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Geochemical analyses of rock, soil, and  
stream sediment samples from the Citico Creek  
Wilderness Study Area, Monroe County, Tennessee

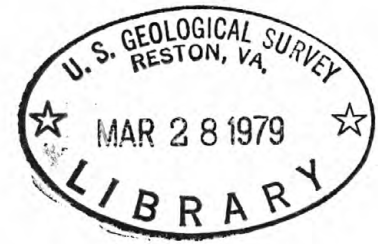
by

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GEOCHEMICAL ANALYSES OF ROCK, SOIL, AND  
STREAM SEDIMENT SAMPLES FROM THE CITICO CREEK  
WILDERNESS STUDY AREA, MONROE COUNTY, TENNESSEE

By

R. T. Hopkins, C. A. Curtis, J. D. Sharkey, and  
J. F. Slack

Abstract

Semiquantitative spectrographic analyses for 31 elements and  
atomic absorption analyses for gold and zinc on 119 stream sediments,  
14 panned concentrates, 128 soils, and 192 rock samples from the  
Citico Creek Wilderness Study Area and vicinity, Monroe County,  
Tennessee, are reported here in detail. Locations for all 453 samples  
are given in Universal Transverse Mercator (UTM) coordinates.  
Rocks analyzed include metasandstone, metaarkose, metagraywacke,  
metaconglomerate, slate, phyllite, and vein quartz. The data  
contain no obviously anomalous values that might be related to  
economically recoverable mineralization.

## Introduction

1  
2 The analyses reported here are on 453 samples from the Citico  
3 Creek Wilderness Study Area, Monroe County, Tennessee, collected in  
4 October, 1976, by J.F. Slack, E.R. Force, F.G. Lesure, C.E. Brown,  
5 M.P. Foose, and A.E. Grosz, all of the U.S. Geological Survey, and in  
6 April, 1977, by P.T. Behum and B.B. Williams of the U.S. Bureau of  
7 Mines.

8 The samples include 192 rock chips, 128 soils, 14 panned  
9 concentrates, and 119 stream sediments. The rock samples mainly are  
10 1 meter chip samples of representative material collected from outcrop  
11 or road cuts; a few samples are from float boulders along ridge crests.  
12 Some of the rock is partly weathered, but the freshest material  
13 available was sampled. Soil samples were taken below surficial organic  
14 material generally from the lower to middle parts of the A horizon, but  
15 in some places from the upper part of the B horizon. Stream sediment  
16 was collected from active and a few smaller intermittent drainages;  
17 heavy minerals from major drainages were artificially concentrated by  
18 standard panning techniques. Sample locations and discussion of the  
19 results of the analytical work are given by Slack, Force, Behum, and  
20 Williams (1979).

21 The X and Y coordinates are Universal Transverse Mercator (UTM)  
22 grid, zone 16, Whiteoak Flats and Big Junction (Tenn.-N.C.) U.S.  
23 Geological Survey 7.5 minute Topographic Quadrangle Maps (1957 editions).  
24 The X coordinate is the easting value; the Y is the northing.

Explanation of table

Iron, magnesium, calcium, and titanium values are reported in percent (%); all others are in parts per million. Letters preceding chemical symbols indicate the methods of analysis: S, six-step semiquantitative spectrographic method; AA, atomic absorption. Other symbols represented on the table are: N, not detected; --, not determined; <, amount detected is below the lowest limit of determination which is figure shown; >, amount detected is above the highest limit of determination, which is figure shown. The table is divided into 5 sections by sample type: soil, stream sediment and panned concentrates ("P" follows sample number), quartz veins, slate, and conglomerate-sandstone-siltstone.

Soils.--Elements looked for spectrographically but not found, except as noted, and their lower limits of determination, in ppm (value in parentheses): Ag(0.5); As(200); Au(0.05) except 4014 and 4022 which are reported as <.05; Bi(10); Cd(20); Mo(5) except 4049 which is reported as <5; Sb(100); Sn(10); W(50).

Stream sediment and panned concentrates.--Elements looked for but not found, except as noted, and their lower limits of determination, in ppm (value in parentheses): Ag(0.5); As(200); Au(0.05); Bi(10); Cd(20); Mo(5) except 6114 which is reported as <5; Sb(100); Sn(10) except 6107 which is reported as 15, 7048 as <10, 7049 as 10, and 7069 as 20; W(50).

1           Quartz veins.--Elements looked for but not found, except as noted,  
2 and their lower limits of determination, in ppm (value in parentheses):  
3 Ag(0.5) except 4165 which is reported as 1.5, 4239 as 2.0, and 5021  
4 as 5.0; As(200); Au(0.05) except 6041 which is reported as 0.3; Bi(10)  
5- except 4239 which is reported as 10; Cd(20); Mo(5) except 5078 which is  
6 reported as <5; Sb(100); Sn(10) except 5039 which is reported as 10;  
7 W(50).

8           Slate.--Elements looked for but not found, except as noted, and  
9 their lower limits of determination, in ppm (value in parentheses):  
10- Ag(0.5) except 4233 which is reported as 1.0; As(200) except 5157 which  
11 is reported as 700; Au(0.05); Bi(10); Cd(20); Mo(5) except 5011 and  
12 6089 which are reported as 5, and 5006 and 5139 which are reported as  
13 7; Sb(100); Sn(10); W(50).

14           Conglomerate-sandstone-siltstone.--Elements looked for but not  
15- found, except as noted, and their lower limits of determination, in  
16 ppm (value in parentheses): Ag(0.5); As(200); Au(0.05); Bi(10);  
17 Cd(20); Mo(5) except 6023 which is reported as <5; Sb(100); Sn(10);  
18 W(50).

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Sols

sample	X-COORD.	Y-COORD.	S-FE%	S-MG%	S-CA%	S-TI%	S-MN	S-B	S-BA	S-BE	S-CO	S-CR	S-CU	S-LA	S-NB
4007	769,339	3,927,000	1.5	.15	<.05	.70	100	150	300	2.0	N	50	15	50	N
4014	769,989	3,927,449	5.0	.30	.07	.70	500	200	500	3.0	15	70	30	100	<20
4022	770,239	3,927,849	2.0	.10	.05	.70	70	200	500	3.0	N	50	15	70	N
4027	769,429	3,927,809	2.0	.15	<.05	.70	300	150	500	3.0	5	50	20	100	N
4040	769,279	3,925,560	1.5	.10	.05	.50	700	150	300	3.0	20	30	20	70	N
4049	770,049	3,925,739	2.0	.15	<.05	.50	500	150	500	5.0	20	50	30	100	N
4054	768,969	3,926,179	1.5	.15	<.05	.70	500	150	500	5.0	15	50	20	70	N
4058	765,059	3,922,470	2.0	.30	.05	.50	700	150	700	3.0	20	50	20	100	N
4068	766,199	3,922,760	1.5	.10	<.05	.70	700	150	500	5.0	20	50	20	70	N
4080	767,639	3,917,409	1.5	.15	<.05	.50	300	30	500	3.0	N	30	15	70	N
4089	766,539	3,917,969	2.0	.15	<.05	.20	3,000	10	500	5.0	30	10	30	100	N
4093	766,219	3,918,619	1.0	.10	<.05	.20	150	30	500	2.0	<5	15	7	70	N
4105	766,509	3,916,199	1.0	.10	<.05	.30	300	10	500	3.0	N	10	7	30	N
4111	766,349	3,916,919	1.0	.15	<.05	.20	200	20	300	3.0	N	10	15	100	N
4114	766,349	3,917,479	1.5	.15	<.05	.30	200	30	500	3.0	N	30	10	150	N
4120	766,279	3,916,539	1.0	.07	<.05	.20	200	20	300	3.0	N	10	10	70	N
4122	769,909	3,923,489	1.0	.07	<.05	.20	150	50	200	3.0	N	15	7	50	N
4129	769,829	3,923,639	.3	.03	<.05	.20	70	70	70	1.5	N	<10	<5	30	N
4138	768,089	3,924,070	.7	.07	<.05	.30	150	100	300	3.0	5	15	10	70	N
4143	767,409	3,924,149	1.5	.10	<.05	.30	200	70	500	3.0	10	30	10	50	N
4147	766,509	3,923,669	.7	.05	<.05	.30	150	70	150	2.0	<5	15	7	30	N
4155	767,699	3,923,379	1.5	.15	<.05	.50	150	150	700	3.0	5	50	20	70	N
4164	767,309	3,922,700	1.5	.15	<.05	.30	700	150	500	3.0	15	20	20	100	N
4169	766,629	3,923,060	1.5	.10	<.05	.50	500	150	500	5.0	15	20	20	100	N
4175	765,969	3,923,439	1.5	.15	<.05	.50	300	150	500	3.0	15	30	20	70	N
4179	765,609	3,921,419	1.5	.15	<.05	.50	200	150	500	3.0	20	30	20	70	N
4186	766,399	3,921,599	2.0	.15	<.05	.50	150	100	500	3.0	<5	50	15	50	N
4201	767,079	3,922,369	1.5	.10	<.05	.50	150	70	200	3.0	N	20	7	50	N
4207	765,839	3,922,129	2.0	.15	.05	.50	150	200	500	5.0	5	50	30	70	<20
4215	770,619	3,919,369	1.5	.15	<.05	.20	500	30	200	3.0	<5	15	7	30	N
4219	770,039	3,919,379	1.5	.10	<.05	.20	150	50	200	2.0	N	20	10	70	<20
4222	769,589	3,919,509	1.5	.20	.15	.50	3,000	30	700	3.0	10	30	15	70	<20
4231	769,139	3,919,769	3.0	.30	.07	.50	1,000	100	700	5.0	15	20	20	100	N
4236	768,829	3,920,009	5.0	.30	<.05	.70	500	100	700	5.0	10	30	30	100	N
4243	768,369	3,920,649	2.0	.15	.07	.20	300	150	200	5.0	N	20	20	30	N
4248	770,919	3,918,869	7.0	.50	.05	.70	700	100	700	5.0	10	70	20	50	N
4254	770,329	3,918,199	7.0	.50	.10	.70	700	100	700	5.0	20	70	30	50	N
4258	770,699	3,917,959	2.0	.30	.05	.50	700	100	500	5.0	15	30	30	70	N
4262	770,509	3,917,469	7.0	1.00	.20	.70	700	300	700	7.0	20	70	30	150	<20
4267	770,839	3,916,969	5.0	.50	.10	.70	1,000	100	700	5.0	15	70	20	70	N
4275	767,469	3,923,169	2.0	.15	.05	.70	500	300	500	5.0	10	30	15	50	N
4288	766,719	3,922,449	3.0	.20	.15	.50	1,500	300	500	5.0	20	70	30	70	N
4293	764,909	3,919,129	3.0	.15	<.05	.70	150	500	500	5.0	N	70	15	50	<20
4297	765,429	3,919,149	1.5	.10	.05	.20	300	200	300	7.0	5	20	10	50	N
4306	766,189	3,918,969	2.0	.30	.05	.30	500	200	500	7.0	10	50	30	70	<20

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sample	S-NI	S-PR	S-SC	S-SR	S-V	S-Y	S-ZR	AA-7N
4007	15	15	15	N	50	50	150	150
4014	30	20	15	100	100	70	200	200
4022	15	20	15	N	100	50	200	200
4027	15	20	15	N	70	30	150	150
4040	15	50	10	N	70	50	150	70
4049	30	30	15	100	70	30	150	150
4054	20	20	15	N	70	30	150	70
4058	20	30	15	N	100	30	150	90
4068	30	20	15	N	70	50	150	60
4080	10	30	15	N	50	30	200	30
4089	15	70	10	100	30	30	150	90
4096	10	20	7	N	30	20	150	45
4105	7	20	7	<100	50	30	150	45
4111	7	30	7	N	30	20	150	40
4114	7	50	10	N	50	30	150	25
4120	5	30	7	N	30	15	150	30
4122	7	10	10	N	30	30	150	25
4129	<5	10	<5	N	20	10	150	10
4138	10	15	10	N	50	30	200	60
4143	15	15	10	N	70	20	150	60
4147	7	15	7	N	50	20	150	40
4155	15	20	15	N	70	30	150	70
4164	15	15	10	N	50	30	150	80
4169	15	20	15	<100	50	30	150	80
4175	20	20	15	N	50	30	150	50
4179	20	20	15	N	50	30	150	65
4180	15	20	15	N	50	50	150	30
4207	20	30	15	200	50	20	150	45
4215	7	20	7	N	30	30	150	80
4219	5	50	10	N	50	15	150	30
4222	10	70	10	<100	50	50	200	80
4231	20	30	10	<100	70	30	200	70
4235	20	50	15	N	70	30	200	30
4243	5	30	10	<100	100	20	150	35
4248	20	30	15	<100	100	30	200	70
4254	50	30	15	<100	150	30	300	85
4258	20	30	15	<100	150	50	200	65
4262	50	50	15	<100	150	50	150	120
4267	30	50	15	<100	150	30	500	85
4275	20	50	15	<100	100	30	700	30
4288	30	50	15	150	100	30	200	55
4293	15	50	15	<100	150	30	500	15
4297	10	15	10	<100	70	30	200	35
4308	20	20	10	<100	100	30	200	55



## Soils--continued

sample	X-COORD.	Y-COORD.	S-FEZ	S-MGZ	S-CAZ	S-T1Z	S-MN	S-B	S-BA	S-BE	S-CO	S-CR	S-CU	S-LA	S-NB
4308	765,934	3,919,399	1.5	.10	<.05	.30	100	300	300	7.0	N	20	15	50	N
4313	765,419	3,919,599	2.0	.20	N	.50	70	500	700	10.0	N	50	20	70	<20
5005	762,629	3,917,119	1.5	.15	<.05	.20	100	200	500	5.0	5	30	20	70	N
5035	768,719	3,926,599	2.0	.20	<.05	.50	1,000	150	500	5.0	20	70	30	100	<20
5043	770,249	3,927,239	2.0	.15	<.05	.30	500	150	300	3.0	20	50	30	70	<20
5044	770,089	3,927,139	1.0	.10	.15	.15	1,000	50	300	3.0	15	15	20	70	N
5046	769,769	3,926,759	3.0	.15	<.05	.50	150	200	500	3.0	15	70	30	100	<20
5047	764,619	3,926,369	2.0	.15	<.05	.30	500	150	500	3.0	20	50	30	100	<20
5050	769,469	3,926,339	1.5	.15	.05	.20	1,500	150	500	5.0	30	30	30	70	N
5057	770,049	3,926,479	2.0	.20	<.05	.50	500	200	500	3.0	15	70	30	70	<20
5061	769,999	3,926,349	1.5	.15	<.05	.20	100	150	500	3.0	15	50	30	100	<20
5089	767,379	3,915,799	1.0	.15	<.05	.20	150	70	300	3.0	N	30	10	30	<20
5090	767,639	3,916,329	7.0	.50	<.05	.50	700	150	700	3.0	10	70	30	70	<20
5104	770,359	3,917,109	3.0	.30	.05	.50	500	100	700	3.0	10	70	20	50	<20
5107	769,469	3,923,959	1.5	.20	.07	.70	700	300	500	3.0	7	50	15	70	<20
5108	769,119	3,924,119	1.5	.15	<.05	.70	100	300	200	3.0	N	30	10	70	N
5108	769,119	3,924,139	7.0	.70	<.05	.50	700	50	700	5.0	30	50	70	150	<20
5110	768,509	3,924,409	1.0	.07	<.05	.30	70	100	200	2.0	N	10	7	100	N
5111	768,249	3,924,550	1.5	.10	<.05	1.00	200	300	200	2.0	N	30	10	30	<20
5112	767,779	3,924,729	1.5	.15	<.05	.70	1,000	70	500	3.0	15	30	15	50	<20
5114	767,609	3,921,929	1.5	.15	<.05	.70	150	300	200	3.0	<5	15	7	70	<20
5116	767,999	3,922,309	7.0	.50	<.05	.70	500	300	700	10.0	20	70	50	150	<20
5118	768,909	3,922,619	5.0	.30	.05	1.00	700	200	700	7.0	30	70	30	100	N
5121	767,909	3,922,479	5.0	.30	<.05	.70	700	200	700	10.0	15	50	30	70	<20
5126	767,989	3,919,429	1.5	.20	.30	.30	2,000	70	700	5.0	7	20	30	100	N
5128	767,679	3,919,719	5.0	.30	.05	.70	700	70	700	7.0	15	50	30	100	<20
5131	767,629	3,920,289	7.0	.15	.10	.50	3,000	200	500	5.0	20	30	50	70	N
5134	767,729	3,920,819	5.0	.15	.05	.70	1,500	300	500	5.0	20	50	20	50	<20
5132	768,759	3,917,739	7.0	.50	<.05	.70	700	150	700	5.0	15	70	30	100	N
5133	768,599	3,917,399	5.0	.30	<.05	.70	500	30	700	3.0	10	50	15	70	<20
5165	769,939	3,921,179	3.0	.30	.07	.50	700	150	700	5.0	15	50	20	70	<20
5169	769,789	3,920,970	3.0	.30	<.05	.70	500	70	700	5.0	10	30	15	70	N
5170	769,339	3,920,900	1.5	.15	<.05	.30	200	20	700	3.0	7	15	7	50	N
5171	771,169	3,919,819	10.0	.70	.05	.70	1,500	50	700	5.0	30	70	30	100	<20
5176	770,249	3,920,060	1.5	.15	<.05	.30	300	70	500	5.0	N	20	15	50	N
6029	769,680	3,916,000	2.0	.50	.05	.70	700	30	700	3.0	10	50	15	50	<20
6059	766,390	3,923,500	1.5	.10	<.05	1.00	200	150	300	2.0	N	20	7	50	<20
6070	766,730	3,923,180	2.0	.07	<.05	1.00	200	500	300	3.0	10	30	20	30	20
6075	762,560	3,917,520	1.5	.15	<.05	.30	500	150	300	3.0	5	50	20	50	<20
6077	763,060	3,918,080	1.5	.15	<.05	.30	700	100	500	5.0	10	30	30	70	<20
6079	763,490	3,918,090	1.0	.07	<.05	.20	150	50	150	3.0	N	15	10	30	N
6081	763,790	3,918,320	1.0	.10	<.05	.20	150	50	300	3.0	<5	15	15	70	N
6083	763,390	3,918,740	1.0	.10	<.05	.20	70	70	200	3.0	N	20	15	50	N
6084	763,540	3,919,110	3.0	.20	<.05	.70	200	200	700	3.0	20	70	30	50	<20
6086	763,720	3,919,390	1.5	.15	<.05	.70	300	300	500	3.0	10	30	10	50	<20

## Soils--continued

sample	S-NI	S-Pa	S-SC	S-SR	S-V	S-Y	S-ZR	AA-ZN
4308	10	15	10	<100	100	30	150	30
4313	10	50	15	<100	150	50	150	15
5005	10	30	15	N	50	30	150	65
5035	20	50	15	100	70	30	150	100
5043	20	30	15	N	50	30	200	70
5044	15	50	7	N	30	20	150	100
5046	20	30	15	200	100	70	150	50
5047	20	30	15	100	70	30	150	120
5050	20	50	15	<100	50	30	150	140
5057	20	30	15	100	100	30	100	90
5061	15	20	15	100	70	30	100	75
5089	7	20	10	N	50	20	100	40
5090	20	30	15	N	70	30	100	100
5104	15	50	15	<100	70	30	200	60
5107	15	30	10	N	100	30	500	35
5108	10	50	10	N	100	20	700	15
5108	50	30	15	<100	100	50	150	140
5110	<5	15	5	N	30	30	150	30
5111	5	30	7	N	50	30	500	20
5112	15	20	7	N	50	30	150	55
5114	7	20	7	N	70	30	500	20
5116	20	50	20	N	150	70	300	55
5118	30	50	15	N	150	70	500	55
5121	30	70	15	N	150	50	200	50
5126	10	70	10	<100	70	20	200	90
5128	50	70	15	<100	150	50	200	70
5131	20	15	15	<100	70	30	150	110
5134	20	30	15	N	100	70	300	50
5152	50	50	15	<100	100	70	500	75
5153	15	50	15	<100	100	30	700	50
5165	20	50	15	<100	100	50	500	65
5169	15	50	15	<100	100	50	300	70
5170	10	20	7	N	50	30	150	45
5171	50	70	15	<100	70	70	500	100
5176	7	20	10	<100	100	30	200	50
6029	15	20	15	100	50	30	300	80
6069	5	15	10	N	50	30	200	20
6070	7	30	15	<100	50	30	500	25
6075	15	30	15	<100	70	30	150	90
6077	15	30	15	<100	70	30	150	100
6079	7	30	10	N	30	20	200	45
6081	10	15	10	N	50	30	150	100
6083	5	30	10	<100	50	30	150	55
6084	20	20	15	N	70	50	200	70
6086	15	30	10	N	50	30	200	60

## Soils--continued

sample	X-COORD.	Y-COORD.	S-FEX	S-MGZ	S-CAZ	S-TIZ	S-MN	S-U	S-BA	S-BE	S-CO	S-CR	S-CU	S-LA	S-HB
6037	763,990	3,919,760	1.5	.15	<.05	.70	200	150	200	3.0	<5	30	15	50	<20
6038	764,100	3,920,040	1.5	.15	<.05	.70	150	200	500	3.0	5	70	15	70	20
6039	764,470	3,920,450	1.5	.10	.05	.30	300	150	300	5.0	<5	30	20	70	<20
6042	764,760	3,920,950	2.0	.10	<.05	.50	100	150	700	5.0	5	70	30	100	<20
6093	764,330	3,921,300	2.0	.10	<.05	.30	70	150	500	3.0	<5	70	30	30	<20
6094	764,500	3,921,700	1.5	.07	<.05	.50	150	200	300	3.0	<5	30	15	30	<20
6095	767,240	3,923,960	2.0	.20	<.05	.70	300	500	500	5.0	N	50	15	70	<20
6097	767,610	3,923,900	3.0	.15	<.05	.30	100	500	700	5.0	<5	50	30	100	N
6098	767,850	3,923,820	10.0	.15	<.05	1.00	150	700	500	5.0	5	70	30	50	<20
6099	768,120	3,923,670	5.0	.15	<.05	1.00	200	700	500	3.0	5	30	30	30	<20
6100	768,840	3,923,700	2.0	.15	<.05	.70	200	100	500	3.0	N	30	15	100	N
6102	768,470	3,924,920	5.0	.20	.05	1.00	500	700	500	3.0	<5	50	20	100	<20
6105	767,990	3,924,940	2.0	.15	<.05	.70	200	300	300	2.0	N	30	10	70	N
6128	765,100	3,920,840	1.5	.15	.05	.70	500	700	700	15.0	15	50	30	100	<20
6129	764,630	3,920,190	7.0	.20	<.05	1.00	700	1,500	700	15.0	15	70	30	20	<20
6131	764,460	3,919,460	5.0	.20	<.05	1.00	500	100	700	3.0	5	70	30	100	<20
6133	763,510	3,922,160	2.0	.15	<.05	1.00	700	300	500	7.0	15	30	30	70	N
6134	768,470	3,921,800	5.0	.15	<.05	.70	500	700	700	7.0	<5	70	30	70	<20
6135	768,150	3,921,620	2.0	.15	<.05	.70	200	700	500	7.0	10	30	15	100	<20
7001	765,540	3,921,660	2.0	.20	<.05	.50	150	100	700	3.0	15	70	30	100	<20
7002	765,620	3,921,930	1.0	.07	<.05	.30	150	150	500	5.0	15	20	15	30	30
7005	765,340	3,922,380	2.0	.15	<.05	.50	200	150	700	3.0	20	70	30	100	<20
7007	765,180	3,922,770	1.5	.15	<.05	.30	70	70	700	2.0	N	70	15	30	N
7008	765,140	3,923,150	1.0	.02	<.05	.50	70	70	150	3.0	N	15	7	30	N
7051	765,700	3,920,440	1.5	.10	<.05	.70	300	200	500	3.0	<5	20	7	200	N
7063	766,140	3,919,690	1.5	.20	.07	.30	2,000	200	500	10.0	30	30	15	70	N
7064	766,290	3,919,480	20.0	.10	<.05	.20	700	150	500	5.0	N	30	20	30	N
7073	767,330	3,916,020	3.0	.30	.10	.70	700	100	700	5.0	N	50	30	50	<20
7080	768,970	3,915,750	1.5	.15	.05	.30	500	100	500	3.0	N	15	10	50	N
8001	770,149	3,918,339	1.0	.10	<.05	.20	200	10	200	2.0	N	10	7	30	N
8002	769,739	3,918,229	1.5	.20	<.05	.30	200	20	500	2.0	N	20	10	20	<20
8005	769,189	3,917,889	1.5	.15	.07	.20	500	50	500	3.0	N	20	30	150	N
8006	768,739	3,918,299	1.0	.10	<.05	.20	200	30	200	3.0	N	15	10	50	N
8007	768,269	3,918,669	1.5	.20	.05	.30	500	30	300	3.0	N	30	15	50	N
8009	767,799	3,919,229	1.0	.15	<.05	.20	100	10	300	3.0	N	20	10	50	N
8016	765,700	3,920,810	2.0	.20	<.05	.30	150	150	500	5.0	5	50	30	70	N
8023	765,409	3,916,179	2.0	.30	<.05	.70	300	100	700	3.0	5	50	20	100	<20
8053	767,169	3,920,409	.7	.07	.15	.20	700	100	300	7.0	<5	<10	7	30	N

sample S-NI S-PI S-SC S-SR S-V S-Y S-ZR AA-ZN

0087	10	50	30	15	N	50	50	150	40
0088	15	50	30	15	N	70	50	200	60
6090	15	30	50	15	150	30	50	150	70
6092	20	50	50	15	200	50	70	150	50
6093	20	50	50	15	200	50	70	150	50
6094	15	20	50	10	N	50	30	200	20
6095	10	50	30	15	N	70	30	500	25
6096	15	30	50	10	N	50	30	500	20
6102	10	50	50	15	N	50	50	500	20
6103	10	50	50	10	N	100	50	300	20
6128	15	50	50	15	150	100	50	200	35
6129	30	70	70	20	N	150	150	200	30
6131	20	50	100	15	N	100	150	1,000	30
6133	30	70	100	15	N	30	50	200	25
6134	20	50	150	20	N	50	50	150	30
6135	15	30	100	15	<100	50	50	300	40
7001	10	30	50	15	100	50	30	150	60
7002	15	15	100	10	100	30	30	150	85
7003	15	30	70	15	<100	30	30	150	80
7007	7	50	50	15	<100	30	30	100	25
7008	7	15	30	10	N	30	30	200	30
7051	7	20	100	10	N	50	50	200	20
7063	20	20	100	15	N	30	30	200	70
7064	<5	30	100	15	150	30	30	150	20
7078	7	70	100	15	N	20	20	500	30
7080	<5	30	100	10	N	15	15	200	20
8001	7	15	30	5	N	20	20	150	55
8002	5	30	50	10	N	20	20	150	15
8003	10	70	50	10	100	30	30	150	60
8006	<5	30	50	7	N	20	20	150	35
8007	7	50	50	10	N	20	20	150	40
8009	7	30	30	7	N	20	20	150	35
8016	7	50	50	15	N	30	30	150	55
8017	15	70	150	15	N	30	30	500	30
8033	5	20	7	7	N	30	30	150	45

Stream Sediments and Panned Concentrates

sample	X-COORD.	Y-COORD.	S-FEZ	S-MGZ	S-CAZ	S-TIX	S-MN	S-B	S-BA	S-DE	S-CO	S-CR	S-CU	S-LA	S-NB
4009	769,399	3,927,149	3.0	.20	.10	.70	1,000	200	500	3	20	50	20	70	N
4010	769,459	3,927,199	1.5	.15	.07	.70	700	500	300	5	20	20	20	70	N
4056	764,699	3,922,270	7.0	.50	.05	.70	1,000	200	700	3	20	70	20	100	<20
4078	767,739	3,917,289	1.0	.15	<.05	.70	700	<10	500	3	7	15	7	30	N
4086	767,099	3,917,969	1.0	.15	<.05	.50	1,000	<10	700	2	10	10	7	70	N
4093	766,429	3,918,409	1.5	.15	<.05	1.00	1,000	10	700	3	20	20	10	150	<20
4106	765,599	3,916,319	1.0	.15	<.05	.30	700	<10	200	3	7	10	7	N	N
4108	766,579	3,916,729	1.0	.10	<.05	.70	700	30	300	3	7	10	7	20	N
4125	769,369	3,923,589	1.5	.15	.05	1.00	1,000	100	500	5	20	20	15	50	<20
4126	769,349	3,923,560	1.5	.15	.05	1.00	1,500	70	500	5	30	30	20	50	<20
4135	768,219	3,923,899	1.5	.10	<.05	1.00	700	100	300	3	15	15	15	150	<20
4136	768,169	3,923,859	1.5	.15	.10	.30	1,500	100	700	5	15	20	15	100	N
4150	767,019	3,923,639	1.5	.15	.05	1.00	700	300	500	3	20	30	20	100	<20
4172	766,409	3,923,189	1.5	.15	.05	.50	700	200	300	3	20	50	20	70	N
4217	770,189	3,919,429	2.0	.30	.05	1.00	1,000	10	700	3	20	30	15	70	<20
4218	770,129	3,919,389	1.5	.20	.05	.70	700	30	300	3	10	15	10	30	N
4221	769,769	3,919,329	1.5	.15	<.05	.50	1,000	<10	500	3	15	15	10	70	<20
4223	769,499	3,919,859	1.5	.15	<.05	.70	1,500	50	500	5	20	15	15	50	<20
4224	769,569	3,919,809	1.5	.15	<.05	.70	1,500	300	300	3	15	15	10	30	N
4227	768,909	3,919,769	1.0	.15	<.05	.70	1,500	N	500	3	15	<10	7	200	<20
4228	768,619	3,920,040	1.5	.15	<.05	.70	1,500	<10	700	3	15	15	15	200	<20
4229	768,519	3,920,429	1.5	.15	.05	.70	700	100	700	2	10	20	15	70	<20
4230	768,949	3,919,929	1.5	.20	.15	.70	1,000	30	700	5	15	20	15	100	N
4240	768,389	3,920,299	1.5	.20	.15	.70	1,000	300	500	5	15	20	15	30	N
4270	767,059	3,923,479	2.0	.20	.10	.50	1,500	300	300	5	20	30	20	50	N
5041	769,339	3,927,189	1.0	.07	<.05	.70	300	70	150	3	7	20	10	30	N
5049	769,539	3,926,399	1.5	.10	<.05	.30	300	100	300	3	10	20	15	70	N
5055	769,729	3,926,349	1.5	.15	<.05	.20	1,500	100	300	5	20	30	20	100	N
5056	769,739	3,926,459	2.0	.15	<.05	.50	700	200	300	3	20	50	30	70	<20
5079	765,369	3,923,409	1.0	.10	.07	.30	1,000	200	200	3	15	15	15	100	N
5087	767,659	3,915,599	1.5	.15	.05	.30	700	20	200	2	10	15	10	20	N
5093	768,039	3,916,849	1.5	.15	.05	1.00	700	50	200	2	10	15	10	20	<20
5094	767,999	3,916,969	1.5	.15	.05	.70	700	30	300	2	N	10	10	20	N
5096	768,309	3,917,029	1.5	.15	<.05	1.00	700	15	150	2	5	10	10	20	N
5098	768,669	3,916,669	1.0	.15	.05	.20	700	10	200	3	7	10	7	20	N
5100	763,849	3,916,879	.7	.10	<.05	.20	300	20	150	2	N	<10	5	20	N
5101	768,949	3,916,389	1.0	.15	.05	.20	500	30	200	3	5	10	7	20	N
5102	769,759	3,916,939	1.0	.15	.07	.20	700	50	200	3	7	15	7	20	N
5103	770,019	3,917,099	1.0	.15	.05	.30	700	20	200	3	5	10	7	<20	N
5124	767,999	3,921,579	7.0	.15	.10	>1.00	1,000	300	200	2	15	15	20	30	20
5156	767,619	3,921,219	5.0	.20	.15	.70	1,500	300	500	3	30	50	30	70	N
5144	765,979	3,921,139	1.5	.15	.15	1.00	700	300	300	3	15	15	20	100	<20
5147	767,309	3,921,009	5.0	.20	.10	1.00	1,500	300	300	5	20	30	30	100	<20
5154	769,399	3,917,209	1.5	.15	.10	.70	700	50	300	3	5	10	7	20	N
5158	768,669	3,921,279	2.0	.30	.15	.50	1,500	200	500	3	20	20	20	30	N

## Stream Sediments and Panned Concentrates

sample	S-NI	S-PB	S-SC	S-SR	S-V	S-Y	S-ZR	AA-ZN
4009	20	50	15	<100	50	30	150	110
4010	15	30	10	<100	50	30	150	90
4056	30	30	20	100	50	50	150	120
4078	5	30	5	<100	30	30	300	30
4086	5	20	<5	<100	20	50	200	40
4093	10	50	5	<100	30	30	300	55
4106	7	15	<5	<100	20	20	200	45
4108	7	15	5	<100	20	30	200	40
4125	15	50	10	<100	30	30	150	70
4126	20	30	15	<100	50	30	200	95
4135	7	20	7	<100	30	30	700	75
4136	20	30	10	<100	30	30	150	80
4150	20	30	15	<100	30	30	200	80
4172	20	30	15	<100	30	30	200	90
4217	15	30	15	150	30	30	200	80
4218	10	20	7	<100	30	20	150	65
4221	10	30	7	<100	30	100	700	55
4223	10	50	7	<100	30	70	200	75
4224	10	30	10	<100	30	30	150	65
4227	5	50	5	<100	20	70	500	25
4228	7	50	5	100	30	30	300	110
4229	7	30	10	<100	30	30	300	50
4230	<5	50	7	<100	50	30	700	65
4240	20	30	10	<100	50	30	300	100
4270	30	30	10	<100	70	70	300	120
5041	7	15	7	N	30	30	200	55
5049	10	15	10	N	30	30	150	70
5055	20	30	10	<100	30	30	100	120
5056	20	20	15	N	30	50	200	100
5079	15	20	10	N	30	30	150	100
5087	10	20	7	N	30	20	150	60
5093	10	20	7	N	30	30	700	45
5094	10	20	5	100	30	30	150	35
5096	10	20	7	N	20	50	300	50
5098	10	20	7	100	20	20	300	45
5100	7	15	N	<100	15	10	150	40
5101	7	30	7	N	20	30	200	50
5102	10	30	7	<100	20	20	150	70
5103	7	20	7	<100	20	20	200	55
5124	7	20	7	<100	30	50	700	60
5136	30	30	10	<100	70	30	200	120
5144	10	30	7	N	50	50	500	65
5147	30	30	10	<100	70	50	300	80
5154	5	15	7	<100	30	20	700	40
5158	20	30	7	<100	50	30	150	100

unmarked 7/19/79



## Stream Sediments and Panned Concentrates--continued

sample	X-COORD.	Y-COORD.	S-FE%	S-MG%	S-CAX	S-TIX	S-MN	S-B	S-BA	S-BE	S-CO	S-CR	S-CU	S-LA	S-NB
5159	769,499	3,921,379	2.0	.30	.15	.70	700	200	500	3	15	30	20	50	N
5173	770,769	3,920,000	3.0	.20	.10	1.00	1,500	<10	300	3	10	15	10	N	N
5174	770,849	3,920,039	5.0	.30	.15	1.00	2,000	70	500	3	30	30	30	70	<20
60J3	765,230	3,916,830	1.5	.10	N	.50	700	10	300	3	15	15	10	70	N
60J4	765,270	3,916,860	1.0	.10	<.05	.50	700	10	500	3	15	10	7	100	N
6006	765,310	3,916,630	.7	.10	<.05	.30	700	20	500	3	15	<10	7	150	<20
6010	765,040	3,918,110	1.5	.15	<.05	.70	1,000	10	500	3	20	20	15	100	<20
6011	764,970	3,918,090	1.5	.20	.07	.70	700	150	500	3	15	20	20	70	<20
6013	764,760	3,918,280	1.5	.15	.10	.70	1,000	200	500	5	20	30	30	100	<20
6015	764,800	3,919,070	1.5	.15	<.05	.50	1,000	100	500	3	15	15	15	70	N
6016	764,690	3,919,180	2.0	.20	.10	.70	700	150	500	3	20	30	30	50	<20
6018	764,790	3,919,560	1.5	.15	.10	.70	700	100	500	3	15	20	15	150	N
6035	769,870	3,924,470	1.5	.10	.10	.70	1,000	100	300	3	15	20	10	200	<20
6036	769,860	3,924,420	2.0	.15	.10	1.00	1,000	100	200	3	10	15	20	70	20
6039	769,710	3,924,400	2.0	.15	.15	1.00	2,000	200	300	3	20	15	15	100	<20
6042	769,290	3,924,860	1.5	.15	.05	1.00	500	100	200	3	15	20	15	100	20
6044	769,010	3,924,880	1.5	.15	.15	1.00	3,000	150	300	3	20	20	20	50	<20
6046	765,760	3,925,000	1.5	.07	.05	1.00	700	200	150	2	10	15	10	100	<20
6048	768,540	3,925,300	1.5	.15	.10	.50	1,500	150	500	3	20	30	15	100	<20
6054	765,020	3,919,960	1.5	.15	.10	.70	1,500	200	300	3	15	30	20	70	<20
6057	765,530	3,920,680	1.5	.10	.10	.70	1,500	150	300	5	15	20	15	70	N
6061	765,360	3,921,280	2.0	.20	.15	.70	1,000	200	500	5	20	50	30	100	<20
6062	765,200	3,921,400	1.5	.20	.15	.70	1,000	200	300	3	20	50	20	100	<20
6063	768,400	3,925,340	2.0	.15	.10	1.00	1,000	200	300	2	15	20	20	100	<20
6066	765,150	3,923,320	.5	.07	.05	.15	700	100	150	3	7	<10	7	50	N
6072	766,400	3,923,100	2.0	.20	.10	.30	2,000	150	500	5	30	50	30	100	<20
6104	768,880	3,913,600	3.0	.30	.15	.70	700	50	700	3	15	50	20	30	N
6105	765,160	3,913,080	2.0	.30	.15	.70	700	150	500	3	10	20	20	30	<20
6106	763,930	3,913,110	1.5	.20	.10	1.00	1,500	50	500	3	5	10	10	30	<20
6107	761,680	3,913,060	2.0	.20	<.05	1.00	700	100	500	<1	10	15	20	150	<20
6108	761,490	3,914,610	3.0	.30	<.05	.70	700	300	500	3	30	50	30	150	N
6109	761,560	3,914,470	1.5	.20	.05	.50	500	20	500	3	10	20	15	30	<20
6111	763,330	3,917,350	1.5	.15	.15	.30	1,000	300	500	5	15	20	20	100	N
6113	763,300	3,917,440	2.0	.30	.15	.70	700	700	500	5	15	50	30	50	<20
6114	763,600	3,917,420	1.5	.20	.15	.20	1,500	200	500	10	20	30	30	100	N
6115	763,650	3,917,510	5.0	.30	.10	.50	700	300	500	5	20	50	30	70	N
6119	764,060	3,917,630	3.0	.20	.15	.70	700	200	500	5	20	30	20	70	<20
6121	764,210	3,917,390	1.5	.20	.10	.30	1,500	30	500	5	15	20	15	50	N
6122	764,220	3,917,380	2.0	.30	.15	.70	2,000	50	700	10	20	20	20	150	N
6125	764,460	3,917,960	5.0	.30	.20	1.00	1,000	300	500	5	20	50	30	100	N
7010	765,150	3,923,320	1.5	.15	.15	.30	700	200	500	5	20	30	30	100	<20
7013	766,450	3,915,680	1.5	.15	.07	.30	700	150	300	3	5	15	7	30	N
7015-P	768,039	3,925,599	5.0	.30	<.05	.70	700	300	500	3	20	50	20	50	<20
7016-P	768,029	3,925,439	1.5	.15	<.05	.70	500	300	200	2	<5	15	7	20	<20
7022-P	767,719	3,925,739	7.0	.20	<.05	.50	700	300	300	3	15	50	20	50	<20

Stream Sediments and Panned Concentrates--continued

sample	S-NI	S-PB	S-SC	S-SR	S-V	S-Y	S-ZR	AA-ZN
5159	20	30	7	<100	50	300	700	90
5173	5	30	5	<100	30	30	700	50
5174	20	70	10	<100	70	50	1,000	85
6003	7	30	7	N	20	30	700	40
6004	7	30	7	N	15	30	700	35
6006	7	30	7	N	20	30	200	55
6010	10	50	7	N	30	30	700	55
6011	15	30	10	N	30	50	700	120
6013	15	50	15	<100	30	50	700	130
6015	15	30	7	N	30	20	200	85
6016	15	30	15	N	30	70	500	100
6018	15	30	10	N	30	100	500	70
6035	10	30	7	N	30	50	500	60
6036	10	30	10	N	30	50	300	70
6039	10	30	10	N	30	30	300	70
6042	10	20	10	N	30	50	500	60
6044	20	30	10	<100	30	30	200	80
6046	10	20	5	N	20	30	200	50
6048	15	50	15	N	50	30	150	130
6054	15	50	10	<100	30	30	150	100
6057	20	30	10	<100	30	30	300	90
6061	20	30	15	<100	30	50	100	145
6062	15	50	15	<100	50	50	700	120
6063	10	30	7	N	20	70	700	60
6066	7	10	5	N	20	20	150	130
6072	20	30	15	100	50	30	150	130
6104	15	30	10	<100	70	30	300	70
6105	10	20	5	<100	50	30	1,000	60
6106	5	20	7	150	30	30	1,000	45
6107	5	50	7	<100	30	100	>1,000	30
6108	20	50	7	N	70	70	1,000	90
6109	10	30	7	<100	70	30	300	50
6111	20	50	10	<100	70	150	300	95
6113	15	50	10	<100	100	70	500	60
6114	20	70	10	<100	70	30	500	120
6115	20	30	15	N	100	50	300	75
6119	20	50	10	<100	70	30	300	70
6121	15	50	N	N	50	30	150	80
6122	15	70	7	<100	100	30	300	75
6125	30	30	10	<100	100	50	150	90
7010	20	30	15	<100	50	30	150	110
7013	7	30	5	<100	20	20	500	40
7015-P	20	20	15	<100	70	30	300	--
7016-P	7	10	5	N	30	30	300	--
7022-P	20	15	15	<100	50	30	150	--

## Stream Sediments and Panned Concentrates--continued

sample	X-COORD.	Y-COORD.	S-FEX	S-MGX	S-CAZ	S-TIX	S-MN	S-B	S-BA	S-BE	S-CO	S-CR	S-CU	S-LA	S-NB
7023	767,160	3,925,000	1.5	.10	<.05	.20	200	150	150	3	10	20	10	50	N
7024	767,040	3,924,470	1.5	.15	<.05	.50	300	200	200	3	5	30	20	70	<20
7029	766,440	3,924,130	1.5	.15	.05	.70	500	200	300	3	10	30	20	70	<20
7030	766,300	3,923,800	1.5	.10	<.05	1.00	500	300	200	3	7	10	15	50	<20
7031	765,850	3,923,560	1.0	.10	<.05	.20	150	50	200	3	5	15	7	50	N
7032	764,650	3,923,590	1.5	.10	.05	.30	500	70	300	3	15	30	15	70	N
7033	764,500	3,922,290	1.5	.20	<.05	1.00	500	300	200	3	7	20	30	100	<20
7033-P	764,500	3,922,290	1.5	.15	<.05	.70	500	300	200	3	<5	15	10	30	<20
7034	764,380	3,922,660	1.0	.10	.05	.30	200	50	200	3	5	10	7	150	N
7034-P	764,380	3,922,660	2.0	.15	.05	1.00	700	300	200	2	<5	15	30	150	<20
7035	764,770	3,922,110	2.0	.30	.15	.50	500	150	700	3	7	30	30	30	N
7036	764,700	3,922,270	3.0	.30	.10	.70	700	300	700	5	15	50	30	100	<20
7047-P	765,560	3,920,340	1.5	.15	<.05	.70	500	50	500	2	<5	15	7	150	<20
7047	765,560	3,920,340	1.5	.15	.05	1.00	700	200	700	3	10	15	15	150	<20
7048	765,440	3,920,340	3.0	.15	.05	1.00	1,000	200	300	3	10	15	20	200	<20
7048-P	765,440	3,920,340	1.5	.15	.05	.70	1,000	.50	300	2	<5	15	7	50	<20
7049-P	765,770	3,920,900	1.5	.15	<.05	.70	700	100	300	3	N	15	7	20	<20
7049	765,770	3,920,900	5.0	.15	.15	1.00	700	150	500	3	10	30	20	30	<20
7057	765,860	3,920,080	2.0	.15	<.05	.70	1,000	50	300	5	20	30	20	50	N
7061	765,930	3,919,960	3.0	.15	.07	.70	1,000	150	500	5	30	50	30	70	<20
7065-P	766,449	3,919,399	1.0	.10	<.05	.30	500	<10	500	2	N	10	<5	100	<20
7066-P	767,039	3,913,459	1.0	.15	.07	.50	700	150	200	3	N	<10	<5	N	<20
7066	767,039	3,913,459	2.0	.30	.15	.70	700	70	500	5	10	20	20	70	N
7067-P	766,529	3,913,489	1.5	.15	.15	.70	700	100	300	3	<5	15	7	<20	<20
7067	766,529	3,913,489	1.5	.30	.20	.30	700	30	700	10	10	20	20	70	N
7068-P	763,639	3,912,589	1.0	.10	.05	.50	700	30	300	3	N	10	5	50	<20
7069-P	761,039	3,912,879	.7	.10	<.05	.30	500	N	300	2	N	<10	5	100	<20
7070-P	760,599	3,913,439	2.0	.15	<.05	1.00	700	70	300	3	7	15	20	100	20
7071	761,710	3,912,150	2.0	.30	.15	.50	700	300	500	3	20	50	20	70	N
7072	762,260	3,919,670	7.0	.30	.10	.70	700	300	500	5	15	50	30	100	N
7073	762,730	3,920,310	3.0	.30	.10	.70	1,000	300	500	7	30	50	20	100	<20
7074	762,900	3,920,480	2.0	.20	.07	.30	1,000	150	300	10	50	20	30	150	<20
7075	763,810	3,921,130	1.5	.10	.05	.30	500	200	200	10	20	15	15	70	N
7076	763,930	3,921,240	1.5	.15	<.05	.50	200	200	500	10	5	30	20	100	<20
7077	764,220	3,921,480	2.0	.15	<.05	.70	300	150	500	10	10	50	20	100	<20
8010	767,199	3,918,889	1.5	.15	.10	.30	1,500	30	700	5	15	20	15	150	<20
8012	767,179	3,918,799	1.5	.20	<.05	.70	700	20	700	3	15	20	10	100	<20
8014	766,499	3,919,379	1.5	.15	.20	.70	700	200	500	5	15	30	20	50	<20
8015	766,399	3,919,489	1.5	.15	.07	1.00	700	100	500	3	15	20	20	150	<20
8028	765,579	3,921,570	2.0	.15	.07	.70	700	300	500	5	20	20	20	50	N
8031	766,139	3,921,689	2.0	.15	.15	1.00	1,000	200	300	5	20	15	20	70	<20
8034	766,979	3,921,679	3.0	.30	.15	1.00	700	300	700	10	20	50	30	150	<20
8039	769,479	3,921,449	7.0	.50	.10	.50	2,000	300	700	10	50	70	30	100	N

## Stream Sediments and Panned Concentrates--continued

sample	S-NI	S-PB	S-SC	S-SR	S-V	S-Y	S-ZR	AA-ZN
7023	10	20	10	N	30	30	150	70
7024	10	30	10	N	30	30	200	40
7029	15	30	15	N	30	30	200	90
7030	10	20	7	N	30	50	700	70
7031	7	30	7	N	30	30	150	40
7032	15	30	10	N	30	30	150	70
7033	10	20	10	<100	30	150	500	50
7033-P	7	10	10	<100	50	30	500	--
7034	10	30	10	N	20	30	200	35
7034-P	7	20	10	<100	30	30	1,000	--
7035	20	30	10	N	100	30	200	90
7036	20	50	15	100	100	70	200	75
7047-P	<5	30	7	<100	30	50	700	--
7047	10	50	10	<100	30	150	700	40
7048	10	30	15	<100	30	70	>1,000	35
7048-P	5	20	7	<100	30	20	700	--
7049-P	<5	15	7	<100	30	20	500	--
7049	15	70	10	N	50	30	200	50
7057	20	50	10	N	70	30	200	70
7061	20	70	15	<100	100	30	200	70
7065-P	5	20	<5	N	20	10	500	--
7066-P	<5	10	5	N	20	15	1,000	--
7066	10	30	10	100	70	30	500	60
7067-P	5	15	5	<100	20	15	700	--
7067	15	70	10	<100	70	30	200	85
7068-P	<5	15	5	<100	30	70	700	--
7069-P	5	20	<5	N	20	10	500	--
7070-P	5	15	7	N	30	50	>1,000	--
7071	20	70	10	N	70	150	200	90
7072	30	50	15	N	100	50	500	80
7073	20	70	15	100	100	30	300	110
7074	50	70	10	<100	70	30	150	75
7075	15	50	7	<100	70	30	150	50
7076	20	50	15	<100	100	30	300	50
7077	20	50	15	100	100	30	200	45
8010	15	70	7	N	50	30	200	60
8012	10	70	10	N	50	30	500	35
8014	20	30	15	N	50	50	200	80
8015	15	50	10	N	30	50	300	60
8028	20	50	10	N	70	30	150	60
8031	15	50	7	N	70	30	700	80
8034	20	50	15	N	100	30	200	65
8039	70	70	20	150	100	70	150	130

Quartz Veins

sample	X-COORD.	Y-COORD.	S-FEZ	S-MG%	S-CAZ	S-TIX	S-MN	S-B	S-BA	S-BE	S-CO	S-CR	S-CU	S-LA	S-NB
4052	769,349	3,925,989	1.50	.07	N	.100	70	15	200	3.0	N	10	10	N	N
4113	766,369	3,917,199	.05	.02	N	.015	30	N	70	<1.0	N	<10	N	N	N
4165	767,229	3,922,729	1.50	.15	N	.100	100	150	700	5.0	N	20	50	50	N
4235	768,829	3,920,009	.30	.20	.20	.150	70	30	300	3.0	N	<10	7	30	N
4239	768,389	3,920,389	.30	<.02	<.05	.020	70	15	70	<1.0	N	<10	7	<20	N
5003	762,629	3,917,119	15.00	.10	.05	.150	3,000	300	500	7.0	100	20	100	200	N
5008	762,999	3,916,649	5.00	1.50	3.00	.700	3,000	15	700	<1.0	N	20	7	200	<20
5021	768,589	3,926,000	.10	<.02	N	.070	500	N	50	N	N	N	7	N	N
5039	769,139	3,927,229	1.50	.15	<.05	.500	50	300	700	5.0	N	70	15	150	<20
5069	764,429	3,922,389	1.50	.20	.70	.200	500	10	150	1.5	N	10	7	N	N
5078	765,009	3,923,400	10.00	.50	<.05	.500	500	150	700	2.0	15	70	15	100	<20
5099	768,719	3,916,759	.70	.07	.15	.150	700	N	500	N	N	10	<5	30	<20
5127	767,719	3,919,639	.20	.05	<.05	.030	70	N	150	<1.0	N	<10	N	N	N
5146	767,309	3,921,009	1.50	.07	N	.030	500	N	100	1.0	N	<10	7	30	N
5167	769,919	3,920,939	<.05	.02	<.05	.015	30	N	70	1.0	N	N	N	N	N
6007	765,290	3,917,550	1.50	.02	N	.050	70	N	150	N	N	<10	20	20	N
6009	765,130	3,917,930	.07	<.02	N	.030	50	N	100	N	N	N	N	N	N
6034	770,110	3,924,500	.30	<.02	N	.003	100	N	N	N	N	<10	N	N	N
6041	769,570	3,924,600	.70	.02	.10	.030	500	N	100	<1.0	N	<10	N	N	N
6051	764,770	3,919,300	.10	<.02	N	.020	20	N	30	<1.0	N	N	<5	N	N
6060	765,600	3,921,060	1.50	.15	N	.150	70	100	500	3.0	N	15	20	N	N
6064	765,020	3,923,390	.70	.03	N	.020	700	<10	100	<1.0	N	<10	10	N	N
6067	765,360	3,923,490	2.00	.20	<.05	.050	500	N	70	1.0	5	<10	15	N	<20
6127	765,450	3,921,180	.10	<.02	N	.003	70	N	N	<1.0	N	N	<5	N	N
6130	764,260	3,919,950	1.00	.10	<.05	.200	500	10	200	<1.0	N	<10	7	N	N
6137	768,150	3,921,700	1.50	.20	<.05	.070	700	10	100	1.5	N	<10	10	N	N
6138	767,270	3,921,810	<.05	<.02	N	N	50	N	N	N	N	N	N	N	N
7004	765,450	3,922,140	.10	<.02	<.05	.015	150	N	30	<1.0	N	N	N	N	N
7011	765,160	3,923,280	.15	.02	N	.050	70	N	70	1.0	N	<10	<5	N	N
7053	765,700	3,920,380	.30	.02	N	.020	150	N	70	<1.0	N	N	5	N	N
7059	765,810	3,920,040	.15	<.02	N	N	70	N	N	<1.0	N	N	5	N	N
8021	762,969	3,916,939	1.00	.10	<.05	.150	70	30	200	2.0	N	<10	<5	70	N
8026	763,629	3,916,359	1.00	.10	<.05	.100	150	15	1,000	2.0	7	<10	7	N	N

Quartz Veins

sample	S-NI	S-PB	S-SC	S-SR	S-V	S-Y	S-ZR	AA-ZN
4052	10	15	5	N	20	<10	20	45
4113	5	N	N	N	<10	N	15	<5
4105	7	150	10	N	30	15	70	20
4235	<5	50	7	N	15	<10	200	15
4239	<5	150	N	N	10	N	N	10
5003	50	10	15	<100	30	70	150	200
5008	5	30	10	1,500	30	50	200	90
5021	7	100	N	N	10	N	15	220
5039	7	70	30	500	150	50	100	<5
5069	5	15	5	150	20	10	150	30
5078	15	70	15	<100	70	50	150	60
5099	<5	20	N	<100	15	10	100	20
5127	5	15	N	N	<10	N	20	5
5146	7	15	N	N	10	10	N	15
5167	5	<10	N	N	<10	N	20	<5
6007	7	70	N	N	10	N	70	25
6009	5	N	N	N	<10	N	N	<5
6034	5	N	N	N	<10	N	N	<5
6041	5	<10	N	N	<10	N	50	10
6051	5	N	N	N	10	N	50	N
6060	7	<10	10	N	70	15	150	25
6064	5	70	N	N	<10	N	N	10
6067	10	70	N	<100	15	N	30	75
6127	5	N	N	N	10	N	N	<5
6130	5	15	<5	N	30	10	70	10
6137	5	15	5	N	20	N	30	50
6138	5	N	N	N	<10	N	20	5
7004	5	10	N	N	<10	N	10	10
7011	5	15	N	N	<10	N	10	5
7053	5	10	N	N	10	N	20	5
7059	5	<10	N	N	10	N	10	5
8021	5	70	5	N	20	30	300	30
8026	15	70	5	150	20	N	70	20



## Slate

sample	X-COORD.	Y-COORD.	S-FE%	S-MG%	S-CA%	S-TIX	S-MN	S-B	S-BA	S-BE	S-CO	S-CR	S-CU	S-LA	S-NB
4017	770,329	3,927,399	5.0	1.0	N	.50	700	300	500	5	10	70	10	50	N
4043	769,849	3,925,389	5.0	.7	N	.20	700	150	700	3	10	70	10	20	N
4050	769,769	3,925,039	5.0	.7	<.05	.20	700	150	500	3	N	70	20	70	N
4059	765,169	3,922,550	7.0	1.0	<.05	.20	500	200	1,000	3	10	70	20	100	N
4085	767,379	3,917,729	2.0	.7	<.05	.30	200	50	1,500	3	N	70	5	70	N
4107	766,759	3,916,189	2.0	.7	.15	.50	500	30	2,000	3	N	70	15	50	<20
4110	766,349	3,916,919	1.5	.5	N	.30	150	30	1,000	3	N	70	10	100	N
4137	766,149	3,923,969	7.0	1.0	.15	.50	2,000	200	700	3	20	70	50	70	<20
4153	767,499	3,923,509	10.0	1.5	N	.50	700	200	500	3	20	70	50	70	<20
4193	767,299	3,921,889	7.0	1.0	N	.30	500	300	1,000	3	10	70	20	100	N
4216	770,159	3,919,399	2.0	.5	.10	.50	200	50	1,000	3	N	50	15	100	<20
4225	769,309	3,919,749	3.0	.7	.15	.30	300	15	700	3	N	70	15	100	<20
4233	768,829	3,920,009	2.0	1.5	.20	.70	300	200	1,000	3	10	50	30	300	<20
4245	770,619	3,919,179	5.0	.7	N	.70	700	30	1,500	3	N	70	30	50	<20
4246	770,729	3,919,099	7.0	.7	.15	.70	700	30	1,000	3	15	70	30	100	<20
4263	770,739	3,917,419	10.0	1.5	.20	.70	1,000	50	1,000	5	50	70	70	70	<20
4305	766,169	3,918,969	2.0	1.0	.20	.50	500	200	1,000	5	N	50	20	150	<20
4309	765,869	3,919,409	7.0	.2	<.05	.30	150	300	1,000	7	7	70	70	20	<20
5004	762,629	3,917,119	7.0	1.0	N	.30	700	500	700	5	15	70	30	100	<20
5005	763,019	3,916,799	2.0	.7	.30	.30	500	150	700	3	10	70	30	100	<20
5009	762,999	3,916,649	7.0	1.5	.20	.30	300	50	1,500	3	20	70	50	100	<20
5011	763,719	3,916,359	2.0	1.5	.15	1.00	300	70	3,000	5	N	70	10	200	20
5020	768,569	3,926,000	7.0	1.0	.15	.70	1,500	100	700	3	10	70	20	100	N
5034	765,329	3,926,589	7.0	.7	<.05	.50	700	300	500	3	<5	70	20	150	N
5037	769,079	3,926,839	7.0	.7	<.05	.50	500	300	700	5	7	70	20	100	N
5045	769,369	3,927,049	7.0	1.0	.05	.50	500	150	700	3	5	70	10	100	N
5054	769,399	3,926,379	7.0	1.0	.10	.70	700	200	500	3	20	70	30	70	N
5058	770,199	3,926,529	7.0	.7	N	.50	500	150	300	3	15	70	30	100	<20
5070	764,369	3,922,570	7.0	1.0	.15	.50	150	30	700	3	10	70	20	50	N
5080	765,269	3,923,039	7.0	1.0	.07	.30	700	150	300	3	15	50	20	20	N
5081	765,419	3,921,489	7.0	1.0	.15	.50	700	300	700	5	7	70	20	50	N
5085	767,349	3,915,539	2.0	.5	.15	.20	300	50	700	3	15	70	20	50	N
5117	768,199	3,922,429	7.0	1.0	.05	.70	700	300	700	7	10	50	30	100	<20
5133	767,719	3,920,589	7.0	1.0	.15	.70	500	300	700	5	15	70	15	N	N
5139	766,069	3,920,799	7.0	1.0	.10	.50	300	300	1,500	7	N	70	15	100	N
5141	766,259	3,920,809	5.0	1.0	.10	.50	700	300	1,000	5	20	70	30	100	N
5143	766,799	3,921,089	7.0	1.0	.20	.50	500	300	1,000	10	10	70	30	100	<20
5145	767,219	3,921,070	7.0	1.0	.20	.70	500	30	1,000	7	20	70	30	100	N
5148	767,439	3,921,100	7.0	1.0	.07	.30	1,300	300	700	10	15	70	30	100	N
5156	768,319	3,921,129	5.0	.5	<.05	.50	700	300	700	10	N	50	30	70	<20
5157	768,569	3,921,279	5.0	1.0	.05	.30	1,000	300	500	3	100	70	30	100	N
6008	765,290	3,917,550	3.0	.5	<.05	.50	100	30	1,000	2	N	70	20	100	<20
6012	765,000	3,918,090	1.5	.7	.15	.30	200	150	700	3	<5	70	7	150	<20
6014	764,840	3,918,400	5.0	.7	.15	.30	500	150	500	2	15	70	30	70	<20
6017	764,710	3,919,380	7.0	1.0	.70	.30	700	200	700	3	10	70	30	100	<20

sample	S-NI	S-PB	S-SC	S-SR	S-V	S-Y	S-ZR	AA-ZN
4017	15	20	15	150	70	20	150	100
4043	15	10	15	200	70	30	70	100
4050	15	50	15	200	70	30	70	80
4059	20	15	15	100	70	30	100	100
4065	5	30	15	N	50	30	150	10
4107	5	20	15	100	50	30	200	10
4110	10	70	15	N	50	30	150	5
4137	30	30	20	N	50	50	200	140
4153	70	30	20	N	50	70	300	200
4193	20	30	20	N	70	70	100	100
4216	5	20	15	N	50	30	150	15
4225	<5	30	15	200	50	30	150	20
4233	20	70	15	150	100	70	200	30
4245	5	150	20	100	100	30	150	15
4246	15	70	15	150	100	50	300	35
4263	70	30	20	150	150	50	300	120
4305	15	70	15	200	100	70	200	30
4339	20	70	20	200	150	50	100	10
5004	20	20	20	150	100	30	150	120
5006	20	30	15	150	70	30	150	100
5009	50	15	15	200	70	100	150	180
5011	10	<10	30	<100	150	150	300	10
5020	15	20	20	<100	50	30	150	140
5034	10	30	20	200	70	70	150	90
5037	10	<10	20	<100	100	50	150	100
5045	15	30	20	200	70	50	150	110
5054	30	15	15	150	70	50	150	160
5058	50	20	15	150	70	30	150	200
5070	15	20	15	<100	100	50	150	90
5050	15	70	15	<100	30	50	150	170
5051	10	15	15	100	70	50	150	95
5055	15	30	15	<100	30	20	150	110
5117	30	20	20	N	100	70	150	90
5133	20	15	20	100	100	20	150	55
5139	5	100	20	N	100	50	100	30
5141	30	50	20	100	100	30	150	55
5143	30	15	30	<100	150	70	200	75
5145	50	10	30	N	100	50	150	90
5143	20	50	20	500	100	30	100	85
5156	5	70	15	200	100	70	150	50
5157	30	50	15	200	100	20	70	70
6008	5	50	15	150	70	30	150	5
6012	5	15	15	<100	70	30	150	25
6014	15	10	15	100	100	30	150	100
6017	10	30	20	300	100	150	150	90

Slate--continued

sample	X-COORD.	Y-COORD.	S-FEZ	S-MGX	S-CAZ	S-TIX	S-MN	S-B	S-BA	S-BE	S-CO	S-CR	S-CU	S-LA	S-NB
6021	766,730	3,915,550	1.5	.3	<.05	.30	300	15	700	3	N	20	15	100	<20
6025	767,790	3,915,100	2.0	.3	N	.15	200	50	700	2	7	70	20	100	<20
6037	769,750	3,924,470	10.0	1.0	.15	.30	700	200	700	3	15	70	30	50	<20
6043	769,100	3,924,820	7.0	1.0	.15	.30	700	150	300	3	15	70	30	N	<20
6045	768,940	3,925,000	1.0	.1	<.05	.20	200	15	70	<1	N	10	5	N	<20
6052	764,820	3,919,560	7.0	1.0	.10	.30	300	15	700	3	15	70	20	20	<20
6055	765,150	3,920,080	10.0	1.0	.05	.50	700	300	700	3	15	100	30	100	<20
6065	765,090	3,923,400	10.0	.7	N	.20	700	300	700	3	10	70	30	100	N
6071	766,840	3,923,000	7.0	.7	.05	.30	700	100	700	3	<5	50	30	100	N
6074	762,600	3,917,300	7.0	.7	<.05	.30	700	300	700	3	7	70	30	100	N
6076	762,760	3,917,950	7.0	.7	.10	.30	500	150	700	3	5	70	30	100	N
6082	763,130	3,913,300	7.0	1.0	.10	.30	100	200	700	3	10	70	30	100	<20
6089	764,140	3,920,270	7.0	.7	.05	.20	700	300	500	5	7	70	7	100	N
6091	764,740	3,920,640	7.0	.7	<.05	.30	500	200	500	3	7	70	15	100	N
6096	767,520	3,923,810	10.0	1.0	N	.50	700	500	700	10	20	70	20	100	N
6110	761,500	3,914,550	1.5	.2	.20	.20	500	10	700	3	N	<10	20	100	N
6112	763,310	3,917,400	7.0	.5	N	.50	500	500	700	5	N	70	30	100	N
6117	763,520	3,917,800	10.0	1.5	<.05	.50	700	500	700	5	10	70	20	200	N
6120	764,100	3,917,590	1.5	.7	.05	.70	150	300	700	3	N	50	15	100	N
6123	764,460	3,917,690	1.5	.5	.05	.50	300	200	500	3	N	50	20	100	<20
6136	763,150	3,921,700	7.0	1.5	.05	.70	1,500	500	700	5	10	70	20	100	<20
7019	767,530	3,925,500	7.0	.7	<.05	.20	1,000	200	700	3	10	70	15	100	N
7020	767,560	3,925,270	7.0	.7	.05	.30	500	200	300	3	10	70	20	100	N
7026	766,720	3,924,440	7.0	.7	.07	.20	700	200	700	3	15	70	30	50	N
7037	764,980	3,922,100	7.0	1.0	.10	.30	500	300	700	3	10	70	20	100	N
7043	764,670	3,921,730	7.0	.7	.10	.30	500	200	700	3	5	70	50	70	N
7046	764,780	3,921,970	7.0	1.0	N	.30	700	300	700	3	15	70	50	70	N
7056	765,740	3,920,130	7.0	1.0	.20	.50	500	300	700	3	15	70	30	20	N
7058	765,810	3,920,040	7.0	1.0	.05	.50	700	200	700	7	10	70	15	30	N
8011	767,199	3,918,889	2.0	.5	.05	.30	150	15	700	3	20	20	30	100	N
8017	766,339	3,919,459	7.0	1.0	.07	.50	1,000	700	700	5	7	70	30	100	N
8020	762,829	3,917,079	7.0	.7	.20	.50	500	500	700	5	20	70	20	100	N
8022	765,409	3,916,179	2.0	.7	N	.70	200	30	1,000	3	7	50	15	100	N
8024	764,569	3,916,349	2.0	.7	.05	.70	500	100	2,000	3	N	70	10	200	<20
8041	769,659	3,921,760	5.0	1.0	.10	.20	700	300	500	3	10	70	20	30	N
8043	770,139	3,922,099	7.0	1.0	.05	.50	1,000	300	700	5	<5	70	30	30	<20
8050	766,539	3,920,439	7.0	1.0	<.05	.30	700	300	700	7	10	70	30	100	<20
8055	767,159	3,920,060	5.0	.5	.05	.30	700	200	700	5	N	70	20	100	<20

State-continued

sample	S-NI	S-PU	S-SC	S-SR	S-V	S-Y	S-ZR	AA-ZN
6021	7	30	15	<100	70	20	200	10
6025	10	15	15	N	70	30	70	55
6037	30	15	20	<100	100	50	150	130
6043	30	20	15	N	100	30	150	140
6045	<5	<10	5	<100	50	10	300	15
6052	20	15	15	N	70	30	150	95
6055	20	15	20	<100	70	70	150	120
6065	10	50	15	<100	50	50	100	85
6071	7	15	15	300	70	70	100	90
6074	15	15	15	200	100	50	150	120
6076	5	30	15	200	70	50	100	80
6032	15	20	15	100	100	100	100	100
6039	15	30	15	500	100	30	150	100
6071	20	30	15	150	100	50	150	100
6076	50	15	20	N	150	30	150	120
6110	10	50	N	100	20	10	150	65
6112	10	70	20	N	150	50	150	45
6117	20	30	30	100	150	70	100	90
6120	5	50	15	N	100	30	150	30
6123	7	20	15	N	100	50	150	25
6130	15	50	30	700	150	70	150	100
7019	15	30	15	100	70	30	70	120
7020	15	<10	15	N	70	50	150	130
7026	15	30	15	N	70	30	150	120
7037	15	15	15	100	70	50	150	120
7043	10	10	15	N	50	50	100	100
7046	7	30	15	<100	70	100	150	80
7056	20	20	20	N	100	70	200	100
7058	20	30	30	N	150	70	150	90
8011	15	70	15	<100	50	20	150	30
8017	5	70	20	500	150	50	150	50
8020	15	50	20	100	150	70	200	50
8022	15	70	15	100	100	30	150	5
8024	<5	70	20	N	100	30	300	<5
8041	15	15	15	<100	100	30	150	100
8043	7	50	20	300	150	30	100	75
8050	20	30	20	150	100	50	100	95
8055	7	50	20	200	150	30	100	40

Conglomerate, Sandstone, and Siltstone

sample	X-COORD.	Y-COORD.	S-FEZ	S-MGZ	S-CAZ	S-TIZ	S-MN	S-B	S-BA	S-BE	S-CO	S-CR	S-CU	S-LA	S-NB
4003	769,109	3,927,889	1.5	.20	.50	.30	700	150	200	2.0	N	15	7	20	N
4005	769,069	3,927,469	1.5	.15	N	.20	700	150	100	2.0	10	10	10	30	N
4006	763,999	3,927,409	10.0	.70	N	.70	500	500	700	5.0	15	70	30	150	<20
4011	769,509	3,927,239	1.5	.20	.30	.50	500	70	150	1.5	10	50	7	30	N
4015	769,989	3,927,449	1.0	.05	<.05	.15	300	100	100	1.5	<5	10	7	50	N
4021	770,349	3,927,819	7.0	.20	N	.70	70	300	500	3.0	10	70	30	50	<20
4036	768,679	3,925,809	1.5	.30	.15	.15	500	70	100	<1.0	7	20	7	N	N
4065	766,009	3,922,519	7.0	1.00	.05	.50	700	200	500	3.0	10	50	20	50	<20
4076	767,339	3,917,169	1.0	.20	<.05	.30	150	<10	700	3.0	N	15	10	100	<20
4090	766,539	3,917,969	1.5	.15	.10	.50	300	20	700	3.0	N	15	7	100	<20
4095	766,219	3,918,619	1.5	.30	.20	.20	70	10	1,000	3.0	<5	15	10	70	N
4119	766,279	3,916,539	.7	.15	<.05	.30	70	<10	700	3.0	N	10	5	50	<20
4123	769,779	3,923,570	7.0	1.50	.05	.70	500	300	700	5.0	15	70	20	N	<20
4128	769,029	3,923,639	.7	.10	.15	.20	150	10	500	3.0	N	10	7	30	<20
4144	767,299	3,924,289	1.5	.20	<.05	.30	200	50	500	2.0	5	20	7	20	<20
4146	766,299	3,923,770	7.0	1.00	.10	.50	500	300	700	3.0	10	70	30	20	<20
4158	767,959	3,923,050	1.0	.15	.30	.20	3,000	150	300	3.0	N	10	7	30	N
4170	766,599	3,923,089	1.5	.30	<.05	.50	300	150	150	2.0	N	15	10	50	<20
4180	765,659	3,921,319	1.5	.15	.15	.20	150	100	700	2.0	<5	20	10	50	N
4187	766,559	3,921,649	1.5	.15	N	.30	200	150	150	2.0	<5	20	7	50	N
4203	766,649	3,922,439	5.0	.30	<.05	.30	200	300	700	3.0	N	70	50	100	<20
4212	765,239	3,921,869	1.5	.30	N	.30	300	200	200	3.0	10	20	15	30	<20
4214	770,729	3,919,339	7.0	.70	.15	.50	700	30	1,000	3.0	15	70	15	20	<20
4241	763,529	3,920,530	3.0	1.00	.70	.50	700	500	500	3.0	10	30	10	50	N
4251	770,579	3,918,509	2.0	.70	.30	.50	700	20	700	3.0	10	50	15	30	<20
4257	770,549	3,917,999	2.0	.50	.30	.30	700	50	700	3.0	10	20	15	100	<20
4268	770,839	3,916,859	3.0	.70	.30	.70	700	10	700	5.0	15	50	7	50	<20
4274	767,369	3,923,219	1.0	.20	.15	.15	500	100	100	1.5	<5	<10	<5	N	N
4292	764,829	3,919,149	3.0	.70	.05	.50	700	300	300	3.0	10	50	7	50	N
4298	765,509	3,919,109	7.0	.70	.70	.50	700	100	700	3.0	15	50	20	50	<20
5007	763,019	3,916,799	1.5	.30	.30	.50	500	10	700	2.0	7	15	20	100	<20
5012	765,769	3,915,889	2.0	.70	1.50	.50	700	10	700	3.0	10	50	7	70	<20
5013	765,769	3,915,889	7.0	1.00	.50	.70	700	<10	700	3.0	20	70	20	150	<20
5017	768,159	3,925,779	7.0	.70	.10	.30	700	200	300	3.0	20	50	30	70	<20
5051	769,179	3,926,659	1.0	.15	.30	.20	700	150	100	<1.0	N	10	N	50	N
5060	770,239	3,923,329	1.0	.15	<.05	.20	700	150	100	<1.0	5	15	<5	30	<20
5066	764,929	3,922,129	7.0	1.00	.15	.50	300	300	1,000	3.0	5	70	15	30	N
5068	764,459	3,922,329	5.0	1.00	.10	1.00	200	300	700	3.0	10	70	20	20	N
5076	764,979	3,923,409	1.5	.30	.30	.20	700	50	100	<1.0	<5	15	10	30	N
5082	765,579	3,921,359	1.0	.10	.30	.20	700	100	500	2.0	7	15	5	30	N
5033	767,659	3,915,599	1.5	.30	.50	.20	700	30	300	3.0	10	30	10	50	N
5091	767,499	3,916,419	1.5	.30	.10	.50	300	15	700	3.0	N	20	15	150	N
5097	768,519	3,916,729	1.0	.15	.15	.20	200	10	500	1.5	N	10	10	70	N
5106	770,599	3,917,039	5.0	.70	.15	.50	700	50	700	3.0	15	50	7	30	<20
5109	769,099	3,924,260	1.0	.05	.10	.30	150	50	300	1.0	N	10	<5	<20	N

Conglomerate, Sandstone, and Siltstone

sample	S-NI	S-PB	S-SC	S-SR	S-V	S-Y	S-ZR	AA-ZN
4003	7	30	7	100	30	30	150	30
4005	15	20	7	N	30	50	150	70
4006	50	20	20	150	100	70	150	120
4011	15	10	10	N	50	30	200	90
4015	10	20	5	N	15	10	150	30
4021	30	30	20	<100	70	70	200	60
4036	15	30	5	N	20	30	150	80
4065	20	30	15	<100	100	50	300	120
4076	7	70	5	150	20	20	150	10
4090	7	30	7	<100	20	30	700	5
4095	7	70	7	150	30	50	300	15
4119	5	70	5	<100	15	20	100	N
4123	30	20	15	<100	70	30	200	100
4128	5	15	5	N	15	15	150	10
4144	10	20	5	N	30	20	200	20
4146	15	30	20	N	70	50	200	120
4158	5	30	5	N	20	30	500	40
4170	5	15	7	N	30	20	200	50
4180	10	15	10	N	30	50	500	20
4187	10	15	5	N	30	20	200	30
4203	15	20	20	300	50	30	150	40
4212	20	20	7	N	30	20	200	50
4214	20	15	15	200	70	30	150	90
4241	20	20	15	300	70	30	300	40
4251	20	20	15	150	100	50	300	50
4257	20	70	10	200	30	30	200	45
4268	20	30	15	300	100	50	300	45
4274	10	20	N	N	15	N	150	25
4292	15	20	10	200	100	30	200	50
4298	20	50	15	200	100	30	200	50
5007	5	50	7	200	30	30	500	30
5012	15	50	15	500	30	30	150	50
5013	15	20	15	300	50	50	300	80
5017	30	20	15	N	30	30	150	120
5051	7	10	<5	N	20	10	150	30
5060	7	10	<5	N	20	15	200	30
5066	15	20	15	100	70	30	150	110
5068	15	10	20	100	100	70	300	120
5076	10	10	7	<100	30	20	150	40
5082	10	20	7	<100	30	30	150	20
5088	15	10	20	100	100	70	300	120
5091	5	50	10	100	30	30	150	60
5097	7	70	5	100	20	20	150	70
5106	15	20	15	200	50	30	200	80
5109	<5	10	<5	N	30	10	200	10



## Conglomerate, Sandstone, and Siltstone--continued

sample	X-COORD.	Y-COORD.	S-FEZ	S-MGX	S-CAX	S-TIX	S-MN	S-B	S-BA	S-BE	S-CO	S-CR	S-CU	S-LA	S-NB
5113	767,609	3,924,749	1.5	.15	<.05	.30	700	50	500	1.5	10	30	5	30	N
5115	767,689	3,922,050	2.0	.30	2.00	.70	1,500	300	200	2.0	5	20	15	20	<20
5122	768,149	3,921,869	3.0	.50	1.00	.50	1,500	200	150	3.0	10	20	7	50	N
5125	767,989	3,919,429	1.5	.30	.05	.50	150	<10	1,000	2.0	N	10	7	150	N
5129	767,679	3,919,719	2.0	.20	.20	.70	500	N	1,000	1.5	<5	10	10	70	<20
5130	767,639	3,919,989	3.0	.70	2.00	.50	1,000	150	300	2.0	10	30	20	30	N
5138	765,909	3,920,829	7.0	1.00	.15	.50	500	200	700	3.0	15	50	15	20	N
5140	766,169	3,920,799	1.5	.30	2.00	.30	2,000	50	500	3.0	10	20	N	50	N
5142	766,709	3,921,040	1.5	.30	.70	.20	700	N	500	2.0	7	15	<5	7	N
5155	770,159	3,917,229	7.0	1.00	.20	.70	700	50	1,000	5.0	20	70	30	20	<20
5161	769,749	3,921,379	10.0	1.50	.20	1.00	500	150	2,000	5.0	20	70	7	150	<20
5166	770,029	3,921,089	7.0	1.00	.05	1.00	100	500	1,000	3.0	N	70	20	150	<20
5168	769,789	3,920,970	1.0	1.00	.05	.70	150	200	1,000	3.0	N	70	<5	150	N
5172	770,899	3,920,000	5.0	.70	.70	.70	1,000	20	700	3.0	15	50	<5	70	N
5177	770,049	3,920,009	1.0	.10	.15	.50	70	10	700	2.0	N	<10	5	30	<20
5178	769,789	3,919,849	1.5	.15	.20	.30	300	20	1,000	1.5	N	<10	<5	30	N
6005	765,400	3,916,850	2.0	.30	.70	.50	700	N	700	1.5	5	30	5	50	<20
6019	766,510	3,915,950	5.0	.70	.70	.50	700	10	700	2.0	15	50	10	100	<20
6020	766,550	3,915,690	1.0	.10	.07	.20	300	N	500	1.5	N	<10	7	150	<20
6022	766,910	3,915,480	1.5	.20	.15	.30	500	15	700	3.0	N	15	15	150	<20
6023	767,050	3,915,300	2.0	.50	.50	.50	300	N	700	1.5	10	50	20	100	<20
6024	767,790	3,915,160	1.5	.20	.15	.20	500	N	300	3.0	<5	10	20	50	<20
6026	768,300	3,915,200	5.0	.10	.15	.30	700	70	700	3.0	7	70	15	<20	<20
6027	769,150	3,915,450	5.0	.70	.15	.50	500	20	700	3.0	15	70	30	70	<20
6028	769,090	3,915,820	2.0	.50	.30	.30	700	15	500	3.0	N	30	15	100	<20
6030	769,770	3,916,040	1.5	.30	.70	.30	500	15	500	1.5	7	30	10	50	<20
6031	770,620	3,916,160	2.0	.30	.15	.30	500	<10	700	2.0	10	50	5	70	<20
6032	770,820	3,924,720	5.0	.50	<.05	.30	300	150	700	2.0	10	70	<5	20	<20
6033	770,300	3,924,510	1.5	.10	<.05	.20	500	<10	700	<1.0	<5	30	7	70	<20
6038	769,830	3,924,470	1.0	.15	.15	.20	300	50	300	<1.0	N	10	5	30	<20
6040	769,570	3,924,600	1.0	.15	N	.20	1,000	N	500	1.0	5	15	7	30	<20
6047	768,730	3,925,160	1.5	.20	.15	.20	700	50	300	2.0	5	15	20	20	<20
6049	768,560	3,925,320	1.0	.15	.20	.20	150	70	300	1.0	N	<10	7	20	N
6050	764,700	3,919,240	1.5	.20	.10	.15	700	150	70	<1.0	5	10	7	<20	N
6053	764,980	3,919,800	1.5	.10	.20	.30	1,000	10	300	1.0	5	20	15	30	<20
6056	765,420	3,920,400	1.5	.15	.30	.30	200	30	500	2.0	N	10	5	50	<20
6058	765,500	3,920,780	1.5	.30	.50	.20	500	20	200	1.5	N	10	7	30	<20
6059	765,560	3,920,860	1.5	.10	<.05	.15	700	70	300	1.5	15	10	10	20	<20
6068	765,360	3,923,490	2.0	.15	.15	.50	500	100	200	2.0	5	20	7	30	<20
6073	766,270	3,922,670	2.0	.30	.15	1.00	700	200	500	3.0	10	50	7	70	<20
6078	762,960	3,918,110	2.0	.30	.30	.20	700	70	200	2.0	7	30	15	30	N
6080	764,060	3,918,490	5.0	.70	.10	.30	300	50	500	3.0	7	50	15	N	N
6085	763,480	3,919,240	.7	.05	N	.15	200	N	300	<1.0	N	10	<5	<20	N
6101	768,810	3,923,980	1.0	.05	.05	.30	200	50	300	1.0	N	<10	<5	N	<20
6116	763,600	3,917,540	7.0	1.00	.20	1.00	500	300	700	3.0	15	70	20	30	<20

Conglomerate, Sandstone and Siltstone--continued

sample	S-NI	S-Pa	S-SC	S-SR	S-V	S-Y	S-ZR	AA-ZN
5113	7	20	7	N	30	20	200	30
5115	15	15	10	200	70	20	300	30
5122	15	20	10	N	50	20	200	50
5125	5	70	7	200	30	30	200	5
5129	10	50	7	200	30	30	500	75
5130	15	20	10	200	30	30	300	45
5138	50	20	15	150	70	30	200	70
5140	15	30	10	200	50	150	200	25
5142	15	15	7	200	30	20	200	20
5155	50	50	20	300	150	50	300	60
5161	70	10	20	150	150	70	200	65
5166	<5	50	20	150	150	70	700	10
5168	5	50	20	150	100	30	150	5
5172	30	70	15	500	100	150	200	80
5177	5	70	7	N	20	<10	500	10
5178	5	70	5	100	20	15	150	5
6005	10	20	10	300	70	30	150	45
6019	15	20	15	300	100	30	200	40
6020	5	70	5	<100	20	30	200	5
6022	5	70	10	150	30	30	200	10
6023	10	20	10	150	50	30	300	45
6024	15	50	7	100	30	20	150	60
6026	10	30	15	<100	70	15	150	120
6027	15	15	15	100	100	30	150	85
6028	5	70	15	100	50	30	150	40
6030	15	50	10	150	30	30	150	40
6031	15	50	15	150	30	30	200	40
6032	15	15	15	N	50	30	150	60
6033	7	15	7	N	30	30	150	25
6038	5	30	5	<100	30	10	150	20
6040	7	30	7	<100	30	30	1,000	30
6047	15	20	7	N	50	20	150	45
6049	7	10	5	<100	30	10	150	20
6050	7	10	5	N	20	30	150	40
6053	7	10	7	<100	30	30	150	20
6056	7	15	5	<100	30	15	150	10
6058	15	10	5	150	20	10	150	30
6059	10	15	5	<100	30	50	100	25
6068	10	15	7	<100	30	30	200	50
6073	10	30	15	<100	100	30	300	50
6078	15	10	10	<100	50	30	150	60
6080	15	10	15	<100	70	20	150	95
6085	5	10	5	<100	20	50	300	15
6101	5	15	5	N	20	N	200	10
6116	30	10	20	150	150	100	1,000	65

Conglomerate, Sandstone, and Siltstone--continued

sample	X-COORD.	Y-COORD.	S-FE%	S-MG%	S-CA%	S-T1%	S-MN	S-B	S-BA	S-BE	S-CO	S-CR	S-CU	S-LA	S-Nb
6118	763,540	3,917,720	1.0	.15	<.05	.20	150	300	300	3.0	N	10	7	50	N
6124	764,280	3,918,030	7.0	1.00	.50	.70	700	700	500	3.0	20	70	30	N	N
6126	764,940	3,918,180	2.0	.50	.30	.50	500	20	700	3.0	10	30	7	N	N
6132	764,030	3,919,020	7.0	.70	.15	.70	700	200	300	3.0	15	50	50	N	N
70J3	765,450	3,922,140	.7	.07	.07	.15	300	150	70	<1.0	N	<10	5	N	N
7017	766,920	3,924,690	2.0	.20	.15	.30	700	100	700	3.0	10	15	7	30	N
7021	767,370	3,925,050	1.5	.20	<.05	.50	200	200	700	3.0	N	15	7	20	N
7027	766,710	3,924,040	2.0	.50	.30	.50	300	150	700	3.0	15	30	15	30	N
7038	764,980	3,922,100	7.0	.50	.20	.70	500	150	700	3.0	15	70	10	<20	N
7041	765,090	3,921,920	1.5	.30	.07	.20	300	150	500	3.0	N	20	10	20	N
7052	765,700	3,920,380	1.5	.20	<.05	.30	300	100	700	3.0	N	50	5	N	N
7079	768,820	3,915,780	2.0	.50	.20	.50	500	15	700	3.0	10	50	15	N	N
8000	770,149	3,918,339	1.5	.30	.15	.50	500	10	700	3.0	5	15	7	30	<20
80J4	769,379	3,917,999	7.0	1.00	.05	.70	700	20	1,000	3.0	7	100	15	30	<20
80J8	768,039	3,918,879	1.0	.20	<.05	.50	100	<10	1,000	2.0	N	10	<5	30	N
8035	767,019	3,921,369	1.0	.07	.50	.15	700	30	200	1.5	N	<10	<5	N	N
8047	770,069	3,922,189	5.0	.70	.20	.70	700	500	700	7.0	<5	70	10	20	<20
8049	766,139	3,920,070	7.0	1.00	<.05	.70	700	500	700	7.0	20	100	30	100	<20
8054	766,879	3,920,319	1.5	.20	.10	.20	300	10	700	3.0	N	15	7	<20	<20

Conglomerate, Sandstone, and Siltstone--continued

sample	S-NI	S-Pd	S-SC	S-SR	S-V	S-Y	S-ZR	AA-ZN
6118	10	10	5	N	30	10	150	20
6124	30	15	15	<100	100	30	200	85
6126	15	30	10	<100	100	20	150	35
6132	30	20	15	N	100	30	200	70
7003	5	20	N	N	15	<10	200	30
7017	15	<10	7	150	30	30	150	45
7021	5	<10	7	<100	30	20	150	25
7027	15	20	15	100	70	20	150	55
7038	15	<10	15	N	70	30	150	65
7041	10	10	7	N	30	20	200	30
7052	7	10	10	N	50	<10	150	25
7079	15	20	10	<100	100	30	200	55
8000	10	30	10	100	70	30	150	40
8004	10	20	15	<100	100	100	200	60
8008	5	50	7	<100	30	20	150	5
8035	7	20	N	<100	20	10	150	15
8047	15	20	20	<100	150	50	500	45
8049	30	20	30	100	150	100	300	90
8054	7	10	5	N	70	30	200	20