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ON

KAMLOOPS WEBBER PROJECT - 1970

BY

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December 1970 4573

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KAMLOOPS AREA, BRITISH COLUMBIA

(Webber 1970 Project)

by G. R. Webber

September 9, 1970

INTRODUCTION

During the period April 28 to September 4, 1970, stream sediment sampling, soil sampling and geological mapping were done in an area south of Kamloops, B. C., bounded approximately by latitudes 50° and $50^{\circ}45'$ and longitudes 120° and $120^{\circ}50'$. The work was a continuation of a project started the previous year (see report dated September 3, 1969: Kamloops Area, British Columbia, Webber 1969 project).

The field party consisted of Edgar Ramsay, George Bell, John Haskins, Richard Pasker, Murray Ratcliffe, Graham Smith, and the writer. Field work was supervised by Mr. Ramsay and the writer (who joined the party at the beginning of August). P. W. Richardson administered the project from Vancouver on behalf of Newconex Canadian Exploration Ltd., maintained contact with the field party and visited it several times.

Samples were tested by a field test (Bloom's method) for readily extractable "total heavy metal" and many of the samples were tested by a copper field test. Samples were sent to Bondar-Clegg & Company Ltd., Vancouver, and analysed there for Cu, Pb and Zn by atomic absorption after extraction of metals by aqua regia. A few samples were also analysed by them for Co and Mo.

Reconnaissance work occupied a large part of the field season, particularly in the early part of the field season when snow conditions in the bush did not permit work in the Chuwhels Mountain area or the Ridge Mountain area.

GEOLOGY

The general geology of the area is described by W. E. Cockfield (Geology and Mineral Deposits of Nicola Map-Area, British Columbia, Geol. Surv. of Canada Memoir 249, 1961). Rock types in the area under consideration in 1970 are mostly volcanic rocks of the Nicola Group. Geological mapping was done to an appreciable extent only in the two areas sampled in detail, the Chuwhels Mountain area and the Ridge Mountain area. The following classification was made for mapping purposes:

- V1 - andesite - a gray-green, fine-grained chloritic rock.
- V1+ - andesite - medium-grained. This is a coarser-grained version of V1 and often occurs in the same outcrop with it. Some dike rock could be included in this classification, but dikes were not observed.
- V2 - hornblende porphyry - stubby dark phenocrysts of hornblende in a fine-grained matrix.
- V3 - hornblende diorite - contains acicular crystals of hornblende. This rock may be intrusive or could be a phase of the volcanics.

V3+ - diorite - a coarse-grained equivalent of V1+.

V4 - granodiorite - a light-coloured, medium-grained rock with quartz - could be either intrusive or extrusive.

V6 - syenodiorite - a light-coloured, medium-grained rock without quartz - could be either intrusive or extrusive.

V7 - feldspar porphyry - contains phenocrysts of feldspar up to about 5 mm in length - could be either intrusive or extrusive.

V8 - amygdaloidal basalt - brownish red to purple matrix with variable content of amygdules.

DETAILED AREAS

Detailed work was done on the Chuwhels Mountain area and the Ridge Mountain area (an area north of Frogmoore Lakes and southwest of Ridge Mountain).

1. Chuwhels Mountain Area (Interim Map 92I/10E) **(Fig. 36)**

This is an area on the south slope of Chuwhels Mountain. Reconnaissance results are shown on Interim Map 92I/10E and detailed results on the scale of 1" = 400' on the "Chuwhels Mountain Area" map. Geology of the area is shown on a separate 1" = 400' map which also shows the high geochemical readings. **(Fig. 10 & 11)**

Relatively high copper anomalies (up to 750 ppm Cu) had been found in stream sediments in the area in 1969, and detailed geochemical work in the 1970 field season consisted of soil sampling along a chained east-west baseline and along four chained north-south lines one thousand feet apart. The geology was mapped along all but one of these lines. Two additional east-west pace and compass traverses were made.

Geochemical Results

Results of the detailed geochemical soil and stream sediment surveys are shown on the Chuwhels Mountain map. The highest values are also shown on the geological map of the area.

The highest analyses were from drainage samples in the southeastern portion of the area. Up to 1550 ppm Cu was obtained (sample KC-1555). The soil samples gave relatively low results.

Geology

Volcanic rocks predominate in the area, and hornblende porphyry (V2) is the most common rock type. Individual outcrops often consist of several rock types. Some of the coarser-grained rocks may be intrusive, but no definite evidence of this was found. Three outcrops of hornblende diorite occur near the south end of line A.

A number of rock specimens from the area were tested for Cu. The results are shown on the geological map. Rock analyses near the geochemical highs are not notably higher than elsewhere although the average rock analysis is considerably higher than the average soil. Figure 1 shows a plot of Cu content of rock against nearby soil or sediment including samples from Chuwhels Mountain and other areas. High content of copper in the sediment or soil is not in general accompanied by high content in the neighbouring rock. It does not, therefore, appear likely that the geochemical highs can be explained as the result of local moderate high Cu content of the nearby rock.

2. Ridge Mountain Area (Interim Map 92I/7E) (Fig. 31)

This area is southwest of Ridge Mountain and about 2 miles north of Frogmoore Lakes on a highland of a little more than 5500' elevation, higher therefore than Ridge Mountain itself which is only 4947' in elevation. Reconnaissance geochemical results are shown on Interim Map 92I/7E and detailed geochemical results are shown on the scale of 1" = 400' on the "Ridge Mountain Area" map. Geology of the area is shown on a separate 1" = 400' map. ~~which also shows the high geochemical readings.~~ (Figs. 8 & 9)

Geology

Rock in the northern part of the area is mostly fine- to medium-grained andesitic rock (V1 and V1+). Some hornblende diorite (V3) also occurs in this area. A zone of chlorite schist, gneissic rock and a large outcrop of barren milky quartz occurs near the height of land on the east side of the outcrop area. The schistose zone is probably part of the schistose and gneissic zone shown by Cockfield (GSC Memoir 249, 1961) to border the western side of the Central Nicola Batholith. Outcrop is sparse in the eastern part of the area mapped.

The southern part of the area is mostly medium-grained volcanic rock (V1+) with sparsely disseminated pyrite.

Geochemical Sampling

Copper anomalies in stream sediments up to 325 ppm Cu had been found in the field season of 1969. Follow-up geochemical work in 1970 consisted of soil sampling at 200' intervals along 8 lines which were 1000' apart. Geological mapping was also done along these lines. Each of these lines started at the bush road on the west side of the area. The lines were numbered consecutively as they were run.

High copper analyses were obtained in several streams near the height of land (samples KC-2639 with 690 ppm Cu, sample KC-2640 with 515 ppm Cu, sample KC-2548 with 420 ppm Cu and sample KC-3712 with 390 ppm Cu). Two streams draining north on the west side of the area gave high Cu results (KC-2549 - 540 ppm Cu, KC-2547 - 332 ppm Cu, K-982 - 325 ppm Cu, KC-2524 - 330 ppm Cu and K-1007 - 310 ppm Cu). Soil anomalies were not as high as stream anomalies. Five soil samples with greater than 200 ppm Cu were obtained in the northern part of the area (samples KC-3376 - 368 ppm Cu, KC-3382 - 225 ppm Cu, KC-3638 - 250 ppm Cu, KC-3636 - 215 ppm Cu, and KC-3633 - 270 ppm Cu). These samples came from areas of abundant outcrop of andesitic rocks containing some sparsely disseminated pyrite. Several of the highs were resampled and samples of the nearby bedrock were also taken for analysis.

One high soil sample was also obtained near the height of land (KC-3278 - 235 ppm Cu). It is in the area of high Cu stream sediments and lies on the edge of a swampy area. A prominent zone of chlorite schist and gneiss lies about 400' to the east. There is also a large outcrop of barren milky quartz in the schist area.

A value of 230 ppm Cu was obtained for sample KC-3771 from a swampy area on the eastern end of line 6.

OTHER ANOMALOUS AREAS

Several other anomalous areas showed up as a result of the reconnaissance work. These are: Wyse Lakes, Brussels Creek, Anderson Lake, Mount Hamilton, Glimpse Lake, Mount Mabel, and Mount Guichon areas.

1. Wyse Lakes Area (Interim Map 92I/10E) **(Fig. 36)**

Wyse Lakes lie to the northwest of Paska Lake. Reconnaissance results are shown on Interim Map 92I/10E and detailed results are shown in a separate 1" = 400' map. **(Fig. 12)** A high of 1385 ppm Cu (sample K-3925) was found on one stream on the eastern part of the area. Several samples from other streams further west gave analyses greater than 400 ppm Cu (up to 595 ppm Cu - sample K-3237). Much less work has been done in this area than in the Chuwhels Mountain area or the Ridge Mountain area. Additional stream sediment samples were taken to confirm the presence and size of the anomalies. Outcrop of medium-grained andesite occurs near the high zones in the northwest part **(Fig. 13)** of the Wyse Lakes map sheet. This area deserves further drainage reconnaissance as well as more detailed work in the form of soil sampling and rock examination near the known highs.

2. <u>Brussels Creek</u> (Interim Map 92I/10E) **(Fig. 36)**

Brussels Creek drains into Kamloops Lake about 16 miles west of Kamloops. A high of 925 ppm Cu was obtained (sample K-3897). Figure 2 shows results of supplementary stream sediment sampling and soil sampling. No highs were obtained in the soils.

3. <u>Anderson Lake Area</u> (Map A92I/8W) **(Fig. 32)**

Anderson Lake is about 3 miles northwest of Stump Lake. Two separate high samples were found in reconnaissance sampling. One (sample K-1468) containing 475 ppm Cu is near Moore Creek about 3/4 mile west of Anderson Lake. This sample was taken from a spring area which flows into Moore Creek from the west. The spring comes out of hills of bouldery glacial material. Nearby gullys could not be traced very far up hill. Additional samples were taken nearby and sample KC-3742 gave 550 ppm Cu.

There is abundant outcrop of schistose rock containing a moderate amount of disseminated pyrite in Moore Creek near sample K-1467. This schistose rock may be related to the Central Nicola Batholith which is shown to be about 1 mile to the west on the regional geological map (GSC Memoir 249, 1961).

A second moderate high (K-1272 - 220 ppm Cu) is located 1/2 mile ~~west~~ east of Anderson Lake. It is the last sample on the west side of a local height of land. Medium-grained andesite occurs nearby and outcrop of agglomerate occurs about 600' to the west. This area was revisited and additional samples taken. The highest copper analysis obtained on the resampling was 252 ppm (K-3756) taken at the same site as K-1272.

4. Mount Hamilton Area (Interim Map 92I/1W) (Fig. 27)

Several high copper stream sediment samples (up to 1050 ppm Cu) were taken on a stream about 1 mile east of Mount Hamilton which is about 3½ miles west of Douglas Lake.

This area was revisited. There is a variety of rock types (agglomerate, andesite, hornblende porphyry and microdiorite) in scattered outcrops in the higher ground. Sulphides (mostly pyrite but with traces of chalcopyrite) are scattered through agglomerate near sample K-2875 which contained 640 ppm Cu in the sediment. This area deserves further follow up.

5. Glimpse Lake Area (Map A-92I/8W and E) (Figs. 32 & 33)

Glimpse Lake is about 8 miles southeast of Stump Lake. Several scattered high copper stream sediment samples were obtained in streams north of Glimpse Lake. The area was revisited.

6. Mount Mabel Area (Map 92I/7E) (Fig. 31)

A copper value of 255 ppm was obtained from a stream sediment sample from a small dry gully just south of Mount Mabel. No follow-up work has been done in this area.

7. Mount Guichon Area (Map 92I/7E) (Fig. 31)

Several moderately high stream sediment analyses were obtained on samples taken from a small stream approximately 2 miles northeast of Mount Guichon. Two of these samples contained more than 300 ppm Cu (K-3953 and K-3955).

Sample K-3944 on another nearby stream contains 275 ppm Cu. Current claim posts were observed in these areas at locations rather far removed from their plotted positions on the claim map. If further work were to be done in this area, claim locations would have to be investigated.

SUGGESTIONS FOR FURTHER WORK

A considerable part of the area has not yet been thoroughly covered by stream reconnaissance. This may be seen by referring to the index maps which show averages, numbers of samples and ranges of analyses for copper in each square mile of the various areas. Many of the areas which have not been sampled are currently staked by other mining companies; however there are still many gaps in coverage. Those areas which have been covered show a fair degree of contourability (for example high areas are grouped in the central region near Greenstone Mountain and in the southeast near Chuwhels Mountain). With more reconnaissance work more anomalous areas of this sort may be discovered and more intensive detailed drainage sampling, soil sampling and other follow-up work could then be done within these areas.

Further work in the Chuwhels Mountain area should be set aside for the time being in view of the fact that soil results were not encouraging and abundant unmineralized outcrop can be seen in the area.

In the Ridge Mountain area further soil sampling and geological mapping is recommended on the west side of the area and in the central part of the area. More drainage sampling is desirable to the east of the area of detailed sampling.

Other areas deserving more detailed follow up include Wyse Lakes, Brussels Creek, Anderson Lake, Mount Hamilton, Glimpse Lake, Mount Mabel and Mount Guichon.

APPENDIX I

REPRODUCIBILITY OF SAMPLING

Ten sites which had been sampled the previous year were resampled in May of 1970, retested by the field test and analysed by Bondar-Clegg for Cu. The copper field test was also performed on the new samples.

	Sample Number (paired samples are from same sites)	Field Tests* THM	Cu	ppm Cu (atomic absorption)
1969	K-851	7		300
1970	KC-1632	2	0	290
1969	K-852	12		420
1970	KC-1633	1	0	310
1969	K-853	3		350
1970	KC-1634	3	0	295
1969	K-854	3		275
1970	KC-1635	1	0	260
1969	K-855	11		450
1970	KC-1636	3	0	350
1969	K-856	15+		400
1970	KC-1637	3	0	340
1969	K-857	2		30
1970	KC-1638	2	0	38
1969	K-858	7		390
1970	KC-1639	5	0	310
1969	K-859	18		480
1970	KC-1640	7	0	550
1969	K-860	20+		750
1970	KC-1641	15	12	980

*mls of 0.001% dithizone in benzene required to react with metal in 0.1 grams of sample using either total heavy metal or copper buffer.

The atomic absorption laboratory tests show good agreement but the field tests for 1970 are generally lower than those of 1969. It was thought that the differences might be due to differences in drainage conditions at different times of year (snow was still present in the early 1970 sampling) or to differences in the reagents used. A later resampling of some of the earlier samples was made by P. W. Richardson in June 1970 to see whether the same results were obtained after the snow had disappeared. The field tests are erratic and not conclusive of a date factor. Possibly differences in the field tests could be due to differences in pH of the buffer solutions. Atomic absorption results are generally consistent.

Date Sampled	Sample Number (paired samples are from same sites)	Field Tests THM	Field Tests Cu	ppm Cu (atomic absorption)
May 22, 1970	KC-1625	2	0	290
June 18, 1970	KC-2504	13	10	1150
May 22, 1970	KC-1630	9	9	780
June 18, 1970	KC-2505	2		720
May 13, 1970	KC-1555		5	1550
June 18, 1970	KC-2506	15+	12	1600
Aug. 11, 1969	KC-856	15+		400
June 18, 1970	KC-2507	5		520
Aug. 11, 1969	KC-860	20+		750
June 18, 1970	KC-2508	4		645
May 13, 1970	KC-1602		10	725
June 18, 1970	KC-2509	5		970

APPENDIX II

COBALT AND MOLYBDENUM ANALYSES

A selected few samples were submitted to Bondar-Clegg for analysis for Co and Mo to see whether samples anomalous in copper could be distinguished in different groups by their cobalt and molybdenum contents. The cobalt content does not show clear differences between the groups. The molybdenum content of the Dominic Lake samples is distinctly higher than the other groups. Assessment reports show that soil sampling for Mo has been done north of Dominic Lake. Sample KC-2639 from the Ridge Mountain area has a content of 8 ppm Mo. This suggests that more testing for Mo might be useful in this area.

Sample Number	Area	ppm Cu	ppm Co	ppm Mo
K-268	Dominic Lake area	540	13	7
269	" " "	700	38	4
270	" " "	590	13	17
1061	" " "	950	26	11
1062	" " "	480	7	8
KC-1555	Chuwhels Mt. area	1550	9	1
1556	" " "	875	6	insuff. sample
1558	" " "	1150	15	2
1599	" " "	1300	8	2
1603	" " "	975	9	1
1631	" " "	800	11	4
3541	" " "	447		2
KC-1522	Chuwhels Mt. area	85	58	4
1535	" " "	155	15	1
1553	" " "	210	10	1
1673	" " "	210	22	2
2023	" " "	185	10	1
KC-2548	Ridge Mt. area seds.	420		2
2639	" " " "	690		8
2640	" " " "	515		2
3376	" " " soils	368		1
3382	" " " "	225		2
R-1555-1	Chuwhels Mt. area rock		18	ND
R-1556-1	" " " "		24	1
R-1556-3	" " " "		19	ND
R-1558-1	" " " "		11	ND
R-1599-1	" " " "		30	1

APPENDIX III

DISTRIBUTION OF COPPER CONCENTRATIONS IN AREAS SAMPLED IN DETAIL

Figures 3 to 7 are histograms showing the distribution of copper analyses in stream sediments collected in 1969, the distribution of copper analyses in soils and sediments in the Chuwhels Mountain area and the Ridge Mountain area.

Modal values are as follows:

	Mode (ppm Cu)
Stream sediments 1969	50 - 60
Chuwhels Mt. area - sediments	180 - 190
- soils	40 - 50
Ridge Mt. area - sediments	80 - 90
- soils	20 - 30

Modal values of copper in stream sediments in both the Ridge Mountain area and the Chuwhels Mountain area are considerably higher than in the area in general. The mode in soils from the Ridge Mountain area is lower than the corresponding mode from Chuwhels Mountain, but there is a higher proportion of high values in the Ridge Mountain area.

ADDENDUM

KAMLOOPS PROJECT 1970

I - INTRODUCTION:

During the period September 10th to November 6th the project was continued with special emphasis on the detail areas recommended by Dr. Webber in his report of September 7, 1970.

The field party consisted of George Gottselig, David Rankin and the writer.

An additional 647 samples were taken - 503 detail, mostly soil, and 146 reconnaissance stream sediment samples.

All the areas recommended for detail work were covered except the Mount Guichon area and Anderson Lake area. In addition, all geological outcrops along the soil sampling traverses were examined at Wyse Lakes, on the west side of the area SW of Ridge Mountain as had been done previously on the Chuwhels Mountain area, and the east side of the Ridge Mountain area. However, no effort was made to visit every outcrop, but the geology outcrop maps of these three areas [Figs. 9, 11, and 13] do give an indication of the outcrop density.

The reconnaissance data for both 1969 and 1970 are plotted on twelve interim sheets with a scale of 2" = 1 mile.

Samples numbered up to 1121 were collected in 1969. Those numbered from 1122 to 4596 were collected in 1970.

Detail sampling data, mostly from soil samples, were plotted along with that of the reconnaissance samples on 1" = 400' maps. In this connection it is essential to remember that, although stream sediment and soil samples appear on the same map, the background levels of these two types are different and the anomalous levels cannot be compared directly. This is especially so in the region under study where most of the overburden is transported glacial material.

In addition to the maps showing the geological and geochemical data, a series of Geochemical Sample Distribution plots were prepared for the seven areas which had sufficient data to make it worthwhile.

II - DETAIL AREAS

Chuwhels Mountain Area [Figs. 10, 11]

Except for one repeat detail sample and one reconnaissance traverse of a creek in the SW, no additional data were added to that recorded in Dr. Webber's report.

NW of Ridge Mountain [Figs. 8, 9]

Detail soil samples were taken at 200' intervals along seven lines 1,000' apart in the western part of the area and on one line in the eastern part. Some creeks encountered during the soil sampling were also sampled. Two adjacent samples [KC-4178 and KC-4989] with much organic matter contained 1300 ppm Cu, whereas the highest soil sample [KC-3836 on line 3W] contained 330 ppm Cu.

One stream sediment sample of clay-sand composition on line 1W [KC-3845] contained 420 ppm Cu.

A geology map showing all the outcrops along the soil traverses was prepared for this area [Fig. 9].

On the east side of the area the high density of outcrops indicates that no further work is justified there. However, on the west side of the area, the high copper content in some of the streams, the lower density of outcrop, and the presence of some intrusive rocks indicates that further work is justified in this section.

Wyse Lakes Area [Figs. 12, 13]

Detail soil sampling was carried out at 200' intervals along six lines 1,000' apart and on one line 2,000' from line 6. These lines bear N 60° E which is at right angles to the topographic trend of the area. The highest sediment sample contained 1385 ppm Cu [KC-3925]; the highest soil sample 460 ppm [KC-4401].

The outcrops along the soil sample lines were mapped [Fig. 13]. A large part of the centre of the area is covered by swampy ground or glacial overburden, and the outcrops are generally confined to the periphery. The rocks are volcanic. Most have a purplish color, and some are amygdaloidal. None of the hornblende porphyry, which is common on Chuwhels Mountain, was found in this area.

Brussels Creek Area [Figs. 2, 18] (Pages 30 & 40)

In addition to the survey reported by Dr. Webber [Fig. 2], more detail soil and stream sediment sampling was carried out higher up the creek. The highest stream sediment sample contained 925 ppm Cu [K-3897]; the highest soil sample 55 ppm [KC-4593]. The rock samples collected in the area were purple and green andesites without visible mineralization.

Anderson Lake Area (Fig. 32)

No further work was done in this area but a map of the section around the junction of Moore and Hollis Creeks was prepared [Fig. 17]. (Page 39)

Further work is recommended in this area because this is an interesting anomaly near a geological contact.

Mount Hamilton Area [Fig. 14] (Page 36 and Fig. 27)

There are three creeks of interest in this area. Soil samples and additional stream sediment samples were taken on the creek to the NE where sample K-2266 carried 995 ppm copper. The soil samples were low and the rocks which crop out at some distance to each side of this creek did not carry visible mineralization. However, because of the high readings in the creek to the west and the high pyrite in the outcrops there, further detailed work over this whole area is recommended.

Glimpse Lake Area [Fig. 16] (Page 38)

One sample [KC-2104] from a creek flowing southerly into Glimpse Lake contained 260 ppm Cu.

Two lines of soil samples were run 200' to each side of the creek with sample intervals at 400'. The results were generally low. The highest sample [KC-4534], predominantly organic, contained 105 ppm copper and the highest inorganic sample [KC-4570] contained only 56 ppm Cu.

Mount Mabel Area [Fig. 15] (Page 37)

Detail soil and stream sediment samples were taken along the stream running south from Mount Mabel to Mab Lake. In this area, the outcrops are gneissic to granitic rocks of the Nicola batholith. On the original reconnaissance the maximum reading was 225 ppm Cu from the most northerly sample [K-2444]. The preliminary detail soil survey indicated a high field reading in one sample [KC-4571]. After a follow-up survey was done the laboratory report indicated that this sample contained only 26 ppm Cu.

This area is of no further interest.

III - DISCUSSION OF RECONNAISSANCE AREAS

Area 92-I-1-E [Fig. 26]

More than half of this area is underlain by Palaeozoic rocks of the Cache Creek Group intruded along the southern edge by plutonic rocks of the Pennask batholith.

The mineral rights to a large part of the land around Douglas Lake are owned by the Douglas Lake Cattle Company under option to Craigmont Mines Ltd., so only one unnamed stream was sampled NE of Douglas Lake. Most of the sampling done was on Mellin Creek and tributaries.

No copper anomalies were found although one sample [K-2238] contained 300 ppm Zn.

Area 92-I-1-W [Fig. 27]

Most of this area is underlain by Nicola rocks intruded on the south by the Pennask batholith and on the NE by the Douglas Lake stock.

The Douglas Lake Indian Reservation covers a large area on the east side including most of the Douglas Lake stock.

Reconnaissance covered the area SW of Glimpse Lake and SW of Douglas Lake.

West of Glimpse Lake the highest sample [K-1943] contained 295 ppm copper.

South and east of Mount Hamilton there were a number of anomalous copper samples. Stream sediment sample K-2199 contained 1050 ppm Cu, and a repeat sample at the same location [KC-3770] contained 950 ppm. However, samples taken above and below this station were much lower. Northeast of this station three stream sediment samples [K-2873, 2874, 2875] contained 434 to 640 ppm Cu. There is outcrop nearby, much of it containing scattered pyrite. Further east a stream sediment sample [K-2266] containing 995 ppm Cu led to detailed sampling of the creek [Fig. 14]. Page 36 This whole area should be mapped in detail.

<u>Area 92-I-2-E</u> [Fig. 28]

This area is underlain mostly by Nicola rocks intruded on the NE by the Nicola batholith and farther south by several stocks. Patches of Tertiary Coldwater sedimentary rocks lie on the Nicola rocks.

Much of the land is staked and a large Indian reserve covers the central east side.

However, Godey & Howarth Creeks in the SW and Shuta, Betty, Mabel and several other creeks in the north were sampled without finding any areas of special interest.

<u>Area 92-I-2-W</u> [Fig. 29]

Much of this area is underlain by Nicola volcanic rocks intruded on the north by the Guichon batholith and several stocks. A large area in the SW and a smaller area in the north central part are underlain by rocks of the Lower Cretaceous Kingsvale Group. Patches of Tertiary Kamloops Group overlie earlier rocks.

Most of the north half of the area is staked or is Indian land.

Because of the amount of staking, reconnaissance sampling was confined to the area south of the Nicola River over the Kingsvale rocks of the Coutlee Plateau and the Nicola rocks near Iron Mountain.

Background over the Kingsvale volcanic rocks is lower than that over the Nicola volcanic rocks. Thus, three samples collected six miles SW of Merritt containing less than 200 ppm Cu are anomalous, and this area should be investigated further.

Area 92-I-7-W [Fig. 30]

The western two-thirds of the area is underlain by plutonic rocks of the Guichon Batholith; the eastern one-third by Nicola rocks.

Although the area has great economic interest the large amount of staked land precluded any large scale sampling. Three samples were collected at the headwaters of Tolman Creek in 1970. Two were collected on Rey Creek in 1969. These samples were not anomalous with respect to copper although sample K-2230 contained 103 ppm Zn and K-2231 121 ppm Zn.

Area 92-I-7-E [Fig. 31]

The western two-thirds of this area is underlain by Nicola rocks; the eastern third by intrusive rocks of the Nicola batholith. Much of the southwest and west side is heavily staked. Two areas were mapped in detail [Figs. 8, 15].

Samples from a creek in the ~~northeast~~ southeast contained up to 290 ppm Zn [K-2386]. This area does not warrant further sampling at this time.

Area 92-I-8-W [Fig. 32]

Half of this area is underlain by Nicola rocks intruded by rocks of the Nicola batholith on the west and the Wild Horse Mountain batholith on the NE. These are overlain by volcanic rocks of the Kamloops Group in the ~~south~~ north central area.

Most of this ground is unstaked.

Two areas [Figs. 16 and 17] were sampled in detail.

Much of Moore Creek and several tributaries crossing the Nicola batholith from the west were sampled as were a large number of creeks flowing into Trapp and Stump Lakes. In addition to those in the two areas sampled in detail, there were a number of anomalous samples in the southeast corner. The highest of these was sample K-2831 which contained 369 ppm Cu. Because this area appears to straddle the contact between the Nicola and Cache Creek rocks further work in this area would be justified.

Area 92-I-8-E [Fig. 33]

This area is underlain by Palaeozoic Cache Creek volcanic rocks to the south intruded by rocks of the Wild Horse Mountain batholith to the north which is overlain in part by volcanic rocks of the Cenozoic Kamloops Group. A little Nicola is present on the west side of the area.

A few traverses were run on the west side but nothing of significance was discovered.

Area 92-I-9-E [Fig. 34]

South of the Thompson River the area is underlain by Cache Creek rocks intruded by plutonic rocks of Wild Horse Mountain batholith. A small segment of Nicola rocks lies immediately south of the river on the east. All these rocks are overlain by volcanic rocks of the Kamloops Group.

No sampling was done in 1970 in this area.

Area 92-I-9-W [Fig. 35]

The Iron Mask batholith lies across the centre of this area, and the Nicola batholith, with a wedge of metamorphosed Palaeozoic rocks, intrudes the Nicola rocks, to the southwest. Cache Creek rocks lie along the east side.

Volcanic rocks of the Kamloops Group overlie older rocks to the north and south.

Much of the centre of the area is heavily staked so sampling was confined to the SW corner. One sample [K-4007] on a tributary of Anderson Creek contained 330 ppm Cu. This anomaly is recognizable for 1/2 mile down the creek so this area should be sampled in detail. One sample on Alkali Creek [K-4465] contained 200 ppm Cu.

Much quartz crops out near sample K-4151 on Alkali Creek.

Area 92-I-10-E [Fig. 36]

Most of this area is underlain by Nicola rocks intruded by a few stocks of the Coast Intrusions. Some Kamloops Group volcanic rocks occur in the NE and some sedimentary Coldwater beds overlie the Nicola on the west.

Except for the area around Dominic Lake, north of Greenstone Mountain, and along the eastern and northern edges, little of the area is staked.

In addition to the four detail areas, there are two other areas of interest. One near Dominic Lake, which is firmly held by Cominco who did extensive drilling on the property, and the other north of Greenstone Mountain. Several assessment reports are available covering parts of this area. The widespread geochemical anomalies N. of Greenstone Mountain suggest that further work might be possible in the area after the ownership of the property is established. Those on a tributary of Ned Roberts Creek are especially interesting.

<u>Area 92-I-10-W</u> [Fig. 37]

Except for the Nicola rocks along the north and east side, the area is underlain by ~~Volcanic~~ Kamloops Group volcanic rocks and intrusive rocks of the Guichon batholith. The area covered by the batholith is heavily staked. One creek flowing east from Mt. Savona to Durand Creek was sampled in 1970. The survey revealed nothing of interest.

IV - <u>CONCLUSIONS</u>:

1. No ore bodies or large areas of highly altered rock were found.

2. A number of areas with high anomalous copper were found. ~~in stream sediments~~.

3. No anomalous area was delineated well enough by detail soil survey to justify staking, geophysical work, or drilling.

4. A number of anomalous areas warrant further geochemical work.

5. A number of areas were not covered because of lack of drainage or because of being heavily staked.

6. When the reconnaissance survey has shown an area to have geochemical anomalies, some geological work should be done in the area before much detail geochemical work is done, so that detail work is not done in areas of absolutely no geological interest.

V - RECOMMENDATIONS:

1. Change the program so that emphasis is on geology with geochemical followup.

2. Add to the area covered by the agreement to take in a strip from Merritt to the 49th parallel because better geological information is available at this time. For example, several major faults are reasonably well mapped.

3. Additional followup should be done on the following areas:

    1. SE of Mt. Hamilton. (Figs. 14 & 27)
    2. 6 miles SW of Merritt. (Fig. 29)
    3. NW of Surrey Lake. or northeast of Mt. Guichon (Fig. 31)
    4. SW of Ridge Mountain. (Figs. 8, 9 & 31)
    5. Hollis and Moore Creeks junction. (Figs. 32 & 17)
    6. North of Glimpse Lake. (Figs. 16 & 32)
    7. North of Greenstone Mountain. (Fig. 36)
    8. East of Anderson Creek. (Fig. 35)

E. A. Ramsay

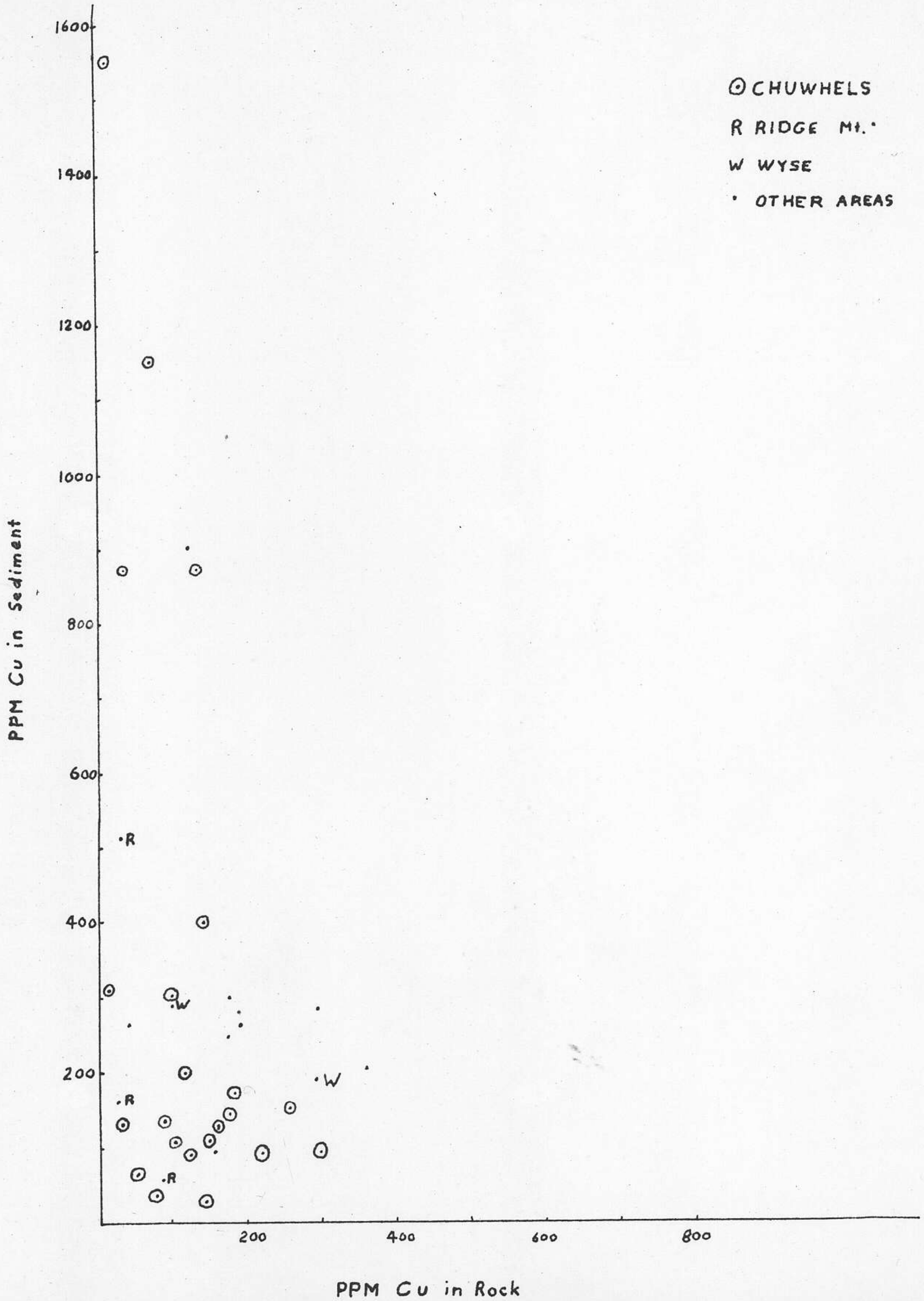


FIG. 1 COMPARISON OF Cu CONTENT OF ROCK WITH NEARBY SEDIMENT OR SOIL

FIG. 2 BRUSSELS CREEK - DETAIL

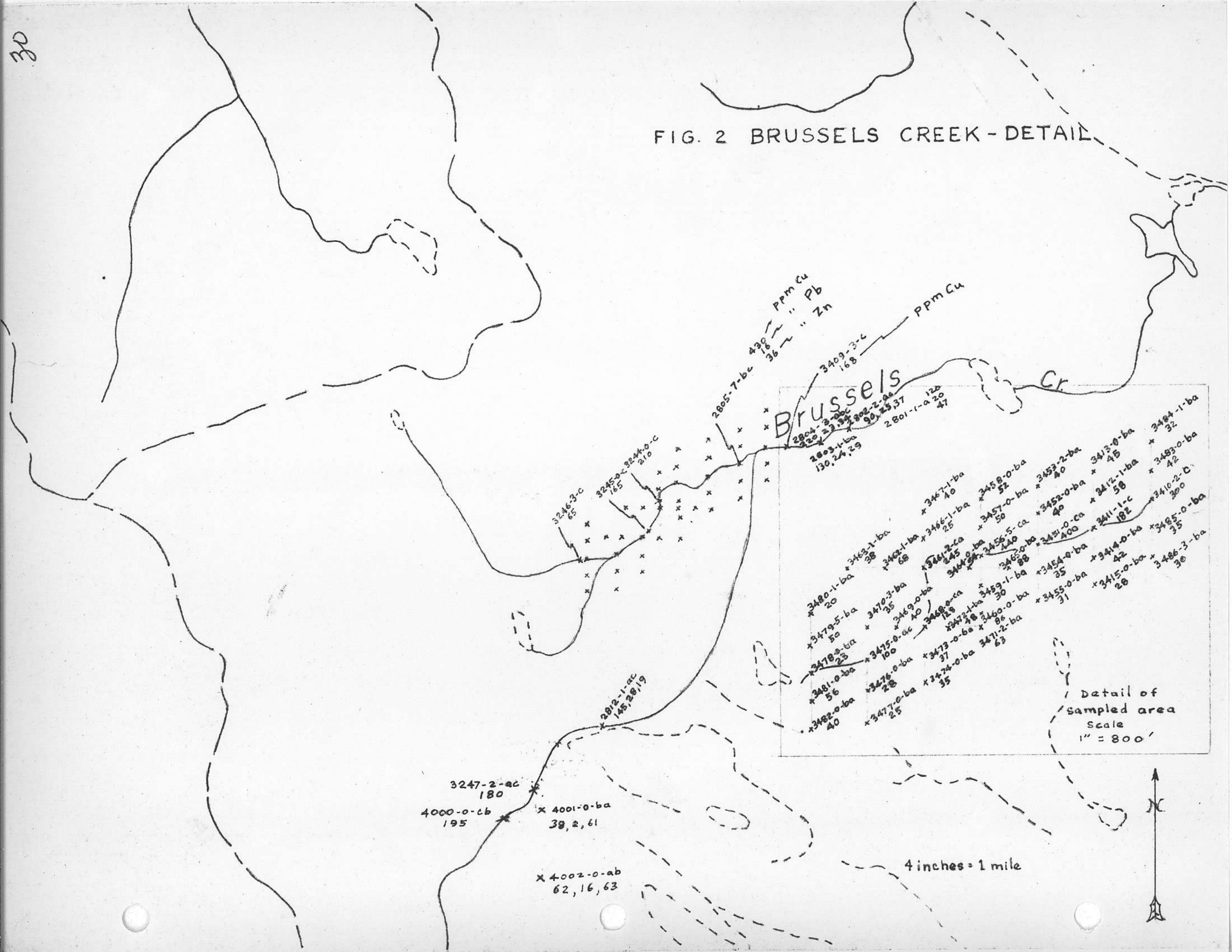
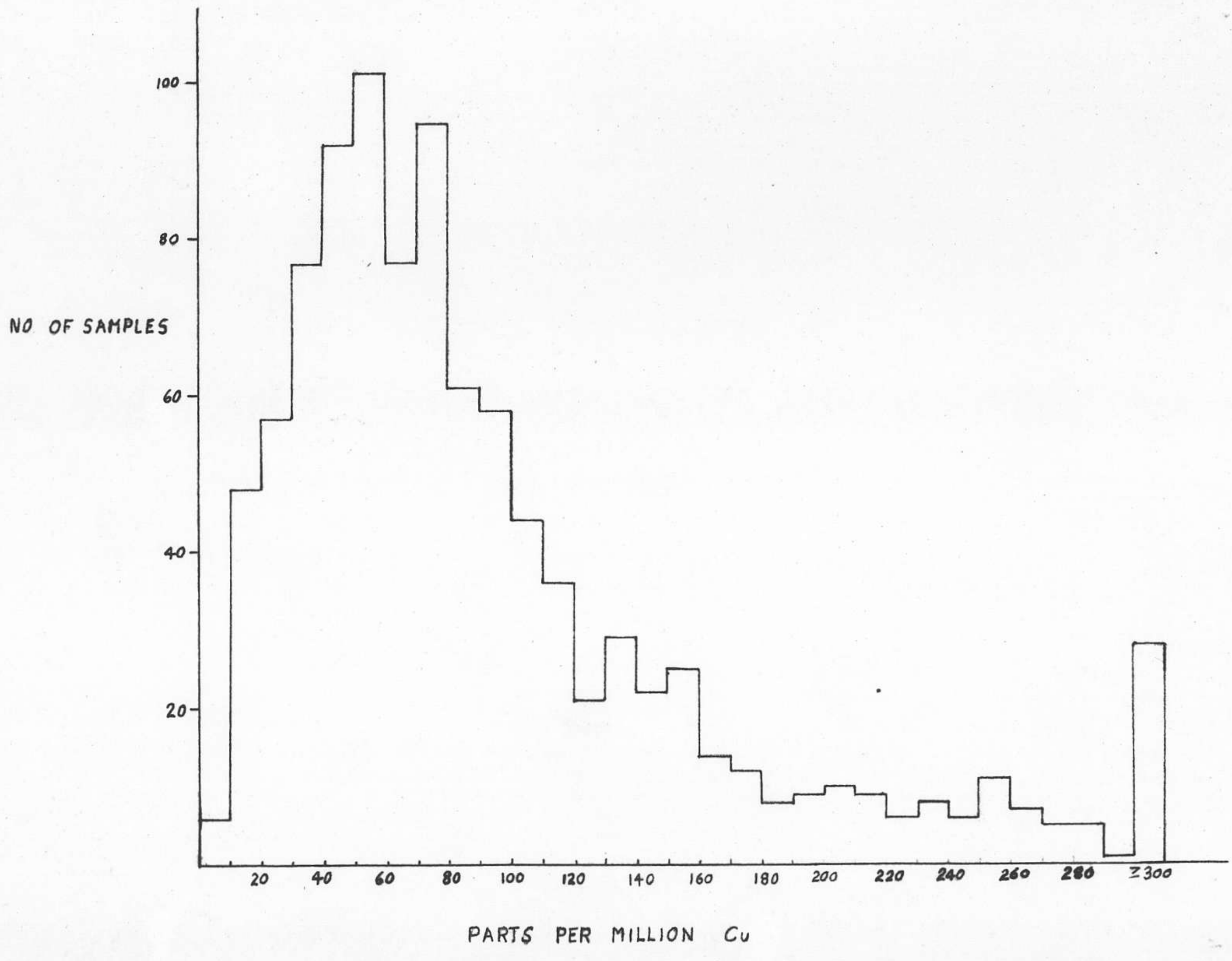


FIG. 3 DISTRIBUTION OF COPPER CONCENTRATIONS IN STREAM SEDIMENT SAMPLES IN THE KAMLOOPS AREA B.C.



1969
G.B.

FIG. 4 DISTRIBUTION OF COPPER CONCENTRATIONS IN SOILS · CHUWHELS MOUNTAIN

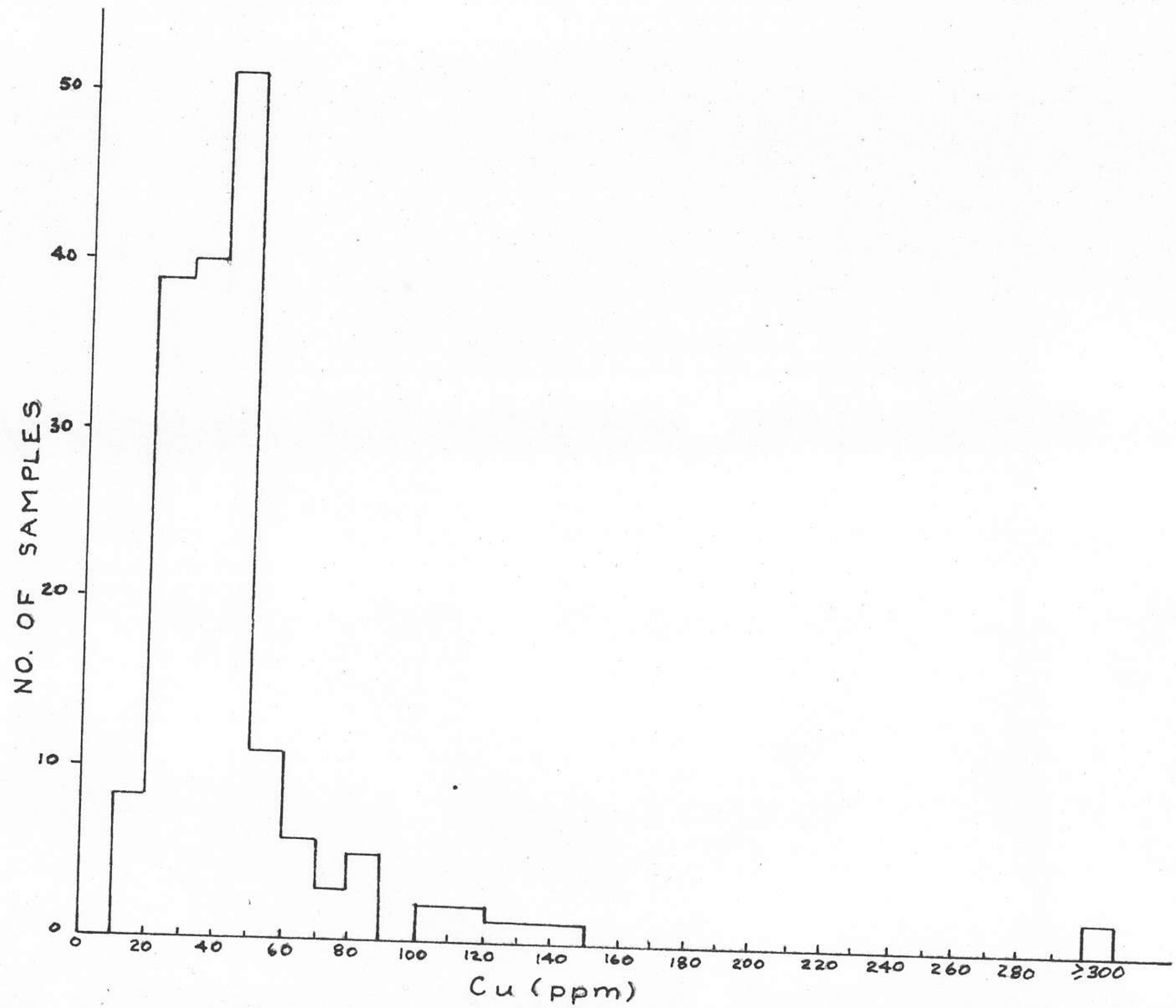


FIG. 5 DISTRIBUTION OF COPPER CONCENTRATIONS IN STREAM SEDIMENT SAMPLES - CHUWHELS MOUNTAIN

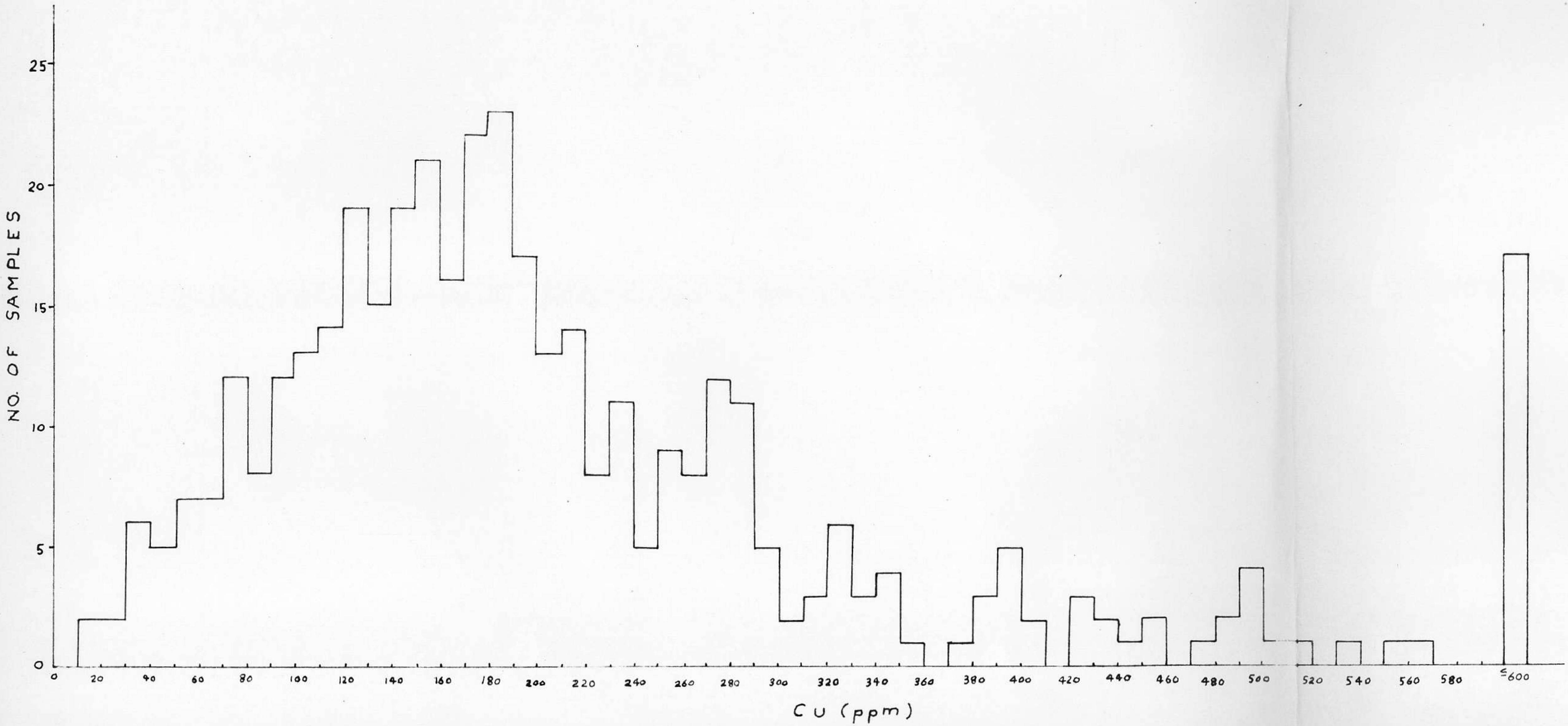


FIG. 6 DISTRIBUTION OF COPPER CONCENTRATIONS IN SOILS - RIDGE MOUNTAIN AREA

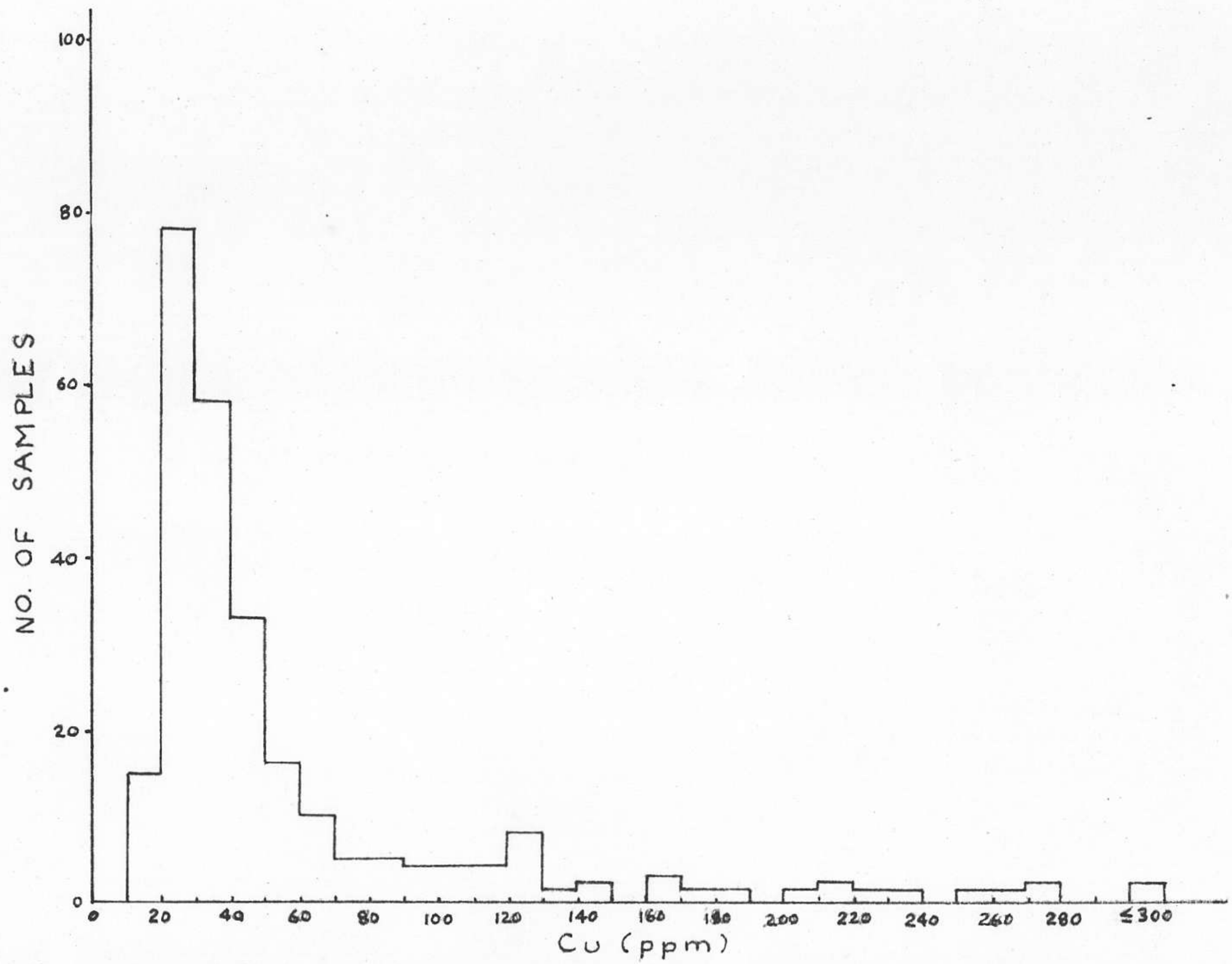
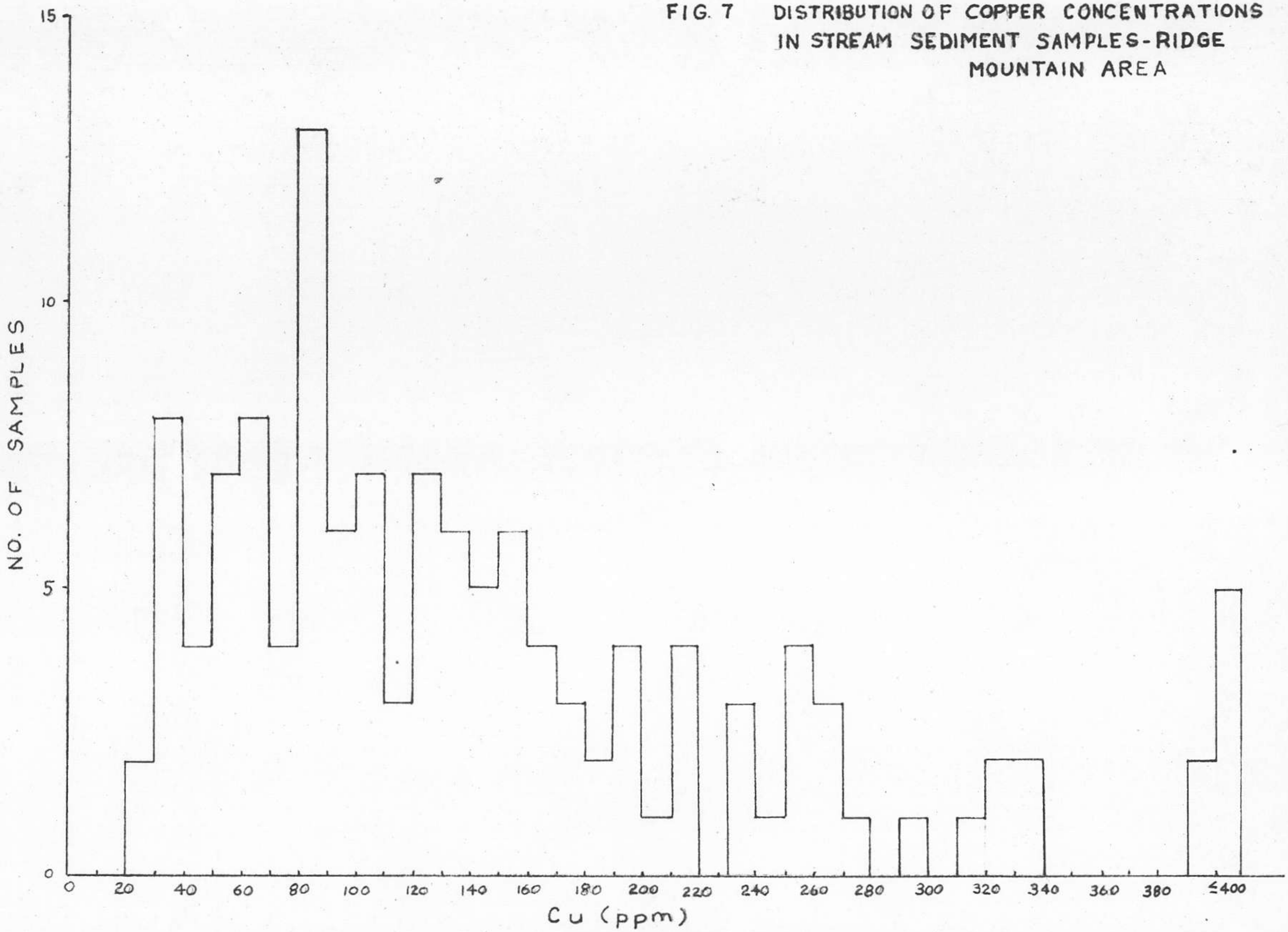


FIG. 7 DISTRIBUTION OF COPPER CONCENTRATIONS IN STREAM SEDIMENT SAMPLES-RIDGE MOUNTAIN AREA



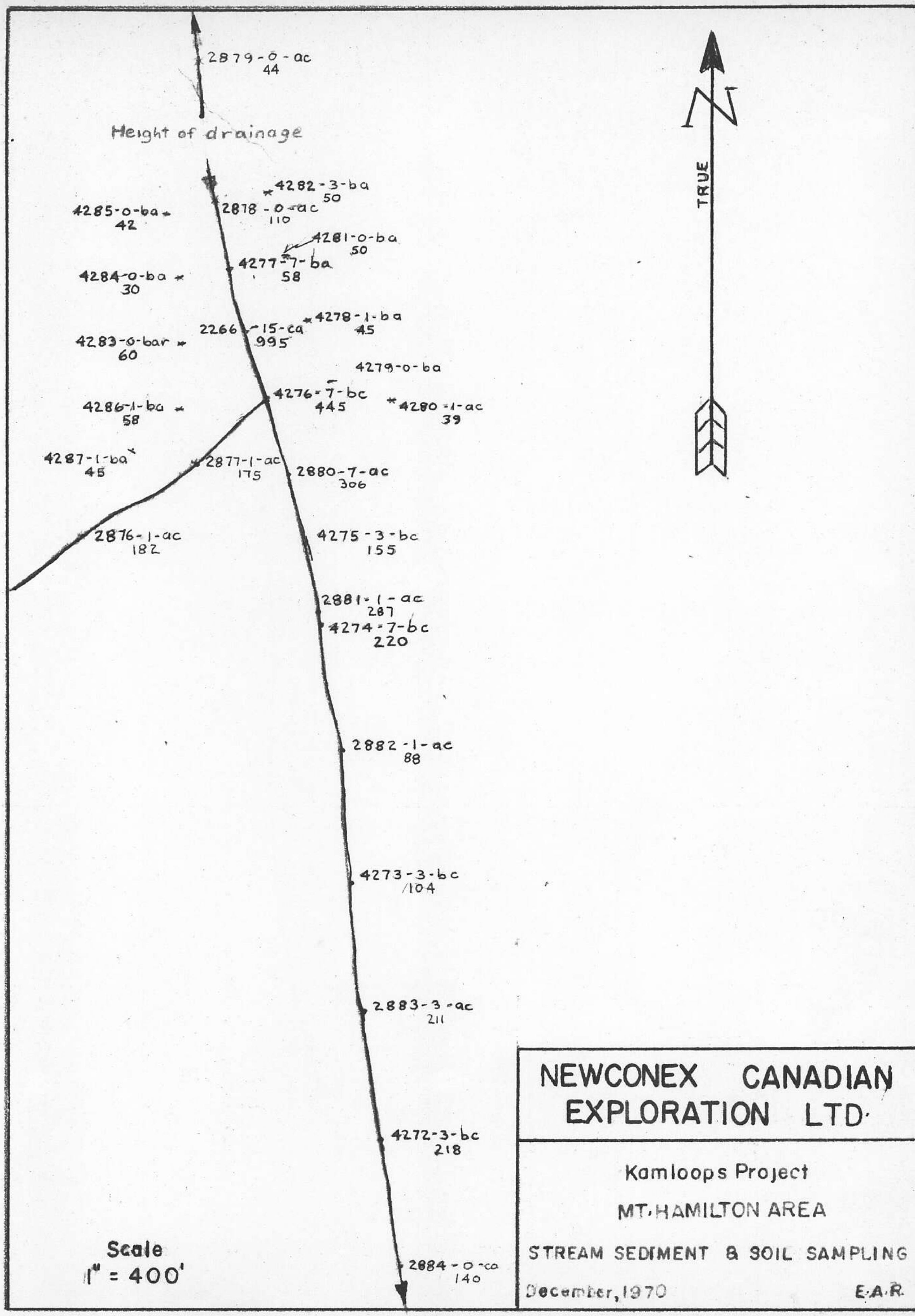
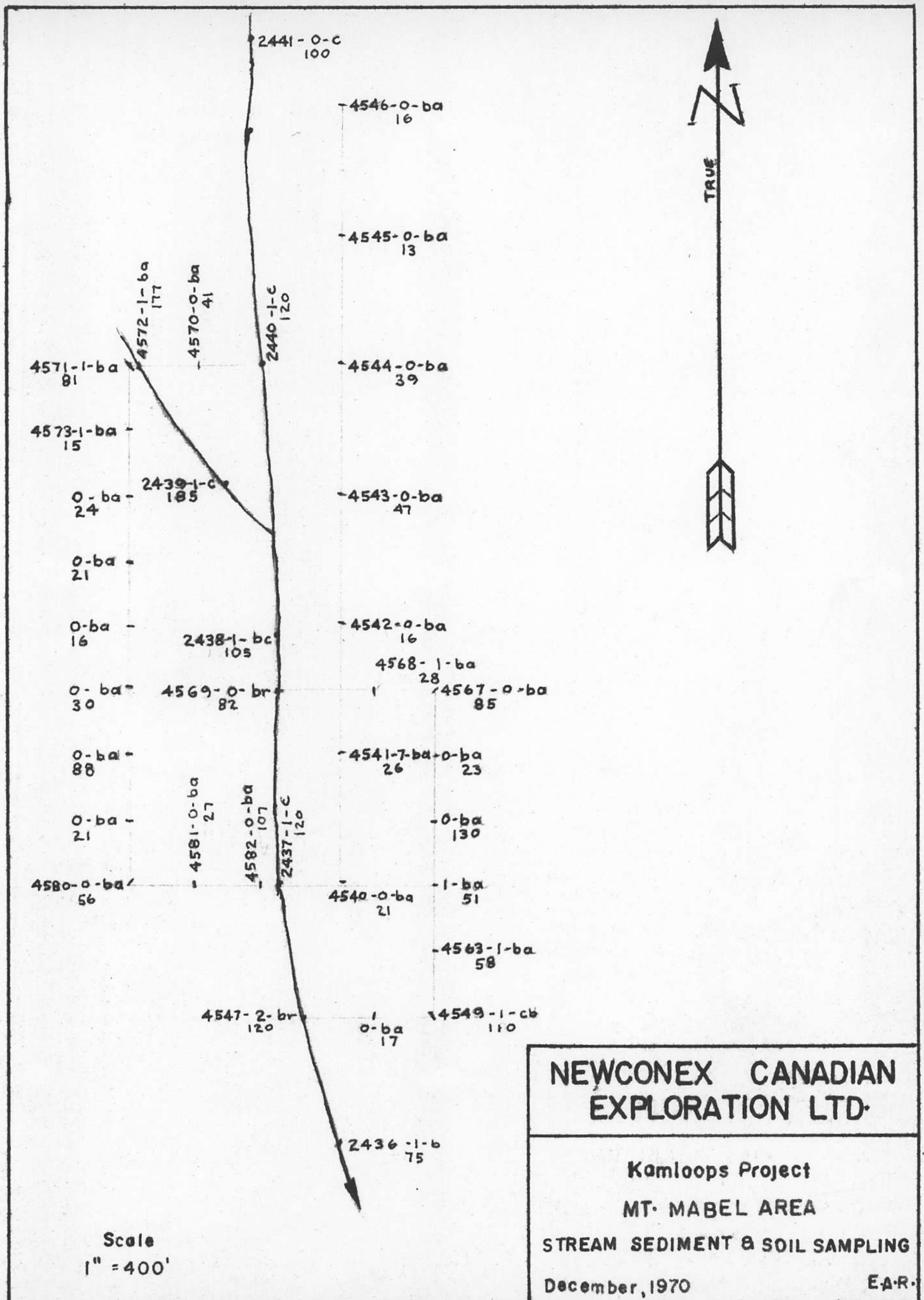

2879-0-ac
44
Height of drainage
4282-3-ba
50
4285-0-ba
42
2878-0-ac
110
4281-0-ba
50
4284-0-ba
30
4277-7-ba
58
2266-15-ca
995
4278-1-ba
45
4283-0-bar
60
4279-0-ba
4276-7-bc
445
4280-1-ac
39
4286-1-ba
58
4287-1-ba
45
2877-1-ac
175
2880-7-ac
306
2876-1-ac
182
4275-3-bc
155
2881-1-ac
287
4274-7-bc
220
2882-1-ac
88
4273-3-bc
104
2883-3-ac
211
4272-3-bc
218
2884-0-ca
140
TRUE
N
Scale
1" = 400'
NEWCONEX CANADIAN EXPLORATION LTD.
Kamloops Project
MT. HAMILTON AREA
STREAM SEDIMENT & SOIL SAMPLING
December, 1970
E.A.R.

FIG. 14

37



NEWCONEX CANADIAN EXPLORATION LTD.

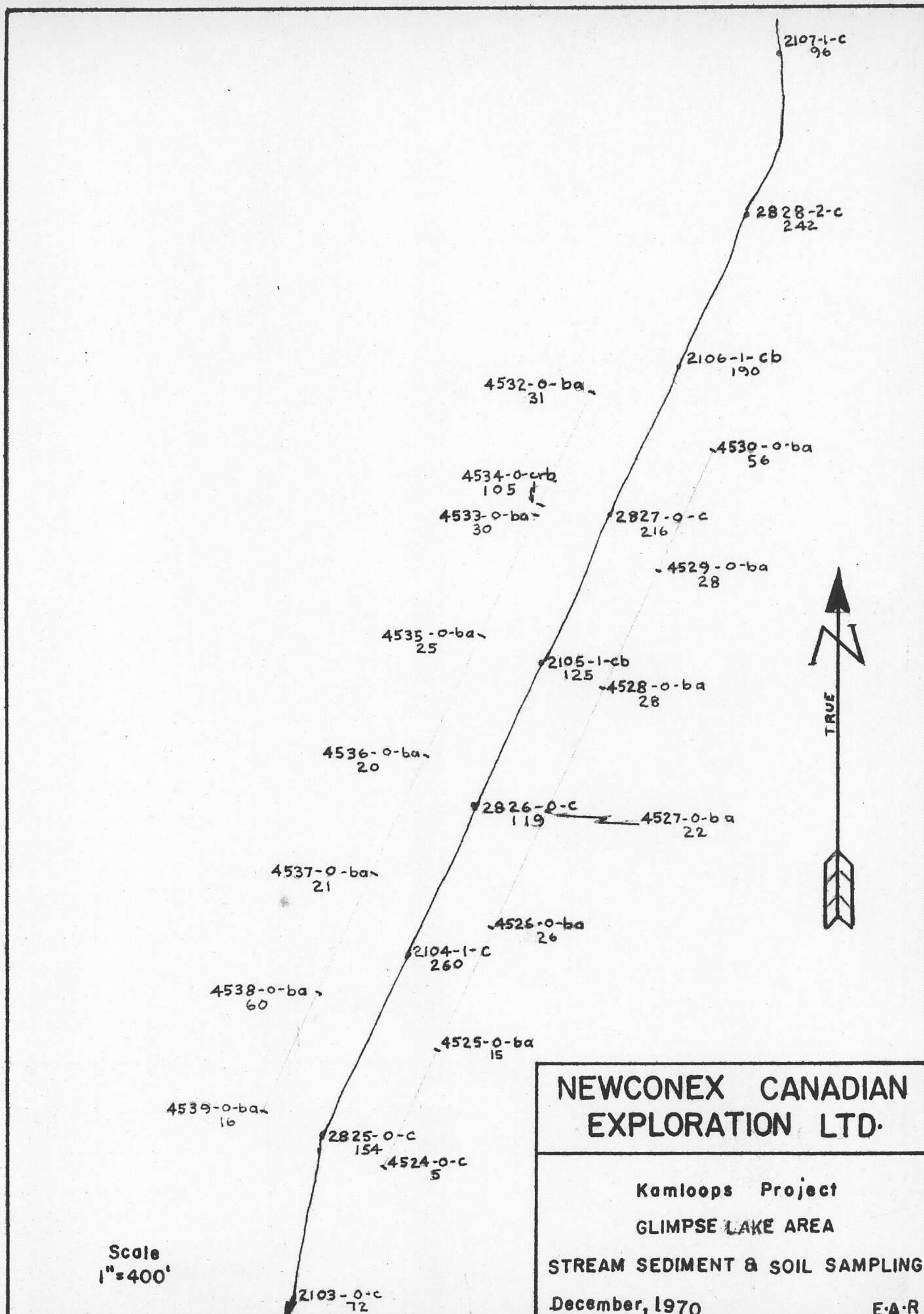
Kamloops Project

MT. MABEL AREA

STREAM SEDIMENT & SOIL SAMPLING

December, 1970 E.A.R.

FIG 15



NEWCONEX CANADIAN EXPLORATION LTD.

Kamloops Project

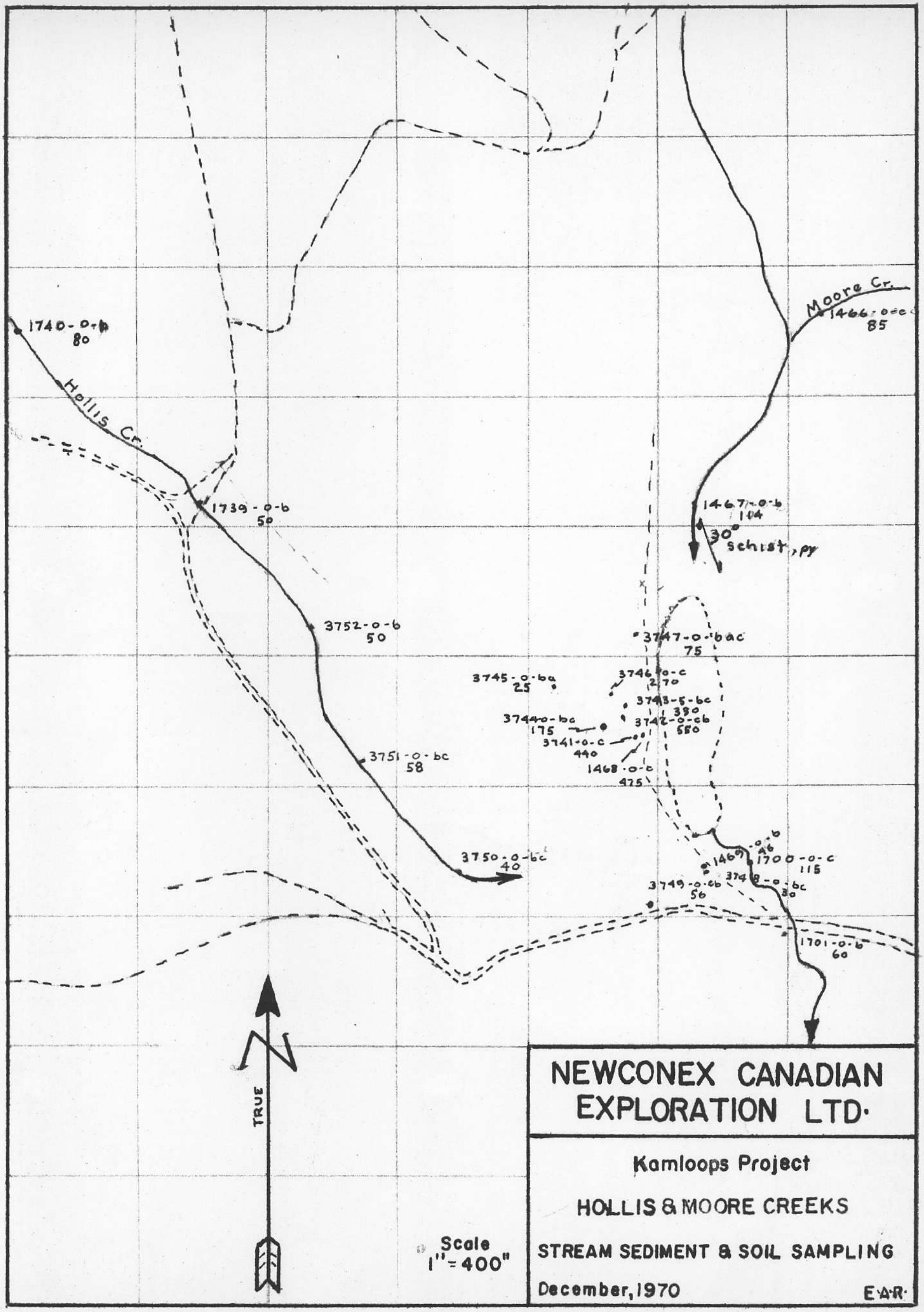
GLIMPSE LAKE AREA

STREAM SEDIMENT & SOIL SAMPLING

December, 1970

E.A.R

FIG. 16



NEWCONEX CANADIAN EXPLORATION LTD.

Kamloops Project

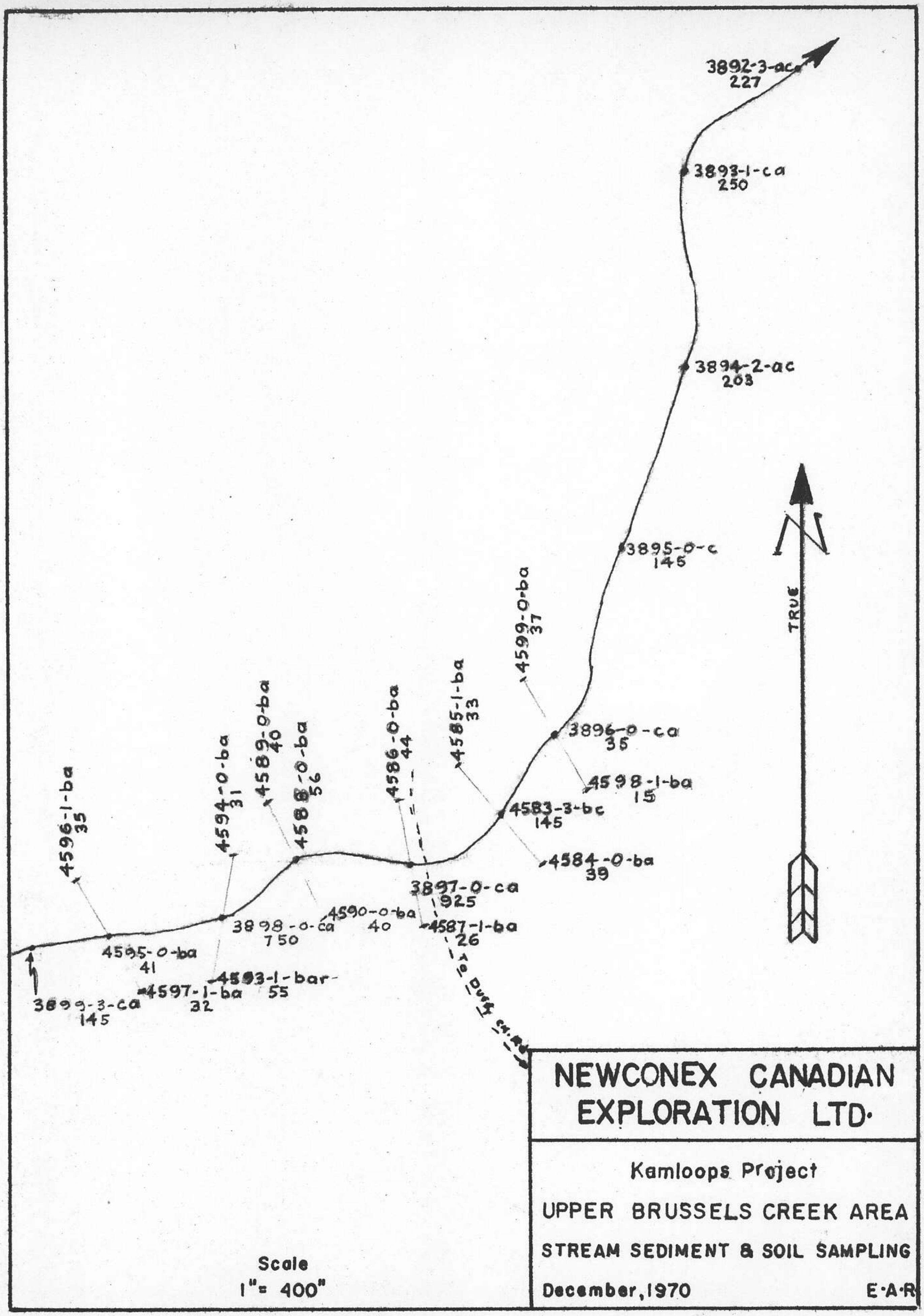
HOLLIS & MOORE CREEKS

STREAM SEDIMENT & SOIL SAMPLING

December, 1970

E.A.R.

FIG. 17


3892-3-ac
227
3893-1-ca
250
3894-2-ac
203
3895-0-c
145
TRUE
N
4599-0-ba
37
3896-0-ca
35
4598-1-ba
15
4585-1-ba
33
4583-3-bc
145
4584-0-ba
39
4586-0-ba
44
3897-0-ca
925
4587-1-ba
26
4590-0-ba
40
4588-0-ba
56
4589-0-ba
40
4594-0-ba
31
3898-0-ca
750
4593-1-bar-
55
4596-1-ba
35
4595-0-ba
41
4597-1-ba
32
3899-3-ca
145
To Dunn Lk. Rd.
Scale
1"= 400"
NEWCONEX CANADIAN EXPLORATION LTD.
Kamloops Project
UPPER BRUSSELS CREEK AREA
STREAM SEDIMENT & SOIL SAMPLING
December, 1970
E.A.R.

FIG·18

GEOCHEMICAL SAMPLE DISTRIBUTION PLOTS

Each plot covers the same area as the interim maps showing the reconnaissance data.

The plots are divided into one mile squares 11 miles east-west and 17 miles north-south.

Squares marked with an X have over 50% of the area staked by others. Squares marked IR are covered by an Indian Reservation. The number in the upper left of a square indicates the number of samples; the number in the centre indicates the average contained copper in ppm; the number in the lower left denotes the amount of copper in the sample containing the least copper in the square; the number in the lower right indicates the amount of copper in the sample containing the most copper in the square.

	1	2	3	4	5	6	7	8	9	10	11
17	7 34 14 105	1 28			2 58 50 65	7 53 45 73	1 75	8 115 35 275		X IR	X IR
16		X IR				2 63 63 63	4 56 50 63		3 36 22 45	X IR	X IR
15		X IR				4 61 50 70	2 51 40 61	3 42 28 50	X IR	X IR	X IR
14	NICOLA LAKE	X IR				9 63 50 115	3 41 30 52		X IR	X IR	X IR
13		X				4 46 42 48	1 34	X IR	X IR	X IR	X IR
12	1 112	X						X IR	X IR	X IR	X IR
11	1 95	X			7 67 44 91			1 65 IR	X IR	X IR	X IR
10		½		½	4 84 112 65		1 98		X IR	X IR	X IR
9	½	1 66	X	X	X	X	2 83 80 86	9 266 44 995	X IR	X IR	X IR
8	X	1 80	X	X		1 104	17 233 33 1050	2 180 140 220	1 29 IR	X IR	X IR
7	X	1 70	X				6 65 18 110	5 50 42 65	2 41 31 50		X IR
6	X	X	1 85		2 66 50 82		1 30	9 56 31 112			X IR
5	X	X	X	4 87 68 100	2 56 48 65		5 41 30 52				
4	X	X	2 68 38 100	8 71 56 98	2 47 39 55	2 35 30 40	8 38 25 52	2 60 20 100			
3	X	X	1 48	6 57 50 65	1 45	4 32 20 53		1 270			
2	X	X	X	X	1 44		1 85	½			
1	X		½			1 93			1 71		

GEOCHEMICAL SAMPLE DISTRIBUTION 92-I-1-W

FIG. 19

	1	2	3	4	5	6	7	8	9	10	11
17	X		25 56 30 136	5 78 30 124	½		11 35 25 55			4 52 48 60	6 29 12 65
16	½		10 44 60 36		4 74 32 103		6 45 27 81	7 68 40 107	1 88	2 57 53 60	
15	X		1 37	6 44 33 50	2 43 35 50	½					1 26
14	X	5 78		4 37 32 45			X			X	½
13	½	1 25	7 36 31 41	1 35		1 38	½		½	X	
12			1 50					X	X		
11				X	X	½				X	X
10				X	X	X	X	X	X	X	1 126
9					X	1 66	1 35	½			1 55
8				X	X	X	X	X	X		2 65 55 74
7	X	X		2 41 39 43	X	1 40	X	X	X	X 1R	1 98 1R
6	X	X	X	X	½	1 44	½		X	X 1R	½
5		3 33 29 41			X	X	X		X	X 1R	X
4	8 71 30 132	4 52 38 76				X	X	X	X 1R	X 1R	X
3	4 92 56 166	X				X	X	X	1 49	X	X
2	6 76 40 100		1 89			X	X	X	1 50	X	X
1	1 50						X	1 50	X	X	

GEOCHEMICAL SAMPLE DISTRIBUTION

92-I-2-E

FIG. 20

	1	2	3	4	5	6	7	8	9	10	11
17	X	X	X	X	X	X	X 1R	X 1R	1 54	X	X
16	X	X	X	X	X	X	X 1R	X 1R		1 41	X
15	X	X	X	X	X	X	X 1R	X 1R		X	X
14		X	X	X	X	X	X 1R	X 1R			½
13	½	½	X	X	X	X	X 1R	X 1R	X	½	½
12	X	X	X	X	X	X	1 52 1R	X 1R	X	X	X
11	½	X	X				X 1R	X 1R	X	X	
10			1 20				X 1R?	X 1R?		X	
9			6 40 20 59	2 49 37 60		3 34 24 43		X			
8			2 39 38 40	1 33	2 32 26 37	6 25 20 35	½			X	
7			2 26 22 30	10 33 15 80	8 25 16 31						X 1R
6			7 27 15 55	3 22 22 22		7 46 19 82	3 25 24 27			1 66	1 36
5			13 33 13 43	2 25 24 25	10 75 19 183	2 75 49 100	3 40 25 52		1 47	1 44	
4			8 23 10 32	1 50	2 25 25 25		X 1R	X 1R	4 62 50 75	5 42 10 76	
3		5 17 13 21	7 36 24 52	5 23 15 30	2 66 48 83	X 1R	X 1R	X 1R		5 62 30 84	5 95 54 170
2	1 14	12 21 12 29	12 28 10 35	1 36	X 1R	X 1R	½	9 39 23 50	3 51 30 74	3 47 31 74	X
1	5 19 15 1R 24								12 37 25 49	6 35 30 46	5 70 32 189

GEOCHEMICAL SAMPLE DISTRIBUTION 92-I-2-W

FIG-21

	1	2	3	4	5	6	7	8	9	10	11
17	1 / 135	X	X	6 / 47 / 10 / 103	4 / 91 / 70 / 120	17 / 128 / 56 / 205	12 / 139 / 50 / 253	10 / 116 / 20 / 256	20 / 82 / 58 / 104	19 / 69 / 39 / 99	X
16	X	X	2 / 49 / 43 / 54	X		18 / 155 / 45 / 380	16 / 128 / 12 / 360	6 / 100 / 27 / 165			3 / 60 / 47 / 80
15	X	X	X		1 / 62	10 / 62 / 29 / 110	3 / 42 / 35 / 46		11 / 133 / 59 / 198	17 / 50 / 25 / 96	6 / 52 / 27 / 90
14	X	X	1 / 105		14 / 66 / 36 / 160			17 / 197 / 78 / 332	12 / 157 / 66 / 266	13 / 100 / 49 / 215	4 / 50 / 30 / 58
13	X	X	3 / 100 / 23 / 157		17 / 69 / 30 / 120		11 / 108 / 65 / 200	10 / 184 / 81 / 540	20 / 239 / 51 / 690	3 / 63 / 30 / 83	
12		3 / 155 / 119 / 218		1 / 275	3 / 69 / 62 / 75	1 / 185	4 / 164 / 57 / 380	6 / 132 / 30 / 265	13 / 161 / 51 / 255	26 / 54 / 28 / 89	
11		6 / 117 / 94 / 144	8 / 83 / 75 / 125	10 / 126 / 40 / 310	5 / 157 / 64 / 311	2 / 51 / 35 / 67	18 / 99 / 40 / 190	5 / 89 / 31 / 135	11 / 134 / 34 / 218	19 / 80 / 32 / 157	2 / 38 / 37 / 38
10	X		1 / 45	6 / 64 / 37 / 127	4 / 106 / 55 / 155	X	4 / 55 / 24 / 73	4 / 67 / 35 / 99			
9	X	X		X	X	X		3 / 56 / 52 / 61			
8	X			X	X	3 / 71 / 30 / 112					
7	X	1 / 105	X	X	X	3 / 49 / 27 / 90	7 / 24 / 20 / 70	2 / 33 / 30 / 35			9 / 59 / 42 / 78
6	X	X	X	2 / 94 / 78 / 107	X	X		X	X	X	12 / 47 / 20 / 74
5	X	X	X	X	2 / 41 / 40 / 41	1 / 70	X	X	X	X	3 / 47 / 20 / 74
4	X	X	X	X	X	2 / 91 / 80 / 102	2 / 145 / 45 / 245	7 / 142 / 100 / 255	9 / 62 / 15 / 83	5 / 43 / 18 / 75	2 / 175 / 170 / 180
3	X	X	X	X	X	X		8 / 68 / 30 / 120	17 / 43 / 20 / 92		8 / 98 / 35 / 165
2	X	X	3 / 45 / 26 / 62		X	X	1 / 21	2 / 16 / 11 / 20	5 / 46 / 30 / 68	3 / 23 / 10 / 35	8 / 45 / 10 / 85
1	X	X	11 / 50 / 31 / 70		X	X	7 / 37 / 21 / 103				3 / 35 / 21 / 44

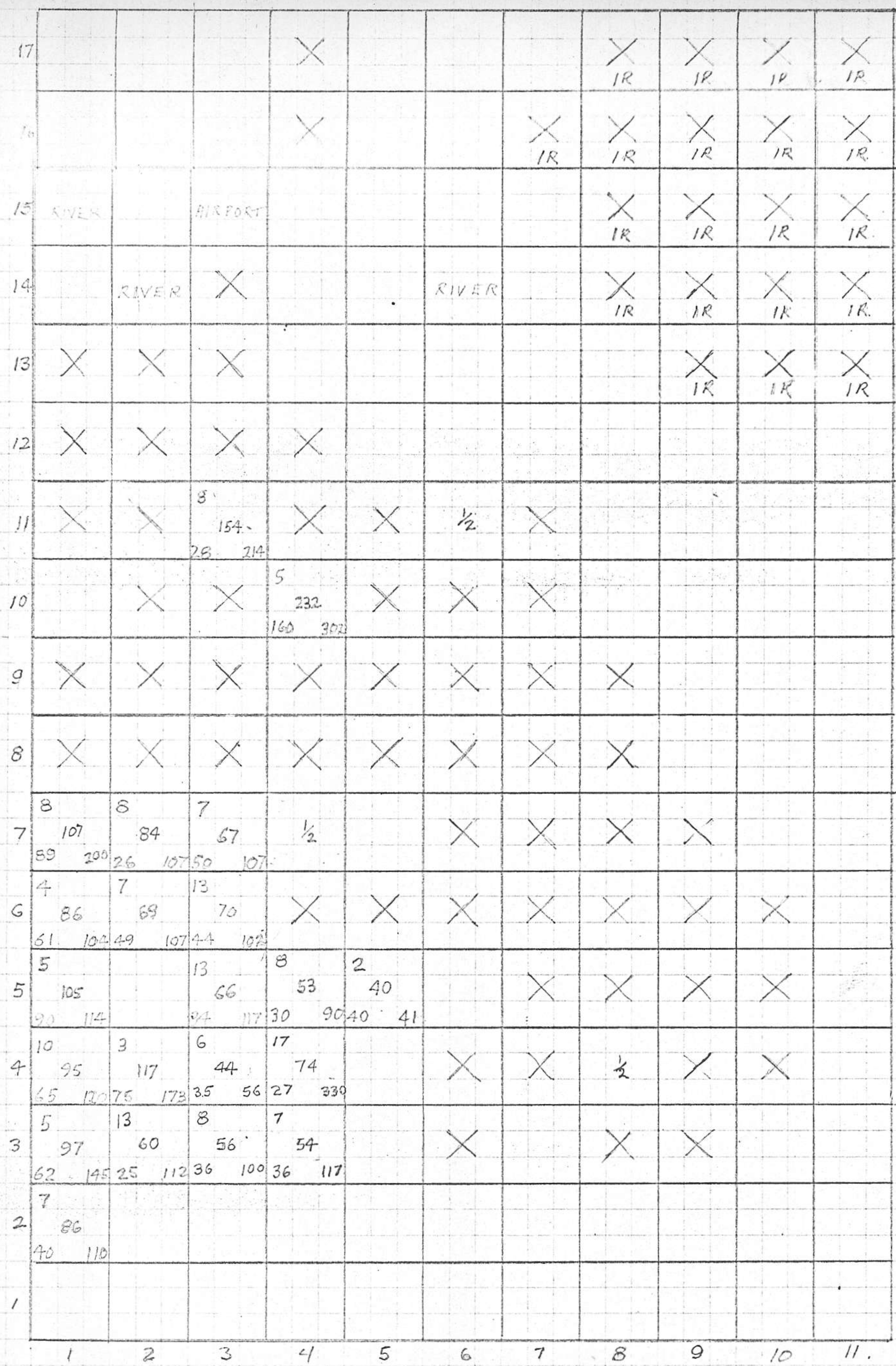
GEOCHEMICAL SAMPLE DISTRIBUTION 92-I-7-E

FIG-22

	1	2	3	4	5	6	7	8	9	10	11
17									X		
16	2 / 44 / 39 48						X		X		7 / 28 / 18 52
15	3 / 73 / 42 117			3 / 37 / 10 76		9 / 56 / 20 107				4 / 39 / 30 48	17 / 31 / 18 45
14				4 / 63 / 58 70	9 / 56 / 16 75	5 / 45 / 32 60				11 / 34 / 18 62	13 / 27 / 20 42
13		11 / 43 / 18 96			15 / 75 / 30 121				6 / 38 / 30 54	6 / 41 / 30 56	18 / 25 / 19 33
12			12 / 51 / 20 160	25 / 124 / 26 475	12 / 96 / 15 252	7 / 96 / 48 220			X	4 / 39 / 42 37	
11	4 / 83 / 47 96	3 / 148 / 105 180	1 / 20	9 / 89 / 30 140	1 / 60	14 / 47 / 25 69	4 / 75 / 46 115		1 / 54	3 / 33 / 17 51	2 / 29 / 28 30
10	9 / 97 / 29 240	1 / 23	10 / 99 / 23 445	13 / 79 / 24 125		13 / 50 / 25 110	5 / 51 / 45 67		14 / 59 / 24 118	6 / 31 / 17 51	10 / 29 / 21 40
9	7 / 29 / 17 45	5 / 53 / 28 84		7 / 41 / 25 78		4 / 56 / 40 50		6 / 48 / 33 71	7 / 41 / 21 74	6 / 40 / 25 70	10 / 47 / 27 84
8		4 / 30 / 20 38	8 / 66 / 39 96				12 / 55 / 34 70	6 / 44 / 32 65			
7	5 / 59 / 35 75		7 / 35 / 10 119		1/2	X	1/2				
6	15 / 33 / 22 59	7 / 26 / 22 32	7 / 27 / 13 48			X	X				
5	10 / 67 / 23 130	9 / 66 / 30 185	5 / 24 / 15 35			6 / 51 / 22 81	5 / 80 / 63 97	1 / 44		4 / 125 / 65 198	
4	X	X	X					3 / 30 / 22 37	6 / 57 / 30 69	3 / 108 / 60 147	
3	X	X	1 / 100		2 / 70 / 44 96	3 / 63 / 52 72					16 / 130 / 10 369
2	7 / 19 / 5 68			5 / 51 / 45 68	2 / 76 / 72 80	4 / 91 / 52 139	1 / 95	2 / 62 / 35 88		7 / 200 / 98 450	17 / 144 / 54 260
1	1 / 15	1 / 46	1 / 45	2 / 46 / 41 50	10 / 78 / 35 146	5 / 56 / 38 76		6 / 97 / 46 245		10 / 120 / 61 292	8 / 101 / 64 190

GEOCHEMICAL SAMPLE DISTRIBUTION 92-I-8-W

FIG-23



GEOCHEMICAL SAMPLE DISTRIBUTION 92-I-9-W

FIG. 24

17					X	X	X	X			
16				X	X			LAKE			
15			3 / 113 / 90 130	X	X	½	½				
14		9 / 162 / 38 430	2 / 194 / 168 220	X	5 / 40 / 27 50	X					
13	4 / 464 / 36 925	4 / 158 / 35 250	2 / 35 / 31 39	8 / 32 / 26 40	X	X					X
12		1 / 38	1 / 34	1 / 72		½					X
11		1 / 59			14 / 62 / 43 90	1 / 57	5 / 47 / 40 56	4 / 102 / 38 260	6 / 71 / 43 128		X
10			1 / 74	4 / 72 / 57 99	6 / 101 / 58 127	21 / 167 / 30 675	23 / 72 / 37 145	13 / 81 / 50 147	4 / 48 / 46 49	X	X
9			X	2 / 70 / 60 80	11 / 352 / 31 650	8 / 186 / 76 300	13 / 317 / 40 900	6 / 156 / 98 218	X	X	X
8	11 / 63 / 47 89	14 / 75 / 49 100	X	2 / 156 / 112 200	X	5 / 161 / 54 283					X
7		3 / 78 / 70 88	13 / 101 / 69 237	9 / 552 / 230 950	1 / 262	6 / 88 / 65 147	14 / 78 / 58 110	10 / 82 / 61 138			7 / 85 / 75 110
6			8 / 78 / 46 115	2 / 21 / 15 26	X		20 / 109 / 52 181	8 / 148 / 102 265			
5			13 / 80 / 30 163			2 / 109 / 98 119	14 / 137 / 89 230	14 / 127 / 64 180	2 / 78 / 20 115		
4	14 / 81 / 35 425	9 / 64 / 20 155		18 / 185 / 71 290	3 / 160 / 61 265	7 / 233 / 48 700	10 / 141 / 110 175	3 / 108 / 26 265	17 / 146 / 82 280	22 / 178 / 130 235	16 / 79 / 40 150
3	3 / 59 / 46 80	½		20 / 154 / 16 700	18 / 340 / 90 1385	13 / 121 / 90 158	5 / 106 / 72 155	6 / 116 / 64 165	9 / 182 / 66 425	1 / 460	12 / 324 / 15 750
2		10 / 107 / 80 163	7 / 111 / 63 162	3 / 70 / 45 104	3 / 141 / 119 200	10 / 118 / 55 172	2 / 206 / 195 218	23 / 193 / 70 490	13 / 179 / 115 235	15 / 285 / 70 600	4 / 343 / 260 510
1		4 / 77 / 52 106	19 / 64 / 29 160	8 / 99 / 25 170	6 / 163 / 116 170	16 / 130 / 38 270		22 / 133 / 65 260	25 / 107 / 50 195	25 / 99 / 34 190	
	1	2	3	4	5	6	7	8	9	10	11

GEOCHEMICAL SAMPLE DISTRIBUTION - 92-I-10-E

FIG-25

CANADA

DEPARTMENT OF MINES AND RESOURCES

MINES AND GEOLOGY BRANCH

BUREAU OF GEOLOGY AND TOPOGRAPHY

SHEET 92 I (East Half)

LEGEND

CENOZOIC

[TERT]IARY

MIOCENE OR LATER

13 — Valley basalt: mainly vesicular basalt

MIOCENE OR EARLIER

KAMLOOPS GROUP

11, 12 — 11. Rhyolite, andesite, and basalt; associated tuffs, breccias and agglomerates. May include some younger basalts. 12. TRANQUILLE BEDS: conglomerate, sandstone, shale, tuff; thin coal seams

10 — COLDWATER BEDS: conglomerate, sandstone, shale, and coal; 10a, similar to 10, but may include younger beds

MESOZOIC OR CENOZOIC

CRETACEOUS OR TERTIARY

9 — COPPER CREEK INTRUSIONS: granite, granodiorite, granite porphyry

8 — Andesite, basalt; picrite, agglomerate, breccia, and tuff; minor conglomerate and sandstone

7 — Conglomerate, sandstone, and shale

MESOZOIC

CRETACEOUS

LOWER CRETACEOUS

KINGSVALE GROUP

6 — Rhyolite, andesite, and basalt; associated tuffs, breccias, and agglomerates; arkose, conglomerate

SPENCE BRIDGE GROUP

5 — Hard, reddish lava

JURASSIC AND(?) LATER

4 — COAST INTRUSIONS: granite, granodiorite, gabbro; 4a, Iron Mask batholith; syenite, monzonite, diorite, gabbro; 4b, pyroxenite and peridotite. Probably not all of the same age, and may be in part post-Lower Cretaceous

TRIASSIC

UPPER TRIASSIC

NICOLA GROUP

3 — Greenstone; andesite, basalt; agglomerate, breccia, tuff; minor argillite, limestone, and conglomerate

PALÆOZOIC

CARBONIFEROUS AND PERMIAN

CACHE CREEK GROUP (?)

2 — Greenstone, generally slightly sheared. May include some Triassic rocks (3)

1, 1A — Argillite, quartzite, hornstone, limestone, sheared conglomerate, breccia, greenstone, and serpentine; 1A, limestone

A — Chlorite schist, quartz-mica schist, amphibolite, and granitic intrusions; commonly gneissic and largely of Palæozoic age

Heavily drift-covered area

Fault

Synclinal axis

Fossil locality

Mineral occurrence

SYMBOLS FOR METALS

Silver	Ag
Gold	Au
Copper	Cu
Iron	Fe
Mercury	Hg
Lead	Pb
Tungsten	W

Road

Road (not well travelled)

Trail

Post Office

Forestry lookout

Land District boundary

Limit of Railway belt

Indian Reserve boundary

Intermittent lake and stream

Marsh

Sand bar

Contours (interval 500 feet)

Depression contour

Height in feet above mean sea-level

Geology by W. E. Cockfield, 1939, 1940, 1941, 1943.

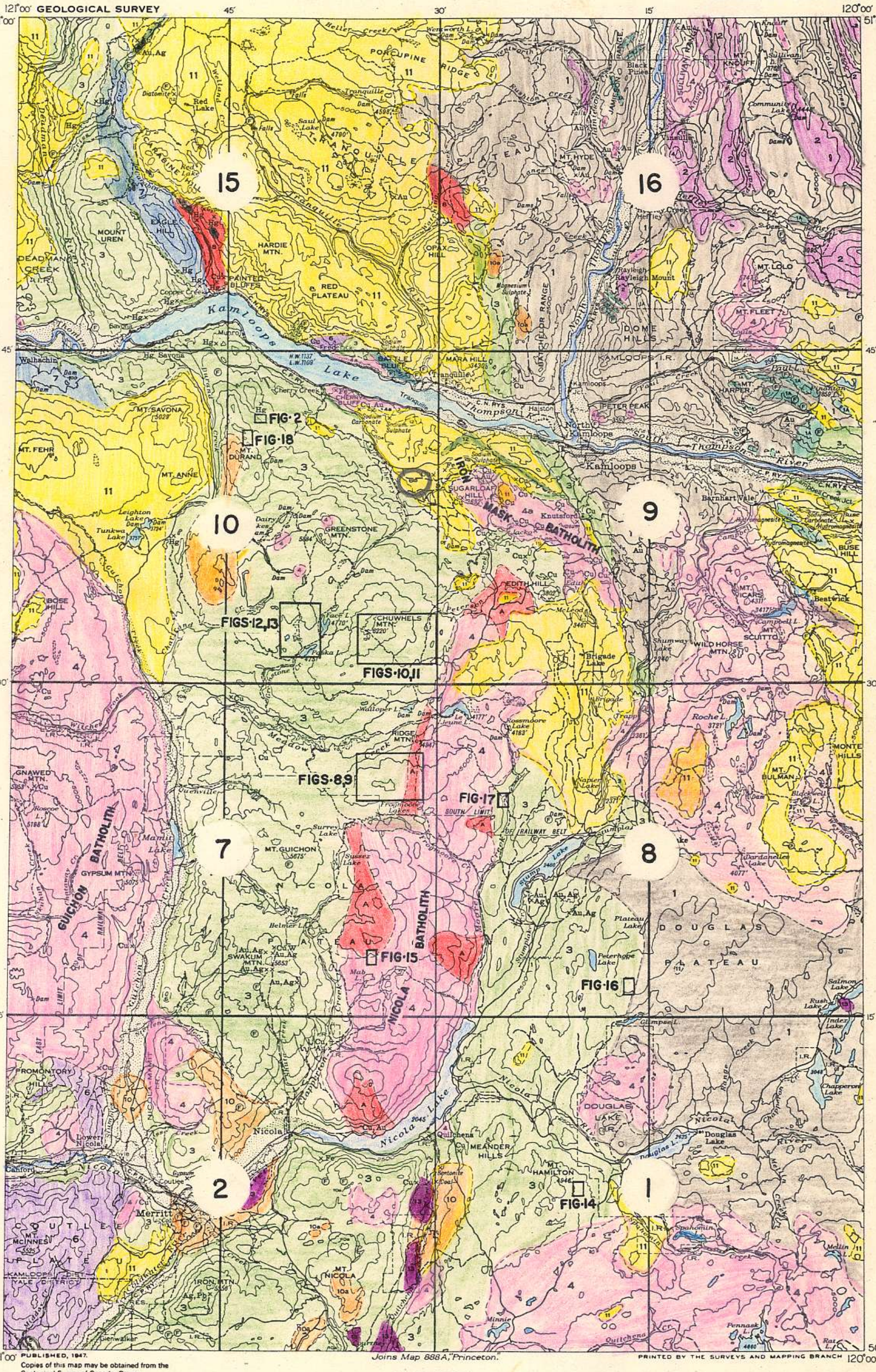
For Mineral Localities, see Map 887A, "Nicola"

Base-map compiled by the Topographical Survey, 1937, from information obtained from published Federal Government maps. Cartography by the Drafting and Reproducing Division, 1946.

SCALE, 1 INCH TO 200 MILES

The coloured version of this map is no longer available. To meet current demand it has been reissued in uncoloured form, thereby effecting a substantial saving in time of preparation. There is no loss of information, but the map will be clearer to read if all or some of the map-units are hand-coloured. Reissued 1969.

GEOLOGICAL SURVEY



PUBLISHED, 1947. Copies of this map may be obtained from the Geological Survey of Canada, Ottawa

Joins Map 888A, "Princeton."

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MAP 886A

NICOLA

KAMLOOPS AND YALE DISTRICTS

BRITISH COLUMBIA

~~Scale: 1 inch to 4 Miles~~ 8

Miles

Approximate magnetic declination, 24°30' to 27° East.

INDEX MAP