UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

GEOCHEMICAL ANALYSES OF ROCK AND STREAM-SEDIMENT SAMPLES FROM BIRDSEYE, NEPHI, AND SANTAQUIN ROADLESS AREAS, JUAB AND UTAH COUNTIES, UTAH

By

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and Steven M. Haley
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STUDIES RELATED TO WILDERNESS

The Wilderness Act (Public Law 88-577, September 3, 1964) and related acts require the U.S. Geological Survey and the U.S. Bureau of Mines to survey certain areas on Federal lands to determine their mineral resource potential. Results must be made available to the public and be submitted to the President and Congress. This report presents the results of a geochemical survey of the Birdseye, Nephi, and Santaquin Roadless Areas in the Uinta National Forest, Juab and Utah Counties, Utah. Birdseye (4726), Nephi (4729), and Santaquin (4720) were classified as further planning areas during the Second Roadless Area Review and Evaluation (RARE II) by the U.S. Forest Service, January 1979.

INTRODUCTION

The Birdseye (4726), Nephi (4729), and Santaquin (4720) Roadless Areas occupy approximately 13,220, 24,000, and 12,880 acres respectively in the Uinta National Forest in the southern Wasatch Mountains a few miles east and south of Santaquin and approximately 55 mi south of Salt Lake City, Utah (fig. 1). Access to the roadless areas is provided by unpaved roads from U.S. Highway 15 on the west, and by the paved Nebo Loop and Santaquin Canyon Roads. The study area is bounded on the west by the north-trending Wasatch fault. The geology of the area has been summarized by Hintze (1962).

The Wasatch Mountains in the area of this report are underlain primarily by a thick section of sedimentary rocks that range in age from Proterozoic to Tertiary and discontinuous outcrops of Tertiary volcanic rocks. Minor intrusive rocks have been questionably assigned to the Tertiary (Phillips, 1962, p. 68-69).

The base of the stratigraphic section comprises approximately 900 ft of quartzite and shale of Proterozoic age, overlain by 3,000 ft of Lower(?), Middle, and Upper Cambrian quartzite, shale, limestone, and dolomite. These Proterozoic and Cambrian rocks are unconformably overlain by discontinuous outcrops of Upper Devonian(?) dolomite and quartzite. The balance of the Paleozoic section consists of approximately 15,000 ft of Mississippian, Pennsylvanian, and Permian limestone, dolomite, sandstone, and shale. The Mesozoic section in the study area consists of approximately 7,000 ft of predominantly shale, limestone, sandstone, and, near the top, conglomerate. These rocks are overlain by Tertiary conglomerate, limestone, and locally by andesitic volcanic rocks.

The Birdseye, Nephi, and Santaquin Roadless Areas are underlain, with the exception of a few square miles of the Nephi Roadless Area, by the Nebo thrust

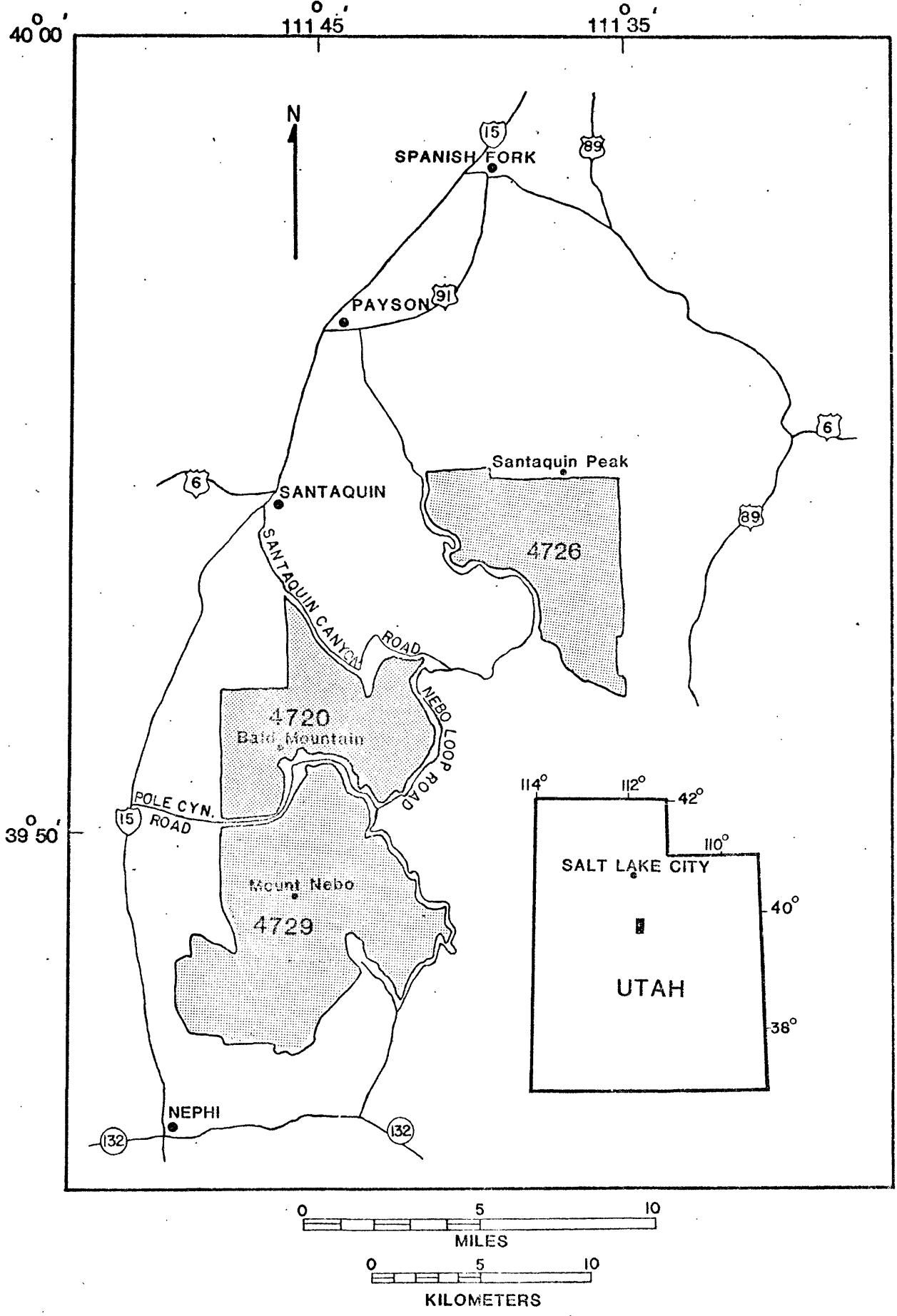

Figure 1.--Index map showing location of Birdseye (4726), Nephi (4729), and Santaquin (4720) Roadless Areas, Juab and Utah Counties, Utah.

fault. Thrust faults exposed in Santaquin Canyon and in the northwest corner of the Birdseye Roadless Area are thought to be imbricate thrust faults rising from the subsurface Nebo thrust fault.

Rocks in the Birdseye and Santaquin Roadless Areas dip homoclinally to the east and southeast at moderate angles, but steepen southward and are near vertical to overturned throughout the southern part of the Nephi Roadless Area.

The Birdseye and northeast half of the Santaquin Roadless Areas are in the Santaquin mining district. The Nephi and southwest half of the Santaquin Roadless Areas are in the Mount Nebo mining district. The Santaquin distict, organized in 1871, had a reported production from 1910 to 1917 of 208 lbs copper, 206,522 lbs lead, and 3,499 oz silver, and minor production after 1917 (Bullock, 1962, p. 90). The Mount Nebo district, organized in 1872, had a reported production from 1870 to 1917 of 1,526 lbs copper, 15.29 oz gold, 1,932,693 lbs lead, 37,226 oz zilver, and 788,679 lbs zinc (Heikes, 1920, p. 334). The Mount Nebo district has not had any production since 1917. Most deposits in the two districts have been small lead-zinc-silver replacement or fissure deposits in Cambrian or Mississippian carbonate rocks.

ANALYTICAL DATA

Rock, stream-sediment, and stream-sediment-concentrate samples were collected for semiquantitative emission spectrographic analysis (see fig. 2 for localities). Bedrock samples were collected in areas showing possible mineralization and from mine dumps and prospect pits. Two stream-sediment samples were collected at each locality and one sample was concentrated by panning away organic material and light minerals until about 5 percent of the original volume remained. All samples were collected during 1981 and 1982 by S. M. Haley, H. Pietropaoli, and M. L. Sorensen. Assistance from J. A. Peterson, U.S. Geological Survey, in the preparation of this report is gratefully acknowledged.

Sample preparation and analytical procedure

Rock samples were crushed to 0.25 in. (6 mm), split, and pulverized prior to analysis for 31 elements (table 1) by standard semiquantitative emission spectrography following the techniques outlined in Grimes and Marranzino (1968). Stream-sediment samples and concentrates were dried, sieved to minus 80-mesh, and split. The concentrates were separated into heavy and light fractions using bromoform, and magnetic minerals removed using a hand magnet or a Frantz Isodynamic separator. The stream sediments and concentrates were analyzed by semiquantitative emission spectrography for 30 or 31 elements (elements are listed in tables 1 and 2). Semiquantitative spectrographic analyses were performed by D. Detra, J. Domenico, W. Gerstel, and S. Sutley at the U.S. Geological Survey in Denver, Colo.

Data

Analytically determined abundances for all elements are reported in parts per million, except for Ca, Fe, Mg, and Ti, which are given as percentages. Trace element analyses and frequency distribution data for the analyzed elements are given in table 3 (27 rock samples), table 4 (173 stream-sediment

samples), and table 5 (147 stream-sediment concentrates). Rock types and formations are listed in table 3. Elements not reported present above the lower determination limits given in tables 1 and 2 were omitted from tables 3, 4, and 5. Semiquantitative spectrographic analyses are reported as the midpoints of a six-step geometric interval whose boundaries are 0.12, 0.18, 0.26, 0.38, 0.56, 0.83, 1.2, and so on, and whose midpoints and 0.15, 0.2, 0.3, 0.5, 0.7, 1.0, and so on. The precision of these values is approximately plus or minus one interval at 68 percent confidence.

Analytical data are stored in the U.S. Geological Survey RASS system (Rock Analysis Storage System) (Van Trump and Miesch, 1976). STATPAC (STATistical PACkage) files were generated for rock, stream-sediment, and stream-sediment-concentrate data using RASS program Retrieval (b860). STATPAC programs Publst (Publication listing), written by J. B. Fife of the U.S. Geological Survey and Geosum (a470), were used to produce tables 3, 4 and 5.

Table 1.--Lower limits of analytical determination for rock and stream sediment samples from Birdseye, Nephi, and Santaquin Roadless Areas [Limits of determination of elements are in parts per million (ppm) except where noted. All analyses are by spectrographic methods]

Element	Determination limit	Element	Determination limit
Ca	0.05 percent	Mn	10.
Fe	.05 percent	Mo	5.
Mg	.02 percent	Nb	20.
Ti	.002 percent	Ni	5.
Ag	.5	Pb	10.
As	200.	Sb	100.
Au	10.	Sc	5.
B	10.	Sn	10.
Ba	20.	Sr	100.
Be	1.	Th	100.
Bi	10.	V	10.
Cd	20.	W	50.
Co	5.	Y	10.
Cr	10.	Zn	200.
Cu	20.	Zr	10.
La	20.		

Table 2.--Lower limits of analytical determination for stream-sediment concentrates from Birdseye, Nephi, and Santaquin Roadless Areas
[Limits of determination for elements are in parts per million (ppm) except where noted. All analyses are by spectrographic methods]

Element	Determination limit	Element	Determination limit
Ca	0.1 percent	Mn	20.
Fe	.1 percent	Mo	10.
Mg	.05 percent	Nb	50.
Ti	.005 percent	Ni	10.
Ag	1.	Pb	20.
As	500.	Sb	200.
Au	20.	Sc	10.
B	20.	Sn	20.
Ba	50.	Sr	200.
Be	2.	Th	200.
Bi	20.	V	20.
Cd	50.	W	100.
Co	10.	Y	20.
Cr	20.	Zn	500.
Cu	10.	Zr	20.
La	50.		

Table 3.--Rock geochemical analyses and frequency-distribution data for analyzed elements for samples from Birdseye, Nephi, and Santaquin Roadless Areas

[First two digits of sample number indicate year of collection; letters indicate collector; UP, H. Pietropaoli; US, M. L. Sorensen; last two digits indicate sample site. Qualifying codes in analytical data are defined as follows: N, not detected at the limit of analytical detection; <, detected, but below the lower limit of analytical determination; >, detected but above the upper limit of analytical determination. Stratigraphic nomenclature from Hintze (1962)]

Sample number	Sample type	Formation
82UP91	quartzite	Manning Canyon Shale
82UP92	dump sample	do.
82UP93	do.	Humbug Formation
82UP94	gossan	Deseret Limestone
82UP95	dump sample	Gardison Limestone
82UP96	do.	do.
81US01	phosphatic oolite	Deseret Limestone
81US02	dump sample	Cambrian formations undifferentiated
81US03	fault breccia	do.
81US04	lamprophyre	dike
81US05	sandstone	Manning Canyon Shale
81US06	dump sample	Cambrian formations undifferentiated
81US07	fault breccia	do.
82US08	dump sample	Deseret Limestone
82US09	lamprophyre	dike
82US10	dump sample	Deseret Limestone
82US11	do.	Gardison Limestone
82US12	limestone	Great Blue Limestone
82US13	quartzite	Manning Canyon Shale
82US14	dump sample	Deseret Limestone
82US15	do.	do.
82US16	do.	do.
82US17	do.	do.
82US18	do.	Humbug Formation
82US19	fault breccia	Oquirrh(?) Formation
82US20	dump sample	Deseret Limestone
82US21	do.	do.

Sample	X coordinate	Y coordinate	Ca-pct. s	Fe-pct. s	Mg-pct. s	Ti-pct. s	Ag-ppm s	As-ppm s	B-ppm s
81US01	441,640	4,423,900	>20.00	.5	.5	.020	5.0	N	15
81US02	441,540	4,423,670	15.00	3.0	7.0	.010	<.5	N	10
81US03	441,110	4,423,730	20.00	.7	7.0	.010	5.0	N	N
81US04	432,500	4,415,370	20.00	3.0	1.5	.050	N	N	30
81US05	432,500	4,415,370	.50	3.0	.5	.200	N	N	50
81US06	441,140	4,424,940	10.00	2.0	7.0	.005	<.5	N	<10
81US07	441,340	4,424,760	15.00	1.5	7.0	.007	N	N	N
82US08	430,580	4,407,920	10.00	.7	2.0	.010	.5	200	N
82US09	431,550	4,408,400	5.00	5.0	2.0	.700	N	N	N
82US10	431,370	4,408,400	.07	5.0	.2	.003	30.0	N	N
82US11	431,223	4,409,027	7.00	1.0	3.0	.015	200.0	N	<10
82US12	432,869	4,409,524	15.00	.5	2.0	.030	.7	N	N
82US13	433,320	4,409,309	2.00	5.0	.3	.050	N	N	10
82US14	430,840	4,408,041	10.00	1.0	5.0	<.002	50.0	N	N
82US15	430,840	4,408,041	15.00	1.0	5.0	.002	20.0	N	N
82US16	431,300	4,408,380	10.00	1.0	5.0	<.002	15.0	N	N
82US17	431,300	4,408,380	7.00	7.0	2.0	.030	1.0	N	<10
82US18	434,319	4,412,725	5.00	.5	2.0	<.002	70.0	N	N
82US19	434,800	4,414,480	5.00	.7	2.0	.007	.7	N	N
82US20	434,319	4,413,800	5.00	.5	3.0	<.002	150.0	N	N
82UP91	431,200	4,407,450	.70	10.0	.1	.050	<.5	N	20
82UP92	432,070	4,408,369	2.00	1.5	1.5	.070	.7	N	30
82UP93	431,980	4,409,220	10.00	1.5	7.0	.010	2.0	300	10
82UP94	432,450	4,411,258	2.00	1.0	1.5	.007	5.0	N	N
82UP95	432,513	4,411,345	3.00	10.0	3.0	<.002	15.0	<200	10
82UP96	431,375	4,409,136	15.00	.1	.7	.030	2.0	N	30
82UP97	433,970	4,412,160	1.00	.3	.7	<.002	300.0	N	30

Sample	Ba-ppm s	Be-ppm s	Cd-ppm s	Co-ppm s	Cr-ppm s	Cu-ppm s	La-ppm s	Mn-ppm s	Mo-ppm s
81US01	150	1.5	N	N	500	20	500	70	N
81US02	50	N	N	N	N	15	N	200	N
81US03	N	N	N	N	N	N	N	500	N
81US04	50	1.0	N	N	100	20	20	700	N
81US05	70	1.0	N	7	100	15	20	200	N
81US06	N	<1.0	N	150	N	20	N	1,500	N
81US07	N	N	N	<5	N	10	N	1,500	N
82US08	<20	1.0	<20	N	10	5	N	200	N
82US09	1,000	1.0	N	30	200	50	150	500	N
82US10	<20	1.0	>500	N	20	300	N	500	5
82US11	<20	N	150	N	10	100	N	5,000	N
82US12	<20	1.0	<20	5	<10	7	N	500	N
82US13	20	1.0	N	10	70	5	30	500	N
82US14	<20	N	200	N	10	15	N	2,000	N
82US15	>5,000	<1.0	150	N	15	15	N	2,000	N
82US16	<20	<1.0	500	N	<10	70	N	1,000	<5
82US17	<20	<1.0	300	N	15	10	N	1,000	10
82US18	<20	N	>500	N	10	20	N	1,500	N
82US19	30	N	20	N	<10	<5	N	200	N
82US20	<20	3.0	500	N	<10	7	N	1,000	N
82UP91	20	2.0	N	30	50	10	N	200	5
82UP92	<20	<1.0	N	N	10	<5	N	700	N
82UP93	<20	N	N	<5	20	10	N	700	30
82UP94	<20	N	N	N	10	20	N	70	5
82UP95	N	N	N	N	10	100	N	100	200
82UP96	30	N	50	N	200	20	300	100	5
82UP97	N	N	300	N	<10	100	N	500	10

Sample	Nb-ppm s	Ni-ppm s	Pb-ppm s	Sb-ppm s	Sc-ppm s	Sr-ppm s	V-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s
81US01	N	50	100	N	N	500	500	700	N	50
81US02	N	5	150	N	N	<100	30	N	700	N
81US03	N	<5	70	N	N	150	10	N	N	N
81US04	N	20	10	N	5	500	100	30	N	30
81US05	N	70	<10	N	10	N	100	30	N	300
81US06	N	100	100	N	N	N	10	30	<200	N
81US07	N	<5	15	N	N	N	15	N	N	N
82US08	N	20	200	N	N	100	10	20	1,000	10
82US09	20	100	20	N	20	700	100	30	N	100
82US10	N	10	5,000	N	N	N	<10	20	>10,000	<10
82US11	N	5	>20,000	200	<5	N	10	10	>10,000	10
82US12	N	10	500	N	<5	700	10	20	300	50
82US13	N	15	20	N	5	100	50	50	<200	50
82US14	N	N	>20,000	<100	N	N	10	15	>10,000	N
82US15	N	7	>20,000	N	N	150	10	15	>10,000	N
82US16	N	N	>20,000	N	N	N	<10	15	>10,000	10
82US17	N	15	700	N	N	N	15	10	>10,000	20
82US18	N	10	7,000	N	N	N	<10	20	>10,000	10
82US19	N	N	100	N	N	N	10	<10	200	<10
82US20	N	N	>20,000	100	N	N	<10	10	>10,000	10
82UP91	N	50	20	N	N	N	70	30	N	300
82UP92	N	5	N	N	N	N	30	10	N	150
82UP93	N	30	500	N	N	N	10	10	1,500	N
82UP94	N	30	5,000	N	N	N	100	N	1,000	N
82UP95	N	30	5,000	<100	N	N	10	N	2,000	N
82UP96	N	70	50	N	N	1,500	300	200	200	30
82UP97	N	10	>20,000	500	N	200	15	N	>10,000	N

TITLE
WASATCH ROCKS

FREQUENCY TABLE FOR COLUMN 3 (S-CA%)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E-02 -	5.6E-02	0	0	0.00	100.00
5.6E-02 -	8.3E-02	1	1	3.70	100.00
8.3E-02 -	1.2E-01	0	1	0.00	96.30
1.2E-01 -	1.8E-01	0	1	0.00	96.30
1.8E-01 -	2.6E-01	0	1	0.00	96.30
2.6E-01 -	3.8E-01	0	1	0.00	96.30
3.8E-01 -	5.6E-01	1	2	3.70	96.30
5.6E-01 -	8.3E-01	1	3	3.70	92.59
8.3E-01 -	1.2E+00	1	4	3.70	88.89
1.2E+00 -	1.8E+00	0	4	0.00	85.19
1.8E+00 -	2.6E+00	3	7	11.11	85.19
2.6E+00 -	3.8E+00	1	8	3.70	74.07
3.8E+00 -	5.6E+00	4	12	14.81	70.37
5.6E+00 -	8.3E+00	2	14	7.41	55.56
8.3E+00 -	1.2E+01	5	19	18.52	48.15
1.2E+01 -	1.8E+01	5	24	18.52	29.63
1.8E+01 -	2.6E+01	2	26	7.41	11.11

HISTOGRAM FOR COLUMN 3 (S-CA%)

```
7.0E-02 XXXX
1.0E-01
1.5E-01
2.0E-01
3.0E-01
5.0E-01 XXXX
7.0E-01 XXXX
1.0E+00 XXXX
1.5E+00
2.0E+00 XXXXXXXXXXX
3.0E+00 XXXX
5.0E+00 XXXXXXXXXXXXXXX
7.0E+00 XXXXXXX
1.0E+01 XXXXXXXXXXXXXXXXXXX
1.5E+01 XXXXXXXXXXXXXXXXXXX
2.0E+01 XXXXXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	1	26
0.00	0.00			0.00	3.70	

MAXIMUM = 2.00000E+01
MINIMUM = 7.00000E-02
GEOMETRIC MEAN = 4.81094E+00
GEOMETRIC DEVIATION = 3.83831E+00

TITLE
WASATCH ROCKS

FREQUENCY TABLE FOR COLUMN 4 (S-FE%)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E-02 -	5.6E-02	0	0	0.00	100.00
5.6E-02 -	8.3E-02	0	0	0.00	100.00
8.3E-02 -	1.2E-01	1	1	3.70	100.00
1.2E-01 -	1.8E-01	0	1	0.00	96.30
1.8E-01 -	2.6E-01	0	1	0.00	96.30
2.6E-01 -	3.8E-01	1	2	3.70	96.30
3.8E-01 -	5.6E-01	4	6	14.81	92.59
5.6E-01 -	8.3E-01	3	9	11.11	77.78
8.3E-01 -	1.2E+00	5	14	18.52	66.67
1.2E+00 -	1.8E+00	3	17	11.11	48.15
1.8E+00 -	2.6E+00	1	18	3.70	37.04
2.6E+00 -	3.8E+00	3	21	11.11	33.33
3.8E+00 -	5.6E+00	3	24	11.11	22.22
5.6E+00 -	8.3E+00	1	25	3.70	11.11
8.3E+00 -	1.2E+01	2	27	7.41	7.41

HISTOGRAM FOR COLUMN 4 (S-FE%)

```
1.0E-01 XXXX
1.5E-01
2.0E-01
3.0E-01 XXXX
5.0E-01 XXXXXXXXXXXXXXX
7.0E-01 XXXXXXXXXXX
1.0E+00 XXXXXXXXXXXXXXXXXXX
1.5E+00 XXXXXXXXXXX
2.0E+00 XXXX
3.0E+00 XXXXXXXXXXX
5.0E+00 XXXXXXXXXXX
7.0E+00 XXXX
1.0E+01 XXXXXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	27
0.00	0.00			0.00	0.00	

MAXIMUM = 1.00000E+01
MINIMUM = 1.00000E-01
GEOMETRIC MEAN = 1.40784E+00
GEOMETRIC DEVIATION = 3.06681E+00

TITLE
WASATCH ROCKS

FREQUENCY TABLE FOR COLUMN 5 (S-MG%)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E-02 -	2.6E-02	0	0	0.00	100.00
2.6E-02 -	3.8E-02	0	0	0.00	100.00
3.8E-02 -	5.6E-02	0	0	0.00	100.00
5.6E-02 -	8.3E-02	0	0	0.00	100.00
8.3E-02 -	1.2E-01	1	1	3.70	100.00
1.2E-01 -	1.8E-01	0	1	0.00	96.30
1.8E-01 -	2.6E-01	1	2	3.70	96.30
2.6E-01 -	3.8E-01	1	3	3.70	92.59
3.8E-01 -	5.6E-01	2	5	7.41	88.89
5.6E-01 -	8.3E-01	2	7	7.41	81.48
8.3E-01 -	1.2E+00	0	7	0.00	74.07
1.2E+00 -	1.8E+00	3	10	11.11	74.07
1.8E+00 -	2.6E+00	6	16	22.22	62.96
2.6E+00 -	3.8E+00	3	19	11.11	40.74
3.8E+00 -	5.6E+00	3	22	11.11	29.63
5.6E+00 -	8.3E+00	5	27	18.52	18.52

HISTOGRAM FOR COLUMN 5 (S-MG%)

```
1.0E-01 XXXX
1.5E-01
2.0E-01 XXXX
3.0E-01 XXXX
5.0E-01 XXXXXXX
7.0E-01 XXXXXXX
1.0E+00
1.5E+00 XXXXXXXXXXX
2.0E+00 XXXXXXXXXXXXXXXXXXXXX
3.0E+00 XXXXXXXXXXX
5.0E+00 XXXXXXXXXXX
7.0E+00 XXXXXXXXXXXXXXXXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	27
0.00	0.00			0.00	0.00	

MAXIMUM = 7.00000E+00
MINIMUM = 1.00000E-01
GEOMETRIC MEAN = 1.80957E+00
GEOMETRIC DEVIATION = 3.17802E+00

TITLE
WASATCH ROCKS

FREQUENCY TABLE FOR COLUMN 6 (S-TI%)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E-03 -	2.6E-03	1	1	3.70	77.78
2.6E-03 -	3.8E-03	1	2	3.70	74.07
3.8E-03 -	5.6E-03	1	3	3.70	70.37
5.6E-03 -	8.3E-03	3	6	11.11	66.67
8.3E-03 -	1.2E-02	4	10	14.81	55.56
1.2E-02 -	1.8E-02	1	11	3.70	40.74
1.8E-02 -	2.6E-02	1	12	3.70	37.04
2.6E-02 -	3.8E-02	3	15	11.11	33.33
3.8E-02 -	5.6E-02	3	18	11.11	22.22
5.6E-02 -	8.3E-02	1	19	3.70	11.11
8.3E-02 -	1.2E-01	0	19	0.00	7.41
1.2E-01 -	1.8E-01	0	19	0.00	7.41
1.8E-01 -	2.6E-01	1	20	3.70	7.41
2.6E-01 -	3.8E-01	0	20	0.00	3.70
3.8E-01 -	5.6E-01	0	20	0.00	3.70
5.6E-01 -	8.3E-01	1	21	3.70	3.70

HISTOGRAM FOR COLUMN 6 (S-TI%)

```
2.0E-03 XXXX
3.0E-03 XXXX
5.0E-03 XXXX
7.0E-03 XXXXXXXXXXX
1.0E-02 XXXXXXXXXXXXXXX
1.5E-02 XXXX
2.0E-02 XXXX
3.0E-02 XXXXXXXXXXX
5.0E-02 XXXXXXXXXXX
7.0E-02 XXXX
1.0E-01
1.5E-01
2.0E-01 XXXX
3.0E-01
5.0E-01
7.0E-01 XXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	6	0	0	0	0	21
0.00	22.22			0.00	0.00	

MAXIMUM = 7.00000E-01
MINIMUM = 2.00000E-03
GEOMETRIC MEAN = 1.93261E-02
GEOMETRIC DEVIATION = 4.01419E+00

TITLE
WASATCH ROCKS

FREQUENCY TABLE FOR COLUMN 7 (S-AG)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E-01 -	5.6E-01	1	1	3.70	70.37
5.6E-01 -	8.3E-01	3	4	11.11	66.67
8.3E-01 -	1.2E+00	1	5	3.70	55.56
1.2E+00 -	1.8E+00	0	5	0.00	51.85
1.8E+00 -	2.6E+00	2	7	7.41	51.85
2.6E+00 -	3.8E+00	0	7	0.00	44.44
3.8E+00 -	5.6E+00	3	10	11.11	44.44
5.6E+00 -	8.3E+00	0	10	0.00	33.33
8.3E+00 -	1.2E+01	0	10	0.00	33.33
1.2E+01 -	1.8E+01	2	12	7.41	33.33
1.8E+01 -	2.6E+01	1	13	3.70	25.93
2.6E+01 -	3.8E+01	1	14	3.70	22.22
3.8E+01 -	5.6E+01	1	15	3.70	18.52
5.6E+01 -	8.3E+01	1	16	3.70	14.81
8.3E+01 -	1.2E+02	0	16	0.00	11.11
1.2E+02 -	1.8E+02	1	17	3.70	11.11
1.8E+02 -	2.6E+02	1	18	3.70	7.41
2.6E+02 -	3.8E+02	1	19	3.70	3.70

HISTOGRAM FOR COLUMN 7 (S-AG)

```
      5.0E-01 XXXX
      7.0E-01 XXXXXXXXXXX
      1.0E+00 XXXX
      1.5E+00
      2.0E+00 XXXXXXX
      3.0E+00
      5.0E+00 XXXXXXXXXXX
      7.0E+00
      1.0E+01
      1.5E+01 XXXXXXX
      2.0E+01 XXXX
      3.0E+01 XXXX
      5.0E+01 XXXX
      7.0E+01 XXXX
      1.0E+02
      1.5E+02 XXXX
      2.0E+02 XXXX
      3.0E+02 XXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
5	3	0	0	0	0	19
18.52	11.11			0.00	0.00	

MAXIMUM = 3.00000E+02
MINIMUM = 5.00000E-01
GEOMETRIC MEAN = 8.40058E+00
GEOMETRIC DEVIATION = 7.99700E+00

TITLE
WASATCH ROCKS

FREQUENCY TABLE FOR COLUMN 8 (S-AS)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E+02 -	2.6E+02	1	1	3.70	7.41
2.6E+02 -	3.8E+02	1	2	3.70	3.70

HISTOGRAM FOR COLUMN 8 (S-AS)

```
2.0E+02 XXXX
3.0E+02 XXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
24	1	0	0	0	0	2
88.89	3.70			0.00	0.00	

MAXIMUM = 3.00000E+02
MINIMUM = 2.00000E+02
GEOMETRIC MEAN = 2.44949E+02
GEOMETRIC DEVIATION = 1.33203E+00
A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80) DATE 12/13/82

TITLE
WASATCH ROCKS

FREQUENCY TABLE FOR COLUMN 9 (S-B)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E+00 -	1.2E+01	4	4	14.81	40.74
1.2E+01 -	1.8E+01	1	5	3.70	25.93
1.8E+01 -	2.6E+01	1	6	3.70	22.22
2.6E+01 -	3.8E+01	4	10	14.81	18.52
3.8E+01 -	5.6E+01	1	11	3.70	3.70

HISTOGRAM FOR COLUMN 9 (S-B)

```
1.0E+01 XXXXXXXXXXXXXXX
1.5E+01 XXXX
2.0E+01 XXXX
3.0E+01 XXXXXXXXXXXXXXX
5.0E+01 XXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
13	3	0	0	0	0	11
48.15	11.11			0.00	0.00	

MAXIMUM = 5.00000E+01
MINIMUM = 1.00000E+01
GEOMETRIC MEAN = 1.90729E+01
GEOMETRIC DEVIATION = 1.80337E+00
A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80) DATE 12/13/82

TITLE
WASATCH ROCKS

FREQUENCY TABLE FOR COLUMN 10 (S-BA)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E+01 -	2.6E+01	2	2	7.41	37.04
2.6E+01 -	3.8E+01	2	4	7.41	29.63
3.8E+01 -	5.6E+01	2	6	7.41	22.22
5.6E+01 -	8.3E+01	1	7	3.70	14.81
8.3E+01 -	1.2E+02	0	7	0.00	11.11
1.2E+02 -	1.8E+02	1	8	3.70	11.11
1.8E+02 -	2.6E+02	0	8	0.00	7.41
2.6E+02 -	3.8E+02	0	8	0.00	7.41
3.8E+02 -	5.6E+02	0	8	0.00	7.41
5.6E+02 -	8.3E+02	0	8	0.00	7.41
8.3E+02 -	1.2E+03	1	9	3.70	7.41

HISTOGRAM FOR COLUMN 10 (S-BA)

```
2.0E+01 XXXXXXX
3.0E+01 XXXXXXX
5.0E+01 XXXXXXX
7.0E+01 XXXX
1.0E+02
1.5E+02 XXXX
2.0E+02
3.0E+02
5.0E+02
7.0E+02
1.0E+03 XXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
5	12	0	0	0	1	9
18.52	44.44			0.00	3.70	

MAXIMUM = 1.00000E+03
MINIMUM = 2.00000E+01
GEOMETRIC MEAN = 5.95728E+01
GEOMETRIC DEVIATION = 3.44145E+00
A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80) DATE 12/13/82

TITLE
WASATCH ROCKS

FREQUENCY TABLE FOR COLUMN 11 (S-BE)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E-01 -	1.2E+00	7	7	25.93	37.04
1.2E+00 -	1.8E+00	1	8	3.70	11.11
1.8E+00 -	2.6E+00	1	9	3.70	7.41
2.6E+00 -	3.8E+00	1	10	3.70	3.70

HISTOGRAM FOR COLUMN 11 (S-BE)

```
1.0E+00 XXXXXXXXXXXXXXXXXXXXXXXXX
1.5E+00 XXXX
2.0E+00 XXXX
3.0E+00 XXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
12	5	0	0	0	0	10
44.44	18.52			0.00	0.00	

MAXIMUM = 3.00000E+00
MINIMUM = 1.00000E+00
GEOMETRIC MEAN = 1.24573E+00
GEOMETRIC DEVIATION = 1.47701E+00
A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80) DATE 12/13/82

TITLE
WASATCH ROCKS

FREQUENCY TABLE FOR COLUMN 12 (S-CD)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E+01 -	2.6E+01	1	1	3.70	40.74
2.6E+01 -	3.8E+01	0	1	0.00	37.04
3.8E+01 -	5.6E+01	1	2	3.70	37.04
5.6E+01 -	8.3E+01	0	2	0.00	33.33
8.3E+01 -	1.2E+02	0	2	0.00	33.33
1.2E+02 -	1.8E+02	2	4	7.41	33.33
1.8E+02 -	2.6E+02	1	5	3.70	25.93
2.6E+02 -	3.8E+02	2	7	7.41	22.22
3.8E+02 -	5.6E+02	2	9	7.41	14.81

HISTOGRAM FOR COLUMN 12 (S-CD)

```
  2.0E+01 XXXX
  3.0E+01
  5.0E+01 XXXX
  7.0E+01
  1.0E+02
  1.5E+02 XXXXXXX
  2.0E+02 XXXX
  3.0E+02 XXXXXXX
  5.0E+02 XXXXXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
14	2	0	0	0	2	9
51.85	7.41			0.00	7.41	

MAXIMUM = 5.00000E+02
MINIMUM = 2.00000E+01
GEOMETRIC MEAN = 1.67040E+02
GEOMETRIC DEVIATION = 2.90621E+00

TITLE
WASATCH ROCKS

FREQUENCY TABLE FOR COLUMN 13 (S-CO)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E+00 -	5.6E+00	1	1	3.70	22.22
5.6E+00 -	8.3E+00	1	2	3.70	18.52
8.3E+00 -	1.2E+01	1	3	3.70	14.81
1.2E+01 -	1.8E+01	0	3	0.00	11.11
1.8E+01 -	2.6E+01	0	3	0.00	11.11
2.6E+01 -	3.8E+01	2	5	7.41	11.11
3.8E+01 -	5.6E+01	0	5	0.00	3.70
5.6E+01 -	8.3E+01	0	5	0.00	3.70
8.3E+01 -	1.2E+02	0	5	0.00	3.70
1.2E+02 -	1.8E+02	1	6	3.70	3.70

HISTOGRAM FOR COLUMN 13 (S-CO)

```
      5.0E+00 XXXX
      7.0E+00 XXXX
      1.0E+01 XXXX
      1.5E+01
      2.0E+01
      3.0E+01 XXXXXXX
      5.0E+01
      7.0E+01
      1.0E+02
      1.5E+02 XXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
19	2	0	0	0	0	6
70.37	7.41			0.00	0.00	

MAXIMUM = 1.50000E+02
MINIMUM = 5.00000E+00
GEOMETRIC MEAN = 1.90137E+01
GEOMETRIC DEVIATION = 3.50855E+00

TITLE
WASATCH ROCKS

FREQUENCY TABLE FOR COLUMN 14 (S-CR)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E+00 -	1.2E+01	7	7	25.93	66.67
1.2E+01 -	1.8E+01	2	9	7.41	40.74
1.8E+01 -	2.6E+01	2	11	7.41	33.33
2.6E+01 -	3.8E+01	0	11	0.00	25.93
3.8E+01 -	5.6E+01	1	12	3.70	25.93
5.6E+01 -	8.3E+01	1	13	3.70	22.22
8.3E+01 -	1.2E+02	2	15	7.41	18.52
1.2E+02 -	1.8E+02	0	15	0.00	11.11
1.8E+02 -	2.6E+02	2	17	7.41	11.11
2.6E+02 -	3.8E+02	0	17	0.00	3.70
3.8E+02 -	5.6E+02	1	18	3.70	3.70

HISTOGRAM FOR COLUMN 14 (S-CR)

```
      1.0E+01 XXXXXXXXXXXXXXXXXXXXXXXXX
      1.5E+01 XXXXXXX
      2.0E+01 XXXXXXX
      3.0E+01
      5.0E+01 XXXX
      7.0E+01 XXXX
      1.0E+02 XXXXXXX
      1.5E+02
      2.0E+02 XXXXXXX
      3.0E+02
      5.0E+02 XXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
4	5	0	0	0	0	18
14.81	18.52			0.00	0.00	

MAXIMUM = 5.00000E+02
MINIMUM = 1.00000E+01
GEOMETRIC MEAN = 3.08214E+01
GEOMETRIC DEVIATION = 3.66818E+00

A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80) DATE 12/13/82

TITLE
WASATCH ROCKS

FREQUENCY TABLE FOR COLUMN 15 (S-CU)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E+00 -	5.6E+00	2	2	7.41	88.89
5.6E+00 -	8.3E+00	2	4	7.41	81.48
8.3E+00 -	1.2E+01	4	8	14.81	74.07
1.2E+01 -	1.8E+01	4	12	14.81	59.26
1.8E+01 -	2.6E+01	6	18	22.22	44.44
2.6E+01 -	3.8E+01	0	18	0.00	22.22
3.8E+01 -	5.6E+01	1	19	3.70	22.22
5.6E+01 -	8.3E+01	1	20	3.70	18.52
8.3E+01 -	1.2E+02	3	23	11.11	14.81
1.2E+02 -	1.8E+02	0	23	0.00	3.70
1.8E+02 -	2.6E+02	0	23	0.00	3.70
2.6E+02 -	3.8E+02	1	24	3.70	3.70

HISTOGRAM FOR COLUMN 15 (S-CU)

```
5.0E+00 XXXXXXX
7.0E+00 XXXXXXX
1.0E+01 XXXXXXXXXXXXXXX
1.5E+01 XXXXXXXXXXXXXXX
2.0E+01 XXXXXXXXXXXXXXXXXXXXXXX
3.0E+01
5.0E+01 XXXX
7.0E+01 XXXX
1.0E+02 XXXXXXXXXXX
1.5E+02
2.0E+02
3.0E+02 XXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
1	2	0	0	0	0	24
3.70	7.41			0.00	0.00	

MAXIMUM = 3.00000E+02
MINIMUM = 5.00000E+00
GEOMETRIC MEAN = 2.07728E+01
GEOMETRIC DEVIATION = 2.88263E+00

TITLE
WASATCH ROCKS

FREQUENCY TABLE FOR COLUMN 16 (S-LA)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E+01 -	2.6E+01	2	2	7.41	22.22
2.6E+01 -	3.8E+01	1	3	3.70	14.81
3.8E+01 -	5.6E+01	0	3	0.00	11.11
5.6E+01 -	8.3E+01	0	3	0.00	11.11
8.3E+01 -	1.2E+02	0	3	0.00	11.11
1.2E+02 -	1.8E+02	1	4	3.70	11.11
1.8E+02 -	2.6E+02	0	4	0.00	7.41
2.6E+02 -	3.8E+02	1	5	3.70	7.41
3.8E+02 -	5.6E+02	1	6	3.70	3.70

HISTOGRAM FOR COLUMN 16 (S-LA)

```
      2.0E+01 XXXXXXX
      3.0E+01 XXXX
      5.0E+01
      7.0E+01
      1.0E+02
      1.5E+02 XXXX
      2.0E+02
      3.0E+02 XXXX
      5.0E+02 XXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
21	0	0	0	0	0	6
77.78	0.00			0.00	0.00	

MAXIMUM = 5.00000E+02
MINIMUM = 2.00000E+01
GEOMETRIC MEAN = 8.03947E+01
GEOMETRIC DEVIATION = 4.20255E+00

A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80) DATE 12/13/82

TITLE
WASATCH ROCKS

FREQUENCY TABLE FOR COLUMN 17 (S-MN)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E+00 -	1.2E+01	0	0	0.00	100.00
1.2E+01 -	1.8E+01	0	0	0.00	100.00
1.8E+01 -	2.6E+01	0	0	0.00	100.00
2.6E+01 -	3.8E+01	0	0	0.00	100.00
3.8E+01 -	5.6E+01	0	0	0.00	100.00
5.6E+01 -	8.3E+01	2	2	7.41	100.00
8.3E+01 -	1.2E+02	2	4	7.41	92.59
1.2E+02 -	1.8E+02	0	4	0.00	85.19
1.8E+02 -	2.6E+02	5	9	18.52	85.19
2.6E+02 -	3.8E+02	0	9	0.00	66.67
3.8E+02 -	5.6E+02	6	15	22.22	66.67
5.6E+02 -	8.3E+02	3	18	11.11	44.44
8.3E+02 -	1.2E+03	3	21	11.11	33.33
1.2E+03 -	1.8E+03	3	24	11.11	22.22
1.8E+03 -	2.6E+03	2	26	7.41	11.11
2.6E+03 -	3.8E+03	0	26	0.00	3.70
3.8E+03 -	5.6E+03	1	27	3.70	3.70

HISTOGRAM FOR COLUMN 17 (S-MN)

```
      7.0E+01 XXXXXXX
      1.0E+02 XXXXXXX
      1.5E+02
      2.0E+02 XXXXXXXXXXXXXXXXXX
      3.0E+02
      5.0E+02 XXXXXXXXXXXXXXXXXXXXX
      7.0E+02 XXXXXXXXXX
      1.0E+03 XXXXXXXXXX
      1.5E+03 XXXXXXXXXX
      2.0E+03 XXXXXXX
      3.0E+03
      5.0E+03 XXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	27
0.00	0.00			0.00	0.00	

MAXIMUM = 5.00000E+03
MINIMUM = 7.00000E+01
GEOMETRIC MEAN = 4.94976E+02
GEOMETRIC DEVIATION = 3.01437E+00

TITLE
WASATCH ROCKS

FREQUENCY TABLE FOR COLUMN 18 (S-MO)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E+00 -	5.6E+00	4	4	14.81	29.63
5.6E+00 -	8.3E+00	0	4	0.00	14.81
8.3E+00 -	1.2E+01	2	6	7.41	14.81
1.2E+01 -	1.8E+01	0	6	0.00	7.41
1.8E+01 -	2.6E+01	0	6	0.00	7.41
2.6E+01 -	3.8E+01	1	7	3.70	7.41
3.8E+01 -	5.6E+01	0	7	0.00	3.70
5.6E+01 -	8.3E+01	0	7	0.00	3.70
8.3E+01 -	1.2E+02	0	7	0.00	3.70
1.2E+02 -	1.8E+02	0	7	0.00	3.70
1.8E+02 -	2.6E+02	1	8	3.70	3.70

HISTOGRAM FOR COLUMN 18 (S-MO)

```
5.0E+00 XXXXXXXXXXXXXXX
7.0E+00
1.0E+01 XXXXXXX
1.5E+01
2.0E+01
3.0E+01 XXXX
5.0E+01
7.0E+01
1.0E+02
1.5E+02
2.0E+02 XXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
18	1	0	0	0	0	8
66.67	3.70			0.00	0.00	

MAXIMUM = 2.00000E+02
MINIMUM = 5.00000E+00
GEOMETRIC MEAN = 1.17965E+01
GEOMETRIC DEVIATION = 3.68035E+00

TITLE
WASATCH ROCKS

FREQUENCY TABLE FOR COLUMN 20 (S-NI)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E+00 -	5.6E+00	3	3	11.11	77.78
5.6E+00 -	8.3E+00	1	4	3.70	66.67
8.3E+00 -	1.2E+01	4	8	14.81	62.96
1.2E+01 -	1.8E+01	2	10	7.41	48.15
1.8E+01 -	2.6E+01	2	12	7.41	40.74
2.6E+01 -	3.8E+01	3	15	11.11	33.33
3.8E+01 -	5.6E+01	2	17	7.41	22.22
5.6E+01 -	8.3E+01	2	19	7.41	14.81
8.3E+01 -	1.2E+02	2	21	7.41	7.41

HISTOGRAM FOR COLUMN 20 (S-NI)

```
5.0E+00 XXXXXXXXXXX
7.0E+00 XXXX
1.0E+01 XXXXXXXXXXXXXXX
1.5E+01 XXXXXXX
2.0E+01 XXXXXXX
3.0E+01 XXXXXXXXXXX
5.0E+01 XXXXXXX
7.0E+01 XXXXXXX
1.0E+02 XXXXXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
4	2	0	0	0	0	21
14.81	7.41			0.00	0.00	

MAXIMUM = 1.00000E+02
MINIMUM = 5.00000E+00
GEOMETRIC MEAN = 2.02075E+01
GEOMETRIC DEVIATION = 2.68053E+00

TITLE
WASATCH ROCKS

FREQUENCY TABLE FOR COLUMN 21 (S-PB)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E+00 -	1.2E+01	1	1	3.70	92.59
1.2E+01 -	1.8E+01	1	2	3.70	88.89
1.8E+01 -	2.6E+01	3	5	11.11	85.19
2.6E+01 -	3.8E+01	0	5	0.00	74.07
3.8E+01 -	5.6E+01	1	6	3.70	74.07
5.6E+01 -	8.3E+01	1	7	3.70	70.37
8.3E+01 -	1.2E+02	3	10	11.11	66.67
1.2E+02 -	1.8E+02	1	11	3.70	55.56
1.8E+02 -	2.6E+02	1	12	3.70	51.85
2.6E+02 -	3.8E+02	0	12	0.00	48.15
3.8E+02 -	5.6E+02	2	14	7.41	48.15
5.6E+02 -	8.3E+02	1	15	3.70	40.74
8.3E+02 -	1.2E+03	0	15	0.00	37.04
1.2E+03 -	1.8E+03	0	15	0.00	37.04
1.8E+03 -	2.6E+03	0	15	0.00	37.04
2.6E+03 -	3.8E+03	0	15	0.00	37.04
3.8E+03 -	5.6E+03	3	18	11.11	37.04
5.6E+03 -	8.3E+03	1	19	3.70	25.93

HISTOGRAM FOR COLUMN 21 (S-PB)

```
1.0E+01 XXXX
1.5E+01 XXXX
2.0E+01 XXXXXXXXXXX
3.0E+01
5.0E+01 XXXX
7.0E+01 XXXX
1.0E+02 XXXXXXXXXXX
1.5E+02 XXXX
2.0E+02 XXXX
3.0E+02
5.0E+02 XXXXXXX
7.0E+02 XXXX
1.0E+03
1.5E+03
2.0E+03
3.0E+03
5.0E+03 XXXXXXXXXXX
7.0E+03 XXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
1	1	0	0	0	6	19
3.70	3.70			0.00	22.22	

MAXIMUM = 7.00000E+03
MINIMUM = 1.00000E+01
GEOMETRIC MEAN = 1.89749E+02
GEOMETRIC DEVIATION = 8.56852E+00

TITLE
WASATCH ROCKS

FREQUENCY TABLE FOR COLUMN 22 (S-SB)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E+01 -	1.2E+02	1	1	3.70	11.11
1.2E+02 -	1.8E+02	0	1	0.00	7.41
1.8E+02 -	2.6E+02	1	2	3.70	7.41
2.6E+02 -	3.8E+02	0	2	0.00	3.70
3.8E+02 -	5.6E+02	1	3	3.70	3.70

HISTOGRAM FOR COLUMN 22 (S-SB)

```
1.0E+02 XXXX
1.5E+02
2.0E+02 XXXX
3.0E+02
5.0E+02 XXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
22	2	0	0	0	0	3
81.48	7.41			0.00	0.00	

MAXIMUM = 5.00000E+02
MINIMUM = 1.00000E+02
GEOMETRIC MEAN = 2.15443E+02
GEOMETRIC DEVIATION = 2.24183E+00
A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80) DATE 12/13/82

TITLE
WASATCH ROCKS

FREQUENCY TABLE FOR COLUMN 23 (S-SC)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E+00 -	5.6E+00	2	2	7.41	14.81
5.6E+00 -	8.3E+00	0	2	0.00	7.41
8.3E+00 -	1.2E+01	1	3	3.70	7.41
1.2E+01 -	1.8E+01	0	3	0.00	3.70
1.8E+01 -	2.6E+01	1	4	3.70	3.70

HISTOGRAM FOR COLUMN 23 (S-SC)

```
5.0E+00 XXXXXXX
7.0E+00
1.0E+01 XXXX
1.5E+01
2.0E+01 XXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
21	2	0	0	0	0	4
77.78	7.41			0.00	0.00	

MAXIMUM = 2.00000E+01
MINIMUM = 5.00000E+00
GEOMETRIC MEAN = 8.40896E+00
GEOMETRIC DEVIATION = 1.94184E+00
A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80) DATE 12/13/82

TITLE
WASATCH ROCKS

FREQUENCY TABLE FOR COLUMN 24 (S-SR)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E+01 -	1.2E+02	2	2	7.41	37.04
1.2E+02 -	1.8E+02	2	4	7.41	29.63
1.8E+02 -	2.6E+02	1	5	3.70	22.22
2.6E+02 -	3.8E+02	0	5	0.00	18.52
3.8E+02 -	5.6E+02	2	7	7.41	18.52
5.6E+02 -	8.3E+02	2	9	7.41	11.11
8.3E+02 -	1.2E+03	0	9	0.00	3.70
1.2E+03 -	1.8E+03	1	10	3.70	3.70

HISTOGRAM FOR COLUMN 24 (S-SR)

```
1.0E+02 XXXXXXX
1.5E+02 XXXXXXX
2.0E+02 XXXX
3.0E+02
5.0E+02 XXXXXXX
7.0E+02 XXXXXXX
1.0E+03
1.5E+03 XXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
16	1	0	0	0	0	10
59.26	3.70			0.00	0.00	

MAXIMUM = 1.50000E+03
MINIMUM = 1.00000E+02
GEOMETRIC MEAN = 3.10273E+02
GEOMETRIC DEVIATION = 2.57866E+00
A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80) DATE 12/13/82

TITLE
WASATCH ROCKS

FREQUENCY TABLE FOR COLUMN 25 (S-V)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E+00 -	1.2E+01	10	10	37.04	85.19
1.2E+01 -	1.8E+01	3	13	11.11	48.15
1.8E+01 -	2.6E+01	0	13	0.00	37.04
2.6E+01 -	3.8E+01	2	15	7.41	37.04
3.8E+01 -	5.6E+01	1	16	3.70	29.63
5.6E+01 -	8.3E+01	1	17	3.70	25.93
8.3E+01 -	1.2E+02	4	21	14.81	22.22
1.2E+02 -	1.8E+02	0	21	0.00	7.41
1.8E+02 -	2.6E+02	0	21	0.00	7.41
2.6E+02 -	3.8E+02	1	22	3.70	7.41
3.8E+02 -	5.6E+02	1	23	3.70	3.70

HISTOGRAM FOR COLUMN 25 (S-V)

```
1.0E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.5E+01 XXXXXXXXXXX
2.0E+01
3.0E+01 XXXXXXX
5.0E+01 XXXX
7.0E+01 XXXX
1.0E+02 XXXXXXXXXXXXXXX
1.5E+02
2.0E+02
3.0E+02 XXXX
5.0E+02 XXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	4	0	0	0	0	23
0.00	14.81			0.00	0.00	

MAXIMUM = 5.00000E+02
MINIMUM = 1.00000E+01
GEOMETRIC MEAN = 2.77712E+01
GEOMETRIC DEVIATION = 3.42655E+00

TITLE
WASATCH ROCKS

FREQUENCY TABLE FOR COLUMN 26 (S-Y)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E+00 -	1.2E+01	5	5	18.52	74.07
1.2E+01 -	1.8E+01	3	8	11.11	55.56
1.8E+01 -	2.6E+01	4	12	14.81	44.44
2.6E+01 -	3.8E+01	5	17	18.52	29.63
3.8E+01 -	5.6E+01	1	18	3.70	11.11
5.6E+01 -	8.3E+01	0	18	0.00	7.41
8.3E+01 -	1.2E+02	0	18	0.00	7.41
1.2E+02 -	1.8E+02	0	18	0.00	7.41
1.8E+02 -	2.6E+02	1	19	3.70	7.41
2.6E+02 -	3.8E+02	0	19	0.00	3.70
3.8E+02 -	5.6E+02	0	19	0.00	3.70
5.6E+02 -	8.3E+02	1	20	3.70	3.70

HISTOGRAM FOR COLUMN 26 (S-Y)

```
1.0E+01 XXXXXXXXXXXXXXXXXX
1.5E+01 XXXXXXXXXX
2.0E+01 XXXXXXXXXXXXXX
3.0E+01 XXXXXXXXXXXXXXXXXX
5.0E+01 XXXX
7.0E+01
1.0E+02
1.5E+02
2.0E+02 XXXX
3.0E+02
5.0E+02
7.0E+02 XXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
6	1	0	0	0	0	20
22.22	3.70			0.00	0.00	

MAXIMUM = 7.00000E+02
MINIMUM = 1.00000E+01
GEOMETRIC MEAN = 2.50124E+01
GEOMETRIC DEVIATION = 2.87963E+00

TITLE
WASATCH ROCKS

FREQUENCY TABLE FOR COLUMN 28 (S-ZR)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E+00 -	1.2E+01	5	5	18.52	55.56
1.2E+01 -	1.8E+01	0	5	0.00	37.04
1.8E+01 -	2.6E+01	1	6	3.70	37.04
2.6E+01 -	3.8E+01	2	8	7.41	33.33
3.8E+01 -	5.6E+01	3	11	11.11	25.93
5.6E+01 -	8.3E+01	0	11	0.00	14.81
8.3E+01 -	1.2E+02	1	12	3.70	14.81
1.2E+02 -	1.8E+02	1	13	3.70	11.11
1.8E+02 -	2.6E+02	0	13	0.00	7.41
2.6E+02 -	3.8E+02	2	15	7.41	7.41

HISTOGRAM FOR COLUMN 28 (S-ZR)

```
      1.0E+01 XXXXXXXXXXXXXXXXXXX
      1.5E+01
      2.0E+01 XXXX
      3.0E+01 XXXXXXX
      5.0E+01 XXXXXXXXXXX
      7.0E+01
      1.0E+02 XXXX
      1.5E+02 XXXX
      2.0E+02
      3.0E+02 XXXXXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
10	2	0	0	0	0	15
37.04	7.41			0.00	0.00	

MAXIMUM = 3.00000E+02
MINIMUM = 1.00000E+01
GEOMETRIC MEAN = 3.67706E+01
GEOMETRIC DEVIATION = 3.40374E+00
A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80)
DATE 12/13/82

TITLE
WASATCH ROCKS

FREQUENCY TABLE FOR COLUMN 27 (S-ZN)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E+02 -	2.6E+02	2	2	7.41	62.96
2.6E+02 -	3.8E+02	1	3	3.70	55.56
3.8E+02 -	5.6E+02	0	3	0.00	51.85
5.6E+02 -	8.3E+02	1	4	3.70	51.85
8.3E+02 -	1.2E+03	2	6	7.41	48.15
1.2E+03 -	1.8E+03	1	7	3.70	40.74
1.8E+03 -	2.6E+03	1	8	3.70	37.04

HISTOGRAM FOR COLUMN 27 (S-ZN)

```
2.0E+02 XXXXXXX
3.0E+02 XXXX
5.0E+02
7.0E+02 XXXX
1.0E+03 XXXXXXX
1.5E+03 XXXX
2.0E+03 XXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
8	2	0	0	0	9	8
29.63	7.41			0.00	33.33	

MAXIMUM = 2.00000E+03
MINIMUM = 2.00000E+02
GEOMETRIC MEAN = 6.31212E+02
GEOMETRIC DEVIATION = 2.46713E+00
A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80)
DATE 12/13/82

IN THE COMPUTATIONS PERFORMED TO PRODUCE THE FOLLOWING TABLE OF GEOMETRIC MEANS AND DEVIATIONS, ALL ELEMENTS ARE IGNORED WHERE ONE OR MORE OF THE UNQUALIFIED DATA VALUES IS LESS THAN THE ANALYTICAL LIMIT OF DETECTION SPECIFIED ON INPUT OR WHERE ANY DATA VALUES ARE QUALIFIED WITH THE G (GREATER THAN) CODE. DATA VALUES QUALIFIED WITH B OR H ARE NOT USED IN THE COMPUTATIONS. WHERE NONE OF THE DATA VALUES FOR AN ELEMENT ARE QUALIFIED THE MEAN AND DEVIATION SHOULD BE THE SAME AS THOSE GIVEN IN THE PRECEDING SECTION. WHERE DATA ARE QUALIFIED WITH THE CODES N, L, OR T, THE ESTIMATES OF GEOMETRIC MEAN AND DEVIATION ARE BASED ON A METHO BY A. J. COHEN FOR TREATING CENSORED DISTRIBUTIONS. THE APPLICATION OF THIS METHOD TO GEOCHEMICAL PROBLEMS IS DESCRIBED IN USGS PROFESSIONAL PAPER 574-B. THE ESTIMATES ARE UNBIASED IN A STRICT SENSE ONLY WHERE THE DATA ARE DERIVED FROM A LOGNORMAL PARENT POPULATION, BUT EXPERIMENTS HAVE SHOWN THAT LARGE DEPARTURES FROM THIS REQUIREMENT MAY NOT GREATLY INVALIDATE THE RESULTS ACCEPTANCE AND USE OF THE ESTIMATES, HOWEVER, IS THE RESPONSIBILITY OF THE INDIVIDUAL.

ELEMENT	N	L	H	B	T	G	ANALYTICAL VALUES
X-COORD.	0	0	0	0	0	0	27
Y-COORD.	0	0	0	0	0	0	27
S-CA%	0	0	0	0	0	1	26
S-FE%	0	0	0	0	0	0	27
S-MG%	0	0	0	0	0	0	27
S-TI%	0	6	0	0	0	0	21
S-AG	5	3	0	0	0	0	19
S-AS	24	1	0	0	0	0	2
S-B	13	3	0	0	0	0	11
S-BA	5	12	0	0	0	1	9
S-BE	12	5	0	0	0	0	10
S-CD	14	2	-	-	-	-	-
S-CO	19	2	0	0	0	0	6
S-CR	4	5	0	0	0	0	18
S-CU	1	2	0	0	0	0	24
S-LA	21	0	0	0	0	0	6
S-MN	0	0	0	0	0	0	27
S-MO	18	1	0	0	0	0	8
S-NI	4	2	0	0	0	0	21
S-PB	1	1	0	0	0	6	19
S-SB	22	2	0	0	0	0	3
S-SC	21	2	0	0	0	0	4
S-SR	16	1	0	0	0	0	10
S-V	0	4	0	0	0	0	23
S-Y	6	1	0	0	0	0	20
S-ZN	8	2	0	0	0	9	8
S-ZR	10	2	0	0	0	0	15

TITLE

ELEMENT	GEOMETRIC MEAN	GEOMETRIC DEVIATION	REMARKS
X-COORD.	433873.570313	1.01	27 SAMPLES AND 27 ANALYTICAL VALUES.
Y-COORD.	412784.039063	1.01	27 SAMPLES AND 27 ANALYTICAL VALUES.
S-CA%	91567307	******	1 GREATER THAN VALUES. NO COMPUTATIONS.
S-FE%	1.407844	3.07	27 SAMPLES AND 27 ANALYTICAL VALUES.
S-MG%	1.809565	3.18	27 SAMPLES AND 27 ANALYTICAL VALUES.
S-TI%	0.008929	6.98	6 NOT DETECTED, LESS THAN, OR TRACE VALUES. 21 REPORTED VALUES.
S-AG	1.931193	19.63	8 NOT DETECTED, LESS THAN, OR TRACE VALUES. 19 REPORTED VALUES.
S-AS	62.766565	2.05	25 NOT DETECTED, LESS THAN, OR TRACE VALUES. 2 REPORTED VALUES.
S-B	6.464052	3.06	16 NOT DETECTED, LESS THAN, OR TRACE VALUES. 11 REPORTED VALUES.
S-BA	********	******	1 GREATER THAN VALUES. NO COMPUTATIONS.
S-BE	0.655516	1.91	17 NOT DETECTED, LESS THAN, OR TRACE VALUES. 10 REPORTED VALUES.
S-CD	********	******	2 GREATER THAN VALUES. NO COMPUTATIONS.
S-CO	0.479148	15.39	21 NOT DETECTED, LESS THAN, OR TRACE VALUES. 6 REPORTED VALUES.
S-CR	13.461753	5.30	9 NOT DETECTED, LESS THAN, OR TRACE VALUES. 18 REPORTED VALUES.
S-CU	16.070752	3.48	3 NOT DETECTED, LESS THAN, OR TRACE VALUES. 24 REPORTED VALUES.
S-LA	2.113389	15.61	21 NOT DETECTED, LESS THAN, OR TRACE VALUES. 6 REPORTED VALUES.
S-MN	494.975716	3.01	27 SAMPLES AND 27 ANALYTICAL VALUES.
S-MO	1.158556	7.97	19 NOT DETECTED, LESS THAN, OR TRACE VALUES. 8 REPORTED VALUES.
S-NI	11.768502	3.93	6 NOT DETECTED, LESS THAN, OR TRACE VALUES. 21 REPORTED VALUES.
S-PB	********	******	6 GREATER THAN VALUES. NO COMPUTATIONS.
S-SB	215.498819	2.24	24 NOT DETECTED, LESS THAN, OR TRACE VALUES. 3 REPORTED VALUES.
S-SC	8.410236	1.94	23 NOT DETECTED, LESS THAN, OR TRACE VALUES. 4 REPORTED VALUES.
S-SR	45.851031	6.37	17 NOT DETECTED, LESS THAN, OR TRACE VALUES. 10 REPORTED VALUES.
S-V	20.542529	3.94	4 NOT DETECTED, LESS THAN, OR TRACE VALUES. 23 REPORTED VALUES.
S-Y	15.079790	3.65	7 NOT DETECTED, LESS THAN, OR TRACE VALUES. 20 REPORTED VALUES.
S-ZN	********	******	9 GREATER THAN VALUES. NO COMPUTATIONS.
S-ZR	10.141093	6.36	12 NOT DETECTED, LESS THAN, OR TRACE VALUES. 15 REPORTED VALUES.

Table 4.--Stream-sediment geochemical analyses and frequency-distribution data for analyzed elements for samples from Birdseye, Nephi, and Santaquin Roadless Areas

[First two digits of sample number indicate year of collection; letters indicate collector; UH, S. M. Haley; UP, H. Pietropaoli; last two digits indicate sample site. Qualifying codes in analytical data are defined as follows: N, not detected at the limit of analytical detection; <, detected, but below the lower limit of analytical determination]

Sample	X coordinate	Y coordinate	Ca-pct. s	Fe-pct. s	Mg-pct. s	Ti-pct. s	Ag-ppm s	B-ppm s	Ba-ppm s	Be-ppm s	Cd-ppm s	Co-ppm s	Cr-ppm s
81UH01S	442,320	4,422,360	5.0	1.0	1.50	.10	1.0	30	200	<1.0	N	5	30
81UH02S	442,555	4,422,330	5.0	1.0	1.50	.15	<.5	50	300	<1.0	N	5	30
81UH03S	444,300	4,422,080	2.0	1.0	.50	.15	.7	50	200	1.0	N	5	50
81UH04S	444,340	4,421,765	5.0	1.5	1.50	.20	<.5	100	2,000	1.0	N	10	100
81UH05S	441,160	4,425,500	5.0	1.5	1.50	.20	.5	50	700	3.0	N	7	30
81UH06S	443,930	4,426,170	1.0	1.0	.30	.20	.7	70	500	1.0	N	5	50
81UH07S	445,280	4,425,200	.7	1.0	.50	.20	.7	70	500	<1.0	N	5	50
81UH08S	445,080	4,425,410	.5	1.0	.20	.20	.5	70	300	1.0	N	5	70
81UH09S	431,345	4,415,500	1.0	1.5	.30	.30	.5	150	300	1.5	N	10	70
81UH10S	432,485	4,415,075	1.0	.7	.20	.15	N	50	300	1.5	N	N	10
81UH11S	433,275	4,414,640	5.0	1.0	3.00	.15	1.5	50	200	1.0	N	7	50
81UH12S	433,420	4,415,300	5.0	1.5	5.00	.15	2.0	70	200	<1.0	N	10	100
81UH13S	439,440	4,411,840	.2	1.0	.20	.30	.5	70	500	1.0	N	7	70
81UH14S	440,280	4,413,610	.3	1.0	.20	.30	<.5	70	500	1.0	N	7	70
81UH15S	439,575	4,413,790	1.0	1.0	.30	.20	.5	50	500	1.0	N	5	70
81UH16S	439,230	4,413,860	1.5	1.0	.30	.20	<.5	50	300	<1.0	N	5	30
81UH17S	438,880	4,415,210	.3	1.0	.20	.30	.5	100	300	1.0	N	5	70
81UH18S	438,060	4,416,250	7.0	1.0	.30	.15	<.5	70	300	1.0	N	7	70
81UH19S	431,245	4,411,885	10.0	.7	3.00	.15	.5	50	200	<1.0	N	5	50
81UH20S	430,995	4,408,930	5.0	2.0	1.50	.20	1.5	100	200	<1.0	N	10	150
81UH21S	431,280	4,410,670	7.0	.7	3.00	.05	1.0	50	200	<1.0	N	5	50
81UH22S	431,290	4,412,670	5.0	1.0	5.00	.10	.7	50	300	<1.0	N	7	50
81UH23S	430,665	4,408,215	3.0	1.5	1.50	.20	1.5	50	300	1.0	N	10	100
81UH24S	430,365	4,404,880	1.0	.5	.15	.10	<.5	50	200	1.0	N	N	30
81UH25S	432,315	4,404,120	2.0	1.0	.50	.20	.7	70	500	1.0	N	5	30
81UH26S	432,280	4,404,060	5.0	1.0	.50	.20	.5	70	500	<1.0	N	7	100
81UH27S	432,380	4,405,200	7.0	.2	.70	.05	<.5	15	200	<1.0	N	N	70
81UH28S	432,125	4,405,430	1.0	.3	.20	.07	<.5	20	200	1.0	N	N	20
81UH29S	431,900	4,405,470	5.0	.2	.20	.07	<.5	15	200	<1.0	N	N	20
81UH30S	429,635	4,404,215	3.0	.5	.50	.15	<.5	70	500	1.0	N	<5	30
81UH31S	429,370	4,401,350	5.0	.7	2.00	.20	.7	70	300	1.0	N	7	100
81UH32S	429,840	4,402,030	7.0	.5	.50	.07	.5	30	200	<1.0	N	<5	30
81UH33S	437,590	4,414,410	7.0	.7	1.00	.10	.5	70	150	<1.0	N	5	100
81UH34S	439,160	4,417,460	5.0	1.0	.50	.20	<.5	50	500	1.0	N	7	20
81UH35S	437,610	4,417,150	3.0	1.0	.30	.20	<.5	50	200	<1.0	N	7	30
81UH36S	435,545	4,419,340	5.0	1.0	3.00	.20	.5	50	300	1.0	N	7	30
81UH37S	435,300	4,419,750	5.0	1.5	1.00	.20	<.5	50	200	<1.0	N	7	50
81UH38S	436,955	4,416,175	5.0	2.0	1.00	.30	.5	100	100	1.0	N	15	100
81UH39S	436,940	4,416,200	.7	1.0	.50	.15	.5	70	200	1.5	N	7	50
81UH40S	434,280	4,417,760	1.5	.7	1.00	.10	1.0	50	150	1.0	N	<5	70
81UH41S	433,265	4,419,070	1.0	1.5	.50	.30	<.5	70	300	1.0	N	15	70
81UH42S	433,215	4,420,100	1.0	1.5	.70	.20	.7	50	500	1.0	N	10	70
81UH43S	431,400	4,400,350	5.0	.7	1.50	.10	.5	50	200	<1.0	N	5	70
81UH44S	445,220	4,422,510	.5	1.0	.20	.20	.7	50	300	1.0	N	7	70
81UH45S	446,145	4,422,055	.5	1.0	.20	.20	.5	50	300	1.0	N	7	70

Sample	Cu-ppm s	La-ppm s	Mn-ppm s	Mo-ppm s	Ni-ppm s	Pb-ppm s	Sc-ppm s	Sr-ppm s	V-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s
81UH01S	10	50	300	N	20	30	5	100	50	20	N	70
81UH02S	10	50	500	N	20	20	7	100	50	20	N	70
81UH03S	10	30	300	N	20	30	7	100	50	20	N	100
81UH04S	15	50	500	N	10	30	10	100	70	50	N	1,000
81UH05S	10	50	500	N	15	30	7	150	70	20	N	200
81UH06S	20	<20	500	N	20	150	7	100	50	20	N	200
81UH07S	30	20	300	N	20	150	7	<100	50	15	N	200
81UH08S	20	20	500	N	30	70	7	100	50	20	<200	300
81UH09S	30	30	500	N	30	70	10	100	70	30	N	200
81UH10S	20	20	1,000	N	N	70	5	<100	30	10	N	70
81UH11S	30	N	700	N	10	500	5	<100	50	10	<200	50
81UH12S	30	N	500	<5	30	500	5	100	100	20	200	30
81UH13S	15	N	700	N	10	50	5	<100	50	20	N	500
81UH14S	20	50	500	N	15	50	7	<100	70	30	N	300
81UH15S	15	50	200	N	10	50	5	100	50	20	N	500
81UH16S	10	20	500	N	10	20	5	<100	50	15	N	500
81UH17S	10	30	700	N	15	20	5	<100	50	20	N	700
81UH18S	10	30	500	N	15	50	5	<100	50	20	N	150
81UH19S	10	<20	300	N	20	70	5	150	50	15	N	100
81UH20S	15	50	300	N	70	700	10	200	100	30	300	100
81UH21S	15	N	300	N	20	200	5	150	50	15	N	50
81UH22S	20	<20	500	<5	15	150	7	150	50	20	N	70
81UH23S	50	50	700	N	100	200	7	200	70	30	200	100
81UH24S	10	<20	200	N	10	50	5	100	30	10	N	70
81UH25S	15	20	200	N	15	50	7	100	50	15	N	500
81UH26S	15	20	300	N	50	70	7	100	50	20	N	300
81UH27S	7	N	200	N	15	50	5	100	20	10	N	50
81UH28S	15	N	200	N	10	50	5	<100	30	10	N	50
81UH29S	7	N	100	N	<5	50	<5	<100	20	<10	N	30
81UH30S	15	<20	300	<5	15	70	5	100	30	15	N	100
81UH31S	10	20	200	5	30	70	5	150	50	20	N	200
81UH32S	10	20	150	N	10	70	5	100	30	10	N	50
81UH33S	10	20	300	N	20	50	5	100	50	20	N	50
81UH34S	15	20	700	N	10	50	5	100	50	20	N	150
81UH35S	10	<20	300	N	15	20	5	<100	70	20	N	200
81UH36S	20	<20	500	<5	10	100	5	<100	50	15	<200	70
81UH37S	10	20	300	N	15	30	5	100	70	15	N	200
81UH38S	15	50	300	<5	50	50	10	100	70	30	N	150
81UH39S	20	50	500	N	20	150	7	100	50	20	N	100
81UH40S	20	30	500	<5	20	100	7	<100	50	20	N	50
81UH41S	15	100	500	N	30	50	10	150	70	20	N	300
81UH42S	20	70	500	N	30	100	10	150	70	30	N	100
81UH43S	10	30	150	N	20	30	7	100	20	15	N	100
81UH44S	15	50	200	<5	20	30	7	100	50	20	N	200
81UH45S	30	50	200	N	20	70	7	100	50	20	N	300

Sample	X coordinate	Y coordinate	Ca-pct.s	Fe-pct.s	Mg-pct.s	Ti-pct.s	Ag-ppms	B-ppms	Ba-ppms	Be-ppms	Cd-ppms	Co-ppms	Cr-ppms
81UH46S	447,155	4,421,660	.5	.7	.20	.15	.7	30	300	1.0	N	<5	50
81UH47S	447,635	4,421,500	.5	.7	.20	.20	.5	70	500	1.0	N	5	50
81UH48S	448,060	4,421,110	2.0	.5	.30	.15	<.5	50	300	<1.0	N	<5	20
81UH49S	448,150	4,421,140	.3	1.0	.20	.30	.5	50	500	1.0	N	7	70
81UH50S	448,630	4,420,270	2.0	1.5	.50	.30	<.5	50	500	1.0	N	10	50
81UH51S	441,090	4,404,595	3.0	.5	1.00	.15	<.5	50	100	<1.0	N	10	30
81UH52S	441,200	4,404,600	2.0	.7	.20	.20	<.5	50	200	1.0	N	5	70
81UH53S	440,800	4,403,595	3.0	.7	1.00	.20	.7	50	150	<1.0	N	5	30
81UH54S	440,240	4,403,060	.5	1.0	.15	.30	.5	50	300	1.0	N	5	50
81UH55S	439,640	4,402,060	3.0	.5	1.00	.10	.5	30	200	<1.0	N	5	20
81UH56S	439,060	4,401,590	5.0	.7	1.00	.15	.5	30	300	<1.0	N	5	30
81UH57S	436,920	4,401,750	.1	.5	.10	.10	<.5	30	300	<1.0	N	<5	20
81UH58S	439,520	4,402,590	.5	1.0	.20	.20	.5	50	300	1.0	N	10	50
81UH59S	437,260	4,402,590	5.0	1.5	1.50	.20	N	70	500	1.0	N	20	100
81UH60S	438,535	4,403,325	2.0	.5	.20	.10	<.5	50	300	<1.0	N	<5	20
81UH61S	438,040	4,403,695	1.5	1.0	.50	.20	<.5	70	300	1.0	N	10	50
81UH62S	437,635	4,403,810	.2	1.5	.70	.20	N	70	500	1.5	N	15	70
81UH63S	438,460	4,408,160	.1	1.0	.15	.20	<.5	50	500	<1.0	N	7	50
81UH64S	438,580	4,408,190	.3	.7	.20	.20	.5	50	200	<1.0	N	<5	50
81UH65S	438,720	4,407,820	.2	1.0	.10	.20	<.5	50	150	1.0	N	5	50
81UH66S	437,850	4,406,560	.7	1.0	.15	.30	<.5	70	300	<1.0	N	<5	50
81UH67S	437,670	4,406,555	2.0	.7	.30	.15	.5	50	200	<1.0	N	<5	50
81UH68S	437,430	4,405,910	5.0	.7	.50	.20	.5	50	200	<1.0	N	<5	70
81UH69S	437,130	4,404,970	3.0	1.0	.30	.20	.5	70	200	1.0	N	<5	70
81UH70S	436,980	4,404,830	5.0	.7	.50	.15	.5	50	200	<1.0	N	<5	70
81UH71S	436,980	4,404,700	.7	.5	.50	.20	.5	50	300	1.0	N	<5	50
81UH72S	437,145	4,404,375	1.0	.5	.50	.20	.5	50	200	1.0	N	5	70
81UH73S	447,040	4,418,760	3.0	1.5	1.00	.50	N	50	500	1.0	N	15	30
81UH74S	448,385	4,418,810	3.0	2.0	.70	.50	N	50	500	1.0	N	15	50
81UH75S	448,500	4,418,770	3.0	1.5	.50	.50	<.5	70	300	1.0	N	10	50
81UH76S	449,095	4,419,395	2.0	1.5	.50	.30	.5	70	500	1.0	N	10	50
81UH77S	449,140	4,419,350	3.0	2.0	.70	.50	.5	50	500	1.0	N	15	30
81UH78S	449,100	4,425,130	.7	.5	.50	.20	.7	50	300	1.0	<20	5	70
81UH79S	449,135	4,425,050	.2	.7	.15	.20	.7	50	300	1.0	20	7	50
81UH80S	450,055	4,425,200	1.0	.7	.30	.20	.7	70	300	1.0	N	10	70
81UH81S	450,015	4,423,230	.2	.7	.20	.20	.5	50	300	1.0	N	7	50
81UH82S	442,530	4,424,500	.3	.7	.30	.20	.7	70	300	1.0	N	10	70
81UH83S	433,710	4,404,080	2.0	1.0	.30	.20	<.5	50	500	<1.0	N	10	100
81UP01S	442,340	4,422,395	3.0	3.0	1.00	.30	N	50	1,000	1.0	N	15	20
81UP02S	442,715	4,422,360	5.0	3.0	1.50	.30	<.5	50	700	1.0	N	15	30
81UP03S	443,800	4,422,390	2.0	2.0	.50	.20	.5	70	500	<1.0	N	10	50
81UP04S	444,200	4,421,800	5.0	.5	.50	.15	.5	70	300	<1.0	N	5	10
81UP05S	444,285	4,421,735	7.0	1.0	1.50	.20	.5	50	300	<1.0	N	7	70
81UP06S	441,155	4,424,940	5.0	5.0	5.00	.15	3.0	50	200	<1.0	<20	15	100
81UP07S	441,235	4,425,510	1.0	1.5	.50	.20	.7	70	500	1.0	N	7	70

Sample	Cu-ppm s	La-ppm s	Mn-ppm s	Mo-ppm s	Ni-ppm s	Pb-ppm s	Sc-ppm s	Sr-ppm s	V-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s
81UH46S	15	30	200	N	30	50	5	100	50	15	<200	100
81UH47S	20	30	200	N	15	70	5	100	50	20	N	200
81UH48S	5	30	150	N	7	15	5	<100	30	15	N	300
81UH49S	20	50	300	N	20	70	7	100	50	20	N	200
81UH50S	10	100	500	N	10	20	7	150	70	30	N	500
81UH51S	5	30	500	N	7	<10	5	100	20	15	N	500
81UH52S	10	50	300	N	7	20	5	<100	30	15	N	500
81UH53S	7	30	500	N	10	15	5	<100	30	20	N	200
81UH54S	20	50	500	N	15	50	7	100	50	20	N	200
81UH55S	7	20	300	N	10	10	5	<100	30	15	N	70
81UH56S	10	20	300	<5	15	20	5	100	50	15	N	300
81UH57S	<5	20	150	N	5	10	<5	<100	20	10	N	200
81UH58S	15	50	500	N	15	30	7	100	70	20	N	200
81UH59S	20	50	1,000	N	20	50	10	150	70	30	N	150
81UH60S	5	<20	200	N	10	10	5	<100	20	10	N	70
81UH61S	15	20	500	N	20	50	10	100	50	20	N	150
81UH62S	20	30	1,000	N	30	70	15	100	70	30	N	100
81UH63S	15	20	200	N	20	30	7	<100	50	20	N	300
81UH64S	10	<20	200	N	20	20	5	<100	50	20	N	200
81UH65S	10	30	200	N	15	20	5	<100	50	30	N	200
81UH66S	10	20	200	N	15	20	<5	<100	30	20	N	700
81UH67S	20	<20	200	N	20	20	5	100	50	15	N	300
81UH68S	10	20	200	N	30	50	5	100	50	20	N	100
81UH69S	10	20	200	N	30	30	5	100	50	20	N	100
81UH70S	10	20	150	N	30	70	5	100	30	20	N	100
81UH71S	15	<20	200	N	20	20	5	100	50	20	N	100
81UH72S	10	20	200	N	30	50	5	<100	50	20	N	100
81UH73S	10	30	500	N	20	50	10	200	70	30	N	100
81UH74S	10	30	700	N	15	50	10	200	100	20	N	100
81UH75S	10	30	500	N	20	50	7	150	70	20	N	100
81UH76S	10	30	300	N	30	70	10	150	70	30	N	200
81UH77S	10	30	700	N	20	50	10	150	100	30	N	150
81UH78S	15	20	200	N	20	70	5	<100	30	15	200	100
81UH79S	20	30	300	<5	20	100	7	100	50	20	300	200
81UH80S	15	30	300	N	20	50	7	<100	50	20	<200	150
81UH81S	20	30	500	<5	20	70	7	100	50	20	N	70
81UH82S	30	50	300	N	20	150	7	<100	50	20	N	100
81UH83S	15	50	500	N	30	50	7	100	50	20	N	200
81UP01S	20	50	700	N	15	50	10	200	100	20	N	100
81UP02S	20	50	700	N	20	70	10	200	100	30	N	100
81UP03S	20	50	500	N	20	50	7	150	70	30	N	300
81UP04S	10	70	200	N	N	30	5	150	50	20	N	500
81UP05S	15	30	500	N	15	50	7	150	70	20	N	200
81UP06S	150	N	1,000	5	30	3,000	7	100	50	20	2,000	70
81UP07S	50	50	700	N	30	100	7	150	50	30	N	100

Sample	X coordinate	Y coordinate	Ca-pct. s	Fe-pct. s	Mg-pct. s	Ti-pct. s	Ag-ppm s	B-ppm s	Ba-ppm s	Be-ppm s	Cd-ppm s	Co-ppm s	Cr-ppm s
81UP08S	443,735	4,426,180	5.0	1.0	.50	.20	.5	70	300	<1.0	N	7	50
81UP09S	445,120	4,425,250	.5	1.0	.30	.20	.5	70	300	1.0	N	7	100
81UP10S	445,350	4,425,150	.5	1.0	.20	.30	.5	70	300	<1.0	N	7	50
81UP11S	431,910	4,415,900	5.0	1.0	3.00	.15	.7	70	200	<1.0	N	7	100
81UP12S	432,220	4,414,680	5.0	1.5	2.00	.20	.7	70	300	1.0	N	7	50
81UP13S	433,095	4,414,465	2.0	1.0	1.50	.15	.5	50	300	1.0	N	5	50
81UP14S	432,875	4,415,560	7.0	1.5	5.00	.15	1.0	100	200	<1.0	N	7	100
81UP15S	433,900	4,415,715	2.0	1.0	1.50	.10	1.5	50	500	1.0	N	5	70
81UP16S	438,045	4,411,850	.3	1.0	.20	.20	.5	50	300	1.0	N	7	70
81UP17S	440,225	4,413,595	.5	1.0	.20	.30	<.5	70	300	1.0	N	7	70
81UP18S	439,580	4,413,650	.3	1.5	.20	.30	.5	70	300	<1.0	N	7	50
81UP19S	439,940	4,413,385	.2	.7	.30	.20	<.5	50	300	1.0	N	<5	50
81UP20S	438,770	4,415,030	3.0	3.0	.70	.50	<.5	50	300	<1.0	N	15	30
81UP21S	438,860	4,414,940	2.0	.7	.30	.10	.5	70	200	<1.0	N	5	15
81UP22S	438,680	4,415,620	1.5	1.0	.20	.20	.5	70	300	1.0	N	5	20
81UP23S	438,245	4,415,910	1.0	.7	.30	.15	.5	70	300	<1.0	N	5	20
81UP24S	431,190	4,410,175	5.0	.5	1.50	.10	.5	70	200	<1.0	N	<5	30
81UP25S	431,320	4,409,690	5.0	.7	3.00	.10	1.5	50	300	<1.0	N	5	30
81UP26S	431,250	4,411,245	7.0	.7	5.00	.10	<.5	50	200	1.0	N	7	30
81UP27S	431,420	4,413,700	5.0	.7	3.00	.10	.5	50	200	1.0	N	5	20
81UP28S	430,415	4,407,480	5.0	1.5	1.50	.30	.5	100	200	1.0	N	15	100
81UP29S	432,570	4,404,160	5.0	.7	.50	.15	<.5	50	200	<1.0	N	5	50
81UP30S	431,540	4,406,170	2.0	.7	.70	.15	.5	70	300	1.0	N	7	50
81UP31S	432,090	4,405,870	5.0	.5	1.00	.05	.5	50	150	<1.0	N	<5	50
81UP32S	429,590	4,403,350	2.0	.5	1.00	.10	.7	50	200	<1.0	N	5	50
81UP33S	429,660	4,403,750	3.0	.7	1.00	.10	.7	70	200	1.0	N	5	50
81UP34S	429,755	4,402,430	2.0	.7	1.00	.15	.5	50	300	1.0	N	5	70
81UP35S	437,615	4,414,300	1.0	.7	.50	.20	.5	70	300	<1.0	N	5	20
81UP36S	437,660	4,414,270	1.0	3.0	.70	.50	.5	50	500	<1.0	N	20	20
81UP37S	437,720	4,417,020	5.0	2.0	1.00	.20	.5	200	150	1.0	N	10	150
81UP38S	436,480	4,418,040	10.0	.5	1.00	.05	.7	10	100	<1.0	N	N	15
81UP39S	435,020	4,419,900	2.0	1.0	.50	.15	<.5	100	200	<1.0	N	<5	30
81UP40S	435,300	4,412,375	.5	2.0	.50	.30	<.5	70	300	1.0	N	10	50
81UP41S	435,210	4,412,660	.7	1.5	.50	.20	.5	70	300	1.0	N	<5	100
81UP42S	435,130	4,412,680	.5	1.0	.50	.20	<.5	100	200	1.0	N	5	50
81UP43S	435,245	4,412,020	1.0	1.0	.70	.20	.5	70	300	1.0	N	5	100
81UP44S	434,315	4,410,360	.5	.7	.30	.15	.5	70	200	1.0	N	<5	70
81UP45S	434,310	4,410,335	1.0	1.0	.50	.20	.5	70	200	1.0	N	N	100
81UP46S	433,885	4,410,490	3.0	2.0	1.00	.30	.5	100	300	1.0	N	15	150
81UP47S	432,940	4,416,335	5.0	.5	2.00	.07	1.0	50	150	<1.0	N	5	70
81UP48S	430,485	4,400,520	7.0	1.0	1.50	.10	.5	100	150	<1.0	N	7	70
81UP49S	431,320	4,400,430	10.0	1.0	2.00	.15	N	150	300	<1.0	N	15	50
81UP50S	450,510	4,419,830	1.0	1.0	.50	.20	<.5	70	500	1.0	N	10	30
81UP51S	449,980	4,420,620	2.0	.7	.30	.10	<.5	70	300	<1.0	N	5	50
81UP52S	450,000	4,420,960	.5	1.0	.20	.20	.5	70	500	<1.0	N	5	50

Sample	Cu-ppm s	La-ppm s	Mn-ppm s	Mo-ppm s	Ni-ppm s	Pb-ppm s	Sc-ppm s	Sr-ppm s	V-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s
81UP08S	20	20	500	N	30	50	7	150	50	20	N	70
81UP09S	30	20	500	N	30	70	7	<100	70	20	N	300
81UP10S	30	20	500	<5	20	70	5	100	50	20	N	300
81UP11S	20	<20	500	N	30	200	5	100	70	20	<200	50
81UP12S	30	20	500	N	30	150	5	100	70	20	N	100
81UP13S	20	<20	500	N	20	150	5	100	50	15	N	100
81UP14S	30	20	500	5	50	500	5	<100	70	20	200	70
81UP15S	30	<20	300	<5	20	1,000	5	<100	50	15	1,000	70
81UP16S	20	<20	300	N	20	20	5	<100	50	20	N	200
81UP17S	20	20	500	N	20	30	7	<100	70	20	N	300
81UP18S	20	<20	500	N	20	50	5	<100	50	30	N	500
81UP19S	20	50	300	N	20	30	7	100	50	30	N	150
81UP20S	15	N	500	N	20	50	10	100	150	20	N	100
81UP21S	10	N	300	N	10	20	5	<100	50	20	N	200
81UP22S	15	<20	500	N	20	20	7	100	50	30	N	150
81UP23S	15	50	300	N	15	30	5	100	50	30	N	100
81UP24S	10	20	200	<5	20	50	5	100	50	20	N	100
81UP25S	20	20	500	5	30	500	5	100	70	30	300	50
81UP26S	10	20	500	N	15	100	5	100	50	20	N	50
81UP27S	15	N	500	N	15	100	5	100	50	20	N	50
81UP28S	15	50	500	5	50	70	15	150	70	30	N	200
81UP29S	7	<20	150	N	15	20	5	100	30	20	N	200
81UP30S	20	20	200	<5	20	70	5	100	50	20	N	70
81UP31S	7	<20	100	N	20	50	5	100	30	15	N	50
81UP32S	15	<20	150	N	20	70	5	100	50	20	N	70
81UP33S	20	<20	200	5	20	100	5	100	50	20	N	70
81UP34S	15	<20	200	<5	20	100	5	100	50	20	N	150
81UP35S	20	<20	200	N	15	30	5	<100	50	20	N	200
81UP36S	20	50	700	N	20	50	10	100	100	20	N	200
81UP37S	15	30	500	N	50	50	10	150	100	30	N	150
81UP38S	10	N	200	N	5	100	<5	<100	20	<10	N	20
81UP39S	15	N	300	N	10	70	5	<100	30	15	N	70
81UP40S	10	30	300	N	20	20	7	100	70	30	N	150
81UP41S	20	20	500	N	5	70	7	100	50	30	N	200
81UP42S	15	20	300	N	15	50	7	N	50	20	N	200
81UP43S	15	20	300	N	20	50	7	<100	50	20	N	200
81UP44S	10	20	200	N	10	30	7	<100	50	20	N	100
81UP45S	10	<20	300	N	5	70	5	N	50	20	N	150
81UP46S	15	50	500	5	50	50	15	200	70	30	N	100
81UP47S	10	N	300	N	7	100	5	N	50	15	N	20
81UP48S	15	N	200	N	20	50	5	300	50	20	N	70
81UP49S	15	20	300	N	15	50	7	200	50	20	N	50
81UP50S	15	30	500	N	15	20	7	200	50	20	N	500
81UP51S	10	N	200	N	10	50	5	100	30	20	N	100
81UP52S	15	20	300	N	10	70	5	100	50	20	N	150

Sample	X coordinate	Y coordinate	Ca-pct.s	Fe-pct.s	Mg-pct.s	Ti-pct.s	Ag-ppms	B-ppms	Ba-ppms	Be-ppms	Cd-ppms	Co-ppms	Cr-ppms
81UP53S	450,390	4,419,980	1.0	2.0	.30	.30	N	50	700	<1.0	N	15	30
81UP54S	447,840	4,422,335	.2	1.5	.50	.20	<.5	70	500	1.0	N	10	70
81UP55S	447,945	4,422,420	.2	1.0	.50	.20	.5	70	700	1.0	N	10	100
81UP56S	448,400	4,422,615	1.0	1.0	.30	.20	.5	70	500	1.0	N	5	70
81UP57S	448,440	4,422,600	.5	1.0	.30	.20	.7	100	500	1.0	N	7	70
81UP58S	448,885	4,421,340	1.5	1.0	.20	.20	.5	70	500	<1.0	N	5	70
81UP59S	448,980	4,421,350	.5	.7	.15	.15	.5	70	300	1.0	N	5	70
81UP60S	439,790	4,406,980	.2	1.5	.15	.20	<.5	70	300	1.0	N	7	50
81UP61S	439,740	4,406,980	.2	1.5	.20	.30	<.5	70	300	1.0	N	5	20
81UP62S	439,400	4,406,170	.3	1.0	.15	.20	<.5	70	300	1.0	N	7	150
81UP63S	438,940	4,405,500	.2	1.0	.15	.20	<.5	100	300	1.0	N	7	30
81UP64S	438,935	4,405,610	.2	1.0	.15	.20	N	70	300	1.0	N	7	50
81UP65S	437,625	4,404,255	.7	1.5	.15	.30	N	70	200	1.0	N	5	30
81UP66S	435,700	4,399,830	1.5	.7	.30	.15	<.5	70	300	<1.0	N	5	30
81UP67S	435,560	4,399,940	5.0	1.0	1.50	.20	<.5	100	300	<1.0	N	10	70
81UP68S	435,050	4,399,670	.5	1.0	.50	.30	.5	100	500	1.0	N	7	100
81UP69S	434,880	4,399,560	.5	1.5	.70	.30	.7	100	500	1.0	N	10	100
81UP70S	433,720	4,400,370	2.0	1.0	1.00	.20	.5	100	300	1.0	N	7	100
81UP71S	433,780	4,400,245	1.0	1.0	.70	.20	.7	100	300	1.0	N	10	150
81UP72S	437,300	4,404,140	3.0	1.0	.70	.20	N	70	300	1.0	N	7	50
81UP73S	436,460	4,402,710	5.0	1.0	1.50	.15	.5	70	300	<1.0	N	10	100
81UP74S	436,465	4,402,660	2.0	1.5	1.00	.20	N	70	300	1.0	N	15	100
81UP75S	447,470	4,416,620	3.0	1.0	1.00	.20	<.5	50	300	1.0	N	7	50
81UP76S	448,540	4,417,250	5.0	3.0	1.50	.30	N	50	500	1.0	N	15	70
81UP77S	448,910	4,418,060	1.0	2.0	1.00	.30	<.5	70	700	1.0	N	10	50
81UP78S	449,670	4,417,885	3.0	2.0	1.50	.50	N	50	500	1.0	N	15	70
81UP79S	449,670	4,417,630	.7	2.0	1.00	.30	N	50	500	1.0	N	10	70
81UP80S	450,110	4,418,770	1.0	7.0	1.00	.70	N	50	500	<1.0	N	20	50
81UP81S	437,700	4,410,370	.2	1.0	.20	.20	.5	70	200	<1.0	N	7	50
81UP82S	437,595	4,409,470	.2	.7	.20	.20	2.0	50	300	<1.0	N	5	70
81UP83S	437,540	4,409,450	1.0	1.5	.30	.20	<.5	70	300	<1.0	N	7	70
81UP84S	437,415	4,407,775	1.0	1.0	.20	.20	.5	50	300	<1.0	N	5	70
81UP85S	437,380	4,407,760	3.0	.7	1.00	.20	<.5	50	200	<1.0	N	5	50
81UP86S	437,340	4,407,375	3.0	1.0	.70	.20	.5	50	300	<1.0	N	5	70
81UP87S	438,320	4,412,850	1.5	1.0	.50	.20	.5	50	200	<1.0	N	5	50
81UP88S	437,955	4,413,150	1.0	3.0	.50	.70	<.5	50	500	<1.0	N	20	50
81UP89S	437,130	4,413,540	.5	1.5	.30	.20	.7	70	500	<1.0	N	5	100
81UP90S	437,100	4,413,570	.5	1.0	.30	.30	.5	70	500	1.0	N	7	100

Sample	Cu-ppm s	La-ppm s	Mn-ppm s	Mo-ppm s	Ni-ppm s	Pb-ppm s	Sc-ppm s	Sr-ppm s	V-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s
81UP53S	10	20	3,000	N	10	30	7	150	70	20	N	200
81UP54S	20	50	500	N	15	70	10	100	50	30	N	300
81UP55S	20	50	500	<5	30	70	10	100	70	30	N	200
81UP56S	20	20	300	N	30	70	7	<100	50	20	N	300
81UP57S	20	<20	500	N	20	100	10	<100	50	30	N	500
81UP58S	15	20	300	N	20	50	7	<100	50	20	N	300
81UP59S	20	<20	300	N	20	100	7	<100	50	20	N	100
81UP60S	15	20	300	<5	20	50	10	<100	50	50	N	300
81UP61S	20	20	500	N	20	30	7	N	70	20	N	300
81UP62S	15	30	200	N	20	50	10	<100	50	30	N	500
81UP63S	20	30	300	N	15	50	10	<100	50	30	N	200
81UP64S	15	30	300	N	15	50	10	<100	50	30	N	500
81UP65S	15	30	300	N	<5	30	7	<100	50	30	N	1,000
81UP66S	10	<20	500	N	10	10	7	100	30	15	N	300
81UP67S	15	20	500	N	20	50	7	200	50	20	N	200
81UP68S	30	30	700	N	15	70	7	<100	50	20	N	300
81UP69S	20	50	500	N	20	70	10	100	50	30	N	150
81UP70S	15	20	200	<5	20	50	7	<100	50	30	N	200
81UP71S	20	20	200	N	20	70	10	100	50	30	N	300
81UP72S	20	20	300	N	10	50	7	100	50	30	N	150
81UP73S	15	30	300	<5	30	50	10	150	70	20	N	150
81UP74S	20	30	500	N	30	50	10	150	70	20	N	100
81UP75S	15	30	500	N	N	50	10	100	70	20	N	1,000
81UP76S	10	50	700	N	20	50	10	150	100	20	N	150
81UP77S	20	50	500	N	15	70	10	150	100	30	N	200
81UP78S	15	50	700	N	20	50	10	150	100	20	N	150
81UP79S	20	50	700	N	10	70	10	200	100	20	N	200
81UP80S	10	70	700	N	<5	50	10	150	150	20	N	500
81UP81S	10	30	500	N	10	50	7	<100	50	20	N	500
81UP82S	7	20	200	N	<5	10	5	<100	50	15	N	700
81UP83S	10	30	300	N	15	20	7	<100	50	20	N	500
81UP84S	10	20	200	N	10	30	7	<100	50	20	N	200
81UP85S	10	20	150	N	15	30	5	<100	30	15	N	200
81UP86S	15	20	200	N	15	70	7	<100	50	20	N	300
81UP87S	10	<20	300	N	10	50	7	<100	50	20	N	200
81UP88S	15	20	700	N	10	50	10	150	150	20	N	150
81UP89S	20	30	300	N	15	50	7	<100	70	20	N	500
81UP90S	15	30	500	N	20	50	7	100	70	20	N	300

TITLE
WASATCH SEDS

FREQUENCY TABLE FOR COLUMN 3 (S-CA%)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E-02 -	5.6E-02	0	0	0.00	100.00
5.6E-02 -	8.3E-02	0	0	0.00	100.00
8.3E-02 -	1.2E-01	2	2	1.16	100.00
1.2E-01 -	1.8E-01	0	2	0.00	98.84
1.8E-01 -	2.6E-01	14	16	8.09	98.84
2.6E-01 -	3.8E-01	8	24	4.62	90.75
3.8E-01 -	5.6E-01	20	44	11.56	86.13
5.6E-01 -	8.3E-01	8	52	4.62	74.57
8.3E-01 -	1.2E+00	25	77	14.45	69.94
1.2E+00 -	1.8E+00	7	84	4.05	55.49
1.8E+00 -	2.6E+00	20	104	11.56	51.45
2.6E+00 -	3.8E+00	20	124	11.56	39.88
3.8E+00 -	5.6E+00	37	161	21.39	28.32
5.6E+00 -	8.3E+00	9	170	5.20	6.94
8.3E+00 -	1.2E+01	3	173	1.73	1.73

HISTOGRAM FOR COLUMN 3 (S-CA%)

```
1.0E-01 X
1.5E-01
2.0E-01 XXXXXXXX
3.0E-01 XXXXX
5.0E-01 XXXXXXXXXXXX
7.0E-01 XXXXX
1.0E+00 XXXXXXXXXXXXXX
1.5E+00 XXXX
2.0E+00 XXXXXXXXXXX
3.0E+00 XXXXXXXXXXX
5.0E+00 XXXXXXXXXXXXXXXXXXXXX
7.0E+00 XXXXX
1.0E+01 XX
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	173
0.00	0.00			0.00	0.00	

MAXIMUM = 1.00000E+01
MINIMUM = 1.00000E-01
GEOMETRIC MEAN = 1.49146E+00
GEOMETRIC DEVIATION = 3.11591E+00

TITLE
WASATCH SEDS

FREQUENCY TABLE FOR COLUMN 4 (S-FE%)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E-02 -	5.6E-02	0	0	0.00	100.00
5.6E-02 -	8.3E-02	0	0	0.00	100.00
8.3E-02 -	1.2E-01	0	0	0.00	100.00
1.2E-01 -	1.8E-01	0	0	0.00	100.00
1.8E-01 -	2.6E-01	2	2	1.16	100.00
2.6E-01 -	3.8E-01	1	3	0.58	98.84
3.8E-01 -	5.6E-01	17	20	9.83	98.27
5.6E-01 -	8.3E-01	37	57	21.39	88.44
8.3E-01 -	1.2E+00	68	125	39.31	67.05
1.2E+00 -	1.8E+00	28	153	16.18	27.75
1.8E+00 -	2.6E+00	12	165	6.94	11.56
2.6E+00 -	3.8E+00	6	171	3.47	4.62
3.8E+00 -	5.6E+00	1	172	0.58	1.16
5.6E+00 -	8.3E+00	1	173	0.58	0.58

HISTOGRAM FOR COLUMN 4 (S-FE%)

```
2.0E-01 X
3.0E-01 X
5.0E-01 XXXXXXXXXX
7.0E-01 XXXXXXXXXXXXXXXXXXXX
1.0E+00 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.5E+00 XXXXXXXXXXXXXXXX
2.0E+00 XXXXXXX
3.0E+00 XXX
5.0E+00 X
7.0E+00 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	173
0.00	0.00			0.00	0.00	

MAXIMUM = 7.00000E+00
MINIMUM = 2.00000E-01
GEOMETRIC MEAN = 1.00240E+00
GEOMETRIC DEVIATION = 1.65342E+00

TITLE
WASATCH SEDS

FREQUENCY TABLE FOR COLUMN 5 (S-MG%)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E-02 -	2.6E-02	0	0	0.00	100.00
2.6E-02 -	3.8E-02	0	0	0.00	100.00
3.8E-02 -	5.6E-02	0	0	0.00	100.00
5.6E-02 -	8.3E-02	0	0	0.00	100.00
8.3E-02 -	1.2E-01	2	2	1.16	100.00
1.2E-01 -	1.8E-01	11	13	6.36	98.84
1.8E-01 -	2.6E-01	28	41	16.18	92.49
2.6E-01 -	3.8E-01	25	66	14.45	76.30
3.8E-01 -	5.6E-01	35	101	20.23	61.85
5.6E-01 -	8.3E-01	13	114	7.51	41.62
8.3E-01 -	1.2E+00	24	138	13.87	34.10
1.2E+00 -	1.8E+00	19	157	10.98	20.23
1.8E+00 -	2.6E+00	4	161	2.31	9.25
2.6E+00 -	3.8E+00	7	168	4.05	6.94
3.8E+00 -	5.6E+00	5	173	2.89	2.89

HISTOGRAM FOR COLUMN 5 (S-MG%)

```
1.0E-01 X
1.5E-01 XXXXXX
2.0E-01 XXXXXXXXXXXXXXXX
3.0E-01 XXXXXXXXXXXXXX
5.0E-01 XXXXXXXXXXXXXXXXXXXX
7.0E-01 XXXXXXXX
1.0E+00 XXXXXXXXXXXXXX
1.5E+00 XXXXXXXXXXX
2.0E+00 XX
3.0E+00 XXXX
5.0E+00 XXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	173
0.00	0.00			0.00	0.00	

MAXIMUM = 5.00000E+00
MINIMUM = 1.00000E-01
GEOMETRIC MEAN = 5.50336E-01
GEOMETRIC DEVIATION = 2.48224E+00

TITLE
WASATCH SEDS

FREQUENCY TABLE FOR COLUMN 6 (S-TI%)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E-03 -	2.6E-03	0	0	0.00	100.00
2.6E-03 -	3.8E-03	0	0	0.00	100.00
3.8E-03 -	5.6E-03	0	0	0.00	100.00
5.6E-03 -	8.3E-03	0	0	0.00	100.00
8.3E-03 -	1.2E-02	0	0	0.00	100.00
1.2E-02 -	1.8E-02	0	0	0.00	100.00
1.8E-02 -	2.6E-02	0	0	0.00	100.00
2.6E-02 -	3.8E-02	0	0	0.00	100.00
3.8E-02 -	5.6E-02	4	4	2.31	100.00
5.6E-02 -	8.3E-02	4	8	2.31	97.69
8.3E-02 -	1.2E-01	19	27	10.98	95.38
1.2E-01 -	1.8E-01	30	57	17.34	84.39
1.8E-01 -	2.6E-01	79	136	45.66	67.05
2.6E-01 -	3.8E-01	28	164	16.18	21.39
3.8E-01 -	5.6E-01	7	171	4.05	5.20
5.6E-01 -	8.3E-01	2	173	1.16	1.16

HISTOGRAM FOR COLUMN 6 (S-TI%)

```
5.0E-02 XX
7.0E-02 XX
1.0E-01 XXXXXXXXXXX
1.5E-01 XXXXXXXXXXXXXXXXX
2.0E-01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
3.0E-01 XXXXXXXXXXXXXXXX
5.0E-01 XXXX
7.0E-01 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	173
0.00	0.00			0.00	0.00	

MAXIMUM = 7.00000E-01
MINIMUM = 5.00000E-02
GEOMETRIC MEAN = 1.87384E-01
GEOMETRIC DEVIATION = 1.58604E+00

TITLE
WASATCH SEDS

FREQUENCY TABLE FOR COLUMN 7 (S-AG)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E-01 -	5.6E-01	71	71	41.04	62.43
5.6E-01 -	8.3E-01	24	95	13.87	21.39
8.3E-01 -	1.2E+00	5	100	2.89	7.51
1.2E+00 -	1.8E+00	5	105	2.89	4.62
1.8E+00 -	2.6E+00	2	107	1.16	1.73
2.6E+00 -	3.8E+00	1	108	0.58	0.58

HISTOGRAM FOR COLUMN 7 (S-AG)

```
5.0E-01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
7.0E-01 XXXXXXXXXXXXXX
1.0E+00 XXX
1.5E+00 XXX
2.0E+00 X
3.0E+00 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
16	49	0	0	0	0	108
9.25	28.32			0.00	0.00	

MAXIMUM = 3.00000E+00
MINIMUM = 5.00000E-01
GEOMETRIC MEAN = 6.10693E-01
GEOMETRIC DEVIATION = 1.43373E+00

TITLE
WASATCH SEDS

FREQUENCY TABLE FOR COLUMN 8 (S-B)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E+02 -	2.6E+02	1	1	0.58	100.00

HISTOGRAM FOR COLUMN 8 (S-B)

```
2.0E+02 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	173
0.00	0.00			0.00	0.00	

MAXIMUM = 2.00000E+02
MINIMUM = 1.00000E+01
GEOMETRIC MEAN = 5.95532E+01
GEOMETRIC DEVIATION = 1.43928E+00

TITLE
WASATCH SEDS

FREQUENCY TABLE FOR COLUMN 9 (S-BA)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E+00 -	1.2E+01	0	0	0.00	100.00
1.2E+01 -	1.8E+01	0	0	0.00	100.00
1.8E+01 -	2.6E+01	0	0	0.00	100.00
2.6E+01 -	3.8E+01	0	0	0.00	100.00
3.8E+01 -	5.6E+01	0	0	0.00	100.00
5.6E+01 -	8.3E+01	0	0	0.00	100.00
8.3E+01 -	1.2E+02	3	3	1.73	100.00
1.2E+02 -	1.8E+02	8	11	4.62	98.27
1.8E+02 -	2.6E+02	43	54	24.86	93.64
2.6E+02 -	3.8E+02	72	126	41.62	68.79
3.8E+02 -	5.6E+02	40	166	23.12	27.17
5.6E+02 -	8.3E+02	5	171	2.89	4.05
8.3E+02 -	1.2E+03	1	172	0.58	1.16
1.2E+03 -	1.8E+03	0	172	0.00	0.58
1.8E+03 -	2.6E+03	1	173	0.58	0.58

HISTOGRAM FOR COLUMN 9 (S-BA)

```
1.0E+02 XX
1.5E+02 XXXXX
2.0E+02 XXXXXXXXXXXXXXXXXXXXXXXX
3.0E+02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
5.0E+02 XXXXXXXXXXXXXXXXXXXXXX
7.0E+02 XXX
1.0E+03 X
1.5E+03
2.0E+03 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	173
0.00	0.00			0.00	0.00	

MAXIMUM = 2.00000E+03
MINIMUM = 1.00000E+02
GEOMETRIC MEAN = 3.02603E+02
GEOMETRIC DEVIATION = 1.55577E+00

TITLE
WASATCH SEDS

FREQUENCY TABLE FOR COLUMN 10 (S-BE)

LIMITS LOWER - UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E+01 - 2.6E+01	0	0	0.00	58.38

HISTOGRAM FOR COLUMN 10 (S-BE)

N	L	H	B	T	G	ANALYTICAL VALUES
0	72	0	0	0	0	101
0.00	41.62			0.00	0.00	

MAXIMUM = 3.00000E+00
MINIMUM = 1.00000E+00
GEOMETRIC MEAN = 1.02730E+00
GEOMETRIC DEVIATION = 1.14321E+00

TITLE
WASATCH SEDS

FREQUENCY TABLE FOR COLUMN 12 (S-CO)

LIMITS LOWER - UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E+01 - 2.6E+01	4	4	2.31	84.39

HISTOGRAM FOR COLUMN 12 (S-CO)

2.0E+01 XX

N	L	H	B	T	G	ANALYTICAL VALUES
7	20	0	0	0	0	146
4.05	11.56			0.00	0.00	

MAXIMUM = 2.00000E+01
MINIMUM = 5.00000E+00
GEOMETRIC MEAN = 7.44268E+00
GEOMETRIC DEVIATION = 1.49143E+00

TITLE
WASATCH SEDS

FREQUENCY TABLE FOR COLUMN 13 (S-CR)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E+00 -	5.6E+00	0	0	0.00	100.00
5.6E+00 -	8.3E+00	0	0	0.00	100.00
8.3E+00 -	1.2E+01	2	2	1.16	100.00
1.2E+01 -	1.8E+01	2	4	1.16	98.84
1.8E+01 -	2.6E+01	14	18	8.09	97.69
2.6E+01 -	3.8E+01	26	44	15.03	89.60
3.8E+01 -	5.6E+01	53	97	30.64	74.57
5.6E+01 -	8.3E+01	46	143	26.59	43.93
8.3E+01 -	1.2E+02	25	168	14.45	17.34
1.2E+02 -	1.8E+02	5	173	2.89	2.89

HISTOGRAM FOR COLUMN 13 (S-CR)

```
1.0E+01 X
1.5E+01 X
2.0E+01 XXXXXXXX
3.0E+01 XXXXXXXXXXXXXXX
5.0E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
7.0E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.0E+02 XXXXXXXXXXXXXX
1.5E+02 XXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	173
0.00	0.00			0.00	0.00	

MAXIMUM = 1.50000E+02
MINIMUM = 1.00000E+01
GEOMETRIC MEAN = 5.19333E+01
GEOMETRIC DEVIATION = 1.71108E+00

TITLE
WASATCH SEDS

FREQUENCY TABLE FOR COLUMN 14 (S-CU)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E+00 -	1.2E+01	49	49	28.32	99.42
1.2E+01 -	1.8E+01	51	100	29.48	71.10
1.8E+01 -	2.6E+01	47	147	27.17	41.62
2.6E+01 -	3.8E+01	12	159	6.94	14.45
3.8E+01 -	5.6E+01	2	161	1.16	7.51
5.6E+01 -	8.3E+01	0	161	0.00	6.36
8.3E+01 -	1.2E+02	0	161	0.00	6.36
1.2E+02 -	1.8E+02	1	162	0.58	6.36

HISTOGRAM FOR COLUMN 14 (S-CU)

```
1.0E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.5E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
2.0E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
3.0E+01 XXXXXXX
5.0E+01 X
7.0E+01
1.0E+02
1.5E+02 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	1	0	0	0	0	172
0.00	0.58			0.00	0.00	

MAXIMUM = 1.50000E+02
MINIMUM = 5.00000E+00
GEOMETRIC MEAN = 1.48310E+01
GEOMETRIC DEVIATION = 1.55756E+00

A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80) DATE 12/13/82

TITLE
WASATCH SEDS

FREQUENCY TABLE FOR COLUMN 15 (S-LA)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E+00 -	5.6E+00	0	0	0.00	74.57
5.6E+00 -	8.3E+00	0	0	0.00	74.57
8.3E+00 -	1.2E+01	0	0	0.00	74.57
1.2E+01 -	1.8E+01	0	0	0.00	74.57
1.8E+01 -	2.6E+01	52	52	30.06	74.57
2.6E+01 -	3.8E+01	37	89	21.39	44.51
3.8E+01 -	5.6E+01	35	124	20.23	23.12
5.6E+01 -	8.3E+01	3	127	1.73	2.89
8.3E+01 -	1.2E+02	2	129	1.16	1.16

HISTOGRAM FOR COLUMN 15 (S-LA)

```
2.0E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
3.0E+01 XXXXXXXXXXXXXXXXXXXX
5.0E+01 XXXXXXXXXXXXXXXXXXX
7.0E+01 XX
1.0E+02 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
16	28	0	0	0	0	129
9.25	16.18			0.00	0.00	

MAXIMUM = 1.00000E+02
MINIMUM = 2.00000E+01
GEOMETRIC MEAN = 3.04085E+01
GEOMETRIC DEVIATION = 1.52383E+00

A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80) DATE 12/13/82

TITLE
WASATCH SEDS

FREQUENCY TABLE FOR COLUMN 16 (S-MN)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E+01 -	2.6E+01	0	0	0.00	100.00
2.6E+01 -	3.8E+01	0	0	0.00	100.00
3.8E+01 -	5.6E+01	0	0	0.00	100.00
5.6E+01 -	8.3E+01	0	0	0.00	100.00
8.3E+01 -	1.2E+02	2	2	1.16	100.00
1.2E+02 -	1.8E+02	8	10	4.62	98.84
1.8E+02 -	2.6E+02	37	47	21.39	94.22
2.6E+02 -	3.8E+02	45	92	26.01	72.83
3.8E+02 -	5.6E+02	59	151	34.10	46.82
5.6E+02 -	8.3E+02	17	168	9.83	12.72
8.3E+02 -	1.2E+03	4	172	2.31	2.89
1.2E+03 -	1.8E+03	0	172	0.00	0.58
1.8E+03 -	2.6E+03	0	172	0.00	0.58
2.6E+03 -	3.8E+03	1	173	0.58	0.58

HISTOGRAM FOR COLUMN 16 (S-MN)

```
1.0E+02 X
1.5E+02 XXXXX
2.0E+02 XXXXXXXXXXXXXXXXXXXX
3.0E+02 XXXXXXXXXXXXXXXXXXXXXXXXXX
5.0E+02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
7.0E+02 XXXXXXXXXX
1.0E+03 XX
1.5E+03
2.0E+03
3.0E+03 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	173
0.00	0.00			0.00	0.00	

MAXIMUM = 3.00000E+03
MINIMUM = 1.00000E+02
GEOMETRIC MEAN = 3.54579E+02
GEOMETRIC DEVIATION = 1.67920E+00

TITLE
WASATCH SEDS

FREQUENCY TABLE FOR COLUMN 18 (S-NI)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E+00 -	5.6E+00	4	4	2.31	95.95
5.6E+00 -	8.3E+00	4	8	2.31	93.64
8.3E+00 -	1.2E+01	27	35	15.61	91.33
1.2E+01 -	1.8E+01	36	71	20.81	75.72
1.8E+01 -	2.6E+01	62	133	35.84	54.91
2.6E+01 -	3.8E+01	25	158	14.45	19.08
3.8E+01 -	5.6E+01	6	164	3.47	4.62
5.6E+01 -	8.3E+01	1	165	0.58	1.16
8.3E+01 -	1.2E+02	1	166	0.58	0.58

HISTOGRAM FOR COLUMN 18 (S-NI)

```
5.0E+00 XX
7.0E+00 XX
1.0E+01 XXXXXXXXXXXXXXXX
1.5E+01 XXXXXXXXXXXXXXXXXXXXX
2.0E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
3.0E+01 XXXXXXXXXXXXXX
5.0E+01 XXX
7.0E+01 X
1.0E+02 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
3	4	0	0	0	0	166
1.73	2.31			0.00	0.00	

MAXIMUM = 1.00000E+02
MINIMUM = 5.00000E+00
GEOMETRIC MEAN = 1.76958E+01
GEOMETRIC DEVIATION = 1.62473E+00
A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80) DATE 12/13/82

TITLE
WASATCH SEDS

FREQUENCY TABLE FOR COLUMN 19 (S-PB)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E+01 -	2.6E+01	19	19	10.98	99.42
2.6E+01 -	3.8E+01	21	40	12.14	88.44
3.8E+01 -	5.6E+01	60	100	34.68	76.30
5.6E+01 -	8.3E+01	35	135	20.23	41.62
8.3E+01 -	1.2E+02	13	148	7.51	21.39
1.2E+02 -	1.8E+02	7	155	4.05	13.87
1.8E+02 -	2.6E+02	3	158	1.73	9.83
2.6E+02 -	3.8E+02	0	158	0.00	8.09
3.8E+02 -	5.6E+02	4	162	2.31	8.09
5.6E+02 -	8.3E+02	1	163	0.58	5.78
8.3E+02 -	1.2E+03	1	164	0.58	5.20
1.2E+03 -	1.8E+03	0	164	0.00	4.62
1.8E+03 -	2.6E+03	0	164	0.00	4.62
2.6E+03 -	3.8E+03	1	165	0.58	4.62

HISTOGRAM FOR COLUMN 19 (S-PB)

```
      2.0E+01 XXXXXXXXXXX
      3.0E+01 XXXXXXXXXXXX
      5.0E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
      7.0E+01 XXXXXXXXXXXXXXXXXXXX
      1.0E+02 XXXXXXXX
      1.5E+02 XXXX
      2.0E+02 XX
      3.0E+02
      5.0E+02 XX
      7.0E+02 X
      1.0E+03 X
      1.5E+03
      2.0E+03
      3.0E+03 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	1	0	0	0	0	172
0.00	0.58			0.00	0.00	

MAXIMUM = 3.00000E+03
MINIMUM = 1.00000E+01
GEOMETRIC MEAN = 5.39206E+01
GEOMETRIC DEVIATION = 2.26770E+00

TITLE
WASATCH SEDS

FREQUENCY TABLE FOR COLUMN 20 (S-SC)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E+00 -	5.6E+00	70	70	40.46	97.69
5.6E+00 -	8.3E+00	61	131	35.26	57.23
8.3E+00 -	1.2E+01	35	166	20.23	21.97
1.2E+01 -	1.8E+01	3	169	1.73	1.73

HISTOGRAM FOR COLUMN 20 (S-SC)

```
5.0E+00 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
7.0E+00 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.0E+01 XXXXXXXXXXXXXXXXXXX
1.5E+01 XX
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	4	0	0	0	0	169
0.00	2.31			0.00	0.00	

MAXIMUM = 1.50000E+01
MINIMUM = 5.00000E+00
GEOMETRIC MEAN = 6.64550E+00
GEOMETRIC DEVIATION = 1.33001E+00

A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80) DATE 12/13/82

TITLE
WASATCH SEDS

FREQUENCY TABLE FOR COLUMN 21 (S-SR)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E+00 -	1.2E+01	0	0	0.00	64.16
1.2E+01 -	1.8E+01	0	0	0.00	64.16
1.8E+01 -	2.6E+01	0	0	0.00	64.16
2.6E+01 -	3.8E+01	0	0	0.00	64.16
3.8E+01 -	5.6E+01	0	0	0.00	64.16
5.6E+01 -	8.3E+01	0	0	0.00	64.16
8.3E+01 -	1.2E+02	72	72	41.62	64.16
1.2E+02 -	1.8E+02	27	99	15.61	22.54
1.8E+02 -	2.6E+02	11	110	6.36	6.94
2.6E+02 -	3.8E+02	1	111	0.58	0.58

HISTOGRAM FOR COLUMN 21 (S-SR)

```
1.0E+02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.5E+02 XXXXXXXXXXXXXXXX
2.0E+02 XXXXXX
3.0E+02 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
4	58	0	0	0	0	111
2.31	33.53			0.00	0.00	

MAXIMUM = 3.00000E+02
MINIMUM = 1.00000E+02
GEOMETRIC MEAN = 1.19389E+02
GEOMETRIC DEVIATION = 1.29713E+00

A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80) DATE 12/13/82

TITLE
WASATCH SEDS

FREQUENCY TABLE FOR COLUMN 22 (S-V)

LIMITS LOWER - UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E+01 - 1.2E+02	12	12	6.94	100.00
1.2E+02 - 1.8E+02	3	15	1.73	93.06

HISTOGRAM FOR COLUMN 22 (S-V)

```
1.0E+02 XXXXXXX
1.5E+02 XX
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	173
0.00	0.00			0.00	0.00	

MAXIMUM = 1.50000E+02
MINIMUM = 2.00000E+01
GEOMETRIC MEAN = 5.24021E+01
GEOMETRIC DEVIATION = 1.44895E+00
A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80) DATE 12/13/82

TITLE
WASATCH SEDS

FREQUENCY TABLE FOR COLUMN 23 (S-Y)

LIMITS LOWER - UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E+00 - 5.6E+00	0	0	0.00	98.84
5.6E+00 - 8.3E+00	0	0	0.00	98.84
8.3E+00 - 1.2E+01	8	8	4.62	98.84
1.2E+01 - 1.8E+01	25	33	14.45	94.22
1.8E+01 - 2.6E+01	98	131	56.65	79.77
2.6E+01 - 3.8E+01	38	169	21.97	23.12
3.8E+01 - 5.6E+01	2	171	1.16	1.16

HISTOGRAM FOR COLUMN 23 (S-Y)

```
1.0E+01 XXXXX
1.5E+01 XXXXXXXXXXXXXX
2.0E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
3.0E+01 XXXXXXXXXXXXXXXXXXXXXX
5.0E+01 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	2	0	0	0	0	171
0.00	1.16			0.00	0.00	

MAXIMUM = 5.00000E+01
MINIMUM = 1.00000E+01
GEOMETRIC MEAN = 2.05337E+01
GEOMETRIC DEVIATION = 1.32856E+00
A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80) DATE 12/13/82

TITLE
WASATCH SEDS

FREQUENCY TABLE FOR COLUMN 24 (S-ZN)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E+01 -	1.2E+02	0	0	0.00	5.20
1.2E+02 -	1.8E+02	0	0	0.00	5.20
1.8E+02 -	2.6E+02	4	4	2.31	5.20
2.6E+02 -	3.8E+02	3	7	1.73	2.89
3.8E+02 -	5.6E+02	0	7	0.00	1.16
5.6E+02 -	8.3E+02	0	7	0.00	1.16
8.3E+02 -	1.2E+03	1	8	0.58	1.16
1.2E+03 -	1.8E+03	0	8	0.00	0.58
1.8E+03 -	2.6E+03	1	9	0.58	0.58

HISTOGRAM FOR COLUMN 24 (S-ZN)

```
      2.0E+02 XX
      3.0E+02 XX
      5.0E+02
      7.0E+02
      1.0E+03 X
      1.5E+03
      2.0E+03 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
158	6	0	0	0	0	9
91.33	3.47			0.00	0.00	

MAXIMUM = 2.00000E+03
MINIMUM = 2.00000E+02
GEOMETRIC MEAN = 3.53591E+02
GEOMETRIC DEVIATION = 2.28501E+00

TITLE
WASATCH SEDS

FREQUENCY TABLE FOR COLUMN 25 (S-ZR)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E+00 -	1.2E+01	0	0	0.00	100.00
1.2E+01 -	1.8E+01	0	0	0.00	100.00
1.8E+01 -	2.6E+01	2	2	1.16	100.00
2.6E+01 -	3.8E+01	2	4	1.16	98.84
3.8E+01 -	5.6E+01	13	17	7.51	97.69
5.6E+01 -	8.3E+01	18	35	10.40	90.17
8.3E+01 -	1.2E+02	33	68	19.08	79.77
1.2E+02 -	1.8E+02	20	88	11.56	60.69
1.8E+02 -	2.6E+02	39	127	22.54	49.13
2.6E+02 -	3.8E+02	23	150	13.29	26.59
3.8E+02 -	5.6E+02	17	167	9.83	13.29
5.6E+02 -	8.3E+02	3	170	1.73	3.47
8.3E+02 -	1.2E+03	3	173	1.73	1.73

HISTOGRAM FOR COLUMN 25 (S-ZR)

```
2.0E+01 X
3.0E+01 X
5.0E+01 XXXXXXXX
7.0E+01 XXXXXXXXXX
1.0E+02 XXXXXXXXXXXXXXXXXX
1.5E+02 XXXXXXXXXXX
2.0E+02 XXXXXXXXXXXXXXXXXXXXXX
3.0E+02 XXXXXXXXXXXX
5.0E+02 XXXXXXXXXX
7.0E+02 XX
1.0E+03 XX
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	173
0.00	0.00			0.00	0.00	

MAXIMUM = 1.00000E+03
MINIMUM = 2.00000E+01
GEOMETRIC MEAN = 1.58296E+02
GEOMETRIC DEVIATION = 2.15347E+00

TITLE
WASATCH SEDS

IN THE COMPUTATIONS PERFORMED TO PRODUCE THE FOLLOWING TABLE OF GEOMETRIC MEANS AND DEVIATIONS, ALL ELEMENT ARE IGNORED WHERE ONE OR MORE OF THE UNQUALIFIED DATA VALUES IS LESS THAN THE ANALYTICAL LIMIT OF DETECTION SPECIFIED ON INPUT OR WHERE ANY DATA VALUES ARE QUALIFIED WITH THE G (GREATER THAN) CODE. DATA VALUES QUALIFIED WITH B OR H ARE NOT USED IN THE COMPUTATIONS. WHEF NONE OF THE DATA VALUES FOR AN ELEMENT ARE QUALIFIED THE MEAN AND DEVIATION SHOULD BE THE SAME AS THOSE GIVEN IN THE PRECEDING SECTION. WHERE DATA ARE QUALIFIED WITH THE CODES N, L, OR T, THE ESTIMATES OF GEOMETRIC MEAN AND DEVIATION ARE BASED ON A METH BY A. J. COHEN FOR TREATING CENSORED DISTRIBUTIONS. THE APPLICATION OF THIS METHOD TO GEOCHEMICAL PROBLEMS IS DESCRIBED IN USGS PROFESSIONAL PAPER 574-B. THE ESTIMATES ARE UNBIASED IN A STRICT SENSE ONLY WHERE THE DATA ARE DERIVED FROM A LOGNORMAL PARENT POPULATION, BUT EXPERIMENTS HAVE SHOWN THAT LARGE DEPARTURES FROM THIS REQUIREMENT MAY NOT GREATLY INVALIDATE THE RESULT ACCEPTANCE AND USE OF THE ESTIMATES, HOWEVER, IS THE RESPONSIBILITY OF THE INDIVIDUAL.

ELEMENT	N	L	H	B	T	G	ANALYTICAL VALUES
X-COORD.	0	0	0	0	0	0	173
Y-COORD.	0	0	0	0	0	0	173
S-CA%	0	0	0	0	0	0	173
S-FE%	0	0	0	0	0	0	173
S-MG%	0	0	0	0	0	0	173
S-TI%	0	0	0	0	0	0	173
S-AG	16	49	0	0	0	0	108
S-B	0	0	0	0	0	0	173
S-BA	0	0	0	0	0	0	173
S-BE	0	72	0	0	0	0	101
S-CO	7	20	0	0	0	0	146
S-CR	0	0	0	0	0	0	173
S-CU	0	1	0	0	0	0	172
S-LA	16	28	0	0	0	0	129
S-MN	0	0	0	0	0	0	173
S-NI	3	4	0	0	0	0	166
S-PB	0	1	0	0	0	0	172
S-SC	0	4	0	0	0	0	169
S-SR	4	58	0	0	0	0	111
S-V	0	0	0	0	0	0	173
S-Y	0	2	0	0	0	0	171
S-ZN	158	6	0	0	0	0	9
S-ZR	0	0	0	0	0	0	173

A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80) DATE 12/13/82

TITLE

ELEMENT	GEOMETRIC MEAN	GEOMETRIC DEVIATION	REMARKS
X-COORD.	438830.304688	1.01	173 SAMPLES AND 173 ANALYTICAL VALUES.
Y-COORD.	412835.140625	1.02	173 SAMPLES AND 173 ANALYTICAL VALUES.
S-CA%	1.491464	3.12	173 SAMPLES AND 173 ANALYTICAL VALUES.
S-FE%	1.002399	1.65	173 SAMPLES AND 173 ANALYTICAL VALUES.
S-MG%	0.550336	2.48	173 SAMPLES AND 173 ANALYTICAL VALUES.
S-TI%	0.187384	1.59	173 SAMPLES AND 173 ANALYTICAL VALUES.
S-AG	0.446324	1.69	65 NOT DETECTED, LESS THAN, OR TRACE VALUES. 108 REPORTED VALUES.
S-B	********	******	172 VALUES LESS THAN SPECIFIED LIMIT OF DETECTION. NO COMPUTATIONS.
S-BA	302.602791	1.56	173 SAMPLES AND 173 ANALYTICAL VALUES.
S-BE	********	******	101 VALUES LESS THAN SPECIFIED LIMIT OF DETECTION. NO COMPUTATIONS.
S-CO	********	******	142 VALUES LESS THAN SPECIFIED LIMIT OF DETECTION. NO COMPUTATIONS.
S-CR	51.933311	1.71	173 SAMPLES AND 173 ANALYTICAL VALUES.
S-CU	********	******	10 VALUES LESS THAN SPECIFIED LIMIT OF DETECTION. NO COMPUTATIONS.
S-LA	15.241108	3.55	44 NOT DETECTED, LESS THAN, OR TRACE VALUES. 129 REPORTED VALUES.
S-MN	354.578640	1.68	173 SAMPLES AND 173 ANALYTICAL VALUES.
S-NI	16.508598	1.79	7 NOT DETECTED, LESS THAN, OR TRACE VALUES. 166 REPORTED VALUES.
S-PB	********	******	7 VALUES LESS THAN SPECIFIED LIMIT OF DETECTION. NO COMPUTATIONS.
S-SC	6.543290	1.35	4 NOT DETECTED, LESS THAN, OR TRACE VALUES. 169 REPORTED VALUES.
S-SR	30.323386	6.90	62 NOT DETECTED, LESS THAN, OR TRACE VALUES. 111 REPORTED VALUES.
S-V	********	******	158 VALUES LESS THAN SPECIFIED LIMIT OF DETECTION. NO COMPUTATIONS.
S-Y	20.131199	1.40	2 NOT DETECTED, LESS THAN, OR TRACE VALUES. 171 REPORTED VALUES.
S-ZN	0.447039	25.12	164 NOT DETECTED, LESS THAN, OR TRACE VALUES. 9 REPORTED VALUES.
S-ZR	158.295820	2.15	173 SAMPLES AND 173 ANALYTICAL VALUES.

Table 5.--Stream-sediment-concentrate geochemical analyses and frequency-distribution data for analyzed elements for samples from Birdseye, Nephi, and Santaquin Roadless Areas

[First two digits of sample number indicate year of collection; letters indicate collector; UH, S. M. Haley; UP, H. Pietropaoli; last two digits indicate sample site. Qualifying codes in analytical data are defined as follows: N, not detected at the limit of analytical detection; <, detected, but below the lower limit of analytical determination; >, detected but above the upper limit of analytical determination]

Sample	X coordinate	Y coordinate	Ca-pct. s	Fe-pct. s	Mg-pct. s	Ti-pct. s	Ag-ppm s	As-ppm s	B-ppm s	Ba-ppm s
81UH01C	442,320	4,422,360	2.0	.5	.50	>2.00	20	N	50	>10,000
81UH02C	442,555	4,422,330	3.0	.5	.30	>2.00	N	N	50	>10,000
81UH03C	444,300	4,422,080	5.0	.5	.15	>2.00	N	N	70	5,000
81UH04C	444,340	4,421,765	1.0	.5	.20	>2.00	N	N	50	>10,000
81UH05C	441,160	4,425,500	5.0	.7	.50	>2.00	N	N	70	>10,000
81UH07C	445,280	4,425,200	.7	1.5	.10	>2.00	N	N	100	>10,000
81UH08C	445,080	4,425,410	.5	1.0	.07	>2.00	N	N	70	10,000
81UH09C	431,345	4,415,500	10.0	1.0	.15	2.00	N	N	100	5,000
81UH11C	433,275	4,414,640	10.0	1.0	1.50	.50	200	<500	70	7,000
81UH12C	433,420	4,415,300	15.0	.7	1.00	.70	70	N	100	5,000
81UH13C	439,440	4,411,840	2.0	1.0	.15	>2.00	N	N	200	7,000
81UH14C	440,280	4,413,610	1.0	1.0	.10	>2.00	N	N	70	700
81UH15C	439,575	4,413,790	3.0	.7	.15	>2.00	N	N	100	700
81UH16C	439,230	4,413,860	5.0	1.0	.10	>2.00	N	N	100	5,000
81UH17C	438,880	4,415,210	5.0	1.0	.10	>2.00	N	N	150	2,000
81UH18C	438,060	4,416,250	15.0	1.5	.30	2.00	N	N	150	700
81UH19C	431,245	4,411,885	10.0	.7	.70	>2.00	20	N	100	5,000
81UH20C	430,995	4,408,930	10.0	1.0	1.00	1.50	200	N	70	5,000
81UH21C	431,280	4,410,670	20.0	.5	1.50	.50	10	N	70	700
81UH27C	432,380	4,405,200	10.0	1.5	1.00	.50	N	N	100	7,000
81UH28C	432,125	4,405,430	7.0	1.0	.50	1.00	N	N	100	5,000
81UH31C	429,370	4,401,350	10.0	3.0	.70	1.00	N	N	100	10,000
81UH32C	429,840	4,402,030	1.0	2.0	.50	>2.00	2	N	500	>10,000
81UH33C	437,590	4,414,410	10.0	3.0	.50	.50	N	N	100	1,500
81UH34C	439,160	4,417,460	1.0	1.5	.10	>2.00	N	N	100	700
81UH35C	437,610	4,417,150	7.0	1.0	.20	>2.00	N	N	100	5,000
81UH37C	435,300	4,419,750	7.0	2.0	.30	>2.00	N	N	100	10,000
81UH38C	436,955	4,416,175	10.0	2.0	.30	2.00	N	N	100	5,000
81UH39C	436,940	4,416,200	10.0	3.0	.20	2.00	N	N	150	5,000
81UH40C	434,280	4,417,760	20.0	.5	.50	.20	5	N	50	1,000
81UH41C	433,265	4,419,070	20.0	.7	.15	>2.00	N	N	70	>10,000
81UH42C	433,215	4,420,100	20.0	1.0	.50	1.50	N	N	50	1,500
81UH44C	445,220	4,422,510	5.0	2.0	.20	>2.00	N	N	300	3,000
81UH45C	446,145	4,422,055	1.5	2.0	.15	>2.00	N	N	300	1,500
81UH47C	447,635	4,421,500	.5	1.5	.10	>2.00	N	N	150	2,000
81UH48C	448,060	4,421,110	5.0	1.0	.10	>2.00	N	N	150	10,000
81UH49C	448,150	4,421,140	1.0	1.0	.10	2.00	N	N	100	1,500
81UH50C	448,630	4,420,270	5.0	.7	.20	>2.00	N	N	150	5,000
81UH51C	441,090	4,404,595	1.5	1.0	.05	>2.00	N	N	150	1,500
81UH52C	441,200	4,404,600	.7	1.5	.05	>2.00	N	N	150	500
81UH53C	440,800	4,403,595	2.0	2.0	.05	>2.00	N	N	100	3,000
81UH54C	440,240	4,403,060	3.0	2.0	.07	>2.00	N	N	200	1,000
81UH55C	439,640	4,402,060	3.0	5.0	.50	>2.00	N	N	150	>10,000
81UH56C	439,060	4,401,590	2.0	.5	.05	>2.00	N	N	30	>10,000
81UH57C	436,920	4,401,750	.2	1.5	.05	>2.00	N	N	500	1,500

Sample	Be-ppm s	Cd-ppm s	Co-ppm s	Cr-ppm s	Cu-ppm s	La-ppm s	Mn-ppm s	Mo-ppm s	Nb-ppm s	Ni-ppm s
81UH01C	N	N	N	70	20	100	100	N	<50	N
81UH02C	N	N	N	70	15	200	100	N	50	N
81UH03C	N	N	N	200	<10	200	150	N	<50	N
81UH04C	3	N	N	70	<10	100	100	N	<50	N
81UH05C	N	N	<10	150	10	200	150	N	50	N
81UH07C	<2	N	N	100	N	100	100	N	<50	N
81UH08C	<2	N	N	100	150	70	150	N	N	N
81UH09C	10	N	10	150	300	300	200	N	<50	50
81UH11C	<2	50	10	100	50	300	300	50	N	30
81UH12C	N	70	<10	300	150	500	200	300	N	100
81UH13C	<2	N	N	200	<10	100	150	N	<50	N
81UH14C	N	N	N	70	<10	<50	150	N	<50	N
81UH15C	<2	N	N	100	N	150	100	N	<50	N
81UH16C	2	N	<10	150	10	300	150	N	<50	N
81UH17C	<2	N	<10	200	20	300	150	N	50	N
81UH18C	<2	N	10	300	15	300	200	<10	<50	100
81UH19C	<2	100	N	150	15	200	150	50	50	30
81UH20C	N	150	<10	100	100	200	500	200	<50	50
81UH21C	N	<50	N	150	15	500	300	30	N	50
81UH27C	<2	N	<10	100	10	50	200	<10	N	30
81UH28C	<2	<50	<10	70	10	50	200	N	<50	20
81UH31C	N	N	N	300	30	70	300	10	<50	100
81UH32C	<2	N	<10	200	20	100	200	N	N	50
81UH33C	2	N	10	100	30	200	200	15	<50	100
81UH34C	2	N	N	200	<10	150	100	N	50	N
81UH35C	2	N	<10	150	20	200	150	N	50	N
81UH37C	2	50	10	200	20	150	500	20	50	30
81UH38C	<2	70	15	200	30	200	200	<10	<50	100
81UH39C	<2	N	20	150	20	150	200	N	50	100
81UH40C	N	N	N	200	20	700	500	N	N	70
81UH41C	<2	N	<10	150	10	500	150	N	50	20
81UH42C	N	N	N	150	20	500	500	10	<50	50
81UH44C	<2	N	<10	200	10	150	500	<10	<50	70
81UH45C	<2	N	N	100	10	150	200	N	N	50
81UH47C	N	N	N	100	N	70	200	N	<50	N
81UH48C	<2	N	N	200	N	300	100	N	<50	N
81UH49C	N	N	N	70	N	70	200	N	N	20
81UH50C	2	N	N	100	N	300	150	N	<50	N
81UH51C	<2	N	N	200	<10	200	200	N	<50	N
81UH52C	<2	N	N	200	N	200	150	N	<50	N
81UH53C	<2	N	<10	300	10	300	200	N	50	N
81UH54C	<2	N	<10	200	700	300	500	N	<50	N
81UH55C	<2	N	20	200	10	300	1,500	N	<50	20
81UH56C	<2	N	N	70	<10	70	100	N	<50	N
81UH57C	<2	N	<10	300	N	200	300	N	N	N

Sample	Pb-ppm s	Sc-ppm s	Sn-ppm s	Sr-ppm s	V-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s
81UH01C	200	50	N	1,000	100	500	N	>2,000
81UH02C	150	20	N	1,000	100	500	N	>2,000
81UH03C	100	70	N	700	100	500	N	>2,000
81UH04C	100	20	N	1,500	70	200	N	>2,000
81UH05C	150	50	N	1,000	150	500	N	>2,000
81UH07C	100	100	N	500	100	1,000	N	>2,000
81UH08C	100	100	N	N	100	1,000	N	>2,000
81UH09C	100	30	20	1,000	100	500	N	>2,000
81UH11C	>50,000	N	N	700	200	300	>20,000	>2,000
81UH12C	>50,000	10	N	500	300	700	10,000	>2,000
81UH13C	500	100	<20	500	150	1,000	<500	>2,000
81UH14C	70	30	N	N	100	200	N	>2,000
81UH15C	200	50	N	200	100	500	N	>2,000
81UH16C	1,500	150	<20	500	100	1,000	<500	>2,000
81UH17C	1,000	70	50	500	100	500	N	>2,000
81UH18C	150	30	N	500	100	500	N	>2,000
81UH19C	30,000	50	N	700	100	700	10,000	>2,000
81UH20C	>50,000	10	20	500	100	300	20,000	>2,000
81UH21C	5,000	N	N	1,000	300	1,000	700	>2,000
81UH27C	200	10	N	300	70	100	N	>2,000
81UH28C	200	15	N	200	50	100	500	>2,000
81UH31C	500	10	N	1,000	70	200	N	>2,000
81UH32C	500	50	N	1,000	70	700	N	>2,000
81UH33C	200	<10	N	700	70	200	<500	>2,000
81UH34C	100	100	<20	200	50	1,000	N	>2,000
81UH35C	1,500	100	<20	500	70	700	N	>2,000
81UH37C	2,000	70	N	500	100	1,000	2,000	>2,000
81UH38C	2,000	20	N	700	70	500	3,000	>2,000
81UH39C	100	20	N	700	70	200	<500	>2,000
81UH40C	2,000	<10	N	1,500	300	1,000	N	2,000
81UH41C	1,000	50	50	700	100	700	N	>2,000
81UH42C	500	20	N	1,000	200	1,000	N	>2,000
81UH44C	100	70	N	200	100	300	N	>2,000
81UH45C	100	100	N	200	100	500	N	>2,000
81UH47C	150	70	300	N	100	500	N	>2,000
81UH48C	200	100	20	500	100	700	N	>2,000
81UH49C	70	50	N	N	70	300	N	>2,000
81UH50C	70	100	N	500	100	700	N	>2,000
81UH51C	200	200	<20	500	100	1,000	N	>2,000
81UH52C	500	200	<20	<200	100	1,000	N	>2,000
81UH53C	200	100	N	200	100	700	N	>2,000
81UH54C	500	100	20	300	100	1,000	N	>2,000
81UH55C	100	70	N	200	150	700	N	>2,000
81UH56C	200	50	N	>10,000	70	500	N	>2,000
81UH57C	50	200	30	200	150	1,000	N	>2,000

Sample	X coordinate	Y coordinate	Ca-pct. s	Fe-pct. s	Mg-pct. s	Ti-pct. s	Ag-ppm s	As-ppm s	B-ppm s	Ba-ppm s
81UH58C	439,520	4,402,590	7.0	1.5	.10	>2.00	N	N	200	2,000
81UH59C	437,260	4,402,590	15.0	2.0	.50	.70	3	N	100	>10,000
81UH60C	438,535	4,403,325	.7	1.0	.10	>2.00	N	N	500	>10,000
81UH61C	438,040	4,403,695	10.0	2.0	.10	>2.00	N	N	200	5,000
81UH63C	438,460	4,408,160	.5	1.0	.07	>2.00	N	N	150	1,000
81UH64C	438,580	4,408,190	.5	5.0	.10	>2.00	N	N	500	500
81UH65C	438,720	4,407,820	.7	2.0	.10	>2.00	N	N	200	1,000
81UH66C	437,850	4,406,560	.5	1.5	.05	>2.00	N	N	150	3,000
81UH67C	437,670	4,406,555	10.0	2.0	.10	>2.00	N	N	150	3,000
81UH68C	437,430	4,405,910	10.0	2.0	.15	.50	N	N	100	>10,000
81UH69C	437,130	4,404,970	10.0	2.0	.10	>2.00	N	N	100	10,000
81UH70C	436,980	4,404,830	5.0	2.0	.15	1.50	N	N	100	>10,000
81UH71C	436,980	4,404,700	1.0	1.0	.20	.50	N	N	100	3,000
81UH72C	437,145	4,404,375	7.0	1.5	.20	2.00	N	N	150	10,000
81UH73C	447,040	4,418,760	7.0	.5	.70	1.00	N	N	50	5,000
81UH74C	448,385	4,418,810	10.0	.5	.50	>2.00	N	N	200	>10,000
81UH75C	448,500	4,418,770	5.0	.7	.20	>2.00	N	N	200	>10,000
81UH76C	449,095	4,419,395	7.0	.7	.20	>2.00	N	N	200	2,000
81UH77C	449,140	4,419,350	7.0	.7	.30	>2.00	N	N	100	>10,000
81UH79C	449,135	4,425,050	.7	1.0	.20	.50	N	N	70	3,000
81UH81C	450,015	4,423,230	.5	5.0	.20	2.00	N	N	500	500
81UH82C	442,530	4,424,500	5.0	5.0	.20	>2.00	N	N	200	700
81UH83C	433,710	4,404,080	.7	2.0	.20	>2.00	N	N	200	1,000
81UP01C	442,340	4,422,395	7.0	.2	.20	>2.00	N	N	70	>10,000
81UP02C	442,715	4,422,360	10.0	.2	.30	>2.00	N	N	70	3,000
81UP03C	443,800	4,422,390	5.0	.3	.10	>2.00	N	N	50	3,000
81UP04C	444,200	4,421,800	5.0	.5	.30	>2.00	N	N	50	>10,000
81UP05C	444,285	4,421,735	5.0	.2	.70	2.00	N	N	50	>10,000
81UP06C	441,155	4,424,940	10.0	5.0	3.00	.10	100	N	20	3,000
81UP07C	441,235	4,425,510	10.0	.5	.20	>2.00	3	N	70	5,000
81UP08C	443,735	4,426,180	7.0	.2	.20	>2.00	N	N	50	2,000
81UP09C	445,120	4,425,250	10.0	.7	.20	2.00	N	N	70	7,000
81UP10C	445,350	4,425,150	1.0	1.0	.10	>2.00	N	N	150	2,000
81UP11C	431,910	4,415,900	15.0	.5	1.00	1.50	10	N	50	3,000
81UP12C	432,220	4,414,680	15.0	.7	2.00	1.50	100	N	70	2,000
81UP13C	433,095	4,414,465	20.0	.2	1.50	1.00	2	N	50	2,000
81UP14C	432,875	4,415,560	20.0	.5	1.50	.70	100	N	50	3,000
81UP15C	433,900	4,415,715	3.0	.5	.20	.70	100	1,500	70	>10,000
81UP16C	438,045	4,411,850	1.0	.5	.07	>2.00	N	N	100	2,000
81UP17C	440,225	4,413,595	.7	1.0	.10	>2.00	N	N	70	3,000
81UP18C	439,580	4,413,650	.7	1.0	.10	>2.00	N	N	100	1,000
81UP19C	439,940	4,413,385	10.0	.2	.15	>2.00	5	N	30	2,000
81UP20C	438,770	4,415,030	2.0	.7	.20	>2.00	N	N	150	3,000
81UP21C	438,860	4,414,940	1.0	1.0	.07	>2.00	N	N	150	5,000
81UP22C	438,680	4,415,620	1.5	1.0	.07	>2.00	N	N	150	>10,000

Sample	Be-ppm s	Cd-ppm s	Co-ppm s	Cr-ppm s	Cu-ppm s	La-ppm s	Mn-ppm s	Mo-ppm s	Nb-ppm s	Ni-ppm s
81UH58C	<2	N	10	200	100	200	500	N	50	10
81UH59C	<2	N	<10	500	200	300	500	10	N	50
81UH60C	<2	N	<10	300	100	200	150	N	N	N
81UH61C	2	N	<10	200	70	300	200	N	50	10
81UH63C	<2	N	N	150	150	150	150	N	<50	N
81UH64C	<2	N	10	200	20	300	200	N	50	30
81UH65C	<2	N	10	200	50	200	150	N	50	N
81UH66C	<2	N	N	200	<10	150	150	N	<50	N
81UH67C	<2	N	<10	100	10	200	200	N	70	20
81UH68C	<2	50	N	70	700	200	100	<10	<50	70
81UH69C	<2	N	<10	150	10	200	150	N	70	N
81UH70C	<2	<50	N	70	10	N	200	N	<50	30
81UH71C	N	N	N	100	10	N	200	N	<50	20
81UH72C	N	50	N	300	10	100	100	N	<50	50
81UH73C	10	N	N	50	<10	100	200	N	<50	N
81UH74C	<2	N	<10	100	50	200	300	N	50	N
81UH75C	50	N	<10	150	<10	200	200	N	50	N
81UH76C	5	N	N	100	N	200	200	N	<50	N
81UH77C	15	N	N	150	N	200	200	N	50	N
81UH79C	N	<50	N	70	200	N	300	N	N	20
81UH81C	<2	N	N	150	20	70	300	N	N	70
81UH82C	N	N	N	200	20	150	300	N	<50	70
81UH83C	<2	N	<10	100	100	150	300	N	<50	15
81UP01C	N	N	N	100	70	200	100	N	50	N
81UP02C	N	N	N	100	20	300	100	N	50	N
81UP03C	100	N	N	100	<10	200	100	N	50	N
81UP04C	2	N	N	70	<10	200	200	N	<50	N
81UP05C	<2	N	N	50	<10	150	200	N	50	N
81UP06C	N	150	20	50	300	150	1,500	N	N	50
81UP07C	N	N	<10	70	15	200	500	N	50	N
81UP08C	N	N	N	70	<10	<50	200	N	<50	N
81UP09C	N	N	N	100	20	200	200	N	<50	20
81UP10C	N	N	N	100	15	100	150	N	<50	20
81UP11C	N	<50	N	200	50	500	200	50	<50	50
81UP12C	N	N	N	100	20	200	500	20	<50	50
81UP13C	N	N	N	150	15	300	200	N	<50	30
81UP14C	N	70	N	150	150	300	300	200	N	70
81UP15C	N	50	N	50	150	100	300	300	N	<10
81UP16C	2	N	N	150	<10	70	150	N	<50	N
81UP17C	<2	N	N	70	20	100	100	N	<50	N
81UP18C	<2	N	N	100	15	100	150	N	<50	N
81UP19C	N	50	N	100	15	300	100	50	<50	50
81UP20C	3	N	N	100	15	100	200	N	<50	N
81UP21C	2	N	N	200	70	150	150	N	<50	N
81UP22C	2	N	N	200	20	150	150	N	50	N

Sample	Pb-ppm s	Sc-ppm s	Sn-ppm s	Sr-ppm s	V-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s
81UH58C	500	100	N	200	150	1,000	N	>2,000
81UH59C	70	20	N	700	100	500	<500	>2,000
81UH60C	300	200	<20	200	100	1,000	N	>2,000
81UH61C	150	70	N	500	100	700	N	>2,000
81UH63C	100	200	20	N	100	1,000	N	>2,000
81UH64C	100	100	<20	200	150	700	N	>2,000
81UH65C	100	150	<20	200	100	700	N	>2,000
81UH66C	100	200	20	200	100	1,000	N	>2,000
81UH67C	100	50	<20	500	100	500	N	>2,000
81UH68C	500	15	50	1,000	50	200	2,000	>2,000
81UH69C	500	70	<20	500	100	500	N	>2,000
81UH70C	500	15	N	700	70	150	700	>2,000
81UH71C	50	<10	<20	<200	50	100	700	>2,000
81UH72C	70	70	N	500	70	700	2,000	>2,000
81UH73C	70	N	N	500	50	100	N	>2,000
81UH74C	300	50	N	500	70	300	N	>2,000
81UH75C	100	70	<20	500	70	500	N	>2,000
81UH76C	70	70	N	300	100	500	N	>2,000
81UH77C	100	70	<20	500	100	500	N	>2,000
81UH79C	100	<10	20	N	70	70	500	>2,000
81UH81C	100	100	N	N	100	700	N	>2,000
81UH82C	150	70	N	200	150	500	N	>2,000
81UH83C	100	100	N	500	100	700	N	>2,000
81UP01C	200	20	N	1,000	100	500	N	>2,000
81UP02C	50	15	N	700	100	500	N	>2,000
81UP03C	150	30	N	700	100	300	N	>2,000
81UP04C	70	30	N	1,000	100	300	N	>2,000
81UP05C	50	15	N	1,000	50	200	N	>2,000
81UP06C	>50,000	N	20	200	100	200	>20,000	1,000
81UP07C	5,000	10	N	500	100	200	2,000	>2,000
81UP08C	1,000	30	N	<200	70	300	500	>2,000
81UP09C	1,000	15	N	500	70	200	N	>2,000
81UP10C	200	50	N	N	100	500	N	>2,000
81UP11C	10,000	15	N	700	200	700	3,000	>2,000
81UP12C	>50,000	10	N	1,000	200	500	3,000	>2,000
81UP13C	500	<10	N	1,000	200	500	N	>2,000
81UP14C	>50,000	<10	N	1,000	500	500	10,000	>2,000
81UP15C	>50,000	<10	N	1,000	5,000	100	>20,000	>2,000
81UP16C	1,000	100	N	<200	100	500	700	>2,000
81UP17C	700	50	N	200	70	500	<500	>2,000
81UP18C	200	100	70	N	70	500	N	>2,000
81UP19C	5,000	20	N	1,000	200	500	2,000	>2,000
81UP20C	150	100	N	200	100	700	N	>2,000
81UP21C	300	200	50	<200	100	1,000	N	>2,000
81UP22C	150	70	<20	500	100	500	N	>2,000

Sample	X coordinate	Y coordinate	Ca-pct. s	Fe-pct. s	Mg-pct. s	Ti-pct. s	Ag-ppm s	As-ppm s	B-ppm s	Ba-ppm s
81UP23C	438,245	4,415,910	10.0	1.0	.10	>2.00	N	N	100	1,500
81UP24C	431,190	4,410,175	2.0	2.0	.15	>2.00	N	N	150	2,000
81UP25C	431,320	4,409,690	20.0	.5	.20	1.00	7	N	70	500
81UP27C	431,420	4,413,700	10.0	.7	.50	>2.00	3	N	100	1,500
81UP28C	430,415	4,407,480	10.0	1.0	.20	1.50	N	N	70	1,500
81UP35C	437,615	4,414,300	3.0	.5	.20	.70	N	N	70	1,000
81UP36C	437,660	4,414,270	2.0	.5	.20	>2.00	N	N	100	2,000
81UP37C	437,720	4,417,020	10.0	1.0	.20	>2.00	N	N	70	10,000
81UP39C	435,020	4,419,900	5.0	1.0	.20	>2.00	N	N	30	>10,000
81UP40C	435,300	4,412,375	7.0	1.0	.15	>2.00	N	N	70	10,000
81UP42C	435,130	4,412,680	7.0	1.0	.20	2.00	N	N	100	2,000
81UP43C	435,245	4,412,020	7.0	10.0	.70	1.00	N	N	100	1,000
81UP44C	434,315	4,410,360	7.0	.7	.20	2.00	N	N	70	500
81UP45C	434,310	4,410,335	10.0	2.0	.50	2.00	N	N	100	1,500
81UP46C	433,885	4,410,490	10.0	1.0	.20	2.00	N	N	100	1,000
81UP47C	432,940	4,416,335	15.0	.3	1.00	.70	5	N	50	700
81UP48C	430,485	4,400,520	20.0	1.5	1.00	.50	N	N	70	3,000
81UP49C	431,320	4,400,430	15.0	1.0	1.00	.50	N	N	100	>10,000
81UP50C	450,510	4,419,830	1.5	1.0	.30	>2.00	N	N	200	5,000
81UP51C	449,980	4,420,620	5.0	.7	.20	>2.00	N	N	150	2,000
81UP52C	450,000	4,420,960	5.0	.7	.20	2.00	N	N	200	1,000
81UP53C	450,390	4,419,980	3.0	.5	.15	1.00	N	N	50	5,000
81UP55C	447,945	4,422,420	.2	.7	.10	2.00	N	N	50	500
81UP56C	448,400	4,422,615	2.0	1.5	.15	2.00	N	N	200	2,000
81UP57C	448,440	4,422,600	.5	1.0	.15	2.00	N	N	100	1,000
81UP58C	448,885	4,421,340	1.0	.5	.10	2.00	N	N	100	5,000
81UP59C	448,980	4,421,350	1.0	.5	.10	.50	N	N	100	5,000
81UP60C	439,790	4,406,980	.5	.7	.05	>2.00	N	N	150	700
81UP61C	439,740	4,406,980	.2	.7	.05	>2.00	N	N	100	500
81UP62C	439,400	4,406,170	.2	1.0	.05	>2.00	N	N	200	1,000
81UP63C	438,940	4,405,500	.2	.5	.05	>2.00	N	N	100	700
81UP64C	438,935	4,405,610	.2	.5	.07	>2.00	N	N	150	300
81UP65C	437,625	4,404,255	.5	.5	.05	>2.00	N	N	70	3,000
81UP66C	435,700	4,399,830	10.0	.7	.20	1.50	N	N	150	5,000
81UP67C	435,560	4,399,940	10.0	.5	.50	.50	N	N	70	3,000
81UP68C	435,050	4,399,670	20.0	.7	.20	.50	N	N	50	500
81UP69C	434,880	4,399,560	20.0	.5	.20	.20	N	N	70	2,000
81UP70C	433,720	4,400,370	15.0	.5	.50	.30	2	N	70	5,000
81UP71C	433,780	4,400,245	10.0	.5	.30	2.00	N	N	70	1,500
81UP73C	436,460	4,402,710	10.0	.5	1.50	.15	2	N	70	5,000
81UP74C	436,465	4,402,660	7.0	.5	.20	.70	3	N	70	10,000
81UP75C	447,470	4,416,620	1.0	.5	.20	>2.00	N	N	100	7,000
81UP76C	448,540	4,417,250	2.0	.5	.70	>2.00	N	N	70	10,000
81UP77C	448,910	4,418,060	.7	.5	.20	>2.00	N	N	50	10,000
81UP78C	449,670	4,417,885	2.0	.5	.70	>2.00	N	N	50	10,000

Sample	Be-ppm s	Cd-ppm s	Co-ppm s	Cr-ppm s	Cu-ppm s	La-ppm s	Mn-ppm s	Mo-ppm s	Nb-ppm s	Ni-ppm s
81UP23C	<2	N	N	200	10	200	150	N	50	50
81UP24C	2	N	N	150	10	150	200	N	<50	50
81UP25C	<2	<50	N	200	20	300	200	200	<50	70
81UP27C	2	N	N	150	20	200	150	150	50	30
81UP28C	<2	N	N	100	15	100	150	<10	<50	50
81UP35C	N	N	N	70	100	70	150	N	<50	N
81UP36C	<2	N	<10	70	700	100	200	N	50	N
81UP37C	<2	70	<10	150	15	200	200	N	<50	50
81UP39C	N	N	N	100	10	<50	100	N	70	20
81UP40C	<2	N	N	100	<10	200	150	N	50	N
81UP42C	<2	70	N	100	<10	300	200	N	<50	20
81UP43C	2	N	20	100	50	100	300	10	<50	150
81UP44C	<2	<50	N	100	2,000	150	100	50	<50	30
81UP45C	<2	<50	<10	100	70	100	150	<10	<50	50
81UP46C	<2	N	<10	150	20	200	150	N	<50	50
81UP47C	<2	<50	N	100	20	500	150	20	N	50
81UP48C	N	N	N	100	50	70	200	10	N	20
81UP49C	<2	N	N	100	50	100	300	10	N	20
81UP50C	<2	N	<10	100	<10	200	200	N	<50	N
81UP51C	7	N	N	200	70	200	150	N	<50	N
81UP52C	<2	N	N	70	<10	200	150	N	<50	N
81UP53C	<2	N	<10	500	N	70	500	N	<50	N
81UP55C	<2	N	<10	100	<10	N	500	N	<50	20
81UP56C	<2	N	10	100	20	70	300	<10	<50	70
81UP57C	<2	<50	<10	100	10	70	200	N	<50	30
81UP58C	<2	N	N	70	<10	<50	100	N	<50	N
81UP59C	<2	N	<10	50	10	<50	150	N	N	20
81UP60C	2	N	<10	150	100	150	150	N	50	N
81UP61C	2	N	<10	100	<10	70	100	N	50	N
81UP62C	2	N	<10	150	<10	200	100	N	<50	N
81UP63C	<2	N	N	100	200	150	100	N	50	N
81UP64C	<2	N	N	70	<10	100	100	N	70	N
81UP65C	3	N	N	100	<10	100	100	N	<50	<10
81UP66C	<2	N	N	300	10	200	300	N	<50	15
81UP67C	N	N	N	150	70	50	300	N	N	N
81UP68C	2	N	N	500	15	500	500	10	N	50
81UP69C	<2	N	N	500	10	300	300	<10	N	30
81UP70C	<2	<50	N	500	10	200	150	<10	N	50
81UP71C	<2	N	N	300	20	200	150	N	<50	50
81UP73C	<2	<50	N	500	10	200	150	<10	N	30
81UP74C	<2	N	N	200	10	150	150	N	N	20
81UP75C	<2	N	N	150	50	200	100	N	50	N
81UP76C	<2	N	N	100	<10	200	200	N	50	N
81UP77C	<2	N	N	70	N	100	150	N	<50	N
81UP78C	<2	N	N	70	10	200	200	N	50	N

Sample	Pb-ppm s	Sc-ppm s	Sn-ppm s	Sr-ppm s	V-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s
81UP23C	500	30	50	700	70	500	700	>2,000
81UP24C	1,000	30	N	500	100	300	N	>2,000
81UP25C	7,000	10	N	700	200	700	2,000	>2,000
81UP27C	500	50	N	500	150	500	<500	>2,000
81UP28C	700	15	N	500	100	150	N	>2,000
81UP35C	100	<10	N	200	70	100	N	>2,000
81UP36C	200	50	300	300	100	300	N	>2,000
81UP37C	150	20	20	1,000	100	300	1,500	>2,000
81UP39C	300	<10	N	500	150	100	N	>2,000
81UP40C	100	70	N	500	100	500	700	>2,000
81UP42C	100	20	N	500	100	200	2,000	>2,000
81UP43C	300	15	N	500	100	150	<500	>2,000
81UP44C	500	20	200	500	100	200	500	>2,000
81UP45C	50	15	N	500	70	150	500	>2,000
81UP46C	70	20	N	700	100	500	N	>2,000
81UP47C	1,000	<10	N	1,000	300	700	1,000	>2,000
81UP48C	500	10	N	700	100	150	N	>2,000
81UP49C	150	<10	N	1,000	70	150	N	>2,000
81UP50C	70	70	N	200	100	700	N	>2,000
81UP51C	70	70	50	300	100	700	N	>2,000
81UP52C	70	30	N	200	100	500	N	>2,000
81UP53C	30	<10	N	200	70	100	N	>2,000
81UP55C	50	20	N	N	70	150	N	>2,000
81UP56C	70	20	N	N	70	150	N	>2,000
81UP57C	70	20	N	<200	100	150	500	>2,000
81UP58C	100	50	N	N	70	200	N	>2,000
81UP59C	50	10	N	N	50	70	N	>2,000
81UP60C	70	50	<20	<200	70	200	N	>2,000
81UP61C	100	70	<20	N	70	500	N	>2,000
81UP62C	50	100	20	N	70	300	N	>2,000
81UP63C	50	70	20	<200	70	300	N	>2,000
81UP64C	20	20	N	N	70	150	N	>2,000
81UP65C	50	70	<20	<200	70	300	N	>2,000
81UP66C	150	50	N	500	70	300	N	>2,000
81UP67C	20	<10	<20	300	50	70	N	>2,000
81UP68C	100	30	N	500	70	500	N	>2,000
81UP69C	50	15	N	500	70	200	N	>2,000
81UP70C	50	10	N	500	70	200	500	>2,000
81UP71C	1,500	30	50	500	70	300	<500	>2,000
81UP73C	50	<10	N	700	100	200	1,000	>2,000
81UP74C	100	50	N	500	70	200	<500	>2,000
81UP75C	200	70	<20	300	70	500	N	>2,000
81UP76C	30	30	<20	500	70	300	N	>2,000
81UP77C	30	30	N	500	70	200	N	>2,000
81UP78C	30	20	N	500	70	200	N	>2,000

Sample	X coordinate	Y coordinate	Ca-pct. s	Fe-pct. s	Mg-pct. s	Ti-pct. s	Ag-ppm s	As-ppm s	B-ppm s	Ba-ppm s
81UP79C	449,670	4,417,630	.7	.5	.15	2.00	N	N	20	700
81UP80C	450,110	4,418,770	1.0	.5	.20	>2.00	N	N	100	10,000
81UP81C	437,700	4,410,370	1.0	.5	.05	>2.00	N	N	100	1,000
81UP82C	437,595	4,409,470	7.0	.7	.05	2.00	N	N	150	1,500
81UP83C	437,540	4,409,450	10.0	.5	.05	>2.00	N	N	70	5,000
81UP84C	437,415	4,407,775	10.0	.3	.05	1.00	N	N	100	10,000
81UP85C	437,380	4,407,760	10.0	.3	.05	1.00	N	N	70	>10,000
81UP86C	437,340	4,407,375	2.0	.5	.05	>2.00	N	N	70	10,000
81UP87C	438,320	4,412,850	2.0	.5	.20	>2.00	N	N	70	2,000
81UP88C	437,955	4,413,150	2.0	.7	.10	2.00	N	N	100	700
81UP89C	437,130	4,413,540	1.5	.5	.07	1.50	N	N	70	500
81UP90C	437,100	4,413,570	10.0	.3	.05	>2.00	N	N	70	3,000

Sample	Be-ppm s	Cd-ppm s	Co-ppm s	Cr-ppm s	Cu-ppm s	La-ppm s	Mn-ppm s	Mo-ppm s	Nb-ppm s	Ni-ppm s
81UP79C	<2	N	N	70	N	70	150	N	<50	N
81UP80C	3	N	N	100	N	200	150	N	<50	N
81UP81C	5	N	N	150	N	150	100	N	<50	N
81UP82C	<2	N	N	100	<10	150	100	N	<50	<10
81UP83C	<2	N	N	100	<10	150	70	N	50	N
81UP84C	<2	70	N	70	<10	70	50	N	<50	N
81UP85C	<2	<50	N	50	<10	70	70	N	<50	N
81UP86C	2	N	N	150	50	150	150	N	50	N
81UP87C	<2	N	N	100	20	100	150	N	50	N
81UP88C	<2	N	N	70	10	200	200	N	<50	N
81UP89C	<2	N	N	70	10	70	150	N	<50	N
81UP90C	<2	N	N	100	100	200	100	N	50	N

Sample	Pb-ppm s	Sc-ppm s	Sn-ppm s	Sr-ppm s	V-ppm s	Y-ppm s	Zn-ppm s	Zr-ppm s
81UP79C	20	20	30	300	50	200	N	>2,000
81UP80C	50	30	<20	300	100	200	N	>2,000
81UP81C	50	70	<20	200	100	500	N	>2,000
81UP82C	200	30	<20	200	70	300	N	>2,000
81UP83C	50	50	<20	300	70	500	N	>2,000
81UP84C	100	30	N	300	50	200	2,000	>2,000
81UP85C	300	30	150	500	70	200	500	>2,000
81UP86C	100	50	<20	500	100	300	N	>2,000
81UP87C	50	50	20	300	100	200	N	>2,000
81UP88C	50	30	N	200	70	200	N	>2,000
81UP89C	50	20	N	<200	70	200	N	>2,000
81UP90C	50	30	<20	200	70	500	N	>2,000

TITLE
WASATCH CONC

FREQUENCY TABLE FOR COLUMN 3 (S-CA%)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E-02 -	1.2E-01	0	0	0.00	100.00
1.2E-01 -	1.8E-01	0	0	0.00	100.00
1.8E-01 -	2.6E-01	6	6	4.08	100.00
2.6E-01 -	3.8E-01	0	6	0.00	95.92
3.8E-01 -	5.6E-01	9	15	6.12	95.92
5.6E-01 -	8.3E-01	10	25	6.80	89.80
8.3E-01 -	1.2E+00	14	39	9.52	82.99
1.2E+00 -	1.8E+00	5	44	3.40	73.47
1.8E+00 -	2.6E+00	13	57	8.84	70.07
2.6E+00 -	3.8E+00	7	64	4.76	61.22
3.8E+00 -	5.6E+00	16	80	10.88	56.46
5.6E+00 -	8.3E+00	16	96	10.88	45.58
8.3E+00 -	1.2E+01	33	129	22.45	34.69
1.2E+01 -	1.8E+01	8	137	5.44	12.24
1.8E+01 -	2.6E+01	10	147	6.80	6.80

HISTOGRAM FOR COLUMN 3 (S-CA%)

```
2.0E-01 XXXX
3.0E-01
5.0E-01 XXXXXX
7.0E-01 XXXXXXX
1.0E+00 XXXXXXXXXX
1.5E+00 XXX
2.0E+00 XXXXXXXXX
3.0E+00 XXXXX
5.0E+00 XXXXXXXXXXX
7.0E+00 XXXXXXXXXXX
1.0E+01 XXXXXXXXXXXXXXXXXXXXXX
1.5E+01 XXXXX
2.0E+01 XXXXXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	147
0.00	0.00			0.00	0.00	

MAXIMUM = 2.00000E+01
MINIMUM = 2.00000E-01
GEOMETRIC MEAN = 3.49057E+00
GEOMETRIC DEVIATION = 3.53077E+00

TITLE
WASATCH CONC

FREQUENCY TABLE FOR COLUMN 4 (S-FE%)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E-02 -	1.2E-01	0	0	0.00	100.00
1.2E-01 -	1.8E-01	0	0	0.00	100.00
1.8E-01 -	2.6E-01	6	6	4.08	100.00
2.6E-01 -	3.8E-01	5	11	3.40	95.92
3.8E-01 -	5.6E-01	41	52	27.89	92.52
5.6E-01 -	8.3E-01	23	75	15.65	64.63
8.3E-01 -	1.2E+00	34	109	23.13	48.98
1.2E+00 -	1.8E+00	12	121	8.16	25.85
1.8E+00 -	2.6E+00	17	138	11.56	17.69
2.6E+00 -	3.8E+00	3	141	2.04	6.12
3.8E+00 -	5.6E+00	5	146	3.40	4.08
5.6E+00 -	8.3E+00	0	146	0.00	0.68
8.3E+00 -	1.2E+01	1	147	0.68	0.68

HISTOGRAM FOR COLUMN 4 (S-FE%)

```
2.0E-01 XXXX
3.0E-01 XXX
5.0E-01 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
7.0E-01 XXXXXXXXXXXXXXXX
1.0E+00 XXXXXXXXXXXXXXXXXXXXXXX
1.5E+00 XXXXXXXX
2.0E+00 XXXXXXXXXXXX
3.0E+00 XX
5.0E+00 XXX
7.0E+00
1.0E+01 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	147
0.00	0.00			0.00	0.00	

MAXIMUM = 1.00000E+01
MINIMUM = 2.00000E-01
GEOMETRIC MEAN = 8.60975E-01
GEOMETRIC DEVIATION = 2.03925E+00

TITLE
WASATCH CONC

FREQUENCY TABLE FOR COLUMN 5 (S-MG%)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E-02 -	5.6E-02	18	18	12.24	100.00
5.6E-02 -	8.3E-02	8	26	5.44	87.76
8.3E-02 -	1.2E-01	24	50	16.33	82.31
1.2E-01 -	1.8E-01	15	65	10.20	65.99
1.8E-01 -	2.6E-01	38	103	25.85	55.78
2.6E-01 -	3.8E-01	9	112	6.12	29.93
3.8E-01 -	5.6E-01	14	126	9.52	23.81
5.6E-01 -	8.3E-01	7	133	4.76	14.29
8.3E-01 -	1.2E+00	7	140	4.76	9.52
1.2E+00 -	1.8E+00	5	145	3.40	4.76
1.8E+00 -	2.6E+00	1	146	0.68	1.36
2.6E+00 -	3.8E+00	1	147	0.68	0.68

HISTOGRAM FOR COLUMN 5 (S-MG%)

```
5.0E-02 XXXXXXXXXXX
7.0E-02 XXXXX
1.0E-01 XXXXXXXXXXXXXXX
1.5E-01 XXXXXXXXXX
2.0E-01 XXXXXXXXXXXXXXXXXXXXXXXXXX
3.0E-01 XXXXXX
5.0E-01 XXXXXXXXXX
7.0E-01 XXXXX
1.0E+00 XXXXX
1.5E+00 XXX
2.0E+00 X
3.0E+00 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	147
0.00	0.00			0.00	0.00	

MAXIMUM = 3.00000E+00
MINIMUM = 5.00000E-02
GEOMETRIC MEAN = 1.96354E-01
GEOMETRIC DEVIATION = 2.58248E+00

TITLE
WASATCH CONC

FREQUENCY TABLE FOR COLUMN 6 (S-TI%)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E-03 -	5.6E-03	0	0	0.00	100.00
5.6E-03 -	8.3E-03	0	0	0.00	100.00
8.3E-03 -	1.2E-02	0	0	0.00	100.00
1.2E-02 -	1.8E-02	0	0	0.00	100.00
1.8E-02 -	2.6E-02	0	0	0.00	100.00
2.6E-02 -	3.8E-02	0	0	0.00	100.00
3.8E-02 -	5.6E-02	0	0	0.00	100.00
5.6E-02 -	8.3E-02	0	0	0.00	100.00
8.3E-02 -	1.2E-01	1	1	0.68	100.00
1.2E-01 -	1.8E-01	1	2	0.68	99.32
1.8E-01 -	2.6E-01	2	4	1.36	98.64
2.6E-01 -	3.8E-01	1	5	0.68	97.28
3.8E-01 -	5.6E-01	12	17	8.16	96.60
5.6E-01 -	8.3E-01	7	24	4.76	88.44
8.3E-01 -	1.2E+00	9	33	6.12	83.67
1.2E+00 -	1.8E+00	8	41	5.44	77.55
1.8E+00 -	2.6E+00	22	63	14.97	72.11

HISTOGRAM FOR COLUMN 6 (S-TI%)

```
1.0E-01 X
1.5E-01 X
2.0E-01 X
3.0E-01 X
5.0E-01 XXXXXXXX
7.0E-01 XXXXX
1.0E+00 XXXXXX
1.5E+00 XXXXX
2.0E+00 XXXXXXXXXXXXXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	84	63
0.00	0.00			0.00	57.14	

MAXIMUM = 2.00000E+00
MINIMUM = 1.00000E-01
GEOMETRIC MEAN = 9.85126E-01
GEOMETRIC DEVIATION = 2.09838E+00

TITLE
WASATCH CONC

FREQUENCY TABLE FOR COLUMN 7 (S-AG)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E-01 -	1.2E+00	0	0	0.00	[illegible]
1.2E+00 -	1.8E+00	0	0	0.00	15.65
1.8E+00 -	2.6E+00	4	4	2.72	15.65
2.6E+00 -	3.8E+00	4	8	2.72	12.93
3.8E+00 -	5.6E+00	3	11	2.04	10.20
5.6E+00 -	8.3E+00	1	12	0.68	8.16
8.3E+00 -	1.2E+01	2	14	1.36	7.48
1.2E+01 -	1.8E+01	0	14	0.00	6.12
1.8E+01 -	2.6E+01	2	16	1.36	6.12
2.6E+01 -	3.8E+01	0	16	0.00	4.76
3.8E+01 -	5.6E+01	0	16	0.00	4.76
5.6E+01 -	8.3E+01	1	17	0.68	4.76
8.3E+01 -	1.2E+02	4	21	2.72	4.08
1.2E+02 -	1.8E+02	0	21	0.00	1.36
1.8E+02 -	2.6E+02	2	23	1.36	1.36

HISTOGRAM FOR COLUMN 7 (S-AG)

```
      2.0E+00 XXX
      3.0E+00 XXX
      5.0E+00 XX
      7.0E+00 X
      1.0E+01 X
      1.5E+01
      2.0E+01 X
      3.0E+01
      5.0E+01
      7.0E+01 X
      1.0E+02 XXX
      1.5E+02
      2.0E+02 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
124	0	0	0	0	0	23
84.35	0.00			0.00	0.00	

MAXIMUM = 2.00000E+02
MINIMUM = 2.00000E+00
GEOMETRIC MEAN = 1.23444E+01
GEOMETRIC DEVIATION = 5.25847E+00

TITLE
WASATCH CONC

FREQUENCY TABLE FOR COLUMN 9 (S-B)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E+01 -	2.6E+01	2	2	1.36	100.00
2.6E+01 -	3.8E+01	3	5	2.04	98.64
3.8E+01 -	5.6E+01	19	24	12.93	96.60
5.6E+01 -	8.3E+01	37	61	25.17	83.67
8.3E+01 -	1.2E+02	42	103	28.57	58.50
1.2E+02 -	1.8E+02	23	126	15.65	29.93
1.8E+02 -	2.6E+02	14	140	9.52	14.29
2.6E+02 -	3.8E+02	2	142	1.36	4.76
3.8E+02 -	5.6E+02	5	147	3.40	3.40

HISTOGRAM FOR COLUMN 9 (S-B)

```
2.0E+01 X
3.0E+01 XX
5.0E+01 XXXXXXXXXXXXX
7.0E+01 XXXXXXXXXXXXXXXXXXXXXXXXX
1.0E+02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.5E+02 XXXXXXXXXXXXXXXX
2.0E+02 XXXXXXXXXX
3.0E+02 X
5.0E+02 XXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	147
0.00	0.00			0.00	0.00	

MAXIMUM = 5.00000E+02
MINIMUM = 2.00000E+01
GEOMETRIC MEAN = 9.73663E+01
GEOMETRIC DEVIATION = 1.78624E+00

TITLE
WASATCH CONC

FREQUENCY TABLE FOR COLUMN 10 (S-BA)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E+01 -	5.6E+01	0	0	0.00	100.00
5.6E+01 -	8.3E+01	0	0	0.00	100.00
8.3E+01 -	1.2E+02	0	0	0.00	100.00
1.2E+02 -	1.8E+02	0	0	0.00	100.00
1.8E+02 -	2.6E+02	0	0	0.00	100.00
2.6E+02 -	3.8E+02	1	1	0.68	100.00
3.8E+02 -	5.6E+02	9	10	6.12	99.32
5.6E+02 -	8.3E+02	11	21	7.48	93.20
8.3E+02 -	1.2E+03	13	34	8.84	85.71
1.2E+03 -	1.8E+03	12	46	8.16	76.87
1.8E+03 -	2.6E+03	17	63	11.56	68.71
2.6E+03 -	3.8E+03	17	80	11.56	57.14
3.8E+03 -	5.6E+03	23	103	15.65	45.58
5.6E+03 -	8.3E+03	5	108	3.40	29.93
8.3E+03 -	1.2E+04	15	123	10.20	26.53

HISTOGRAM FOR COLUMN 10 (S-BA)

```
3.0E+02 X
5.0E+02 XXXXXX
7.0E+02 XXXXXXX
1.0E+03 XXXXXXXXX
1.5E+03 XXXXXXXX
2.0E+03 XXXXXXXXXXXX
3.0E+03 XXXXXXXXXXXX
5.0E+03 XXXXXXXXXXXXXXXX
7.0E+03 XXX
1.0E+04 XXXXXXXXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	24	123
0.00	0.00			0.00	16.33	

MAXIMUM = 1.00000E+04
MINIMUM = 3.00000E+02
GEOMETRIC MEAN = 2.35291E+03
GEOMETRIC DEVIATION = 2.53785E+00

TITLE
WASATCH CONC

FREQUENCY TABLE FOR COLUMN 11 (S-BE)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E+00 -	2.6E+00	19	19	12.93	21.09
2.6E+00 -	3.8E+00	4	23	2.72	8.16
3.8E+00 -	5.6E+00	2	25	1.36	5.44
5.6E+00 -	8.3E+00	1	26	0.68	4.08
8.3E+00 -	1.2E+01	2	28	1.36	3.40
1.2E+01 -	1.8E+01	1	29	0.68	2.04
1.8E+01 -	2.6E+01	0	29	0.00	1.36
2.6E+01 -	3.8E+01	0	29	0.00	1.36
3.8E+01 -	5.6E+01	1	30	0.68	1.36
5.6E+01 -	8.3E+01	0	30	0.00	0.68
8.3E+01 -	1.2E+02	1	31	0.68	0.68

HISTOGRAM FOR COLUMN 11 (S-BE)

```
2.0E+00 XXXXXXXXXXXXX
3.0E+00 XXX
5.0E+00 X
7.0E+00 X
1.0E+01 X
1.5E+01 X
2.0E+01
3.0E+01
5.0E+01 X
7.0E+01
1.0E+02 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
34	82	0	0	0	0	31
23.13	55.78			0.00	0.00	

MAXIMUM = 1.00000E+02
MINIMUM = 2.00000E+00
GEOMETRIC MEAN = 3.46895E+00
GEOMETRIC DEVIATION = 2.69156E+00

TITLE
WASATCH CONC

FREQUENCY TABLE FOR COLUMN 12 (S-CD)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E+01 -	5.6E+01	6	6	4.08	10.20
5.6E+01 -	8.3E+01	6	12	4.08	6.12
8.3E+01 -	1.2E+02	1	13	0.68	2.04
1.2E+02 -	1.8E+02	2	15	1.36	1.36

HISTOGRAM FOR COLUMN 12 (S-CD)

```
5.0E+01 XXXX
7.0E+01 XXXX
1.0E+02 X
1.5E+02 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
119	13	0	0	0	0	15
80.95	8.84			0.00	0.00	

MAXIMUM = 1.50000E+02
MINIMUM = 5.00000E+01
GEOMETRIC MEAN = 6.93595E+01
GEOMETRIC DEVIATION = 1.45474E+00

TITLE
WASATCH CONC

FREQUENCY TABLE FOR COLUMN 13 (S-CO)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E+00 -	1.2E+01	9	9	6.12	9.52
1.2E+01 -	1.8E+01	1	10	0.68	3.40
1.8E+01 -	2.6E+01	4	14	2.72	2.72

HISTOGRAM FOR COLUMN 13 (S-CO)

```
1.0E+01 XXXXXX
1.5E+01 X
2.0E+01 XXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
98	35	0	0	0	0	14
66.67	23.81			0.00	0.00	

MAXIMUM = 2.00000E+01
MINIMUM = 1.00000E+01
GEOMETRIC MEAN = 1.25483E+01
GEOMETRIC DEVIATION = 1.38266E+00

TITLE
WASATCH CONC

FREQUENCY TABLE FOR COLUMN 14 (S-CR)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E+01 -	2.6E+01	0	0	0.00	100.00
2.6E+01 -	3.8E+01	0	0	0.00	100.00
3.8E+01 -	5.6E+01	6	6	4.08	100.00
5.6E+01 -	8.3E+01	25	31	17.01	95.92
8.3E+01 -	1.2E+02	47	78	31.97	78.91
1.2E+02 -	1.8E+02	27	105	18.37	46.94
1.8E+02 -	2.6E+02	27	132	18.37	28.57
2.6E+02 -	3.8E+02	9	141	6.12	10.20
3.8E+02 -	5.6E+02	6	147	4.08	4.08

HISTOGRAM FOR COLUMN 14 (S-CR)

```
5.0E+01 XXXX
7.0E+01 XXXXXXXXXXXXXXXX
1.0E+02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.5E+02 XXXXXXXXXXXXXXXXX
2.0E+02 XXXXXXXXXXXXXXXXX
3.0E+02 XXXXXX
5.0E+02 XXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0.	147
0.00	0.00			0.00	0.00	

MAXIMUM = 5.00000E+02
MINIMUM = 5.00000E+01
GEOMETRIC MEAN = 1.27863E+02
GEOMETRIC DEVIATION = 1.69879E+00

TITLE
WASATCH CONC

FREQUENCY TABLE FOR COLUMN 15 (S-CU)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E+00 -	1.2E+01	27	27	18.37	69.39
1.2E+01 -	1.8E+01	13	40	8.84	51.02
1.8E+01 -	2.6E+01	23	63	15.65	42.18
2.6E+01 -	3.8E+01	3	66	2.04	26.53
3.8E+01 -	5.6E+01	9	75	6.12	24.49
5.6E+01 -	8.3E+01	6	81	4.08	18.37
8.3E+01 -	1.2E+02	7	88	4.76	14.29
1.2E+02 -	1.8E+02	5	93	3.40	9.52
1.8E+02 -	2.6E+02	3	96	2.04	6.12
2.6E+02 -	3.8E+02	2	98	1.36	4.08
3.8E+02 -	5.6E+02	0	98	0.00	2.72
5.6E+02 -	8.3E+02	3	101	2.04	2.72
8.3E+02 -	1.2E+03	0	101	0.00	0.68
1.2E+03 -	1.8E+03	0	101	0.00	0.68
1.8E+03 -	2.6E+03	1	102	0.68	0.68

HISTOGRAM FOR COLUMN 15 (S-CU)

```
1.0E+01 XXXXXXXXXXXXXXXXXX
1.5E+01 XXXXXXXXX
2.0E+01 XXXXXXXXXXXXXXXX
3.0E+01 XX
5.0E+01 XXXXXX
7.0E+01 XXXX
1.0E+02 XXXXX
1.5E+02 XXX
2.0E+02 XX
3.0E+02 X
5.0E+02
7.0E+02 XX
1.0E+03
1.5E+03
2.0E+03 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
15	30	0	0	0	0	102
10.20	20.41			0.00	0.00	

MAXIMUM = 2.00000E+03
MINIMUM = 1.00000E+01
GEOMETRIC MEAN = 3.06249E+01
GEOMETRIC DEVIATION = 3.26116E+00

TITLE
WASATCH CONC

FREQUENCY TABLE FOR COLUMN 16 (S-LA)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E+01 -	5.6E+01	3	3	2.04	93.88
5.6E+01 -	8.3E+01	17	20	11.56	91.84
8.3E+01 -	1.2E+02	21	41	14.29	80.27
1.2E+02 -	1.8E+02	23	64	15.65	65.99
1.8E+02 -	2.6E+02	46	110	31.29	50.34
2.6E+02 -	3.8E+02	20	130	13.61	19.05
3.8E+02 -	5.6E+02	7	137	4.76	5.44
5.6E+02 -	8.3E+02	1	138	0.68	0.68

HISTOGRAM FOR COLUMN 16 (S-LA)

```
5.0E+01 XX
7.0E+01 XXXXXXXXXXX
1.0E+02 XXXXXXXXXXXXXX
1.5E+02 XXXXXXXXXXXXXXXX
2.0E+02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
3.0E+02 XXXXXXXXXXXXXX
5.0E+02 XXXXX
7.0E+02 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
4	5	0	0	0	0	138
2.72	3.40			0.00	0.00	

MAXIMUM = 7.00000E+02
MINIMUM = 5.00000E+01
GEOMETRIC MEAN = 1.63981E+02
GEOMETRIC DEVIATION = 1.73723E+00

TITLE
WASATCH CONC

FREQUENCY TABLE FOR COLUMN 17 (S-MN)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E+01 -	2.6E+01	0	0	0.00	100.00
2.6E+01 -	3.8E+01	0	0	0.00	100.00
3.8E+01 -	5.6E+01	1	1	0.68	100.00
5.6E+01 -	8.3E+01	2	3	1.36	99.32
8.3E+01 -	1.2E+02	27	30	18.37	97.96
1.2E+02 -	1.8E+02	44	74	29.93	79.59
1.8E+02 -	2.6E+02	41	115	27.89	49.66
2.6E+02 -	3.8E+02	17	132	11.56	21.77
3.8E+02 -	5.6E+02	13	145	8.84	10.20
5.6E+02 -	8.3E+02	0	145	0.00	1.36
8.3E+02 -	1.2E+03	0	145	0.00	1.36
1.2E+03 -	1.8E+03	2	147	1.36	1.36

HISTOGRAM FOR COLUMN 17 (S-MN)

```
      5.0E+01 X
      7.0E+01 X
      1.0E+02 XXXXXXXXXXXXXXXXX
      1.5E+02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
      2.0E+02 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
      3.0E+02 XXXXXXXXXXXX
      5.0E+02 XXXXXXXXX
      7.0E+02
      1.0E+03
      1.5E+03 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	147
0.00	0.00			0.00	0.00	

MAXIMUM = 1.50000E+03
MINIMUM = 5.00000E+01
GEOMETRIC MEAN = 1.84291E+02
GEOMETRIC DEVIATION = 1.70523E+00
A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80)
DATE 12/13/82

TITLE
WASATCH CONC

FREQUENCY TABLE FOR COLUMN 18 (S-MO)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E+00 -	1.2E+01	7	7	4.76	15.65
1.2E+01 -	1.8E+01	1	8	0.68	10.88
1.8E+01 -	2.6E+01	3	11	2.04	10.20
2.6E+01 -	3.8E+01	1	12	0.68	8.16
3.8E+01 -	5.6E+01	5	17	3.40	7.48
5.6E+01 -	8.3E+01	0	17	0.00	4.08
8.3E+01 -	1.2E+02	0	17	0.00	4.08
1.2E+02 -	1.8E+02	1	18	0.68	4.08
1.8E+02 -	2.6E+02	3	21	2.04	3.40
2.6E+02 -	3.8E+02	2	23	1.36	1.36

HISTOGRAM FOR COLUMN 18 (S-MO)

```
1.0E+01 XXXXX
1.5E+01 X
2.0E+01 XX
3.0E+01 X
5.0E+01 XXX
7.0E+01
1.0E+02
1.5E+02 X
2.0E+02 XX
3.0E+02 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
113	11	0	0	0	0	23
76.87	7.48			0.00	0.00	

MAXIMUM = 3.00000E+02
MINIMUM = 1.00000E+01
GEOMETRIC MEAN = 3.70591E+01
GEOMETRIC DEVIATION = 3.44700E+00
A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80)
DATE 12/13/82

TITLE
WASATCH CONC

FREQUENCY TABLE FOR COLUMN 19 (S-NB)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E+01 -	5.6E+01	37	37	25.17	27.89
5.6E+01 -	8.3E+01	4	41	2.72	2.72

HISTOGRAM FOR COLUMN 19 (S-NB)

```
       5.0E+01 XXXXXXXXXXXXXXXXXXXXXXXX
       7.0E+01 XXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
27	79	0	0	0	0	41
18.37	53.74			0.00	0.00	

MAXIMUM = 7.00000E+01
MINIMUM = 5.00000E+01
GEOMETRIC MEAN = 5.16686E+01
GEOMETRIC DEVIATION = 1.10638E+00
A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80)
DATE 12/13/82

TITLE
WASATCH CONC

FREQUENCY TABLE FOR COLUMN 20 (S-NI)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E+00 -	1.2E+01	2	2	1.36	46.94
1.2E+01 -	1.8E+01	2	4	1.36	45.58
1.8E+01 -	2.6E+01	16	20	10.88	44.22
2.6E+01 -	3.8E+01	12	32	8.16	33.33
3.8E+01 -	5.6E+01	22	54	14.97	25.17
5.6E+01 -	8.3E+01	8	62	5.44	10.20
8.3E+01 -	1.2E+02	6	68	4.08	4.76
1.2E+02 -	1.8E+02	1	69	0.68	0.68

HISTOGRAM FOR COLUMN 20 (S-NI)

```
       1.0E+01 X
       1.5E+01 X
       2.0E+01 XXXXXXXXXX
       3.0E+01 XXXXXXX
       5.0E+01 XXXXXXXXXXXXXX
       7.0E+01 XXXXX
       1.0E+02 XXXX
       1.5E+02 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
75	3	0	0	0	0	69
51.02	2.04			0.00	0.00	

MAXIMUM = 1.50000E+02
MINIMUM = 1.00000E+01
GEOMETRIC MEAN = 3.82586E+01
GEOMETRIC DEVIATION = 1.82695E+00
A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80)
DATE 12/13/82

TITLE
WASATCH CONC

FREQUENCY TABLE FOR COLUMN 21 (S-PB)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E+01 -	2.6E+01	3	3	2.04	100.00
2.6E+01 -	3.8E+01	4	7	2.72	97.96
3.8E+01 -	5.6E+01	20	27	13.61	95.24
5.6E+01 -	8.3E+01	15	42	10.20	81.63
8.3E+01 -	1.2E+02	29	71	19.73	71.43
1.2E+02 -	1.8E+02	12	83	8.16	51.70
1.8E+02 -	2.6E+02	15	98	10.20	43.54
2.6E+02 -	3.8E+02	6	104	4.08	33.33
3.8E+02 -	5.6E+02	15	119	10.20	29.25
5.6E+02 -	8.3E+02	2	121	1.36	19.05
8.3E+02 -	1.2E+03	7	128	4.76	17.69
1.2E+03 -	1.8E+03	3	131	2.04	12.93
1.8E+03 -	2.6E+03	3	134	2.04	10.88
2.6E+03 -	3.8E+03	0	134	0.00	8.84
3.8E+03 -	5.6E+03	3	137	2.04	8.84
5.6E+03 -	8.3E+03	1	138	0.68	6.80
8.3E+03 -	1.2E+04	1	139	0.68	6.12
1.2E+04 -	1.8E+04	0	139	0.00	5.44
1.8E+04 -	2.6E+04	0	139	0.00	5.44
2.6E+04 -	3.8E+04	1	140	0.68	5.44

HISTOGRAM FOR COLUMN 21 (S-PB)

```
2.0E+01 XX
3.0E+01 XXX
5.0E+01 XXXXXXXXXXXXX
7.0E+01 XXXXXXXXXX
1.0E+02 XXXXXXXXXXXXXXXXXXXX
1.5E+02 XXXXXXXX
2.0E+02 XXXXXXXXXX
3.0E+02 XXXX
5.0E+02 XXXXXXXXXX
7.0E+02 X
1.0E+03 XXXXX
1.5E+03 XX
2.0E+03 XX
3.0E+03
5.0E+03 XX
7.0E+03 X
1.0E+04 X
1.5E+04
2.0E+04
3.0E+04 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	7	140
0.00	0.00			0.00	4.76	

MAXIMUM = 3.00000E+04
MINIMUM = 2.00000E+01
GEOMETRIC MEAN = 1.77781E+02
GEOMETRIC DEVIATION = 3.77540E+00
A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80)
DATE 12/13/82

TITLE
WASATCH CONC

FREQUENCY TABLE FOR COLUMN 22 (S-SC)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
8.3E+00 -	1.2E+01	10	10	6.80	87.76
1.2E+01 -	1.8E+01	11	21	7.48	80.95
1.8E+01 -	2.6E+01	19	40	12.93	73.47
2.6E+01 -	3.8E+01	19	59	12.93	60.54
3.8E+01 -	5.6E+01	21	80	14.29	47.62
5.6E+01 -	8.3E+01	22	102	14.97	33.33
8.3E+01 -	1.2E+02	18	120	12.24	18.37
1.2E+02 -	1.8E+02	2	122	1.36	6.12
1.8E+02 -	2.6E+02	7	129	4.76	4.76

HISTOGRAM FOR COLUMN 22 (S-SC)

```
1.0E+01 XXXXXXX
1.5E+01 XXXXXXX
2.0E+01 XXXXXXXXXXXX
3.0E+01 XXXXXXXXXXXX
5.0E+01 XXXXXXXXXXXXX
7.0E+01 XXXXXXXXXXXXXX
1.0E+02 XXXXXXXXXXX
1.5E+02 X
2.0E+02 XXXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
4	14	0	0	0	0	129
2.72	9.52			0.00	0.00	

MAXIMUM = 2.00000E+02
MINIMUM = 1.00000E+01
GEOMETRIC MEAN = 4.12958E+01
GEOMETRIC DEVIATION = 2.25943E+00
A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80)
DATE 12/13/82

TITLE
WASATCH CONC

FREQUENCY TABLE FOR COLUMN 23 (S-SN)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E+01 -	2.6E+01	12	12	8.16	17.69
2.6E+01 -	3.8E+01	2	14	1.36	9.52
3.8E+01 -	5.6E+01	7	21	4.76	8.16
5.6E+01 -	8.3E+01	1	22	0.68	3.40
8.3E+01 -	1.2E+02	0	22	0.00	2.72
1.2E+02 -	1.8E+02	1	23	0.68	2.72
1.8E+02 -	2.6E+02	1	24	0.68	2.04
2.6E+02 -	3.8E+02	2	26	1.36	1.36

HISTOGRAM FOR COLUMN 23 (S-SN)

```
2.0E+01 XXXXXXXX
3.0E+01 X
5.0E+01 XXXXX
7.0E+01 X
1.0E+02
1.5E+02 X
2.0E+02 X
3.0E+02 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
94	27	0	0	0	0	26
63.95	18.37			0.00	0.00	

MAXIMUM = 3.00000E+02
MINIMUM = 2.00000E+01
GEOMETRIC MEAN = 4.02926E+01
GEOMETRIC DEVIATION = 2.39381E+00
A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80)
DATE 12/13/82

TITLE
WASATCH CONC

FREQUENCY TABLE FOR COLUMN 24 (S-SR)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E+02 -	2.6E+02	25	25	17.01	82.31
2.6E+02 -	3.8E+02	12	37	8.16	65.31
3.8E+02 -	5.6E+02	44	81	29.93	57.14
5.6E+02 -	8.3E+02	17	98	11.56	27.21
8.3E+02 -	1.2E+03	20	118	13.61	15.65
1.2E+03 -	1.8E+03	2	120	1.36	2.04

HISTOGRAM FOR COLUMN 24 (S-SR)

```
2.0E+02 XXXXXXXXXXXXXXXXX
3.0E+02 XXXXXXXX
5.0E+02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
7.0E+02 XXXXXXXXXXXX
1.0E+03 XXXXXXXXXXXXXX
1.5E+03 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
16	10	0	0	0	1	120
10.88	6.80			0.00	0.68	

MAXIMUM = 1.50000E+03
MINIMUM = 2.00000E+02
GEOMETRIC MEAN = 4.70659E+02
GEOMETRIC DEVIATION = 1.75476E+00
A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80)
DATE 12/13/82

TITLE
WASATCH CONC

FREQUENCY TABLE FOR COLUMN 25 (S-V)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E+01 -	2.6E+01	0	0	0.00	100.00
2.6E+01 -	3.8E+01	0	0	0.00	100.00
3.8E+01 -	5.6E+01	10	10	6.80	100.00
5.6E+01 -	8.3E+01	49	59	33.33	93.20
8.3E+01 -	1.2E+02	66	125	44.90	59.86
1.2E+02 -	1.8E+02	9	134	6.12	14.97
1.8E+02 -	2.6E+02	7	141	4.76	8.84
2.6E+02 -	3.8E+02	4	145	2.72	4.08
3.8E+02 -	5.6E+02	1	146	0.68	1.36
5.6E+02 -	8.3E+02	0	146	0.00	0.68
8.3E+02 -	1.2E+03	0	146	0.00	0.68
1.2E+03 -	1.8E+03	0	146	0.00	0.68
1.8E+03 -	2.6E+03	0	146	0.00	0.68
2.6E+03 -	3.8E+03	0	146	0.00	0.68
3.8E+03 -	5.6E+03	1	147	0.68	0.68

HISTOGRAM FOR COLUMN 25 (S-V)

```
5.0E+01 XXXXXXX
7.0E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.0E+02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.5E+02 XXXXXX
2.0E+02 XXXXX
3.0E+02 XXX
5.0E+02 X
7.0E+02
1.0E+03
1.5E+03
2.0E+03
3.0E+03
5.0E+03 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	147
0.00	0.00			0.00	0.00	

MAXIMUM = 5.00000E+03
MINIMUM = 5.00000E+01
GEOMETRIC MEAN = 9.60061E+01
GEOMETRIC DEVIATION = 1.66958E+00
A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80)
DATE 12/13/82

TITLE
WASATCH CONC

FREQUENCY TABLE FOR COLUMN 26 (S-Y)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E+01 -	2.6E+01	0	0	0.00	100.00
2.6E+01 -	3.8E+01	0	0	0.00	100.00
3.8E+01 -	5.6E+01	0	0	0.00	100.00
5.6E+01 -	8.3E+01	3	3	2.04	100.00
8.3E+01 -	1.2E+02	8	11	5.44	97.96
1.2E+02 -	1.8E+02	10	21	6.80	92.52
1.8E+02 -	2.6E+02	27	48	18.37	85.71
2.6E+02 -	3.8E+02	19	67	12.93	67.35
3.8E+02 -	5.6E+02	41	108	27.89	54.42
5.6E+02 -	8.3E+02	21	129	14.29	26.53
8.3E+02 -	1.2E+03	18	147	12.24	12.24

HISTOGRAM FOR COLUMN 26 (S-Y)

```
7.0E+01 XX
1.0E+02 XXXXX
1.5E+02 XXXXXXX
2.0E+02 XXXXXXXXXXXXXXXXXX
3.0E+02 XXXXXXXXXXXXX
5.0E+02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
7.0E+02 XXXXXXXXXXXXXX
1.0E+03 XXXXXXXXXXXX
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	0	147
0.00	0.00			0.00	0.00	

MAXIMUM = 1.00000E+03
MINIMUM = 7.00000E+01
GEOMETRIC MEAN = 3.66358E+02
GEOMETRIC DEVIATION = 2.01089E+00
A470 GEOCHEMICAL SUMMARY - U S G S STATPAC (04/02/80)
DATE 12/13/82

TITLE
WASATCH CONC

FREQUENCY TABLE FOR COLUMN 27 (S-ZN)

LIMITS LOWER - UPPER		FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
3.8E+02 -	5.6E+02	8	8	5.44	23.81
5.6E+02 -	8.3E+02	6	14	4.08	18.37
8.3E+02 -	1.2E+03	2	16	1.36	14.29
1.2E+03 -	1.8E+03	1	17	0.68	12.93
1.8E+03 -	2.6E+03	8	25	5.44	12.24
2.6E+03 -	3.8E+03	3	28	2.04	6.80
3.8E+03 -	5.6E+03	0	28	0.00	4.76
5.6E+03 -	8.3E+03	0	28	0.00	4.76
8.3E+03 -	1.2E+04	3	31	2.04	4.76
1.2E+04 -	1.8E+04	0	31	0.00	2.72
1.8E+04 -	2.6E+04	1	32	0.68	2.72

HISTOGRAM FOR COLUMN 27 (S-ZN)

```
       5.0E+02 XXXXX
       7.0E+02 XXXX
       1.0E+03 X
       1.5E+03 X
       2.0E+03 XXXXX
       3.0E+03 XX
       5.0E+03
       7.0E+03
       1.0E+04 XX
       1.5E+04
       2.0E+04 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
102	10	0	0	0	3	32
69.39	6.80			0.00	2.04	

MAXIMUM = 2.00000E+04
MINIMUM = 5.00000E+02
GEOMETRIC MEAN = 1.43086E+03
GEOMETRIC DEVIATION = 2.80635E+00

TITLE
WASATCH CONC

FREQUENCY TABLE FOR COLUMN 28 (S-ZR)

LIMITS LOWER	- UPPER	FREQ	FREQ CUM	PERCENT FREQ	PERCENT FREQ CUM
1.8E+01 -	2.6E+01	0	0	0.00	100.00
2.6E+01 -	3.8E+01	0	0	0.00	100.00
3.8E+01 -	5.6E+01	0	0	0.00	100.00
5.6E+01 -	8.3E+01	0	0	0.00	100.00
8.3E+01 -	1.2E+02	0	0	0.00	100.00
1.2E+02 -	1.8E+02	0	0	0.00	100.00
1.8E+02 -	2.6E+02	0	0	0.00	100.00
2.6E+02 -	3.8E+02	0	0	0.00	100.00
3.8E+02 -	5.6E+02	0	0	0.00	100.00
5.6E+02 -	8.3E+02	0	0	0.00	100.00
8.3E+02 -	1.2E+03	1	1	0.68	100.00
1.2E+03 -	1.8E+03	0	1	0.00	99.32
1.8E+03 -	2.6E+03	1	2	0.68	99.32

HISTOGRAM FOR COLUMN 28 (S-ZR)

```
    1.0E+03 X
    1.5E+03
    2.0E+03 X
```

N	L	H	B	T	G	ANALYTICAL VALUES
0	0	0	0	0	145	2
0.00	0.00			0.00	98.64	

MAXIMUM = 2.00000E+03
MINIMUM = 1.00000E+03
GEOMETRIC MEAN = 1.41421E+03
GEOMETRIC DEVIATION = 1.63252E+00

IN THE COMPUTATIONS PERFORMED TO PRODUCE THE FOLLOWING TABLE OF GEOMETRIC MEANS AND DEVIATIONS, ALL ELEMENTS ARE IGNORED WHERE ONE OR MORE OF THE UNQUALIFIED DATA VALUES IS LESS THAN THE ANALYTICAL LIMIT OF DETECTION SPECIFIED ON INPUT OR WHERE ANY DATA VALUES ARE QUALIFIED WITH THE G (GREATER THAN) CODE. DATA VALUES QUALIFIED WITH B OR H ARE NOT USED IN THE COMPUTATIONS. WHERE NONE OF THE DATA VALUES FOR AN ELEMENT ARE QUALIFIED THE MEAN AND DEVIATION SHOULD BE THE SAME AS THOSE GIVEN IN THE PRECEDING SECTION. WHERE DATA ARE QUALIFIED WITH THE CODES N, L, OR T, THE ESTIMATES OF GEOMETRIC MEAN AND DEVIATION ARE BASED ON A METHO BY A. J. COHEN FOR TREATING CENSORED DISTRIBUTIONS. THE APPLICATION OF THIS METHOD TO GEOCHEMICAL PROBLEMS IS DESCRIBED IN USGS PROFESSIONAL PAPER 574-B. THE ESTIMATES ARE UNBIASED IN A STRICT SENSE ONLY WHERE THE DATA ARE DERIVED FROM A LOGNORMAL PARENT POPULATION, BUT EXPERIMENTS HAVE SHOWN THAT LARGE DEPARTURES FROM THIS REQUIREMENT MAY NOT GREATLY INVALIDATE THE RESULTS ACCEPTANCE AND USE OF THE ESTIMATES, HOWEVER, IS THE RESPONSIBILITY OF THE INDIVIDUAL.

ELEMENT	N	L	H	B	T	G	ANALYTICAL VALUES
X-COORD.	0	0	0	0	0	0	147
Y-COORD.	0	0	0	0	0	0	147
S-CA%	0	0	0	0	0	0	147
S-FE%	0	0	0	0	0	0	147
S-MG%	0	0	0	0	0	0	147
S-TI%	0	0	0	0	0	84	63
S-AG	124	0	0	0	0	0	23
S-B	0	0	0	0	0	0	147
S-BA	0	0	0	0	0	24	123
S-BE	34	82	0	0	0	0	31
S-CD	119	13	0	0	0	0	15
S-CO	98	35	0	0	0	0	14
S-CR	0	0	0	0	0	0	147
S-CU	15	30	0	0	0	0	102
S-LA	4	5	0	0	0	0	138
S-MN	0	0	0	0	0	0	147
S-MO	113	11	0	0	0	0	23
S-NB	27	79	0	0	0	0	41
S-NI	75	3	0	0	0	0	69
S-PB	0	0	0	0	0	7	140
S-SC	4	14	0	0	0	0	129
S-SN	94	27	0	0	0	0	26
S-SR	16	10	0	0	0	1	120
S-V	0	0	0	0	0	0	147
S-Y	0	0	0	0	0	0	147
S-ZN	102	10	0	0	0	3	32
S-ZR	0	0	0	0	0	145	2

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TITLE

ELEMENT	GEOMETRIC MEAN	GEOMETRIC DEVIATION	REMARKS	
X-COORD.	439457.656250	1.01	147 SAMPLES AND 147 ANALYTICAL VALUES.	
Y-COORD.	413253.500000	1.02	147 SAMPLES AND 147 ANALYTICAL VALUES.	
S-CA%	3.490567	3.53	147 SAMPLES AND 147 ANALYTICAL VALUES.	
S-FE%	0.860975	2.04	147 SAMPLES AND 147 ANALYTICAL VALUES.	
S-MG%	0.196354	2.58	147 SAMPLES AND 147 ANALYTICAL VALUES.	
S-TI%	********	******	84 GREATER THAN VALUES. NO COMPUTATIONS.	
S-AG	0.006987	*****	124 NOT DETECTED, LESS THAN, OR TRACE VALUES.	23 REPORTED VALUES.
S-B	97.366334	1.79	147 SAMPLES AND 147 ANALYTICAL VALUES.	
S-BA	********	******	24 GREATER THAN VALUES. NO COMPUTATIONS.	
S-BE	0.490271	4.54	116 NOT DETECTED, LESS THAN, OR TRACE VALUES.	31 REPORTED VALUES.
S-CD	8.763828	3.22	132 NOT DETECTED, LESS THAN, OR TRACE VALUES.	15 REPORTED VALUES.
S-CO	2.652509	2.39	133 NOT DETECTED, LESS THAN, OR TRACE VALUES.	14 REPORTED VALUES.
S-CR	127.862920	1.70	147 SAMPLES AND 147 ANALYTICAL VALUES.	
S-CU	14.972519	4.61	45 NOT DETECTED, LESS THAN, OR TRACE VALUES.	102 REPORTED VALUES.
S-LA	147.717756	1.97	9 NOT DETECTED, LESS THAN, OR TRACE VALUES.	138 REPORTED VALUES.
S-MN	184.291389	1.71	147 SAMPLES AND 147 ANALYTICAL VALUES.	
S-MO	37.069123	3.45	124 NOT DETECTED, LESS THAN, OR TRACE VALUES.	23 REPORTED VALUES.
S-NB	30.851966	1.50	106 NOT DETECTED, LESS THAN, OR TRACE VALUES.	41 REPORTED VALUES.
S-NI	8.560364	5.11	78 NOT DETECTED, LESS THAN, OR TRACE VALUES.	69 REPORTED VALUES.
S-PB	********	******	7 GREATER THAN VALUES. NO COMPUTATIONS.	
S-SC	31.940020	2.82	18 NOT DETECTED, LESS THAN, OR TRACE VALUES.	129 REPORTED VALUES.
S-SN	3.784938	5.17	121 NOT DETECTED, LESS THAN, OR TRACE VALUES.	26 REPORTED VALUES.
S-SR	********	******	1 GREATER THAN VALUES. NO COMPUTATIONS.	
S-V	96.006148	1.67	147 SAMPLES AND 147 ANALYTICAL VALUES.	
S-Y	366.357979	2.01	147 SAMPLES AND 147 ANALYTICAL VALUES.	
S-ZN	********	******	3 GREATER THAN VALUES. NO COMPUTATIONS.	
S-ZR	********	******	145 GREATER THAN VALUES. NO COMPUTATIONS.	

REFERENCES CITED

Bullock, K. C., 1962, Economic geology of north-central Utah, in Hintze, L. H., ed., Geology of the southern Wasatch Mountains and vicinity, Utah: Brigham Young University Geology Studies, v. 9, pt. 1, p. 85-94.

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

Heikes, V. C., 1920, Production, Santaquin and Mount Nebo region, in Butler, B. S., Loughlin, G. F., Heikes, V. C., and others, The ore deposits of Utah: U.S. Geological Survey Professional Paper 111, p. 333-334.

Hintze, L. F., ed., 1962, Geology of the southern Wasatch Mountains and vicinity, Utah: Brigham Young University Geology Studies, v. 9, pt. 1, 104 p.

Phillips, W. R., 1962, Igneous rocks of north-central Utah, in Hintze, L. F., ed., Geology of the southern Wasatch Mountains and vicinity, Utah: Brigham Young University Geology Studies, v. 9, pt. 1, p. 85-94.

Van Trump, George, Jr., and Miesch, A. T., 1976, The U.S. Geological Survey RASS-STATPAC system for management and statistical reduction of geochemical data: Computers and Geosciences, v. 3, p. 475-488.