UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

Analytical results and sample locality map of stream sediment, heavy-mineral-concentrate, and rock samples from the Lost Creek Wilderness Area, Jefferson and Park Counties, Colorado

by

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Open-File Report 85-383

1985

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STUDIES RELATED TO WILDERNESS

The Wilderness Act (Public Law 88-577) 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, if any. 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 Lost Creek Wilderness in the Pike National Forest, Jefferson and Park Counties, Colorado. The area was established as a wilderness by Public Law 96-560, December 12, 1980. Portions of the Lost Creek Roadless Area were classified as a further planning area and proposed wilderness during the Second Roadless Area Review and Evaluation (RARE II) by the U.S. Forest Service, January 1979.

INTRODUCTION

In June and July 1982, the U.S. Geological Survey conducted a reconnaissance geochemical survey of the Lost Creek Wilderness Area, Jefferson and Park Counties, Colorado.

The Lost Creek Wilderness Area is comprised of approximately 105,500 acres (165 mi^2), extending in a southerly direction from the town of Bailey to the town of Tarryall, Colorado (fig. 1). Main access to the northern portion of the area is provided by U.S. Highway 285 and Jefferson County Road 126. Forest Road 127 provides access to the middle portion of the area from the west, and Park County Road 77 and Forest Road 211 provide the main access to the southern portion of the area.

The Lost Creek Wilderness Area extends, from north to south, over the Platte River, Kenosha, and Tarryall Mountain ranges. The entire area is underlain by Precambrian X and Y rocks locally covered by unconsolidated Quaternary alluvium in valleys. The oldest rock generally occurs in the north part of the area. This rock is biotite gneiss and schist locally containing numerous layers, pods and lenses of pegmatite. The southern portion of the area is primarily underlain by various facies of the younger Precambrian Y Pikes Peak granite batholith. This batholith is cut in the southernmost end of the area by the slightly younger Redskin Granite stock. The individual formations have been described in detail by Bryant and others (1978) and Hawley and Wobus (1977).

The topographic relief in the area is approximately 4300 ft (1280 m) ranging in elevation from 12,320 ft at South Twin Cone Peak, to approximately 8000 ft where the major drainages exit the area. The area consists largely of rolling hills covered with evergreen, aspen, and brushwood, locally rising to spectacular rock domes, pinnacles, and monoliths cut by wide valleys with open meadows. Some of the valleys and meadows narrow into steep gulches. In the vicinity of Lost Creek the valleys are blocked at intervals by piles of huge granite boulders under which the stream flows. Perennial streams generally drain the area. The climate ranges from semiarid to alpine at the higher elevations.

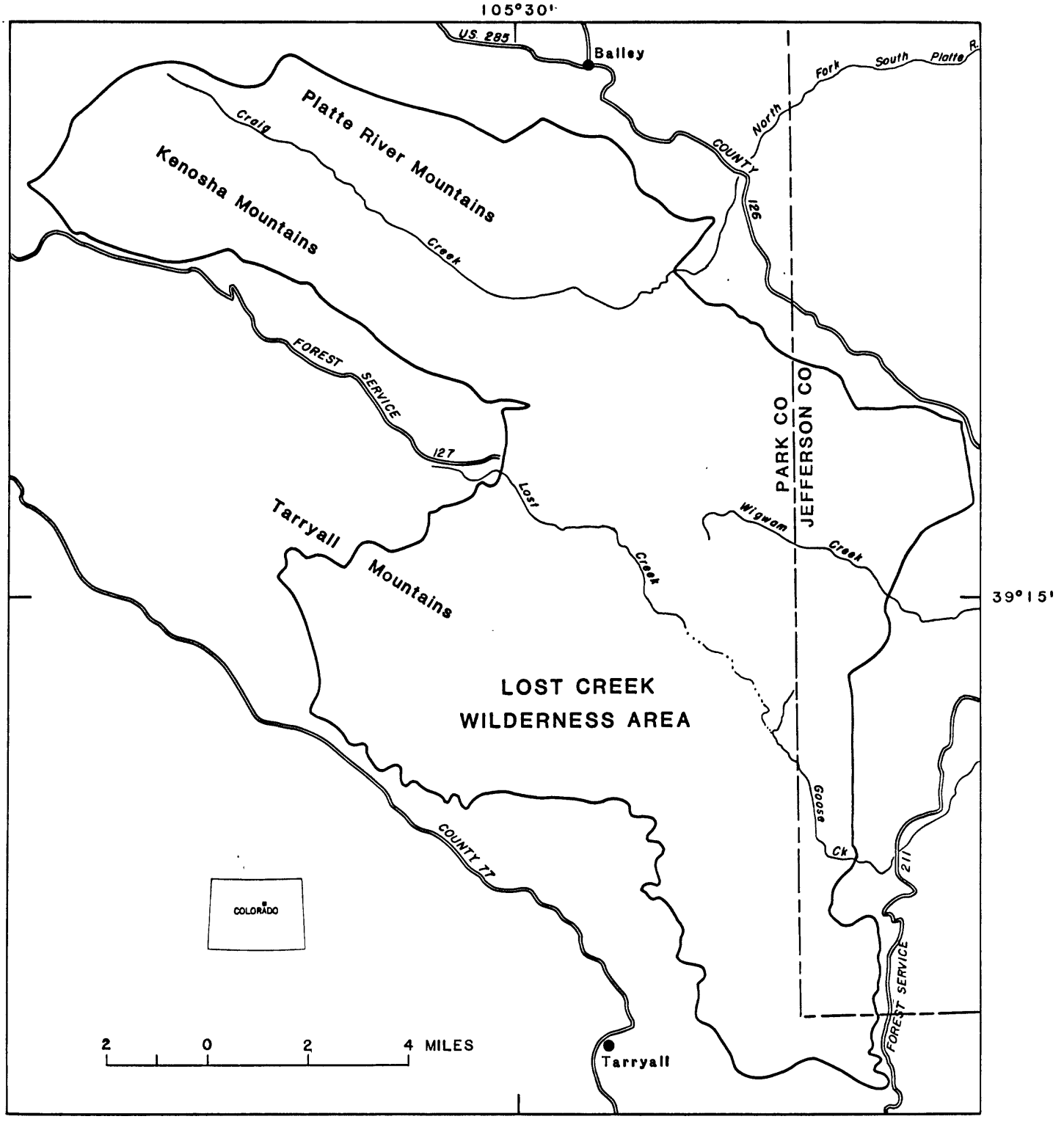

Figure 1. Index map of the Lost Creek Wilderness Area, Colorado.

METHODS OF STUDY

Sample collection

Samples were collected at 290 sites (plate 1). At 112 of the sites a stream sediment and a panned-concentrate sample were collected. However at two sites only a concentrate sample was available; the sediment sample was accidentally lost in preparation. These samples were analyzed and are included in the Lost Creek Wilderness data set. A total of 78 rocks was also collected and analyzed to provide representative values of the various rock units present in the area. Sampling density was about one sediment and concentrate sample site per 1.5 mi^2 and about 1 sample site per 2.1 mi^2 for the rock samples. Stream-sediment and concentrate sites are designated by a circle (●), and are numbered 001-113; rock sample sites are designated by a triangle (▲) and are numbered 200-299.

Stream-sediment samples

Analyses of the stream-sediment samples represent the chemistry of the rock material eroded from the drainage basin from each sample site. Such information is useful in identifying those basins which contain concentrations of elements that may be related to mineral deposits.

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 ft from the site plotted on the map.

Heavy-mineral-concentrate samples

Heavy-mineral-concentrate samples were collected from the same active alluvium 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 the quartz, feldspar, organic material, and clay sized material were removed.

Rock samples

Rock samples were collected from outcrops or exposures in the vicinity of the plotted site location. Samples were collected from unaltered and altered rocks.

Sample Preparation

The stream-sediment samples were air dried, then sieved using 80 mesh (0.17 mm) stainless steel sieves. The portion of the sediment passing through the sieve was saved for analysis.

After air drying, bromoform (specific gravity 2.8) was used to remove the remaining quartz and feldspar 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 (in this case 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 analysis/archival storage. The third

fraction (the least magnetic material including the nonmagnetic ore minerals, 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, and a tilt of 10, with a current of 0.1 ampere to remove the magnetite and ilmenite, and a current of 1.0 ampere to split the remainder of the sample into paramagnetic and nonmagnetic fractions.

Rock samples were crushed and then pulverized to minus 0.15 mm with ceramic plates.

Sample Analysis

Spectrographic method

The stream-sediment, heavy-mineral-concentrate, and rock 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 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, and titanium) are given in weight percent; all others are given in parts per million (micrograms/gram). Analytical data for samples from the Lost Creek Wilderness Area are listed in Tables 3-5.

Chemical Methods

The stream sediments were analyzed for lithium and zinc by atomic absorption spectrographic methods, described by Meier (1980) and Ward and others (1969), respectively (Table 2). The rock samples were also analyzed for lithium and zinc according to the above methods; and in addition, were analyzed for gold by atomic absorption spectroscopy (Thompson and others, 1968), for fluorine by a specific ion methodology (Hopkins, 1977), and for uranium by fluorometry (Centanni, 1956).

Analytical results for stream-sediment, heavy-mineral-concentrate, and rock samples are listed in tables 3, 4, and 5, respectively.

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 (VanTrump and Miesch, 1976).

TABLE 1.--Limits of determination for the spectrographic analysis of rocks and stream sediments, based on a 10-mg sample

The spectrographic limits of determination for heavy-mineral-concentrate samples are two reporting units higher than the limits given for rocks and stream sediments

Elements	Lower determination limit	Upper determination limit
	Percent	
Iron (Fe)	0.05	20
Magnesium (Mg)	.02	10
Calcium (Ca)	.05	20
Titanium (Ti)	.002	1
	Parts per million	
Manganese (Mn)	10	5,000
Silver (Ag)	0.5	5,000
Arsenic (As)	200	10,000
Gold (Au)	10	500
Boron (B)	10	2,000
Barium (Ba)	20	5,000
Beryllium (Be)	1	1,000
Bismuth (Bi)	10	1,000
Cadmium (Cd)	20	500
Cobalt (Co)	5	2,000
Chromium (Cr)	10	5,000
Copper (Cu)	5	20,000
Lanthanum (La)	20	1,000
Molybdenum (Mo)	5	2,000
Niobium (Nb)	20	2,000
Nickel (Ni)	5	5,000
Lead (Pb)	10	20,000
Antimony (Sb)	100	10,000
Scandium (Sc)	5	100
Tin (Sn)	10	1,000
Strontium (Sr)	100	5,000
Vanadium (V)	10	10,000
Tungsten (W)	50	10,000
Yttrium (Y)	10	2,000
Zinc (Zn)	200	10,000
Zirconium (Zr)	10	1,000
Thorium (Th)	100	2,000

Table 2.--Chemical methods used

Sample type	Constituent determined	Analytical method	Determination limit micrograms/gram or ppm	Reference
Sediments and Rocks	Li	AA	5	Meier, 1979
	Zn	AA	5	Ward and others, 1969
Rocks	Au	AA	0.05	Thompson and others, 1968
	F	Specific ion	100	Hopkins, 1977
	U	Fluorometry	0.1	Centanni, 1956

DESCRIPTION OF DATA TABLES

Tables 3-5 list the analyses for the samples of stream sediment, heavy-mineral concentrate, rock, and water, respectively. For the three tables, the data are arranged so that column 1 contains the USGS-assigned sample numbers. These numbers correspond to the numbers shown on the site location maps (plate 1). Columns in which the element headings show the letter "s" below the element symbol are emission spectrographic analyses; "aa" indicates atomic absorption analyses. In table 5 "Si" represents specific ion analysis, and uranium analyses were completed by fluorometry. A letter "N" in the tables indicates that a given element was looked for but not detected at the lower limit of determination shown for that element in tables 1 and 2. If an element was observed but was below the lowest reporting value, a "less than" symbol (<) was entered in the tables 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 the tables in front of the upper limit of determination. If an element was not looked for in a sample, two dashes (--) are entered in tables 3-5 in place of an analytical value. Because of the formatting used in the computer program that produced tables 3-5, some of the elements listed in these tables (Fe, Mg, Ca, Ti, Ag, and Be) 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.

The spectrographic determinations for Ag, As, Au, Bi, Cd, Sb, and Zn in stream-sediment samples, for Ag, As, Au, Cd, Sb, and Zn in heavy-mineral-concentrate samples, and for As, Au, and Sb in rock samples were all below the lower limits of determinations shown in table 1; consequently, the columns for these elements have been deleted from tables 3, 4, and 5, respectively.

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TABLE 3. ANALYTICAL DATA FOR STREAM-SEDIMENT SAMPLES FROM 110 SITES DRAINING THE LOST CREEK WILDERNESS AREA, COLORADO.

[N, not detected; <, detected but below the limit of determination shown; >, determined to be greater than the value shown.]

Sample	Latitude	Longitude	Fe-pct. s	Mg-pct. s	Ca-pct. s	Ti-pct. s	Mn-ppm s	B-ppm s	Ba-ppm s	Be-ppm s	Co-ppm s	Cr-ppm s	Cu-ppm s
001	39 23 34	105 31 38	7.00	.20	.20	1.0	1,000	20	300	1.5	15	150	20
002	39 23 27	105 32 31	5.00	.30	.50	.7	700	20	500	1.0	15	150	20
003	39 22 50	105 30 3	7.00	.30	.50	1.0	700	20	500	1.5	10	150	10
004	39 10 15	105 26 59	2.00	.30	.50	.3	1,000	N	500	10.0	5	20	15
005	39 10 5	105 26 58	1.50	.15	.70	.5	700	N	500	50.0	<5	N	<5
006	39 9 50	105 25 27	2.00	.30	.30	.5	1,500	50	500	15.0	10	15	15
007	39 9 23	105 24 51	1.50	.20	.30	.5	1,500	N	200	20.0	N	N	<5
008	39 9 27	105 24 8	1.50	.30	.30	.2	1,000	30	500	10.0	5	20	7
009	39 9 44	105 23 10	3.00	.30	.70	.7	3,000	N	700	15.0	5	N	5
010	39 23 33	105 40 24	5.00	.50	.70	.5	1,000	10	700	1.0	10	70	20
011	39 23 32	105 40 14	3.00	.50	.70	.7	1,000	10	700	1.0	7	70	30
012	39 20 38	105 34 35	7.00	.70	.70	1.0	1,000	30	700	<1.0	15	150	30
013	39 20 48	105 35 17	10.00	.50	.70	1.0	1,500	30	700	<1.0	10	200	5
014	39 21 7	105 36 6	3.00	.30	.70	.7	1,000	50	500	<1.0	10	100	5
015	39 22 36	105 39 31	5.00	.30	.50	.7	1,500	<10	500	1.0	10	100	10
016	39 22 15	105 38 59	7.00	.30	.50	1.0	3,000	<10	300	<1.0	7	100	7
017	39 22 9	105 38 44	7.00	.30	.70	>1.0	2,000	15	500	<1.0	7	100	7
018	39 21 44	105 37 58	2.00	.50	.70	.5	700	50	700	1.5	10	70	20
019	39 10 59	105 27 33	1.00	.15	.20	.3	1,000	30	300	10.0	5	N	20
020	39 10 41	105 27 18	1.00	.20	.50	.3	700	20	500	10.0	N	N	15
021	39 11 10	105 28 9	2.00	.20	1.00	.7	2,000	20	700	10.0	N	15	50
022	39 17 57	105 24 15	1.50	.15	.30	.2	700	15	300	15.0	5	10	10
023	39 17 56	105 24 20	1.00	.15	.30	.3	500	20	300	15.0	N	10	10
024	39 18 18	105 24 0	2.00	.30	.30	.5	1,500	20	700	50.0	7	50	70
025	39 18 47	105 23 54	2.00	.10	.10	.7	1,500	N	200	7.0	N	N	<5
026	39 19 29	105 24 22	10.00	.10	.10	>1.0	3,000	10	300	1.0	5	N	<5
027	39 19 43	105 24 33	10.00	.50	1.00	>1.0	5,000	20	1,000	1.5	10	30	10
028	39 20 24	105 26 33	5.00	.30	.50	.7	700	20	700	2.0	15	100	20
029	39 21 24	105 25 55	5.00	.70	.70	.7	1,000	50	700	2.0	10	150	50
030	39 19 42	105 26 58	7.00	.50	.50	.7	700	20	700	1.5	20	200	50
031	39 20 27	105 28 35	3.00	.30	.70	.7	700	20	700	1.5	10	100	20
032	39 20 27	105 28 35	10.00	.50	1.00	>1.0	1,500	30	700	1.0	15	200	70
033	39 20 16	105 28 41	5.00	.70	1.00	1.0	1,500	30	1,000	2.0	15	150	50
034	39 19 44	105 27 42	7.00	.20	.30	1.0	1,000	30	700	1.0	15	150	30
035	39 19 49	105 27 29	7.00	.30	.30	1.0	1,500	30	500	1.0	15	150	50
036	39 13 55	105 26 31	.20	.50	.30	.3	1,000	20	500	5.0	5	30	15
037	39 14 3	105 26 32	.30	.20	.30	.3	700	30	300	5.0	5	30	7
038	39 14 22	105 25 31	.30	.20	.20	>1.0	1,500	10	500	7.0	N	20	10
039	39 14 7	105 24 57	.15	.20	.20	.7	1,000	N	700	5.0	N	15	5
042	39 12 51	105 23 46	2.00	.15	.30	1.0	1,000	15	500	3.0	N	15	7
043	39 12 31	105 23 44	5.00	.20	.30	>1.0	2,000	10	700	2.0	5	20	10
044	39 12 23	105 24 23	2.00	.20	.30	.5	500	50	500	5.0	<5	20	10
045	39 14 48	105 27 14	3.00	.20	.30	1.0	1,500	20	700	3.0	N	20	5
046	39 14 42	105 26 19	2.00	.15	.20	.5	700	15	300	3.0	N	15	5
047	39 15 31	105 27 19	3.00	.20	.20	.7	500	15	700	3.0	N	50	5

TABLE 3. ANALYTICAL DATA FOR STREAM-SEDIMENT SAMPLES FROM 110 SITES DRAINING THE LOST CREEK WILDERNESS AREA, COLORADO.--Continued

Sample	La-ppm s	Mo-ppm s	Nb-ppm s	Ni-ppm s	Pb-ppm s	Sc-ppm s	Sn-ppm s	Sr-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zr-ppm s	Th-ppm s	Li-ppm aa	Zn-ppm aa
001	500	N	20	20	70	15	N	100	200	N	100	500	<100	18	70
002	150	N	<20	30	50	10	N	100	200	N	200	200	N	18	68
003	500	N	30	20	70	15	N	150	200	N	150	200	N	18	90
004	1,000	N	70	5	100	7	700	N	30	N	200	>1,000	<100	55	78
005	>1,000	N	70	5	100	10	150	N	15	N	700	>1,000	150	38	58
006	700	N	150	15	150	10	20	N	50	<50	500	1,000	200	103	70
007	700	N	300	<5	50	15	500	N	10	<50	500	700	100	78	45
008	500	N	100	10	50	10	50	N	50	N	500	1,000	N	55	45
009	150	N	50	<5	30	7	20	N	10	N	500	>1,000	<100	35	123
010	700	N	<20	15	50	10	N	150	150	N	70	200	N	25	63
011	700	N	N	15	70	10	N	200	200	N	700	200	<100	28	68
012	500	N	<20	30	70	15	N	100	300	N	300	700	<100	30	70
013	300	N	N	15	30	15	N	100	200	N	150	300	<100	18	58
014	700	N	<20	15	70	7	N	<100	150	N	500	700	N	18	58
015	700	N	<20	15	70	10	10	100	150	N	500	200	100	25	73
016	>1,000	N	<20	10	100	15	10	N	100	N	700	500	150	18	65
017	>1,000	N	20	10	100	15	10	N	100	N	500	500	150	15	75
018	200	N	N	15	50	10	N	150	70	N	150	300	N	28	65
019	>1,000	N	100	10	100	10	10	N	30	N	150	1,000	150	55	83
020	500	N	100	7	150	15	20	N	30	N	200	1,000	200	43	63
021	1,000	5	150	15	150	15	15	N	30	<50	700	>1,000	500	53	83
022	200	N	50	5	70	5	15	N	20	N	70	500	N	65	73
023	500	N	70	5	100	7	20	N	30	N	100	700	100	53	45
024	500	<5	50	10	150	15	20	N	70	N	150	700	<100	150	102
025	500	<5	70	<5	100	15	100	N	30	N	200	>1,000	<100	45	88
026	500	N	100	<5	70	15	20	N	150	N	150	>1,000	<100	30	155
027	300	N	70	<5	70	15	20	200	200	N	100	1,000	<100	13	113
028	300	N	N	30	50	15	N	150	150	N	150	500	N	30	68
029	300	N	N	20	100	15	N	200	100	N	100	300	N	28	65
030	300	N	20	50	150	15	N	100	150	N	150	300	N	23	78
031	300	N	<20	15	70	15	N	300	100	N	100	200	N	25	60
032	1,000	N	30	30	150	15	N	200	150	N	200	150	150	30	90
033	300	N	30	20	100	15	N	200	150	N	70	200	<100	40	85
034	1,000	N	20	30	100	15	N	N	150	N	500	300	150	25	88
035	700	N	50	20	100	15	N	100	200	N	150	700	100	28	83
036	500	5	70	15	150	7	20	N	50	N	200	500	100	103	108
037	1,000	<5	150	5	200	10	30	N	50	N	200	1,000	200	105	123
038	>1,000	N	70	5	200	10	70	N	50	N	500	>1,000	200	38	98
039	700	N	70	5	150	10	50	N	20	N	300	1,000	150	30	68
042	700	N	70	<5	150	7	30	N	30	N	200	1,000	100	35	113
043	>1,000	<5	100	5	200	15	200	N	50	N	300	>1,000	200	43	180
044	700	N	100	5	150	10	30	N	30	N	300	1,000	150	83	60
045	1,000	5	70	5	100	15	30	N	30	N	300	>1,000	150	73	100
046	500	N	70	5	100	7	20	N	50	N	150	1,000	<100	38	58
047	500	N	70	5	150	10	30	N	70	N	200	1,000	N	63	90

TABLE 3. ANALYTICAL DATA FOR STREAM-SEDIMENT SAMPLES FROM 110 SITES DRAINING THE LOST CREEK WILDERNESS AREA, COLORADO.--Continued

Sample	Latitude	Longitude	Fe-pct. s	Mg-pct. s	Ca-pct. s	Ti-pct. s	Mn-ppm s	B-ppm s	Ba-ppm s	Be-ppm s	Co-ppm s	Cr-ppm s	Cu-ppm s
048	39 15 31	105 27 29	.15	.20	.20	.5	700	20	500	5.0	N	20	10
049	39 15 46	105 27 41	.20	.20	.15	.7	700	20	300	5.0	5	30	7
050	39 16 5	105 29 13	.20	.15	.15	.7	500	<10	300	2.0	5	50	5
051	39 16 11	105 29 38	.20	.15	.20	1.0	500	15	300	2.0	N	30	5
052	39 25 22	105 35 53	15.00	1.00	.70	.7	1,000	15	300	<1.0	15	700	10
053	39 24 27	105 34 34	5.00	.20	.50	1.0	300	70	500	1.0	5	200	5
054	39 24 26	105 33 36	3.00	.70	1.00	.7	300	50	700	1.0	7	200	7
055	39 24 11	105 33 43	7.00	.50	1.00	.7	500	20	500	1.0	7	300	10
056	39 23 18	105 31 21	15.00	.20	.30	>1.0	1,000	15	300	<1.0	10	500	10
057	39 23 35	105 28 34	15.00	.70	.15	1.0	700	30	300	<1.0	10	500	20
058	39 22 57	105 27 44	5.00	1.00	.50	.5	500	70	700	1.0	7	200	10
059	39 23 2	105 27 51	10.00	.70	.30	1.0	700	30	500	<1.0	7	500	15
060	39 21 32	105 39 32	3.00	1.50	1.50	.7	500	15	500	1.5	7	70	15
061	39 21 22	105 39 5	2.00	1.00	1.00	.3	700	20	500	1.0	5	100	10
062	39 21 4	105 38 5	5.00	1.00	.20	.5	300	15	300	<1.0	7	500	15
063	39 10 51	105 24 7	1.50	.20	.20	.3	300	20	300	5.0	<5	50	10
064	39 10 53	105 24 6	1.00	.20	.30	.3	500	20	700	3.0	N	30	10
065	39 10 36	105 23 56	1.50	.20	.20	.3	500	10	500	5.0	N	20	7
066	39 9 19	105 22 17	1.00	.30	.30	.7	700	N	1,000	1.5	N	10	5
068	39 18 25	105 21 44	1.00	.30	.15	.3	300	15	300	3.0	N	10	<5
069	39 18 24	105 22 1	1.50	.20	.10	.5	500	15	200	3.0	N	10	5
070	39 14 30	105 34 28	5.00	.70	.70	1.0	500	20	200	1.5	15	150	20
071	39 14 50	105 34 33	2.00	.50	1.50	.7	500	30	300	1.5	7	100	20
072	39 15 11	105 34 38	3.00	.70	2.00	.7	300	15	300	1.5	15	150	15
073	39 19 42	105 32 54	7.00	.30	1.00	>1.0	300	30	500	<1.0	15	200	20
074	39 19 38	105 32 51	10.00	.10	<.05	>1.0	300	30	150	N	15	500	20
075	39 18 43	105 30 54	3.00	.30	1.00	>1.0	200	20	300	1.0	5	150	15
076	39 18 20	105 21 9	1.50	.05	.20	.7	300	20	150	2.0	N	20	10
077	39 14 11	105 21 34	2.00	.10	.20	1.0	300	30	300	3.0	N	20	10
078	39 6 51	105 22 1	2.00	.10	.30	1.0	500	20	200	5.0	N	20	10
079	39 6 20	105 24 12	1.00	.20	.50	.5	300	30	500	7.0	<5	30	7
080	39 6 31	105 23 28	2.00	.30	.30	.2	300	20	200	7.0	5	30	15
081	39 22 49	105 35 57	7.00	.20	.20	>1.0	500	10	200	N	7	150	20
082	39 22 39	105 34 55	3.00	.30	.30	>1.0	500	30	300	N	20	150	20
083	39 22 14	105 34 11	3.00	.30	.50	>1.0	500	30	300	N	7	150	20
084	39 21 42	105 33 32	7.00	.50	.50	>1.0	500	30	500	1.0	10	150	20
085	39 7 18	105 25 27	1.00	.30	.20	.3	500	30	300	7.0	5	20	7
086	39 7 29	105 26 7	1.50	.50	.50	.3	500	30	500	7.0	5	70	10
087	39 7 29	105 26 18	1.00	.30	.50	.5	500	30	300	7.0	5	30	15
088	39 20 58	105 31 45	10.00	.50	.70	>1.0	500	20	200	1.0	10	200	20
089	39 20 48	105 31 35	5.00	.70	.70	1.0	300	30	300	1.5	15	150	30
090	39 20 20	105 30 42	5.00	.30	.70	>1.0	300	30	300	1.0	7	150	20
091	39 20 11	105 29 51	10.00	.30	.70	>1.0	700	20	100	N	10	300	20
092	39 15 40	105 31 34	10.00	.20	.50	>1.0	500	20	200	N	10	200	15
093	39 14 43	105 30 57	2.00	.15	.15	.7	500	20	200	3.0	<5	20	30

TABLE 3. ANALYTICAL DATA FOR STREAM-SEDIMENT SAMPLES FROM 110 SITES DRAINING THE LOST CREEK WILDERNESS AREA, COLORADO.--Continued

Sample	La-ppm s	Mo-ppm s	Nb-ppm s	Ni-ppm s	Pb-ppm s	Sc-ppm s	Sn-ppm s	Sr-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zr-ppm s	Th-ppm s	Li-ppm aa	Zn-ppm aa
048	700	N	70	5	150	10	30	N	50	N	300	1,000	100	65	83
049	1,000	N	100	10	150	15	30	N	50	N	300	>1,000	150	83	113
050	700	N	50	5	150	10	20	N	70	N	200	1,000	100	33	63
051	500	N	70	5	150	10	20	N	50	N	200	>1,000	150	23	65
052	1,000	N	20	50	150	20	20	N	150	N	500	500	<100	8	65
053	150	N	<20	15	100	7	N	100	200	N	150	500	N	10	35
054	100	N	N	20	100	15	N	150	200	N	100	100	N	23	55
055	200	N	20	20	70	10	N	150	200	N	150	200	N	15	60
056	500	N	30	20	70	15	N	N	200	N	200	200	N	13	98
057	200	N	20	30	70	15	N	<100	300	N	70	150	N	53	50
058	100	N	N	30	100	15	N	200	200	N	70	150	N	3	38
059	200	N	20	50	70	15	N	100	300	N	150	200	N	5	5
060	150	N	30	20	70	15	N	300	150	N	50	150	N	15	90
061	150	N	N	15	50	15	15	150	100	N	100	150	N	20	68
062	500	N	N	30	70	15	N	100	200	N	150	200	150	28	120
063	1,000	5	70	10	100	15	200	N	70	N	200	700	300	45	53
064	>1,000	<5	100	10	150	15	100	N	70	N	300	1,000	200	45	55
065	>1,000	N	100	10	150	15	150	N	70	N	300	1,000	300	33	55
066	500	N	70	10	100	15	70	N	50	N	200	>1,000	150	18	70
068	500	N	50	5	150	N	30	N	50	N	150	700	100	63	58
069	1,000	<5	70	5	150	30	100	N	50	N	200	>1,000	150	63	75
070	150	N	<20	30	30	10	10	150	150	N	100	150	N	20	55
071	200	N	20	20	50	15	10	150	100	N	100	200	N	--	--
072	300	N	N	20	70	7	10	150	150	N	300	200	200	30	55
073	200	N	<20	20	50	10	15	150	150	N	100	500	N	40	58
074	200	N	N	20	30	10	20	N	150	N	200	150	N	30	65
075	300	N	20	10	50	7	15	100	150	N	200	500	100	30	45
076	>1,000	<5	150	100	100	20	>1,000	N	50	N	500	>1,000	300	40	58
077	>1,000	5	70	20	70	15	200	N	50	N	500	1,000	200	40	65
078	700	N	50	30	70	10	20	N	50	N	300	1,000	150	30	65
079	500	N	70	7	50	10	30	100	50	N	300	700	100	30	8
080	500	5	200	10	70	30	200	N	50	N	500	>1,000	200	140	75
081	>1,000	N	20	10	50	7	10	100	150	N	700	1,000	200	20	90
082	700	N	20	20	30	7	10	100	100	N	300	500	100	30	93
083	1,000	N	20	20	50	7	N	N	100	N	500	500	150	20	93
084	150	N	20	20	30	10	N	100	150	N	150	700	N	30	93
085	150	N	50	10	50	7	20	100	50	N	100	200	<100	40	43
086	500	N	30	5	70	10	70	100	50	N	150	200	100	60	48
087	500	N	100	5	50	15	200	100	50	N	200	1,000	200	50	60
088	200	N	20	20	50	7	<10	100	70	N	200	700	N	20	95
089	200	N	<20	30	30	10	<10	<100	100	N	200	200	N	30	90
090	500	N	<20	10	50	7	10	100	200	N	200	300	N	20	68
091	1,000	N	30	15	70	7	10	N	300	N	300	300	150	10	85
092	150	N	N	10	30	15	200	N	200	N	500	200	N	10	58
093	200	5	70	7	50	7	15	N	20	N	200	1,000	<100	30	58

TABLE 3. ANALYTICAL DATA FOR STREAM-SEDIMENT SAMPLES FROM 110 SITES DRAINING THE LOST CREEK WILDERNESS AREA, COLORADO.--Continued

Sample	Latitude	Longitude	Fe-pct. s	Mg-pct. s	Ca-pct. s	Ti-pct. s	Mn-ppm s	B-ppm s	Ba-ppm s	Be-ppm s	Co-ppm s	Cr-ppm s	Cu-ppm s
094	39 12 38	105 31 13	3.00	.20	.50	>1.0	700	20	500	2.0	5	20	30
095	39 12 30	105 31 52	5.00	.30	.20	>1.0	700	15	500	1.0	7	100	15
096	39 16 23	105 28 32	2.00	.20	.20	1.0	500	10	200	3.0	<5	20	20
097	39 16 29	105 27 27	2.00	.20	.20	.5	300	30	200	2.0	5	70	7
098	39 16 39	105 26 49	1.00	.10	.30	.7	500	N	300	3.0	<5	15	7
099	39 12 35	105 33 12	1.50	.50	.70	.3	200	150	700	1.5	7	50	7
100	39 12 42	105 33 26	3.00	.30	.70	.7	200	100	500	1.5	7	100	10
101	39 16 26	105 25 44	1.50	.10	.50	.7	1,000	10	200	7.0	<5	10	7
102	39 16 33	105 25 16	2.00	.10	.30	1.0	700	N	150	5.0	<5	15	10
103	39 16 18	105 24 35	1.00	.10	.10	.7	500	N	150	5.0	<5	10	7
104	39 16 12	105 24 37	1.00	.10	.07	.5	200	N	150	5.0	<5	10	5
105	39 15 54	105 24 5	1.50	.07	.15	.7	300	N	300	3.0	<5	10	7
106	39 15 50	105 24 1	2.00	.10	.20	1.0	700	N	200	5.0	<5	10	7
107	39 15 57	105 23 16	1.50	.07	.15	.7	500	N	100	7.0	<5	<10	7
108	39 15 29	105 22 15	2.00	.30	.30	.3	200	N	100	5.0	<5	10	10
109	39 13 11	105 34 39	2.00	.30	.50	.5	200	15	200	1.0	7	100	15
110	39 11 34	105 29 32	5.00	.20	1.00	1.0	700	10	500	2.0	5	50	5
111	39 11 57	105 29 26	7.00	.10	.70	>1.0	2,000	<10	150	3.0	<5	10	5
112	39 11 55	105 29 53	3.00	.10	.70	1.0	500	N	300	3.0	<5	<10	7
113	39 15 21	105 22 17	2.00	.05	.50	.7	700	<10	200	3.0	N	N	7

TABLE 3. ANALYTICAL DATA FOR STREAM-SEDIMENT SAMPLES FROM 110 SITES DRAINING THE LOST CREEK WILDERNESS AREA, COLORADO.--Continued

Sample	La-ppm s	Mo-ppm s	Nb-ppm s	Ni-ppm s	Pb-ppm s	Sc-ppm s	Sn-ppm s	Sr-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zr-ppm s	Th-ppm s	Li-ppm aa	Zn-ppm aa
094	150	10	70	7	50	10	30	N	30	N	200	700	N	30	133
095	150	5	70	10	30	10	20	N	150	N	300	1,000	N	20	145
096	200	<5	50	5	50	7	15	N	30	N	300	1,000	<100	30	95
097	700	N	50	7	30	10	15	<100	70	N	200	1,000	150	20	58
098	200	7	50	7	50	10	15	N	50	N	300	1,000	<100	20	25
099	70	N	N	15	30	7	<10	200	50	N	30	150	N	8	48
100	100	N	N	15	30	10	<10	150	100	N	50	300	N	8	45
101	700	7	50	7	70	7	15	N	30	N	300	1,000	150	35	110
102	500	5	70	7	50	7	30	N	30	N	200	>1,000	100	40	80
103	700	5	70	7	50	7	50	N	30	N	100	1,000	200	25	55
104	1,000	<5	70	5	70	7	200	N	30	N	300	700	150	18	58
105	1,000	<5	70	7	70	7	15	N	30	N	300	1,000	200	25	75
106	0	<5	30	7	50	7	15	N	20	N	200	1,000	150	25	95
107	>1,000	<5	100	10	50	7	20	N	20	N	150	1,000	150	30	60
108	700	5	50	10	30	7	20	N	30	N	200	1,000	100	28	88
109	150	N	<20	20	30	7	N	100	100	N	70	150	<100	12	55
110	500	5	70	7	50	7	15	<100	20	N	500	>1,000	100	23	138
111	>1,000	N	100	7	30	7	150	N	20	N	1,000	>1,000	300	25	115
112	700	<5	50	5	30	7	20	N	10	N	500	1,000	100	20	138
113	500	N	50	7	30	7	30	N	15	N	200	>1,000	100	28	93

TABLE 4. ANALYTICAL DATA FOR NONMAGNETIC HEAVY-MINERAL-CONCENTRATE SAMPLES FROM 112 SITES DRAINING THE LOST CREEK WILDERNESS AREA, COLORADO.

[N, not detected; <, detected but below the limit of determination shown; >, determined to be greater than the value shown.]

Sample	Latitude	Longitude	Fe-pct.	Mg-pct.	Ca-pct.	Ti-pct.	Mn-ppm	B-ppm	Ba-ppm	Be-ppm	Bi-ppm	Co-ppm	Cr-ppm
			s	s	s	s	s	s	s	s	s	s	s
001	39 23 34	105 31 38	1.00	.20	7.00	1.0	1,500	150	300	N	N	N	100
002	39 23 27	105 32 31	3.00	.70	10.00	1.5	1,500	700	300	N	N	10	200
003	39 22 50	105 30 3	1.00	.20	10.00	.7	1,500	70	300	2	N	N	150
004	39 10 15	105 27 1	.20	<.05	15.00	1.0	300	N	70	15	N	N	N
005	39 10 5	105 27 1	.30	<.05	20.00	.2	300	N	N	5	N	N	N
006	39 9 50	105 25 27	.10	<.05	<.10	.1	150	50	N	10	N	N	N
007	39 9 23	105 24 51	.20	<.05	.15	.7	200	N	100	20	N	N	N
008	39 9 27	105 24 8	1.50	.05	.10	.7	300	70	150	30	N	N	N
009	39 9 44	105 23 10	.50	<.05	.20	.2	200	20	150	10	N	N	N
010	39 23 33	105 40 24	.30	.20	20.00	.7	2,000	N	200	2	N	N	20
011	39 23 32	105 40 14	.50	.10	20.00	.2	1,500	N	300	N	N	N	50
012	39 20 32	105 34 35	1.50	.30	15.00	.7	1,000	50	200	N	N	N	150
013	39 20 48	105 35 17	1.00	.30	2.00	.2	1,500	200	500	2	N	N	100
014	39 21 4	105 36 6	1.50	.30	3.00	.5	1,000	150	300	3	N	N	150
015	39 22 36	105 39 31	1.50	.20	1.50	.7	500	N	200	3	N	N	70
016	39 22 15	105 38 59	1.50	.20	3.00	1.0	500	N	150	3	N	N	100
017	39 22 9	105 38 44	1.00	.20	15.00	.2	1,500	150	200	3	N	10	70
018	39 21 44	105 37 58	.70	.20	1.50	.3	300	N	300	2	N	N	100
019	39 10 59	105 27 33	.50	.05	20.00	.7	200	N	100	2	N	N	N
020	39 10 41	105 27 18	.70	.05	20.00	.7	200	N	100	2	N	N	N
021	39 11 10	105 28 9	.30	<.05	30.00	1.0	150	N	50	3	N	N	N
022	39 17 57	105 24 15	.70	.05	1.00	>2.0	300	30	150	5	N	N	N
023	39 17 56	105 24 20	.50	.05	.20	1.0	200	N	50	3	N	N	N
024	39 18 11	105 24 0	.70	.07	.30	1.5	200	N	70	3	N	N	N
025	39 18 47	105 23 54	.50	<.05	10.00	1.5	300	N	100	3	N	N	N
026	39 19 29	105 24 22	.50	.05	2.00	>2.0	300	N	100	3	N	N	N
027	39 19 43	105 24 33	.50	.10	7.00	>2.0	500	N	100	N	N	N	50
028	39 20 24	105 26 33	.70	.20	5.00	>2.0	700	20	200	N	N	N	50
029	39 21 24	105 25 55	1.00	1.00	5.00	1.5	700	150	150	<2	N	20	200
030	39 19 42	105 26 58	1.00	.50	1.00	1.0	500	70	200	2	N	10	500
031	39 20 44	105 29 2	1.50	1.50	1.50	1.0	500	100	200	3	N	15	500
032	39 20 27	105 28 35	.70	.50	30.00	1.5	1,000	200	150	N	N	10	200
033	39 20 16	105 28 41	.50	.30	20.00	1.0	700	500	100	2	N	20	200
034	39 19 44	105 27 42	.70	.20	30.00	1.0	2,000	30	100	N	N	N	150
035	39 19 49	105 27 29	.70	.20	5.00	1.5	1,000	30	100	2	N	<10	200
036	39 13 55	105 26 31	.70	.07	15.00	.7	500	20	500	2	N	N	100
037	39 14 3	105 26 32	.30	.05	20.00	1.0	200	20	150	3	N	N	200
038	39 14 22	105 25 31	.30	<.05	10.00	2.0	300	20	150	5	N	N	200
039	39 14 7	105 24 57	.50	.05	15.00	1.5	500	30	200	2	N	N	200
040	39 13 46	105 25 17	.30	.05	15.00	.7	700	<20	100	2	N	N	N
041	39 13 32	105 23 53	.30	.05	15.00	1.5	300	<20	100	3	N	N	N
042	39 12 51	105 23 46	.20	.10	3.00	1.0	200	20	70	3	N	10	N
043	39 12 31	105 23 44	.20	.10	10.00	.5	200	<20	50	3	N	10	N
044	39 12 23	105 24 23	.50	.10	10.00	.5	200	20	100	5	N	10	N
045	39 14 48	105 27 14	.30	.10	1.00	2.0	300	20	100	3	N	10	N

TABLE 4. ANALYTICAL DATA FOR NONMAGNETIC HEAVY-MINERAL-CONCENTRATE SAMPLES FROM 112 SITES DRAINING THE LOST CREEK WILDERNESS AREA, COLORADO.--Continued

Sample	Cu-ppm s	La-ppm s	Mo-ppm s	Nb-ppm s	Ni-ppm s	Pb-ppm s	Sc-ppm s	Sn-ppm s	Sr-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zr-ppm s	Th-ppm s
001	20	>2,000	N	N	N	200	20	N	N	100	N	500	>2,000	700
002	30	>2,000	N	N	50	200	20	N	N	150	N	2,000	>2,000	1,000
003	100	1,000	N	N	N	150	N	N	N	70	N	300	>2,000	200
004	N	2,000	N	200	N	150	N	>2,000	N	50	N	1,000	>2,000	500
005	<10	>2,000	N	150	N	300	100	>2,000	N	50	N	2,000	>2,000	3,000
006	N	1,500	N	50	N	50	N	>2,000	N	30	N	200	>2,000	<200
007	N	500	N	300	N	150	N	2,000	N	N	N	500	>2,000	200
008	N	1,500	N	300	N	150	N	1,500	N	30	N	700	>2,000	500
009	N	700	N	N	N	100	70	500	N	50	N	3,000	>2,000	500
010	N	2,000	N	50	N	150	N	N	N	70	N	700	>2,000	300
011	N	2,000	N	N	N	200	N	N	200	50	N	500	>2,000	300
012	N	2,000	N	N	N	200	N	N	N	50	N	500	>2,000	300
013	N	1,000	N	N	N	150	N	N	N	20	N	300	>2,000	N
014	<10	500	N	N	N	150	N	N	N	100	N	200	>2,000	N
015	N	2,000	N	N	N	150	N	N	N	150	N	300	>2,000	300
016	N	1,000	N	N	N	100	N	N	N	100	N	300	>2,000	<200
017	N	>2,000	N	N	N	500	50	N	N	50	N	1,000	>2,000	1,000
018	N	200	N	N	N	150	N	N	N	70	N	200	>2,000	N
019	<10	>2,000	N	100	N	300	20	300	1,000	20	N	>5,000	>2,000	1,000
020	N	>2,000	N	100	N	300	20	200	1,500	20	N	1,500	>2,000	1,500
021	N	2,000	N	150	N	150	20	20	2,000	20	N	2,000	>2,000	1,000
022	10	>2,000	N	70	N	500	20	1,500	1,500	20	N	1,500	>2,000	1,000
023	N	2,000	N	100	N	200	20	1,000	1,500	20	N	1,000	>2,000	500
024	10	>2,000	<10	100	N	700	20	2,000	1,000	20	<100	1,500	>2,000	2,000
025	<10	>2,000	N	70	N	300	20	2,000	2,000	20	N	1,000	>2,000	1,000
026	10	2,000	N	70	N	300	20	50	1,000	20	N	1,500	>2,000	700
027	10	2,000	<10	50	N	300	20	2,000	2,000	20	N	1,000	>2,000	500
028	10	>2,000	15	50	N	500	20	700	1,000	20	N	700	>2,000	500
029	15	>2,000	50	<50	N	500	20	1,500	N	20	150	1,000	>2,000	700
030	<10	2,000	N	N	N	500	20	50	N	20	<100	1,000	2,000	500
031	10	2,000	N	50	30	300	20	100	N	20	N	1,000	2,000	300
032	N	>2,000	N	N	<10	500	20	N	1,500	20	N	1,500	1,500	1,000
033	10	>2,000	N	N	20	1,000	20	N	N	20	N	3,000	1,000	2,000
034	<10	2,000	N	N	10	300	20	<20	700	20	N	1,000	1,500	1,000
035	<10	>2,000	N	N	10	500	20	150	N	20	N	1,500	>2,000	1,000
036	15	>2,000	N	100	N	200	20	200	1,500	70	N	2,000	>2,000	1,500
037	N	2,000	N	100	N	200	20	300	2,000	20	N	3,000	>2,000	700
038	10	>2,000	N	70	N	300	20	1,500	2,000	50	N	3,000	>2,000	1,000
039	15	>2,000	N	100	N	300	20	150	3,000	30	N	5,000	>2,000	1,500
040	N	>2,000	N	200	N	300	20	1,500	1,000	20	N	3,000	>2,000	1,500
041	<10	>2,000	N	150	N	300	20	50	1,000	N	N	5,000	>2,000	1,500
042	15	>2,000	N	300	N	1,000	20	500	1,000	30	N	5,000	>2,000	2,000
043	10	>2,000	N	300	N	1,000	20	700	1,000	30	N	3,000	>2,000	3,000
044	<10	>2,000	N	100	N	1,000	20	1,500	1,000	30	N	3,000	>2,000	2,000
045	<10	>2,000	N	150	N	700	20	>2,000	1,000	30	N	2,000	>2,000	2,000

TABLE 4. ANALYTICAL DATA FOR NONMAGNETIC HEAVY-MINERAL-CONCENTRATE SAMPLES FROM 112 SITES DRAINING THE LOST CREEK WILDERNESS AREA, COLORADO.--Continued

Sample	Latitude	Longitude	Fe-pct.	Mg-pct.	Ca-pct.	Ti-pct.	Mn-ppm	B-ppm	Ba-ppm	Be-ppm	Bi-ppm	Co-ppm	Cr-ppm
			s	s	s	s	s	s	s	s	s	s	s
046	39 14 42	105 26 19	.30	<.05	1.00	>2.0	200	20	150	3	N	N	200
047	39 15 31	105 27 19	.50	.10	.50	>2.0	200	30	100	5	N	N	300
048	39 15 31	105 27 29	.30	.05	.20	>2.0	200	30	100	7	N	N	200
049	39 15 46	105 27 41	.50	.07	.20	2.0	300	30	150	5	N	N	200
050	39 16 5	105 29 13	.30	.05	.20	>2.0	300	30	100	3	N	N	200
051	39 16 11	105 29 38	.50	.05	7.00	>2.0	500	30	100	3	N	N	300
052	39 25 22	105 35 53	.50	.50	5.00	.7	300	N	500	3	N	15	50
053	39 24 27	105 34 34	1.00	.50	15.00	1.5	1,000	500	300	N	N	<10	200
054	39 24 26	105 33 36	1.00	1.00	5.00	1.0	700	100	1,500	2	N	<10	70
055	39 24 11	105 33 43	1.00	.50	15.00	1.5	2,000	200	200	N	N	<10	200
056	39 23 18	105 31 21	.70	.20	15.00	1.0	1,500	200	200	<2	N	10	100
057	39 23 35	105 28 34	1.00	.20	1.50	.3	300	30	200	2	N	N	150
058	39 22 57	105 27 44	1.00	.20	3.00	1.0	300	30	200	3	N	N	200
059	39 23 2	105 27 51	1.50	.70	15.00	1.0	700	20	200	2	N	10	200
060	39 21 32	105 39 32	.70	.20	15.00	1.5	300	20	100	<2	N	10	150
061	39 21 22	105 39 5	1.00	.20	1.00	.5	200	20	100	2	N	N	300
062	39 21 4	105 38 5	1.50	.50	1.50	1.5	500	50	300	<2	N	N	200
063	39 10 51	105 24 7	.70	.10	.50	.7	200	N	70	7	N	N	N
064	39 10 53	105 24 6	.70	.07	10.00	1.0	300	20	100	7	N	N	N
065	39 10 36	105 23 56	.20	<.05	7.00	.5	150	N	N	3	N	N	N
066	39 9 19	105 22 17	.50	<.05	.50	.7	500	30	150	5	N	N	N
068	39 18 25	105 21 44	.50	.07	.30	2.0	200	30	150	10	N	N	N
069	39 18 24	105 22 1	.30	.05	15.00	1.0	150	20	50	3	N	N	N
070	39 14 30	105 34 28	1.00	.50	15.00	1.5	700	30	100	2	>2,000	N	200
071	39 14 50	105 34 33	.70	.50	20.00	2.0	1,000	20	150	2	500	N	200
072	39 15 11	105 34 38	1.00	.70	30.00	1.0	2,000	20	100	N	70	10	150
073	39 19 42	105 32 54	1.50	1.00	20.00	.7	700	100	150	3	20	10	200
074	39 19 38	105 32 51	2.00	1.00	7.00	.7	500	300	200	2	<20	15	300
075	39 18 43	105 30 54	.50	.05	15.00	1.5	150	50	50	5	N	N	20
076	39 18 20	105 21 9	.30	<.05	3.00	2.0	100	50	100	5	N	N	N
077	39 14 11	105 21 34	.30	<.05	7.00	2.0	100	50	70	5	N	N	N
078	39 6 51	105 22 1	.15	<.05	10.00	1.0	50	N	50	5	N	N	N
079	39 6 20	105 24 12	.50	.10	10.00	>2.0	150	50	100	50	N	N	50
080	39 6 31	105 23 28	1.00	.50	15.00	.7	700	N	150	2	N	15	100
081	39 22 49	105 35 57	.70	.10	.10	1.0	1,000	50	50	2	N	N	100
082	39 22 39	105 34 55	.70	.50	7.00	>2.0	700	200	150	N	N	10	300
083	39 22 14	105 34 11	.70	.70	10.00	>2.0	1,000	200	150	N	N	10	200
084	39 21 42	105 33 32	.70	.50	10.00	.7	1,000	70	100	N	N	10	150
085	39 7 18	105 25 27	.70	.50	20.00	>2.0	300	50	150	200	N	N	70
086	39 7 29	105 26 7	.50	.10	15.00	1.5	300	30	100	100	N	N	20
087	39 7 29	105 26 18	.50	.07	1.00	.7	500	20	<50	2	N	N	<20
088	39 20 58	105 31 45	.70	.30	30.00	.3	2,000	50	100	2	N	N	100
089	39 20 48	105 31 35	1.00	.70	20.00	.2	1,500	100	150	5	N	<10	150
090	39 20 20	105 30 42	.70	.50	30.00	1.5	1,500	100	100	N	N	10	100
091	39 20 11	105 29 51	.70	.70	15.00	.7	2,000	150	70	N	N	10	150

TABLE 4. ANALYTICAL DATA FOR NONMAGNETIC HEAVY-MINERAL-CONCENTRATE SAMPLES FROM 112 SITES DRAINING THE LOST CREEK WILDERNESS AREA, COLORADO.--Continued

Sample	Cu-ppm s	La-ppm s	Mo-ppm s	Nb-ppm s	Ni-ppm s	Pb-ppm s	Sc-ppm s	Sn-ppm s	Sr-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zr-ppm s	Th-ppm s
046	10	2,000	N	100	N	500	20	1,000	1,000	20	N	1,500	>2,000	700
047	10	>2,000	N	100	N	700	20	1,000	1,000	20	N	2,000	>2,000	1,000
048	<10	>2,000	N	150	N	700	20	>2,000	1,000	N	N	3,000	>2,000	1,500
049	<10	2,000	N	70	N	500	20	700	1,000	20	N	1,500	>2,000	700
050	10	1,500	N	70	N	300	20	100	1,000	20	N	2,000	>2,000	700
051	20	2,000	N	70	N	300	20	500	1,000	20	N	2,000	>2,000	1,000
052	10	>2,000	<10	150	N	700	20	20	1,000	20	N	1,500	2,000	1,000
053	10	2,000	N	<50	N	500	20	N	1,000	20	N	1,500	>2,000	500
054	<10	500	N	N	N	200	20	N	N	200	N	500	>2,000	N
055	15	1,000	10	<50	N	200	20	N	N	200	N	1,000	>2,000	500
056	<10	2,000	N	<50	N	300	20	N	N	150	N	1,000	2,000	700
057	<10	200	70	N	N	30	10	N	N	150	700	100	1,500	N
058	10	150	N	N	N	70	15	N	N	200	N	200	>2,000	N
059	<10	700	N	N	N	100	15	N	200	150	N	300	>2,000	200
060	10	700	N	50	N	100	10	N	300	200	N	500	1,500	200
061	N	300	N	N	N	50	10	<20	N	300	N	100	2,000	N
062	10	1,500	N	50	N	200	20	50	N	300	N	300	>2,000	300
063	N	2,000	N	100	N	150	30	1,000	N	20	N	700	>2,000	700
064	<10	>2,000	50	150	N	500	30	>2,000	N	20	N	2,000	>2,000	1,500
065	N	2,000	N	70	N	150	20	>2,000	N	20	N	1,500	>2,000	1,000
066	N	2,000	N	70	N	500	30	>2,000	N	20	N	2,000	>2,000	500
068	<10	>2,000	N	100	N	500	30	1,000	N	20	N	1,500	>2,000	1,000
069	<10	>2,000	N	150	10	300	30	700	N	20	N	2,000	>2,000	1,500
070	30	150	N	50	10	200	20	1,000	200	200	N	700	>2,000	N
071	10	200	N	70	10	100	20	1,000	200	200	N	700	>2,000	N
072	10	>2,000	N	<50	30	300	15	100	<200	50	N	2,000	>2,000	1,500
073	<10	1,000	N	N	20	70	20	20	N	70	N	1,000	>2,000	200
074	10	1,000	N	N	30	70	20	20	N	200	<100	500	>2,000	<200
075	<10	1,000	20	500	10	150	20	>2,000	300	20	100	5,000	>2,000	300
076	N	>2,000	N	100	10	100	20	1,500	N	20	N	>5,000	>2,000	300
077	N	>2,000	N	100	N	100	20	1,000	N	20	N	>5,000	>2,000	300
078	N	2,000	N	100	N	70	20	700	N	20	N	2,000	>2,000	500
079	<10	2,000	N	300	N	70	20	>2,000	N	30	N	1,500	>2,000	500
080	10	>2,000	N	N	70	700	20	N	N	20	N	5,000	>2,000	5,000
081	<10	2,000	N	700	10	70	20	>2,000	N	20	<100	1,500	>2,000	1,000
082	<10	2,000	N	150	10	150	20	30	N	50	100	1,500	>2,000	1,000
083	<10	>2,000	N	50	15	200	20	20	N	50	100	700	>2,000	1,000
084	<10	1,500	N	N	10	70	20	50	N	50	N	700	>2,000	200
085	10	2,000	N	500	N	100	15	2,000	N	50	<100	1,000	>2,000	1,000
086	N	>2,000	N	200	20	100	15	2,000	N	50	N	1,500	>2,000	1,500
087	N	2,000	N	200	10	70	15	>2,000	N	30	N	1,000	>2,000	2,000
088	N	1,000	N	N	20	70	15	150	N	30	<100	1,000	>2,000	500
089	10	1,000	N	N	15	50	15	70	N	30	<100	300	>2,000	500
090	10	>2,000	10	N	30	200	15	N	N	150	N	2,000	>2,000	2,000
091	<10	>2,000	N	N	30	500	15	20	N	200	N	2,000	>2,000	3,000

TABLE 4. ANALYTICAL DATA FOR NONMAGNETIC HEAVY-MINERAL-CONCENTRATE SAMPLES FROM 112 SITES DRAINING THE LOST CREEK WILDERNESS AREA, COLORADO.--Continued

Sample	Latitude	Longitude	Fe-pct. s	Mg-pct. s	Ca-pct. s	Ti-pct. s	Mn-ppm s	B-ppm s	Ba-ppm s	Be-ppm s	Bi-ppm s	Co-ppm s	Cr-ppm s
092	39 15 40	105 31 34	.50	.10	.20	>2.0	300	70	50	2	N	N	N
093	39 14 43	105 30 57	1.00	.20	.30	2.0	300	70	150	2	N	N	200
094	39 12 38	105 31 13	.10	<.05	10.00	1.0	100	20	50	2	N	N	N
095	39 12 30	105 31 52	.30	.50	2.00	2.0	200	70	70	2	N	N	100
096	39 16 23	105 28 32	.30	.05	.50	2.0	200	70	100	2	N	N	<20
097	39 16 29	105 27 27	.70	.50	.50	>2.0	700	100	70	2	N	N	150
098	39 16 39	105 26 49	.50	.05	.10	>2.0	500	50	70	2	N	N	30
099	39 12 35	105 33 12	.30	.10	2.00	>2.0	300	70	300	20	N	N	50
100	39 12 42	105 33 26	5.00	.20	1.00	>2.0	700	200	300	<2	N	10	150
101	39 16 26	105 25 44	.50	<.05	.10	>2.0	500	50	100	20	N	20	N
102	39 16 33	105 25 16	.20	<.05	.10	>2.0	300	20	50	15	N	N	N
103	39 16 18	105 24 35	.70	.05	.10	>2.0	300	30	100	20	N	N	N
104	39 16 12	105 24 37	.50	<.05	<.10	>2.0	300	30	70	30	N	N	N
105	39 15 54	105 24 5	.70	<.05	<.10	>2.0	500	30	70	20	N	N	N
106	39 15 50	105 24 1	.30	<.05	.15	>2.0	500	50	70	30	N	N	N
107	39 15 57	105 23 16	2.00	.05	<.10	>2.0	1,000	30	70	15	N	N	N
108	39 15 29	105 22 15	.20	<.05	7.00	2.0	300	30	<50	10	N	N	N
109	39 13 11	105 34 39	1.50	.50	7.00	>2.0	1,000	100	100	2	N	N	100
110	39 11 34	105 29 32	.70	<.05	10.00	1.0	500	30	50	7	N	N	20
111	39 11 57	105 29 26	.20	<.05	20.00	1.0	200	N	<50	5	20	N	N
112	39 11 55	105 29 53	.15	<.05	20.00	1.0	200	N	<50	7	N	N	N
113	39 15 21	105 22 17	.20	.05	30.00	1.5	200	N	<50	7	N	N	N

TABLE 4. ANALYTICAL DATA FOR NONMAGNETIC HEAVY-MINERAL-CONCENTRATE SAMPLES FROM 112 SITES DRAINING THE LOST CREEK WILDERNESS AREA, COLORADO.--Continued

Sample	Cu-ppm s	La-ppm s	Mo-ppm s	Nb-ppm s	Ni-ppm s	Pb-ppm s	Sc-ppm s	Sn-ppm s	Sr-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zr-ppm s	Th-ppm s
092	N	>2,000	N	200	N	150	15	300	N	100	<100	1,500	>2,000	1,500
093	10	2,000	N	70	N	100	15	>2,000	N	100	100	500	>2,000	1,000
094	N	200	15	100	N	50	15	500	N	N	N	700	>2,000	200
095	N	2,000	N	70	N	100	15	1,000	N	30	N	1,000	>2,000	1,000
096	N	1,500	N	100	<10	100	15	30	N	20	N	3,000	>2,000	500
097	<10	>2,000	N	70	10	150	15	1,000	N	30	N	2,000	>2,000	1,000
098	N	500	N	50	10	100	15	1,000	N	N	N	3,000	>2,000	700
099	N	300	N	50	N	30	10	100	300	70	100	150	>2,000	N
100	15	300	N	N	30	20	15	N	200	150	<100	200	>2,000	N
101	<10	>2,000	N	70	<10	300	15	30	N	30	N	3,000	>2,000	1,500
102	N	1,500	N	70	N	70	15	1,500	N	30	N	1,000	>2,000	300
103	15	2,000	N	70	15	100	15	>2,000	N	30	N	1,500	>2,000	300
104	<10	>2,000	N	50	10	200	15	>2,000	N	30	N	3,000	>2,000	1,000
105	10	>2,000	N	50	N	200	15	1,000	N	30	N	3,000	>2,000	1,000
106	<10	>2,000	N	70	15	200	15	150	N	30	N	5,000	>2,000	1,500
107	20	>2,000	N	100	10	150	15	>2,000	N	30	N	3,000	>2,000	1,000
108	<10	>2,000	N	100	N	200	15	50	N	30	N	2,000	>2,000	1,500
109	15	2,000	N	<50	N	100	15	20	200	30	100	700	>2,000	200
110	10	2,000	N	70	<10	70	15	N	N	30	N	3,000	>2,000	700
111	<10	>2,000	N	100	N	150	15	>2,000	N	30	N	2,000	>2,000	2,000
112	<10	2,000	N	70	N	100	15	70	N	30	N	2,000	>2,000	1,000
113	<10	>2,000	N	100	N	70	15	>2,000	N	30	N	3,000	>2,000	1,000

TABLE 5. ANALYTICAL DATA FOR ROCK SAMPLES FROM 80 SITES DRAINING THE LOST CREEK WILDERNESS AREA, COLORADO.
[N, not detected; <, detected but below the limit of determination shown; >, determined to be greater than the value shown.]

Sample	Latitude	Longitude	Fe-pct. s	Mg-pct. s	Ca-pct. s	Ti-pct. s	Mn-ppm s	Ag-ppm s	B-ppm s	Ba-ppm s	Be-ppm s	Bi-ppm s
201	39 23 30	105 32 4	2.00	.30	.30	.500	700	N	N	1,000	1.0	N
202	39 10 5	105 26 52	.70	.05	.30	.070	300	N	N	700	3.0	N
203	39 9 31	105 24 47	.70	<.02	.05	.020	500	N	N	150	5.0	N
204	39 9 36	105 24 50	1.00	.07	.10	.100	200	N	N	200	3.0	N
205	39 23 34	105 40 14	.70	2.00	.30	.150	150	N	N	700	N	N
206	39 20 52	105 35 35	5.00	1.00	.30	.500	500	N	10	500	2.0	N
207	39 22 1	105 40 7	.05	<.02	.30	.010	70	N	15	700	N	N
209	39 21 58	105 38 8	3.00	.50	.15	.500	500	N	15	500	1.0	N
211	39 10 44	105 27 20	1.00	.10	>20.00	.050	100	N	N	50	1.5	N
213	39 17 58	105 24 26	1.50	.03	.20	.150	500	N	N	200	3.0	N
214	39 18 24	105 23 51	1.50	.02	.20	.150	500	N	N	200	3.0	N
215	39 18 55	105 23 42	1.00	.05	.15	.020	50	N	N	N	3.0	N
216	39 20 34	105 26 36	1.50	.20	.20	.150	150	N	N	300	<1.0	N
217	39 20 32	105 28 40	1.00	.20	.20	.100	150	N	N	700	<1.0	N
218	39 20 11	105 28 16	1.00	.20	.50	.150	300	N	N	1,000	1.0	N
219	39 19 42	105 27 3	2.00	.70	<.05	.500	700	N	15	200	1.5	N
220	39 19 44	105 26 50	3.00	.20	<.05	.150	70	N	70	500	1.5	N
221	39 19 42	105 26 49	7.00	.15	.05	.200	100	N	30	300	1.5	N
222	39 19 43	105 26 2	3.00	.50	<.05	.300	200	N	20	700	1.0	N
223	39 19 54	105 25 27	5.00	1.00	<.05	.500	300	N	10	700	<1.0	N
224A	39 10 37	105 28 17	2.00	.10	.30	.200	500	N	N	700	2.0	N
225	39 11 38	105 27 0	1.50	.07	.20	.100	200	N	N	300	3.0	N
226	39 12 17	105 27 3	1.50	.07	.30	.100	300	N	N	300	3.0	N
227	39 13 49	105 26 30	2.00	.07	.20	.200	300	N	N	300	3.0	N
228	39 14 17	105 25 32	.70	.05	.20	.020	150	N	N	100	3.0	N
229	39 14 18	105 25 9	.50	.05	<.05	<.002	50	N	N	50	<1.0	N
230	39 13 11	105 23 44	.20	.05	.05	.005	500	N	N	50	5.0	N
231	39 12 39	105 24 21	.50	.07	.10	.010	300	N	N	150	3.0	N
232A	39 9 54	105 26 9	2.00	.10	.20	.200	300	N	N	300	3.0	N
233	39 14 42	105 26 31	3.00	.20	1.00	.200	500	N	N	500	3.0	N
234	39 15 0	105 27 13	1.50	.07	.50	.150	200	N	N	200	3.0	N
235	39 16 2	105 28 14	1.50	.07	.20	.150	300	N	N	300	2.0	N
236	39 16 47	105 29 57	.30	.10	.10	.050	100	N	N	100	1.0	N
237	39 24 26	105 34 37	3.00	.70	1.00	.500	500	N	N	2,000	1.5	N
238	39 24 13	105 33 43	5.00	1.00	.20	.700	300	N	N	500	1.0	N
240	39 22 58	105 27 43	3.00	.70	.30	.300	300	N	20	700	1.0	N
241A	39 21 4	105 38 25	2.00	.70	.50	.500	150	N	20	1,500	N	N
242	39 10 53	105 24 9	1.00	.07	.20	.100	500	N	N	300	2.0	N
243	39 10 50	105 24 1	.70	.07	.20	.050	200	N	20	200	1.5	N
244	39 10 48	105 23 19	5.00	.50	1.00	.500	700	N	10	500	2.0	N
245	39 10 29	105 22 53	1.50	.10	.70	.200	500	N	15	1,500	2.0	N
246A	39 8 27	105 28 35	.50	.10	.30	.010	200	N	N	150	2.0	N
248	39 14 28	105 34 25	5.00	1.50	.07	.700	200	N	N	150	1.0	N
250	39 15 7	105 34 43	1.00	.70	.70	.300	200	N	N	700	1.0	N
252	39 7 9	105 22 4	.70	.05	.70	.150	200	N	N	1,500	7.0	N

TABLE 5. ANALYTICAL DATA FOR ROCK SAMPLES FROM 80 SITES DRAINING THE LOST CREEK WILDERNESS AREA, COLORADO.--Continued

Sample	Cd-ppm s	Co-ppm s	Cr-ppm s	Cu-ppm s	La-ppm s	Mo-ppm s	Nb-ppm s	Ni-ppm s	Pb-ppm s	Sc-ppm s	Sn-ppm s	Sr-ppm s
201	N	7	N	50	200	N	N	5	70	7	N	300
202	N	N	N	N	150	N	20	5	70	<5	N	100
203	N	N	N	N	N	N	30	5	70	<5	20	N
204	N	N	N	<5	50	N	50	5	200	7	50	N
205	N	N	10	<5	30	N	N	10	30	5	N	150
206	N	15	70	<5	N	N	N	50	30	15	N	<100
207	N	N	N	5	N	N	N	<5	70	N	N	200
209	N	15	100	N	50	N	<20	30	10	15	N	<100
211	N	N	N	20	50	20	N	<5	20	N	N	N
213	N	N	N	5	200	N	50	<5	70	5	20	N
214	N	N	N	<5	200	N	50	5	70	<5	<10	N
215	N	N	N	<5	20	N	70	<5	N	N	N	N
216	N	10	50	10	N	N	N	15	10	7	N	100
217	N	<5	N	70	70	N	N	5	100	7	N	150
218	N	7	N	15	30	N	N	5	150	7	N	500
219	N	20	70	N	N	N	20	50	10	15	N	N
220	N	5	50	300	N	N	N	15	300	7	N	N
221	N	N	70	500	N	N	N	5	70	10	N	N
222	N	20	70	10	70	N	N	30	20	15	N	N
223	N	30	100	<5	70	N	N	50	20	20	N	N
224A	N	N	N	<5	300	N	30	5	150	7	30	<100
225	N	N	10	<5	200	N	70	5	100	5	30	N
226	N	N	N	N	200	N	70	5	100	5	20	N
227	N	N	N	<5	200	N	50	<5	70	7	30	N
228	N	N	N	<5	70	N	30	N	100	5	30	N
229	N	N	N	<5	30	N	N	5	N	N	N	N
230	N	N	N	N	30	N	50	7	150	5	N	N
231	N	N	<10	5	30	5	30	5	50	<5	10	N
232A	N	N	N	N	200	N	70	5	150	15	50	N
233	N	N	N	<5	>1,000	<5	30	<5	100	10	50	N
234	N	N	N	<5	300	N	30	<5	100	5	20	N
235	N	N	N	5	200	5	30	5	150	7	30	N
236	N	N	10	<5	50	N	N	7	N	N	N	100
237	N	5	20	20	150	N	<20	10	100	20	N	500
238	N	15	150	<5	50	N	N	70	20	20	N	100
240	N	7	100	<5	70	N	N	30	30	15	N	150
241A	N	7	20	20	200	<5	N	20	100	15	15	500
242	N	N	N	N	50	<5	150	5	150	7	30	N
243	N	N	N	5	100	7	50	5	100	5	20	N
244	N	<5	N	<5	200	5	50	5	100	30	30	N
245	N	N	N	N	200	N	30	<5	100	7	10	100
246A	N	N	N	5	200	N	30	5	150	7	15	N
248	N	20	150	5	50	N	<20	30	10	15	<10	100
250	N	7	15	10	200	N	<20	7	70	10	<10	150
252	N	N	N	N	70	N	30	<5	30	15	20	200

TABLE 5. ANALYTICAL DATA FOR ROCK SAMPLES FROM 80 SITES DRAINING THE LOST CREEK WILDERNESS AREA, COLORADO.--Continued

Sample	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s	Th-ppm s	Li-ppm aa	Au-ppm aa	Zn-ppm aa	F-ppm si	U-inst
201	50	N	30	N	300	N	23	N	73	492	3.04
202	N	N	70	N	150	N	28	N	53	2,660	2.73
203	N	N	30	N	200	N	38	N	30	695	15.38
204	N	N	100	N	150	N	75	N	35	--	2.31
205	30	N	<10	N	150	N	15	N	28	292	2.46
206	150	N	<10	N	100	N	43	N	78	414	2.29
207	N	N	N	N	N	N	5	N	5	198	.18
209	100	N	20	N	300	N	25	N	110	600	2.40
211	N	N	200	N	100	N	10	N	65	266,000	8.72
213	N	N	20	N	500	N	40	N	83	3,200	7.61
214	N	N	50	N	200	N	15	N	13	5,320	4.62
215	N	N	70	N	500	N	20	N	53	2,820	6.28
216	70	N	20	N	300	N	13	N	33	382	3.17
217	20	N	70	N	100	N	8	N	33	600	2.62
218	50	N	30	N	150	N	60	N	100	292	1.18
219	150	N	N	<200	200	N	18	N	138	636	4.95
220	70	N	50	N	150	N	10	N	30	516	.55
221	70	N	10	N	200	N	48	N	50	504	.11
222	70	N	20	N	200	N	78	N	90	636	.11
223	150	N	30	N	200	N	50	N	135	654	19.80
224A	N	N	100	N	200	<100	53	N	50	2,260	1.98
225	N	<50	70	N	150	N	63	N	48	1,882	1.16
226	N	N	100	N	200	N	60	N	65	3,420	.83
227	N	N	70	N	300	N	60	N	60	2,380	8.25
228	N	N	70	N	30	N	20	N	18	2,520	6.05
229	N	N	N	N	N	N	8	N	3	330	12.10
230	N	N	15	N	100	N	25	N	13	776	1.65
231	N	N	30	N	100	N	5	N	5	1,526	1.98
232A	N	N	150	N	200	N	103	N	70	3,420	3.03
233	N	N	200	N	150	150	83	N	75	10,540	1.87
234	N	N	100	N	300	N	35	N	38	2,820	.55
235	N	N	70	N	300	N	50	N	40	1,912	2.31
236	N	N	<10	N	30	N	5	N	10	196	1.21
237	150	N	70	N	150	N	30	N	60	956	.17
238	150	N	50	N	200	N	25	N	75	580	1.32
240	150	N	30	N	200	N	23	N	60	456	6.38
241A	150	N	30	N	300	<100	30	N	68	608	6.16
242	N	N	70	N	70	150	53	N	70	1,974	.79
243	N	N	70	N	300	N	18	N	60	2,080	1.76
244	20	N	700	<200	500	N	18	N	95	4,700	4.62
245	N	N	100	N	150	N	20	N	30	2,380	8.58
246A	N	N	50	N	100	N	250	N	225	266	29.70
248	100	N	50	N	300	N	30	N	85	210	1.20
250	50	N	70	N	300	100	30	N	70	130	2.10
252	10	N	70	N	300	N	50	N	70	2,500	1.30

TABLE 5. ANALYTICAL DATA FOR ROCK SAMPLES FROM 80 SITES DRAINING THE LOST CREEK WILDERNESS AREA, COLORADO.--Continued

Sample	Latitude	Longitude	Fe-pct. s	Mg-pct. s	Ca-pct. s	Ti-pct. s	Mn-ppm s	Ag-ppm s	B-ppm s	Ba-ppm s	Be-ppm s	Bi-ppm s
253	39 6 23	105 24 11	.70	.05	.50	.100	150	N	N	100	5.0	N
254	39 20 29	105 32 34	.50	.30	1.50	.100	150	N	N	500	1.5	N
255A	39 9 6	105 25 48	1.00	.02	.50	.100	200	N	N	200	3.0	N
256	39 8 54	105 25 39	.50	.02	.30	.100	200	N	N	150	3.0	N
257	39 8 48	105 25 35	.50	.02	.50	.100	200	N	N	200	5.0	N
258	39 8 33	105 25 15	.70	.05	.50	.100	300	N	10	300	7.0	N
259	39 8 19	105 25 5	.70	.05	.50	.100	200	N	N	200	7.0	N
260	39 8 4	105 24 48	.50	.07	.30	.100	150	N	N	200	10.0	N
261	39 7 58	105 24 30	.70	.07	.70	.100	150	N	N	200	3.0	N
262	39 7 38	105 24 8	.70	.07	.30	.100	150	N	N	200	10.0	N
263	39 7 23	105 23 41	1.00	.05	.20	.150	300	N	N	150	7.0	N
264	39 7 5	105 23 36	.50	<.02	<.05	.070	150	N	N	100	7.0	N
265	39 7 8	105 23 59	.70	.10	.50	.100	150	N	N	150	5.0	N
266	39 7 9	105 24 17	.70	.10	.70	.100	500	N	N	200	5.0	N
267	39 7 12	105 24 31	.70	.07	.70	.150	150	N	N	150	2.0	N
268	39 7 26	105 24 38	1.00	.10	.10	.100	500	N	N	150	7.0	50
269	39 7 24	105 25 7	1.00	.07	.10	.100	150	N	N	150	3.0	N
270	39 21 28	105 32 36	.15	.03	<.05	.015	70	<.5	N	700	N	N
271B	39 20 47	105 31 23	.50	.30	.50	.200	150	N	N	1,000	50.0	N
272	39 24 23	105 36 13	2.00	.70	.50	.700	200	N	N	700	1.0	N
273	39 23 43	105 35 51	3.00	1.50	<.05	.700	500	N	200	300	1.5	N
274	39 21 57	105 32 10	.50	.03	<.05	.050	70	1.0	N	200	<1.0	N
275	39 15 3	105 31 1	1.00	.02	.30	.100	200	N	N	200	3.0	N
276	39 13 32	105 31 9	.50	.02	<.05	.010	100	<.5	N	300	N	N
277	39 12 31	105 31 30	20.00	.05	<.05	.100	100	.7	15	100	5.0	N
278	39 16 25	105 28 34	1.00	.03	.70	.100	200	<.5	N	200	3.0	N
279	39 16 37	105 27 19	1.00	.03	.50	.100	200	N	N	100	3.0	N
292	39 15 53	105 23 12	1.50	.03	.07	.150	200	N	N	500	7.0	N
293	39 15 44	105 22 53	.70	.02	.50	.100	100	N	N	500	1.5	N
294	39 15 15	105 22 1	1.00	.03	.30	.100	150	N	N	300	2.0	N
295	39 14 16	105 25 10	2.00	.10	1.00	.200	300	.5	N	500	7.0	N
296	39 14 17	105 25 10	.10	.03	10.00	.015	500	2.0	N	>5,000	5.0	10
297	39 14 14	105 25 9	.10	.02	3.00	.005	150	5.0	N	>5,000	1.0	<10
298	39 14 11	105 25 6	.15	<.02	15.00	.015	70	1.5	N	300	10.0	N
299	39 14 12	105 29 19	.20	.02	<.05	<.002	50	N	N	30	>1,000.0	N

TABLE 5. ANALYTICAL DATA FOR ROCK SAMPLES FROM 80 SITES DRAINING THE LOST CREEK WILDERNESS AREA, COLORADO.--Continued

Sample	Cd-ppm s	Co-ppm s	Cr-ppm s	Cu-ppm s	La-ppm s	Mo-ppm s	Nb-ppm s	Ni-ppm s	Pb-ppm s	Sc-ppm s	Sn-ppm s	Sr-ppm s
253	N	N	N	N	150	N	50	<5	50	5	50	N
254	N	N	<10	10	70	N	N	N	70	5	10	200
255A	N	N	N	N	150	N	70	<5	70	7	30	N
256	N	N	N	N	100	N	70	N	50	<5	30	N
257	N	N	N	5	150	N	50	N	30	<5	30	N
258	N	N	N	N	150	N	50	N	50	5	30	N
259	N	N	N	N	150	N	50	<5	50	<5	30	N
260	N	N	N	N	50	N	30	<5	20	<5	30	N
261	N	N	N	N	100	20	30	N	30	<5	100	N
262	N	N	N	N	100	N	70	N	20	N	30	N
263	N	N	N	N	100	N	50	N	50	10	30	N
264	N	N	N	<5	50	N	50	N	30	<5	30	N
265	N	N	N	5	150	5	70	N	30	5	50	N
266	N	N	N	N	150	10	50	N	20	<5	30	N
267	N	N	N	N	150	N	50	N	30	5	50	N
268	N	N	N	<5	150	5	50	<5	30	<5	50	N
269	N	N	N	<5	100	5	30	5	50	5	50	N
270	N	N	N	N	N	N	N	<5	100	N	N	200
271B	N	7	30	10	70	N	N	10	70	10	<10	150
272	N	7	20	<5	100	N	<20	7	50	15	15	200
273	N	20	100	<5	20	N	30	50	10	20	15	N
274	N	N	N	30	N	15	N	5	30	N	N	N
275	N	N	N	N	200	<5	50	<5	50	<5	10	N
276	N	N	N	N	50	N	20	<5	20	N	N	N
277	N	5	30	20,000	1,000	20	30	10	10	10	<10	N
278	N	N	N	70	500	N	50	N	50	<5	<10	N
279	N	N	N	10	200	N	50	N	70	5	15	N
292	N	N	N	<5	200	N	30	<5	50	7	30	<100
293	N	N	N	N	200	<5	20	<5	50	5	10	<100
294	N	N	N	<5	500	<5	30	<5	70	<5	20	<100
295	N	N	N	70	300	50	50	<5	10,000	10	20	N
296	N	N	N	20	20	200	N	N	5,000	<5	<10	5,000
297	N	N	N	70	N	150	N	5	2,000	N	<10	150
298	N	N	N	15	70	10	N	5	100	<5	10	N
299	N	N	N	N	N	N	N	5	N	100	N	N

TABLE 5. ANALYTICAL DATA FOR ROCK SAMPLES FROM 80 SITES DRAINING THE LOST CREEK WILDERNESS AREA, COLORADO.--Continued

Sample	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s	Th-ppm s	Li-ppm aa	Au-ppm aa	Zn-ppm aa	F-ppm si	U-inst
253	N	N	100	N	200	<100	100	N	65	5,100	8.10
254	20	N	20	N	200	N	20	N	30	110	9.20
255A	<10	N	200	N	300	100	160	N	55	3,500	5.70
256	10	N	150	N	200	N	180	N	55	3,700	9.20
257	<10	N	100	N	200	N	140	N	40	3,900	9.20
258	N	N	100	N	300	N	100	N	55	3,700	4.20
259	N	N	150	N	200	N	50	N	65	4,700	6.20
260	10	N	100	N	150	N	120	N	65	2,700	4.20
261	N	N	150	N	200	N	150	N	100	4,300	4.90
262	10	N	150	N	300	N	130	N	70	2,500	1.80
263	N	N	70	N	300	N	140	N	80	1,300	5.10
264	N	N	50	N	200	N	170	N	50	210	3.10
265	N	N	200	N	300	N	90	N	65	3,500	5.10
266	N	N	150	N	200	N	70	N	80	4,300	1.60
267	N	N	200	N	300	N	60	N	90	3,400	2.00
268	N	N	150	N	200	N	160	N	110	3,300	4.40
269	10	<50	100	N	200	N	130	N	80	1,900	3.10
270	N	N	N	N	N	N	N	N	10	<100	.40
271B	50	N	70	N	50	N	10	N	40	210	.45
272	100	N	30	N	100	N	40	N	80	150	.65
273	100	<50	15	<200	300	N	60	N	130	350	.85
274	N	N	N	N	30	N	N	N	15	N	9.00
275	N	N	100	N	150	N	40	N	70	2,100	9.20
276	N	N	20	N	N	N	N	N	5	<100	3.20
277	50	N	150	200	300	N	30	N	265	470	9.20
278	N	N	200	N	500	N	30	N	60	2,100	6.20
279	N	N	100	N	200	N	70	N	60	1,200	2.90
292	N	N	50	N	100	N	40	N	50	2,900	2.00
293	N	<50	70	N	70	N	50	N	65	4,700	2.90
294	N	N	70	N	200	<100	40	N	55	3,500	2.20
295	N	N	200	200	300	N	20	N	265	5,500	3.60
296	10	N	100	<200	10	N	60	N	135	79,900	3.20
297	N	N	20	<200	N	N	110	.16	165	33,900	.60
298	N	N	100	N	70	N	50	.06	105	204,000	.85
299	N	N	N	N	N	N	10	N	15	<100	.02