

PE-103-02

TERRITORY OF ALASKA

DEPARTMENT OF MINES

SUPPLIMENTARY EXAMINATION REPORT

McNEIL COPPER CLAIM GROUP
(E.E. Sargent & Associates, Owners)

PAINT RIVER AREA, KAMISHAK BAY REGION, ILIAMNA PRECINCT
ALASKA PENINSULA

DEPARTMENT OF MINES
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by

M. W. JASPER

TERRITORIAL MINING ENGINEER

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References:

1. U.S.G.S. Bul. No. 773-D, Pages 162-164
2. 1953 Report, M. W. Jasper, Territory
Department of Mines.

Appended:

Maps No. 6 - 7 - 8.

Report on Folly Mineral Claim Copper Occurrence. - PE-103-2

SUMMARY

Work done upon the old McNeil copper claim group, since the 1953 report, has been limited to cleaning out No. 3 Adit and several open-cuts. Of the latter, only two remained open; two others, having been "sluffed-in" by heavy rains shortly before arrival, were partially cleaned out during the 1955 investigation. As a result, little additional information of encouraging nature was obtained.

Examination of the limited lateral work, completed on Adit No. 3 level by the original owners, indicates the ore shoots lenses or "pods" to be "spotty" and small in size. In this working maximum depth reached is estimated at 30 feet.

The mineralization present at collar of 10 foot winze, located on east side and a few feet from Adit No. 2 portal, is very encouraging, although its limited exposure suggests it be a small lense.

Alignment of the old workings supports belief of a northeasterly trending sheared zone, 40 feet or more in width, being controlling structure in which the contact metamorphic mineral deposition was largely confined. With probably a larger number of northerly striking faults present than was observed, ore occurrences may be limited to areas close to them within the wide shear zone. A limited diamond drilling program is indicated as being preferred means of proving possible economic importance of mineral occurrences in this area.

Copper and magnetite occurrences in upper Crevice Creek, as presently known, are not considered of economic importance.

The magnetite occurrence $1\frac{1}{2}$ mile north of the camp, discovered last year, may prove to be of interest. Diamond drilling will be best method to determine its lateral extent and thickness, as the steep slopes are covered by tundra and dense brush growth.

INTRODUCTION

The old McNeil copper prospect was revisited Sept. 15th to 17th, 1955, at request of owners, after receiving advice that Adit No. 3 and several old open-cuts had been cleaned out for examination. They also advised at the same time that new magnetite occurrences had been located nearby, that a copper occurrence on upper Crevise creek - covered by a snow drift when property was examined in early July, 1953 - was free of snow.

Attention was also called to fact that they had located another old copper prospect about 10 miles north of the McNeil claim group.

The above mentioned were all examined.

With perfect weather prevailing, the trip to the property was made in record time. Leaving Anchorage at 7:20 A.M. via Pacific Alaska Airlines the direct flight arrived at Iliamna at 8:35 A.M. Departing from Iliamna at 10:10 A.M. by "bush" float plane, landing on Pilot Knob Lake was made at 10:45 A.M. The 3 mile hike with packs was made in one hour and twenty minutes, arriving at the temporary camp on the McNeil copper prospect at 1:00 P.M.

LOCATION AND ACCESSIBILITY

The property is located at approximate geographical coordinates, Longitude $154^{\circ} 40'$ and Latitude $59^{\circ} 07'$ North. For additional details concerning its location and accessibility reference is made to the 1953 report and to attached key map of area, Plate 8.

CLIMATE AND VEGETATION

The area is subject to frequent rain storms during summer months and fairly heavy snowfall during the winter, with strong winds resulting in deep snow drifts, which may remain until late July. Sub zero weather is said to be uncommon.

During summer months the lowlands are covered with heavy grass growth, three to six feet in height. Alder and willow has a dense growth in some valley areas and mountain slopes although foot travel in the district is easy. *

The nearest mine timber is 20 to 30 miles distant, as locally tree growth is limited to scattered cottonwood and few spruce.

* Refer to pictures on Plate 4 and 5. 1953 Report.

WATER SUPPLY

Paint river should supply ample water throughout the year for any sized mining operation, as well as having possibilities for some power development. *

TOPOGRAPHY

A typical glaciated region, there are numerous lakes in the lowlands and U-shaped valleys and cirque hanging valleys in the uplands, with maximum elevations along the higher ridges estimated at 3000 to 4000 feet.

HISTORY AND OWNERSHIP

This has been discussed in considerable detail in the 1953 report. The claims originally discovered and located by C.H. McNeill and associates in 1911, and held by them for about 15 years, were relocated by E.E. Sargent and associates in June and July 1953. This partnership was composed of -

E. E. Sargent	-	Spenard, Alaska
E. S. Pfaff	-	Naknek, Alaska
Wm. Hammersly	-	Anchorage, Alaska
Leon Alsworth	-	Port Alsworth, Alaska

In 1955 Mr. Hammersly's interest was acquired by Terry Gill, Larson Bay, Kodiak Bay, Alaska. Mr. Sargent is spokesman for the group.

To the 8 claims located in 1953, three have been added in upper crevice creek area, and one covering the magnetite occurrence $1\frac{1}{4}$ mile north of their temporary camp.

GEOLOGY

Geological coverage of the Kamishak Bay region is limited to the work of K.F. Mather, U.S. Geological Survey Bulletin 773-D, 1923.

His map (Plate 3) showing the upper Paint river section which includes the old McNeill claim group area (shown on Plate I of the 1953 report and on Plate 8 attached) outlines an irregular mass of Lower to Middle Jurassic rocks intruded into Paleozoics of two general types:-

I. A complex of gneiss, quartitic schist, and quartzite. These are the oldest rocks, and are highly metamorphosed sediments.

* Refer to pictures on Plate 4 and 5, 1953 Report.

These rocks vary greatly from place to place. The gneisses also vary greatly in width, direction, and intensity, and have no definite trend. Members of this group change quickly in character and composition.

2. Crystalline limestone and calcareous schist. These highly metamorphosed sediments are shown as a "remnant" of northeasterly trend of elongated form, about three miles in length and one mile in width; it is considered "possible they represent higher members of the gneiss and quartzitic schist that surround them, which have been preserved at this locality because it is approximately in trough of a great synclinal fold".

These calcareous sediments are considered of special interest "because of their relation to the (McNeil) copper properties". *

1955 Work and Investigations

Work done during 1955 included the following:-

I. Adit No. 3 was cleaned out. This old working, limited in depth of 20 to 30 feet below surface, provides the only limited opportunity to date to study structural conditions and mineralization characteristics underground. From portal for 25 feet the adit cross-cuts the formation and follows footwall side of a strong fault zone. It was driven through a gossan capping and indications point to it having encountered small lenses of sulfides (chalcopyrite and pyrite). **

At 23 feet the cross-cut intersected a well defined wall, dipping 70° to 80° north and striking N70-72W, the adit cross-cut and cross-cut from the drift suggest this shear zones width to be 45 feet or more, and composed of highly altered sediments. The well defined wall was followed in drifting for 70 feet on an average N70W bearing. From face of drift an inclined raise has been driven into west end of the old No. 9 open-cut, floor of which is about 20 feet vertically above drift floor. This raise has been completely filled by deposition of limonite, migration of which mineral is currently continuing. **

The cross-cut at 18 feet N65W from adit was driven 20 feet at N11E, and stopped at intersection of a fault bearing N65 to 70E and dipping 80° north. An four inch gouge seam is present in roof. A 12 inch width of 7% copper is present at face on west wall 2.5 feet above floor; this vein or lense splits near the roof where it shows a 36 inch width of irregular mineralization of lower grade. With malachite predominant, chalcopyrite and pyrite are the other minerals present. **

* Refer to: U.S.G.S. Bul. 773-D Pages 162-164 and to 1953 Report.

** Refer to Plate 6.

Eight feet from face of this hanging-wall there is a small lense (or pod) of Malachite, chalcopryite and pyrite in the roof; at 16 feet from face there is a little malachite currently being deposited on the roof. This cross-cut was driven largely through actinolite and calcite, both of which are coarsely crystalline.

In the drift 8 feet west of cross-cut a fault of minor displacement was intersected with N12W strike and 65° degree dip to east. Continuing westerly in drift at 32 feet from the hanging-wall cross-cut there is a 26 inch width of malachite, chalcopryite, and pyrite in the roof of 6.4% copper; its width is indicated to be wider than that sampled as mineralization is present in north wall of drift. This lense does not continue across drift, and no fracturing was evident cutting the well defined wall on south side; however, it is probable the showing sampled may be a continuation of that present at face of cross-cut 35 feet to the northeast. *

No other copper mineralization was noted in this working. No malachite was seen in the limonite filling the short raise - and currently being deposited in the drifts west end.

2. Open-cut No. 9. At south end and in east bank a "possible" lense of solid pyrite and chalcopryite may occur. Here a weathered, crumbly discovery was made which is 6 inches in width and about 1½ foot in length. It had not been dug into, to determine its full width or extent, or whether it was "float" which slipped down the hill, or had been thrown out of the open-cut by blasting. Should it be "in place", it would lie 15 to 20 feet in the foot-wall of the drift below; this latter could be a reasonable expectation in view of the indicated smalllenses of solid sulfides that were encountered in driving No. 3 adit cross-cut. *

3. Open-cut No. 5. Located 75 feet west of No. 9 open-cut, it was cleaned out and shows a 2 foot gossan capping containing abundant malachite and a very coarsely crystalline calcite lense 10 foot wide in bottom of the cut. The limonite capping, as well as its contained malachite, lies parallel to surface. These secondary minerals also are being currently deposited, and their migration apparently is from a source above (beyond) face of the cut as no primary sulfide minerals are present there. *

4. Open-cut No. 6. This old working, 450 feet west of No. 5, had been cleaned out in 1955, but heavy rains shortly before visit had washed bank into it. Digging into upper end of this 40 foot trench for a foot or so, its upper end revealed some cuprite, malachite, azurite, and very little chalcopryite, and a few grains of pyrite. The cut was not sufficiently cleaned to permit proper sampling, so that its width, lateral extent and value could not be determined. **

* Refer to Plate 6, attached.

** Refer to Plate 7, attached.

The work at four points is on the McNeil No. I claim.

5. Open-cut No. 11. Located on northeast bank of Crevice Creek, a trench 8 or 10 feet long was dug in the bank at southeast end of a long trench dug by original owners in an iron stained, weathered, sedimentary section. Except for iron (Limonite) stain and a little red hematite, no mineralization was present. *

6. Open-cut No. 10. Located on southwest bank of Crevice Creek; this cut had also been cleaned out last summer, but heavy rains had filled it in. However, it was cleared again sufficiently to expose 12 inches of bedrock in a sheared zone, which was found to contain some cuprite, malachite, and a little azurite, chalcopryite, limonite and hematite. Its full width and lateral extent was not determined. A grab sample of better pieces from this exposed section carried 8% copper and chip sample across the 12 inches went 1.9% copper and 14.5 ounces in silver. This cut is considered to be on same mineralized zone exposed at McNeil claim discovery post, 160 feet distant, where similar mineralization occurs. *

Open-cuts No. 10 and No. 11 are both on the McNeil mineral claim.

7. Adit No. 2, McNeil No. 2 mineral claim. This caved portal was not cleaned out. However, the old cut above it was, which gave access to a 10 foot winze and the four feet driven to northwest by original owners, possibly started to get around the caved portal. The winze was started on a short (localized?) highly silicified limestone (?) section having abundant fine-grained chalcopryite and some pyrite across a 12 inch width (copper 6.7% and 10.3 ounces silver); mineralization decreased considerably in 10 foot depth obtained. This showing (the "healthiest" mineralization noted) was overlain by several feet of gossan capping, whose lateral extent had not been determined, but was at least 5 to 10 feet on each side.

The 40 foot trench leading to the caved portal cut through 20 to 30 feet of gossan, (more or less paralleling slope and 2 to 4 feet in thickness) capping, in which a number of small irregular lenses or "pods" of solid chalcopryite and pyrite occurred. Remnants of these lenses suggest they may have been 6 to 8 feet in length and several feet in thickness and width. *

Access to Adit No. 2 level would have probably given more definite proof of the suggested northeasterly striking wide shear zone, as well as desirable information on ore deposition habits. There is the chance it might show that northerly or northwesterly fractures or faults might have provided the mineralizing channels, instead of the suggested northeasterly striking shear zone.

* Refer to Plate 7, attached.

(d) From 130 to 300 feet and 20 to 50 feet above and on right limit (west) slope of creek, there is an iron stained granitic porphyry dike (?) which strikes N10 to 20W and dips steeply to west. Its contact is not sharply defined; it contains a little disseminated pyrite. This dike reappears for short distances at two points in next several hundred feet with similar sparsely disseminated pyrite.

(e) For 130 to 230 feet upstream from McNeil No. 7 corner post, there is fairly abundant "float" in the creek bed and on the east bank slope, with some chalcopryite and malachite present in epidotite and actinolite.

(f) From 230 to 300 feet upstream from above noted corner post "float" is present in the creek. At 300 feet (which is around 20 feet from McNeil No. 7 Discovery Post) on west side slope, short distance above the creek, there is a small mass of epidote in which irregular lenses of coarsely crystalline calcite occurs. Appreciable amounts of malachite, chalcopryite, and specular hematite are associated with the calcite.

(g) On east side of creek, in section 200 to 300 feet upstream from McNeil No. 7 southwest corner post, there is a 100 foot estimated width showing copper mineralization (this is area which was covered by snow drift when visited in July, 1953). The 70 feet on south side is composed largely of epidote with some actinolite.

On north side of this 70 foot section there is a gray, fine grained dike, 30 feet in width, at creek level, which has a N65E strike and steep northwest dip.

At approximately 150 feet to northeast the dike narrows to 20 foot width and from that point northeasterly is obscured by small talus and moss in a shallow depression. The dike contains very little chalcopryite and malachite.

A grab sample was taken across the 70 foot section and it was estimated to contain 2 to 4 per cent copper. With its south side being of irregular outline, and lacking a strong structure, or evidence of its continuation to northeast or southwest, it is considered to be a localized area. Unfortunately, the grab sample across this section was lost in shipping.

About 150 to 200 feet northeast of McNeil No. 7 Discovery Post, there is a shallow depression 12 feet in width, having a "strike" course of S65E. Shallow digging in this depression shows presence of abundant broken magnetite, but it has not been trenched to show its full width or possible lateral extent "in place".

(h) Continuing upstream from the McNeil No. 7 Discovery Post, there is an epidotite dike that follows the creek bed for an estimated 500 to 600 feet, which does not appear to be appreciably mineralized. From vicinity of the same discovery post

8. Adit No. 1. This old, caved working was re-examined, although it had not been cleaned out. On dump at west side of portal there is abundant malachite, azurite, coarse calcite (up to 4 in.) crystals, and limonite, with little chalcopryite or pyrite observed.

The structure from which this material was removed was not evident in this 30 to 40 feet adit, as only occasional malachite stain was noted.

Adits No. 1 and No. 2 are located on McNeil No. 2 mineral claim.

9. Joker Claim. Approximately 150 feet southwest of "joker" discovery post there is an isolated outcrop showing a little chalcopryite associated with calcite and actinolite.

"Ribs" of garnetized igneous (granitic) rock, having N70 to 75E bearing, are present in this area. The depressions on each side of the "ribs" suggest fault zones of probable small displacement. The garnetized sections have been followed up the slope to point where it "breaks" into south end of crevice creeks "hanging-valley". A few shallow pits have been dug in this zone which show little malachite associated with epidote and actinolite.

These occurrences are considered of no economic importance.

10. Upper Crevice Creek reconnaissance. During day spent traversing that area, which lies in a hanging-valley, numerous copper and magnetite occurrences were noted. From south end of this glacial cirque basin to head of the main stream (a distance of $3/4$ to 1 mile) its general course is N20W. The east and west forks join the main stream about halfway.

(a) On left limit slopes (east side of creek) at south end of basin, chalcopryite and malachite occurs in small masses of epidotized and garnetized rock, with abundant actinolite. With mineralization scattered and disseminated as small grains and fair sized "blebs" favoring the actinolite, there is no well defined structure and this section has no apparent economic significance.

(b) From southwest corner post of McNeil No. 7 claim, located in creek bed few hundred feet north of the hanging valley's south end, copper mineralization occurs at intervals for 450 feet upstream. In the first 100 feet, a few pieces of "float" were noted in creek bed and a few grains of chalcopryite in the granite bedrock were seen.

(c) At 100 feet (on right limit slope, west side of creek) there is a small mass of epidote with some actinolite, the latter carrying some malachite and little chalcopryite.

for a greater distance there is a very fine grained light colored dike on east side of creek, in which no mineralization was noted. Both dikes disappeared under a probably shallow residual soil and small talus mantle.

(i) Near base of steep mountain slopes, at head of this glacial cirque valley, fairly abundant magnetite "float" was noted in the talus between Crevice Creeks main stream and the east fork. Continuing easterly there are two outcroppings of magnetite, several hundred feet apart. The more easterly one is rounded (by glaciation?) and 25 to 35 feet stands above the basin floor, has 50 to 75 feet width at its base, in the center, and is 100 to 150 feet long. It appears to be fairly pure and has an estimated 10,000 tons. The westerly occurrence is smaller, with a possible 5,000 tons. No copper minerals were noted in them.

(j) Continuing easterly to rim of the glacial basin, where mountain slope plunges into Pain river valley, for an estimated 1200 feet, some small magnetite "float" and an occasional very small "pod" or lense was noted in the granite.

II. Descending the steep slope, from an estimated 2000 foot elevation, on the west side of Paint river valley, a shallow depression was followed, with occasional magnetite "float" observed. Two to 300 feet vertically above foot of slope an open-cut had been excavated at one side of the shallow draw, in 1955. Benched in two steps, it had a 10 to 12 foot face; at one point in face, where a little water was seeping through the soil and decomposed granite sandy clay a few "beads" of malachite was being formed. In bottom of cut some magnetite was exposed but it is doubtful that the cut was on bedrock. This work is an estimated $1\frac{1}{2}$ mile north of the temporary camp and 300 to 400 feet above Paint river.

At an estimated $\frac{1}{4}$ mile closer to camp and 500 to 600 feet above the river, opposite mouth of the Middle Fork, shallow digging uncovered magnetite across horizontal distance of 300 to 400 feet or more at each of two sections, which are thought to be several hundred feet apart. The most southerly section only was examined. On this one only a few feet of bedrock was exposed in each cut beneath 6 or 8 inches of moss and soil in a dense alder growth. Of 5 or 6 cuts examined, 3 appeared to show high grade magnetite, and the others were possibly 50% magnetite. No samples were taken. Considerable work will have to be done to determine thickness and lateral extent of the deposit before tonnage estimates can be made.

* Refer to Plate 8, attached, for location.

Mineralization

While this subject has been discussed herein in some detail, additional comments are made:-

I. Mineralization in area of the McNeil group of mineral claims is fairly widespread. The most well defined copper occurrences, although old workings are widely spaced, presently appear to be confined to section 2500 feet in length. From map made in 1953 following a Brunton and paced survey, which tied-in the old workings, the general trend of the mineralized zone seems to be N65 to 70E, extending from Adit No. 1 on McNeil No. 3 claim at easterly end of the property westerly through the McNeil No. 2 and No. 1 to showings on the McNeil mineral claim on west side of Crevise Creek. This is suggested by the alignment of old work and without benefit of access to and mapping of all underground workings. *

Accessible short adits (No. 1 and No. 4) in 1953, and a few old cuts indicated the presence of a wide shear zone, more or less paralleling local strikes and steep dips of the highly altered and metamorphosed sediments of the area. Adits, trenches and open cuts, appeared designed to cross-cut the mineralized formation. Prevalence of epidotization, garnetization, actinolite, magnetite and other features mark the section as being close to an igneous contact, and the mineral occurrences being typical of contact metamorphic type.

Most of original work by Mr. McNeil was concentrated on what is now called the McNeil No. 1 claim. In 1955 Adit No. 3 portal was cleared and examination shows the adit cross-cut the formation and then swung to follow a well defined wall, locally striking N70W for short distance drifted upon. ** A cross-cut was driven to north for twenty feet, revealing a strong fault of N65 to 70E strike and a 4 inch gouge seam, appears equal to or stronger than fault followed by adit cross-cut. The fault shown 8 feet west of hanging-wall cross-cut shows no marked displacement.

Strike of fractured zone in open-cut over the caved No. 2 adit portal is also N65 to 70E and the 40 foot trench to this adit portal indicates a fractured zone wider than the 40 feet at No. 3 adit level. Fracturing across the apparent northeasterly trending shear zone provided mineralizing channels which could have localized mineral deposition and were responsible for the small lenses and confined them, as found to date. Insufficient underground development work has been done to determine recurrence frequency of the lenses.

* Refer to Plate 2, 1953 Report.

** Refer to Plate 6, 1955 Report.

Although open-cuts on the McNeil mineral claim line up with general trend of mineralized zones found in old workings to the northeast, the former are on a shear zone of gneissic structure having a northerly strike and westerly dip.

Primary minerals in this area are confined to pyrite, chalcopryrite, and magnetite. The secondary copper minerals in order of abundance are malachite, azurite, cuprite, and possibly a little chryscolia. Limonite is common and together with malachite was noted being currently deposited at several points. Gold content is erratic while silver occurs in important amount in most samples.

2. In lower end of basin in upper Crevice Creek chalcopryrite is the more common copper mineral with minor amounts of malachite. Very little pyrite is present. Magnetite in minor amounts was noted. The estimated 2 to 4% copper across 70 foot width near McNeil No. 7 discovery post, in an isolated epidote-actinolite mass, is the only encouraging copper occurrence in this area but it lacks length and the probable depth required to be of economic interest.

3. Mineral occurrences noted in northeast section of upper Crevice Creek basin were limited to magnetite with occasional traces of chalcopryrite and malachite, as previously described.

4. At magnetite occurrences $1\frac{1}{4}$ mile north of the temporary McNeil campsite, only a trace of malachite was noted at one isolated spot.

Sampling

The following samples were taken and their values and location are as follows:-

(See Page 12 for Sample Results)

Sample Results

Sample No.	Width inch's	Au oz	Ag oz	Cu %	Description
1-McN	30	nil	nil	Tr	Face of No. 11 open-cut dug in '55. Located on east side of Crevice Cr. 150-200' below falls. No mineralization noted.
2-McN	6	nil	10.42	2.31	Solid sulfides discovered in '55. Located at south end No. 9 open-cut in east bank. Chalcopyrite, pyrite & little limonite.
3-McN	12	0.04	6.24	7.03	West wall, 2.5' above floor at face of hanging wall cross-cut in No. 3 Adit. Malachite, chalcopyrite & some pyrite.
4-McN	26	0.08	9.12	6.41	Roof of drift 32' west of H.W. Cross-cut in No. 3 Adit. Chalcopyrite & malachite with little pyrite.
5-McN	32	nil	2.00	8.41	West bank at face of No. 5 open-cut cleaned out in '55. "Gossan" with abundant recent malachite.
6-McN	Grab	0.04	0.56	8.01	Grab of best material from No. 10 open-cut thrown on bank in cleaning out in '55. Contains cuprite, malachite, & little azurite, chalcopyrite, limonite, & red hematite. Located on west side Crevice Creek.
7-McN	12	nil	14.52	1.91	Chip sample from bedrock of partially cleaned out No. 10 open-cut. Full width not exposed. Little cuprite, malachite, azurite & (red) hematite.
8-McN	Grab	nil	1.54	tr	Taken by E. Pfaff from showing at head of Crevice Cr. west fork. No work done upon it, so was not examined. Few grains of pyrite and very little malachite staining.
9-McN	12	0.20	10.32	6.76	Taken across the short highly silified limestone section above 10' winze collar located few feet east of No. 2 Adit portal. Abundant fine grained chalcopyrite & some pyrite.
12-McN	Grab	nil	0.80	tr	Taken by Sargent Aug. '55 from outcrop beyond Pfaff's No. 8-McN & similar to it. Abundant specular hematite in brecciated volcanic(?) agglomerate. Some limonite. No sulfides. Epidote & red material.
13-McN	Grab	0.04	23.20	7.83	Taken by Sargent Aug. '55. One piece 4"x4" x5" from open-cut No. 9 east face over raise from No. 3 Adit. Highly oxidized. Chalcopyrite & pyrite in limonite.
14-McN	Grab	0.56	2.88	5.25	Brought in by Terry Gill or E.E. Sargent in Aug. '55, & reported to be from head of Crevice Cr. west fork. Est. 60% sulfides. Pyrite, chalcopyrite & little malachite, limonite. Brecciated. Sample 1 piece 2½" x 3½" x 5".

(See Note on Page 13, following)

Note:- The showings in area at head of Crevice Creeks west fork from which the "grab" samples were taken by Mr. Sargent and Mr. Pfaff, were not examined as no work had been done upon them, and their report indicates the material to have been "float".

CONCLUSIONS

Results of reexamining the copper showings along the zone between the McNeil claim on the west end and McNeil No. 3 at easterly end did not reveal any new points of especially encouraging interest.

The No. 3 Adit level, limited to 30 foot depth below surface, shows only a short section of fair copper mineralization in the 70 feet of drifting along the wide shear zone. That occurrence may be the west end of a lense intersected at face of the cross-cut driven 20 feet north from the drift, as shown on attached Plate 6.

Source of the 1 ton or so, of solid pyrite and chalcopyrite ore on the dump appears to have been derived from small lenses encountered in driving the adit cross-cut through the gossan capping and along footwall side of the fault for the 30 feet from portal. There is no evidence of any similar sulfide remnants remaining in the drift or north cross-cut, but there is the possibility some of that ore may have come from No. 9 open-cut. Recent filling of the short raise with limonite was probably derived from solid sulfide lenses in area of that old open-cut.

The presence of gossan "cappings" at the widely spaced workings suggests possibility of finding enriched zones with depth in calcareous beds. However, the 70 feet of drifting on the No. 3 adit level shows ore occurrences to be "spotty", irregularly spaced, frequency of recurrence uncertain, and confined to small lenses. The occurrence being of contact metamorphic type, erratic distribution of the minerals can normally be expected.

Unless continuous stripping can be done with tractor equipment, it is believed that further exploration of this zone can best be done through putting down a number of diamond drill holes, closely spaced, as surface slopes are too low to permit gaining appreciable depth with "drifting" along this section.

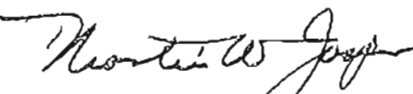
None of the copper or magnetite showings examined in upper Crevice Creek basin area are considered of economic importance as presently known.

The magnetite occurrences $1\frac{1}{4}$ to $1\frac{1}{2}$ mile north of the temporary camp may have possibilities; it will require diamond drilling to determine its grade and dimensions.

RECOMMENDATIONS

To permit a thorough examination of the showings all old workings must be cleaned out before a systematic sampling, and a more detailed study of the mineralization and structural conditions can be made. This has not been possible to date.

To determine the potential value of property, a diamond drilling program to minimum depths of 100 feet, is recommended. It will be necessary to space the holes at 50 to 100 foot intervals along strike of the easterly-westerly trending mineralized zones on the McNeil claim group. Necessity for close spacing of drill holes is indicated by the apparent erratic distribution of small lenses and oreshoots, at or near surface, as their recurrence frequency is presently unknown.

By- 
Martin W. Jasper

Territorial Mining Engineer

Anchorage, Alaska
May 4, 1956

May 19, 1958

RECEIVED
JUNE 1 1958
BUREAU, ALASKA

Mr. W. L. Edgar, Geologist,
The W. L. Edgar Company, Agents,
Iron River, Michigan.

Dear Mr. Edgar:

RE: McFall Copper Property report
Illwaco, Washington
Saint River Area

Enclosed you will find copy of report covering the
above property, which is held by L. C. Sargent and associates.

Enclosed you will find also report of copper occur-
rence on the TOMMY mineral claim, held by the same partnership,
and located about ten miles north of the McFall group of copper
and magnetite locations.

I neglected to mention in the report that there are
3 mineral claims located on the magnetite occurrences found last
year, and located about 10 miles north of their temporary Saint River
campsite.

Delay in getting this work out is regretted but it
has been unavoidable.

Very truly yours,

Martin Jasper
Territorial Mining Engineer

cc: L. C. Sargent & Associates

cc: PRH

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TERRITORY OF ALASKA
DEPARTMENT OF MINES
329 SECOND AVENUE
BOX 2139
ANCHORAGE, ALASKA
November 2, 1955

PE
The [unclear]

ITINERARY REPORT

TO: Phil R. Holdsworth, Commissioner of Mines
FROM: Martin W. Jasper, Territorial Mining Engineer
SUBJECT: Examination of Copper occurrences on the old McNeil copper prospect, Paint River area, Iliamna Quadrangle, and another Copper occurrence ten miles to north. Requested by E. E. Sargent and Ernie Pfaff, and associates. see PE-103-3

September 15, 1955: Left Anchorage via PNA at 7:20 AM for Iliamna. Arrived Iliamna (non-stop) at 8:35 AM., accompanied by A. F. Daily, field man on research assignment for Miami Copper Company.

At 10:10 AM left Iliamna Trading Post with bush pilot Leon (Babe) Alsworth '33 JRSR Model Stinson "float" plane, landing on Pilot Knob Lake, 3 miles from property, at 10:45 AM. We were met there within half hour by Ernie Pfaff, left the lake at 11:45 AM and reached the "barabara" camp on the McNeil property at 1:10 PM.

Afternoon and evening were spent on inspection of the No. 3 Adit and number of old open-cuts cleaned out the past season.

September 16: From 8 AM to 6 PM made reconnaissance trip up Crevice Creek to inspect copper showings which had been covered by snow drifts at time of 1953 examination. This traverse was continued to head of north fork of Crevice Creek, thence down the steep mountain slope to the northeast, opposite the mouth the Paint Rivers middle fork, to examine numerous magnetite showings exposed by small open-cuts the past season.

September 17: From 8 AM to 7 PM examined and sampled the old No. 3 Adit and the several open-cuts along this mineralized zone to the southwest and northeast, assisted by Mr. Daily.

Mr. Pfaff made trip to head of Crevice Creeks west fork to obtain "grab" samples of another copper occurrence. That showing was not examined as no stripping or trenching had been done upon it and the occurrence (or occurrences) were limited to a few outcrops along a talus slope.

September 18: "Broke" camp at 8:15 AM and reached Pilot Knob Lake at 9:05 AM with Mr. Pfaff and Mr. Daily, with Pilot Alsworth arriving from Port Alsworth on Lake Clarke at same time.

The party was shuttled in two trips from here to (locally

ITINERARY REPORT
PAINT RIVER AREA
Sept. 15-18, 1955

known as) Big Lake, situated at head of Lake Fork which is a north fork of the Paint River, 7 to 8 miles northeast of Pilot Knob Lake. With Mr. Pfaff made the first trip, arriving at the camp on lake shore at 9:30 AM. Left there few minutes after arrival, with pilot returning to pick up Mr. Daily, returning within a half hour and remaining for the day on account of the weather.

The day was spent examining the copper occurrence on the Folly mineral claim which was staked the past season by Mr. Pfaff.

The copper occurrence is located on the very steep (and in places precipitous) north side of Canyon Creek, $1\frac{1}{2}$ to 2 miles northeast of the camp site - located at southeast corner of Big Lake. The copper showing has points of real interest with 25 to 30 feet or more width with encouraging values contained in chalcopyrite and malachite in a strongly sheared zone of an irregular basic intrusive into a diorite (or grano-diorite ?) but to date has ~~to date has~~ not been traced beyond the limits of the north canyon rim.

To the north and northwest some scattered chalcopyrite mineralization was noted at several points in the diorite. In this area it was noted that this intrusive rock type had an abundance of magnetite, with an estimated range of 5 to 50% of that mineral present.

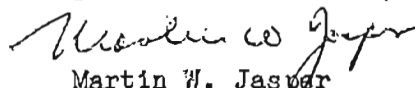
The canyon copper occurrence was prospected many years ago; an adit 15 feet in length was driven into the showing about halfway down the canyon slope. Date of that work is not known but was probably 35 to 40 years ago.

It was recommended that trenching be done along projected strike to the north of the canyon to trace mineralization to its limits in that direction.

The McNeil property on Paint River and the Folly on Canyon Creek are held by E. E. Sargent, Ernie Pfaff, Leon Alsworth, and Terry Gill. The latter bought Wm. Hammersley's interest last spring.

Returned to Big Lake at 4 PM. At Pilot Alsworth request to make a reconnaissance flight to and over the Bonanza Creek drainage area - an easterly tributary of the Mulchatna River - at his expense the next day, left Big Lake at 4:30 PM with Mr. Daily and arrived at Port Alsworth on Lake Clarke at 5:25 PM, where we spent the night.

Respectfully submitted,


Martin W. Jasper

Territorial Mining Engineer

November 3, 1955
Anchorage