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GEOLOGICAL SURVEY

Geochemical signatures, analytical results, mineralogical data, and sample locality map of placer and lode gold, and heavy-mineral concentrates from the Fortymile mining district, Eagle quadrangle, Alaska

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This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards and stratigraphic nomenclature. Any use of trade names is for descriptive purposes only and does not imply endorsement by the USGS.

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INTRODUCTION

Geochemical studies of Alaskan gold deposits were begun in 1984 as a joint study by the U.S. Geological Survey and the State of Alaska Division of Geological and Geophysical Surveys (D.G.G.S.). The objectives of the study are (1) to characterize the deposits, (2) to determine relationships of gold in placer deposits to possible lode sources, (3) to identify possible sources of gold in placer deposits, (4) to study processes of placer formation, (5) to contribute to existing knowledge of the principles of prospecting for placer deposits, and (6) to determine if minerals associated with placer deposits might suggest economic deposits of other metals. The purpose of this report is to release both the analytical data and gold signatures for placer and lode gold samples and also the analytical data and mineralogy of heavy-mineral-concentrate samples from placer gold deposits of the Fortymile mining district in Alaska. Gold signatures comprise the alloy proportions and ratios of gold, silver, and copper, and the content of trace elements (Antweiler and Campbell, 1976).

SAMPLING AND ANALYTICAL PROCEDURE

Placer and lode gold samples and associated heavy-mineral concentrates from stream-sediment samples were obtained from most of the active claims in the Fortymile mining district. At some localities, miners provided us with ample amounts of gold for analysis and at other localities the samples were collected by Mary Albanese and Larry Lueck of the D.G.G.S. To determine whether differences in composition could be correlated with physical attributes, these samples were handled in various ways. Some were sieved into two or more size ranges; others were separated by color; and some were separated on the basis of physical characteristics, e.g., rounded, angular, blocky, (3-D nuggety) delicate, etc. Self-explanatory, descriptive information is included in table 1. Where no descriptive information is provided, the samples were generally small, and no sorting of individual grains was attempted prior to analysis.

A total of 250 emission spectrographic analyses using a technique described by Mosier (1975) were made on gold samples from 31 mines and prospects. These are the numbered and lettered sites on the sample location map (fig. 1) and correspond to the locality index (table 1). The elements analyzed and their lower limits of determination are listed on table 2. Spectrographic results were obtained by visual comparison of spectra derived from the sample against spectra obtained from standards made from pure oxides, graphite, and 99.999 percent pure metallic gold. Pure Al_2O_3 was added to the standards and samples as a codistillation agent. Standard concentrations are geometrically spaced over any given order of magnitude of concentration as follows: 100, 50, 20, 10, and so forth. Samples whose concentrations are estimated to fall between those values are assigned values of 70, 30, 15, and so forth. Standard concentrations are based on a 5-mg gold sample weight. Because of the nature of native gold, it is often difficult to weigh exact 5-mg samples and in many instances there is less than 5-mg of gold available for analysis. Therefore, the reported concentration values (table 2) are corrected to reflect a 5-mg sample weight by the following formula:

$$\text{reported concentration value} = \text{determined value} \times \frac{5}{\text{sample weight}} .$$

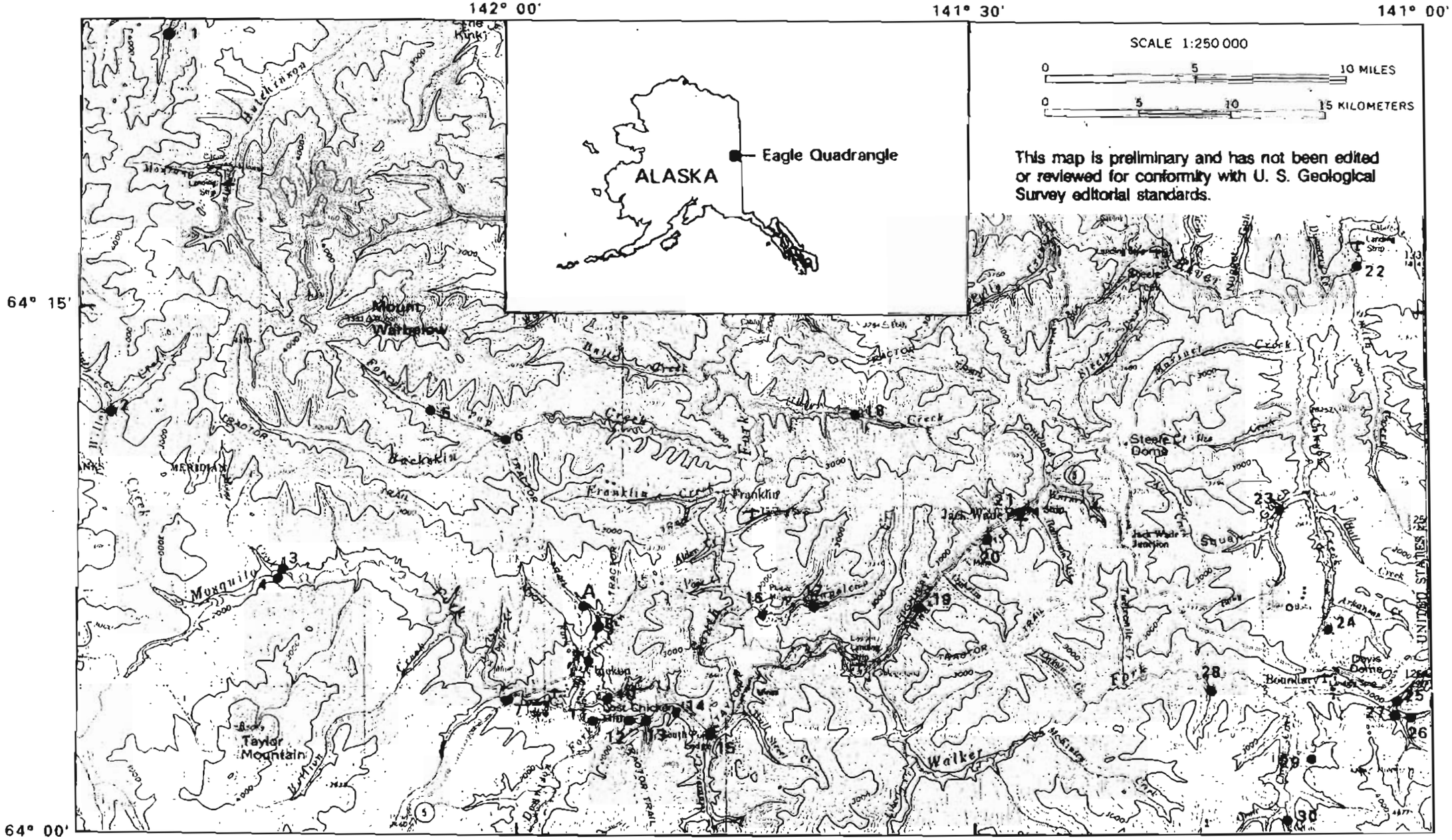

FIG.1 LOCALITIES OF GOLD SAMLPLES FROM THE FORTY-MILE MINING DISTRICT, EAGLE QUADRANGLE, ALASKA

EXPLANATION

●3--Locality where placer gold sample collected.

●A--Locality where lode gold sample collected.

Locality Index

A	Stonehouse Creek
1	Bullion Creek
2	Willow Creek; below Porphyry Creek
3	Unnamed Creek; 1/2 mile east of Moose Creek
4	Mosquito Fork, below Moose Creek
5	Fortyfive Pup
6	Buckskin Creek, below Fortyfive Pup
7	Mosquito Fork, 1/2 mile west of Taylor Highway
8	Chicken Creek, at Stonehouse Creek
9	Chicken Creek bench, above Myers Fork
10	Lost Chicken Creek
11	Mosquito Fork, above Dennison Fork
12	South Fork, I
13	South Fork, II
14	South Fork, III
15	South Fork, at Atwater Creek
16	Napoleon Creek, I
17	Napoleon Creek, II
18	Uhler Creek
19	Wade Creek, 1/2 mile below Ophelia Creek
20	Wade Creek, below Jefferson Creek
21	Wade Creek, at Robinson Creek
22	Fortymile River, above Smith Creek
23	Squaw Gulch, 1 mile above Canyon Creek
24	Canyon Creek, above Woods Creek
25	Davis Creek
26	Poker Creek, above Younger Creek
27	Poker Creek, below Younger, above Davis Creek
28	Walker Fork, at "Ruins"
29	Turk Creek
30	Cherry Creek, above Crow Creek

The trace-element content of natural gold varies greatly from grain to grain as well as from deposit to deposit and this creates a problem in determining the precision of the analytical technique. However, studies using artificial melts show that the precision of the analytical method far exceeds the natural variance of trace elements in native gold (Mosier, 1975).

Heavy-mineral-concentrate samples were obtained at most sites by wet-sieving stream sediment through a stainless-steel screen with a mesh opening of 2 mm into a 14-in steel gold pan and by panning the minus-10-mesh material. In the laboratory, the panned concentrate was air dried and sieved through a 30-mesh (0.8-mm) sieve. This sieving procedure greatly reduces the amount of sample that has to be further processed because most rock-forming mineral grains found in stream sediment are larger than 30-mesh (0.8 mm) and most ore-mineral grains are smaller than 30-mesh (0.8 mm) size.

The minus-30-mesh fraction of the heavy-mineral concentrate was scanned visually using a binocular microscope and shortwave ultraviolet light to identify ore-related minerals. In most cases, the mineral grains could be identified from their physical properties, but x-ray diffraction was used to confirm some species. This visual examination is an important adjunct to the spectrographic analyses because the particulate nature of this sample medium pose problems for both the sample preparer and the analyst. A 5-mg split of finely pulverized sample is normally used for the spectrographic analysis; however, malleable metals such as gold, silver, and copper may be poorly represented in the sample because of smearing out on the pulverizer components. Another benefit of the visual examination is identification of artifacts such as bullet and solder fragments, wire, or other man-made contaminants. It is desirable to be aware of these contaminants as they can give inflated values of the ore-related elements in the spectrographic results.

The minus-30-mesh fractions of the heavy-mineral-concentrate samples were analyzed for 31 elements using a semiquantitative, direct-current arc emission spectrographic method (Grimes and Marranzino, 1968). The elements analyzed and their lower and upper limits of determination are listed in table 3. As with the analytical method for gold, spectrographic results were obtained by visual comparison of spectra derived from the samples against spectra obtained from standards made from pure oxides and carbonates with the same geometrical spacing of concentrations. The precision of the analytical method for the minus-30-mesh fractions is approximately plus or minus one reporting interval at the 83 percent confidence level and plus or minus two reporting intervals at the 96 percent confidence level (Motooka and Grimes, 1976).

RELIABILITY OF GOLD ANALYSES

Differences in the composition of native gold from different geological settings can readily be distinguished using the analytical procedures mentioned above if enough analyses are made to ascertain the magnitude of natural variations in gold samples. In this study five or more spectrographic analyses were found desirable for a single sample site to obtain a signature in which one can place confidence. However, in the context of many other analyses from this district, a single analysis is of value.

The composition of native gold varies considerably (for example, see Gay, 1963; Jones and Fleischer, 1969). Variations in composition are present even from point to point within the same grain (Desborough, 1970). Native gold in oxidized zones and in associated placers generally contains lesser amounts of silver and other elements compared with the native gold in the corresponding

primary deposits; within some specific deposits, single particles of native gold are relatively homogeneous, but in other deposits the native gold is heterogeneous (Boyle, 1979). Because variations in gold composition are natural rather than analytical, they are worthy of study, particularly so their significance can be understood. In spite of the variations, gold compositional data are useful in that they help characterize conditions of ore deposition and are commonly locally distinctive for mines, districts, or regions. Moreover, they are useful in determining the relationships of gold in placer deposits to possible lode sources, and in meeting the other objectives stated in the introductory section of this report.

The natural variability of analyses for Ag and Cu in gold from a single locality was determined by repeatedly analyzing portions of single nuggets (Mosier, 1975; Antweiler and Campbell, 1987). They found silver content of one such nugget ranged from 4.7 to 8.1 percent in four analyses with a mean silver content of 5.7 percent, and a standard deviation (S.D.) of ±1.6 percent and the copper content of this nugget ranged from .048 to .08 percent with a mean copper content of .062 percent, and a standard deviation of ±.0144 percent. Replicate analyses of portions of another nugget from the same locality showed silver content of 18.9 to 19.8 percent with a mean silver content of 19.3 percent, a standard deviation of ±0.56 percent and copper content .038 to .055 percent with a mean of .047 percent, and a standard deviation of ±.012 percent. Such analytical results indicated considerable natural variability. Another nugget from the same locality was washed with hydrofluoric acid to remove surface coatings, then heated to 1300 °C for 30 minutes to homogenize silver and copper content. Analysis of ten 5-mg portions of that nugget each time showed excellent precision; 10 percent silver, (S.D.=0) and 0.05 percent copper (S.D.=0). Prior to acid washing and heat treating, ten 5-mg portions ranged in silver content from 1.5 to 15 percent and in copper content from .015 to .05 percent indicating their natural variation (Mosier, 1975). The concentration of other elements in nuggets from the locality ranged somewhat more widely than copper and silver, even after the homogenization treatment. Significantly, however, the mean values for most elements, including copper and silver, were almost the same on 10 analyses of the natural sample as the mean values for those elements on the homogenized sample, except for elements removed by the acid and heat treatment.

Accuracy is much more difficult to determine than precision because homogeneous gold samples with known amounts of impurities are not readily available. However, standards prepared with known amounts of copper and silver show the method to be accurate within a factor of two in determination of those elements (Mosier, 1975).

One test for reliability of the method is comparison of fineness on samples from localities where large lots of gold have been analyzed for the U.S. Mint or by banks or commercial refiners who have purchased gold. Compilations of gold fineness data have been made by Smith (1941) and by Metz and Hawkins (1981). Also, the First National Bank in Fairbanks made available to us records of gold purchases from 1903 to 1937 from many Alaskan placer deposits. These compilations show excellent agreement for some areas with each other, and poor agreement in other areas. The U.S. Geological Survey data, although acquired by analyses of relatively small samples, agree as well as the data from those sources and are therefore reliable to the extent permitted by natural variation of gold composition.

DESCRIPTION OF DATA TABLES

The analytical results for placer and lode gold (table 4) are given in weight percent and are presented by site numbers and gold type which are keyed to table 1. The USGS-assigned sample number is given under sample. When sufficient gold was available from a particular site, multiple analyses were made and the results are listed. For this study, fineness is defined as:

$$\text{fineness} = \frac{\text{Au wt\%}}{\text{Au wt\%} + \text{Ag wt\%}} \times 1{,}000 .$$

The gold value was determined by difference, that is:

$$\text{Au\%} = 100-(\text{Ag\%} + \text{X\%}),$$

where X% is the sum of elements other than gold and silver. If an element was not detected at the lower limit of detection, a -- was entered. The actual weight in milligrams of the gold sample analyzed is given under wt. The values under r = Au/Ag, Au/Cu, Ag/Cu, and r/Cu are self-explanatory alloy ratios that are part of the gold signature (Antweiler and Campbell, 1976). Because the corrected values shown in table 4 are computer-generated data, these results often carry more digits than are significant. The analysts did not determine these values to the accuracy suggested by the extra numbers.

Table 5 lists the results of the analyses for the minus-30-mesh fraction of the heavy-mineral-concentrate samples and are presented by localities. No analytical data on heavy-mineral concentrates were obtained from sites A, 3, 4, 12, 16, 21, and 22. Values determined for the major elements (iron, magnesium, calcium, and titanium) are given in weight percent; all others are given in parts per million (micrograms/gram). The USGS-assigned sample number corresponds to the placer gold sample number.

Table 6 shows the mineralogical results of the heavy-mineral-concentrate samples. No mineralogical data were obtained from sites A, 3, 4, 12, 16, 21, and 22. The percentages determined for the pyrite and scheelite are visual estimates as seen in the microscope field under 20X magnification and do not reflect actual grain counts. If a mineral species was observed in the sample and determined to be less than 1% by volume of the total nonmagnetic sample, an "X" is used. This table indicates only those minerals that we believe may be ore-related and does not show extraneous minerals such as apatite, sphene, zircon, etc., most of which appeared in all samples.

OTHER PUBLICATIONS

Other U.S. Geological Survey publications showing principally analytical results, geochemical signatures, mineralogical data, and sample locality maps of placer/lode gold and heavy-mineral concentrates from other gold mining districts in Alaska are:

1. Mosier, E.L., and Lewis, J.S., 1986, Analytical results, geochemical signatures, and sample locality map of lode gold, placer gold, and heavy-mineral concentrates from the Koyukuk-Chandalar mining district, Alaska: U.S. Geological Survey Open-File Report 86-345, 172 p., 1 pl.

2. Cathrall, J.B., Antweiler, J.C., and Mosier, E.L., 1987, Occurrence of platinum in gold samples from the Tolovana and Rampart mining districts, Livengood quadrangle, Alaska: U.S. Geological Survey Open-File Report 87-330, 12 pages, 1 pl.
3. McDanal, S.K., Cathrall, J.B., Mosier, E.L., Antweiler, J.C., and Tripp, R.B., 1988, Analytical results, geochemical signatures, mineralogical data, and sample locality map of placer gold and heavy-mineral concentrates from the Manley Hot Springs, Tofty, Eureka, and Rampart mining districts, Tanana and Livengood quadrangles, Alaska: U.S. Geological Survey Open-File Report 88-443, 54 p.
4. Cathrall, J.B., McDanal, S.K., Van Trump G., Mosier, E.L., and Tripp, R.B., 1988, Analytical results, geochemical signatures, mineralogical data, and sample locality map of lode gold, placer gold, and heavy-mineral concentrates from the Tolovana mining district, Livengood quadrangle, Alaska: U.S. Geological Survey Open-File Report 88-578, 32 p.
5. Cathrall, J.B., Tripp, R.B., McDanal, S.K., Mosier, E.L., and VanTrump, G., 1988, Analytical results, geochemical signatures, mineralogical data, and sample locality map of placer gold and heavy-mineral concentrates from the Circle mining district, Circle quadrangle, Alaska: U.S. Geological Survey Open-File Report 88-676, 48 p., 1 pl.
6. Mosier, E.L., Cathrall, J.B., Antweiler, J.C., and Tripp, R.B., 1989, Geochemistry of placer gold, Koyukuk-Chandalar mining district, Alaska: Journal of Geochemical Exploration, v. 31, p. 97-115.

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Desborough, G.A., 1970, Silver depletion indicated by microanalyses of gold from placer occurrences, Western United States: Economic Geology, v. 65, no. 3, p. 304-311.

Gay, N.C., 1963, A review of geochemical characteristics of gold in ore deposits: University of Witwatersrand, Economical Geological Research Unit Information Circular 12, 70 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.

Jones, R.S., and Fleischer, Michael, 1969, Gold in minerals and the composition of native gold: U.S. Geological Survey Circular 612, 17 p.

Metz, Paul A., and Hawkins, D.B., 1981, A summary of gold fineness values for Alaska Placer deposits: School of Mineral Industry, University of Alaska, Fairbanks, Alaska 99701, MIRL Report 45.

Mosier, E.L., 1975, Use of emission spectroscopy for the semiquantitative analysis of trace elements and silver in native gold, in F.N. Ward, ed., New and refined methods of trace analysis useful in geochemical exploration: U.S. Geological Survey Bulletin 1408, p. 97-105.
Motooka, J.M., and Grimes, D.J., 1976, Analytical precision of one-sixth order semiquantitative spectrographic analyses: U.S. Geological Survey Circular 738, 25 p.
Smith, P.S., 1941, Fineness of gold from Alaska placers: U.S. Geological Survey Bulletin 910-C, p. 147-272.

TABLE 1.--Index for site, type of gold, locality name, and gold description for placer gold and lode gold samples from the Fortymile mining district, Eagle quadrangle, Alaska

[A = lode gold site; 1-30 = placer gold site]

Site type	Locality name	Gold description
A.01	Stonehouse Creek	Unsorted gold.
1.01	Bullion Creek	Plus 20-mesh gold; 3-D grains.
1.02	--Do---------	Minus 20-, plus 60-mesh gold; flat thin flakes.
2.01	Willow Creek, below Porphyry Creek.	Plus 20-mesh gold; secondary crystals present.
2.02	--Do----------	Minus 20-mesh, plus 60-mesh gold.
3.01	Unnamed Creek, 1/2 mile east of Moose Creek	Unsorted gold; very shiny, light yellow.
4.01	Mosquito fork, below Moose Creek	Unsorted gold.
5.01	Forty-five Pup	Plus 20-mesh gold; 3-D grains.
5.02	--Do----------	Plus 20-mesh gold; flat thin, ragged flakes.
5.03	--Do----------	Minus 20-, plus 60-mesh gold.
6.01	Buckskin Creek, below Forty-five Pup	Plus 20-mesh gold; 3-D grains.
6.02	--Do----------	Minus 20-, plus 60-mesh gold; 3-D grains with crystals.
6.03	--Do----------	Minus 20-, plus 60-mesh gold; flat, thin, little wear, flakes.
7.01	Mosquito Fork, 1/2 mile west of Taylor Highway	Plus 20-mesh gold; flat flakes.
7.02	--Do----------	Plus 20-mesh gold; nuggets with quartz.
7.03	--Do----------	Minus 20-, plus 60-mesh gold; flat flakes.
7.04	--Do----------	Minus 60-, plus 100-mesh gold.
8.01	Chicken Creek, at Stonehouse Creek	Plus 20-mesh gold; little worn.
8.02	--Do----------	Minus 20-, plus 60-mesh gold; little worn.
8.03	--Do----------	Minus 20-, plus 60-mesh gold; flat, thin, little worn
8.04	--Do----------	Minus 60-, plus 100-mesh gold.
8.05	--Do----------	Minus 100-mesh gold.
9.01	Chicken Creek bench, above Myers Fork	Plus 20-mesh gold; ragged, thin, delicate, little worn.
9.02	--Do----------	Minus 20-, plus 60-mesh gold; flat, thin, delicate, white to light yellow.
9.03	--Do----------	Unsorted gold.
9.04	--Do----------	Flat, delicate, flakes of gold.
9.05	--Do----------	Minus 60-, plus 100-mesh gold.
9.06	--Do----------	Minus 60-, plus 100-mesh gold; dirty, specularite grains present.
9.07	--Do----------	Minus 160-mesh gold; dirty, specularite grains present.
10.01	Lost Chicken Creek	Plus 20-mesh gold; flat grains.
10.02	--Do----------	Minus 20-, plus 60-mesh gold; 3-D grains.
10.03	--Do----------	Minus 20-, plus 60-mesh gold; flat grains.

TABLE 1--Continued

10.04	--Do----------	Minus 60-mesh gold.
11.01	Mosquito Fork, above Dennison Fork	Plus 20-mesh gold; flat.
11.02	--Do----------	Plus 20-mesh gold; colloform.
11.03	--Do----------	Minus 20-, plus 60-mesh gold.
11.04	--Do----------	Minus 60-, plus 100-mesh gold.
12.01	South Fork, I	Flat, thin, worn, flakes of gold.
13.01	South Fork, II	Minus 20-, plus 60-mesh gold; flat, thin, worn grains.
13.02	--Do----------	Minus 60-mesh gold.
14.01	--Do----------	Plus 20-mesh gold; flat flakes.
14.02	--Do----------	Plus 25-mesh gold; 3-D grains.
14.03	--Do----------	Minus 25-mesh gold.
15.01	South Fork, at Atwater Creek	Flat, thin flakes of gold.
16.01	Napoleon Creek, I	Minus 20-mesh gold; flat, thin, well worn.
16.02	--Do----------	Plus 20-mesh gold.
17.01	Napoleon Creek, II	Plus 20-mesh gold; flat flakes.
17.02	--Do----------	Plus 20-mesh gold; nuggety grains.
17.03	--Do----------	Minus 20-, plus 60-mesh gold; flat, thin, little wear.
17.04	--Do----------	Minus 20-, plus 60-mesh gold; 3-D grains, little wear.
17.05	--Do----------	Minus 60-mesh gold.
18.01	Uhler Creek	Unsorted gold.
18.02	--Do-------	Plus 20-mesh gold; whitish yellow.
18.03	--Do-------	Plus 20-mesh gold; quartz.
18.04	--Do-------	Plus 20-mesh gold; magnetite intergrowths, 3-D nuggets.
18.05	--Do-------	Plus 20-mesh gold; flattened wires.
18.06	--Do-------	Minus 20-, plus 60-mesh gold; vermillion tipped grains.
18.07	--Do-------	Minus 20-, plus 60-mesh gold.
18.08	--Do-------	Minus 60-, plus 100-mesh gold.
18.09	--Do-------	Minus 100-mesh gold.
19.01	Wade Creek, 1 1/2 mile below Ophelia Creek	Plus 20-mesh gold; discolored, 3-D grains.
19.02	--Do----------	Plus 20-mesh gold; flat, worn grains.
19.03	--Do----------	Minus 20-, plus 60-mesh gold; discolored, 3-D grains.
19.04	--Do----------	Minus 20-, plus 60-mesh gold; flat, thin flakes.
19.05	--Do----------	Minus 60-, plus 100-mesh gold.
20.01	Wade Creek, below Jefferson Creek	Unsorted gold.
20.02	--Do----------	Crinkly, pitted wires, delicate gold.
20.03	--Do----------	Plus 20-mesh gold; flat, rough.
20.04	--Do----------	Plus 20-mesh gold; 3-D grains.
20.05	--Do----------	Plus 20-mesh gold; flat grains.
21.01	Wade Creek at Robinson Creek	Unsorted gold.
22.01	Fortymile River; above Smith Creek	Plus 20-mesh gold; flat flakes
22.02	--Do----------	Plus 20-mesh gold; rusty, flat flakes.

TABLE 1.--Continued

22.03	--Do----------	Minus 20-, plus 60-mesh gold; flat, thin grains.
22.04	--Do----------	Minus 60-, plus 100-mesh gold.
22.05	--Do----------	Minus 100-mesh gold.
23.01	Squaw Gulch, 1 mile above Canyon Creek	Unsorted gold.
24.01	Canyon Creek, above Woods Creek	Unsorted gold.
25.01	Davis Creek	Minus 20-, plus 60-mesh gold; bright yellow grains.
25.02	--Do----------	Minus 20-, plus 60-mesh gold; dull yellow to whitish grains.
25.03	--Do----------	Minus 20-, plus 60-mesh gold.
25.04	--Do----------	Minus 60-mesh gold.
26.01	Poker Creek, above Younger Creek	Plus 20-mesh gold; flat, not worn.
26.02	--Do----------	Minus 20-, plus 60-mesh gold.
26.03	--Do----------	Minus 20-, plus 60-mesh gold; white to light yellow
26.04	--Do----------	Minus 20-, plus 60-mesh gold; rusty yellow.
27.01	Poker Creek, below Younger, above Doves Creek	Minus 20-mesh gold.
27.02	--Do----------	Plus 20-mesh gold.
27.03	--Do----------	Unsorted gold.
27.04	--Do----------	Gold with greyish white metal; lead.
28.01	Walker Fort at Ruins	Plus 20-mesh gold; flat grains.
28.02	--Do----------	Minus 20-, plus 60-mesh gold; yellow flat grains.
28.03	--Do----------	Minus 20-, plus 60-mesh gold; whitish yellow.
28.04	--Do----------	Minus 60-, plus 100-mesh gold.
29.01	Turk Creek	Unsorted gold.
30.01	Cherry Creek, above Crow Creek	Plus 20-mesh gold; intricate slightly worn.
30.02	--Do----------	Plus 20-mesh gold; bright, fresh crystals on surface of rounded grains.
30.03	--Do----------	Unsorted gold.

TABLE 2.—Lower limits of determination for the spectrographic analyses of gold, based on a 5-mg sample

Elements	Lower determination limit
	Percent
Silver (Ag)	0.001
Copper (Cu)	.0005
Zinc (Zn)	.005
Gallium (Ga)	.0002
Lead (Pb)	.0002
Arsenic (As)	.005
Antimony (Sb)	.002
Cadmium (Cd)	.0002
Bismuth (Bi)	.0002
Indium (In)	.0005
Mercury (Hg)	.002
Tellurium (Te)	.005
Nickel (Ni)	.0005
Cobalt (Co)	.0005
Tin (Sn)	.0005
Molybdenum (Mo)	.0005
Germanium (Ge)	.0005
Platinum (Pt)	.001
Palladium (Pd)	.0002
Barium (Ba)	.0005
Strontium (Sr)	.01
Zirconium (Zr)	.0005
Vanadium (V)	.001
Chromium (Cr)	.001
Yttrium (Y)	.0005
Lanthanum (La)	.002
Scandium (Sc)	.0005
Niobium (Nb)	.001
Boron (B)	.0005
Tantalum (Ta)	.005
Beryllium (Be)	.0001
Tungsten (W)	.005
Manganese (Mn)	.0001
Iron (Fe)	.001
Magnesium (Mg)	.0005
Calcium (Ca)	.001
Titanium (Ti)	.001
Silicon (Si)	.0002

TABLE 3.--Limits of determination for the spectrographic analyses of heavy-mineral concentrates, based on a 5-mg sample

Elements	Lower determination limit	Upper determination limit
	Percent	
Calcium (Ca)	0.1	50
Iron (Fe)	.1	50
Magnesium (Mg)	.05	20
Calcium (Ca)	.1	50
Titanium (Ti)	.005	2
Sodium (Na)	.5	10
Phosphorus (P)	.5	20
	Parts per million	
Manganese (Mn)	20	10,000
Silver (Ag)	1	10,000
Arsenic (As)	500	20,000
Gold (Au)	20	1,000
Boron (B)	20	5,000
Barium (Ba)	50	10,000
Beryllium (Be)	2	2,000
Bismuth (Bi)	20	2,000
Cadmium (Cd)	50	1,000
Cobalt (Co)	20	5,000
Chromium (Cr)	20	10,000
Copper (Cu)	10	50,000
Gallium (Ga)	10	1,000
Germanium (Ge)	20	200
Lanthanum (La)	100	2,000
Molybdenum (Mo)	10	5,000
Niobium (Nb)	50	5,000
Nickel (Ni)	10	10,000
Lead (Pb)	20	50,000
Antimony (Sb)	200	20,000
Scandium (Sc)	10	200
Tin (Sn)	20	2,000
Strontium (Sr)	200	10,000
Vanadium (V)	20	20,000
Tungsten (W)	50	20,000
Yttrium (Y)	20	5,000
Zinc (Zn)	500	20,000
Zirconium (Zr)	20	2,000
Thorium (Th)	200	5,000
Palladium (Pd)	5	1,000
Platinum (Pt)	20	1,000

TABLE 4.--Signatures of placer and lode gold from the Fortymile mining district, Eagle quadrangle, Alaska

[Fine = fineness where fineness = $\frac{Au\%}{Au\% + Ag\%} \times 1.000$; x = sum of elements other than gold and silver; wt = sample weight in milligrams; all element and X values are given in percent; Ge, Sr, Sc, and Ta analyzed, but not detected; analyst: E.L. Mosier. See table 1 for locality name and gold description which corresponds with site locality and analysis.]

Sample	SiteNo	% Au	Fineness	Ag	SUM of X	Cu	Zn	Ga	Pb	As	Sb	Cd	Bi	Hg
3405A	A.01	85.4	916	7.8	6.8030	.0022	--	--	.0011	--	--	--	--	.3348
3405B	A.01	79.1	856	13.4	7.5458	.0057	--	--	.0057	--	--	--	--	.3817
3411B	1.01	85.8	882	11.5	2.6954	.0057	--	--	.0034	--	--	--	--	.0172
3411NA	1.02	89.7	900	10.0	.2579	.0100	--	--	.0005	--	--	--	--	.0100
3411NB	1.02	87.4	897	10.0	2.5730	.0050	--	--	.0030	--	--	--	--	.3000
3411NC	1.02	84.4	849	15.0	.5574	.0050	--	--	.0002	--	--	--	--	.0100
3414A	2.01	84.7	850	15.0	.3318	.0050	--	--	.0003	--	--	--	--	.1000
3414C	2.01	95.2	956	4.3	.4391	.0174	--	--	.0003	--	--	--	.0006	.0609
3414NA	2.02	88.8	899	10.0	1.2185	.0150	--	--	.0010	--	--	--	.0010	.0700
3414NB	2.02	88.4	898	10.0	1.5650	.0150	--	--	.0005	--	--	--	--	.3000
3414NC	2.02	92.6	930	7.0	.3864	.0200	--	--	.0007	--	--	--	.0005	.2000
3387A	3.01	91.3	916	8.4	.3745	.0239	.0239	--	.0084	--	--	.0006	.0012	.1790
3387B	3.01	90.1	912	8.7	1.1624	.0435	.0261	--	.0087	--	--	.0013	.0061	.8696
3387C	3.01	88.2	898	10.0	1.7942	.0301	.0502	--	.0100	--	--	.0030	.0010	1.5060
3408A	4.01	89.6	927	7.1	3.3535	.0071	--	.0002	.0005	--	--	--	--	3.0242
3408B	4.01	92.6	930	7.0	.3794	.0300	--	.0002	.0005	--	--	--	--	.2000
3408C	4.01	86.9	885	11.3	2.3606	.0023	--	--	.0006	--	--	--	--	1.6892
3409A	5.01	86.4	872	12.7	.9025	.0085	--	.0002	.0004	--	--	--	--	.8475
3409B	5.01	88.8	895	10.4	.8167	.0073	--	--	.0005	--	--	--	--	.7292
3409C	5.01	88.0	886	11.4	.6147	.0080	--	.0002	.0006	--	--	--	--	.5682
3409NB	5.02	85.1	860	13.8	1.0766	.0028	--	--	.0277	--	--	--	--	.4613
3409NC	5.02	80.2	805	19.5	.3418	.0013	--	--	.0003	--	--	--	--	.1299
3409PA	5.03	74.4	768	22.5	3.1022	.0011	--	--	.0056	--	.0022	--	--	2.2472
3409PB	5.03	81.9	822	17.8	.3441	.0089	--	--	.0004	--	.0027	--	--	.0888
3409PC	5.03	71.9	723	27.5	.5476	.0009	--	--	.0002	--	.0092	--	--	.2752
3410A	6.01	75.8	777	21.7	2.4196	.0016	--	--	.0011	--	--	--	--	.0217
3410B	6.01	75.0	761	23.6	1.4039	.0018	--	--	--	--	--	--	--	.0236
3410C	6.01	82.2	824	17.5	.2940	.0018	--	--	--	--	--	--	--	.0877
3410NA	6.02	80.1	806	19.2	.7189	.0019	--	--	.0010	--	.0096	--	--	.1442
3410NB	6.02	79.6	799	20.0	.3797	.0015	--	--	.0002	--	.0050	--	--	.1500
3410NC	6.02	79.4	799	20.0	.6372	.0070	--	--	.0050	--	.0030	--	.0002	.2000
3410PA	6.03	79.7	799	20.0	.3102	.0070	--	--	.0002	--	.0070	--	--	.1500
3410PB	6.03	79.8	800	20.0	.2373	.0020	--	--	.0003	--	.0030	--	--	.1000
3410PC	6.03	80.8	811	18.9	.3354	.0047	--	--	.0005	--	.0028	--	--	.1415
3399A	7.01	95.3	955	4.5	.2169	.0270	--	--	.0013	--	--	--	--	.0629
3399B	7.01	94.9	956	4.3	.7413	.0130	--	--	.0009	--	--	--	.0017	.6066
3399C	7.01	91.4	920	7.9	.7344	.0169	--	--	.0011	--	.0023	--	--	.5643
3399NA	7.02	90.4	936	6.2	3.4116	.0124	--	--	.0025	--	--	--	.0002	.6219
3399NB	7.02	90.5	936	6.2	3.3251	.0087	--	--	.0012	--	--	--	--	.6203
3399PA	7.03	93.5	939	6.1	.4047	.0173	--	--	.0009	--	--	--	.0130	.1733
3399PB	7.03	90.6	909	9.1	.2908	.0181	--	--	.0045	--	--	--	.0181	.0907
3399PC	7.03	95.2	954	4.6	.2053	.0274	--	--	.0005	--	--	--	--	.0639
3399Q	7.04	91.5	919	8.1	.4326	.0173	--	--	.0017	--	--	--	.0035	.2304
3389A	8.01	92.1	929	7.0	.8705	.0050	--	--	.0050	--	--	--	.0015	.5000
3389B	8.01	90.3	910	9.0	.7424	.0045	--	--	.0018	--	--	--	--	.4480
3389C	8.01	94.3	946	5.4	.3243	.0016	--	--	.0011	--	--	--	--	.0542
3389NA	8.02	93.3	949	5.0	1.6499	.0030	--	--	.0030	--	--	--	.0030	1.0060
3389NB	8.02	92.8	932	6.8	.4275	.0049	--	--	.0019	--	--	--	--	.1946
3389NC	8.02	90.3	915	8.4	1.2668	.0060	--	--	.0018	--	--	--	--	.2398
3389PA	8.03	92.9	946	5.3	1.8089	.0106	--	--	.0032	--	--	--	--	.5308

TABLE 4.--continued

Sample	SiteNo	Te	Ni	Co	Sn	Mo	Pt	Pd	Ba	Zr	V	Cr	Y	La	Nb	B
3405A	A.01	--	--	.0022	--	--	--	--	.0056	.0011	.0558	.0017	--	--	--	--
3405B	A.01	--	--	.0029	--	--	--	--	.0038	.0010	.0382	.0019	--	--	--	--
3411B	1.01	--	.0017	--	--	--	--	--	.0017	.0011	.0011	--	--	--	--	--
3411NA	1.02	--	--	--	--	--	--	--	.0007	--	--	--	--	--	--	--
3411NB	1.02	--	--	--	--	--	--	--	.0020	--	--	--	--	--	--	--
3411NC	1.02	--	--	--	--	--	--	--	.0030	--	--	--	--	--	--	.0005
3414A	2.01	--	--	--	--	--	--	--	.0005	--	--	--	--	--	--	--
3414C	2.01	--	.0009	--	--	--	--	--	.0013	--	--	--	--	--	--	--
3414NA	2.02	--	.0010	--	--	--	--	--	.0015	--	--	--	.0020	--	--	--
3414NB	2.02	--	.0005	--	--	--	--	.0020	.0050	--	--	--	--	--	--	--
3414NC	2.02	--	--	--	--	--	--	--	.0005	--	--	--	--	--	--	--
3387A	3.01	--	--	--	.0006	--	--	--	--	--	--	--	.0024	--	--	--
3387B	3.01	--	--	--	.0043	--	--	--	--	--	--	--	--	--	--	--
3387C	3.01	--	--	--	.0201	--	--	--	.0005	--	--	--	--	--	--	--
3408A	4.01	--	--	--	--	--	--	--	.0010	--	--	--	--	--	--	--
3408B	4.01	--	--	--	--	--	--	--	.0030	--	--	--	--	--	--	--
3408C	4.01	--	--	--	--	--	--	--	.0034	--	--	--	--	--	--	--
3409A	5.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3409B	5.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3409C	5.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3409NB	5.02	--	--	--	--	--	--	--	.0018	--	--	--	--	--	--	--
3409NC	5.02	--	--	--	--	--	--	--	.0006	--	--	--	--	--	--	--
3409PA	5.03	--	--	.0011	--	--	--	--	.0011	--	--	--	--	--	--	--
3409PB	5.03	--	--	--	--	--	--	--	.0013	--	--	--	--	--	--	--
3409PC	5.03	--	--	--	--	--	--	--	.0009	--	--	--	--	--	--	--
3410A	6.01	--	--	--	--	--	--	--	.0016	--	--	--	--	--	--	--
3410B	6.01	--	--	--	--	--	--	--	.0024	--	--	--	--	--	--	--
3410C	6.01	--	--	--	--	--	--	--	.0006	--	--	--	--	--	--	--
3410NA	6.02	--	.0010	--	--	--	--	--	.0014	--	.0048	--	--	--	--	--
3410NB	6.02	--	--	--	--	--	--	--	.0010	--	--	--	--	--	--	--
3410NC	6.02	--	--	--	--	--	--	--	.0010	--	--	--	--	--	--	--
3410PA	6.03	--	--	--	--	--	--	--	.0005	--	--	--	--	--	--	--
3410PB	6.03	--	--	--	--	--	--	--	.0005	--	--	--	--	--	--	--
3410PC	6.03	--	--	.0005	--	--	--	--	.0009	--	--	--	--	--	--	--
3399A	7.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3399B	7.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3399C	7.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3399NA	7.02	--	--	--	--	.0012	--	--	.0009	--	--	--	--	--	--	--
3399NB	7.02	--	--	--	--	.0012	--	--	--	--	--	--	--	--	--	--
3399PA	7.03	.0043	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3399PB	7.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3399PC	7.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3399Q	7.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3389A	8.01	--	--	.0020	--	--	--	--	--	--	--	--	--	--	--	--
3389B	8.01	.0045	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3389C	8.01	--	--	--	--	--	--	--	--	--	--	--	.0005	--	--	--
3389NA	8.02	--	--	--	--	.0005	--	--	.0020	--	.0015	--	--	--	--	--
3389NB	8.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3389NC	8.02	--	--	--	--	--	--	--	.0120	--	.0024	--	--	--	--	--
3389PA	8.03	.0053	--	--	--	--	--	--	.0032	--	.0011	--	--	--	--	--

TABLE 4.--continued

Sample	SiteNo	Be	W	Mn	Fe	Mg	Ca	Ti	Si	smpl wt	Au/Ag=r	Au/Cu	Ag/Cu	r/Cu
3405A	A.01	--	--	.0335	2.2321	2.2321	.2232	.0033	1.6741	4.48	10.9	38,252	3,500	4,896
3405B	A.01	--	--	.0382	1.9084	1.9084	.3817	.0057	2.8626	2.62	5.9	13,815	2,333	1,034
3411B	1.01	--	--	.0023	.2299	.1149	.0115	.0057	2.2989	4.35	7.5	14,931	2,000	1,299
3411NA	1.02	--	--	.0007	.0200	.0100	.0050	.0010	.2000	5.00	9.0	8,974	1,000	897
3411NB	1.02	--	--	.0010	.1500	.1000	.0070	.0050	2.0000	5.00	8.7	17,485	2,000	1,749
3411NC	1.02	--	--	.0007	.0200	.0100	.0050	.0030	.5000	5.00	5.6	16,889	3,000	1,126
3414A	2.01	--	--	.0010	.0500	.0100	.0100	.0050	.1500	5.00	5.6	16,934	3,000	1,129
3414C	2.01	--	--	.0013	.0609	.0087	.0087	.0174	.2609	5.75	21.9	5,475	250	1,259
3414NA	2.02	--	--	.0020	.1000	.0100	.0100	.0050	1.0000	5.00	8.9	5,919	667	592
3414NB	2.02	--	--	.0070	.5000	.0200	.0100	.0050	.7000	5.00	8.8	5,896	667	590
3414NC	2.02	--	--	.0007	.0500	.0070	.0020	.0050	.1000	5.00	13.2	4,631	350	662
3387A	3.01	--	--	.0004	.0239	.0006	.0024	.0239	.0835	4.19	10.9	3,824	350	458
3387B	3.01	--	--	.0003	.0435	.0009	.0017	.0261	.1304	5.75	10.4	2,073	200	238
3387C	3.01	--	--	.0005	.0502	.0010	.0010	.0201	.1004	4.98	8.8	2,927	333	292
3408A	4.01	--	--	.0010	.1512	.0071	.0030	.0071	.1512	4.96	12.7	12,696	1,000	1,799
3408B	4.01	--	--	.0007	.0300	.0070	.0030	.0050	.1000	5.00	13.2	3,087	233	441
3408C	4.01	--	--	.0008	.0788	.0113	.0056	.0056	.5631	4.44	7.7	38,352	5,000	3,406
3409A	5.01	--	--	.0003	.0169	.0017	.0017	--	.0254	5.90	6.8	10,194	1,500	802
3409B	5.01	--	--	.0005	.0208	.0031	.0010	.0021	.0521	4.80	8.5	12,174	1,429	1,169
3409C	5.01	--	--	.0002	.0114	.0011	.0011	.0011	.0227	4.40	7.7	11,066	1,429	974
3409NB	5.02	--	--	.0009	.0923	.0138	.0138	.0009	.4613	5.42	6.1	30,744	5,000	2,222
3409NC	5.02	--	--	.0006	.0649	.0065	.0065	.0013	.1299	3.85	4.1	61,737	15,000	3,169
3409PA	5.03	--	--	.0011	.1685	.0787	.0169	.0169	.5618	4.45	3.3	66,239	20,000	2,948
3409PB	5.03	--	--	.0004	.0444	.0062	.0089	.0044	.1776	5.63	4.6	9,221	2,000	519
3409PC	5.03	--	--	.0006	.0642	.0064	.0046	.0018	.1835	5.45	2.6	78,403	30,000	2,849
3410A	6.01	--	--	.0022	.1630	.0326	.0109	.0109	2.1739	4.60	3.5	46,516	13,333	2,140
3410B	6.01	--	--	.0024	.1179	.0354	.0236	.0177	1.1792	4.24	3.2	42,406	13,333	1,798
3410C	6.01	--	--	.0004	.0175	.0044	.0018	.0044	.1754	5.70	4.7	46,832	10,000	2,669
3410NA	6.02	--	--	.0007	.0481	.0192	.0048	.0014	.4808	5.20	4.2	41,626	10,000	2,165
3410NB	6.02	--	--	.0003	.0150	.0050	.0010	.0007	.2000	5.00	4.0	53,080	13,333	2,654
3410NC	6.02	--	--	.0010	.1000	.0150	.0020	.0030	.3000	5.00	4.0	11,338	2,857	567
3410PA	6.03	--	--	.0005	.0300	.0050	.0050	.0050	.1000	5.00	4.0	11,384	2,857	569
3410PB	6.03	--	--	.0005	.0280	.0070	.0030	.0010	.1000	5.00	4.0	39,881	10,000	1,994
3410PC	6.03	--	--	.0005	.0283	.0047	.0047	.0047	.1415	5.30	4.3	17,129	4,000	908
3399A	7.01	--	--	.0006	.0180	.0018	.0063	.0090	.0899	5.56	21.2	3,532	167	786
3399B	7.01	--	--	.0004	.0173	.0017	.0043	.0087	.0867	5.77	21.9	7,303	333	1,686
3399C	7.01	--	--	.0008	.0226	.0023	.0056	.0056	.1129	4.43	11.6	5,397	467	683
3399NA	7.02	--	--	.0025	.2488	.0087	.0124	.0124	2.4876	4.02	14.5	7,266	500	1,168
3399NB	7.02	--	--	.0025	.1861	.0087	.0087	.0062	2.4814	4.03	14.6	10,417	714	1,679
3399PA	7.03	--	--	.0009	.0433	.0043	.0087	.0087	.1300	5.77	15.4	5,397	350	890
3399PB	7.03	--	--	.0005	.0136	.0018	.0027	.0045	.1361	5.51	10.0	4,994	500	550
3399PC	7.03	--	--	.0005	.0091	.0018	.0046	.0064	.0912	5.48	20.9	3,479	167	763
3399Q	7.04	--	--	.0012	.0346	.0058	.0115	.0115	.1152	4.34	11.3	5,295	467	657
3389A	8.01	--	--	.0020	.1000	.0200	.0200	.0150	.2000	5.00	13.2	18,426	1,400	2,632
3389B	8.01	--	--	.0013	.1344	.0269	.0134	.0179	.0896	5.58	10.1	20,154	2,000	2,249
3389C	8.01	--	--	.0011	.0542	.0217	.0163	.0108	.1627	4.61	17.4	57,934	3,333	10,683
3389NA	8.02	--	--	.0020	.2012	.2012	.0151	.0101	.2012	4.97	18.6	30,920	1,667	6,147
3389NB	8.02	--	--	.0015	.0486	.0195	.0097	.0010	.1459	5.14	13.6	19,072	1,400	2,801
3389NC	8.02	--	--	.0036	.2398	.1199	.0180	.0240	.5995	4.17	10.8	15,069	1,400	1,795
3389PA	8.03	--	--	.0021	.1062	.0531	.0106	.0212	1.0616	4.71	17.5	8,750	500	1,648

TABLE 4.--continued

Sample	SiteNo	% Au	Fineness	Ag	SUM of X	Cu	Zn	Ga	Pb	As	Sb	Cd	Bi	Hg
3389PB	8.03	93.0	940	6.0	.9791	.0026	--	--	.0128	--	--	--	.0004	.5973
3389PC	8.03	87.6	890	10.8	1.5680	.0022	--	--	.0016	--	--	--	--	1.0799
3389QA	8.04	93.0	941	5.8	1.2130	.0058	--	--	.0058	--	--	--	.0081	.3472
3389QB	8.04	90.4	919	8.0	1.5577	.0048	--	--	.0032	--	--	--	.0016	.8013
3389RA	8.05	93.5	953	4.6	1.8868	.0028	--	--	.0028	--	.0065	--	.0186	.4638
3389RB	8.05	90.4	919	8.0	1.5782	.0057	--	--	.0034	--	.0057	--	.0228	.7991
3389RC	8.05	91.3	930	6.9	1.7574	.0049	--	--	.0099	--	.0049	--	.0197	.4931
3388A	9.01	93.3	950	4.9	1.8823	.0146	--	--	.0015	--	--	--	.0097	1.4591
3388B	9.01	92.1	931	6.8	1.1055	.0068	--	--	.0019	--	--	--	.0002	.9747
3388C	9.01	93.0	933	6.7	.3715	.0095	--	--	.0010	--	--	--	--	.2852
3388NA	9.02	85.7	875	12.3	2.0723	.0037	--	--	.0012	--	.0104	--	--	1.8382
3388NB	9.02	85.6	877	12.0	2.3574	.0086	--	--	.1718	--	.0034	--	.0026	1.7182
3388PA	9.03	91.7	921	7.8	.5075	.0112	--	--	.0022	--	--	--	.0034	.3356
3388PB	9.03	92.7	938	6.2	1.1681	.0062	--	--	.0018	--	--	--	.0013	.8803
3388PC	9.03	86.5	883	11.5	1.9805	.0057	--	--	.0034	--	--	--	.0023	1.7241
3388QA	9.04	90.4	914	8.6	1.0040	.0060	--	--	.0009	--	--	--	.0004	.8562
3388QB	9.04	87.4	886	11.3	1.3760	.0056	--	--	.0056	--	.0023	--	.0002	1.1261
3388QC	9.04	88.6	893	10.7	.7545	.0075	--	--	.0021	--	--	--	.0213	.5330
3388RA	9.05	87.0	883	11.5	1.4724	.0081	--	--	.0023	--	.0023	--	.0058	1.1521
3388RB	9.05	86.6	883	11.4	1.9908	.0057	--	--	.0023	--	.0023	--	.0023	1.7162
3388RC	9.05	89.5	914	8.4	2.0732	.0059	--	--	.0017	--	--	--	.0017	1.6892
3388SA	9.06	93.1	952	4.7	2.1262	.0066	--	--	.0664	--	--	--	.0019	.4744
3388SB	9.06	90.7	925	7.4	1.9137	.0053	--	--	.0053	--	.0074	--	.0316	.3158
3388SC	9.06	91.7	939	6.0	2.3532	.0043	--	--	.0853	--	.0043	--	.0427	.5973
3388TA	9.07	91.4	942	5.6	3.0011	.0023	--	--	.0563	--	.0113	--	.0017	.2252
3388TB	9.07	93.0	952	4.7	2.3120	.0047	--	--	.0658	--	.0047	--	.0019	.4699
3388TC	9.07	94.2	970	2.9	2.8889	.0044	--	--	.0292	.0219	--	--	.0015	.1462
3395A	10.01	97.5	979	2.1	.4096	.0320	--	--	.0007	--	--	--	.0075	.2132
3395B	10.01	89.9	900	9.9	.1849	.0070	--	--	.0005	--	.0050	--	--	.0298
3395C	10.01	89.2	896	10.3	.4837	.0103	--	--	.0007	--	--	--	--	.1033
3395NA	10.02	95.0	953	4.6	.4082	.0186	--	--	.0014	--	--	--	.0464	.0928
3395NB	10.02	93.6	941	5.9	.5665	.0176	--	--	.0012	--	--	--	--	.2353
3395NC	10.02	91.4	922	7.8	.7961	.0111	--	--	.0017	--	--	--	--	.3333
3395PA	10.03	92.4	928	7.2	.3648	.0072	--	--	.0051	--	--	--	--	.1540
3395PB	10.03	91.1	915	8.5	.4235	.0121	--	--	.0018	--	--	--	.0024	.2427
3395PC	10.03	92.6	929	7.1	.2372	.0071	--	--	.0020	--	--	--	.0007	.0711
3395Q	10.04	87.2	893	10.5	2.2794	.0053	--	--	1.0504	--	--	--	--	.2101
3398A	11.01	92.9	941	5.9	1.2139	.0251	--	--	.0013	--	--	--	.0003	.5853
3398B	11.01	94.9	953	4.6	.4405	.0186	--	--	.0014	--	--	--	.0019	.2788
3398C	11.01	91.8	922	7.7	.5304	.0220	--	--	.0008	--	--	--	.0002	.1101
3398NA	11.02	81.0	823	17.4	1.6070	.0035	--	--	.0008	--	--	--	--	1.1601
3398NB	11.02	81.0	822	17.5	1.5216	.0035	--	--	.0012	--	--	--	--	1.1682
3398NC	11.02	83.3	847	15.1	1.6496	.0030	--	--	.0010	--	--	--	--	1.0040
3398PA	11.03	91.5	918	8.1	.3726	.0174	--	--	.0006	--	--	--	--	.1160
3398PB	11.03	95.6	958	4.2	.1937	.0252	--	--	.0013	--	--	--	.0003	.0252
3398PC	11.03	87.7	886	11.3	.9587	.0170	--	--	.0226	--	--	--	.0057	.5656
3398Q	11.04	88.3	893	10.6	1.1242	.0106	--	--	.0032	--	--	--	.0074	.7431
3385A	12.01	92.6	930	7.0	.4075	.0100	--	--	.0100	--	--	--	.0030	.1000
3385B	12.01	95.5	958	4.2	.3135	.0169	--	--	.0169	--	--	--	.0042	.0422
3385C	12.01	95.0	951	4.9	.1368	.0147	--	--	.0010	--	--	--	.0147	.0295

TABLE 4.--continued

Sample	SiteNo	Te	Ni	Co	Sn	Mo	Pt	Pd	Ba	Zr	V	Cr	Y	La	Nb	B
3389PB	8.03	.0085	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3389PC	8.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3389QA	8.04	--	--	--	--	--	--	--	.0012	.0579	.0023	--	--	--	--	--
3389QB	8.04	--	--	--	.0080	--	--	--	--	.0240	.0016	--	--	--	--	--
3389RA	8.05	.0464	--	.0019	--	--	--	--	--	.0186	.0065	--	.0093	.0186	--	--
3389RB	8.05	.0228	--	--	--	--	--	--	--	.0171	.0023	.0023	.0006	.0057	--	--
3389RC	8.05	.0296	--	.0010	--	--	--	--	--	.0197	.0069	.0010	.0030	.0099	--	--
3388A	9.01	--	--	--	--	--	--	--	.0068	--	--	--	--	--	--	--
3388B	9.01	--	--	--	--	--	--	--	--	.0005	--	--	--	--	--	--
3388C	9.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3388NA	9.02	--	--	--	--	--	--	--	.0006	--	--	--	--	--	--	--
3388NB	9.02	--	--	--	.0859	--	--	--	--	--	--	--	--	--	--	--
3388PA	9.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3388PB	9.03	--	--	--	--	--	--	--	.0004	--	--	--	--	--	--	--
3388PC	9.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3388QA	9.04	--	--	--	--	--	--	--	.0004	--	--	--	--	--	--	--
3388QB	9.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3388QC	9.04	.0107	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3388RA	9.05	--	--	--	--	--	--	--	.0012	--	--	--	--	--	--	--
3388RB	9.05	.0114	--	--	--	--	--	--	.0011	--	--	--	--	--	--	--
3388RC	9.05	.0084	--	--	--	--	--	--	.0006	.0008	--	--	--	--	--	--
3388SA	9.06	--	--	--	.0047	--	--	--	--	.0190	.0095	.0019	.0047	.0190	--	--
3388SB	9.06	.0316	--	.0021	.0526	--	--	--	--	.0074	.0021	.0053	.0053	.0211	--	--
3388SC	9.06	.0853	.0004	.0004	--	--	--	--	--	.0085	.0060	.0043	.0043	.0128	--	--
3388TA	9.07	--	--	.0017	.0023	--	--	--	--	.0563	.0169	.0034	.0113	.0225	--	--
3388TB	9.07	--	--	.0019	.0282	--	--	--	--	.0470	.0066	.0019	.0066	.0188	--	--
3388TC	9.07	--	--	.0029	.0102	--	--	--	--	.0731	.0146	.0044	.0146	.0292	--	--
3395A	10.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3395B	10.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3395C	10.01	--	--	--	--	--	--	--	.0010	.0010	--	--	--	--	--	--
3395NA	10.02	.0278	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3395NB	10.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3395NC	10.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3395PA	10.03	.0513	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3395PB	10.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3395PC	10.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3395Q	10.04	--	--	.0011	.1576	--	--	--	.0074	.0525	--	--	.0210	.0210	--	--
3398A	11.01	--	--	--	--	--	--	--	.0013	--	--	--	--	--	--	--
3398B	11.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3398C	11.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3398NA	11.02	--	--	--	--	--	--	--	.0006	--	--	--	--	--	--	--
3398NB	11.02	--	--	--	--	--	--	--	.0006	--	--	--	--	--	--	--
3398NC	11.02	--	--	--	--	--	--	--	.0005	--	--	--	--	--	--	--
3398PA	11.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3398PB	11.03	--	--	--	--	--	--	.0002	--	--	--	--	--	--	--	--
3398PC	11.03	--	--	--	--	--	--	--	.0017	--	--	--	--	--	--	--
3398Q	11.04	--	--	--	--	--	--	--	.0011	.0021	--	--	--	--	--	--
3385A	12.01	--	--	--	--	--	--	--	.0005	--	--	--	--	--	--	--
3385B	12.01	--	--	--	--	--	--	--	.0013	--	--	--	--	--	--	--
3385C	12.01	.0049	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 4.--continued

Sample	SiteNo	Be	W	Mn	Fe	Mg	Ca	Ti	Si	smpl wt	Au/Ag=r	Au/Cu	Ag/Cu	r/Cu
3389PB	8.03	--	--	.0017	.0853	.0853	.0128	.0017	.1706	5.86	15.6	36,351	2,333	6,086
3389PC	8.03	--	--	.0016	.1080	.0216	.0216	.0076	.3240	4.63	8.1	40,574	5,000	3,757
3389QA	8.04	--	--	.0035	.3472	.0231	.0058	.1736	.2315	4.32	16.1	16,070	1,000	2,777
3389QB	8.04	--	--	.0080	.3205	.0321	.0321	.1603	.1603	3.12	11.3	18,809	1,667	2,347
3389RA	8.05	--	.0019	.0093	.9276	.0464	.0278	.1855	.0928	5.39	20.2	33,589	1,667	7,242
3389RB	8.05	--	--	.0057	.3425	.0342	.0228	.1142	.1712	4.38	11.3	15,843	1,400	1,983
3389RC	8.05	--	.0099	.0099	.6903	.0493	.0493	.1972	.1479	5.07	13.2	18,524	1,400	2,683
3388A	9.01	--	--	.0015	.0973	.0292	.0486	.0195	.1946	5.14	19.2	6,391	333	1,314
3388B	9.01	--	--	.0005	.0292	.0097	.0068	.0068	.0682	5.13	13.5	13,495	1,000	1,978
3388C	9.01	--	--	.0003	.0190	.0048	.0029	.0014	.0475	5.26	14.0	9,781	700	1,470
3388NA	9.02	--	--	.0006	.0613	.0086	.0086	.0086	.1225	4.08	7.0	23,303	3,333	1,902
3388NB	9.02	--	--	.0026	.1203	.0120	.0086	.0515	.1718	2.91	7.1	9,966	1,400	829
3388PA	9.03	--	--	.0008	.0336	.0022	.0056	.0011	.1119	4.47	11.7	8,195	700	1,047
3388PB	9.03	--	--	.0009	.0880	.0018	.0088	.0026	.1761	5.68	15.0	15,039	1,000	2,441
3388PC	9.03	--	--	.0011	.0575	.0034	.0080	.0023	.1724	4.35	7.5	15,055	2,000	1,310
3388QA	9.04	--	--	.0006	.0428	.0026	.0026	.0060	.0856	5.84	10.6	15,090	1,429	1,762
3388QB	9.04	--	--	.0008	.0563	.0034	.0034	.0034	.1689	4.44	7.8	15,516	2,000	1,378
3388QC	9.04	--	--	.0007	.0533	.0107	.0053	.0032	.1066	4.69	8.3	11,870	1,429	1,113
3388RA	9.05	--	--	.0012	.0806	.0173	.0173	.0115	.1728	4.34	7.6	10,789	1,429	936
3388RB	9.05	--	--	.0011	.0801	.0343	.0114	.0080	.1144	4.37	7.6	15,132	2,000	1,323
3388RC	9.05	--	--	.0017	.1267	.0422	.0253	.0422	.1267	5.92	10.6	15,135	1,429	1,792
3388SA	9.06	--	.0949	.0285	.9488	.0474	.0664	.1898	.1423	5.27	19.6	14,023	714	2,956
3388SB	9.06	--	--	.0316	1.0526	.0526	.0737	.1053	.1053	4.75	12.3	17,236	1,400	2,339
3388SC	9.06	--	.0043	.0427	.8532	.0427	.0427	.4266	.0853	5.86	15.3	21,488	1,400	3,598
3388TA	9.07	--	.0563	.0563	1.6892	.0563	.0563	.5631	.1126	4.44	16.2	40,567	2,500	7,205
3388TB	9.07	--	.0094	.0470	.9398	.0658	.0282	.4699	.0940	5.32	19.8	19,788	1,000	4,211
3388TC	9.07	--	.0219	.0731	1.4620	.0731	.0731	.7310	.1023	3.42	32.2	21,475	667	7,344
3395A	10.01	--	--	.0011	.0213	.0005	.0053	.0213	.1066	4.69	45.7	3,047	67	1,429
3395B	10.01	--	--	.0010	.0298	.0005	.0020	.0099	.0994	5.03	9.0	12,916	1,429	1,299
3395C	10.01	--	--	.0015	.0517	.0010	.0031	.1033	.2066	4.84	8.6	8,633	1,000	836
3395NA	10.02	--	--	.0014	.0464	.0019	.0046	.0278	.1391	5.39	20.5	5,118	250	1,103
3395NB	10.02	--	--	.0012	.0588	.0018	.0035	.0118	.2353	4.25	15.9	5,301	333	901
3395NC	10.02	--	--	.0017	.0778	.0017	.0022	.0333	.3333	4.50	11.8	8,228	700	1,058
3395PA	10.03	--	--	.0003	.0308	.0010	.0021	.0103	.1027	4.87	12.9	12,864	1,000	1,790
3395PB	10.03	--	--	.0012	.0364	.0012	.0024	.0018	.1214	4.12	10.7	7,505	700	883
3395PC	10.03	--	--	.0007	.0305	.0010	.0020	.0203	.1016	4.92	13.0	13,024	1,000	1,831
3395Q	10.04	--	.1050	.0074	.3151	.0105	.0525	.0525	.2101	4.76	8.3	16,606	2,000	1,581
3398A	11.01	--	--	.0013	.0836	.0059	.0084	.0836	.4181	5.98	15.9	3,705	233	633
3398B	11.01	--	--	.0005	.0186	.0028	.0065	.0186	.0929	5.38	20.4	5,106	250	1,099
3398C	11.01	--	--	.0008	.0330	.0055	.0055	.0220	.3304	4.54	11.9	4,166	350	540
3398NA	11.02	--	--	.0012	.0580	.0058	.0116	.0174	.3480	4.31	4.7	23,272	5,000	1,337
3398NB	11.02	--	--	.0012	.0584	.0082	.0117	.0350	.2336	4.28	4.6	23,099	5,000	1,318
3398NC	11.02	--	--	.0015	.0703	.0100	.0070	.0502	.5020	4.98	5.5	27,652	5,000	1,836
3398PA	11.03	--	--	.0008	.0348	.0058	.0116	.0116	.1740	4.31	11.3	5,259	467	648
3398PB	11.03	--	--	.0004	.0252	.0025	.0042	.0252	.0840	5.95	22.8	3,792	167	903
3398PC	11.03	--	--	.0011	.0792	.0057	.0113	.0226	.2262	4.42	7.8	5,170	667	457
3398Q	11.04	--	--	.0011	.1062	.0106	.0159	.0106	.2123	4.71	8.3	8,314	1,000	783
3385A	12.01	--	--	.0010	.0700	.0030	.0500	.0100	.1500	5.00	13.2	9,259	700	1,323
3385B	12.01	--	--	.0006	.0845	.0017	.0127	.0059	.1267	5.92	22.6	5,651	250	1,338
3385C	12.01	--	--	.0003	.0098	.0010	.0020	.0098	.0491	5.09	19.3	6,444	333	1,312

TABLE 4.--continued

Sample	SiteNo	% Au	Fineness	Ag	SDM of X	Cu	Zn	Ga	Pb	As	Sb	Cd	Bi	Hg
3390NA	13.01	91.3	917	8.3	.4374	.0236	--	--	.0035	--	.0024	--	.0012	.2364
3390NB	13.01	91.0	915	8.0	.9103	.0172	--	--	.0023	--	--	--	.0023	.5747
3390NC	13.01	91.0	915	8.5	.5121	.0182	--	--	.0024	--	--	--	.0036	.1211
3390P	13.02	86.9	879	12.0	1.1019	.0240	--	--	.0084	--	.0024	--	.0060	.1799
3406A	14.01	84.0	842	15.8	.2036	.0105	--	.0002	.0011	--	--	--	.0002	.0737
3406B	14.01	80.7	809	19.0	.3004	.0048	--	.0002	.0067	--	--	--	.0014	.1905
3406C	14.01	94.4	950	5.0	.6385	.0100	--	--	.0150	--	--	--	.0005	.1000
3406NA	14.02	92.6	933	6.6	.7693	.0189	--	--	.0005	--	--	--	--	.0943
3406NB	14.02	90.6	910	8.9	.4478	.0178	--	.0002	.0002	--	--	--	--	.0624
3406NC	14.02	90.2	912	8.7	1.1368	.0186	--	--	.0004	--	--	--	--	.1238
3406PA	14.03	87.1	893	10.5	2.4652	.0105	--	.0002	.0003	--	--	--	.0052	2.0921
3406PB	14.03	87.0	889	10.9	2.0883	.0109	--	.0002	.0076	--	--	--	.0033	1.6304
3406PC	14.03	86.9	887	11.1	1.9922	.0167	--	--	.0111	.2222	--	--	.0033	.7778
3386A	15.01	91.2	915	8.4	.3886	.0120	--	--	.0012	--	--	--	.0012	.2410
3386B	15.01	90.0	905	9.5	.5226	.0135	--	--	.0007	.0270	--	--	--	.2703
3171A	16.01	82.4	850	14.6	3.0829	.0194	--	--	.0068	--	.0049	--	.0002	2.9126
3171B	16.01	78.1	799	19.7	2.1978	.0148	--	--	.0015	--	.0049	--	.0010	1.9685
3171C	16.01	78.0	834	15.5	6.4263	.0104	--	--	.0031	--	--	--	--	6.2112
3171D	16.01	84.5	856	14.2	1.2253	.0190	--	--	.0047	--	--	--	.0285	.9488
3171E	16.01	79.5	839	15.3	5.2491	.0102	--	--	.0051	--	.0020	--	--	5.0916
3171X	16.02	81.6	837	15.9	2.4779	.0106	--	--	.0032	--	--	--	--	2.1231
3415A	17.01	78.5	790	20.8	.6224	.0016	--	--	.0003	--	--	--	--	.0729
3415B	17.01	87.6	896	10.2	2.1548	.0102	--	--	.0002	--	--	--	--	2.0408
3415C	17.01	81.1	827	17.0	1.9057	.0057	--	--	.0003	--	--	--	--	1.7007
3415NA	17.02	87.1	881	11.8	1.0976	.0082	--	--	.0024	--	--	--	--	.0824
3415NB	17.02	89.7	920	7.8	2.5457	.0023	--	--	.0775	.0054	--	--	.0078	.0543
3415NC	17.02	84.0	906	8.8	7.2809	.0062	--	--	.0025	--	--	--	--	.8875
3415PA	17.03	88.7	899	10.0	1.2943	.0200	--	--	.0005	--	--	--	--	1.0000
3415PB	17.03	88.9	899	10.0	1.1435	.0100	--	--	.0005	--	--	--	--	.7000
3415QA	17.04	78.7	797	20.0	1.3382	.0010	--	--	.0007	.0200	--	--	--	.0700
3415QB	17.04	82.6	846	15.0	2.4164	.0070	.0100	--	.0700	--	--	.0020	.0002	.0700
3415QC	17.04	88.1	898	10.0	1.8947	.0100	--	--	.0020	--	--	--	.0002	.1000
3415R	17.05	85.0	888	10.7	4.3263	.0321	--	--	.2137	.2137	--	--	.0015	1.0684
3412A	18.01	89.4	899	10.0	.6348	.0070	--	--	.0003	--	--	--	--	.5000
3412B	18.01	87.8	889	11.0	1.1781	.0077	--	--	.0003	--	--	--	--	1.0989
3412C	18.01	89.1	903	9.6	1.3252	.0067	.0962	--	.0002	--	--	--	--	.9615
3412NA	18.02	88.2	920	7.7	4.1732	.0077	--	--	.0005	--	--	--	--	3.8285
3412NB	18.02	89.7	894	10.0	5.2905	.0100	--	--	.0005	--	--	--	--	5.0000
3412NC	18.02	87.4	916	8.1	4.5528	.0081	--	--	.0004	--	--	--	--	4.0323
3412PA	18.03	83.8	879	11.5	4.6613	.0077	--	--	.0054	--	--	--	--	2.3077
3412PB	18.03	83.7	870	12.5	3.8179	.0087	--	--	.0250	--	--	--	--	1.2500
3412PC	18.03	88.2	898	10.0	1.7650	.0100	--	--	.0050	--	--	--	--	1.5000
3412QA	18.04	87.0	899	9.8	3.1875	.0020	--	--	.0005	--	--	--	--	.9804
3412QC	18.04	87.6	913	8.4	4.0243	.0042	--	--	.0084	--	--	--	.0025	1.6779
3412RA	18.05	87.4	882	11.7	.8323	.0117	--	--	.0008	--	--	--	--	.7813
3412RB	18.05	85.9	888	10.8	3.2795	.0076	--	--	.0011	--	--	--	--	3.2397
3412RC	18.05	83.6	853	14.4	2.0022	.0096	--	--	.0010	--	--	--	--	1.9231
3412T	18.06	88.0	901	9.6	2.4274	.0048	--	--	.0010	--	--	--	--	1.4423
3412UA	18.07	86.8	896	10.1	3.1321	.0051	--	--	.0003	--	--	--	--	2.0202
3412UB	18.07	87.3	897	10.0	2.6695	.0100	--	--	.0005	--	--	--	--	2.0000

TABLE 4.--contined

Sample	SiteNo	Te	Ni	Co	Sn	Mo	Pt	Pd	Ba	Zr	V	Cr	Y	La	Nb	B
3390NA	13.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3390NB	13.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3390NC	13.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3390P	13.02	--	--	--	.2398	--	--	--	--	.0360	--	--	.0120	.0180	--	--
3406A	14.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3406B	14.01	--	--	--	--	.0005	--	--	--	--	--	--	--	--	--	--
3406C	14.01	--	--	--	--	--	--	--	.0010	--	.0010	--	--	--	--	--
3406NA	14.02	--	--	--	--	--	--	--	.0005	--	--	--	--	--	--	--
3406NB	14.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3406NC	14.02	--	--	--	--	--	--	--	.0006	--	--	--	--	--	--	--
3406PA	14.03	--	--	--	--	--	--	--	.0005	--	--	--	--	--	--	--
3406PB	14.03	--	--	--	--	--	--	--	.0543	.0054	--	--	--	--	--	--
3406PC	14.03	--	--	.0006	--	--	--	--	--	.0222	.0017	--	--	--	--	--
3386A	15.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3386B	15.01	--	--	--	--	--	--	--	--	.0020	--	--	--	--	--	--
3171A	16.01	--	.0015	--	--	--	--	--	.0005	--	--	--	--	--	--	--
3171B	16.01	--	--	--	--	--	--	--	.0007	--	--	--	--	--	--	--
3171C	16.01	--	.0010	--	--	--	--	--	.0005	--	--	--	--	--	--	--
3171D	16.01	--	--	--	--	--	--	--	.0005	.0005	--	--	--	--	--	--
3171E	16.01	--	--	--	--	--	--	--	.0005	--	--	--	--	--	--	--
3171X	16.02	--	--	--	--	--	--	--	.0007	--	--	--	--	--	--	--
3415A	17.01	--	.0010	--	--	--	--	--	.0007	--	--	--	--	--	--	--
3415B	17.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3415C	17.01	--	--	--	--	--	--	--	.0006	--	--	--	--	--	--	--
3415NA	17.02	--	--	--	--	--	--	--	.0024	--	--	--	--	--	--	--
3415NB	17.02	.0388	.0008	.0005	--	--	--	--	.0005	--	--	--	--	--	--	--
3415NC	17.02	--	.0009	.0013	--	--	--	--	.0013	--	--	--	--	--	--	--
3415PA	17.03	--	--	--	--	--	--	.0003	.0005	--	--	--	--	--	--	--
3415PB	17.03	--	--	--	--	--	--	--	.0010	--	--	--	--	--	--	--
3415QA	17.04	--	.0100	.0020	--	.0005	--	--	.0050	--	--	--	--	--	--	--
3415QB	17.04	--	.0005	.0007	--	.0010	--	--	.0030	--	--	--	--	--	--	--
3415QC	17.04	--	.0005	--	--	.0010	--	--	.0030	--	--	--	--	--	--	--
3415R	17.05	--	--	--	.0021	--	.2137	.0150	--	.1068	.0043	.0021	--	--	--	--
3412A	18.01	--	--	--	--	--	--	--	.0010	--	--	--	--	--	--	--
3412B	18.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3412C	18.01	--	--	--	--	--	--	--	.0014	.0019	--	--	--	--	--	--
3412NA	18.02	.0077	--	--	--	--	--	--	.0015	--	--	--	--	--	--	--
3412NB	18.02	--	--	--	--	--	--	--	.0020	.0010	--	--	--	--	--	--
3412NC	18.02	--	--	--	--	--	--	--	.0016	--	--	--	--	--	--	--
3412PA	18.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3412PB	18.03	.0062	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3412PC	18.03	--	--	--	--	--	--	--	.0005	--	--	--	--	--	--	--
3412QA	18.04	--	--	--	--	--	--	.0002	.0015	--	--	--	--	--	--	--
3412QC	18.04	--	--	--	--	.0042	--	--	.0059	.0042	.0042	.0008	.0008	--	--	--
3412RA	18.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3412RB	18.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3412RC	18.05	--	--	--	--	--	--	--	.0005	--	--	--	--	--	--	--
3412T	18.06	--	.0005	--	--	--	--	--	.0019	--	.0019	.0010	--	--	--	--
3412UA	18.07	--	.0005	--	--	--	--	.0020	.0010	.0010	.0015	.0020	.0005	--	--	--
3412UB	18.07	--	.0005	.0005	--	--	--	--	.0020	--	--	--	--	--	--	--

TABLE 4.--continued

Sample	SiteNo	Be	W	Mn	Fe	Mg	Ca	Ti	Si	smpl wt	Au/Ag=r	Au/Cu	Ag/Cu	r/Cu
3390NA	13.01	--	--	.0006	.0355	.0018	.0059	.0083	.1182	4.23	11.0	3,861	350	467
3390NB	13.01	--	--	.0011	.0575	.0057	.0080	.0115	.2299	4.35	11.3	5,281	467	656
3390NC	13.01	--	--	.0012	.0605	.0024	.0242	.0363	.2421	4.13	10.7	5,012	467	591
3390P	13.02	--	--	.0060	.2398	.0120	.0180	.0600	.2398	4.17	7.2	3,624	500	302
3406A	14.01	--	--	.0005	.0526	.0016	.0032	.0074	.0526	4.75	5.3	7,981	1,500	505
3406B	14.01	--	--	.0002	.0190	.0029	.0029	.0048	.0667	5.25	4.2	16,937	4,000	889
3406C	14.01	--	--	.0010	.2000	.0050	.0050	.1000	.2000	5.00	18.9	9,436	500	1,887
3406NA	14.02	--	--	.0014	.1415	.0283	.0094	.0028	.4717	5.30	14.0	4,909	350	743
3406NB	14.02	--	--	.0018	.0446	.0045	.0446	.0045	.2674	5.61	10.2	5,085	500	571
3406NC	14.02	--	--	.0009	.0866	.0186	.0087	.0124	.8663	4.04	10.4	4,859	467	561
3406PA	14.03	--	--	.0007	.1046	.0209	.0105	.0105	.2092	4.78	8.3	8,324	1,000	796
3406PB	14.03	--	--	.0011	.2174	.0109	.0054	.0326	.1087	4.60	8.0	8,008	1,000	737
3406PC	14.03	--	--	.0033	.3333	.0222	.0222	.2222	.3333	4.50	7.8	5,214	667	469
3386A	15.01	--	--	.0006	.0361	.0036	.0060	.0024	.0843	4.15	10.8	7,568	700	897
3386B	15.01	--	--	.0009	.0946	.0027	.0068	.0095	.0946	3.70	9.5	6,661	700	704
3171A	16.01	--	--	.0002	.0291	.0029	.0049	.0029	.0971	5.15	5.7	4,241	750	291
3171B	16.01	--	--	.0003	.0492	.0030	.0049	.0015	.1476	5.08	4.0	5,291	1,333	269
3171C	16.01	--	--	.0003	.0311	.0052	.0031	.0052	.1553	4.83	5.0	7,539	1,500	486
3171D	16.01	--	--	.0005	.0664	.0028	.0047	.0066	.1423	5.27	5.9	4,455	750	313
3171E	16.01	--	--	.0002	.0305	.0031	.0031	.0010	.1018	4.91	5.2	7,805	1,500	511
3171X	16.02	--	--	.0016	.1062	.0074	.0106	.0021	.2123	4.71	5.1	7,687	1,500	483
3415A	17.01	--	--	.0052	.2083	.0104	.0073	.0021	.3125	4.80	3.8	50,268	13,333	2,413
3415B	17.01	--	--	.0005	.0204	.0051	.0051	.0010	.0714	4.90	8.6	8,589	1,000	842
3415C	17.01	--	--	.0011	.0567	.0079	.0079	.0113	.1134	4.41	4.8	14,304	3,000	841
3415NA	17.02	--	--	.0024	.1176	.0235	.0235	.0118	.8235	4.25	7.4	10,581	1,429	899
3415NB	17.02	--	--	.0155	.7752	.0116	.0039	.0012	1.5504	6.45	11.6	38,572	3,333	4,976
3415NC	17.02	--	--	.0125	.8750	.0125	.0188	.0125	6.2500	4.00	9.6	13,435	1,400	1,535
3415PA	17.03	--	--	.0010	.0500	.0100	.0100	.0020	.2000	5.00	8.9	4,435	500	444
3415PB	17.03	--	--	.0020	.1000	.0100	.0100	.0100	.3000	5.00	8.9	8,886	1,000	889
3415QA	17.04	--	--	.0020	.2000	.0150	.0100	.0020	1.0000	5.00	3.9	78,662	20,000	3,933
3415QB	17.04	--	--	.0100	.7000	.0200	.0150	.0070	1.5000	5.00	5.5	11,798	2,143	787
3415QC	17.04	--	--	.0030	.2000	.0500	.0150	.0100	1.5000	5.00	8.8	8,811	1,000	881
3415R	17.05	--	.1068	.0064	1.0684	.0321	.0641	.1068	1.0684	2.34	8.0	2,652	333	248
3412A	18.01	--	--	.0005	.0200	.0030	.0020	.0010	.1000	5.00	8.9	12,766	1,429	1,277
3412B	18.01	--	--	.0003	.0110	.0022	.0016	.0011	.0549	4.55	8.0	11,418	1,429	1,039
3412C	18.01	--	--	.0005	.0481	.0096	.0019	.0048	.1923	5.20	9.3	13,232	1,429	1,376
3412NA	18.02	--	--	.0004	.0766	.0077	.0115	.0015	.2297	6.53	11.5	11,515	1,000	1,504
3412NB	18.02	--	--	.0005	.0500	.0150	.0100	.0015	.2000	5.00	8.5	8,471	1,000	847
3412NC	18.02	--	--	.0008	.0806	.0161	.0081	.0016	.4032	6.20	10.8	10,835	1,000	1,344
3412PA	18.03	--	--	.0005	.0154	.0077	.0077	.0015	2.3077	6.50	7.3	10,894	1,500	944
3412PB	18.03	--	--	.0004	.0188	.0038	.0025	.0025	2.5000	4.00	6.7	9,564	1,429	765
3412PC	18.03	--	--	.0005	.0300	.0070	.0100	.0020	.2000	5.00	8.8	8,824	1,000	882
3412QA	18.04	--	--	.0020	.1961	.0196	.0147	.0098	1.9608	5.10	8.9	44,374	5,000	4,526
3412QC	18.04	--	--	.0042	.4195	.0419	.0419	.1258	1.6779	5.96	10.4	20,881	2,000	2,489
3412RA	18.05	--	--	.0002	.0117	.0008	.0016	.0008	.0234	6.40	7.5	7,462	1,000	637
3412RB	18.05	--	--	.0002	.0054	.0011	.0022	.0008	.0216	4.63	8.0	11,366	1,429	1,053
3412RC	18.05	--	--	.0003	.0194	.0019	.0019	.0019	.0481	5.20	5.8	8,692	1,500	603
3412T	18.06	--	--	.0010	.1442	.0048	.0067	.1442	.6731	5.20	9.1	18,295	2,000	1,903
3412UA	18.07	--	--	.0020	.5051	.0505	.0202	.0152	.5051	4.95	8.6	17,180	2,000	1,701
3412UB	18.07	--	--	.0010	.1000	.0150	.0300	.0100	.5000	5.00	8.7	8,733	1,000	873

TABLE 4.--continued

Sample	SiteNo	% Au	Fineness	Ag	SUM of %	Cu	Zn	Ga	Pb	As	Sb	Cd	Bi	Hg
3412UC	18.07	81.9	845	15.0	3.1464	.0020	--	--	.0002	--	--	--	--	3.0000
3412VA	18.08	88.1	918	7.8	4.0382	.0056	--	--	.0002	--	--	--	--	2.2422
3412VB	18.08	88.8	921	7.6	3.6097	.0076	--	--	.0005	--	--	--	--	1.6234
3412W	18.09	86.6	910	8.5	4.8786	.0085	--	--	.0061	--	--	--	.0002	2.4331
3392A	19.01	85.0	861	13.8	1.2569	.0018	--	--	.0018	--	--	--	--	.0642
3392B	19.01	90.0	911	8.7	1.3029	.0061	--	--	.0013	--	--	--	--	.2622
3392C	19.01	91.0	927	7.2	1.7957	.0051	--	--	.0010	--	--	--	--	.5133
3392NA	19.02	89.3	903	9.6	1.1147	.0048	--	--	.0019	--	--	--	--	.9560
3392NB	19.02	90.8	913	8.7	.5695	.0173	--	--	.0013	--	--	--	--	.4333
3392NC	19.02	95.4	958	4.2	.3607	.0419	--	--	.0008	--	--	--	--	.0839
3392PA	19.03	86.7	877	12.2	1.1095	.0061	--	--	.0085	--	--	--	--	.2433
3392PB	19.03	90.5	919	8.0	1.5156	.0114	--	--	.0017	--	--	--	--	.2273
3392PC	19.03	88.4	901	9.7	1.8723	.0049	--	--	.0146	--	--	--	.0005	.0485
3392QA	19.04	89.7	904	9.5	.7671	.0067	--	--	.0143	--	--	--	.0010	.0952
3392QB	19.04	90.8	920	7.9	1.2822	.0226	--	--	.0023	--	--	--	.0057	.5656
3392QC	19.04	90.7	912	8.8	.5026	.0088	--	--	.0009	--	--	--	--	.2632
3392R	19.05	86.8	879	12.0	1.2309	.0072	--	--	.0036	--	--	--	--	.7177
3172A	20.01	82.0	848	14.7	3.3292	.0069	--	--	.0002	--	--	--	--	2.9412
3172B	20.01	74.2	784	20.4	5.3908	.0071	--	--	.0020	--	--	--	--	5.1020
3172C	20.01	82.7	853	14.3	3.0099	.0190	--	--	.0002	--	--	--	--	2.8571
3172SB	20.02	77.3	794	20.0	2.7500	.0200	--	--	.0010	--	--	--	--	2.0000
3172SC	20.02	83.2	859	13.7	3.0915	.0182	--	--	.0046	--	--	--	.0014	2.7322
3172XA	20.03	80.0	817	17.9	2.0390	.0090	--	--	--	--	--	--	--	1.7921
3172XB	20.03	73.1	773	21.4	5.4616	.0075	--	--	--	--	--	--	--	5.3533
3172XC	20.03	78.5	810	18.5	3.0375	.0092	--	--	.0009	--	--	--	--	2.7675
3393A	20.04	86.0	870	12.8	1.2141	.0017	--	--	.0013	--	--	--	--	.8547
3393B	20.04	88.1	891	10.7	1.1727	.0032	--	--	.0011	--	--	--	--	1.0730
3393C	20.04	90.9	915	8.4	.6890	.0059	--	--	.0017	--	--	--	--	.5892
3393NA	20.05	89.1	898	10.1	.8458	.0101	--	--	.0015	--	--	--	--	.7056
3393NB	20.05	91.8	923	7.7	.4917	.0165	--	--	.0011	--	--	--	--	.3304
3393NC	20.05	89.4	904	9.5	1.0535	.0029	--	--	.0010	--	--	--	--	.9506
3407A	21.01	87.4	895	10.3	2.3349	.0154	--	--	.0005	--	--	--	--	.5133
3407B	21.01	89.3	912	8.6	2.0588	.0172	--	.0002	.0003	--	--	--	--	.0862
3407C	21.01	84.2	874	12.2	3.6505	.0122	--	--	.0024	--	--	--	.0061	.0608
3413A	22.01	94.3	946	5.4	.2636	.0543	--	--	.0005	--	--	--	--	.1087
3413B	22.01	93.9	942	5.7	.3991	.0246	--	--	.0164	--	--	--	.0082	.0410
3413C	22.01	90.7	913	8.7	.6497	.0130	--	--	.0003	--	--	--	--	.4333
3413NA	22.02	92.0	929	7.0	1.0401	.0150	--	--	.0003	--	--	--	--	.2000
3413NB	22.02	88.7	894	10.6	.7278	.0106	--	--	.0004	--	--	--	--	.4930
3413NC	22.02	90.5	913	8.6	.8905	.0129	--	--	.0009	--	--	--	--	.4310
3413PA	22.03	94.6	950	5.0	.3744	.0300	--	--	.0005	--	--	--	.0002	.0500
3413PB	22.03	89.8	903	9.7	.5091	.0290	--	--	.0005	--	--	--	--	.2901
3413PC	22.03	88.2	898	10.0	1.7910	.0050	--	--	.0003	--	.0100	--	--	1.5000
3413QA	22.04	88.9	899	10.0	1.0802	.0200	--	--	.0020	--	--	--	.1000	.2000
3413QB	22.04	87.8	893	10.6	1.6358	.0211	--	--	.0011	--	--	--	.0011	.7400
3413QC	22.04	89.4	905	9.4	1.2087	.0142	--	--	.0028	--	--	--	.0009	.4717
3413R	22.05	83.3	867	12.8	3.9541	.0255	--	--	.0255	--	--	--	.0064	.1276
3397A	23.01	91.8	922	7.8	.3666	.0112	--	--	.0022	--	--	--	--	.1116
3397B	23.01	87.6	889	11.0	1.3665	.0165	--	--	.0011	--	.0077	--	--	.7692
3397C	23.01	86.8	880	11.8	1.3442	.0118	--	--	.0018	--	--	--	--	.8294

TABLE 4.--continued

40-Mile Data--Continued

Sample	SiteNo	Te	Ni	Co	Sn	Mo	Pt	Pd	Ba	Zr	V	Cr	Y	La	Nb	B
3412UC	18.07	--	.0005	--	--	--	--	--	--	--	--	--	--	--	--	--
3412VA	18.08	--	.0006	--	--	--	--	--	.0008	.0112	.0056	.1121	.0008	--	--	--
3412VB	18.08	--	.0005	--	--	--	--	--	.0008	.0216	.0054	.0011	.0008	--	--	--
3412W	18.09	.0608	.0006	.0024	--	--	--	--	.0006	.0365	.0061	.6083	.0061	.0122	--	--
3392A	19.01	--	--	--	--	--	--	--	.0018	--	.0009	--	.0046	--	--	--
3392B	19.01	--	--	--	--	--	--	--	.0026	--	--	--	--	--	--	--
3392C	19.01	--	.0010	--	--	--	--	--	.0021	--	.0021	.0010	--	--	--	--
3392NA	19.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3392NB	19.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3392NC	19.02	--	--	--	--	--	--	--	--	.0017	--	--	--	--	--	--
3392PA	19.03	--	--	--	--	--	--	--	.0122	--	--	--	--	--	--	--
3392PB	19.03	--	--	--	--	.0008	--	--	.0114	--	--	--	--	--	--	--
3392PC	19.03	--	--	--	--	.0010	--	--	.0097	.0010	.0029	--	.0097	--	--	--
3392QA	19.04	--	--	--	--	--	--	--	.0095	--	.0019	--	.0019	.0067	--	--
3392QB	19.04	--	--	--	--	--	--	--	.0113	--	--	--	--	--	--	--
3392QC	19.04	--	--	--	--	--	--	--	.0009	--	--	--	--	--	--	--
3392R	19.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3172A	20.01	--	.0007	--	--	--	--	--	.0049	--	.0008	--	--	--	--	--
3172B	20.01	--	--	--	--	--	--	--	.0010	--	--	--	--	--	--	--
3172C	20.01	--	--	--	--	--	--	--	.0005	--	--	--	--	--	--	--
3172SB	20.02	--	.0010	--	--	--	--	--	.0020	--	--	--	--	--	--	--
3172SC	20.02	--	.0005	--	--	--	--	--	.0064	--	--	--	--	--	--	--
3172XA	20.03	--	--	--	--	--	--	--	.0090	--	--	--	--	--	--	--
3172XB	20.03	--	--	--	--	--	--	--	.0011	--	--	--	--	--	--	--
3172XC	20.03	--	--	--	--	--	--	--	.0009	--	--	--	--	--	--	--
3393A	20.04	--	--	--	--	--	--	--	.0026	--	--	--	--	--	--	--
3393B	20.04	--	--	--	--	--	--	--	.0005	--	--	--	--	--	--	--
3393C	20.04	--	--	--	--	--	--	--	.0008	--	--	--	--	--	--	--
3393NA	20.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3393NB	20.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3393NC	20.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3407A	21.01	--	--	.0007	--	--	--	--	.0031	--	--	--	--	--	--	--
3407B	21.01	--	--	.0006	--	--	--	--	.0017	--	--	--	--	--	--	--
3407C	21.01	--	--	--	--	--	--	--	.0009	--	--	--	--	--	--	--
3413A	22.01	--	.0005	--	--	--	--	--	--	--	--	--	--	--	--	--
3413B	22.01	--	.0004	--	--	--	--	.0002	.0006	--	--	--	--	--	--	--
3413C	22.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3413NA	22.02	--	--	--	--	--	--	.0003	.0015	--	--	--	--	--	--	--
3413NB	22.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3413NC	22.02	--	--	--	--	--	--	--	--	--	--	.0009	--	--	--	--
3413PA	22.03	--	--	--	--	--	--	--	.0007	.0050	--	--	--	--	--	--
3413PB	22.03	--	--	--	--	--	--	.0005	.0007	.0019	--	--	--	--	--	--
3413PC	22.03	--	--	--	--	--	--	--	.0005	--	--	--	--	--	--	--
3413QA	22.04	.0100	--	--	--	--	--	.0002	.0005	.0100	.0020	.0050	.0005	--	--	--
3413QB	22.04	--	--	--	--	--	--	--	.0005	.0211	--	--	--	--	--	--
3413QC	22.04	--	--	--	--	--	--	--	.0007	.0094	.0014	--	--	--	--	--
3413R	22.05	--	--	.0026	.1276	--	--	--	--	.6378	.0038	.0128	.0255	.0638	--	--
3397A	23.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3397B	23.01	--	--	--	--	--	--	--	.0011	--	--	--	--	--	--	--
3397C	23.01	--	--	--	--	--	--	.0018	.0006	--	--	--	--	--	--	--

TABLE 4.--continued

Sample	SiteNo	Be	W	Mn	Fe	Mg	Ca	Ti	Si	smpl wt	Au/Ag=r	Au/Cu	Ag/Cu	r/Cu
3412UC	18.07	--	--	.0007	.0300	.0030	.0050	.0050	.1000	5.00	5.5	40,927	7,500	2,728
3412VA	18.08	--	--	.0112	1.1211	.0224	.0561	.1121	.3363	4.46	11.2	15,720	1,400	2,003
3412VB	18.08	--	--	.0216	1.0823	.0325	.0541	.2165	.5411	4.62	11.7	11,724	1,000	1,548
3412W	18.09	--	--	.0182	1.2165	.0365	.0365	.0243	.3650	4.11	10.2	10,170	1,000	1,194
3392A	19.01	--	--	.0028	.1835	.0183	.0138	.0459	.9174	5.45	6.2	46,315	7,500	3,366
3392B	19.01	--	--	.0017	.1311	.0087	.0131	.0017	.8741	5.72	10.3	14,701	1,429	1,682
3392C	19.01	--	--	.0072	1.0267	.0051	.0103	.0154	.2053	4.87	12.7	17,730	1,400	2,467
3392NA	19.02	--	--	.0010	.0478	.0010	.0019	.0048	.0956	5.23	9.3	18,687	2,000	1,955
3392NB	19.02	--	--	.0006	.0260	.0009	.0026	.0009	.0867	5.77	10.5	5,237	500	604
3392NC	19.02	--	--	.0008	.0587	.0008	.0025	.0017	.1678	5.96	22.8	2,275	100	542
3392PA	19.03	--	--	.0061	.1825	.0122	.0061	.0243	.6083	4.11	7.1	14,258	2,000	1,172
3392PB	19.03	--	--	.0017	.1136	.0034	.0023	.0057	1.1364	4.40	11.4	7,967	700	1,002
3392PC	19.03	--	--	.0029	.4854	.0194	.0097	.2913	.9709	5.15	9.1	18,214	2,000	1,876
3392QA	19.04	--	--	.0014	.1429	.0048	.0048	.1905	.2857	5.25	9.4	13,456	1,429	1,413
3392QB	19.04	--	--	.0017	.0792	.0057	.0113	.0113	.5656	4.42	11.5	4,013	350	507
3392QC	19.04	--	--	.0009	.0439	.0018	.0044	.0026	.1754	5.70	10.3	10,343	1,000	1,179
3392R	19.05	--	--	.0024	.2392	.0048	.0120	.0048	.2392	2.09	7.3	12,095	1,667	1,011
3172A	20.01	--	--	.0020	.1471	.0196	.0049	.0049	.1961	5.10	5.6	11,943	2,143	812
3172B	20.01	--	--	.0010	.0510	.0102	.0051	.0071	.2041	4.90	3.6	10,388	2,857	509
3172C	20.01	--	--	.0007	.0286	.0067	.0019	--	.0952	5.25	5.8	4,342	750	304
3172SB	20.02	--	--	.0020	.2000	.0150	.0070	.0020	.5000	5.00	3.9	3,863	1,000	193
3172SC	20.02	--	--	.0009	.0455	.0046	.0027	.0014	.2732	5.49	6.1	4,570	750	335
3172XA	20.03	--	--	.0009	.0448	.0027	.0013	--	.1792	5.58	4.5	8,932	2,000	498
3172XB	20.03	--	--	.0002	.0214	.0021	.0011	--	.0749	4.67	3.4	9,757	2,857	456
3172XC	20.03	--	--	.0006	.0646	.0046	.0046	--	.1845	5.42	4.3	8,511	2,000	461
3393A	20.04	--	--	.0009	.0855	.0043	.0043	.0026	.2564	5.85	6.7	50,290	7,500	3,923
3393B	20.04	--	--	.0005	.0322	.0016	.0054	.0016	.0536	4.66	8.2	27,369	3,333	2,551
3393C	20.04	--	--	.0004	.0421	.0008	.0042	.0017	.0421	5.94	10.8	15,426	1,429	1,833
3393NA	20.05	--	--	.0005	.0202	.0020	.0030	.0020	.1008	4.96	8.8	8,836	1,000	877
3393NB	20.05	--	--	.0006	.0220	.0022	.0033	.0055	.1101	4.54	11.9	5,557	467	721
3393NC	20.05	--	--	.0003	.0190	.0019	.0019	.0095	.0665	5.26	9.4	31,364	3,333	3,299
3407A	21.01	--	--	.0051	.2053	.0205	.0205	.0103	1.5400	4.87	8.5	5,675	667	553
3407B	21.01	--	--	.0026	.1724	.0431	.0060	.0043	1.7241	5.80	10.4	5,181	500	601
3407C	21.01	--	--	.0122	.2433	.0243	.8516	.0036	2.4331	4.11	6.9	6,920	1,000	569
3413A	22.01	--	--	.0016	.0326	.0022	.0033	.0054	.0543	4.60	17.4	1,735	100	319
3413B	22.01	--	--	.0012	.1230	.0082	.0057	.0057	.1639	6.10	16.4	3,817	233	665
3413C	22.01	--	--	.0026	.0607	.0043	.0043	.0013	.1300	5.77	10.5	6,977	667	805
3413NA	22.02	--	--	.0030	.5000	.0070	.0100	.0030	.3000	5.00	13.1	6,131	467	876
3413NB	22.02	--	--	.0007	.1408	.0035	.0035	.0049	.0704	7.10	8.4	8,398	1,000	795
3413NC	22.02	--	--	.0009	.2586	.0060	.0060	.0009	.1724	5.80	10.5	6,998	667	812
3413PA	22.03	--	--	.0010	.1500	.0070	.0100	.0200	.1000	5.00	18.9	3,154	167	631
3413PB	22.03	--	--	.0007	.0967	.0068	.0097	.0048	.0677	5.17	9.3	3,096	333	320
3413PC	22.03	.0002	--	.0050	.1500	.0070	.0100	.0030	.1000	5.00	8.8	17,642	2,000	1,764
3413QA	22.04	--	--	.0100	.5000	.0100	.0100	.1000	.1000	5.00	8.9	4,446	500	445
3413QB	22.04	--	--	.0106	.5285	.0106	.0159	.0740	.2114	4.73	8.3	4,153	500	393
3413QC	22.04	--	--	.0094	.4717	.0094	.0094	.0189	.1887	5.30	9.5	6,315	667	669
3413R	22.05	--	.2551	.0383	1.2755	.0128	.0383	.6378	.6378	3.92	6.5	3,265	500	256
3397A	23.01	--	--	.0011	.1116	.0017	.0078	.0078	.1116	4.48	11.8	8,227	700	1,053
3397B	23.01	--	--	.0016	.2198	.0033	.0055	.0110	.3297	4.55	8.0	5,317	667	484
3397C	23.01	--	--	.0012	.2370	.0059	.0059	.0118	.2370	4.22	7.3	7,327	1,000	618

TABLE 4.--continued

Sample	SiteNo	% Au	Fineness	Ag	SUM of X	Cu	Zn	Ga	Pb	As	Sb	Cd	Bi	Hg
3396	24.01	82.3	843	15.3	2.4486	.0071	--	--	.0031	--	--	--	--	.0713
3402NA	25.01	94.4	947	5.3	.3446	.0211	--	--	.0021	--	.0106	--	--	.1057
3402NB	25.01	93.7	942	5.7	.5621	.0172	--	--	.0017	--	--	--	--	.3448
3402NC	25.01	90.8	920	7.9	1.3372	.0158	--	--	.0047	--	--	--	--	.1104
3402PA	25.02	92.7	937	6.2	1.0763	.0125	--	.0002	.0037	--	.0025	--	--	.8728
3402PB	25.02	91.2	917	8.3	.5421	.0177	--	.0002	.0083	--	.0024	--	--	.3538
3402PC	25.02	88.8	909	8.9	2.3434	.0178	--	--	.0356	.0089	--	--	--	.8897
3402QA	25.03	92.7	936	6.3	.9493	.0135	--	--	.0090	--	.0090	--	--	.6318
3402QB	25.03	93.5	941	5.9	.6277	.0126	--	.0002	.0059	--	.0059	--	--	.4216
3402QC	25.03	91.8	926	7.3	.8841	.0105	--	.0002	.0523	.0073	.0052	--	--	.5230
3402RA	25.04	88.9	906	9.3	1.7861	.0928	.0093	.0002	.0464	.0278	.0046	--	--	.9276
3402RB	25.04	88.6	900	9.8	1.5733	.0098	.0492	--	.0689	--	.0197	--	--	.4921
3402RC	25.04	87.1	880	11.9	.9524	.0119	--	.0002	.0060	--	--	--	.0002	.5967
3400A	26.01	91.9	937	6.2	1.8744	.0249	--	--	.0871	--	--	--	.0019	.0622
3400B	26.01	93.2	938	6.1	.7048	.0122	--	--	.0244	--	--	--	--	.0367
3400C	26.01	91.7	922	7.7	.5077	.0111	--	--	.0221	--	--	--	--	.1106
3400NA	26.02	91.8	932	6.7	1.4923	.0193	--	--	.9634	--	.0145	--	.0005	.0482
3400NB	26.02	91.0	919	8.0	.9588	.0172	--	--	.0343	--	.0080	--	--	.0343
3400NC	26.02	86.7	877	12.2	1.0810	.0052	--	--	.0871	--	.0035	--	--	.1742
3400PA	26.03	93.9	943	5.7	.4163	.0171	--	--	.0228	--	--	--	--	.0797
3400PB	26.03	92.7	934	6.6	.6781	.0094	--	--	.0940	--	--	--	--	.2820
3400PC	26.03	93.0	934	6.5	.4263	.0093	--	--	.0466	--	.0019	--	--	.1866
3400Q	26.04	93.5	939	6.0	.4601	.0121	--	--	.0121	--	--	--	--	.1208
3400QB	26.04	94.5	949	5.0	.4637	.0151	--	--	.0202	.0050	--	--	--	.2016
3400QC	26.04	94.0	943	5.7	.3126	.0114	--	--	.0171	--	--	--	--	.1139
3232B	27.01	94.5	952	4.7	.7974	.0190	--	--	.0014	--	--	--	--	.4744
3232C	27.01	80.2	846	14.6	5.2130	.0292	--	--	.0029	--	--	--	--	4.8638
3232XA	27.02	85.3	854	14.5	.2005	.0484	--	--	.0010	--	--	--	--	.0484
3232XC	27.02	89.7	907	9.1	1.2025	.0183	--	--	.0005	--	--	--	--	.0457
3232ZA	27.03	80.5	854	13.7	5.7319	.0137	--	--	.0092	--	.0027	--	--	5.4945
3232ZB	27.03	78.5	863	12.4	9.1114	.0177	--	--	.0009	--	.0031	--	--	8.8653
3401A	27.03	95.1	953	4.7	.2439	.0187	--	--	.0047	--	.0047	--	--	.0466
3401B	27.03	90.4	905	9.4	.2007	.0094	--	--	.0066	--	.0189	--	--	.0943
3394A	28.01	89.5	898	10.2	.2995	.0071	--	--	.0015	--	--	--	--	.0305
3394B	28.01	93.2	934	6.6	.2711	.0094	--	--	.0009	--	--	--	--	.0655
3394C	28.01	92.7	929	7.1	.2111	.0505	--	--	.0010	--	--	--	--	.0202
3394NA	28.02	91.5	917	8.3	.2090	.0178	--	--	.0012	--	--	--	--	.0238
3394NB	28.02	93.1	932	6.8	.1529	.0194	--	--	.0015	--	--	.0010	--	.0291
3394NC	28.02	94.3	945	5.4	.2345	.0109	--	--	.0011	--	--	--	--	.0763
3394P	28.03	88.8	899	10.0	1.1872	.0100	--	--	.0007	--	--	--	--	.7163
3394Q	28.04	87.0	877	12.2	.8537	.0174	--	--	.0017	--	--	--	--	.1742
3403A	29.01	86.4	874	12.5	1.1218	.0083	.0167	.0002	.0013	--	--	--	--	.1667
3403B	29.01	88.7	890	11.0	.3043	.0055	--	--	.0022	--	--	--	--	.0768
3403C	29.01	86.3	893	10.6	1.1125	.0053	.0053	--	.0021	--	--	--	--	.1592
3404A	30.01	90.1	912	8.7	1.1652	.0087	.0061	.0002	.0009	--	--	--	--	.0261
3404B	30.01	90.0	911	8.8	1.2078	.0125	.0062	.0003	.0013	--	--	--	--	.0625
3404C	30.01	89.3	908	9.0	1.6560	.0090	.0090	--	.0018	--	--	--	--	.1808
3404NA	30.02	89.8	905	9.5	.7497	.0066	--	.0002	.0047	--	--	--	.0014	.0947
3404NB	30.02	88.3	887	11.2	.4652	.0112	--	--	.0011	--	--	--	--	.0561
3404P	30.03	91.2	916	8.4	.4207	.0125	--	.0002	.0013	--	--	--	--	.0585

TABLE 4.--continued

Sample	SiteNo	Te	Ni	Co	Sn	Mo	Pt	Pd	Ba	Zr	V	Cr	Y	La	Nb	B
3396	24.01	--	--	--	--	--	--	--	2.0367	--	--	--	--	--	--	--
3402NA	25.01	--	--	--	--	--	--	--	.0021	--	--	--	--	--	--	--
3402NB	25.01	--	--	--	--	--	--	.0011	.0017	--	--	--	--	--	--	.0011
3402NC	25.01	--	--	--	--	--	--	.0005	--	--	--	--	--	--	--	--
3402PA	25.02	--	--	--	--	--	--	--	.0062	--	--	--	--	--	--	--
3402PB	25.02	--	--	--	--	--	--	--	.0024	--	--	--	--	--	--	--
3402PC	25.02	--	--	--	--	--	--	--	.8897	--	--	--	--	--	--	--
3402QA	25.03	--	--	--	--	--	--	.0003	.0135	.0014	--	--	--	--	--	.0027
3402QB	25.03	--	--	.0013	--	--	--	.0002	.0008	--	--	--	--	--	--	--
3402QC	25.03	--	--	--	--	--	--	--	.0052	--	--	--	--	--	--	.0021
3402RA	25.04	--	--	--	.0093	--	--	.0002	.1855	.0046	--	--	--	.0093	--	.0046
3402RB	25.04	--	--	--	.0010	--	--	.0005	.4921	.0020	--	.0492	--	.0148	--	--
3402RC	25.04	--	--	--	--	--	--	.0002	.0018	.0012	--	--	--	--	--	.0012
3400A	26.01	--	--	--	1.2438	--	--	--	.0019	--	--	--	--	--	--	--
3400B	26.01	--	--	--	.0061	--	--	--	.0006	--	--	--	--	--	--	--
3400C	26.01	--	--	--	.0055	--	--	--	.0033	--	--	--	--	--	--	.0022
3400NA	26.02	--	--	--	.2890	--	--	--	.0019	--	--	--	--	--	--	--
3400NB	26.02	--	.0011	--	.0343	--	--	--	.0034	--	--	--	--	--	--	--
3400NC	26.02	--	--	--	.0017	--	--	--	.0026	--	--	--	--	--	--	--
3400PA	26.03	--	--	--	--	--	--	--	.0023	--	--	--	--	--	--	--
3400PB	26.03	--	.0005	--	--	--	--	--	.0009	--	--	--	--	--	--	--
3400PC	26.03	--	--	--	.0093	--	--	--	.0028	--	--	--	--	--	--	--
3400Q	26.04	--	--	--	--	--	--	--	.0018	--	--	--	--	--	--	.0006
3400QB	26.04	--	--	--	.0050	--	--	--	.0015	--	--	--	--	--	--	.0005
3400QC	26.04	--	--	--	.0034	--	--	--	--	--	--	--	--	--	--	--
3232B	27.01	--	.0005	--	--	--	--	--	.0009	--	--	--	--	--	--	.0005
3232C	27.01	--	.0005	--	--	--	--	--	.0005	--	--	--	--	--	--	--
3232XA	27.02	--	--	--	--	--	--	--	.0004	--	--	--	--	--	--	--
3232XC	27.02	--	.0046	--	--	--	--	--	.0009	--	--	--	--	--	--	--
3232ZA	27.03	--	--	--	--	--	--	--	.0006	--	--	--	--	--	--	--
3232ZB	27.03	--	--	--	--	--	--	--	.0007	--	--	--	--	--	--	--
3401A	27.03	--	--	--	--	--	--	.0009	.0009	--	--	--	--	--	--	--
3401B	27.03	--	--	--	--	--	--	--	.0005	--	--	--	--	--	--	--
3394A	28.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3394B	28.01	--	--	--	--	--	--	--	.0009	--	--	--	--	--	--	--
3394C	28.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3394NA	28.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3394NB	28.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3394NC	28.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3394P	28.03	--	--	--	--	--	--	.0003	.0014	--	--	--	--	--	--	--
3394Q	28.04	--	--	--	--	--	--	--	.0087	--	--	--	--	--	--	--
3403A	29.01	--	.0025	.0008	--	--	--	--	.0025	.0004	.0017	--	--	--	--	--
3403B	29.01	--	--	--	--	--	--	--	.0022	--	--	--	--	--	--	--
3403C	29.01	--	.0021	--	--	--	--	--	.0053	--	--	--	--	--	--	--
3404A	30.01	--	.0026	--	--	--	--	--	.0087	--	--	--	--	--	--	--
3404B	30.01	--	.0013	--	--	--	--	--	.0025	--	--	--	--	--	--	--
3404C	30.01	--	.0018	.0014	--	--	--	--	.0063	.0009	.0045	.0009	.0018	--	--	--
3404NA	30.02	--	--	--	--	--	--	--	.0014	--	--	--	--	--	--	--
3404NB	30.02	--	.0011	--	--	--	--	--	.0017	--	--	--	--	--	--	--
3404P	30.03	--	--	--	--	--	--	--	.0025	--	--	--	--	--	--	--

TABLE 4.--continued

Sample	SiteNo	Be	W	Mn	Fe	Mg	Ca	Ti	Si	smpl wt	Au/Ag=r	Au/Cu	Ag/Cu	r/Cu
3396	24.01	--	--	.0015	.1018	.0102	.0102	.0031	.2037	4.91	5.4	11,542	2,143	756
3402NA	25.01	--	--	.0011	.0317	.0032	.0032	.0053	.1586	4.73	17.9	4,464	250	845
3402NB	25.01	--	--	.0011	.0575	.0057	.0034	.0115	.1149	4.35	16.3	5,434	333	946
3402NC	25.01	--	--	.0024	.0789	.0079	.0047	.0079	1.1041	3.17	11.5	5,755	500	730
3402PA	25.02	--	--	.0012	.0249	.0062	.0025	.0187	.1247	4.01	14.9	7,434	500	1,192
3402PB	25.02	--	--	.0018	.0236	.0024	.0035	.0083	.1179	4.24	11.0	5,156	467	625
3402PC	25.02	--	--	.0036	.2669	.0267	.0089	.0178	.1779	2.81	10.0	4,988	500	561
3402QA	25.03	--	--	.0018	.0903	.0090	.0045	.0271	.1354	5.54	14.7	6,850	467	1,084
3402QB	25.03	--	--	.0013	.0843	.0025	.0025	.0042	.0843	5.93	15.8	7,390	467	1,252
3402QC	25.03	--	--	.0021	.1569	.0052	.0021	.0073	.1046	4.78	12.5	8,775	700	1,198
3402RA	25.04	--	--	.0028	.2783	.0186	.0065	.0186	.1391	5.39	9.6	959	100	103
3402RB	25.04	--	--	.0049	.1969	.0148	.0098	.0492	.0984	5.08	9.0	9,000	1,000	914
3402RC	25.04	--	--	.0024	.1790	.0060	.0024	.0239	.1193	4.19	7.3	7,300	1,000	612
3400A	26.01	--	--	.0025	.2488	.0062	.0025	.0062	.1866	4.02	14.8	3,695	250	594
3400B	26.01	--	--	.0037	.2445	.0037	.0024	.0037	.3667	4.09	15.2	7,622	500	1,247
3400C	26.01	--	--	.0022	.2212	.0077	.0077	.0033	.1106	4.52	11.8	8,294	700	1,071
3400NA	26.02	--	--	.0010	.0482	.0014	.0019	.0067	.0963	5.19	13.6	4,763	350	706
3400NB	26.02	--	--	.0057	.2288	.0057	.0057	.0080	.5721	4.37	11.4	5,304	467	662
3400NC	26.02	--	--	.0052	.2613	.0052	.0035	.0087	.5226	2.87	7.1	16,593	2,333	1,361
3400PA	26.03	--	--	.0011	.1708	.0034	.0034	.0017	.1139	4.39	16.5	5,496	333	965
3400PB	26.03	--	--	.0014	.1880	.0019	.0047	.0014	.0940	5.32	14.1	9,868	700	1,500
3400PC	26.03	--	--	.0009	.0653	.0019	.0019	.0065	.0933	5.36	14.2	9,974	700	1,527
3400Q	26.04	--	--	.0024	.1812	.0024	.0036	.0024	.1208	4.14	15.5	7,742	500	1,282
3400QB	26.04	--	--	.0010	.1008	.0020	.0050	.0050	.1008	4.96	18.7	6,249	333	1,240
3400QC	26.04	--	--	.0011	.0797	.0017	.0034	.0011	.0797	4.39	16.5	8,253	500	1,449
3232B	27.01	--	--	.0019	.0949	.0095	.0047	--	.1898	5.27	19.9	4,978	250	1,049
3232C	27.01	--	--	.0068	.2918	.0097	.0019	.0010	.0049	5.14	5.5	2,748	500	188
3232XA	27.02	--	--	.0005	.0291	.0029	.0010	.0010	.0678	5.16	5.9	1,760	300	121
3232XC	27.02	--	--	.0183	.6399	.0137	.0018	.0018	.4570	5.47	9.8	4,904	500	537
3232ZA	27.03	--	--	.0009	.0641	.0046	.0014	.0027	.1374	5.46	5.9	5,863	1,000	427
3232ZB	27.03	--	--	.0012	.0887	.0035	.0027	.0035	.1241	2.82	6.3	4,426	700	357
3401A	27.03	--	--	.0009	.0653	.0014	.0019	.0047	.0933	5.36	20.4	5,097	250	1,093
3401B	27.03	--	--	.0009	.0189	.0014	.0019	.0007	.0472	5.30	9.6	9,579	1,000	1,015
3394A	28.01	--	--	.0007	.1524	.0015	.0020	.0020	.1016	4.92	8.8	12,586	1,429	1,239
3394B	28.01	--	--	.0005	.0936	.0019	.0028	.0019	.0936	5.34	14.2	9,951	700	1,518
3394C	28.01	--	--	.0005	.0303	.0010	.0015	.0051	.1010	4.95	13.1	1,836	140	260
3394NA	28.02	--	--	.0012	.0356	.0024	.0024	.0059	.1188	4.21	11.0	5,135	467	618
3394NB	28.02	--	--	.0005	.0291	.0015	.0019	.0010	.0680	5.15	13.7	4,792	350	705
3394NC	28.02	--	--	.0003	.0327	.0011	.0022	.0011	.1089	4.59	17.3	8,658	500	1,590
3394P	28.03	--	--	.0014	.2149	.0100	.0029	.0143	.2149	3.49	8.9	8,853	1,000	883
3394Q	28.04	--	--	.0122	.2613	.0087	.0035	.0174	.3484	2.87	7.1	4,991	700	409
3403A	29.01	--	--	.0042	.4167	.0583	.0083	.0167	.4167	6.00	6.9	10,365	1,500	829
3403B	29.01	--	--	.0016	.0768	.0110	.0077	.0110	.1096	4.56	8.1	16,185	2,000	1,476
3403C	29.01	--	--	.0021	.1592	.0106	.0106	.0074	.7431	4.71	8.3	16,630	2,000	1,567
3404A	30.01	--	--	.0013	.1742	.0436	.0087	.0131	.8711	5.74	10.3	10,346	1,000	1,188
3404B	30.01	--	--	.0025	.1875	.0375	.0125	.0062	.8750	4.00	10.3	7,203	700	823
3404C	30.01	--	--	.0045	.6329	.0633	.0136	.0904	.6329	5.53	9.9	9,877	1,000	1,092
3404NA	30.02	--	--	.0014	.0947	.0473	.0142	.0095	.4735	5.28	9.5	13,544	1,429	1,430
3404NB	30.02	--	--	.0017	.1121	.0336	.0112	.0112	.2242	4.46	7.9	7,878	1,000	703
3404P	30.03	--	--	.0013	.1672	.0042	.0042	.0017	.1672	5.98	10.9	7,273	667	870

TABLE 5.--Spectrographic analyses for the minus-30-mesh fraction of the heavy-mineral-concentrate sample from placer gold samples from the Fortymile mining district, Eagle quadrangle, Alaska

[N, not detected; <, detected but below limit of determination shown; >, determined to be greater than value shown; values in parts per million except where noted; %, percent; Be, Cd, Th, Ge, Pd, Pt, and P analyzed, but not detected; analyst: J.H. Bullock, Jr. No concentrate samples collected at sites 3, 4, 12, 16, 21, and 22. See table 1 for locality name.]

Sample	SiteNo	S-FE%	S-MG%	S-CA%	S-TI%	S-MN	S-AG	S-AS	S-AU	S-B	S-BA	S-BI	S-CO	S-CR	S-CU
3411	1	>50	2.00	.70	.7	5,000	10	N	N	N	300	N	50	3,000	50
3414	2	>50	.20	.15	.7	5,000	<1	N	N	N	2,000	N	<20	20	20
3409	5	>50	2.00	.70	.2	7,000	<1	N	N	N	2,000	N	50	100	20
3410	6	>50	2.00	1.00	.7	10,000	N	N	>1,000	<20	200	N	20	50	30
3399	7	>50	1.50	.70	.7	700	2	N	N	N	300	N	30	300	15
3389	8	>50	2.00	.50	>2.0	1,500	1	N	N	N	200	N	70	100	N
3388	9	>50	3.00	.70	>2.0	1,500	3	N	30	N	200	N	100	500	70
3395	10	>50	.50	.15	2.0	1,500	5	N	100	N	500	N	50	500	N
3398	11	>50	1.00	.50	.7	1,000	<1	N	N	N	<50	N	50	300	20
3390	13	>50	.15	.10	.7	1,500	7	N	20	N	N	N	<20	100	10
3406	14	>50	2.00	.50	2.0	2,000	10	N	N	N	1,000	N	70	1,500	50
3386	15	>50	1.50	1.00	1.0	3,000	50	N	500	N	100	N	70	500	30
3415	17	>50	.50	<.10	1.5	700	5	N	N	N	300	N	70	3,000	N
3412	18	>50	2.00	.50	1.0	3,000	10,000	N	N	N	700	300	70	>10,000	15
3392	19	>50	.20	.20	.5	1,000	30	N	50	N	2,000	N	50	30	50
3393	20	>50	.50	.50	1.0	2,000	5	N	N	N	>10,000	N	100	70	50
3413	22	>50	2.00	1.00	2.0	10,000	2	N	N	N	500	N	50	1,000	70
3397	23	>50	.50	.30	.7	1,500	N	N	N	N	1,500	N	30	100	<10
3396	24	>50	2.00	.70	.5	3,000	3	N	N	N	10,000	N	20	200	50
3402	25	50	.15	<.10	.5	2,000	70	<500	>1,000	20	2,000	N	70	1,500	150
3400	26	>50	.10	.30	.5	2,000	>10,000	>20,000	>1,000	N	10,000	300	1,500	5,000	700
3232	27	10	.20	.50	1.0	700	30	5,000	100	300	>10,000	<20	100	200	100
3394	28	>50	1.50	.50	.7	2,000	N	N	N	N	1,000	N	50	10,000	20
3403	29	>50	3.00	<.10	.5	2,000	2	N	N	N	50	N	100	>10,000	50
3404	30	>50	1.50	.50	1.0	3,000	N	N	N	N	10,000	N	50	10,000	30

TABLE 5.--continued

Sample	SiteNo	S-LA	S-MO	S-NB	S-NI	S-PB	S-SB	S-SC	S-SN	S-SR	S-V	S-W	S-Y	S-ZN	S-ZR	S-GA	S-NAX
3411	1	N	N	N	50	30	N	20	1,000	N	500	500	50	N	30	N	N
3414	2	N	N	N	10	N	N	N	<20	N	500	N	<20	1,500	<20	N	N
3409	5	N	N	100	30	N	N	<10	N	N	500	15,000	70	N	20	200	.5
3410	6	N	N	50	20	N	N	15	N	N	200	N	100	N	30	50	<.5
3399	7	N	N	N	30	<20	N	N	N	N	500	100	N	N	150	200	2.0
3389	8	N	N	<50	50	N	N	<10	N	N	200	500	<20	<500	200	<10	N
3388	9	N	<10	<50	100	N	N	15	N	N	150	150	20	N	500	N	<.5
3395	10	<100	N	N	50	<20	N	<10	N	N	200	<50	20	<500	300	N	N
3398	11	N	N	N	20	70	N	N	N	N	300	N	N	N	50	50	.5
3390	13	N	N	N	10	N	N	N	30	N	500	<50	N	<500	300	<10	N
3406	14	N	N	<50	70	N	N	<10	N	N	300	N	50	N	100	100	N
3386	15	N	N	<50	70	N	N	<10	<20	N	500	N	50	N	200	50	N
3415	17	N	50	N	100	500	N	<10	N	N	200	1,000	<20	N	150	N	N
3412	18	N	N	N	70	<20	N	<10	N	N	300	N	50	500	70	70	1.0
3392	19	N	N	N	30	70	N	N	<20	N	500	500	N	N	70	150	N
3393	20	N	10	50	70	<20	N	<10	20	<200	700	2,000	20	N	70	10	N
3413	22	<100	N	<50	70	N	N	20	N	N	300	N	100	N	300	50	N
3397	23	N	N	<50	30	N	N	N	N	N	500	N	<20	500	70	N	N
3396	24	N	N	N	20	50	N	N	N	N	300	N	<20	N	70	<10	<.5
3402	25	100	<10	N	200	1,000	N	N	50	N	100	N	<20	1,500	30	N	N
3400	26	100	50	50	1,000	>50,000	1,000	N	>2,000	N	70	7,000	50	700	200	N	N
3232	27	150	20	<50	500	1,500	N	15	50	200	100	300	100	500	200	--	--
3394	28	N	N	<50	200	N	N	<10	N	N	200	500	30	N	300	<10	.5
3403	29	N	N	N	1,500	N	N	N	700	N	300	N	N	N	N	N	N
3404	30	N	N	<50	100	N	N	10	N	N	150	150	50	1,000	500	N	<.5

TABLE 6.--Ore-related minerals of the heavy-mineral-concentrate samples from placer gold samples from the Fortymile mining district, Eagle quadrangle, Alaska

[Arsenopyrite FeAsS; barite, $BaSO_4$; cassiterite, SnO_2; cerussite, $PbCO_3$; cinnabar, HgS; galena, PbS; gold, Au; kyanite, $AlSiO_5$; pyrite, FeS_2; rutile, $Ti(Fe)O_2$; scheelite, $CaWO_4$; sphalerite; Zn(Fe)S; and stibnite, Sb_2S_3. No mineralogy for sites 3, 4, 12, 16, 21, and 22; Mineralogist: R.B. Tripp. See table 1 for locality name.]

Site number	Gold	Arsenopyrite	Cinnabar	Galena	Pyrite	Sphalerite	Stibnite	Cassiterite	Barite	Scheelite	Rutile	Kyanite	Cerussite	Comments
1	X				50			X	X	X	X			large rutile crystals
2	X				10	X			80		X			
5	X				X				80	X	X			
6	X										X	X		large rutile crystals with mostly kyanite
7	X				X					X				
8	X		X	X	X		X		X	X				
9	X		X		20				X	X				
10	X				10				20	X				
11	X				90								X	
13	X				X			X		X				
14	X				10				X		X			large rutile crystals
15	X	X			50				X					
17	X		10	10					60	X				
18	X		40			X								
19	X		X		90				X	X				

TABLE 6--Continued

Site number	Gold	Arsenopyrite	Cinnabar	Galena	Pyrite	Sphalerite	Stibnite	Cassiterite	Barite	Scheelite	Rutile	Kyanite	Cerussite
20	X				60				30	5			
23			X		X	X			X				
24	X		X		10				70				
25	X			X	10	X			20		40		
26	X	40		X	30	X			X	X			
27	X		X		90				X	X			
28	X				50				40	X			
29	X			X					X				
30	X				80	X			X	X	10		