UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

Analytical results and sample locality maps of stream-sediment and heavy-mineral-concentrate samples from the San Juan National Forest, Archuleta, Dolores, Hinsdale, La Plata, Mineral, Montezuma, Rio Grande, San Juan, and San Miguel counties, Colorado

By

Harlan N. Barton*, D.L. Fey*,
J.M. Motooka*, and R.T. Hopkins*

Open-File Report 92-709

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

*U.S. Geological Survey, DFC, Box 25046, MS 973, Denver, CO 80225

1993

CONTENTS

Illustrations

Data diskette

STUDIES RELATED TO WILDERNESS

The Wilderness Act (Public Law 88-57, September 3, 1964) and 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 be submitted to the President and the Congress. This report presents the results of a geochemical survey of the San Juan National Forest, Archuleta, Dolores, Hinsdale, La Plata, Mineral, Montezuma, Rio Grande, San Juan, and San Miguel counties, Colorado.

INTRODUCTION

In July, August and September 1991 the U.S. Geological Survey conducted a limited reconnaissance geochemical survey of selected portions of the San Juan National Forest, Archuleta, Dolores, Hinsdale, La Plata, Mineral, Montezuma, Rio Grande, San Juan, and San Miguel counties, Colorado (fig.1). The San Juan National Forest comprises about 2922 square miles (1,869,931 acres) in southwestern Colorado, extending approximately 120 miles east-west and 60 miles north-south. Paved highways cross the Forest, connecting the nearby communities of Dolores, Cortez, Durango, Silverton, and Pagosa Springs. Numerous mining districts, six peaks exceeding 14,000 feet, and five wilderness areas are contained within its boundaries.

The San Juan National Forest is within the Colorado Plateau and the Southern Rocky Mountain Physiographic Provinces. A structural high, the Needle Mountain uplift occupies the central part of the Forest. The Needle Mountains are remnants of a deeply eroded domal arch that exposes a large mass of Early and Late Proterozoic metamorphic and igneous rock. This uplift is flanked on the north and east by Tertiary volcanics of the San Juan Volcanic field and on the west and south by Paleozoic and younger sedimentary rocks. Late Cretaceous and Tertiary volcanic rocks intrude rock of all ages (written commun.,Preliminary report on the mineral resource assessment of the San Juan National Forest, April, 1991).

METHODS OF STUDY

Sample Media

Analyses of the stream-sediment samples represent the chemistry of the rock material eroded from the drainage basin upstream from each sample site. Such information is useful in identifying those basins which contain concentrations of elements that may be related to mineral deposits. Heavy-mineral-concentrate samples provide information about the chemistry of a limited number of high density minerals in the same rock material. The selective concentration of minerals, many of which

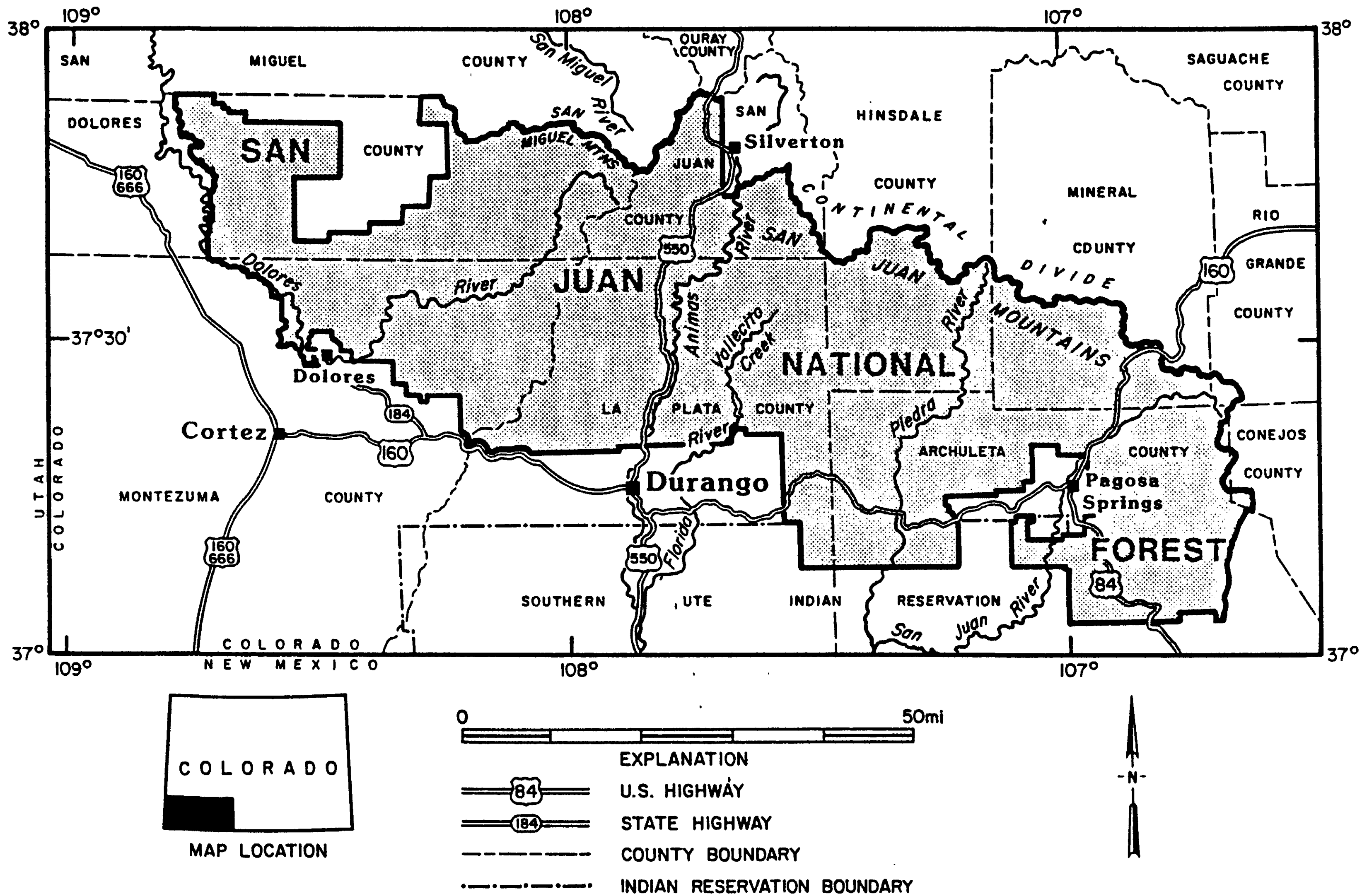

Figure 1.--Index map of San Juan National Forest, Colorado.

may be ore related, permits determination of some elements that are not easily detected in stream-sediment samples.

Sample Collection

Samples were collected at a total of 112 sites from several selected areas within the Forest as is shown on plate 1. At all sites, both a stream-sediment sample and a heavy-mineral-concentrate sample were collected. Sampling density was about one sample site per two square miles, for the specific areas sampled. The area of the drainage basins sampled ranged from 0.2 to 2.0 square miles.

Stream-sediment samples

The stream-sediment samples consisted of active alluvium collected primarily from first-order (unbranched) and second-order (below the junction of two first-order) streams as shown on USGS topographic maps (scale = 1:24,000). Each sample was composited from several localities within an area that may extend as much as 50 feet from the site plotted on the map.

Heavy-mineral-concentrate samples

Heavy-mineral-concentrate samples were collected from the same active alluvium sites as the stream-sediment samples. Each bulk sample was screened with a 2.0-mm (10-mesh) screen to remove the coarse material. The less than 2.0-mm fraction was panned until most of the quartz, feldspar, organic material, and clay-sized material were removed.

Sample Preparation

Stream-sediment samples

Stream-sediment samples were prepared using the method described by Peacock and Taylor (1990). The samples were air dried and sieved using an 80-mesh (0.17-mm) stainless-steel sieve. The portion of the sediment passing through the sieve was saved for analysis.

Heavy-mineral-concentrate samples

Heavy-mineral-concentrate samples were prepared using the method described by Taylor (1990). Following air drying, bromoform (specific gravity 2.8) was used to remove the remaining quartz and feldspar and other low density minerals from the heavy-mineral-concentrate samples that had been panned in the field. The resultant heavy-mineral sample was separated into three fractions using a large electromagnet (a modified Frantz Isodynamic Separator). The most magnetic material, primarily magnetite, was not analyzed. The second fraction, largely ferromagnesian silicates and iron oxides, was saved for archival storage. The third fraction (the least magnetic material which may include the nonmagnetic ore minerals and zircon, sphene, etc.) was split using a Jones splitter. One split was hand ground for spectrographic analysis; the other split was saved for mineralogical analysis. These magnetic separates are the same separates that would be produced by using a Frantz Isodynamic Separator set at a slope of 15 degrees and a tilt of 10 degrees with a current of 0.2 ampere to remove the magnetite and ilmenite, and a current of 0.6 ampere to split the remainder of the sample into paramagnetic and nonmagnetic fractions.

Sample Analysis

Heavy-mineral-concentrate samples were analyzed by an emission spectrographic method for 37 elements. Because preparation of heavy-mineral concentrates frequently yields only a small non-magnetic fraction for analysis, this method which requires only 5 mg of sample, was the analysis method selected.

Stream sediments were analyzed by: (1) the same emission spectrographic method as was used for concentrates, (2) a total dissolution inductively coupled plasma (ICP) method for 40 elements, (3) a partial dissolution ICP method for ten elements, (4) a graphite furnace atomic absorption method for gold, and (5) a delayed neutron counting analysis of thorium and uranium.

Emission spectrographic method

The stream-sediment and heavy-mineral-concentrate samples were analyzed for 35 and 37 elements respectively using a semiquantitative, direct-current arc emission spectrographic method (Adrian and others, 1990). The elements analyzed and their lower limits of determination are listed in table 1. Spectrographic results were obtained by visual comparison of spectra derived from the sample against spectra obtained from standards made from pure oxides and carbonates. 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. The precision of the analytical method 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). Values determined for the major elements (iron, magnesium, calcium, titanium, sodium and phosphorous) are given in weight percent; all others are given in parts per million (ppm) (micrograms/gram). Analytical data are listed in tables 2 and 3 for stream-sediment and heavy-mineral-concentrate samples respectively.

Total dissolution inductively coupled plasma method for 40 elements

Forty major and trace elements were determined by ICP by the method described by Briggs (1990). The sample is dissolved by treating with a mixture of hydrochloric, nitric, perchloric, and hydrofluoric acids at 150° and taken to dryness. The residue is treated with aqua regia and the solution diluted to a standard weight with dilute nitric acid. The solution is aspirated into an ICP instrument for determination of the elements. Corrections are made for 219 interelement interferences. Lower limits of determination in ppm are listed in table 1.

Partial dissolution inductively coupled plasma method for 10 elements

Stream-sediment samples were analyzed by a partial dissolution ICP method using the method described by Motooka (1990). A hydrochloric acid-hydrogen peroxide digestion solubilizes metals not tightly bound in the silicate lattice of rocks and stream sediments. The metals are extracted into an aliquat-diisobutylketone solution as organic halides. This organic phase is aspirated into an ICP instrument and concentrations of the metals (Ag, As, Au, B, Cd, Mo, Pb, Sb, and Zn) determined. Lower limits of determination in ppm are listed in table 1.

Gold determination by flame and graphite furnace atomic absorption

Gold in stream-sediments was determined by the method of O'Leary and Meier (1990). The sample is treated with a hydrobromic acid-0.5% bromine solution. The gold-bromide complex formed is extracted with methyl isobutyl ketone (MIBK) and washed with dilute hydrobromic acid to remove interfering iron. The MIBK solution is atomized by flame or graphite furnace into an atomic absorption spectrophotometer for estimation of the gold content. Lower limits of determination for gold are 0.05 ppm by flame and 0.002 ppm by graphite furnace.

Delayed neutron counting analysis for thorium and uranium

Thorium and uranium were determined by the method of McKown and Knight (1990). A 10 g sample was irradiated in the USGS TRIGA reactor and the resultant delayed neutrons counted. No separations are required prior to the analysis. Limits of determination are 1 ppm for thorium and 0.1 ppm for uranium.

ROCK ANALYSIS STORAGE SYSTEM

Upon completion of all analytical work, the analytical results were entered into a computer-based file called Rock Analysis Storage System (RASS). This data base contains both descriptive geological information and analytical data. Any or all of this information may be retrieved and converted to a binary form (STATPAC) for computerized statistical analysis or publication (Van Trump and Miesch, 1977).

DESCRIPTION OF DATA TABLES

Tables 2 and 3 list the analyses for heavy-mineral-concentrate and stream-sediment samples respectively. For both tables, the data are arranged so that column 1 contains the USGS-assigned sample numbers. These numbers correspond to the numbers shown on the sample locality map, plate 1. Columns 2 and 3 give the latitude and longitude of the sample site.

Table 2, heavy-mineral-concentrate samples

All data contained in table 2 for heavy-mineral concentrates was obtained by emission spectrographic analysis. A letter "N" in a data column indicates that a given element was looked for but not detected at the lower limit of determination shown for that element in table 1. If an element was observed but was below the lowest reporting value, a "less than" symbol (<) was entered in the table in front of the lower limit of determination. If an element was observed but was above the highest reporting value, a "greater than" symbol (>) was entered in front of the upper limit of determination. If an element was not looked for in a sample, two dashes (--) are entered in the table in place of an analytical value. Because of the formatting used in the computer program that produced the data tables, some of the elements listed in these tables (Ca, Fe, Mg, Na, P, Ti, Ag, and Be) may carry one or more nonsignificant digits to the right of the significant digits. The analysts did not determine these elements to the accuracy suggested by the extra zeros. All values are in ppm (parts per million) except where the column heading shows the percent symbol (%).

Table 3, stream-sediment samples

Data in table 3 for stream sediments are from several sources. Columns 4-47 contain analyses from the ICP 40 element method and have a "ICP-40" in the column heading along with the element symbol. Columns 48-57 contain analyses from the ICP 10 element method and have a "ICP-10" in the column heading along with the element symbol. Columns 58-92 contain analyses from the emission spectrographic method and have a "ESPEC" in the column heading along with the element symbol. Column 93 has the gold analysis by graphite furnace atomic absorption and has a "GFAA" column heading. Columns 94 and 95 have the delayed neutron counting analyses for thorium and uranium and have a "DNC" column heading.

The discussion regarding "less than" and "not detected" values for heavy-mineral concentrates applies to stream sediments analyzed by emission spectrography as well. Gold values determined by graphite furnace atomic absorption (GFAA) may also be qualified as either "less than" or "not detected". Element concentrations below the limit of determination are qualified as "less than" when determined by the ICP 40 element method and as "not detected" for the ICP 10 element method.

DATA DISKETTE

The data of tables 2 and 3 is also stored on a diskette found in a pocket inside the back cover of this report. The diskette contains five files: (1) A readme file in ASC II, (2) a binary data file, TABLE2.STP, for heavy-mineral-concentrate samples, (3) a binary data file, TABLE3.STP, for stream-sediment samples, (4) STP2DAT.EXE, authored by W.D. Grundy of the USGS, for conversion of TABLE2.STP and TABLE3.STP to any of several formats, including DBF,DIF,and ASC II, and (5) SJUAN.TXT a word perfect WP 5.1 file containing the text of this report. Although these programs have been used by the U.S. Geological Survey, no warranty, expressed or implied is made by the USGS as to the accuracy and functioning of the program and related material, nor shall the fact of distribution constitute any such warranty, and no responsibility is assumed by the USGS in connection therewith.

REFERENCES CITED

Adrian, B.M.,Arbogast, B.F., Detra, D.E., and Mays, R.E., 1990, Direct-current arc emission spectrographic method for the semiquantitative analysis of rock, stream-sediment, soil, and heavy-mineral-concentrate samples, in Arbogast, Belinda F., ed., Quality assurance manual for the Branch of Geochemistry, U.S. Geological Survey: U.S. Geological Survey Open-File Report 90-668, pp. 100-106.

Briggs, Paul, 1990, Elemental analysis of geological material by inductively coupled plasma-atomic emission spectrometry, in Arbogast, Belinda F., ed., Quality assurance manual for the Branch of Geochemistry, U.S. Geological Survey: U.S. Geological Survey Open-File Report 90-668, pp. 83-91.

McKown, D.M. and Knight, R.J., 1990, Determination of uranium and thorium in geologic materials by delayed neutron counting, in Arbogast, Belinda F., ed., Quality assurance manual for the Branch of Geochemistry, U.S. Geological Survey: U.S. Geological Survey Open-File Report 90-668, pp. 146-150.

Motooka, Jerry, 1990, Organometallic halide extraction applied to the analysis of geologic materials for 10 elements by inductively coupled plasma-atomic emission spectrometry, in Arbogast, Belinda F., ed., Quality assurance manual for the Branch of Geochemistry, U.S. Geological Survey: U.S. Geological Survey Open-File Report 90-668, pp. 92-96.

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.

O'Leary, Richard M. and Meier, Allen L., 1990, Determination of gold in samples of rock, soil, stream-sediment and heavy-mineral-concentrate by flame and graphite furnace atomic absorption spectrophotometry following dissolution by HBr-Br_2, in Arbogast, Belinda F., ed., Quality assurance manual for the Branch of Geochemistry, U.S. Geological Survey: U.S. Geological Survey Open-File Report 90-668, pp. 46-51.

Peacock, Thomas R. and Taylor, Cliff D., 1990, Physical preparation of stream-sediment samples, in Arbogast, Belinda F., ed., Quality assurance manual for the Branch of Geochemistry, U.S. Geological Survey: U.S. Geological Survey Open-File Report 90-668, pp. 26-28.

Taylor, Cliff D., 1990, Physical preparation of heavy-mineral concentrates by heavy liquid and magnetic separation, in Arbogast, Belinda F., ed., Quality assurance manual for the Branch of Geochemistry, U.S. Geological Survey: U.S. Geological Survey Open-File Report 90-668, pp. 33-37.

Van Trump, George, Jr., and Miesch, A.T., 1977, The U.S. Geological Survey RASS-STATPAC system for management and statistical reduction of geochemical data: Computers and Geosciences, v. 3, p. 475-488.

Table 1. Lower limits of determination[1] for elements in stream-sediment samples[2] by different methods of analysis: (1) emission spectrography (ESPEC), (2) inductively coupled plasma total dissolution method for 40 elements (ICP-40), (3) inductively coupled plasma partial dissolution method for 10 elements (ICP-10), (4) gold by graphite furnace atomic absorption (Au GFAA), and (5) thorium and uranium by delayed neutron counting (Th/U-DNC).

Element	ESPEC	ICP-40	ICP-10	Au-GFAA	U/Th-DNC
Aluminum (Al)		.005%			
Calcium (Ca)	.05 %	.005%			
Iron (Fe)	.05 %	.005%			
Potassium (K)		.05 %			
Magnesium (Mg)	.02 %	.005%			
Sodium (Na)	.2 %	.005%			
Phosphorous (P)	.2 %	.005%			
Titanium (Ti)	.002%	.005%			
Silver (Ag)	0.5	2	0.045		
Arsenic (As)	200	10	0.600		
Gold (Au)	10	8	0.150	.002	
Boron (B)	10				
Barium (Ba)	20	1			
Beryllium (Be)	1	1			
Bismuth (Bi)	10	10	0.600		
Cadmium (Cd)	20	2	0.050		
Cerium (Ce)		4			
Cobalt (Co)	10	1			
Chromium (Cr)	10	1			
Copper (Cu)	5	1	0.050		
Europium (Eu)		2			
Gallium (Ga)	5	4			
Germanium (Ge)	10				
Holmium (Ho)		4			
Lanthanum (La)	50	2			
Lithium (Li)		2			
Manganese (Mn)	10	4			
Molybdenum (Mo)	5	2	0.090		
Niobium (Nb)	20	4			
Neodymium (Nd)		4			
Nickel (Ni)	5	2			
Lead (Pb)	10	4	0.600		
Tin (Sn)	10	4			
Antimony (Sb)	100		0.600		
Scandium (Sc)	5	2			
Strontium (Sr)	100	2			
Tantalum (Ta)		40			

(Table 1 continued next page)

Table 1 (continued)

Element	ESPEC	ICP-40	ICP-10	Au-GFAA	U/Th-DNC
Thorium (Th)	100	4			1
Uranium (U)		100			0.1
Vanadium (V)	10	2			
Tungsten (W)	20				
Yttrium (Y)	10	2			
Ytterbium (Yb)		1			
Zinc (Zn)	200	2	0.050		
Zirconium (Zr)	10				
Palladium (Pd)[3]	5				
Platinum (Pt)[3]	20				

1. All values are in parts per million (ppm), except those with a percent symbol (%).
2. Limits of determination for heavy-mineral concentrates are two reporting intervals higher (approximately twice) than for stream sediments due to the use of a smaller sample (5mg rather than 10 mg).
3. Pd and Pt are determined in heavy-mineral-concentrate samples only. Limits are for heavy-mineral-concentrate samples.

Table 2--Results of analyses of heavy-mineral-concentrate samples from the San Juan National Forest, Colorado.

Sample	Latitude	Longtude	CA %-S	FE %-S	MG %-S	NA %-S	P %-S	TI %-S	AG PPM-S	AS PPM-S	AU PPM-S	B PPM-S	BA PPM-S
SJ001C	37 43 9	107 45 25	3.0	10.00	.15	N	3.0	2.000	N	5,000	N	20	>10,000
SJ002C	37 42 32	107 46 16	5.0	2.00	.10	N	5.0	>2.000	70	N	N	<20	>10,000
SJ003C	37 40 45	107 47 45	7.0	3.00	.20	N	7.0	>2.000	N	N	N	20	>10,000
SJ004C	37 40 46	107 47 43	7.0	1.50	.30	N	7.0	>2.000	N	N	N	30	>10,000
SJ005C	37 40 51	107 47 10	10.0	.70	.20	N	10.0	>2.000	N	N	N	20	>10,000
SJ006C	37 45 13	107 45 39	7.0	7.00	.30	N	7.0	>2.000	70	N	100	30	>10,000
SJ007C	37 45 11	107 45 29	5.0	2.00	.30	N	10.0	>2.000	N	N	N	50	>10,000
SJ008C	37 44 19	107 45 3	7.0	2.00	.15	N	7.0	>2.000	N	N	N	<20	>10,000
SJ009C	37 42 11	107 50 31	7.0	3.00	.50	.7	7.0	>2.000	15	N	N	30	>10,000
SJ010C	37 42 38	107 50 38	10.0	1.50	.20	N	15.0	>2.000	N	N	N	20	>10,000
SJ011C	37 42 18	107 50 29	7.0	1.50	.30	N	7.0	>2.000	N	N	N	30	>10,000
SJ012C	37 41 58	107 50 24	20.0	2.00	.70	.5	15.0	>2.000	N	N	N	30	>10,000
SJ013C	37 41 16	107 50 17	10.0	2.00	.50	<.5	10.0	>2.000	N	N	N	30	>10,000
SJ014C	37 40 52	107 49 59	15.0	3.00	.50	<.5	10.0	>2.000	N	N	N	20	>10,000
SJ015C	37 40 58	107 49 52	7.0	3.00	.15	N	10.0	>2.000	N	N	N	50	7,000
SJ016C	37 40 34	107 49 35	10.0	2.00	.70	N	15.0	>2.000	N	N	N	20	>10,000
SJ017C	37 44 48	107 50 52	15.0	3.00	1.00	N	15.0	>2.000	N	N	N	70	1,000
SJ018C	37 43 51	107 52 1	15.0	5.00	1.00	N	3.0	>2.000	N	N	N	70	>10,000
SJ019C	37 43 58	107 45 5	10.0	5.00	.50	N	10.0	>2.000	N	N	N	50	>10,000
SJ020C	37 26 52	108 12 45	20.0	1.00	.20	N	7.0	>2.000	N	N	N	30	>10,000
SJ021C	37 27 10	108 12 56	10.0	1.50	.20	N	7.0	>2.000	N	N	N	50	>10,000
SJ022C	37 34 17	108 22 2	.3	1.50	.20	N	.5	>2.000	N	N	N	70	>10,000
SJ023C	37 35 27	108 12 34	<.1	.30	.07	N	.7	>2.000	N	N	N	150	N
SJ024C	37 35 33	108 12 35	.3	.30	.10	N	1.0	>2.000	N	N	N	100	N
SJ025C	37 35 18	108 9 47	1.0	.70	.10	N	2.0	2.000	N	N	N	150	N
SJ026C	37 35 43	108 8 13	7.0	.30	.15	N	10.0	>2.000	N	N	N	70	N
SJ027C	37 35 1	108 9 59	7.0	1.00	.30	N	7.0	>2.000	N	N	N	100	N
SJ028C	37 35 41	108 7 20	15.0	.70	.50	N	10.0	>2.000	N	N	N	70	10,000
SJ029C	37 36 39	108 5 32	20.0	1.00	.70	N	7.0	>2.000	N	N	N	150	>10,000
SJ030C	37 36 46	108 5 9	7.0	.30	.20	N	7.0	>2.000	N	N	N	150	10,000
SJ031C	37 37 21	108 4 6	7.0	.70	.30	<.5	10.0	>2.000	N	N	N	50	>10,000
SJ032C	37 38 23	108 3 46	10.0	.70	.30	<.5	7.0	>2.000	N	N	N	<20	>10,000
SJ033C	37 49 48	108 9 33	30.0	2.00	1.00	2.0	10.0	2.000	N	N	N	70	3,000
SJ034C	37 49 22	108 10 18	30.0	7.00	.70	<.5	10.0	.700	N	N	N	30	>10,000
SJ035C	37 48 56	108 10 2	30.0	2.00	.70	N	3.0	1.500	N	N	N	100	1,500
SJ036C	37 49 30	108 7 52	1.5	5.00	.50	1.5	1.5	1.000	N	N	N	50	>10,000
SJ037C	37 49 31	108 7 5	15.0	3.00	2.00	2.0	5.0	>2.000	N	N	N	70	3,000
SJ038C	37 48 55	108 9 17	5.0	1.50	.70	.5	5.0	2.000	N	N	N	30	1,500
SJ039C	37 48 54	108 9 12	7.0	7.00	.30	<.5	7.0	1.000	N	N	N	20	>10,000
SJ040C	37 48 9	108 7 13	7.0	7.00	.50	<.5	7.0	1.000	N	N	N	30	>10,000
SJ041C	37 47 43	108 5 51	10.0	2.00	.70	N	1.5	.700	N	N	N	20	>10,000
SJ042C	37 47 33	108 6 7	3.0	2.00	.30	N	2.0	>2.000	N	N	N	30	>10,000
SJ043C	37 39 12	108 2 34	7.0	1.50	.30	<.5	10.0	>2.000	N	N	N	20	>10,000
SJ044C	37 38 48	108 2 47	10.0	.50	.15	N	10.0	>2.000	N	N	N	<20	5,000
SJ045C	37 38 28	108 3 3	10.0	.70	.30	N	15.0	>2.000	N	N	N	20	>10,000

Table 2--Results of analyses of heavy-mineral-concentrate samples from the San Juan National Forest, Colorado.--Continued.

Sample	BE PPM-S	BI PPM-S	CD PPM-S	CO PPM-S	CR PPM-S	CU PPM-S	GA PPM-S	GE PPM-S	LA PPM-S	MN PPM-S	MO PPM-S	NB PPM-S	NI PPM-S
SJ001C	<2	N	N	<20	50	50	20	N	2,000	200	N	70	30
SJ002C	<2	N	N	N	30	10	<10	N	100	200	N	100	15
SJ003C	2	N	N	N	50	<10	<10	N	150	200	N	50	20
SJ004C	2	N	N	N	70	<10	<10	N	700	200	N	70	<10
SJ005C	2	30	N	N	70	<10	<10	N	700	300	N	150	<10
SJ006C	<2	N	N	<20	70	<10	10	N	700	300	N	150	10
SJ007C	<2	N	N	N	70	N	10	N	700	300	N	150	<10
SJ008C	<2	N	N	N	70	N	10	N	500	200	N	200	<10
SJ009C	<2	N	N	N	100	<10	15	N	1,000	500	N	150	<10
SJ010C	N	N	N	N	50	<10	<10	N	2,000	300	N	150	N
SJ011C	<2	N	N	N	50	N	<10	N	700	200	N	150	N
SJ012C	<2	N	N	N	70	N	15	N	150	300	N	200	10
SJ013C	<2	N	N	N	100	N	10	N	700	500	N	150	15
SJ014C	N	N	N	N	100	N	15	N	1,000	500	N	200	N
SJ015C	<2	N	N	N	100	N	10	N	700	300	N	150	<10
SJ016C	<2	N	N	N	100	N	10	N	700	300	N	100	10
SJ017C	N	N	N	N	150	N	20	N	1,500	300	N	50	20
SJ018C	N	50	N	N	150	N	20	N	700	500	N	100	20
SJ019C	<2	N	N	N	100	N	20	N	700	300	N	200	<10
SJ020C	N	N	N	N	100	N	10	N	1,000	500	N	70	10
SJ021C	N	N	N	N	50	N	10	N	1,000	500	N	70	N
SJ022C	N	N	N	N	50	N	10	N	100	200	N	50	N
SJ023C	N	N	N	N	100	10	10	N	500	70	N	<50	N
SJ024C	N	N	N	N	70	10	10	N	500	70	N	50	N
SJ025C	N	N	N	N	150	150	N	N	500	100	N	<50	<10
SJ026C	<2	N	N	N	70	20	<10	N	700	200	N	70	N
SJ027C	<2	N	N	N	100	20	<10	N	700	300	N	100	N
SJ028C	N	N	N	N	100	20	<10	N	500	500	N	50	N
SJ029C	<2	N	N	N	300	20	10	N	700	500	N	50	<10
SJ030C	N	N	N	N	70	20	10	N	700	300	N	70	N
SJ031C	<2	N	N	N	50	20	10	N	1,000	300	N	100	<10
SJ032C	<2	N	N	N	50	15	10	N	500	300	N	100	<10
SJ033C	N	N	N	N	100	30	50	N	500	1,000	N	<50	20
SJ034C	N	N	N	N	50	50	20	N	700	300	15	<50	50
SJ035C	N	N	N	N	100	20	30	N	150	700	<10	<50	30
SJ036C	N	70	N	<20	70	50	20	N	150	500	N	<50	100
SJ037C	N	N	N	N	100	30	50	N	700	500	N	50	20
SJ038C	N	30	N	N	50	20	20	N	200	300	N	<50	15
SJ039C	N	N	N	N	30	20	20	N	150	300	30	<50	30
SJ040C	N	N	N	N	50	20	30	N	200	300	20	<50	50
SJ041C	N	N	N	N	50	20	10	N	100	300	N	<50	20
SJ042C	N	N	N	N	70	15	10	N	500	300	N	70	N
SJ043C	2	N	N	N	70	15	15	N	300	200	N	70	N
SJ044C	2	<20	N	N	50	20	<10	N	500	200	N	70	N
SJ045C	2	N	N	N	70	20	10	N	500	200	N	100	20

Table 2--Results of analyses of heavy-mineral-concentrate samples from the San Juan National Forest, Colorado.--Continued.

Sample	PB PPM-S	SB PPM-S	SC PPM-S	SN PPM-S	SR PPM-S	TH PPM-S	V PPM-S	W PPM-S	Y PPM-S	ZN PPM-S	ZR PPM-S	PD PPM-S	PT PPM-S
SJ001C	150	N	50	N	1,000	500	100	N	1,000	N	>2,000	N	N
SJ002C	150	N	50	N	3,000	N	100	N	700	<500	>2,000	N	N
SJ003C	300	N	150	N	3,000	<200	50	N	1,500	<500	>2,000	N	N
SJ004C	150	N	>200	N	2,000	200	70	150	2,000	N	>2,000	N	N
SJ005C	150	N	200	N	2,000	<200	150	N	1,000	<500	>2,000	N	N
SJ006C	50	N	70	N	2,000	N	150	N	1,000	N	>2,000	N	N
SJ007C	100	N	70	N	1,500	N	150	N	700	N	>2,000	N	N
SJ008C	150	N	70	N	1,500	N	100	N	700	N	>2,000	N	N
SJ009C	100	N	100	N	5,000	N	150	N	1,000	N	>2,000	N	N
SJ010C	50	N	100	N	3,000	N	150	N	1,000	N	>2,000	N	N
SJ011C	70	N	100	N	3,000	N	150	N	1,000	N	>2,000	N	N
SJ012C	150	N	70	N	3,000	N	100	N	700	<500	>2,000	N	N
SJ013C	100	N	200	50	3,000	<200	200	N	1,500	<500	>2,000	N	N
SJ014C	70	N	150	N	3,000	N	200	N	1,000	N	>2,000	N	N
SJ015C	50	N	150	N	1,500	N	150	N	1,500	N	>2,000	N	N
SJ016C	70	N	200	N	3,000	N	150	N	1,500	N	>2,000	N	N
SJ017C	20	N	20	N	700	N	500	N	500	N	>2,000	N	N
SJ018C	200	N	150	N	1,500	N	200	N	500	N	>2,000	N	N
SJ019C	200	N	150	N	1,500	N	200	N	1,000	N	>2,000	N	N
SJ020C	50	N	30	N	2,000	N	300	N	700	N	>2,000	N	N
SJ021C	150	N	30	N	3,000	N	200	N	700	N	>2,000	N	N
SJ022C	20	N	70	N	3,000	N	150	N	500	N	>2,000	N	N
SJ023C	20	N	150	N	1,000	N	100	N	700	N	>2,000	N	N
SJ024C	200	N	150	N	2,000	N	150	N	700	N	>2,000	N	N
SJ025C	<20	N	30	N	5,000	N	70	N	300	N	>2,000	N	N
SJ026C	30	N	100	N	1,500	N	200	N	1,000	N	>2,000	N	N
SJ027C	30	N	70	N	1,000	<200	200	N	1,000	N	>2,000	N	N
SJ028C	50	N	150	N	1,500	N	200	N	1,000	N	>2,000	N	N
SJ029C	50	N	200	N	2,000	N	300	N	1,000	N	>2,000	N	N
SJ030C	150	N	100	N	1,000	N	300	N	1,000	N	>2,000	N	N
SJ031C	100	N	70	N	1,500	N	150	N	1,000	N	>2,000	N	N
SJ032C	50	N	70	N	1,000	N	100	N	1,000	N	>2,000	N	N
SJ033C	200	N	30	N	1,000	N	200	N	300	N	>2,000	N	N
SJ034C	100	N	20	N	2,000	N	70	N	700	<500	>2,000	N	N
SJ035C	20	N	20	50	<200	N	1,500	N	200	N	>2,000	N	N
SJ036C	70	N	15	N	700	N	100	N	150	N	>2,000	N	N
SJ037C	50	N	70	N	1,000	N	200	N	300	N	>2,000	N	N
SJ038C	20	N	15	N	500	N	150	N	200	N	>2,000	N	N
SJ039C	200	N	10	N	700	N	150	N	200	2,000	>2,000	N	N
SJ040C	300	N	10	N	700	N	150	N	300	2,000	>2,000	N	N
SJ041C	70	N	15	N	>10,000	N	70	N	100	N	>2,000	N	N
SJ042C	150	N	50	N	2,000	N	100	N	300	N	>2,000	N	N
SJ043C	7,000	N	100	20	1,000	N	150	N	1,000	N	>2,000	N	N
SJ044C	70	N	100	N	700	N	100	N	1,000	N	>2,000	N	N
SJ045C	300	N	150	N	1,000	<200	150	N	1,500	N	>2,000	N	N

Table 2--Results of analyses of heavy-mineral-concentrate samples from the San Juan National Forest, Colorado.--Continued.

Sample	Latitude	Longtude	CA %-S	FE %-S	MG %-S	NA %-S	P %-S	TI %-S	AG PPM-S	AS PPM-S	AU PPM-S	B PPM-S	BA PPM-S
SJ046C	37 45 42	108 0 2	5.0	1.00	1.00	N	2.0	>2.000	N	N	N	20	>10,000
SJ047C	37 45 9	108 0 38	.7	.70	.20	N	3.0	>2.000	N	N	N	30	>10,000
SJ048C	37 47 42	108 1 58	15.0	1.00	.70	N	7.0	>2.000	20	N	N	30	>10,000
SJ049C	37 47 57	108 3 46	1.0	.70	.20	N	1.5	>2.000	N	N	N	50	>10,000
SJ050C	37 47 44	108 3 54	10.0	1.50	.50	N	7.0	>2.000	N	N	N	30	>10,000
SJ051C	37 23 6	107 16 3	7.0	1.00	.30	N	5.0	>2.000	N	N	N	100	>10,000
SJ052C	37 23 51	107 14 0	7.0	.70	.15	<.5	5.0	>2.000	N	N	N	<20	2,000
SJ053C	37 26 35	107 25 48	30.0	2.00	.70	N	20.0	>2.000	N	N	N	70	3,000
SJ054C	37 27 18	107 23 51	7.0	1.50	.15	N	5.0	>2.000	N	N	N	30	5,000
SJ055C	37 28 2	107 22 45	7.0	2.00	.20	N	5.0	>2.000	N	N	N	100	10,000
SJ056C	37 28 10	107 22 39	15.0	2.00	.30	N	7.0	>2.000	N	N	N	30	1,000
SJ057C	37 28 35	107 21 52	7.0	2.00	.30	N	5.0	>2.000	N	N	N	50	700
SJ058C	37 29 5	107 20 24	10.0	1.50	.30	N	5.0	>2.000	N	N	N	30	300
SJ059C	37 27 32	107 21 54	15.0	2.00	.30	N	5.0	>2.000	N	N	N	30	700
SJ060C	37 27 32	107 22 1	7.0	2.00	.20	N	5.0	>2.000	N	N	N	100	5,000
SJ061C	37 30 4	107 19 3	7.0	1.50	.30	N	3.0	>2.000	N	N	N	30	500
SJ062C	37 30 15	107 18 7	7.0	1.50	.15	N	3.0	>2.000	N	N	N	20	5,000
SJ063C	37 24 49	106 45 49	1.5	20.00	.70	<.5	<.5	1.000	N	N	N	<20	5,000
SJ064C	37 24 52	106 44 13	1.5	15.00	.50	N	1.0	1.500	N	N	N	N	>10,000
SJ065C	37 24 58	106 44 15	5.0	7.00	.50	N	3.0	1.000	N	N	N	<20	>10,000
SJ066C	37 25 17	106 46 12	10.0	3.00	1.00	1.5	7.0	>2.000	N	N	N	100	5,000
SJ067C	37 25 13	106 46 57	7.0	1.50	.30	1.5	3.0	>2.000	N	N	N	N	2,000
SJ068C	37 25 5	106 47 50	10.0	7.00	.70	1.5	5.0	>2.000	N	N	N	20	>10,000
SJ069C	37 24 36	106 48 58	10.0	2.00	.70	1.5	7.0	>2.000	N	N	N	30	5,000
SJ070C	37 23 40	108 9 57	10.0	1.00	.15	N	10.0	>2.000	N	N	N	50	3,000
SJ071C	37 24 23	108 9 55	30.0	.50	.20	N	20.0	>2.000	N	N	N	<20	500
SJ072C	37 23 53	108 10 0	7.0	1.50	.20	N	7.0	>2.000	N	N	N	20	10,000
SJ073C	37 24 8	108 11 53	15.0	1.50	.30	N	20.0	.700	N	N	N	30	>10,000
SJ074C	37 25 2	108 9 8	10.0	5.00	.15	N	10.0	>2.000	N	N	N	30	10,000
SJ075C	37 37 19	108 8 44	.3	1.50	.30	N	.7	>2.000	N	N	N	150	>10,000
SJ076C	37 37 23	108 8 45	.3	.70	.07	N	2.0	>2.000	N	N	N	150	>10,000
SJ077C	37 37 4	108 8 50	.7	1.00	.30	N	1.5	>2.000	N	N	N	150	>10,000
SJ078C	37 36 12	108 9 12	.2	1.00	.15	N	1.0	>2.000	N	N	N	50	>10,000
SJ079C	37 30 11	108 5 8	.5	1.50	.30	N	1.5	>2.000	N	N	N	150	>10,000
SJ080C	37 29 53	108 5 6	7.0	1.00	.30	N	7.0	>2.000	N	N	N	20	>10,000
SJ081C	37 29 58	108 4 55	3.0	.70	.15	N	5.0	>2.000	N	N	N	30	>10,000
SJ082C	37 30 59	108 6 29	7.0	.70	.15	N	10.0	>2.000	N	N	N	50	2,000
SJ083C	37 26 31	108 6 55	15.0	10.00	.30	N	5.0	>2.000	N	N	N	20	>10,000
SJ084C	37 26 19	108 7 53	10.0	2.00	.15	N	10.0	>2.000	N	N	N	20	2,000
SJ085C	37 23 57	108 13 4	15.0	2.00	.30	N	20.0	>2.000	N	N	N	20	>10,000
SJ086C	37 24 47	108 12 50	15.0	.70	.15	N	20.0	>2.000	N	N	N	N	7,000
SJ087C	37 25 13	108 13 6	30.0	.70	.20	N	20.0	>2.000	N	N	N	N	700
SJ088C	37 41 23	108 10 21	1.5	.70	.15	N	2.0	>2.000	N	N	N	50	>10,000
SJ089C	37 41 18	108 10 21	15.0	1.00	.30	N	10.0	>2.000	N	N	N	30	>10,000
SJ090C	37 41 15	108 10 43	5.0	1.00	.30	N	5.0	>2.000	N	N	N	30	>10,000

Table 2--Results of analyses of heavy-mineral-concentrate samples from the San Juan National Forest, Colorado.--Continued.

Sample	BE PPM-S	BI PPM-S	CD PPM-S	CO PPM-S	CR PPM-S	CU PPM-S	GA PPM-S	GE PPM-S	LA PPM-S	MN PPM-S	MO PPM-S	NB PPM-S	NI PPM-S
SJ046C	N	N	N	N	50	20	10	N	300	150	N	50	10
SJ047C	<2	N	N	N	70	20	10	N	700	70	N	70	N
SJ048C	N	N	N	N	70	70	20	N	700	200	N	100	10
SJ049C	N	N	N	N	50	10	N	N	300	70	N	70	N
SJ050C	N	N	N	N	100	30	10	N	700	100	10	50	20
SJ051C	<2	N	N	N	70	50	10	N	700	200	N	50	N
SJ052C	2	N	N	N	30	<10	20	N	700	300	N	70	N
SJ053C	N	N	N	N	150	30	20	N	2,000	1,000	N	<50	10
SJ054C	3	N	N	N	70	20	15	<20	500	300	N	50	10
SJ055C	3	N	N	N	150	30	15	N	700	300	N	50	10
SJ056C	5	N	N	N	50	20	15	N	700	500	N	70	<10
SJ057C	5	N	N	N	50	15	20	<20	500	500	50	50	<10
SJ058C	3	N	N	N	50	20	15	N	700	500	N	70	<10
SJ059C	3	N	N	N	50	20	15	N	500	500	N	70	<10
SJ060C	2	N	N	N	100	20	20	N	700	300	N	70	10
SJ061C	2	N	N	N	50	20	15	<20	500	300	N	70	10
SJ062C	N	N	N	N	50	20	10	N	150	200	N	70	<10
SJ063C	N	150	N	100	30	70	50	N	200	200	N	50	70
SJ064C	N	20	N	70	50	50	50	N	500	300	N	50	50
SJ065C	N	500	N	50	30	50	20	N	200	500	N	<50	30
SJ066C	N	N	N	<20	70	30	50	N	500	500	15	100	15
SJ067C	<2	N	N	N	30	30	30	N	500	300	N	70	<10
SJ068C	N	N	N	<20	50	50	50	N	500	500	15	70	15
SJ069C	N	N	N	N	70	20	50	N	700	500	N	70	<10
SJ070C	N	N	N	N	100	30	15	N	2,000	500	N	100	<10
SJ071C	N	N	N	N	30	10	15	N	1,000	1,000	N	50	N
SJ072C	N	N	N	N	50	50	15	N	1,000	500	N	70	<10
SJ073C	N	N	N	N	30	20	10	N	1,000	700	N	<50	15
SJ074C	N	N	N	N	100	30	10	N	1,000	500	N	70	30
SJ075C	N	N	N	N	200	20	15	N	200	100	N	50	<10
SJ076C	N	N	N	N	50	50	<10	N	500	100	N	50	N
SJ077C	N	N	N	N	200	30	10	N	500	300	N	70	20
SJ078C	N	N	N	N	100	20	10	N	300	100	N	50	<10
SJ079C	N	N	N	N	150	30	15	N	500	300	N	70	<10
SJ080C	N	N	N	N	70	20	10	N	500	500	10	50	<10
SJ081C	N	N	N	N	70	10	15	N	300	300	N	70	N
SJ082C	N	N	N	N	70	10	15	N	1,000	700	N	50	10
SJ083C	N	500	N	70	150	300	20	N	500	1,000	N	100	50
SJ084C	N	N	N	N	70	300	<10	N	1,000	500	N	50	N
SJ085C	N	N	N	N	50	50	10	N	1,000	1,000	N	100	20
SJ086C	N	N	N	N	20	20	<10	N	1,000	700	N	70	N
SJ087C	N	N	N	N	30	20	10	N	1,000	1,000	N	70	N
SJ088C	N	N	N	N	50	15	N	N	500	300	N	50	10
SJ089C	N	N	N	N	100	20	10	N	500	500	N	150	<10
SJ090C	N	N	N	N	70	20	15	N	700	200	N	100	15

Table 2--Results of analyses of heavy-mineral-concentrate samples from the San Juan National Forest, Colorado.--Continued.

Sample	PB PPM-S	SB PPM-S	SC PPM-S	SN PPM-S	SR PPM-S	TH PPM-S	V PPM-S	W PPM-S	Y PPM-S	ZN PPM-S	ZR PPM-S	PD PPM-S	PT PPM-S
SJ046C	300	N	30	N	10,000	N	70	N	300	2,000	>2,000	N	N
SJ047C	70	N	70	N	5,000	N	70	N	700	N	>2,000	N	N
SJ048C	1,500	N	70	N	1,500	N	100	N	700	N	>2,000	N	N
SJ049C	30	N	30	N	5,000	N	70	N	150	N	>2,000	N	N
SJ050C	200	N	70	N	3,000	N	70	N	500	2,000	>2,000	N	N
SJ051C	200	N	150	N	3,000	N	150	N	1,000	N	>2,000	N	N
SJ052C	30	N	100	N	700	N	100	N	1,000	N	>2,000	N	N
SJ053C	200	N	200	N	1,500	N	200	N	1,500	N	>2,000	N	N
SJ054C	50	N	>200	N	500	N	150	N	3,000	N	>2,000	N	N
SJ055C	70	N	>200	200	700	N	150	N	2,000	N	>2,000	N	N
SJ056C	50	N	>200	N	500	N	150	N	2,000	N	>2,000	N	N
SJ057C	100	N	>200	N	500	N	150	N	3,000	N	>2,000	N	N
SJ058C	100	N	>200	N	N	N	150	N	3,000	N	>2,000	N	N
SJ059C	100	N	>200	N	N	N	150	N	2,000	N	>2,000	N	N
SJ060C	100	N	>200	N	1,500	N	150	N	3,000	N	>2,000	N	N
SJ061C	300	N	>200	N	N	N	150	N	3,000	N	>2,000	N	N
SJ062C	50	N	200	N	N	N	200	N	3,000	N	>2,000	N	N
SJ063C	200	N	30	N	700	N	100	N	200	N	>2,000	N	N
SJ064C	300	N	20	N	7,000	N	150	N	100	700	>2,000	N	N
SJ065C	70	N	20	N	7,000	N	100	N	150	700	>2,000	N	N
SJ066C	70	N	50	500	700	N	200	N	300	N	>2,000	N	N
SJ067C	50	N	20	N	700	N	70	N	200	N	>2,000	N	N
SJ068C	50	N	30	70	1,000	N	100	N	200	N	>2,000	N	N
SJ069C	30	N	50	50	700	N	100	N	500	N	>2,000	N	N
SJ070C	50	N	100	N	3,000	N	200	N	700	N	>2,000	N	N
SJ071C	<20	N	30	N	1,000	N	150	N	500	N	>2,000	N	N
SJ072C	20	N	50	50	700	N	300	N	700	N	>2,000	N	N
SJ073C	30	N	10	N	3,000	N	70	N	500	N	>2,000	N	N
SJ074C	30	N	70	N	1,000	N	150	N	700	N	>2,000	N	N
SJ075C	30	N	150	N	5,000	N	150	N	700	N	>2,000	N	N
SJ076C	30	N	70	N	5,000	N	100	N	300	N	>2,000	N	N
SJ077C	30	N	150	N	5,000	N	150	N	500	N	>2,000	N	N
SJ078C	30	N	200	N	2,000	N	150	N	700	N	>2,000	N	N
SJ079C	50	N	150	N	7,000	N	200	N	700	N	>2,000	N	N
SJ080C	50	N	20	N	5,000	N	70	N	500	N	>2,000	N	N
SJ081C	30	N	100	N	5,000	N	150	N	700	N	>2,000	N	N
SJ082C	30	N	100	N	2,000	N	100	N	700	N	>2,000	N	N
SJ083C	30	N	70	N	2,000	N	200	70	700	1,000	>2,000	N	N
SJ084C	20	N	70	N	1,000	N	200	N	700	N	>2,000	N	N
SJ085C	200	N	20	<20	1,000	N	300	N	700	N	>2,000	N	N
SJ086C	30	N	20	N	700	N	200	N	500	N	>2,000	N	N
SJ087C	<20	N	30	N	1,000	N	200	N	700	N	>2,000	N	N
SJ088C	20	N	30	N	10,000	N	70	N	200	N	>2,000	N	N
SJ089C	30	N	50	N	5,000	N	150	N	500	N	>2,000	N	N
SJ090C	30	N	70	N	3,000	N	150	N	500	N	>2,000	N	N

Table 2--Results of analyses of heavy-mineral-concentrate samples from the San Juan National Forest, Colorado.--Continued.

Sample	Latitude	Longtude	CA %-S	FE %-S	MG %-S	NA %-S	P %-S	TI %-S	AG PPM-S	AS PPM-S	AU PPM-S	B PPM-S	BA PPM-S
SJ091C	37 40 51	108 12 54	3.0	.15	.05	N	3.0	1.500	N	N	N	N	>10,000
SJ092C	37 40 57	108 12 56	5.0	.15	.07	N	5.0	1.000	N	N	N	N	>10,000
SJ093C	37 27 23	108 8 41	20.0	.30	.10	N	15.0	.700	N	N	N	N	>10,000
SJ095C	37 27 26	108 8 37	30.0	.50	.30	N	20.0	1.500	N	N	N	N	>10,000
SJ096C	37 27 43	108 9 16	10.0	1.00	.07	N	10.0	.200	N	N	N	N	>10,000
SJ097C	37 27 23	108 9 13	30.0	.50	.10	N	20.0	.200	N	N	N	N	>10,000
SJ098C	37 47 14	108 3 48	.3	.30	.07	N	1.5	2.000	N	N	N	20	>10,000
SJ099C	37 43 33	108 8 21	.7	.20	.10	N	3.0	2.000	N	N	N	N	>10,000
SJ100C	37 43 29	108 8 22	1.5	.70	.30	.7	5.0	1.000	N	N	N	N	>10,000
SJ101C	37 42 43	108 7 37	1.5	.30	.15	<.5	5.0	.300	N	N	N	N	>10,000
SJ102C	37 42 48	108 7 41	7.0	10.00	.20	<.5	7.0	2.000	N	N	N	<20	>10,000
SJ103C	37 41 14	108 6 37	10.0	1.00	.15	N	15.0	>2.000	N	N	N	<20	>10,000
SJ104C	37 39 43	108 7 8	.3	.15	.05	N	.7	.500	N	N	N	N	>10,000
SJ105C	37 39 53	108 10 32	.3	.10	<.05	N	1.0	1.500	N	N	N	N	>10,000
SJ106C	37 27 50	108 6 38	15.0	.15	.05	N	15.0	.020	N	N	N	N	>10,000
SJ107C	37 28 11	108 7 12	30.0	.15	.15	N	20.0	.050	N	N	N	N	700
SJ109C	37 46 22	108 3 9	<.1	.10	.07	N	<.5	.007	N	N	N	N	>10,000
SJ110C	37 45 10	108 4 4	.3	<.10	.07	N	<.5	.010	N	N	N	N	>10,000
SJ111C	37 44 27	108 4 8	10.0	.50	.07	N	10.0	.500	N	N	N	30	>10,000
SJ112C	37 44 19	108 4 43	10.0	.70	.10	N	15.0	2.000	N	N	N	50	>10,000

Table 2--Results of analyses of heavy-mineral-concentrate samples from the San Juan National Forest, Colorado.--Continued.

Sample	BE PPM-S	BI PPM-S	CD PPM-S	CO PPM-S	CR PPM-S	CU PPM-S	GA PPM-S	GE PPM-S	LA PPM-S	MN PPM-S	MO PPM-S	NB PPM-S	NI PPM-S
SJ091C	N	N	N	N	30	N	<10	N	<100	70	N	<50	<10
SJ092C	N	N	N	N	30	<10	N	N	<100	100	N	<50	N
SJ093C	N	N	N	N	30	<10	N	N	1,000	500	N	N	<10
SJ095C	N	N	N	N	20	20	15	N	1,000	700	N	N	15
SJ096C	N	N	N	N	30	20	N	N	700	700	N	N	10
SJ097C	N	N	N	N	20	20	N	N	1,500	1,000	N	N	N
SJ098C	N	N	N	N	30	<10	<10	N	<100	50	N	<50	N
SJ099C	N	N	N	N	30	10	10	N	<100	200	N	50	10
SJ100C	<2	N	N	N	20	<10	N	N	N	700	N	<50	10
SJ101C	N	N	N	N	20	20	N	N	<100	300	N	N	10
SJ102C	N	N	N	<20	30	50	15	N	100	300	N	100	50
SJ103C	N	N	N	N	30	10	<10	N	200	300	N	50	<10
SJ104C	N	N	N	N	20	N	N	N	N	70	N	N	N
SJ105C	N	N	N	N	20	N	N	N	N	50	N	<50	<10
SJ106C	N	N	N	N	30	<10	N	N	700	500	N	N	10
SJ107C	N	N	N	N	30	N	N	N	1,000	1,500	N	N	10
SJ109C	N	N	N	N	20	N	N	N	N	70	N	N	<10
SJ110C	N	N	N	N	20	N	N	N	N	30	N	N	N
SJ111C	N	N	N	N	20	<10	N	N	200	500	N	<50	<10
SJ112C	N	N	N	N	30	<10	<10	N	500	300	N	70	<10

Table 2--Results of analyses of heavy-mineral-concentrate samples from the San Juan National Forest, Colorado.--Continued.

Sample	PB PPM-S	SB PPM-S	SC PPM-S	SN PPM-S	SR PPM-S	TH PPM-S	V PPM-S	W PPM-S	Y PPM-S	ZN PPM-S	ZR PPM-S	PD PPM-S	PT PPM-S
SJ091C	30	N	15	N	5,000	N	30	N	300	N	>2,000	N	N
SJ092C	30	N	<10	N	10,000	N	30	N	200	N	>2,000	N	N
SJ093C	20	N	10	N	7,000	N	70	N	500	N	>2,000	N	N
SJ095C	20	N	15	N	5,000	N	50	N	500	N	2,000	N	N
SJ096C	50	N	N	N	1,000	N	30	N	200	N	>2,000	N	N
SJ097C	30	N	15	N	2,000	N	70	N	500	N	>2,000	N	N
SJ098C	20	N	15	N	10,000	N	30	N	150	2,000	>2,000	N	N
SJ099C	200	N	10	N	10,000	N	70	N	100	N	>2,000	N	N
SJ100C	20	N	N	N	5,000	N	20	N	100	N	300	N	N
SJ101C	<20	N	N	N	10,000	N	30	N	100	N	>2,000	N	N
SJ102C	100	N	10	N	3,000	N	50	N	300	500	>2,000	N	N
SJ103C	50	N	15	N	7,000	N	70	N	700	N	>2,000	N	N
SJ104C	N	N	<10	N	10,000	N	<20	N	30	N	>2,000	N	N
SJ105C	20	N	<10	N	10,000	N	<20	N	20	N	2,000	N	N
SJ106C	N	N	15	N	200	N	50	N	200	N	2,000	N	N
SJ107C	N	N	10	N	700	N	30	N	300	N	30	N	N
SJ109C	N	N	<10	N	7,000	N	<20	N	N	N	<20	N	N
SJ110C	<20	N	10	N	5,000	N	<20	N	20	N	>2,000	N	N
SJ111C	150	N	<10	N	10,000	N	20	N	150	N	>2,000	N	N
SJ112C	20	N	20	N	3,000	N	50	N	700	N	>2,000	N	N

Table 3--Results of analyses of stream-sediment samples from the San Juan National Forest, Colorado.

1 Sample	2 Latitude	3 Longtude	4 Al % ICP-40	5 Ca % ICP-40	6 Fe % ICP-40	7 Al % ICP-40	8 Mg % ICP-40	9 Na % ICP-40	10 P % ICP-40	11 Ti % ICP-40	12 Mn ppm ICP-40	13 Ag ppm ICP-40
SJ001S	37 43 9	107 45 25	5.7	.69	8.60	2.10	.81	1.50	.11	.36	500	<2
SJ002S	37 42 32	107 46 16	6.4	1.40	4.10	2.30	.60	1.70	.09	.29	540	<2
SJ003S	37 40 45	107 47 45	7.1	2.40	4.70	3.20	1.20	1.30	.12	.44	360	<2
SJ004S	37 40 46	107 47 43	6.6	1.50	4.20	2.80	.84	1.70	.10	.36	340	<2
SJ005S	37 40 51	107 47 10	6.6	.55	4.50	3.10	.75	1.20	.09	.29	330	<2
SJ006S	37 45 13	107 45 39	5.9	.66	4.90	2.10	.93	1.00	.09	.36	570	<2
SJ007S	37 45 11	107 45 29	6.7	1.30	6.80	2.30	1.10	1.30	.11	.50	840	<2
SJ008S	37 44 19	107 45 3	7.0	.77	3.60	2.20	.64	2.20	.09	.31	640	<2
SJ009S	37 42 11	107 50 31	5.5	.57	6.60	2.10	.43	1.40	.08	.36	640	<2
SJ010S	37 42 38	107 50 38	3.3	.70	2.30	1.20	.45	.82	.06	.32	530	<2
SJ011S	37 42 18	107 50 29	5.1	.62	7.00	1.80	.74	1.00	.10	.34	420	<2
SJ012S	37 41 58	107 50 24	7.2	1.30	3.10	2.80	.69	1.60	.07	.28	410	<2
SJ013S	37 41 16	107 50 17	5.8	.65	5.90	2.40	.47	1.80	.09	.42	830	<2
SJ014S	37 40 52	107 49 59	6.3	.69	5.50	2.50	.73	1.60	.09	.39	770	<2
SJ015S	37 40 58	107 49 52	6.2	1.10	3.10	2.40	.39	2.00	.07	.26	340	<2
SJ016S	37 40 34	107 49 35	6.1	2.60	5.00	2.40	.78	1.80	.10	.32	470	<2
SJ017S	37 44 48	107 50 52	7.3	3.90	6.30	1.80	2.20	2.20	.37	1.00	1,200	<2
SJ018S	37 43 51	107 52 1	6.5	.35	2.20	1.90	.78	.55	.07	.25	1,300	<2
SJ019S	37 43 58	107 45 5	6.6	.54	3.20	2.20	.78	1.90	.07	.28	410	<2
SJ020S	37 26 52	108 12 45	4.6	.54	1.80	1.30	.43	.52	.04	.20	430	<2
SJ021S	37 27 10	108 12 56	4.9	.75	2.70	1.40	.55	.63	.07	.25	600	<2
SJ022S	37 34 17	108 22 2	1.8	.45	.67	.99	.18	.08	.02	.07	140	<2
SJ023S	37 35 27	108 12 34	1.9	.13	.91	.97	.18	.14	.02	.10	200	<2
SJ024S	37 35 33	108 12 35	2.1	.13	.85	1.00	.21	.13	.02	.11	250	<2
SJ025S	37 35 18	108 9 47	2.6	.55	1.20	.95	.26	.13	.03	.13	340	<2
SJ026S	37 35 43	108 8 13	3.9	4.60	2.10	1.50	.60	.95	.05	.20	350	<2
SJ027S	37 35 1	108 9 59	4.0	4.00	2.10	1.70	.62	.86	.07	.22	390	<2
SJ028S	37 35 41	108 7 20	4.3	1.90	2.90	1.60	.62	1.30	.06	.24	400	<2
SJ029S	37 36 39	108 5 32	3.8	1.30	2.70	1.50	.60	.88	.05	.21	480	<2
SJ030S	37 36 46	108 5 9	3.1	2.70	1.60	1.20	.47	.64	.04	.15	420	<2
SJ031S	37 37 21	108 4 6	4.4	1.20	3.20	1.80	.54	.92	.06	.22	400	<2
SJ032S	37 38 23	108 3 46	6.4	2.40	6.70	2.40	.86	1.90	.09	.34	440	<2
SJ033S	37 49 48	108 9 33	6.3	1.10	3.80	1.60	.99	1.10	.10	.33	690	<2
SJ034S	37 49 22	108 10 18	6.8	5.30	3.00	1.70	.95	.52	.10	.26	240	<2
SJ035S	37 48 56	108 10 2	6.8	1.20	2.60	1.60	.81	.83	.10	.26	690	<2
SJ036S	37 49 30	108 7 52	7.4	.87	5.40	2.00	.70	1.20	.10	.38	730	<2
SJ037S	37 49 31	108 7 5	6.5	2.70	2.90	1.70	.86	.69	.10	.27	330	<2
SJ038S	37 48 55	108 9 17	7.5	1.70	3.70	2.00	1.60	1.30	.11	.39	630	<2
SJ039S	37 48 54	108 9 12	7.5	1.80	4.20	1.90	1.20	1.40	.11	.47	720	<2
SJ040S	37 48 9	108 7 13	7.0	2.70	2.90	1.70	.89	1.20	.11	.28	590	<2
SJ041S	37 47 43	108 5 51	6.1	4.60	2.50	1.60	1.00	.61	.09	.24	270	<2
SJ042S	37 47 33	108 6 7	5.4	.84	2.80	1.60	.62	.69	.08	.24	490	<2
SJ043S	37 39 12	108 2 34	6.0	.79	7.40	2.20	.68	2.00	.11	.36	470	<2
SJ044S	37 38 48	108 2 47	5.8	2.00	4.50	2.20	.61	1.90	.08	.28	430	<2
SJ045S	37 38 28	108 3 3	6.0	1.80	5.80	2.20	.70	1.90	.09	.34	560	<2

Table 3--Results of analyses of stream-sediment samples from the San Juan National Forest, Colorado.--Continued.

Sample	14 As ppm ICP-40	15 Au ppm ICP-40	16 B ppm ICP-40	17 Ba ppm ICP-40	18 Be ppm ICP-40	19 Bi ppm ICP-40	20 Cd ppm ICP-40	21 Ce ppm ICP-40	22 Co ppm ICP-40	23 Cr ppm ICP-40	24 Cu ppm ICP-40
SJ001S	130	<8	--	690	2	<10	<2	170	15	85	21
SJ002S	10	<8	--	740	2	<10	<2	74	11	53	23
SJ003S	<10	<8	--	940	3	<10	<2	120	15	67	34
SJ004S	<10	<8	--	800	2	<10	<2	100	10	59	18
SJ005S	<10	<8	--	600	3	<10	<2	70	11	56	17
SJ006S	10	<8	--	560	2	<10	<2	91	13	54	21
SJ007S	<10	<8	--	610	2	<10	<2	98	17	57	24
SJ008S	<10	<8	--	580	2	<10	<2	67	11	49	15
SJ009S	<10	<8	--	640	2	<10	<2	92	12	68	17
SJ010S	<10	<8	--	380	1	<10	<2	41	7	33	11
SJ011S	<10	<8	--	640	2	<10	<2	130	13	75	19
SJ012S	<10	<8	--	610	3	<10	<2	62	10	53	16
SJ013S	<10	<8	--	580	2	<10	<2	94	10	62	16
SJ014S	<10	<8	--	650	2	<10	<2	120	13	68	17
SJ015S	<10	<8	--	550	2	<10	<2	59	7	43	12
SJ016S	<10	<8	--	1,100	2	<10	<2	97	11	63	17
SJ017S	<10	<8	--	880	2	<10	<2	130	29	77	39
SJ018S	<10	<8	--	440	6	<10	<2	320	8	36	14
SJ019S	<10	<8	--	570	2	<10	<2	68	10	48	18
SJ020S	<10	<8	--	470	1	<10	<2	48	7	21	11
SJ021S	<10	<8	--	580	1	<10	<2	48	11	26	64
SJ022S	<10	<8	--	380	<1	<10	<2	12	2	9	12
SJ023S	<10	<8	--	260	<1	<10	<2	23	2	9	9
SJ024S	<10	<8	--	330	<1	<10	<2	24	3	8	7
SJ025S	<10	<8	--	700	<1	<10	<2	30	5	13	12
SJ026S	<10	<8	--	530	1	<10	<2	53	7	29	16
SJ027S	<10	<8	--	530	1	<10	<2	49	7	28	18
SJ028S	<10	<8	--	500	1	<10	<2	58	8	38	19
SJ029S	<10	<8	--	430	1	<10	<2	50	7	35	19
SJ030S	<10	<8	--	330	<1	<10	<2	35	6	24	14
SJ031S	<10	<8	--	490	1	<10	<2	55	8	39	13
SJ032S	10	<8	--	660	2	<10	<2	110	13	74	11
SJ033S	<10	<8	--	450	1	<10	<2	45	14	44	16
SJ034S	10	<8	--	340	2	<10	<2	56	11	64	25
SJ035S	<10	<8	--	480	1	<10	<2	57	10	37	19
SJ036S	<10	<8	--	640	2	<10	<2	56	12	57	22
SJ037S	<10	<8	--	380	2	<10	<2	56	11	57	20
SJ038S	<10	<8	--	570	1	<10	<2	61	12	51	17
SJ039S	<10	<8	--	600	1	<10	<2	61	13	48	14
SJ040S	<10	<8	--	540	1	<10	<2	56	12	57	18
SJ041S	10	<8	--	540	1	<10	<2	49	9	62	18
SJ042S	10	<8	--	460	1	<10	<2	51	10	51	19
SJ043S	<10	<8	--	690	2	<10	<2	110	11	80	17
SJ044S	<10	<8	--	690	2	<10	<2	97	9	58	13
SJ045S	<10	<8	--	710	2	<10	<2	100	11	71	16

Table 3--Results of analyses of stream-sediment samples from the San Juan National Forest, Colorado.--Continued.

Sample	25 Eu ppm ICP-40	26 Ga ppm ICP-40	27 Ge ppm ICP-40	28 Ho ppm ICP-40	29 La ppm ICP-40	30 Li ppm ICP-40	31 Mo ppm ICP-40	32 Nb ppm ICP-40	33 Nd ppm ICP-40	34 Ni ppm ICP-40	35 Pb ppm ICP-40	36 Sc ppm ICP-40
SJ001S	<2	17	--	<4	91	24	<2	17	73	17	30	8
SJ002S	<2	15	--	<4	38	42	<2	14	34	18	19	8
SJ003S	<2	19	--	<4	59	52	<2	20	55	23	17	13
SJ004S	<2	16	--	<4	52	38	<2	16	45	15	16	8
SJ005S	<2	15	--	<4	36	25	<2	14	32	18	14	10
SJ006S	<2	15	--	<4	49	30	<2	12	40	18	21	9
SJ007S	<2	17	--	<4	52	31	<2	16	44	19	22	11
SJ008S	<2	17	--	<4	34	36	<2	14	30	16	16	9
SJ009S	<2	15	--	<4	54	29	<2	17	43	15	23	7
SJ010S	<2	8	--	<4	20	20	<2	10	17	12	11	4
SJ011S	<2	15	--	<4	70	26	<2	14	59	17	24	8
SJ012S	<2	18	--	<4	31	81	<2	15	29	18	16	10
SJ013S	<2	15	--	<4	54	30	<2	19	46	13	19	7
SJ014S	<2	17	--	<4	64	36	<2	16	54	18	20	9
SJ015S	<2	14	--	<4	30	34	<2	13	26	12	15	6
SJ016S	<2	16	--	<4	51	31	<2	13	46	16	20	8
SJ017S	<2	20	--	<4	74	24	3	21	68	50	32	17
SJ018S	5	14	--	<4	380	44	2	12	300	17	20	9
SJ019S	<2	16	--	<4	36	31	<2	13	33	16	16	8
SJ020S	<2	10	--	<4	27	42	<2	8	24	9	18	5
SJ021S	<2	11	--	<4	28	36	<2	10	24	13	15	6
SJ022S	<2	4	--	<4	8	16	<2	<4	7	4	9	<2
SJ023S	<2	4	--	<4	13	16	<2	<4	10	4	8	2
SJ024S	<2	5	--	<4	13	19	<2	<4	9	3	9	2
SJ025S	<2	6	--	<4	16	23	<2	5	13	6	13	3
SJ026S	<2	8	--	<4	28	20	<2	6	22	11	14	5
SJ027S	<2	10	--	<4	27	20	<2	6	23	11	14	6
SJ028S	<2	10	--	<4	30	20	<2	8	26	12	14	5
SJ029S	<2	9	--	<4	25	21	<2	5	20	12	16	6
SJ030S	<2	6	--	<4	19	17	<2	5	15	9	11	4
SJ031S	<2	12	--	<4	28	22	<2	8	25	11	14	6
SJ032S	<2	17	--	<4	58	22	<2	13	46	17	30	8
SJ033S	<2	15	--	<4	27	42	<2	7	25	16	16	10
SJ034S	<2	14	--	<4	32	48	11	14	25	36	24	9
SJ035S	<2	13	--	<4	35	41	<2	10	32	17	17	8
SJ036S	<2	18	--	<4	32	45	3	12	29	20	17	10
SJ037S	<2	14	--	<4	30	44	5	10	27	29	17	9
SJ038S	<2	17	--	<4	33	37	<2	9	30	14	16	12
SJ039S	<2	17	--	<4	33	37	<2	11	28	15	14	13
SJ040S	<2	15	--	<4	30	43	4	8	29	29	12	10
SJ041S	<2	15	--	<4	28	44	3	7	28	25	13	9
SJ042S	<2	13	--	<4	29	41	<2	6	27	22	16	8
SJ043S	<2	17	--	<4	60	19	<2	14	49	14	24	7
SJ044S	<2	15	--	<4	53	20	<2	10	47	12	17	6
SJ045S	<2	16	--	<4	55	20	<2	13	49	15	19	7

Table 3--Results of analyses of stream-sediment samples from the San Juan National Forest, Colorado.--Continued.

Sample	37 Sn ppm ICP-40	38 Sr ppm ICP-40	39 Ta ppm ICP-40	40 Th ppm ICP-40	41 U ppm ICP-40	42 V ppm ICP-40	43 W ppm ICP-40	44 Y ppm ICP-40	45 Yb ppm ICP-40	46 Zn ppm ICP-40	47 Zr ppm ICP-40	48 Ag ppm ICP-10
SJ001S	<5	94	<40	39	<100	150	--	24	3	57	--	.120
SJ002S	<5	110	<40	13	<100	78	--	19	2	74	--	N
SJ003S	<5	130	<40	21	<100	97	--	31	4	70	--	N
SJ004S	<5	120	<40	18	<100	84	--	25	3	55	--	N
SJ005S	<5	100	<40	12	<100	77	--	19	2	66	--	N
SJ006S	<5	120	<40	17	<100	100	--	20	2	69	--	.240
SJ007S	<5	190	<40	15	<100	150	--	21	2	110	--	N
SJ008S	<5	130	<40	9	<100	83	--	18	2	75	--	N
SJ009S	<5	110	<40	13	<100	110	--	18	2	76	--	N
SJ010S	<5	140	<40	6	<100	60	--	8	1	40	--	N
SJ011S	<5	80	<40	31	<100	130	--	21	2	54	--	N
SJ012S	<5	120	<40	10	<100	67	--	17	2	66	--	N
SJ013S	<5	100	<40	16	<100	110	--	21	2	91	--	N
SJ014S	<5	110	<40	20	<100	110	--	24	3	81	--	N
SJ015S	<5	130	<40	8	<100	60	--	15	2	55	--	N
SJ016S	<5	140	<40	16	<100	89	--	23	2	60	--	N
SJ017S	<5	740	<40	13	<100	180	--	28	3	160	--	.190
SJ018S	<5	90	<40	10	<100	65	--	75	3	520	--	.089
SJ019S	<5	100	<40	11	<100	63	--	16	2	66	--	N
SJ020S	<5	120	<40	8	<100	47	--	15	2	54	--	.081
SJ021S	<5	160	<40	9	<100	80	--	17	2	110	--	.070
SJ022S	<5	48	<40	<4	<100	18	--	4	<1	30	--	N
SJ023S	<5	59	<40	<4	<100	21	--	6	<1	22	--	N
SJ024S	<5	55	<40	<4	<100	19	--	7	<1	20	--	N
SJ025S	<5	66	<40	4	<100	26	--	9	1	33	--	.071
SJ026S	<5	320	<40	7	<100	46	--	13	1	32	--	N
SJ027S	<5	170	<40	7	<100	42	--	15	2	37	--	N
SJ028S	<5	130	<40	10	<100	61	--	16	2	36	--	N
SJ029S	<5	85	<40	6	<100	57	--	14	2	39	--	N
SJ030S	<5	100	<40	6	<100	36	--	10	1	33	--	N
SJ031S	<5	93	<40	9	<100	62	--	12	1	40	--	N
SJ032S	<5	140	<40	16	<100	120	--	19	2	60	--	N
SJ033S	<5	150	<40	9	<100	130	--	16	2	110	--	.082
SJ034S	<5	260	<40	10	<100	170	--	19	2	110	--	.140
SJ035S	<5	170	<40	8	<100	75	--	22	2	130	--	.160
SJ036S	<5	210	<40	12	<100	150	--	16	2	180	--	.120
SJ037S	<5	190	<40	10	<100	160	--	19	2	110	--	.086
SJ038S	<5	330	<40	8	<100	130	--	19	2	85	--	.140
SJ039S	<5	340	<40	8	<100	150	--	19	2	100	--	.074
SJ040S	<5	270	<40	9	<100	180	--	21	2	110	--	.190
SJ041S	<5	230	<40	9	<100	130	--	18	2	94	--	.100
SJ042S	<5	130	<40	9	<100	120	--	16	1	93	--	.096
SJ043S	<5	130	<40	22	<100	140	--	21	2	57	--	N
SJ044S	<5	120	<40	20	<100	90	--	19	2	50	--	N
SJ045S	<5	130	<40	21	<100	110	--	21	2	52	--	N

Table 3--Results of analyses of stream-sediment samples from the San Juan National Forest, Colorado.--Continued.

Sample	49 As ppm ICP-10	50 Au ppm ICP-10	51 Bi ppm ICP-10	52 Cd ppm ICP-10	53 Cu ppm ICP-10	54 Mo ppm ICP-10	55 Pb ppm ICP-10	56 Sb ppm ICP-10	57 Zn ppm ICP-10	58 Ca % ESPEC	59 Fe % ESPEC	60 Mg % ESPEC
SJ001S	120.00	N	N	.110	4.9	.450	22.0	1.40	31.0	.30	7.0	.7
SJ002S	11.00	N	N	.290	17.0	.840	14.0	1.50	61.0	.70	3.0	.5
SJ003S	4.50	N	N	.110	29.0	.550	11.0	N	60.0	1.00	3.0	.7
SJ004S	3.10	N	N	.110	16.0	.400	9.2	.67	51.0	.70	3.0	.7
SJ005S	2.60	N	.73	.160	14.0	.660	9.1	N	53.0	.30	3.0	.7
SJ006S	6.40	N	N	.180	6.6	.650	18.0	.82	36.0	.30	5.0	1.0
SJ007S	4.20	N	N	.130	7.6	.790	19.0	.68	50.0	.70	7.0	1.5
SJ008S	2.10	N	N	.200	10.0	.560	12.0	N	55.0	.50	3.0	1.0
SJ009S	N	N	N	N	1.7	.190	9.0	N	29.0	.30	5.0	.5
SJ010S	1.90	N	N	.084	4.6	.590	7.9	N	19.0	.30	3.0	.5
SJ011S	1.80	N	N	.110	3.2	.480	20.0	.77	26.0	.30	5.0	.7
SJ012S	2.80	N	N	.190	11.0	.510	11.0	.75	51.0	3.00	3.0	1.0
SJ013S	1.70	N	N	.160	5.2	.550	15.0	.68	69.0	.15	3.0	.3
SJ014S	1.70	N	N	.170	6.0	.430	15.0	.67	53.0	.20	3.0	.5
SJ015S	2.70	N	N	.160	9.5	.410	9.6	N	46.0	.70	3.0	.5
SJ016S	2.70	N	N	.130	9.8	.480	14.0	N	50.0	3.00	5.0	.7
SJ017S	5.20	N	N	.370	37.0	2.900	23.0	.83	100.0	5.00	5.0	2.0
SJ018S	10.00	N	N	.870	10.0	3.600	23.0	N	400.0	.20	3.0	.7
SJ019S	5.70	N	N	.210	7.6	.350	14.0	N	45.0	.30	3.0	.7
SJ020S	2.40	N	N	.260	6.2	.700	16.0	N	33.0	.50	2.0	.5
SJ021S	5.60	N	N	.490	51.0	1.600	11.0	N	78.0	.30	2.0	.5
SJ022S	N	N	N	.082	3.9	.071	5.6	N	10.0	.30	1.0	.3
SJ023S	N	N	N	.055	1.7	.130	5.2	N	8.7	.07	1.0	.2
SJ024S	.88	N	N	.076	18.0	.140	5.7	N	9.9	.10	1.5	.2
SJ025S	2.40	N	N	.120	6.3	.580	8.7	N	22.0	1.00	1.5	.5
SJ026S	N	N	N	.092	5.5	.170	8.1	N	17.0	2.00	1.5	.5
SJ027S	N	N	N	.100	3.1	.210	8.2	N	18.0	5.00	2.0	.5
SJ028S	N	N	N	.090	6.5	.240	9.6	N	19.0	1.50	3.0	.7
SJ029S	.75	N	N	.077	4.7	.250	11.0	N	20.0	1.50	3.0	.7
SJ030S	N	N	N	.088	3.3	.170	6.8	N	16.0	3.00	2.0	.5
SJ031S	1.00	N	N	.094	3.7	.320	11.0	N	22.0	.70	3.0	.5
SJ032S	1.00	N	N	.110	4.6	.380	21.0	N	39.0	1.50	7.0	.7
SJ033S	4.50	N	N	.460	13.0	1.700	19.0	.80	98.0	1.00	5.0	1.0
SJ034S	11.00	N	N	1.700	23.0	11.000	20.0	2.00	100.0	5.00	3.0	.7
SJ035S	4.50	N	N	.520	12.0	1.600	16.0	N	89.0	.70	2.0	.5
SJ036S	5.00	N	N	.880	20.0	2.100	21.0	1.10	150.0	.30	3.0	.7
SJ037S	6.80	N	N	.390	14.0	1.300	16.0	.90	66.0	1.00	3.0	1.5
SJ038S	7.70	N	N	1.300	18.0	6.500	18.0	1.30	91.0	2.00	3.0	1.0
SJ039S	4.50	N	N	.350	13.0	1.900	14.0	.67	75.0	1.50	7.0	1.5
SJ040S	5.90	N	N	1.700	15.0	6.300	16.0	1.90	88.0	2.00	3.0	1.0
SJ041S	7.10	N	N	.980	18.0	4.000	16.0	.90	78.0	5.00	3.0	1.0
SJ042S	7.80	N	N	.880	15.0	2.600	16.0	.85	70.0	.30	3.0	.7
SJ043S	1.40	N	N	.079	5.6	.350	19.0	N	30.0	.70	5.0	.7
SJ044S	1.50	N	N	.140	7.1	.310	14.0	N	33.0	1.50	3.0	.7
SJ045S	1.20	N	N	.110	6.2	.300	14.0	N	31.0	.70	5.0	.7

Table 3--Results of analyses of stream-sediment samples from the San Juan National Forest, Colorado.--Continued.

Sample	61 Na ppm ESPEC	62 P ppm ESPEC	63 Ti ppm ESPEC	64 Ag ppm ESPEC	65 As ppm ESPEC	66 Au ppm ESPEC	67 B ppm ESPEC	68 Ba ppm ESPEC	69 Be ppm ESPEC	70 Bi ppm ESPEC	71 Cd ppm ESPEC
SJ001S	1.5	<.2	.7	N	<200	N	30	700	1.5	N	N
SJ002S	1.5	<.2	.7	N	N	N	30	700	2.0	N	N
SJ003S	1.5	.2	.7	N	N	N	30	1,000	3.0	N	N
SJ004S	1.5	.2	.5	N	N	N	30	700	2.0	N	N
SJ005S	1.5	<.2	.5	N	N	N	70	700	2.0	N	N
SJ006S	.7	<.2	.7	N	N	N	50	700	1.5	N	N
SJ007S	1.5	N	1.0	N	N	N	50	1,000	1.5	N	N
SJ008S	2.0	<.2	.7	N	N	N	30	1,000	1.5	N	N
SJ009S	1.0	<.2	.5	N	N	N	30	700	1.5	N	N
SJ010S	.7	<.2	.7	N	N	N	30	700	<1.0	N	N
SJ011S	.7	<.2	.5	N	N	N	50	1,000	1.0	N	N
SJ012S	3.0	N	1.0	N	N	N	50	1,500	1.5	N	N
SJ013S	.7	.2	.5	N	N	N	30	500	2.0	N	N
SJ014S	1.0	<.2	.5	N	N	N	30	500	2.0	N	N
SJ015S	2.0	<.2	.7	N	N	N	30	700	2.0	N	N
SJ016S	1.5	<.2	.7	N	N	N	50	1,500	2.0	N	N
SJ017S	2.0	.5	>1.0	N	N	N	15	1,000	1.5	N	N
SJ018S	.7	<.2	.5	N	N	N	70	700	5.0	N	N
SJ019S	1.5	<.2	.7	N	N	N	30	700	2.0	N	N
SJ020S	.7	N	.5	N	N	N	50	700	1.5	N	N
SJ021S	.5	<.2	.5	N	N	N	30	700	1.0	N	N
SJ022S	N	<.2	.2	N	N	N	30	700	<1.0	N	N
SJ023S	<.2	<.2	.3	N	N	N	30	500	<1.0	N	N
SJ024S	<.2	<.2	.3	N	N	N	30	500	<1.0	N	N
SJ025S	.5	N	.5	N	N	N	30	1,500	1.0	N	N
SJ026S	1.0	<.2	.3	N	N	N	50	700	<1.0	N	N
SJ027S	1.5	<.2	.7	N	N	N	30	700	1.0	N	N
SJ028S	1.5	<.2	.7	N	N	N	30	700	1.0	N	N
SJ029S	1.5	<.2	.7	N	N	N	50	1,000	<1.0	N	N
SJ030S	1.0	<.2	.5	N	N	N	30	500	1.0	N	N
SJ031S	1.0	<.2	.7	N	N	N	30	700	1.0	N	N
SJ032S	1.5	<.2	.7	N	N	N	20	1,000	1.5	N	N
SJ033S	1.5	<.2	.7	N	N	N	50	700	1.0	N	N
SJ034S	1.0	<.2	.3	N	N	N	50	300	1.0	N	N
SJ035S	1.0	<.2	.5	N	N	N	30	500	1.5	N	N
SJ036S	1.5	<.2	.3	N	N	N	30	500	1.0	N	N
SJ037S	1.5	<.2	.5	N	N	N	50	700	1.5	N	N
SJ038S	.7	<.2	.5	N	N	N	70	500	1.5	N	N
SJ039S	1.5	<.2	.7	N	N	N	70	1,000	1.0	N	N
SJ040S	1.0	<.2	.5	<.5	N	N	100	1,000	1.5	N	N
SJ041S	1.0	<.2	.5	N	N	N	50	700	1.5	N	N
SJ042S	1.0	<.2	.5	N	N	N	50	500	1.0	N	N
SJ043S	1.5	<.2	.7	N	N	N	20	1,000	1.0	N	N
SJ044S	2.0	<.2	.5	N	N	N	30	700	1.0	N	N
SJ045S	1.5	<.2	.5	N	N	N	20	700	1.0	N	N

Table 3--Results of analyses of stream-sediment samples from the San Juan National Forest, Colorado.--Continued.

Sample	72 Co ppm ESPEC	73 Cr ppm ESPEC	74 Cu ppm ESPEC	75 Ga ppm ESPEC	76 Ge ppm ESPEC	77 La ppm ESPEC	78 Mn ppm ESPEC	79 Mo ppm ESPEC	80 Nb ppm ESPEC	81 Ni ppm ESPEC	82 Pb ppm ESPEC	83 Sb ppm ESPEC
SJ001S	20	100	20	50	N	100	700	N	20	20	50	N
SJ002S	20	100	20	50	N	100	700	N	20	30	50	N
SJ003S	20	70	20	50	N	100	500	N	20	30	50	N
SJ004S	10	100	20	50	N	70	300	N	20	30	50	N
SJ005S	15	70	15	50	N	50	500	N	<20	20	30	N
SJ006S	20	100	20	30	N	70	700	N	20	30	30	N
SJ007S	20	100	20	50	N	100	1,000	N	20	30	50	N
SJ008S	15	100	15	50	N	70	1,000	N	20	20	30	N
SJ009S	10	70	20	50	N	70	700	N	20	20	50	N
SJ010S	10	50	15	15	N	<50	700	N	20	15	15	N
SJ011S	20	150	20	50	N	70	500	N	20	30	30	N
SJ012S	15	150	15	50	N	100	1,000	N	20	20	70	N
SJ013S	<10	30	15	20	N	70	500	N	20	15	20	N
SJ014S	15	70	20	30	N	70	700	N	<20	30	30	N
SJ015S	10	70	20	50	N	70	700	N	20	20	50	N
SJ016S	15	100	20	50	N	100	700	N	20	30	30	N
SJ017S	30	100	30	50	N	150	1,000	<5	20	70	50	N
SJ018S	10	70	15	30	N	700	1,500	5	20	30	30	N
SJ019S	10	100	20	50	N	70	500	N	20	30	50	N
SJ020S	<10	30	15	30	N	70	700	N	<20	15	50	N
SJ021S	10	30	30	20	N	50	700	<5	<20	20	15	N
SJ022S	N	20	15	<5	N	<50	150	N	<20	<5	10	N
SJ023S	N	100	10	5	N	<50	150	N	<20	N	15	N
SJ024S	N	100	10	7	N	<50	300	N	<20	<5	15	N
SJ025S	<10	30	15	15	N	50	1,000	N	20	5	20	N
SJ026S	<10	70	20	20	N	<50	300	N	<20	15	20	N
SJ027S	<10	50	15	30	N	50	500	N	20	15	20	N
SJ028S	10	70	20	30	N	70	700	N	20	15	15	N
SJ029S	10	70	20	30	N	70	700	N	20	15	20	N
SJ030S	<10	30	15	20	N	50	700	N	20	7	15	N
SJ031S	10	70	15	30	N	50	500	N	30	10	30	N
SJ032S	15	100	15	50	N	300	500	N	30	20	30	N
SJ033S	15	70	20	50	N	50	1,000	N	20	15	30	N
SJ034S	10	100	20	50	N	50	300	7	<20	20	30	N
SJ035S	10	70	15	20	N	50	700	N	20	15	20	N
SJ036S	10	50	20	20	N	<50	700	N	<20	15	20	N
SJ037S	10	70	20	30	N	50	700	N	<20	15	20	N
SJ038S	10	70	30	20	N	50	500	7	<20	30	20	N
SJ039S	20	100	30	50	N	50	700	N	<20	30	20	N
SJ040S	15	100	20	30	N	50	700	7	<20	30	30	N
SJ041S	10	100	20	30	N	<50	300	7	<20	30	30	N
SJ042S	10	70	20	20	N	<50	700	5	<20	30	30	N
SJ043S	10	200	20	50	N	70	700	N	20	20	50	N
SJ044S	<10	70	20	50	N	50	700	N	<20	20	50	N
SJ045S	<10	70	15	50	N	<50	700	N	<20	15	30	N

Table 3--Results of analyses of stream-sediment samples from the San Juan National Forest, Colorado.--Continued.

Sample	84 Sc ppm ESPEC	85 Sn ppm ESPEC	86 Sr ppm ESPEC	87 Th ppm ESPEC	88 V ppm ESPEC	89 W ppm ESPEC	90 Y ppm ESPEC	91 Zn ppm ESPEC	92 Zr ppm ESPEC	93 Au ppm GFAA	94 Th ppm DNC	95 U ppm DNC
SJ001S	7	N	150	N	150	N	70	N	500	.038	43.10	8.390
SJ002S	10	N	150	N	100	N	150	N	700	N	14.80	6.370
SJ003S	10	N	150	N	100	N	70	N	700	N	24.10	9.920
SJ004S	7	N	150	N	100	N	70	N	1,000	N	23.00	8.620
SJ005S	7	N	100	N	100	N	50	N	300	N	12.10	7.050
SJ006S	7	N	150	N	100	N	50	<200	500	.006	17.70	5.390
SJ007S	10	N	300	N	150	N	50	N	500	N	15.80	5.120
SJ008S	7	N	200	N	100	N	30	N	300	N	12.00	5.150
SJ009S	7	N	<100	N	100	N	50	<200	500	N	16.30	5.760
SJ010S	<5	N	200	N	100	N	15	N	500	N	6.33	2.830
SJ011S	7	N	N	N	150	N	70	N	700	N	29.20	7.860
SJ012S	10	N	500	N	150	N	70	N	300	N	10.70	5.020
SJ013S	5	N	<100	N	100	N	30	N	500	N	15.60	6.600
SJ014S	7	N	<100	N	100	N	50	N	300	N	19.00	6.010
SJ015S	7	N	300	N	150	N	70	N	500	N	11.50	5.750
SJ016S	7	N	300	N	150	N	200	N	700	.004	15.00	7.370
SJ017S	15	N	700	N	200	N	70	N	700	<.002	15.00	6.450
SJ018S	7	N	150	N	150	N	100	500	200	N	9.63	5.670
SJ019S	7	N	150	N	100	N	50	N	300	N	13.20	5.740
SJ020S	7	N	300	N	100	N	30	N	500	N	6.30	3.130
SJ021S	7	N	300	N	150	N	20	N	500	<.002	9.51	2.790
SJ022S	N	N	<100	N	50	N	<10	N	500	N	2.00	.802
SJ023S	<5	N	<100	N	50	N	15	N	700	N	2.80	1.500
SJ024S	<5	N	<100	N	50	N	15	N	500	N	4.00	1.470
SJ025S	7	N	300	N	100	N	30	N	500	N	5.40	1.940
SJ026S	5	N	300	N	50	N	20	N	500	N	9.42	3.470
SJ027S	7	N	300	N	70	N	30	N	500	N	8.85	3.110
SJ028S	7	N	200	N	100	N	30	N	700	N	9.90	4.180
SJ029S	7	N	200	N	100	N	30	N	1,000	N	10.50	3.400
SJ030S	5	N	150	N	70	N	15	N	700	N	7.73	2.380
SJ031S	7	N	150	N	150	N	30	N	700	N	13.80	4.150
SJ032S	7	N	150	N	150	N	70	N	700	.006	22.10	6.660
SJ033S	7	N	200	N	150	N	20	<200	300	N	8.07	3.220
SJ034S	7	N	300	N	200	N	20	<200	100	N	14.90	6.530
SJ035S	7	N	150	N	100	N	20	N	300	N	10.90	4.370
SJ036S	7	N	150	N	150	N	15	<200	150	N	7.80	4.030
SJ037S	7	N	300	N	200	N	20	N	100	<.002	13.20	3.850
SJ038S	7	N	200	N	200	N	30	N	200	N	9.89	5.460
SJ039S	15	N	500	N	300	N	50	N	700	N	9.65	3.750
SJ040S	7	N	500	N	300	N	30	N	300	N	10.50	5.730
SJ041S	7	N	300	N	150	N	30	N	200	.003	10.00	5.450
SJ042S	7	N	150	N	100	N	20	N	200	<.002	9.00	4.560
SJ043S	7	N	200	N	150	N	70	N	700	<.002	27.60	6.970
SJ044S	7	N	150	N	100	N	50	N	700	.037	19.10	6.350
SJ045S	7	N	150	N	150	N	50	N	500	<.002	22.50	6.610

Table 3--Results of analyses of stream-sediment samples from the San Juan National Forest, Colorado.--Continued.

1 Sample	2 Latitude	3 Longtude	4 Al % ICP-40	5 Ca % ICP-40	6 Fe % ICP-40	7 Al % ICP-40	8 Mg % ICP-40	9 Na % ICP-40	10 P % ICP-40	11 Ti % ICP-40	12 Mn ppm ICP-40	13 Ag ppm ICP-40
SJ046S	37 45 42	108 0 2	5.3	2.10	2.30	1.60	1.20	.59	.07	.22	260	<2
SJ047S	37 45 9	108 0 38	2.9	.22	1.20	1.20	.28	.16	.03	.13	340	<2
SJ048S	37 47 42	108 1 58	6.4	.71	2.90	1.60	.84	.70	.09	.27	410	<2
SJ049S	37 47 57	108 3 46	4.5	.49	2.00	1.50	.50	.36	.06	.21	450	<2
SJ050S	37 47 44	108 3 54	6.6	.75	3.00	1.80	.96	.63	.09	.29	300	<2
SJ051S	37 23 6	107 16 3	3.5	1.30	1.70	1.50	.39	.17	.03	.19	330	<2
SJ052S	37 23 51	107 14 0	7.6	3.60	12.00	1.30	1.10	2.10	.16	1.20	1,300	<2
SJ053S	37 26 35	107 25 48	4.7	.89	2.70	1.60	.85	.64	.06	.29	580	<2
SJ054S	37 27 18	107 23 51	5.7	.89	8.60	1.80	.57	.70	.10	.49	770	<2
SJ055S	37 28 2	107 22 45	6.1	.46	5.20	.79	.25	.21	.05	.47	370	<2
SJ056S	37 28 10	107 22 39	4.1	3.70	4.20	1.60	.69	.47	.06	.39	830	<2
SJ057S	37 28 35	107 21 52	4.7	1.50	16.00	1.70	.77	.97	.23	1.50	1,300	<2
SJ058S	37 29 5	107 20 24	6.0	2.00	8.10	2.20	.99	1.40	.12	.97	1,400	<2
SJ059S	37 27 32	107 21 54	5.5	1.40	7.80	1.90	.76	.90	.12	.74	990	<2
SJ060S	37 27 32	107 22 1	4.2	1.40	4.90	1.20	.35	.31	.03	.39	500	<2
SJ061S	37 30 4	107 19 3	5.3	2.00	10.00	1.80	.96	1.40	.20	2.30	2,300	<2
SJ062S	37 30 15	107 18 7	3.9	1.70	12.00	1.20	.85	.72	.18	2.00	2,000	<2
SJ063S	37 24 49	106 45 49	5.4	2.40	23.00	1.00	1.20	1.40	.17	1.90	2,700	<2
SJ064S	37 24 52	106 44 13	7.5	1.60	7.80	2.20	.89	.97	.19	.66	1,200	<2
SJ065S	37 24 58	106 44 15	7.6	2.20	8.70	1.90	.94	1.50	.19	.71	1,300	<2
SJ066S	37 25 17	106 46 12	7.9	3.10	9.40	1.60	1.20	2.10	.15	.83	1,600	<2
SJ067S	37 25 13	106 46 57	8.1	2.50	6.40	2.40	.88	2.20	.12	.78	1,000	<2
SJ068S	37 25 5	106 47 50	8.0	2.20	7.50	2.00	.85	2.10	.11	.74	1,000	<2
SJ069S	37 24 36	106 48 58	7.8	2.80	7.50	1.80	1.20	1.90	.12	.84	1,100	<2
SJ070S	37 23 40	108 9 57	4.8	.54	1.90	1.30	.42	.41	.06	.20	430	<2
SJ071S	37 24 23	108 9 55	6.5	.50	2.40	1.70	.83	.79	.05	.27	240	<2
SJ072S	37 23 53	108 10 0	5.3	1.10	1.90	1.40	.50	1.10	.07	.22	610	<2
SJ073S	37 24 8	108 11 53	7.0	2.00	3.00	1.60	.88	.63	.08	.28	210	<2
SJ074S	37 25 2	108 9 8	4.6	.76	1.90	1.20	.53	.34	.06	.19	390	<2
SJ075S	37 37 19	108 8 44	2.3	.51	1.00	1.10	.31	.19	.02	.10	220	<2
SJ076S	37 37 23	108 8 45	2.6	.37	1.20	.88	.25	.09	.03	.13	340	<2
SJ077S	37 37 4	108 8 50	3.8	1.50	1.50	1.60	.57	.39	.03	.16	270	<2
SJ078S	37 36 12	108 9 12	2.3	.59	.92	1.10	.23	.22	.02	.11	230	<2
SJ079S	37 30 11	108 5 8	2.4	.44	.86	1.00	.27	.13	.02	.12	310	<2
SJ080S	37 29 53	108 5 6	4.4	.51	1.80	2.00	.52	.38	.05	.18	720	<2
SJ081S	37 29 58	108 4 55	2.6	.31	1.80	1.10	.34	.22	.03	.14	310	<2
SJ082S	37 30 59	108 6 29	4.9	.60	2.60	1.40	.60	.48	.06	.24	460	<2
SJ083S	37 26 31	108 6 55	6.6	.30	4.40	1.10	.26	.19	.09	.09	1,500	<2
SJ084S	37 26 19	108 7 53	4.7	.49	1.70	1.30	.53	.60	.05	.18	360	<2
SJ085S	37 23 57	108 13 4	6.5	3.80	3.10	1.60	.80	.98	.07	.28	570	<2
SJ086S	37 24 47	108 12 50	6.0	1.60	2.60	1.70	.73	1.20	.13	.29	750	<2
SJ087S	37 25 13	108 13 6	3.9	.31	1.40	1.60	.36	.20	.03	.15	590	<2
SJ088S	37 41 23	108 10 21	3.6	.31	1.80	1.40	.32	.31	.04	.17	520	<2
SJ089S	37 41 18	108 10 21	3.8	.26	1.30	1.50	.34	.35	.03	.15	140	<2
SJ090S	37 41 15	108 10 43	5.7	1.80	2.60	1.60	.67	.81	.10	.27	500	<2

Table 3--Results of analyses of stream-sediment samples from the San Juan National Forest, Colorado.--Continued.

Sample	14 As ppm ICP-40	15 Au ppm ICP-40	16 B ppm ICP-40	17 Ba ppm ICP-40	18 Be ppm ICP-40	19 Bi ppm ICP-40	20 Cd ppm ICP-40	21 Ce ppm ICP-40	22 Co ppm ICP-40	23 Cr ppm ICP-40	24 Cu ppm ICP-40
SJ046S	10	<8	--	510	1	<10	<2	38	8	49	16
SJ047S	10	<8	--	500	<1	<10	<2	26	4	19	8
SJ048S	<10	<8	--	420	1	<10	<2	59	9	58	15
SJ049S	25	<8	--	580	1	<10	<2	39	7	35	12
SJ050S	10	<8	--	510	2	<10	<2	56	10	65	21
SJ051S	<10	<8	--	460	1	<10	<2	38	6	21	8
SJ052S	<10	<8	--	660	1	<10	<2	94	31	43	11
SJ053S	<10	<8	--	450	1	<10	<2	88	9	44	13
SJ054S	10	<8	--	510	2	<10	<2	130	16	96	16
SJ055S	24	<8	--	210	2	<10	<2	92	13	91	7
SJ056S	<10	<8	--	370	2	<10	<2	95	11	34	11
SJ057S	20	<8	--	400	3	<10	<2	240	22	78	21
SJ058S	<10	<8	--	610	3	<10	<2	220	17	27	14
SJ059S	10	<8	--	480	2	<10	<2	150	17	51	15
SJ060S	<10	<8	--	340	1	<10	<2	75	9	62	12
SJ061S	10	<8	--	520	3	<10	<2	190	18	47	13
SJ062S	10	<8	--	440	2	<10	<2	150	17	65	13
SJ063S	<10	<8	--	490	1	<10	<2	63	47	66	23
SJ064S	<10	<8	--	420	2	<10	<2	79	20	22	48
SJ065S	<10	<8	--	1,100	1	<10	<2	70	20	21	19
SJ066S	<10	<8	--	720	1	<10	<2	66	19	28	17
SJ067S	<10	<8	--	950	1	<10	<2	76	14	28	16
SJ068S	<10	<8	--	850	1	<10	<2	80	18	27	16
SJ069S	<10	<8	--	830	1	<10	<2	77	20	52	20
SJ070S	<10	<8	--	390	1	<10	<2	48	8	29	15
SJ071S	<10	<8	--	360	2	<10	<2	62	8	44	14
SJ072S	<10	<8	--	450	1	<10	<2	58	6	22	12
SJ073S	10	<8	--	370	2	<10	<2	64	10	55	17
SJ074S	10	<8	--	280	1	<10	<2	44	7	37	13
SJ075S	<10	<8	--	360	<1	<10	<2	20	3	14	10
SJ076S	<10	<8	--	880	<1	<10	<2	29	5	13	13
SJ077S	<10	<8	--	370	1	<10	<2	34	6	24	10
SJ078S	<10	<8	--	330	<1	<10	<2	23	3	10	8
SJ079S	<10	<8	--	360	<1	<10	<2	26	3	10	7
SJ080S	<10	<8	--	490	1	<10	<2	37	6	24	11
SJ081S	<10	<8	--	520	<1	<10	<2	30	4	20	11
SJ082S	<10	<8	--	400	1	<10	<2	43	8	34	13
SJ083S	77	<8	--	290	2	<10	<2	52	41	19	2,200
SJ084S	10	<8	--	350	1	<10	<2	43	6	27	22
SJ085S	10	<8	--	480	1	<10	<2	71	13	43	22
SJ086S	<10	<8	--	510	1	<10	<2	69	10	30	19
SJ087S	<10	<8	--	600	1	<10	<2	41	6	14	10
SJ088S	<10	<8	--	610	1	<10	<2	33	6	21	9
SJ089S	<10	<8	--	410	1	<10	<2	33	5	19	10
SJ090S	10	<8	--	370	1	<10	<2	68	10	40	18

Table 3--Results of analyses of stream-sediment samples from the San Juan National Forest, Colorado.--Continued.

Sample	25 Eu ppm ICP-40	26 Ga ppm ICP-40	27 Ge ppm ICP-40	28 Ho ppm ICP-40	29 La ppm ICP-40	30 Li ppm ICP-40	31 Mo ppm ICP-40	32 Nb ppm ICP-40	33 Nd ppm ICP-40	34 Ni ppm ICP-40	35 Pb ppm ICP-40	36 Sc ppm ICP-40
SJ046S	<2	11	--	<4	21	43	<2	6	19	17	17	7
SJ047S	<2	8	--	<4	16	29	<2	<4	17	7	13	3
SJ048S	<2	16	--	<4	34	45	<2	8	30	21	13	9
SJ049S	<2	8	--	<4	24	48	2	9	18	13	19	5
SJ050S	<2	16	--	<4	31	47	3	8	26	24	19	9
SJ051S	<2	8	--	<4	21	33	<2	4	18	8	12	5
SJ052S	<2	25	--	<4	48	11	<2	16	51	11	14	15
SJ053S	<2	11	--	<4	44	27	<2	4	36	16	13	8
SJ054S	<2	15	--	<4	71	61	<2	10	57	22	21	14
SJ055S	<2	15	--	<4	46	100	<2	13	40	31	27	12
SJ056S	<2	12	--	<4	47	39	<2	<4	45	13	20	11
SJ057S	2	19	--	6	110	45	3	31	97	13	27	27
SJ058S	2	20	--	<4	110	45	3	12	110	12	25	28
SJ059S	<2	16	--	<4	73	57	<2	10	68	17	26	18
SJ060S	<2	10	--	<4	36	52	<2	<4	32	17	21	9
SJ061S	2	20	--	5	93	42	<2	63	100	9	28	29
SJ062S	2	16	--	4	63	34	<2	51	86	8	20	29
SJ063S	<2	34	--	<4	35	11	<2	6	35	19	20	20
SJ064S	<2	19	--	<4	41	12	<2	9	38	12	34	11
SJ065S	<2	21	--	<4	36	16	<2	9	34	7	16	11
SJ066S	<2	20	--	<4	34	17	<2	9	33	9	16	12
SJ067S	<2	21	--	<4	41	16	<2	13	37	10	17	10
SJ068S	<2	20	--	<4	43	17	<2	10	37	9	15	11
SJ069S	<2	21	--	<4	41	20	<2	11	36	13	15	13
SJ070S	<2	11	--	<4	28	39	<2	6	24	15	15	6
SJ071S	<2	14	--	<4	34	29	<2	10	24	10	12	8
SJ072S	<2	12	--	<4	30	28	<2	7	24	8	11	5
SJ073S	<2	16	--	<4	34	40	3	11	29	23	18	9
SJ074S	<2	11	--	<4	24	33	<2	7	21	15	13	6
SJ075S	<2	4	--	<4	12	16	<2	<4	9	5	10	2
SJ076S	<2	5	--	<4	16	22	<2	4	13	5	11	3
SJ077S	<2	8	--	<4	19	20	<2	<4	17	10	11	5
SJ078S	<2	4	--	<4	13	17	<2	<4	9	3	9	2
SJ079S	<2	5	--	<4	14	16	<2	<4	12	4	10	2
SJ080S	<2	10	--	<4	22	21	<2	5	18	9	15	5
SJ081S	<2	5	--	<4	17	17	<2	<4	14	6	12	3
SJ082S	<2	12	--	<4	24	31	2	7	20	13	15	7
SJ083S	2	6	--	<4	28	14	7	5	37	15	10	4
SJ084S	<2	10	--	<4	24	27	<2	6	20	9	13	5
SJ085S	<2	15	--	<4	35	34	3	9	31	23	21	8
SJ086S	<2	14	--	<4	38	31	<2	9	32	13	15	7
SJ087S	<2	8	--	<4	23	51	<2	5	19	7	11	4
SJ088S	<2	8	--	<4	19	26	<2	6	16	8	12	4
SJ089S	<2	8	--	<4	18	29	<2	5	14	8	11	4
SJ090S	<2	13	--	<4	34	34	<2	9	29	20	18	7

Table 3--Results of analyses of stream-sediment samples from the San Juan National Forest, Colorado.--Continued.

Sample	37 Sn ppm ICP-40	38 Sr ppm ICP-40	39 Ta ppm ICP-40	40 Th ppm ICP-40	41 U ppm ICP-40	42 V ppm ICP-40	43 W ppm ICP-40	44 Y ppm ICP-40	45 Yb ppm ICP-40	46 Zn ppm ICP-40	47 Zr ppm ICP-40	48 Ag ppm ICP-10
SJ046S	<5	120	<40	4	<100	81	--	14	1	79	--	.076
SJ047S	<5	72	<40	7	<100	28	--	7	<1	46	--	N
SJ048S	<5	120	<40	12	<100	110	--	17	2	87	--	.110
SJ049S	<5	130	<40	5	<100	56	--	11	1	93	--	N
SJ050S	<5	130	<40	10	<100	130	--	17	2	110	--	.090
SJ051S	<5	120	<40	6	<100	33	--	12	1	31	--	N
SJ052S	<5	610	<40	8	<100	370	--	32	4	180	--	N
SJ053S	<5	89	<40	14	<100	60	--	19	2	52	--	N
SJ054S	<5	92	<40	23	<100	200	--	44	6	75	--	.069
SJ055S	<5	62	<40	15	<100	100	--	24	3	50	--	N
SJ056S	<5	79	<40	13	<100	71	--	37	4	84	--	.087
SJ057S	<5	92	<40	46	<100	300	--	130	21	140	--	.092
SJ058S	<5	120	<40	27	<100	110	--	100	13	140	--	.071
SJ059S	<5	110	<40	27	<100	140	--	63	8	110	--	.070
SJ060S	<5	72	<40	13	<100	91	--	26	4	48	--	N
SJ061S	<5	120	<40	41	<100	170	--	110	15	150	--	N
SJ062S	<5	110	<40	19	<100	200	--	96	13	110	--	N
SJ063S	<5	370	<40	6	<100	660	--	18	3	380	--	N
SJ064S	<5	330	<40	7	<100	180	--	18	2	170	--	.210
SJ065S	<5	360	<40	<4	<100	180	--	19	2	190	--	.094
SJ066S	<5	660	<40	<4	<100	210	--	20	2	190	--	N
SJ067S	<5	590	<40	7	<100	170	--	20	2	120	--	.069
SJ068S	<5	500	<40	6	<100	190	--	19	2	130	--	N
SJ069S	<5	580	<40	8	<100	210	--	21	2	140	--	N
SJ070S	<5	160	<40	7	<100	46	--	15	1	64	--	.150
SJ071S	<5	130	<40	12	<100	80	--	13	1	57	--	.067
SJ072S	<5	230	<40	6	<100	52	--	14	1	51	--	.110
SJ073S	<5	150	<40	11	<100	110	--	16	1	85	--	.110
SJ074S	<5	99	<40	8	<100	65	--	13	1	78	--	.110
SJ075S	<5	77	<40	<4	<100	26	--	5	<1	23	--	N
SJ076S	<5	61	<40	<4	<100	25	--	7	<1	34	--	.090
SJ077S	<5	100	<40	5	<100	34	--	10	<1	33	--	N
SJ078S	<5	97	<40	<4	<100	20	--	6	<1	21	--	.068
SJ079S	<5	65	<40	4	<100	19	--	6	<1	26	--	.075
SJ080S	<5	110	<40	6	<100	50	--	12	1	63	--	.130
SJ081S	<5	66	<40	4	<100	40	--	7	<1	33	--	.082
SJ082S	<5	120	<40	8	<100	76	--	13	2	72	--	.090
SJ083S	<5	71	<40	<4	<100	47	--	50	3	260	--	N
SJ084S	<5	110	<40	7	<100	55	--	12	1	62	--	.210
SJ085S	<5	250	<40	11	<100	94	--	18	2	77	--	.095
SJ086S	<5	260	<40	8	<100	82	--	19	2	75	--	.120
SJ087S	<5	100	<40	5	<100	29	--	9	<1	100	--	.089
SJ088S	<5	71	<40	4	<100	37	--	6	<1	40	--	.084
SJ089S	<5	74	<40	<4	<100	32	--	6	<1	33	--	.100
SJ090S	<5	180	<40	10	<100	87	--	18	2	79	--	.110

Table 3--Results of analyses of stream-sediment samples from the San Juan National Forest, Colorado.--Continued.

Sample	49 As ppm ICP-10	50 Au ppm ICP-10	51 Bi ppm ICP-10	52 Cd ppm ICP-10	53 Cu ppm ICP-10	54 Mo ppm ICP-10	55 Pb ppm ICP-10	56 Sb ppm ICP-10	57 Zn ppm ICP-10	58 Ca % ESPEC	59 Fe % ESPEC	60 Mg % ESPEC
SJ046S	6.90	N	N	.370	12.0	1.400	14.0	N	59.0	1.50	3.0	1.0
SJ047S	11.00	N	N	.140	3.7	.370	10.0	N	27.0	.15	1.5	.3
SJ048S	6.20	N	N	.430	14.0	3.600	17.0	N	71.0	.30	3.0	.7
SJ049S	24.00	N	N	.380	7.2	1.200	16.0	1.70	71.0	.30	2.0	.5
SJ050S	12.00	N	N	.660	18.0	3.600	19.0	.99	96.0	.50	3.0	1.0
SJ051S	1.90	N	N	.120	5.8	.360	6.8	N	21.0	.70	1.5	.3
SJ052S	N	N	N	.090	8.7	.960	6.4	N	98.0	2.00	7.0	.7
SJ053S	1.70	N	.77	.210	8.6	.380	10.0	N	44.0	.50	2.0	.7
SJ054S	10.00	N	.68	.240	14.0	1.200	20.0	.70	57.0	.50	7.0	.5
SJ055S	15.00	N	N	.190	4.9	.710	25.0	.76	35.0	.30	5.0	.3
SJ056S	8.10	N	.73	.410	9.4	.900	18.0	.85	68.0	1.50	3.0	.5
SJ057S	9.40	N	.78	.370	18.0	2.800	20.0	N	100.0	.50	10.0	.5
SJ058S	5.20	N	.70	.330	11.0	2.500	17.0	N	110.0	.70	7.0	.7
SJ059S	9.40	N	N	.380	13.0	1.700	20.0	N	92.0	.50	7.0	.5
SJ060S	8.70	N	N	.230	7.1	.640	17.0	N	36.0	.70	5.0	.3
SJ061S	3.00	N	N	.170	6.3	1.100	20.0	N	87.0	.70	7.0	.7
SJ062S	4.40	N	N	.160	8.3	1.100	15.0	N	64.0	.50	7.0	.5
SJ063S	.93	N	.92	.170	19.0	1.100	16.0	N	220.0	.70	15.0	.7
SJ064S	5.60	N	1.60	.350	46.0	1.600	33.0	.91	140.0	.70	5.0	.7
SJ065S	1.60	N	N	.160	19.0	1.000	13.0	N	170.0	.70	3.0	.7
SJ066S	1.00	N	N	.120	14.0	.610	11.0	N	160.0	1.50	7.0	.7
SJ067S	N	N	N	.130	13.0	.950	11.0	N	70.0	1.00	5.0	.7
SJ068S	N	N	N	.110	14.0	.580	11.0	N	96.0	.70	5.0	.7
SJ069S	.96	N	N	.100	16.0	1.100	11.0	N	110.0	1.50	7.0	.7
SJ070S	4.30	N	N	.320	11.0	.710	15.0	.68	50.0	.20	1.5	.3
SJ071S	4.40	N	.84	.120	10.0	1.400	15.0	N	52.0	.20	2.0	.7
SJ072S	2.60	N	N	.160	8.5	.590	10.0	N	37.0	.50	2.0	.3
SJ073S	8.00	N	.82	.300	16.0	3.900	19.0	N	88.0	.70	3.0	.5
SJ074S	8.40	N	N	.440	9.0	1.800	16.0	.72	71.0	.30	2.0	.5
SJ075S	.68	N	N	.081	2.2	.190	6.2	N	13.0	.30	1.0	.3
SJ076S	2.80	N	N	.130	9.1	.600	9.2	N	23.0	.20	1.5	.2
SJ077S	1.00	N	N	.079	3.2	.210	8.0	N	18.0	.70	2.0	.7
SJ078S	.72	N	N	.053	2.0	.200	5.7	N	12.0	.30	1.5	.2
SJ079S	.92	N	N	.090	1.7	.170	7.1	N	14.0	.20	1.0	.2
SJ080S	2.60	N	N	.560	5.8	.800	12.0	.85	38.0	.30	2.0	.5
SJ081S	1.50	N	N	.096	3.4	.260	8.6	N	18.0	.20	2.0	.3
SJ082S	4.50	N	N	.290	9.1	2.200	14.0	N	61.0	.30	3.0	.7
SJ083S	80.00	N	N	1.500	>1,400.0	7.100	14.0	4.70	200.0	.10	1.5	.1
SJ084S	5.40	N	N	.340	10.0	1.700	13.0	N	44.0	.30	2.0	.5
SJ085S	9.40	N	.83	.310	19.0	3.600	22.0	.90	71.0	1.50	2.0	.3
SJ086S	2.80	N	N	.340	13.0	1.500	13.0	N	59.0	.70	2.0	.5
SJ087S	2.70	N	N	.210	3.7	.360	11.0	N	80.0	.20	1.5	.3
SJ088S	4.30	N	N	.140	4.5	.200	11.0	N	26.0	.15	2.0	.3
SJ089S	1.20	N	N	.130	3.1	.120	8.6	N	20.0	.15	1.5	.3
SJ090S	7.10	N	.79	.390	15.0	2.300	17.0	1.10	70.0	.70	3.0	.7

Table 3--Results of analyses of stream-sediment samples from the San Juan National Forest, Colorado.--Continued.

Sample	61 Na ppm ESPEC	62 P ppm ESPEC	63 Ti ppm ESPEC	64 Ag ppm ESPEC	65 As ppm ESPEC	66 Au ppm ESPEC	67 B ppm ESPEC	68 Ba ppm ESPEC	69 Be ppm ESPEC	70 Bi ppm ESPEC	71 Cd ppm ESPEC
SJ046S	1.0	<.2	.5	N	N	N	70	700	1.0	N	N
SJ047S	.2	N	.3	N	N	N	30	700	1.0	N	N
SJ048S	.7	<.2	.7	<.5	N	N	70	500	1.0	N	N
SJ049S	.7	<.2	.3	N	N	N	50	700	1.0	N	N
SJ050S	.7	<.2	.7	N	N	N	70	700	1.0	N	N
SJ051S	<.2	<.2	.5	N	N	N	30	700	1.5	N	N
SJ052S	2.0	<.2	>1.0	N	N	N	10	700	1.0	N	N
SJ053S	1.0	<.2	.5	N	N	N	20	500	1.5	N	N
SJ054S	1.0	<.2	.7	N	N	N	20	700	1.0	N	N
SJ055S	.5	<.2	.7	N	N	N	30	300	1.5	N	N
SJ056S	1.0	<.2	.7	N	N	N	30	500	1.5	N	N
SJ057S	1.0	.2	>1.0	N	N	N	15	500	1.0	N	N
SJ058S	1.5	.2	1.0	N	N	N	15	1,000	1.5	N	N
SJ059S	1.0	.2	1.0	N	N	N	30	700	1.0	N	N
SJ060S	.5	<.2	.7	N	N	N	20	700	1.0	N	N
SJ061S	1.5	<.2	>1.0	N	N	N	15	700	1.0	N	N
SJ062S	.7	<.2	>1.0	N	N	N	20	700	1.0	N	N
SJ063S	1.0	<.2	>1.0	N	N	N	N	700	N	N	N
SJ064S	1.5	<.2	.7	N	N	N	<10	2,000	1.0	N	N
SJ065S	2.0	<.2	.5	N	N	N	<10	1,500	1.0	N	N
SJ066S	1.5	<.2	.7	N	N	N	<10	1,000	1.0	N	N
SJ067S	1.5	<.2	1.0	N	N	N	10	1,000	1.0	N	N
SJ068S	1.5	<.2	1.0	N	N	N	15	1,000	1.0	N	N
SJ069S	2.0	<.2	1.0	N	N	N	15	1,000	1.0	N	N
SJ070S	1.0	<.2	.2	<.5	N	N	30	300	1.5	N	N
SJ071S	1.0	<.2	.3	N	N	N	50	500	1.5	N	N
SJ072S	1.0	<.2	.7	<.5	N	N	20	500	1.0	N	N
SJ073S	1.5	<.2	.5	N	N	N	50	500	2.0	N	N
SJ074S	.5	<.2	.5	N	N	N	50	300	1.5	N	N
SJ075S	.2	<.2	.3	N	N	N	30	500	<1.0	N	N
SJ076S	<.2	<.2	.5	N	N	N	20	1,000	<1.0	N	N
SJ077S	.7	<.2	.5	N	N	N	30	500	1.0	N	N
SJ078S	.5	<.2	.3	N	N	N	20	500	<1.0	N	N
SJ079S	<.2	<.2	.3	N	N	N	30	300	<1.0	N	N
SJ080S	.7	<.2	.5	N	N	N	30	700	1.0	N	N
SJ081S	.2	<.2	.3	N	N	N	20	700	<1.0	N	N
SJ082S	.7	<.2	.5	N	N	N	50	500	1.5	N	N
SJ083S	.5	<.2	.1	<.5	N	N	20	150	2.0	N	N
SJ084S	.7	<.2	.5	<.5	N	N	30	500	1.0	N	N
SJ085S	1.5	<.2	.3	N	N	N	30	500	2.0	N	N
SJ086S	1.5	<.2	.3	N	N	N	30	700	1.5	N	N
SJ087S	.3	<.2	.5	N	N	N	50	700	1.5	N	N
SJ088S	.3	<.2	.5	N	N	N	30	700	1.0	N	N
SJ089S	.3	<.2	.5	N	N	N	30	500	1.0	N	N
SJ090S	1.0	.2	.7	N	N	N	50	500	1.5	N	N

Table 3--Results of analyses of stream-sediment samples from the San Juan National Forest, Colorado.--Continued.

Sample	72 Co ppm ESPEC	73 Cr ppm ESPEC	74 Cu ppm ESPEC	75 Ga ppm ESPEC	76 Ge ppm ESPEC	77 La ppm ESPEC	78 Mn ppm ESPEC	79 Mo ppm ESPEC	80 Nb ppm ESPEC	81 Ni ppm ESPEC	82 Pb ppm ESPEC	83 Sb ppm ESPEC
SJ046S	<10	70	20	30	N	<50	300	<5	<20	20	20	N
SJ047S	N	30	10	7	N	<50	700	N	N	<5	15	N
SJ048S	15	70	20	20	N	50	500	7	20	30	30	N
SJ049S	<10	50	15	20	N	50	700	<5	<20	15	30	N
SJ050S	10	100	20	30	N	50	700	7	20	30	20	N
SJ051S	<10	30	15	10	N	<50	300	N	<20	15	15	N
SJ052S	30	50	20	50	N	50	1,000	N	20	15	30	N
SJ053S	10	70	15	20	N	50	500	N	<20	30	30	N
SJ054S	20	150	20	50	N	70	700	N	20	30	30	N
SJ055S	20	100	15	50	N	70	500	N	20	50	50	N
SJ056S	15	70	15	30	N	50	500	N	20	20	50	N
SJ057S	20	100	20	50	N	100	700	5	30	20	50	N
SJ058S	20	50	20	50	N	100	700	<5	30	20	50	N
SJ059S	30	70	20	50	N	70	700	N	20	30	50	N
SJ060S	15	100	15	30	N	50	500	N	20	30	50	N
SJ061S	30	70	20	50	N	100	1,000	N	30	15	50	N
SJ062S	30	70	20	30	N	100	1,000	N	50	15	50	N
SJ063S	100	150	30	50	N	<50	1,000	N	<20	30	30	N
SJ064S	20	30	50	50	N	50	1,000	N	<20	20	70	N
SJ065S	15	20	15	50	N	50	700	N	<20	15	30	N
SJ066S	30	50	20	50	N	50	1,000	N	<20	15	30	N
SJ067S	20	50	20	50	N	50	1,000	N	<20	15	30	N
SJ068S	30	30	20	50	N	50	1,000	N	<20	15	30	N
SJ069S	30	70	20	50	N	50	1,000	N	<20	20	30	N
SJ070S	<10	30	20	20	N	<50	300	N	N	15	30	N
SJ071S	<10	70	20	30	N	<50	200	<5	<20	20	30	N
SJ072S	<10	30	15	20	N	<50	700	N	<20	10	20	N
SJ073S	10	100	15	30	N	50	150	5	<20	30	30	N
SJ074S	10	50	15	20	N	<50	200	<5	<20	20	30	N
SJ075S	<10	30	15	10	N	<50	150	N	<20	7	20	N
SJ076S	<10	30	15	10	N	<50	200	N	<20	7	30	N
SJ077S	10	50	15	30	N	<50	200	N	<20	20	30	N
SJ078S	<10	30	15	15	N	<50	200	N	<20	5	20	N
SJ079S	<10	30	10	10	N	<50	200	N	<20	7	30	N
SJ080S	<10	50	15	20	N	<50	700	N	<20	15	30	N
SJ081S	<10	30	15	15	N	<50	300	N	<20	15	20	N
SJ082S	10	50	20	30	N	50	500	5	20	20	30	N
SJ083S	15	20	1,000	15	N	<50	700	N	N	10	20	N
SJ084S	<10	50	20	20	N	<50	300	<5	<20	15	30	N
SJ085S	10	50	15	20	N	50	300	<5	<20	20	20	N
SJ086S	10	70	20	50	N	50	500	N	<20	20	30	N
SJ087S	10	30	15	20	N	<50	500	N	<20	15	30	N
SJ088S	<10	30	15	15	N	<50	500	N	<20	15	30	N
SJ089S	<10	50	15	20	N	<50	150	N	20	10	20	N
SJ090S	15	100	20	50	N	50	500	5	20	30	50	N

Table 3--Results of analyses of stream-sediment samples from the San Juan National Forest, Colorado.--Continued.

Sample	84 Sc ppm ESPEC	85 Sn ppm ESPEC	86 Sr ppm ESPEC	87 Th ppm ESPEC	88 V ppm ESPEC	89 W ppm ESPEC	90 Y ppm ESPEC	91 Zn ppm ESPEC	92 Zr ppm ESPEC	93 Au ppm GFAA	94 Th ppm DNC	95 U ppm DNC
SJ046S	7	N	200	N	100	N	30	N	200	<.002	9.47	3.710
SJ047S	<5	N	100	N	50	N	15	N	700	<.002	5.30	2.430
SJ048S	7	N	150	N	150	N	30	N	300	<.002	12.20	4.850
SJ049S	5	N	200	N	70	N	30	N	500	<.002	6.60	3.020
SJ050S	7	N	200	N	150	N	30	<200	500	<.002	13.00	5.200
SJ051S	7	N	100	N	70	N	20	N	300	0.002	22.00	4.000
SJ052S	10	N	500	N	300	N	50	<200	500	N	9.00	3.000
SJ053S	7	N	<100	N	100	N	30	N	300	N	9.00	3.000
SJ054S	10	N	<100	N	200	N	70	N	>1,000	N	6.00	2.000
SJ055S	10	N	N	N	150	N	50	N	1,000	N	9.00	3.000
SJ056S	7	N	N	N	100	N	50	N	1,000	N	8.00	3.000
SJ057S	20	N	N	N	300	N	200	N	>1,000	N	6.00	1.000
SJ058S	20	N	<100	N	150	N	100	N	>1,000	N	9.00	2.000
SJ059S	20	N	<100	N	150	N	100	N	>1,000	N	7.00	2.000
SJ060S	10	N	N	N	100	N	50	N	1,000	N	10.00	2.000
SJ061S	30	N	<100	N	150	N	150	N	>1,000	N	6.00	2.000
SJ062S	30	N	N	N	200	N	100	<200	>1,000	N	11.00	2.000
SJ063S	20	N	300	N	500	N	50	700	300	<.002	12.00	4.000
SJ064S	10	N	300	N	200	N	20	<200	300	<.002	15.00	4.000
SJ065S	7	N	300	N	200	N	30	<200	150	<.002	23.00	5.000
SJ066S	10	N	500	N	200	N	30	200	200	N	17.00	5.000
SJ067S	10	N	500	N	200	N	30	N	500	N	18.00	4.000
SJ068S	10	N	300	N	200	N	20	<200	300	N	15.00	4.000
SJ069S	10	N	500	N	200	N	30	<200	300	N	17.00	4.000
SJ070S	<5	N	150	N	70	N	20	<200	150	<.002	14.00	4.000
SJ071S	7	N	100	N	100	N	20	<200	200	.002	9.00	3.000
SJ072S	7	N	200	N	100	N	20	N	300	N	14.00	4.000
SJ073S	7	N	150	N	100	N	20	N	200	N	9.00	3.000
SJ074S	7	N	100	N	100	N	20	N	500	N	11.00	4.000
SJ075S	<5	N	100	N	50	N	10	N	700	N	17.00	5.000
SJ076S	5	N	<100	N	50	N	15	N	500	N	15.00	4.000
SJ077S	7	N	150	N	70	N	20	N	500	N	13.00	5.000
SJ078S	<5	N	150	N	50	N	15	N	1,000	N	25.00	5.000
SJ079S	<5	N	<100	N	30	N	20	N	700	N	16.00	5.000
SJ080S	7	N	150	N	70	N	20	N	500	N	12.00	4.000
SJ081S	5	N	N	N	70	N	15	N	700	N	13.00	4.000
SJ082S	7	N	150	N	150	N	20	N	1,000	N	13.00	4.000
SJ083S	<5	N	N	N	50	N	30	<200	70	.350	39.00	2.000
SJ084S	7	N	150	N	150	N	20	N	500	.006	13.00	3.000
SJ085S	7	N	200	N	150	N	20	N	300	.004	9.00	3.000
SJ086S	7	N	200	N	150	N	20	N	300	<.002	11.00	3.000
SJ087S	5	N	150	N	70	N	20	N	500	N	11.00	4.000
SJ088S	5	N	N	N	70	N	20	N	500	<.002	16.00	4.000
SJ089S	5	N	150	N	70	N	20	N	500	.004	16.00	4.000
SJ090S	7	N	200	N	100	N	30	N	500	N	12.00	3.000

Table 3--Results of analyses of stream-sediment samples from the San Juan National Forest, Colorado.--Continued.

1 Sample	2 Latitude	3 Longtude	4 Al % ICP-40	5 Ca % ICP-40	6 Fe % ICP-40	7 Al % ICP-40	8 Mg % ICP-40	9 Na % ICP-40	10 P % ICP-40	11 Ti % ICP-40	12 Mn ppm ICP-40	13 Ag ppm ICP-40
SJ091S	37 40 51	108 12 54	3.0	.49	1.30	1.40	.38	.14	.04	.14	210	<2
SJ092S	37 40 57	108 12 56	3.0	.31	1.50	1.30	.30	.23	.04	.14	330	<2
SJ093S	37 27 23	108 8 41	2.5	.21	1.20	.94	.20	.33	.03	.10	480	<2
SJ094S	37 27 29	108 8 42	7.0	3.10	3.10	1.90	.95	.85	.09	.29	550	<2
SJ095S	37 27 26	108 8 37	5.4	.99	3.50	1.50	.70	.70	.09	.29	530	<2
SJ096S	37 27 43	108 9 16	5.9	1.70	2.80	1.50	.75	.72	.07	.26	400	<2
SJ097S	37 27 23	108 9 13	5.7	.99	2.90	1.50	.69	.59	.08	.26	500	<2
SJ098S	37 47 14	108 3 48	3.2	.21	1.20	1.50	.32	.10	.03	.14	260	<2
SJ099S	37 43 33	108 8 21	3.6	2.10	1.60	1.40	.39	.16	.04	.15	730	<2
SJ100S	37 43 29	108 8 22	4.7	9.60	2.00	1.80	.64	.30	.05	.19	1,400	<2
SJ101S	37 42 43	108 7 37	5.1	2.50	2.50	1.90	.85	.32	.05	.22	480	<2
SJ102S	37 42 48	108 7 41	6.3	2.50	3.20	2.30	.91	.90	.08	.27	470	<2
SJ103S	37 41 14	108 6 37	3.6	.40	2.30	1.40	.31	.39	.06	.16	490	<2
SJ104S	37 39 43	108 7 8	3.5	.21	1.20	1.40	.32	.14	.03	.15	410	<2
SJ105S	37 39 53	108 10 32	3.0	.17	1.10	.94	.23	.11	.02	.13	380	<2
SJ106S	37 27 50	108 6 38	7.2	.78	3.50	1.90	.79	.57	.09	.29	360	<2
SJ107S	37 28 11	108 7 12	7.1	2.00	3.40	1.80	1.10	1.40	.13	.36	740	<2
SJ108S	37 46 50	108 2 11	2.4	.16	.86	.97	.23	.07	.02	.09	250	<2
SJ109S	37 46 22	108 3 9	3.3	.16	1.30	1.50	.37	.04	.03	.13	360	<2
SJ110S	37 45 10	108 4 4	2.8	.29	1.20	1.30	.43	.24	.04	.14	180	<2
SJ111S	37 44 27	108 4 8	3.6	.32	1.70	1.40	.41	.20	.05	.14	560	<2
SJ112S	37 44 19	108 4 43	5.7	.45	5.50	2.20	.64	.76	.10	.36	560	<2

Table 3--Results of analyses of stream-sediment samples from the San Juan National Forest, Colorado.--Continued.

Sample	14 As ppm ICP-40	15 Au ppm ICP-40	16 B ppm ICP-40	17 Ba ppm ICP-40	18 Be ppm ICP-40	19 Bi ppm ICP-40	20 Cd ppm ICP-40	21 Ce ppm ICP-40	22 Co ppm ICP-40	23 Cr ppm ICP-40	24 Cu ppm ICP-40
SJ091S	<10	<8	--	430	<1	<10	<2	29	4	18	13
SJ092S	<10	<8	--	600	<1	<10	<2	28	4	17	9
SJ093S	<10	<8	--	260	<1	<10	<2	25	7	13	67
SJ094S	10	<8	--	410	2	<10	<2	62	11	51	18
SJ095S	10	<8	--	630	1	<10	<2	53	10	35	15
SJ096S	10	<8	--	400	1	<10	<2	54	10	41	14
SJ097S	10	<8	--	410	1	<10	<2	50	11	43	66
SJ098S	20	<8	--	400	<1	<10	<2	27	4	14	7
SJ099S	20	<8	--	1,100	1	<10	<2	25	6	18	33
SJ100S	<10	<8	--	510	1	<10	<2	33	8	32	22
SJ101S	<10	<8	--	670	2	<10	<2	35	8	37	16
SJ102S	<10	<8	--	570	2	<10	<2	49	12	51	56
SJ103S	10	<8	--	480	1	<10	<2	29	6	28	11
SJ104S	<10	<8	--	430	1	<10	<2	35	4	9	9
SJ105S	<10	<8	--	340	<1	<10	<2	32	5	10	5
SJ106S	20	<8	--	480	2	<10	<2	48	11	55	27
SJ107S	<10	<8	--	510	1	<10	<2	73	11	45	17
SJ108S	10	<8	--	250	<1	<10	<2	19	3	11	5
SJ109S	10	<8	--	370	1	<10	<2	26	5	11	7
SJ110S	<10	<8	--	320	<1	<10	<2	21	4	21	10
SJ111S	30	<8	--	480	1	<10	<2	25	6	23	11
SJ112S	<10	<8	--	700	1	<10	<2	56	10	57	11

Table 3--Results of analyses of stream-sediment samples from the San Juan National Forest, Colorado.--Continued.

Sample	25 Eu ppm ICP-40	26 Ga ppm ICP-40	27 Ge ppm ICP-40	28 Ho ppm ICP-40	29 La ppm ICP-40	30 Li ppm ICP-40	31 Mo ppm ICP-40	32 Nb ppm ICP-40	33 Nd ppm ICP-40	34 Ni ppm ICP-40	35 Pb ppm ICP-40	36 Sc ppm ICP-40
SJ091S	<2	6	--	<4	17	26	<2	4	14	6	12	3
SJ092S	<2	8	--	<4	16	25	<2	5	14	6	11	3
SJ093S	<2	6	--	<4	14	15	<2	<4	12	7	10	2
SJ094S	<2	16	--	<4	33	39	<2	10	29	22	17	9
SJ095S	<2	13	--	<4	29	33	3	9	26	16	14	7
SJ096S	<2	13	--	<4	29	33	<2	10	25	18	16	8
SJ097S	<2	13	--	<4	29	37	3	9	24	20	15	7
SJ098S	<2	7	--	<4	15	33	<2	5	14	6	13	3
SJ099S	<2	9	--	<4	14	15	<2	5	14	9	22	4
SJ100S	<2	12	--	<4	19	18	<2	7	23	14	15	7
SJ101S	<2	12	--	<4	18	24	<2	7	21	15	15	7
SJ102S	<2	15	--	<4	24	24	<2	9	25	21	14	10
SJ103S	<2	8	--	<4	17	10	<2	5	14	9	18	5
SJ104S	<2	7	--	<4	20	34	<2	5	16	4	13	4
SJ105S	<2	6	--	<4	18	33	<2	4	15	5	11	3
SJ106S	<2	17	--	<4	26	50	7	13	26	30	18	9
SJ107S	<2	17	--	<4	38	45	<2	11	37	21	14	10
SJ108S	<2	5	--	<4	12	22	<2	<4	9	5	7	2
SJ109S	<2	7	--	<4	15	30	<2	5	13	5	11	4
SJ110S	<2	6	--	<4	12	21	<2	<4	11	10	11	3
SJ111S	<2	9	--	<4	15	17	<2	4	14	8	12	5
SJ112S	<2	14	--	<4	33	17	<2	14	27	13	17	7

Table 3--Results of analyses of stream-sediment samples from the San Juan National Forest, Colorado.--Continued.

Sample	37 Sn ppm ICP-40	38 Sr ppm ICP-40	39 Ta ppm ICP-40	40 Th ppm ICP-40	41 U ppm ICP-40	42 V ppm ICP-40	43 W ppm ICP-40	44 Y ppm ICP-40	45 Yb ppm ICP-40	46 Zn ppm ICP-40	47 Zr ppm ICP-40	48 Ag ppm ICP-10
SJ091S	<5	96	<40	5	<100	30	--	7	<1	39	--	N
SJ092S	<5	74	<40	5	<100	32	--	6	<1	33	--	N
SJ093S	<5	76	<40	<4	<100	32	--	6	<1	69	--	.068
SJ094S	<5	220	<40	11	<100	100	--	19	2	88	--	N
SJ095S	<5	180	<40	9	<100	120	--	17	2	83	--	.090
SJ096S	<5	170	<40	10	<100	80	--	16	2	76	--	.067
SJ097S	<5	140	<40	9	<100	110	--	16	2	130	--	.081
SJ098S	<5	110	<40	5	<100	26	--	6	<1	69	--	.067
SJ099S	<5	100	<40	4	<100	34	--	8	<1	51	--	.130
SJ100S	<5	240	<40	6	<100	43	--	11	<1	51	--	.230
SJ101S	<5	110	<40	6	<100	50	--	9	<1	40	--	.095
SJ102S	<5	130	<40	9	<100	57	--	12	1	59	--	.070
SJ103S	<5	59	<40	5	<100	44	--	7	<1	39	--	.067
SJ104S	<5	68	<40	5	<100	26	--	9	1	33	--	N
SJ105S	<5	56	<40	5	<100	25	--	7	<1	29	--	N
SJ106S	<5	140	<40	11	<100	150	--	18	2	110	--	.130
SJ107S	<5	270	<40	9	<100	130	--	28	3	120	--	.130
SJ108S	<5	72	<40	<4	<100	20	--	4	<1	30	--	.087
SJ109S	<5	100	<40	4	<100	28	--	6	<1	37	--	N
SJ110S	<5	120	<40	<4	<100	31	--	6	<1	35	--	.089
SJ111S	<5	80	<40	4	<100	39	--	9	<1	65	--	.120
SJ112S	<5	90	<40	11	<100	110	--	13	1	67	--	.110

Table 3--Results of analyses of stream-sediment samples from the San Juan National Forest, Colorado.--Continued.

Sample	49 As ppm ICP-10	50 Au ppm ICP-10	51 Bi ppm ICP-10	52 Cd ppm ICP-10	53 Cu ppm ICP-10	54 Mo ppm ICP-10	55 Pb ppm ICP-10	56 Sb ppm ICP-10	57 Zn ppm ICP-10	58 Ca % ESPEC	59 Fe % ESPEC	60 Mg % ESPEC
SJ091S	2.40	N	N	.092	2.7	.140	7.7	N	17.0	.30	1.0	.3
SJ092S	1.70	N	N	.060	1.6	.082	4.9	N	13.0	.70	1.5	.5
SJ093S	5.50	N	N	.390	57.0	.880	8.2	N	58.0	.15	1.5	.2
SJ094S	9.80	N	N	.240	13.0	2.100	15.0	N	84.0	2.00	3.0	.7
SJ095S	8.30	N	N	.300	13.0	3.000	12.0	N	74.0	.70	3.0	.7
SJ096S	7.40	N	N	.170	11.0	1.700	15.0	N	72.0	1.00	3.0	.7
SJ097S	8.30	N	N	.560	57.0	2.900	13.0	.70	110.0	.70	3.0	1.0
SJ098S	15.00	N	N	.190	3.0	.170	10.0	N	56.0	.15	1.0	.3
SJ099S	13.00	N	N	.190	24.0	.440	17.0	.72	37.0	1.50	1.5	.3
SJ100S	4.20	N	N	.180	12.0	.320	12.0	N	39.0	15.00	2.0	.7
SJ101S	2.80	N	N	.110	8.5	.370	13.0	N	24.0	3.00	3.0	1.0
SJ102S	1.80	N	N	.085	41.0	.390	12.0	N	42.0	1.00	3.0	.7
SJ103S	7.40	N	N	.130	7.3	.210	14.0	N	32.0	.20	1.5	.5
SJ104S	1.30	N	N	.290	2.3	.170	9.4	N	22.0	.10	1.0	.2
SJ105S	1.90	N	N	.160	2.7	.240	7.6	N	19.0	.15	1.0	.3
SJ106S	14.00	N	N	.640	25.0	6.900	21.0	1.10	110.0	.30	3.0	.7
SJ107S	4.60	N	N	.840	13.0	2.300	16.0	.70	110.0	1.00	3.0	1.0
SJ108S	11.00	N	N	.100	1.9	.140	5.9	N	17.0	.15	1.0	.3
SJ109S	13.00	N	N	.100	2.1	.260	7.7	N	20.0	.15	1.0	.3
SJ110S	3.10	N	N	.110	2.5	.280	7.9	N	21.0	.30	1.5	.7
SJ111S	31.00	N	N	.130	5.6	.550	11.0	1.10	47.0	.20	1.5	.3
SJ112S	6.60	N	N	.130	5.4	.660	15.0	N	46.0	.30	5.0	.7

Table 3--Results of analyses of stream-sediment samples from the San Juan National Forest, Colorado.--Continued.

Sample	61 Na ppm ESPEC	62 P ppm ESPEC	63 Ti ppm ESPEC	64 Ag ppm ESPEC	65 As ppm ESPEC	66 Au ppm ESPEC	67 B ppm ESPEC	68 Ba ppm ESPEC	69 Be ppm ESPEC	70 Bi ppm ESPEC	71 Cd ppm ESPEC
SJ091S	<.2	<.2	.5	N	N	N	50	500	<1.0	N	N
SJ092S	.7	N	.7	N	N	N	30	1,500	<1.0	N	N
SJ093S	.5	<.2	.3	N	N	N	30	300	1.0	N	N
SJ094S	1.0	<.2	.5	N	N	N	70	700	1.5	N	N
SJ095S	.7	<.2	.5	N	N	N	70	1,000	1.5	N	N
SJ096S	.7	<.2	.5	N	N	N	50	500	1.5	N	N
SJ097S	.7	<.2	.5	N	N	N	70	500	1.5	N	N
SJ098S	N	<.2	.3	N	N	N	50	500	1.0	N	N
SJ099S	<.2	<.2	.3	N	N	N	50	1,500	1.0	N	N
SJ100S	.5	N	.3	N	N	N	50	700	1.5	N	N
SJ101S	.7	N	.5	N	N	N	70	1,500	1.0	N	N
SJ102S	1.0	<.2	.5	N	N	N	30	700	1.5	N	N
SJ103S	<.2	N	.5	N	N	N	50	700	1.0	N	N
SJ104S	<.2	<.2	.3	N	N	N	30	500	1.0	N	N
SJ105S	<.2	N	.3	N	N	N	30	500	1.0	N	N
SJ106S	.7	<.2	.5	N	N	N	100	700	1.5	N	N
SJ107S	1.5	<.2	.7	N	N	N	70	500	1.5	N	N
SJ108S	<.2	N	.3	<.5	N	N	30	500	<1.0	N	N
SJ109S	N	N	.2	N	N	N	30	700	1.0	N	N
SJ110S	.5	N	.5	N	N	N	70	500	<1.0	N	N
SJ111S	.2	<.2	.3	N	N	N	30	500	1.0	N	N
SJ112S	1.0	<.2	1.0	N	N	N	30	700	1.0	N	N

Table 3--Results of analyses of stream-sediment samples from the San Juan National Forest, Colorado.--Continued.

Sample	72 Co ppm ESPEC	73 Cr ppm ESPEC	74 Cu ppm ESPEC	75 Ga ppm ESPEC	76 Ge ppm ESPEC	77 La ppm ESPEC	78 Mn ppm ESPEC	79 Mo ppm ESPEC	80 Nb ppm ESPEC	81 Ni ppm ESPEC	82 Pb ppm ESPEC	83 Sb ppm ESPEC
SJ091S	<10	30	15	10	N	<50	150	N	<20	7	10	N
SJ092S	<10	50	10	20	N	<50	700	N	50	N	20	N
SJ093S	<10	20	50	7	N	<50	500	N	<20	7	<10	N
SJ094S	15	100	20	30	N	50	700	<5	<20	20	30	N
SJ095S	15	50	20	20	N	50	700	5	20	20	20	N
SJ096S	15	70	15	20	N	<50	500	<5	<20	20	20	N
SJ097S	15	70	50	30	N	50	1,000	5	20	30	20	N
SJ098S	N	20	10	7	N	<50	200	N	<20	5	10	N
SJ099S	<10	30	30	20	N	<50	700	N	<20	15	30	N
SJ100S	10	70	20	20	N	50	2,000	N	<20	15	30	N
SJ101S	10	70	15	30	N	70	700	N	20	20	30	N
SJ102S	15	70	30	30	N	50	500	N	20	30	20	N
SJ103S	<10	30	15	15	N	<50	700	N	<20	5	20	N
SJ104S	<10	20	7	7	N	<50	500	N	<20	5	<10	N
SJ105S	<10	30	10	10	N	<50	500	N	<20	5	15	N
SJ106S	20	100	30	30	N	70	500	10	20	50	30	N
SJ107S	15	50	20	30	N	50	700	<5	20	30	30	N
SJ108S	<10	30	10	10	N	<50	300	N	<20	5	10	N
SJ109S	<10	20	10	10	N	<50	500	N	<20	7	10	N
SJ110S	<10	100	15	20	N	<50	300	N	20	10	20	N
SJ111S	<10	30	15	15	N	<50	500	N	<20	10	20	N
SJ112S	15	70	20	50	N	50	700	N	30	20	30	N

Table 3--Results of analyses of stream-sediment samples from the San Juan National Forest, Colorado.--Continued.

Sample	84 Sc ppm ESPEC	85 Sn ppm ESPEC	86 Sr ppm ESPEC	87 Th ppm ESPEC	88 V ppm ESPEC	89 W ppm ESPEC	90 Y ppm ESPEC	91 Zn ppm ESPEC	92 Zr ppm ESPEC	93 Au ppm GFAA	94 Th ppm DNC	95 U ppm DNC
SJ091S	<5	N	150	N	70	N	20	N	300	.012	4.50	2.290
SJ092S	5	N	200	N	70	N	20	N	1,000	<.002	4.10	2.510
SJ093S	<5	N	100	N	70	N	15	N	300	.014	5.50	2.100
SJ094S	7	N	200	N	100	N	30	N	300	<.002	11.40	4.720
SJ095S	7	N	200	N	150	N	30	<200	300	.010	8.50	4.070
SJ096S	7	N	200	N	100	N	30	N	300	<.002	8.50	4.180
SJ097S	7	N	200	N	150	N	30	<200	300	.330	9.37	4.080
SJ098S	5	N	150	N	50	N	20	N	500	<.002	4.30	2.270
SJ099S	5	N	100	N	70	N	20	N	500	<.002	4.50	2.560
SJ100S	7	N	300	N	70	N	30	N	150	<.002	5.70	2.740
SJ101S	7	N	200	N	70	N	50	N	300	<.002	10.30	3.470
SJ102S	7	N	150	N	70	N	20	N	200	<.002	12.20	4.600
SJ103S	<5	N	150	N	70	N	20	N	200	<.002	4.40	3.430
SJ104S	<5	N	100	N	50	N	15	N	300	<.002	5.70	2.490
SJ105S	<5	N	N	N	70	N	20	N	700	<.002	3.20	2.640
SJ106S	10	N	200	N	200	N	50	<200	300	<.002	12.00	6.080
SJ107S	10	N	300	N	150	N	50	<200	200	<.002	10.40	4.820
SJ108S	<5	N	150	N	50	N	15	N	200	<.002	3.80	1.540
SJ109S	5	N	100	N	50	N	15	N	200	<.002	4.80	1.790
SJ110S	5	N	300	N	70	N	20	N	500	<.002	3.50	2.180
SJ111S	5	N	N	N	70	N	20	N	500	<.002	4.60	2.090
SJ112S	7	N	N	N	150	N	50	N	1,000	<.002	11.20	5.470