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Analyses and description of geochemical samples CRANBERRY WILDERNESS STUDY AREA Pocahontas and Webster Counties, West Virginia

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by

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This report is preliminary and has not been edited or reviewed for conformity with U. S. Geological Survey standards and nomenclature.

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SUMMARY

Semiquantitative spectrographic and other analyses on 104 stream sediment and 100 rock and mineral samples are reported here in detail. Location for all samples are in Universal Transverse Mercator (UTM) coordinates. Brief descriptions of rock and mineral samples are included. Rocks analyzed include sandstone and shale; two samples of pyrite from sandstone are included. No obviously anomalous values related to mineralized rock are present in the data.

INTRODUCTION

The analyses reported in this open-file report are on samples from the Cranberry Wilderness Study area, Pocahontas and Webster Counties, West Virginia, collected by C. E. Brown, F. G. Lesure, A. E. Grosz, and J. W. Whitlow, U. S. Geological Survey, in April 1977. The reconnaissance geochemical sampling was done to find indistinct or unexposed mineral deposits that might be recognized by their geochemical halo. The sample locations and results of the study are given in Meissner and others (1978). No obviously anomalous values related to mineralized rock are present in the data.

The X and Y coordinates are Universal Transverse Mercator (UTM) grid, zone 17. The X coordinate is the easting value, and the Y is the northing.

Analytical techniques

Rock samples were crushed to approximately 0.25 inch (6 mm) and pulverized to minus 140-mesh (0.105 mm) in a vertical grinder with ceramic plates. Stream sediments were dried and sieved to minus 80-mesh (0.177 mm) and then pulverized.

Each sample was analyzed semiquantitatively for thirty elements by a six-step, D. C. arc, optical emission spectrographic method (Grimes and Marranzino, 1968). In addition, stream sediments and shales were analyzed for zinc by an atomic absorption technique (Ward and others, 1969, p. 33) and equivalent uranium determined instrumentally by total gamma count.

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 geometric midpoints of the concentration ranges. The precision is shown to be within one adjoining reporting interval on each side of the reported value 83 percent of the time and within two adjoining intervals on each side of the reported value 96 percent of the time (Motooka and Grimes, 1976).

Rock sample descriptions

Pocono formation

Sample No.	Description
WVC 050	3 m, chip sample, sandstone, greenish gray, silty. Roadcut on U.S. Highway 219, 1.4 km southwest of Marlinton, W. Va.
WVC 170	0.6 m, chip sample, sandstone, gray. Roadcut on U.S. Highway 219, 1.4 km southwest of Marlinton, W. Va.
WVC 171	0.3 m, chip sample, sandstone. Roadcut on U.S. Highway 219, 1.45 km southwest of Marlinton, W. Va.
WVC 173	2 m, chip sample, sandstone. Roadcut on U.S. Highway 219, 1.65 km southwest of Marlinton, W. Va.
WVC 174	Sandstone. Same locality as WVC 173.

Hinton Formation

Sandstone

Sample No.	Description
WVC 030	1 m, chip sample, sandstone, fine to medium grained, crossbedded.
WVC 043	1 m, chip sample, sandstone, yellowish gray, medium grained; minor shale pebbles.
WVC 115	2 m, chip sample, sandstone, pale olive, medium grained, friable.
WVC 163	0.1 m, chip sample, sandstone, red, very fine-grained.

Hinton Formation

Shale

WVC 138	1 m, chip sample, mudstone, red.
WVC 134	0.3 m, chip sample, mudstone, greenish gray, from a layer in red mudstone.
WVC 143	1 m, chip sample, mudstone, medium gray.
WVC 160	1 m, chip sample, mudstone, red.
WVC 161	0.05 m, mudstone, mottled red and greenish-gray, sample is mostly greenish gray.
WVC 162	1 m, chip sample, claystone, gray.
WVC 164	0.6 m, chip sample, mudstone, red.
WVC 166	1 m, chip sample, mudstone, greenish gray.

Princeton (?) sandstone

WVC008	1 m, chip sample, sandstone, grayish orange, medium grained.
WVC039	1.5 m, chip sample, conglomerate, light-gray, quartz pebbles, 0.5-2 cm, some shale pebbles, minor coaly fragments.
WVC040	1.5 m, chip sample, sandstone, grayish orange, medium grained, minor conglomerate.
WVC044	1 m, chip sample, conglomerate, light gray; shale pebbles, gray, 1-2 cm; quartz pebbles white, 1 cm.
WVC045	1 m, chip sample, sandstone, grayish orange, medium grained.
WVC108	1 m, chip sample, sandstone, yellowish gray, medium grained.
WVC109	2 m, chip sample, conglomerate, grayish yellow; quartz pebbles 1-5 cm, white.
WVC113	1 m, chip sample, sandstone, yellowish gray, thin layers of dark minerals.
WVC144	0.6 m, chip sample, sandstone, light gray, plant fragments and films.
WVC146	2 m, chip sample, conglomerate.
WVC401	Sandstone.

Bluestone Formation

Sandstone

Sample No.	Description
WVC024	1 m, chip sample, sandstone, yellowish brown, medium grained.
WVC027	1 m, chip sample, sandstone, olive gray, medium grained.
WVC029	1 m, chip sample, sandstone, light olive gray, medium grained.
WVC035	1 m, chip sample, sandstone, pale yellowish brown, medium grained.
WVC037	1 m, chip sample, sandstone, light olive gray, medium grained.
WVC046	1 m, chip sample, sandstone, olive gray, very fine grained, minor very fine grained pyrite and pyrite concretions.
WVC048	1 m, chip sample, sandstone, grayish orange, medium grained.
WVC107	1 m, chip sample, sandstone, light olive gray, fine grained, cross bedded.
WVC116	1 m, chip sample, silty sandstone, olive gray, very fine grained; plant fossils.
WVC132	1 m, chip sample, sandstone, greenish gray, fine grained.
WVC148	1 m, chip sample, sandstone, olive gray, medium grained; plant fossils.
WVC154	1 m, chip sample, sandstone, yellowish gray, medium grained, cross bedded.

Bluestone Formation

Shale

WVC010	1 m, chip sample, siltstone, olive gray.
WVC012	1 m, chip sample, siltstone, medium gray.
WVC036	1 m, chip sample, shale, gray.

Bluestone Formation - Shale (cont'd)

VC042	0.5 m, chip sample, mudstone, mottled grayish red and pale olive.
WVC047	1 m, chip sample, shale, red-orange.
WVC147	1 m, chip sample, shale, medium gray, unit contains pyrite concretions sampled separately as WVC149.
WVC159	1 m, chip sample, mudstone, grayish red.
WVC210	Chip sample, shale, dark gray, carbonaceous, iron-stone concretions.
WVC270	3 m, chip sample, siltstone, olive gray.
WVC271	7 m, chip sample, shale, interlayered grayish red and olive gray; zone of nodular concretions.
WVC272	10 m, chip sample, siltstone, interlayered red and green.
WVC407	Shale.

Pyrite

WVC149	Composite sample, pyrite concretions from single bedding plane in shale sample WVC147.
WVC167	Composite sample, pyrite concretions and fossil replacements in sample WVC046.

New River Formation

Sandstone

Sample No.	Description
WVC016	0.5 m, chip sample, sandstone, grayish-yellow, medium grained, friable, quartz-rich.
WVC119	1 m, chip sample, sandstone, light gray, fine- to medium-grained; iron hydroxide cement along fractures.
WVC124	1 m, chip sample, sandstone, light olive gray, very fine grained; minor dark shale layers with plant fossils.
WVC252	5 m, chip sample, sandstone
WVC253	1 m, chip sample, sandstone
WVC257	4 m, chip sample, sandstone, white medium-grained, plant impressions.
WVC259	9 m, chip sample, sandstone, white coarse-grained, some fine grained interbeds and small iron-stone concretions.
WVC261	20 m, chip sample, sandstone
WVC268	3 m, chip sample, sandstone, feldspathic, coarse-grained; minor iron stone and shale chips.
WVC269	2 m, chip sample, sandstone; interlayered shale.
WVC274	1 m, chip sample, sandstone, yellow gray, medium grained; coaly seams and plant impressions.

New River Formation

Shale

WVC025	1 m, chip sample, shale, gray
WVC026	0.5 m, chip sample, shale, minor ironstone concretions.
WVC128	2 m, chip sample, shale, dark gray, fissile, some plant impressions.
WVC133	1 m, chip sample, shale, black, minor sulfides.
WVC172	0.2 m, chip sample, clay, light gray above coal beds.
WVC254	25 m, chip sample, shale, dark gray, sandy, pyritic(?).
WVC255	30 m, chip sample shale, medium gray; plant fossils.
WVC256	10 m, chip sample, shale, minor sulfides.
WVC258	12 m, chip sample, shale, medium gray, sandy.
WVC260	20 m, chip sample, shale, finely laminated, dark gray, abundant plant fossils, light gray sandy layers.
WVC262	15 m, chip sample, shale, black, thin light gray sandy laminations.
WVC263	15 m, chip sample, shale, medium gray, thin light gray sandy laminations, plant fossils.
WVC264	4 m, chip sample, siltstone, dark gray with light gray sandy laminations, micaceous
WVC265	8 m, chip sample, shale, dash gray, laminated
WVC266	7 m, chip sample, siltstone, light gray with dark gray shale laminations
WVC267	Chip sample, shale, dark gray, laminated

Explanation of tables

Iron, magnesium, calcium, and titanium values are reported in percent (%), all others are in parts per million except equivalent uranium which is in total gamma count. Letters preceding chemical symbols indicate the method of analyses: S, six-step semiquantitative spectrographic method; AA, atomic absorption; eU, total gamma count. Other symbols represented on 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; P, partial digestion.

Elements looked for spectrographically but not detected, except as noted, and the lower limits of determination: for stream sediments Ag(0.5), As(200); Au(10); Bi(10); Cd(20); Mo(5); Sb(100); Sn(10) except samples WVC 104(15 ppm) and WVC 218(10 ppm); W(50) and Zn(200) except samples WVC 018(<200); WVC 137(200 ppm) and WVC 306(300 ppm). For rock samples: Ag(0.5) except samples WVC 139(2 ppm), WVC 149(5 ppm), and WVC 167(<0.5 ppm); As(200) except sample WVC 149(1000 ppm); Au(10), Bi(10), Cd(20); Mo(5) except samples WVC 109(15 ppm), WVC 149(20 ppm), and WVC 167(70 ppm); Sb(100); Sn(10); and Zn(200) except samples WVC 128 and 164 reported as <200.

References cited

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sample	Easting	Northing	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
WVC001	566,070	4,237,630	1.0	.15	<.05	.5	100	100	150	1.0	<5	15	7	<20	<20
WVC002	565,910	4,237,100	1.0	.15	<.05	.5	70	70	200	1.5	N	20	<5	150	<20
WVC003	565,030	4,238,080	2.0	.20	<.05	.5	200	100	300	2.0	5	70	15	30	<20
WVC004	563,460	4,239,430	5.0	.30	<.05	.5	150	150	300	1.5	5	70	15	20	<20
WVC005	561,990	4,238,980	3.0	.30	.05	.5	150	70	300	1.5	10	50	15	20	<20
WVC006	562,100	4,239,680	3.0	.20	<.05	.5	5,000	100	300	3.0	50	50	20	20	<20
WVC007	561,700	4,240,170	3.0	.20	.05	.5	300	100	300	1.5	7	70	15	20	<20
WVC009	560,430	4,240,640	3.0	.30	.07	.5	2,000	100	300	3.0	20	50	20	30	<20
WVC011	557,940	4,242,580	3.0	.20	.15	.5	3,000	70	700	5.0	15	50	20	50	<20
WVC013	557,020	4,243,520	2.0	.15	.07	.5	300	100	300	1.5	10	30	15	20	<20
WVC014	557,820	4,243,980	2.0	.50	<.05	.5	1,000	70	150	3.0	20	70	10	100	<20
WVC015	556,900	4,243,020	2.0	.20	<.05	.5	700	70	200	2.0	10	50	10	N	<20
WVC017	562,170	4,238,660	2.0	.10	<.05	.5	150	50	150	<1.0	5	15	5	N	<20
WVC018	560,530	4,239,540	5.0	.30	.10	.5	1,000	100	500	5.0	20	70	20	30	<20
WVC019	560,460	4,239,380	3.0	.30	.05	.5	1,500	100	300	3.0	20	70	15	20	<20
WVC021	560,170	4,239,670	5.0	.50	.05	.7	3,000	100	500	7.0	20	100	30	30	<20
WVC022	560,020	4,239,630	2.0	.15	<.05	.5	700	70	200	1.5	10	30	10	<20	<20
WVC023	559,960	4,240,040	3.0	.30	<.05	.7	1,500	100	300	3.0	20	70	15	30	20
WVC028	558,640	4,240,500	5.0	.30	<.05	.5	700	100	300	2.0	20	100	20	20	<20
WVC031	564,500	4,242,280	1.5	.10	<.05	.5	150	70	150	1.0	5	20	5	<20	<20
WVC032	564,490	4,242,400	3.0	.20	<.05	.5	500	100	200	2.0	20	70	15	20	<20
WVC033	564,900	4,242,330	2.0	.15	<.05	.5	150	100	150	1.0	5	20	7	20	<20
WVC034	564,980	4,242,280	5.0	.20	<.05	.5	500	100	200	2.0	20	70	20	20	<20
WVC038	565,130	4,243,320	3.0	.50	.20	.7	2,000	100	300	2.0	15	70	20	20	<20
WVC041	556,310	4,244,670	3.0	.50	.20	.5	2,000	100	500	5.0	20	70	20	20	<20
WVC101	565,750	4,236,980	1.5	.15	<.05	.5	150	100	200	<1.0	<5	20	7	70	<20
WVC102	563,940	4,239,220	1.5	.15	<.05	.5	100	100	150	1.0	<5	30	5	20	<20
WVC103	563,000	4,238,020	2.0	.20	<.05	.5	100	50	200	2.0	5	30	10	20	<20
WVC104	563,640	4,237,740	2.0	.15	<.05	.5	150	70	150	1.0	5	30	7	20	<20
WVC105	563,700	4,237,770	2.0	.15	<.05	.7	100	50	150	1.0	5	50	7	20	<20
WVC106	563,360	4,238,080	1.5	.15	<.05	.5	100	150	200	1.0	<5	30	7	<20	<20
WVC110	561,070	4,240,550	2.0	.20	<.05	.7	2,000	100	200	3.0	20	50	20	20	<20
WVC111	558,600	4,242,440	3.0	.50	<.05	.5	2,000	70	300	3.0	20	70	20	20	<20
WVC112	558,380	4,242,210	3.0	.30	<.05	.7	500	100	300	2.0	15	50	10	20	<20
WVC114	557,380	4,242,430	3.0	.20	<.05	.5	1,500	100	200	2.0	20	50	10	20	<20
WVC117	557,130	4,243,420	3.0	.30	<.05	.7	2,000	150	300	3.0	20	70	20	20	<20
WVC118	557,830	4,244,070	2.0	.15	<.05	.7	2,000	100	200	2.0	30	50	15	30	<20
WVC120	562,810	4,241,400	3.0	.20	<.05	.7	700	70	150	2.0	20	50	15	20	<20
WVC121	562,860	4,241,390	1.5	.15	<.05	.5	100	100	150	<1.0	N	20	5	20	<20
WVC122	562,620	4,241,740	2.0	.15	<.05	.5	150	50	200	1.0	5	100	10	20	<20
WVC123	562,640	4,241,790	2.0	.20	<.05	.5	100	70	200	1.0	5	20	5	20	<20
WVC125	561,600	4,242,320	2.0	.10	<.05	.5	1,500	50	150	1.0	30	20	10	20	<20
WVC126	561,660	4,242,670	2.0	.20	<.05	.5	200	50	300	1.5	7	50	10	N	<20
WVC127	561,480	4,242,930	3.0	.20	<.05	.5	300	70	200	2.0	10	50	15	20	<20
WVC129	560,800	4,243,090	3.0	.20	<.05	.5	1,000	70	200	2.0	30	50	15	20	<20

sample	S-NI	S-PB	S-SC	S-SR	S-V	S-Y	S-ZR	AA-ZN-P	eU
WVC001	5	15	7	N	70	20	200	60	<20
WVC002	5	10	7	<100	70	20	300	40	<20
WVC003	15	10	10	N	100	30	700	50	<20
WVC004	15	20	10	N	150	30	1,000	50	<20
WVC005	15	20	10	<100	100	20	200	40	<20
WVC006	20	20	10	N	100	30	300	90	<20
WVC007	10	10	10	N	100	20	500	50	<20
WVC009	20	15	10	N	100	30	500	110	<20
WVC011	50	20	10	N	100	50	300	90	<20
WVC013	15	30	10	N	70	15	200	70	<20
WVC014	20	10	7	N	70	30	700	100	<20
WVC015	15	10	10	N	70	20	1,000	90	<20
WVC017	7	<10	7	N	70	15	200	30	<20
WVC018	70	30	15	N	150	30	300	180	<20
WVC019	30	15	10	N	100	30	500	90	<20
WVC021	50	30	15	N	150	30	300	120	<20
WVC022	15	<10	7	N	70	20	200	70	<20
WVC023	30	15	10	N	150	30	500	90	<20
WVC028	15	15	10	N	150	20	500	70	20
WVC031	7	N	7	N	70	20	300	40	<20
WVC032	20	10	10	N	100	20	300	80	<20
WVC033	10	N	7	N	70	20	700	40	<20
WVC034	30	N	10	N	100	20	300	80	<20
WVC038	20	20	15	N	150	20	700	120	<20
WVC041	50	20	10	N	100	30	300	110	<20
WVC101	5	N	5	N	100	15	300	50	<20
WVC102	7	N	10	N	70	15	300	20	<20
WVC103	10	10	10	N	100	20	700	50	<20
WVC104	10	10	7	N	70	20	300	20	<20
WVC105	7	<10	7	N	70	15	500	40	<20
WVC106	7	N	10	N	100	30	500	30	<20
WVC110	20	10	10	N	100	30	500	130	<20
WVC111	20	20	10	N	100	30	200	90	<20
WVC112	15	10	10	N	100	30	>1,000	70	<20
WVC114	15	<10	7	N	100	20	300	70	<20
WVC117	20	20	10	N	150	30	1,000	80	<20
WVC118	20	10	10	N	70	20	300	90	<20
WVC120	15	10	10	N	70	30	1,000	60	<20
WVC121	N	10	N	N	30	20	1,000	30	<20
WVC122	10	<10	7	N	100	20	300	40	<20
WVC123	7	N	7	N	70	20	700	50	<20
WVC125	10	<10	7	N	50	20	300	30	<20
WVC126	10	N	7	N	100	20	700	50	<20
WVC127	20	20	10	N	100	30	300	50	<20
WVC129	15	10	10	N	100	20	300	40	<20

Stream sediments--continued

sample	Easting	Northing	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
WVC130	560,480	4,242,780	5.0	.30	.05	.5	1,000	100	300	3.0	20	70	20	20	<20
WVC131	560,100	4,242,990	3.0	.20	<.05	.5	1,500	100	300	2.0	15	50	15	20	<20
WVC134	558,190	4,239,470	2.0	.20	<.05	.5	1,500	70	300	1.5	10	30	15	30	<20
WVC135	558,110	4,239,480	2.0	.20	<.05	.7	200	100	200	1.0	5	70	10	50	<20
WVC136	555,700	4,243,220	3.0	.50	.10	.5	1,500	100	500	5.0	30	70	20	20	<20
WVC137	566,840	4,243,780	3.0	.30	.10	.2	2,000	70	300	5.0	20	30	15	20	<20
WVC140	565,190	4,244,550	2.0	.20	<.05	.5	300	100	200	2.0	10	50	10	20	<20
WVC141	564,760	4,244,780	3.0	.20	<.05	.5	2,000	70	200	3.0	20	50	15	20	<20
WVC142	564,030	4,245,600	3.0	.30	<.05	.7	2,000	100	200	2.0	20	50	15	20	<20
WVC145	563,530	4,246,400	3.0	.20	<.05	.5	1,500	70	300	3.0	20	50	20	20	<20
WVC150	561,180	4,246,400	3.0	.20	<.05	.5	1,000	70	300	3.0	20	70	15	30	<20
WVC151	560,530	4,245,700	5.0	.50	<.05	.5	2,000	100	300	3.0	30	70	30	50	<20
WVC152	559,780	4,244,900	3.0	.20	<.05	.5	2,000	70	200	3.0	30	70	20	20	<20
WVC153	559,720	4,244,870	5.0	.30	<.05	.7	1,500	100	300	3.0	30	70	20	30	<20
WVC155	559,220	4,245,250	3.0	.30	.07	.5	2,000	100	500	3.0	15	50	15	20	<20
WVC156	558,060	4,245,370	2.0	.20	.10	.5	1,500	70	200	3.0	10	30	10	20	<20
WVC157	555,820	4,244,500	3.0	.50	.10	.5	1,500	50	200	3.0	15	70	15	20	<20
WVC165	566,990	4,242,380	3.0	.70	.20	.5	3,000	70	500	5.0	20	70	20	20	<20
WVC168	566,860	4,242,060	5.0	.50	.07	.5	5,000	100	300	5.0	30	50	20	20	<20
WVC169	566,860	4,242,060	10.0	.50	.07	.5	>5,000	70	500	3.0	70	70	30	30	<20
WVC201	567,780	4,229,980	3.0	.70	.07	.5	1,000	100	300	2.0	15	50	20	20	<20
WVC202	567,760	4,230,190	5.0	1.00	.30	.5	1,000	100	500	3.0	15	70	30	30	<20
WVC203	566,760	4,230,030	3.0	.70	.20	.5	1,000	100	500	2.0	15	50	20	<20	<20
WVC204	566,240	4,229,710	3.0	.50	.10	.7	700	100	300	2.0	N	70	20	20	<20
WVC205	566,330	4,229,300	3.0	.70	.10	.5	1,000	100	300	2.0	15	50	15	20	<20
WVC206	565,780	4,228,860	3.0	.70	.15	.5	1,000	100	300	2.0	15	30	15	20	<20
WVC207	564,060	4,227,440	5.0	.70	.10	.5	2,000	100	300	3.0	20	70	15	N	<20
WVC208	562,920	4,231,070	3.0	.20	<.05	.5	1,000	70	200	1.5	10	50	10	20	<20
WVC209	560,820	4,232,900	3.0	.20	<.05	.5	150	100	300	1.5	7	100	10	20	<20
WVC211	560,160	4,233,160	3.0	.15	<.05	.5	150	70	150	1.5	<5	70	10	N	<20
WVC212	560,460	4,235,980	3.0	.20	<.05	.5	700	100	200	1.5	20	30	7	20	<20
WVC213	564,750	4,235,510	5.0	.50	.05	.7	1,500	100	300	3.0	30	70	20	20	<20
WVC214	564,400	4,234,550	2.0	.15	<.05	.7	300	50	150	1.5	7	20	10	<20	<20
WVC215	564,770	4,233,840	3.0	.20	<.05	.7	300	50	200	2.0	7	70	10	30	<20
WVC216	564,010	4,234,510	3.0	.30	.10	.5	1,500	70	200	3.0	30	50	20	20	<20
WVC217	562,520	4,234,540	3.0	.20	<.05	.3	500	70	150	1.0	10	30	10	20	<20
WVC218	558,220	4,236,940	3.0	.20	<.05	.5	500	50	200	1.0	15	30	10	20	<20
WVC219	558,280	4,236,260	3.0	.30	<.05	.5	1,000	70	300	3.0	20	50	15	20	<20
WVC220	556,670	4,236,340	2.0	.20	<.05	.5	1,500	70	200	2.0	20	50	10	20	<20
WVC221	556,560	4,236,350	3.0	.15	<.05	.3	700	70	200	1.5	15	20	10	20	<20
WVC275	566,130	4,239,720	2.0	.20	<.05	.5	300	70	150	2.0	10	30	10	20	<20
WVC276	566,330	4,239,710	2.0	.20	<.05	.5	200	100	200	2.0	5	30	10	20	<20
WVC301	564,760	4,226,840	2.0	.30	.07	.5	1,000	50	300	1.5	10	30	15	<20	<20
WVC302	564,380	4,226,690	3.0	.50	.10	.5	700	100	300	2.0	20	50	15	20	<20
WVC303	565,560	4,227,720	3.0	.70	.15	.5	1,000	100	300	3.0	15	70	20	50	<20

sample	S-NI	S-PB	S-SC	S-SR	S-V	S-Y	S-ZR	AA-ZN-P	eU
WVC130	50	15	15	N	150	30	200	90	<20
WVC131	20	<10	7	N	100	20	300	100	<20
WVC134	15	10	10	200	100	20	300	70	<20
WVC135	10	N	10	N	100	30	>1,000	40	<20
WVC136	70	20	15	N	150	30	500	130	<20
WVC137	30	10	10	N	70	15	200	230	<20
WVC140	10	N	10	N	70	20	300	50	<20
WVC141	20	15	10	N	100	20	300	100	<20
WVC142	20	15	10	N	70	30	500	80	<20
WVC145	30	15	10	N	100	30	300	80	<20
WVC150	20	N	10	N	150	20	200	70	<20
WVC151	50	20	15	N	150	30	500	80	<20
WVC152	30	15	10	N	100	20	300	110	<20
WVC153	20	15	15	N	150	30	300	100	<20
WVC155	30	15	10	N	100	20	300	100	<20
WVC156	20	N	10	N	70	30	500	100	<20
WVC157	30	20	10	N	100	20	300	100	<20
WVC165	30	30	10	N	100	20	300	150	<20
WVC168	50	10	15	N	150	20	300	160	<20
WVC169	30	15	10	N	100	30	300	100	<20
WVC201	20	20	10	N	100	20	300	60	<20
WVC202	30	20	10	N	150	20	200	100	<20
WVC203	15	<10	7	N	100	30	300	60	<20
WVC204	30	15	10	N	100	20	500	70	<20
WVC205	15	N	10	N	100	20	500	70	<20
WVC206	20	<10	10	N	100	20	200	80	<20
WVC207	20	15	10	N	150	30	500	120	<20
WVC208	15	<10	7	N	100	20	300	70	<20
WVC209	15	<10	10	N	150	20	500	50	<20
WVC211	7	10	7	N	70	20	300	30	<20
WVC212	10	N	7	N	100	20	300	50	<20
WVC213	30	20	10	N	150	30	500	120	<20
WVC214	10	N	7	N	70	50	300	40	<20
WVC215	15	N	7	N	100	20	300	40	<20
WVC216	20	10	10	N	100	30	300	130	<20
WVC217	10	10	7	N	70	15	300	80	<20
WVC218	15	10	10	N	70	20	200	20	<20
WVC219	20	20	10	N	100	30	200	70	<20
WVC220	15	15	10	N	100	20	300	70	<20
WVC221	10	10	10	N	70	20	500	40	<20
WVC275	15	<10	7	N	70	20	500	60	<20
WVC276	10	N	10	N	70	20	200	30	<20
WVC301	20	<10	7	N	70	30	200	90	<20
WVC302	30	15	10	N	100	20	300	100	<20
WVC303	30	20	10	100	100	20	300	100	<20

Stream sediments--continued

sample	Easting	Northing	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
WVC304	565,320	4,229,390	3.0	.30	.07	.5	1,000	70	200	2.0	10	20	10	20	<20
WVC305	563,110	4,230,230	3.0	.50	.15	.5	1,500	70	300	3.0	15	50	15	20	<20
WVC306	561,360	4,231,990	3.0	.20	.07	.5	5,000	70	300	5.0	50	50	20	20	<20
WVC307	559,420	4,233,350	1.0	.10	<.05	.5	100	100	150	1.0	N	50	<5	N	<20
WVC308	561,330	4,235,760	3.0	.20	<.05	.5	200	100	200	2.0	7	50	15	20	<20
WVC309	561,720	4,235,160	2.0	.20	<.05	.7	150	70	150	1.0	5	30	10	<20	<20
WVC310	564,630	4,235,700	2.0	.10	<.05	.5	700	100	200	1.0	7	30	5	<20	<20
WVC311	564,140	4,233,680	5.0	.30	<.05	.5	>5,000	70	200	3.0	70	50	20	30	<20
WVC312	564,820	4,233,500	3.0	.20	.05	.5	1,000	50	200	2.0	15	20	10	20	<20
WVC313	563,170	4,234,840	3.0	.20	<.05	.5	200	70	300	2.0	7	30	10	20	<20
WVC314	558,940	4,237,450	5.0	.20	<.05	.5	700	100	200	2.0	20	70	15	20	<20
WVC315	559,130	4,237,470	5.0	.30	<.05	.5	1,500	100	200	3.0	30	70	15	20	<20
WVC316	558,790	4,236,740	3.0	.30	<.05	.5	1,500	70	300	2.0	20	70	15	20	<20
WVC317	557,800	4,236,290	3.0	.30	<.05	.5	2,000	100	200	3.0	50	70	30	50	<20

Stream sediments--continued

sample	S-NI	S-PB	S-SC	S-SR	S-V	S-Y	S-ZR	AA-ZN-P	eU
WVC304	20	N	5	N	70	15	500	90	<20
WVC305	20	10	10	N	100	30	300	130	<20
WVC306	50	15	15	N	150	30	500	220	<20
WVC307	5	N	5	N	70	50	700	20	<20
WVC308	15	15	10	N	100	20	500	50	<20
WVC309	10	<10	10	N	100	20	200	60	<20
WVC310	5	<10	7	N	70	20	500	40	<20
WVC311	30	20	10	N	100	30	500	140	<20
WVC312	15	N	10	N	70	20	500	80	<20
WVC313	10	10	10	N	100	20	300	50	<20
WVC314	15	10	10	N	100	20	700	50	<20
WVC315	20	10	10	N	100	30	700	80	<20
WVC316	15	10	10	N	100	20	500	80	<20
WVC317	30	20	15	N	100	50	200	80	<20

sample	Easting	Northing	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
WVC010	558,600	4,241,440	2.0	.7	.20	.5	300	70	200	1.5	15	50	20	20	<20
WVC012	557,170	4,242,870	3.0	1.5	1.50	.7	500	100	300	3.0	20	70	20	30	<20
WVC025	558,500	4,239,900	5.0	.7	.10	.7	700	100	300	2.0	20	70	30	30	<20
WVC026	558,500	4,239,900	3.0	.5	.07	.5	300	100	300	2.0	15	70	20	30	<20
WVC042	554,590	4,243,300	2.0	1.0	1.00	.5	700	70	200	2.0	20	50	20	20	<20
WVC047	566,760	4,241,520	5.0	.5	.20	.5	5,000	70	1,000	3.0	30	50	20	50	<20
WVC128	561,330	4,242,960	5.0	1.0	.05	.5	1,000	100	300	3.0	20	70	20	20	<20
WVC133	558,190	4,239,470	10.0	1.0	.20	.5	2,000	100	300	3.0	20	70	50	30	<20
WVC138	566,840	4,243,780	5.0	1.5	1.50	.5	700	150	300	3.0	20	70	30	30	<20
WVC139	566,840	4,243,780	3.0	1.5	1.50	.7	1,000	150	200	2.0	20	100	300	30	<20
WVC143	563,980	4,245,680	7.0	1.5	.30	.5	500	100	300	3.0	30	100	30	30	<20
WVC147	561,570	4,247,090	7.0	1.5	1.50	.7	500	150	300	3.0	30	100	30	50	<20
WVC149	561,570	4,247,090	20.0	.5	1.00	.2	150	20	1,000	<1.0	500	30	150	<20	N
WVC159	554,590	4,243,300	7.0	1.5	10.00	.5	2,000	70	300	3.0	20	70	30	50	<20
WVC160	568,090	4,242,630	3.0	1.0	2.00	.5	1,500	70	1,500	1.5	15	70	30	20	<20
WVC161	568,090	4,242,630	2.0	1.0	15.00	.5	1,500	70	>5,000	2.0	20	70	50	50	<20
WVC162	568,090	4,242,630	3.0	1.0	.30	.7	300	150	300	3.0	30	70	30	50	<20
WVC164	567,310	4,242,640	5.0	1.5	2.00	.5	500	100	300	3.0	20	70	20	20	<20
WVC166	566,990	4,242,310	3.0	1.0	.10	.5	700	100	500	3.0	20	100	30	20	<20
WVC167	566,950	4,242,170	20.0	.1	.07	.2	50	20	1,500	<1.0	20	15	30	<20	N
WVC172	557,430	4,236,100	1.5	.5	<.05	.5	150	100	300	2.0	7	70	15	30	<20
WVC210	560,160	4,233,160	7.0	1.5	.15	.5	1,000	100	300	3.0	15	100	20	30	<20
WVC250	557,470	4,240,600	3.0	1.0	.30	.7	700	100	300	3.0	20	70	20	30	<20
WVC251	557,470	4,240,600	3.0	1.0	1.00	.5	1,000	100	300	3.0	20	70	20	20	<20
WVC254	556,420	4,240,930	5.0	1.5	.15	.5	1,000	100	500	3.0	20	100	30	30	<20
WVC255	556,420	4,240,930	5.0	1.0	.15	.5	1,000	100	300	3.0	20	70	20	20	<20
WVC256	556,420	4,240,930	3.0	1.0	.07	.5	500	100	200	2.0	30	70	20	30	<20
WVC258	556,420	4,240,930	5.0	1.0	.10	.7	1,000	100	500	3.0	30	100	20	50	<20
WVC260	556,420	4,240,930	3.0	1.0	.15	.5	1,000	100	500	3.0	20	100	30	30	<20
WVC262	556,420	4,240,930	5.0	1.0	.10	.5	1,000	100	300	3.0	30	100	30	30	<20
WVC263	556,420	4,240,930	5.0	1.0	.15	.5	700	150	300	3.0	20	70	30	20	<20
WVC264	556,420	4,240,930	2.0	.5	.20	.5	500	100	300	1.5	20	70	7	20	<20
WVC265	556,420	4,240,930	5.0	.7	.10	.5	700	100	300	3.0	20	70	30	20	<20
WVC266	556,420	4,240,930	3.0	1.0	.20	.5	700	100	300	3.0	20	70	30	20	<20
WVC267	556,420	4,240,930	2.0	.5	.20	.5	500	70	150	1.0	10	70	5	N	<20
WVC270	566,680	4,241,380	5.0	1.5	1.50	.5	700	100	300	2.0	20	70	30	30	<20
WVC271	566,680	4,241,380	7.0	1.5	3.00	.5	1,000	100	300	3.0	20	70	30	30	<20
WVC272	566,470	4,241,000	5.0	1.0	.50	.7	1,000	100	300	2.0	20	70	30	30	<20
WVC273	566,210	4,240,270	3.0	.7	.10	.5	1,000	100	200	3.0	20	70	20	30	<20
WVC277	566,090	4,239,880	3.0	1.0	.05	.5	500	100	300	3.0	20	70	30	30	<20
WVC407	568,510	4,229,180	3.0	1.0	<.05	.5	300	100	300	3.0	20	70	30	30	<20

sample	S-NI	S-PB	S-SC	S-SR	S-V	S-Y	S-ZR	AA-ZN-P	eU
WVC010	30	10	10	N	100	30	500	55	<20
WVC012	30	15	15	<100	150	30	500	75	<20
WVC025	50	30	15	N	150	30	300	95	<20
WVC026	30	20	15	<100	100	30	1,000	90	<20
WVC042	30	10	10	<100	70	20	300	75	<20
WVC047	30	20	10	N	150	50	300	55	<20
WVC128	50	10	15	<100	150	30	200	130	<20
WVC133	50	20	15	100	200	30	150	130	<20
WVC138	50	30	15	200	150	30	150	85	<20
WVC139	70	15	15	200	200	30	150	100	20
WVC143	50	50	15	100	150	30	150	75	<20
WVC147	50	20	15	100	150	30	300	85	<20
WVC149	300	100	7	N	50	20	200	40	<20
WVC159	50	30	15	100	200	50	150	70	<20
WVC160	30	20	15	100	150	30	300	60	<20
WVC161	30	30	15	300	200	30	150	50	<20
WVC162	50	30	15	100	150	30	300	85	<20
WVC164	30	15	15	150	150	30	150	80	<20
WVC166	50	10	10	<100	200	30	300	75	<20
WVC167	30	50	5	100	30	20	200	10	<20
WVC172	20	20	15	<100	200	30	150	25	<20
WVC210	50	30	15	100	150	30	150	70	<20
WVC250	50	10	10	<100	150	30	500	100	<20
WVC251	30	10	15	N	150	30	300	85	<20
WVC254	50	20	15	100	200	30	200	110	<20
WVC255	30	15	15	<100	150	30	150	90	<20
WVC256	50	10	15	<100	150	30	200	95	<20
WVC258	50	10	10	<100	200	30	300	80	<20
WVC260	50	20	15	100	150	30	200	85	<20
WVC262	50	20	15	100	150	30	150	80	<20
WVC263	50	20	15	100	150	30	200	85	<20
WVC264	30	N	7	<100	100	20	300	55	<20
WVC265	50	15	15	100	150	30	200	85	<20
WVC266	30	<10	15	100	150	30	200	85	<20
WVC267	20	N	7	N	50	20	500	45	<20
WVC270	30	30	15	<100	150	30	300	85	<20
WVC271	50	30	15	100	150	30	200	80	<20
WVC272	50	20	15	100	150	30	200	90	<20
WVC273	30	15	10	N	150	30	300	95	<20
WVC277	30	15	15	N	150	30	200	100	<20
WVC407	50	15	15	<100	150	30	300	85	<20

sample	Easting	Northing	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
WVC008	562,610	4,238,730	1.00	.10	<.05	.20	300	20	150	<1.0	N	15	<5	N	N
WVC016	565,320	4,239,300	.50	.05	<.05	.07	20	15	100	N	N	<10	N	N	N
WVC020	560,450	4,239,510	3.00	.70	.05	.70	200	150	300	3.0	20	100	30	50	<20
WVC024	558,650	4,240,260	3.00	.70	<.05	.70	200	100	700	3.0	20	150	20	30	20
WVC027	558,820	4,240,420	3.00	.70	.10	.70	1,000	70	500	2.0	20	70	15	30	<20
WVC029	556,080	4,243,080	2.00	.50	2.00	.70	500	50	200	<1.0	15	70	20	20	N
WVC030	566,840	4,243,780	2.00	.50	1.00	.20	1,000	50	200	2.0	15	30	20	N	N
WVC035	565,240	4,242,910	1.50	.15	<.05	.30	1,000	20	150	1.0	10	20	<5	N	N
WVC036	565,220	4,243,140	5.00	1.00	.10	.70	500	100	500	2.0	30	100	30	20	<20
WVC037	565,220	4,243,140	2.00	.50	.07	.50	200	70	300	1.5	15	30	15	20	<20
WVC039	559,300	4,245,320	2.00	.50	5.00	.20	1,000	20	150	<1.0	10	20	5	N	N
WVC040	557,960	4,245,450	.70	.05	<.05	.07	1,500	15	300	<1.0	<5	10	N	N	N
WVC043	568,090	4,242,630	1.50	.30	1.50	.50	700	30	200	<1.0	15	30	5	20	N
WVC044	566,990	4,242,310	2.00	.70	10.00	.20	1,000	20	150	1.5	7	20	10	N	N
WVC045	566,990	4,242,310	1.00	.30	5.00	.20	300	30	150	<1.0	5	20	<5	N	N
WVC046	566,920	4,242,080	3.00	1.00	2.00	.70	500	100	700	2.0	20	70	20	20	<20
WVC048	566,760	4,241,520	1.50	.15	.05	.50	2,000	20	300	<1.0	15	10	5	N	N
WVC049	578,520	4,229,720	5.00	.70	<.05	.50	500	100	300	1.5	15	50	7	20	<20
WVC050	578,480	4,229,610	5.00	.70	.07	1.00	700	100	300	1.0	20	70	50	100	20
WVC107	562,910	4,238,270	5.00	1.00	.10	.70	300	100	500	2.0	20	70	20	20	<20
WVC108	562,660	4,238,530	2.00	.50	N	.50	200	70	1,500	1.0	15	50	7	20	<20
WVC109	561,530	4,240,200	1.00	.02	<.05	.15	300	20	150	<1.0	15	<10	<5	N	N
WVC113	558,350	4,242,150	2.00	.50	<.05	.30	200	50	200	1.0	10	20	<5	<20	N
WVC115	557,470	4,242,420	1.00	.10	<.05	.15	150	20	150	<1.0	5	10	<5	N	N
WVC116	557,170	4,242,870	3.00	1.50	2.00	.70	700	100	300	2.0	20	100	30	30	<20
WVC119	564,870	4,240,650	5.00	.05	<.05	.07	100	20	100	1.0	N	10	N	N	N
WVC124	562,100	4,241,980	1.50	.50	<.05	.70	150	100	300	1.5	10	50	7	<20	20
WVC132	560,040	4,242,870	3.00	1.00	3.00	.70	1,000	100	300	2.0	15	70	15	30	<20
WVC144	563,980	4,245,680	1.50	.30	1.50	.50	1,500	50	150	<1.0	7	70	<5	N	N
WVC146	563,020	4,247,040	1.50	.15	2.00	.10	700	15	100	N	5	10	<5	N	N
WVC148	561,570	4,247,090	3.00	.70	1.50	.70	1,000	70	300	1.5	15	50	15	30	<20
WVC154	559,720	4,244,870	2.00	.20	.05	.50	150	30	150	1.0	10	30	15	20	N
WVC158	554,590	4,243,300	3.00	1.50	2.00	.70	700	100	500	2.0	20	70	30	50	<20
WVC163	567,310	4,242,640	3.00	1.00	10.00	.70	3,000	100	300	1.5	15	70	30	50	<20
WVC170	578,480	4,229,610	3.00	.70	.10	.70	500	150	300	2.0	20	70	50	20	<20
WVC171	578,370	4,229,360	2.00	.30	.15	.20	150	30	150	<1.0	5	10	<5	20	N
WVC173	578,490	4,229,560	5.00	.30	.05	.30	2,000	100	500	2.0	15	20	10	<20	<20
WVC174	578,490	4,229,560	3.00	.30	.05	.50	1,000	100	300	1.5	20	30	15	<20	N
WVC249	557,470	4,240,600	.70	.15	.20	.20	200	30	150	<1.0	5	10	<5	N	N
WVC252	556,420	4,240,930	2.00	.30	<.05	.50	300	70	200	1.5	10	20	5	N	<20
WVC253	556,420	4,240,930	10.00	.30	.20	.15	3,000	30	150	2.0	15	50	7	N	N
WVC257	556,420	4,240,930	1.50	.20	.07	.20	500	20	150	<1.0	5	15	<5	N	N
WVC259	556,420	4,240,930	2.00	.30	.10	.50	500	30	200	1.0	10	50	5	N	N
WVC261	556,420	4,240,930	.70	.15	.20	.10	200	15	100	<1.0	<5	10	15	N	N
WVC268	556,640	4,240,580	1.00	.30	<.05	.50	200	70	200	1.0	10	20	5	N	<20

sample	S-NI	S-PB	S-SC	S-SR	S-V	S-Y	S-ZR	AA-ZN-P	eU
WVC008	5	N	<5	N	20	10	200	15	<20
WVC016	N	N	N	N	15	20	70	5	<20
WVC020	50	15	15	<100	150	30	300	95	<20
WVC024	30	20	15	N	150	30	500	100	<20
WVC027	50	<10	10	N	100	30	700	95	<20
WVC029	20	<10	5	N	70	30	1,000	45	<20
WVC030	20	10	7	N	70	20	200	75	<20
WVC035	15	N	5	N	30	10	150	50	<20
WVC036	50	20	15	N	150	30	700	115	<20
WVC037	20	N	7	N	70	20	300	65	<20
WVC039	15	N	5	<100	50	20	200	40	<20
WVC040	7	N	N	N	20	10	300	20	<20
WVC043	20	N	7	N	100	20	200	40	<20
WVC044	15	N	10	100	70	20	150	50	<20
WVC045	7	N	<5	<100	50	20	200	20	<20
WVC046	30	10	10	<100	100	30	500	75	<20
WVC048	10	N	<5	N	50	15	200	25	<20
WVC049	30	10	10	N	150	20	700	100	<20
WVC050	15	70	10	N	200	50	>1,000	151	30
WVC107	70	10	15	N	150	30	700	110	<20
WVC108	15	N	5	N	70	15	300	35	<20
WVC109	<5	N	<5	N	20	15	200	10	<20
WVC113	15	N	5	N	50	15	300	35	<20
WVC115	5	N	<5	N	30	10	200	25	<20
WVC116	50	20	10	100	150	30	200	115	<20
WVC119	5	N	<5	N	20	<10	70	30	<20
WVC124	30	N	7	N	100	20	700	70	<20
WVC132	50	<10	15	<100	150	50	700	85	<20
WVC144	15	N	7	N	50	20	1,000	40	<20
WVC146	10	N	N	N	20	10	150	20	<20
WVC148	20	<10	10	N	100	30	700	60	<20
WVC154	15	N	5	N	50	15	300	50	<20
WVC158	50	15	15	<100	150	30	500	100	<20
WVC163	20	15	10	150	100	30	700	60	<20
WVC170	30	<10	10	N	150	30	1,000	55	<20
WVC171	10	N	5	N	70	10	500	45	<20
WVC173	20	N	5	N	50	15	200	45	<20
WVC174	30	10	10	<100	100	20	200	50	<20
WVC249	5	N	<5	N	20	<10	200	25	<20
WVC252	15	N	7	N	50	20	300	50	<20
WVC253	15	10	7	N	50	30	700	50	<20
WVC257	7	N	<5	N	30	10	150	60	<20
WVC259	20	N	5	N	50	20	300	45	<20
WVC261	5	N	N	N	20	<10	150	15	<20
WVC268	10	N	7	N	70	30	500	35	<20

sample	Easting	Northing	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
WVC269	556,640	4,240,580	2.00	.15	.15	.15	2,000	20	100	1.0	5	10	<5	N	N
WVC274	566,210	4,240,270	20.00	.30	.20	.50	2,000	20	300	2.0	30	70	15	50	<20
WVC401	562,970	4,228,020	2.00	.50	.15	.30	700	30	500	1.5	10	50	7	N	N
WVC402	564,490	4,230,060	.70	.05	<.05	.07	50	10	100	N	N	10	<5	N	N
WVC403	563,400	4,233,150	.07	.02	<.05	.10	70	10	100	N	N	<10	N	N	N
WVC404	565,440	4,230,790	.30	.07	<.05	.15	20	20	100	<1.0	N	10	N	N	N
WVC405	564,750	4,230,140	3.00	.70	.05	.30	500	30	200	1.5	15	50	15	20	<20
WVC406	558,550	4,237,620	.30	.07	<.05	.07	100	20	100	N	N	<10	N	N	N
WVC501	564,900	4,239,630	.20	.07	N	.15	30	20	100	N	N	10	N	N	N
WVC502	559,420	4,238,310	.10	.02	N	.07	20	10	100	N	N	<10	N	N	N
WVC503	556,950	4,239,260	.05	.03	N	.15	10	10	100	<1.0	N	<10	N	N	N
WVC504	556,640	4,240,580	.05	.02	N	.10	15	10	100	N	N	<10	N	N	N
WVC505	557,470	4,240,600	.07	.03	N	.10	30	10	70	N	N	<10	N	N	N
WVC506	559,530	4,242,930	.50	.10	.05	.15	150	10	150	<1.0	<5	10	<5	N	N

Rock samples - Sandstone--continued

sample	S-NI	S-PB	S-SC	S-SR	S-V	S-Y	S-ZR	AA-ZN-P	eU
WVC269	<5	N	<5	N	20	15	300	15	<20
WVC274	20	10	15	N	100	50	300	80	<20
WVC401	20	N	7	N	70	20	200	65	<20
WVC402	5	N	N	N	20	<10	70	20	<20
WVC403	<5	N	N	N	15	<10	150	10	<20
WVC404	<5	N	N	N	30	<10	100	15	<20
WVC405	20	N	10	N	100	20	300	95	<20
WVC406	<5	N	N	N	20	<10	50	25	<20
WVC501	<5	N	<5	N	30	10	200	5	<20
WVC502	<5	N	N	N	20	<10	50	10	<20
WVC503	<5	N	N	N	20	<10	50	5	<20
WVC504	<5	N	N	N	30	70	200	20	<20
WVC505	<5	N	N	N	20	<10	100	10	<20
WVC506	5	N	<5	N	30	20	150	55	<20