

Non-placer mineral occurrences in the Solomon, Bendeleben, and  
southern part of the Kotzebue quadrangles, western Alaska

By

Bruce M. Gamble

**INTRODUCTION**

This map and table show the distribution of non-placer occurrences of metalliferous and selected non-metalliferous minerals in the Solomon, Bendeleben, and southern part of the Kotzebue quadrangles, western Alaska. Placer gold occurrences are not shown on the map; they are discussed in a separate report (Yeend and others, 1988). This report was prepared as part of the Alaska Mineral Resource Assessment Program (AMRAP) study of these quadrangles. Field work was conducted from 1981 to 1985, and a preliminary geologic map and the fossil data for these quadrangles was published by Till and others (1986).

The information presented here is compiled from a variety of sources, including previous listings of mineral deposit occurrences (for example, Cobb 1972a, b; 1975; 1978); geologic reports about the area (for example, Sainsbury and others, 1969; Miller and Grybeck, 1973); and field work done for this study.

The information about these occurrences is presented in tabular form. A brief description of the table follows.

Map No.

Refers the listing to a map location on plate 1.

Name

The name by which the deposit has been referred to in the literature. If a second name has been commonly used, it is given in parentheses. The column is left blank for new and previously unnamed occurrences.

Category

- M Mine--A mineral deposit with some record of production. Grade and tonnage of ore produced are given if available.
- P Prospect--A deposit that has been worked or explored, but that has no record of production.
- O Occurrence--A concentration of metalliferous and related minerals that show no evidence of having been worked or explored.

O\* New occurrence--An occurrence first located or recorded during this study. Included are samples that contain high concentrations of metallic elements as determined by geochemical analysis.

Description

A synopsis of the geologic characteristics of the occurrence. Some descriptions are quite brief, reflecting the paucity of information available. In some cases, information gathered during this study is used to augment previous descriptions.

Commodities

The commodities present in the occurrence as reported in the literature and (or) as determined by chemical analyses made for this study. Elements present in subordinate amounts are listed in parentheses. For new occurrences, and new information about previously known occurrences, elemental concentrations are given in parts per million unless otherwise noted. Gold, arsenic, bismuth, cadmium, antimony, and zinc were determined by atomic absorption analysis; all other elements were determined semiquantitatively by the six-step direct-current emission spectrographic method of Grimes and Marranzino (1968). The elements that were considered to be present in high concentrations were selected by visual examination of analytical results, not by statistical evaluation of the data.

References

Include most recent and (or) comprehensive source(s) of information about the occurrence. The reference list is not exhaustive; it is limited to reports that present new or significant information about an occurrence and excludes those references that repeat information presented in earlier reports. See Robinson and others (1985) for a detailed bibliographic listing of the geology and mineral deposits of the area.

Table 1. Non-placer mineral occurrences in the Solomon, Bendeleben, and southern part of the Kotzebue quadrangles, Western Alaska

[Elements present in subordinate amounts listed in parentheses. Values reported in parts per million (ppm) (unless otherwise noted) for new occurrences and new data for previously known occurrences; sample numbers for these samples are given in parentheses. >, greater than value shown; %, percent; Ag, silver; As, arsenic; Au, gold; Ba, barium; Bi, bismuth; Cr, chromium; Cu, copper; F, fluorine; Hg, mercury; Mo, molybdenum; Nb, niobium; Pb, lead; Sb, antimony; Sn, tin; Th, thorium; U, uranium; W, tungsten, Zn, zinc.]

Map No.	Name	Category	Description	Commodities	References
1	Wonder Gulch	O	Auriferous quartz ledge reported	Au	Sainsbury and others (1969, p. 28)
2	Dahl Creek	O	Broken vein quartz in altered schist	Au	Do.
3	-----	O*	Disseminated chalcopyrite in chlorite schist	15 Ag, 1% Cu (82AT1194)	This study
4	-----	O	Galena-bearing veins in bedrock	Pb	Berg and Cobb (1967, p. 118)
5	Arctic Creek	O	Pyrite and chalcopyrite in siliceous marble	Cu	Sainsbury and others (1969, p. 30-31)
6	-----	O	Quartz veinlets in altered pyritic schist	As, Au, Ag, Zn, Cu, Pb, Hg in pyrite separate	Sainsbury and others (1969, p. 30, 39)
7	Taylor Creek	P	Copper sulfides disseminated in marble	Cu	Smith (1908, p. 244); Hudson and others (1977, p. 8a)
8	-----	O*	Quartz veinlets in graphitic schist	260 Zn, 36 Sb (84AGel93d)	This study
9	-----	O*	Gossan float in marble terrain	260 Zn (84AKn148)	Do.
10	-----	O	Calc-silicate float	Sn, Zn	Sainsbury and others (1969, p. 41)
11	Serpentine Hot Springs	P	Galena veins, gossans, and altered zones associated with the Oonatut granite; in schist east of granite	Ag, Pb, As, Sn, Zn (Au, Cu, Hg, Sb, W)	Sainsbury and others (1970); Hudson (1979)
12	-----	O	Altered schist	Zn (Cu, As, Hg, Mo)	Sainsbury and others (1969, p. 40)
13	-----	O*	Grab sample of dolostone with calcite veinlets	500 Pb (82ADu65)	This study
14	-----	O	Altered marble near fault	Ag, Ag, Zn, Sb (Hg, As, Cu)	Sainsbury and others (1969, p. 40)
15	-----	O	Iron-stained marble near fault	(Zn, Mo, Hg)	Do.
16	-----	O*	Sparse quartz-fluorite veinlets in granite; calc-silicate hornfels adjacent to granite	15 Bi, 50 Mo, 50 Nb, 200 W (84AGel45b--granite with veinlets); 50 W (84AGel43a--hornfels)	This study

17	-----	O*	Brecciated, limonite-stained graphitic schist	310 Zn (83ATi207e)	This study
18	Pinnell River	O	Iron-stained marble and gossans in dolomitic marble	(Cu, Pb, Zn, Ag, Au)	Herreid (1966, p. 7, 17-18)
19	Old Glory Creek	O	Gossan in dolomitized, silicified, and altered marble	(Ba, Zn, Au, Ag, Mo, Cu)	Herreid (1966, p. 6-7, 17)
20	-----	O	Boudined quartz veins in schist	(Cu, Pb, Zn, Ag, Au)	Herreid (1966, p. 7, 17-18)
21	-----	O	"Galena and silver lode with limonite capping, magnetite is said to be present"	Pb, Ag, Fe	Anderson (1944, p. 30)
22	Hannum Creek Pb-Zn deposit	P	Disseminations, blebs and stringers of galena and sphalerite in siliceous, stratiform horizon in marble	Pb, Zn, Ag (Sb, Sn, Cd)	Herreid (1966); this study
23	-----	O*	Quartz-calcite (-pyrite) veinlets in pelitic schist	150 Cu, 110 As, 1.5 Ag (84AGel96)	This study
24	-----	O*	Quartz-calcite veinlets in graphitic pelitic schist	0.05 Au (84AGel98)	Do.
25	-----	O*	Gossan float within limonitic soil	10 Bi, 200 Cu, 200 Zn, 20 Sb, 210 As, 0.1 Au (84AGel99)	Do.
26	-----	O*	Amphibolite with malachite stain	2000 Cu (83AC172)	Do.
27	-----	O*	Pelitic schist with disseminated sulfides	2 Ag, 6.4% As, 1.5 Au, 74 Sb (83Ati174)	Do.
28	Patterson Creek	P	Galena veins; 8 in. to 3 ft. wide	Pb, Ag	Anderson (1944, p. 31)
29	-----	O*	Calc-silicate hornfels float around a small granitic intrusive	50 Mo, 700 Zn (83AGe76c)	This study
30	-----	P*	Locally brecciated, iron-stained to gossanous, locally dolomitic marble rubble in prospect trenches	1.5 Ag (83AGel46a); 550 Zn (83AGel46b); 10% Fe, 7 Ag, 300 Cd, 200 Cu, 7000 Pb, 1.4% Zn (83AGel46c); 10% Fe, 7 Ag, 470 As, 1000 Cu, 2000 Pb, 700 Zn (83AGel47); 10% Fe, 800 Zn (83AGel48a); 7% Fe, 10 Ag, 360 As, 500 Pb, 4800 Zn, 600 Sb (83AGel48b)	Do.

Table 1. Non-placer mineral occurrences in the Solomon, Bendeleben, and southern part of the Kotzebue quadrangles, Western Alaska--  
Continued.

Map No.	Name	Category	Description	Commodities	References
31	Billiken	P	Magnetite-chalcopyrite veins (skarn?) in marble and calc-schist	Fe, Cu	Chris Croft, Placid Oil, Reno, Nev., oral commun., 1985; Hudson and others, 1977, p. 2
32	Independence	M	Fault localized galena-sphalerite vein in calc-schist	Ag, Pb, Zn (Cd, Sb, Cu, Au) 35 tons of ore shipped in 1921 and 1922 averaged 33 oz. Ag per ton, 30% pb, and 5% Zn	Cathcart (1920, p. 194-195); Ron Sheardown, Greatland Exploration Inc., Anchorage, Alaska, written commun., 1985; this study
33	-----	0	4 in. thick chalcopyrite vein in marble	Cu	Sainsbury (1975, p. 85)
34	-----	0*	Gossan zones in marble adjacent to small fault; quartz (-hematite?) veins in marble	Gossan--20% Fe, 1100 As, 270 Zn, 80 Sb, 0.5 Ag, 10 Mo (83AGe63a); Veins--1400 Zn, 250 As (83AGe63b.c)	This study
35	-----	0*	Skarn layers in marble	50 W (81ATi199a)	Do.
36	-----	0*	Epidote-pyroxene skarn zone in marble	150 Pb, 220 Zn (81ATi90)	Do.
37	-----	0*	Iron-stained quartz vein rubble in Bendeleben pluton	5400 As, 20 Sb, 4 Bi (84AGe61)	Do.
38	Timber Creek	P	Copper-stained greenstone near marble/greenstone contact	Cu, Ag, Au	Smith and Eakin (1911, p. 134)
39	-----	0	Malachite in dolomitized, schistose carbonate	Cu	Sainsbury (1975, p. 92-93)
40	-----	0	Soil sample from cold spring	Bi	Miller and Grybeck (1973, p. 4, 45)
41	-----	0*	Pyrite- and fluorite-bearing quartz vein in calc-silicate rocks	0.5 Au (83AC199)	This study
42	-----	0*	Float of pyrite-bearing siliceous rock in calc-silicate terrane	5 Ag, 1200 As, 70 Bi, 500 Pb, 70 Sr (83AC1100)	Do.
43	Nutamoyuk Creek	0	Quartz-malachite-sulfide veinlets in marble	Cu (Au, Ag)	Hudson and others (1977, p. 16)
44	-----	0	Small gossan zone in high-grade metamorphic rocks	Bi, W	Miller and Grybeck (1973, p. 4, 45)

45	-----	O*	Grab sample of mixed lithologies: calc-silicate hornfels, schist, and granite	68 B1, 100 W (83AC1102)	This study
46	Granite Creek	O	Galena, sphalerite, chalcopyrite, and fluorite in quartz-splite breccia filling in hornfelsed black slate	Ag, Pb, Zn (Cu, Au)	Miller and Grybeck (1973, p. 3-4, 45); Hudson and others (1977, p. 16)
47	Windy Creek pluton	P	Scattered zones containing sparse quartz-pyrite-molybdenite veinlets in a quartz monzonite intrusive; galena present in some veinlets	Mo, W, Pb, Zn, Ag, Sn (Cu)	Miller and others (1971); this study
48	-----	O	Quartz-fluorite veins	F	Sainsbury (1975, p. 90)
49	-----	O	Altered black slate	(Ag, Cu, Mo, Pb, Zn)	Miller and Grybeck (1973, p. 45)
50	-----	O	Small zone of iron-stained carbonate	Ag, Pb, Zn, Sn, Sb, As, (Cu, Mo)	Do.
51	-----	O	Gossan in calcareous metasedimentary rocks	Zn, Pb, Ag (As, Cu, Mo)	Do.
52	-----	O	Gossan at schist/marble contact	Zn, Sb, Pb, Cu, As (Mo)	Do.
53	-----	O	Altered biotite schist	Ag, Pb (Sb, Cu)	Do.
54	Omilak mine	M	Argentiferous galena in "pockets" along schist/marble contact and in marble. Stibnite occurs as lenses and stringers in dolomitic marble	Ag, Pb, Sb (As, Zn, Sn) 300-400 tons of ore shipped between 1884 and 1889 averaged about 75% Pb and 150 oz. Ag per ton	Smith and Eakin (1911, p. 130-133); Herreid (1965b, p. 4-5); this study
55	Foster prospect	P	Gossanous oxidized vein with galena and minor pyrite, chalcopyrite, and arsenopyrite	Ag, Pb, Zn, Sn (Sb, Cu, As, Cd, Mo)	Mulligan (1962); Miller and Grybeck (1973, p. 45); this study
56	Omilak East	P	Galena-bearing gossans and oxidized veins in schist	Pb, Zn, Cu, Ag (Mo, Sn, Sb, Ba)	Ron Sheardown, Greatland Exploration Inc., Anchorage, Alaska, written commun. 1985; this study
57	-----	P	Quartz-veinlets in pelitic schist	Au, Ag (As, Sb)	Herreid (1965b, p. 5-6); this study
58	-----	O*	Gossan float within micaceous marble	5800 As, 100 Pb, 250 Sb, 150 Zn (84ADn43b)	This study

Table 1. Non-placer mineral occurrences in the Solomon, Bendeleben, and southern part of the Kotzebue quadrangles, Western Alaska--  
Continued.

Map No.	Name	Category	Description	Commodities	References
59	-----	O*	Fractured, limonitic to gossanous graphitic schist adjacent to small granitic intrusive	150 As, 15 Mo (84AGE86a); 880 As, 24 Bi, 22 Sb, 0.5 Ag (84AGE86b); 160 As, 150 Zn (84AGE86c); 3000 As, 880 Zn, 75 Bi, 58 Sb, 10 Mo (84AGE86d)	Do.
60	Death Valley	P	Uraniferous minerals, mainly meta-autunite, in sandstone	U	Dickinson and Cunningham (1984)
61	-----	O*	Darby pluton granodiorite porphyry; no indication of mineralization	20 Ag (84AGE37)	This study
62	Dry Canyon Creek	P	Sphalerite, galena, and pyrite at contact of granite and feldspathic schist; some gossan	Cu, Zn (Ag, Pb, As, Bi)	Miller and Grybeck (1973, p. 4, 45); this study
63	-----	O	Gossan in marble	Zn, Ba (Cu, Pb, Ag)	Miller and Grybeck (1973, p. 6, 45)
64	-----	P	Quartz-stibnite rock	Sb (Ag)	Do.
65	-----	O*	Tourmaline-bearing skarn in marble	500 Cu, >2000 B (84AT113)	This study
66	Carson Creek	P	Malachite and chalcocite in quartz-biotite-feldspar schist	Cu, Ag, Mo, Au, Bi	Smith and Eakin (1911, p. 134- 135); Miller and Grybeck (1973, p. 6, 45)
67	-----	O	Altered granite in fault zone	Ag, As, Pb, Zn, Sn	Miller and Grybeck (1973, p. 6, 45)
68	Eagle Creek	O	Anomalous radioactivity adjacent to alkaline dikes in syenite of Kachauk pluton	U, Th, rare earth elements	Miller and others (1976)
69	-----	O*	Composite sample of iron-stained intrusive and fluorite-bearing calc-silicate hornfels	100 W, 20 Be (83AT1146)	This study
70	-----	O	Altered quartz latite porphyry dike	Au, Bi, As	Miller and Grybeck (1973, p. 5, 45)
71	Fish River	M	"Silver-lead lode"; cinnabar also reported to be present	Ag, Pb, Hg Flasks of mercury reported produced	Mertie (1918, p. 446); U.S. Bureau of Mines claim maps
72	-----	O	Auriferous schist containing quartz stringers	Au	Collier and others (1908, p. 244)

73	Crooked Creek	O	Quartz stringers in schist	Au	Do.
74	-----	O*	Banded quartzite (silicified marble?) in marble terrane	0.1 Au (83AGe47)	This study
75	Crooked Creek	P	"Gold lode" at schist/marble contact	Au	Collier and others (1908, p. 262)
76	-----	O*	Quartz boudin in chlorite schist	0.1 Au (84AGe67c)	This study
77	-----	O*	Calcite vein containing minor pyrite; in marble	0.25 Au (84AGe66b)	Do.
78	-----	P	Chalcopyrite lenses and stringers near schist/marble contact	Cu	Smith and Eakin (1911, p. 135)
79	-----	O*	Sample of amphibolite from outcrop	500 Cu (82AT1205)	This study
80	-----	O*	Gossan float near calc-silicate hornfels outcrops; contains malachite, chalcopyrite, azurite (and bornite?)	100 Ag, 700 Cd, 7000 Cu, >2% Pb, 3.4% Zn, 12 Sb (81AT1351f); 100 Ag, 110 Cd, 1% Cu, >2% Pb, 8000 Zn, 20 Sn, 14 Sb (81AT1351g)	Do.
81	-----	P*	Fault localized chalcopyrite-galena- quartz vein containing limonite, malachite, and chrysocolla	0.5 Au, 8% As, 6000 Zn, 190 Cd, 680 Sb, 300 Ag, 1.5% Cu, >2% Pb, 30 Mo (SPB 19-82)	Do.
82	-----	P	Disseminated galena in schist	Pb	Sainsbury and others (1973)
83	-----	P	Locally brecciated, highly-oxidized pyrite-chalcopyrite-galena veins containing limonite, malachite, azurite, chrysocolla, and cerrusite. Occurs as float and dump rock at prospects.	>2% Pb, >2% Cu, 300 Ag, 6000 Zn, 460 Sb, 100 Cd (SPB 20-82); 500 Cu, 1500 Pb, 1200 Zn, 1000 As, 20 Ag, 5 Mo (SPB21- 82); >2% Pb, 200 Ag, 7000 Cu, 8200 Zn, 930 As, 120 Cd, 70 Sn, 14 Bi (83AGe53a); >2% Cu, 1% Pb, 50 Ag, 5100 Zn, 600 As, 190 Cd (83AGe53b)	Sainsbury and others (1973); this study
84	-----	O	Pyritized zone at greenstone/schist contact	(Ag, Cu, Zn)	Bundtzen (1974) plate IIe)
85	-----	O	Native copper disseminated in malachite-azurite-sphalerite-rich rock; from schist/marble contact	Ag, Cu, Pb, Zn	Do.
86	-----	O*	Tourmaline- and garnet-bearing coarse granite (to pegmatite) rubble in tundra	100 Sn, 70 Be, 30 Nb (83AGe54)	This study

Table 1. Non-placer mineral occurrences in the Solomon, Bendeleben, and southern part of the Kotzebue quadrangles, Western Alaska--  
Continued.

Map No.	Name	Category	Description	Commodities	References
87	-----	P	Unknown (no description given)	Ag, Pb	Sainsbury (1974)
88	-----	O*	Garnet-bearing pegmatite in pelitic schist	100 Be, 30 Sn (83ATi129b)	This study
89	Post Creek	P	Gold-quartz vein	Au	Smith (1907, p. 155)
90	Mt. Dixon	O	Malachite and azurite in silicified marble at schist/marble contact	Cu (Ag, Pb)	Smith (1908, p. 243); Smith (1910, p. 142); this study
91	Brookins	P	Stibnite lenses and stringers in	Sb	Anderson (1944, p. 12)
92	Camp Creek	P	Gold-quartz vein	Au	Smith (1907, p. 155)
93	-----	O*	Malachite and pyrite in quartzite (silicified marble?) float in marble terrain	2000 Cu, 200 As (83AGe2)	This study
94	-----	O*	Fault localized gossan in marble	720 Zn, 600 As, 130 Sb, 130 Cu, 100 Mo, (84AKn130b)	This study
95	Spruce Creek	P	Quartz veins along schist/marble contact	Au, Cu	Smith (1908, p. 238, 243)
96	-----	O*	Gossan float within marble terrain	4400 Sb, 740 As, 300 Zn, 1 Ag (82ATi59a)	This study
97	-----	O*	Iron-stained carbonate-chlorite schist with chalcopyrite and malachite	1% Cu, 5 Ag, 200 Zn, 12 Bi (82ATi72)	Do.
98	-----	O*	Quartz-mica schist with malachite	700 Cu, 1.5 Ag (84APk141)	Do.
99	Bunker Hill	P	Gold-quartz vein with chalcopyrite; near schist/marble contact	Au, Cu	Cathcart (1922, p. 188)
100	Koyana Creek	P	Gold-arsenopyrite-quartz veins in fracture and shear zones in schist	Au, Ag, As (Sb)	Cathcart (1922, p. 188); Herreid 1965a, p. 8; this study
101	Swede Gulch	P	Cinnabar lenses in marble	Hg	Anderson (1944, p. 33)
102	Bluff	P	Gold-arsenopyrite-quartz veins along faults in marble and schist	Au, As, Ag (Sb, Bi, Hg)	Brooks (1908, p. 239); Herreid (1965a) Mulligan (1971); this study
103	Daisy Creek	O	Sulfides in silicified marble or quartzite at schist/marble contact	Cu	Smith (1910, p. 142)



104	Uncle Sam Mountain	P	Quartz veins in graphitic quartz-mica schist	Au	Smith (1910, p. 147); Cathcart (1922, p. 198-199)
105	Big Hurrah	M	Gold-quartz veins in sheared zones in graphitic quartz-mica schist; produced 26,000 oz. gold, mostly between 1903 and 1907; intermittently worked since 1907	Au (Ag, As, Sb, W)	Smith (1910, p. 143-147); Asher (1969a); Read (1985); this study
106	-----	P	Quartz vein containing pyrite, pyrrhotite and chalcopyrite	Au (Cu)	Cathcart (1922, p. 199-200); Asher (1969a, p. 18-19)
107	Linda Vista Creek	P	Gold-quartz vein in graphitic schist	Au	Asher (1969a, p. 14); Smith (1910, p. 14)
108	Gray Eagle (Quigley)	M	Stibnite in silicified zone along a fault in graphitic quartz-mica schist	Sb (Au?); 4 tons of ore shipped in 1914	Mertie (1918, p. 439); Asher (1969a, p. 14); Berg and Cobb (127-128)
109	-----	P	Stibnite lens in graphitic schist	Sb	Berg and Cobb (1967, p. 128)
110	R.W. Silver (Flynn)	P	Gold-quartz veins, locally arsenopyrite-rich, in graphitic schist	Au	Cathcart (1922, p. 204); Asher (1969a, p. 15-18)
111	-----	P	Fault localized quartz vein in graphitic schist	Au	Smith (1908, p. 237)
112	-----	0	Copper carbonates and sulfides in silicified marble along faults	Cu	Asher (1969a, p. 20-21)
113	Penny Creek	0	Malachite in silicified marble along schist/marble contact	Cu (Au?)	Asher (1969a, p. 20)
114	Kasson Creek	0	Calc-schist float	Au	Asher (1969a, p. 19)
115	-----	0*	Quartzite (silicified marble?) layers in marble; contains as much as 2% pyrite	15 Ag (84AGel19c)	This study
116	-----	0	Malachite in silicified marble along schist/marble contact	Cu (Au ?)	Asher (1969a, p. 20)
117	West Creek	P	600-700 ft. of underground workings on quartz vein in pelitic schist	0.15 Au, 5100 As, 26 Sb (84AGel09c--sample of quartz chips from dump)	Smith (1910, p. 148); this study
118	-----	P*	Limonitic pelitic schist near prospect shaft	0.1 Au, 100 As (84AGel08a); 1100 As (84AGel08c)	This study
119	-----	0	Silicified marble with sulfides	Cu	Hummel (1975)
120	-----	0*	Limonitic chlorite-actinolite schist with disseminated chalcopyrite	0.05 Au (82AT122a)	This study

Table 1. Non-placer mineral occurrences in the Solomon, Bendeleben, and southern part of the Kotzebue quadrangles, Western Alaska--  
Continued.

Map No.	Name	Category	Description	Commodities	References
121		0	Sulfides in quartzite (silicified marble?) at schist/marble contact	Cu	Smith (1910, p. 142)
122		0*	Pyritic, micaceous quartzite (silicified marble?) in marble	1100 Zn (84AGel13d)	This study
123		0	Malachite in silicified marble along schist/marble contact	Cu (Au?)	Asher (1969a, p. 20)
124	Johns Creek	0	Chalcopyrite-bearing quartz stringers and lenses near schist/marble contact	Cu (Pb, Zn, Au)	Do.
125		0*	Iron-stained quartzite (silicified marble?) with 2-3% pyrite; within marble	400 As (84AGel38c)	This study
126	Moonlight Creek Divide	0	Malachite in silicified marble along schist/marble contact	Cu	Smith (1908, p. 243)
127		0*	Boxwork limonite gossan float within marble terrain	2000 As, 100 Sb, 100 Cu (82AT1222)	This study
128	Wheeler Copper	M	Disseminated grains and stringers of chalcopyrite in quartzitic rock (silicified marble?); highly oxidized, contains abundant malachite and limonite	Cu, Au, Ag, Sb, (Sn); ore shipped in 1917-1918 averaged 35.7% Cu; a second shipment of 2.4 tons averaged 1.82 oz per ton Au, 5.16 oz per ton Ag, and 17.2% Cu	Smith (1908, p. 242-243); Asher (1969b); this study
129		0	Malachite and local azurite and chalcopyrite in silicified marble along schist/marble contacts	Cu	Asher (1969b, p. 6); Hummel (1975)
130	Wheeler	M	Chalcopyrite, bornite, and malachite in quartz	Cu; several tons of ore	Mertie (1918, p. 441) reported shipped
131	Slate Creek	P	Quartz veinlets in an altered dike that cuts greenstone	Au	Chapin (1914, p. 405-406)
132	Iron Creek	P	Quartz vein in marble	Au	Smith (1909, p. 345)
133		0	Quartz float with disseminated galena	Pb	Asher (1969b, p. 6)
134	Wheeler Lead	P	Disseminated grains and lenses of galena in marble and schist	Pb, Ag (Au, Cu, Sb)	Cathcart (1922, p. 210-211); Smith, 1908, p. 246; Sainsbury and others, 1972, p. 10)

135	0	Limonite nodules	Zn (Cu, Mo)	Sainsbury and others (1969, p. 39)
136	0	Stained schist surrounding a quartz vein	(Zn, Cu, Mo)	Sainsbury and others (1969, p. 38)
137	0	Altered granitic rock float	Zn (Hg, Bi, Mo)	Do.
138	0	Altered gneiss near a fault	(Cu, Pb, Sn, Mo, Cr)	Do.
139	0	Copper-stained pegmatite	Cu, Bi (Au, Ag)	Do.

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