

71-203
472

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

GEOCHEMICAL DATA FROM THE NABESNA C-4 QUADRANGLE, ALASKA

By

N.A. Matson, Jr. and D.H. Richter

Property of
DGGG LIBRARY

Open-file report

1971

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

MAP EXPLANATION

Nabesna C-4 quadrangle,
Alaska



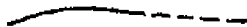
Stream sediment sample locality with map number on upstream side. Darkened quadrants indicate anomalous concentrations of Au, Cu, Mo, and Pb and/or Zn in clockwise order from top. Example 77 is anomalous in Cu and Pb. See Table 1 for analytical values.

109 ▲

Rock sample locality and map number. See Table 2 for analytical values and description of samples.



Altered zone characterized by limonite staining from the weathering of disseminated sulfides and iron carbonate-rich sedimentary rocks.



Approximate contact of intrusive rocks, dashed where covered.

TABLE 1

Analyses of stream sediments
Nabesna C-4 quadrangle, Alaska

Limits of determination shown in parentheses under element.

Map No.	Field No.	Concentration (ppm)									
		Ag (.5)	Au (.02)	B (10)	Cr (5)	Cu (5)	Mo (5)	Ni (5)	Pb (10)	V (10)	Zn (200)
1	70-RL-31	N	L	30	700	70	L	150	20	300	N
2	70-RL-32	N	L*	50	300	100	L	150	15	300	N
3	70-RL-33	N	L	150	1500	100	5	150	30	300	L
4	70-RL-135	N	L	30	700	70	L	100	20	300	L
5	70-RL-134	N	L	50	700	100	L	150	30	300	L
6	70-RL-133	N	L	100	150	100	L	70	20	500	N
7	70-RL-136	N	L	150	150	100	L	100	70	500	L
8	70-RL-132	N	L	50	300	70	L	100	20	300	N
9	70-RL-131	N	L	30	700	100	L	100	20	500	N
10	70-RL-130	N	L	50	150	70	L	70	15	300	N
11	70-RL-129	N	L	30	150	100	L	70	10	300	N
12	70-AMn-71	N	L	100	150	150	L	150	20	500	N
13	70-AMn-70	N	L	30	150	100	L	100	10	300	N
14	70-AMn-69	N	L	70	150	100	L	70	10	300	N
15	70-AMn-68	N	L	30	100	70	L	70	L	300	N
16	70-AMn-67	N	L	70	150	70	L	70	10	300	N
17	70-AMn-66	N	L	50	150	150	L	100	10	300	N
18	70-AMn-63	N	L	30	150	150	L	70	20	500	L
19	70-AMn-62	N	L	100	200	100	L	150	20	300	N
20	70-PCL-43	N	L	500	150	100	5	100	20	500	N
21	70-PCL-44	N	L	70	300	150	5	100	15	500	N
22	70-AMn-55	N	L	70	300	150	L	100	20	500	N
23	70-AMn-57	N	L	70	150	100	L	70	15	300	N
24	70-AMn-54	N	L	70	150	150	L	100	20	500	N
25	70-AMn-53	N	L	200	300	150	5	100	15	700	N
26	70-AMn-52	N	L	700	700	150	7	150	10	700	N
27	70-AMn-61	N	L	200	150	150	7	100	20	300	N
28	70-AMn-60	N	L	70	150	100	L	100	15	500	N
29	70-AMn-59	N	L	30	150	100	L	70	10	300	N
30	70-AMn-58	N	L	50	200	100	L	100	15	500	L
31	70-ARh-50	N	L	30	100	70	L	70	15	300	N
32	70-ARh-51	N	L	20	100	50	N	50	N	300	N
33	70-ARh-52	N	L	30	100	150	L	70	15	500	N
34	70-ARh-54	N	L	70	150	150	L	100	15	500	N
35	70-ARh-53	N	L	70	150	100	L	100	15	500	N

TABLE 1, cont.

Map No.	Field No.	Concentration (ppm)									
		Ag (.5)	Au (.02)	B (10)	Cr (5)	Cu (5)	Mo (5)	Ni (5)	Pb (10)	V (10)	Zn (200)
36	70-RL-98	N	L	70	150	100	L	100	15	500	N
37	70-PCL-55	N	L	30	150	70	L	70	L	500	N
38	70-RL-92	N	L	30	70	50	N	30	L	300	N
39	70-PCL-54	N	L	50	150	150	L	100	20	300	N
40	70-PCL-52	N	L	50	150	150	L	100	10	300	N
41	70-RL-93	N	L	150	150	150	L	150	10	500	N
42	70-RL-95	N	L	70	150	150	L	100	15	500	N
43	70-RL-94	N	L	70	150	100	L	100	15	300	L
44	70-RL-99	N	L	70	100	70	L	70	10	300	N
45	70-RL-100	N	L	70	150	100	L	100	20	300	N
46	70-RL-101	N	L	100	150	300	L	150	70	300	200
47	70-AMn-177	N	L	30	150	30	L	70	15	200	N
48	70-AMn-178	N	L	30	100	30	L	70	10	300	N
49	70-AMn-179	N	L	30	150	15	L	70	10	300	N
50	70-RL-82	N	L	70	150	70	L	70	15	300	N
51	70-RL-81	N	L	70	150	70	L	70	15	300	N
52	70-RL-80	N	L	70	150	100	L	100	15	300	N
53	70-RL-69	N	L	70	150	150	15	100	15	300	N
54	70-RL-68	N	L	50	200	150	L	100	15	300	N
55	70-RL-64	N	L	30	150	150	L	70	20	300	L
56	70-RL-65	N	L	50	200	150	L	70	20	300	N
57	70-RL-66	N	L	70	200	150	L	100	15	300	N
58	70-RL-67	N	L	100	150	150	L	100	30	300	N
59	70-RL-70	N	L	70	150	150	L	70	30	300	N
60	70-RL-83	N	L	50	150	100	L	100	15	500	N
61	70-RL-84	N	L	70	150	100	L	70	15	500	N
62	70-RL-85	N	L	50	100	70	L	70	15	300	N
63	70-RL-86	N	L	70	150	70	L	70	30	300	N
64	70-RL-87	N	L	70	150	70	L	100	15	500	N
65	70-RL-88	N	L	50	150	100	L	100	15	300	N
66	70-RL-89	N	L	70	150	100	N	70	10	300	N
67	70-RL-90	N	L	50	150	150	L	100	15	300	N
68	70-RL-91	N	L	70	150	70	L	100	20	500	N
69	70-AMn-65	N	.08	50	150	150	L	100	10	300	N
70	70-ARh-47	N	L	50	150	100	L	70	20	300	N
71	70-ARh-46	N	L	50	70	150	N	30	30	150	N
72	70-ARh-44	N	L	70	150	150	L	100	20	500	N
73	70-ARh-45	N	L	30	150	150	L	70	15	300	N
74	70-PCL-58	N	L	50	150	150	L	100	15	500	N
75	70-PCL-57	N	L	30	150	150	L	100	15	500	N

TABLE 1, cont.

Map No.	Field No.	Concentration (ppm)									
		Ag (.5)	Au (.02)	B (10)	Cr (5)	Cu (5)	Mo (5)	Ni (5)	Pb (10)	V (10)	Zn (200)
76	70-ARh-48	N	L	30	300	150	5	100	15	500	N
77	70-ARh-49	N	L	50	150	150	L	100	30	300	N
78	70-RL-71	N	L	30	150	70	L	70	L	300	N
79	70-RL-72	N	L	50	150	70	L	100	10	300	N
80	70-RL-73	N	L	70	150	100	L	100	15	300	N
81	70-RL-74	N	L	150	150	150	L	150	15	300	N
82	70-RL-75	N	L	50	150	70	L	70	15	300	N
83	67-ACH-218	N	L*	70	500	300	N	150	L	700	N
84	67-ACH-217	N	L	70	150	150	N	70	15	200	N
85	67-ACH-214	N	L*	20	150	100	N	70	10	200	N
86	70-RL-77	N	L	50	150	150	L	70	20	300	N
87	70-RL-76	N	L	50	150	100	L	100	10	300	N
88	70-RL-78	N	L	30	200	100	L	100	10	300	N
89	67-ACH-215	N	L	20	200	100	N	50	L	200	N
90	67-ACH-216	N	L	20	200	100	N	50	10	200	N
91	70-PCL-45	N	L	30	300	100	5	150	20	500	N
92	67-ACH-203	N	L	20	300	100	N	70	10	200	N
93	67-ACH-204	N	L	10	150	70	N	30	L	150	N
94	67-ACH-212	N	L	50	200	70	N	70	20	200	N
95	67-ACH-213	N	L	50	150	70	L	50	15	100	N
96	67-ACH-207	N	L	50	150	70	N	50	10	200	N
97	67-ACH-208	N	L	L	150	100	N	50	L	150	N
98	68-CWK-113	N	L	30	100	70	L	70	L	150	N
99	68-CWK-106	N	L	10	200	70	N	150	L	300	N
100	67-ACH-209	N	L	L	200	70	N	50	10	300	L
101	67-ACH-211	N	L	50	300	150	N	100	15	200	N
102	67-ACH-210	N	L	50	700	200	N	150	15	300	N
103	68-CWK-108	N	L	10	150	100	L	70	L	200	L
104	67-ACH-219	N	L	50	300	200	N	150	L	300	N

L = detected but below limit of determination; * = usual limits of determination do not apply due to use of different sample weight; N = not detected.

Gold by atomic absorption. Analysts: Meier, A.L.; Miller, R.L.; Murrey, D.G.; Roemer, T.A.; Tripp, R.B.

Other elements by semiquantitative spectrographic analysis. Analysts: Curry, K.J.; Hopkins, R.T. Jr.

TABLE 2

Analyses of rocks and altered material
Nabesna C-4 quadrangle, Alaska

Limits of determination shown in parentheses under element.

Map No.	Field No.	Concentration (ppm)									
		Ag (.5)	Au (.02)	B (10)	Cr (5)	Cu (5)	Mo (5)	Ni (5)	Pb (10)	V (10)	Zn (200)
105	70-PCL-48	N	L	30	150	500	5	50	10	1000	N
106	70-AMn-50	N	L	30	700	150	30	150	L	700	N
107	70-AMn-51	N	L	15	150	200	L	100	15	500	L
108	70-PCL-51	N	L	30	70	50	L	50	20	200	N
109	70-RL-97	N	L	50	150	70	L	70	15	500	N

L = detected but below limit of determination; N = not detected.

Gold by atomic absorption. Analysts: Miller, R.L.; Murrey, D.G.

Other elements by semiquantitative spectrographic analysis. Analyst: Curry, K.J.

Description of Samples

Map No.	Elevation	Description
105	5900'	Random sample of altered, sulfide-bearing diorite.
106	5100'	Random chip sample of iron-stained pyrite-bearing hornblende diorite.
107	5100'	Random chip sample across 20 feet of iron-stained hornfelsed metasedimentary rocks with relict graded bedding.
108	5760'	Random sample of float from iron-stained graded bedded sedimentary rocks.
109	4600'	Grab sample of fault gouge.

ANALYTICAL NOTES

Nabesna C-4 quadrangle, Alaska

1. All stream sediment analyses performed on -80 mesh fraction.
2. In all analyses, excepting gold, the results are reported to the nearest number in the series 0.1, 0.15, 0.2, 0.3, 0.5, 0.7, 1, . . .
3. Copper, lead, molybdenum, and zinc are considered anomalous if they are reported in concentrations approximating, or greater than, 3 times their mean background. With the exception of amygdaloidal basalt terrane, mean background in the area closely approximates average crustal abundance: i.e. copper, 55 ppm; lead, 12.5 ppm; molybdenum, 1.5 ppm; zinc, 70 ppm. Background concentrations for copper and certain other elements in amygdaloidal basalt terrane are considerably higher than crustal average, hence samples 101, 102, and 104 from streams draining amygdaloidal basalts and with copper contents of 150 - 200 ppm probably should not be considered anomalous.
4. Gold and silver are considered anomalous for all values at or above their limits of determination since these limits are greater than 3 times the average crustal abundance for these metals.
5. As, Ba, Be, Bi, Ca, Cd, Fe, La, Mg, Mn, Nb, Sb, Sc, Sn, Sr, Ti, W, Y and Zr were also looked for and significant anomalies are as follows:

<u>Sample No.</u>	<u>Anomalies (values in ppm)</u>
31	Sr 1500
39	Sr 1500
91	Sr 1500
105	Sc 100
106	Sr 1500