Lode Mines and Prospects in the Fairbanks District, Alaska

By ROBERT M. CHAPMAN *and* ROBERT L. FOSTER

SHORTER CONTRIBUTIONS TO ECONOMIC GEOLOGY

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Lode mines and prospects were sampled and associated rock units mapped. Analyses made on 130 selected metallized and random samples showed anomalous amounts of gold and eight or more other elements

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LODE MINES AND PROSPECTS IN THE FAIRBANKS DISTRICT, ALASKA

By Robert M. Chapman and Robert L. Foster

ABSTRACT

Lode mines and prospects in the Fairbanks district were sampled and their location and associated rock units mapped. These lodes are known chiefly for their gold content, but some antimony, tungsten, and lead-silver have been produced. The auriferous deposits are mainly concentrated in the Pedro Dome–Cleary Creek area, where they are localized along the Cleary Creek anticline and in the Ester Dome area. Scheelite deposits are principally in the Gilmore Dome–Tungsten Hill area, and a small group of stibnite deposits is in the area near the head of Vault and Treasure Creeks. The placer gold deposits are closely associated with these four source areas.

The lode deposits are mainly in the Birch Creek Schist of Precambrian or early Paleozoic age and are closely associated with porphyritic granite, quartz monzonite, quartz diorite, and granodiorite of probable Mesozoic age.

Semiquantitative spectrographic analyses for 30 elements and gold analyses were made on 130 samples representative of the igneous rocks and the other rocks closely associated with the lodes. Anomalous amounts of gold, 0.1–24 parts per million, were found in 28 samples, and anomalous amounts of eight or more elements were found in 26 samples.

INTRODUCTION

Lode mines and prospects of the Fairbanks district were examined by Chapman and Foster in September and October of 1966 and during the summer of 1967. For compilation of the map and preparation of the report, material gathered in the field was supplemented by a detailed survey of the various geologic and mining reports on the Fairbanks lode mining district; mapping sources that supplement the authors' mapping are given on plate 1. Numerous people familiar with mining in this district provided additional information, and their help is gratefully acknowledged.

An essentially complete coverage of the locations and pertinent geologic data for all lode mines and prospects in this district is given on plate 1 and in table 1. Analyses of 130 samples collected on a reconnaissance basis from dump material and exposures in and around some of the mines and prospects and from several granitic rock bodies that are closely related to the lode deposits are given in table 2. These analyses provide data for a preliminary evaluation of the geochemical characteristics of the deposits and the rocks to which they are presumably genetically related and may be helpful background information for future detailed geologic studies and exploration. The metal contents shown in table 2 have not been incorporated into table 1.

MINERAL DEPOSITS

The lode deposits and prospects in the Fairbanks district are known chiefly for their gold content, but there has been some production of antimony, tungsten, and lead-silver. The deposits are mainly concentrated in two areas within the district—the Pedro Dome–Cleary Creek area and the Ester Dome area. In the Pedro Dome–Cleary Creek area, they are localized along the Cleary Creek anticline. The tungsten deposits (predominantly scheelite) are principally in the Gilmore Dome–Tungsten Hill area; a small group of antimony deposits (stibnite) is in the area at the head of Vault and Treasure Creeks. Lode deposits are conspicuously absent outside these four areas. The mined areas of placer gold deposits are shown on the map (pl. 1), and there is a close relationship between the locations of these deposits and apparent auriferous source areas of lode deposits and granitic rock bodies.

The three major rock units with which the lode deposits are associated are the Birch Creek Schist of Precambrian or early Paleozoic age, quartz diorite and granodiorite of probable Mesozoic age, and porphyritic granite and quartz monzonite also of probable Mesozoic age. These units were described and their distribution mapped by Hill (1933), Forbes and Brown (1961), and Péwé, Wahrhaftig, and Weber (1966). Most of the lode deposits are in the schist adjacent to the granitic igneous rock bodies exposed in the Pedro Dome–Cleary Creek and Gilmore Dome–Tungsten Hill areas, although a few gold, scheelite, and sulfide deposits occur

within the igneous rocks. A few exposures of quartz diorite and granitic dike rocks are known in the Ester Dome area, and although the presence of a pluton similar to those at Pedro and Gilmore Domes has not been established, one may reasonably occur at a relatively shallow depth beneath this dome. A number of small dikelike granitic bodies occur outside these mineralized areas, and minor metalliferous deposits may be associated with some of them. The stocklike pyroxene-bearing granodiorite body that forms Approach Hill at the east end of the Fort Wainwright runway has no known associated metalliferous deposits.

ANALYSES OF SAMPLES

The 130 samples and specimens listed in table 2 are divided into two groups: (1) metallized rock which includes a variety of selected specimens that were taken because they are obviously mineralized or closely associated with a mineral deposit; (2) rock which includes chiefly the samples of quartz diorite and granodiorite, and porphyritic quartz monzonite and granite that were taken at random to obtain a rough evaluation of the metal content of the igneous country rock in this district. Inasmuch as the metallized rocks are selected specimens and are only characteristic of a particular deposit or limited area and little detailed study has yet been done to relate them specifically to an ore body or group of deposits, these analyses, which show many anomalous values, are presented without detailed discussion or interpretation.

In general, the anomalous amounts of potentially significant metals are found in samples taken from mines and prospects and in or near sheared or fractured zones or quartz veins rather than as disseminated occurrences in the country rock. Twenty-eight of the 130 samples contain anomalous amounts, 0.1-24 ppm (parts per million), of gold. Twenty-six of the 130 samples, including 11 of the samples anomalous in gold, contain anomalous amounts of eight or more other elements, excluding magnesium, iron, calcium, titanium, barium, and strontium. It is of interest, but not statistically significant because of selective sampling, to note the relative frequency of occurrence of anomalous and probably anomalous amounts of some elements in the 130 samples. The following table gives these amounts and the number of samples in which they occur.

Element	*Anomalous or probably anomalous amounts (ppm)*	*Number of samples in the anomalous or probably anomalous range*
Pb	≥100	79
Sb	≥100	51
As	>200	47
Ag	>2	38
Cu	≥100	36
Au	≥0.1	28
Zn	≥300	25
Sn	≥30	24
B	≥100	22
Y	≥50	19
La	≥100	19
Cr	≥100	17
Zr	≥300	17
Nb	≥30	16
V	≥300	11
Be	≥5	11
Mo	≥70	10
Bi	≥10	9
Cd	≥50	9
W	≥50	8
Mn	≥5,000	8
Co	≥50	7
Ni	≥70	5
Sc	50	3

The eight elements that occur most frequently in anomalous amounts in the 130 samples—lead, antimony, arsenic, silver, copper, gold, zinc, and tin—are generally those that either are known to be economically significant or are generally associated with the mined deposits in this district. Tungsten is the only significant metal missing from this group. The tungsten-bearing deposits are mainly associated with the granite–quartz monzonite body in the Gilmore Dome–Tungsten Hill area, and analyses of samples from this area show relatively few occurrences of anomalous amounts of the other significant metals.

Several anomalous metal occurrences in the country rock specimens seem worthy of further investigation and evaluation:

1. The country rock at the Rowley-Shumeff prospect on Steamboat Creek (90 on pl. 1), ranging in composition from altered quartz diorite to granodiorite, contains anomalously high amounts of lead, molybdenum, cadmium, zinc, tin, and gold. The extent of this altered igneous rock and the relations of metal distribution within this zone should be determined. The results of a brief examination and analyses of a small number of samples suggest that the metallization is localized along shear and fracture zones in the igneous rock.
2. Six samples of granodiorite from Pedro Dome and the Busty Belle adit contain anomalous amounts of tungsten (50–>10,000 ppm). This occurrence is probably not of economic significance, as the scheelite which has been noted in the Busty Belle adit occurs as sparsely distributed crystals in some of the very thin calcite and quartz stringers emplaced along fractures in the granodiorite.
3. Several samples from near Pedro Dome, chiefly of porphyritic quartz monzonite, contain 3–5 ppm beryllium, and one sample contains 10 ppm beryllium.
4. Samples of porphyritic quartz monzonite to granite from the Gilmore Dome–Tungsten Hill area show

the following high to anomalous content of metals: Bismuth, 10–15 ppm; lead, 150–5,000 ppm; beryllium, 3–10 ppm; and niobium, 20–50 ppm. Two samples (F–39 and F–40, on pl. 1) collected along a road about 1 mile northwest of Gilmore Dome show 3,000 and 10,000 ppm antimony, although no metallization is megascopically visible in the rocks.

REFERENCES CITED

Alaska Division of Mines and Minerals, 1962, The mining industry, Report for the year 1962: p. 8.

Beistline, E. H., 1939, An examination and valuation of the Harry W. Woods gold mine, located on Twin Creek in the Fairbanks district, Alaska: College, Alaska Univ. B.S. thesis, 38 p.

Brooks, A. H., 1911, The mining industry in 1910: U.S. Geol. Survey Bull. 480–B, p. 21–42.

——— 1912, The mining industry in 1911: U.S. Geol. Survey Bull. 520, p. 17–44.

——— 1916a, Antimony deposits of Alaska: U.S. Geol. Survey Bull. 649, p. 5–41.

——— 1916b, The Alaskan mining industry in 1915: U.S. Geol. Survey Bull. 642–A, p. 16–71.

Brown, J. M., 1962, Bedrock geology and ore deposits of the Pedro Dome area, Fairbanks mining district, Alaska: College, Alaska Univ. M.S. thesis, 137 p.

Byers, F. M., 1957, Tungsten deposits in the Fairbanks district, Alaska: U.S. Geol. Survey Bull. 1024–I, p. 179–216.

Chapin, Theodore, 1914, Lode mining near Fairbanks: U.S. Geol. Survey Bull. 592–J, p. 321–355.

——— 1919, Mining in the Fairbanks district: U.S. Geol. Survey Bull. 692–F, p. 321–327.

Davis, J. A., 1922, Lode mining in the Fairbanks district, Alaska, *in* Stewart, B. D., Annual report of the mine inspector to the Governor of Alaska: p. 88–113.

Ebbley, Norman, Jr., and Wright, W. S., 1948, Antimony deposits in Alaska: U.S. Bur. Mines Rept. Inv. 4173, 41 p.

Forbes, R. B., and Brown, J. M., 1961, A preliminary map of the bedrock geology of the Fairbanks mining district, Alaska: Alaska Div. Mines and Minerals Mineral Inv. Rept. 194–1, scale 1:63, 360.

Hill, J. M., 1933, Lode deposits of the Fairbanks district, Alaska: U.S. Geol. Survey Bull. 849–B, p. 29–163.

Joesting, H. R., 1942, Strategic mineral occurrences in interior Alaska: Alaska Dept. Mines Pamph. 1, 46 p.

——— 1943, Supplement to Pamphlet No. 1—Strategic mineral occurrences in interior Alaska: Alaska Dept. Mines Pamph. 2, 28 p.

Killeen, P. L., and Mertie, J. B., Jr., 1951, Antimony ore in the Fairbanks district, Alaska: U.S. Geol. Survey open-file report, 43 p.

Maloney, William, 1916, Report of the Territorial mine inspector to the Governor of Alaska for the year 1915: p. 14–15.

Martin, G. C., 1920, The Alaskan mining industry in 1918: U.S. Geol. Survey Bull. 712–A, p. 1–52.

McCombe, R. J., and Augustine, Grant, Jr., 1931, An investigation of the gold-bearing quartz veins of Ester Dome: College, Alaska Univ. B.S. thesis, 49 p.

Mertie, J. B., Jr., 1918, Lode mining in the Fairbanks district, Alaska: U.S. Geol. Survey Bull. 662–H, p. 403–424.

Moffit, F. H., 1927, Mineral resources of Alaska, report on progress of investigations in 1925: U.S. Geol. Survey Bull. 792–A, p. 1–39.

Péwé, T. L., 1958, Geology of the Fairbanks (D–2) quadrangle, Alaska: U.S. Geol. Survey Geol. Quad. Map GQ–110.

Péwé, T. L., and Rivard, N. R., 1961, Geologic map and section of the Fairbanks D–3 quadrangle, Alaska: U.S. Geol. Survey Misc. Geol. Inv. Map I–340.

Péwé, T. L., Wahrhaftig, Clyde, and Weber, Florence, 1966, Geologic map of the Fairbanks quadrangle, Alaska: U.S. Geol. Survey Misc. Geol. Inv. Map I–455, scale 1:250,000.

Prindle, L. M., 1910, Auriferous quartz veins of the Fairbanks district: U.S. Geol. Survey Bull. 442–F, p. 210–229.

Reed, Irving, 1939, Report on lode mining and development in the year 1938 in the Fairbanks district, Alaska: Alaska Rept., 26 p.

Sandvik, P. O., 1964, Metal distribution in ore deposits of central Alaska: Stanford, Calif., Stanford Univ. Ph. D. thesis, 144 p.

Sandvik, P. O., and Hersey, A. J., 1951, Relations of structure to mineral deposition at the Grant mine, Ester Dome, Alaska: College, Alaska Univ. B.S. thesis, 28 p.

Saunders, R. H., 1967, Mineral occurrences in the Yukon-Tanana region, Alaska: Alaska Div. Mines and Minerals, 60 p.

Smith, P. S., 1913a, Lode mining near Fairbanks: U.S. Geol. Survey Bull. 542–F, p. 137–202.

——— 1913b, Lode mining near Fairbanks, *in* Prindle, L. M., A geologic reconnaissance of the Fairbanks quadrangle, Alaska: U.S. Geol. Survey Bull. 525, p. 153–216.

——— 1926, Mineral industry of Alaska in 1924: U.S. Geol. Survey Bull. 783–A, p. 1–30.

——— 1933, Mineral industry of Alaska in 1930: U.S. Geol. Survey Bull. 836–A, p. 1–83.

——— 1939a, Mineral industry of Alaska in 1937: U.S. Geol. Survey Bull. 910–A, p. 1–113.

——— 1939b, Mineral industry of Alaska in 1938: U.S. Geol. Survey Bull. 917–A, p. 1–113.

——— 1942a, Mineral industry of Alaska in 1940: U.S. Geol. Survey Bull. 933–A, p. 1–102.

——— 1942b, Occurrences of molybdenum minerals in Alaska: U.S. Geol. Survey Bull. 926–C, p. 161–210.

Spencer, W. W., and O'Neill, W. A., 1934, A survey of the gold quartz veins on the north flank of Pedro Dome: College, Alaska Univ. B.S. thesis, 52 p.

Stewart, B. D., 1933, Mining investigations and mine inspection in Alaska, biennium ending March 31, 1933: 192 p.

Thorne, R. L., Muir, N. M., Erickson, A. W., Thomas, B. I., Heide, H. E., and Wright, W. S., 1948, Tungsten deposits in Alaska: U.S. Bur. Mines Rept. Inv. 4174, 51 p.

Williams, J. R., Péwé, T. L., and Paige, R. A., 1959, Geology of the Fairbanks D–1 quadrangle, Alaska: U.S. Geol. Survey Geol. Quad. Map GQ–124.

TABLES 1, 2

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TABLE 1.—*Description of lode mines and prospects in the Fairbanks district, Alaska*

[Metals: Tr., trace; (?), questionable; †, recorded production. Mineralogy: (?), location questionable; ab, albite; agl, anglesite; anc, anorthoclase; ap, apatite; as, arsenopyrite; as(Ag), argentiferous arsenopyrite; ax, axinite; bit, biotite; bs, bismuthinite; bi, native bismuth; ca, calcite; cas, cassiterite; cer, cerussite; cc, chalcocite; ch, chalcopyrite; cl, chlorite; clz, clinozoisite; cov, covellite; di, diopside; ep, epidote; fl, fluorite; frei, freibergite; ga, galena; ga (Ag), argentiferous galena; gar, garnet; au, gold (free); hr, hornblende; hr(u), uralitic hornblende; ja, jamesonite; or, potash feldspar; lm, limonite; $CuCo_3$, malachite-azurite; mel, meliphanite; mo, molybdenite; ms, muscovite; ol, oligoclase; po, powellite; py, pyrite; pm, pyromorphite; px, pyroxene; pyr, pyrrhotite; qtz, quartz; rob, robinsonite; sh, scheelite; se, senarmontite; ag, silver; sp, sphalerite; sph, sphene; sb, stibnite; ox, Sb-As oxides; tet, tetrahedrite; tr, tourmaline; ves, vesuvianite; zin, zinkenite. Attitudes: *, underground attitude; st, steep; vt, vertical; (?), reliability questionable; dk, dike]

Map No. (pl. 1)	Mine or prospect	Claims or veins and adits	Some past and present operators	Metals	Mineralogy	Geologic notes	Attitudes: Veins	Attitudes: Faults or crushed zones	Attitudes: Foliation or bedding of country rock	References
						Pedro Dome–Cleary Creek area				
1	Egan and Egan prospect.		J. J. Egan, Dan Egan.	Au	qtz	Quartz veins and an 8-ft-wide crushed zone of biotite schist and quartz.	N. 40° W., 45°–60° S.			Hill, 1933, p. 155.
2	Coffee Dome prospect (approx location).			Au, Pb, Ag						Unpublished data.
3	Charles claim mine			Au†						Brooks, 1912, p. 31; Smith, 1913b, p. 156.
4	Eureka claim mine (approx location).			Au†						Do.
5	McCarty claim prospect (Alder Creek).	Lime, Lemon, North Star.			qtz	Quartz vein ranging from 13 in. to 13 ft wide with mineralization near its margins or near horses of schist.	N. 40° E., vt			Prindle, 1910, p. 227; Smith, 1913b, p. 156; Chapin, 1914, p. 326.
6	Queen claim prospect				qtz	Faulted quartz vein		N. 70° W., 33° N.		Chapin, 1914, p. 326.
7	Hi-Yu mine, Crites and Feldman mine.		Hi-Yu Gold Mining Co., Keystone Mines, Inc.	Sb†, Au†, Ag, Pb, Zn.	qtz, sb, au, ga(Ag), as, py, sp, ox, se.	Silicified schist in which closely spaced quartz veinlets constitute lodes. Relatively large bodies of medium-grade gold ore are possibly present if the mineralized wallrock can be mined.	N. 15° E., W.; N. 65° W., 80°–85° S.; E.–W., N. (?); N. 75° W., S.			Smith, 1913b, p. 156–159; Hill, 1933, p. 63, 70, 108–113; Killeen and Mertie, 1951, p. 14, 37–38.
8a	Rob and Roy claim mine.			Au†, Sb	qtz, py, au, sb.	A 30-ft-wide shear zone in schist country rock which has been intruded by numerous granitic dikes.		N. 60° W		Brooks, 1916a, p. 37–38; Martin, 1920, p. 39.
b	Wolf claim prospect									Do.
c	Savey claim prospect									Do.
9	Governor claim prospect (approx location).			Au		Vein associated with auriferous fine-grained granite.	N. 80° W., vt			Smith, 1913b, p. 160.
10	Whitehorse mine (approx location).		Frank Bishop	Au†, Sb, Pb.	sb, ga, py	Postauriferous vein, brecciated footwall mass cemented by stibnite and galena with associated porphyritic granite dikes.	N. 70° W			Smith, 1913b, p. 157, 160; Hill, 1933, p. 104; Killeen and Mertie, 1951, p. 36–37.
11	Plumbum prospect				qtz	Iron-stained quartz vein 3 in.–2 ft thick which conforms to strike of schist country rock but dips more steeply.	N. 70° W., 70° S.; E.–W., S., st.		E.–W., S. (low).	Smith, 1913b, p. 157, 160–161; Hill, 1933, p. 104.
12a	Fairbanks Creek prospect.			Au, Ag	qtz	Mineralized quartz in graphitic quartzose schist. The country rock schist is reported to have yielded 60 oz Ag per ton.			E.–W.,?, N. (low).	Smith, 1913b, p. 163.
b	Schaefer prospect				qtz	Flat-lying quartz stringer in decomposed country rock.				Do.
13	Gilmore mill					Haulage adit driven N. 30° W.			E.–W., (?), 10°–15° N.*	Hill, 1933, p. 107, 108.
14	Ohio mine	Ohio, Mayflower, Early Bird, Gray Eagle.	Conners and Stevens property.	Au†, Sb, Pb, Ag.	qtz, sb, ga, ag, py, as.	Auriferous quartz veins later than barren bull quartz deposits.	N. 70° W., 45° S.; E. 45° N.			Smith, 1913b, p. 162–163; Mertie, 1918, p. 408–409; Hill, 1933, p. 107–108.
15	Mizpah mine	Black Joe, Mizpah, Mizpah vein.	Charles L. Thompson.	Au†, Sb†, Pb, Ag, Mn, W†.	qtz, au, sb, sh.	Irregular gold-scheelite-quartz vein which ranges in thickness from 3 in. to 3 ft and cuts the foliation of crushed quartzite schist.	N. 70°–90° W., 65° S.; E.–W., 75° S.; N. 65° W., 70° S.; N. 80° W., 80° S.		N. 20° W., 18° S.	Smith, 1913b, p. 162; Mertie, 1918, p. 405–406, 409, 421; Hill, 1933, p. 107; Chapin, 1914, p. 329; Byers, 1957, p. 208; Killeen and Mertie, 1951, p. 14

TABLE 1.—*Description of lode mines and prospects in the Fairbanks district, Alaska*—Continued

Map No. (pl. 1)	Mine or prospect	Claims or veins and adits	Some past and present operators	Metals	Mineralogy	Geologic notes	Attitudes: Veins	Attitudes: Faults or crushed zones	Attitudes: Foliation or bedding of country rock	References
				Pedro Dome–Cleary Creek area—Continued						
16	Excelsior claim prospect.			Sb, Pb, Ag(?).	sb, ga, as, lm.	Hard quartzite schist and shiny graphitic schist country rock and a nearby light-gray fine-grained granitic rock.	N. 30° E., S.			Smith, 1913b, p. 161; Killeen and Mertie, 1951, p. 37.
17	McNeil shaft prospect (approx location).		Nars, Anderson, and Gibbs, Leindecker property, Branholm-Jenkins property.	Sb, Pb	qtz, ga, ja, as.	Light-colored quartz-mica schist country rock with sulfide-bearing quartz vein.	N. 60° W., 70° S.			Brooks, 1916b, p. 37; Mertie, 1918A, p. 415; Hill, 1933, p. 104; Killeen and Mertie, 1951, p. 37.
18	"Cross-vein" prospect (approx location).			Sb, Pb, Ag(?).	sb, ga, as		N. 30° E., S. st.			Smith, 1913b, p. 161–162.
19	Perrault prospect	Minnie, Aroostook		Au, Sb, Ag	qtz, au, sb, ag, ox, lm.	Mineralized parallel quartz veins in schist country rock with reticulating veinlets of stibnite in quartz and schist.	N. 80° W., 60° S.			Chapin, 1914, p. 329; Killeen and Mertie, 1951, p. 36.
20	Kellen prospect			Au, Sb	sb, ox, se	Quartz veins in blocky schistose quartzite.			E.–W.(?), 60° S.	Smith, 1913b, p. 163–164.
21a	McCarty mine (located on the Henry Ford group).	McCarty group: Marigold, I.B., Harrietta, Pioneer, Willie, Pennsylvania, Free Gold, Laughing Water, Minnie Ha-Ha, Henry Clay. American Eagle vein, American Eagle "tunnel", Big vein, Upper and Lower Henry Ford veins, Jamesonite vein, Blue Lead vein.	Keystone Mines, Inc.	Au†, Sb†, Pb, Zn.	qtz, au, sb, ja, sp, as.	Crushed iron-stained quartz and gouge.	N. 70° W., 72° S.; N. 80° W., 60°–70° S.; N. 30° E., 75° N.			Maloney, 1916, p. 14–15; Hill, 1933, p. 105–106; Joesting, 1942, p. 10; Killeen and Mertie, 1951, p. 35.
b	Dorothy claim prospect.					Quartz stringers				Smith, 1913b, p. 167.
c	Prospect adit(?)					Steeply dipping quartz vein.				Do.
22	Henry Ford No. 3 mine.	Henry Ford group: Henry Ford, Henry Ford No. 1, Henry Ford No. 2, Henry Ford No. 3, Henry Ford No. 4, Golden Eagle. El Toro 3 claim, American Eagle property, McCarty vein.		Au†, Sb†	qtz, au, sb	Vein consists of quartz adjacent to hanging wall with 30–35 in. of crushed quartz, schist, and gouge above the footwall slip. Hanging-wall slickensides show post mineral horizontal movement.	N. 78° W., 75° S.; N. 40° E., S. st.			Smith, 1913b, p. 164; Hill, 1933, p. 104–105.
23a	Pioneer vein mine	McCarty group		Au†			N. 65° W., 60° S.			Smith, 1913b, p. 165; Hill, 1933, p. 102.
b	Pennsylvania vein mine.	McCarty group		Au†			N. 80° E., 60°–70° S.			Hill, 1933, p. 102.
c	Antimony vein prospect.	McCarty group		Sb, Au		Antimony-bearing vein 18 in. thick and associated gold-quartz veins 6–14 in. thick on Pioneer claim.	N. 85° E., 80° N.			Hill, 1933, p. 102; Davis, 1922, p. 95.
24	Keystone Mines, Inc.	Willie claim of Keystone group.	Nordale property, Ed Ebbert and BECS Corp. lessees.	Au†, Sb†, Pb, Ag†.	sb, ja, ga	Narrow (<1 ft) massive sulfide fissure vein, crushed zone, and sheet-type bodies which cross-cut the schist country rock foliation and have associated yellowish selvages derived from oxidation of sulfides and sulfosalts, green silicic material, and altered argillaceous wall rock.	NW			

25	Homestake mine	Homestake group; Wolf, Keystone Kawalita, Fairbanks, Hope. Nordale vein; Homestake vein; Nordale adit.	Homestake Mining Co., Nordale property, Keystone Mines, Inc.	Au†, Sb, Ag, Cu.	qtz, au, sb, ga, py, cc, lm, $CuCO_3$.	Several quartz veins in black mica schist; those parts of the veins which contain the copper minerals also have the highest gold content.	E.-W., 45° S.; N. 60° W., 45° N.; N. 70° E., 40° S.*	Horizontal*	Smith, 1913b, p. 168; Chapin, 1914, p. 331–334; Hill, 1933, p. 101–102; Killeen and Mertie, 1951, p. 14; Sandvik, 1964, p. 119–120.
26a	Banner claim prospect			Au	au				Smith, 1913b, p. 171.
b	Rexall mine			Au†	qtz, au	Intersecting sulfide-bearing quartz veins and narrow gash veins with some exceptionally rich gold ore.	N. 25° E., 25° N.; E.-W., 60° N.		Smith, 1913b, p. 168–171; Chapin, 1914, p. 334–335.
27	Solomon prospect			Sb	qtz, sb	A 3–4-in.-thick quartz vein carrying an appreciable amount of stibnite.	NE		Smith, 1913b, p. 171; Chapin, 1914, p. 332; Killeen and Mertie, 1951, p. 33.
28	Vetter mine, Vetter-Shelden mine.		Rudolph Vetter, Adolph Vetter.	Au†, Sb, Cu, Zn, Ag, Pb.	qtz, sb, ja, ox, au, as(?), frei(?), py(?).	Sulfide fissure vein deposit which transects flat-lying schistose quartzite and quartz-mica schist. Iron-stained, brecciated quartz and silicified schist horses are associated with the vein material.	N. 80° W., 45° S.; N. 75° W., 60° S.; E.-W., S.	N. 40° E., 75° S	Sandvik, 1964, p. 113–114, 125–126; Brown, 1962, p. 117–121.
29	Keystone Mines, Inc	Kawalita claim of Keystone group, Kawalita shaft.	Nordale property	Au, Sb, Pb, Cu, Zn.	qtz, ja, py, tet(?).	Quartz vein which transects flat-lying schistose quartzite, quartz-mica schist, and greenschist rocks.	N. 70° W., 30°–60° S.	N. 80° W., 45° S.	
30	Chatham mine, Burns mine.	Chatham No. 2, Fay, Fay No. 2, Colby, Colby No. 2.	Chatham Mining Co., Herb Miller.	Au, Sb, Ag, Cu, Zn.	qtz, sb, py, ja(?), frei(?).	A 6–18-in.-thick sulfide-bearing quartz vein with pronounced hanging wall strike-slip slickensiding. This lode is cut by a 10–15-ft-wide zone of shearing which contains kidneys and shoots of stibnite.	N. 60° W., 65°–80° S.; E., S.; N. 70° W.; N. 70° E., vt.		Smith, 1913b, p. 172–173; Chapin, 1914, p. 335–336; Brooks, 1916a, p. 35–36; Mertie, 1918, p. 415; Hill, 1933, p. 100–101; Joesting, 1943, p. 8–9; Sandvik, 1964, p. 109–110; Stewart, 1933, p. 129.
31	Harris and Brown prospect.			Sb, Pb	qtz, sb, ja(?), as(?), zin(?), py.	Intensely brecciated quartz with the fragments cemented by a matrix of crushed quartz or stibnite.	N. 70° E., st		Smith, 1913b, p. 175–176; Chapin, 1914, p. 332; Sandvik, 1964, p. 105–106, 115–118, 123–124.
32	Quemboe Bros. prospect No. 1.			Au, Sb	qtz, sb, py, as.	Quartz fragments cemented by sulfides in soft schist country rock, with the hanging wall marked by a plane of movement.	N. 70° W., S		Smith, 1913b, p. 171–172; Chapin, 1914, p. 332.
33	Fursteneau prospect (approx location).								Chapin, 1914, p. 332.
34a	Quemboe Bros. prospect No. 2.								Do.
b	Sky High claim prospect (approx location).			Au	au, lm	Decomposed brown iron-stained material suggestive of an iron capping rather than a vein.			Smith, 1913b, p. 175.
35a	Alaska (old Jupiter-Mars) mine.	Gladstone, claim	Jupiter-Mars Consolidated Mining Co.	Au		Vein in possible slide rock	E.-W., S. (low)		Smith, 1913b, p. 175; Chapin, 1914, p. 337; Hill, 1933, p. 99–100.
b	Foster-Hungerford mine.			Au	qtz, lm	Iron-stained quartz and crushed schist.	N. 45° E., 50° S		Hill, 1933, p. 99–100.
c	Nils Genki prospect			Au	qtz, ox, lm	A 10–12-in.-wide crushed quartz vein stained with both iron and arsenic oxides.	N. 60° E		Hill, 1933, p. 100.
d	Alaska group prospect		F. M. Wackwitz		qtz, lm, ox	Intensely crushed and heavily iron-stained quartz vein.	E.-W., 30° N.; N. 50°–60° E.		Smith, 1913b, p. 175; Hill, 1933, p. 99–100.
36	Empire claim group mine.			Au					Chapin, 1914, p. 332, 337; Hill, 1933, p. 75.
37	Roughneck prospect								Chapin, 1914, p. 332.
38	Colbert and Warmbold prospect.			Au	qtz	Several small gold-bearing quartz veins in schist.	N. 50° W., 28° S.*		Stewart, 1933, p. 130.
39	Anna-Mary prospect	Annie, Mary, Elsie, Key.		Pb, Ag, Sb, Au.	qtz, ga(Ag?), sb, as (Ag), lm.	A 1–6-ft-wide crushed schist zone (hanging wall) with 1–2 ft of blue gouge on the footwall.	N. 75° W., 80° S.*	N. 70° W., 70° S	Hill, 1933, p. 100; Stewart, 1933, p. 136.

TABLE 1.—*Description of lode mines and prospects in the Fairbanks district, Alaska*—Continued

Map No. (pl.1)	Mine or prospect	Claims or veins and adits	Some past and present operators	Metals	Mineralogy	Geologic notes	Attitudes: Veins	Attitudes: Faults or crushed zones	Attitudes: Foliation or bedding of country rock	References
				Pedro Dome–Cleary Creek area—Continued						
40	Pioneer mine	Pioneer, Discovery, North Star, Blue Bell lode, Blue Moon vein.	Pioneer Quartz Mining Co., Charles Holke.	Au†, Sb, Zn.	qtz, au, sb, sp, as, py.	Two intersecting gold-quartz veins, with sulfides confined to the smaller vein, which ranges from 4 in. to 2.5 ft in width. Blue Bell lode, located in 1903, was the first gold quartz claim in the Fairbanks district.				Prindle, 1910, p. 226; Smith, 1913b, p. 173–174; Chapin, 1914, p. 336–337; Hill, 1933, p. 99; Stewart, 1933, p. 131.
41	Union mine or I.X.L. mine.		Fred C. Robinson	Au(?)						Hill, 1933, p. 75; Reed, 1939, p. 19.
42	Scott Reese prospect	Rex		Au†	qtz	A 320-ft adit intersected quartz veins and a prominent fault zone.	N. 75° E., 25° S.;* E.-W., 45° S.*	N. 60° E., 80° S	E.-W., 30°–40° N.	Hill, 1933, p. 98–99; Stewart, 1933, p. 137.
43a	Butler and Petree prospect (B.P.).			Au, Sb, Pb, Zn.	qtz, au, sb, ga, sp, py, as, tr, ch(?).	A shear zone which contains large quantities of sulfides and tourmaline needles in association with quartz veins, pyrite, and arsenopyrite in mica schist.	N. 85° E., 45° S	NW., 45°–70° S.*	NE. (?)*	Prindle, 1910, p. 226–227; Smith, 1913b, p. 176–177; Hill, 1933, p. 98; Sandvik, 1964, p. 105–108.
b	Rex prospect									Brooks, 1912, p. 31; Smith, 1913b, p. 177; Hill, 1933, pl. 4.
44	Cunningham prospect			Au, Sb	sb, as	A small vein which contains excessive amounts of arsenopyrite and stibnite.				Chapin, 1914, p. 332.
45	Sunrise claim prospect No. 1.			Sb	qtz, sb, ox, lm.	A 1-ft-thick lode composed of stibnite, rusty quartz, blue gouge, and lenses of schist.	E.-W., 25° S			Chapin, 1914, p. 337; Killeen and Mertie, 1951, p. 31.
46a	Lyons prospect									Chapin, 1914, p. 332.
b	California prospect									Do.
47	Cleary Hill mine, Rhoads (Rhodes)-Hall mine.	Free Gold, Snowdrift, New York, Texas, California, Pauper's Dream, Idaho, Colorado, Alabama; ½ interest in Wyoming claim and Wyoming fraction claim, Red vein, Colorado vein, Rhoads vein.	Cleary Hill Alaska Gold Mines Co., Cleary Hill Mines Co., Keystone Mines, Inc.	Au†, Sb†, Cu, Pb, Zn, Sn, W, Ag.	qtz, au, sb, ga, sp, cov, ch, py, as, sh, ox, ja(?), frei(?), rob(?).	Crushed quartz veins cut foliation of schist country rock at high angles and are complexly faulted by at least three fracture systems. Low-angle northeast-striking faults show reverse movement. Scheelite is present as scattered grains and seams in wallrock that contains thin limestone beds.	N. 75° W., 55°–63° S.; N. 75° W., low; N. 75° W., to N. 65° E., 60° S.; N. 75° W., 55° S.; N. 70°–80° W., 43°–60° S.	N. 70° W. to N. 70° E., 5°–15° N. and S.;* N. 75° E., 45°–60° N.; N. 70° E., 80° N.; N. 70° W., 45° S.		Prindle, 1910, p. 225; Brooks, 1911, p. 33; Smith, 1913b, p. 177–180; Brooks, 1916a, p. 34–35; Moffit, 1927, p. 12; Hill, 1933, p. 93–96; Byers, 1957, p. 208–209; Sandvik, 1964, p. 109–110, 113–114.
48	Wyoming mine, Wackwitz mine.	Wyoming, Wyoming Fraction, Oklahoma, V, Goessmann, Tanana Quartz and Hydraulic Mining Co. claim group Goessmann vein, Wyoming vein (vein No. 5), Wackwitz vein.		Au†, Sb, Ag(Tr.), Pb(Tr.), Mn, Mo, Be(Tr.), W.	au, sb, py, sh, ca.	A flat-lying thrust fault which produced 3 ft of crushed schist was intersected by raise A. Crushed-quartz veins cut silicified quartz-mica schist, quartzite and marble country rock. Scheelite occurs in gold-quartz veins and carbonate-replacement deposits.	N. 80° E., 50° S.*; N. 80° W., 35° S.*; N. 75° W., N.	NNW., 45° W.*	N. 85° W., 27° N.	Smith, 1913b, p. 180–182; Mertie, 1918, p. 411; Moffit, 1927, p. 12; Hill, 1933, p. 96–98; Byers, 1957, p. 206–208.
49	Bobbie claim prospect.			Sb, Pb, Ag	qtz, sb, ga (Ag), py, ox, lm.	One stringer composed of banded argentiferous galena near the wallrock contact, with large crystals of galena near the center of the vein.	N.-S., W			Smith, 1913b, p. 177; Chapin, 1914, p. 332; Brooks, 1916a, p. 35.
50	Hess and Burnett prospect No. 1.			Sb	sb, py, lm, qtz.					Chapin, 1914, p. 332, 339.
51	Stepovich prospect No. 1.									Chapin, 1914, p. 332.
52	Crosscut prospect									Do.

53a	Stibnite mine		Eldorado Mining and Milling Co.	Au, Pb, Ag, Sb.	ga(Ag), py, sb.	Galena-pyrite lode which conforms to the foliation of a fine-grained schistose quartzite.	N. 45° E., N. st			Chapin, 1914, p. 332; Mertie, 1918, p. 416.
b	Johnson and Martin prospect.			Sb, W	sb	Massive stibnite enclosed in wide quartz zone. Scheelite on dump.				Joesting, 1943, p. 7; Byers, 1957, p. 210.
54a	Tolovana mine	Tolovana No. 1–No. 4, Scheuyemeress No. 1–No. 4, Scheuyemere No. 1–No. 4, Westonvitch, Tolovana-Stibnite.	Willow Creek–Tolovana Mining Co. Martin Pinska.	Au, Sb, Ag, W.	qtz, au, sb, py, as, sh, ca, ox, ab.	Biotite-quartz schists cut by subparallel quartz stringers, with some quartz offshoots parallel to schistosity. Scheelite present in gold-quartz ore.	E.-W., 60° S.; N. 75° E.; N. 80° E., 70° S.		E.-W., 15° N.	Prindle, 1910, p. 227; Smith, 1913b, p. 183–185; Chapin, 1914, p. 339–340; Hill, 1933, p. 68, 91–92; Byers, 1957, p. 210.
b	Hershberger, Beall, and Phipps prospect (approx location).									Brooks, 1911, p. 34.
c	Tolovana vein prospect.		Tolovana Mining Co.	Sb	qtz, sb, ox.					Smith, 1913b, p. 184–185; Hill, 1933, p. 92.
55	Scheuyemere prospect.									Smith, 1913b, p. 186; Chapin, 1914, p. 332.
56	Westonvitch prospect, Chechako No. 1 prospect, Eldorado mine.		Eldorado Mining and Milling Co.	Au, Sb, Pb, Ag, Zn, Cu.	qtz, sb, ga(Ag), sp, py, as, ch.	Crushed and crumpled biotite-quartz schist; marble and associated massive sulfide replacement deposits; and late quartz veinlets.	N. 35° E., 85° N.*			Smith, 1913b, p. 186–187; Mertie, 1918, p. 416; Hill, 1933, p. 89–90; Davis, 1922, p. 101–102.
57	Moore-Shelden prospect.			Sb	qtz, sb, py, ox, lm.	Banded blue and white sulfide-bearing marble and calc-schist truncated by an iron-stained crushed zone.		N. 55° E		
58	Steil prospect			Sb	qtz, sb, py	Narrow quartz veins penetrating compact greenstones(?).				Smith, 1913b, p. 187; Chapin, 1914, p. 332.
59	Newsboy Extension mine.			Au	qtz		N. 15° E., 77° W			Smith, 1913b, p. 189–190; Hill, 1933, p. 89.
60	Newsboy mine			Au, Sb, Cu, Zn.	qtz, au, sb, ch, sp, py, as.	Silicified schist in which there are closely spaced quartz veinlets constituting lodes, which have been crushed subsequently by post-mineral movement.	N. 40° E., 73° N.*; N. 45°–48° E.*, 65°–80° N.; N. 79° E., 60° S.	E.-W. to N. 76° W., 57°–78° N.; N. 60° W., 80° N. (reverse); E.-W., 32° S.		Smith, 1913b, p. 187–189; Hill, 1933, p.63, 85–89.
61	Hidden Treasure claim mine, New Deal prospect.		L. Goyett	Au	qtz, au	Nonpersistent quartz gash veins associated with an east-west-trending mineralized fault zone.		E.-W., vt*		Chapin, 1914, p. 342–343.
62	Dome View prospect, Rock Run prospect, Wackwitz Bros. prospect, Last Chance prospect.	Thompson, No. 1, No. 2.	Charles Wackwitz	Au	qtz, au	Brecciated iron-stained quartz vein cutting southeast-dipping foliation of quartz-mica schist north of the quartz diorite-schist contact.	N. 40° E., 70° N.*		N. 60° E., 15°–20° S.	Hill, 1933, p. 83–84; Spencer and O'Neill, 1934.
63	Mohawk mine, Robinson (Rose) shaft, Franklin mine, Creighton mine, Greenback mine;		Heilig and Creighton, L. Goyett, Boyd and Shaw.	Au, Sb	qtz, au, sb, py, as, osmiridium.	Two parallel quartz veins with gold concentrated in rusty fractures which penetrate the quartz.	N. 20° E., 60° W.*; N. 30° E., 65° N.; N. 80° W., 35° S.; N. 10° E.,W.			Smith, 1913b, p. 190; Smith, 1913a, p. 176, Chapin, 1914, p. 342; Mertie, 1918 p. 407; Martin, 1920, p. 40; Hill, 1933, p. 82; Killeen and Mertie, 1951, p. 42; Spencer and O'Neill, 1934.
64	Sunrise claim prospect No. 2.				qtz	Quartz stringers in schist				Chapin, 1914, p. 342.
65	Robinson vein prospect.			Au(?)	qtz, as	A 10-in.-wide crushed iron-stained quartz vein with some sulfides near a parallel granitic dike.	N. 79° E., 60° S			Hill, 1933, p. 88–89.
66	Mother Lode claim prospect No. 1 (Cleary Summit).			Au, Sb	qtz, sb, py, ox.	Horizontal stibnite lode localized on a sericitized granite prophyry dike-mica schist contact.				Prindle, 1910, p. 221; Brooks, 1916a, p. 32–33.
67	Cornell prospect									Smith, 1913b, p. 186; Hill, 1933, p. 91.
68	Emma claim mine	Katherine, Emma	I. Overgaard property.	Au†	qtz, au	A 4–12-in.-wide quartz vein in country rock partly composed of greenstone.	E.-W., 45°–60° S			Hill, 1933, p. 90–91.

TABLE 1.—*Description of lode mines and prospects in the Fairbanks district, Alaska*—Continued

Map No. (pl.1)	Mine or prospect	Claims or veins and adits	Some past and present operators	Metals	Mineralogy	Geologic notes	Attitudes: Veins	Attitudes: Faults or crushed zones	Attitudes: Foliation or bedding of country rock	References
				Pedro Dome–Cleary Creek area—Continued						
69	Jackson claim group mine and prospects.	Silver King, Your Jim, Our Jim, Big Jim, Little Jim, Vergil, Wolverine.	W. Jackson	Au†, Sb, Pb, Ag.	qtz, au, sb, ga(Ag), ja, py, as, ox.	Quartz lodes parallel to mica schist foliation and bordered by ribbons of quartz containing sulfide stringers.	N. 70° E.; N. 45° E., S. (low); N. 45° E., 45° S.; E.-W., 25° S.	E.-W., S.; E.-W., 25° S.; N. 75° W., vt; N. 45° E., 65° N.*; N. 75° W., 75° S.*; N. 75° W., 65° S.*; N. 75° W., S.*; N. 40° W., 45° N.* (gouge); N. 55° E., 15° S.; N. 80° W., 70° S.		Chapin, 1914, p. 338–339; Mertie, 1918, p. 416–417; Hill, 1933, p. 92–93.
70	Wackwitz mine (Cleary Summit).		F. M. Wackwitz	Au, Sb†, Pb, Ag, Zn.	qtz, sb, ga, ja.	Quartz veins and mineralized zones in quartz-mica schist.				
71	Pinnacle prospect, Cheyenne prospect (approx location).			Au, Sb, Pb	qtz, sb, ga (Ag), py, as.	Massive galena in schist country rock.				Smith, 1913b, p. 182–183; Smith, 1913a, p. 169.
72	White Elephant claim mine.		H. F. Faulkner	Pb†, Ag†	qtz, ga(Ag), py, lm, cer.	Flat-lying lenses of argentiferous galena which conform to the foliation of the schist country rock.				Chapin, 1914, p. 348; Hill, 1933, p. 114.
73a	Moonlight claim propsect.			Au(?)	qtz	Crushed quartz vein in porphyritic granite-quartzite schist country rock.	N. 75° E., 75° N			Smith, 1913b, p. 201; Hill, 1933, p. 114.
b	Sunlight claim prospect.									Smith, 1913b, p. 201.
c	Zimmerman prospect No. 1.			Au, Ag		Sulfide-bearing material from dump.				Do.
74	Independence mine, Harrais mine, Harry Woods mine, Twin Lode mine.	Independence, Harrais, Moonlight, Sunlight, Twilight.	Harry W. Woods	Au†, Pb	qtz, au, ga, py, as.	Quartz vein transects porphyritic granite and schist country rock and becomes nonauriferous in schist. Gently dipping fault could be a thrust.	N. 82° W., vt*; N. 70° E., vt.	N. 75° W., 30° S.*; E.-W., vt; N. 40° W., 65° W.		Brooks, 1916b, p. 60–61; Hill, 1933, p. 114–115; Beistline, 1939.
75a	Goepfert prospect			Au	qtz, au	Granite country rock near the northern schist contact.				Smith, 1913b, p. 201–202.
b	Whitman and Murray prospect.			Au(?)						Brooks, 1911, p. 35.
76a	Rainbow mine	Rainbow, David	Nirige and Hershberger.	Au†, Pb, Zn, W.	qtz, au, ga, sp, py, as.	Country rock is predominantly schist and quartzite, and the quartz vein clearly cuts fine-grained nonporphyritic granite. Scheelite associated with gold-quartz ore.	E.-W., vt; N., 45° E.	N., 40° E., dk		Smith, 1913b, p. 198–200; Chapin, 1914, p. 348; Hill, 1933, p. 74, 115; Byers, 1957, p. 210.
b	Hirchberger and Zimmerman mine.			Au†						Brooks, 1912, p. 32.
77a	Skoogy Creek prospect.			Au, Sb	sb, as	A 50-ft-wide mineralized zone of iron-stained crushed schist and quartz.				Hill, 1933, p. 117.
b	North Star prospect, Big Lead prospect.		Herbert Falkner, James Muir.	Au, Sb	qtz, au	Iron-stained schist and quartzite; some granitic rock.	N. 87° W., 83° S.*; N. 55° E., 43° S.*.			Prindle, 1910, p. 223–224; Smith, 1913b, p. 202–203; Hill, 1933, p. 116–117. Stewart, 1933, p. 135–186.
78a	Goepfert Galena prospect (approx location).			Pb	ga					Smith, 1913b, p. 202.
b	Galena prospect (approx. location).			Pb	ga	Near granite-schist contact				Do.
79a	Central Star prospect			Au		Schist and quartz porphyry fragments on dump.				Hill, 1933, p. 118.
b	Thompson and Burns prospect.		Million Dollar Corp.	Au		Reddish-yellow brecciated schist and dike rock.		N. 70° W.(?), 80° S.		Do.
80a	North Star Extension mine.			Au†	qtz	A 1-4-in.-wide quartz vein which contains minor sulfides in silicified schist	N. 84° W., 85° S	N. 15° E., dk; N. 30° W., 45° S. dk.	15° SE. (dip)	Smith, 1913b, p. 202–203; Hill, 1933, p. 116–117.

						and cuts a 30-in.-wide aplite dike.				
b	S. S. prospect			Au						Smith, 1913b, p. 202–203
81	David prospect, Apex claim prospect.			Au	au, as	Silicified schist country rock.	N. 70° E., 35° S.; E.-W.			Smith, 1913b, p. 201; Hill, 1933, p. 115–116.
82	Burnet Galena prospect.			Sb, Pb, Ag	qtz, ja, ga (Ag), pm, cer, lm.	A flat-lying body of quartz contains lenses of galena and is enclosed in quartz diorite country rock. The galena-bearing lode is later than some of the fissuring that followed the intrusion of a fine-grained porphyritic granite.				Chapin, 1914, p. 349–350; Hill, 1933, p. 118.
83	Egan prospect			W	sh	Scheelite occurs as sparsely disseminated grains in pegmatite dikes in granodioritic country rock. The pegmatites are thought to be genetically related to a nearby porphyritic granite.		E.-W.(?), dk		Byers, 1957, p. 210; Brown, 1962, p. 122–123.
84	Burnet prospect			Au		Weathered granite with auriferous, brecciated quartz veins.				Chapin, 1914, p. 349.
85	Zimmerman prospect No. 2.			Au	qtz, as, ox	Blue clay gouge shear zone is bordered by quartz diorite to the northeast and silicified schist on the southwest.		E.-W., 85° N.; N. 60°–90° W.; N. 70°–90° W., N.		Hill, 1933, p. 118–119.
86	Birch and Anderson mine, Hoover claim mine.			Au†, Sb	qtz, sb, py, as.	Quartz-mica schist country rock, with extensive quartz veining.		E.-W		Smith, 1913b, p. 198; Hill, 1933, p. 119–120.
87	Robinson prospect				qtz, lm	Highly altered quartz diorite fault breccia.		N. 55° E		Smith, 1913b, p. 173; Hill, 1933, p. 81–82.
88	May Florence claim prospect.					Brecciated mass of schist and blue gouge between two parallel faults.				Chapin, 1914, p. 346.
89	Silver Dollar claim prospect.				qtz, lm	Network of tiny veinlets of quartz along joint and fracture planes in schist.				Do.
90	Rowley-Shumeff prospect, Nightingale prospect.		Gregory Schummeff (Pete Smith), James Lundgren, Don Rowley, Alaska Arctic Resources, Inc., John Nightingale.	Sb, Pb, Ag	sb, ga(Ag), ox.	Massive argentiferous galena lodes in altered quartz diorite-quartz stockwork country rock.		N. 80° W., 70° N.		Smith, 1913b, p. 198.
91a	Silvertone mine, Anderson-Wackwitz mine.		Tury Anderson and F. M. Wackwitz.	Au†, Sb, Pb†, Ag†.	sb, ga(Ag), agl, cer.					Brown, 1962, p. 121–122; Alaska Div. of Mines and Minerals, 1962, p. 8.
b	Busty Belle prospect		Busty Belle Mines, Inc., Mel Anderson, Tury Anderson, John Rasor, Vic Rohrbaugh, Warren Taylor.	Au, Pb, Ag, W, Mo(?).	ga(Ag), py, ca, sh, po, mo(?).	Northwest-trending fissure veins in Pedro Dome quartz diorite country rock, with scheelite and powellite limited to thin calcite veinlets and coatings along joints and fracture planes.	N. 68° W., 70° S			
92	Verdin prospect (approx location).		Ed Verdin	W.(?), Mo(?)	sh, po(?)	Scheelite-bearing placer concentrates were possibly derived from intensely weathered bedrock.				Joesting, 1943, p. 24.
93	Freeman and Sharf prospect.	Cottonwood group	Tury Anderson, F. M. Wackwitz.	Au, Ag, Pb	ga (Ag)					Smith, 1913b, p. 198.
94	Leslie prospect, Old Glory prospect.	Old Glory claim	Bob Leslie, Frank Hawks, Duane Franklin.	Sb (Tr.), W, Mo, Mn.	sh	A 3-ft-thick zone of finely disseminated scheelite in quartz-mica schist and quartzite near a tongue of the Pedro Dome granodiorite.			N. 10° E., 25° E.	Joesting, 1943, p. 23; Thorne and others, 1948, p. 26–27; Byers, 1957, p. 206, 209–210.
95	Alaska Flyer claim prospect.			Au	qtz					Smith, 1913b, p. 194.
96	Soo mine and associated prospects, Spaulding mine.	Soo, La Rose, Wild Rose, Waterbury, Carnation, Inspiration, Waverly, Big Chief, Little Joe vein, Soo vein, Wild Rose vein, Chief vein, H-K vein.	C. M. Hawkins, Reliance Mining Co., M. E. Stevens, S. A. Martin, Heath and Kearns.	Sb†, Au†, Ag, Pb.	qtz, au, ga, sb, tet, py, as, lm, ox.	Crushed quartz in quartz-mica schist.	E.-W., 60° N.; N. 50° E., approximate 50° N.; N. 45° E., approximate 40° S.	E.-W., 60° N.*; N. 76° W., 80° N.*, N. 70° W., 53° N.*.	E.-W., N. (low).	Smith, 1913b, p. 190–194; Hill, 1933, p. 77–80; Spencer and O'Neill, 1934; Stewart, 1933, p. 133–134.

TABLE 1.—*Description of lode mines and prospects in the Fairbanks district, Alaska*—Continued

Map No. (pl. 1)	Mine or prospect	Claims or veins and adits	Some past and present operators	Metals	Mineralogy	Geologic notes	Attitudes: Veins	Attitudes: Faults or crushed zones	Attitudes: Foliation or bedding of country rock	References
				Pedro Dome–Cleary Creek area—Continued						
97	Markovitch mine, Hindenburg mine, Ohio claim prospect.		Poz and Contardi, John Rogash.	Au, Sb†, Zn, Cu, Ag.	qtz, sb, as, sp(?), ch (?), frei(?).	Iron- and manganese-stained crushed quartz containing some stibnite and arsenopyrite.	NE.(?), 60° S.; E.-W., S.(?).			Mertie, 1918, p. 415; Joesting, 1943, p. 9; Hill, 1933, p. 83; Killeen and Mertie, 1951, p. 25; Ebbley and Wright, 1948, p. 38; Sandvik, 1964, p. 111–112.
98	Spruce Creek prospect (approx location).			Au						Smith, 1913b, p. 190.
99	Mother Lode claim prospect No. 1 (Dome Creek).			Cu	py, as, ch	Graphitic limestone impregnated with disseminated sulfides.				Smith, 1913b, p. 194.
100	Woods adit prospect on Franklin Lode.	Alpha, Mary, Franklin, Omega.	M. E. Stevens, Ed Stevens, C. E. Bunnell.	Au, Sb, Pb, Mn.	qtz, au, as, py, sb, ga, lm.	Quartz veins pinch and swell and in part are massive with associated Au values, but mainly are shattered and sugary with the richer Au, including some visible flakes. Some clay gouge and iron and manganese staining is present.	N. 60°–80° W., 75° N.; N. 65° E., 52° N.; N. 77° E., 56° N.; N. 45°–76° E.			Spencer and O'Neill, 1934.
				Vault–Treasure Creek area						
101	Thrift mine (approx location).		Charles Thrift	Au†						Smith, 1913b, p. 196.
102	Fredericks mine			Au†, Sb†	qtz, sb, py, as, ca, ox, lm.	Brecciated and mineralized schist with an associated granitic dike, rather than a distinct quartz vein.	N. 70° W., 45°–70° N.			Smith, 1913b, p. 194–196; Brooks, 1916a, p. 30–31; Hill, 1933, p. 80–81; Killeen and Mertie, 1951, p. 14; Sandvik, 1964, p. 123–124.
103	Hoel Bros., Johnson, and Witmer prospect (approx location).			Au						Brooks, 1912, p. 32; Smith, 1913b, p. 196.
104	Gilmer mine, Muchano mine, Helen W. claim mine.		Howard Wilcox	Au†, Sb†, Ag.	qtz, sb, ga, ca, ox.	Auriferous (0.2–0.74 oz Au per ton) massive stibnite in a fracture or shear zone in silvery mica-schist country rock.	N. 70° E., 60°–70° N.	N. 70° E., 60°–70° N.	N. 80° E., 80° S.	Brooks, 1916a, p. 29–30; Joesting, 1942, p. 8, 10; Sandvik, 1964, p. 121–122.
105	Independence Creek prospect.									Hill, 1933, p. 157.
106	Goodwin prospect (Independence Creek).			Sb(?)	sb(?)					Killeen and Mertie, 1951, p. 23.
107	Goodwin mine (Eagle Creek).			Sb†	sb, py	Lenses of massive stibnite occur in crushed schist.		N. 80° E., 45° S.		Hill, 1933, p. 157; Killeen and Mertie, 1951, p. 22–23.
108	Treasure Creek prospect.			Au(?)						Smith, 1913b, p. 196.
109a	Scrafford mine, Black Eagle mine.		R. C. Woods	Au†, Sb†, Pb, Ag†.	qtz, au, sb, ga, lm, ox, py(?).	Persistent 3–15-ft-wide shear zone which cuts quartz-mica schist and contains iron-stained quartz and massive stibnite lodes.		E.-W., 50°–70° S.; N. 80° E., 50°–70° S.	N. 60° E., N	Brooks, 1916a p. 28–29; Mertie, 1918, p. 415; Hill, 1933, p. 156–157; Killeen and Mertie, 1951, p. 12, 21–22; Sandvik, 1964, p. 121–122, 127–128.
b	Eagle Lode prospect		Kenneth E. O'Hara, Arley Taylor, Silver Ridge Mining Co. (lessee).	Sb	sb, ox	Stibnite in crushed quartz-mica schist.				Smith, 1913b, p. 196; Hill, 1933, p. 156–157.
110	Antimony Ridge prospect.		Silver Ridge Mining Co. (lessee).	Sb	sb	Shaft sunk on metallized breccia associated with a northeast-trending		N. 15° E		

						reverse fault in schistose quartzite and mica schist.				
111	Bunker Hill mine		Albert Goodwin	Au†	qtz	Quartz vein with mica schist hanging wall and quartz-mica schist footwall.	N. 15° W., 70° E.			Chapin, 1914, p. 345; Hill, 1933, p. 154.
112	Bunker Hill prospect		do	Au		A 50-ft-wide crushed zone composed of brecciated iron-stained schist.		N. 70° E., vt.		Hill, 1933, p. 153–154.
					Gilmore Dome–Tungsten Hill area					
113	Janiksela prospect		John Janiksela	Sn(?)	qtz, bit-ms, or(?), cas.	Quartz-feldspar-mica pegmatite along a mica schist-graphite schist contact. Cassiterite has been reported from this locality.			E.-W.	Hill, 1933, p. 154.
114	White Association prospect.			W	sh	Hornblende schist and mica schist impregnated with scheelite along foliation surfaces.	N. 75° E., 75° N. (shoot).			Mertie, 1918, p. 421.
115	Perrault and Murphy mine (approx location).	American, American Eagle.		Au†, W	qtz, au, sh	Irregular mass of sulfide-bearing quartz (ranging in thickness from 6 in. to 3.5 ft), which splits into stringers in brecciated quartzite beds. Associated dike reported to have 15.00 Au per ton.	N. 50° E., 60° N.			Smith, 1913b, p. 166; Chapin, 1914, p. 329–330.
116	Stepovich prospect				qtz, py, as, ox.	Sulfide-bearing quartz vein with sulfide masses cemented by scorodite.	N. 70° E., 70° N.			Smith, 1913b, p. 166; Chapin, 1914, p. 330.
117a	Yellow Pup prospect		Elmer Stohl, William Birklid, M. S. Anderson, Charles Murry, Pat Savage.	W	qtz, ol, ms, ap, gar, sh.	Quartz pegmatite in a garnet tactite zone and quartz-scheelite veins in hornfelsed schist.				Byers, 1957, p. 200–201.
b	Yellow Pup prospect		Alaska Metals Mining Co. (lessee, surface and underground exploration), Mel S. Anderson, William Birklid, Elmer Stohl, Maurice Rafn.							
118	Edward Vogt prospect, Monte Cristo prospect, Melba Creek prospect.	Granite Hill, Monte Cristo.		Au, Te, Bi, W.	qtz, au, bi, bs, sh.	A 5-in.-thick native bismuth- bismuthinite-bearing gold quartz vein striking east which cuts a fine-grained biotite granite country rock; 2 other veins strike N. 5° W.	E.-W., vt; N. 5° W., 80° W.			Chapin, 1914, p. 330–331; Mertie, 1918, p. 412; Hill, 1933, p. 71.
119a	Tungsten claim mine		George Ewers	W†	qtz, px, hr(u), ap, cl, sph, bit, sh.	Skarn and pegmatite deposits.	N. 60° E., 25° N. (shoot).		N. 70° E., 33° N.	Mertie, 1918, p. 419–421.
b	Scheelite claim mine		Alaska Tungsten Mines Co.	W†		do	N. 60° E., 25° N. (shoot).		N. 70° E., 33° N.	Hill, 1933, p. 157–158; Chapin, 1919, p. 325–326.
c	Stepovich lode mine		Cleary Hill Mines Co. (lessee), Alaska Metals Mining Co. (surface and underground exploration).	Sb, Be(Tr.), Sn(Tr.), W†, Mo, Mn.	qtz, di, hr, ca, ep, clz, ol, anc, ms, bit, cl, ap, sph, ves, ax, gar, mel, ab, or, py, pyr.	The major rock units are crystalline limestone (marble), quartz pegmatite, silicated mica schist, and green amphibolite. The tungsten occurs as granular scheelite in irregular masses which replace crystalline limestone and as scheelite-bearing quartz pegmatites. Localization of the granular-type ore is attributed to flowage of carbonate material to crests and troughs of flexure during folding, and to the proximity of quartz pegmatite "feeders." Several northward-striking faults cut the lode.	N. 70° E., 35° N.	N. 40°–60° W., 60° N., dk (pegmatite); NW.(?), N. (steep).	N. 70° E., 35° N.	Byers, 1957, p. 189–198.

TABLE 1.—*Description of lode mines and prospects in the Fairbanks district, Alaska*—Continued

Map No. (pl. 1)	Mine or prospect	Claims or veins and adits	Some past and present operators	Metals	Mineralogy	Geologic notes	Attitudes: Veins	Attitudes: Faults or crushed zones	Attitudes: Foliation or bedding of country rock	References
				Gilmore Dome-Tungston Hill area—Continued						
d	Colbert lode prospect		Lou Colbert, Cleary Hill Mines Co. (lessee).	Sb(Tr.), Sn(Tr.), W, Mo, Mn.	qtz, sh, ol, or, sph, ap, di, clz, ca, hr, cl, ep, bio, ms, gar.	The major rock units are banded silicated schist, pink garnet tactite and granular silicated limestone, near the contact with the Nugget Creek porphyritic granite. This lode replaces mainly calcareous schist.	NE.(?), 35°–45° N			Byers, 1957, p. 199–200.
120a	Schubert prospect			W	qtz, sh, ca	Skarn deposit of the granite-schist contact containing scheelite that occurs as sparsely scattered grains in a 2-in.-thick band within a silicated limestone.			N. 35°–40° E., vt.	Byers, 1957, p. 201.
b	Zimmerman prospect	Ptarmigan, Franklin	J. F. Zimmerman	W	qtz, sh	Quartz-scheelite occurring as replacement deposits in limy horizons of the schist.	N. 40° E., N			Chapin, 1919, p. 327.
121	Nugget Creek prospect.			Au	qtz	Narrow gold-bearing quartz veinlets in granitic rock.				Saunders, 1967, p. 39.
122	Steele Creek prospect									Smith, 1913b, p. 210.
123	Rose Creek prospect			Sb	qtz, sb, or(?).	Tiny veinlets of stibnite in a quartz-feldspar vein.	N. 30° E., 70° N			Chapin, 1914, p. 346.
124	William Brown prospect.					Prospect near porphyritic granite schist contact.				Chapin, 1914, p. 345.
125a	Green Mountain claim prospect.			Au	qtz, au	A 15-ft-wide quartz vein near a brecciated mass of schist.				Chapin, 1914, p. 345–346.
b	Woodpecker claim prospect (approx location).			Au	au	Auriferous weathered granite.				Chapin, 1914, p. 346.
126	Spruce Hen prospect			W, Mo	qtz, di, gar, clz, ves, ca, fl, sh, mo.	Skarn deposit		N. 50° E., 45° N.; N. 60° E. (tactite zones); N. 33° E., 40° N.		Mertie, 1918, p. 423; Chapin, 1919, p. 326–327; Smith, 1942b, p. 196; Byers, 1957, p. 201–203.
127	Columbia prospect			W	qtz, sh	Decomposed schist containing quartz-scheelite stringers with a porphyritic granite hanging wall.		N. 20° W., 30° E		Chapin, 1919, p. 326; Byers, 1957, p. 205–206.
128	Tanana prospect			Au, W	qtz, au, sh	Quartz-scheelite-gold stringers in a 3-ft-wide mineralized zone which conforms to the quartzite foliation.	N. 8° W., 60° E		N. 30° E., 35° N.	Byers, 1957, p. 204–205.
129a	Tungsten Hill prospect.	Grand Duke Nikolas claim, Tungsten No. 1 claim, *General Joffre* claim.		Au, W	qtz, au, sh	Scheelite in schist country rock.				Byers, 1957, p. 205.
b	Anderson prospect			W	qtz, sh	Scheelite-quartz vein in quartz-mica schist.	N. 50° E., 55° N		N. 60° E., 20° N.	Mertie, 1918, p. 424.
130	Blossom prospect	Black Bear, Blossom		W	qtz, sh	Pegmatite-type quartz-scheelite stringers penetrating quartz-biotite schist and porphyritic granite.				Chapin, 1919, p. 327; Byers, 1957, p. 203–204.
131	Peterson prospect		James Peterson		qtz(?)	Prospect holes in barren schist				Hill, 1933, p. 153.
132	Ridge claim prospect		Frank Isaacson	Au			N. 50° E., S			Do.
133	Columbia Creek prospect.			Au(?)	qtz, au(?)					Smith, 1913b, p. 210.
134	Engineer Creek prospect.				qtz, as, lm	Arsenopyrite-bearing iron-stained quartz.	N. 70° E.(?)			Hill, 1933, p. 153.
135	McGrath prospect			Au	qtz	Low-grade gold-quartz vein, 7 in. wide.				Saunders, 1967, p. 37.

Ester Dome area

136	Grant mine 1	Grant vien	O. M. Grant	Au†	qtz, ox, lm	Iron- and arsenic-stained quartz vein which is characterized by crushed and recemented silica. Gently dipping faults probably represent thrusts, and the associated fault gouge apparently maintained a "damming effect" on ascending metal-bearing solutions.	N. 45° E., 65° S.* (average).	N., 25° W.*	N.(?), E. st	Hill, 1933, p. 150–151; Sandvik and Hersey, 1951.
137	Irishman mine	Irishman	do	Au†	qtz					Smith, 1933, p. 19; Smith, 1939a, p. 25.
138	Elmes mine, Nickaloff mine, Happy Creek mine.		Nickaloff	Au†	qtz	Quartz veins in mica schist on dump.	N. 25°–30° E.(?), 75° S.; N. 15° E., 78°–82° W.			Hill, 1933, p. 150; McCombe and Augustine, 1931; Reed, 1939, p. 13; Smith, 1942a, p. 23.
139	Macomb prospect (approx location).		H. N. Macomb		qtz	Crushed schist, gouge, and quartz on dump.	N., 60° S			Hill, 1933, p. 152.
140	Mohawk mine	Bondholder, Bonholder Extension, Peg Leg, Yellow Jacket, Mohawk, Mohawk No. 2, Mohawk No. 3, Liberty, Spite Fraction, Mohawk vein, Bondholder vein.	Tyndall, Henderson, McGinn, McLaughlin.	Au†, Sb†, Pb, Zn.	qtz, au, sb, ga, sp, as.	Crushed schist, gouge, and quartz with minor sulfides. A gently eastward-dipping "foliation-plane fault" in raise 12 and "decking" of seemingly normal metasedimentary strata of biotite-quartz schist suggest thrusting. Many horizontal or near-horizontal faults in tunnel on Yellow Jacket claim.	N. 30° E., 40°–70° S.; N. 20° E., 62°–65° E.*; N. 24° E., 45° N.*; N. 20° E., 40° N.; N. 10° E., 60° N.	N. 30° W.*; N. 10° W., 45° W.*; N. 56° W., 30° S.*; N. 35° W., 40°–50° N.*; N. 20° E., 40° W.*; N. 15° W., 30° E.*; N., 35° E.*; N., 50° E.*; N., 15° E.*; N. 5° E., 47° E.*; N. 58° E., 58° W.*; N. 45° W.*	N. 20° W., 85° E. (joints).	Chapin, 1914, p. 354–355; Mertie, 1918, p 413–414; McCombe and Augustine, 1931; Smith, 1926, p. 8; Hill, 1933, p. 142–147; Joesting, 1943, p. 11.
141	Ryan mine	Ijim, Eva, Edna, Montie, Ryan No. 1, Ryan No. 2, Excelsior, Gem.	A. W. Conradt, Fairbanks Exploration, Bartholomae Oil Co.	Au†, Sb, Ag	qtz, au, sb, as, ox.	A 40–70-ft-wide northeast-trending zone of crushed schist and quartz veins showing evidence of post-mineral movement.	N. 30° E., st	N. 25° E.; N. 20°–25° E., 45°–70° E.	WNW.(?), 10°–15° S.; N. 44° E., 64° E.*; (?) N. 15° E., 50° S.	Brooks, 1912, p. 33; Smith, 1913b, p. 207; Mertie, 1918, p. 413; Hill, 1933, p. 135–138; Smith, 1939b, p. 26; Reed, 1939, p. 12; Davis, 1922, p. 106–107.
142a	McDonald mine, Blue Bird 1.	Blue Bird, Blue Bird Fraction, Combination, McDonald.	J. H. McDonald, L. Morton.	Au†, Sb	qtz, au, sb, as, ox.	Crushed schist, quartz, and gouge-type deposits, except for one quartz vein associated with the contact between a quartz porphyry dike and a lime silicate horizon of the schist.	N. 35° W., 65° N.; N. 20° W., 45° E.; N. 40° E., vt; N. 15° W., 30°–62° N.	E.–W., 50° S.; N.–S., 48° E.; N. 60° E., 60° S.		Chapin, 1919, p. 323; Moffit, 1927, p. 12; Hill, 1933, p. 133–135; Smith, 1939a, p. 25; McCombe and Augustine, 1931; Reed, 1939, p. 9–10; Joesting, 1942, p. 11; Stewart, 1933, p. 139–140.
b	Crown Point claim prospect.		George Comstock	Au	qtz, au	Narrow quartz veins in chloritic schist and clay.	N. 40° W., 65° S.			Chapin, 1914, p. 353.
143	Little Eva mine	Little Eva, Little Eva No. 2, Curlew No. 1, Curlew No. 2, Rose, Comet.	Stay property, Sam Stay, N. Borovich, J. McEachearn.	Au†, Sb	qtz, lm, au(?), as(?), sb(?).	Quartz veins in schist near a shattered iron-stained mineralized quartz porphyry intrusive.	N. 27° W., vt; N. 50° W., 60° N.; N. 65° W., 50° N.; N. 50° W., 50° N.; N. 15° W., 60°–70° E. dk.	N. 10°–51° E., 30°–70° N.		Hill, 1933, p. 129–133; Reed, 1939, p. 9; Sandvik, 1964, p. 119–120, 127–128.
144	Billy Sunday mine	Rat Hole vein, Leah (Lean) Fraction.	Smith Bros., E. H. Smith.	Au†, Sb, Pb, Zn.	qtz, au, sb, as, sp, ga.	Crushed quartz and schist; vein 2–5 ft thick.	N. 5°–10° W., 45°–60° E.*; N.–S., 60° E.*; N. 10° E., 80° E.*; N. 20° W., 45° W.*; N.–S., 65° E.*; N., 45° E., 55° SE.; N. 35° E., 70°–90° S.	N. 10° E., 15°–30° E.*; N. 20° E., 67° W.*; N. 20° W., 45° W.*		Mertie, 1918, p. 412–413; Hill, 1933, p. 139–142; Davis, 1922, p. 105–106.
145a	Fair Chance mine	Fair Chance, Star Crystal, Frisco Fraction.	Miller, J. O'Conner	Au†	qtz	Quartz veins in northeast-trending zone of crushed schist.		N. 20° E., 60° W.		Chapin, 1914, p. 354; Hill, 1933, p. 139.
b	Blue Bird No. 2		J. H. McDonald			Probably same zone as on Fair Chance claim.				Hill, 1933, p. 139.
146	Seattle Fraction prospect (approx location).		H. Jepesen, J. Michaely.							Reed, 1939, p. 10.
147	Little Flower mine		J. McCann, B. Olsen, H. Smith, J. Norris.	Au†			N., 70° E			Reed, 1939, p. 11–12.

TABLE 1.—*Description of lode mines and prospects in the Fairbanks district, Alaska*—Continued

Map No. (pl. 1)	Mine or prospect	Claims or veins and adits	Some past and present operators	Metals	Mineralogy	Geologic notes	Attitudes: Veins	Attitudes: Faults or crushed zones	Attitudes: Foliation or bedding of country rock	References
						Ester Dome area—Continued				
148	St. Paul mine		McCann, Thomas, Mickley, Hagel.	Au†, Sb	qtz, au, sb, as.	Quartz vein in quartz-mica and biotite schists. Gold mineralization followed an earlier barren quartz vein, which had been shattered. Not typical of gold-quartz veins in this district.	N. 40° E., 38° N.; N. 30° E., 45°-70° W.	(horizontal fault).		Mertie, 1918, p. 409-410; Hill, 1933, p. 128-129; Reed, 1939, p. 11.
149	Camp Bird prospect		P. McLaughlin, G. B. Stark, M. Yakopatz.				NNE., 85° W			Reed, 1939, p. 10-11.
150	Clipper mine		McDonald, Michley, Hess, Thomas, McCann, L. Lounsbury.	Au, Sb	qtz, au, sb, ja(?).	Narrow auriferous quartz veins in biotite schist and quartzite.	N. 20° W., 85° W.; N. 4° E., 80° E.*		NW.(?), 10°-15°* N.	Hill, 1933, p. 152; Reed, 1939, p. 8-9; Killeen and Mertie, 1951, p. 12, 14, 16; Stewart, 1933, p. 140.
151	Stibnite Lode mine (approx location).		D. L. Thomas, J. Leach, J. McCann, E. Hess.	Sb†	qtz, sb, ox, lm.	Massive stibnite lenses (largest recorded: 100 ft long, 7 ft wide, 4 ft thick) with quartz hanging wall and crushed schist footwall contacts in a northwest-trending shear zone.		N. 17° W., 70°-89° S.		Brooks, 1916a, p. 38-39; Killeen and Mertie, 1951, p. 15.
152	Wandering Jew mine		J. H. McDonald, J. Michaely, Thomas, J. McCann, A. Bernard, C. Foss, P. Delasto.	Au†	qtz, lm, ox	A 4-18 in. wide sulfide-bearing quartz vein.	N.-S., 75°-80° E	E.-W., 37° N.; N. 30° W., 35°-40° N.		Hill, 1933, p. 147; Reed, 1939, p. 12-13.
153	Killarney claim mine		D. L. Thomas	Au†	qtz, ox	Fractured and recemented gold-bearing quartz veins in micaceous schist.	N. 5° E., 75° W.*			Stewart, 1933, p. 140-141.
154	Last Chance mine			Au†, Sb	qtz, as, sb, au.	Quartz vein 2 ft thick; visible gold.	N. 45° E., N. st*			Davis, 1922, p. 108.
155	First Chance mine		S. Stay, McLaughlin, Franklin.	Au†	qtz	Vein ranging from 6 in. to 4 ft in width.	N. 10° E., 44° W		N.-S., 16°-20° E.*	Hill, 1933, p. 147-148.
156	Bondholder mine	Bondholder vein	Hightower	Au†, Sb	qtz, sb, as, ox, lm.	Quartz vein in quartz-mica schist.	N. 24° E., 45° N			Chapin, 1914, p. 354-355; Hill, 1933, p. 146-147.
157	Prometheus prospect		E. Hess, Hess and Thomas(?).	Au, Sb, Pb, Ag, Cu.	qtz, sb, as, ja, cov, ch, tet.	Sulfide-bearing auriferous quartz vein with anomalous Ag values (6.40 oz per ton).	N. 40° E.; N. 40° E., 70° W.			Smith, 1913b, p. 208; Chapin, 1914, p. 354-355; Hill, 1933, p. 148; McCombe and Augustine, 1931.
158	Big Blue prospect					Crushed schist, quartz, and gouge in fault zone.	N. 27° E			Hill, 1933, p. 148.
159	Lincoln prospect (approx location).		P. McLaughlin, J. Loberg, G. Picotte.	Au(?)		Grab samples from ore dump assay $160.00 Au(?) per ton.				Reed, 1939, p. 15.
160	Dorothy and Dorice prospect, Happy Creek prospect (approx location).		G. Krutsch, R. Cosgrove.	Sb	sb	Stibnite float (maximum dimension 2 ft).	N. 40° E			Chapin, 1914, p. 354; Joesting, 1942, p. 11.
161	Royal Flush mine, Adler mine (approx location).		J. J. Cravey, D. Adler.	Au†		Produced 208 tons of ore averaging $47.50 per ton from a 3-ft-wide vein.	N. 42° E., 70° W			Smith, 1939a, p. 25; Reed, 1939, p. 14.
162	Sanford mine, Lone Tree mine.		J. H. Sanford	Au†	qtz	Quartz vein of variable thickness.	N. 40° E., 45° S.; N. 20° E., vt.			Hill, 1933, p. 149; McCombe and Augustine, 1931; Reed, 1939, p. 14.
163	Grant mine No. 2		O. M. Grant	Au†, Sb	qtz, sb, as	A 6-in. wide quartz vein in quartzite schist country rock.	N. 10° W., 65° E			Hill, 1933, p. 121-122.
164	Lepsoe prospect (approx location).		H. Lepsoe		qtz	A 20-ft-wide quartz vein parallel to a porphyritic granite dike.	N. 40° W			Hill, 1933, p. 152.
165	Mother prospect, Murphy prospect.		Stipp, Logan, Murphy.	Au	qtz, au, lm	Brecciated iron-stained quartz and schist.		E.-W., vt		Hill, 1933, p. 120-122.
166	Rogach prospect									Reed, 1939, p. 5.
167a	Blue Bonanza prospect.	Blue Bonanza, Midnight Sun		Au, Sb, Pb, Ag, Cu.	qtz, sb, au, ga, py, tet, lm.	Gold and sulfide-bearing quartz veins.				Smith, 1913b, p. 196-197; Chapin, 1914, p. 353.

b	Parker prospect (approx location).		Warren and Parks	Au	qtz	Irregular quartz vein, 1-6 in.; some sulfides.	N. 15° E., 55° W.*			Stewart, 1933, p. 145.
168	Flagler prospects(?)			Au(?)	qtz	Large body of mineralized quartz.	N.-S., 45° E			Smith, 1913b, p. 197-198, 204; Chapin, 1914, p. 352.
169	Michley mine			Au†	qtz	Milky quartz vein in quartz-mica schist or gouge.	N.-S., E. or W. (st); N. 4° W., 60° E.			Hill, 1933, p. 149.
170	Farmer mine		W. Borden, J. Loberg.	Au†	qtz, lm	Iron-stained quartz in quartz-mica schist, crushed blue schist, and fault breccia.	N. 25° E., 52° W.*			Hill, 1933, p. 122-123; Reed, 1939, p. 7.
171	Farmer Lode prospect.			Au, Sb	sb, au	Auriferous vein cuts schists and is in turn cut by many small faults.	N.-S., 40° E			Smith, 1913b, p. 198.
172	Prospect(?) (approx location).			Sb	qtz, sb	A 2-3-ft-wide quartz-stibnite vein in quartz-mica schist.	N. 60° E		N.-S., 30° W	Brooks, 1916a, p. 41.
173	McQueen mine, Jenny C. claim prospect, Black Diamond Lode.		R. C. McQueen	Sb†	qtz, sb, ox	Stibnite shoots and kidneys in iron-stained quartz.	N. 50°-70° W.(?); N.; N. 30° E., E. (st)(?); N. 40° W., 75° N.			Brooks, 1916a, p. 40-41; Chapin, 1919, p. 323; Hill, 1933, p. 157; McCombe and Augustine, 1931; Killeen and Mertie, 1951, p. 19-20.
174	Barker and McQueen mine.		W. Harp	Au	qtz		NW., N. (st)			Smith, 1913b, p. 209; Chapin, 1914, p. 352-353.
175	St. Jude prospect, Cotton Blossom prospect.	St. Jude No. 1, St. Jude No. 2.	B. Olsen	Au, Sb	qtz, sb	Stibnite-bearing quartz stringers.	N. 35° W., 30° N.(?).			Smith, 1913b, p. 208-209; Chapin, 1914, p. 352; Hill, 1933, p. 123; Killeen and Mertie, 1951, p. 20.
176	Vuyovich mine (approx location).		J. Vuyovich	Au†	qtz, au, as	A 6-in.-wide crushed and iron-stained quartz vein in a dark micaceous schist and quartz-mica schist.	N. 50° E			Hill, 1933, p. 128.
177	Ready Bullion Creek mine (approx location).		R. Caldart, F. Ciaccia, J. Vukmir.	Au†(?)	qtz	Several hundred tons of high-grade ore were mined from broken sections of veins and quartz masses in schist.				Reed, 1939, p. 5-6.
178	Silver Dollar vein	Silver Dollar vein	D. Makaich, D. Radovich, C. M. Hawkins.	Au†	qtz	Quartz vein in altered schist crushed by post-mineral faulting.	N. 30° E., 68° S		NE.(?), 15° S	Hill, 1933, p. 127-128; Reed, 1939, p. 6-7.
179	Hess and Thomas prospect.				qtz	Disseminated mineralization in small quartz veins and chloritic schist.				Smith, 1913b, p. 208; Hill, 1933, p. 152.
180	Tyndall and Finn prospect.			Au(?)	qtz					Smith, 1913b, p. 208.
181	Vuyovich prospect			Au, Sb	qtz, au, sb, as, lm.	Quartz veinlets in northeast-trending zone of crushed iron-stained schist.		N. 20° E., 85° E.	N. 20° E., 4° E.	Hill, 1933, p. 128.
182	Ready Bullion mine	Geneva, Mary Stay, Hosanna, Hudson, Horseshoe, Ready Bullion, Locle Fraction, Stibnite No. 1, Stibnite No. 2, Borovich, Borovich Fraction, Borovich No. 2, Native Daughter, South Pole, North Pole, Camp, Sunflower, Fraction, Ready Bullion vein.	Eva Quartz Mining Co., G. B. Stevens, N. Borovich, Bartholomae Oil Co.	Au†, Sb	qtz, au, sb, as, ja(?), ox, lm.	Series of crushed quartz veins, schist, and gouge, with possible wide zone of low-grade material.	N. 48° W., 75° N.*; N. 15° E., 70° E.*; N.-S., 80° W.*	N. 50° E., 78° S.; N. 58° E., 50° S.*; N. 53° E., 70° N.*; N. 53° E., 70° S.*; N. 53° E., 45° S.*.	NE.(?), S.*	Hill, 1933, p. 123-127; Reed, 1939, p. 7.
183	Gale prospect			Au	qtz, lm	Auriferous iron-stained quartz and weathered schist.				Smith, 1913b, p. 204, 206.
184	Koegley claim prospect.			Au	qtz	Mineralized schist cut by small quartz stringers.				Do.
185	Hudson mine			Au†	qtz, au, py, lm.	Quartz stringer stockwork in chloritic schist and quartzite.	N. 20° E., 45° N.; N. 45° E., 50° N.	N. 70° W., 60° S.		Smith, 1913b, p. 203-206; Chapin, 1914, p. 350-352; Hill, 1933, p. 123.
186	Maloney prospect		W. Maloney	Sb	qtz, sb, as		ENE., S.(?)			Hill, 1933, p. 123.
187	Social Security prospect.		J. Norris, Bartholomae Oil Co.	Au						Reed, 1939, p. 7-8.
188	Lookout mine		D. E. Turnbarge, A. A. Turnbarge.	Au†		Northeast-trending vein cut by 6-ft-wide auriferous leucocratic dike.	N. 10° E., vt; N. 20° W.			Reed, 1939, p. 8.

TABLE 2.—*Semiquantitative spectrographic analyses and gold*

[All analyses are in parts per million except Mg, Fe, Ca, and Ti,

Map No. (pl. 1)	Field No.	Lab. No.	Megascopic description of sample	Mg	Fe	Ca	Ti	Au	Au [1]	Au [2]	As	Sb	W	V
														Pedro Dome-
29	66AF-28	ADS-585	Stibnite-arsenopyrite-pyrite-quartz (tailings).	0.5	20	1	0.2	<10	<0.02	------	10,000	10,000	<50	15
29	29	586	Stibnite-arsenopyrite-jamesonite in yellow-stained schistose rock (tailings).	.5	5	.1	.7	<10	<.02	------	10,000	10,000	<50	100
29	30	587	Bournonite(?)-hematite-pyrite-sphalerite-quartz (tailings).	.1	2	.05	.01	<10	<.02	------	500	>10,000	<50	<10
28	31	588	Yellow cervantite-stibiconite crust on bull quartz (trench).	.05	.2	<.05	.003	<10	.66	------	1,500	2,000	<50	<10
24	32	589	Jamesonite-(?) ore (pit face)	.02	5	<.05	.003	<10	.02	------	>10,000	>10,000	<50	<10
24	33	590	Altered pelitic country rock near (<6 in.) massive sulfide-sulfosalt ore (pit face).	.5	10	.05	.7	<10	2.93	3.9	>10,000	>10,000	<50	100
24	34	591	Jamesonite-(?) ore with associated green silicic material (ore pile).	.05	10	<.05	.003	<10	1.16	------	>10,000	>10,000	<50	10
24	35	592	Galena-arsenopyrite-stibnite-(?) in altered quartz-mica schist (trench).	.05	2	<.05	.003	<10	.03	------	10,000	>10,000	<50	10
24	36	593	Yellow-stained massive stibnite (ore pile)	.02	<.05	.15	.002	<10	<.02	------	1,500	>10,000	<50	15
24	37	594	Brown-stained stibnite-galena (ore pile)	.05	.2	.1	.07	<10	<.02	------	3,000	>10,000	<50	15
28	76	631	Foliated jamesonite (ore pile)	.02	1	.05	.003	<10	<.02	------	3,000	>10,000	<50	<10
7	77	632	Pyrite-arsenopyrite-galena-sphalerite-stibnite (tailings).	.2	15	.2	.2	<10	.03	------	>10,000	>10,000	<50	30
7	78	633	Galena-sphalerite-stibnite (tailings)	.2	1	1	.3	<10	<.02	------	3,000	>10,000	<50	70
F-81	81	636	Metallic minerals in limonite-stained quartz breccia (trench).	.05	10	.7	.003	<10	2.3	2.7	>10,000	>10,000	<50	<10
30	87	641	Stibnite-arsenopyrite-limonite (adit tailings).	.7	3	.05	.7	<10	.4	------	>10,000	>10,000	150	100
30	88	642	Stibnite-quartz (adit tailings)	<.02	1	.15	.002	<10	<.02	------	7,000	>10,000	<50	<10
30	89	643	Pyrite-galena-sphalerite (adit tailings)	2	5	10	.5	<10	<.02	------	>10,000	>10,000	<50	50
30	90	644	Jamesonite-arsenopyrite(?) (adit tailings)	.7	3	.15	.3	<10	<.02	------	>10,000	>10,000	<50	30
28	91	645	Yellowish-tan alteration surface on stibnite (ore pile).	.05	.1	1.5	.015	<10	<.02	------	1,500	>10,000	<50	10
28	92	646	Yellowish-tan alteration surface on stibnite-arsenopyrite(?) (trench).	.1	1.5	5	.01	<10	<.02	------	>10,000	>10,000	<50	10
28	93	647	Stibnite (pit)	.1	5	1.5	.3	<10	<.02	------	2,000	>10,000	<50	15
57	95	649	Auriferous quartz-stibnite-sulfide(?) rock (trench).	.2	.3	2	.02	30	.2	------	1,500	>10,000	<50	<10
56	97	651	Massive pyrite-sphalerite-arsenopyrite-galena (tailings).	.5	20	2	.015	<10	.2	------	>10,000	2,000	<50	<10
56	98	652	Massive pyrite-sphalerite-arsenopyrite-galena (tailings).	1	15	7	.01	<10	.1	------	7,000	3,000	<50	<10
54	99	653	Disaggregated iron-stained quartz (1 ft-wide channel).	.05	2	.05	.05	<10	.9	------	2,000	150	<50	10
F-82	82	637	Pyrite-bearing calc-schist (dredge tailings)	7	10	20	.3	<10	.03	------	3,000	3,000	<50	100
F-83	83	638	Garnetiferous mica schist with pyrite parallel to foliation (dredge tailings).	.7	5	1.5	.7	<10	<.02	------	2,000	2,000	<50	150
F-84	84	639	Limonite-carbonate-quartz rock (dredge tailings).	.7	5	20	.2	<10	<.02	------	200	200	<50	30
F-85	85	640	Green chert-like material (dredge tailings)	1	7	5	.5	<10	.02	------	<200	<100	<50	200
56	94	648	Sulfide-bearing blue and white banded marble (trench).	5	2	>20	.02	<10	2	------	<200	10,000	<50	10
57	96	650	Gray schistose marble (trench)	2	1.5	>20	.03	<10	<.02	------	<200	2,000	<50	15
F-100	100	654	Garnetiferous amphibolite with disseminated pyrite (dredge tailings).	10	10	5	1	<10	<.02	------	<200	<100	<50	500
F-101	101	655	Dense, garnetiferous amphibolite with minor disseminated sulfides (dredge tailings).	3	10	5	1	<10	<.02	------	<200	<100	<50	300
F-102	102	656	Tourmaline-bearing amphibolite (dredge tailings).	10	10	5	.7	<10	<.02	------	<200	<100	<50	300
F-103	103	657	Schistose garnetiferous amphibolite (dredge tailings).	10	10	5	1	<10	<.02	------	<200	<100	<50	500
56	66ACh-28	671	Massive sulfides	<.02	20	.05	.005	<10	.6	------	>10,000	1,500	<50	<10
C-33	33	672	Mica schist with reddish-orange coating (dredge talings).	.7	3	2	.5	<10	.03	------	<200	<100	<50	100
90	66AF-41	597	Argentiferous galena with cerussite crust (ore pile).	.05	<.05	<.05	<.001	<10	<.02	------	<200	>10,000	<50	<10
90	42	598	Argentiferous galena-(?) (ore pile)	.07	.2	.15	<.001	<10	<.02	------	>10,000	5,000	<50	2,000
91	48	604	Yellowish-brown-stained galena-quartz rock (old adit tailings).	.5	5	.05	.5	<10	6.1	8.7	>10,000	2,000	<50	100
90	43	599	Altered medium-grained granodiorite (pit)	1.5	5	2	.7	<10	<.02	------	200	<100	<50	150
90	44	600	Yellow-brown medium-grained granodiorite with dark-brown slickensided surfaces (pit).	.7	5	.2	.5	<10	<.02	------	1,500	<100	<50	200
90	45	601	Brown crust containing minor galena from intensely altered rock (pit).	.02	20	1	.002	<10	20.5	17.1	>10,000	2,000	<50	700
91	46	602	Altered medium-grained diorite with disseminiated pyrite, quartz veinlets, and calcite (adit tailings).	1	3	20	1	<10	.1	------	1,000	1,000	<50	200
91	47	603	Medium-grained granodiorite (adit tailings).	2	5	3	1	<10	<.02	------	<200	<100	<50	200
F-65	65	620	Medium-grained granodiorite (scree)	1.5	1.0	5	.7	<10	.2	------	500	150	100	150
F-66	66	621	do	1.5	1.0	5	.7	<10	.02	------	<200	<100	150	150
F-67	67	622	do	1	1.0	7	1	<10	<.02	------	<200	<100	<50	150
F-68	68	623	Garnetiferous, sulfide-bearing amphibolite.	2	20	20	.3	<10	<.02	------	<200	100	<50	70
F-69	69	624	Silicic, garnetiferous amphibolite with disseminated sulfides.	1	10	20	.7	<10	<.02	------	<200	<100	<50	150
F-70	70	625	Medium-grained quartz monzonite (scree)	.7	3	2	.3	<10	<.02	------	<200	<100	<50	70
F-71	71	626	Porphyritic quartz monzonite (scree)	.7	3	.7	.3	<10	<.02	------	<200	<100	<50	70
F-72	72	627	Porphyritic aplite with quartz veinlets and light-green alteration masses (scree).	.1	1	.2	.07	<10	.6	------	<200	<100	<50	10
F-73	73	628	Brown-stained schistose quartzite with quartz-pyrite (limonite) veinlets (scree).	.2	5	.05	.3	<10	1.6	------	5,000	<100	<50	100
74	74	629	Porphyritic quartz monzonite with quartz veinlets (tailings).	.2	1.5	.7	.15	<10	.06	------	200	100	<50	20
91	75	630	Medium-grained granodiorite with green slickensided surfaces and calcite veinlets (150-ft adit face tailings).	1	5	5	.7	<10	<.02	------	<200	<100	<50	150

See footnotes at end of table, p. D24.

analyses of rock samples from the Fairbanks district, Alaska

which are in percent. K. C. Watts and J. M. Motooka, analysts]

Mo	Sn	Ni	Cr	Ba	Sr	B	Pb	Mn	Bi	Be	Nb	Y	Cd	Cu	Zr	Ag[4]	Ag[3]	La	Zn	Sc	Co	Selected metallized or random rock samples[4]
Cleary Creek area																						
<5	70	30	15	150	<100	300	20,000	2,000	<10	<1	10	50	<20	70	15	200	-------	<20	1,000	<5	15	M
<5	<10	15	50	500	<100	150	5,000	10	<10	3	20	20	<20	1,000	300	50	-------	100	<200	15	<5	M
<5	200	10	<5	30	<100	70	20,000	100	<10	<1	<10	<10	500	1,000	<10	500	-------	30	>10,000	<5	<5	M
<5	<10	<5	<5	<10	<100	50	1,500	<10	<10	<1	<10	<10	<20	20	<10	20	-------	<20	<200	<5	<5	M
<5	>1,000	<5	<5	70	<100	<10	>20,000	10	<10	<1	<10	<10	300	2,000	<10	2,000	-------	200	7,000	<5	<5	M
<5	700	<5	70	300	<100	700	>20,000	10	<10	1	30	30	<20	300	300	1,000	-------	200	<200	10	<5	M
<5	1,000	<5	10	100	<100	200	>20,000	15	<10	<1	10	<10	<20	700	<10	500	-------	<20	700	<5	<5	M
<5	>1,000	<5	<5	30	<100	20	>20,000	<10	<10	<1	<10	<10	500	700	<10	3,000	-------	70	5,000	<5	<5	M
<5	<10	<5	<5	10	<100	<10	1,500	<10	<10	<1	<10	<10	<20	300	<10	5	-------	100	<200	<5	<5	M
<5	<10	<5	<5	70	<100	<10	10,000	<10	<10	<1	<10	<10	<20	300	200	10	-------	200	<200	<5	<5	M
<5	700	<5	<5	20	<100	<10	>20,000	50	20	<1	<10	<10	<20	700	<10	3,000	-------	100	2,000	<5	<5	M
<5	200	10	10	150	<100	>2,000	>20,000	1,500	<10	<1	<10	150	<20	2,000	50	300	-------	<20	>10,000	5	5	M
<5	<10	15	10	200	100	70	10,000	50	<10	2	<10	20	<20	200	150	70	-------	100	1,500	5	<5	M
<5	>1,000	15	5	700	<100	100	>20,000	700	<10	<1	20	<10	100	1,000	<10	5,000	-------	<20	300	<5	<5	M
<5	<10	15	100	1,500	<100	500	500	15	<10	3	20	20	<20	300	200	100	-------	200	500	20	5	M
<5	<10	<5	<5	20	<100	<10	100	700	<10	<1	<10	<10	<20	20	<10	<.5	-------	70	<200	<5	<5	M
<5	50	20	70	200	200	150	15,000	>5,000	<10	2	20	20	300	500	500	200	-------	100	>10,000	15	5	M
<5	>1,000	10	10	20	<100	>2,000	>20,000	3,000	200	2	20	10	<20	2,000	150	3,000	-------	100	1,000	10	<5	M
<5	<10	<5	<5	20	<100	10	1,000	200	<10	<1	<10	20	<20	300	<10	20	-------	100	300	<5	<5	M
<5	<10	50	<5	30	700	30	1,500	50	<10	<1	<10	50	<20	300	<10	50	-------	100	<200	<5	<5	M
<5	<10	150	10	100	<100	50	1,000	500	<10	<1	20	100	<20	2,000	100	200	-------	200	1,000	20	70	M
<5	<10	5	<5	70	<100	20	100	100	<10	<1	10	<10	<20	200	<10	10	-------	70	<200	<5	<5	M
<5	100	15	10	30	<100	50	>20,000	1,000	<10	<1	10	<10	<20	700	<10	500	-------	<20	>10,000	<5	<5	M
<5	150	<5	10	30	<100	30	20,000	5,000	<10	<1	10	10	<20	2,000	<10	200	-------	<20	10,000	<5	<5	M
<5	<10	<5	<5	70	<100	20	50	20	<10	<1	<10	<10	<20	15	<10	<.5	-------	<20	200	<5	<5	M
<5	100	15	70	500	1,000	150	10,000	3,000	<10	1	20	20	<20	50	200	30	-------	<20	<200	10	10	R
<5	30	20	100	500	<100	150	3,000	200	<10	2	30	20	<20	100	300	7	-------	50	<200	30	20	R
<5	<10	15	30	100	100	20	300	3,000	<10	2	10	15	<20	15	10	1	-------	<20	<200	5	5	R
<5	<10	30	70	150	<100	20	70	2,000	<10	2	10	15	<20	150	20	<.5	-------	<20	<200	20	30	R
<5	<10	10	10	50	1,000	<10	500	75,000	<10	<1	<10	<10	<20	20	<10	20	-------	<20	<200	<5	<5	R
<5	<10	5	10	50	1,500	20	300	1,500	<10	<1	<10	<10	<20	20	<10	<.5	-------	<20	<200	<5	<5	R
<5	<10	300	2,000	70	200	1,000	100	5,000	<10	<1	30	10	<20	150	150	.5	-------	50	300	50	70	R
<5	<10	50	500	70	700	10	70	5,000	<10	<1	30	10	<20	300	150	<.5	-------	50	200	30	50	R
<5	<10	200	1,000	100	700	>2,000	100	3,000	<10	1	30	10	<20	20	100	<.5	-------	<20	200	20	50	R
<5	<10	150	1,000	700	700	<10	50	3,000	<10	<1	70	10	<20	150	200	<.5	-------	50	<200	30	70	R
<5	<10	<5	<5	30	<100	100	15,000	15	<10	<1	10	<10	<20	30	<10	150	-------	<20	1,000	<5	<5	M
<5	<10	20	30	70	<100	70	100	700	<10	<1	<10	10	<20	20	150	<.5	-------	<20	<200	10	10	R
200	1,000	<5	<5	30	200	<10	>20,000	<10	30	<1	<10	<10	200	300	<10	5,000	-------	<20	<200	<5	<5	M
>2,000	1,000	<5	70	70	300	<10	>20,000	<10	200	<1	<10	<10	<20	500	<10	>5,000	-------	<20	<200	<5	<5	M
<5	300	<5	<5	500	<100	200	>20,000	30	<10	5	20	<10	<20	200	150	200	-------	<20	<200	15	<5	M
100	<10	10	20	3,000	500	<10	15,000	700	<10	2	20	20	<20	15	200	100	-------	20	<200	20	<5	R
70	150	5	20	300	<100	<10	10,000	2,000	<10	2	20	20	<20	70	200	50	-------	50	2,000	20	<5	R
>2,000	50	<5	15	2,000	700	<10	>20,000	200	<10	<1	10	<10	500	500	<10	500	-------	<20	3,000	<5	<5	M
70	30	15	70	700	200	200	10,000	5,000	<10	1	10	20	<20	50	200	30	-------	<20	<200	50	20	R
<5	<10	15	100	2,000	500	30	200	2,000	<10	1	20	20	<20	30	500	<.5	-------	<20	<200	50	30	R
<5	<10	5	10	2,000	700	10	150	3,000	<10	1	10	20	<20	20	150	<.5	-------	20	<200	20	20	R
<5	<10	5	15	2,000	700	30	100	1,000	<10	1	20	20	<20	10	200	<.5	-------	50	<200	20	20	R
<5	<10	5	15	2,000	700	20	100	1,500	<10	1	20	50	<20	20	300	<.5	-------	30	<200	30	20	R
<5	<10	50	100	50	300	15	50	5,000	<10	2	10	20	<20	150	300	<.5	-------	<20	<200	10	70	R
<5	<10	20	150	150	700	10	70	3,000	<10	1	20	50	<20	30	200	<.5	-------	70	<200	30	15	R
<5	<10	<5	<5	1,500	300	<10	50	1,000	<10	5	20	50	<20	7	150	<.5	-------	<20	<200	10	<5	R
<5	<10	5	<5	1,000	300	<10	30	1,000	<10	3	20	30	<20	<5	100	<.5	-------	100	<200	10	<5	R
<5	<10	10	<5	500	<100	<10	100	500	<10	3	20	50	<20	15	100	<.5	-------	<20	<200	<5	<5	R
<5	<10	30	20	300	<100	150	150	700	<10	2	20	20	<20	30	700	<.5	-------	20	<200	10	20	R
<5	<10	5	<5	1,000	500	<10	70	500	<10	5	20	100	<20	5	50	<.5	-------	<20	<200	5	<5	R
<5	<10	15	70	1,500	500	10	150	2,000	<10	1	10	10	<20	70	200	<.5	-------	20	<200	50	10	R

TABLE 2.—*Semiquantitative spectrographic analyses and gold*

Map No. (pl. 1)	Field No.	Lab. No.	Megascopic description of sample	Mg	Fe	Ca	Ti	Au	Au [1]	Au [2]	As	Sb	W	V
														Pedro Dome–Cleary
F-79	65AF-79	ADS-634	Altered porphyritic quartz monzonite (scree).	0.7	5	2	0.3	<10	<0.02	------	<200	2,000	<50	100
F-80	80	635	Pyrite-bearing porphyritic quartz monzonite (scree).	.3	5	.1	.3	<10	.2	------	700	1,500	<50	20
91	105	658	Medium-grained granodiorite (179+-ft adit face tailings).	1.5	10	5	.7	<10	<.02	------	<200	<100	<50	200
91	66ACh-11	663	Quartzite inclusion in sheared granodiorite (adit).	2	5	3	.5	<10	.04	------	<200	200	<50	200
C-12	12	664	Biotite-quartz schist	.7	3	1.5	.3	<10	<.02	------	<200	1,000	<50	100
90	14	665	Granodiorite	.7	5	1.5	.3	<10	<.02	------	<200	<100	<50	100
C-15	15	666	do	.7	5	2	.5	<10	<.02	------	<200	<100	<50	200
91	17	667	Granodiorite (adit)	.7	5	2	.5	<10	<.02	------	<200	<100	150	150
91	18	668	do	1.5	5	2	.5	<10	<.02	------	<200	<100	<50	150
91	19	669	do	3	5	2	.5	<10	<.02	------	<200	<100	<50	150
F-68	27	670	Hornfels(?)	.7	10	5	.3	<10	<.02	------	<200	<100	<50	70
91	41	675	Granodiorite (adit)	3	10	5	.7	<10	<.02	------	<200	<100	<50	150
91	42	676	do	1.5	7	3	.7	<10	<.02	------	<200	<100	<50	150
91	43	677	do	2	10	7	.7	<10	<.02	------	<200	<100	<50	150
91	44	ACM-702	do	2	5	2	.5	<10	<.02	------	<200	<100	<50	200
91	45	703	do	2	5	3	.7	<10	<.02	------	<200	<100	<50	200
91	46	704	do	2	5	3	.5	<10	<.02	------	<200	<100	<50	200
91	47	705	do	2	5	3	.7	<10	<.02	------	<200	<100	<50	300
91	67ACh-1	706	do	1.5	5	2	.5	<10	<.02	------	<200	<100	<50	200
91	2	707	do	1	3	2	.5	<10	<.02	------	<200	<100	<50	200
91	3	708	do	2	5	3	.7	<10	<.02	------	<200	<100	<50	200
91	6	709	do	2	5	3	.5	<10	<.02	------	<200	<100	<50	200
91	7	710	do	1	3	2	.5	<10	<.02	------	<200	<100	<50	150
91	8	711	do	2	5	3	.7	<10	<.02	------	<200	<100	<50	200
91	9	712	Granodiorite with scheelite (adit)	2	3	3	.7	<10	.8	------	200	<100	>10,000	200
91	10	713	Granodiorite (adit)	2	5	3	.5	<10	<.02	------	<200	<100	100	200
91	13	714	Clay gouge in granodiorite (adit)	1.5	5	.7	.7	<10	.2	------	>10,000	150	50	300
94	24	723	Granodiorite, border phase(?) (scree)	.03	1.5	<.05	.5	<10	.05	------	300	<100	100	150
94	25	724	Quartzite schist (scree)	.15	5	.07	.2	<10	<.02	------	200	<100	<50	50
C-26	26	725	Granodiorite (composite from scree)	5	7	3	.7	<10	<.02	------	<200	<100	<50	200
C-27	27	726	Quartzite schist near granodiorite contact	1	5	.5	.5	<10	.02	------	<200	<100	<50	150
C-28	28	727	Granodiorite	2	5	2	.5	<10	<.02	------	<200	<100	<50	300
C-29	29	728	Granodiorite (scree)	3	7	3	.7	<10	.04	------	<200	<100	<50	500
C-30	30	729	Quartzite schist-granodiorite contact zone	.7	3	.2	.2	<10	<.02	------	<200	<100	<50	150
C-31	31	730	Quartz-mica schist	1	5	.3	.3	<10	<.02	------	<200	<100	<50	150
C-30	32	731	Quartzite schist (scree)	1	3	.5	.5	<10	<.02	------	<200	<100	<50	100
90	15	715	Quartz-mica schist	1.5	5	.15	.5	<10	<.02	------	<200	<100	<50	200
90	16	716	Altered schist containing quartz	.5	1.5	.2	.3	<10	.03	------	200	<100	<50	70
90	17	717	Quartz-mica schist	1	3	.1	.5	<10	.07	------	<200	<100	<50	150
90	18	718	Yellow-coated galena (ore pile)	.07	3	.2	.015	<10	1.0	------	10,000	2,000	<50	500
90	19	719	Granodiorite	1	5	1	.5	<10	<.02	------	500	<100	<50	150
90	20	720	Vein quartz	.05	.1	.15	.02	<10	.1	------	<200	<100	<50	10
90	21	721	Granodiorite	1	5	1	.5	<10	.03	------	700	<100	<50	200
90	22	722	Granodiorite, mineralized shear zone	.2	10	.5	.1	<10	24	------	>10,000	200	<50	200
														Gilmore Dome–
F-4	66AF-4	ADS-561	Brown-stained, porphyritic quartz monzonite and grus.	0.2	1.5	1	0.03	<10	0.2	------	<200	<100	<50	10
F-5	5	562	Brown-stained, porphyritic quartz monzonite (scree).	.2	1	1	.02	<10	.1	------	<200	<100	<50	<10
F-6	6	563	Porphyritic quartz monzonite (cobble)	.02	.2	<.05	.02	<10	<.02	------	<200	<100	<50	<10
F-7	7	564	Porphyritic quartz monzonite (scree)	.2	1.5	.5	.03	<10	<.02	------	<200	<100	<50	10
F-8	8	565	Porphyritic quartz monzonite	.2	2	.7	.05	<10	.035	------	<200	<100	<50	10
F-9	9	566	Brown-stained porphyritic quartz monzonite and grus.	.1	1	.2	.015	<10	.1	------	<200	<100	<50	<10
F-10	10	567	Porphyritic quartz monzonite (scree)	.3	2	1.5	.05	<10	.1	------	<200	<100	<50	10
F-11	11	568	do	.2	1.5	1.5	.03	<10	.1	------	<200	<100	<50	<10
F-12	12	569	Porphyritic quartz monzonite (trench)	.7	5	3	.3	<10	<.02	------	<200	<100	<50	70
F-13	13	570	Biotite-actinolite-quartz schist (trench)	1.5	7	7	.3	<10	<.02	------	<200	<100	<50	70
F-14	14	571	Biotite-quartz schist with potash feldspar augen (trench).	1	5	3	.3	<10	<.02	------	<200	<100	<50	70
F-15	15	572	Quartz-mica schist with bands of actinolite and chlorite (trench)	2	7	10	.3	<10	<.02	------	<200	<100	<50	100
F-16	16	573	Actinolite-quartz gneiss (trench)	2	5	7	.5	<10	<.02	------	<200	<100	<50	70
F-17	17	574	Biotite-quartz schist with potash feldspar augen (trench)	1	5	2	.5	<10	<.02	------	<200	<100	<50	70
F-18	18	575	Brown-stained porphyritic quartz monzonite (scree)	.5	5	1.5	.3	<10	<.02	------	<200	<100	<50	30
F-19	19	576	Coarse-grained quartz monzonite (borrow pit)	.3	3	1.5	.15	<10	<.02	------	<200	<100	<50	10
F-20	20	577	Limonite-stained sericite-quartz schist (borrow pit)	.2	7	<.5	.7	<10	.055	------	<200	<100	<50	150
F-21	21	578	Coarse-grained quartz monzonite (scree)	.7	7	3	.3	<10	<.02	------	<200	<100	<50	30
F-22	22	579	Brown-stained porphyritic quartz monzonite (scree)	1	7	3	.7	<10	<.02	------	<200	<100	<50	30
F-23	23	580	Argillized porphyritic quartz monzonite	.5	5	.1	.5	<10	<.02	------	<200	<100	<50	30
F-24	24	581	Yellow-stained porphyritic quartz monzonite and grus	.2	3	.2	.3	<10	<.02	------	<200	<100	<50	70
F-25	25	582	Altered medium-grained quartz monzonite with blebs of soft green claylike material (scree)	.3	5	.15	.3	<10	<.02	------	<200	<100	<50	70
F-26	26	583	Schistose garnet-mica-quartz hornfels (scree)	1	10	.2	.7	<10	<.02	------	<200	<100	<50	150
117	27	584	Green, silicic hornfels (tailings)	1	5	10	.5	<10	<.02	------	<200	<100	<50	70
F-39	39	595	Medium-grained quartz monzonite (float)	1	3	2	.3	<10	<.02	------	<200	10,000	<50	50
F-40	40	596	Porphyritic quartz monzonite (float)	.7	5	2	.5	<10	<.02	------	<200	3,000	<50	100

See footnotes at end of table, p. D24.

analyses of rock samples from the Fairbanks district, Alaska—Continued

Mo	Sn	Ni	Cr	Ba	Sr	B	Pb	Mn	Bi	Be	Nb	Y	Cd	Cu	Zr	Ag[4]	Ag[3]	La	Zn	Sc	Co	Selected metallized or random rock samples[4]
Creek area—Continued																						
<5	<10	10	15	2,000	700	20	700	1,000	<10	5	10	15	<20	20	150	<2	-------	<20	<200	55	<5	R
<5	<10	5	10	700	<100	200	300	1,500	<10	10	30	15	<20	15	200	2	-------	<20	<200	<5	<5	R
<5	<10	10	70	1,500	700	<10	50	2,000	<10	1	<10	15	<20	15	50	<.5	-------	70	<200	20	20	R
<5	<10	10	70	1,500	500	50	100	700	<10	1	10	15	<20	30	200	<.5	-------	30	<200	15	15	R
<5	<10	5	10	700	300	30	150	500	<10	1	10	10	<20	10	150	<.5	-------	20	<200	10	10	R
<5	<10	5	15	1,500	500	10	50	700	<10	2	10	10	<20	7	150	<.5	-------	20	<200	15	10	R
<5	<10	<5	30	2,000	700	<10	30	1,000	<10	2	10	10	<20	15	300	<.5	-------	20	<200	15	10	R
<5	<10	10	100	700	200	100	20	700	<10	1	10	10	<20	15	150	<.5	-------	20	<200	15	15	R
<5	<10	10	70	1,000	700	20	50	1,000	<10	1	10	10	<20	10	150	<.5	-------	20	<200	15	15	R
<5	<10	15	150	1,000	500	20	50	700	<10	<1	10	10	<20	20	100	<.5	-------	20	<200	15	15	R
<5	<10	20	150	50	200	<10	50	1,000	<10	<1	10	15	<20	15	150	<.5	-------	20	<200	10	10	R
<5	<10	15	70	700	500	50	70	2,000	<10	<1	20	10	<20	30	150	<.5	-------	<20	<200	20	15	R
<5	<10	10	15	500	500	<10	50	1,000	<10	1	10	10	<20	15	100	<.5	-------	<20	<200	15	10	R
<5	<10	7	50	700	500	10	50	1,500	<10	<1	15	10	<20	20	100	<.5	-------	<20	<200	20	10	R
<5	<10	30	50	1,000	500	15	50	1,000	<10	1	<10	20	<20	30	150	<.5	0.8	30	<200	20	15	R
<5	<10	15	50	1,500	1,000	20	50	1,000	<10	1	<10	30	<20	30	200	<.5	.9	50	<200	30	15	R
<5	<10	50	30	1,500	1,000	20	30	1,500	<10	1.5	<10	30	<20	50	150	<.5	.7	50	<200	20	15	R
<5	<10	10	70	1,500	700	20	30	1,500	<10	1	10	30	<20	5	150	<.5	.8	50	<200	30	15	R
<5	<10	7	20	1,500	500	20	50	1,000	<10	1.5	<10	30	<20	50	200	<.5	.5	50	<200	20	15	R
<5	<10	5	20	1,000	1,500	10	70	1,000	<10	1	<10	20	<20	50	150	<.5	.8	30	300	15	10	R
<5	<10	10	50	1,500	700	20	50	1,500	<10	1.5	<10	30	<20	150	200	<.5	1.2	50	<200	30	20	R
<5	<10	10	50	1,500	700	20	50	1,500	<10	1.5	<10	20	<20	20	150	<.5	.9	50	<200	30	15	R
<5	<10	7	30	1,000	500	15	30	1,000	<10	<1	<10	20	<20	50	150	<.5	.7	30	<200	20	10	R
<5	<10	10	50	1,500	700	30	30	1,500	<10	1.5	10	30	<20	30	150	<.5	.8	30	<200	30	15	R
1,000	10	20	70	1,500	500	<10	100	1,000	<10	1	<10	20	<20	50	200	<.5	.8	50	<200	20	10	M
10	<10	10	30	1,500	1,000	30	50	1,500	<10	1.5	10	30	<20	10	200	<.5	.5	30	<200	30	10	R
<5	200	10	50	500	<100	200	1,000	500	<10	3	10	30	<20	100	200	20	6.2	50	1,000	30	15	M
<5	<10	20	70	70	<100	<10	70	150	<10	<1	30	10	<20	20	300	.5	.4	<20	<200	10	7	R
<5	<10	30	50	500	<100	70	50	500	<10	1	<10	30	<20	30	300	<.5	.3	30	<200	7	5	R
<5	<10	20	50	2,000	700	20	100	1,500	<10	1.5	<10	30	<20	30	200	<.5	.6	30	<200	20	20	R
<5	<10	50	70	300	<100	30	30	700	<10	1	<10	30	<20	20	500	<.5	.6	20	<200	15	15	R
<5	<10	7	50	2,000	700	50	100	1,500	<10	1.5	<10	30	<20	30	200	<.5	.6	30	<200	30	15	R
<5	<10	20	70	2,000	700	10	50	1,500	<10	1	10	30	<20	20	300	<.5	.6	30	<200	30	20	R
15	<10	15	50	300	<100	<10	30	300	<10	1.5	<10	20	<20	70	100	<.5	.4	30	<200	10	5	R
<5	<10	50	100	500	<100	15	30	1,500	<10	1	10	30	<20	30	150	<.5	.6	20	<200	15	10	R
<5	<10	30	70	500	<100	10	50	1,500	<10	1	10	20	<20	30	200	<.5	.5	30	<200	10	10	R
15	<10	30	100	500	<100	20	50	500	<10	2	10	30	<20	50	200	<.5	.5	50	<200	15	15	R
5	<10	20	50	300	<100	50	20	1,000	<10	.5	<10	20	<20	30	300	<.5	.7	20	<200	7	10	R
10	<10	30	100	300	100	50	50	500	<10	2	15	30	<20	50	300	<.5	.6	50	<200	15	7	R
>2,000	500	<5	70	70	200	20	>20,000	1,500	20	1	<10	10	70	200	<10	2,000	320	<20	2,000	<5	<5	M
150	<10	10	30	1,500	300	<10	3,000	1,000	<10	2	10	20	<20	20	150	30	8.8	30	<200	15	10	R
20	<10	<5	<5	100	<100	<10	200	1,000	<10	<1	<10	<10	<20	15	10	1.5	1.8	<20	<200	<5	<5	R
15	<10	5	15	2,000	300	10	150	1,000	<10	1.5	10	30	<20	20	200	2	1.1	50	700	15	10	R
500	70	5	20	500	<100	150	3,000	3,000	<10	1.5	<10	70	50	70	50	70	47	20	1,000	10	7	M
Tungsten Hill Area																						
<5	<10	<5	<5	150	<100	<10	150	150	10	3	10	70	<20	10	10	<0.5	-------	<20	<200	<5	<5	R
<5	<10	<5	<5	100	<100	<10	300	300	15	3	30	100	<20	10	20	<.5	-------	<20	<200	<5	<5	R
<5	<10	<5	<5	70	<100	<10	30	10	<10	<1	20	100	<20	10	10	<.5	-------	<20	<200	<5	<5	R
<5	<10	<5	<5	200	<100	<10	200	700	15	3	30	150	<20	20	15	<.5	-------	<20	<200	<5	<5	R
<5	<10	<5	<5	200	<100	20	150	700	<10	5	15	100	<20	7	15	<.5	-------	<20	<200	<5	<5	R
<5	<10	<5	<5	100	<100	10	150	200	<10	2	10	20	<20	7	10	<.5	-------	<20	<200	<5	<5	R
<5	<10	<5	<5	200	<100	<10	150	700	<10	5	20	100	<20	7	10	<.5	-------	<20	<200	<5	<5	R
<5	<10	<5	<5	200	<100	<10	150	500	10	5	15	100	<20	<5	10	<.5	-------	<20	<200	<5	<5	R
<5	<10	<5	<5	700	300	10	150	1,000	<10	3	15	30	<20	20	150	<.5	-------	70	<200	7	5	R
<5	<10	5	<5	1,000	500	<10	10	3,000	<10	1	30	15	<20	15	15	<.5	-------	70	<200	7	7	R
<5	<10	<5	<5	1,000	300	<10	50	1,500	<10	<1	30	10	<20	20	150	<.5	-------	150	<200	5	7	R
<5	<10	<5	<5	700	300	<10	10	3,000	<10	2	70	20	<20	7	300	<.5	-------	100	<200	5	5	R
<5	<10	<5	<5	1,000	300	<10	30	3,000	<10	1	30	15	<20	15	300	<.5	-------	70	<200	5	5	R
<5	<10	<5	<5	1,000	700	<10	20	2,000	<10	1	50	15	<20	7	200	<.5	-------	100	<200	5	5	R
<5	<10	<5	<5	700	300	<10	200	2,000	<10	3	20	50	<20	50	200	<.5	-------	<20	<200	5	<5	R
<5	<10	<5	<5	500	100	<10	150	700	<10	10	30	30	<20	15	15	<.5	-------	<20	<200	<5	<5	R
5	<10	<5	<5	700	<100	30	30	700	<10	2	50	10	<20	20	200	<.5	-------	50	200	5	<5	R
<5	<10	<5	<5	500	200	10	150	3,000	<10	2	20	10	<20	5	50	<.5	-------	20	<200	5	<5	R
<5	<10	<5	<5	500	300	10	200	3,000	<10	5	15	20	<20	30	50	<.5	-------	<20	<200	5	<5	R
<5	<10	<5	<5	300	<100	10	100	1,000	<10	2	20	20	<20	<5	150	<.5	-------	<20	<200	5	5	R
<5	<10	<5	<5	700	<100	<10	200	500	<10	2	20	50	<20	15	150	<.5	-------	50	<200	5	<5	R
<5	<10	<5	<5	300	<100	<10	100	1,500	<10	2	20	10	<20	2	100	<.5	-------	<20	<200	5	<5	R
<5	<10	<5	100	500	<100	50	50	700	<10	5	20	30	<20	150	200	<.5	-------	70	<200	15	10	R
<5	<10	70	150	300	700	30	50	5,000	<10	1	15	30	<20	10	150	<.5	-------	100	<200	20	50	R
<5	<10	10	<5	3,000	1,000	10	5,000	500	<10	3	20	<10	<20	20	150	2	-------	<20	<200	<5	<5	R
<5	<10	20	15	2,000	1,500	<10	700	1,500	<10	5	20	30	<20	20	150	<.5	-------	70	<200	<5	<5	R

TABLE 2.—*Semiquantitative spectrographic analyses and gold*

Map No. (pl. 1)	Field No.	Lab. No.	Megascopic description of sample	Mg	Fe	Ca	Ti	Au	Au [1]	Au [2]	As	Sb	W	V
														Vault-Treasure
110	106	659	Altered, sulfide-bearing breccia (tailings)	2	10	5	0.5	<10	<0.02	------	<200	<100	<50	200
109	107	660	Yellow-stained quartz-stibnite-(?) (tailings)	.05	1	.2	.1	<10	<.02	------	5,000	>10,000	<50	15
109	108	661	Yellow-stained; quartz-(?) rock (tailings)	.1	3	.2	.2	<10	7.4	11.1	>10,000	>10,000	<50	15
														Ester Dome
173	62	618	Stibnite crystals (>2 in. long) in massive brown-stained quartzite	0.2	0.2	1	0.01	<10	<0.02	------	1,000	>10,000	<50	10

[1] Atomic absorption DCR-1, cold method, analyses by E. E. Martinez, T. A. Roemer, R. B. Tripp, A. L. Meier and R. L. Miller.
[2] Fire assay analyses by W. D. Goss, J. E. Troxel, and Claude Huffman, Jr.
[3] Atomic absorption analyses by Z. C. Stephenson and R. L. Miller.
[4] M, selected metallized sample; R, random rock sample.

analyses of rock samples from the Fairbanks district, Alaska

Mo	Sn	Ni	Cr	Ba	Sr	B	Pb	Mn	Bi	Be	Nb	Y	Cd	Cu	Zr	Ag[4]	Ag[3]	La	Zn	Sc	Co	Selected metallized or random rock samples[4]
Creek area																						
<5	<10	10	70	1,000	700	<10	20	2,000	<10	1	10	15	<20	15	50	<0.5	-------	20	<200	20	20	M
<5	<10	<5	<5	50	<100	15	150	15	<10	<1	<10	<10	<20	50	<10	<.5	-------	10	<200	<5	<5	M
<5	<10	5	15	100	150	100	<10	50	<10	<1	<10	10	<20	15	100	<.5	-------	<20	<200	<5	<5	M
area																						
<5	<10	5	<5	70	<100	<10	200	20	<10	<1	<10	10	<20	100	15	<0.5	-------	100	<200	<5	<5	M

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UNITED STATES DEPARTMENT OF THE INTERIOR

WALTER J. HICKEL, *Secretary*

GEOLOGICAL SURVEY

William T. Pecora, *Director*

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