D.C. SYNDICATE

EXPLORATION REPORT - 1975

by

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INTRODUCTION

The 1975 field program of D.C. Syndicate was directed primarily toward the search for copper in the Whitehorse-Lake Laberge area of Yukon Territory. This area contains a number of small intrusive bodies which were thought to be favourable prospecting targets for possible porphyry copper deposits. In addition, sediments and volcanics of Triassic age occur, which might contain skarn type deposits, in the vicinity of intrusive bodies. (See key map 'Laberge Area')

The program was divided into the following sub-programs:

(1) Prospecting within batholithic 'Coast Range' intrusives west of Whitehorse copper belt for possible porphyry copper deposits.

(2) Prospecting of Hutshi volcanics in the southwest portion of Laberge map sheet for possible volcanogenic, skarn or porphyry deposits related directly to the volcanics or to younger intrusive bodies.

(3) Prospecting of Triassic volcanics in the northeast portion of Aishihik Lake map sheet to follow up minor geochem indications from the 1974 program.

(4) Prospecting of Triassic and Hutshi volcanics in north-central Laberge map sheet together with related younger intrusives in search for possible volcanogenic, skarn or porphyry deposits.

(5) Prospecting of intrusives in the southeastern portion of Laberge map sheet and north margin of Whitehorse map sheet primarily in search of porphyry-type deposits.

(6) Staking and examination of silicified zones in northwestern Carmacks map sheet as follow-up on very low erratic gold values obtained during the 1974 program.

(7) General reconnaissance including scintillometer checks of some areas.

RESULTS AND CONCLUSIONS

Three granitic stocks were found to contain minor copper-molybdenum mineralization. Although claims were staked on two of these, follow-up programs were not encouraging and no further work is recommended. No distinct target was located in the third (TUV) stock but there may be geochemical problems in this area and it cannot be entirely written off.

Tractor trenching on the silicified zones in northwest Carmacks map sheet (RAINBOW group) exposed extensive rubble of the rock types but very little outcrop. Two specimens from 4+60W 12+00N ran 4.75 ppm (or about 0.11 oz. Au) and 0.06 oz. Au. A minor hand trenching effort is recommended here with more extensive sampling.

Gold was found in very minor quartz stringers in a rhyolite dyke in the Lower Laberge area. This was staked as the GEM group. Follow-up work was extremely disappointing and no further work is recommended.

A zone of above background scintillometer readings was located northwest of Whitehorse indicating the area might be of interest for eventual reconnaissance for uranium.

No significant prospects were found during the 1975 program.

GEOLOGY AND MINERALIZATION

No attempt is made here to give a complete description of the regional geology. Difficulties were encountered in differentiating Triassic (Lewes River) and Hutshi volcanics in some areas, and similar confusion occurs between Lewes River Group and Laberge Group sediments. The following is a general description of some aspects of some formations and their related mineralization.

YUKON GROUP

This formation was encountered only in the vicinity of Livingstone Creek and Loon Lakes in the southeast portion of Laberge map sheet.

North of Livingstone Creek, an attempt was made to investigate granitic bodies between Mendocina Creek and Cottoneva Creek. The granitic body, Unit 11, was located. Only narrow granitic sills or dykes were found where Unit 2 should have been. Outcrop was surprisingly sparse, however. No mineralization other than minor pyrite was found.

A traverse over part of Unit 10 in serpentine and hornblendite revealed nothing of interest.

Further work in this area had been planned but was not carried out. The area is considered of interest because of native copper found in the gold placer deposits reminiscent of the native copper found in placer gold deposits in the Cariboo Bell area of British Columbia.

North of Loon Lakes, the LYNX claims cover copper showings associated with quartz veining and silicification in quartzitic sediments. The vicinity of the main showing and dumps of two adits were examined. It was thought the copper content was too low and erratic to warrant further work.

Limited prospecting was done in the vicinity of Moose Mtn. on the contact between Yukon Group and Hutshi Group. Geology was complex. Very minor copper and pyrite mineralization was found but nothing of importance was indicated.

TRIASSIC VOLCANICS - LEWES RIVER GROUP

Investigation of geochemically anomalous areas in Lewes River Group found during the 1974 program was conducted west of Nordenskoild River and north of Kirkland Creek.

These volcanics are medium to dark green, generally epidotized and often exhibit augite phenocrysts. Locally the volcanics consist of agglomerate or volcanic breccia.

Overlying the green volcanics are sedimentary rocks. These are wackes, sandstones, siltstones and shales. These are generally fine-grained, often massive. The massive wackes occasionally exhibit cross-bedding. Some of these may be part of the Laberge Series.

Minor disseminated chalcopyrite was found in the green volcanics, while minor chalcopyrite in calcite was found in the sediments. No indication of possible economic mineralization was found. Some pyritic areas were found in the volcanics which weather rusty. Some thin-bedded siltstones were also pyritic.

East of Laberge Lake north of Laurier Creek, dark green basic volcanics and volcanic agglomerate appear to underlie a thick series of limestone beds (Unit 5). It was assumed this limestone was part of Lewes River Group and the volcanics also appear to be part of that Group.

North of the granitic intrusive at 61°00N, 134°45'W the volcanics appear to be part of the Lewes River Group in the vicinity of the granitic contact. Across the valley to the north and on the peaks of Teslin Mtn., the less altered volcanics are assumed to be of the Hutshi Group. (See Map 1 'LORI Intrusive Area')

Very minor pyrite and chalcopyrite mineralization was found near the granitic volcanic contact. This mineralization is assumed to be related to that introduced into the intrusive body.

On the west side of Joe Mountain near the north margin of Whitehorse map sheet, pyrrhotite, pyrite and minor chalcopyrite were found disseminated and in tight fractures in what are mapped as Lewes River volcanics. South of Joe Mtn., pyrite and chalcopyrite occur in the volcanics and minor galena was found associated with small widely scattered quartz veins.

Nothing of interest was found northeast of Cap Mountain where a minor granitic intrusive cuts Lewes River volcanics in the Cap Creek valley.

Prospecting was conducted in Lewes River Group formations (1) north and south of Takhini River between 135°30' and 135°45', (2) at about 60°42'N, 136°00W on the west margin of Whitehorse map sheet and (3) west of Bonneville Lakes in the Ibex River area.

Fractured zones in volcanics at about 60°53'N, 135°33'W north of Takhini River are mineralized with some pyrite and are anomalous for copper although no significant mineralization was found.

At 60°48'N, 135°41W northeast of Ibex River, a minor shear zone was found with chalcopyrite and malachite. The zone was staked but was found to be too

small to warrant more than very preliminary investigation. The four WIND claims were not recorded.

West of Bonneville Lakes, widespread pyrite mineralization was found in sediments of both Lewes River and Laberge Groups. No copper geochem was obtained.

Some prospecting was done on the east side of Canyon Mountain east of Whitehorse. Massive limestones together with Triassic volcanics occur intruded by various granitic dykes. No significant mineralization was located.

East of Takhini Hot Springs, fracture zones were found in sediments close to massive limestone mapped as Lewes River. These zones were anomalous for copper, zinc and arsenic and, in one area, contained chalcopyrite and malachite. The zone was of limited extent and no precious metal values were obtained.

LABERGE GROUP

West of Bonneville Lakes pyrite occurs in conglomeratic beds of the Laberge Group. Nothing of economic interest was found.

The extensive conglomerates north of Takhini Hot Springs, to the west shore of Laberge Lake at about Richthofen Island, were checked for radioactivity especially along beds of sandstone or dark coloured beds which might have had a higher organic content. Nothing of interest was found.

Similar check work for radioactivity was done in the canyon-like creek valley west from the north end of Laberge Lake and in the area north of Laberge Lake toward Coghlan Lake. These sediments are greywacke, sandstone argillite and limestone. Nothing of interest was found.

Much of the limestone included in Unit 5 on the Laberge sheet geology and classed as Lewes River Series is thought to be part of the Laberge Group.

These limestones appear to be interbedded or otherwise intimately related spatially with extensive areas of argillitic sediments mapped as Laberge Group.

No skarn deposits of any sort were found related to these limestones.

At Packers Peak, a skarn deposit with pyrrhotite, pyrite and chalcopyrite mineralization was staked as the BAND claim group. This occurs in Lower Jurassic sediments and tuffs. Age is indicated by fossils located in the area and identified by Tempelman-Kluit. This claim group is more fully described later in this report.

Argillites of Laberge Group in the vicinity of TUV intrusive are extensively altered to hornfels and contain pyrite, pyrrhotite and minor chalcopyrite. No significant geochemical anomalies were found.

TANTALUS FORMATION

This formation was encountered west of Yukon River, a few miles south of Cassiar Bar. No mineralization or significant geochemical anomalies were located.

An isolated outcrop area of severely contorted fresh looking argillite, in contact with light buff coloured grit or small pebble conglomerate, occurs east of the TUV intrusive. This argillite is moderately anomalous for copper, molybdenum and zinc.

No mineralization, other than fine pyrite along thin sandy lenses, was found. The formation is cut by feldspar porphyry dykes which post date the intense folding. No alteration was noted in the vicinity of these dykes.

This outcrop area may be part of the Laberge Group although it is tentatively included in the Tantalus.

HUTSHI VOLCANICS

These volcanics were examined mainly in the Miners Range area where they consist mainly of andesite and basalt flows. Flows are commonly porphyritic and, in places, amygdaloidal. Dips were in the order of 30°. Bright red chert breccia as scattered isolated fragments was noted. Rhyolite occurs as dykes cutting flows and as interbedded horizons.

The volcanic sequence is intruded by granodiorite, monzonite and feldspar porphyry.

In the Teslin Mountain area, volcanics similar to those in the Miners Range occur. Isolated fragments and small beds of bright red chert and red hematite occur on the west spur of the mountain. Near the peak the volcanics contain much fine-grained magnetite. The volcanics are intruded by granodiorite, porphyritic granite and feldspar porphyry. Some sediments occur, apparently interbedded with the volcanics on the east slopes of Teslin Mountain.

West of Miller Lake, a mixed sequence of sediments with subordinate volcanics was investigated. Except that these rocks are classed as Hutshi on the Laberge geology map, we have no evidence of age here and no marked similarity of these rocks with other Hutshi rocks was noted. The sequence is intruded by feldspar porphyry and rhyolite.

Volcanic breccia and porphyritic volcanic flows of the Hutshi Group are well exposed northeast of the Packers Mountain ridges. These are purple and dark green and of basaltic composition.

In the Miners Range, pyrite was found associated with one intrusive area. On the west spur of Teslin Mtn., disseminated pyrrhotite, pyrite and minor chalcopyrite was found in the vicinity of a band of red hematite and magnetite. This sulphide mineralization is very similar to that found in volcanics on Joe Mountain on the Whitehorse map sheet where the rocks are classed as Lewes River. The rocks are classed as Hutshi because of the presence of the red chert and hematite similar to the red chert found in Miners Range rocks.

GRANITIC INTRUSIVES

Two intrusive centres were located in the Packers Mountain area.

(1) About two miles north of Packers Mountain peak, a monzonite, medium-grained, greyish orange with about 10% hornblende and biotite, was partially explored. No mineralization was found. (See Map II)

In the vicinity of the mountain peak, a long narrow zone of intrusive breccia contains rounded to subrounded fragments of medium-grained monzonite to granodiorite as well as light green volcanics, white felsite and rhyolite fragments. This breccia is parallel to the skarn zone described below under BAND claim group.

In the same general area, the volcanics and sediments are intruded by dykes and small bodies of aplite and granodiorite.

(2) Four to five miles southeast of Packers Mountain, an intrusive of

granodiorite to diorite composition, about two miles in length, contains about 10-15% biotite and is quite magnetic.

In the same area, a granodiorite porphyry contains anhedral quartz phenocrysts of about 4 mm diameter together with slightly smaller feldspar crystals. This rock appears to grade into fine-grained aplite. Relative age relations of these two intrusive phases is unknown.

Seven miles southeast of Big Salmon, a biotite-hornblende diorite intrudes gently dipping sediments and volcanic tuffs. The intrusive is fresh and massive.

North of Miller Creek, about 10 miles east of Lower Laberge, the BOND claims were staked on minor chalcopyrite molybdenite mineralization in monzonite.

The intrusive area is composed of medium-grained monzonite, rhyolite and quartz feldspar porphyry. A zone of breccia between a rhyolite zone and the main feldspar porphyry intrusive was thought to be of pyroclastic origin.

Pyrite occurs in the altered Laberge sediments, in the feldspar porphyry and in the monzonite. Only very little chalcopyrite and molybdenite was found.

Between Miller Creek and Teslin River, an intrusive body occupies about twenty square miles. This has been designated the TUV intrusive after the TUV claim group staked by United Keno Hill in 1972. Some of these claims are still in good standing. (See Map III)

This intrusive is one of the most interesting in the region. It appears to be composed mainly of monzonite which is quite fresh in some areas but shows

evidence, over quite large areas, of brecciation and introduction of pink feldspar and, in places, introduction of quartz. The pink feldspar starts by filling narrow fractures and develops into areas of extensive pink feldspar flooding. This highly altered rock approaches syenite in appearance.

Mineralization occurs (1) as chalcopyrite and malachite in small shear zones in highly altered volcanics near the east contact, (2) as minor chalcopyrite disseminations and thin sprinklings on tight fractures in fresh monzonite, (3) as chalcopyrite with magnetite and quartz-veining in local breccia zones, (4) as disseminations in "syenite", (5) as minor chalcopyrite disseminations with pyrite and pyrrhotite in hornfels mainly near the southwest contact.

Pyrite occurs in the southeast portion of the intrusive with remnants of hornfels and feldspar porphyry intrusives.

In the west central portion of the intrusive, the altered monzonite appears to be bleached and, in part, silicified. Although no molybdenite was seen, the rock was locally similar to Climax rock types. A soil sample ran 26 ppm Mo.

United Keno Hill carried out a mapping and soil sampling program and did some blasting on mineralized fractures in the relatively fresh monzonite. It is suggested the most important area is the southwest portion of the original TUV claim group in the zone of most intense "syenite" alteration near the hornfels contact. In spite of steep slopes, exposure is poor. Our geochemical program did not cover this region.

As described below under Geochemistry, the reconnaissance silt sampling program was very disappointing.

Southwest of Teslin Mountain, the LORI claims were staked on minor molybdenite-chalcopyrite mineralization on tight fractures in granodiorite. The intrusive body, covering some 25 to 30 square miles may extend to the southeast to join a much larger mass straddling the M'Clintock River valley. The intrusive area explored is termed the LORI intrusive. United Keno Hill staked the HIG claims on molybdenite-chalcopyrite bearing fractures in monzonite at the same time as our work started here. (See Map I)

The intrusive is primarily a medium-grained hornblende granodiorite with ill defined phases of monzonite, granite and, in the extreme northwest portion, diorite. A vague zonation of progressive alteration of the hornblende to chlorite from east to west, from unaltered massive intrusive areas across the areas of anomalous geochemical results and staked mineralization, has not been well enough defined to show as mapped areas. Similarly, phases of medium-grained granite are suggested by comparison of prospectors' rock specimens but were not recognized as mappable units during check traverses. These granitic zones are indicated on the 1" = $\frac{1}{2}$ mile map of the area.

Photos 1 and 2 give an indication of the snow problems encountered in June during prospecting. Later check work, however, did not provide much encouragement. Photo 2 shows some of the large proportion of the intrusive covered by glacial drift and muskeg. The aeromagnetic map shows a slight magnetic low. It is possible a phase of more acid intrusive occurs which might be a reasonable prospecting target. However, no float was found to help confirm this supposition and exploration is made extremely difficult by overburden problems.

Pyrite and rare chalcopyrite occur in highly altered volcanic remnants along the west contact of the intrusive on the east end of the east spur of Joe Mountain. This zone is cut by several feldspar porphyry dykes which appear to be barren.

Limited air reconnaissance was carried out over the intrusive area straddling M'Clintock River. No indication of interesting mineralization or alteration was seen.

Air reconnaissance was carried out over the intrusive area west of Cap Creek where exposure is extensive. Nothing of interest was found. Ground prospecting was done over a limited area east of Cantlie Lake. No mineralization or interesting geochemistry was found.

Small intrusives located 5 miles east of Upper Laberge, 6 miles northwest of the junction of Michie Creek and M'Clintock River, and east of M'Clintock River 3 miles north of the mouth of Michie Creek, were examined. Nothing of interest was found.

In the Miners Range, intrusive bodies were found to be much more extensive than indicated on the geology map. Except for pyrite mineralization on the north margin of the intrusive north of Pilot Creek, nothing of interest was found. In this area the intrusive is a porphyritic granodiorite. To the west, the intrusive is a medium-grained leucocratic granodiorite. Contacts are generally sharp and regular and the intrusives fresh and unfractured. Photo 3 taken on the northeast side of Ibex River is also representative of the contacts in the Miners Range area. (See Map IV)

In the Little Ridge area in the southwest corner of Laberge map sheet, intrusive rocks ranged from granodiorite and monzonite to granite. One phase of coarse-grained red granite was very similar to the granite on the northeast side of Big Creek in Carmacks map sheet which extends north to the RAINBOW claim group.

No mineralization or geochemical indications were encountered.

In what are termed "Coast Range" intrusives, west and southwest of Whitehorse, remnants of Yukon schists and Lewes River Formations occur in or close to dioritic phases of the intrusive. Successive intrusions of monzonite, quartz monzonite and granite occupy large areas. Some phases of light coloured granite termed alaskite granite and numerous dykes of feldspar porphyry occur in the central part of map sheet 105D-12. Some pyrite and molybdenite mineralization is associated with these late phases. Silts are anomalous for zinc which seems to be related to the pyrite. No mineral concentrations of possible economic interest were found. The extent of prospecting in this area is shown on map sheets 105D-11, 12, 13, 14. (See Maps V, VI, VII and VIII)

SILT GEOCHEMISTRY

The prospecting program included routine silt sampling of available creeks. In some areas such as the west portion of the Packers Mountain area and the BOND intrusive area, many of the smaller creek beds were dry and the number and quality of silts were therefore limited.

Occasional soil samples were taken during prospecting but the majority of soil samples were taken on grids in areas showing minor mineralization or on claim groups.

Figure II illustrates the number of samples taken with a breakdown as to type and number of determinations of metal content made.

As in previous years, samples were collected in kraft paper bags, dried and sifted to -40 mesh at the base camp and forwarded to either Chemex or Min-En laboratories for chemical determinations. All samples taken primarily for gold determinations were sent to Min-En Labs.

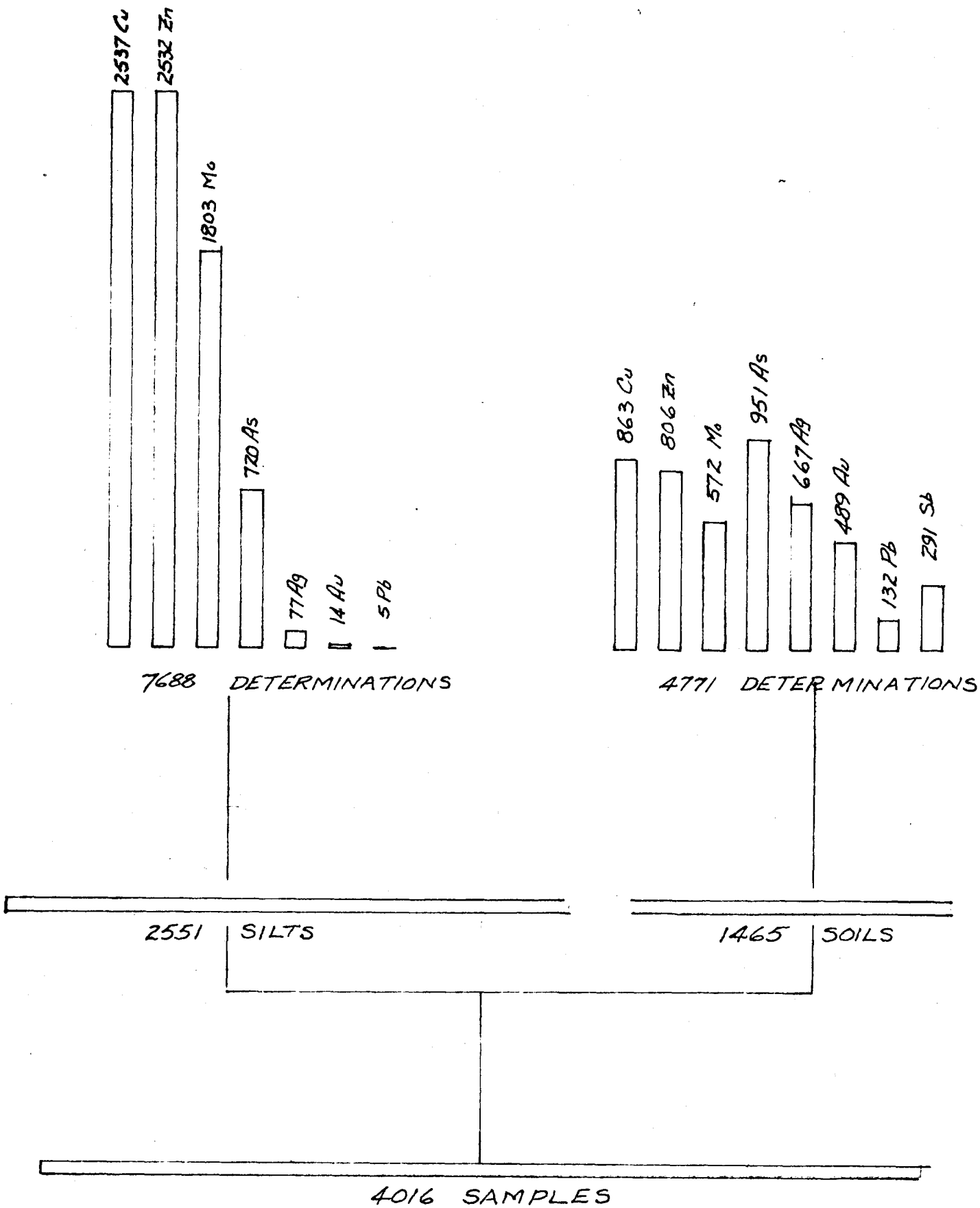
Distribution curves for copper and zinc values obtained from silt samples in various areas are shown on Figures III and IV.

Only a very few silt samples gave values of 50 ppm copper or over. No one area is outstanding in any way. The peaks of copper curves are very similar for the Miners Range and Coast Range areas while the peaks for the Packers Mountain, TUV and LORI areas are similar and slightly higher in value.

Curves for zinc show most samples are below 100 ppm. The curve for the Coast Range area is somewhat broader and practically all anomalous values for zinc occurred in this area. Of these anomalous values, nearly all occur in the central part of Map 115A-12 and appear to be related to minor pyrite and molybdenite mineralization.

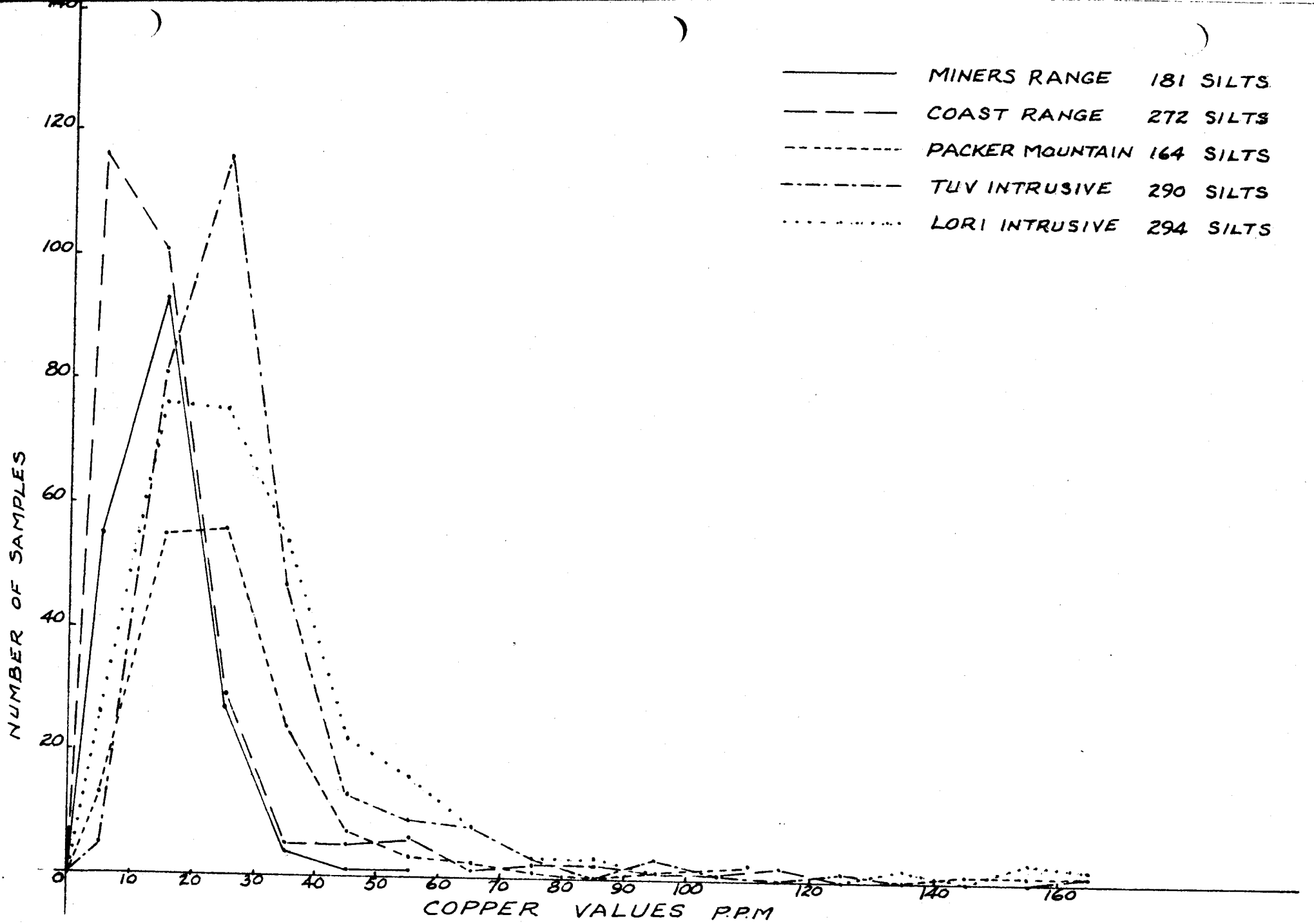
Throughout the area prospected in 1975, more mineralization was found through ordinary prospecting than is indicated by geochemical results.

On Joe Mountain (Map I - LORI Intrusive Area), pyrrhotite, pyrite and chalcopyrite mineralization in small amounts is widespread in the volcanics. Except for the minor amounts of galena associated with quartz veins at the south end



DISTRIBUTION
OF SAMPLES AND
GEOCHEMICAL DETERMINATIONS
1975

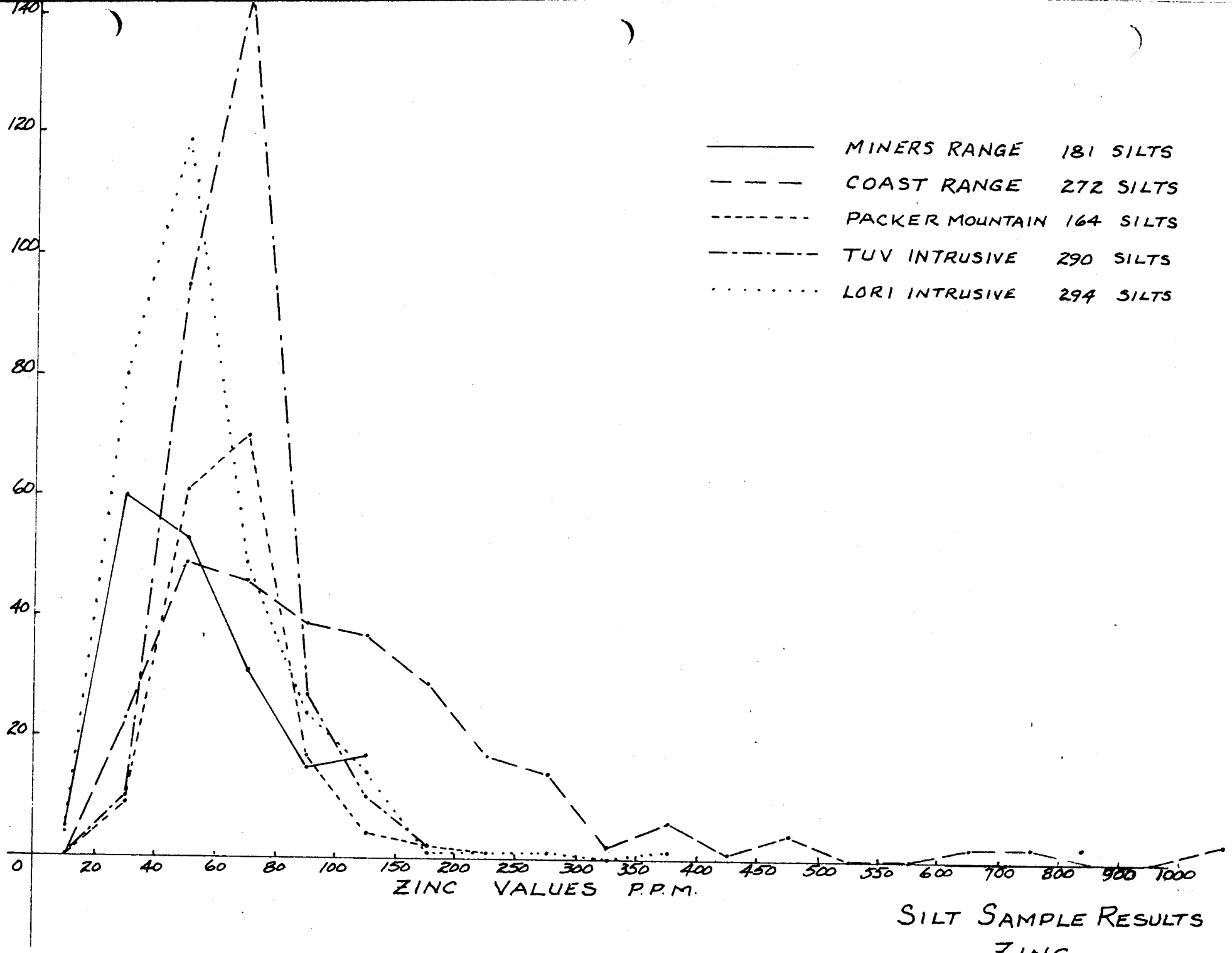
FIGURE II



SILT SAMPLE RESULTS

COPPER

FIGURE III



SILT SAMPLE RESULTS
ZINC

FIGURE IV

of this zone, the mineralization is fairly evident from aerial reconnaissance. Some pyrite and very minor chalcopyrite mineralization east and northwest of Ice Mountain was also located by prospecting but is not evident in the geochemical results.

On the United Keno Hill HIG claims and on the LORI claims, small amounts of molybdenite and chalcopyrite mineralization was found prior to receiving any geochemical results. Results of silt sampling in the area indicate there is probably additional spotty mineralization between the two claim groups. Fairly intensive prospecting failed to find alteration or mineralization of sufficient intensity to warrant further work.

To the north on Map Sheet 105E/7 (Map II) - two areas of granitic intrusive were investigated. These are termed the TUV and BOND intrusives after claim group names. Examination of silt sample results on the TUV intrusive indicates there is only very local and weak indication of copper mineralization found in outcrop. Except for ridge tops, outcrop is relatively sparse, particularly on the west and northwest margins of the intrusive.

In the northeast quarter of the TUV claim group, chalcopyrite and malachite occur in small amounts on weak fracturing and as weak disseminations in relatively fresh monzonite.

Pyrite, chalcopyrite and malachite occur in small but significant amounts in remnants of sediments and volcanics.

Chalcopyrite and magnetite occur in small amounts in an area of brecciation in the northeast corner of the claim group.

Although all these occurrences are small, their fairly widespread occurrence would seem to warrant much stronger geochemical results than have actually been obtained. Fairly extensive swamp in this area might neutralize any anomalous waters and prevent development of a significant geochemical anomaly downstream to the northeast.

To the southeast of the TUV claim group the silts are not anomalous, except very weakly for molybdenum, in spite of widespread pyrite mineralization.

There is a gap in silt sampling southwest of the TUV group but the silt sample result on the west boundary is surprisingly low.

The next creek northwest of the northwest corner of the TUV group ranges up to 94 ppm Cu and must be considered anomalous in this area. Rock outcrops on the ridgetop appeared to be somewhat bleached and silicified and had a higher pink feldspar content than those on the east side of the ridge. No outcrop was found on the west slopes and location of the contact is arbitrary.

In the east central portion of the intrusive two silt samples ran 100 and 141 ppm copper. These were resampled and returned only background values. However, small soil sample grids were laid out here and to the east on a minor malachite-chalcopyrite showing in volcanics. No significant anomalies were found (See Figure V)

East of TUV intrusive toward Teslin River, an outcrop area of fresh looking highly crumpled argillite is anomalous for Cu, Mo and Zn. Various rock specimens of this argillite, including a picked sample of pyrite in a thin sandy bed,

returned geochemical values equivalent to the silts. No silver is indicated in these rocks. Numerous small selenite crystals occur in the argillite.

Outcrops of the TUV intrusive exhibit interesting fracturing, brecciation, pink feldspar introduction, development of pyritic hornfels, and small amounts of copper mineralization. The geochemical results are amazingly low in this context and are analogous to the silt sample results in the southwest corner of the JEAN project in the Nation Lakes area of B.C. There, silt samples ran from 10 to 60 ppm Cu and 3 to 35 ppm Mo on the creek overlying what has been outlined as the south portion of the 'A' zone and the main body of 'B' zone. Outcrops immediately south of this creek carried pyrite and chalcopyrite mineralization: no molybdenite was evident here although it occurs in showings in the main creek to the north.

The BOND intrusive is an area of complex rock types. Primarily, it seems to be a small monzonite stock intruded into an area of Laberge sediments and minor volcanics. Apparently, extensive intrusion of feldspar porphyry followed.

Minor malachite, molybdenite and chalcopyrite mineralization was found in the area staked as the BOND claims. This is generally similar to occurrences in the LORI area.

A volcanic float with chalcopyrite mineralization was found on the ridge west of BOND group. A single soil sample here ran 1560 ppm Cu and was anomalous for Mo and Zn. The BO soil sample grid here failed to outline any significant anomaly (See Figure VI).

It may be of some significance that practically all the interesting mineralization seen during the 1975 program occurs in a belt extending approximately south from the BOND intrusive through TUV and LORI to Joe Mountain. This is an area about 35 miles north-south by 5 miles east-west. Limited prospecting was done in the regions between intrusives and although a few slightly anomalous silt samples were obtained no targets of importance were found.

In the Packers Mountain area (Map II), only one silt sample directly north of the sulphide zone staked as the BAND claim group was distinctly anomalous. Considering the high sulphide content and assay of 0.20% copper, it might be expected that a more extensive anomaly would be present.

South of the peak, two samples ran 41 and 80 ppm copper while to the west three widely spaced soil samples were anomalous for both copper and zinc. No mineralization was found to account for these latter results. The crew had difficulty finding silts of decent quality.

Arsenic determinations were made on some silt samples from several small areas. No distinct anomalies were found although slightly anomalous results were obtained from two creeks in the GEM claim group area. The high was 80 ppm arsenic.

CLAIM GROUPS

NADA GROUP (Fig. VII)

Work was resumed on the NADA group staked in 1974 on a biotite feldspar porphyry with minor chalcopyrite mineralization. The 1975 program was to consist of linecutting, additional geological mapping, soil sampling and an IP survey. This was predicated on the assumption that intrusive rocks reported on the east side of Hayes Creek valley were of the same intrusive as that staked on the west side of the valley. (See Photo 4)

The extent of additional work is indicated on the plan of the As claim group which adjoins NADA to the east. Five miles of line were cut. The limited soil sampling carried out gave low anomalous copper values in the swampy valley floor but nothing of significance on the valley's east slope. Geological mapping was not completed but the writer examined the limited intrusive outcrop located, and determined that it was a leucocratic granite quite unlike the feldspar porphyry to the west. The IP survey was cancelled in light of the rather negative findings of the program and high mobilization costs for this small job.

As GROUP (Fig. VII)

Geological and geochemical results obtained in past years by Delta International Minerals were acquired early in 1975. Widespread anomalous results for copper, zinc, lead and silver were indicated. Outcrop was extremely sparse in spite of fairly steep terrain. Check soil sampling was done as indicated in Figure VII 'As Claim Group'. In addition to copper, lead and silver run by Delta, the samples were run for arsenic. Geochemical work confirmed earlier results but no mineralization was located.

On completion of tractor trenching on the RAINBOW claims, the tractor was used to do 2500 feet of trenching on the As claims. These trenches are indicated on Figure VII and were positioned largely as a consequence of topography. Perma-frost is extensive and the tractor was unable to do a thorough job. Rock outcrop and rubble uncovered was mainly of feldspar porphyry or of quartz mica schist. No zones of mineralization or of interesting alteration were found.

Rock specimens run geochemically gave the results listed below:

Rock Geochemistry - As Group

Sample No.	Location	Description	Geochemical Results - ppm Pb	Ag	As
4862A	12E 16+10N		10	< 0.5	150
4863A	12E 10+60N		17	0.5	7
4864A	12E 11+50N		12	< 0.5	4
4865A	12E 10+50N		12	< 0.5	78
4866A	12E 15+80N		34	0.5	65
4867A	12E 7+80N		24	< 0.5	6
4868A	8E 9+40N		10	< 0.5	5
4869A	8E 8+60N		15	0.5	6
4870A	8E 10+20N		16	< 0.5	6
4871A	8E 11+95N		10	3.0	> 500
4872A	8E 14+70N		25	< 0.5	100
4873A	8E 15+50N		6	< 0.5	100
4874A	8E 17+70N	Quartz & limonite	4	< 0.5	7
4875A	8E 17+50N		7	< 0.5	20
4876A	4E 12+00N	Pyrite	25	< 0.5	35
4877A	4E 20+00N		17	< 0.5	6
4878A	4E 14+00N		25	< 0.5	25
4879A	4E 15+70N		19	0.5	7
4880A	4E 15+80N	Rock	19	< 0.5	30
4881A	4E 15+80N	Brown dirt	146	4.0	> 500
4882A	4E 16+40N		15	0.5	280
4883A	8E 14+40N	Altered crushed material - fault?	26	< 0.5	120

RAINBOW GROUP (Fig. VIII)

The 20 RAINBOW claims were staked on a zone of silicification cutting granite west of Mt. Pitts.

Linecutting was conducted to facilitate mapping and more extensive soil sampling. Poor rock exposure limited the value of mapping and because of some low order gold anomalies and the potential size of the structure, a tractor was obtained to carry out a trenching program.

Sixty-six hundred feet of trenching was done, part of which is shown in Photo 6. This work was done on a southeast facing slope with fair timber cover, and the extent of perma-frost encountered was unexpected. As a result, rock exposure is fair to poor. Fifty character samples of all rock types were collected and portions of each sample were run geochemically. Only one sample gave a significant gold determination - 4.75 ppm or approximately 0.11 oz. Au per ton. There was no accompanying increase in the arsenic content of this sample. This area, 12N 4 + 60 W, was re-examined at a later date and found to be poorly exposed with no distinctly predominant rock type. Three specimens were selected and assayed. One of these returned 0.06 oz. Au per ton.

The negative results from 49 of 50 rock specimens more or less precludes the possibility of finding a major zone of gold mineralization in these large silicified structures. The samples which did run for gold are schists of no particularly distinguished appearance. It is thought possible that very small quantities of 'placer' gold occur in the soil and may be sparsely present in the surface of the bedrock.

A small amount of hand-trenching is suggested to further expose rock in the immediate vicinity of the assays so far obtained.

PANTHER GROUP (Fig. IX)

These claims were staked on a zone similar to that on the RAINBOW. The 1975 program consisted of soil sampling on tape and compass lines and geological mapping. Several rock specimens were submitted for geochemical determinations but no significant anomalies were indicated.

RAND GROUP

This consisted of only two claims staked on a third silicified zone. No work was carried out. A rock specimen run geochemically did not carry gold.

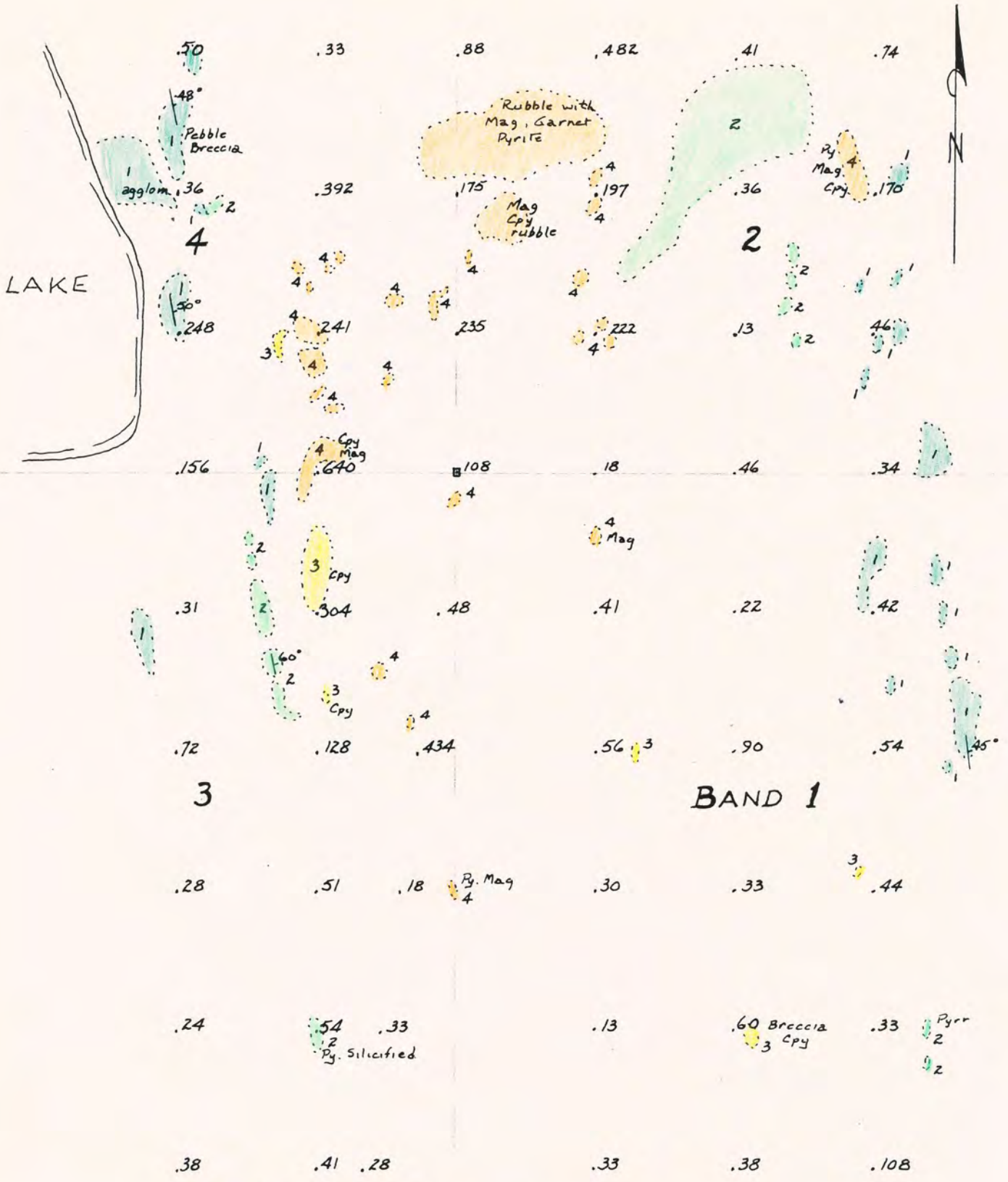
BAND GROUP (Figures X & XI - Map II)

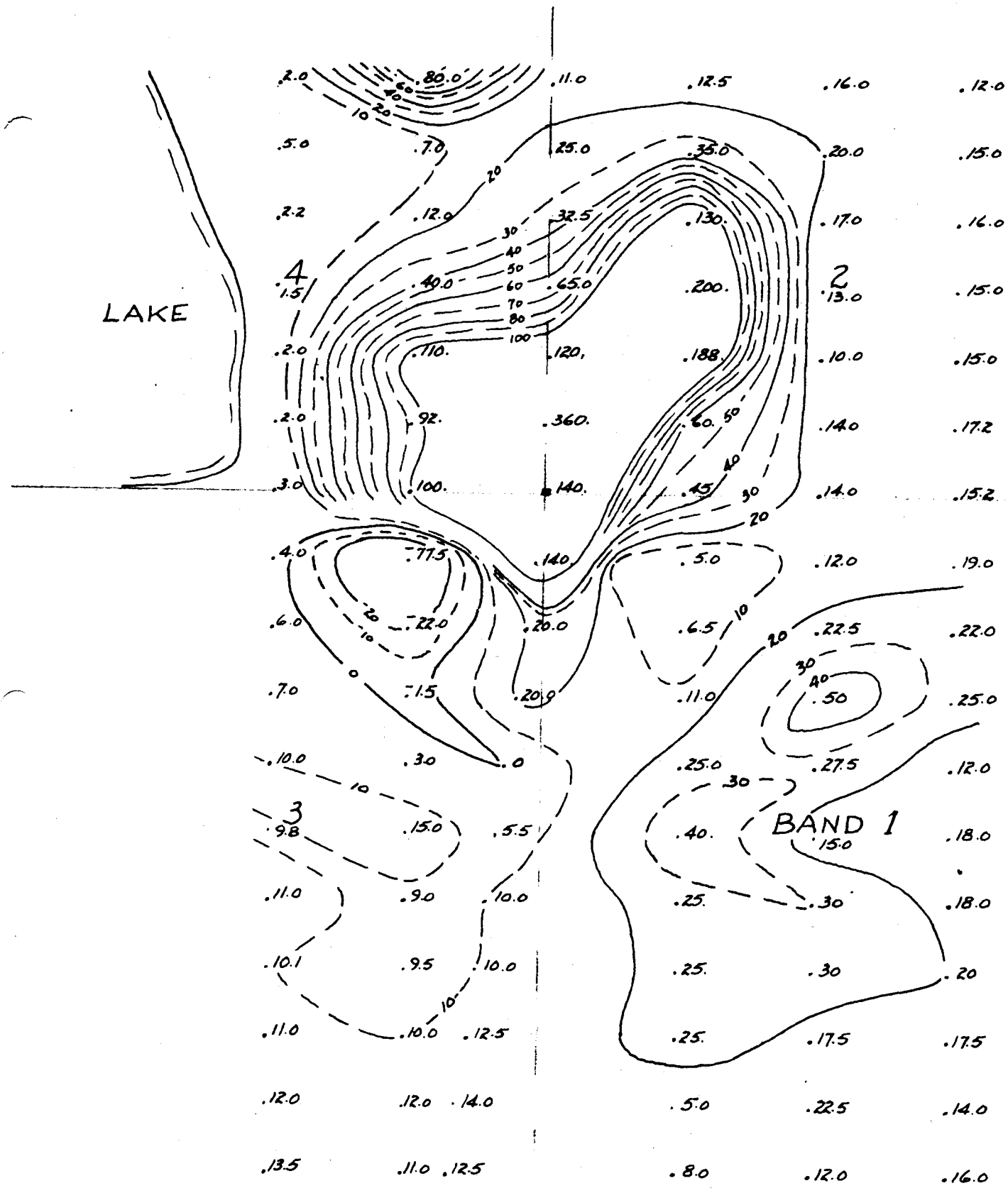
Four claims were staked on a magnetite-sulphide bearing skarn located just east of the peak of Packers Mountain.

This sulphide bearing zone is part of an elongate skarn zone, predominantly a garnet skarn, developed in tuffs and impure sediments of the Hutshi group. No mineralization of interest was found in the garnet rich zones.

The sulphide zone contains pyrrhotite, pyrite and chalcopyrite. The best assay was 0.20% Cu.

The magnetometer survey over the immediate zone outlined a magnetic high which conforms well with the mapped extent of the zone. Minor copper mineralization was found to the east and south of the magnetic high but geochemical results were not encouraging.


.50
.33
.88
.482
.41
.74
48°
Pebble Breccia
agglom.
.36
2
1
4
.392
Rubble with Mag, Garnet Pyrite
.175
Mag Cpy rubble
.197
2
.36
Py. Mag. Cpy.
.170
LAKE
50°
.248
.241
.235
.222
.13
46
.156
Cpy Mag
.640
.108
.18
.46
.34
Mag
3
Cpy
.31
.304
.48
.41
.22
.42
60°
.72
.128
.434
.56
.90
.54
45°
3
BAND 1
.28
.51
.18
Py. Mag
.30
.33
.44
.24
.54
.33
Py. Silicified
.13
.60 Breccia
Cpy
.33
Pyr
.38
.41
.28
.33
.38
.108
4 IRON RICH SKARN Pyrite, Pyrrhotite, Magnetite, Chalcopyrite
3 IRON POOR SKARN Garnet, minor Chalcopyrite
2 Thin to Medium Bedded Fine Grained Waterlain Tuff
1 Pebble Breccia - Tuff Breccia and Agglomerate
.46 Soil Sample - Copper p.p.m.
D C SYNDICATE
BAND CLAIM GROUP
GEOLOGY & SOIL SAMPLE RESULTS
105E-13
1" - 200'
1975
FIGURE X



.22.5 MAGNETOMETER READING
8 × 100

D C SYNDICATE
BAND CLAIM GROUP
MAGNETOMETER SURVEY
105E-13
1"-200' 1975

FIGURE XI

Silt sampling in the region shows an anomaly of limited extent to the north of the showing and an isolated high of 80 ppm approximately one mile to the south.

The skarn zone is approximately parallel to a breccia zone containing a high percentage of rounded granodiorite fragments lying a few hundred feet to the east. This breccia contains fragments of many rock types but is predominantly of granodiorite and is assumed to be an intrusive breccia. No mineralization was found in the breccia.

BOND GROUP (Map III - Figure VI)

Minor malachite and rare fractures mineralized with molybdenite and chalcopyrite were found in a small monzonitic intrusive.

Relatively widely spaced soil sampling and mapping of the sparse outcrop did not provide encouragement. Silt sampling in the area failed to indicate an anomalous area.

West of the BOND claims, a piece of volcanic float was found which contained appreciable chalcopyrite on fractures. This area was soil sampled but the only anomalous results were immediately adjacent to the float. (See Fig. VI)

No further work is proposed.

GEM GROUP (Map IX - Figures XII & XIII)

A prospecting crew was placed three miles west of Miller Lake to investigate aeromagnetic highs in an area mapped as Hutshi volcanics with feldspar porphyry intrusives. This crew found free gold in small quartz stringers in a rhyolite

dyke (Photos 7, 8 & 9). The whole of the magnetically anomalous area was staked and detailed prospecting carried out.

Geological mapping and soil sampling was done in the vicinity of the rhyolite dyke as shown on Figures XII and XIII. Results of assays are as follows:

Sample No.	Description	Assays Ag	Assays Au
29014-A	Rhyolite fragments with grey telluride (?)	0.60	0.014
29015-A	Minor pyrite, chalcopyrite in rhyolite	0.01	0.005
29017-A	6" wide zone of quartz veining on strike SE of free gold location	0.08	0.001
29016-A	Rhyolite with gossanous rust from creek 6 miles north of GEM	0.06	< 0.003
29018-A	Fractured feldspar porphyry from creek 6 miles north of GEM	0.08	0.002

Similar rhyolite dykes were found in a west flowing creek about 6 miles north of GEM. No significant geochem or mineralization was obtained.

The negative results here and the lack of response in prospecting the surrounding area indicate no further work is warranted.

LORI GROUP (Map 1 - Figure XIV)

Minor fracturing with molybdenite and chalcopyrite mineralization was found along the north margin of what is termed the LORI intrusive. Fairly extensive snow cover precluded thorough examination at the time. Claims were staked and, over a period of time, a soil sample grid was completed as shown in Figure XIV.

Although no geological map, as such, was made the outcrop areas were further examined later in the season with negative results.

No further work is warranted on these claims.

SCINTILLOMETER RECONNAISSANCE

Prospecting crews routinely sent in rock specimens to the base camp each week representing all rock types and mineralization encountered. All rock specimens collected in this way were checked closely with a scintillometer.

Of several hundred rock specimens, only one was radioactive. This was a fragment, probably part of a volcanic bomb, dark green with small patches of red chert or hematite, found on the northwest spur of Joe Mountain.

Other specimens from Hutshi volcanics which contained hematite and chert zones were not radioactive.

The approximate track of aerial reconnaissance is shown on Figure I 'Key Map Laberge Area'.

The scintillometer was simply mounted in a cushioned box at the base of the helicopter door. Repeated flights over a spot of slightly radioactive stain in Laberge conglomerate indicated quite local sources could be located with close flying at about 40 m.p.h.

As expected, distinctly different background counts were obtained (in increasing order) over water, extensive deep perma-frost, extensive silt deposits in the Lake Laberge valley, Laberge sediments, Lewes River and Hutshi volcanics, granitic intrusive rocks.

In general, background over granitic intrusive rocks was about twice as high as over any other rock type.

Only one area of anomalous readings was located. This was in the northeast corner of the Dezadeash map sheet where a fairly extensive area of sediments, volcanics and granitic rocks gave readings of 1½ to 2½ times their respective background counts.

One creek bed was checked in this area for radioactive float. The only specimens found were of small irregular pegmatitic phases cutting granitic rocks. These had small spotty areas of about twice background count.

No radioactive zones of any importance were located but the method is apparently adequate for general reconnaissance in areas of outcrop as an adjunct to regional prospecting for other minerals.

Respectfully submitted,

J.C. Stephen

REGISTER OF CLAIMS

Claims	Staker	Date Staked	Recorded	Grant Number
RAINBOW 1-6	J.W. Mustard	May 24, 1975	June 23, 1975	Y98896-Y98901
7, 8	J.W. Mustard	May 30, 1975	June 23, 1975	Y98902, 903
9-12	Corey Bickford	May 3, 1975	June 23, 1975	Y98904-907
13-20	J.C. Stephen	July 6, 1975	July 11, 1975	Y99328-Y99335
PANTHER 1, 2	Corey Bickford	June 2, 1975	June 23, 1975	Y98908, 909
3-6	Paul Wilson	June 2, 1975	June 9, 1975	Y98651-654
RAND 1,2	C.R. Saugstad	July 6, 1975	July 11, 1975	Y99336, 337
LORI 1-8	D. Dunn	June 14, 1975	July 2, 1975	
9-12	A.D. Waterhouse	June 19, 1975	July 2, 1975	
13	A.D. Waterhouse	June 27, 1975	July 2, 1975	
As 1-8	M. Shulist	July 10, 1975	July 11, 1975	Y99312-319
9-16	M. Douglas	July 10, 1975	July 11, 1975	Y99320-327
BAND 1-4	Richard Basnett	July 21, 1975	Aug. 12, 1975	YA 3158-3161
GEM 1-8	A.N. Hamilton	Aug. 24, 1975	Aug. 28, 1975	YA 3282-289
9-16	D.S. Wood	"	"	YA 3290-297
17-24	D. Dunn	"	"	YA 3298-305
25-30	A.D. Waterhouse	"	"	YA 3306-311
31, 32	A.D. Waterhouse	Aug. 25, 1975	"	YA 3312, 313
33-40	J.C. Stephen	"	"	YA 3314-321
41-44	C.R. Saugstad	"	Aug. 29, 1975	YA 3392-395
45-48	C.R. Saugstad	Aug. 26, 1975	"	YA 3396-399
49-56	M. Saugstad	"	"	YA 3400-407
57, 58	J.W. Mustard	"	Aug. 28, 1975	YA 3322, 323
59-64	J.W. Mustard	Aug. 25, 1975	"	YA 3324-329
65-72	J. Fowler	"	"	YA 3330-337
73-80	R. Linden	Aug. 26, 1975	Aug. 29, 1975	YA 3408-415
81-86	R. Basnett	Aug. 25, 1975	Aug. 28, 1975	YA 3338-343
BOND 1-6	Joan Mustard	Aug. 7, 1975	Aug. 13, 1975	YA 3170-175

Photo 1 - LORI GROUP - Looking S.W. during staking

Photo 2 - LORI INTRUSIVE VALLEY - Looking S.E.

Photo 3 - GRANITE-VOLCANIC CONTACT - N.E. of Ibex River

Photo 4 - HAYES CREEK VALLEY - Looking west to NADA

Photo 5 - RAINBOW GROUP - Komatsu tractor at camp

Photo 6 - RAINBOW GROUP - Looking west to trenches

Photo 7 - GEM GROUP - Looking north

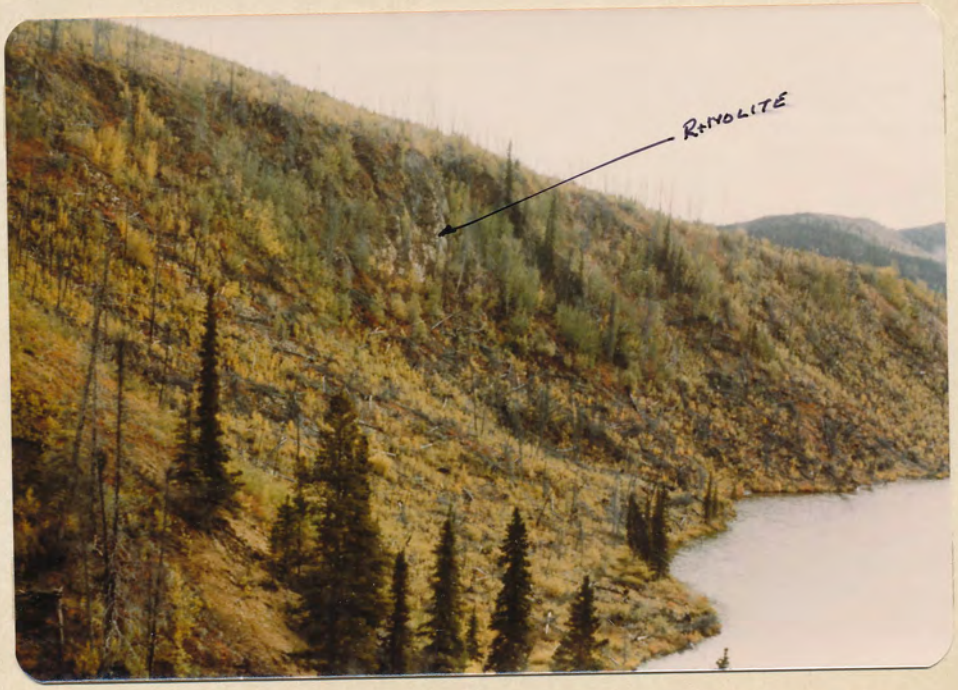


Photo 8 - GEM GROUP - Rhyolite dyke on face of ridge

Photo 9 - GEM GROUP - Free gold in quartz stringer

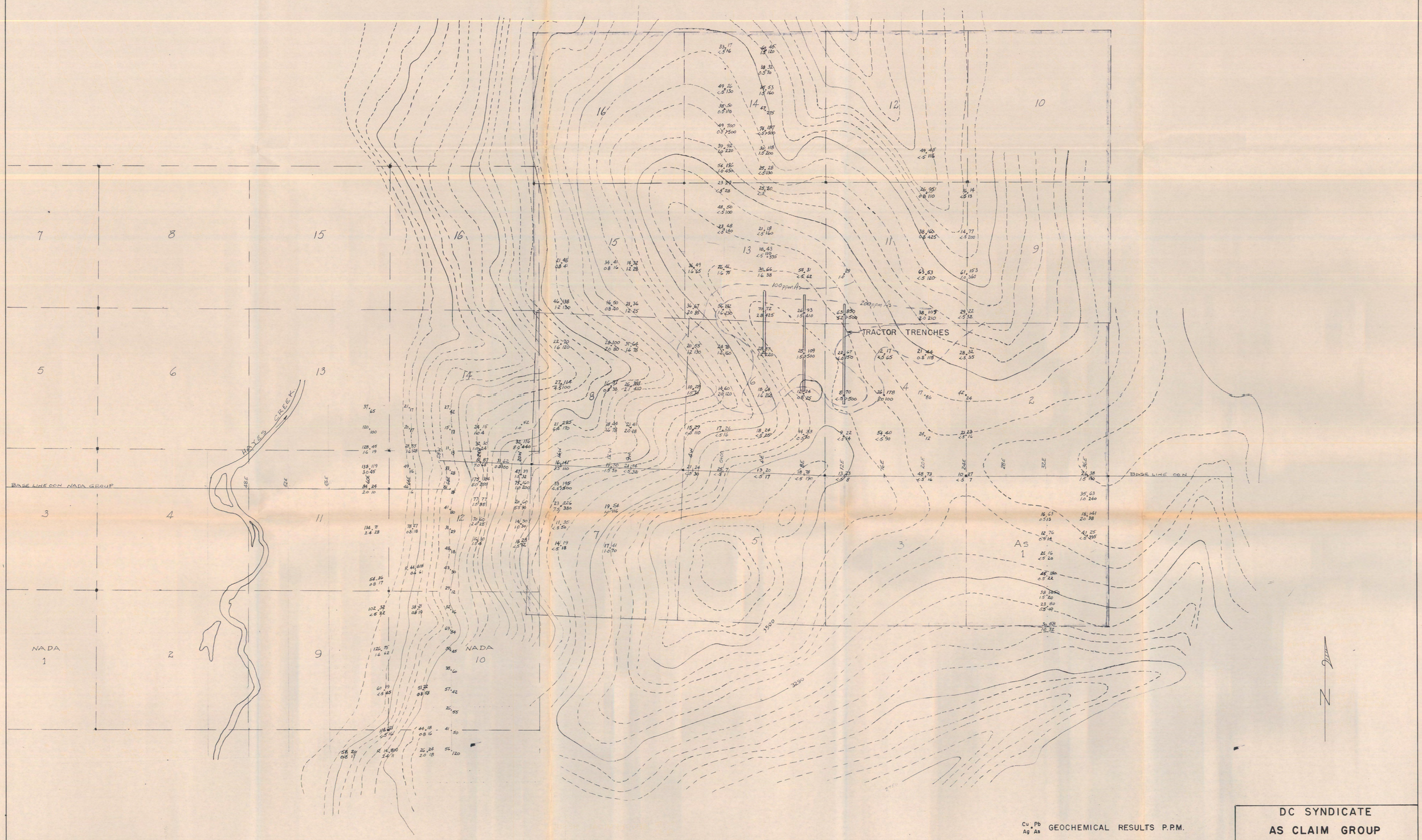
Photo 10 - GEM GROUP - Quartz stringers in rhyolite

Photo 11 - GEM GROUP - Rhyolite breccia

Photo 12 - TUV AREA - Pink feldspar in fractured monzonite

Photo 13 - TUV AREA - Pink feldspar zones in monzonite breccia

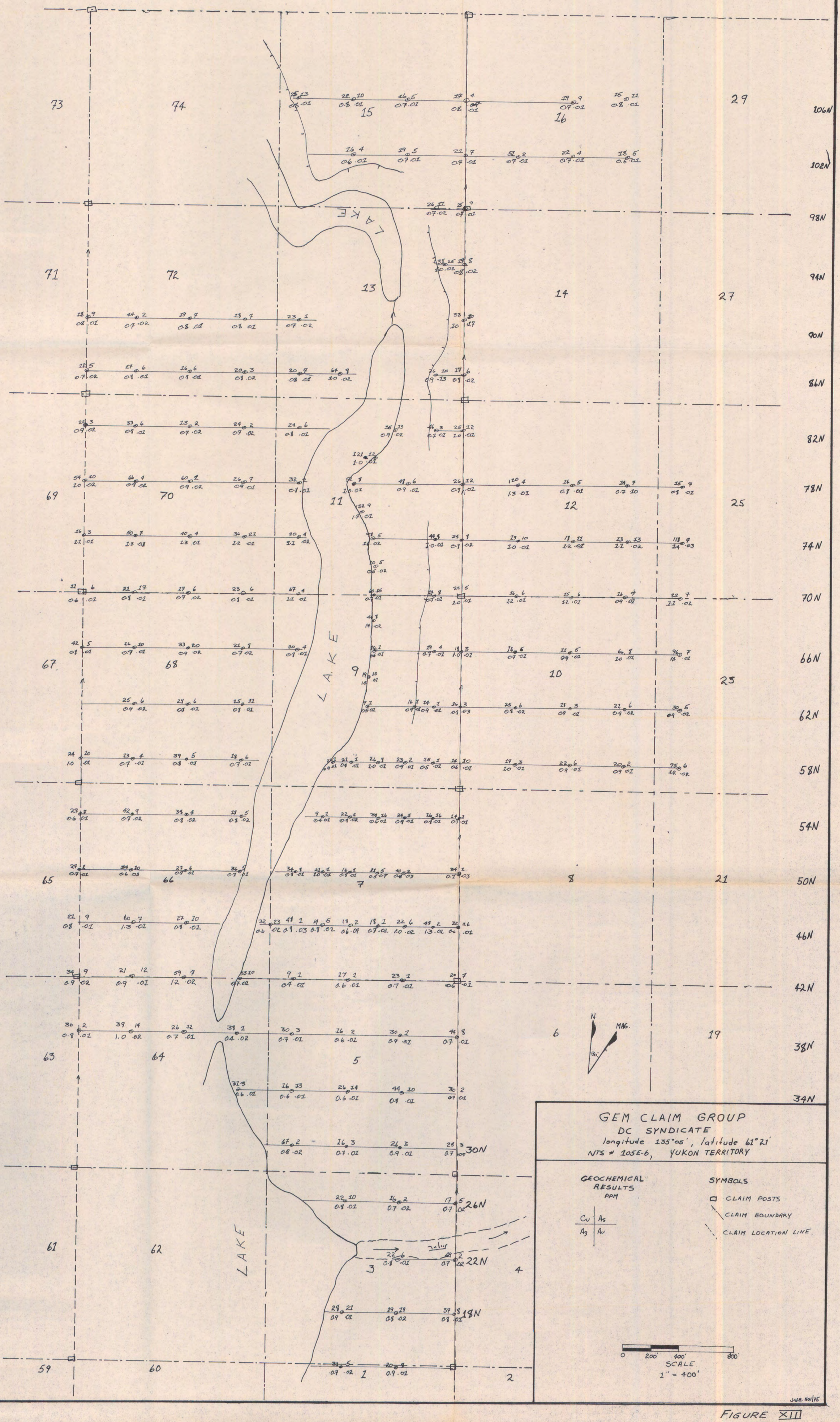
Photo 14 - TUV AREA - Quartz filled monzonite breccia



Cu, Pb
Ag, As GEOCHEMICAL RESULTS P.P.M.

DC SYNDICATE
AS CLAIM GROUP
GEOCHEMICAL SURVEY
1151-12 1975
0 400' 800'

FIGURE VII



GEM CLAIM GROUP

DC SYNDICATE

longitude 135°05', latitude 61°21'

NTS # 105E-6, YUKON TERRITORY

GEOCHEMICAL RESULTS
PPM

Cu	As
Ag	Au

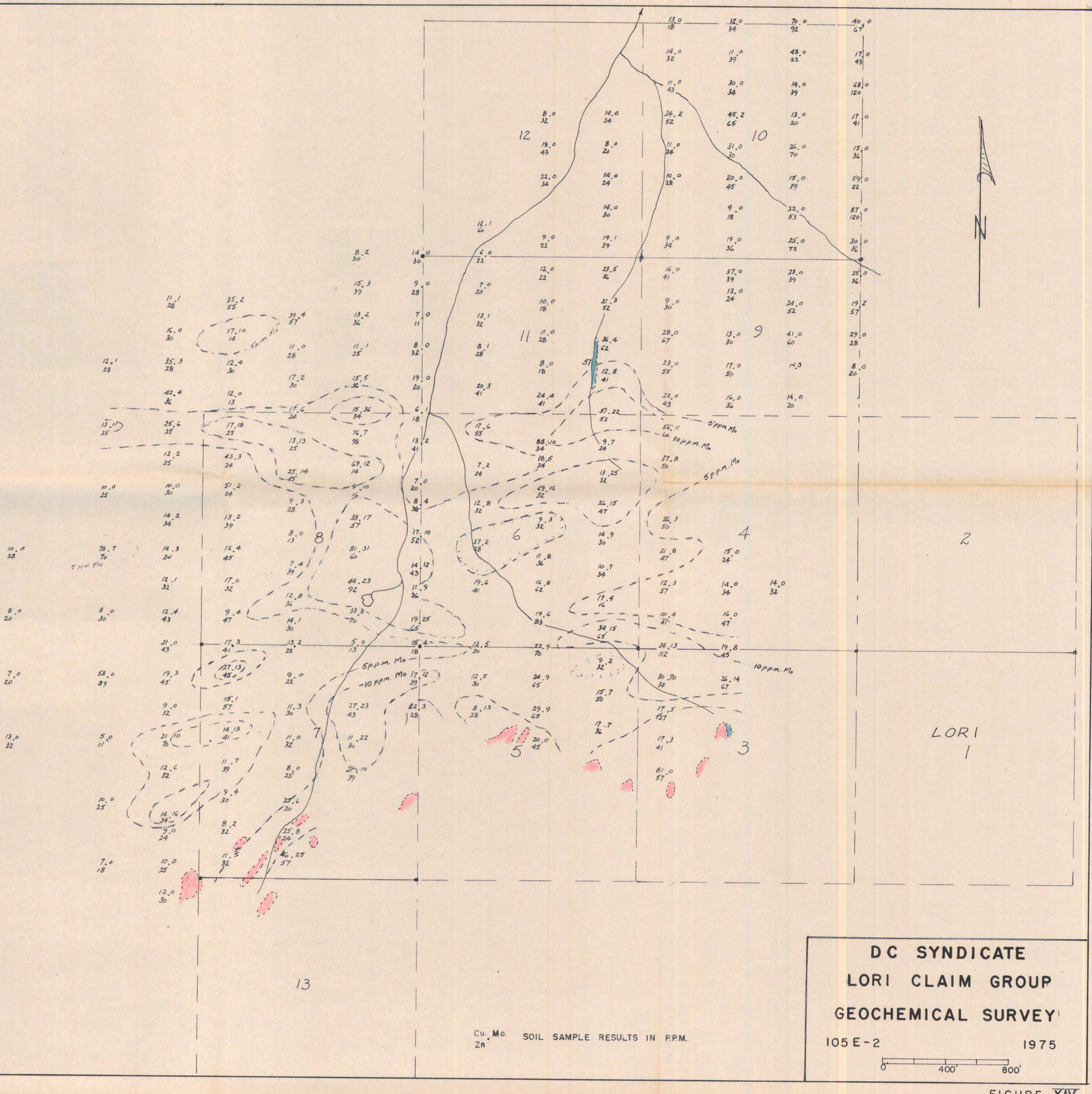
SYMBOLS

- CLAIM POSTS
- CLAIM BOUNDARY
- CLAIM LOCATION LINE

0 200' 400' 800'
SCALE
1" = 400'

J.W.H. Nov/75

FIGURE XIII



Cu. Mo. Zn SOIL SAMPLE RESULTS IN P.P.M.

DC SYNDICATE
LORI CLAIM GROUP
GEOCHEMICAL SURVEY

105 E-2 1975

0 400' 800'

FIGURE XIV

GEM CLAIM GROUP

DC SYNDICATE

longitudue 135°05', latitude 61°21'

NTS # 105E-6, YUKON TERRITORY

GEOLOGY

6 PORPHYR GRANODIORITE

5 FELDSPAR PORPHYRY

4 APLITE

3 RHYOLITE

2 TRIASSIC VOLCANICS

1 TRIASSIC SEDIMENTS

SYMBOLS

- Outcrop
- xx Abundant Float
- Fracture direction, inclined, vertical
- Bedding, inclined, tops unknown; inclined, tops known
- Py - Presence of Mineralization
- Breccia
- Claim Posts
- Claim Boundary
- Claim Location Line
- Breccia

0 200' 400' 800'

SCALE

1" = 400'

J.W.M. Nov/85

FIGURE XII

PANTHER 6

PANTHER 1

LEGEND

5	CARMACKS VOLCANICS
4	SILICEOUS ZONE INCLUDING ALTERED GRANITE
3	QUARTZ EYE FELDSPAR PORPHYRY
2	APLITE DYKES (ABUNDANT)
1	GRANITE
Au Ag Sb As	GEOCHEMICAL RESULTS P.P.M.

N

DC SYNDICATE

PANTHER CLAIM GROUP

GEOLOGICAL & GEOCHEMICAL SURVEY

1151-5 12 1975

0' 200' 400'

FIGURE IX

12 11 1

10 9 16 15

8 7 6 5

14 13 4 3

2 1

RAINBOW 1

CREEK

28N 26N 24N 22N 20N 18N 16N 14N 12N 10N 8N 6N 4N 2N 0 2S 4S 6S 8S 12S

16W 14W 12W 10W 8W 6W 4W 2W 14S 2E 4E 6E

LEGEND

- CARMACKS VOLCANIC
- SILICEOUS ZONE
- PINK COARSE GRAINED BIOTITE GRANITE
- SCHIST GNEISS
- TALUS
- FLOAT
- SOIL SAMPLE RESULTS PPM Au | Ag / St | As

DC SYNDICATE
RAINBOW CLAIM GROUP
GEOLOGICAL & GEOCHEMICAL SURVEY
1151-12 1975
0 200 400

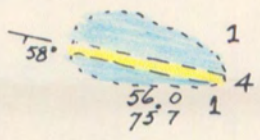
FIGURE VIII

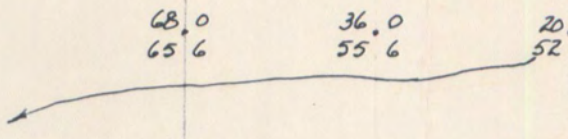
HAYES CREEK
NADA GROUP
AS GROUP
WOLVERINE CREEK
YUKON RIVER
RAND GRP.
RAINBOW GROUP
MOUNT PITTS
PANTHER GROUP
CAR & CASH GROUPS
BIG CREEK
CROSSING CREEK
KLAZA RIVER
NANSEN CREEK
NISLING RIVER
KIRKLAND CREEK
BAND GROUP
PACKERS MTN.
BIG SALMON RIVER
APPROXIMATE LIMIT OF 1975 RECONNAISSANCE PROGRAM (APPROX 5600 SQ. MILES)
SCINTILLOMETER AIR RECONNAISSANCE
AISHIHIK LAKES
NORDENSKIOLD RIVER
MENDOCINA CREEK
BOND GROUP
GEM GROUP
MILLER LAKE
TUV INTRUSIVE
LIVINGSTONE CREEK
TOX LAKE
LABERGE LAKE
APPROXIMATE SULPHIDE MINERAL ZONE
TESLIN RIVER
PILOT CR.
RICHTNOREN ISLAND
TESLIN MTN.
LORI GROUP
LORI INTRUSIVE
JOE MTN.
LITTLE RIDGE
ZONE OF 1½-2½ x BACKGROUND RADIOACTIVITY
TAKHINI HOTSPRING RIVER
TAKHINI LAKE
KING LAKE
CAP CREEK
ANNELL CREEK
WHITEHORSE
CANYON MTN
CANTLIE LAKE
MICHIE CREEK
BONNEVILLE LAKES
FISH LAKE
M'CLINTOCK RIVER
MARSH LAKE
DEZADEASH RIVER
KUSAWA LAKE

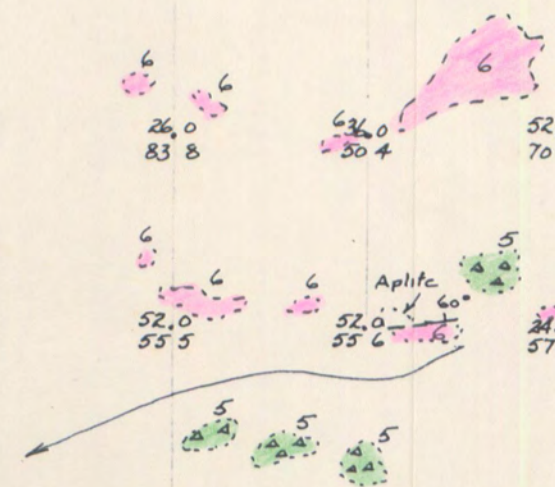
62° 00'
61° 00'
139° 00'
136° 00'
134° 00'

D.C. SYNDICATE
KEY MAP
1975 PROGRAM
SCALE: 1: 250,000
DECEMBER 1975

FIGURE 1







D. C. SYNDICATE
BOND AREA
SOIL SAMPLE GRID
105 E - 7
1"- 400' DEC 1975

FIGURE VI

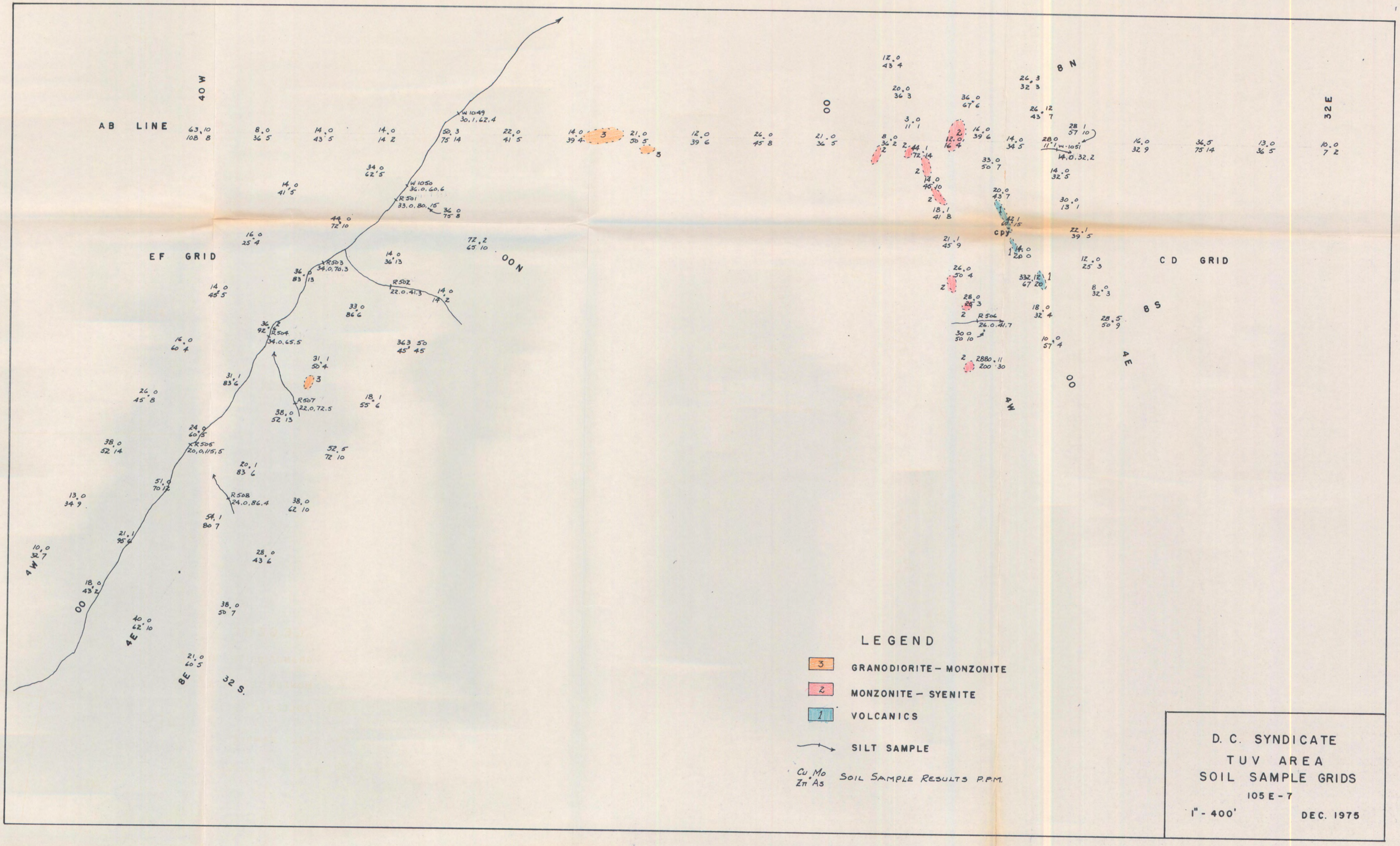

AB LINE
EF GRID
CD GRID
40 W
32 E
8 N
8 S
00
00N
4E
4W
8E
32 S.
CPY
LEGEND
3 GRANODIORITE - MONZONITE
2 MONZONITE - SYENITE
1 VOLCANICS
SILT SAMPLE
Cu Mo
Zn As
SOIL SAMPLE RESULTS P.P.M.
D. C. SYNDICATE
TUV AREA
SOIL SAMPLE GRIDS
105 E - 7
1" - 400'
DEC. 1975

FIGURE V