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Analyses and descriptions of some rock samples, Virgilina district and vicinity, North Carolina and Virginia

by

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ABSTRACT

Semiquantitative spectrographic analyses for 30 elements, atomic absorption analyses for bismuth, copper, gold, lead, and zinc, and colorimetric analyses for molybdenum and tungsten, all made on 229 rock samples from the Virgilina copper district and vicinity, North Carolina-Virginia, are reported here in detail. Localities for all samples are given in latitude and longitude. Brief sample descriptions are included. Rocks analyzed include granite, greenstone, various metavolcanic rocks, metasediments, and vein quartz. Gold is present in amounts ranging from 0.02 parts per million (ppm) to 15 ppm in 71 samples and is detectable but less than the limit of determination (0.02 ppm) in the rest of the samples. A few samples contain small amounts of bismuth, molybdenum, and tin.

INTRODUCTION

In the fall of 1968, Lesure made a geochemical reconnaissance of some gold and copper mines and the enclosing rocks in the Virgilina District, North Carolina-Virginia, as part of the U.S. Geological Survey (USGS) heavy metals program. A few samples are from the Hamme tungsten mine, Vance County, North Carolina, and also areas west of the main Virgilina district. All samples taken are rocks--either fresh, partly weathered, or saprolite--from road cuts, mine workings, and mine dumps. The samples are mostly composites of small chips taken across the layering or structure of the rock for an interval of 0.3 to 8 m (table 1). A few samples are composites of dump or float material. Thirty-nine samples are from the Luce-Howard and Redbank gold mines. Maps showing sample localities and discussion of the analytical results for samples from the southern part of the Virgilina district are given in Lesure (in press).

ANALYTICAL TECHNIQUES

The rock and saprolite samples were crushed to approximately 6 mm particle size and were pulverized to minus 140-mesh (0.105 mm) in a vertical grinder with ceramic plates. Each sample was analyzed semiquantitatively in USGS laboratories, Denver, Colo., for 30 elements by means of a six-step, direct-current arc optical-emission spectrographic method (Grimes and Marranzino, 1968) by E. L. Mosier and K. C. Watts (table 2). In addition,

each sample was analyzed by means of atomic-absorption techniques (Thompson and others, 1968; Ward and others, 1969) for copper and gold by J. G. Frisken, A. J. Toevs, W. H. Ficklin, and A. L. Meier in USGS field laboratories, Beltsville, Md.; and for bismuth, lead, and zinc by J. G. Viets, Z. C. Stephenson, and L. A. Vinnola, in USGS laboratories, Denver, Colo. The samples were also analyzed in USGS laboratories, Denver, Colo., for molybdenum and tungsten by L. W. Bailey, H. D. King, and A. W. Wells, using standard colorimetric methods.

The semiquantitative spectrographic values are reported as six steps per order of magnitude (1, 0.7, 0.5, 0.3, 0.2, 0.15, or multiples of 10 of these numbers) and are approximate midpoints of geometric brackets whose boundaries are 1.2, 0.83, 0.56, 0.38, 0.26, 0.18, 0.12, etc. The expected precision is within one adjoining reporting interval on each side of the reported value 83 percent of the time and within two adjoining intervals 96 percent of the time (Motooka and Grimes, 1976).

Explanation of Table 2

Table 2 presents the results of geochemical analyses of rock samples from the Virgilina district and vicinity. The sample location coordinates are given as the latitude (LAT) and longitude (LONG). Iron, magnesium, calcium, and titanium concentrations are reported in percent (%); all others are in parts per million (ppm). Letters added to the chemical symbols indicate a method of analysis other than the six-step semiquantitative spectrographic method; AA, atomic absorption; C-, colorimetric. Other symbols used in the table are: N, not detected; <, 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 visual lower limits of determination for the 30 elements that were determined spectrographically are as follows:

For those given in percent:

Calcium	0.05	Magnesium	0.02
Iron	0.05	Titanium	0.002

For those given in parts per million (ppm):

Antimony	100	Copper	5	Silver	0.5
Arsenic	200	Gold	10	Strontium	100
Barium	10	Lanthanum	20	Tin	10
Beryllium	1	Lead	10	Tungsten	50
Bismuth	10	Manganese	10	Vanadium	10
Boron	10	Molybdenum	5	Yttrium	10
Cadmium	20	Nickel	5	Zinc	200
Chromium	5	Niobium	10	Zirconium	10
Cobalt	5	Scandium	5		

Elements looked for spectrographically but not found, except as noted below, are: As, Au, Bi, Cd, Sb, Sn, and W.

Exceptions: Au - samples C18 and C19, 10 ppm; C28, 15 ppm. Bi - samples C4, R5, R14, R23, <10 ppm; C9, C21, R16, 10 ppm; C30, 70 ppm; BY9, 150 ppm. Cd - sample BY9, 200 ppm. Sb - sample BY9, 700 ppm. Sn - samples BY3, R41, R46, W10, W16, 10 ppm; BY4, 15 ppm; MN3, MN6, MN7, 20 ppm; MN4, 30 ppm; MN2, 50 ppm; MN5, 70 ppm. W - BY5, BY7, 50 ppm; BY1, 100 ppm; BY9, 10,000 ppm.

REFERENCES CITED

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

Lesure, F.G., in press, Reconnaissance geochemistry in the southern part of the Virgilina District, North Carolina-Virginia: U.S. Geological Survey Miscellaneous Field Studies Map MF-2203, scale 1:48,000.

Motooka, J.M., and Grimes, D.J., 1976, analytical precision of one-sixth order semiquantitative spectrographic analyses: U.S. Geological Survey Circular 738, 25 p.

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

Ward, F.N., Nakagawa, H.M., Harms, T.F., and Van Sickle, G.H., 1969, Atomic-absorption methods of analysis useful in geochemical exploration: U.S. Geological Survey Bulletin 1289, 45 p.

Table 1.--Sample descriptions
(Outcrop or road cut samples except where noted.)

(BY) Boydton 15-min quadrangle or Tungsten 7.5-min quadrangle:

BY1 3-m chip sample, felsic metavolcanic rock; very fine-grained pyrite.
BY2 Composite sample of several pieces of quartz vein, 0.6 m thick; old prospect pit.
BY3 Composite sample, boulder of partly weathered granite.
BY4 3-m chip sample, yellowish-tan, granite saprolite.
BY5 1-m chip sample, weathered granite.
BY6 0.15-m chip sample, quartz vein; minor pyrite altered to limonite.

Dump of Hamme mine BY7-BY9:

BY7 Composite sample sheared granite; fine-grained sulfides.
BY8 Composite sample, coarse-grained, altered granite; blue quartz.
BY9 Composite sample, sheared vein quartz, sulfides.

(C) Clarksville 15-min quadrangle or Nelson 7.5-min quadrangle:

Luce-Howard mine (C1-C6):

C1 1-m chip sample, silicified greenstone containing quartz and pyrite.
C2 0.6-m chip sample, greenish-gray, greenstone saprolite.
C3 0.6-m chip sample, silicified greenstone, contains quartz and limonite.
C4 1-m chip sample, greenstone and quartz.
C5 0.5-m chip sample, silicified felsic and mafic schist, weathered.
C6 0.6-m chip sample, silicified greenstone.

Redbank mine (C7-C21):

C7 0.6-m chip sample, sericite-chlorite schist, weathered; footwall of quartz vein of sample C8.
C8 0.5-m chip sample, vein quartz containing dark-green chlorite and minor schist inclusions.
C9 0.6-m chip sample, greenstone and vein quartz, minor hematite; sample from east side of cut.
C10 0.6-m chip sample, greenstone and vein quartz; sample from south end of cut.

C11 1-m chip sample, greenstone containing light-gray fragmental layers and one cross-cutting quartz vein 2.5 cm thick; sample from west side of cut.
C12 0.6-m chip sample, mixed greenstone and quartz; east side of old shaft.
C13 1-m chip sample, vein quartz containing minor greenstone; south wall of old shaft and in main ore vein.
C14 0.6-m chip sample, greenstone, minor silicified zones about 5 cm thick; west wall of old shaft.
C15 0.6-m chip sample, gray phyllite.
C16 Composite sample, quartz vein, 2-7 cm thick, minor clay and limonite.
C17 1-m chip sample, greenish-gray schist, minor amounts of vein quartz.
C18 0.3-m chip sample, vein quartz containing minor amount of schist.
C19 0.3-m chip sample, vein quartz; sheared, containing minor amounts of chlorite, hematite, and gray phyllite.
C20 0.3-m chip sample, greenstone, light-greenish-gray, contains a few 1-2 cm quartz-chlorite lenses.
C21 0.3-m chip sample, silicified greenstone and one-third vein quartz.

Luce-Howard mine (C22-C28):

C22 0.6-m chip sample, vein quartz, contains chlorite and gray phyllite.
C23 0.6-m chip sample, vein quartz, contains chlorite and gray phyllite.
C24 0.2-m chip sample, vein quartz, sheared, contains some gray phyllitic greenstone.
C25 1.3-m chip sample, olive-gray greenstone saprolite.
C26 1.3-m chip sample, similar to C25 but east of C24.
C27 0.2-m chip sample, greenstone and vein quartz.
C28 1-m chip sample, vein quartz, sheared.

Redbank mine:

C29 Composite sample, unweathered, moderate-greenish-gray greenstone from dump near old stamp mill.

Luce-Howard mine (C30-C38):

C30 0.3-m chip samples, vein quartz, sheared, contains chlorite.
C31 1.3-m chip sample, olive-gray greenstone saprolite.
C32 1.3-m chip sample, olive-gray greenstone saprolite, contains four 1-3 cm quartz veins.
C33 1.3-m chip sample, greenish-gray schist containing vein quartz and pyrite.
C34 1-m chip sample, greenish-gray schist, minor pyrite.
C35 0.3-m chip sample, vein quartz and schist.
C36 1.3-m chip sample, schistose, felsic to mafic, fragmental rock, contains minor amounts of pyrite (?), weathered.
C37 0.3-m chip sample, vein quartz, sheared.
C38 0.6-m chip sample, greenstone, footwall of sample 37.
C39 3-m chip sample, vein quartz.
C40 1-m chip sample, vein quartz.
C41 1-m chip sample, gray felsic pyroclastic phyllite.
C42 0.5-m composite sample of tailings, green sand and brown clay, Redbank mine.

Milton 15-min quadrangle:

MN1 1-m chip sample, quartz-muscovite schist saprolite; trace pyrite.
MN2 1-m chip sample, quartz-muscovite schist saprolite; trace pyrite.
MN3 1-m chip sample, weathered, quartz-muscovite schist; very fine-grained pyrite, altered to limonite.
MN4 1-m chip sample, similar to MN3.

MN5 Composite sample of limonite-rich layers in quartz-muscovite schist.
MN6 Composite sample, limonite-stained, quartz-muscovite schist; minor pyrite, altered to limonite.
MN7 Composite sample, quartz-muscovite schist; minor very fine-grained pyrite, altered to limonite.
MN8 3-m chip sample, mafic gneiss.
MN9 0.3-m chip sample, weathered feldspar-quartz-mica schist.

Durham North 15-min quadrangle or Lake Michie 7.5-min quadrangle:

ND1 3-m chip sample, red to pale-orange pyrophyllite schist; tourmaline needles.
ND2 6-m chip sample, pyrophyllite schist.
ND3 4.5-m chip sample, limonite-stained schist; pyrite altered to limonite.
ND4 4.5-m chip sample, reddish-brown, mafic saprolite.

Oxford 15-min quadrangle:

OX1 0.3-m chip sample, granodiorite, medium-grained.
OX2 0.3-m chip sample, tan to cream-colored, granodiorite saprolite.

Roxboro 15-min quadrangle:

R1 0.5-m chip sample, granite, unweathered.
R2 Composite sample, granite; weathered, friable, cream-colored, grus.
R3 0.5-m chip sample, granite saprolite, orange.
R4 0.3-m chip sample, grayish-yellow to dark-yellowish-orange, tuff (?) saprolite.
R5 0.3-m chip sample; medium-gray, fine-grained, hard tuff (?). Parent rock of sample R4.
R6 0.6-m chip sample, reddish-purple, clay-rich saprolite. Parent rock may be tuff.
R7 0.3-m chip sample, medium-gray volcanic rock, weathers olive gray.
R8 0.3-m chip sample, light-tan to gray, clay-rich slate saprolite.
R9 0.6-m chip sample, reddish-purple, medium-grained saprolite. Parent rock light-gray tuff (?).
R10 1.3-m chip sample medium-gray, medium- to coarse-grained granite, unweathered.
R11 0.3-m chip sample, chalky-weathered granite grus.
R12 Composite sample, four quartz veins, 1-2 cm thick, cut granite of sample R11.
R13 0.3-m chip sample, unweathered granite.
R14 0.3-m chip sample, chalky-weathered granite grus.
R15 2-m chip sample, vein quartz.
R16 0.3-m chip sample, vein quartz.
R17 1.3-m chip sample, interlayered red, clay-rich saprolite and tan, medium-grained, sandy saprolite.
R18 0.3-m chip sample, unweathered granite.
R19 0.3-m chip sample, reddish-yellow, clay-rich granite saprolite.
R20 1.2-m chip sample, felsic volcanic saprolite.
R21 0.3-m chip sample, light-gray, fine-grained, hard felsic volcanic rock; contains minor fine-grained pyrite.
R22 0.8-m chip sample, conglomerate saprolite.
R23 0.6-m chip sample, light-tan, clay-rich, slate saprolite.
R24 0.3-m chip sample, medium-dark gray, fine- to medium-grained, gabbro.
R25 0.3-m chip sample, coarse-grained gabbro; contains minor iron sulfides.
R26 1.6-m chip sample, vein quartz, contains malachite; east side of Durgy mine ore zone.

R27 1-m chip sample, vein quartz, contains malachite; west side of Durgy mine ore zone.
R28 0.6-m chip sample, grayish-red, clay-rich saprolite; from hanging wall of Durgy mine.
R29 1-m chip sample, grayish-red and yellow-tan, clay-rich saprolite; from footwall of Durgy mine.
R30 0.6-m chip sample, felsic volcanic rock, silicified; contains fine-grained pyrite.
R31 0.3-m chip sample, granite.
R32 0.3-m chip sample, altered fragmental volcanic rock, now mostly quartz and minor amounts of mafic fragments.
R33 Composite sample of four quartz veins, 2-8 cm thick; crosscut rock of sample R32.
R34 3-m chip sample, yellow-gray kyanite-quartz rock, coarse-grained.
R35 1.3-m chip sample, light- to medium-gray, iron-rich fragmental rock; contains chloritoid (?).
R36 0.3-m chip sample, silicified zone in granite saprolite, may be extension of Hager Mountain alteration zone.
R37 1.3-m chip sample, unweathered granite.
R38 0.2-m chip sample, chalky-weathered granite grus.
R39 0.3-m chip sample, orange, clay-rich, granite saprolite.
R40 1.6-m chip sample, reddish-orange, clay-rich saprolite; parent rock may be felsic volcanic.
R41 0.3-m chip sample, light-gray to greenish-gray, fine-grained sericitic claystone; parent rock may have been fragmental felsic volcanic (?).
R42 1.3-m chip sample, olive-gray mafic tuff (?).
R43 5-m chip sample, orange, clay-rich saprolite.
R44 0.6-m chip sample, greenish-gray, mafic tuff (?) saprolite.
R45 3-m chip sample, grayish-red saprolite, contains limonite after pyrite porphyroblasts.
R46 6-m chip sample, light-gray, very fine-grained, clay-rich saprolite; parent rock may have been felsic volcanic.
R47 3-m chip sample, greenish-gray slate containing several thin quartz veins; sample about one-third quartz.
R48 1.3-m chip sample, reddish- to olive-gray, clay-rich saprolite.
R49 5-m chip sample, olive-gray, clay-rich saprolite.
R50 3-m chip sample, light gray, very fine-grained, graphitic (?) phyllite saprolite, minor limonite after pyrite.
R51 8-m chip sample, light-gray, clay-rich saprolite.
R52 1.6-m chip sample, brown, mafic saprolite.
R53 1-m chip sample, light gray, hard, brittle, felsic tuff, silicified (?).
R54 Composite sample of four quartz veins, 0.1 to 0.3 m thick, minor limonite after pyrite.
R55 1.3-m chip sample, medium-gray, felsic (?) volcanic rock, weathered; wall rock for two of quartz veins of sample R54.
R56 1.3-m chip sample, altered mafic (?) volcanic rock, epidote-rich; contains minor quartz seams.
R57 Composite sample of eight quartz lenses, 5 to 10 cm thick, in 1.3 m zone of quartz and schist.
R58 0.3-m chip sample, grayish-green, chlorite-sericite schist; parent rock sheared pyroclastic rock.
R59 Composite sample of four epidote-rich altered zones in mafic volcanic rock; Duke mine area.

R60 6-m chip sample, medium-gray volcanic rock, weathered, encloses epidote-rich altered zones of R59.
R61 Composite sample vein quartz from 2-m zone in prospect pit.
R62 1-m chip sample, grayish-green, fragmental volcanic rock, weathered; wall rock of sample R61.
R63 1-m chip sample, vein quartz, Holloway mine area, small shaft west of main vein.
R64 1-m chip sample, gray saprolite from hanging wall and footwall of vein in sample R63.
R65 3-m chip sample, altered volcanic rock, epidote-rich; contains veins of quartz 2-5 cm thick.
R66 0.3-m chip sample, green slate.
R67 1-m chip sample, red slate; at mill site of Durgy mine.
R68 3-m chip sample, white, stained red, quartz-feldspar(?)-kyanite rock, minor pyrite.
R69 Composite sample, quartz, minor limonite after pyrite.
R70 6-m chip sample, quartz-chloritoid (?) schist.
R71 0.3-m chip sample, medium-dark-gray, hematitic iron formation.
R72 1-m chip sample, iron-rich siliceous rock.
R73 6-m chip sample, light-tan to light-gray, siliceous schist, scattered limonite after pyrite; northwest of quartz-kyanite zone.
R74 1.6-m chip sample, quartz crystal tuff, minor pyrite.
R75 1-m chip sample, granodiorite gneiss, partly weathered.
R76 0.3-m chip sample, granodiorite grus.
R77 1-m chip sample, olive-gray, metabasalt, weathered, friable.
R78 Composite sample half vein quartz and half epidote-rich altered metagabbro.
R79 0.6-m chip sample, sheared granite, weathered.
R80 6-m chip sample, dark-green, hard, fragmental volcanic rock.
R81 Composite sample of scattered pieces of red-purple jasper; silicified crystal tuff (?).
R82 Composite sample peridotite boulders.
R83 Composite sample light-green, hard, dense mafic rock.
R84 1-m chip sample, light-greenish-gray slate.
R85 1-m chip sample, tan sandstone.
R86 1-m chip sample, zone of pale-olive, epidote alteration and vein quartz in greenstone.
R87 0.3-m chip sample, greenstone, mafic, pyroclastic schist.
R88 0.6-m chip sample, white and red-stained quartz-sericite schist, minor limonite after pyrite.
R89 Composite sample of white to yellow-gray quartz-kyanite rock, minor chloritoid.
R90 0.3-m chip sample, red-purple, chlorite schist saprolite.
R91 0.3-m chip sample, white quartz-pyrophyllite phyllite.

South Boston 15-min quadrangle

S1 1.3-m chip sample, greenstone.
S2 1-m chip sample, conglomerate.
S3 1-m chip sample, yellowish-tan, clay-rich saprolite; parent rock probably fine-grained metasediment.
S4 Composite sample of quartz vein 1-2 cm thick.
S5 Composite sample, limonite psuedomorphs of pyrite cubes, 1 to 2 cm.
S6 2-m chip sample, felsic lapilli tuff.
S7 1-m chip sample, lapilli tuff and conglomerate.
S8 3-m chip sample, light-gray, fine-grained tuff.

S9 1.6-m chip sample, vein quartz containing chlorite and malachite stain; north side of No. 2 shaft, Seaboard mine.
S10 1-m chip sample, greenstone, weathered; west wall of Seaboard vein.
S11 1-m chip sample, quartz vein; 60 m west of No. 1 shaft, Seaboard mine.
S12 0.3-m chip sample, silicified greenstone, weathered; west wall of quartz vein in sample S11.
S13 1.3-m chip sample, vein quartz; No. 3 shaft, Blue Wing mine.
S14 1.3-m chip sample, light- to medium-gray, fragmental volcanic rock, weathered; east side of vein in No. 2 shaft, Blue Wing mine.
S15 0.6-m chip sample, vein quartz, minor malachite stain; shaft No. 2, Blue Wing mine.
S16 1.6-m chip sample, medium-gray phyllite, contains epidote.
S17 1.6-m chip sample, greenstone; parent rock was fragmental mafic tuff (?).
S18 1.3-m chip sample, zone of epidote alteration in greenstone, minor amounts of vein quartz.
S19 1.3-m chip sample, mafic pyroclastic greenstone, minor epidote alteration.
S20 1.3-m chip sample, greenstone, minor epidote alteration.
S21 Composite sample of three epidote alteration zones and vein quartz in greenstone.
S22 Composite sample of five quartz veins cutting metasediments and metavolcanic rocks.
S23 1.3-m chip sample, vein quartz, hematite stain.
S24 1-m chip sample, quartz vein.
S25 1.3-m chip sample, red, clay-rich saprolite, contains four quartz veins, 1-2 cm thick.
S26 3-m chip sample, vein quartz, iron-stained.
S27 3-m chip sample, vein quartz and red, clay-rich saprolite.
S28 Composite sample, four quartz veins 0.1-0.6 m thick.
S29 2-m chip sample, clay-rich saprolite in area of sample S28; parent rock mixed sediments and volcanic rock.
S30 9-m chip sample, pyroclastic rock, partly weathered.
S31 3-m chip sample, four epidote alteration zones in greenish-gray volcanic rock.
S32 5-m chip sample, greenish-gray volcanic rock.
S33 3-m chip sample, greenstone.
S34 2-m chip sample, epidote alteration zone in greenstone, minor amount of quartz.
S35 0.3-m chip sample, sericite phyllite, minor fine-grained pyrite.
S36 0.3-m chip sample, greenish gray crystal tuff saprolite, minor pyrite.
S37 0.6-m chip sample, sericite phyllite.
S38 0.6-m chip sample, vein quartz, minor chlorite schist inclusions.
S39 3-m chip sample greenstone.
S40 Composite sample of granodiorite sills, 1-15 cm thick.
S41 1-m chip sample, weathered biotite schist or mafic volcanic rock (?).
S42 1.3-m chip sample, light-gray, quartz-feldspar-mica schist saprolite.
S43 1.3-m chip sample, granodiorite grus.
S44 Composite sample of three quartz veins, 2-15 cm thick.
S45 0.6-m chip sample, quartz-pyrophyllite rock, minor pyrite.
S46 1.6-m chip sample, white to cream pyrophyllite (?).
S47 0.6-m chip sample, fine-grained quartz-mica schist, minor pyrite.
S48 1.6-m chip sample, granodiorite.
S49 0.6-m chip sample, granodiorite grus.

Vance County

VNC1 1-m chip sample, silicified breccia zone; minor pyrite.
VNC2 1-m chip sample hypersthene tonalite.
VNC3 1-m chip sample granite saprolite.
VNC4 1-m chip sample, partly weathered, medium-grained, biotite granite.

Olive Hill 7.5-min quadrangle

W1 6-m chip sample, granite.
W2 6-m chip sample, granite grus.
W3 1.3-m chip sample, pinkish-gray granite, unweathered.
W4 1-m chip sample, orange granite saprolite.
W5 0.6-m chip sample, granite grus.
W6 2-m chip sample, granite.
W7 Composite sample of granite grus layer 2-5 cm thick above sample W6.
W8 0.3-m chip sample, orange granite saprolite.
W9 1.3-m chip sample, quartzite (?).
W10 1.3-m chip sample, quartzite (?).
W11 6-m chip sample, quartzite (?).
W12 1-m chip sample, silicified or altered granite (?); minor sulfides.
W13 1-m chip sample, white, tan weathering, silicified (?) granite; minor pyrite.
W14 0.3-m chip sample, granite grus.
W15 0.3-m chip sample, granite, partly weathered.
W16 3-m chip sample, white, quartzose, altered zone (?) in granite (?).
W17 1.3-m chip sample, sheared, vein quartz in granite.
W18 1-m chip sample, granite weathered.
W19 1-m chip sample, yellow-orange, granite saprolite.

Sample	LAT	LONG	FE%	MG%	CA%	TI%	MN	AG	B	BA	BE	CO	CR	CU
BY1	36.5333	78.4756	15.00	1.50	<.05	1.000	700	N	15	1,000	10.0	30	300	100
BY2	36.5500	78.4528	.30	.10	.05	.030	200	N	10	100	2.0	N	N	<5
BY3	36.5069	78.4111	5.00	2.00	7.00	1.000	2,000	N	<10	1,500	<1.0	10	20	7
BY4	36.5069	78.4111	10.00	.15	.05	1.000	1,000	N	<10	1,500	N	20	30	5
BY5	36.5156	78.4519	10.00	2.00	<.05	1.000	1,000	N	15	2,000	10.0	N	30	<5
BY6	36.5156	78.4519	1.00	.07	.05	.030	200	3.0	10	70	200.0	N	N	7
BY7	36.5139	78.4722	7.00	1.50	3.00	>1.000	1,500	.5	<10	700	30.0	5	20	50
BY8	36.5139	78.4722	7.00	2.00	3.00	1.000	1,500	N	<10	1,000	1.5	20	30	15
BY9	36.5139	78.4722	.20	.10	2.00	.010	5,000	500.0	10	20	3.0	N	N	1,500
C1	36.6017	78.7450	5.00	.70	.50	.200	1,500	7.0	15	300	<1.0	5	5	70
C2	36.6017	78.7450	15.00	2.00	.07	1.000	3,000	N	30	500	<1.0	30	20	30
C3	36.6017	78.7450	7.00	1.50	<.05	.500	2,000	N	20	500	<1.0	20	50	20
C4	36.6017	78.7450	5.00	2.00	.05	.700	1,000	.5	>2,000	700	1.0	5	50	20
C5	36.6014	78.7450	5.00	.50	.05	.300	2,000	N	20	500	<1.0	20	20	30
C6	36.6014	78.7450	3.00	.70	.15	.300	1,500	N	20	500	<1.0	5	5	10
C7	36.5989	78.7450	15.00	2.00	.20	1.000	5,000	1.5	150	1,000	<1.0	30	70	150
C8	36.5989	78.7450	5.00	1.00	.05	.100	5,000	1.5	10	150	<1.0	15	N	30
C9	36.5989	78.7450	10.00	2.00	.05	.500	5,000	2.0	30	500	<1.0	20	30	70
C10	36.5989	78.7450	10.00	1.50	.05	.500	3,000	5.0	50	500	<1.0	20	20	30
C11	36.5989	78.7450	15.00	1.50	.05	1.000	5,000	1.0	100	700	<1.0	50	70	100
C12	36.5989	78.7450	10.00	1.00	.10	.300	5,000	1.0	10	300	<1.0	30	20	100
C13	36.5989	78.7450	15.00	1.50	1.00	.500	>5,000	5.0	50	1,000	<1.0	15	20	100
C14	36.5989	78.7450	10.00	.70	.07	.300	>5,000	10.0	70	1,000	1.5	30	50	100
C15	36.5989	78.7444	15.00	2.00	.10	1.000	1,500	N	100	1,500	1.0	20	100	70
C16	36.5989	78.7444	10.00	1.50	.15	.300	2,000	N	15	300	<1.0	20	10	15
C17	36.5989	78.7444	10.00	3.00	.07	.500	2,000	N	15	300	<1.0	20	50	30
C18	36.5989	78.7450	5.00	.50	.07	.300	>5,000	5.0	10	700	1.0	30	20	30
C19	36.5939	78.7450	15.00	1.50	.07	.700	>5,000	3.0	10	700	<1.0	100	30	30
C20	36.5992	78.7450	7.00	2.00	.10	.500	5,000	N	20	1,000	<1.0	30	50	50
C21	36.5992	78.7450	7.00	1.00	.10	.500	2,000	1.0	10	700	<1.0	10	50	50
C22	36.6011	78.7450	7.00	1.00	.05	.700	3,000	1.0	15	1,000	<1.0	15	30	30
C23	36.6011	78.7450	3.00	.50	.07	.200	1,500	N	10	700	<1.0	5	10	20
C24	36.6011	78.7450	3.00	.70	.05	.200	2,000	.7	15	500	<1.0	10	5	50
C25	36.6011	78.7450	10.00	2.00	.15	1.000	5,000	N	20	1,000	<1.0	30	20	100
C26	36.6011	78.7450	15.00	3.00	.20	1.000	5,000	N	20	1,000	<1.0	50	70	70
C27	36.6011	78.7450	7.00	2.00	.50	.500	3,000	N	20	1,500	<1.0	20	20	30
C28	36.6011	78.7450	2.00	.70	.05	.150	1,000	7.0	10	300	<1.0	5	10	20
C29	36.5989	78.7450	10.00	2.00	2.00	1.000	5,000	.7	100	1,000	<1.0	20	N	20
C30	36.6011	78.7453	3.00	.70	<.05	.070	2,000	15.0	N	100	<1.0	10	N	100
C31	36.6011	78.7453	15.00	2.00	.05	.700	3,000	N	300	1,000	<1.0	70	30	70
C32	36.6011	78.7453	10.00	2.00	.07	.700	1,000	N	500	700	<1.0	10	70	200
C33	36.6011	78.7453	7.00	1.00	.10	.500	700	1.5	150	700	<1.0	N	70	30
C34	36.6011	78.7453	7.00	1.00	.05	.500	300	N	100	700	<1.0	N	70	30
C35	36.6011	78.7450	7.00	2.00	<.05	.500	1,000	N	10	500	<1.0	30	30	5
C36	36.6011	78.7447	7.00	.50	<.05	.700	700	7.0	1,000	300	<1.0	5	70	50

Sample	LA	MO	NB	NI	PB	SC	SR	V	Y	ZN	ZR	AUAA	CUAA	PBAA	ZNAA	BIAA	C-MO
BY1	N	N	20	50	20	30	N	300	15	N	150	<.02	100	<25	32	<10	N
BY2	N	N	N	<5	<10	N	N	N	N	N	10	<.02	<10	N	N	<10	N
BY3	70	N	15	5	30	30	500	150	150	N	150	<.02	<10	<25	<25	<10	N
BY4	200	N	20	10	70	30	N	200	30	N	200	<.02	<10	<25	<25	<10	4
BY5	20	N	15	5	20	30	N	200	15	N	50	<.02	<10	N	<25	<10	<4
BY6	N	N	N	<5	10	N	N	N	N	N	N	.12	<10	N	<25	<10	N
BY7	30	30	10	5	20	20	200	200	70	N	100	.06	50	<25	48	<10	N
BY8	20	N	15	10	30	20	500	200	70	N	100	<.02	40	<25	72	<10	N
BY9	N	N	30	<5	5,000	N	N	N	N	10,000	N	4.50	3,200	8,500	6,800	150	4
C1	N	15	10	7	10,000	10	N	70	20	300	70	.02	90	1,200	200	<10	6
C2	20	N	10	30	150	30	N	200	30	500	200	.04	50	64	370	18	N
C3	N	N	10	20	70	20	N	150	N	700	70	1.40	20	28	350	12	N
C4	N	<5	10	10	1,000	20	N	200	15	200	100	.30	30	320	100	12	4
C5	N	N	10	10	1,500	10	N	100	<10	500	100	<.02	60	800	280	<10	N
C6	N	N	10	10	150	10	N	70	<10	300	70	.08	20	76	220	<10	N
C7	20	20	10	30	7,000	50	N	300	30	1,000	200	<.02	150	2,000	1,000	16	8
C8	N	N	15	15	30	7	N	70	N	1,500	50	.40	40	25	1,000	10	N
C9	N	N	15	15	3,000	15	N	200	10	700	100	1.50	90	1,500	920	18	N
C10	N	N	15	10	300	15	N	150	20	700	100	.70	50	170	640	10	<4
C11	N	N	10	30	500	30	N	300	20	700	150	.02	130	290	520	18	N
C12	N	N	15	10	200	15	N	150	15	1,000	100	.60	110	130	1,000	14	N
C13	N	N	N	10	100	15	N	500	30	1,500	150	7.50	120	40	1,600	12	N
C14	20	N	10	20	300	20	N	200	20	2,000	150	1.50	90	120	960	<10	N
C15	N	N	20	50	30	50	N	300	50	<200	300	<.02	60	<25	150	<10	<4
C16	20	N	<20	30	15	10	N	100	20	N	50	.02	30	<25	110	<10	<4
C17	N	N	10	30	10	15	N	150	20	N	100	.10	50	<25	60	12	<4
C18	N	N	10	20	500	15	N	150	15	2,000	50	9.50	60	230	880	<10	<4
C19	N	N	<20	20	150	30	N	200	10	1,000	70	3.50	30	36	1,300	10	N
C20	N	N	15	20	150	20	N	300	10	1,000	100	.50	80	72	760	10	N
C21	20	N	<20	15	150	20	N	200	N	700	50	.20	80	84	400	<10	N
C22	N	N	10	15	100	20	N	150	10	700	100	.20	70	72	520	14	N
C23	N	N	<20	7	1,500	10	N	70	N	300	50	1.20	50	490	220	10	<4
C24	N	N	<20	10	150	10	N	70	20	700	70	2.00	70	84	340	12	N
C25	30	N	15	20	500	30	N	300	70	1,000	200	.10	110	170	800	10	<4
C26	20	N	15	50	300	50	N	500	100	1,000	200	.20	70	140	800	14	N
C27	N	N	<20	15	1,500	20	N	200	30	700	100	.40	70	450	480	12	N
C28	N	N	<20	10	100	5	N	70	N	N	20	.10	60	60	36	<10	N
C29	N	N	10	10	100	50	100	300	50	1,500	200	.02	40	<25	880	<10	<4
C30	N	N	<20	7	1,500	N	N	30	N	200	10	.04	300	740	96	24	N
C31	70	N	10	30	70	30	N	200	50	300	150	<.02	90	52	200	14	N
C32	20	N	10	20	200	30	N	200	20	N	200	.02	200	110	120	16	4
C33	N	N	<20	10	1,000	20	N	150	10	500	100	.20	80	340	260	12	<4
C34	N	N	10	5	500	30	N	200	10	<200	150	.04	70	240	130	12	4
C35	N	N	10	30	10	20	N	150	20	500	100	.02	40	<25	480	14	N
C36	20	N	10	5	150	30	N	200	30	N	150	.08	100	92	44	<10	N

Sample	LAT	LONG	FE%	MG%	CA%	TI%	MN	AG	B	BA	BE	CO	CR	CU
C37	36.6011	78.7447	10.00	1.00	0.10	.100	5,000	1.5	15	50	N	15	10	50
C38	36.6011	78.7447	10.00	1.00	<.05	.500	2,000	1.0	200	300	N	20	70	50
C39	36.6000	78.7417	.50	.15	<.05	.020	200	N	10	10	N	N	5	7
C40	36.5764	78.7472	.50	.15	.05	.030	300	N	15	50	N	N	5	<5
C41	36.5764	78.7472	15.00	2.00	.10	1.000	500	N	20	1,500	<1.0	15	10	<5
C42	36.5989	78.7450	5.00	2.00	3.00	.700	>5,000	20.0	50	300	<1.0	20	30	100
MN1	36.7117	79.2194	.50	.10	.50	.030	150	N	10	700	1.5	N	N	5
MN2	36.7250	79.1989	5.00	.70	<.05	.150	1,000	N	<10	1,000	<1.0	15	N	30
MN3	36.7269	79.1819	10.00	.50	<.05	.200	100	N	<10	1,000	1.0	N	5	20
MN4	36.7356	79.1778	7.00	.50	<.05	.150	1,500	N	<10	700	1.5	10	20	30
MN5	36.7347	79.1772	20.00	.30	<.05	.150	500	N	<10	300	1.0	N	70	300
MN6	36.7483	79.1806	7.00	.30	<.05	.100	700	N	<10	700	<1.0	15	20	30
MN7	36.7333	79.1689	10.00	.30	<.05	.200	70	.7	10	1,000	1.0	N	20	50
MN8	36.5347	79.0456	10.00	5.00	10.00	.500	1,500	N	<10	50	<1.0	70	500	20
MN9	36.5392	79.0458	7.00	1.00	.05	.500	300	N	<10	700	1.5	20	100	20
ND1	36.2394	78.7653	5.00	.70	.07	.300	300	N	300	2,000	1.0	N	15	<5
ND2	36.2394	78.7653	.50	.10	.05	.300	10	N	20	1,500	<1.0	N	N	<5
ND3	36.2394	78.7653	3.00	.70	<.05	.300	70	N	20	2,000	2.0	N	10	7
ND4	36.2394	78.7653	7.00	.20	.05	1.000	100	N	15	1,000	<1.0	N	70	20
OX1	36.2708	78.7000	5.00	1.50	5.00	.300	300	N	15	1,000	1.5	15	20	10
OX2	36.2708	78.7000	7.00	1.50	2.00	.500	300	N	10	700	1.5	20	50	10
R1	36.4367	78.9328	1.00	.10	.30	.050	200	N	N	700	2.0	<5	<10	10
R2	36.4367	78.9328	1.00	.07	.15	.050	100	N	N	500	1.5	5	N	20
R3	36.4367	78.9328	1.50	.10	N	.100	100	N	N	500	1.0	<5	10	50
R4	36.4408	78.9319	5.00	1.00	<.05	.500	500	N	10	500	1.0	30	70	20
R5	36.4408	78.9319	3.00	1.50	.50	.300	700	N	20	700	1.5	20	70	30
R6	36.4408	78.9319	5.00	.50	N	.500	150	N	50	700	1.5	15	100	15
R7	36.4408	78.9319	5.00	1.00	.70	.300	1,000	N	20	500	1.5	20	100	30
R8	36.4458	78.9306	5.00	.70	.50	.300	500	N	10	300	1.0	30	100	20
R9	36.4453	78.9425	5.00	.30	N	.500	200	N	30	500	1.0	30	50	70
R10	36.3933	78.9694	2.00	.20	.50	.100	500	N	N	700	1.5	<5	N	20
R11	36.4367	78.9194	2.00	.15	<.05	.150	150	N	N	700	<1.0	10	<10	50
R12	36.3933	78.9694	.20	<.02	N	.010	70	N	N	20	<1.0	N	N	<5
R13	36.3925	78.9550	2.00	.20	.70	.070	700	N	N	1,000	1.5	<5	<10	70
R14	36.3925	78.9550	2.00	.10	.15	.150	100	N	N	700	1.0	10	<10	15
R15	36.3931	78.9050	.07	<.02	N	.005	70	N	N	<20	<1.0	N	<10	7
R16	36.3933	78.9125	.30	<.02	.20	.007	100	N	N	<20	<1.0	N	10	30
R17	36.3933	78.9125	5.00	.30	.05	.500	100	N	<10	300	1.5	5	200	50
R18	36.3939	78.9139	1.50	.10	.20	.100	300	N	N	700	2.0	5	<10	5
R19	36.3939	78.9139	3.00	.20	<.05	.200	100	N	<10	500	1.0	10	30	20
R20	36.3958	78.8750	2.00	.02	.10	.100	200	N	N	700	1.5	5	N	7
R21	36.3958	78.8750	2.00	.03	.30	.070	2,000	N	N	500	2.0	<5	N	70
R22	36.3886	78.8594	3.00	.50	.20	.500	300	N	15	200	1.0	15	30	30
R23	36.3886	78.8594	5.00	1.00	.10	.700	200	N	10	500	1.5	20	50	15
R24	36.3833	78.8364	7.00	7.00	2.00	.500	2,000	N	<10	20	N	70	1,000	30

Sample	LA	MO	NB	NI	PB	SC	SR	V	Y	ZN	ZR	AUAA	CUAA	PBAA	ZNAA	BIAA	C-MO
C37	N	N	10	20	100	10	N	70	15	300	20	6.50	90	100	210	12	N
C38	N	N	<20	15	100	30	N	200	30	200	100	.80	90	68	160	16	<4
C39	N	N	N	<5	N	N	N	10	N	N	20	.02	60	N	<25	<10	N
C40	N	N	N	<5	N	N	N	<10	N	N	N	<.02	40	N	N	<10	N
C41	N	N	10	5	20	50	300	300	30	200	100	.08	40	<25	72	14	4
C42	N	N	10	10	200	20	N	300	50	2,000	100	15.00	70	100	1,500	12	N
MN1	50	5	10	5	30	<5	N	N	20	N	70	.04	10	N	N	<10	<4
MN2	N	30	30	5	70	N	N	20	N	N	100	<.02	50	<25	<25	<10	6
MN3	20	15	20	<5	200	15	N	50	N	N	200	<.02	30	<25	<25	<10	4
MN4	20	5	30	<5	30	15	N	50	N	N	300	<.02	30	<25	<25	<10	4
MN5	N	100	10	<5	100	20	N	70	50	300	70	<.02	340	40	72	18	40
MN6	N	50	15	<5	100	7	N	20	N	N	150	<.02	80	68	<25	<10	24
MN7	N	N	10	<5	100	15	N	70	N	N	150	<.02	50	<25	<25	<10	4
MN8	N	N	<20	100	<10	50	150	500	20	N	700	<.02	50	<25	<25	N	<4
MN9	100	N	20	30	70	20	100	150	50	N	300	<.02	30	28	56	<10	<4
ND1	20	N	10	7	20	15	700	150	20	N	200	.04	30	N	<25	<10	<4
ND2	70	N	<20	5	15	10	500	70	30	N	300	.02	<10	N	N	<10	N
ND3	N	10	15	<5	20	15	100	50	30	N	500	.02	10	N	<25	<10	<4
ND4	N	N	10	7	20	20	N	200	N	N	100	.02	20	<25	<25	<10	<4
OX1	N	N	10	10	30	10	700	150	10	N	100	<.02	10	N	48	<10	N
OX2	20	N	15	15	20	15	500	150	30	N	200	<.02	10	<25	52	<10	N
R1	30	N	<20	<5	10	5	100	15	100	N	50	<.02	<10	26	<25	<10	N
R2	N	N	<20	5	10	5	<100	15	50	N	70	<.02	<10	14	<25	<10	N
R3	N	N	10	7	15	7	<100	30	20	N	100	<.02	<10	<25	<25	<10	N
R4	20	N	30	50	50	30	<100	100	30	N	700	<.02	30	32	50	10	N
R5	50	N	15	30	10	20	150	100	50	N	200	<.02	20	10	80	10	N
R6	N	N	20	10	15	20	<100	150	10	N	300	<.02	10	18	<25	<10	N
R7	30	N	15	30	15	20	200	100	30	N	200	<.02	20	<25	55	<10	N
R8	100	N	10	30	10	20	150	150	100	N	150	<.02	30	<25	55	<10	N
R9	50	N	20	50	20	50	100	200	15	N	200	<.02	30	14	<25	<10	N
R10	20	N	<20	5	10	5	100	20	70	N	200	<.02	<10	<25	45	<10	N
R11	<20	N	<20	5	30	7	<100	20	20	N	200	<.02	<10	26	50	<10	N
R12	N	N	<20	N	N	N	100	15	<10	N	10	<.02	<10	<25	<25	<10	N
R13	20	N	<20	5	10	5	100	15	70	N	70	<.02	<10	<25	45	<10	N
R14	N	N	<20	5	20	7	<100	15	20	N	200	<.02	10	18	30	<10	N
R15	N	N	N	N	N	N	<100	15	N	N	<10	<.02	<10	<25	<25	<10	N
R16	N	N	N	N	N	N	<100	20	N	N	<10	<.02	<10	<25	50	<10	N
R17	N	N	10	30	20	15	<100	150	20	N	500	<.02	20	16	30	<10	N
R18	30	N	10	5	<10	10	100	15	70	N	200	<.02	<10	<25	<25	<10	N
R19	N	<5	10	20	<10	15	<100	70	15	N	200	<.02	10	14	25	<10	N
R20	N	N	<20	5	20	5	<100	20	30	N	500	<.02	<10	18	<25	<10	N
R21	30	N	<20	5	10	<5	100	15	150	200	200	<.02	<10	<25	140	<10	N
R22	30	5	<20	20	10	15	150	100	20	N	200	<.02	10	14	30	<10	N
R23	50	N	10	30	15	20	100	150	50	N	200	<.02	30	22	60	<10	N
R24	N	<5	<20	150	<10	50	200	200	10	N	<10	<.02	40	<25	<25	<10	N

Sample	LAT	LONG	FE%	MG%	CA%	TI%	MN	AG	B	BA	BE	CO	CR	CU
R25	36.3833	78.8364	10.00	10.00	2.00	.700	3,000	N	10	10	N	100	1,500	150
R26	36.4422	78.8333	2.00	.50	<.05	.300	100	20.0	<10	100	<1.0	10	70	>20,000
R27	36.4422	78.8333	1.50	.20	<.05	.070	100	50.0	N	50	<1.0	N	10	15,000
R28	36.4422	78.8333	7.00	2.00	.05	.700	2,000	N	15	300	1.0	50	50	1,000
R29	36.4422	78.8333	10.00	1.00	<.05	.700	200	1.0	10	150	<1.0	15	200	2,000
R30	36.4667	78.9944	2.00	.50	1.50	.300	1,500	.7	<10	2,000	1.0	N	<10	30
R31	36.4672	78.9306	2.00	.05	<.05	.700	150	N	<10	100	N	N	20	<5
R32	36.4672	78.9306	1.50	.07	N	.700	200	N	N	70	N	N	20	<5
R33	36.4672	78.9306	.20	.02	N	.050	100	N	N	20	<1.0	N	N	10
R34	36.4678	78.9300	N	<.02	<.05	.700	70	N	<10	50	<1.0	N	N	<5
R35	36.4673	78.9300	10.00	.30	<.05	.200	1,500	N	10	150	<1.0	N	15	<5
R36	36.4444	78.9939	2.00	.05	.05	.200	70	N	10	150	<1.0	N	N	<5
R37	36.3917	78.9428	3.00	.20	1.50	.150	700	N	N	1,000	2.0	N	N	<5
R38	36.3917	78.9428	5.00	.20	.20	.300	200	N	<10	1,000	<1.0	5	N	<5
R39	36.3917	78.9428	5.00	.30	<.05	.300	200	N	<10	700	<1.0	7	30	5
R40	36.4444	78.8528	5.00	.50	<.05	.300	300	N	<10	1,000	1.0	N	5	20
R41	36.4444	78.8528	7.00	1.00	.10	.300	1,000	N	<10	1,500	1.0	15	10	50
R42	36.4444	78.8528	20.00	1.50	.07	>1.000	1,000	N	N	1,000	1.0	50	100	20
R43	36.4444	78.8528	3.00	.30	.07	.150	500	N	<10	1,500	2.0	5	N	5
R44	36.4444	78.8528	7.00	1.50	.07	.500	1,000	N	<10	2,000	1.5	30	200	30
R45	36.4444	78.8528	7.00	1.00	.07	.500	1,000	N	<10	1,000	1.5	30	150	20
R46	36.4444	78.8522	3.00	.30	.07	.150	500	N	<10	1,500	1.5	N	N	10
R47	36.4444	78.8522	2.00	.50	.05	.200	1,000	N	10	300	<1.0	30	10	5
R48	36.4444	78.8522	3.00	.70	.05	.200	700	N	10	1,500	1.5	5	N	20
R49	36.4444	78.8522	15.00	2.00	.15	>1.000	2,000	N	<10	500	N	70	15	<5
R50	36.4444	78.8519	15.00	1.50	.10	>1.000	3,000	N	<10	700	1.0	50	10	<5
R51	36.4444	78.8519	7.00	1.00	.30	.500	1,000	N	<10	2,000	1.5	5	10	<5
R52	36.4444	78.8519	15.00	5.00	5.00	.700	3,000	N	<10	500	1.5	50	700	100
R53	36.4472	78.8431	5.00	.15	2.00	.200	1,000	N	<10	1,500	1.5	N	N	7
R54	36.4994	78.8072	2.00	.05	.05	.030	300	N	10	20	N	N	10	5
R55	36.4994	78.8072	10.00	.20	.10	.700	200	1.0	50	200	N	10	100	20
R56	36.4994	78.8067	15.00	.70	20.00	.700	1,500	N	<10	30	N	5	150	10
R57	36.4903	78.8125	3.00	.70	.07	.200	1,500	N	20	200	N	20	100	30
R58	36.4903	78.8125	10.00	3.00	.10	.500	300	N	30	500	<1.0	30	500	30
R59	36.3867	78.8678	10.00	2.00	20.00	.700	1,500	N	10	30	N	30	700	700
R60	36.3867	78.8678	10.00	5.00	5.00	.700	1,500	N	<10	100	N	70	300	5
R61	36.3844	78.8700	.30	.10	<.05	.030	200	1.0	10	50	N	N	10	50
R62	36.3844	78.8700	10.00	5.00	5.00	1.000	1,500	N	<10	200	N	70	1,000	500
R63	36.4967	78.7908	.50	.30	.05	.050	200	5.0	10	150	N	N	5	300
R64	36.4967	78.7908	10.00	5.00	7.00	1.000	1,500	.5	<10	200	<1.0	50	200	2,000
R65	36.4981	78.7889	15.00	1.50	>20.00	.700	2,000	N	<10	150	N	30	500	7
R66	36.4731	78.8611	7.00	2.00	.20	1.000	1,500	N	15	1,500	1.0	20	70	50
R67	36.4422	78.8336	10.00	5.00	5.00	.700	1,500	N	10	300	<1.0	50	200	7
R68	36.4625	78.9631	2.00	.05	<.05	.300	30	N	10	150	N	N	5	5
R69	36.4594	78.9717	5.00	.20	>.05	.300	50	N	20	1,500	<1.0	N	20	10

Sample	LA	MO	NB	NI	PB	SC	SR	V	Y	ZN	ZR	AUAA	CUAA	PBAA	ZNAA	BIAA	C-MO
R25	N	<5	<20	300	10	100	150	300	15	N	20	<.02	240	<25	<25	<10	N
R26	N	N	N	20	10	10	N	150	10	N	50	.08	26,000	<25	65	<10	N
R27	N	N	N	<5	N	N	N	50	<10	N	10	.06	15,000	<25	75	<10	N
R28	N	N	<20	20	<10	70	100	500	15	N	70	.02	980	<25	120	<10	N
R29	20	N	<20	70	10	50	100	500	30	N	200	.02	1,200	<25	75	<10	N
R30	50	10	<20	<5	30	7	500	70	50	N	200	<.02	40	20	70	<10	N
R31	70	N	30	N	N	15	100	50	50	N	>1,000	<.02	<10	<25	<25	<10	N
R32	100	N	20	N	N	10	100	50	100	N	1,000	<.02	<10	<25	<25	<10	N
R33	N	N	N	<5	N	N	N	15	<10	N	70	.02	<10	<25	<25	<10	N
R34	100	N	30	N	N	15	100	30	50	N	>1,000	<.02	<10	<25	<25	<10	N
R35	30	N	10	<5	<10	20	100	200	15	N	300	<.02	<10	<25	<25	<10	N
R36	30	N	20	<5	<10	5	N	20	30	N	500	<.02	60	N	N	<10	N
R37	30	N	<20	5	50	5	N	15	70	N	150	<.02	<10	<25	60	<10	<4
R38	N	N	20	<5	50	15	N	20	20	N	200	<.02	20	25	25	<10	N
R39	N	N	20	5	50	15	N	70	20	N	500	<.02	<10	<25	<25	<10	N
R40	N	N	15	5	10	20	N	30	30	N	700	<.02	20	<25	<25	<10	N
R41	20	N	15	<5	<10	30	N	150	50	N	700	<.02	110	N	40	<10	<4
R42	N	N	<20	50	20	70	N	500	70	N	150	<.02	80	<25	80	<10	<4
R43	20	N	20	<5	50	15	N	30	70	N	500	<.02	20	<25	<25	<10	N
R44	150	N	20	70	30	30	N	200	200	200	500	<.02	40	<25	150	<10	N
R45	70	N	20	50	20	20	N	150	100	N	200	<.02	30	<25	36	<10	<4
R46	70	N	20	<5	20	10	N	15	150	N	500	<.02	40	<25	<25	<10	<4
R47	N	N	<20	15	N	10	N	50	30	N	70	<.02	60	N	32	<10	N
R48	N	N	20	5	<10	15	N	50	30	N	300	<.02	30	<25	N	<10	N
R49	20	N	<20	10	20	70	N	300	150	200	100	.06	20	<25	160	10	<4
R50	70	N	10	5	15	50	N	200	100	200	150	.02	20	<25	150	<10	N
R51	N	N	20	<5	20	30	N	30	50	N	700	<.02	20	<25	N	<10	N
R52	200	N	<20	100	15	50	700	300	>200	500	70	<.02	120	<25	270	16	4
R53	50	N	20	<5	30	5	200	<10	200	N	700	<.02	20	<25	44	<10	<4
R54	N	N	<20	5	N	10	N	15	N	N	N	.06	50	N	<25	<10	N
R55	N	N	N	30	20	50	700	500	30	N	100	.08	30	<25	40	<10	N
R56	N	N	N	5	20	30	3,000	300	50	N	100	.10	<10	<25	<25	<10	N
R57	N	N	<20	50	10	20	100	100	10	N	20	<.02	70	<25	<25	<10	N
R58	20	N	N	70	15	50	500	300	30	N	70	.08	50	<25	120	<10	N
R59	N	N	N	150	20	50	1,000	300	30	N	100	.20	640	<25	25	<10	N
R60	70	N	N	70	10	50	500	300	70	N	100	.06	10	<25	.92	<10	N
R61	N	N	N	5	N	N	N	100	N	N	10	<.02	110	N	<25	<10	N
R62	20	N	N	100	15	50	300	300	50	N	100	.08	480	<25	120	14	N
R63	N	N	N	5	N	N	N	15	N	N	10	<.02	420	N	<25	<10	N
R64	N	N	N	70	20	50	500	300	30	N	100	.08	1,800	<25	96	10	N
R65	N	N	N	70	15	50	2,000	300	20	N	70	.10	10	<25	<25	<10	N
R66	150	N	20	20	50	50	150	200	30	N	200	.10	40	<25	80	12	N
R67	N	N	10	70	15	50	200	200	30	N	100	.04	20	<25	52	<10	N
R68	70	15	50	<5	<10	15	N	30	100	N	500	<.02	<10	N	N	<10	4
R69	20	5	20	5	10	10	N	70	10	N	200	<.02	<10	N	N	<10	N

Sample	LAT	LONG	FE%	MG%	CA%	TI%	MN	AG	B	BA	BE	CO	CR	CU
R70	36.4603	78.9739	5.00	0.15	0.10	.200	1,000	N	10	1,000	<1.0	N	N	<5
R71	36.4603	78.9739	>20.00	.15	.05	.030	200	N	N	200	N	N	10	50
R72	36.4611	78.9739	10.00	.15	.07	.300	500	N	<10	700	N	N	10	5
R73	36.4625	78.9736	5.00	.30	.05	.200	200	N	10	1,000	1.5	N	N	10
R74	36.4644	78.9778	3.00	.70	1.00	.200	700	.5	<10	2,000	<1.0	N	N	10
R75	36.4947	78.9417	3.00	1.00	5.00	.500	1,000	N	<10	1,000	1.0	N	5	10
R76	36.4947	78.9417	5.00	1.00	1.00	.500	500	N	<10	1,000	<1.0	10	20	20
R77	36.4919	78.9611	15.00	3.00	10.00	1.000	1,500	N	<10	500	N	50	150	70
R78	36.4919	78.9611	3.00	.70	5.00	.200	700	N	10	70	N	7	50	15
R79	36.4919	78.9611	3.00	.70	5.00	.200	300	N	10	2,000	<1.0	7	N	30
R80	36.3222	78.8389	7.00	3.00	10.00	.500	1,500	N	<10	1,000	<1.0	30	70	30
R81	36.3222	78.8394	3.00	.70	1.00	.200	1,000	N	<10	1,500	1.0	5	N	5
R82	36.3214	78.8422	15.00	5.00	7.00	1.000	1,000	N	N	300	<1.0	70	1,000	70
R83	36.3197	78.8392	10.00	5.00	10.00	.700	1,000	N	N	700	N	50	200	50
R84	36.3381	78.9025	7.00	2.00	2.00	1.000	500	N	10	1,500	1.0	20	100	30
R85	36.3381	78.9025	7.00	1.00	5.00	.700	700	N	<10	300	<1.0	15	70	50
R86	36.3375	78.9033	10.00	.50	15.00	.500	1,000	N	<10	50	N	N	70	15
R87	36.3375	78.9039	10.00	5.00	7.00	.500	1,000	N	<10	200	N	50	300	30
R88	36.4639	78.9708	5.00	.10	.10	.200	15	N	10	2,000	<1.0	N	N	<5
R89	36.4639	78.9708	3.00	.30	<.05	.300	300	N	<10	150	N	N	5	N
R90	36.4639	78.9708	15.00	2.00	<.05	1.000	100	N	N	30	N	20	700	<5
R91	36.4639	78.9708	.70	.05	.20	.300	<10	N	20	2,000	<1.0	N	N	N
S1	36.5011	78.7867	10.00	3.00	2.00	.500	2,000	N	10	300	N	70	1,000	20
S2	36.5450	78.8328	2.00	.07	N	.500	100	N	<10	300	<1.0	N	15	10
S3	36.5208	78.8278	3.00	.70	1.50	.500	1,500	N	<10	100	1.0	10	10	<5
S4	36.5208	78.8278	.20	.05	.10	.030	200	N	N	50	<1.0	N	N	<5
S5	36.5208	78.8278	>20.00	.03	.10	.100	200	1.0	50	150	3.0	50	30	150
S6	36.5258	78.8389	5.00	1.00	1.50	.700	1,000	N	<10	500	<1.0	50	50	15
S7	36.5258	78.8389	3.00	1.00	.70	.500	500	N	<10	500	1.0	15	30	<5
S8	36.5258	78.8389	3.00	1.00	.10	.700	1,000	N	20	500	1.0	50	50	5
S9	36.5917	78.7811	1.00	.50	.50	.200	200	2.0	10	70	N	N	20	200
S10	36.5917	78.7811	10.00	5.00	3.00	.500	1,500	N	<10	100	N	50	300	700
S11	36.5917	78.7811	1.00	.20	.50	.070	200	N	10	70	N	N	15	15
S12	36.5917	78.7811	7.00	2.00	7.00	.500	1,500	N	<10	200	N	30	150	100
S13	36.5222	78.7750	.50	.07	<.05	.010	50	15.0	10	20	N	N	10	50
S14	36.5222	78.7750	7.00	2.00	.20	1.000	1,500	10.0	<10	300	<1.0	50	15	2,000
S15	36.5222	78.7750	2.00	.50	.05	.070	300	10.0	10	100	N	10	N	1,500
S16	36.5425	78.7767	10.00	7.00	10.00	.500	1,500	N	<10	150	N	50	1,500	5
S17	36.5425	78.7764	10.00	5.00	20.00	1.000	1,500	N	10	150	N	50	1,000	50
S18	36.5506	78.7967	7.00	2.00	5.00	.500	1,000	N	<10	50	N	20	300	<5
S19	36.5506	78.7972	10.00	7.00	10.00	.700	1,500	N	<10	200	N	50	700	70
S20	36.5500	78.8056	10.00	5.00	10.00	.500	1,500	N	<10	70	N	50	1,000	30
S21	36.5494	78.8111	7.00	.70	20.00	.500	1,500	N	<10	70	N	10	500	30
S22	36.5489	78.8139	5.00	.50	.10	.150	1,000	<.5	10	100	N	20	100	20
S23	36.5744	78.7528	15.00	.07	<.05	.100	50	<.5	10	50	2.0	N	10	200

Sample	LA	MO	NB	NI	PB	SC	SR	V	Y	ZN	ZR	AUAA	CUAA	PBAA	ZNAA	BIAA	C-MO
R70	20	N	30	5	15	15	150	50	30	N	300	.02	<10	N	N	<10	N
R71	N	N	20	<5	15	5	N	70	30	N	20	.02	10	N	<25	<10	<4
R72	70	N	20	<5	10	15	100	100	50	N	300	<.02	<10	N	<25	<10	4
R73	30	N	20	<5	10	10	N	15	50	N	300	.04	10	N	<25	<10	N
R74	20	N	10	5	100	7	300	50	20	N	200	.02	30	40	<25	<10	<4
R75	50	N	10	<5	15	15	700	100	50	N	300	<.02	20	<25	28	<10	<4
R76	30	N	15	7	20	15	300	150	30	N	150	<.02	30	<25	32	<10	N
R77	20	N	10	30	<10	50	1,000	300	50	N	100	<.02	70	<25	52	<10	N
R78	N	N	N	10	<10	20	700	150	15	N	70	<.02	30	<25	<25	<10	<4
R79	20	N	10	5	20	7	1,000	100	10	N	300	<.02	50	<25	36	N	N
R80	20	N	10	15	15	50	1,000	300	30	N	150	<.02	80	<25	60	<10	N
R81	70	5	10	<5	20	15	150	50	50	N	200	<.02	10	<25	44	N	<4
R82	N	N	<20	500	N	50	200	500	50	N	70	<.02	90	<25	72	<10	N
R83	N	N	<20	50	15	50	1,000	500	30	N	70	<.02	60	<25	68	<10	N
R84	70	N	10	30	15	50	300	200	70	N	200	<.02	40	<25	48	<10	N
R85	50	N	20	20	30	30	700	150	50	N	150	<.02	60	<25	48	<10	N
R86	N	N	10	10	20	30	700	300	20	N	100	<.02	10	<25	N	N	4
R87	N	N	10	100	15	50	700	300	30	N	100	<.02	40	<25	60	<10	N
R88	50	N	20	<5	30	10	300	20	30	N	200	<.02	<10	N	N	<10	N
R89	50	N	50	<5	N	10	N	30	20	N	300	<.02	<10	N	N	N	N
R90	N	N	20	100	N	30	N	200	30	N	100	<.02	<10	<25	48	10	N
R91	100	N	20	<5	50	15	700	20	30	N	200	<.02	<10	<25	N	N	N
S1	<20	<5	<20	200	10	100	500	500	50	N	70	<.02	<10	<25	65	10	N
S2	30	N	<20	<5	N	7	100	100	30	N	700	<.02	<10	<25	<25	<10	N
S3	30	N	<20	<5	N	20	300	70	100	N	200	<.02	<10	<25	85	<10	N
S4	N	N	N	<5	N	N	N	20	10	N	20	<.02	<10	<25	<25	<10	N
S5	20	N	10	<5	20	10	100	50	70	N	70	.06	140	18	70	20	N
S6	50	N	<20	30	15	30	500	200	100	N	200	<.02	<10	<25	70	<10	N
S7	30	N	<20	15	15	15	500	100	50	N	200	<.02	<10	<25	60	<10	N
S8	70	N	<20	70	10	20	150	150	70	N	200	<.02	<10	<25	55	<10	N
S9	N	N	N	10	N	5	N	50	N	N	10	<.02	420	<25	<25	<10	<4
S10	N	N	<20	70	<10	30	300	200	15	N	50	.02	500	<25	64	12	N
S11	N	N	N	10	N	5	N	30	N	N	N	.02	40	N	N	<10	N
S12	N	N	N	50	10	30	700	200	15	N	50	.02	150	<25	36	<10	N
S13	N	N	N	<5	<10	N	N	10	N	N	10	.02	120	<25	N	<10	N
S14	30	N	N	20	15	50	150	300	70	N	200	<.02	800	<25	76	10	N
S15	N	N	N	5	<10	5	N	50	N	N	20	.02	3,400	<25	72	<10	N
S16	N	N	N	100	<10	50	500	300	20	N	50	<.02	10	<25	<25	<10	N
S17	N	10	N	100	15	50	1,000	500	50	N	100	<.02	90	<25	40	<10	N
S18	N	N	N	50	<10	50	300	300	20	N	50	<.02	<10	<25	<25	<10	N
S19	N	N	N	100	10	50	500	300	30	N	100	.02	20	<25	32	<10	N
S20	N	N	N	100	<10	50	500	300	30	N	70	.02	20	<25	25	<10	N
S21	N	N	N	30	15	50	2,000	200	30	N	70	<.02	20	<25	<25	<10	N
S22	N	N	N	50	10	15	N	100	20	N	30	<.02	40	<25	32	<10	N
S23	N	N	N	<5	30	10	N	50	N	N	15	.02	200	<25	<25	<10	N

Sample	LAT	LONG	FE%	MG%	CA%	TI%	MN	AG	B	BA	BE	CO	CR	CU
S24	36.5744	78.7528	1.50	0.05	0.05	0.030	50	0.5	<10	20	N	N	N	70
S25	36.5744	78.7528	15.00	.50	.05	1.000	200	N	<10	300	<1.0	N	50	200
S26	36.5278	78.7694	.70	.05	<.05	.020	500	<.5	10	20	N	N	N	50
S27	36.5278	78.7694	3.00	.10	<.05	.300	50	N	<10	30	N	N	20	30
S28	36.5161	78.7622	.50	.15	.05	.050	100	N	<10	20	N	N	10	<5
S29	36.5161	78.7622	10.00	3.00	.50	.700	700	N	10	1,000	1.0	30	200	20
S30	36.5189	78.7722	5.00	.70	5.00	.500	1,000	N	10	1,000	1.0	15	20	7
S31	36.5189	78.7722	15.00	.70	20.00	.700	2,000	N	<10	20	N	10	700	<5
S32	36.5189	78.7722	15.00	5.00	3.00	.700	1,500	N	<10	150	N	70	1,000	<5
S33	36.5222	78.7883	10.00	5.00	10.00	1.000	1,000	N	<10	300	N	50	500	10
S34	36.5222	78.7883	10.00	1.00	20.00	.700	1,500	N	<10	20	N	20	300	<5
S35	36.5183	78.8111	10.00	.50	.05	1.000	500	N	50	1,000	1.0	20	100	30
S36	36.5181	78.8167	7.00	2.00	.07	1.000	1,500	N	<10	500	1.0	50	70	10
S37	36.5181	78.8167	7.00	1.50	.07	.700	1,000	N	30	2,000	1.0	20	20	20
S38	36.5250	78.8528	2.00	.70	.05	.070	150	N	<10	30	N	10	50	15
S39	36.5250	78.8528	10.00	7.00	7.00	.500	1,500	N	<10	70	N	70	2,000	70
S40	36.5767	78.8917	1.00	5.00	1.00	.070	100	N	10	1,000	<1.0	N	N	10
S41	36.5767	78.8917	10.00	3.00	10.00	.700	1,000	N	<10	700	1.0	30	150	30
S42	36.5689	78.8764	3.00	.70	<.05	.200	>5,000	.5	20	1,500	1.5	5	N	50
S43	36.5686	78.8756	3.00	.70	.20	.300	300	N	<10	1,500	<1.0	N	N	5
S44	36.5681	78.8725	.50	.07	.05	.020	300	N	<10	70	N	N	10	10
S45	36.5683	78.8689	1.50	.15	<.05	1.000	20	N	10	700	<1.0	N	N	7
S46	36.5683	78.8689	.50	.07	<.05	.700	10	N	10	1,000	N	N	50	<5
S47	36.5683	78.8689	3.00	.50	<.05	.500	70	N	10	1,500	<1.0	N	10	7
S48	36.5689	78.8661	3.00	.70	.30	.300	1,000	N	10	1,000	<1.0	N	5	20
S49	36.5689	78.8661	3.00	.70	.15	.300	500	N	10	1,000	<1.0	N	5	10
VNC1	36.4667	78.4500	.50	.05	.05	.070	70	N	10	100	<1.0	N	15	10
VNC2	36.4250	78.4556	7.00	2.00	5.00	1.000	1,500	N	N	1,000	N	15	20	20
VNC3	36.4250	78.4556	7.00	1.50	3.00	.700	1,000	N	N	700	<1.0	15	10	20
VNC4	36.3500	78.4611	7.00	2.00	5.00	.700	700	N	<10	700	<1.0	20	50	20
W1	36.4131	79.0450	2.00	.50	2.00	.300	700	N	<10	1,000	<1.0	N	N	5
W2	36.4131	79.0450	2.00	.30	1.50	.300	500	N	<10	1,500	<1.0	5	N	5
W3	36.4425	79.0381	1.50	.20	1.50	.150	300	N	10	1,500	1.0	N	N	<5
W4	36.4425	79.0381	5.00	.20	<.05	.150	70	N	<10	1,000	<1.0	5	30	5
W5	36.4425	79.0381	2.00	.15	.30	.100	300	N	10	1,500	<1.0	N	N	<5
W6	36.4458	79.0417	1.00	.15	1.00	.070	500	N	10	1,000	1.0	N	N	5
W7	36.4458	79.0417	1.50	.15	.15	.100	200	N	10	1,000	<1.0	N	N	<5
W8	36.4458	79.0417	2.00	.15	<.05	.150	70	N	10	1,000	<1.0	N	10	15
W9	36.4561	79.0033	1.50	.30	1.00	.150	500	N	10	1,500	<1.0	N	15	5
W10	36.4561	79.0033	2.00	.20	1.00	.150	300	N	10	1,500	1.0	N	N	10
W11	36.4567	79.0042	2.00	.20	1.00	.150	100	N	10	1,000	<1.0	N	N	15
W12	36.4567	79.0042	3.00	.50	2.00	.500	500	N	<10	1,000	<1.0	7	N	20
W13	36.4564	79.0036	1.00	.15	.20	.100	70	N	<10	1,500	<1.0	N	N	7
W14	36.4564	79.0036	3.00	.30	1.00	.150	300	N	10	1,000	<1.0	5	N	10
W15	36.4564	79.0036	1.50	.20	1.50	.150	300	N	10	1,000	<1.0	N	N	<5
W16	36.4550	79.0014	1.50	.30	<.05	.200	30	N	10	1,000	1.0	N	5	<5
W17	36.4278	78.9939	.50	.02	<.05	.010	70	N	10	10	N	N	N	<5
W18	36.4278	78.9989	2.00	.30	1.50	.150	500	N	<10	2,000	1.5	N	N	10
W19	36.4278	78.9939	5.00	.30	<.05	.200	200	N	<10	700	1.0	N	10	15

Sample	LA	MO	NB	NI	PB	SC	SR	V	Y	ZN	ZR	AUAA	CUAA	PBAA	ZNAA	BIAA	C-MO
S24	N	N	<20	<5	20	5	N	15	N	N	10	.02	110	<25	<25	<10	N
S25	N	N	N	10	20	50	N	300	20	N	500	<.02	160	<25	<25	10	N
S26	N	30	N	<5	<10	N	N	<10	N	N	10	<.02	60	<25	N	<10	N
S27	N	N	<20	<5	<10	15	N	100	N	N	70	<.02	40	<25	<25	<10	N
S28	N	N	N	<5	N	N	N	<10	N	N	10	<.02	<10	<25	<25	<10	N
S29	100	N	N	50	20	50	200	200	100	N	200	<.02	30	<25	130	14	N
S30	20	N	10	20	50	20	500	100	50	N	200	<.02	20	<25	28	<10	N
S31	N	N	N	50	20	70	2,000	500	30	N	100	<.02	<10	<25	<25	<10	N
S32	50	N	N	100	10	50	300	300	70	N	100	<.02	50	<25	120	14	N
S33	N	N	N	100	10	50	700	300	50	N	100	<.02	<10	<25	52	10	N
S34	N	N	N	50	15	50	1,500	300	50	N	100	<.02	10	<25	<25	<10	N
S35	70	N	20	20	30	50	500	200	70	N	300	<.02	50	<25	32	<10	N
S36	30	N	10	50	20	30	N	100	50	200	200	<.02	30	<25	200	12	N
S37	500	N	15	5	30	50	500	100	70	N	500	<.02	40	<25	84	<10	N
S38	N	N	N	20	N	5	N	50	N	N	10	<.02	40	<25	<25	<10	N
S39	N	N	N	200	<10	50	300	300	20	N	50	.02	70	<25	32	12	N
S40	N	N	N	5	50	<5	700	30	N	N	50	<.02	10	<25	<25	<10	<4
S41	20	N	<20	50	20	50	1,000	200	30	N	70	<.02	50	<25	44	<10	<4
S42	100	N	10	<5	100	5	N	30	30	700	200	<.02	90	44	350	<10	<4
S43	100	N	10	<5	30	10	200	50	50	N	300	<.02	<10	<25	32	N	<4
S44	N	N	<20	<5	30	N	N	N	N	N	20	<.02	<10	<25	<25	N	N
S45	N	10	20	5	10	10	100	30	30	N	200	<.02	<10	<25	N	N	8
S46	20	N	10	<5	10	15	200	100	10	N	200	<.02	<10	<25	N	N	4
S47	50	5	15	<5	15	15	200	70	30	N	200	<.02	<10	N	N	<10	4
S48	50	N	10	<5	20	10	300	50	30	N	200	<.02	30	<25	48	<10	N
S49	20	N	10	<5	20	10	200	70	10	N	200	<.02	10	<25	32	<10	N
VNC1	N	N	N	<5	20	N	N	10	N	N	20	.04	10	25	16	<10	N
VNC2	20	N	<20	10	20	30	700	200	50	N	200	<.02	40	<25	68	<10	N
VNC3	20	N	<20	10	15	20	500	150	50	N	70	<.02	30	<25	84	<10	<4
VNC4	20	N	N	20	20	15	1,000	150	10	N	150	<.02	30	<25	60	<10	<4
W1	50	N	10	<5	30	10	150	50	50	N	500	<.02	<10	<25	28	<10	<4
W2	50	N	10	10	30	10	100	70	30	N	300	<.02	<10	<25	25	<10	N
W3	70	N	10	<5	15	5	N	<10	50	N	100	<.02	10	<25	<25	<10	N
W4	N	30	20	15	50	7	N	70	15	N	100	<.02	10	<25	<25	<10	8
W5	N	N	<20	5	30	<5	N	15	20	N	70	<.02	<10	<25	<25	<10	N
W6	70	N	<20	<5	30	<5	N	<10	70	N	70	<.02	<10	<25	<25	<10	N
W7	20	N	<20	5	30	<5	N	10	10	N	70	<.02	<10	<25	<25	<10	N
W8	20	N	15	5	30	7	N	30	10	N	100	<.02	10	<25	<25	<10	N
W9	50	20	15	5	100	10	150	50	50	N	100	<.02	60	<25	N	<10	6
W10	50	N	15	7	70	10	200	20	50	N	100	<.02	70	<25	<25	<10	4
W11	70	N	10	<5	50	5	150	20	30	N	150	<.02	80	<25	<25	<10	<4
W12	70	N	20	<5	30	15	500	30	50	N	500	<.02	100	<25	<25	<10	N
W13	N	N	10	<5	20	<5	N	10	15	N	150	<.02	70	<25	N	<10	N
W14	20	N	<20	5	30	7	N	30	20	N	200	<.02	10	<25	<25	<10	<4
W15	30	N	<20	<5	20	<5	100	10	20	N	150	<.02	10	<25	<25	<10	N
W16	N	10	20	<5	<10	15	N	70	30	N	150	<.02	60	<25	N	<10	4
W17	N	N	N	<5	N	N	N	10	N	N	N	<.02	60	<25	<25	<10	N
W18	70	5	10	5	30	<5	N	15	200	N	100	<.02	20	<25	25	<10	N
[illegible]	N	N	20	15	50	15	N	70	20	N	150	<.02	20	28	32	<10	4