UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

Analytical results and sample locality maps of stream-sediment, heavy-mineral-concentrate, and rock samples from the Swasey Mountain and Howell Peak Wilderness Study Areas Millard County, Utah

By

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Open-File Report 88-577

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1988

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STUDIES RELATED TO WILDERNESS

Bureau of Land Management Wilderness Study Areas

The Federal Land Policy and Management Act (Public Law 94-579, October 21, 1976) requires the U.S. Geological Survey and the U.S. Bureau of Mines to conduct mineral surveys on certain areas to determine their mineral values, 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 Swasey Mountain and Howell Peak Wilderness Study Areas, Millard County, Utah.

INTRODUCTION

In 1986, the U.S. Geological Survey conducted a reconnaissance geochemical survey of the Swasey Mountain (UT050-061) and Howell Peak (UT050-077) Wilderness Study Areas, Millard County, Utah.

The Swasey Mountain and Howell Peak Wilderness Study Areas comprise about 49,300 acres. The Swasey Mountain Wilderness Study Area is located in the House Range south of the gravel road through Sand Pass and north of the gravel road through Dome Canyon, 40 mi west of Delta, Utah (fig. 1). The Howell Peak Wilderness Study Area is located in the House Range south of Dome Canyon and north of Marjum Pass (fig. 1). Access to both study areas is by foot from the Dome Canyon road and by dirt roads and jeep trails on the east and west sides of the range. Access to the Howell Peak study area is also provided by foot from the Marjum Pass road.

The following comments regarding the general geology of the study area have been summarized from Lindsey and others (1989). The Swasey Mountain and Howell Peak study areas are composed mostly of Cambrian sedimentary rocks. These rocks are tilted east by a major range-bounding fault that extends along the west side of the House Range. No comparable fault is evident on the east side of the range. The entire section of Paleozoic rocks in the House Range, and perhaps a thick section of Precambrian sedimentary rocks in the subsurface, rests on low-angle faults as interpreted from a deep seismic profile of western Utah. The faults are interpreted tentatively as having moved as thrusts during the Mesozoic Sevier orogeny and as extensional detachments during Cenozoic basin range faulting. The low-angle faults and the rocks overlying them form a gentle arch beneath the study areas.

On the western sides of the study areas, picturesque cliffs rise from the floor of Tule Valley. Long slopes covered by piñon and juniper dip gently east to meet Whirlwind Valley. Swasey Peak, the highest point in the two study areas, rises to 9,669 ft in elevation, but most of the crest of the study area is about 7,500-8,500 ft in elevation.

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 certain minerals in rock material eroded from the drainage basin upstream from

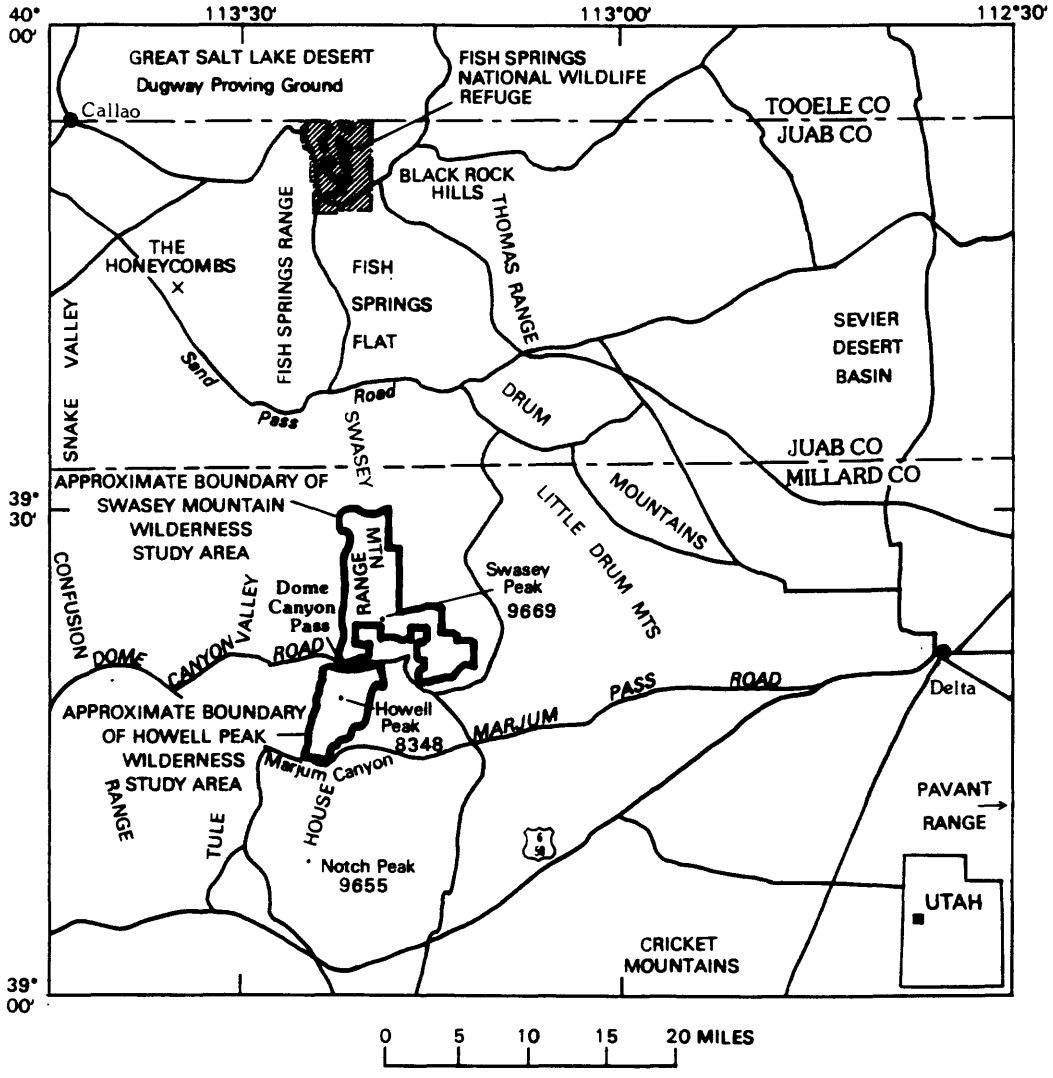

Figure 1. Index map of the Swasey Mountain and Howell Peak Wilderness Study Areas, Millard county, Utah.

each sample site. The selective concentration of minerals, many of which may be ore related, permits determination of some elements that are not easily detected in stream-sediment samples.

Analyses of unaltered or unmineralized rock samples provide background geochemical data for individual rock units. On the other hand, analyses of altered or mineralized rocks, where present, may provide useful geochemical information about the major- and trace-element assemblages associated with a mineralizing system.

Sample Collection

Fifty eight stream-sediment and 58 heavy-mineral-concentrate samples were collected (plate 1 and fig. 2). One hundred and eighty nine rock samples were collected (plates 2 and 3).

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 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 most of 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/or altered and/or mineralized rocks. A summary of geochemical anomalies for selected elements from rock samples is included in table 6.

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 which may include 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

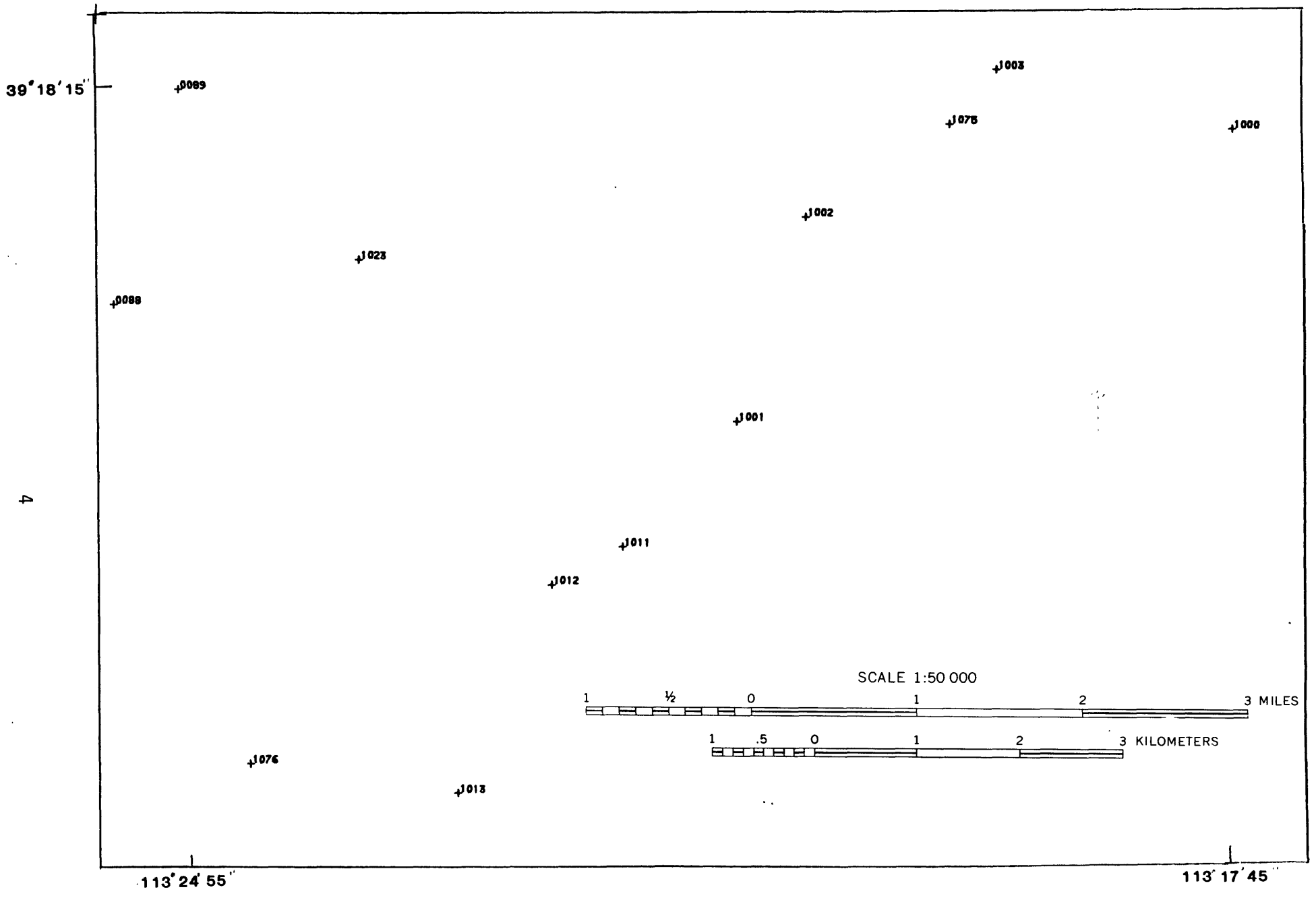

Figure 2. Additional stream-sediment and heavy-mineral-concentrate sample sites located south of the Swasey Mountain and Howell Peak Wilderness Study Areas, Millard County, Utah

would be produced by using a Frantz Isodynamic Separator set at a slope of 15° and a tilt of 10° with a current of 0.2 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.

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 Swasey Mountain and Howell Peak Wilderness Study Areas are listed in tables 3, 4, and 5.

Chemical methods

Other methods of analysis used on samples from the Swasey Mountain and Howell Peak Wilderness Study Areas are summarized in table 2. Rock and stream-sediment samples were analyzed for gold (Au), arsenic (As), bismuth (Bi), cadmium (Cd), antimony (Sb), and zinc (Zn) either using an atomic absorption spectroscopy method by Thompson and others (1968) or by an inductively coupled plasma-atomic emission spectroscopy (ICP-AES) method of Crock and others (1987).

Analytical results for stream-sediment and rock samples are listed in tables 3 and 5 respectively.

DATA STORAGE SYSTEM

Upon completion of all analytical work, the analytical results were entered into either the Branch of Geochemistry computer data base called PLUTO or RASS (Rock Analysis Storage System). These data bases contain 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, 1977).

DESCRIPTION OF DATA TABLES

Tables 3-5 list the results of analyses for the samples of stream sediment, heavy-mineral concentrate, and rock, 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 (plates 1, 2 and 3). Columns in which the element headings show the letter "s" below the element symbol are emission spectrographic analyses; "aa" indicates atomic absorption analyses; "icp" indicates inductively coupled plasma-atomic emission spectroscopy. 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 table 1. 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.

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Thompson, C. E., Nakagawa, H. M., and Van Sickle, G. H., 1968, Rapid analysis for gold in geologic materials, in Geological Survey research 1968: U.S. Geological Survey Professional Paper 600-B, p. B130-B132.

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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 based on a 5-mg sample, and are therefore two reporting intervals 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.--Commonly used chemical methods

[AA = atomic absorption; ICP = inductively coupled plasma spectroscopy]

Element or constituent determined	Sample type	Method	Determination limit (micrograms/ gram or ppm)	Analyst	Reference
Gold (Au)		AA	0.05		Thompson and others, 1968.
Arsenic (As)		ICP	5		Crock and others, 1987.
Antimony (Sb)		ICP	2		
Zinc (Zn)		ICP	2		
Bismuth (Bi)		ICP	2		
Cadmium (Cd)		ICP	.1		

TABLE 3-RESULTS OF ANALYSES OF STREAM-SEDIMENT SAMPLES, SWASEY MOUNTAIN AND HOWELL PEAK WILDERNESS STUDY AREAS, MILLARD COUNTY, UTAH

[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	As-ppm s	Au-ppm s	B-ppm s	Ba-ppm s
6EF0001S	39 24 31	113 16 5	2.0	5.0	5	.10	500	N	N	N	10	150
6EF0002S	39 25 26	113 17 19	2.0	1.5	5	.15	300	N	N	N	20	150
6EF0003S	39 26 48	113 17 47	3.0	2.0	10	.20	500	N	N	N	10	150
6EF0004S	39 28 38	113 17 49	5.0	2.0	20	.15	700	N	N	N	50	300
6EF0005S	39 29 51	113 18 56	2.0	1.5	7	.10	200	N	N	N	<10	100
6DF0006S	39 31 16	113 18 26	2.0	2.0	10	.10	300	N	N	N	10	200
6DF0007S	39 34 15	113 19 28	1.0	10.0	10	.10	200	N	N	N	<10	100
6DF0008S	39 32 23	113 19 40	1.5	2.0	10	.10	200	N	N	N	<10	100
6DF0009S	39 34 39	113 22 1	1.5	5.0	10	.10	200	N	N	N	<10	100
6DF0010S	39 35 4	113 20 20	1.0	5.0	10	.07	200	N	N	N	<10	100
6DF0011S	39 32 18	113 21 58	5.0	2.0	10	.20	200	N	N	N	20	200
6DF0012S	39 30 40	113 21 24	3.0	2.0	10	.15	500	N	N	N	10	150
6DF0022S	39 35 55	113 21 14	1.0	7.0	10	.05	300	N	N	N	<10	100
6DF0042S	39 32 51	113 22 9	3.0	1.5	7	.10	200	N	N	N	<10	100
6DF1061S	39 35 19	113 22 26	.5	10.0	10	.02	300	N	N	N	<10	100
6DF1062S	39 33 9	113 18 28	2.0	3.0	15	.15	300	N	N	N	10	200
6DF1063S	39 32 9	113 19 21	3.0	2.0	7	.15	200	N	N	N	20	100
6DF1064S	39 30 41	113 18 42	3.0	2.0	10	.20	500	N	N	N	50	200
6DF1065S	39 39 32	113 18 42	5.0	2.0	10	.20	500	N	N	N	50	200
6EF1066S	39 27 32	113 17 46	5.0	3.0	20	.20	500	N	N	N	100	300
6EF1067S	39 26 13	113 17 49	2.0	1.5	7	.10	300	N	N	N	50	200
6EF1068S	39 24 57	113 16 56	5.0	3.0	7	.20	1,000	N	N	N	100	500
6EF1069S	39 23 2	113 12 23	1.0	7.0	7	.10	500	N	N	N	30	150
6FG1070S	39 22 5	113 11 30	1.5	10.0	10	.10	700	N	N	N	15	200
6FG1071S	39 21 9	113 11 27	1.0	7.0	10	.10	700	N	N	N	50	300
6DF1036S	39 31 21	113 21 51	2.0	3.0	10	.10	1,000	N	N	N	20	200
6EF1037S	39 28 22	113 21 29	5.0	1.5	10	.15	500	N	N	N	50	300
6FG1007S	39 20 14	113 14 6	2.0	5.0	10	.10	300	N	N	N	15	150
6FG1008S	39 20 26	113 13 11	2.0	7.0	15	.15	700	N	N	N	50	300
6FG1009S	39 22 4	113 12 46	2.0	10.0	15	.10	500	N	N	N	50	200
6FG1010S	39 23 13	113 14 16	1.5	10.0	10	.07	300	N	N	N	N	100
6EF1014S	39 29 41	113 21 55	5.0	2.0	5	.50	700	N	N	N	100	500
6EF1015S	39 27 50	113 21 49	5.0	2.0	5	.20	500	N	N	N	50	200
6EF1016S	39 26 43	113 21 49	5.0	3.0	10	.20	1,000	N	N	N	100	500
6EF1017S	39 25 47	113 21 57	2.0	1.5	7	.20	500	N	N	N	30	300
6EF1018S	39 24 32	113 20 59	5.0	2.0	7	.15	500	N	N	N	50	200
6EF1019S	39 22 51	113 21 11	5.0	3.0	10	.20	1,000	N	N	N	100	500
6FF1004S	39 21 7	113 19 16	7.0	2.0	10	.30	700	N	N	N	100	500
6FF1005S	39 21 58	113 17 49	2.0	5.0	15	.10	700	N	N	N	50	200
6FF1006S	39 21 25	113 15 57	5.0	10.0	20	.20	1,000	N	N	N	<10	200
6FF1020S	39 21 39	113 20 50	3.0	5.0	10	.15	500	N	N	N	50	300
6FF1021S	39 20 34	113 21 57	3.0	2.0	10	.20	700	N	N	N	100	500
6FF1000S	39 18 18	113 17 45	3.0	2.0	7	.15	500	N	N	N	20	200
6FF1001S	39 16 38	113 21 1	5.0	2.0	10	.20	700	N	N	N	100	500
6FF1002S	39 17 43	113 20 37	5.0	1.5	10	.20	500	N	N	N	100	300

TABLE 3-RESULTS OF ANALYSES OF STREAM-SEDIMENT SAMPLES, SWASEY MOUNTAIN AND HOWELL PEAK WILDERNESS STUDY AREAS, MILLARD COUNTY, UTAH--Continued

Sample	Be-ppm s	Bi-ppm s	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	Sb-ppm s	Sc-ppm s
6EF0001S	<1.0	N	N	10	30	15	<20	N	N	20	20	N	5
6EF0002S	<1.0	N	N	10	30	15	<20	N	N	20	20	N	10
6EF0003S	<1.0	N	N	15	50	10	20	N	20	20	20	N	7
6EF0004S	<1.0	N	N	15	50	15	20	N	N	20	30	N	7
6EF0005S	<1.0	N	N	5	30	10	N	N	N	15	10	N	<5
6DF0006S	<1.0	N	N	5	30	10	N	N	N	10	15	N	<5
6DF0007S	<1.0	N	N	5	20	10	N	N	N	5	10	N	<5
6DF0008S	N	N	N	7	20	10	N	N	N	10	<10	N	5
6DF0009S	<1.0	N	N	7	20	10	N	N	N	15	10	N	<5
6DF0010S	N	N	N	5	15	7	N	N	N	10	<10	N	N
6DF0011S	<1.0	N	N	15	100	20	20	<5	<20	30	20	N	10
6DF0012S	<1.0	N	N	10	50	20	20	N	N	20	50	N	5
6DF0022S	N	N	N	5	10	5	N	N	N	5	10	N	N
6DF0042S	N	N	N	10	50	20	N	N	N	20	10	N	<5
6DF1061S	N	N	N	10	<10	5	N	N	N	<5	<10	N	N
6DF1062S	<1.0	N	N	10	20	10	N	N	N	15	10	N	<5
6DF1063S	<1.0	N	N	10	50	20	N	N	N	20	10	N	5
6DF1064S	<1.0	N	N	10	50	15	<20	N	N	20	20	N	5
6DF1065S	<1.0	N	N	10	70	15	<20	N	N	20	20	N	5
6EF1066S	1.0	N	N	15	100	20	<20	N	N	30	30	N	10
6EF1067S	<1.0	N	N	20	30	10	<20	N	N	30	20	N	5
6EF1068S	1.0	N	N	15	50	20	50	N	N	30	20	N	10
6EF1069S	<1.0	N	N	N	20	10	N	N	N	5	20	N	<5
6FG1070S	<1.0	N	N	<5	30	10	N	N	N	10	20	N	<5
6FG1071S	<1.0	N	N	<5	20	15	N	N	N	5	50	N	5
6DF1036S	<1.0	N	N	7	30	15	N	N	N	10	50	N	5
6EF1037S	N	N	N	15	30	15	<20	N	N	20	20	N	7
6FG1007S	<1.0	N	N	10	20	15	<20	N	N	15	20	N	<5
6FG1008S	<1.0	N	N	10	20	10	N	N	N	10	15	N	5
6FG1009S	<1.0	N	N	7	20	15	N	N	N	10	20	N	5
6FG1010S	N	N	N	5	15	10	N	N	N	5	10	N	N
6EF1014S	1.0	N	N	15	70	20	30	N	N	20	50	N	10
6EF1015S	<1.0	N	N	10	50	15	<20	N	N	20	30	N	7
6EF1016S	<1.0	N	N	10	50	20	20	N	N	20	50	N	10
6EF1017S	N	N	N	10	30	15	<20	N	N	10	30	N	5
6EF1018S	<1.0	N	N	10	50	20	N	N	N	20	30	N	7
6EF1019S	<1.0	N	N	15	100	20	<20	N	N	20	70	N	10
6FF1004S	<1.0	N	N	15	100	30	20	N	N	20	50	N	10
6FF1005S	<1.0	N	N	5	30	20	<20	N	N	10	20	N	7
6FF1006S	<1.0	N	N	7	50	10	<20	N	N	10	15	N	<5
6FF1020S	<1.0	N	N	10	50	15	N	N	N	20	50	N	7
6FF1021S	1.0	N	N	10	50	20	<20	N	N	20	100	N	7
6FF1000S	<1.0	N	N	10	30	15	N	N	N	10	10	N	<5
6FF1001S	1.0	N	N	15	50	20	<20	N	N	20	30	N	7
6FF1002S	<1.0	N	N	15	70	20	<20	N	N	20	30	N	10

TABLE 3-RESULTS OF ANALYSES OF STREAM-SEDIMENT SAMPLES, SWASEY MOUNTAIN AND HOWELL PEAK WILDERNESS STUDY AREAS, MILLARD COUNTY, UTAH--Continued

Sample	Sn-ppm s	Sr-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s	Th-ppm s	Au-ppm aa	As-ppm icp	Bi-ppm icp	Cd-ppm icp	Sb-ppm icp	Zn-ppm icp
6EF0001S	N	200	50	N	10	200	100	N	<.1	<5	<2	.5	<2	23
6FF0002S	N	200	30	N	20	<200	100	N	<.1	7	<2	.7	<2	38
6EF0003S	N	300	70	N	30	<200	150	N	<.1	10	<2	.5	<2	28
6EF0004S	N	500	50	N	20	<200	150	N	<.1	10	<2	.6	<2	28
6EF0005S	N	200	30	N	10	<200	100	N	<.1	9	<2	.8	<2	31
6DF0006S	N	500	30	N	10	<200	100	N	<.1	9	<2	.5	<2	22
6DF0007S	N	300	20	N	<10	<200	100	N	<.1	7	<2	.2	<2	5
6DF0008S	N	300	20	N	<10	N	70	N	<.1	11	<2	.6	<2	22
6DF0009S	N	300	50	N	<10	<200	100	N	<.1	12	<2	.4	<2	11
6DF0010S	N	300	15	N	<10	N	100	N	<.1	10	<2	.3	<2	8
6DF0011S	N	300	70	N	20	<200	150	N	<.1	34	<2	.7	<2	34
6DF0012S	N	300	70	N	15	<200	100	N	<.1	18	<2	.6	<2	28
6DF0022S	N	200	10	N	<10	<200	100	N	<.1	7	<2	.3	<2	6
6DF0042S	N	200	20	N	<10	<200	50	N	<.1	23	<2	.8	<2	39
6DF1061S	N	500	<10	N	N	<200	30	N	<.1	5	<2	.2	<2	5
6DF1062S	N	500	50	N	15	N	100	N	<.1	12	<2	.5	<2	22
6DF1063S	N	200	50	N	10	<200	70	N	<.1	10	<2	.7	<2	39
6DF1064S	N	200	70	N	20	<200	150	N	<.1	9	<2	.5	<2	32
6DF1065S	N	200	100	N	20	<200	100	N	<.1	7	<2	.7	<2	31
6EF1066S	N	500	70	N	30	<200	150	N	<.1	6	<2	.7	<2	32
6EF1067S	N	200	50	N	10	<200	70	N	<.1	9	<2	.7	<2	36
6EF1068S	N	300	70	N	20	<200	200	N	<.1	11	<2	.7	<2	39
6EF1069S	N	<100	10	N	10	200	100	N	<.1	6	<2	.5	<2	21
6FG1070S	N	100	30	N	10	<200	700	N	<.1	<5	<2	.5	<2	12
6FG1071S	N	200	15	N	15	<200	100	N	<.1	5	<2	.5	<2	22
6DF1036S	N	200	30	N	15	<200	300	N	<.1	21	<2	.6	<2	30
6FF1037S	N	100	50	N	70	N	200	N	<.1	16	<2	.6	<2	30
6FG1007S	N	200	30	N	<10	N	70	N	<.1	5	<2	.5	<2	16
6FG1008S	N	300	50	N	15	N	200	N	<.1	<5	<2	.5	<2	18
6FG1009S	N	300	50	N	10	N	200	N	<.1	<5	<2	.5	<2	18
6FG1010S	N	N	15	N	10	<200	70	N	<.1	<5	<2	.3	2	8
6EF1014S	N	500	70	N	50	<200	300	N	<.1	20	<2	.5	3	32
6FF1015S	N	100	50	N	30	<200	150	N	<.1	42	<2	.5	<2	42
6EF1016S	N	500	50	N	50	<200	200	N	<.1	10	<2	.5	<2	44
6EF1017S	N	200	30	N	20	N	150	N	<.1	13	<2	.5	<2	34
6FF1018S	N	200	20	N	20	<200	100	N	<.1	14	<2	.8	<2	41
6FF1019S	N	200	70	N	50	<200	200	N	<.1	13	<2	.7	<2	47
6FF1004S	N	500	100	N	20	<200	150	N	<.1	11	<2	.7	<2	47
6FF1005S	N	300	30	N	15	<200	70	N	<.1	8	<2	.7	<2	34
6FF1006S	N	300	30	N	10	N	70	N	<.1	<5	<2	.4	<2	12
6FF1020S	N	200	50	N	20	N	100	N	<.1	9	<2	.6	2	31
6FF1021S	N	300	50	N	20	<200	200	N	<.1	16	<2	.6	<2	50
6FF1000S	N	100	70	N	10	<200	100	N	<.1	19	<2	.7	<2	35
6FF1001S	N	200	100	N	20	<200	150	N	<.1	15	<2	.6	<2	39
6FF1002S	N	200	70	N	50	<200	200	N	<.1	16	<2	.7	4	36

TABLE 3-RESULTS OF ANALYSES OF STREAM-SEDIMENT SAMPLES, SWASEY MOUNTAIN AND HOWELL PEAK WILDERNESS STUDY AREAS, MILLARD COUNTY, UTAH--Continued

Sample	Latitude	Longitude	Fe-pct. s	Mg-pct. s	Ca-pct. s	Ti-pct. s	Mn-ppm s	Ag-ppm s	As-ppm s	Au-ppm s	B-ppm s	Ba-ppm s
6FF1003S	39 18 33	113 19 22	5.0	2.0	10	.20	700	N	N	N	50	300
6FF1011S	39 15 57	113 21 45	2.0	2.0	10	.15	700	N	N	N	50	300
6FF1012S	39 15 44	113 22 13	5.0	2.0	15	.20	700	N	N	N	100	500
6FF1072S	39 19 39	113 17 46	5.0	2.0	10	.20	1,000	N	N	N	50	300
6FF1073S	39 20 5	113 20 32	2.0	2.0	10	.15	700	N	N	N	70	300
6FF1074S	39 20 24	113 22 3	5.0	2.0	10	.30	1,500	N	N	N	70	500
6FF1075S	39 18 15	113 19 40	2.0	1.5	7	.10	500	N	N	N	<10	100
6GE1013S	39 14 37	113 22 47	2.0	2.0	20	.10	1,000	N	N	N	50	200
6GE1076S	39 14 43	113 24 12	3.0	1.5	10	.15	500	N	N	N	30	200
6FE1022S	39 19 13	113 23 17	7.0	2.0	10	.50	1,000	N	N	N	50	700
6FE1023S	39 17 22	113 23 38	5.0	2.0	10	.20	500	N	N	N	50	300
6FE0088S	39 17 4	113 25 17	5.0	2.0	10	.30	700	N	N	N	20	300
6FE0089S	39 18 13	113 24 55	5.0	2.0	10	.20	500	N	N	N	30	300

TABLE 3-RESULTS OF ANALYSES OF STREAM-SEDIMENT SAMPLES, SWASEY MOUNTAIN AND HOWELL PEAK WILDERNESS STUDY AREAS, MILLARD COUNTY, UTAH--Continued

Sample	Be-ppm s	Bi-ppm s	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	Sb-ppm s	Sc-ppm s
6FF1003S	<1.0	N	N	15	50	15	<20	N	N	20	10	N	7
6FF1011S	<1.0	N	N	10	50	20	N	N	N	15	30	N	5
6FF1012S	1.0	N	N	20	100	20	20	N	N	30	30	N	10
6FF1072S	<1.0	N	N	15	50	15	20	N	N	30	20	N	7
6FF1073S	<1.0	N	N	10	50	20	20	N	N	15	30	N	5
6FF1074S	1.0	N	N	10	50	20	20	N	N	20	70	N	7
6FF1075S	N	N	N	7	30	15	<20	N	N	10	20	N	<5
6GE1013S	<1.0	N	N	5	20	15	<20	N	N	7	20	N	7
6GE1076S	<1.0	N	N	10	50	15	<20	N	N	20	30	N	7
6FF1022S	1.5	N	N	15	70	15	30	N	N	20	50	N	10
6FE1023S	<1.0	N	N	15	70	20	20	N	N	30	30	N	10
6FE0088S	<1.0	N	N	15	30	10	20	N	20	20	50	N	7
6FE0089S	1.0	N	N	7	30	15	20	N	N	7	30	N	7

TABLE 3-RESULTS OF ANALYSES OF STREAM-SEDIMENT SAMPLES, SWASEY MOUNTAIN AND HOWELL PEAK WILDERNESS STUDY AREAS, MILLARD COUNTY, UTAH--Continued

Sample	Sn-ppm s	Sr-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s	Th-ppm s	Au-ppm aa	As-ppm icp	Bi-ppm icp	Cd-ppm icp	Sb-ppm icp	Zn-ppm icp
6FF1003S	N	200	70	N	20	N	150	N	<.1	16	<2	.6	<2	34
6FF1011S	N	200	50	N	20	N	200	N	<.1	15	<2	.5	<2	34
6FF1012S	N	500	70	N	50	N	200	N	<.1	16	<2	.7	3	38
6FF1072S	N	500	100	N	30	<200	300	N	<.1	6	<2	.6	<2	32
6FF1073S	N	300	50	N	20	<200	100	N	<.1	7	<2	.7	<2	36
6FF1074S	N	300	100	N	50	<200	300	N	<.1	32	<2	.6	3	37
6FF1075S	N	<100	30	N	10	<200	70	N	<.1	18	<2	.6	<2	29
6GE1013S	N	500	15	N	20	N	100	N	<.1	19	<2	.7	<2	35
6GE1076S	N	200	20	N	20	<200	100	N	<.1	18	<2	.6	2	34
6FE1022S	N	300	100	N	70	<200	500	N	<.1	13	<2	.5	2	27
6FE1023S	N	200	70	N	20	<200	100	N	<.1	14	<2	.6	<2	37
6FE0088S	N	300	100	N	50	N	300	N	<.1	16	<2	.5	<2	26
6FE0089S	N	300	70	N	50	<200	700	N	<.1	11	<2	.4	<2	20

TABLE 4-RESULTS OF ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES, SWASEY MOUNTAIN AND HOWELL PEAK WILDERNESS STUDY AREAS, MILLARD COUNTY, UTAH

[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	As-ppm s	Au-ppm s	B-ppm s	Ba-ppm s
6EF0001C	39 24 31	113 16 5	.5	7	15	.20	500	N	N	N	20	700
6EF0002C	39 25 26	113 17 19	.7	7	10	.70	300	N	N	N	50	500
6EF0003C	39 26 48	113 17 47	1.0	3	10	1.00	300	N	N	N	50	700
6EF0004C	39 28 38	113 17 49	.5	5	10	1.00	300	N	N	N	50	1,500
6EF0005C	39 29 51	113 18 56	.7	5	10	1.00	700	N	N	N	70	5,000
6DF0006C	39 31 16	113 18 26	1.0	7	10	1.50	300	N	N	N	100	3,000
6DF0007C	39 34 15	113 19 28	.5	10	15	.15	300	N	N	N	50	>10,000
6DF0008C	39 32 23	113 19 40	1.0	10	15	.50	1,000	N	N	N	70	1,000
6DF0009C	39 34 39	113 22 1	1.0	7	15	.70	500	N	N	N	100	>10,000
6DF0010C	39 35 4	113 20 20	.5	15	15	.30	300	N	N	N	70	7,000
6DF0011C	39 32 18	113 21 58	1.5	7	20	.20	2,000	N	N	N	70	>10,000
6DF0012C	39 30 40	113 21 24	1.0	10	15	2.00	700	N	N	N	150	10,000
6DF0022C	39 35 55	113 21 14	.7	10	15	.20	700	N	N	N	50	>10,000
6DF0042C	39 32 51	113 22 9	1.0	5	15	1.00	500	N	N	N	70	>10,000
6DF1061C	39 35 19	113 22 26	.7	15	20	.15	300	N	N	N	70	3,000
6DF1062C	39 33 9	113 18 28	.7	7	15	1.00	500	N	N	N	70	10,000
6DF1063C	39 32 9	113 19 21	.7	10	15	.30	500	N	N	N	70	2,000
6DF1064C	39 30 41	113 18 42	1.0	10	15	.50	1,000	N	N	N	70	500
6DF1065C	39 39 32	113 18 42	.5	5	15	.70	300	N	N	N	100	3,000
6EF1066C	39 27 32	113 17 46	2.0	5	15	1.00	500	N	N	N	150	2,000
6EF1067C	39 26 13	113 17 49	1.5	10	20	.50	1,000	N	N	N	50	500
6EF1068C	39 24 57	113 16 56	1.0	7	15	1.00	500	N	N	N	30	100
6EF1069C	39 23 2	113 12 23	1.5	10	20	.50	1,000	N	N	N	50	5,000
6FG1070C	39 22 5	113 11 30	5.0	10	15	.70	1,000	N	N	N	50	100
6FG1071C	39 21 9	113 11 27	1.5	10	15	.50	500	N	N	N	50	150
6DF1036C	39 31 21	113 21 51	1.0	3	10	2.00	1,000	N	N	N	100	>10,000
6EF1037C	39 28 22	113 21 29	1.0	2	7	>2.00	500	N	N	N	500	7,000
6FG1007C	39 20 14	113 14 6	1.0	10	15	.50	500	N	N	N	50	700
6FG1008C	39 20 26	113 13 11	2.0	10	15	.50	700	N	N	N	50	5,000
6FG1009C	39 22 4	113 12 46	2.0	10	15	.50	500	N	N	N	100	100
6EG1010C	39 23 12	113 14 17	1.0	10	15	.15	500	N	N	N	20	3,000
6EF1014C	39 29 41	113 21 55	1.0	2	10	>2.00	700	N	N	N	200	7,000
6EF1015C	39 27 50	113 21 49	2.0	5	10	>2.00	2,000	N	N	N	500	1,000
6EF1016C	39 26 43	113 21 49	1.5	3	10	>2.00	1,000	N	N	N	500	5,000
6EF1017C	39 25 47	113 21 57	1.0	2	7	>2.00	700	N	N	N	500	5,000
6EF1018C	39 24 32	113 20 59	2.0	7	15	.30	1,000	N	N	N	50	5,000
6EF1019C	39 22 51	113 21 11	.7	3	10	>2.00	500	N	N	N	100	>10,000
6FF1004C	39 21 7	113 19 16	.7	2	15	2.00	300	N	N	N	100	>10,000
6FF1005C	39 21 58	113 17 49	1.0	10	10	2.00	500	N	N	N	30	2,000
6FF1006C	39 21 25	113 15 57	2.0	10	20	.50	500	N	N	N	50	1,500
6FF1020C	39 21 39	113 20 50	2.0	7	10	1.00	700	N	N	N	100	1,000
6FF1021C	39 20 34	113 21 57	1.0	5	15	2.00	500	N	N	N	70	>10,000
6FF1000C	39 18 18	113 17 45	.5	7	10	.50	300	N	N	N	<20	200
6FF1001C	39 16 38	113 21 1	.5	2	15	>2.00	300	N	N	N	20	5,000
6FF1002C	39 17 43	113 20 37	.3	1	15	>2.00	200	N	N	N	70	>10,000

TABLE 4-RESULTS OF ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES, SWASEY MOUNTAIN AND HOWELL PEAK WILDERNESS STUDY AREAS, MILLARD COUNTY, UTAH--Continued

Sample	Be-ppm s	Bi-ppm s	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	Sb-ppm s	Sc-ppm s
6FF0001C	<2	N	N	N	<20	<10	<50	N	N	N	70	N	N
6EF0002C	<2	N	N	N	20	10	<50	N	<50	<10	20	N	<10
6EF0003C	2	N	N	N	<20	<10	<50	N	N	N	<20	N	10
6EF0004C	2	N	N	N	20	10	50	N	<50	N	500	N	20
6EF0005C	<2	N	N	N	20	<10	200	N	50	50	20	N	20
6DF0006C	<2	N	N	N	30	10	100	N	N	N	20	N	30
6DF0007C	<2	N	N	N	<20	10	70	N	N	<10	50	N	<10
6DF0008C	<2	N	N	N	20	<10	50	N	N	10	20	N	15
6DF0009C	2	N	N	N	20	10	100	N	N	N	100	N	10
6DF0010C	<2	N	N	N	20	<10	<50	N	N	N	20	N	10
6DF0011C	20	N	N	N	<20	<10	<50	N	N	N	70	N	<10
6DF0012C	3	N	N	N	50	10	50	N	<50	N	300	N	50
6DF0022C	N	N	N	N	<20	10	<50	N	N	N	100	N	<10
6DF0042C	<2	N	N	20	20	15	<50	N	N	N	100	N	20
6DF1061C	<2	N	N	N	<20	<10	<50	N	N	N	<20	N	<10
6DF1062C	2	N	N	N	20	<10	100	N	<50	N	50	N	20
6DF1063C	<2	N	N	N	20	<10	<50	N	N	10	50	N	<10
6DF1064C	<2	N	N	N	30	<10	70	N	N	N	20	N	15
6DF1065C	<2	N	N	N	<20	<10	<50	N	N	N	70	700	<10
6EF1066C	2	N	N	10	30	<10	100	N	<50	N	70	N	20
6EF1067C	N	20	N	10	30	10	50	N	N	20	3,000	N	10
6EF1068C	N	N	N	N	<20	<10	50	N	<50	N	20	N	N
6FF1069C	<2	N	N	N	<20	<10	50	N	N	N	<20	N	<10
6FG1070C	<2	N	N	<10	30	10	100	N	<50	N	200	N	10
6FG1071C	N	N	N	N	20	70	70	N	N	N	20	N	10
6DF1036C	5	N	N	N	20	<10	70	N	N	N	1,500	N	50
6EF1037C	7	N	N	N	100	15	200	N	50	N	1,000	N	150
6FG1007C	N	N	N	N	<20	<10	500	N	N	50	500	N	10
6FG1008C	<2	N	N	N	20	10	50	N	<50	10	50	N	<10
6FG1009C	N	N	N	N	20	10	50	N	N	10	100	N	<10
6EG1010C	N	N	N	N	<20	<10	<50	N	N	N	200	N	N
6EF1014C	5	N	N	<10	70	10	100	N	100	N	1,000	N	50
6EF1015C	7	N	N	<10	50	20	500	N	70	N	200	N	70
6EF1016C	7	N	N	N	50	10	150	N	70	N	1,000	N	100
6EF1017C	10	N	N	N	70	<10	200	N	50	N	100	N	100
6EF1018C	<2	N	N	<10	<20	10	150	N	N	N	100	N	<10
6EF1019C	5	N	N	N	20	200	150	N	50	200	5,000	N	50
6FF1004C	<2	N	N	<10	20	50	150	N	50	N	50,000	N	20
6FF1005C	N	N	N	<10	<20	10	50	N	70	N	2,000	N	N
6FF1006C	N	N	N	N	<20	15	100	N	<50	N	1,000	N	<10
6FF1020C	5	N	N	N	<20	10	200	N	50	N	700	N	20
6FF1021C	5	N	N	N	20	10	100	N	<50	N	200	N	30
6FF1000C	<2	N	N	N	<20	<10	<50	<10	N	N	<20	N	<10
6FF1001C	3	N	N	<10	20	<10	N	N	N	N	500	N	<10
6FF1002C	N	N	N	N	20	<10	<50	N	50	N	1,000	N	N

TABLE 4-RESULTS OF ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES, SWASEY MOUNTAIN AND HOWELL PEAK WILDERNESS STUDY AREAS, MILLARD COUNTY, UTAH--Continued

Sample	Sn-ppm s	Sr-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s	Th-ppm s	Au-ppm aa	As-ppm aa	Bi-ppm aa	Cd-ppm aa	Sb-ppm aa	Zn-ppm aa
6EF0001C	500	<200	20	N	30	N	2,000	N	--	--	--	--	--	--
6EF0002C	N	1,500	50	300	150	N	>2,000	N	--	--	--	--	--	--
6EF0003C	N	1,000	50	N	200	N	>2,000	N	--	--	--	--	--	--
6EF0004C	N	1,000	50	N	300	<500	>2,000	N	--	--	--	--	--	--
6EF0005C	N	500	100	N	500	N	>2,000	N	--	--	--	--	--	--
6DF0006C	N	500	70	N	300	N	>2,000	N	--	--	--	--	--	--
6DF0007C	N	1,000	30	N	150	N	>2,000	N	--	--	--	--	--	--
6DF0008C	N	300	50	N	200	N	>2,000	N	--	--	--	--	--	--
6DF0009C	N	500	50	N	300	N	>2,000	N	--	--	--	--	--	--
6DF0010C	N	<200	30	N	150	N	>2,000	N	--	--	--	--	--	--
6DF0011C	N	2,000	30	N	100	2,000	>2,000	N	--	--	--	--	--	--
6DF0012C	N	700	50	N	500	N	>2,000	N	--	--	--	--	--	--
6DF0022C	N	700	30	N	150	N	>2,000	N	--	--	--	--	--	--
6DF0042C	N	2,000	50	N	300	N	>2,000	N	--	--	--	--	--	--
6DF1061C	N	N	20	N	100	N	>2,000	N	--	--	--	--	--	--
6DF1062C	N	700	50	N	300	N	>2,000	N	--	--	--	--	--	--
6DF1063C	50	1,000	50	N	200	N	>2,000	N	--	--	--	--	--	--
6DF1064C	N	N	50	N	200	N	>2,000	N	--	--	--	--	--	--
6DF1065C	N	1,000	50	100	200	1,000	>2,000	N	--	--	--	--	--	--
6EF1066C	N	500	70	N	300	N	>2,000	N	--	--	--	--	--	--
6EF1067C	N	1,000	50	N	200	N	>2,000	N	--	--	--	--	--	--
6EF1068C	N	200	50	N	100	N	>2,000	N	--	--	--	--	--	--
6EF1069C	N	<200	50	N	100	N	>2,000	N	--	--	--	--	--	--
6FG1070C	N	N	200	N	150	N	>2,000	N	--	--	--	--	--	--
6FG1071C	N	N	50	N	150	N	>2,000	N	--	--	--	--	--	--
6DF1036C	N	2,000	100	200	700	N	>2,000	<200	--	--	--	--	--	--
6EF1037C	N	1,000	100	N	1,500	<500	>2,000	200	--	--	--	--	--	--
6FG1007C	N	200	70	N	200	N	>2,000	N	--	--	--	--	--	--
6FG1008C	N	300	50	N	150	N	>2,000	N	--	--	--	--	--	--
6FG1009C	N	N	70	N	150	N	>2,000	N	--	--	--	--	--	--
6FG1010C	N	N	30	N	50	N	>2,000	N	--	--	--	--	--	--
6EF1014C	N	1,000	100	N	1,000	500	>2,000	<200	--	--	--	--	--	--
6EF1015C	N	N	70	N	1,000	N	>2,000	<200	--	--	--	--	--	--
6EF1016C	N	N	100	N	1,500	1,000	>2,000	200	--	--	--	--	--	--
6FF1017C	N	N	100	N	1,500	N	>2,000	200	--	--	--	--	--	--
6EF1018C	N	2,000	20	N	150	N	>2,000	N	--	--	--	--	--	--
6EF1019C	N	5,000	150	N	1,000	N	>2,000	N	--	--	--	--	--	--
6FF1004C	N	7,000	500	N	500	N	>2,000	N	--	--	--	--	--	--
6FF1005C	500	1,000	100	N	100	N	>2,000	N	--	--	--	--	--	--
6FF1006C	N	700	70	N	100	N	>2,000	N	--	--	--	--	--	--
6FF1020C	N	<200	50	N	500	N	>2,000	N	--	--	--	--	--	--
6FF1021C	N	3,000	70	N	1,000	500	>2,000	N	--	--	--	--	--	--
6FF1000C	N	N	20	<100	200	N	>2,000	N	--	--	--	--	--	--
6FF1001C	70	5,000	30	N	200	N	>2,000	<200	--	--	--	--	--	--
6FF1002C	N	10,000	500	<100	150	N	>2,000	N	--	--	--	--	--	--

TABLE 4-RESULTS OF ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES, SWASEY MOUNTAIN AND HOWELL PEAK WILDERNESS STUDY AREAS, MILLARD COUNTY, UTAH--Continued

Sample	Latitude	Longitude	Fe-pct. s	Mg-pct. s	Ca-pct. s	Ti-pct. s	Mn-ppm s	Ag-ppm s	As-ppm s	Au-ppm s	B-ppm s	Ba-ppm s
6FF1003C	39 18 33	113 19 22	.5	5	10	>2.00	500	N	N	N	100	5,000
6FF1011C	39 15 57	113 21 45	.7	3	10	>2.00	300	N	N	N	200	10,000
6FF1012C	39 15 45	113 22 13	2.0	3	20	2.00	500	N	N	N	100	3,000
6FF1072C	39 19 39	113 17 46	1.0	5	10	2.00	300	N	N	N	70	1,500
6FF1073C	39 20 5	113 20 32	2.0	5	10	2.00	1,000	N	N	N	100	1,000
6FF1074C	39 20 24	113 22 3	1.0	5	7	2.00	300	N	N	N	100	1,500
6FF1075C	39 18 15	113 19 40	2.0	7	10	2.00	500	N	N	N	200	1,000
6GE1013C	39 14 37	113 22 47	1.0	2	20	.70	500	N	N	N	150	3,000
6GE1076C	39 14 43	113 24 12	1.0	2	50	.30	500	N	N	N	70	5,000
6FF1022C	39 19 13	113 23 17	.7	2	10	>2.00	500	N	N	N	100	7,000
6FE1023C	39 17 22	113 23 38	1.0	3	10	>2.00	500	N	N	N	200	10,000
6FE0088C	39 17 4	113 25 17	2.0	5	15	>2.00	500	N	N	N	200	5,000
6FE0089C	39 18 13	113 24 55	1.0	5	10	>2.00	300	N	N	N	200	1,500

TABLE 4-RESULTS OF ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES, SWASEY MOUNTAIN AND HOWELL PEAK WILDERNESS STUDY AREAS, MILLARD COUNTY, UTAH--Continued

Sample	Be-ppm s	Bi-ppm s	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	Sb-ppm s	Sc-ppm s
6FF1003C	<2	N	N	<10	<20	<10	50	N	100	N	1,500	N	10
6FF1011C	2	N	N	N	20	10	200	N	50	N	500	N	50
6FE1012C	100	N	N	10	20	10	70	N	50	N	100	N	10
6FF1072C	<2	N	N	70	<20	15	<50	N	<50	N	50	N	10
6FF1073C	<2	N	N	10	20	15	150	N	50	N	500	N	20
6FF1074C	5	N	N	N	50	10	<50	N	50	N	100	N	100
6FF1075C	<2	N	N	<10	70	10	100	N	100	N	20	N	20
6GE1013C	N	N	N	10	<20	<10	50	N	N	N	<20	N	<10
6GE1076C	N	N	N	15	<20	<10	N	N	N	N	2,000	N	N
6FE1022C	10	N	N	N	50	10	100	N	70	N	300	N	100
6FF1023C	10	N	N	<10	100	10	150	N	50	N	70	N	100
6FE0088C	7	N	N	N	70	15	700	N	<50	N	200	N	70
6FE0089C	7	N	N	N	70	10	300	N	<50	N	100	N	100

TABLE 4-RESULTS OF ANALYSES OF HEAVY-MINERAL-CONCENTRATE SAMPLES, SWASEY MOUNTAIN AND HOWELL PEAK WILDERNESS STUDY AREAS, MILLARD COUNTY, UTAH--Continued

Sample	Sn-ppm s	Sr-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s	Th-ppm s	Au-ppm aa	As-ppm aa	Bi-ppm aa	Cd-ppm aa	Sb-ppm aa	Zn-ppm aa
6FF1003C	N	<200	500	N	300	N	>2,000	N	--	--	--	--	--	--
6FF1011C	N	700	150	N	500	N	>2,000	N	--	--	--	--	--	--
6FF1012C	N	7,000	100	N	300	N	>2,000	N	--	--	--	--	--	--
6FF1072C	N	7,000	50	N	200	N	>2,000	N	--	--	--	--	--	--
6FF1073C	N	500	150	N	300	N	>2,000	200	--	--	--	--	--	--
6FF1074C	N	200	50	N	1,000	N	>2,000	<200	--	--	--	--	--	--
6FF1075C	N	200	100	N	300	N	>2,000	N	--	--	--	--	--	--
6GE1013C	N	2,000	50	N	100	N	>2,000	N	--	--	--	--	--	--
6GF1076C	200	5,000	50	N	150	N	>2,000	N	--	--	--	--	--	--
6FF1022C	N	1,000	100	N	1,500	N	>2,000	300	--	--	--	--	--	--
6FF1023C	N	2,000	150	N	1,500	1,000	>2,000	200	--	--	--	--	--	--
6FF0088C	N	2,000	100	N	1,500	500	>2,000	300	--	--	--	--	--	--
6FF0089C	N	1,000	100	N	2,000	N	>2,000	200	--	--	--	--	--	--

TABLE 5-RESULTS OF ANALYSES OF ROCK SAMPLES, SWASEY MOUNTAIN AND HOWELL PEAK WILDERNESS STUDY AREAS, MILLARD COUNTY, UTAH

[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	As-ppm s	Au-ppm s	B-ppm s	Ba-ppm s
6DE5031	39 33 48	113 22 42	2.00	1.00	>20.0	.070	2,000	N	200	N	70	300
6DE5032	39 33 52	113 22 40	5.00	5.00	>20.0	.015	2,000	N	N	N	<10	>5,000
6DE5033	39 34 6	113 22 41	5.00	2.00	10.0	.050	1,000	N	<200	N	50	200
6DE5034A	39 34 12	113 22 36	.70	.10	1.0	.020	2,000	<.5	<200	N	50	100
6DE5034B	39 34 12	113 22 36	5.00	.20	2.0	.150	300	N	200	N	100	2,000
6DE5035	39 34 18	113 22 38	1.00	.30	1.0	.200	150	<.5	N	N	150	2,000
6DF5005A	39 32 11	113 20 49	5.00	1.50	>20.0	.100	500	N	N	N	<10	100
6DF5005B	39 32 11	113 20 49	5.00	1.00	>20.0	.050	2,000	N	N	N	N	20
6DF5006	39 32 3	113 20 54	5.00	1.00	>20.0	.100	1,000	N	N	N	<10	50
6DF5007	39 32 6	113 21 9	7.00	10.00	>20.0	N	5,000	N	N	N	N	<20
6DF5008	39 32 3	113 21 11	2.00	2.00	>20.0	.070	500	N	N	N	N	<20
6DF5010A	39 31 42	113 21 24	5.00	1.00	5.0	.010	2,000	N	N	N	70	5,000
6DF5010B	39 31 42	113 21 24	.50	.05	1.0	.010	150	N	N	N	30	200
6DF5010C	39 31 42	113 21 24	2.00	.05	1.0	.010	150	N	<200	N	30	5,000
6DF5011	39 31 38	113 21 26	1.00	.10	2.0	.030	150	N	N	N	30	>5,000
6DF5012	39 32 52	113 20 56	2.00	.30	>20.0	.005	200	N	N	N	N	20
6DF5013A	39 33 11	113 21 44	1.00	.20	10.0	.030	500	N	N	N	20	500
6DF5013B	39 33 11	113 21 44	1.50	.20	2.0	.050	1,000	N	N	N	30	500
6DF5014	39 33 19	113 21 45	1.50	.10	.5	.200	20	N	N	N	50	200
6DF1061R	39 35 19	113 22 26	.10	10.00	20.0	.010	150	N	N	N	N	<20
6DF1062R	39 33 9	113 18 28	<.05	.50	>20.0	.005	150	N	N	N	N	N
6EF1068R	39 24 57	113 16 56	.07	5.00	7.0	N	100	N	N	N	N	N
6FG1007R	39 20 14	113 14 6	.70	1.50	>20.0	.020	200	N	N	N	10	50
6FG1008R	39 20 26	113 13 11	.30	>10.00	>20.0	.015	200	N	N	N	N	<20
6FG1009R	39 22 4	113 12 46	1.00	>10.00	>20.0	.050	200	N	N	N	N	30
6EG1010R	39 23 12	113 14 17	.10	1.00	>20.0	.015	100	N	N	N	N	N
6EF1014R	39 29 41	113 21 55	10.00	.50	1.0	.300	500	N	N	N	100	1,000
6EF1015R	39 27 50	113 21 49	5.00	.20	1.0	.100	300	N	N	N	50	500
6EF1016R	39 26 43	113 21 49	7.00	.20	1.5	.050	3,000	N	N	N	50	150
6EF1019R	39 22 51	113 21 11	20.00	1.50	.2	.150	700	N	N	N	100	700
6FF1020R	39 21 39	113 20 50	7.00	1.50	.3	.700	200	N	N	N	100	1,500
6FF1021R	39 20 34	113 21 57	7.00	1.00	>20.0	.005	2,000	.5	N	N	N	100
6EF0001	39 24 31	113 16 5	.05	2.00	>20.0	.005	50	N	N	N	N	70
6EF0003	39 26 48	113 17 47	5.00	1.50	>20.0	.050	2,000	N	N	N	<10	50
6EF0004	39 28 38	113 17 49	3.00	1.00	>20.0	.030	500	N	N	N	N	20
6EF0005	39 29 51	113 18 56	3.00	1.50	>20.0	.070	500	N	N	N	20	100
6DF0006	39 31 16	113 18 26	.50	.50	>20.0	.020	100	N	N	N	N	<20
6DF0008	39 32 23	113 19 40	.50	1.00	>20.0	.010	150	N	N	N	<10	50
6DF0009	39 34 39	113 22 1	.70	1.50	>20.0	.020	150	N	N	N	N	<20
6DF0010	39 35 4	113 20 20	.50	7.00	20.0	.015	300	N	N	N	30	70
6DF0011	39 32 18	113 21 58	2.00	.20	5.0	.050	300	N	N	N	50	100
6DF0012	39 30 40	113 21 24	2.00	.20	10.0	.070	300	N	N	N	70	100
7DF5169	39 31 2	113 21 14	2.00	.10	.5	.100	50	N	N	N	15	70
7DF5182	39 34 19	113 22 37	1.00	.20	.1	.200	50	N	N	N	30	300
7DF5170	39 31 7	113 21 9	7.00	.20	.2	.200	20	N	1,500	N	30	200

TABLE 5-RESULTS OF ANALYSES OF ROCK SAMPLES, SWASEY MOUNTAIN AND HOWELL PEAK WILDERNESS STUDY AREAS, MILLARD COUNTY, UTAH--Continued

Sample	Be-ppm s	Bi-ppm s	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	Sb-ppm s	Sc-ppm s
6DE5031	1.5	N	N	10	10	10	N	100	N	30	300	300	15
6DE5032	<1.0	N	N	<5	10	10	N	10	N	20	100	N	5
6DE5033	2.0	N	N	5	10	15	N	20	N	10	100	100	7
6DE5034A	10.0	N	N	N	<10	5	N	5	200	5	10	<100	10
6DE5034B	3.0	N	N	10	20	10	N	20	N	20	30	200	5
6DE5035	3.0	N	N	<5	20	7	N	N	N	10	20	150	<5
6DF5005A	N	N	N	5	30	15	N	<5	N	10	10	N	5
6DF5005B	1.0	N	N	<5	<10	10	N	N	N	5	<10	N	N
6DF5006	<1.0	N	N	10	20	30	N	10	N	20	70	N	5
6DF5007	N	N	N	N	<10	10	N	<5	N	7	N	N	N
6DF5008	N	N	N	7	<10	5	N	N	N	7	20	N	N
6DF5010A	3.0	N	N	<5	10	50	N	10	N	30	30	200	<5
6DF5010B	3.0	N	N	N	<10	<5	N	N	N	5	N	300	N
6DF5010C	2.0	N	N	N	<10	20	N	N	N	5	15	500	N
6DF5011	2.0	N	N	N	<10	<5	N	5	N	5	50	200	N
6DF5012	<1.0	N	N	N	<10	5	N	<5	N	10	20	N	N
6DF5013A	3.0	N	N	10	10	15	N	7	N	10	300	100	N
6DF5013B	5.0	N	N	5	15	20	N	5	N	20	<10	100	<5
6DF5014	10.0	N	N	N	10	10	<20	5	N	5	20	100	<5
6DF1061R	N	N	N	N	N	<5	N	N	N	N	10	N	N
6DF1062R	N	N	N	N	N	<5	N	N	N	N	N	N	N
6EF1068R	<1.0	N	N	N	<10	<5	N	N	N	<5	<10	N	N
6FG1007R	N	N	N	N	10	7	N	N	N	7	10	N	N
6FG1008R	<1.0	N	N	N	<10	5	N	N	N	<5	20	N	5
6FG1009R	N	N	N	N	10	10	N	N	N	7	<10	N	<5
6EG1010R	N	N	N	N	<10	<5	N	N	N	<5	<10	N	N
6EF1014R	7.0	N	N	10	30	5	200	15	20	10	50	N	20
6EF1015R	5.0	N	N	N	20	5	50	N	N	10	10	N	10
6EF1016R	1.0	N	N	<5	<10	<5	N	N	N	7	N	N	10
6EF1019R	1.0	N	N	7	20	30	100	<5	N	10	50	N	10
6FF1020R	5.0	N	N	5	50	5	100	N	50	20	50	N	20
6FF1021R	N	N	N	5	<10	20	N	N	N	10	100	N	N
6EF0001	<1.0	N	N	N	N	<5	N	N	N	N	N	N	<5
6EF0003	1.0	N	N	15	10	15	20	N	N	30	70	N	15
6EF0004	<1.0	N	N	10	10	5	N	N	N	20	10	N	5
6EF0005	<1.0	N	N	5	30	15	<20	N	N	20	50	N	5
6DF0006	<1.0	N	N	N	<10	<5	N	N	N	5	N	N	N
6DF0008	N	N	N	N	<10	<5	N	N	N	5	<10	N	<5
6DF0009	N	N	N	N	<10	<5	N	N	N	<5	N	N	<5
6DF0010	<1.0	N	N	N	<10	5	N	N	N	5	N	N	N
6DF0011	3.0	N	N	<5	<10	70	N	N	N	10	<10	N	N
6DF0012	1.0	N	N	N	<10	<5	N	N	N	10	30	N	<5
7DF5169	2.0	N	N	<5	30	5	<20	N	<20	<5	20	100	N
7DE5182	N	N	N	<10	30	5	20	<5	N	20	30	100	<45
7DF5170	<1.0	N	N	<5	100	10	50	7	N	7	500	500	7

TABLE 5-RESULTS OF ANALYSES OF ROCK SAMPLES, SWASEY MOUNTAIN AND HOWELL PEAK WILDERNESS STUDY AREAS, MILLARD COUNTY, UTAH--Continued

Sample	Sn-ppm s	Sr-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s	Th-ppm s	Au-ppm aa	As-ppm aa/icp	Bi-ppm aa/icp	Cd-ppm aa/icp	Sb-ppm aa/icp	Zn-ppm aa/icp
6DE5031	N	200	100	N	10	500	70	N	.10	340	<2.0	9.4	140	330
6DE5032	N	500	100	N	<10	<200	<10	N	<.10	90	<2.0	.7	4	17
6DE5033	N	<100	70	N	<10	200	20	N	<.10	270	<2.0	1.0	38	97
6DE5034A	20	N	15	N	100	<200	100	N	<.10	11	<2.0	.1	3	26
6DE5034B	N	100	100	N	<10	200	100	N	<.10	310	<2.0	.4	100	57
6DE5035	N	<100	70	N	<10	<200	150	N	<.10	27	<2.0	.1	6	15
6DF5005A	N	1,000	70	N	20	N	50	N	N	13	<2.0	.6	<2	36
6DF5005B	N	700	15	N	30	N	10	N	N	<5	<2.0	.7	<2	31
6DF5006	N	500	50	N	50	N	70	N	N	11	<2.0	1.0	<2	17
6DF5007	N	100	20	N	<10	N	N	N	N	61	<2.0	.8	11	<2
6DF5008	N	1,000	20	N	<10	N	10	N	N	<5	<2.0	.3	<2	3
6DF5010A	N	<100	50	50	<10	N	<10	N	N	65	<2.0	.4	27	93
6DF5010B	N	N	50	100	N	<200	<10	N	N	22	<2.0	<.1	8	6
6DF5010C	N	N	150	<50	<10	<200	<10	N	N	110	<2.0	.1	30	6
6DF5011	N	200	30	50	N	<200	<10	N	N	27	<2.0	.3	15	7
6DF5012	N	500	50	N	N	N	N	N	N	43	<2.0	.4	<2	52
6DF5013A	N	N	50	N	<10	<200	<10	N	N	36	<2.0	.5	6	21
6DF5013B	N	<100	50	N	10	<200	50	N	N	25	<2.0	.3	2	16
6DF5014	N	100	100	N	<10	<200	50	N	N	82	<2.0	<.1	8	7
6DF1061R	N	N	<10	N	N	<200	N	N	N	<5	<2.0	<.1	<2	<2
6DF1062R	N	300	<10	N	N	N	N	N	N	<5	<2.0	<.1	<2	<2
6EF1068R	N	N	<10	N	N	200	N	N	N	<5	<2.0	.2	<2	<2
6FG1007R	N	1,000	20	N	10	<200	10	N	N	<5	<2.0	.1	<2	3
6FG1008R	N	N	10	N	<10	<200	10	N	N	<5	<2.0	.1	3	<2
6FG1009R	N	200	20	N	<10	<200	30	N	N	<5	<2.0	.4	<2	<2
6EG1010R	N	1,000	10	N	<10	N	<10	N	N	<5	<2.0	<.1	<2	9
6EF1014R	N	<100	100	N	150	200	1,000	N	N	8	<2.0	.3	<2	14
6EF1015R	N	<100	70	N	100	<200	200	N	N	5	<2.0	.3	<2	6
6EF1016R	N	100	70	N	30	<200	100	N	N	7	<2.0	1.2	<2	11
6EF1019R	N	<100	50	N	100	200	1,000	N	N	33	<2.0	4.2	<2	28
6FF1020R	N	<100	100	N	150	N	1,000	N	N	5	<2.0	.5	<2	20
6FF1021R	N	150	100	N	<10	<200	<10	N	N	46	<2.0	1.5	<2	130
6EF0001	N	1,000	10	N	N	N	<10	N	N	<5	<2.0	<.1	<2	20
6EF0003	N	700	20	N	50	N	10	N	N	<5	<2.0	1.4	<2	50
6EF0004	N	500	20	N	15	N	50	N	N	8	<2.0	.6	<2	23
6EF0005	N	700	50	N	10	N	50	N	N	6	<2.0	.3	<2	15
6DF0006	N	700	15	N	N	N	<10	N	N	15	<2.0	.1	2	10
6DF0008	N	700	10	N	N	N	<10	N	N	<5	<2.0	<.1	<2	5
6DF0009	N	300	15	N	N	N	10	N	N	8	<2.0	.2	<2	<2
6DF0010	N	N	20	N	N	<200	<10	N	N	7	<2.0	.2	<2	<2
6DF0011	N	N	50	N	N	N	20	N	N	110	<2.0	.3	24	8
6DF0012	N	N	70	N	<10	<200	150	N	N	37	<2.0	.4	3	11
7DF5169	N	N	50	70	30	<200	200	N	N	100	1.0	N	100	35
7DE5182	N	N	50	N	<20	<70	70	N	N	130	N	.1	20	45
7DF5170	N	300	200	50	10	<200	100	N	.05	1,700	N	N	350	10

TABLE 5-RESULTS OF ANALYSES OF ROCK SAMPLES, SWASEY MOUNTAIN AND HOWELL PEAK WILDERNESS STUDY AREAS, MILLARD COUNTY, UTAH--Continued

Sample	Latitude	Longitude	Fe-pct. s	Mg-pct. s	Ca-pct. s	Ti-pct. s	Mn-ppm s	Ag-ppm s	As-ppm s	Au-ppm s	B-ppm s	Ba-ppm s
7DE5188A	39 34 6	113 22 52	1.00	.10	.5	.100	100	N	N	N	20	700
7DF5172	39 31 9	113 21 12	3.00	.05	.2	.005	100	N	500	N	10	100
7DF5168	39 30 59	113 21 15	10.00	.20	.5	.200	50	<.5	7,000	N	30	200
7DE5184A	39 34 15	113 22 37	.50	.20	1.0	.020	300	N	N	N	10	700
7DE5188	39 34 6	113 22 52	2.00	2.00	3.0	.500	500	N	N	N	50	200
7DE5163	39 34 27	113 22 48	2.00	10.00	15.0	.020	2,000	N	N	N	<10	100
7DE5178A	39 34 55	113 22 52	.50	.20	2.0	.200	200	1.5	N	N	30	200
7DF5166	39 30 49	113 21 20	1.50	.10	.5	.030	500	N	N	N	15	1,000
7DF5165	39 30 44	113 21 17	5.00	.10	.5	.020	200	<.5	500	N	15	200
7DE5160	39 34 23	113 22 43	1.00	.10	.7	.100	100	.5	N	N	20	150
7DE5190C	39 34 4	113 22 37	.30	.20	5.0	.150	100	N	N	N	30	300
7DE5189	39 34 4	113 22 48	2.00	.70	>20.0	.100	1,000	N	N	N	15	100
7DE5180A	39 34 52	113 23 5	1.00	.10	.5	.100	100	1.0	N	N	20	1,000
7DE5190B	39 34 4	113 22 37	.30	.20	3.0	.100	100	N	N	N	20	150
7DE5181	39 34 36	113 22 51	3.00	.20	5.0	.200	300	N	1,000	N	50	5,000
7DF5174C	39 32 3	113 22 23	2.00	2.00	3.0	.010	1,000	N	N	N	10	300
7DE5179	39 34 53	113 22 53	5.00	.70	20.0	.070	1,000	N	N	N	10	100
7DF5167	39 30 51	113 21 12	1.00	.10	.5	.100	200	N	N	N	20	2,000
7DE5190A	39 34 4	113 22 37	2.00	1.00	20.0	.200	700	N	N	N	50	150
7DE5176	39 34 53	113 22 48	.70	.10	.5	.010	1,500	N	N	N	20	200
7DE5178	39 34 55	113 22 52	.50	.10	2.0	.100	500	1.0	N	N	20	200
7DE5187	39 34 6	113 22 54	1.00	.20	1.0	.100	100	.5	<200	N	20	150
7DE5177	39 34 55	113 22 49	1.00	.15	.3	.005	1,000	N	N	N	10	500
7DF5175	39 32 11	113 22 8	1.00	10.00	20.0	.020	1,500	N	N	N	<10	50
7DF5171	39 31 8	113 21 12	2.00	.20	5.0	.150	1,000	<.5	N	N	50	100
7DF5173	39 31 13	113 21 11	1.00	.10	1.0	.002	200	N	N	N	10	150
7DE5180B	39 34 52	113 23 5	.70	.15	.5	.150	100	<.5	N	N	30	200
7DF5174A	39 32 3	113 22 23	2.00	.50	2.0	.010	500	<.5	N	N	10	700
7DF5174D	39 32 3	113 22 23	2.00	5.00	7.0	.010	3,000	1.0	N	N	<10	300
7DF0172	39 33 11	113 21 49	2.00	.10	.5	.070	200	N	<200	N	15	200
7DF0166	39 32 57	113 21 24	2.00	.20	.5	.200	100	N	200	N	30	200
7DF0160	39 32 38	113 21 38	.20	.10	1.0	.050	300	N	N	N	15	300
7DF0161	39 32 42	113 21 22	.50	.10	.3	.100	150	N	N	N	20	500
7DF0157	39 32 48	113 21 31	1.00	.15	.3	.150	70	N	N	N	20	200
7DF0164	39 32 53	113 21 21	3.00	.20	.7	.300	300	N	500	N	20	500
7DF0146	39 32 8	113 21 20	2.00	2.00	20.0	.050	1,000	N	<200	N	<10	50
7DF0150	39 32 16	113 21 2	.30	.30	>20.0	.015	300	N	N	N	N	20
7DF0149	39 32 8	113 21 4	2.00	1.50	>20.0	.100	1,000	N	N	N	<10	100
7DF0162	39 32 47	113 21 20	1.50	.20	1.0	.100	200	N	300	N	20	200
7DF0155	39 32 17	113 21 27	1.00	.30	.7	.200	100	N	<200	N	20	1,500
7DF0148	39 32 12	113 21 4	1.00	.20	.5	.200	50	N	N	N	50	200
7DF0152	39 32 18	113 21 14	.50	.20	1.5	.100	100	N	N	N	20	300
7DF0153	39 32 23	113 21 16	1.50	.20	.5	.200	70	1.0	200	N	30	300
7DF0132	39 32 27	113 22 9	2.00	10.00	20.0	<.002	3,000	.5	N	N	N	50
7DF0151	39 32 19	113 21 11	2.00	.20	.2	.150	70	N	300	N	50	150

TABLE 5-RESULTS OF ANALYSES OF ROCK SAMPLES, SWASEY MOUNTAIN AND HOWELL PEAK WILDERNESS STUDY AREAS, MILLARD COUNTY, UTAH--Continued

Sample	Be-ppm s	Bi-ppm s	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	Sb-ppm s	Sc-ppm s
7DE5188A	1.0	N	N	<5	30	5	N	<5	N	5	10	100	N
7DF5172	1.0	N	N	<5	<10	5	N	<5	N	5	50	100	N
7DF5168	<1.0	N	N	5	20	20	N	15	N	10	300	200	<5
7DE5184A	3.0	N	N	N	<10	<5	N	<5	30	5	<10	N	5
7DE5188	<1.0	N	N	20	50	15	50	5	<20	20	50	N	15
7DE5163	<1.0	N	N	N	10	5	N	10	N	10	200	N	N
7DE5178A	1.0	N	N	<5	70	5	<20	<5	N	7	150	<100	<5
7DF5166	1.0	N	N	N	<10	5	N	N	N	5	50	100	N
7DF5165	<1.0	N	N	<5	20	15	N	<5	N	5	300	100	N
7DE5160	1.5	N	N	<5	50	5	N	5	N	7	50	100	N
7DE5190C	1.0	N	N	<5	50	<5	<20	N	N	5	10	<100	5
7DE5189	<1.0	N	N	10	70	5	N	10	N	20	70	N	10
7DE5180A	<1.0	N	N	N	50	5	<20	10	N	10	70	150	N
7DE5190B	1.0	N	N	<5	50	<5	N	N	N	5	10	<100	N
7DE5181	1.0	N	N	10	70	20	20	200	N	50	200	100	<5
7DF5174C	1.0	N	N	<5	<10	15	N	<5	N	5	20	200	<5
7DE5179	<1.0	N	N	20	70	20	20	7	N	50	70	N	20
7DF5167	<1.0	N	N	N	10	<5	N	N	N	<5	10	<100	N
7DE5190A	<1.0	N	N	10	100	10	50	N	N	20	30	N	20
7DE5176	10.0	<10	N	N	<10	<5	N	N	100	5	30	N	7
7DE5178	1.0	N	N	N	30	5	N	<5	N	10	50	N	<5
7DE5187	1.5	N	N	5	50	5	N	50	N	15	100	100	N
7DE5177	10.0	N	N	N	N	<5	N	10	70	<5	20	N	10
7DF5175	<1.0	N	N	N	20	5	N	7	N	10	100	N	N
7DF5171	<1.0	N	N	<5	30	30	<20	<5	N	5	150	300	30
7DF5173	1.0	N	N	<5	<10	10	N	N	N	5	20	200	N
7DE5180B	2.0	N	N	<5	10	<5	N	5	N	5	10	N	N
7DF5174A	1.0	N	N	<5	<10	30	N	<5	N	5	30	200	N
7DF5174D	<1.0	N	N	<5	10	20	N	<5	N	10	20	100	<5
7DF0172	1.5	N	N	<5	10	7	N	5	N	20	10	100	N
7DF0166	3.0	N	N	7	50	20	30	7	N	30	30	<100	5
7DF0160	1.0	N	N	<5	<10	<5	<20	N	N	10	<10	300	N
7DF0161	1.0	N	N	<5	20	5	<20	N	N	10	<10	300	N
7DF0157	3.0	N	N	<5	30	7	<20	<5	N	10	10	100	<5
7DF0164	2.0	N	N	10	70	30	20	10	<20	50	20	100	<5
7DF0146	N	N	N	5	50	5	N	N	N	5	200	N	5
7DF0150	N	N	N	N	15	<5	N	N	N	<5	20	N	N
7DF0149	<1.0	N	N	15	70	20	20	N	N	20	70	N	10
7DF0162	2.0	N	N	5	10	10	N	10	N	20	20	100	N
7DF0155	2.0	N	N	5	70	5	<20	5	N	15	15	<100	N
7DF0148	2.0	N	N	5	100	7	20	<5	N	15	10	100	<5
7DF0152	5.0	N	N	<5	<10	5	<20	<5	N	10	10	150	N
7DF0153	1.5	N	N	<5	50	10	<20	5	N	15	20	200	N
7DF0132	N	N	N	N	<10	<5	N	N	N	<5	15	N	N
7DF0151	5.0	N	N	5	50	10	<20	<5	N	20	15	200	<5

TABLE 5-RESULTS OF ANALYSES OF ROCK SAMPLES, SWASEY MOUNTAIN AND HOWELL PEAK WILDERNESS STUDY AREAS, MILLARD COUNTY, UTAH--Continued

Sample	Sn-ppm s	Sr-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s	Th-ppm s	Au-ppm aa	As-ppm aa/icp	Bi-ppm aa/icp	Cd-ppm aa/icp	Sb-ppm aa/icp	Zn-ppm aa/icp
7DE5188A	N	N	30	N	<10	<200	70	N	N	40	N	N	4	5
7DF5172	N	N	30	<50	N	<200	N	N	N	500	N	N	20	N
7DF5168	N	200	100	70	50	<200	200	N	N	>2,000	N	.2	88	35
7DE5184A	N	<100	20	N	30	<200	50	N	N	30	2.0	.1	4	10
7DE5188	N	N	100	N	30	<200	200	N	N	30	N	N	N	10
7DE5163	N	N	20	N	<10	<200	20	N	N	20	N	.4	2	100
7DE5178A	N	N	70	N	<10	<200	100	N	N	10	1.0	.6	4	25
7DF5166	N	N	100	50	N	<200	20	N	N	70	N	.1	26	30
7DF5165	N	N	70	100	<10	<200	10	N	N	700	1.0	.3	50	10
7DE5160	N	N	50	N	<10	<200	50	N	N	50	1.0	N	6	N
7DE5190C	N	N	70	N	10	<200	50	N	N	30	N	.1	6	15
7DE5189	N	500	50	N	20	N	50	N	N	300	1.0	N	6	85
7DE5180A	N	N	30	N	<10	<200	70	N	N	50	N	N	8	5
7DE5190B	N	N	50	N	10	<200	50	N	N	40	1.0	N	6	<5
7DE5181	N	150	100	N	10	<200	70	N	N	900	1.0	1.0	66	140
7DF5174C	N	N	70	50	<10	<200	<10	N	N	50	1.0	.1	24	25
7DE5179	N	500	50	N	70	N	50	N	N	60	1.0	N	16	65
7DF5167	N	N	70	<50	<10	<200	50	N	N	70	N	.1	4	N
7DE5190A	N	700	70	N	50	N	100	N	N	20	1.0	N	2	20
7DE5176	20	N	15	N	70	<200	50	N	N	N	2.0	N	2	20
7DE5178	N	N	50	N	10	<200	50	N	N	N	2.0	.4	6	15
7DE5187	N	N	50	N	<10	300	50	N	.10	200	N	1.7	46	480
7DE5177	20	N	20	N	50	<200	50	N	N	30	N	.1	6	90
7DF5175	N	100	30	N	10	500	20	N	N	30	N	2.6	6	500
7DF5171	N	N	150	100	30	<200	500	N	N	50	1.0	N	270	25
7DF5173	N	N	100	50	<10	<200	15	N	N	40	N	N	26	10
7DE5180B	N	N	50	N	<10	<200	70	N	N	10	1.0	.1	2	15
7DF5174A	N	<100	100	N	<10	<200	N	N	N	200	N	.1	50	35
7DF5174D	N	200	100	N	<10	<200	N	N	N	50	N	.2	8	30
7DF0172	N	N	70	N	<10	<200	50	N	N	200	N	.2	24	20
7DF0166	N	700	150	N	20	<200	100	N	N	200	N	.2	20	25
7DF0160	N	N	30	N	N	<200	20	N	N	30	N	.1	6	N
7DF0161	N	N	50	N	N	<200	30	N	N	30	N	.1	12	N
7DF0157	N	<100	100	N	<10	<200	50	N	N	100	N	N	14	5
7DF0164	N	500	30	N	30	<200	100	N	N	200	N	.3	50	20
7DF0146	N	500	20	N	20	N	20	N	N	140	N	.1	4	5
7DF0150	N	150	30	N	<10	<200	<10	N	N	10	N	.1	2	5
7DF0149	N	500	50	N	50	<200	70	N	N	N	N	N	<2	25
7DF0162	N	200	100	N	10	<200	100	N	N	200	N	.3	30	30
7DF0155	N	N	100	N	<10	<200	100	N	N	50	N	.1	4	5
7DF0148	N	N	70	N	<10	<200	70	N	N	70	N	N	10	20
7DF0152	N	<100	50	N	<10	<200	50	N	N	90	N	.1	14	10
7DF0153	N	<100	70	N	<10	<200	70	N	N	200	N	.1	36	10
7DF0132	N	<100	10	N	N	<200	N	N	N	10	N	.2	2	15
7DF0151	N	N	100	N	<10	<200	70	N	N	200	N	.2	42	5

TABLE 5-RESULTS OF ANALYSES OF ROCK SAMPLES, SWASEY MOUNTAIN AND HOWELL PEAK WILDERNESS STUDY AREAS, MILLARD COUNTY, UTAH--Continued

Sample	Latitude	Longitude	Fe-pct. s	Mg-pct. s	Ca-pct. s	Ti-pct. s	Mn-ppm s	Ag-ppm s	As-ppm s	Au-ppm s	B-ppm s	Ba-ppm s
7DF0158	39 32 45	113 21 29	.20	2.00	20.0	.003	100	N	N	N	N	<20
7DF0154	39 32 20	113 21 24	.50	.50	1.0	.200	300	N	N	N	15	500
7DF0139	39 32 13	113 21 33	2.00	.05	.7	.020	200	<.5	<200	N	10	100
7DF0138	39 32 13	113 21 34	2.00	.10	.5	.050	200	<.5	300	N	10	100
7DF0140	39 32 12	113 21 34	.50	.10	.7	.050	150	N	N	N	10	150
7DF0137	39 32 14	113 21 35	1.00	.20	1.0	.010	500	<.5	1,000	N	<10	150
7DF0129	39 32 23	113 22 9	5.00	10.00	20.0	.010	>5,000	N	N	N	<10	50
7DF0126	39 32 17	113 21 43	.20	1.50	20.0	<.002	500	N	N	N	N	20
7DF0124	39 32 20	113 21 52	3.00	10.00	20.0	.050	3,000	N	N	N	<10	70
7DF0145	39 32 8	113 21 26	.70	.50	.5	.200	100	N	N	N	30	200
7DF0125	39 32 19	113 21 48	.50	.20	.5	.200	150	N	N	N	30	150
7DF0131	39 32 25	113 22 12	2.00	10.00	20.0	.020	2,000	N	N	N	N	70
7DF0136	39 32 27	113 22 3	2.00	10.00	10.0	.002	1,000	N	N	N	N	<20
7DF0128	39 32 20	113 22 10	3.00	.50	1.0	.200	500	N	N	N	20	200
7DF0133	39 32 29	113 22 7	2.00	7.00	10.0	.070	1,500	N	N	N	15	100
7DF0123	39 32 21	113 22 0	1.00	10.00	15.0	.020	5,000	N	N	N	N	200
7DF0135	39 32 27	113 22 4	2.00	.20	1.5	.015	300	N	N	N	20	300
7DF0134	39 32 27	113 22 3	2.00	5.00	10.0	.010	1,500	N	N	N	<10	150
7DF0130	39 32 25	113 22 9	2.00	10.00	10.0	.010	1,000	N	N	N	<10	100
7DF0127	39 32 20	113 21 43	2.00	10.00	7.0	<.002	2,000	N	N	N	N	<20
7DF0110	39 32 2	113 21 55	.50	.70	15.0	.010	500	N	N	N	N	70
7DF0115	39 32 0	113 21 49	.10	.50	20.0	.020	500	N	N	N	N	20
7DF0106	39 32 0	113 22 3	1.00	.50	1.0	.050	300	N	N	N	20	150
7DF0113	39 32 5	113 21 51	.30	.20	.5	.030	100	N	N	N	10	5,000
7DF0101	39 32 6	113 22 6	2.00	10.00	5.0	.010	2,000	N	N	N	N	50
7DF0109	39 32 4	113 21 57	2.00	10.00	7.0	.005	3,000	N	N	N	N	70
7DF0122	39 32 12	113 21 40	5.00	.20	2.0	.070	100	N	5,000	N	20	100
7DF0118	39 31 57	113 21 16	5.00	3.00	15.0	.100	1,000	N	N	N	20	200
7DF0114	39 32 4	113 21 52	.50	.20	.5	.150	70	N	N	N	50	200
7DF0121	39 32 11	113 21 34	.70	.10	.7	.020	500	N	N	N	20	100
7DF0120	39 32 3	113 21 36	1.50	.50	20.0	.050	500	N	2,000	N	<10	50
7DF0117	39 31 58	113 21 36	2.00	7.00	20.0	.200	3,000	N	N	N	15	300
7DF0103	39 32 4	113 22 4	2.00	>10.00	20.0	.020	5,000	N	N	N	10	200
7DF0100	39 32 7	113 22 6	2.00	>10.00	20.0	.020	>5,000	N	N	N	<10	50
7DF0119	39 32 2	113 21 35	2.00	2.00	20.0	.100	1,000	N	N	N	15	100
7DF0112	39 32 3	113 21 51	.50	.20	1.0	.050	500	N	N	N	20	500
7DF5164	39 30 4	113 20 39	.70	.50	20.0	.030	70	N	N	N	N	<20
7DF0111	39 32 1	113 21 56	1.00	.10	.7	.005	100	N	N	N	10	200
7DF0107	39 31 59	113 22 2	2.00	10.00	10.0	.005	1,500	N	N	N	<10	100
7DF0105	39 32 2	113 22 2	1.50	.20	.5	.100	50	N	N	N	30	100
7DF0102	39 32 5	113 22 5	2.00	10.00	20.0	.020	>5,000	N	N	N	<10	300
7DF0108	39 32 5	113 21 53	.10	.50	>20.0	.020	200	N	N	N	N	20
7DF0147	39 32 10	113 21 5	3.00	2.00	20.0	.200	1,000	N	N	N	50	200
7DF0156	39 32 50	113 21 31	.20	.50	20.0	.030	500	N	N	N	<10	100
7DF0159	39 32 43	113 21 31	1.00	.10	.5	.100	300	N	500	N	20	200

TABLE 5-RESULTS OF ANALYSES OF ROCK SAMPLES, SWASEY MOUNTAIN AND HOWELL PEAK WILDERNESS STUDY AREAS, MILLARD COUNTY, UTAH--Continued

Sample	Be-ppm s	Bi-ppm s	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	Sb-ppm s	Sc-ppm s
7DF0158	N	N	N	N	10	<5	N	N	N	<5	N	N	N
7DF0154	2.0	N	N	<5	70	5	N	7	N	20	20	<100	<5
7DF0139	1.0	N	N	<5	20	20	N	<5	N	10	20	200	N
7DF0138	<1.0	N	N	<5	10	10	N	<5	N	10	50	200	N
7DF0140	<1.0	N	N	<5	10	10	N	N	N	5	<10	<100	N
7DF0137	1.0	N	N	10	<10	15	N	<5	N	15	30	500	N
7DF0129	N	N	N	<5	15	10	N	10	N	10	20	N	N
7DF0126	N	N	N	N	<10	<5	N	N	N	<5	N	N	N
7DF0124	N	N	N	<5	20	<5	N	<5	N	7	10	N	<5
7DF0145	1.0	N	N	N	70	7	<20	<5	N	15	20	<100	N
7DF0125	1.5	N	N	N	50	5	N	N	N	15	20	<100	N
7DF0131	N	N	N	N	<10	<5	N	N	N	<5	10	N	N
7DF0136	N	N	N	N	<10	<5	N	<5	N	10	N	N	N
7DF0128	1.0	N	N	10	20	<5	20	<5	N	10	<10	N	10
7DF0133	<1.0	N	N	<5	30	7	N	<5	N	10	<10	<100	<5
7DF0123	N	N	N	N	<10	<5	N	<5	N	5	200	N	N
7DF0135	1.0	N	N	<5	10	15	N	<5	N	7	50	100	N
7DF0134	<1.0	N	N	<5	<10	10	N	<5	N	7	<10	100	<5
7DF0130	N	N	N	N	10	10	N	<5	N	7	200	N	<5
7DF0127	N	N	N	N	<10	<5	N	N	N	<5	10	N	N
7DF0110	N	N	N	N	<10	<5	N	N	N	5	20	N	N
7DF0115	N	N	N	N	15	<5	N	N	N	<5	N	N	<5
7DF0106	1.0	N	N	<5	30	7	N	N	N	15	<10	<100	N
7DF0113	<1.0	N	N	N	N	5	N	N	N	5	<10	150	N
7DF0101	N	N	N	<5	<10	5	N	<5	N	<5	50	N	N
7DF0109	N	N	N	N	10	10	N	N	N	5	50	N	N
7DF0122	1.0	N	N	N	15	15	N	10	N	5	200	200	N
7DF0118	N	N	N	20	100	20	20	N	N	30	30	N	15
7DF0114	3.0	N	N	N	20	<5	<20	N	N	<5	20	<100	5
7DF0121	1.0	N	N	<5	15	5	N	N	N	7	10	N	N
7DF0120	N	N	N	<5	20	<5	N	<5	N	5	20	N	5
7DF0117	N	N	N	100	50	70	<20	10	N	100	100	100	10
7DF0103	<1.0	N	N	N	<10	<5	N	N	N	<5	20	N	<5
7DF0100	N	N	N	N	10	<5	N	N	N	<5	50	N	<5
7DF0119	N	N	N	10	70	5	20	N	N	15	70	N	7
7DF0112	1.0	N	N	<5	<10	5	N	<5	N	15	20	100	N
7DF5164	N	N	N	N	10	<5	N	N	N	5	100	N	N
7DF0111	1.0	N	N	<5	<10	7	N	N	N	5	50	200	N
7DF0107	<1.0	N	N	<5	10	20	N	<5	N	10	20	N	N
7DF0105	2.0	N	N	<5	50	10	N	N	N	10	20	<100	N
7DF0102	N	N	N	<5	<10	<5	N	<5	N	<5	10	N	N
7DF0108	N	N	N	N	10	<5	N	N	N	<5	<10	N	N
7DF0147	N	N	N	20	100	5	30	<5	N	20	50	N	10
7DF0156	1.0	N	N	N	N	<5	<20	N	N	<5	20	N	5
7DF0159	5.0	N	N	<5	<10	10	<20	15	N	20	10	100	5

TABLE 5-RESULTS OF ANALYSES OF ROCK SAMPLES, SWASEY MOUNTAIN AND HOWELL PEAK WILDERNESS STUDY AREAS, MILLARD COUNTY, UTAH--Continued

Sample	Sn-ppm s	Sr-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s	Th-ppm s	Au-ppm aa	As-ppm aa/icp	Bi-ppm aa/icp	Cd-ppm aa/icp	Sb-ppm aa/icp	Zn-ppm aa/icp
7DF0158	N	500	10	N	N	<200	N	N	N	N	N	.1	N	N
7DF0154	N	N	70	N	<10	<200	50	N	N	30	N	.2	6	<5
7DF0139	N	N	70	50	N	<200	10	N	N	130	N	.3	50	5
7DF0138	N	N	70	N	<10	<200	20	N	N	200	N	.2	70	<5
7DF0140	N	N	50	N	N	<200	20	N	N	30	N	.2	2	N
7DF0137	N	N	100	N	N	<200	N	N	N	500	N	.2	100	20
7DF0129	N	100	10	N	10	N	10	N	N	N	N	.2	<2	40
7DF0126	N	N	20	N	N	<200	<10	N	N	N	N	.2	<2	10
7DF0124	N	N	15	N	30	N	150	N	N	10	N	N	N	10
7DF0145	N	N	50	N	10	<200	70	N	N	80	1.0	N	10	N
7DF0125	N	N	50	N	<10	<200	50	N	N	10	N	N	N	5
7DF0131	N	N	10	N	10	<200	70	N	N	N	N	N	N	5
7DF0136	N	N	10	N	N	N	N	N	N	10	N	N	N	N
7DF0128	N	N	50	N	100	<200	500	N	N	20	1.0	N	N	5
7DF0133	N	N	30	N	10	<200	20	N	N	40	N	N	20	5
7DF0123	N	100	20	N	<10	<200	10	N	N	10	N	1.7	2	260
7DF0135	N	N	100	<50	<10	<200	30	N	N	130	1.0	N	36	5
7DF0134	N	N	50	N	<10	<200	N	N	N	40	N	N	10	5
7DF0130	N	N	30	N	<10	<200	10	N	N	N	N	.1	<2	30
7DF0127	N	N	10	N	N	<200	N	N	N	N	1.0	.1	N	N
7DF0110	N	200	20	N	<10	<200	10	N	N	40	1.0	N	N	<5
7DF0115	N	200	15	N	10	<200	20	N	N	N	N	N	N	N
7DF0106	N	N	50	N	<10	<200	50	N	N	30	1.0	N	8	10
7DF0113	N	N	20	N	<10	<200	10	N	N	N	N	N	4	N
7DF0101	N	100	10	N	15	<200	20	N	N	N	N	N	N	15
7DF0109	N	N	20	N	N	<200	N	N	N	N	N	N	N	20
7DF0122	N	N	30	N	<10	<200	50	N	N	>2,000	1.0	N	220	N
7DF0118	N	500	50	N	30	N	30	N	N	N	N	N	N	45
7DF0114	N	N	100	N	10	<200	20	N	N	30	N	N	2	N
7DF0121	N	N	30	N	N	<200	10	N	N	50	N	N	2	N
7DF0120	N	200	15	N	20	N	15	N	N	700	N	N	6	25
7DF0117	N	100	100	N	30	<200	70	N	N	140	N	2.8	70	90
7DF0103	N	N	10	N	30	<200	50	N	N	N	N	N	N	10
7DF0100	N	<100	10	N	20	N	100	N	N	N	N	N	N	10
7DF0119	N	300	20	N	30	<200	70	N	N	20	N	N	N	15
7DF0112	N	N	20	N	<10	<200	20	N	N	20	N	.2	2	5
7DF5164	N	200	15	N	<10	N	10	N	N	70	N	.1	2	25
7DF0111	N	N	50	50	<10	<200	<10	N	N	50	N	.1	38	5
7DF0107	N	N	50	<50	<10	<200	N	N	N	10	N	N	6	20
7DF0105	N	N	70	<50	10	<200	50	N	N	30	N	N	6	N
7DF0102	N	150	10	N	15	<200	30	N	N	N	N	N	N	10
7DF0108	N	200	20	N	<10	N	20	N	N	20	N	N	6	N
7DF0147	N	300	50	N	50	N	100	N	N	10	1.0	N	4	N
7DF0156	N	500	30	N	20	<200	30	N	N	10	N	.2	2	10
7DF0159	N	N	50	N	N	<200	70	N	N	230	N	.1	50	20

TABLE 5-RESULTS OF ANALYSES OF ROCK SAMPLES, SWASEY MOUNTAIN AND HOWELL PEAK WILDERNESS STUDY AREAS, MILLARD COUNTY, UTAH--Continued

Sample	Latitude	Longitude	Fe-pct. s	Mg-pct. s	Ca-pct. s	Ti-pct. s	Mn-ppm s	Ag-ppm s	As-ppm s	Au-ppm s	B-ppm s	Ba-ppm s
7DF0163	39 32 54	113 21 21	1.50	.15	.7	.150	200	N	500	N	50	500
7DF0165	39 32 54	113 21 27	1.00	.10	.7	.150	200	N	<200	N	30	300
7DF0167	39 32 56	113 21 28	.50	1.00	20.0	.020	300	N	N	N	N	50
7DE2074	39 34 48	113 22 59	.50	.10	.2	.050	300	N	<200	N	20	200
7DE2075	39 34 50	113 22 52	.50	.20	.5	.150	20	5.0	N	N	50	1,000
7DF2076	39 32 51	113 21 31	1.50	.05	.5	.050	150	N	500	N	20	300
7DF2077	39 33 7	113 21 41	1.00	.10	1.0	.050	500	N	N	N	15	500
7DE2090	39 33 58	113 22 49	.30	.10	.3	.100	50	N	N	N	20	200
7DE2091	39 33 47	113 22 48	.50	.10	.5	.100	150	N	N	N	30	500
7DE2092	39 33 40	113 22 24	.70	.10	.1	.070	50	N	<200	N	30	500
7DE2093	39 32 5	113 21 57	.20	.07	.5	.010	200	N	N	N	10	>5,000
7DF2094	39 32 11	113 21 56	.20	.10	.5	.020	200	N	N	N	10	200
7DF2095	39 32 29	113 22 5	2.00	.10	.5	.070	200	N	N	N	20	150
6FE0088	39 17 4	113 25 17	3.00	2.00	5.0	.100	700	N	N	N	20	500
6FE0089	39 18 13	113 24 55	3.00	.50	1.0	.150	500	N	N	N	50	300
6FF1075R	39 18 15	113 19 40	.20	1.00	>20.0	.010	500	N	N	N	N	<20
6GE1076R	39 14 43	113 24 12	.10	.20	>20.0	.015	200	N	N	N	N	<20
6FF1000R	39 18 18	113 17 45	1.00	.30	>20.0	.010	300	N	N	N	N	<20
6FF1001R	39 16 38	113 21 1	1.00	1.50	>20.0	.010	100	1.0	N	N	N	N
6FF1002R	39 17 43	113 20 37	.70	1.50	>20.0	.030	200	N	N	N	<10	20
6FF1004R	39 21 7	113 19 16	2.00	.50	>20.0	.010	3,000	N	N	N	10	20
6GE1013R	39 14 37	113 22 47	15.00	.20	20.0	.020	500	N	3,000	N	30	70
6FF1023R	39 17 22	113 23 38	.50	10.00	>20.0	.020	100	N	N	N	N	30
7FF5427A	39 20 42	113 22 28	5.00	.15	.2	.100	500	100.0	500	N	50	1,000
7FF5427B	39 20 42	113 22 28	15.00	.50	.1	.500	50	2.0	5,000	N	100	1,000
7FF5427C	39 20 42	113 22 28	5.00	.20	.1	.700	100	2.0	1,000	N	100	1,000
7FF5428A	39 19 55	113 22 27	5.00	>10.00	>20.0	.010	3,000	N	N	N	N	<20
7FF5428B	39 19 55	113 22 27	10.00	.70	>20.0	.020	3,000	N	<200	N	50	20
7FF5428C	39 19 55	113 22 27	5.00	10.00	>20.0	.015	2,000	N	N	N	<10	<20
7FF5428D	39 19 55	113 22 27	20.00	1.00	20.0	.070	2,000	N	5,000	N	200	500
7FF5429A	39 20 21	113 22 23	10.00	1.00	5.0	.200	1,500	N	500	N	50	700
7FF5429B	39 20 21	113 22 23	10.00	.50	.2	.500	2,000	N	200	N	100	1,500
6DF1063R	39 32 9	113 19 21	2.00	.50	3.0	.007	300	N	N	N	15	100
7DF2096	39 32 10	113 21 35	.50	.10	.2	.005	200	N	200	N	10	100
7DF2097	39 30 46	113 21 18	1.50	.10	.2	.030	200	N	200	N	10	150
7DF2098	39 34 23	113 22 45	.30	.15	.3	.100	70	N	N	N	30	150
86RY101	39 19 59	113 21 22	10.00	1.00	20.0	.010	1,000	N	N	N	10	1,000
86RY102	39 30 44	113 21 9	5.00	.15	.5	.100	700	N	<200	N	50	5,000
86RY103	39 30 52	113 21 19	1.50	.05	.2	.050	200	N	<200	N	50	1,500
86RY104	39 32 3	113 22 27	5.00	10.00	10.0	.005	2,000	N	N	N	10	200
86RY105	39 32 25	113 22 21	5.00	>10.00	>20.0	.010	5,000	N	N	N	N	70
86RY106	39 32 39	113 21 18	.70	.20	.5	.100	100	N	<200	N	100	500
86RY107	39 32 49	113 21 39	2.00	.15	.5	.100	100	N	2,000	N	100	200
86RY108	39 33 15	113 21 43	1.50	.15	.3	.070	100	N	<200	N	50	300
86RY109	39 32 55	113 21 25	1.00	.15	.5	.300	100	N	<200	N	70	500

TABLE 5-RESULTS OF ANALYSES OF ROCK SAMPLES, SWASEY MOUNTAIN AND HOWELL PEAK WILDERNESS STUDY AREAS, MILLARD COUNTY, UTAH--Continued

Sample	Be-ppm s	Bi-ppm s	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	Sb-ppm s	Sc-ppm s
7DF0163	5.0	N	N	<5	20	20	50	10	N	20	15	<100	10
7DF0165	7.0	N	N	<5	20	10	<20	10	N	20	10	<100	<5
7DF0167	<1.0	N	N	N	N	7	N	N	N	<5	150	N	<5
7DE2074	2.0	N	N	<5	10	7	<20	7	N	10	100	200	<5
7DE2075	3.0	N	N	<5	20	7	50	5	N	7	<10	N	<5
7DF2076	5.0	N	N	<5	10	5	<20	10	N	7	<10	<100	<5
7DF2077	5.0	N	N	<5	10	10	<20	10	N	30	15	100	<5
7DE2090	3.0	N	N	N	10	<5	<20	N	N	5	<10	N	5
7DE2091	3.0	N	N	N	10	5	<20	5	N	5	10	<100	<5
7DE2092	5.0	N	N	<5	10	<5	<20	5	N	5	10	<100	<5
7DE2093	2.0	N	N	N	10	7	<20	N	N	5	10	100	N
7DF2094	2.0	N	N	<5	<10	<5	<20	N	N	5	<10	100	<5
7DF2095	2.0	N	N	<5	<10	7	<20	<5	N	10	20	150	N
6FE0088	<1.0	N	N	7	20	20	<20	N	N	10	200	N	<5
6FE0089	1.0	N	N	5	15	20	20	N	N	5	150	N	5
6FF1075R	N	N	N	N	<10	<5	N	N	N	<5	N	N	N
6GF1076R	N	N	N	N	<10	5	N	N	N	N	50	N	N
6FF1000R	N	N	N	N	<10	<5	N	N	N	10	10	N	N
6FF1001R	N	N	N	N	<10	<5	N	N	N	5	10	N	N
6FF1002R	2.0	N	N	N	<10	<5	N	N	N	5	10	N	N
6FF1004R	<1.0	N	N	N	<10	<5	N	N	N	10	10	N	50
6GF1013R	10.0	N	N	7	<10	20	N	N	N	7	50	100	5
6FE1023R	<1.0	N	N	N	<10	<5	N	5	N	5	N	N	N
7FF5427A	<1.0	N	N	5	10	100	N	5	N	5	>20,000	7,000	5
7FF5427B	2.0	N	N	5	70	500	50	5	20	10	1,000	300	20
7FF5427C	2.0	N	N	<5	50	300	50	7	20	<5	2,000	200	10
7FF5428A	<1.0	N	N	7	<10	15	N	7	N	<5	5,000	N	N
7FF5428B	3.0	N	N	10	10	70	N	20	N	20	1,500	<100	5
7FF5428C	<1.0	N	N	7	<10	15	N	N	N	<5	50	N	<5
7FF5428D	10.0	N	N	50	20	50	N	50	N	30	500	N	30
7FF5429A	15.0	N	N	15	50	10	50	5	20	30	70	500	15
7FF5429B	10.0	N	N	10	20	10	30	<5	20	20	70	100	20
6DF1063R	<1.0	N	N	10	<10	5	N	N	N	10	N	N	N
7DF2096	1.5	N	N	<5	<10	5	N	<5	N	7	10	1,000	<5
7DF2097	1.0	N	N	<5	<10	10	N	N	N	10	10	<100	N
7DE2098	5.0	N	N	<5	10	5	<20	N	N	7	<10	<100	<5
86RY101	3.0	N	N	20	20	30	N	20	N	20	500	N	10
86RY102	2.0	N	N	N	<10	10	N	<5	N	5	70	20	<5
86RY103	2.0	N	N	N	<10	<5	N	N	N	5	10	10	N
86RY104	1.0	N	N	N	<10	10	N	N	N	5	20	10	N
86RY105	<1.0	N	N	N	<10	15	N	<5	N	<5	100	N	<5
86RY106	5.0	N	N	N	30	5	N	N	N	5	<10	30	N
86RY107	7.0	N	N	<5	30	10	N	5	N	20	20	50	N
86RY108	7.0	N	N	10	<10	10	N	7	N	20	<10	10	N
86RY109	7.0	N	N	<5	50	15	N	5	N	20	15	10	<5

TABLE 5-RESULTS OF ANALYSES OF ROCK SAMPLES, SWASEY MOUNTAIN AND HOWELL PEAK WILDERNESS STUDY AREAS, MILLARD COUNTY, UTAH--Continued

Sample	Sn-ppm s	Sr-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s	Th-ppm s	Au-ppm aa	As-ppm aa/icp	Bi-ppm aa/icp	Cd-ppm aa/icp	Sb-ppm aa/icp	Zn-ppm aa/icp
7DF0163	N	500	150	N	15	<200	70	N	N	190	N	.6	18	20
7DF0165	N	200	150	N	10	<200	100	N	N	100	N	.2	10	35
7DF0167	N	500	20	N	<10	N	<10	N	N	30	N	.1	N	10
7DE2074	N	N	20	N	<10	<200	70	N	N	100	N	.5	10	65
7DE2075	N	N	70	N	15	<200	150	N	N	20	N	.1	N	<5
7DF2076	N	N	100	N	<10	<200	30	N	N	200	N	.2	24	<5
7DF2077	N	N	50	N	10	<200	50	N	N	30	N	.3	2	25
7DE2090	N	N	50	N	<10	<200	70	N	N	20	N	N	N	5
7DE2091	N	N	50	N	<10	<200	70	N	N	40	N	.1	4	5
7DE2092	N	N	50	N	N	<200	20	N	N	120	N	N	6	10
7DE2093	N	N	70	N	N	<200	<10	N	N	10	N	N	2	5
7DF2094	N	N	20	N	N	<200	<10	N	N	N	N	N	<2	N
7DF2095	N	N	50	N	<10	<200	50	N	N	70	N	N	6	15
6FF0088	N	N	20	N	10	300	200	N	N	86	<2.0	.6	4	70
6FE0089	N	N	50	N	50	200	700	N	N	<5	<2.0	.4	<2	38
6FF1075R	N	500	<10	N	N	N	<10	N	N	28	<2.0	.2	<2	8
6GF1076R	N	<100	<10	N	<10	N	10	N	N	8	<2.0	.3	<2	7
6FF1000R	N	300	10	N	N	N	20	N	N	5	<2.0	.2	4	10
6FF1001R	N	500	10	N	N	N	10	N	N	<5	<2.0	<.1	<2	5
6FF1002R	N	500	10	N	N	N	10	N	N	12	<2.0	.2	4	19
6FF1004R	N	700	20	N	500	<200	15	N	N	<5	<2.0	.7	<2	29
6GE1013R	N	100	100	1,000	50	200	200	N	N	1,200	<2.0	3.2	76	67
6FF1023R	N	300	15	N	<10	<200	15	N	N	5	<2.0	.2	<2	<2
7FF5427A	N	200	50	N	15	<200	300	N	N	400	2.0	.1	580	10
7FF5427B	N	2,000	100	N	70	<200	500	N	N	2,000	N	1.5	64	45
7FF5427C	N	2,000	150	N	50	<200	1,000	N	N	300	1.0	N	30	5
7FF5428A	N	200	20	N	<10	<200	<10	N	N	30	N	.4	4	40
7FF5428B	N	500	100	N	70	200	100	N	N	200	1.0	.5	32	300
7FF5428C	N	100	10	N	15	N	15	N	N	30	N	.1	4	25
7FF5428D	N	200	200	N	100	700	300	N	N	>2,000	<1.0	.3	10	1,300
7FF5429A	N	1,000	150	1,500	100	<200	1,000	N	N	400	N	N	240	35
7FF5429B	N	500	100	100	100	200	1,000	N	N	300	1.0	N	66	25
6DF1063R	N	N	50	N	N	<200	<10	N	N	290	<2.0	.5	26	17
7DF2096	N	N	20	N	N	<200	<10	N	N	110	N	N	22	10
7DF2097	N	N	20	N	N	<200	20	N	N	90	N	.9	6	<5
7DE2098	N	N	50	N	<10	<200	70	N	N	10	N	N	N	<5
86RY101	N	200	100	N	70	500	20	N	N	80	2.0	3.1	12	--
86RY102	N	N	70	300	15	<200	70	N	N	130	N	N	28	--
86RY103	N	N	50	<50	<10	<200	50	N	N	80	N	N	20	--
86RY104	N	<100	50	N	<10	<200	<10	N	N	40	N	N	12	--
86RY105	N	100	20	N	10	<200	<10	N	N	40	N	N	2	--
86RY106	N	N	100	N	<10	<200	70	N	N	110	N	N	18	--
86RY107	N	N	70	N	<10	<200	70	N	N	940	N	.4	220	--
86RY108	N	100	50	N	10	<200	50	N	N	150	N	.6	24	--
86RY109	N	<100	200	N	20	<200	100	N	N	110	N	.3	14	--

TABLE 5-RESULTS OF ANALYSES OF ROCK SAMPLES, SWASEY MOUNTAIN AND HOWELL PEAK WILDERNESS STUDY AREAS, MILLARD COUNTY, UTAH--Continued

Sample	Latitude	Longitude	Fe-pct. s	Mg-pct. s	Ca-pct. s	Ti-pct. s	Mn-ppm s	Ag-ppm s	As-ppm s	Au-ppm s	B-ppm s	Ba-ppm s
86RY110	39 31 28	113 21 8	2.00	.10	1.0	.020	700	N	<200	N	30	5,000
86RY111	39 31 31	113 21 13	2.00	1.50	3.0	.020	1,000	N	500	N	30	200
86RY112	39 31 35	113 21 23	2.00	.05	.5	.020	300	N	<200	N	20	500
86RY113	39 31 59	113 21 54	1.00	2.00	5.0	.010	700	N	N	N	20	50
86RY114	39 32 12	113 21 33	2.00	.05	.2	.005	300	N	N	N	20	300
86RY115	39 34 18	113 22 54	1.00	.10	.2	.050	150	1.0	200	N	50	700
86RY116	39 34 17	113 22 50	.70	.20	.2	.200	70	<.5	N	N	150	200
86RY117	39 34 13	113 22 41	2.00	.20	5.0	.070	300	N	N	N	100	1,000
86RY118	39 34 14	113 22 40	.50	.15	.5	.050	500	N	N	N	100	150

TABLE 5-RESULTS OF ANALYSES OF ROCK SAMPLES, SWASEY MOUNTAIN AND HOWELL PEAK WILDERNESS STUDY AREAS, MILLARD COUNTY, UTAH--Continued

Sample	Be-ppm s	Bi-ppm s	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	Sb-ppm s	Sc-ppm s
86RY110	5.0	N	N	N	<10	10	N	<5	N	10	<10	30	N
86RY111	3.0	N	N	N	<10	15	N	N	N	7	50	30	N
86RY112	5.0	N	N	N	<10	5	N	N	N	5	10	30	N
86RY113	2.0	N	N	N	<10	10	N	N	N	5	10	20	N
86RY114	5.0	N	N	N	<10	10	N	N	N	10	<10	20	N
86RY115	5.0	N	N	5	<10	7	N	N	N	5	30	200	N
86RY116	5.0	N	N	<5	50	5	<20	N	N	5	50	<100	N
86RY117	5.0	N	N	N	50	<5	N	5	N	5	<10	<100	7
86RY118	10.0	N	N	N	20	<5	N	N	50	<5	N	N	5

TABLE 5-RESULTS OF ANALYSES OF ROCK SAMPLES, SWASEY MOUNTAIN AND HOWELL PEAK WILDERNESS STUDY AREAS, MILLARD COUNTY, UTAH--Continued

Sample	Sn-ppm s	Sr-ppm s	V-ppm s	W-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s	Th-ppm s	Au-ppm aa	As-ppm aa/icp	Bi-ppm aa/icp	Cd-ppm aa/icp	Sb-ppm aa/icp	Zn-ppm aa/icp
86RY110	N	N	70	50	<10	<200	<10	N	N	100	N	N	18	--
86RY111	N	N	100	50	<10	<200	20	N	N	400	N	N	44	--
86RY112	N	N	200	100	N	<200	20	N	N	150	N	N	36	--
86RY113	N	N	50	<50	<10	<200	10	N	N	60	N	N	12	--
86RY114	N	N	70	50	<10	<200	<10	N	N	60	N	N	14	--
86RY115	N	N	50	<50	10	<200	50	N	N	200	N	1.3	32	--
86RY116	N	N	70	N	10	<200	200	N	N	30	N	.4	8	--
86RY117	N	N	70	N	<10	<200	70	N	N	110	N	.4	10	--
86RY118	<10	N	50	N	50	<200	70	N	N	20	N	.1	N	--

Table 6. Summary of geochemical anomalies for selected elements from rock samples, Swasey Mountain and Howell Peak Wilderness Study Areas, Utah
[Selected elements (and associated minimum values considered anomalous) include: Au (.05), Ag (5), As (200), Ba (>5,000), Be (10), Bi (10), Cd (20), Cu (500), Mn (>5,000), Mo (20), Pb (500), Sb (100), Sn (10), W (50), and Zn (500)]

Field No.	Anomalous elements (values in parts per million)	Rock type
RY-101	Mo (20, Pb (500), Zn (500)	Limestone.
RY-102	W (300)	Jasperoid.
RY-107	As (2000)	Silicified breccia.
RY-110	W (50)	
RY-111	As (500), W (50)	
RY-112	W (100)	
RY-114	W (50)	
RY-115	Sb (200)	Jasperoid.
RY-118	Be (10)	Breccia.
RY-120	As (200), Zn (700)	Limestone.
RY-121	As (1000)	Dolomite.
0100	Mn (>5000)	Limestone.
0102	Mn (>5000)	Limestone.
0111	Sb (200), W (50)	Jasperoid.
0112	Sb (100)	Limestone.
0113	Sb (150)	Jasperoid.
0117	Sb (100)	Breccia.
0119	Sb (150)	Limestone.
0120	As (2000)	Shaley limestone.
0122	As (5000), Sb (200)	Jasperoid.
0129	Mn (>5000)	Limestone.
0134	Sb (100)	Limestone.
0135	Sb (100)	Jasperoid.
0137	As (1000), Sb (500	Jasperoid.
0138	As (300), Sb (200)	Jasperoid.
0139	Sb (200), W (50)	Jasperoid.
0144	Sb (100)	Jasperoid.
0148	Sb (100)	Jasperoid.
0151	As (300), Sb (200)	Jasperoid.
0152	Sb (150)	Jasperoid.
0153	As (200), Sb (200)	Jasperoid.
0157	Sb (100)	Jasperoid.
0160	Sb (300)	Jasperoid.
0161	Sb (300)	Jasperoid.
0162	As (300), Sb (100)	Jasperoid.
0164	As (500), Sb (100)	Jasperoid.
0166	As (200)	Jasperoid.
0170	Sb (100)	Jasperoid.
0171	Sb (100)	Jasperoid.
0172	Sb (100)	Jasperoid.
0178	Pb (1000), Sb (100)	Jasperoid.
0179A	Sb (150)	Jasperoid.

Field No.	Anomalous elements (values in parts per million)	Rock type
1013	As (3000), Sb (100), W (1000), Be (10)	Limestone.
5010A	Sb (200), W (50)	Jasperoid.
5010B	Sb (300), W (100)	Jasperoid.
5010C	Sb (500)	Jasperoid.
5011	Ba (>5000), Sb (200), W (50)	Jasperoid.
5013A	Sb (100)	Jasperoid.
5013B	Sb (100)	Jasperoid.
5014	Sb (100), Be (10) Sb (300), Zn (500)	Jasperoid.
5031	Au (.10), As (200), Mo (100), Sb (300), Zn (500)	Jasperoid.
5032	Ba (>5000)	Jasperoid.
5033	Mo (20), Sb (100)	Jasperoid.
5034	Sn (20), Be (10)	Quartz latite.
5034B	As (200), Mo (30), Sb (200)	Jasperoid.
5035	Sb (150)	Jasperoid.
5160	Sb (100)	Jasperoid.
5161	Sn (30), Be (10)	Quartz latite.
5162	Au (.05), As (1000), Mo (200), Sb (150)	Jasperoid.
5165A	As (500), Pb (1500), Sb (100)	Jasperoid.
5165	As (500), Sb (100), W (100)	Jasperoid.
5166	Sb (100), W (50)	Jasperoid.
5168	As (7000), Sb (200), W (70)	Limestone
5169	Sb (100), W (70)	Limestone.
5170	Au (.05), As (1500), Pb (500), Sb (500), W (50)	Jasperoid.
5170	Sb (300), W (100)	Limestone.
5172	As (500), Sb (100)	Jasperoid.
5173	Sb (200), W (50)	Jasperoid.
5174A	Sb (200)	Jasperoid.
5174B	As (200), Sb (200), W (50)	Jasperoid.
5174C	Sb (200), W (50)	Jasperoid.
5174D	Sb (100)	Dolomite.
5175	Zn (500)	Carbonate breccia.
5176	Sn (20), Be (10)	Quartz latite.
5177	Sn (20), Be (10)	Quartz latite.
5180A	Sb (150)	Jasperoid.
5181	As (1000), Mo (200), Sb (100)	Jasperoid.
5182	Sb (100)	Jasperoid.
5187	Au (.10), Mo (50), Sb (100)	Shaley limestone.
5188A	Sb (100)	Jasperoid.
5190A	Au (.85), As (100), Mo (70), Sb (100), Zn (1000)	Shale
5190C	Au (1.25), Ag (5), As (2000), Mo (100), Pb (500), Sb (200), W (50), Zn (2000)	Jasperoid.
5193	Sb (100)	Jasperoid.