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TINTINA PROJECT

FINLAYSON LAKE AREA

REPORT ON EXPLORATION ACTIVITIES

N.T.S. 105-G-1, 2, 5, 6,
-7, 8, 9, 10,
-11, 12, 13, 14
105-H-3, 4, 5

June - August, 1969

by

G.H.K. PEARSE

ATLAS EXPLORATIONS LIMITED

December, 1969

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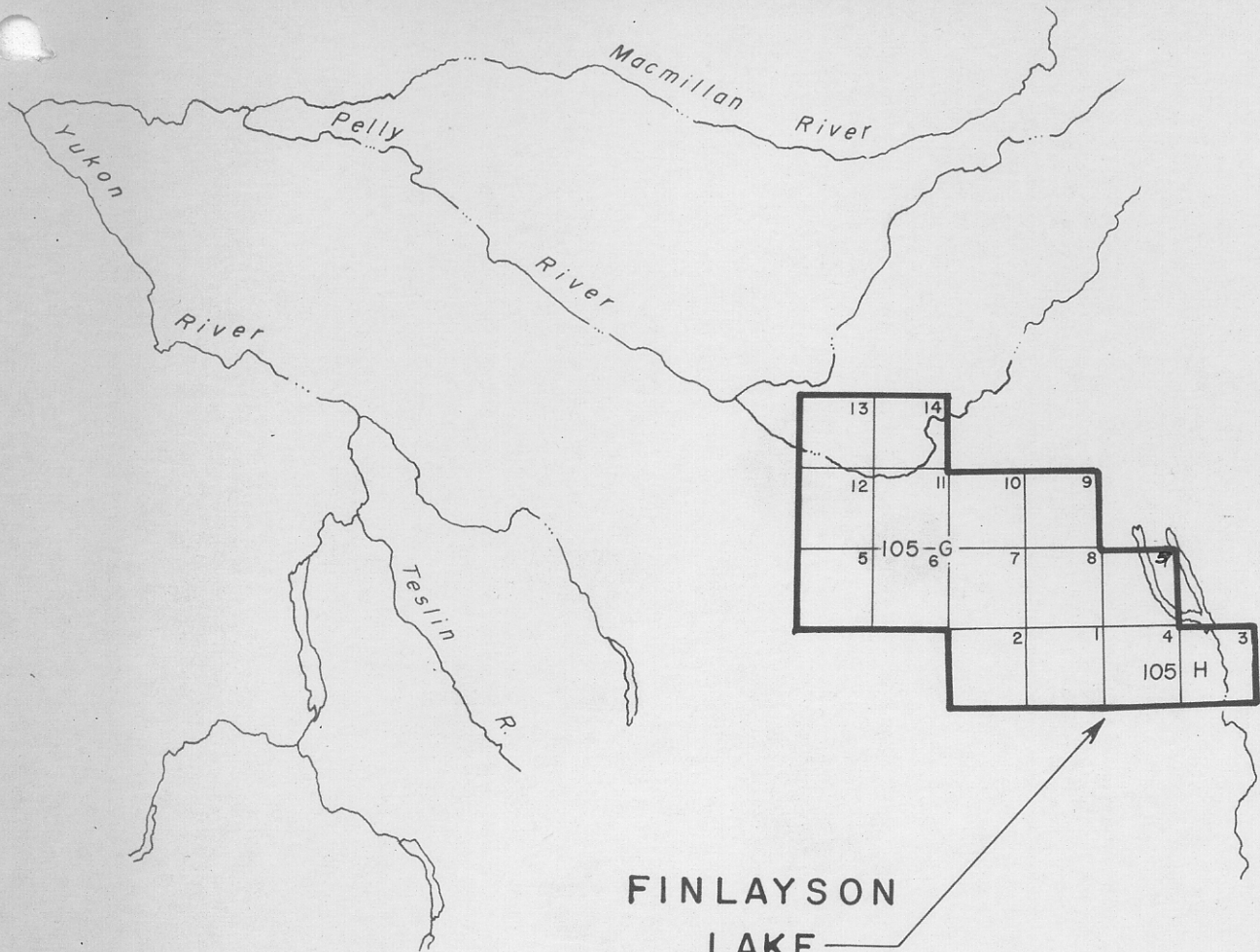
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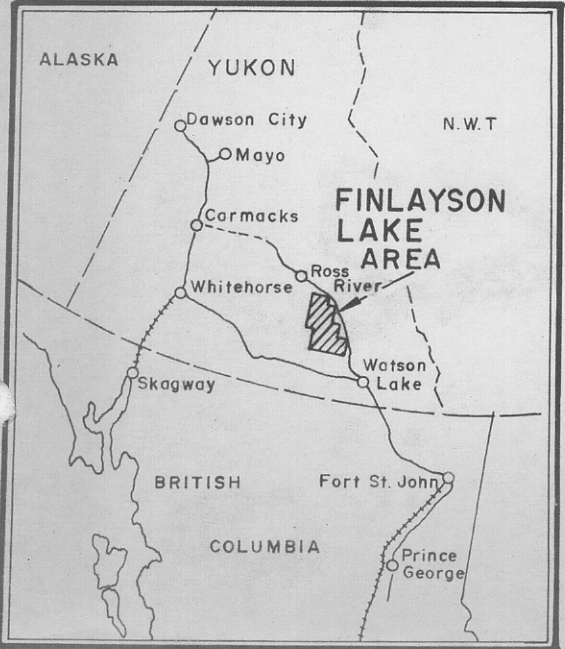
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FINLAYSON
LAKE
AREA

KEY MAP



LOCATION
MAP

SCALE: 1" = 8 miles



ATLAS EXPLORATIONS LIMITED

330 MARINE BUILDING
355 BURRARD STREET
VANCOUVER 1, B.C.

TINTINA PROJECT - FINLAYSON LAKE AREA REPORT ON EXPLORATION ACTIVITIES

June - August, 1969

by

G.H.K. Pearse

INTRODUCTION

Geochemical sampling, geologic mapping, and prospecting were carried out in Finlayson Lake area during July and the first half of August, 1969. An area including most of Finlayson Lake Sheet (105-G) and the southwest corner of Frances Lake Sheet (105-H), was worked from a base camp at the southeast end of Finlayson Lake. The field party consisted of four geologists, six geochemical samplers, a prospector, a camp manager, a cook and two helicopter crew. K.M. Dawson was in charge of operations. Logistics support was provided by a contract G3-B2 helicopter (United Helicopters Ltd. - R. McCord, pilot), casual fixed wing aircraft, two four-wheel-drive trucks, and a camp trailer.

Work in Finlayson Lake area was part of the Tintina Project which was formulated to explore a strip of country between Dawson City and Frances Lake, which straddles the Tintina Fault. Geochemical silt sampling on a routine regional basis, with higher density coverage in priority areas, was the primary exploration tool. Priority areas were centred on favourable geology, known mineralization, aeromagnetic anomalies, and gossans spotted during a fixed-wing reconnaissance. The object of the program was to outline target areas for follow-up work in 1970.

SUMMARY

Silt samples were collected at $\frac{1}{2}$ mile intervals in Finlayson Lake area and the coverage is as follows (see enclosed geochemical maps):

- 1) Waters Creek (105-G-1)
- 2) Upper Black River (105-G-2) except for drainages into Liard River.
- 3) McNeil Lake (105-G-5) drainages into Hoole River in the northeast corner.
- 4) Upper Hoole River (105-G-6) all but the southwest quarter.
- 5) Grass Lake (105-G-7)
- 6) Wolverine Lake (105-G-8) many secondary drainages omitted in northeast half.
- 7) McEvoy Creek (105-G-9) all but the northwest quarter.

- 8) Finlayson Lake (105-G-10) all but the northern quarter.
- 9) Mink Creek (105-G-11) all but an area near Pelly River.
- 10) Starr Creek (105-G-12) - souther half.
- 11) Weasel Lake (105-G-13) - only one drainage in the southeast.
- 12) Slate Rapids (105-G-14) - three drainages in the southwest quarter.
- 13) Klatsa River (105-H-3) - western border area.
- 14) Tuchitua River (105-H-4) - all but some secondary drainages.
- 15) Money Creek (105-H-5) - two creeks in the southwest.

Reconnaissance geology for these areas is shown on enclosed 1-mile geologic maps. Several prospecting and detailed mapping fly camps were set up in the area and coverage is indicated on Fig.2.

An asbestos showing was discovered, staked, mapped in detail and ground magnetic profiles run on grid lines. A strong magnetic anomaly 4,000 feet long by 500 feet wide was outlined in an area of overburden contiguous with the showing. Trenching, sampling and, if warranted, drilling are proposed for this property in 1970.

Several geochemical anomalies were outlined predominantly in the southern half of the area and follow-up work on these is proposed for 1970.

CONCLUSION AND RECOMMENDATIONS

Economic potential in the Finlayson Lake area is primarily one of copper mineralization. First priority anomalies outlined in the area are:

1) Waters Creek (105-G-1)

Three copper anomalies in the northern half of the sheet occur on or adjacent to a complex granitic intrusion. Two of these areas were followed up in September 1969. (See Fyre Lake Follow-up Report), and possibly porphyry copper-molybdenum potential was recognized.

2) Upper Black River (105-G-2)

One copper anomaly four miles northwest of Fyre Lake is underlain by chloritized amphibolite schist and may be due to replacement mineralization.

3) Grass Lakes (105-G-7)

Copper-lead-zinc anomalies, some 5 miles south of North Lakes, may be related to a nearby granitic stock. The area should be examined for both porphyry copper and replacement mineralization. Two high zinc anomalies in the southwest corner are underlain by schists and may be due to replacement mineralization.

4) Wolverine Lake (105-G-8)

A drainage anomalous in copper-lead-zinc occurs in the southeastern part of the sheet. Time did not permit examination of it during the Fyre Lake follow-up program and it should be included in the 1970 work.

5) McEvoy Creek (105-G-9)

A small tributary of the drainage into the north end of Wolverine Lake is anomalous in copper and cuts some 15 feet of transported gossan.

6) Tuchitua River (105-H-4)

A drainage east of the center of the sheet is anomalous in copper and coincides with a moderate magnetic high. High copper anomalies occur at the center of the east boundary of the sheet. High copper-lead-zinc anomalies occur in the midwestern part of the sheet. These areas are underlain by Devonian(?) and Mississippian sedimentary rocks much of which are carbonates and may be related to skarn or replacement mineralization.

Detailed geologic mapping, prospecting and contour soil sampling at 300-foot spacing should be done in the anomalous areas. Analyses should be made for Cu, Pb, Zn, Mn and Mo for

all samples with perhaps W and Sn in selected areas. All should be total extraction analyses. Samples should be collected from granitic rocks for age dating.

Second priority areas include a copper anomaly over a pyritized contact area between graphite phyllite and quartz-diorite in the southwest corner of Finlayson Lake Sheet (105-G-10). Drainages not sampled in this area should be covered and two or three soil profiles run. In the Tuchitua Sheet (105-H-4), five elliptical magnetic anomalies of the same magnitude as that over a high priority copper anomaly, occur in the southern half. Soil sample lines should be run over these and the drainages sampled.

Budget estimates are given in the Appendix.

LOCATION AND ACCESS

Operations in the Finlayson Lake area lie for the most part between the divide, along and southwest of the Tintina fault, and the Watson Lake road. The road runs south of and parallel to Finalyson River, Finlayson Lake, ~~Finlayson Lake,~~ crosses Big Campbell Creek near its mouth, and follows the south side of Pelly River to Ross River settlement. Parts of 105-H-3, -4, and -5 of the Frances Lake sheet are included in this area. In addition, one creek in the southeast corner

of 105-G-13 and drainages in the southwest quarter of 105-G-14 were covered.

The center of the area lies approximately at $61^{\circ}30'N$ and $131^{\circ}00'W$.

Access along the northeastern boundary of the area is provided by the Watson Lake road. Elsewhere, helicopter and float-equipped fixed wing aircraft are required.

The area was worked from a base camp at the southeast end of Finlayson Lake on the Watson Lake road, 85 miles southeast of Ross River.

HISTORY

Several interesting massive sulphide replacement properties were located in the Fyre Lake - Grass Lakes - North Lakes area over the last 10 years by Atlas Explorations Limited, and others. Airborne and ground geophysics, detailed geochemical sampling, geologic mapping and diamond drilling were done on some of the properties. Serpentinite bodies occur in most parts of the area and commonly carry minor short fiber asbestos. Trenching and drilling have been done on several of them.

Detailed information on previous work done is available in the following reports in our files:

1. Geochemical Soil Sampling Surveys.
Tak Mineral Claim Group.
by J.S. Brock and J.N. Boateng
105-G-2 and -7.
2. Magnetic and Electromagnetic Geophysical Survey.
Tak Mineral Claim Group.
105-G-2 and -7.
3. Geological Report.
Dub Claims 1-167 and Zot Claims 11 & 12.
by T.L. Sadlier-Brown
105-G-1 and -2.
4. A Geological Report on the Ash Claim from 1-36, Inclusive.
by T.L. Sadlier-Brown
105-G-2
5. Magnetic and Electromagnetic Geophysical Surveys.
Dub and Zot Mineral Claim Groups.
by J.S. Brock
105-G-1 and -2.
6. Information Obtained from Cassiar Asbestos.
105-G-2

7. Report from North Lake Mines.
8. Various Drilling Reports - 105-G-1 and -2.

GENERAL GEOLOGY

The main area between the Tintina Fault and the Watson Lake road is underlain by a northwest-trending metamorphic belt of uncertain age consisting of a variety of quartzose schists and gneisses, micaceous quartzite and minor phyllite, limestone, dolomite and serpentized peridotite. These rocks have been intruded by medium- to coarse-grained biotite granodiorite, quartz monzonite, minor diorite and granite of probable Jurassic and/or Cretaceous age.

A belt of predominantly volcanic rocks and massive cream and grey limestone of Mississippian or earlier age border the metamorphic belt on the northwest side along the Watson Lake road.

Highly folded and thrust faulted Paleozoic limestones, dolomites, shales and phyllites border the metamorphic belt along and southwest of Tintina Fault. These rocks are intruded by granitic rocks southeast of the headwaters of Black River.

STRUCTURAL GEOLOGY

The dominant structural feature in the area is Tintina Fault which divides the rugged topography of the highly-folded and thrust-faulted Paleozoic rocks southwest of the Fault from the less rugged, gently-dipping schists and gneisses. St. Cyr Fault and several lesser faults parallel Tintina Fault on its southwest side. Sub-parallel faults are postulated to underly the valley containing Fyre Lake.

Trends in the schistose rocks of the metamorphic belt are northwesterly and dips are generally shallow. Folding has been interpreted to be broad and open but detailed mapping in the North Lakes area indicates that the gentle undulations are superimposed on larger recumbent folds or nappe structures. Cores of nappes are high-grade feldspar augen gneiss enclosed by lower grade quartzose biotite, sericite and chlorite schists. The axes of these folds appear to be trending easterly. Tight isoclinal microfolds at this locality and elsewhere, notably in the cirque containing the Fyre Lake showing, are inconsistent with gentle open folding. Shearing out of the noses, or what may be strong axial plane cleavage in microfolds, has been observed in all stages of development, and it is possible that this has largely obliterated evidence for isoclinal recumbent folds in much of the area. This structural

interpretation may be of importance in prospecting in the area and relationships which may exist between folding and mineral showings should be investigated. Structure of the Mississippian limestone-volcanic belt is unknown.

ECONOMIC GEOLOGY

Schists and gneisses of the metamorphic belt, adjacent to Tintina Fault, are intruded by granitic stocks and present an analagous setting to that of the sulphide deposits in the Anvil area. What appears to be massive sulphide replacement, largely pyrite with some chalcopyrite, characterizes the Fyre Lake showing. North Lakes and Grass Lakes copper and lead-zinc showings are presumed to be sulphide replacement as well. Work to the present has not outlined any large sulphide bodies but the area contains abundant small copper showings.

Lead and zinc veins occur at several localities throughout the area. These are small and reported Ag/Pb ratios are discouraging.

A short-fibre asbestos showing examined by Newmont in 1955 occurs about 20 miles northwest of Grass Lakes. Minor asbestos has been observed in numerous serpentinite bodies throughout the area. A short-fibre asbestos showing on Big Campbell Creek was located and staked by Atlas during the 1969 summer work. The quality and grade is sub-economic but a ground magnetic

survey indicates a strong anomaly some 4,000 feet long by 500 feet wide in an area of overburden contiguous with the showing. Porphyry copper-molybdenum mineralization may exist in the area and future work should include a detailed inspection of the numerous stocks and plugs. One fleck of molybdenite in quartz was found in the southeast corner of the sheet. Soil samples taken in follow-up areas about 10 miles east of Fyre Lake were run for molybdenum in addition to copper lead and zinc. Good copper and molybdenum anomalies were outlined in schists and gneisses bordering granitic intrusives. Minor malachite and rusty fractures were observed in quartz monzonite in Area-1 (see Fyre Lake Follow-up Report). Pyrite occurs in gneissic granite in Area-2. Schists and gneisses are pervasively pyritized and minor galena veinlets were found in both areas. Minor chalcopyrite in a dioritic rock was noted in the North Lakes area (North Lakes Mines Ltd., Report, page 20).

A green mineral coating fractures in volcanics on a ridge immediately northwest of Wolverine Lake was identified as variscite ($\text{Al PO}_4 \cdot 2\text{H}_2\text{O}$), a phosphate ore. A creek draining the ridge cuts 10 to 15 feet of transported gossan and is anomalous in copper. This area should be included in a follow-up program.

A barite layer up to 20 feet thick was mapped in Area-1 of the follow-up program (Fyre Lake Follow-up Report). Volume is estimated at about 1 million tons.

Replacement lead-zinc mineralization on the Red Claim south of the Tintina Fault at the headwaters of Hoole River was examined and sampled by Gordon Davis in 1963 (see Report), and concluded to be small and low in silver. Mineralization occurs in steeply-dipping calc-silicate hornfels, marble and breccia. The prospect was revisited by the writer and a sample collected at 3 foot intervals across 250 of the slope (true width a maximum of 100') assayed .38 oz. Ag/ton, .01% Cu, 1.75% Pb and 1.96 Zn. The possibility that the mineralization was segmented by the numerous faults in the vicinity was considered and the drainages around the mountain were sampled. No lead anomalies were outlined.

GEOCHEMISTRY

All geochemical samples taken in the Finlayson Lake area were analyzed at the Ross River Lab for copper, lead, zinc and manganese, using 0.5N HCl.

Anomaly thresholds for copper lead and zinc were chosen by inspection to be 80, 60 and 400, respectively. These values are somewhat higher than what would be obtained by statistical

treatment of the values but experience in the Fyre Lake area shows that significant mineralization is accompanied by rather high geochemical responses. Molybdenum was analyzed for only in the follow-up program and threshold was chosen at 4 ppm.

Water Creek (105-G-1)

All anomalies occur in the north half of 105-G-1 except for three anomalous sample sites. The two major anomalous areas are located in the north central (Area-1) and east of the central parts (Area-2) of the map sheet (Fyre Lake Follow-up Report). These were examined during follow-up work and anomalies occur in schists and gneisses close to granitic intrusions.

In Area-1, copper anomalies in silt range from 80 to 420 ppm. Highest values occur towards the headwaters of a creek near the quartz monzonite contact. Soil sampling of the valley walls, however, indicates other sources in the schists. A fine-grained amphibolite with minor chalcopyrite intrudes the schists and is undoubtedly the copper source for many of the soil samples.

Highest copper anomalies in Waters Creek area occur in silts and soils in Area-2. The highest silt anomaly of 1965 ppm Cu

occurs at the headwaters of a creek draining a schist-granodiorite contact with an extensive associated gossan. A small amphibolite body in the cirque bears minor chalcopyrite and undoubtedly contributes copper as well. High diminishing values downstream are a train of silt derived from the headwaters since soil sampling in the area yields copper responses only in the headwaters of the creek. Two tributary drainages three miles downstream fed by cirques have values of 232 ppm and 1000 ppm Cu. These were not investigated.

Lead and zinc anomalies are less common and are probably derived from minor vein occurrences, a few of which were observed in these areas. In Area-2 mineralization zoning is indicated by copper-zinc-molybdenum anomalies without lead, near the granite contact, and lead anomalies without the other metals for a distance of one-half mile going northwards away from the contact.

For the most part molybdenum anomalies occur associated with copper anomalies, or along. One anomaly in Area-1 is 115 ppm, several are in the 20's and 30's, and an average is around 15-20 ppm. No molybdenum mineralization was seen in the follow-up area but it is assumed to be derived from mineralized quartz veins or small granitic bodies obscured by overburden, the ultimate source being the intrusive granitic rocks in the area. The magnetic response in these areas is low.

Copper and copper-lead anomalies in the northwest quarter of the sheet occur within a diorite phase of the westward extension of the granitic intrusion of Area-1 and in the adjacent metasediments. Diorite responds as a well-defined magnetic high on the 1-mile aeromagnetic map. Lead anomalies alone occur to the south and may reflect mineralization zoning related to the stock. These areas warrant detailed follow-up work with particular attention paid to the intrusive rocks as possible porphyry copper-molybdenum hosts.

Upper Black River (105-G-2)

All geochemical anomalies on 105-G-2 except one lie in the northeast sector of the sheet north of Tintina Fault. Three main anomalous areas can be recognized.

The single anomalous creek north of Fyre Lake drains the Fyre Lake copper property. Copper values range from 200 ppm to 2750 ppm. Weakly anomalous zinc values are associated with the copper, and lead values are not anomalous.

Southwest of Fyre Lake a belt of lead anomalies occur with low copper and zinc values. These possibly reflect a mineralization zoning outwards from the granitic stock east of Fyre Lake, or perhaps represent a faulted block moved along a fault zone in the Fyre Lake valley.

Drainages in the north central area of the sheet are anomalous in copper. The area is underlain by chloritized amphibolite schist and quartz-sericite schist. The source of the anomalies is not known but may be due to replacement mineralization similar to that at the Fyre Lake property. This area warrants at least a brief examination.

A magnetic high borders the Fyre Lake property on the east side and is probably related to the granite-schist contact area. Elsewhere, magnetic responses are weak.

McNeil Lake (105-G-5)

Drainages in the northeast corner of the sheet which are underlain by highly-folded and faulted Paleozoic limestones, shales and phyllites, were sampled. Two sites were anomalous in lead and one in zinc; the area is otherwise considered to be of no interest.

Upper Hoole River (105-G-6)

A train of moderate copper anomalies in the southeast and a few moderate zinc anomalies in the northwest part of the sheet lie south of the Tintina Fault in Paleozoic limestone, dolomite, shale and phyllite terrane. Three scattered lead and one copper anomaly occur northeast of the fault. These anomalies are all very localized and are not likely to be of

economic significance. The area worked by North Lakes Mines Limited did not respond markedly in the geochemical coverage.

Grass Lakes (105-G-7)

Copper-lead-zinc anomalies occur in an area of three or four square miles some 5 miles south of North Lakes. These occur over schists and gneisses bordering a granitic stock in the southeast corner of the sheet. The stock responds as a well-defined magnetic high on the G.S.C. one-mile aeromagnetic map. This area should be examined for possible porphyry type mineralization.

A copper-lead-zinc anomaly, just east of North Lakes at the border of the sheet, occurs in schists and gneisses and is probably derived from one of several small replacement-type showings in the area. This area is not of immediate interest.

Two high zinc anomalies at the headwaters of a creek in the southwest corner of the sheet are underlain by schists and gneisses. One of the values (3450 ppm Zn) may be related to a replacement zinc occurrence. Geochemical samples in the surrounding vicinity were not anomalous. So far as it is known, this area has not been worked previously and, in view of the fact that areas of interest previously worked were

not detected in the regional sampling, a brief examination of the headwaters area should be made.

Wolverine Lake (105-G-8)

A copper anomaly of 920 ppm and several lead and zinc anomalies occur along a drainage in the southeastern part of 105-G-8. The drainage is underlain by micaceous schists, graphitic schist and quartzite. A junction at the headwaters, where the high copper anomaly occurs, is recorded as underlain by an altered rock containing brown calcite and mariposite (W.Gruenwald). The latter mineral may be malachite. The area was chosen for follow-up in the fall but time did not permit, and it should therefore be included in the 1970 follow-up program.

Lead and zinc anomalies to the west of the above drainage are localized and occur in schists and gneiss above the north contact with a granitic intrusion which lies largely in sheet 105-G-1. These are not likely of economic interest.

A moderate copper-zinc anomaly occurs over granite close to the contact with sericite-quartz schist near the western boundary of the sheet. A few scattered copper, lead and zinc anomalies occur in the northern and northeastern part of the area underlain by volcanic-greenschist rocks. This unit

responds as a magnetic high area relative to gneisses and schists to the southwest of Wolverine Lake. These anomalies do not appear to be of importance.

McEvoy Creek (105-G-9)

Copper anomalies occur on a small southwest-flowing tributary of the drainage into the north end of Wolverine Lake. The creek drains an oval swamp on top of the hill, the outlet of which is anomalous in copper and cuts through a deposit of transported gossan some 25 feet thick that formerly filled the narrow valley. A copper anomaly was detected in one of the creeks draining the other side of the hill. A green mineral identified by Gower as variscite - a phosphate ore - occurs as fracture-fillings in the volcanics which make up the hill. The area warrants detailed examination.

Scattered lead and zinc anomalies occur in the southern half of the sheet in creeks draining the Mississippian (?) limestone-volcanic belt. These do not appear to be of economic significance.

Numerous granitic stocks intrude limestones, dolomite, cherts, slates, phyllite and volcanics of Paleozoic age with extensive development of hornfels northeast of Finlayson River. Minor occurrences of galena, sphalerite, chalcopyrite, molybdenite and scheelite have been noted in this area which lies wholly within the Sheldon project.

Finlayson Lake (105-G-10)

A weak copper anomaly occurs in the southwest corner of the sheet on a creek draining a contact area between black graphitic phyllite with intercalated quartzite and a quartz diorite stock. The contact area is pyritized and minor pyrrhotite occurs in the quartz diorite. Small alaskite and syenite dykes to the east of the stock occur in serpentine which appears to enclose the stock on all sides. The general area responds as a high magnetic anomaly reflecting the peridotite with several scattered lows, the largest of which underlies the quartz diorite stock. Several tributaries draining this area were not sampled. In view of the interesting geology, the pyritization associated with the stock and the possibility of several smaller stocks existing under scattered magnetic lows, this area warrants at least a brief follow-up visit.

Minor chalcopyrite in phyllite responds as a copper anomaly on a north-flowing tributary of Big Campbell Creek near the west boundary of the sheet.

The main creek in the southeast corner has a moderate zinc and a lead anomaly. Minor very small grains of galena, sphalerite, and chalcopyrite occur in small conformable quartz-siderite veins in phyllites at several localities over a distance of about 1½ miles. Other creeks in the surrounding area carry

zinc values generally less than 100 ppm. The area is considered to be of low priority, not demanding immediate attention.

Mink Creek (105-G-11)

Only one anomaly, 90 ppm copper, occurs on this sheet in the southwest corner. The area is underlain largely by serpentized peridotite with bordering quartz-carbonate alteration, intruding gneisses and schists. The copper anomaly source is probably the peridotite, which responds as a well-defined magnetic high and therefore need not be examined in the immediate future.

Starr Creek (105-G-12)

Two moderate zinc anomalies occur in the southwest quarter of this sheet, one near the headwaters of the southern branch of Starr Creek, the other on a creek flowing westward into Hoole River, southwest of the center of the sheet. The area is south of Tintina Fault and is underlain by highly folded and faulted Paleozoic limestone shales, cherts, phyllites and quartzite. The anomalies may be derived from replacement type mineralization in limy rocks similar to that observed elsewhere in this belt, notably the Red Claim property near the headwaters of Hoole River. No samples were taken upstream from the anomalous site on Starr Creek and the headwaters lie

some 3 miles to the south. Surrounding drainages have not been sampled and this coverage should be considered sometime in the future in order to better evaluate the anomaly.

Weasel Lake (105-G-13)

Only one creek was sampled on this sheet and no anomalies were detected.

Slate Rapids (105-G-14)

Three drainages in the southwest quarter were sampled and no anomalies were detected.

Frances Lake (105-H)

Work was done on three sheets in the Frances Lake area: Klatsa River (105-H-3), Tuchitua River (105-H-4), and Money Creek (105-H-5), which are contiguous with the southeast quarter of Finalyson Lake sheet.

Klatsa River (105-H-3)

Only three drainages were sampled on the western side of 105-H-3. The southernmost creek yielded copper values in the 70 ppm range at the headwaters which is just below the minimum anomalous figure of 80 ppm. The area is underlain by limestone, quartzites, argillite and serpentinite. Creeks immediately to the north and east should be sampled in order to properly evaluate the near

anomalous copper results. Elsewhere, metal values are low. This area is not sufficiently interesting to warrant follow-up in the 1970 program. Areas of high magnetic response are underlain by ultrabasic rocks and the pattern coincides with regional trends.

Tuchitua River (105-H-4)

A train of copper anomalies ranging from 88 to 221 ppm occurs along a south-flowing creek east of the center of the map sheet. Devonian (?) and Mississippian shales, chert, quartzite and limestone underlie the area. No granitic rocks were observed. A westerly trending belt of high magnetic response crosses the creek in the section of highest copper values. The anomaly is a maximum of 58,900 gammas, markedly lower and less sharply defined than anomalies over peridotite bodies. Replacement or skarn copper mineralization in limy rocks may possibly occur in this area and high priority follow-up work is recommended. The only sample on the creek immediately to the east carries 71 ppm copper and detailed sampling of this drainage should be included in further work.

Copper anomalies of 166 ppm and 290 ppm occur at the center of the east boundary of the sheet. The sites are

moderately anomalous in zinc. This area warrants a brief visit to examine the headwaters area for copper mineralization.

Four copper, two zinc and two lead anomalies occur in the midwestern part of the area which is underlain by Devonian and Mississippian rocks intruded by granite to the south. The best anomaly has 336 ppm copper and 1690 ppm zinc on a small tributary. This area should be briefly examined for possible skarn or replacement type mineralization.

Five elliptical magnetic anomalies, all about one to one and a half miles long, and of the same magnitude, occur in the middle to southeastern part of the map area. The area is underlain by Devonian (?) and Mississippian sediments with abundant limestone. A fine- to medium-grained biotite hornblende quartz monzonite stock intrudes these rocks and adjacent gneisses and schists in the southwest quarter of the sheet and other small bodies of this intrusive, may occur elsewhere in the area. These areas are second priority and all tributary creeks draining these areas should be sampled and soil sample lines run over the highs.

Money Creek (105-H-5)

Only two drainages in the southwest corner of 105-H-5 were sampled and no anomalous values were obtained.

Respectfully submitted,

G.H.K. Pearse

December, 1969

PROPOSED 1970 GEOPHYSICS AND TRENCHING PROGRAM
FOR BOT CLAIMS

105-G-10

K.M. Dawson

December 22, 1969

SUMMARY OF 1969 WORK

In July 1969, Stanley Reamsbottom and Peter Dean, geologist and prospector, respectively, with Atlas' Tintina Project, discovered chrysotile asbestos in serpentine float on Big Campbell Creek, about 12 miles upstream from the bridge on Ross-Watson highway. Subsequent prospecting led to the discovery of three serpentine outcroppings containing fibre, over a strike length of 2000 feet. The showing was examined and sampled by the writer and Colin Godwin, and later visited by Gordon Davis and John Brock.

Asbestos is found within a serpentine dyke about 100 feet thick that strikes N70W and dips steeply northward. The dyke is flanked by rusty-weathering quartz-carbonate alteration up to 200 feet thick. Intruded rocks are a Paleozoic sequence of greenschist, graphitic slate and phyllite. Quartz veins along Big Campbell Creek southeast of showings contain pyrite and minor chalcopyrite. Stibnite was noted in quartz-carbonate alteration near asbestos showings. Dean's prospecting map of the area is given in Figure 1.

Specimens containing fibre were submitted to Bill Plumb of Cassiar Asbestos and John Kerr of Canadian Johns-Manville, for appraisal. In the opinion of both these asbestos experts, the fibre is too short on the average, and constitutes too low a volume of the specimens, to be economic in Yukon. The fibre is all essentially $\frac{1}{16}$ inch long, with a few $\frac{1}{8}$ inch fibrils. At least 3 to 5% of rock should be fibre of $\frac{1}{16}$ inch or longer, of which at least 25% should be $\frac{1}{4}$ inch or longer. Copies of Plumb's and Kerr's appraisals are given in Appendix.

Twenty-four claims were staked in the area (Figure 2.), and a ground magnetometer survey carried out over the inferred extensions of the serpentine dyke. Craig Fleming prepared a geological map of the claims on a scale of 1 inch = 200 feet (Appendix). In the course of mapping and prospecting the area, some short fibre was discovered 1 mile upstream from main showings. Strong magnetic anomalies in the range 5000-12,000 gammas were detected along the inferred strike of serpentine dyke. Magnetic highs to east of this anomaly indicate a northward offset of the dyke along a northeast-striking fault. No outcroppings were found over anomalies. Two strong anomalies are open to the east, indicating probable extensions of serpentine bodies. No magnetometer work has been done on

eastern one-third of claims. The magnetometer survey map is given in Appendix.

PROPOSED WORK IN 1970.

Additional magnetometer work should be done on eastern part of claim group to define the eastern extent of known magnetic anomalies, and to delimit probable new anomalous areas. Two men, one of whom is capable of running a magnetometer, will flag in 22,600 feet of line. Six north-south lines, at 400-foot spacing with 100-foot station intervals, will extend present mag grid to the eastern limit of claims. The two men will run the magnetometer survey and locate trenches. The work should be completed in 15 days.

On the basis of priorities established from 1969 work (below) plus any new anomalies detected in proposed 1970 mag survey, target areas should be trenched by Atlas' D7E Caterpillar tractor. Initial trenching will involve trenches of maximum depth/length ratio, i.e. about 12 feet deep by 100 feet long, on priority targets #1 - #4. Trenches will be elongated if bedrock is reached, up to maximum lengths indicated below. If mineralization is exposed, the geologist will decide upon additional trenching. The geologist will visit the claims every 3 days during trenching to supervise the crew, map the trenches, and direct bulk-sampling.

Proposed trenches and extensions of magnetometer grid are depicted on Magnetometer Survey Map - Appendix. Priorities for trenching and estimates of bulldozer time follow:

Stage 1.

Four 100-foot trenches, on anomalies #1 to #4, to reach bedrock in 12 feet or less.

Bulldozer time: 80 hours.

Stage 2.

<u>Anomaly Priority,</u>	<u>Location</u>	<u>Trench Length</u>	<u>Time</u>
#1	2400E, 100S	300 feet	70 hrs
#2	3200E, 300S	200 feet	40 hrs
#3	5200E, 600N	300 feet	70 hrs
#4	6400E, 100N	100 feet	20 hrs
#5	6000E, 100S	100 feet	20 hrs
#6	5600E, 900S	100 feet	20 hrs
#7	6400E, 1500S	100 feet	20 hrs

Bulldozer Time (including Stage 1 and excluding #6 and #7) 220 hrs

Additional trenching will be done between Trenches #1 and #2 if fibre is exposed. This would constitute Priority 3.

More trenching may be done east of Trenches #4 and #7 if 1970 magnetometer survey detects eastward extensions of open mag anomalies.

Work on trenches #6 and #7 will only be undertaken if budgetted bulldozer time is not used up in higher priority targets. These targets also may be pre-empted by stronger anomalies detected in 1970 magnetometer survey.

SCHEDULING

1. A two-man fly camp will be set out and supplied from Fyre Lake base camp. Supply trips will coincide with geologists' visits.
2. Two men will complete line work, magnetometer survey and location of trenches in 15 days.
3. Senior man will return to Fyre Lake area, and junior man will meet bulldozer operator at Finlayson Lake fuel dump. Bulldozer should be available by mid-June.
4. Bulldozer will skid fuel and supplies 7 miles in to Bot claims. Operator and helper will occupy existing camp.
5. Helper will direct operator to trenches, collect samples and undertake camp duties.
6. Geologist will visit claims every three days to supervise men, map trenches and instruct helper in collection of bulk samples.
7. Bulk samples (100 lb. sacks) of asbestos will be shipped to Cassiar Asbestos c/o Bill Plumb for inspection and mill testing.

8. Trenching operations should not exceed 20 days.
Whole BOT project should be completed in 30-35 days.
Work should commence on BOT claims at the same time
Tintina crew moves to Fyre Lake base camp in early
June.

PRELIMINARY BUDGET ESTIMATE FOR BOT WORK, 1970

A. PERSONNEL

- | | |
|---|----------|
| 1. Geologist (6 days @ \$30) | \$180.00 |
| 2. Field Assistant-mag operator
(15 days @ \$20) | \$300.00 |
| 3. Field man (25 days @ \$20) | \$500.00 |
| 4. Bulldozer operator (20 days - allocated) | |

(Salaries allocated below.)

B. BUDGET ESTIMATE

05 - Linecutting, Trench Location

1 (wages) 15 man days	300.00
3 (field expenses)	50.00
5 (camp operations)	150.00
6 (freight and transportation) -3 helicopter 2-1hr round trips Fyre Lake-BOT @ \$130/hr	260.00
44 (overhead) includes expediting and administration	300.00
	<hr/>
Total Linecutting	1,060.00
	<hr/>

B. BUDGET ESTIMATE (contd.)

06 - Geology

1 (wages), geologist, 6 days @ \$30	180.00
4 (assays) shipping and mill testing	500.00
6 (freight and transportation)	
-3 helicopter:	
3-1hr round trips Fyre Lake-BOT	
@ \$130/hr	390.00
	<hr/>
Total Geology	1,070.00
	<hr/>

07 - Geophysics

1 (wages) 15 man-days	300.00
3 (field expenses)	50.00
5 (camp operation)	150.00
6 (freight and transportation)	
-3 helicopter:	
2-1hr round trips Fyre Lake - BOT	
@ \$130/hr	260.00
44 (overhead)	300.00
	<hr/>
Total Geophysics	1,060.00
	<hr/>

10 - Physical Work

1 (wages) - allocated to bulldozer contract payments	
2 (contract payments)	
220 bulldozer hours @ \$35/hr	7,700.00
3 (field expenses)	200.00
5 (camp operation) 20 man-days	200.00
6 (freight and transportation)	
-3 helicopter:	
1-1hr round trip @ \$130/hr	130.00
Fuel: 42 drums diesel @ \$30 delivered to Finlayson Lake	1,260.00
Skid fuel to claims:	
2-14 mile round trips,	
12 hours @ \$35/hr	420.00
44 (overhead) 20 man-day basis	600.00
	<hr/>
Total Physical Work	10,510.00
	<hr/>

GRAND TOTAL

\$13,700.00

PRELIMINARY BUDGET ESTIMATE

FINALYSON LAKE PROJECT - 1970

A. PERSONNEL

	<u>Salary</u>
1. Party Chief - geologist	\$900.00/mo.
2. Field Assistant	650.00/mo.
3. Camp manager - field man	600.00/mo.
4. Prospector	600.00/mo.
5. Sampler	600.00/mo.
6. Sampler	600.00/mo.
7. Helicopter pilot	contract
8. Helicopter engineer	contract
9. Cook	650.00/mo.

Total crew salary for 6 weeks: \$7,800.00

B. BUDGET FOR 6-WEEK EXPLORATION PROGRAM

02 - Prospecting

1 (wages) 45 man-days - allocated	
3 (field expenses)	100.00
5 (camp operations)	450.00
6 (freight and transportation) - allocated	
44 (overhead - includes expediting, administration)	900.00

Total Prospecting 1,450.00

03 - Staking

Estimate 100 claims, 15 man-days	
1 (wages) - allocated	
3 (field expenses)	50.00
5 (camp operations)	150.00
6 (freight and transportation) - allocated	
44 (overhead)	300.00

Total Staking 500.00

B. BUDGET (contd.)

06 - Geology

1 (wages) 45 days geologist, 15 days assistant - allocated	
3 (field expenses)	100.00
4 (assays)	200.00
5 (camp operations)	600.00
6 (freight and transportation) - allocated	
44 (overhead)	1,675.00
	<hr/>
Total Geology	2,575.00
	<hr/>

08 - Geochemistry

1 (wages) 210 man-days - allocated	
3 (field expenses)	200.00
4 (assays) 2000 samples @\$2.50 200 samples @\$1.50	5,300.00
5 (camp operations)	2,100.00
6 (freight and transportation) - allocated	
44 (overhead)	4,200.00
	<hr/>
Total Geochemistry	11,800.00
	<hr/>

21 - Camp Operations

wages, groceries, supplies - allocated for Atlas Crew	
camp expenses helicopter crew (90 man-days)	900.00
	<hr/>
Total Camp Operations	900.00
	<hr/>

B. BUDGET (contd.)

22 - Freight and Transportation

1 Freighting supplies to and from camp

4-180 mile round trips Ross-
Fyre Lake with camp gear,
groceries, men @.70/mi. (Beaver) 500.00

6-180 mile supply trips Ross-
Fyre Lake (Beaver) 750.00

2 Transportation and accommodation
of men. Allow 2 Beaver trips 250.00

3 Local transportation - helicopter

Estimate total time 120 hrs
@ \$130 15,600.00

Fuel costs 40 drums @\$35 1,400.00

Fuel transport -

7 other trips Watson-Fyre L.
192 mi. round trip @\$1.20/mi. 3,240.00

6 Local Transportation - truck

6 trips Finlayson-Ross,
170 mi. @\$20 204.00

Total Freight & Transportation 21,944.00

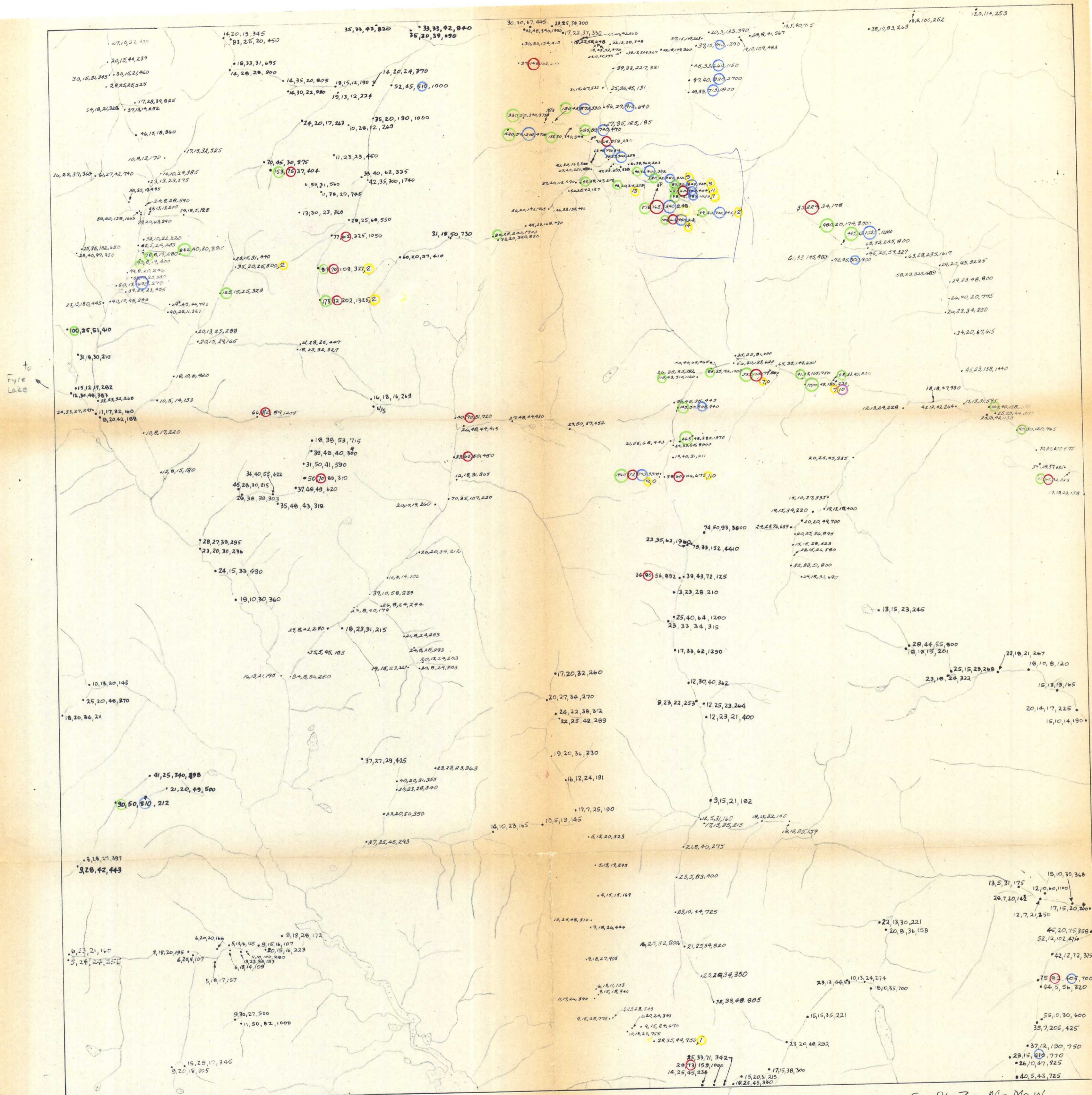
TOTAL FINLAYSON LAKE BUDGET \$46,969.00

(BOT budget excluded)

APPENDIX I

105-G-1 - Waters Creek
Geology, Geochemistry
Follow-up

001-002



to
Fyre
Lake

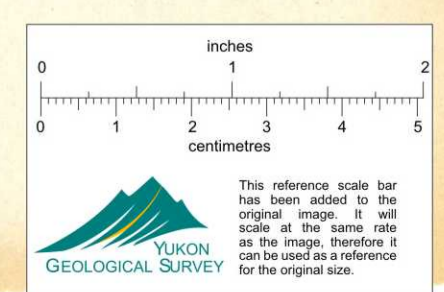
GEOCHEMISTRY

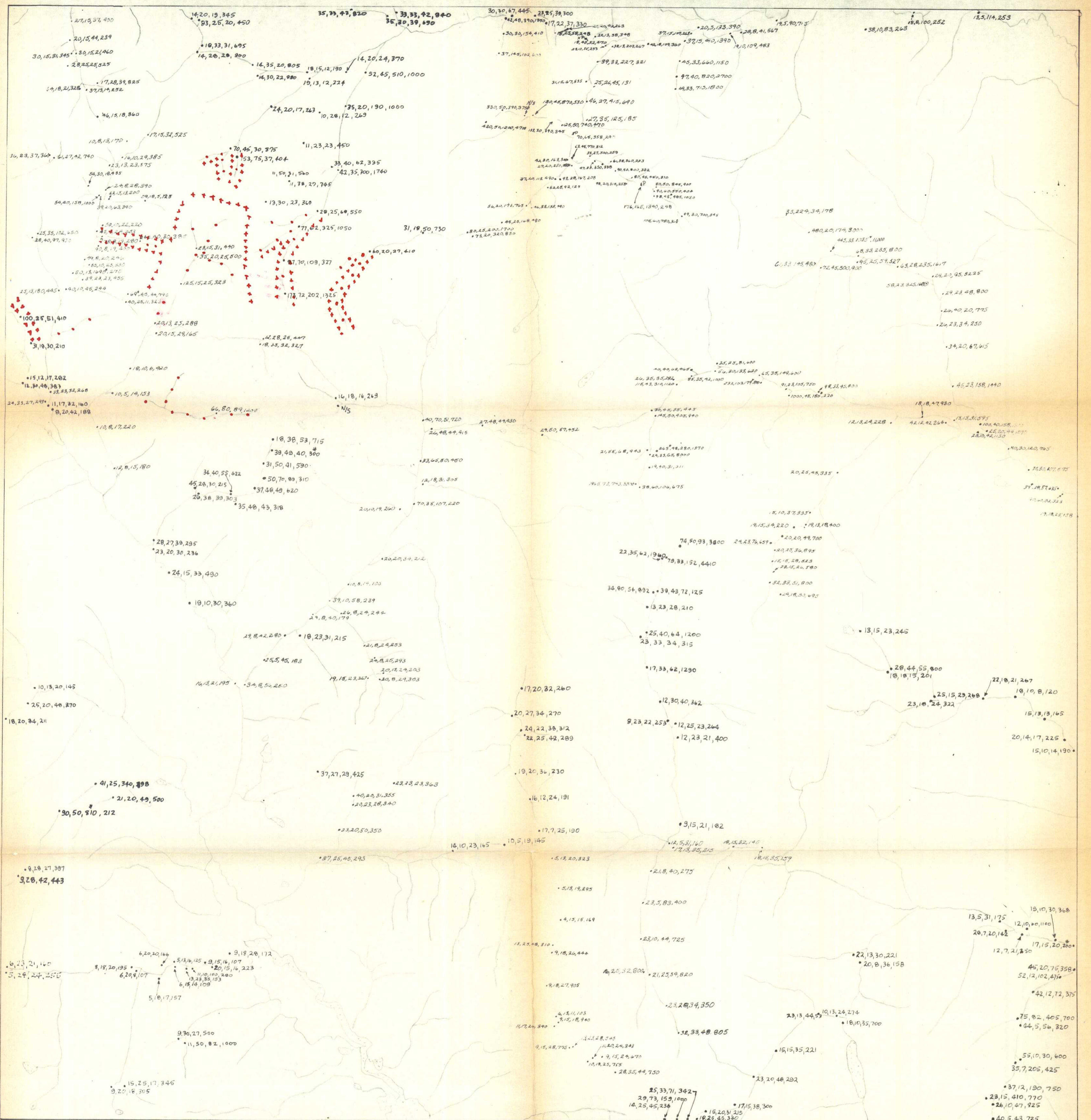
SCALE: 1" = 1 mile

- | | | | | | |
|----|-----------|----|----------|----|------------|
| Cu | ○ 80-120 | Pb | ○ 60-90 | Zn | ○ 400-600 |
| | ○ 120-200 | | ○ 90-150 | | ○ 600-1000 |
| | ○ >200 | | ○ >150 | | ○ >1000 |
- 105-G-1

WATERS CREEK
105 G 1

Cu, Pb, Zn, Mn, Mo, W





Cu, Pb, Zn, Mn

**PROPOSED FOLLOW-UP WORK
1970**

1 0 1 2 3
SCALE: 1" = 1 mile

•..... Silt sample
x..... Soil sample
..... Magnetic anomaly

105-6-1

WATERS CREEK
105 G 1

0 1 2 3 4 5
Inches

0 1 2 3 4 5
centimetres

YUKON
GEOLOGICAL SURVEY

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

LEGEND

Map-units 10, 7, 2a, B, appear on Map 7-1960 "Quiet Lake" only

QUATERNARY
12 Unconsolidated glacial and alluvial deposits

TERTIARY
11 Dark brown and black basalt flows

PALEOCENE
10 Shale, sandstone, and conglomerate

MESOZOIC
JURASSIC AND/OR CRETACEOUS
9 Medium- to coarse-grained, biotite granodiorite and quartz monzonite, in part porphyritic; minor diorite, granite, and gneiss

MISSISSIPPIAN (?)
8 Current-bedded, ripple-marked, dark grey limestone; minor dark grey and brown argillite, and dolomite

MISSISSIPPIAN (?) OR EARLIER
7 Heterogeneous, shattered hornblende syenite, associated with unit 6
6 6a, partly altered green volcanic rocks, greenstone, meta-diorite; minor serpentine and amphibolite; 6b, green and maroon breccias, tuffs, and flows; minor meta-diorite, slate, chert, and greywacke; 6c, buff, rusty, and pale green felsic breccias and tuffs; minor chert and brown crinoidal limestone; 6d, massive grey and cream limestone

5 Brown and black-weathering, siliceous slate and shale, thin-bedded varicoloured cherts with shaly partings, speckled grey and brownish grey greywacke; minor chert pebble conglomerate

SILURIAN AND DEVONIAN
4 Grey and buff-weathering, thick-bedded dolomite with local lenses of chert; buff to reddish weathering, well-bedded, dark grey dolomite, and sandy and silty dolomites; buff, grey and white, lichen-covered quartzite

ORDOVICIAN AND SILURIAN
3 Black slate, platy black limestone, grey and pink siltstone; 3a, minor volcanic breccia

CAMBRIAN
MIDDLE AND UPPER CAMBRIAN (?)
2 Lustrous phyllite; grey and orange-weathering phyllite, in part limy and dolomitic, and locally changed to hornfels; minor greenstone, limestone, chert, greywacke, and phyllitic quartzite (perhaps younger); 2a, greenstone breccia and tuff

LOWER CAMBRIAN
1 1a, massive grey and buff quartzite; 1b, grey and brownish grey phyllite; 1c, grey, buff, and orange-weathering, grey limestone, locally oolitic; 1d, limestone, quartzite, and phyllite, undivided

A Quartz-biotite and quartz-chlorite schist, micaceous quartzite, hornfels; minor phyllite and limestone
B Limestone and minor dolomite associated with A and C
C Micaceous, quartzose gneiss, granitoid gneiss; minor quartz-biotite schist
D Dunite; minor peridotite, pyroxenite, and serpentinized equivalents; gabbro and diorite

Geological boundary (defined, approximate or assumed)
Limit of geological mapping, unmapped area U
Bedding (horizontal, inclined, vertical, overturned) + / / /
Bedding (dip known, tops unknown)
Bedding (estimated attitudes, includes foliation in metamorphic rocks; dip g, gentle, m, medium, s, steep)
Foliation (horizontal, inclined, vertical) + / / /
Fault (defined, approximate or assumed)
Thrust fault (defined, approximate or assumed)
Anticline (defined, approximate)
Syncline (defined, approximate)
Fossil locality ©
Mineral occurrence or prospect X Cu
Rock altered to hornfels / / / /

MINERAL SYMBOLS

Asbestos asb	Lead Pb
Barite ba	Molybdenum Mo
Copper Cu	Silver Ag
Gold Au	Tungsten W



LEGEND

J gr, gm Coarse grained pink hornblende, quartz monzonite and granite, biotite granite.

J qd, gd Massive and foliated hornblende granodiorite; medium grained quartz diorite and diorite associated with J gr, gm

M pb Peridotite, pyroxenite (thick sills and/or lopoliths) largely serpentinized, associated minor gabbro.

C pl Lustrous phyllite and hornfelsed equivalents.

? pc gn Fine grained dark green amphibolite sills, dykes and plugs, probably meta-andesite. May be as recent as Mississippian?

pc gr Granitoid gneiss; probably metamorphosed older granitic intrusive rocks.

pc ls Bedded and massive grey to white fine grained limestone, minor skarn, marble.

pc cs Dark green fine grained (quartz) chlorite schist and medium to coarse grained chloritized amphibole schist and gneiss. Possibly originally volcanic rocks. May be as recent as Mississippian?

pc qf Black cherty and grey laminated quartzite, micaceous quartzite - a more quartzose facies of ubiquitous quartz sericite schist.

pc qs, ss, bs Yellow weathering sericite quartz schist and quartz sericite schist generally pyritiferous, biotite schist.

pc gn Thinly laminated biotite granitoid gneiss.

pc agf Buff to medium grey mottled feldspar augen gneiss.

MAP 8-1960
GEOLOGY
FINLAYSON LAKE
YUKON TERRITORY

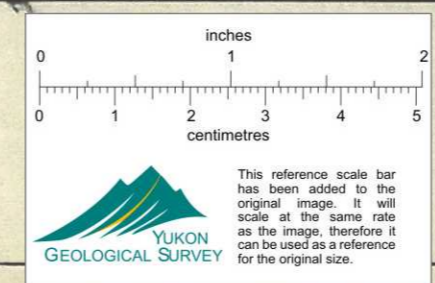
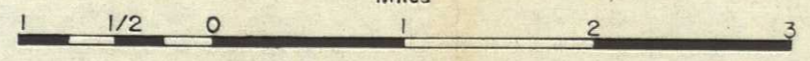
105 G-1

SHEET 105 G/1

WATERS CREEK

JOINS MAP 105-B/16, "ECHMAN CREEK"

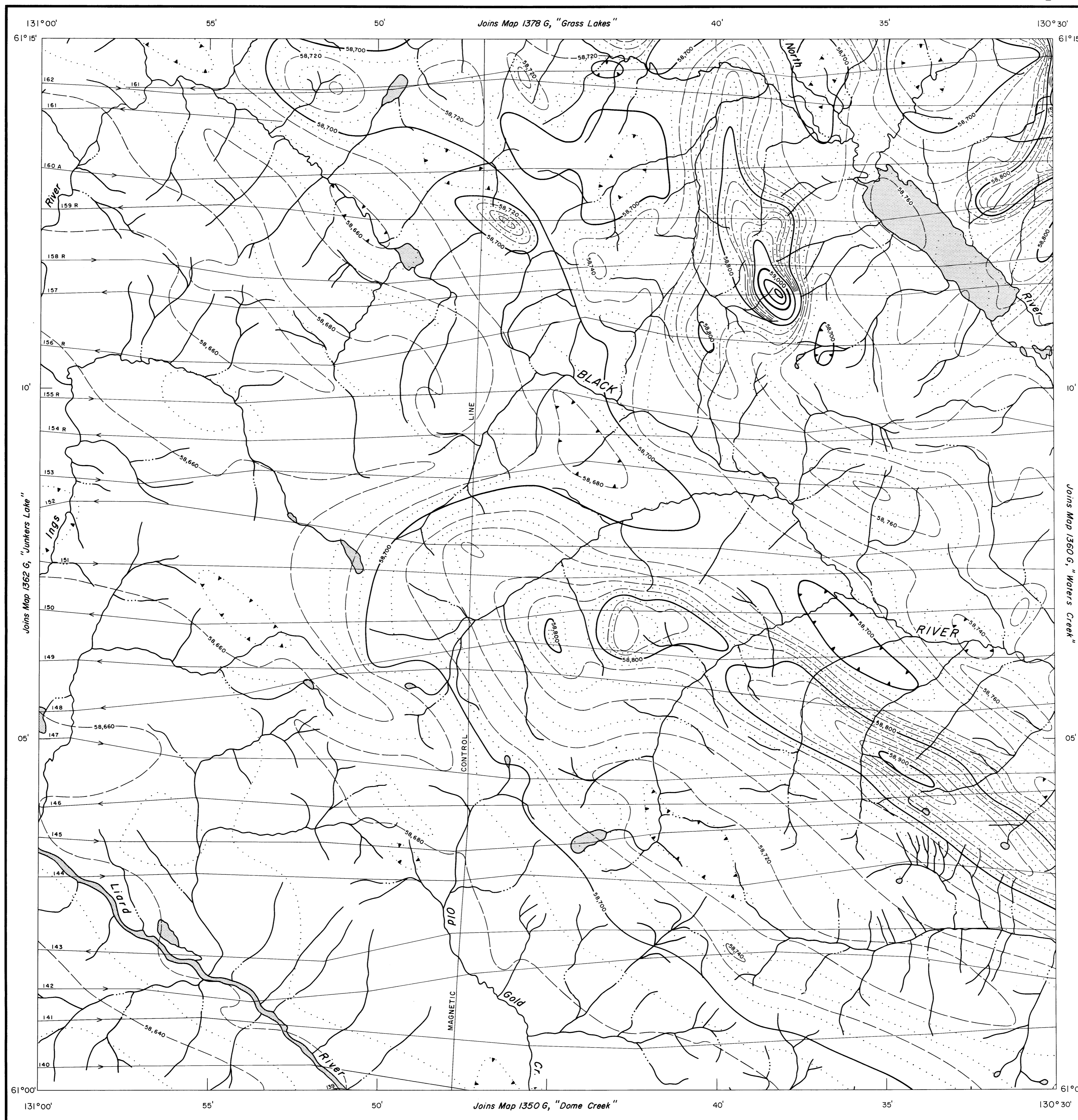
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APPENDIX II

105-G-2 - Upper Black River
Geology, Geochemistry
Follow-up

003 - 006



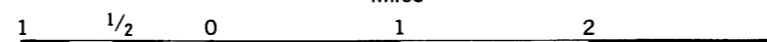
MAP 1361G

PUBLISHED, 1963

UPPER BLACK RIVER

YUKON TERRITORY

Scale: One Inch to One Mile = $\frac{1}{63,360}$ Miles

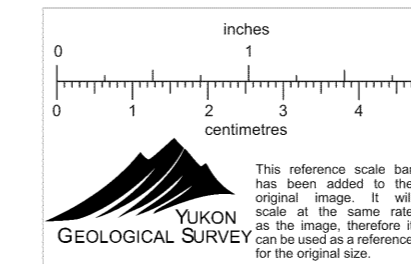


Air photographs covering this map-area may be obtained through the National Air Photographic Library, Topographical Survey, Ottawa, Ontario.

Airborne Magnetic Survey, June to September, 1961, by Aero Surveys Ltd.

No correction has been made for regional variation.

The planimetry for this map was obtained from topographical map sheets, published by the Department of Mines and Technical Surveys.



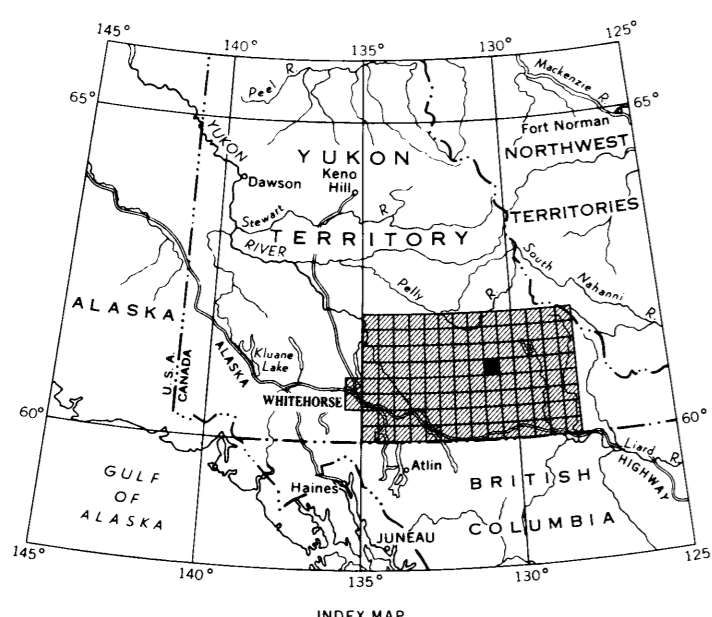
The magnetic data on this map were compiled from information recorded along the flight lines shown. The anomalies expressed by the magnetic contours are dependent on the variable magnetic intensities of the underlying rocks, and may be due to conditions near, or at unknown depths below the surface. High magnetic anomalies normally indicate the presence of basic rocks, such as diabase, gabbro, or serpentine, which have a relatively high iron content, but in special instances may be due, or partly due, to concentrations of magnetic ore minerals. By means of the magnetic anomalies, various rock bodies or structural features, such as faults or folds, may be traced into, or across, areas of few or no outcrops. In many instances, however, no interpretation of particular anomalies may be possible without further geological information.

GEOPHYSICS PAPER 1361

UPPER BLACK RIVER

YUKON TERRITORY

SHEET 105 G
2

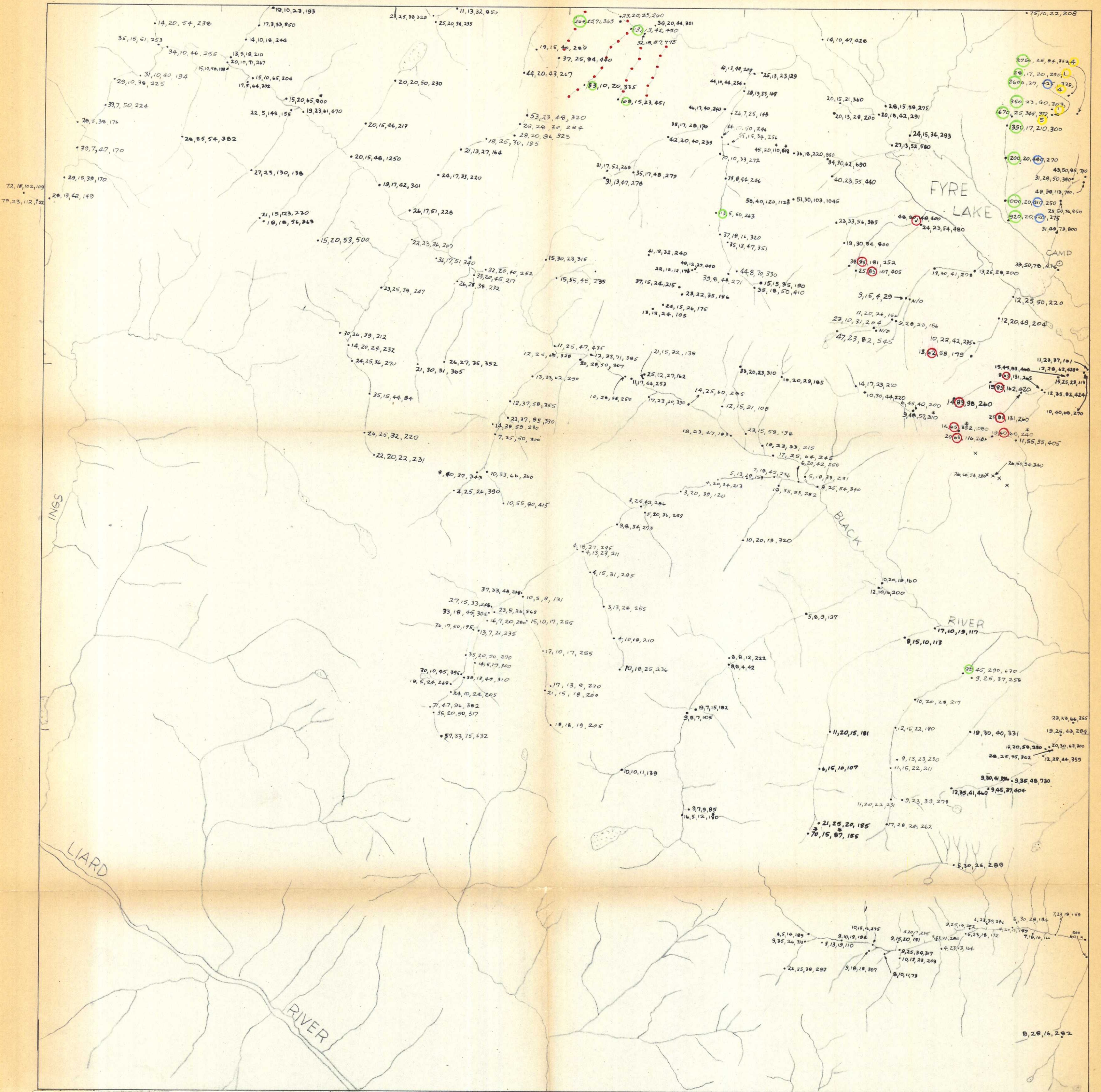


INDEX MAP

ISOMAGNETIC LINES (absolute total field)

- 500 gammas
- 100 gammas
- 20 gammas
- 10 gammas
- Magnetic depression

Flight lines
Flight altitude: nominally 1000 feet above ground level where terrain permitted.



GEOCHEMISTRY

SCALE: 1" = 1 mile

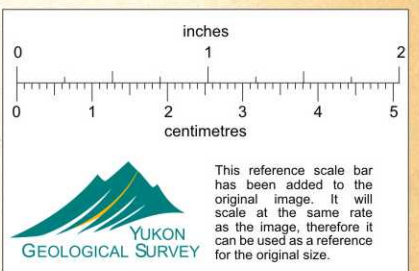
- | | | |
|-------------|------------|--------------|
| Cu ○ 80-120 | Pb ○ 60-90 | Zn ○ 400-600 |
| ○ 120-200 | ○ 90-150 | ○ 600-1000 |
| ○ >200 | ○ >150 | ○ >1000 |

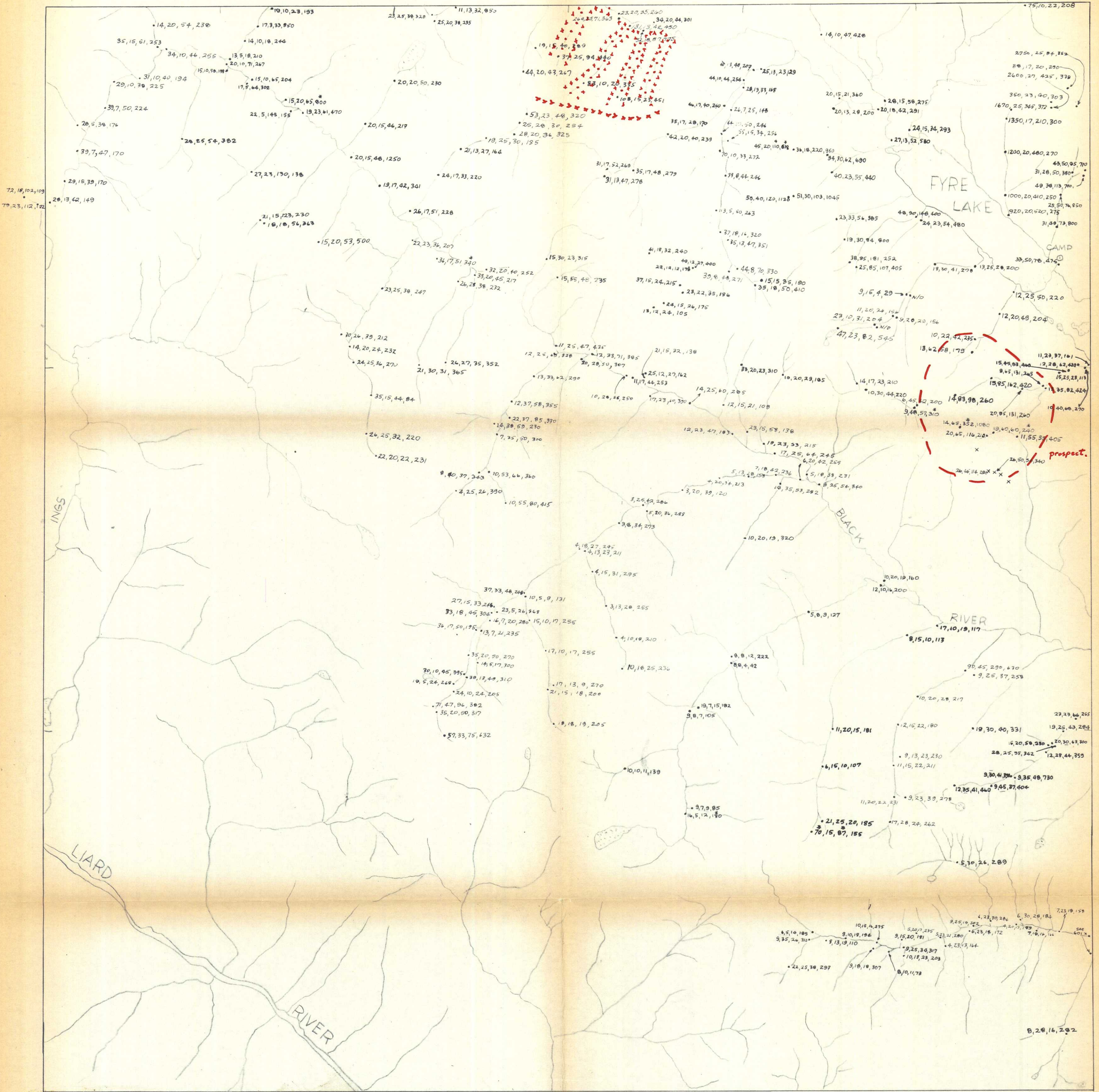
105-G-2

UPPER BLACK RIVER

105 $\frac{G}{2}$

Cu, Pb, Zn, Mn, Mo, W





Cu, Pb, Zn, Mn

**PROPOSED FOLLOW-UP WORK
1970**

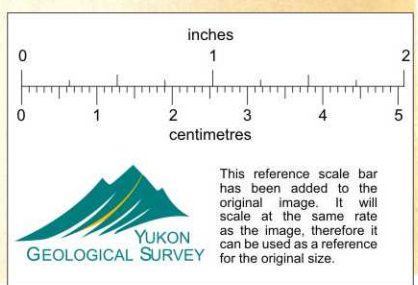
1 0 1 2 3
SCALE: 1" = 1 mile

● Silt sample
X Soil sample
..... Magnetic anomaly

105-6-2

UPPER BLACK RIVER

105
21



LEGEND

Map-units 10, 7, 2a, B appear on Map 7-1960 "Quiet Lake" only

- QUATERNARY**
12 Unconsolidated glacial and alluvial deposits
- TERTIARY**
11 Dark brown and black basalt flows
- PALEOCENE**
10 Shale, sandstone, and conglomerate
- MESOZOIC**
9 Medium- to coarse-grained, biotite granodiorite and quartz monzonite, in part porphyritic; minor diorite, granite, and gneiss

- MISSISSIPPIAN (?)**
8 Current-bedded, ripple-marked, dark grey limestone; minor dark grey and brown argillite, and dolomite
- MISSISSIPPIAN (?) OR EARLIER**
7 Heterogeneous, shattered hornblende syenite, associated with unit 6
- 6a, partly altered green volcanic rocks, greenstone, meta-diorite; minor serpentine and amphibole;
6b, green and maroon breccias, tuffs, and flows; minor meta-diorite, slate, chert, and greywacke;
6c, buff, rusty, and pale green felsic breccias and tuffs; minor chert and brown crinoidal limestone;
6d, massive grey and cream limestone

- PALEOZOIC**
5 Brown and black-weathering, siliceous slate and shale, thin-bedded varicoloured cherts with shaly partings, speckled grey and brownish grey greywacke; minor chert pebble conglomerate
- SILURIAN AND DEVONIAN**
4 Grey and buff-weathering, thick-bedded dolomite with local lenses of chert; buff to reddish weathering, well-bedded, dark grey dolomite, and sandy and silty dolomites; buff, grey and white, lichen-covered quartzite

- ORDOVICIAN AND SILURIAN**
3 Black slate, platy black limestone, grey and pink siltstone; 3a, minor volcanic breccia

- CAMBRIAN**
MIDDLE AND UPPER CAMBRIAN (?)
2 Lustrous phyllite; grey and orange-weathering phyllite, in part limy and dolomitic, and locally changed to hornfels; minor greenstone, limestone, chert, greywacke, and phyllitic quartzite (perhaps younger); 2a, greenstone breccia and tuff

- LOWER CAMBRIAN**
1a, massive grey and buff quartzite; 1b, grey and brownish grey phyllite; 1c, grey, buff, and orange-weathering, grey limestone, locally oolitic
1d, limestone, quartzite, and phyllite, undivided

- A Quartz-biotite and quartz-chlorite schist, micaceous quartzite, hornfels; minor phyllite and limestone
- B Limestone and minor dolomite associated with A and C
- C Micaceous, quartzose gneiss, granitoid gneiss; minor quartz-biotite schist
- D Dunite; minor peridotite, pyroxenite, and serpenitized equivalents; gabbro and diorite

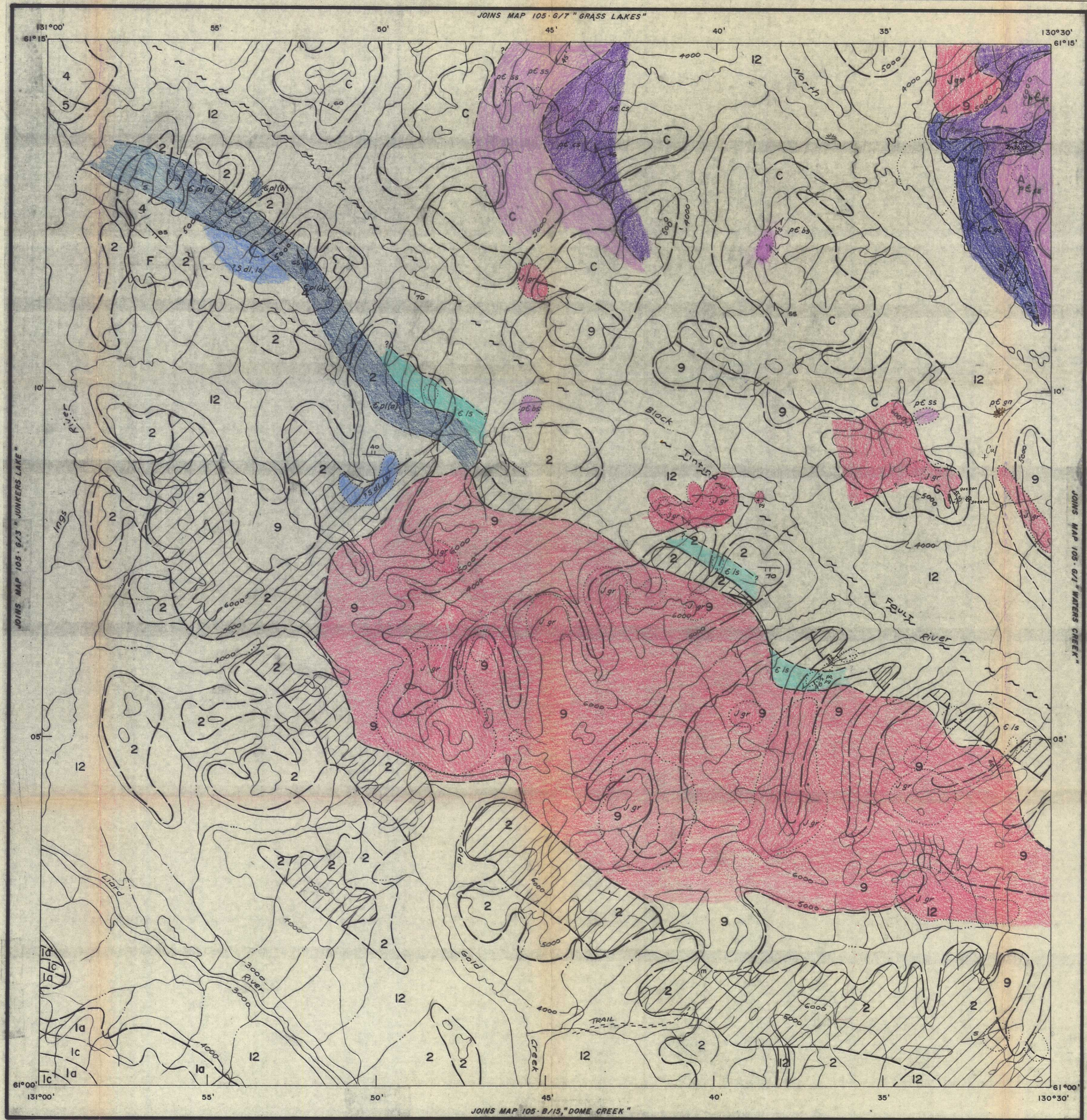
- Geological boundary (defined, approximate or assumed) ————
- Limit of geological mapping, unmapped area ———— U
- Bedding (horizontal, inclined, vertical, overturned) ———— + / / /
- Bedding (dip known, tops unknown) ———— / / /
- Bedding (estimated attitudes, includes foliation in metamorphic rocks; dip g, gentle, m, medium, s, steep) ———— / / /
- Foliation (horizontal, inclined, vertical) ———— + / / /
- Fault (defined, approximate or assumed) ————
- Thrust fault (defined, approximate or assumed) ————
- Anticline (defined, approximate) ————
- Syncline (defined, approximate) ————
- Fossil locality ———— ©
- Mineral occurrence or prospect ———— X Cu
- Rock altered to hornfels ————

MINERAL SYMBOLS

Asbestos asb	Lead Pb
Barite ba	Molybdenum Mo
Copper Cu	Silver Ag
Gold Au	Tungsten W

MAP 8-1960
GEOLOGY
FINLAYSON LAKE
YUKON TERRITORY

105 G-2



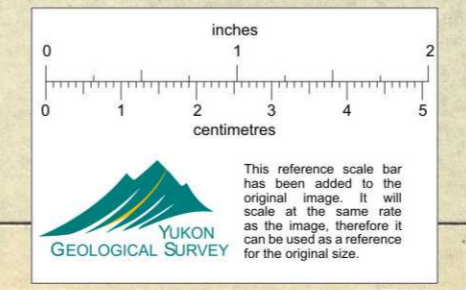
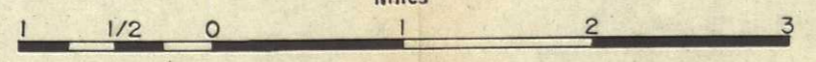
LEGEND

- Jgr Massive coarse grained porphyritic biotite granite, fine to medium grained granite, minor leucocratic granite.
- ?s di ls Thick bedded dolomite and limestone.
- C pl Black graphitic phyllite and shaly phyllite (a) brown and grey lustrous phyllite (b) minor limy phyllites associated with above; hornfelsed equivalents.
- C ls Limestone, phyllitic limestone and limy phyllite.
- pc ss Dark green fine grained (quartz) chlorite schist and medium to coarse grained chloritized amphibole schist and gneiss, possibly originally volcanic rocks.
- pc gs Graphitic (low graphite) schists, dark grey to black.
- pc bs ss Quartz biotite and quartz muscovite schist; minor limy layers and skarn.
- pc gr Granitoid para gneiss.
- pc agn Feldspar augen gneiss including some biotite granitoid gneiss.

SHEET 105-G/2

UPPER BLACK RIVER

Scale: One Inch to One Mile = 1/63,360 Miles



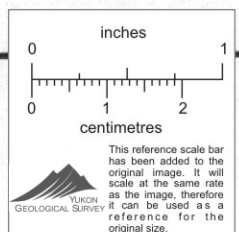
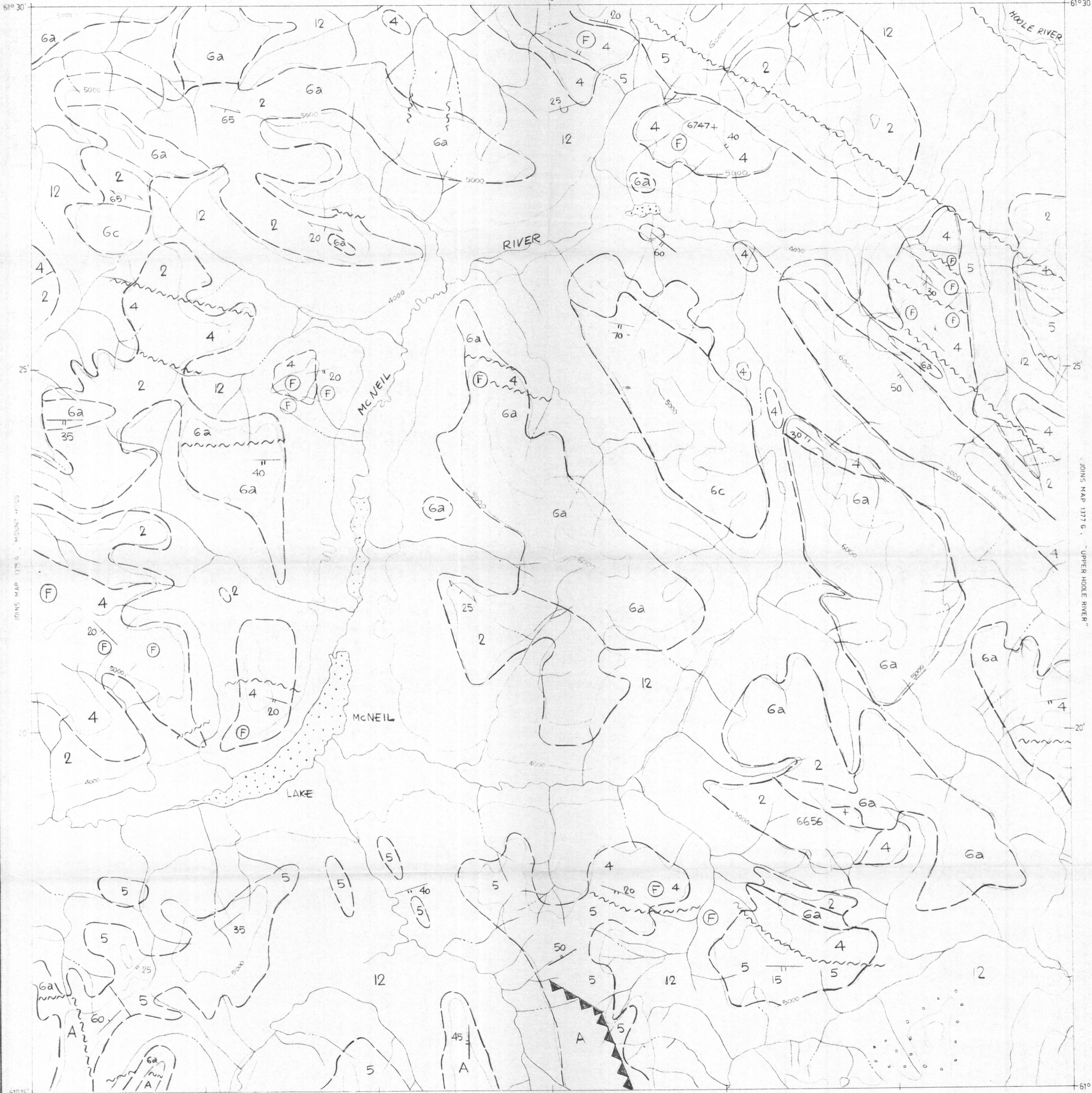
This reference scale bar has been added to the original image. It will scale at the same rate as the image. Therefore, it is not a true reference for the original size.

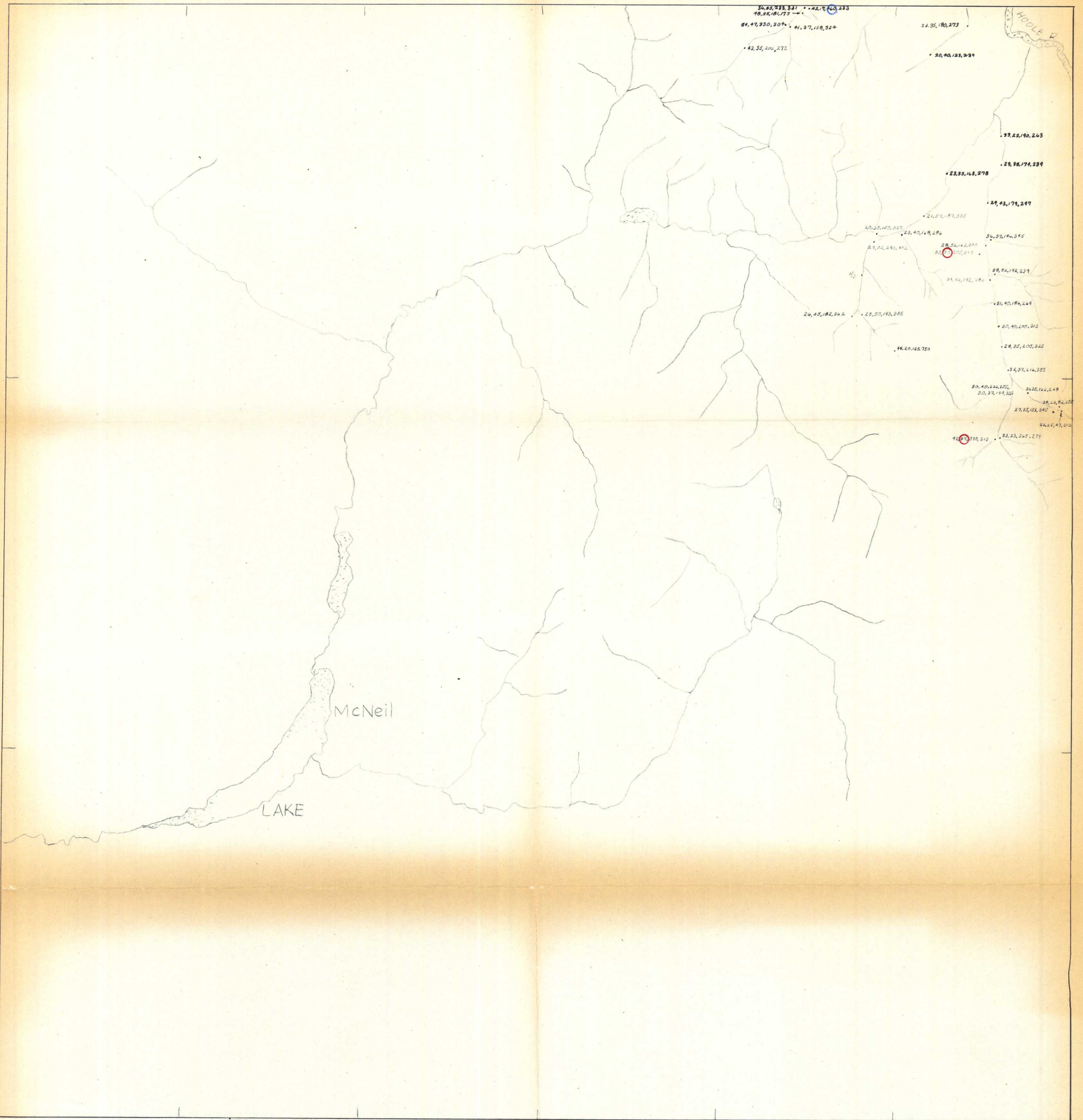
APPENDIX III

105-G-5 - McNeil Lake
Geology, Geochemistry

007-

008





36,85,233,821 • 42,76,40,233
 18,85,181,273
 64,47,330,209 • 41,37,128,324
 • 42,32,208,272
 22,35,180,273
 • 20,40,133,239
 • 33,25,90,243
 • 23,35,74,239
 • 23,35,168,278
 • 23,43,174,247
 • 21,37,157,335
 20,35,160,287 • 23,40,148,286
 21,32,240,302
 20,37,140,345
 20,35,140,280
 20,37,192,280
 20,34,148,239
 20,40,180,249
 24,45,182,342 • 25,50,193,286
 • 20,40,200,313
 • 20,35,205,340
 • 16,20,185,750
 • 34,37,214,355
 20,40,244,350 • 20,35,142,288
 30,37,194,325
 20,34,148,239
 20,35,193,345
 20,40,170,212 • 33,33,327,279
 20,40,170,212

McNeil

LAKE

Cu, Pb, Zn, Mn

105 5/16

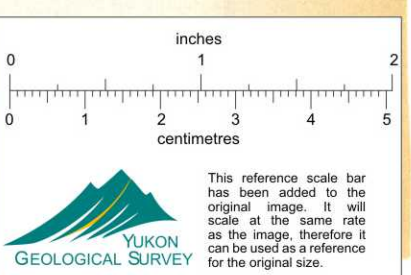
McNeil Lake

GEOCHEMISTRY

SCALE: 1" = 1 mile

- | | | |
|-------------|------------|--------------|
| Cu ○ 80-120 | Pb ○ 60-90 | Zn ○ 400-600 |
| ○ 120-200 | ○ 90-150 | ○ 600-1000 |
| ○ >200 | ○ >150 | ○ >1000 |

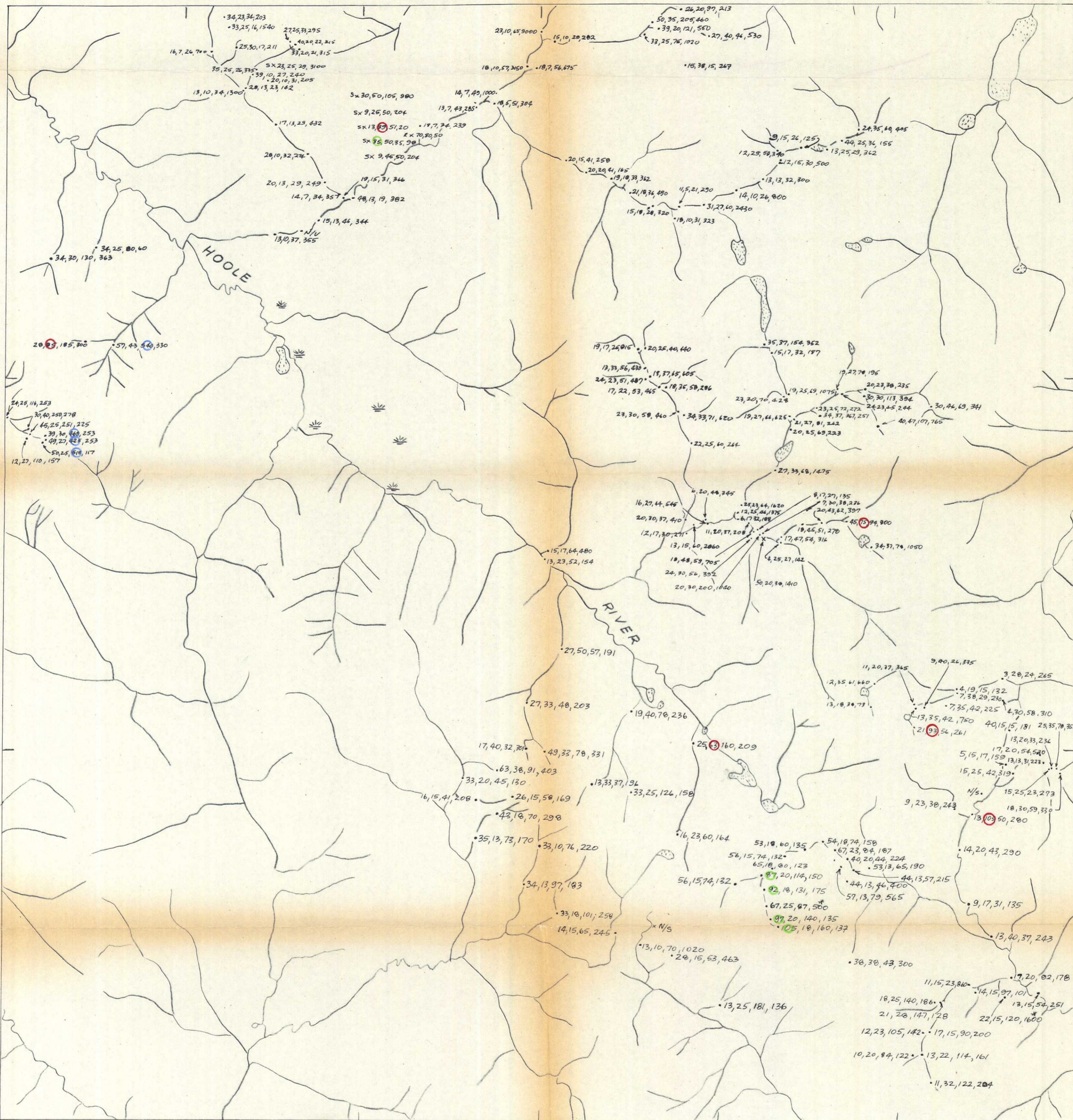
105-6-5



APPENDIX IV

105-G-6 - Upper Hoole River
Geology, Geochemistry

009-010



Cu, Pb, Zn, Mn

• SILT SAMPLES
 X OTHERS
 * A, B HAVE WIDE SPREAD

GEOCHEMISTRY

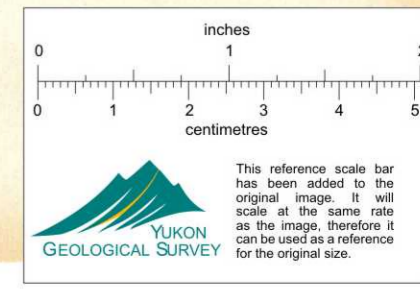
SCALE: 1" = 1 mile

Cu ○ 80-120	Pb ○ 60-90	Zn ○ 400-600
○ 120-200	○ 90-150	○ 600-1000
○ >200	○ >150	○ >1000

105-6-6

UPPER HOOLE RIVER

105 ⁶/₆



LEGEND

Map-units 10, 7, 2a, B, appear on Map 7-1960 "Quiet Lake" only

- QUATERNARY**
 - 12 Unconsolidated glacial and alluvial deposits
- TERTIARY**
 - 11 Dark brown and black basalt flows
- PALEOCENE**
 - 10 Shale, sandstone, and conglomerate

- JURASSIC AND/OR CRETACEOUS**
 - 9 Medium- to coarse-grained, biotitic granodiorite and quartz monzonite, in part porphyritic; minor diorite, granite, and gneiss

- MISSISSIPPIAN (?)**
 - 8 Current-bedded, ripple-marked, dark grey limestone; minor dark grey and brown argillite, and dolomite

- MISSISSIPPIAN (?) OR EARLIER**
 - 7 Heterogeneous, shattered hornblende syenite, associated with unit 6

- 6 6a, partly altered green volcanic rocks, greenstone, meta-diorite; minor serpentine and amphibolite; 6b, green and maroon breccias, tuffs, and flows; minor meta-diorite, slate, chert, and greywacke; 6c, buff, rusty, and pale green felsic breccias and tuffs; minor chert and brown crinoidal limestone; 6d, massive grey and cream limestone

- 5 Brown and black-weathering, siliceous slate and shale, thin-bedded varicoloured cherts with shaly partings, speckled grey and brownish grey greywacke; minor chert pebble conglomerate

- SILURIAN AND DEVONIAN**
 - 4 Grey and buff-weathering, thick-bedded dolomite with local lenses of chert; buff to reddish weathering, well-bedded, dark grey dolomite, and sandy and silty dolomites; buff, grey and white, lichen-covered quartzite

- ORDOVICIAN AND SILURIAN**
 - 3 Black slate, platy black limestone, grey and pink siltstone; 3a, minor volcanic breccia

- CAMBRIAN MIDDLE AND UPPER CAMBRIAN (?)**
 - 2 Lustrous phyllite; grey and orange-weathering phyllite, in part limy and dolomitic, and locally changed to hornfels; minor greenstone, limestone, chert, greywacke, and phyllitic quartzite (perhaps younger); 2a, greenstone breccia and tuff

- LOWER CAMBRIAN**
 - 1 1a, massive grey and buff quartzite; 1b, grey and brownish grey phyllite; 1c, grey, buff, and orange-weathering, grey limestone, locally oolitic; 1d, limestone, quartzite, and phyllite, undivided

- A Quartz-biotite and quartz-chlorite schist, micaceous quartzite, hornfels; minor phyllite and limestone
- B Limestone and minor dolomite associated with A and C
- C Micaceous, quartzose gneiss, granitoid gneiss; minor quartz-biotite schist
- D Dunite; minor peridotite, pyroxenite, and serpentinized equivalents; gabbro and diorite

- Geological boundary (defined, approximate or assumed)
- Limit of geological mapping, unmapped area U
- Bedding (horizontal, inclined, vertical, overturned) + / \ /
- Bedding (dip known, tops unknown)
- Bedding (estimated attitudes, includes foliation in metamorphic rocks; dip g, gentle, m, medium, s, steep)
- Foliation (horizontal, inclined, vertical) + / \ /
- Fault (defined, approximate or assumed)
- Thrust fault (defined, approximate or assumed)
- Anticline (defined, approximate)
- Syncline (defined, approximate)
- Fossil locality ⊙
- Mineral occurrence or prospect x Cu
- Rock altered to hornfels

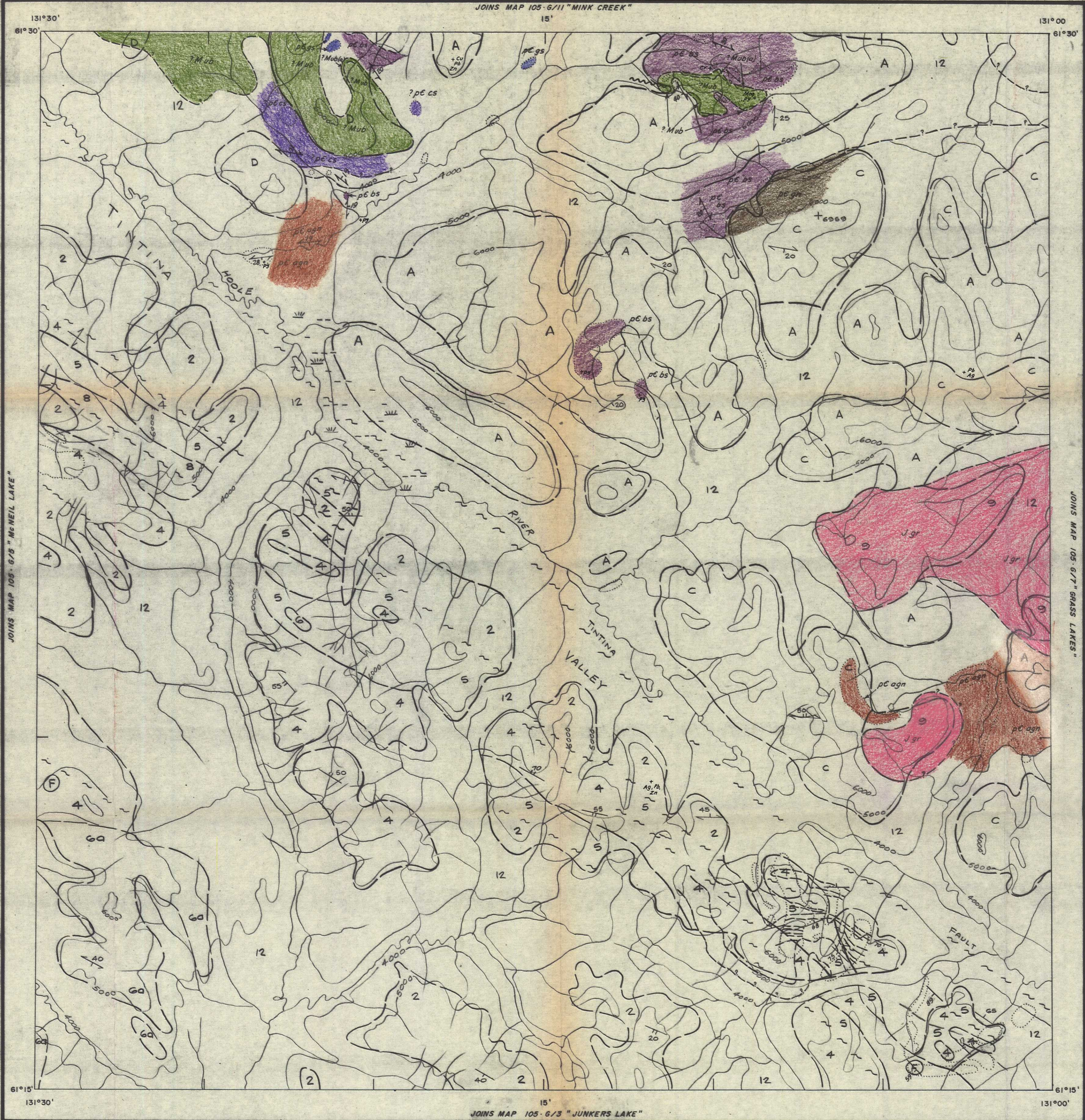
MINERAL SYMBOLS

Asbestos asb	Lead Pb
Barite ba	Molybdenum Mo
Copper Cu	Silver Ag
Gold Au	Tungsten W

MAP 8-1960
GEOLOGY
FINLAYSON LAKE
YUKON TERRITORY

105 G-6

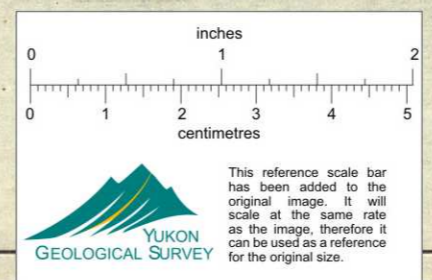
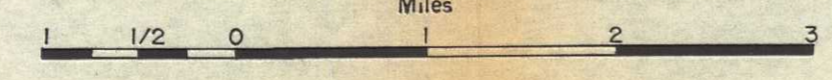
JOINS MAP 105-G/11 "MINK CREEK"



JOINS MAP 105-G/3 "JUNKERS LAKE"

SHEET 105-G/6 UPPER HOOLE RIVER

Scale: One Inch to One Mile = 1/63,360 Miles



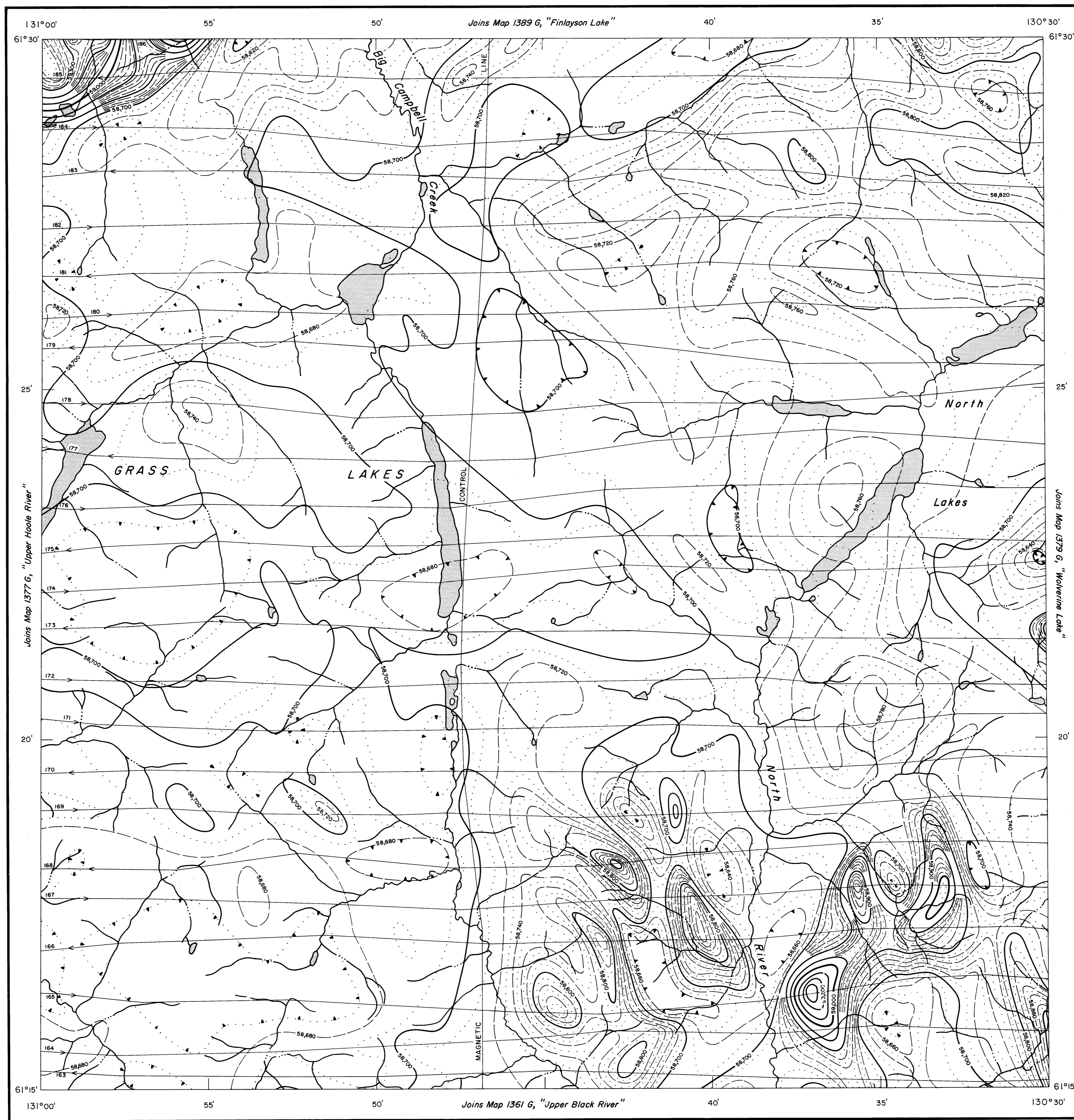
LEGEND

- Medium to coarse grained granite.
- Peridotite, pyroxenite (thick sills and/or lapoliths) largely serpentinized (minor asbestos); quartz carbonate alteration (a)
- Dark green fine grained (quartz) chlorite schist and medium to coarse grained chloritized amphibole schist and gneiss. Possibly originally volcanic rocks. May be as recent as Mississippian?
- Quartz biotite schist.
- Graphitic schist.
- Granitoid gneiss.
- Buff granitoid feldspar augen gneiss, including some pc gn.

APPENDIX V

105-G-7 - Grass Lakes
Geology, Geochemistry
Follow-up

011-
014

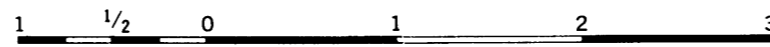


MAP 1378G

GRASS LAKES

YUKON TERRITORY

Scale: One Inch to One Mile = $\frac{1}{63,360}$
Miles

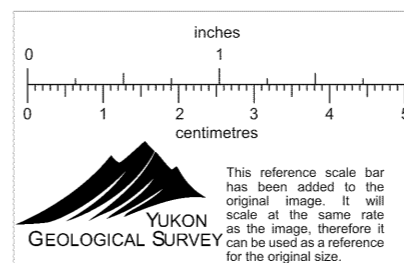


Air photographs covering this map-area may be obtained through the National Air Photographic Library, Topographical Survey, Ottawa, Ontario.

Airborne Magnetic Survey, June to September, 1961, by Aero Surveys Ltd.

No correction has been made for regional variation.

The planimetry for this map was obtained from topographical map sheets, published by the Department of Mines and Technical Surveys.



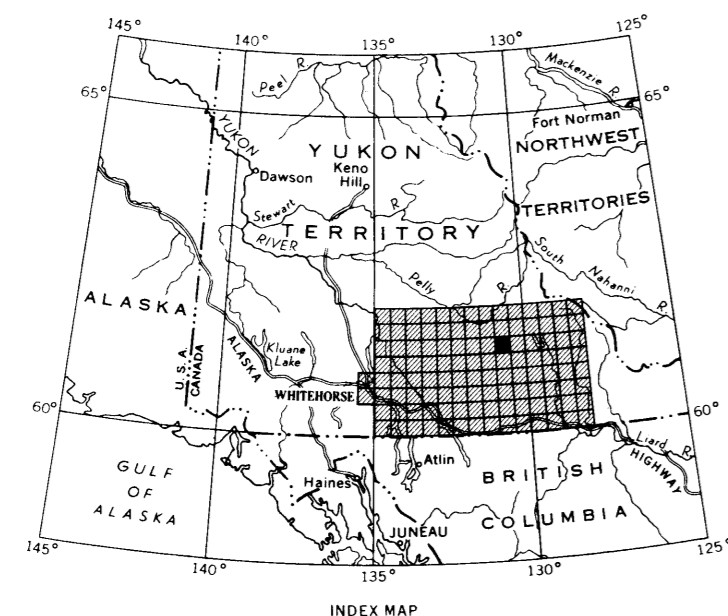
The magnetic data on this map were compiled from information recorded along the flight lines shown. The anomalies expressed by the magnetic contours are dependent on the variable magnetic intensities of the underlying rocks, and may be due to conditions near, or at unknown depths below the surface. High magnetic anomalies normally indicate the presence of basic rocks, such as diabase, gabbro, or serpentine, which have a relatively high iron content, but in special instances may be due, or partly due, to concentrations of magnetic ore minerals. By means of the magnetic anomalies, various rock bodies or structural features, such as faults or folds, may be traced into, or across, areas of low or no outcrops. In many instances, however, no interpretation of particular anomalies may be possible without further geological information.

GEOPHYSICS PAPER 1378

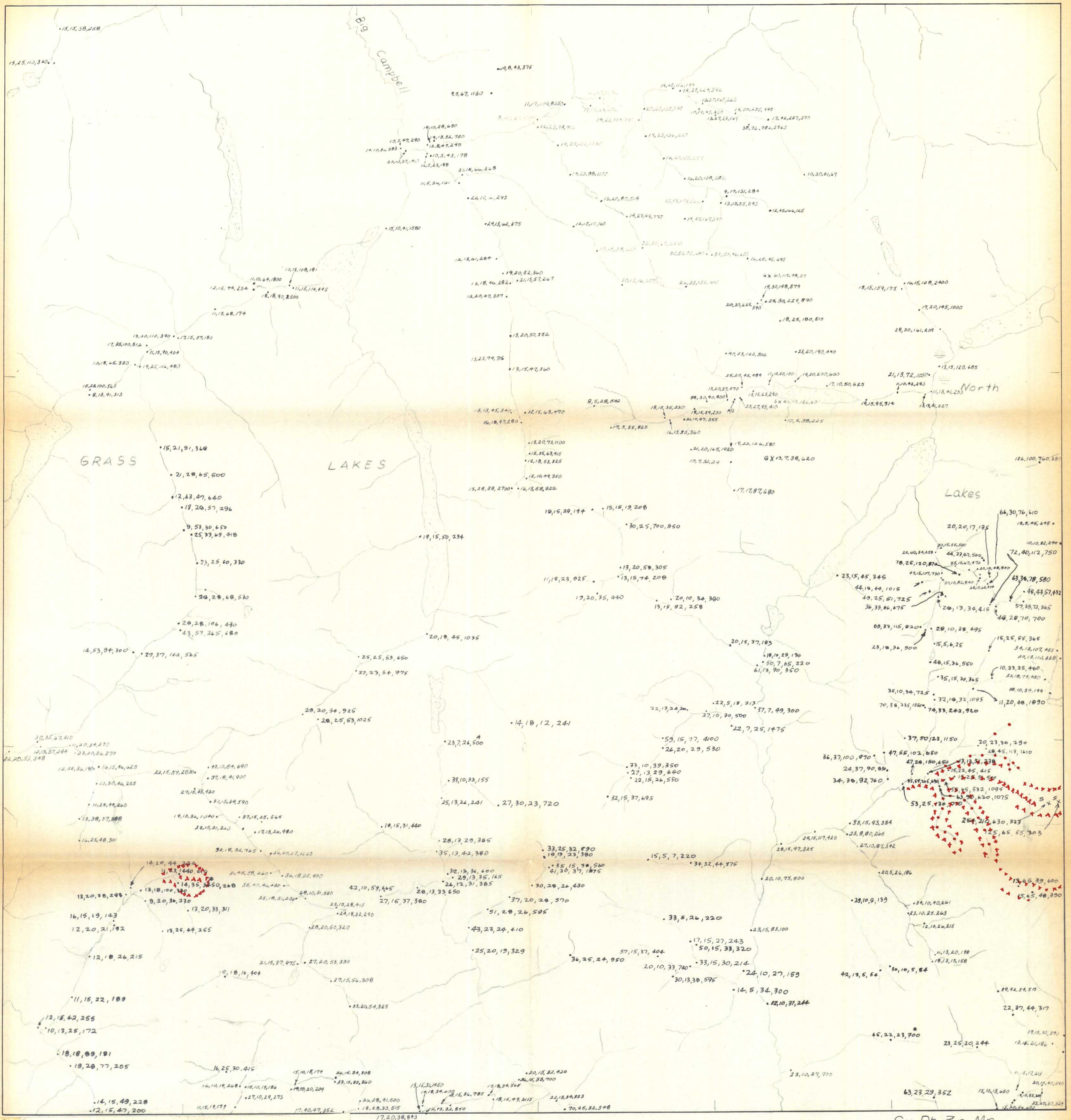
GRASS LAKES

YUKON TERRITORY

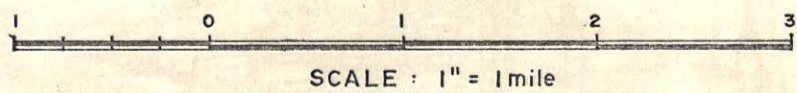
SHEET 105 ⁶/₇



INDEX MAP



PROPOSED FOLLOW-UP WORK
1970



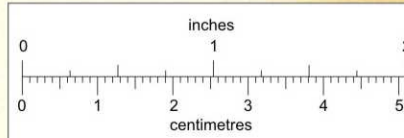
- Silt sample
- × Soil sample

..... Magnetic anomaly

105-G-7

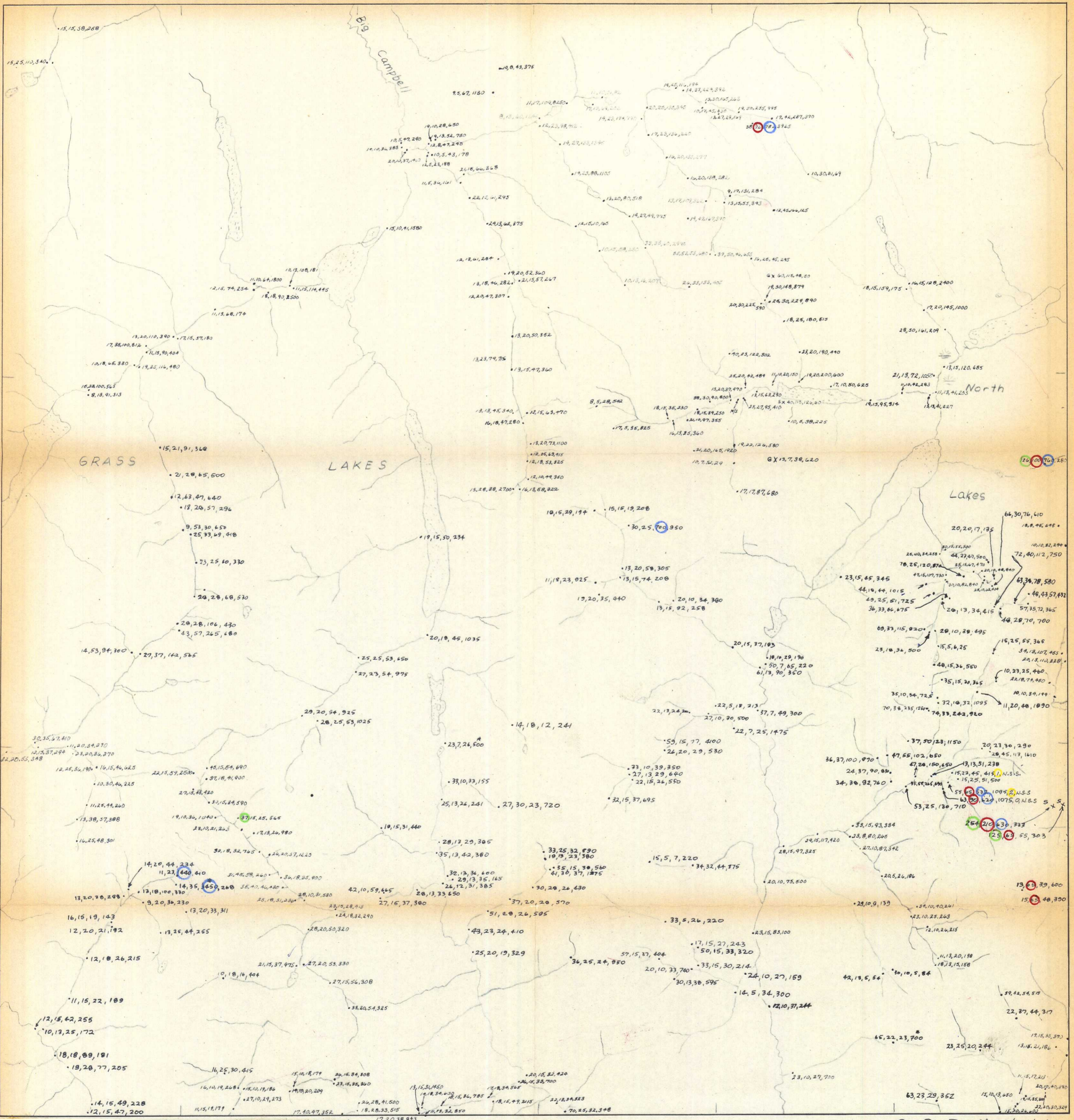
GRASS LAKES

105 $\frac{6}{7}$



This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

YUKON
GEOLOGICAL SURVEY



Cu, Pb, Zn, Mn, Mo, W

GEOCHEMISTRY

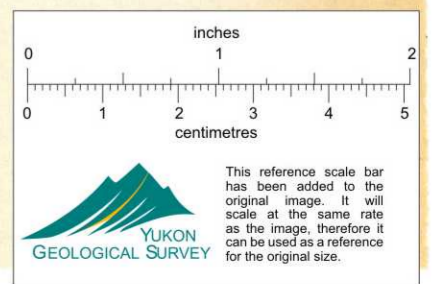
SCALE: 1" = 1 mile

GRASS LAKES

105 $\frac{6}{7}$

- Cu ○ 80-120 Pb ○ 60-90 Zn ○ 400-600
- 120-200 ○ 90-150 ○ 600-1000
- >200 ○ >150 ○ >1000

105-6-7



LEGEND

Map-units 10, 7, 2a, B, appear on Map 7-1960 "Quiet Lake" only

CENOZOIC

QUATERNARY

12 Unconsolidated glacial and alluvial deposits

TERTIARY

11 Dark brown and black basalt flows

PALEOCENE

10 Shale, sandstone, and conglomerate

MESOZOIC

JURASSIC AND/OR CRETACEOUS

9 Medium- to coarse-grained, biotite granodiorite and quartz monzonite, in part porphyritic; minor diorite, granite, and gneiss

MISSISSIPPIAN (?)

8 Current-bedded, ripple-marked, dark grey limestone; minor dark grey and brown argillite, and dolomite

MISSISSIPPIAN (?) OR EARLIER

7 Heterogeneous, shattered hornblende syenite, associated with unit 6

6 6a, partly altered green volcanic rocks, greenstone, meta-diorite; minor serpentine and amphibolite; 6b, green and maroon breccias, tufts, and flows; minor meta-diorite, slate, chert, and greywacke; 6c, buff, rusty, and pale green felsic breccias and tufts; minor chert and brown crinoidal limestone; 6d, massive grey and cream limestone

5 Brown and black-weathering, siliceous slate and shale, thin-bedded varicoloured cherts with shaly partings, speckled grey and brownish grey greywacke; minor chert pebble conglomerate

SILURIAN AND DEVONIAN

4 Grey and buff-weathering, thick-bedded dolomite with local lenses of chert; buff to reddish weathering, well-bedded, dark grey dolomite, and sandy and silty dolomites; buff, grey and white, lichen-covered quartzite

ORDOVICIAN AND SILURIAN

3 Black slate, platy black limestone, grey and pink siltstone; 3a, minor volcanic breccia

CAMBRIAN

MIDDLE AND UPPER CAMBRIAN (?)

2 Lustrous phyllite; grey and orange-weathering phyllite, in part limy and dolomitic, and locally changed to hornfels; minor greenstone, limestone, chert, greywacke, and phyllitic quartzite (perhaps younger); 2a, greenstone breccia and tuff

LOWER CAMBRIAN

1 1a, massive grey and buff quartzite; 1b, grey and brownish grey phyllite; 1c, grey, buff, and orange-weathering, grey limestone, locally coarsitic; 1d, limestone, quartzite, and phyllite, undivided

Geological boundary (defined, approximate or assumed)

Limit of geological mapping, unmapped area

Bedding (horizontal, inclined, vertical, overturned)

Bedding (dip known, tops unknown)

Bedding (estimated attitudes, includes foliation in metamorphic rocks; dip g, gentle, m, medium, s, steep)

Foliation (horizontal, inclined, vertical)

Fault (defined, approximate or assumed)

Thrust fault (defined, approximate or assumed)

Anticline (defined, approximate)

Syncline (defined, approximate)

Fossil locality

Mineral occurrence or prospect

Rock altered to hornfels

MINERAL SYMBOLS

Asbestos asb	Lead Pb
Barite ba	Molybdenum Mo
Copper Cu	Silver Ag
Gold Au	Tungsten W

MAP B-1960
GEOLOGY
FINLAYSON LAKE
YUKON TERRITORY



LEGEND

Jgr Medium to coarse grained muscovite granite; minor biotite-granite, pegmatite.

pc 10 Peridotite, pyroxenite (thick sills and/or lopoliths) largely serpentinized (minor asbestos).

pc 9s Dark green fine grained (quartz) chlorite schist and medium to coarse grained chloritized amphibole schist and gneiss. Possibly originally volcanic rocks.

pc 9b Quartz biotite schist, including minor intercalated quartzite.

pc 9a Sericite and biotite quartz schist, notably more quartzose than above.

pc 9d Hornblende biotite schist, probably originally limy beds and skarn.

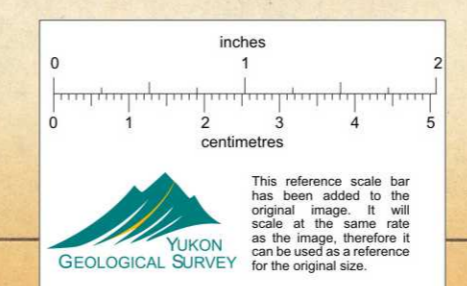
pc 9f Thinly laminated biotite granitoid gneiss.

pc 9gn Buff granitoid feldspar augen gneiss, including some pc 9n

SHEET 105-G/7 GRASS LAKES

Scale: One Inch to One Mile = 63,360 Miles

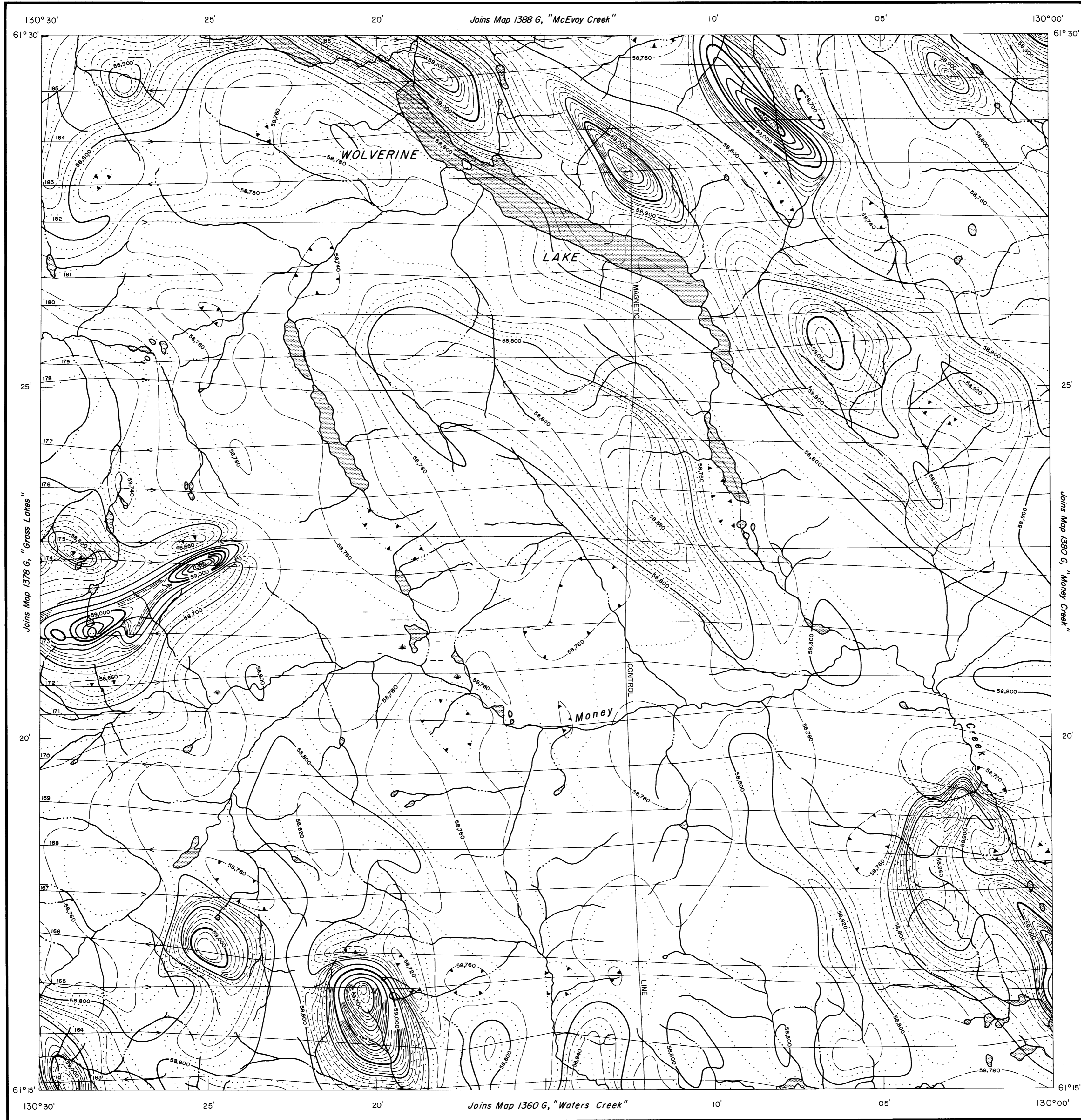
1/2 0 1 2 3



APPENDIX VI

105-G-8 - Woverine Lake
Geology, Geochemistry,
Follow-up

015 - 017

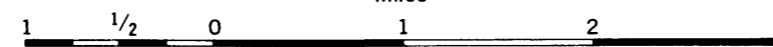


MAP 1379G

WOLVERINE LAKE

YUKON TERRITORY

Scale: One Inch = One Mile = $\frac{1}{63,360}$ Miles

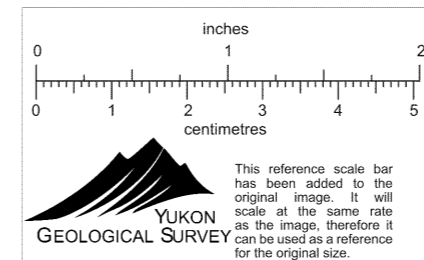


Air photographs covering this map area may be obtained through the National Air Photographic Library, Topographical Survey, Ottawa, Ontario.

Airborne Magnetic Survey, June to September, 1961, by Aero Surveys Ltd.

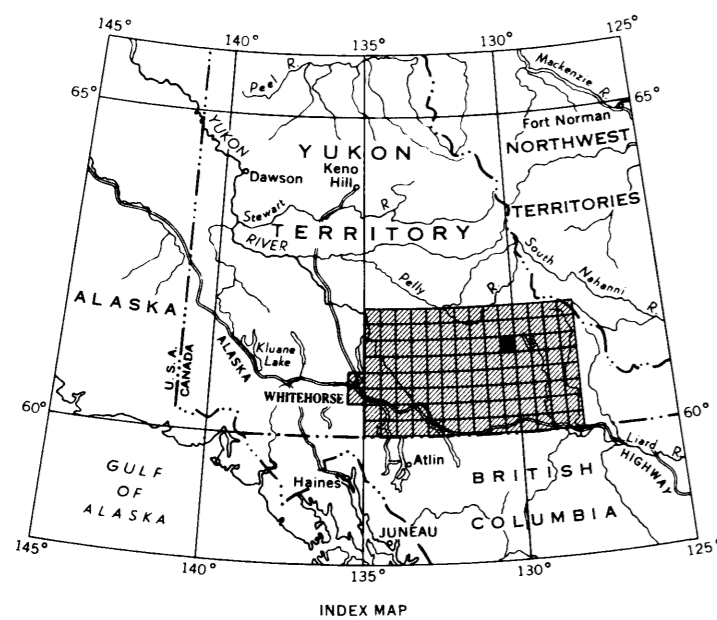
No correction has been made for regional variation.

The planimetry for this map was obtained from topographical map sheets, published by the Department of Mines and Technical Surveys.



The magnetic data on this map were compiled from information recorded along the flight lines shown. The anomalies expressed by the magnetic contours are dependent on the variable magnetic intensities of the underlying rocks, and may be due to conditions near, or at unknown depths below the surface. High magnetic anomalies normally indicate the presence of basic rocks, such as diabase, gabbro, or serpentine, which have a relatively high iron content, but in special instances may be due, or partly due, to concentrations of magnetic ore minerals. By means of the magnetic anomalies, various rock bodies or structural features, such as faults or folds, may be traced into, or across, areas of low or no outcrops. In many instances, however, no interpretation of particular anomalies may be possible without further geological information.

GEOPHYSICS PAPER 1379
WOLVERINE LAKE
YUKON TERRITORY
SHEET 105 $\frac{G}{8}$

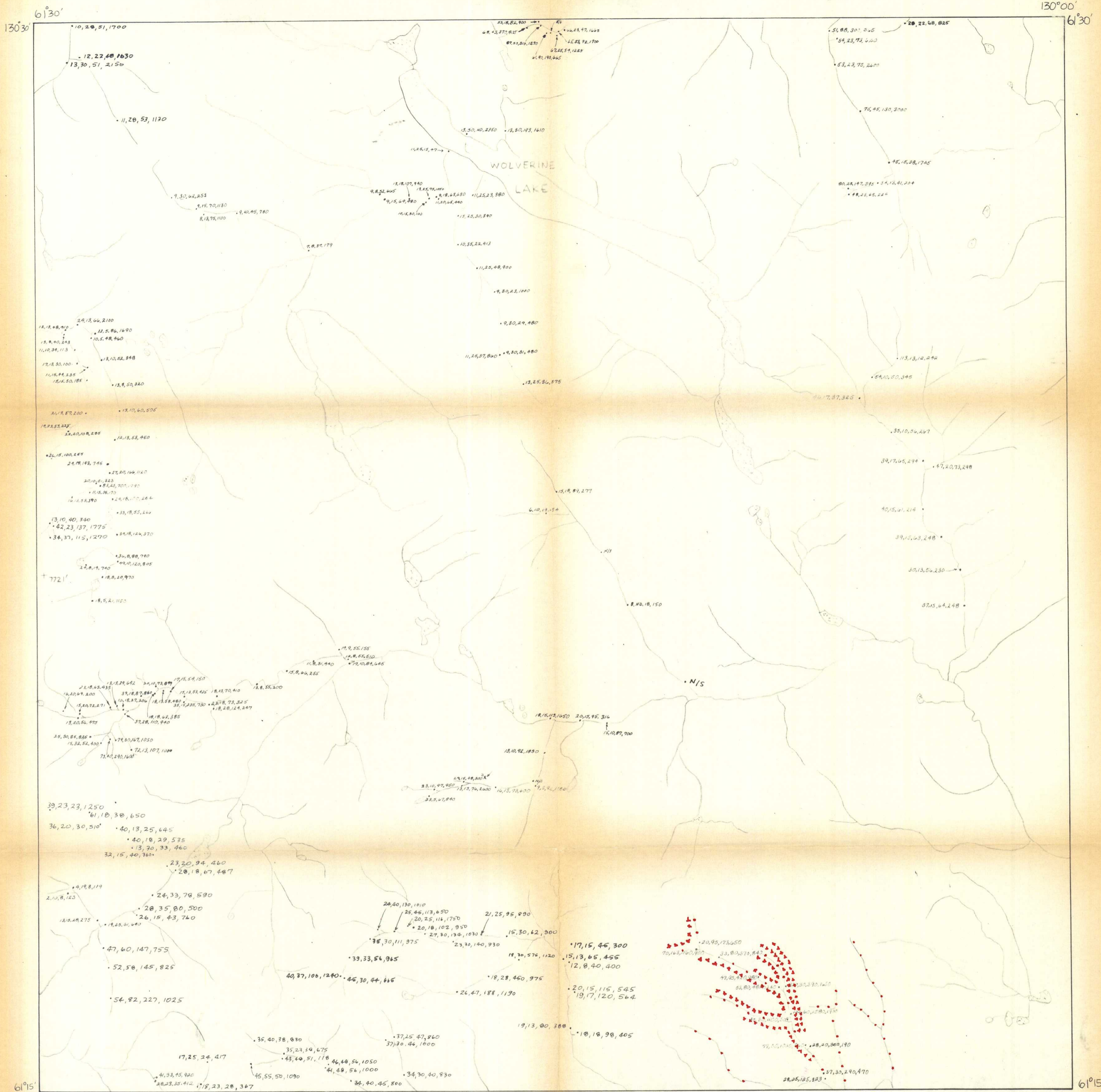


ISOMAGNETIC LINES (absolute total field)

- 500 gammas
- 100 gammas
- 20 gammas
- 10 gammas
- Magnetic depression

Flight lines

Flight altitude: nominally 1000 feet above ground level where terrain permitted



Cu, Pb, Zn, Mn

**PROPOSED FOLLOW-UP WORK
1970**

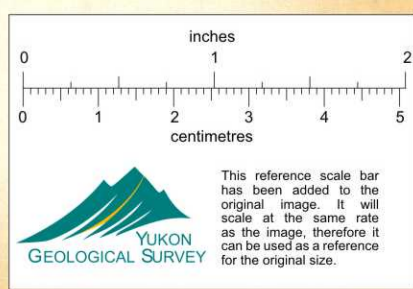
1 0 1 2 3
SCALE: 1" = 1 mile

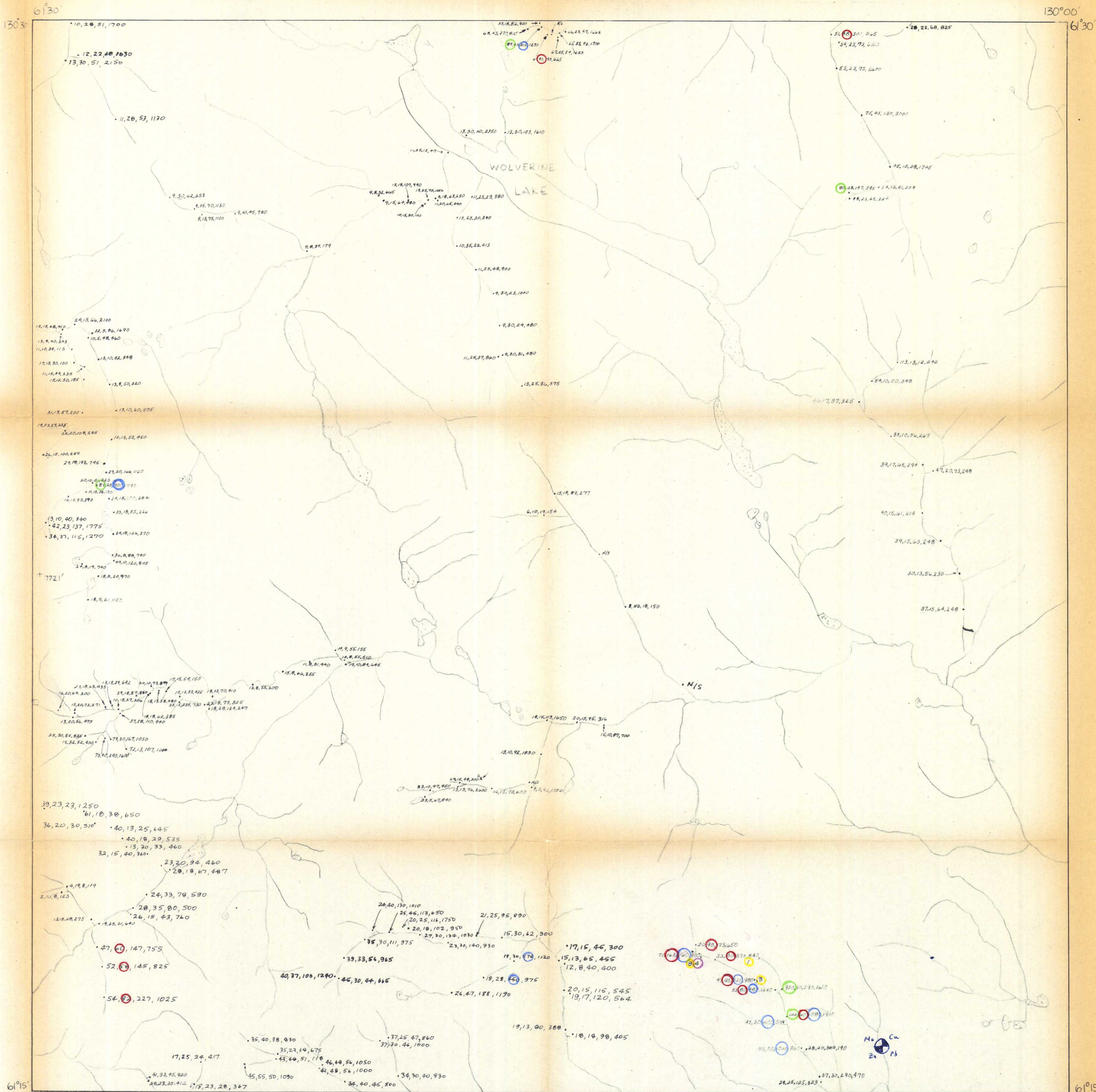
●..... Silt sample
X..... Soil sample
..... Magnetic anomaly

105-G-8

WOLVERINE LAKE

105 G 8





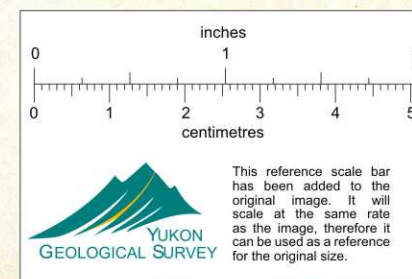
GEOCHEMISTRY

SCALE: 1" = 1 mile

- | | | |
|-------------|------------|--------------|
| Cu ○ 80-120 | Pb ○ 60-90 | Zn ○ 400-600 |
| ○ 120-200 | ○ 90-150 | ○ 600-1000 |
| ○ >200 | ○ >150 | ○ >1000 |

WOLVERINE LAKE

105 G 8



Cu, Pb, Zn, Mn, Mo, W

Cu Pb Zn Mo
Ag Au, WOs, Sn.
As Mn

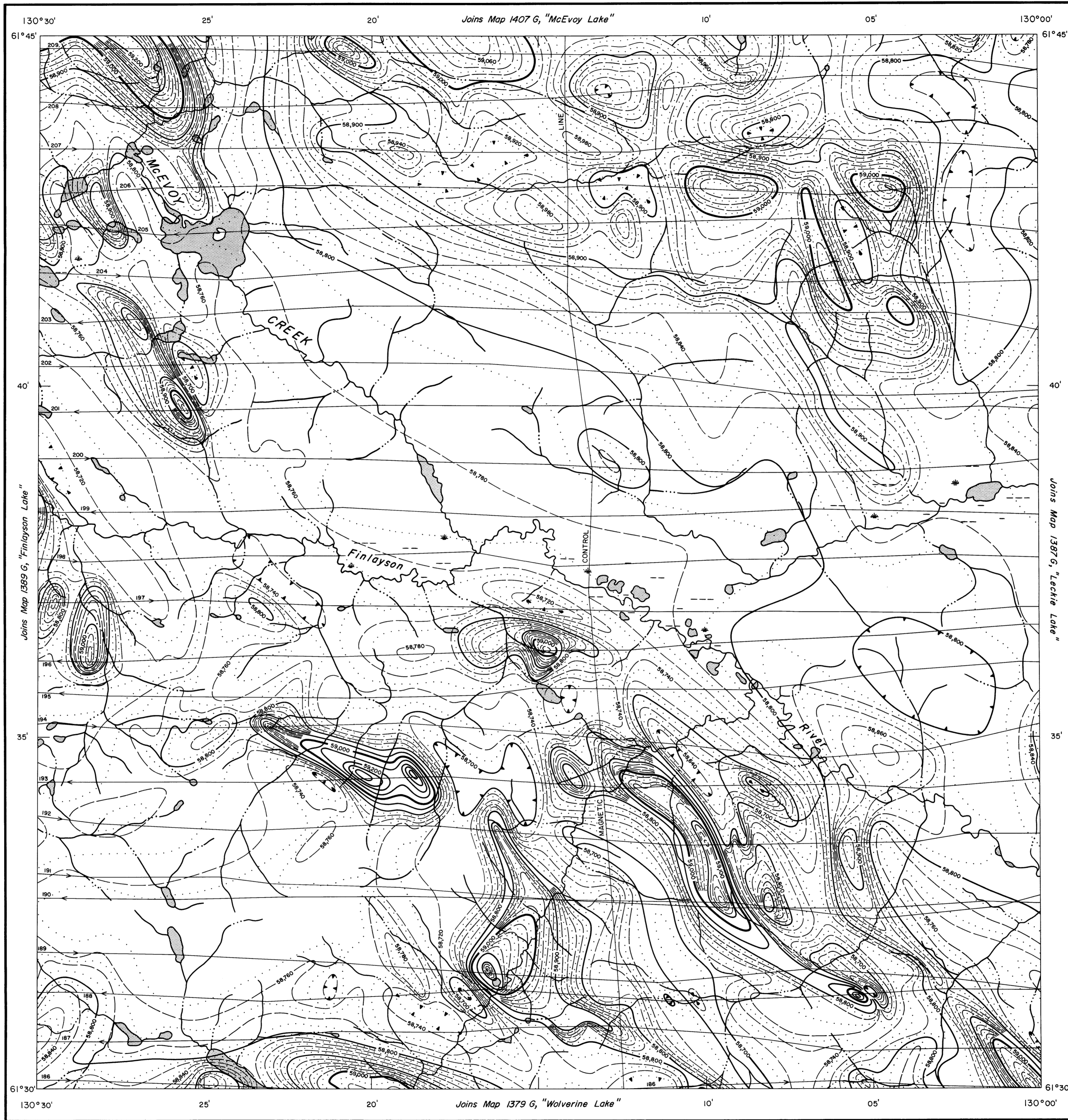
105-G-8

130°00'

APPENDIX VII

105-G-9 - McEvoy Creek
Geology, Geochemistry,
Follow-up

018-021

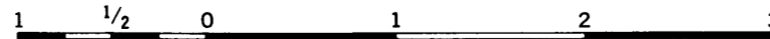


MAP 1388G

McEVOY CREEK

YUKON TERRITORY

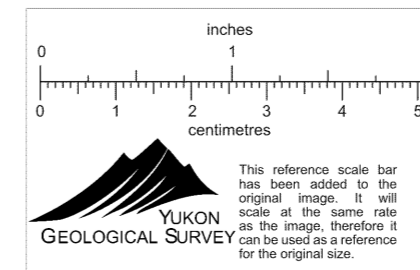
Scale: One Inch to One Mile = $\frac{1}{63,360}$ Miles



Air photographs covering this map-area may be obtained through the National Air Photographic Library, Topographical Survey, Ottawa, Ontario.

Airborne Magnetic Survey, June to September, 1961, by Aero Surveys Ltd.
No correction has been made for regional variation.

The planimetry for this map was obtained from topographical map sheets, published by the Department of Mines and Technical Surveys.



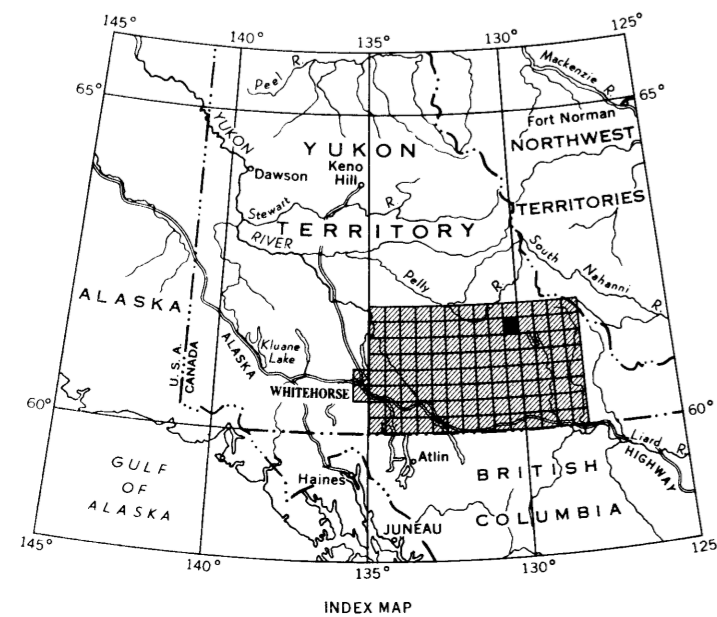
The magnetic data on this map were compiled from information recorded along the flight lines shown. The anomalies expressed by the magnetic contours are dependent on the variable magnetic intensities of the underlying rocks, and may be due to conditions near, or at unknown depths below the surface. High magnetic anomalies normally indicate the presence of basic rocks, such as diabase, gabbro, or serpentine, which have a relatively high iron content, but in special instances may be due, or partly due, to concentrations of magnetic ore minerals. By means of the magnetic anomalies, various rock bodies or structural features, such as faults or folds, may be traced into, or across, areas of few or no outcrops. In many instances, however, no interpretation of particular anomalies may be possible without further geological information.

GEOPHYSICS PAPER 1388

McEVOY CREEK

YUKON TERRITORY

SHEET 105 ⁶/₉



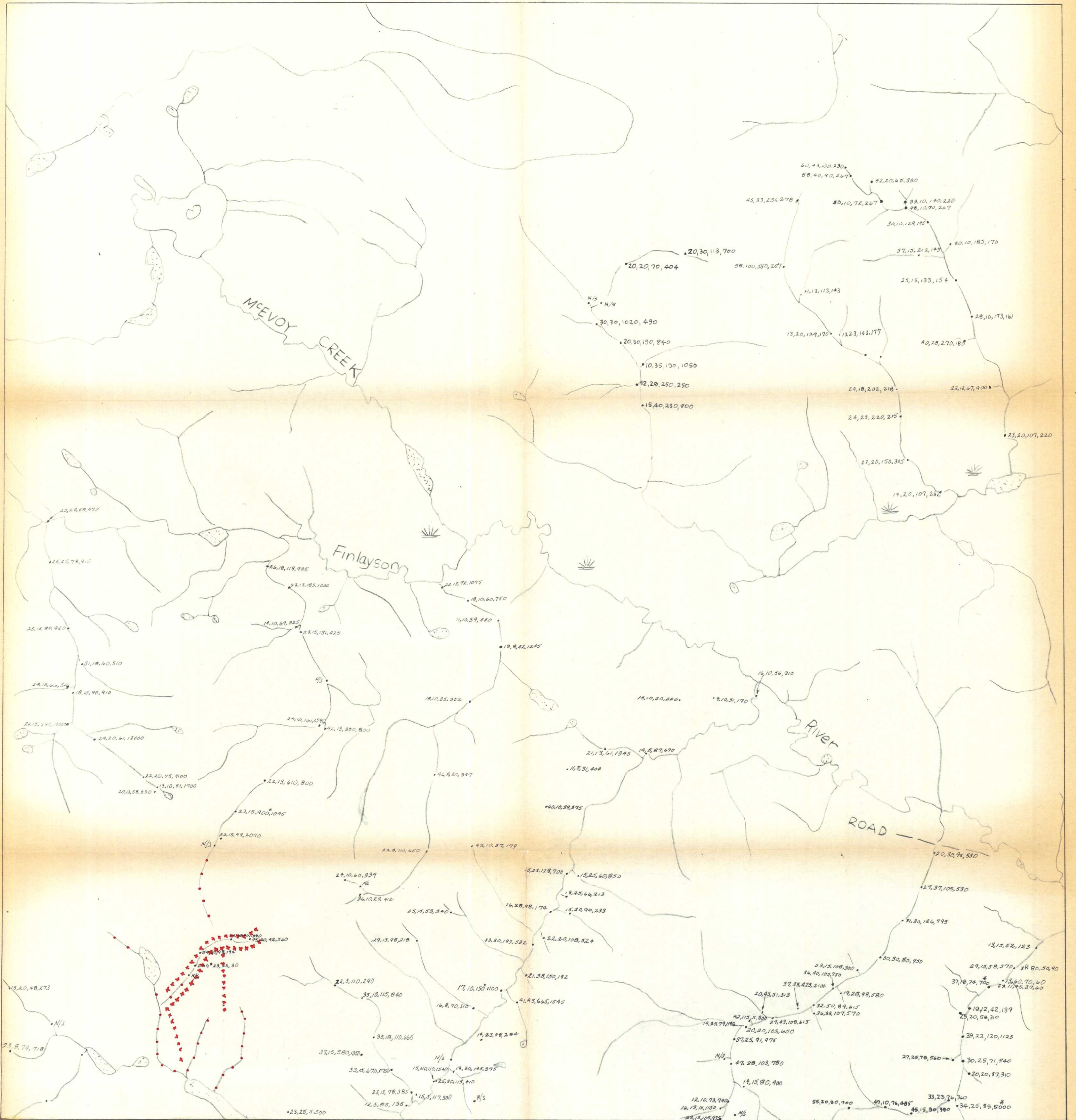
INDEX MAP

ISOMAGNETIC LINES (absolute total field)

- 500 gammas
- 100 gammas
- 20 gammas
- 10 gammas
- Magnetic depression

Flight lines

Flight altitude: nominally 1000 feet above ground level where terrain permitted.



Cu, Pb, Zn, Mn

McEVROY CREEK 105 G 9

PROPOSED FOLLOW-UP WORK 1970

1 0 1 2 3
SCALE: 1" = 1 mile

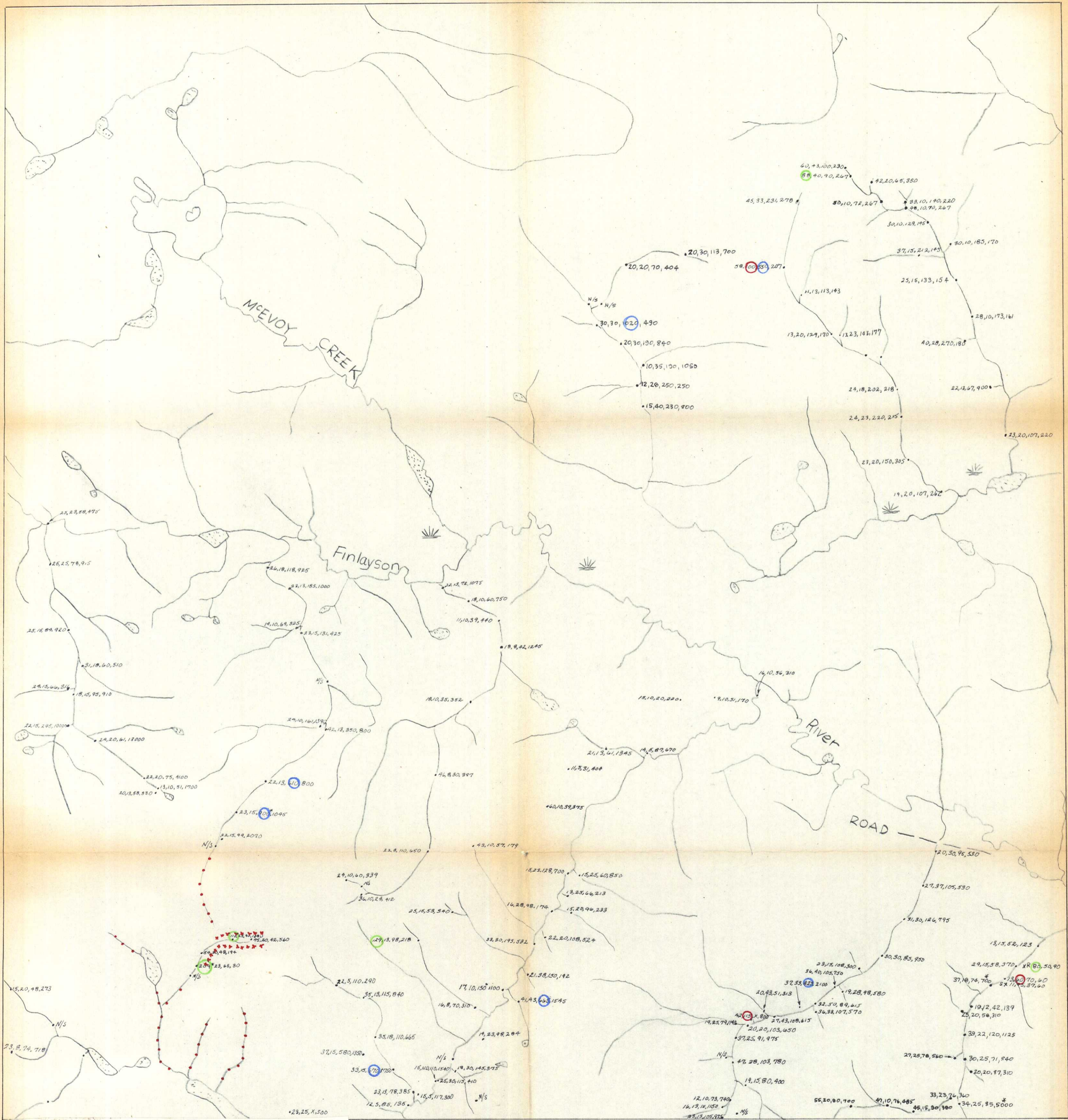
●..... Silt sample
x..... Soil sample
..... Magnetic anomaly

105-G-9

inches 1 2
centimetres 0 1 2 3 4 5

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YUKON GEOLOGICAL SURVEY



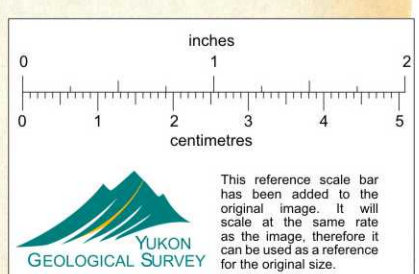
GEOCHEMISTRY 105-6-9

SCALE: 1" = 1 mile

- | | | |
|-------------|------------|--------------|
| Cu ○ 80-120 | Pb ○ 60-90 | Zn ○ 400-600 |
| ○ 120-200 | ○ 90-150 | ○ 600-1000 |
| ○ >200 | ○ >150 | ○ >1000 |

McEVROY CREEK 105 G 9

Cu, Pb, Zn, Mn



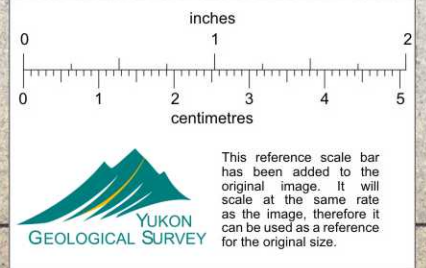
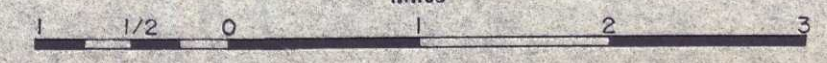
LEGEND

- Jgr Granite.
- Jdi Diorite.
- ?Msb Serpentinite, minor asbestos.
- Mis Massive grey and cream limestone, minor dolomite, skarn(a)
- Msh Graphitic shale; red shale with intercalated chert (a)
- Mct Chert, graphitic chert.
- Mqt Quartzite, graphitic quartzite, minor phyllite.
- Mgs Greenschist.
- Mgs Graphite schist and phyllite.
- Pyl Phyllite
-
-



SHEET 105 - G/9 McEVY CREEK

Scale: One Inch to One Mile = 1/63,360 Miles



4224-277
43205-43328

Geology 105-G/9

APPENDIX VIII

105-G-10 - Finlayson Lake
Geology, Geochemistry,
Follow-up

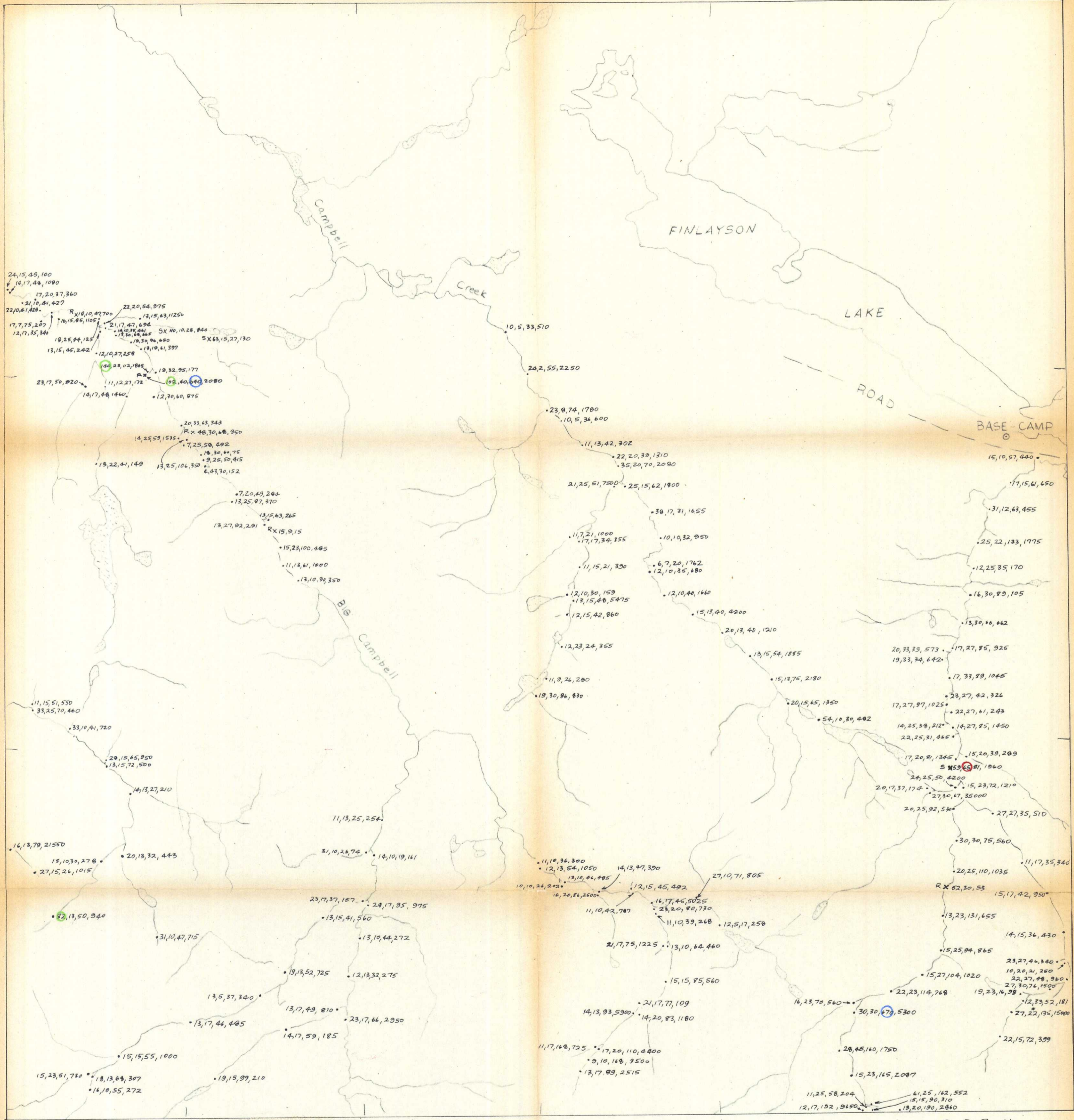
Fig. 1 - Prospecting Map -
Bot Claims

Fig. 2 - Magnetometer Survey -
Bot Claims

Geologic Map - Bot Claims
1" = 200 ft.

Correspondence - Cassier
Johns-Manville

022 - 032



Cu, Pb, Zn, Mn

GEOCHEMISTRY

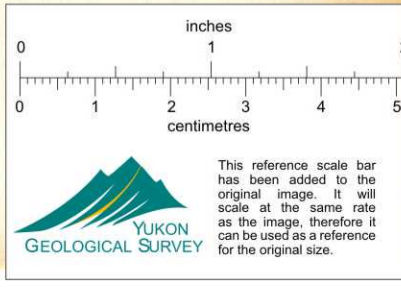
SCALE: 1" = 1 mile

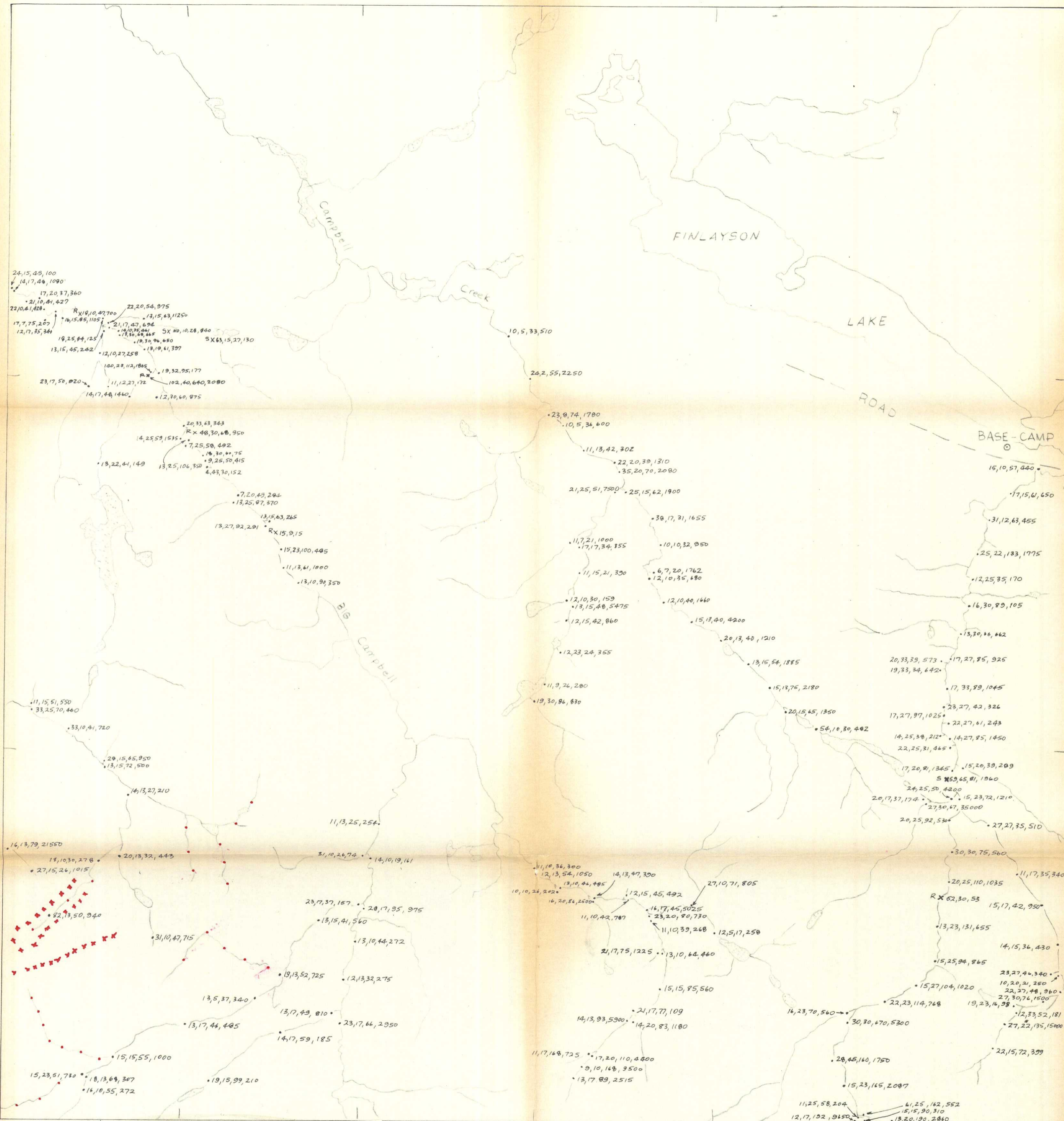
- | | | |
|-------------|------------|--------------|
| Cu ○ 80-120 | Pb ○ 60-90 | Zn ○ 400-600 |
| ○ 120-200 | ○ 90-150 | ○ 600-1000 |
| ○ > 200 | ○ > 150 | ○ > 1000 |

105 G 10

FINLAYSON LAKE

105 G 10





Cu, Pb, Zn, Mn

**PROPOSED FOLLOW-UP WORK
1970**

1 0 1 2 3
SCALE: 1" = 1 mile

● Silt sample
X Soil sample
- - - - - Magnetic anomaly

105-6-10

FINLAYSON LAKE

105 6/10

0 1 2 3 4 5
inches
0 1 2 3 4 5
centimetres

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

YUKON
GEOLOGICAL SURVEY

LEGEND

Map-units 10, 7, 2a, B, appear on Map 7-1960 "Quiet Lake" only

- QUATERNARY**
 12 Unconsolidated glacial and alluvial deposits
- TERTIARY**
 11 Dark brown and black basalt flows
- PALEOCENE**
 10 Shale, sandstone, and conglomerate
- MESOZOIC**
JURASSIC AND/OR CRETACEOUS
 9 Medium- to coarse-grained, biotite granodiorite and quartz monzonite, in part porphyritic; minor diorite, granite, and gneiss
- MISSISSIPPIAN (?)**
 8 Current-bedded, ripple-marked, dark grey limestone; minor dark grey and brown argillite, and dolomite
- MISSISSIPPIAN (?) OR EARLIER**
 7 Heterogeneous, shattered hornblende syenite, associated with unit 6
- 6a, partly altered green volcanic rocks, greenstone, meta-diorite; minor serpentine and amphibolite; 6b, green and maroon breccias, tuffs, and flows; minor meta-diorite, slate, chert, and greywacke; 6c, buff, rusty, and pale green felsic breccias and tuffs; minor chert and brown crinoidal limestone; 6d, massive grey and cream limestone
- 5 Brown and black-weathering, siliceous slate and shale, thin-bedded varicoloured cherts with shaly partings, speckled grey and brownish grey greywacke; minor chert pebble conglomerate
- SILURIAN AND DEVONIAN**
 4 Grey and buff-weathering, thick-bedded dolomite with local lenses of chert; buff to reddish weathering, well-bedded, dark grey dolomite, and sandy and silty dolomites; buff, grey and white, lichen-covered quartzite
- ORDOVICIAN AND SILURIAN**
 3 Black slate, platy black limestone, grey and pink siltstone; 3a, minor volcanic breccia
- CAMBRIAN**
MIDDLE AND UPPER CAMBRIAN (?)
 2 Lustrous phyllite; grey and orange-weathering phyllite, in part limy and dolomitic, and locally changed to hornfels; minor greenstone, limestone, chert, greywacke, and phyllitic quartzite (perhaps younger); 2a, greenstone breccia and tuff
- LOWER CAMBRIAN**
 1 1a, massive grey and buff quartzite; 1b, grey and brownish grey phyllite; 1c, grey, buff, and orange-weathering, grey limestone, locally oolitic; 1d, limestone, quartzite, and phyllite, undivided
- A Quartz-biotite and quartz-chlorite schist, micaceous quartzite, hornfels; minor phyllite and limestone
- B Limestone and minor dolomite associated with A and C
- C Micaceous, quartzose gneiss, granitoid gneiss; minor quartz-biotite schist
- D Dunite; minor peridotite, pyroxenite, and serpentinized equivalents; gabbro and diorite

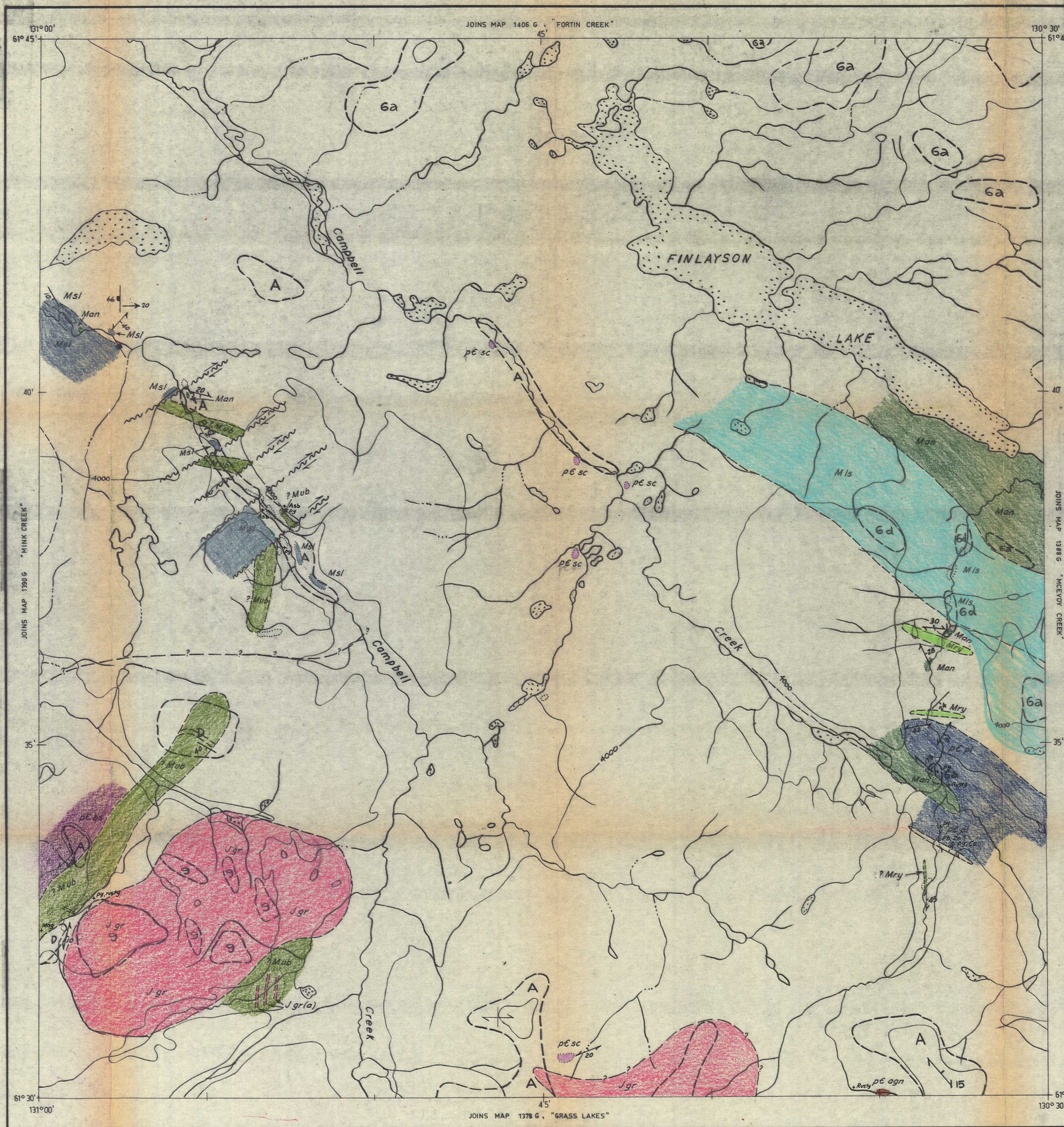
- Geological boundary (defined, approximate or assumed) ————
- Limit of geological mapping, unmapped area ————
- Bedding (horizontal, inclined, vertical, overturned) ————
- Bedding (dip known, tops unknown) ————
- Bedding (estimated attitudes, includes foliation in metamorphic rocks; dip g, gentle, m, medium, s, steep) ————
- Foliation (horizontal, inclined, vertical) ————
- Fault (defined, approximate or assumed) ————
- Thrust fault (defined, approximate or assumed) ————
- Anticline (defined, approximate) ————
- Syncline (defined, approximate) ————
- Fossil locality ————
- Mineral occurrence or prospect ————
- Rock altered to hornfels ————

MINERAL SYMBOLS

Asbestos asb	Lead Pb
Barite ba	Molybdenum Mo
Copper Cu	Silver Ag
Gold Au	Tungsten W

MAP 8-1960
 GEOLOGY
 FINLAYSON LAKE
 YUKON TERRITORY

105 G-10



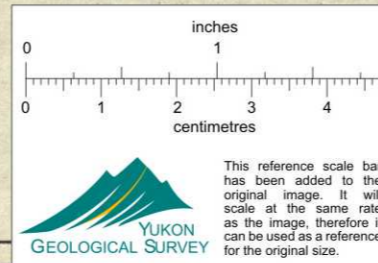
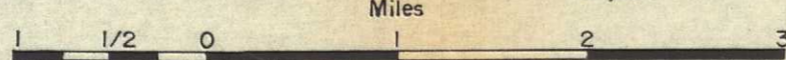
LEGEND

- Jgr Porphyritic granite, associated diorite with minor disseminated pyrrhotite; alaskite, syenite dykes (a)
- Man Greenschist facies of altered andesite, includes minor intercalated rhyolite.
- Mry Rhyolite flows in altered andesite (Mcs).
- Mub Amphibolite, peridotite and serpentinized equivalents; minor altered basic volcanics; quartz carbonate alteration.
- Mis Massive grey and cream limestone.
- Msl Black graphitic shale, slate and phyllite.
- pc ag "Silver" grey phyllites, minor black graphitic phyllite (a) minor sericite schist (unit may be in part as recent as Mississippian?)
- pc ps Graphitic phyllite and schist.
- pc sc Quartz sericite and sericite quartz schist, minor quartzite.
- pc ps Quartz muscovite biotite schist.
- pc agn Buff granitoid feldspar augen gneiss.

SHEET 105-G-10

FINLAYSON LAKE

Scale: One inch to One Mile = 63,360 Miles



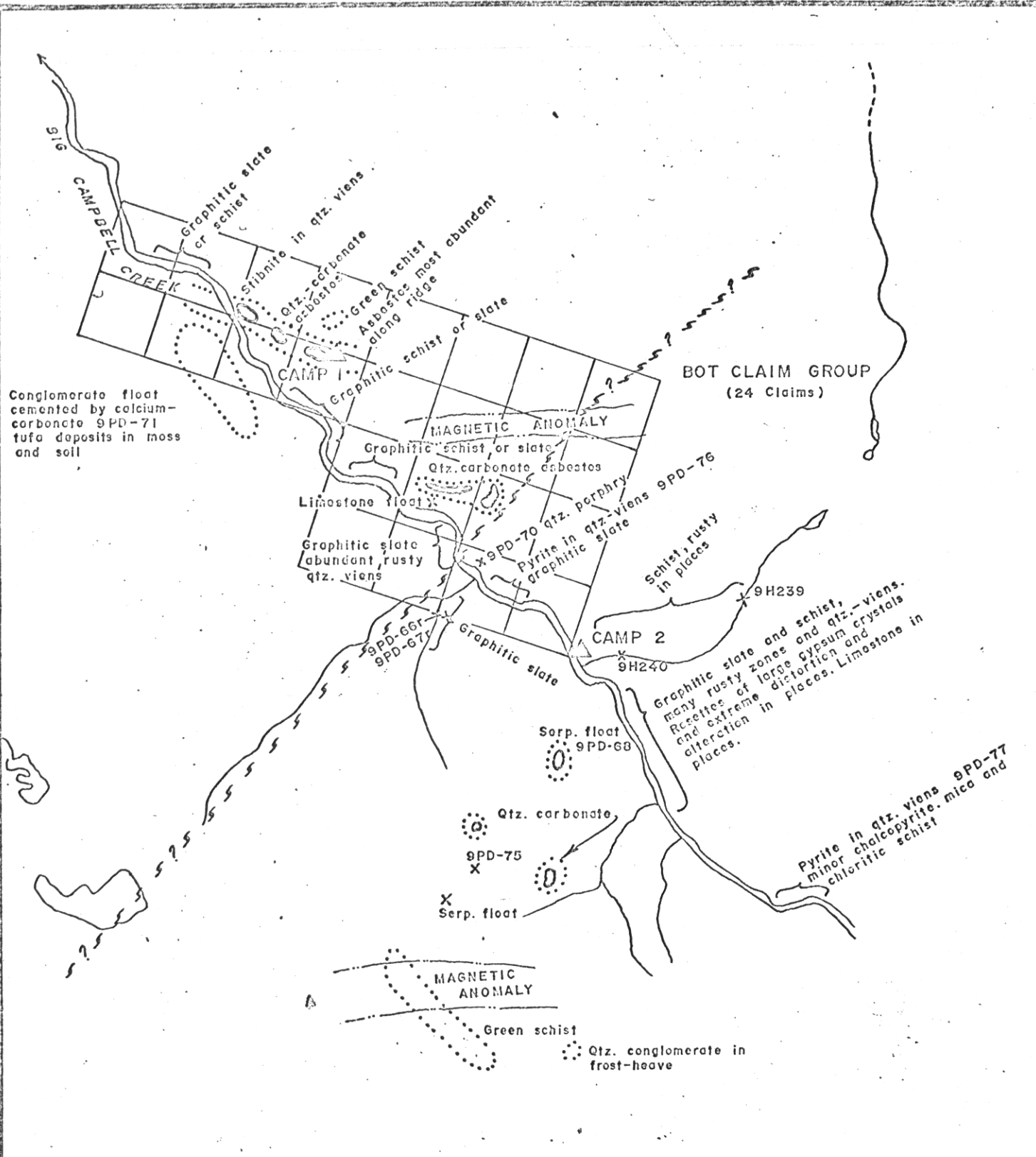
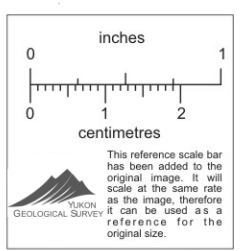
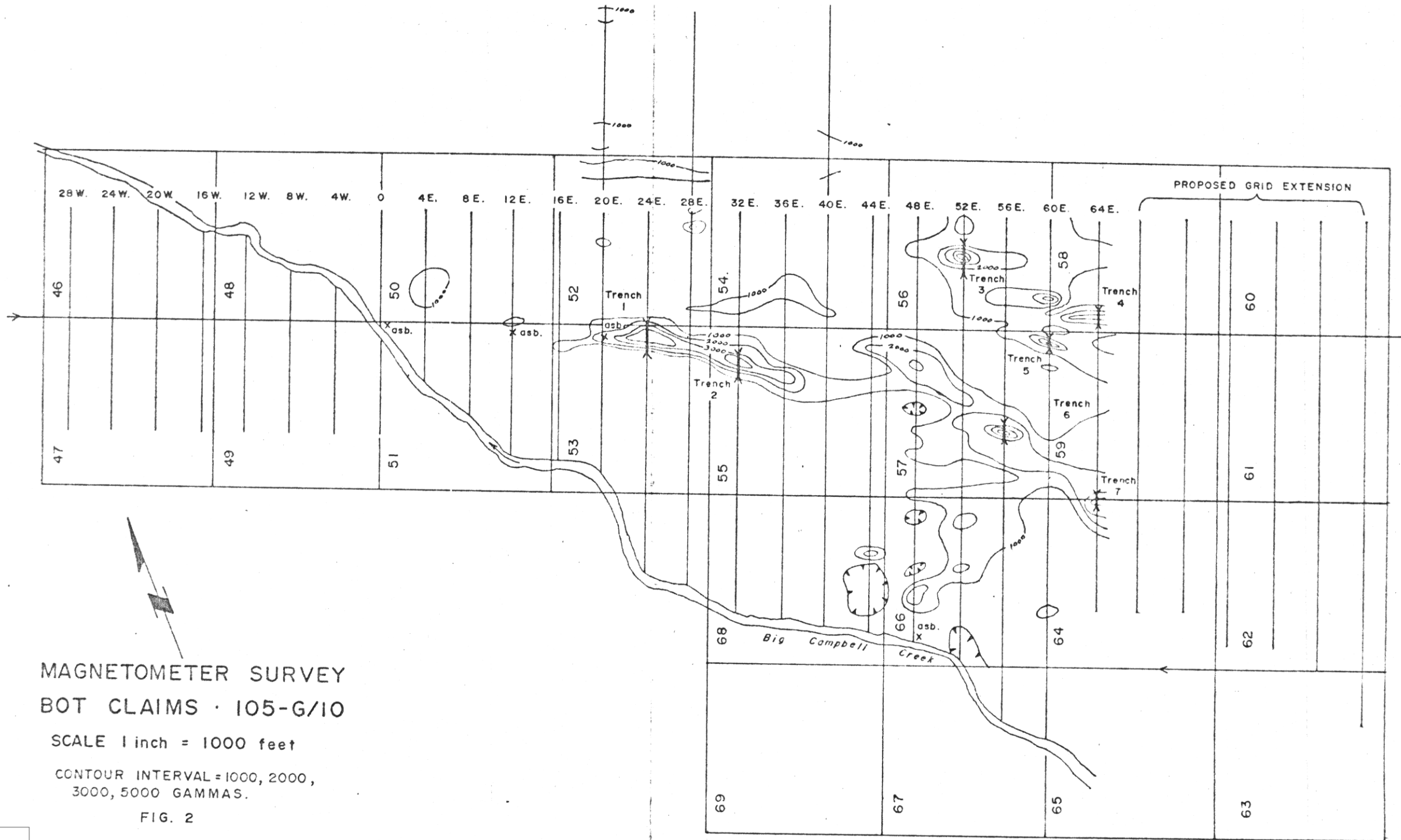


FIGURE 1
PROSPECTING MAP
 OF
BOT CLAIMS
 P. DEAN; JULY, 1969
 SCALE : 1" = 1/2 m.



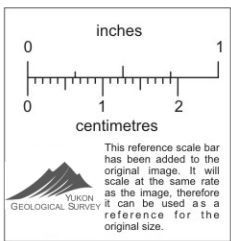


MAGNETOMETER SURVEY
BOT CLAIMS · 105-G/10

SCALE 1 inch = 1000 feet

CONTOUR INTERVAL = 1000, 2000,
3000, 5000 GAMMAS.

FIG. 2

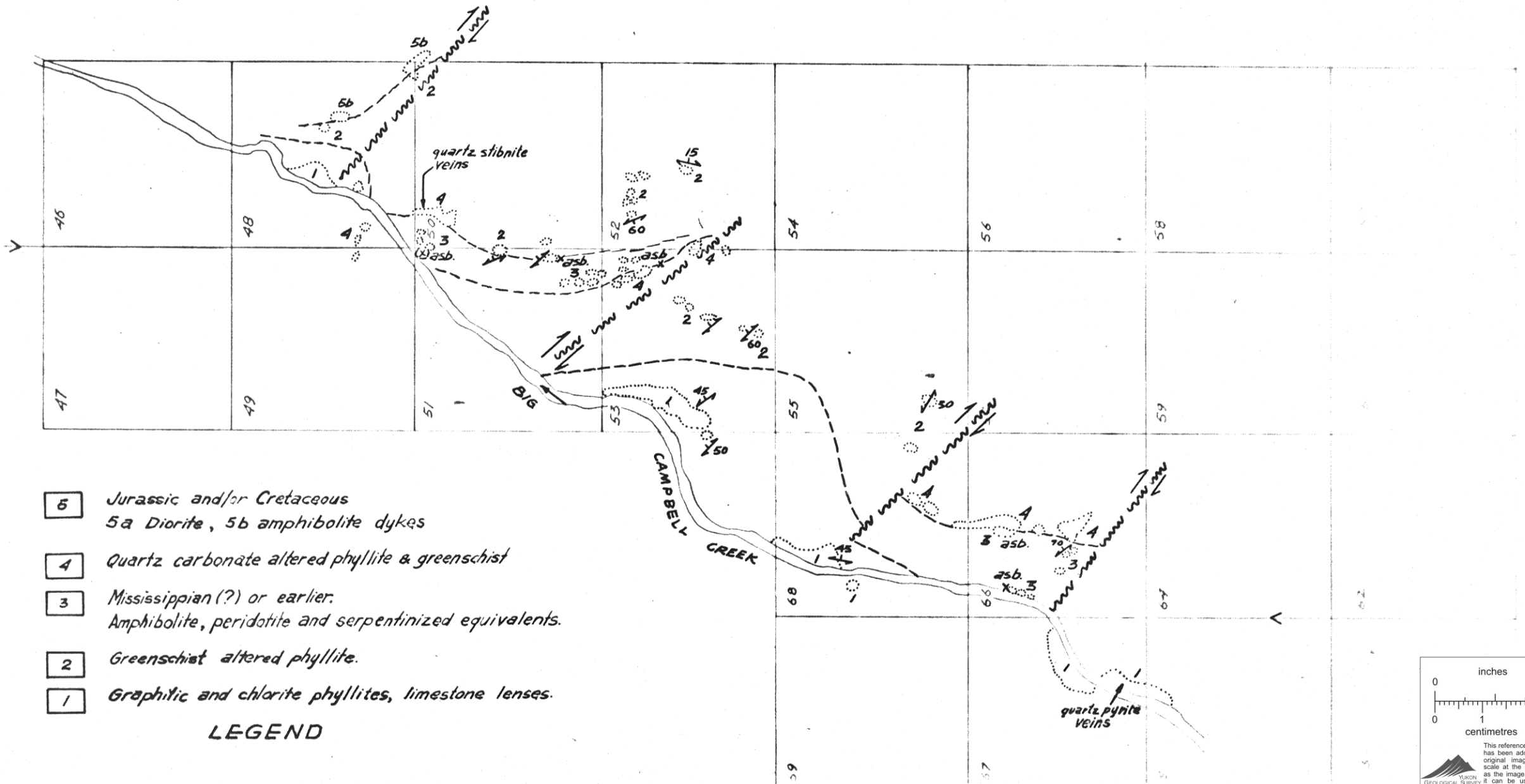


**GEOLOGIC MAP
BOT CLAIMS**

105-G-10

Scale 1 inch = 1000 feet

GEOLOGY: Graig Fleming 1969



- 5 Jurassic and/or Cretaceous
5a Diorite, 5b amphibolite dykes
- 4 Quartz carbonate altered phyllite & greenschist
- 3 Mississippian (?) or earlier.
Amphibolite, peridotite and serpentized equivalents.
- 2 Greenschist altered phyllite.
- 1 Graphitic and chlorite phyllites, limestone lenses.

LEGEND

61°30' N
105°55' E

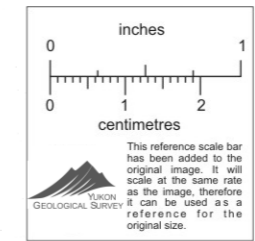
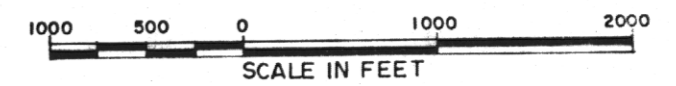
inches
0 1 2

centimetres
0 1 2

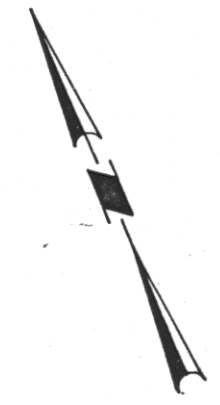
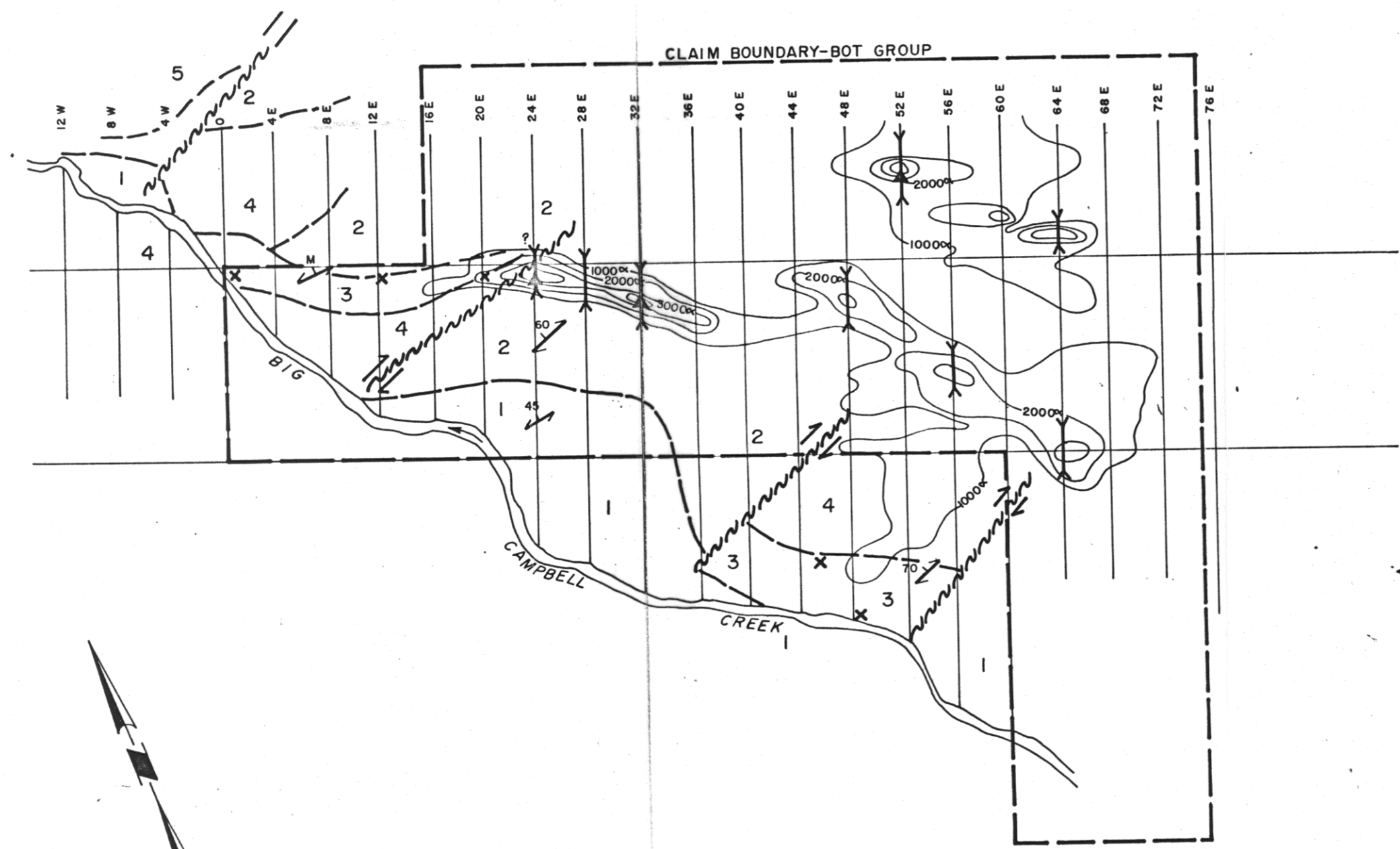
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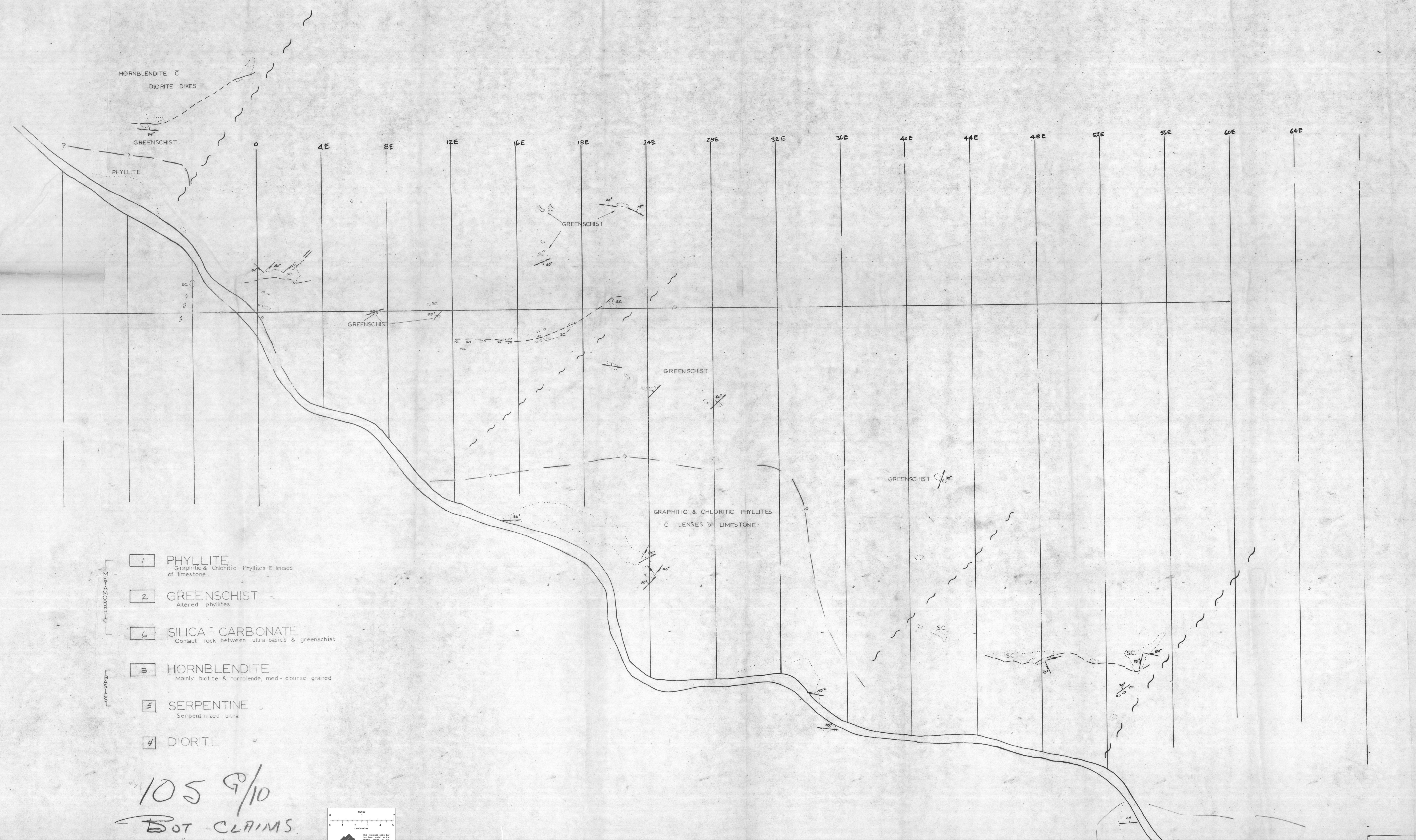
LEGEND

- 5 AMPHIBOLITE DYKES
- 4 QUARTZ CARBONATE ALTERED PHYLLITE AND GREENSCHIST
- 3 MISSISSIPPIAN(?) OR EARLIER, AMPHIBOLITE, PERIDOTITE, & SERPENTINIZED EQUIVALENTS.
- 2 GREENSCHIST ALTERED PHYLLITES
- 1 GRAPHITIC AND CHLORITIC PHYLLITES
- ~ GEOLOGICAL CONTACTS
- ↗ FOLIATION
- PRESUMED FAULTS
- x ASBESTOS SHOWING
- ▲ TEST PITS
- 1000 or 2000 GROUND MAGNETIC ANOMALIES
- Y PROPOSED CAT TRENCHES



COMPILATION MAP. DEC/72
ATLAS EXPLORATIONS LIMITED
BOT GROUP

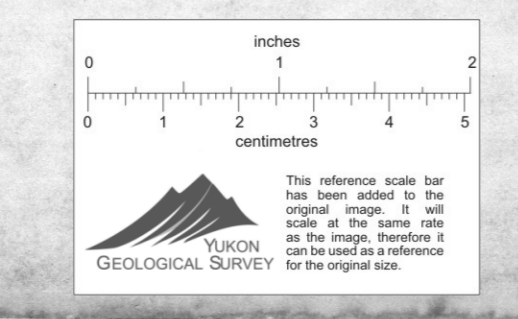




- 1 PHYLITE
Graphitic & Chloritic Phyllites & lenses of limestone
- 2 GREENSCHIST
Altered phyllites
- 3 SILICA-CARBONATE
Contact rock between ultra-basics & greenschist
- 4 HORNBLENDITE
Mainly biotite & hornblende, med. coarse grained
- 5 SERPENTINE
Serpentinized ultra
- 6 DIORITE

Legend

105 9/10
BOT CLAIMS
1" = 200'



GREENSCHIST

DIORITE

HORNBLENDITE

HORNBLENDITE
DIORITE Dikes

GREENSCHIST

PHYLITE

GREENSCHIST

GREENSCHIST

GREENSCHIST

GRAPHITIC & CHLORITIC PHYLITES
& LENSES OF LIMESTONE

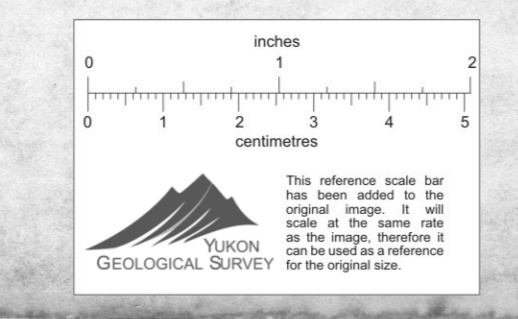
Legend

3 SILICA-CARBONATE
Contact rock between ultra-basics & greenschist

4 HORNBLENDITE
Mainly biotite & hornblende, med. coarse grained

5 SERPENTINE
Serpentinized ultra

6 DIORITE



CASSIAR ASBESTOS CORPORATION LIMITED

PLEASE ADDRESS ALL CORRESPONDENCE
TO THE COMPANY
CASSIAR, B. C.

PHONE
CASSIAR 7435

TELEX 049-828

MR. JOHN. S. BROCK.,
ATLAS EXPLORATIONS LIMITED,
Box 3050,
WHITEHORSE, YUKON.

31st, JULY, 1969.

DEAR JOHN,

CAM OGILVY IS OUT OF CAMP, SO I AM REPLYING TO YOUR LETTER OF JULY 16TH, 1969. RE: YOUR ASBESTOS SPECIMENS FROM THE ROSS RIVER AREA SORRY FOR THE DELAY.

EVALUATION OF ASBESTOS DEPOSITS IS RATHER FRUSTRATING, AS IT IS SELDOM THAT YOU GET A LARGE ENOUGH TONNAGE OF COMMERCIAL FIBRE GRADES AND PROPER LENGTH DISTRIBUTIONS.

TO BE OF INTEREST, A PROSPECT SHOULD SUGGEST THE FOLLOWING: AT LEAST 3 TO 5% TOTAL FIBRE OF 1/16 INCH OR GREATER, OF WHICH AT LEAST 25% SHOULD BE 1/4 INCH OR OVER. THIS SHOULD BE CAPABLE OF OPEN PIT OPERATION AND INDICATE THE POSSIBILITY OF DEVELOPING 10 MILLION TONS OR MORE. THE FIBRE LENGTHS REFERRED TO ARE THE RECOVERABLE LENGTHS AFTER MILLING, I.E. THE ACTUAL LENGTHS AFTER BEING PLUCKED OUT OF THE VEINLETS. MOST VEINLETS ARE COMPOUND, WITH ONE OR MORE PARTINGS, SUCH THAT AN APPARENT 1/4 INCH VEINLET MAY BREAK DOWN INTO ONE 1/8" SIMPLE AND TWO 1/16" FIBRILS. EXCEPT IN VERY EXCEPTIONAL CIRCUMSTANCES, AN OPERATION CANNOT BE PREDICATED UPON SHORT FIBRE ALONE; SOME 1/4 INCH OR LONGER ELEMENTS ARE ALWAYS NECESSARY, TO MAKE EVEN ASBESTOS - CEMENT GRADES.

YOUR SPECIMENS ARE ALL ESSENTIALLY 1/16 INCH FIBRILS, WITH A VERY FEW UP TO 1/8 INCH. THIS IS CONSIDERED UNECONOMIC IN YUKON OR NORTHERN B.C. AT THIS TIME, REGARDLESS OF THE POTENTIAL TONNAGE OR TOTAL PERCENTAGE OF FIBRE, WITHOUT THE 1/4 INCH OR LONGER ELEMENTS.

HOWEVER, SHOULD YOU FIND A SIZEABLE AREA OF SLIGHTLY LONGER FIBRES IN GOOD CONCENTRATIONS, WE WOULD CERTAINLY BE INTERESTED, AS IT APPEARS TO BE GOOD QUALITY CHRYSOTILE. WE HAVE FACILITIES FOR TEST MILLING BULK SAMPLES OF BETWEEN 200 AND 600 POUNDS FOR EVALUATION.

BEST REGARDS,

SINCERELY,
CASSIAR ASBESTOS CORPORATION LIMITED

W. N. Plumb

W. N. PLUMB.

CHIEF GEOLOGIST

WNP/MH



CANADIAN JOHNS-MANVILLE CO., LIMITED
PRODUCTS DIVISION

XXXXXWESKXATHXAVENUEXVANCOUVERX9XTELEPHONEXX738X977X
#6 - 219 Victoria Street - Kamloops, B.C. - Tel: 374-6427

July 27, 1969

Mr. Ken Dawson
Atlas Explorations Ltd.
P.O. Box 3050
Whitehorse, Y.T.

Dear Ken:

I received your samples of asbestos about a week ago, and the delay in answering is due to the fact that I was out of town all last week. I am happy to comment on your samples.

Samples received were from your No. 1 and No. 3 showings only. If there is a No. 2 showing, there were no samples identified as such. I will refer to the samples as either No. 1 or No. 3 showings.

No. 1 Showing (slide on block - F10)

One sample indicated a vein width of $\frac{1}{2}$ ", however, the fibre lengths were divided into at least four veins. The longest fibre observed was $\frac{3}{16}$ ". In this particular sample, the fibre is flaky, and somewhat brittle. Upon rubbing the fibre between my fingers, I notice that the fibre breaks down to a powder. This probably indicates the presence of talc, carbonate, and possibly brucite. The yellowish tinge of the fibre vein is further substantiation of the presence of the aforementioned alteration minerals.

The remainder of the fibre veins from showing No. 1 were all short, seldomly $\frac{1}{8}$ " wide. Some of these veins also indicated talc alteration.

Talc and carbonate alteration in the fibre will undesirably affect the strength quality of a final fibre product.

The serpentinite rock may be described as a serpentized pyroxene-rich peridotite. The light yellow-green bands indicate zones of total serpentinitization. Remnant crystals of altered pyroxene are visible in the black serpentinite. The rock is very soft and has a greasy feel, indicating the presence of talc and carbonate (magnesite) in the rock mass.

No. 3 Showing (slide on block - F10)

The fibre veins observed in the samples submitted are very narrow, fibre lengths not exceeding $\frac{1}{16}$ ". The fibre is much softer and silkier than at Showing No. 1, not being affected by alteration. However, there appears to

(2)

be a considerable amount of secondary carbonate crystals in the rock mass.

In general, the fibre examined does not appear to be of economic significance, however, this is an initial estimate, given without knowing the geologic setting of your discoveries. In known ore zones of asbestos, the length and quality of fibre veins are poor around the periphery of the main fibre zone. The presence of fibre in serpentine is generally indicative of more fibre being present. If there is any possibility of the two showings forming one fibre zone, your showings could be of significance. An easy test of continuity of the fibre zone would be a reconnaissance magnetic survey across the interpreted possible fibre zone, and stripping zones of magnetic anomalies. If access is not possible for a bulldozer, hand test pitting would indicate fibre in the overburden.

An economic fibre deposit situated in the Yukon Territories would have to contain >5% fibre content, and approximately 30% of the fibre would have to be 1/4" long or greater. A suggested surface area of mineralization would be 200,000 square feet.

I am sending a copy of this letter to our Senior Geologist, Clive Aspinall, stationed in Atlin, B.C. He would be in a much better position than I to arrange an examination of your property, if you should come up with something of significance. He can be contacted at the following address:

c/o Canadian Johns-Manville Co. Ltd.
Atlin, B.C.
Phone: 401

Many thanks for bringing your samples to our attention. If anything of significance is discovered during your summer programme, I am certain that J.M. would be very interested in offering Atlas Explorations some type of working agreement in developing any fibre zone.

I heartily concur with some sort of post-summer get-together when you come down from the north. I haven't had the chance to visit your new home in North Vancouver as yet, and feel that I will not have much of an opportunity to get to the Coast until the fall.

Good luck with your programme during the remainder of the summer.

Regards,

John

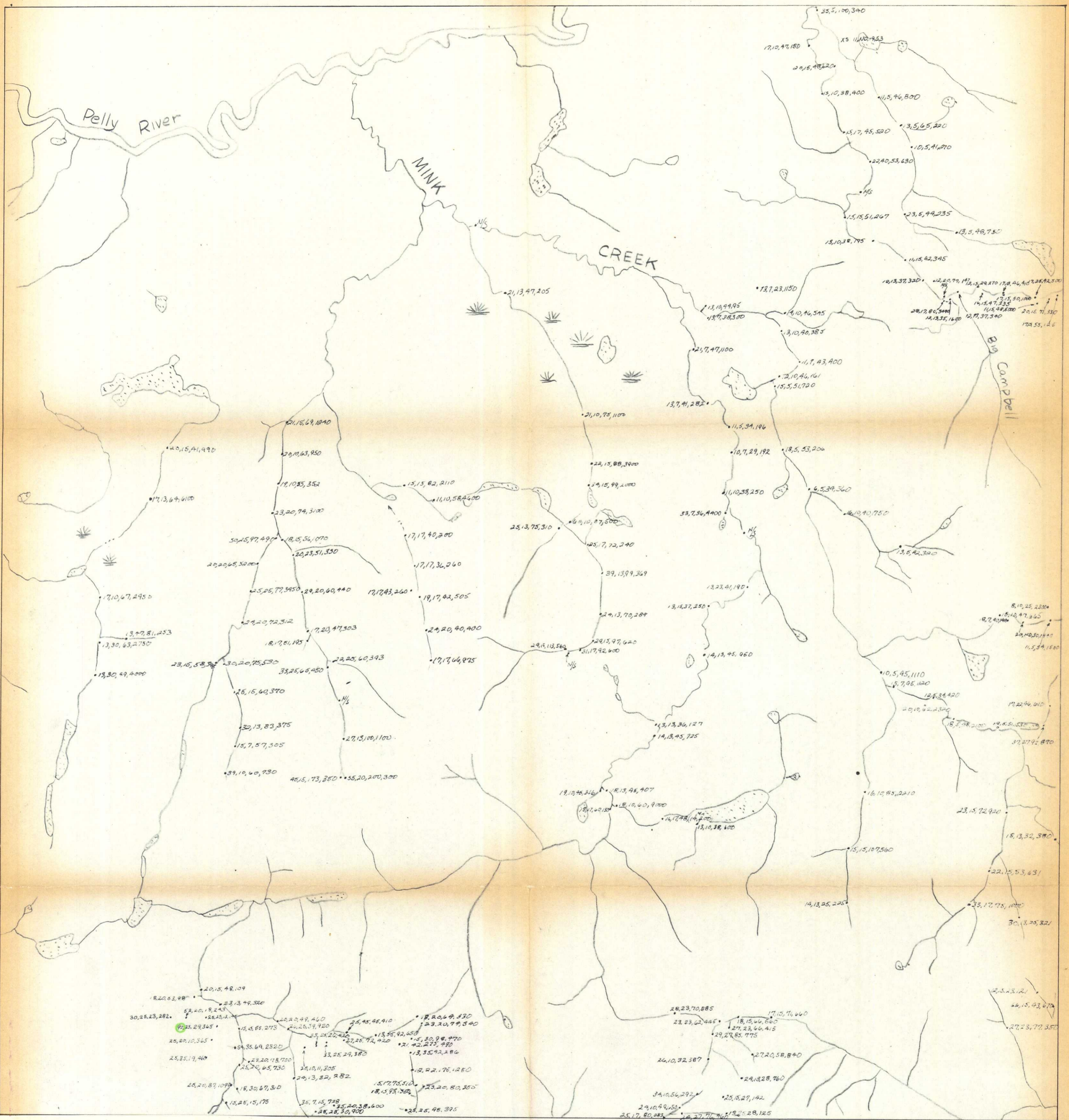
cc: Clive Aspinall

(John Kerr (JMK))

APPENDIX IX

105-G-11 - Mink Creek
Geology, Geochemistry

033-034



Cu, Pb, Zn, Mn

GEOCHEMISTRY

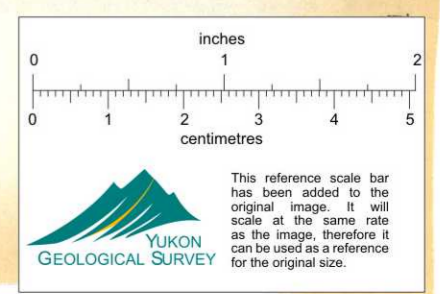
SCALE: 1" = 1 mile

- | | | | | | |
|----|-----------|----|----------|----|------------|
| Cu | ○ 80-120 | Pb | ○ 60-90 | Zn | ○ 400-600 |
| | ○ 120-200 | | ○ 90-150 | | ○ 600-1000 |
| | ○ >200 | | ○ >150 | | ○ >1000 |

105-6-11

MINK CREEK

105 G 11



LEGEND

Map-units 10, 7, 2a, B, appear on Map 7-1960 "Quiet Lake" only

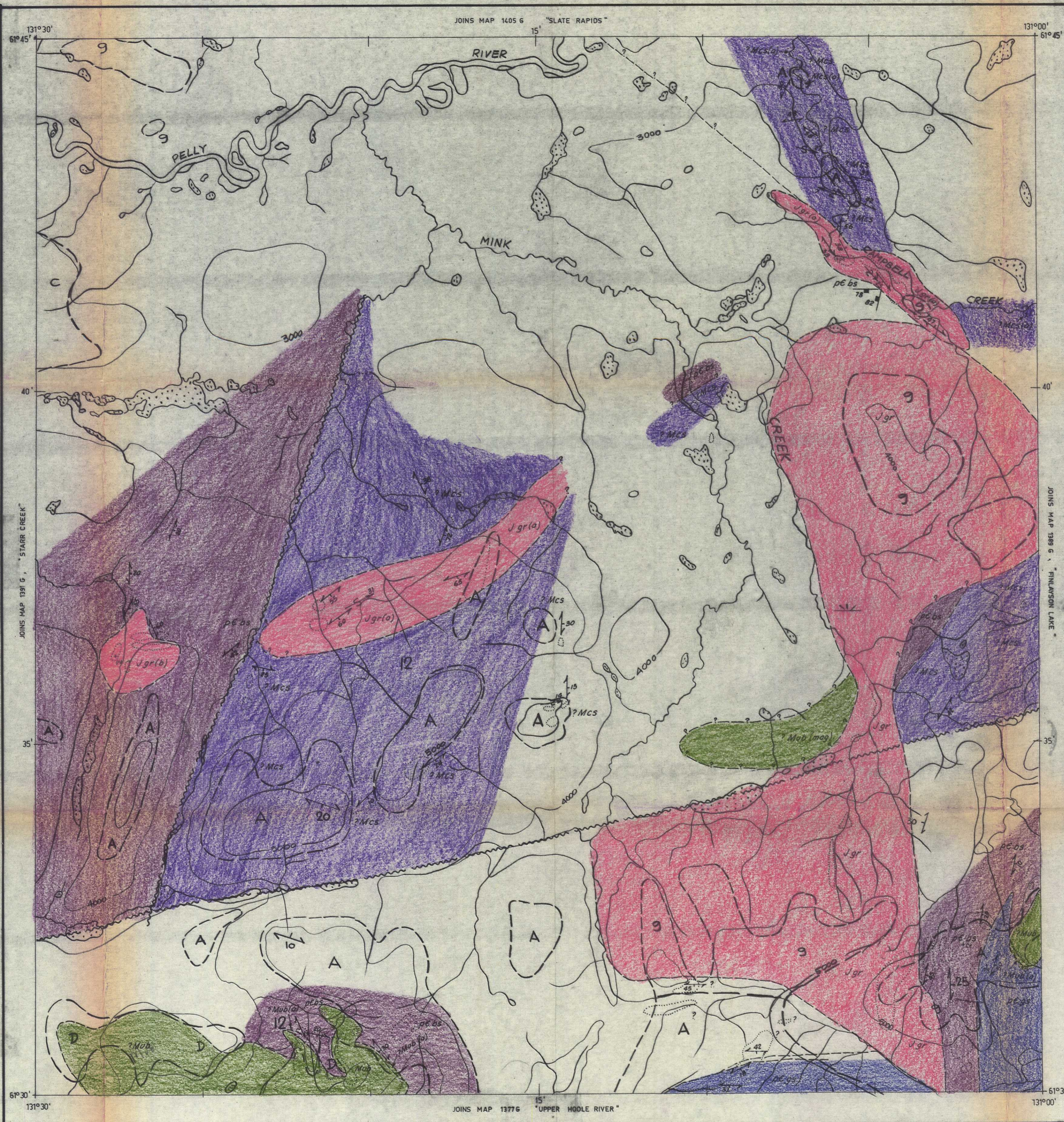
- QUATERNARY**
- 12 Unconsolidated glacial and alluvial deposits
- TERTIARY**
- 11 Dark brown and black basalt flows
- PALEOCENE**
- 10 Shale, sandstone, and conglomerate
- MESOZOIC**
- JURASSIC AND/OR CRETACEOUS**
- 9 Medium- to coarse-grained, biotite granodiorite and quartz monzonite, in part porphyritic; minor diorite, granite, and gneiss
- MISSISSIPPIAN (?)**
- 8 Current-bedded, ripple-marked, dark grey limestone; minor dark grey and brown argillite, and dolomite
- MISSISSIPPIAN (?) OR EARLIER**
- 7 Heterogeneous, shattered hornblende syenite, associated with unit 6
 - 6
 - 6a, partly altered green volcanic rocks, greenstone, meta-diorite; minor serpentine and amphibole;
 - 6b, green and maroon breccias, tuffs, and flows; minor meta-diorite, slate, chert, and greywacke;
 - 6c, buff, rusty, and pale green felsic breccias and tuffs; minor chert and brown crinoidal limestone;
 - 6d, massive grey and cream limestone
 - 5 Brown and black-weathering, siliceous slate and shale, thin-bedded varicoloured cherts with shaly partings, speckled grey and brownish grey greywacke; minor chert pebble conglomerate
- PALAEZOIC**
- SILURIAN AND DEVONIAN**
- 4 Grey and buff-weathering, thick-bedded dolomite with local lenses of chert; buff to reddish weathering, well-bedded, dark grey dolomite, and sandy and silty dolomites; buff, grey and white, lichen-covered quartzite
- ORDOVICIAN AND SILURIAN**
- 3 Black slate, platy black limestone, grey and pink siltstone; 3a, minor volcanic breccia
- CAMBRIAN**
- MIDDLE AND UPPER CAMBRIAN (?)**
- 2 Lustrous phyllite; grey and orange-weathering phyllite, in part limy and dolomitic, and locally changed to hornfels; minor greenstone, limestone, chert, greywacke, and phyllitic quartzite (perhaps younger); 2a, greenstone breccia and tuff
- LOWER CAMBRIAN**
- 1
 - 1a, massive grey and buff quartzite; 1b, grey and brownish grey phyllite; 1c, grey, buff, and orange-weathering, grey limestone, locally oolitic
 - 1d, limestone, quartzite, and phyllite, undivided
- Geological boundary (defined, approximate or assumed)**
- Limit of geological mapping, unmapped area**
- Bedding (horizontal, inclined, vertical, overturned)**
- Bedding (dip known, tops unknown)**
- Bedding (estimated attitudes, includes foliation in metamorphic rocks; dip g, gentle, m, medium, s, steep)**
- Foliation (horizontal, inclined, vertical)**
- Fault (defined, approximate or assumed)**
- Thrust fault (defined, approximate or assumed)**
- Anticline (defined, approximate)**
- Syncline (defined, approximate)**
- Fossil locality**
- Mineral occurrence or prospect**
- Rock altered to hornfels**

MINERAL SYMBOLS

Asbestos asb	Lead Pb
Barite ba	Molybdenum Mo
Copper Cu	Silver Ag
Gold Au	Tungsten W

MAP 8-1960
GEOLOGY
FINLAYSON LAKE
YUKON TERRITORY

105 G - 11

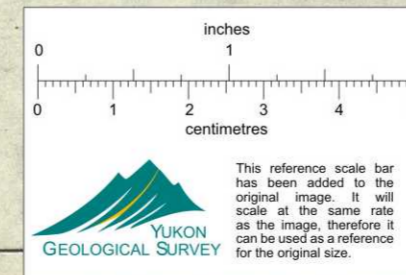
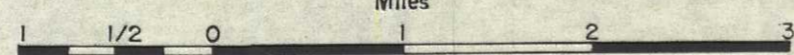


LEGEND

- Jgr** Coarse grained biotite granite; coarse grained gneissic porphyritic granite, feldspar phenocrysts up to 4" long (a) muscovite granite (b).
- Mdb** Peridotite, pyroxenite (thick sills and lopoliths) largely serpentinized; quartz carbonate alteration(a).
- Mcs** Quartz chlorite schist and calc greenschist, and intercalated limestone, phyllitic limestone, limy graphitic phyllite, altered andesite and tuff (a).
- pe bs** Black graphitic phyllite and schist.
- pe bs** Quartz muscovite biotite schist, muscovite schist, minor garnetiferous muscovite schist.

SHEET 105-G-11 "MINK CREEK"

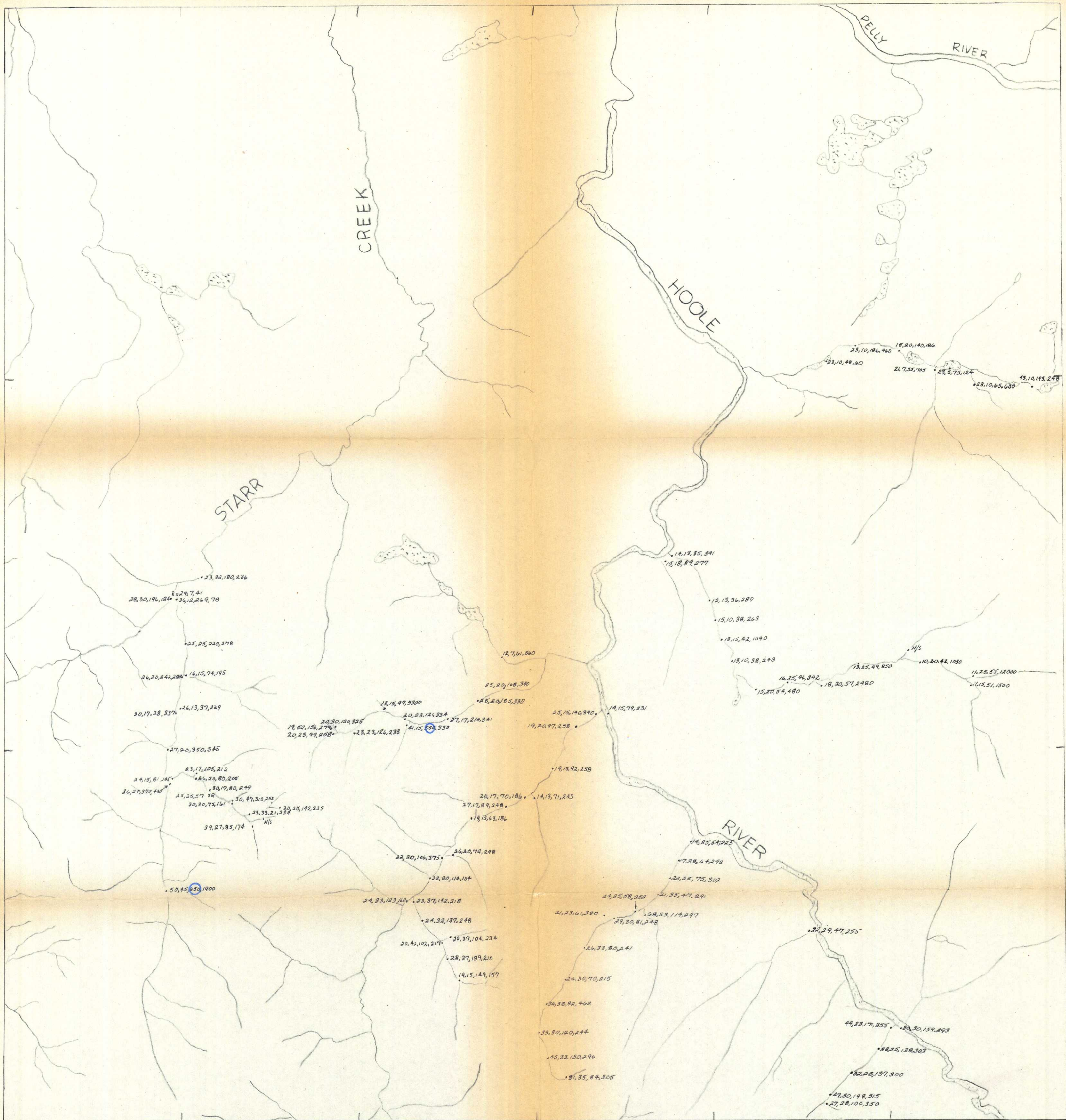
Scale: One Inch to One Mile = 1/63,360 Miles



APPENDIX X

105-G-12 - Starr Creek
Geology, Geochemistry

035-036



Cu, Pb, Zn, Mn

GEOCHEMISTRY

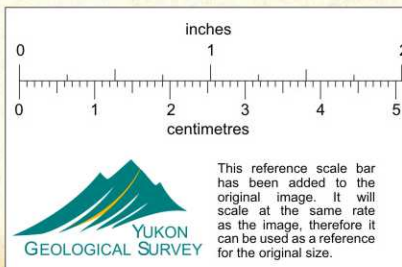
105-6-12

SCALE: 1" = 1 mile

STARR CREEK

105 G
12

- | | | | | | |
|----|-----------|----|----------|----|------------|
| Cu | ○ 80-120 | Pb | ○ 60-90 | Zn | ○ 400-600 |
| | ○ 120-200 | | ○ 90-150 | | ○ 600-1000 |
| | ○ >200 | | ○ >150 | | ○ >1000 |



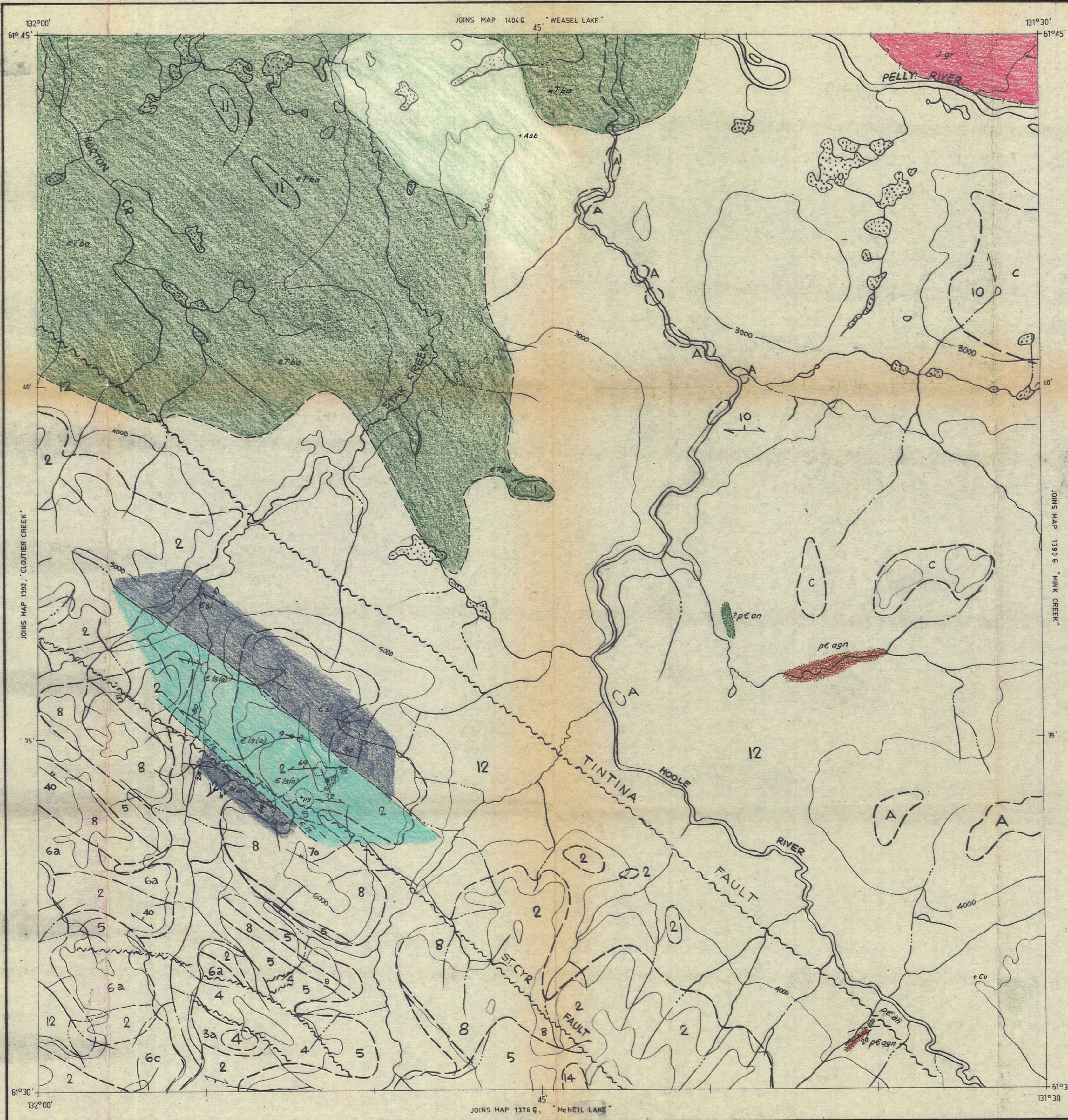
LEGEND

- et ba* Dark brown and black basalt flows.
- J gr* Medium to coarse grained granite.
- M or* Sub graphitic argillite and quartzite.
- ε ls* Buff platy limestone; phyllitic limestone, locally graphitic(a)
- ε sl* Black shale, limestone and minor conglomerate.
- ?pe an* Epidotized andesite. May be as recent as Mississippian?
- pe agn* Granitoid feldspar augen gneiss.
-
-
-
-
-
-

LEGEND

Map-units 10, 7, 2a, B, appear on Map 7-1960 "Quiet Lake" only

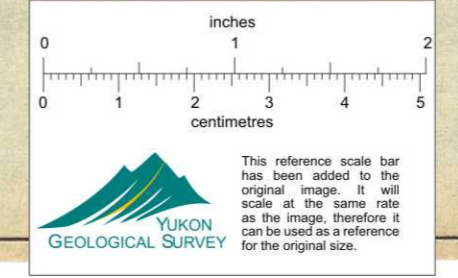
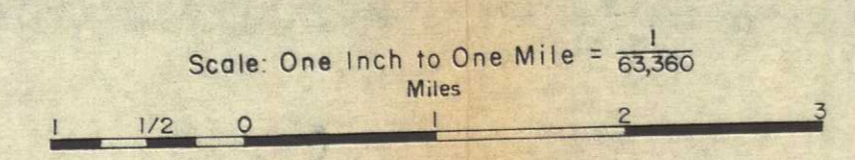
- QUATERNARY**
- 12 Unconsolidated glacial and alluvial deposits
- TERTIARY**
- 11 Dark brown and black basalt flows
- PALEOCENE**
- 10 Shale, sandstone, and conglomerate
- JURASSIC AND/OR CRETACEOUS**
- 9 Medium- to coarse-grained, biotite granodiorite and quartz monzonite, in part porphyritic; minor diorite, granite, and gneiss
- MISSISSIPPIAN (?)**
- 8 Current-bedded, ripple-marked, dark grey limestone; minor dark grey and brown argillite, and dolomite
- MISSISSIPPIAN (?) OR EARLIER**
- 7 Heterogeneous, shattered hornblende syenite, associated with unit 6
 - 6 6a, partly altered green volcanic rocks, greenstone, meta-diorite; minor serpentine and amphibolite; 6b, green and maroon breccias, tuffs, and flows; minor meta-diorite, slate, chert, and greywacke; 6c, buff, rusty, and pale green felsic breccias and tuffs; minor chert and brown crinoidal limestone; 6d, massive grey and cream limestone
 - 5 Brown and black-weathering, siliceous slate and shale, thin-bedded varicoloured cherts with shaly partings, speckled grey and brownish grey greywacke; minor chert pebble conglomerate
- SILURIAN AND DEVONIAN**
- 4 Grey and buff-weathering, thick-bedded dolomite with local lenses of chert; buff to reddish weathering, well-bedded, dark grey dolomite, and sandy and silty dolomites; buff, grey and white, lichen-covered quartzite
- ORDOVICIAN AND SILURIAN**
- 3 Black slate, platy black limestone, grey and pink siltstone; 3a, minor volcanic breccia
- CAMBRIAN**
- MIDDLE AND UPPER CAMBRIAN (?)**
- 2 Lustrous phyllite; grey and orange-weathering phyllite, in part limy and dolomitic, and locally changed to hornfels; minor greenstone, limestone, chert, greywacke, and phyllitic quartzite (perhaps younger); 2a, greenstone breccia and tuff
- LOWER CAMBRIAN**
- 1 1a, massive grey and buff quartzite; 1b, grey and brownish grey phyllite; 1c, grey, buff, and orange-weathering, grey limestone, locally oolitic; 1d, limestone, quartzite, and phyllite, undivided
- A** Quartz-biotite and quartz-chlorite schist, micaceous quartzite, hornfels; minor phyllite and limestone
- B** Limestone and minor dolomite associated with A and C
- C** Micaceous, quartzose gneiss, granitoid gneiss; minor quartz-biotite schist
- D** Danite; minor peridotite, pyroxenite, and serpentinized equivalents; gabbro and diorite
- Geological boundary (defined, approximate or assumed) ————
- Limit of geological mapping, unmapped area U
- Bedding (horizontal, inclined, vertical, overturned) + / / /
- Bedding (dip known, tops unknown) + / / /
- Bedding (estimated attitudes, includes foliation in metamorphic rocks; dip g, gentle, m, medium, s, steep) + / / /
- Foliation (horizontal, inclined, vertical) + / / /
- Fault (defined, approximate or assumed) ————
- Thrust fault (defined, approximate or assumed) ————
- Anticline (defined, approximate) ————
- Syncline (defined, approximate) ————
- Fossil locality ⊙
- Mineral occurrence or prospect x Cu
- Rock altered to hornfels. [Symbol]
- MINERAL SYMBOLS**
- | | |
|------------------------|-------------------------|
| Asbestos asb | Lead Pb |
| Barite ba | Molybdenum Mo |
| Copper Cu | Silver Ag |
| Gold Au | Tungsten W |



MAP 8-1960
GEOLOGY
FINLAYSON LAKE
YUKON TERRITORY

105 G 12

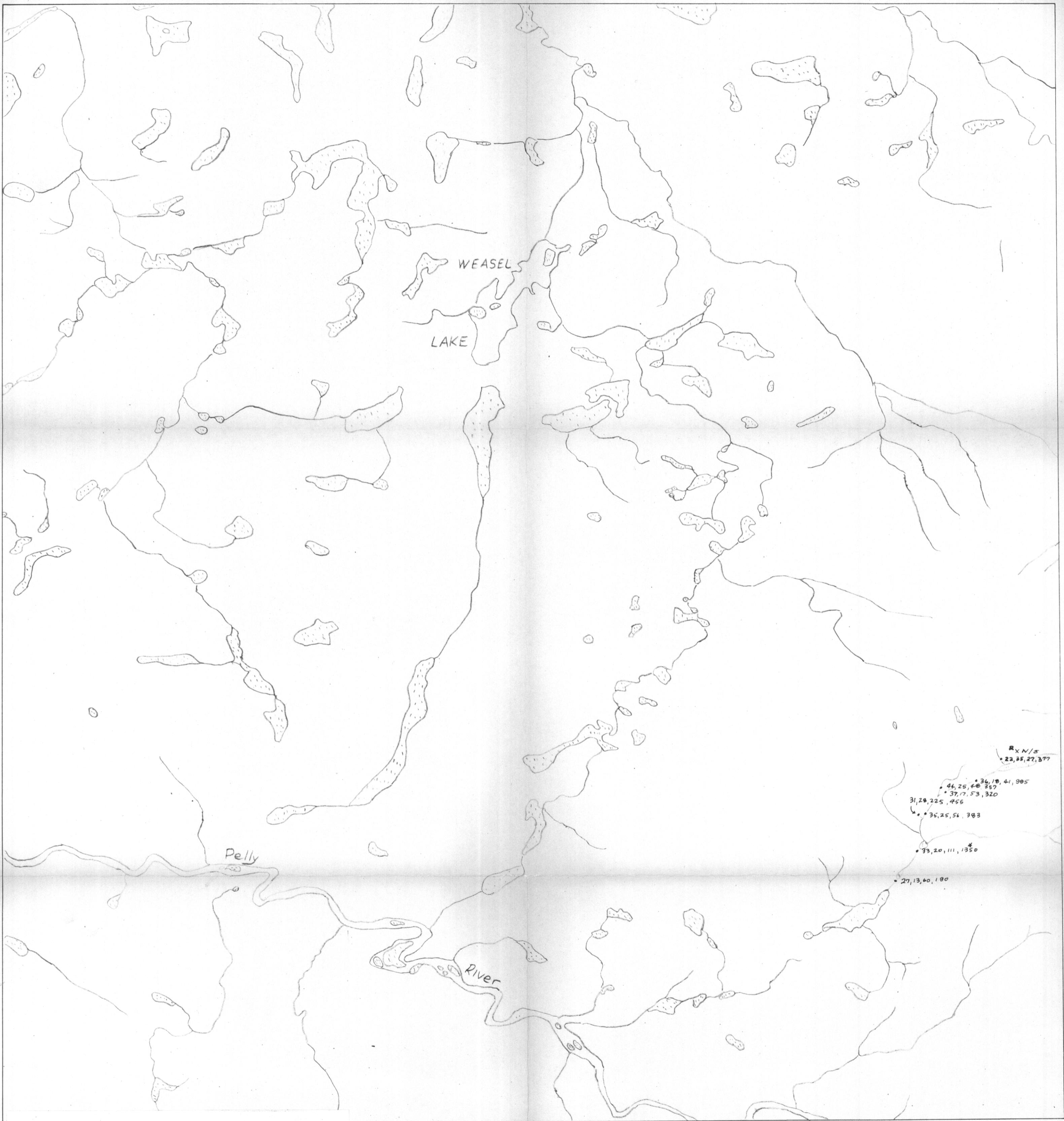
SHEET 105-G-12 STAR CREEK



APPENDIX XI

105-G-13 - Weasel Lake
Geology, Geochemistry

037-038



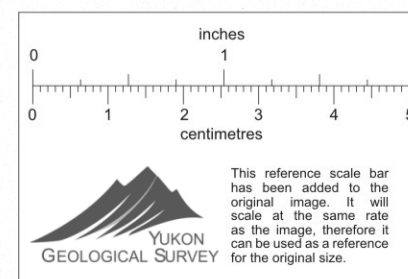
GEOCHEMISTRY

SCALE: 1" = 1 mile

- | | | | | | |
|----|-----------|----|----------|----|------------|
| Cu | ○ 80-120 | Pb | ○ 60-90 | Zn | ○ 400-600 |
| | ○ 120-200 | | ○ 90-150 | | ○ 600-1000 |
| | ○ >200 | | ○ >150 | | ○ >1000 |

105-6-13

WEASEL LAKE



Cu, Pb, Zn, Mn

105G/13

- SILT
- x OTHERS
- * A, or B deviates greatly from average

* 36, 18, 41, 985
 * 46, 25, 60, 357
 * 37, 17, 53, 320
 31, 28, 225, 455
 * 36, 25, 56, 303
 * 33, 20, 111, 1350
 * 27, 13, 60, 180
 * x N/S
 * 22, 25, 27, 377

LEGEND

Map-units 10, 7, 2a, B, appear on Map 7-1960 "Quiet Lake" only

- QUATERNARY**
- 12 Unconsolidated glacial and alluvial deposits
- TERTIARY**
- 11 Dark brown and black basalt flows
- PALEOCENE**
- 10 Shale, sandstone, and conglomerate
- MESOZOIC**
- JURASSIC AND/OR CRETACEOUS**
- 9 Medium- to coarse-grained, biotite granodiorite and quartz monzonite, in part porphyritic; minor diorite, granite, and gneiss
- MISSISSIPPIAN (?)**
- 8 Current-bedded, ripple-marked, dark grey limestone; minor dark grey and brown argillite, and dolomite
- MISSISSIPPIAN (?) OR EARLIER**
- 7 Heterogeneous, shattered hornblende syenite, associated with unit 6
- 6a, partly altered green volcanic rocks, greenstone, meta-diorite; minor serpentine and amphibolite; 6b, green and maroon breccias, tuffs, and flows; minor meta-diorite, slate, chert, and greywacke; 6c, buff, rusty, and pale green felsic breccias and tuffs; minor chert and brown crinoidal limestone; 6d, massive grey and cream limestone
- 5 Brown and black-weathering, siliceous slate and shale, thin-bedded varicoloured cherts with shaly partings, speckled grey and brownish grey greywacke; minor chert pebble conglomerate
- SILURIAN AND DEVONIAN**
- 4 Grey and buff-weathering, thick-bedded dolomite with local lenses of chert; buff to reddish weathering, well-bedded, dark grey dolomite, and sandy and silty dolomites; buff, grey and white, lichen-covered quartzite
- ORDOVICIAN AND SILURIAN**
- 3 Black slate, platy black limestone, grey and pink siltstone; 3a, minor volcanic breccia
- CAMBRIAN**
- MIDDLE AND UPPER CAMBRIAN (?)**
- 2 Lustrous phyllite; grey and orange-weathering phyllite, in part limy and dolomitic, and locally changed to hornfels; minor greenstone, limestone, chert, greywacke, and phyllitic quartzite (perhaps younger); 2a, greenstone breccia and tuff
- LOWER CAMBRIAN**
- 1a, massive grey and buff quartzite; 1b, grey and brownish grey phyllite; 1c, grey, buff, and orange-weathering, grey limestone, locally oolitic; 1d, limestone, quartzite, and phyllite, undivided
- A Quartz-biotite and quartz-chlorite schist, micaceous quartzite, hornfels; minor phyllite and limestone
- B Limestone and minor dolomite associated with A and C
- C Micaceous, quartzose gneiss, granitoid gneiss; minor quartz-biotite schist
- D Dunite; minor peridotite, pyroxenite, and serpen-tinized equivalents; gabbro and diorite

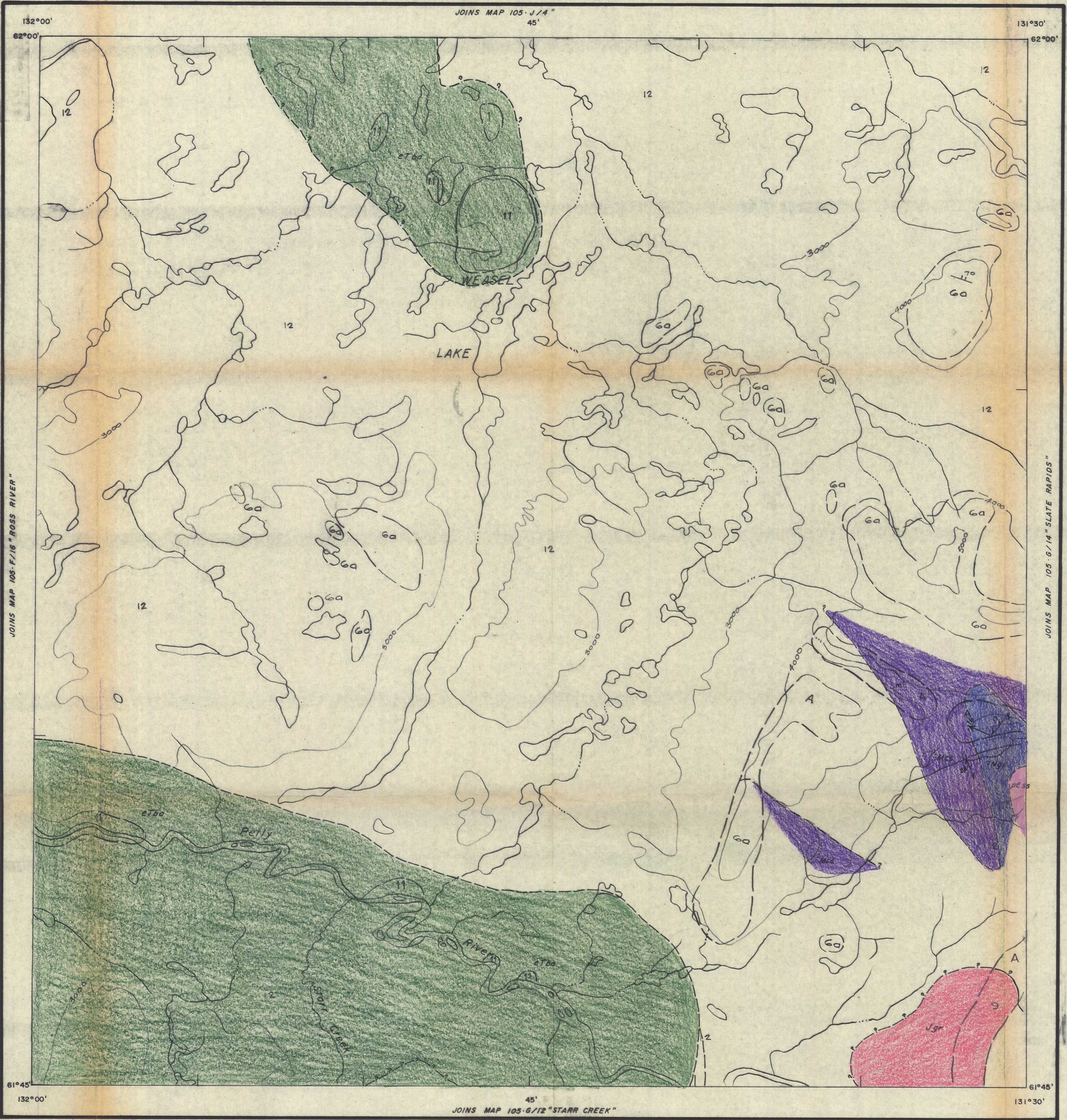
- Geological boundary (defined, approximate or assumed)
- Limit of geological mapping, unmapped area
- Bedding (horizontal, inclined, vertical, overturned)
- Bedding (dip known, tops unknown)
- Bedding (estimated attitudes, includes foliation in metamorphic rocks; dip g, gentle, m, medium, s, steep)
- Foliation (horizontal, inclined, vertical)
- Fault (defined, approximate or assumed)
- Thrust fault (defined, approximate or assumed)
- Anticline (defined, approximate)
- Syncline (defined, approximate)
- Fossil locality
- Mineral occurrence or prospect
- Rock altered to hornfels

MINERAL SYMBOLS

Asbestos	asb	Lead	Pb
Barite	ba	Molybdenum	Mo
Copper	Cu	Silver	Ag
Gold	Au	Tungsten	W

MAP 8-1960
GEOLOGY
FINLAYSON LAKE
YUKON TERRITORY

105 G-13

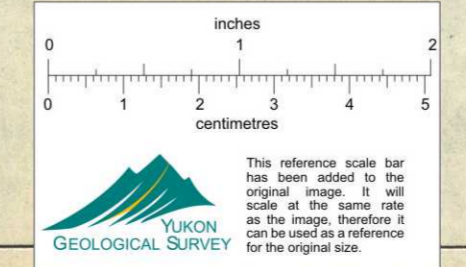
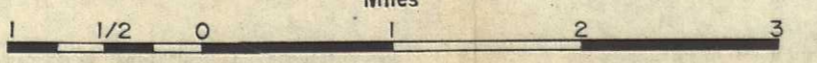


LEGEND

- Dark brown and black basalt flows.
- Granitic intrusive rocks (not visited).
- Greenschist facies of altered volcanics.
- Slightly graphitic phyllite.
- Quartz sericite schist.

SHEET 105 G/13 WEASEL LAKE

Scale: One inch to One Mile = 1/63,360 Miles



APPENDIX XII

105-G-14 - Slate Rapids
Geology, Geochemistry

039-040



SLATE RAPIDS

Pelly River

Cu, Pb, Zn, Mn

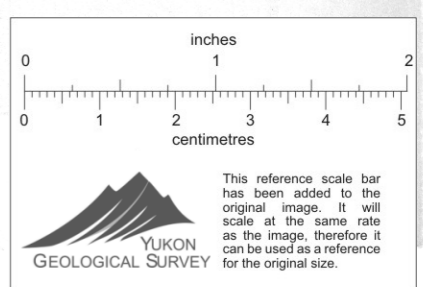
GEOCHEMISTRY

SCALE: 1" = 1 mile

Cu	○ 80-120	Pb	○ 60-90	Zn	○ 400-600
	○ 120-200		○ 90-150		○ 600-1000
	○ >200		○ >150		○ >1000

105-G-14

SLATE RAPIDS 105 G 14



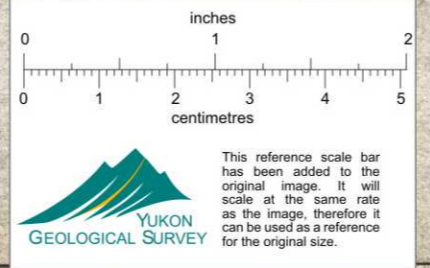
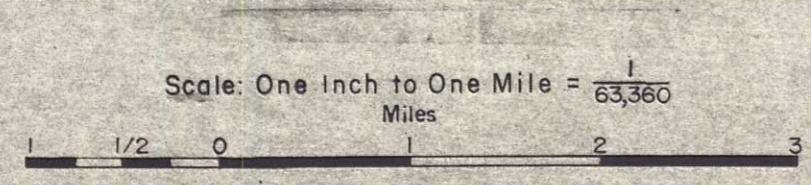


LEGEND

- J gr* Granitic intrusive rocks (not visited)
- Mcs* Greenschist facies of altered volcanics; feldspar porphyry (rhyolite?) (a)
- Mgs* Graphitic phyllite, intercalated phyllite and limestone
- pc ss* Quartz sericite schist.
-
-
-
-
-
-
-
-

SHEET 105-G-14

SLATE RAPIDS

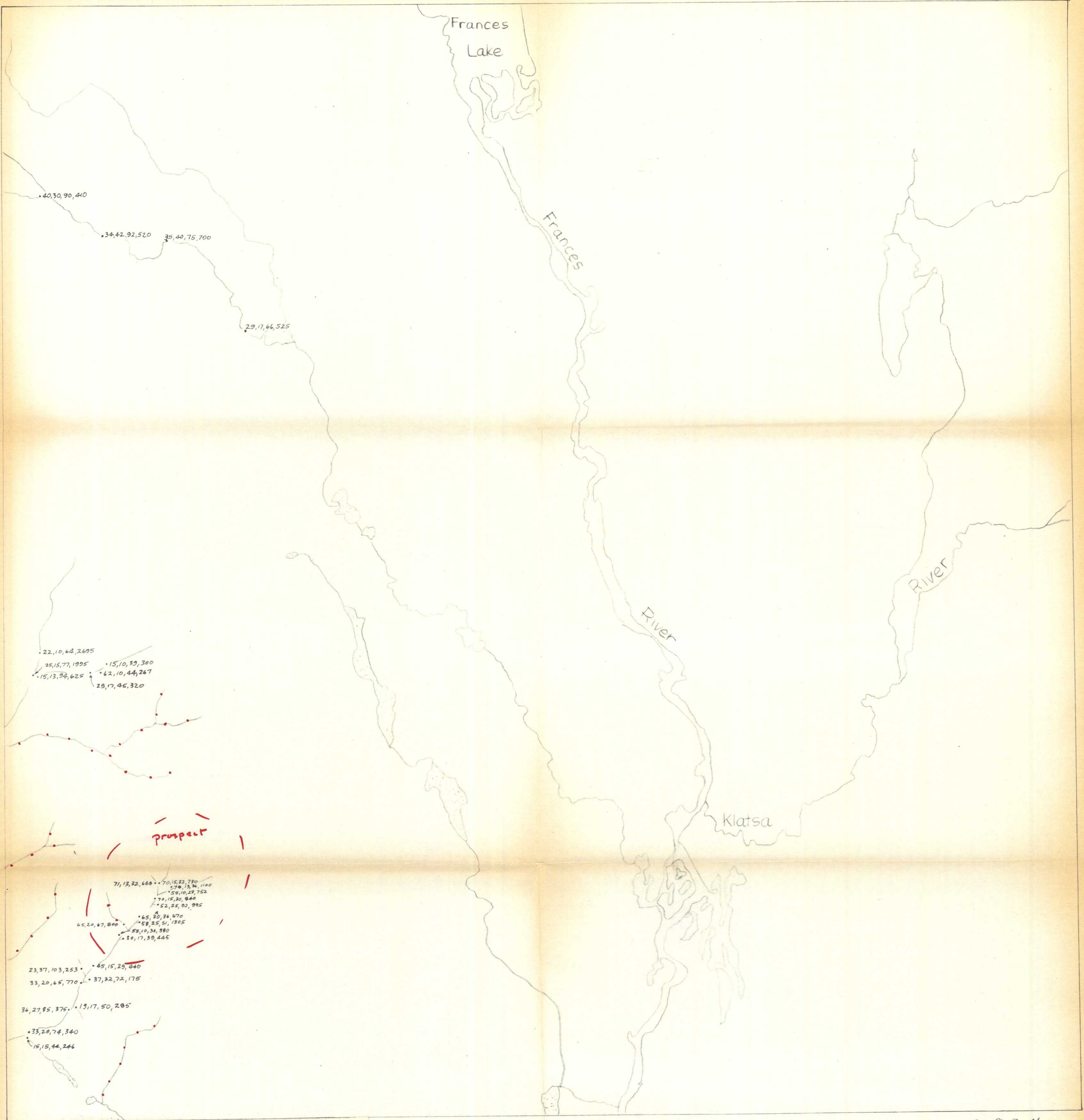


Geology 105-G/14

APPENDIX XIII

105-H-3 - Klatsa River
Geology, Geochemistry,
Follow-up

041-043



Cu, Pb, Zn, Mn

PROPOSED FOLLOW-UP WORK 1970

SCALE: 1" = 1 mile

- Silt sample
- Soil sample
- Magnetic anomaly

105-4-3.

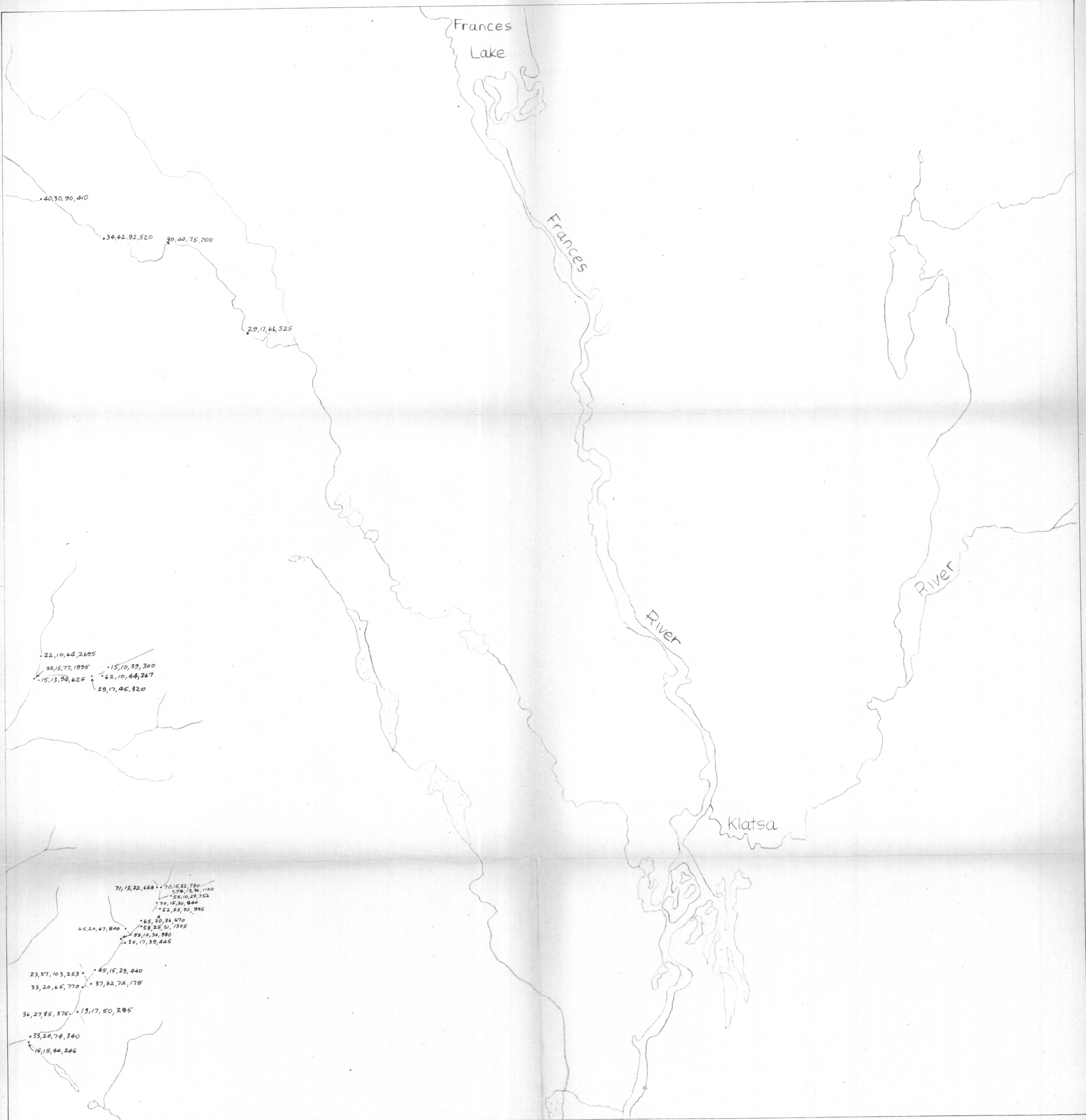
KLATSA RIVER

105
3

0 1 2 3 4 5
centimetres

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

YUKON GEOLOGICAL SURVEY



Cu, Pb, Zn, Mn

GEOCHEMISTRY

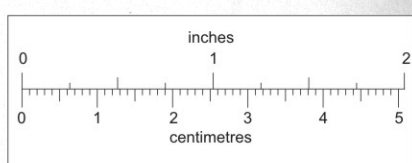
SCALE: 1" = 1 mile

Cu	○ 80-120	Pb	○ 60-90	Zn	○ 400-600
	○ 120-200		○ 90-150		○ 600-1000
	○ >200		○ >150		○ >1000

105-H-3

KLATSA RIVER

105 H
3



This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

YUKON GEOLOGICAL SURVEY

LEGEND

- QUATERNARY**
 16 Unconsolidated glacial and alluvial deposits
- CRETACEOUS (?)**
 15 Fine- to medium-grained biotite-quartz monzonite, granodiorite, minor diorite and gneiss; 15a, fine- and medium-grained biotite hornblende quartz monzonite and granodiorite, in part porphyritic; 15b, hornblende syenite
- DEVONIAN AND (?) MISSISSIPPIAN**
 13 Brown and black shale, black and grey chert, quartzite, greywacke, chert-pebble conglomerate; 13a, fine-grained light grey limestone and minor dolomite; 13b, greenstone; 13c, serpentinite
- SILURIAN AND DEVONIAN (?)**
 12 Fine-grained light to dark grey dolomite and quartzite; minor buff-grey dolomitic quartzite and silty to sandy dolomite
- ORDOVICIAN AND SILURIAN**
 11 Black shale, slate; minor chert, siltstone, dark limestone
- CAMBRIAN**
MIDDLE AND LATE CAMBRIAN
 9 Light grey and brownish grey weathering, intercalated platy argillaceous silty limestone, siltstone, and fine-grained grey limestone
- EARLY AND/OR MIDDLE CAMBRIAN**
 7 Buff-weathering dolomite, silty and sandy dolomite, minor sandstone and shale
- EARLY CAMBRIAN**
 5 Sandstone, buff-weathering sandy and silty dolomite, dolomite, minor quartzite and argillaceous limestone; basic volcanic flows
- CAMBRIAN AND/OR EARLIER**
 4 "Swiss-cheese" limestone, irregular interbedded dolomitic siltstone and argillaceous to silty limestone; pods and lenses of limestone; minor blue-grey fine-grained limestone and orange-weathering dolomite
- 3** Brown to red-brown weathering slate, phyllite, siltstone and fine-grained quartzite; 3a, green-grey slate and phyllite
- 2** Quartz-feldspar-mica gneiss and schist, granitoid gneiss, feldspathic and micaceous quartzite, biotite schist, minor marble and skarn, numerous small granitic bodies, anite and pegmatite; 2a, fine- to coarse-grained marble
- 1** Brown, grey, maroon and green shale; grey to green slate and phyllite, gritty feldspathic quartzite, quartz- and feldspar-pebble conglomerate, sandstone; 1a, minor limestone; 1b, light grey weathering, fine-grained grey limestone; 1c, mainly grey to green slate and phyllite; 1d, maroon and green shale and slate; 1e, mainly brown and grey shale and slate, minor maroon and green shale. 1d and 1e are probably equivalent and perhaps correlative with 1c
- A** Highly altered, green to brown, megacrystic, coarse-grained biotite-quartz monzonite or granodiorite. Age uncertain

- Geological boundary (defined, approximate or assumed)
- Bedding (inclined, vertical)
- Foliation (horizontal, inclined, vertical)
- Lineation (horizontal, inclined)
- Fault (defined, approximate)
- Anticline (defined, approximate, arrow indicates plunge)
- Syncline (defined, approximate, overturned)
- Fossil locality
- Mineral occurrence or prospect (tungsten, W, copper, Cu; zinc, Zn)
- Areas of mineral prospects (zinc, Zn; lead, Pb; copper, Cu; silver, Ag)
- Hot spring
- Glacier

Geology by E. F. Roots, 1953; L. H. Green and J. A. Roddick, 1960
 S. L. Blusson, 1962 and 1963

Geological cartography by the Geological Survey of Canada, 1966

- Road, all weather
- Airstrip
- Mine
- Horizontal control point
- Provincial boundary
- Intermittent stream
- Marsh
- Contours (interval 500 feet)
- Height in feet above mean sea-level

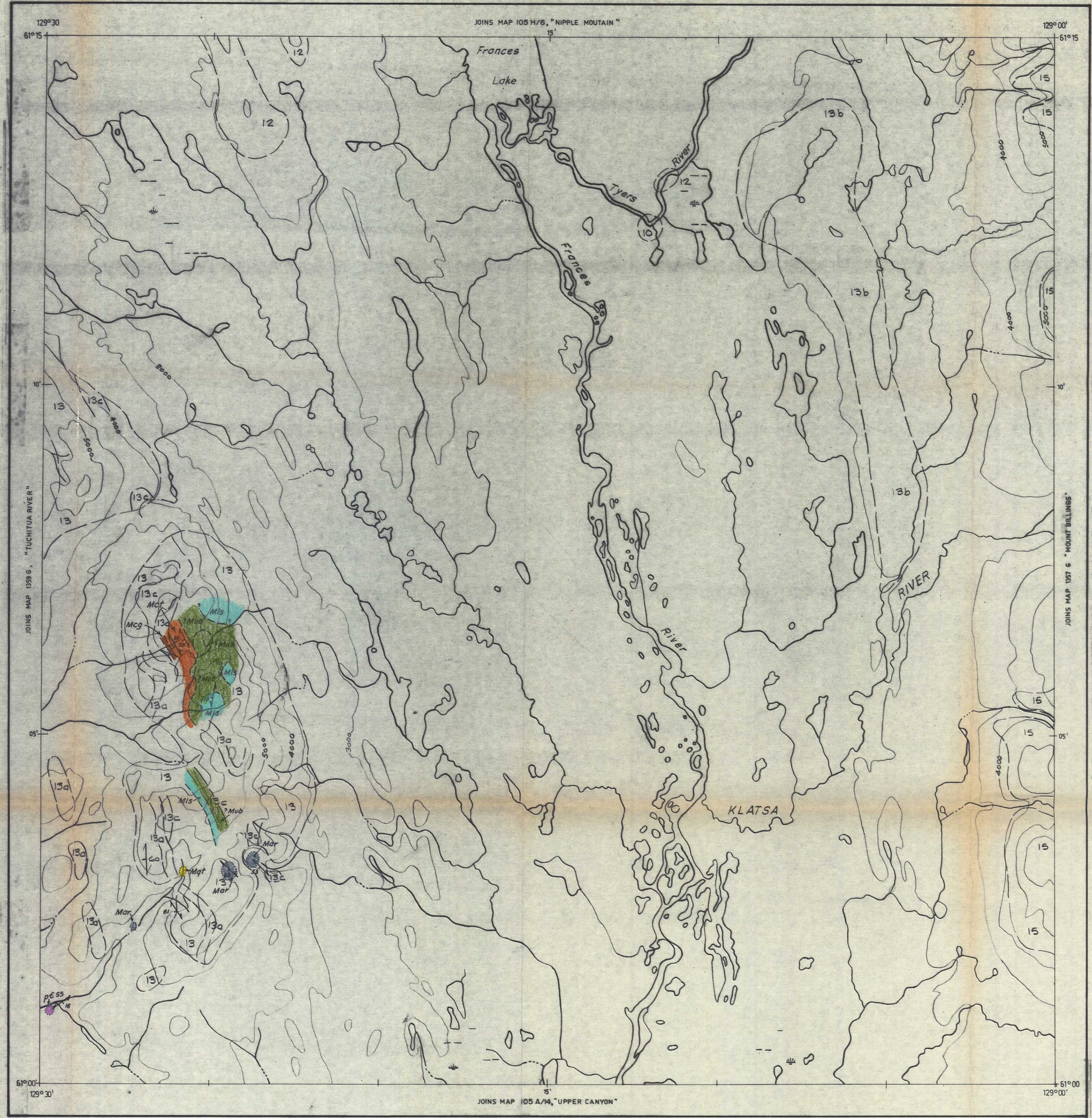
MAP 6-1966

GEOLOGY

FRANCES LAKE

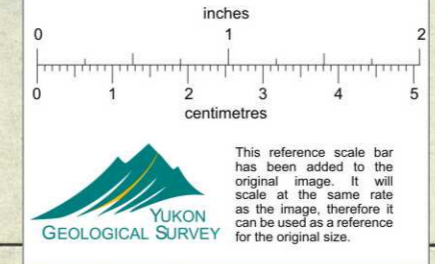
YUKON TERRITORY AND DISTRICT OF MACKENZIE

105 H 3



SHEET 105-H-3 KLATSA RIVER

Scale: One inch to One Mile = 63,360



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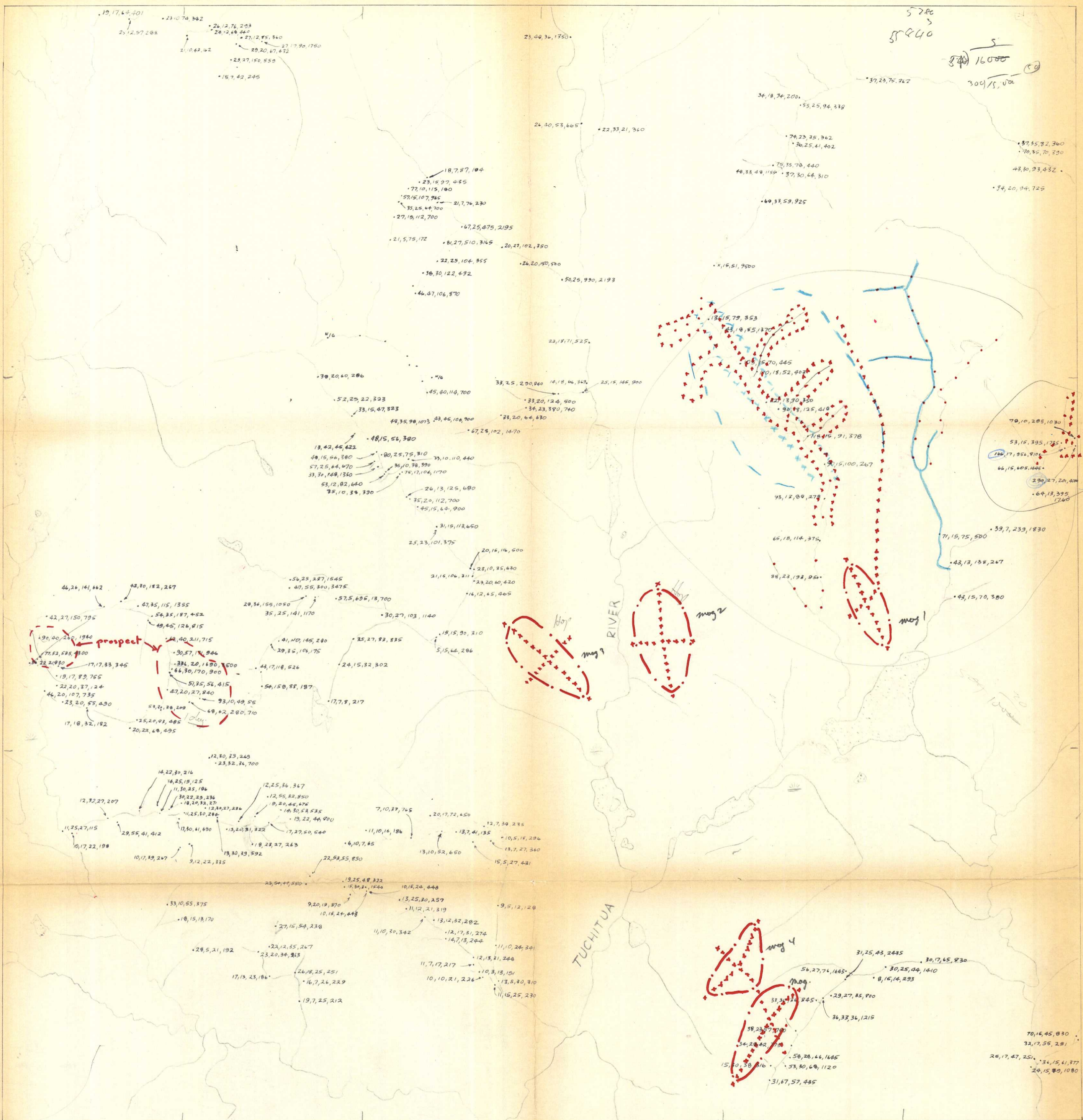
LEGEND

- Mub** Serpentinite with minor asbestos fibre.
- Mis** Yellowish weathering limestone and calc silicate.
- Mar** Argillite, minor quartzite, hornfels.
- Mct** Grey chert, minor quartzite.
- Mgt** Quartzite.
- Meg** Conglomerate.
- P655** Quartz sericite schist basement rocks.

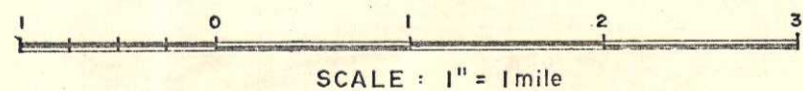
APPENDIX XIV

105-H-4 - Tuchitua River
Geology, Geochemistry,
Follow-up

044-046



PROPOSED FOLLOW-UP WORK
1970



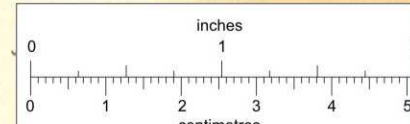
- Silt sample
- × Soil sample
- Magnetic anomaly

105-H-4

TUCHITUA RIVER

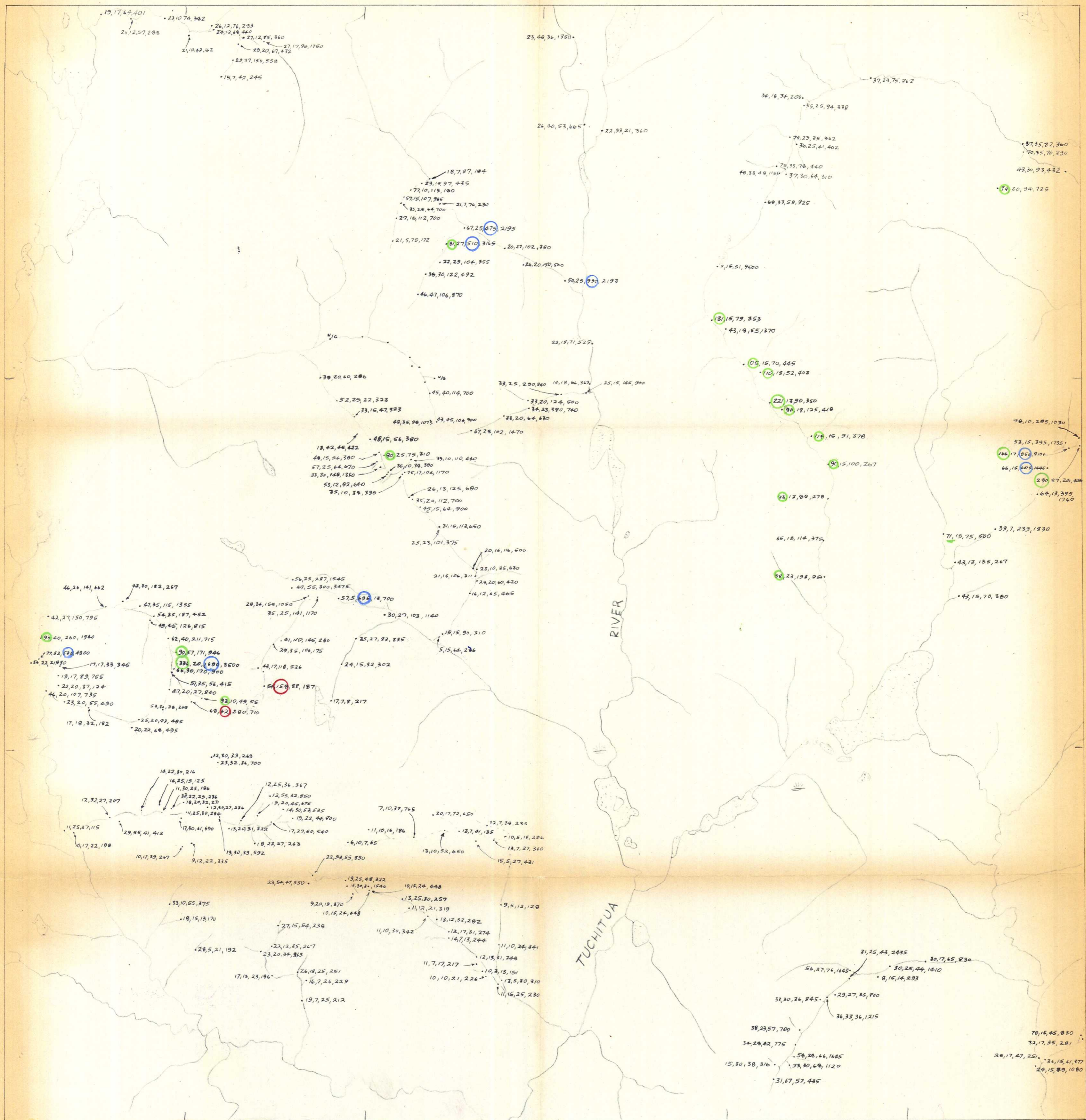
105 H/4

Cu, Pb, Zn, Mn



This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

YUKON
GEOLOGICAL SURVEY



GEOCHEMISTRY

SCALE: 1" = 1 mile

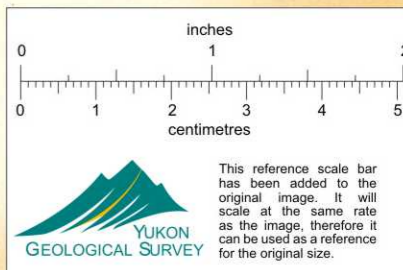
- | | | | | | |
|----|-----------|----|----------|----|------------|
| Cu | ○ 80-120 | Pb | ○ 60-90 | Zn | ○ 400-600 |
| | ○ 120-200 | | ○ 90-150 | | ○ 600-1000 |
| | ○ >200 | | ○ >150 | | ○ >1000 |

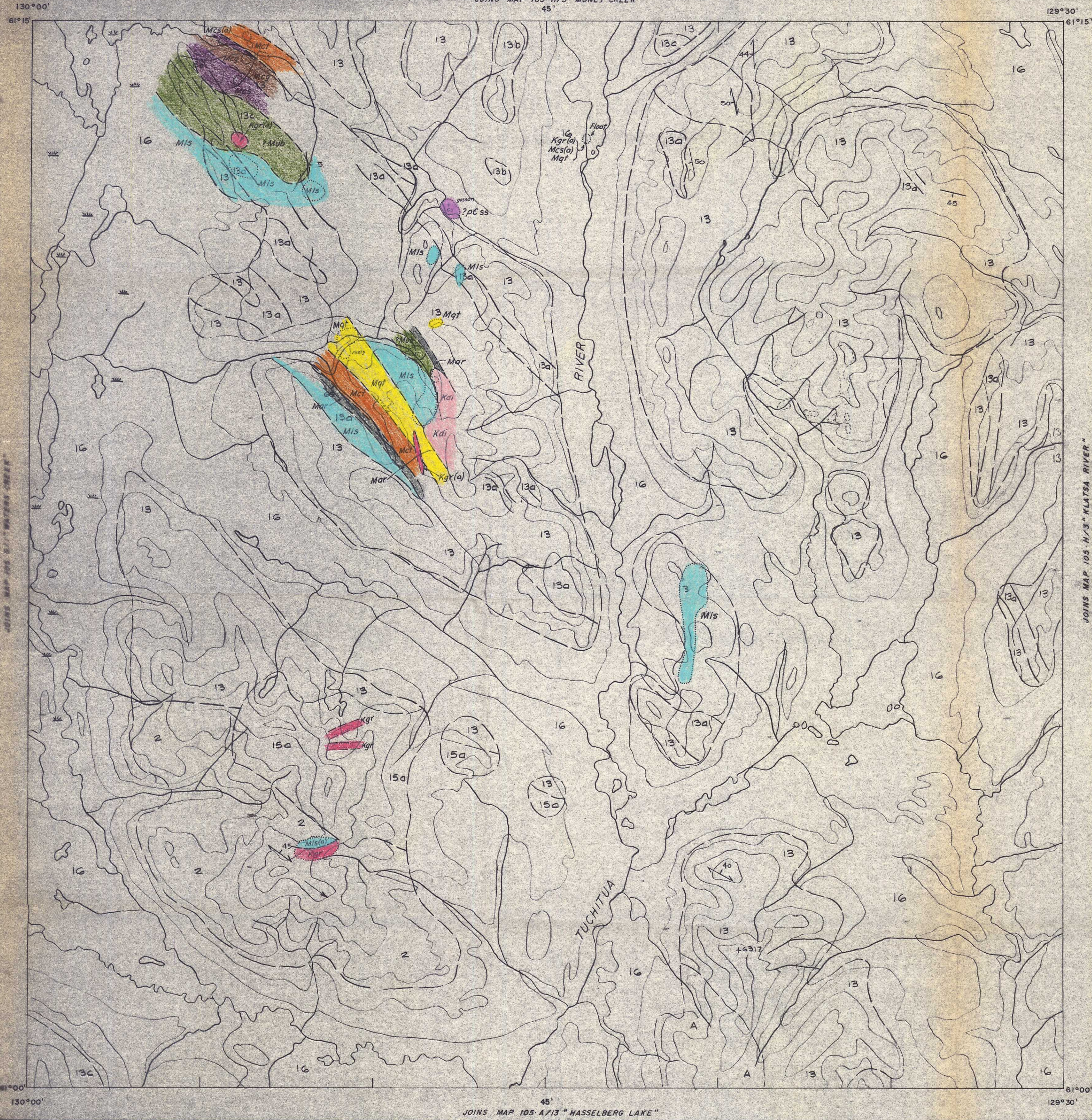
105-H-4


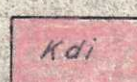


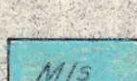






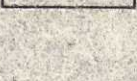
Cu, Pb, Zn, Mn

TUCHITUA RIVER

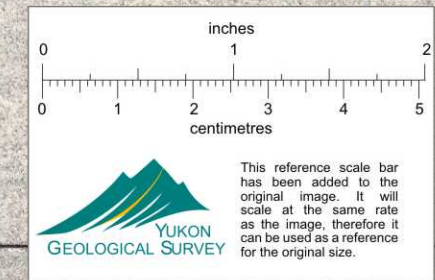
105 $\frac{H}{4}$





-  *Kgr* Granite, feldspar porphyry (a)
-  *Kdi* Medium grained hornblende diorite
-  *?Msb* Serpentine and associated quartz carbonate alteration
-  *Mcs* Chlorite schist; minor andesite (a)
-  *Mls* Fine grained light grey limestone and minor dolomite; scarn (a)
-  *Mar* Argillite, slate, shale
-  *Mct* Black chert with minor shale
-  *Mqt* Quartzite
-  *Mgs* Grit and chert pebble conglomerate
-  *?pcss* Mica schist (sheared, leached? outcrop)
- 
- 

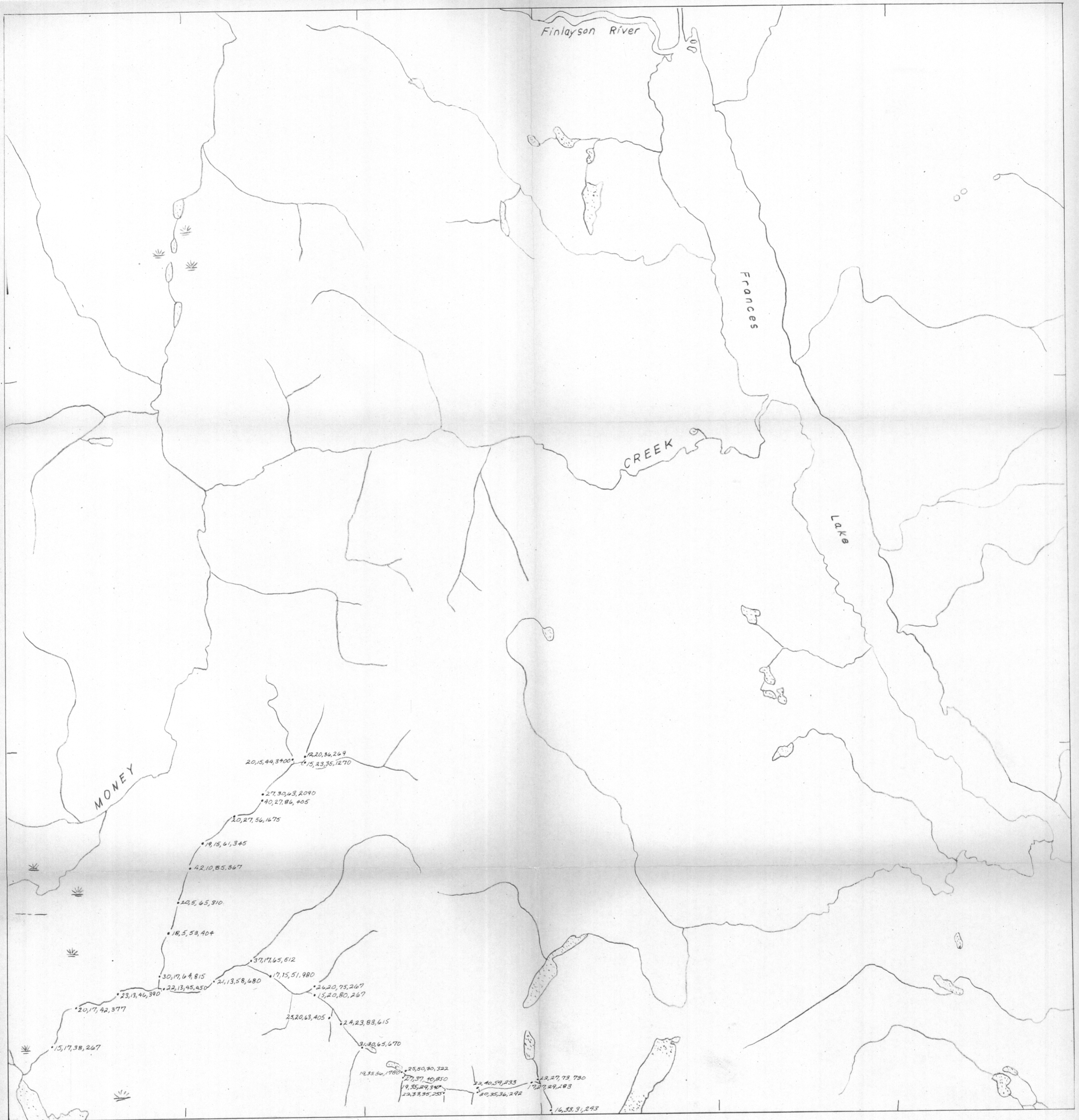
Scale: One Inch to One Mile = $\frac{1}{63,360}$
Miles



APPENDIX XV

105-H-5 - Money Creek
Geology, Geochemistry

047 - 048



Cu, Pb, Zn, Mn

GEOCHEMISTRY

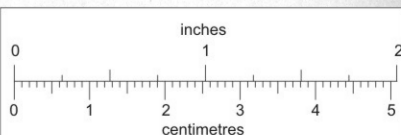
SCALE: 1" = 1 mile

- | | | | | | |
|----|-----------|----|----------|----|------------|
| Cu | ○ 80-120 | Pb | ○ 60-90 | Zn | ○ 400-600 |
| | ○ 120-200 | | ○ 90-150 | | ○ 600-1000 |
| | ○ >200 | | ○ >150 | | ○ >1000 |

105-H-5

MONEY CREEK

105 H
5



YUKON GEOLOGICAL SURVEY
This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

LEGEND

- QUATERNARY**
 - 16 Unconsolidated glacial and alluvial deposits
- CRETACEOUS (?)**
 - 15 Fine- to medium-grained biotite-quartz monzonite, granodiorite, minor diorite and gneiss; 15a, fine- and medium-grained biotite hornblende quartz monzonite and granodiorite, in part porphyritic; 15b, hornblende syenite
- DEVONIAN AND (?) MISSISSIPPIAN**
 - 13 Brown and black shale, black and grey chert, quartzite, greywacke, chert-pebble conglomerate; 13a, fine-grained light grey limestone and minor dolomite; 13b, greenstone; 13c, serpentinite
 - 14 Rusty brown weathering fine-grained schistose and spotted biotite hornfels, fine-grained quartzite, black pyritic argillite, dense light green to grey calc-silicate hornfels and fine-grained marble; minor slate, silty limestone and greywacke; 14a, light grey thin bedded fine-grained marble and calc-silicate hornfels. May include some 1 and 2
- SILURIAN AND DEVONIAN (?)**
 - 12 Fine-grained light to dark grey dolomite and quartzite; minor buff-grey dolomitic quartzite and silty to sandy dolomite
- ORDOVICIAN AND SILURIAN**
 - 11 Black shale, slate; minor chert, siltstone, dark limestone
- CAMBRIAN**
 - MIDDLE AND LATE CAMBRIAN**
 - 9 Light grey and brownish grey weathering, intercalated platy argillaceous silty limestone, siltstone, and fine-grained grey limestone
 - 10 Dark grey and brown silty shale and finely laminated siltstone, dark grey slate, thin-bedded brown-grey fine-grained sandstone; minor hornfels limestone
 - EARLY AND/OR MIDDLE CAMBRIAN**
 - 7 Buff-weathering dolomite, silty and sandy dolomite; minor sandstone and shale
 - 8 Dark brown-grey to black, in part pyritic, calcareous argillite, sand shale, and minor thin-bedded argillaceous limestone
 - EARLY CAMBRIAN**
 - 5 Sandstone, buff-weathering sandy and silty dolomite, dolomite, minor quartzite and argillaceous limestone, basic volcanic flows
 - 4 'Swiss-cheese' limestone, irregular interbedded dolomitic siltstone and argillaceous to silty limestone; pods and lenses of limestone; minor blue-grey fine-grained limestone and orange-weathering dolomite
 - CAMBRIAN AND/OR EARLIER**
 - 3 Brown to red-brown weathering slate, phyllite, siltstone and fine-grained quartzite; 3a, green-grey slate and phyllite
 - 2 Quartz-feldspar-mica gneiss and schist, granitoid gneiss, felsite and micaceous quartzite, biotite schist, minor marble and skarn; numerous small granitic bodies; anorthite and pegmatite; 2a, fine-grained coarse-grained marble
- PROTEROZOIC**
 - 1 Brown, grey, maroon and green shale; grey to green slate and phyllite, gritty feldspathic quartzite, quartz- and feldspar-pebble conglomerate, sandstone; 1a, minor limestone; 1b, light grey weathering, fine-grained grey limestone; 1c, mainly grey to green slate and phyllite; 1d, maroon and green shale and slate; 1e, mainly brown and grey shale and slate, minor maroon and green shale. 1d and 1e are probably equivalent and perhaps correlative with 1c
 - A Highly altered, green to brown, megacrystic, coarse-grained biotite-quartz monzonite or granodiorite. Age uncertain

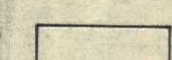
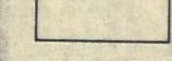


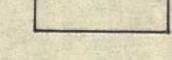
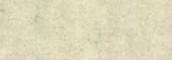
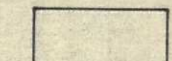
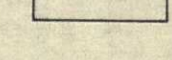
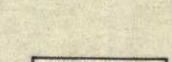

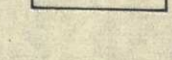



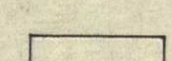
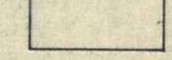

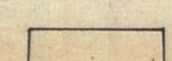
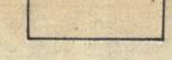
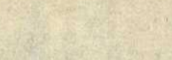
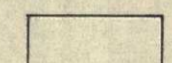
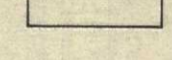
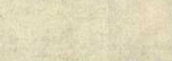
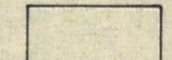
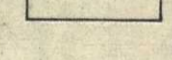
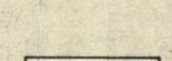
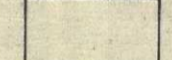
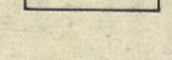
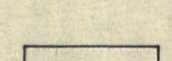
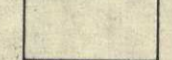
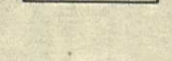
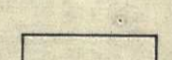
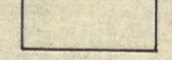
- Geological boundary (defined, approximate or assumed)
- Bedding (inclined, vertical)
- Foliation (horizontal, inclined, vertical)
- Lineation (horizontal, inclined)
- Fault (defined, approximate)
- Anticline (defined, approximate, arrow indicates plunge)
- Syncline (defined, approximate, overturned)
- Fossil locality
- Mineral occurrence or prospect (tungsten, W; copper, Cu; zinc, Zn)
- Areas of mineral prospects (zinc, Zn; lead, Pb; copper, Cu, silver, Ag)
- Hot spring
- Glacier

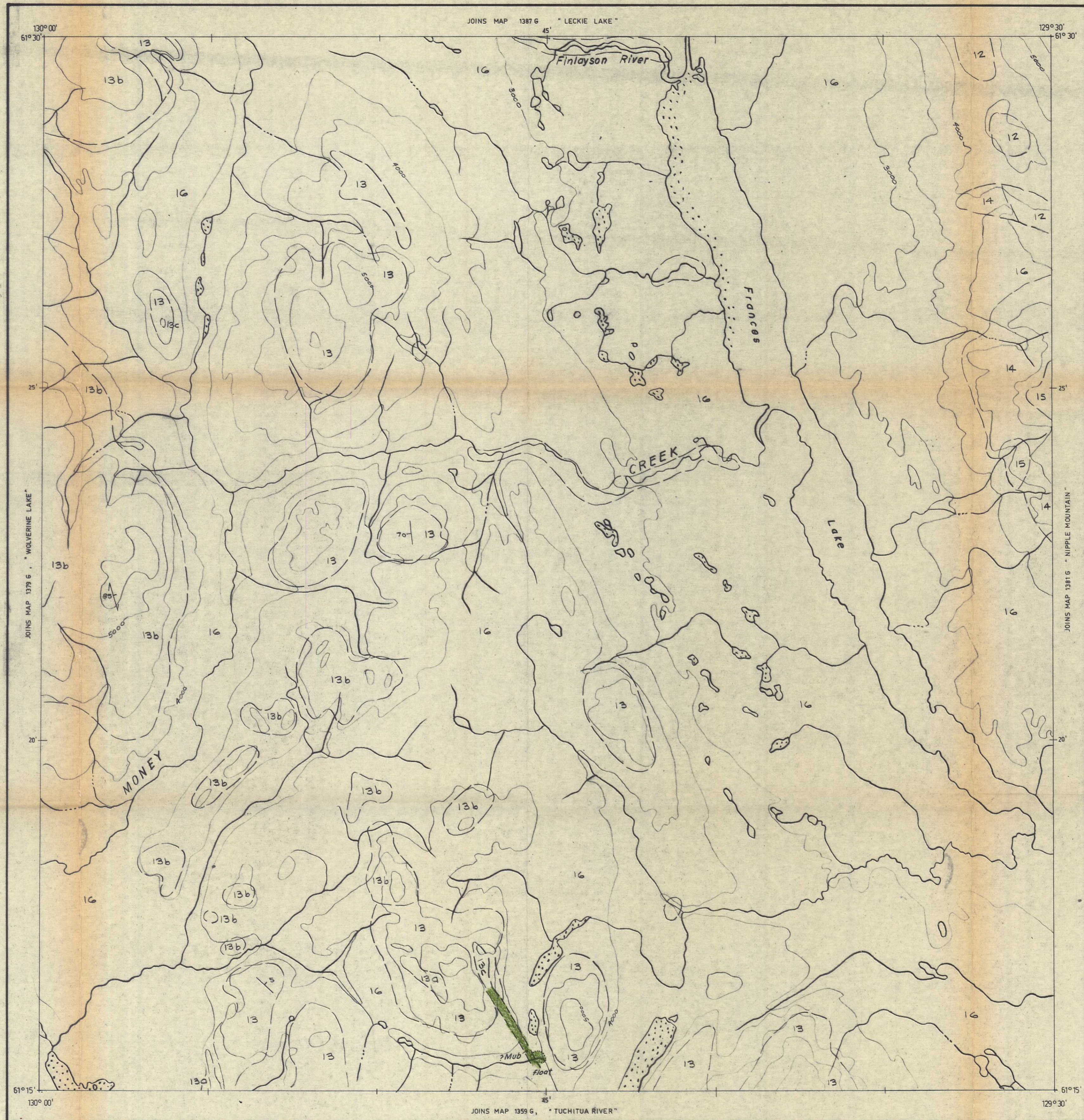
Geology by E. F. Roots, 1933; L. H. Green and J. A. Roddick, 1960
S. L. Blusson, 1962 and 1965

Geological cartography by the Geological Survey of Canada, 1966

- Road, all weather
- Airstrip
- Mine
- Horizontal control point
- Provincial boundary
- Intermittent stream
- Marsh
- Contours (interval 500 feet)
- Height in feet above mean sea-level

LEGEND

-  Serpentinite and associated quartz carbonate alteration.
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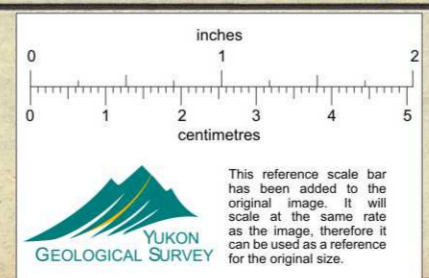
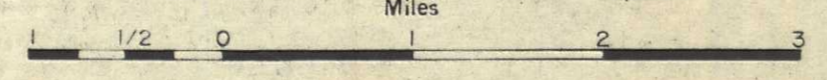
MAP 6-1966
GEOLOGY

FRANCES LAKE

YUKON TERRITORY AND DISTRICT OF MACKENZIE

SHEET 105-H-5 "MONEY CREEK"

Scale: One Inch to One Mile = 1/63,360 Miles



This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

105 H-5