

012169

Dec. 21, 1970

Dr. Toru Kikuchi, P. Eng.  
1374 PARK DRIVE  
VANCOUVER 14, B.C.

Dear Toru,

Harry Fromme asked me to give you some further information about the Mt. Freegold property. To this end I enclose a newly made topography map with some geology added, a portion of an aero mag. survey which covers the north part of the property and a claim map. The mag. map is distorted somewhat but gives the general idea. The claim map gives the wrong impression as well — the staking really isn't as bad as it appears.

This past season we did some line cutting which tied the top of the mountain to the road in the valley. We also built some new access trails. We were unable to get a technical program going due to the pressure of other commitments which we could not avoid and which kept me away.

After you were on the property in October 1969 we put in some control lines with a bulldozer in the bleached zone section of the property. In the course of this work we uncovered some large floats of highly leached sulphide vein matter. An assay showed 0.40 Au and 5.48 Ag. Geochemistry indicated an arsenic content so I took some soils which were tested. Although few in number these indicated that

zones of anomalous arsenic values exist in the bleached zone.

The property needs a good close survey for arsenic and lead ~~for a start~~ <sup>for a start</sup> and we had planned to get this done in 1970. Perhaps you will have some ideas in this regard for the coming year.

I assayed some of the sulphide vein matter you and I looked at on one of the old shaft collars - 0.08 Au, 38.2 Ag. This was from the Augusta Shaft. Old Govt. reports give much higher assays but they were taken while the shafts were open. I haven't been able to get deep enough with bulldozer cuts to get to the sulphide.

I hope that you and your family are well and that you will drop in to "say hello" next time you are up here.

Best wishes,

Ron Granger.

INTERNAL PURPOSES REPORT

MINERALIZATION AND PRELIMINARY GEOLOGY

MT. FREEGOLD CLAIM GROUPS

CLAIMS:

Two groups of claims are held under option agreement with Mr. P.F. Guder, prospector, of Carmacks, Yukon. The option was recorded and claims transferred to the name of the author and a separate agreement made showing ownership by a group of five Whitehorse residents represented by Mr. H.C. Fromme.

Twenty-one claims are located west of the summit of Mr. Freegold while a further seven claims are located on Caribou Creek some three miles to the south. All claims have been tagged and, in good standing.

*Total now 81 claims.*

*are*

LOCATION AND ACCESS:

The claims are reached by all weather road from Carmacks, being 32 air miles WNW of the town and 44 miles away by road. Both claim groups are about two miles west of Discovery Mines Laforma property.

HISTORY:

In 1929 Mr. Guder made the original gold discovery on Mt. Freegold and subsequently located the Augusta Claim. He then located further claims in accord with the laws of that era and a sizeable rush took place. Several additional deposits were located during this period and are described by Bostock, memoir 189, and by Johnston, memoir 214.

In the winter of 1936 Mr. Guder discovered floats of rich gold bearing quartz on Caribou Creek and, in partnership with Mr. Bill Thier, located the source of this material in 1937. The deposits are mentioned by Bostock in his annual reports; see memoir 218.

A small mill was erected and 14 tons of ore were crushed for a recovery of about 80 oz. of gold. Guder later cleaned up an additional 10 oz. from the tailings.

No further work was done on either property except by hand methods until the early 1960's when some bulldozer work was carried out on Caribou Creek and five short drill holes were sunk on Mt. Freegold by the optionees. Assays are not presently available for the drill core.

## REGIONAL GEOLOGY & MINERALIZATION:

The mineral deposits of Mt. Freegold are associated with Upper Jurassic and Tertiary igneous rocks which intrude each other as well as the Precambrian gneisses and schists. This intrusive belt follows the Dawson Range on a N.W. axis and is presently being intensively explored by several large exploration firms. Several porphyry type deposits of copper-molybdenum mineralization have been located this season and can be described as classic in most respects.

Deposits located to date are spotted at approximately ten mile intervals along a very straight line for ninety miles. Although information is necessarily incomplete at this time all known deposits show a marked degree of similarity. Included as typical features are bleached masses of quartz monzonite with leached zones, jarosite zones and tourmaline zones. This rock is generally associated with a breccia zone of variable appearance and with dikes and/or bodies of latite porphyry which are intrusive into the altered rocks.

Due to the lack of glaciation these deposits are deeply leached. Drilling at Casino Silver Mines deposit indicates a barren to near barren blanket of an average thickness of about 150 feet. This is underlain by a secondary enrichment zone then by a primary zone of what may prove to be an economic grade.

The Yukon Revenue Mines showings are exposures on the fringe of the leached zone and average 0.2% Cu. in unaltered granodiorite. The unaltered rocks of Casino are barren.

## GEOLOGY AND MINERALIZATION OF MT. FREEGOLD CLAIMS:

Mr. Guder's gold-silver deposits occur in two widely different environments. The original discovery showings are in vein and narrow replacement deposits in the Yukon Group gneisses and schists. Our recent trenching has indicated what appears to be a continuous structure for an explored length of 5000'. The eastern portion of this length shows better values in gold than in silver on the average while the extreme western end is marked by a galena vein assaying up to 160 oz. of silver with little gold. Strike of the zone averages N 60° W and dip appears to be about 80° N.E.

Later discoveries of rich gold and silver float in Cabin Creek draining down to the south led to the uncovering of many quartz - sulphide veins in kaolinized and sericitized rocks of the regional porphyry type. The writer assayed one grab sample of dump material which returned 0.48 oz. gold and 10.1 oz. silver.

Cont'd. . . . 3

GEOLOGY AND MINERALIZATION OF MT. FREEGOLD CLAIMS: Cont'd

Several of Guder's deeper shafts had dumps which disclosed pieces of vein matter containing molybdenite mineralization and ultra violet light indicated the presence of powellite in 75% of the rock suite collected.

Examination of rocks from at least two locations indicates the remnant presence of chalcocite.

Preliminary mapping just completed suggests a large area of grano diorite altered to a chloritic meta syenite "porphyry" surrounding a mass of bleached porphyry measuring 1500' x 1000' in rectangular terms. Nearly all of this mass shows signs of intense alteration and leaching of sulphides with attendant deposition of limonite-jarosite, goethite and a little hematite. Strong tourmaline development occurs in various locations with a preference shown for the southern contact. The core of this porphyry is occupied by an irregular zone of rusty brown, leached breccia measuring 1000' x 300'.

The mapped outline of the alteration zone suggests that this may be the top of a larger mass exposed by the drainage pattern which has developed within it.

CONCLUSIONS:

The Mt. Freegold porphyry zone exhibits the known characteristics of the better explored mineral deposits recently discovered in the Dawson Range. Some copper and molybdenite mineralization has been discovered within the zone and extensive leaching has taken place.

The nature of the secondary minerals of the surface zone supports the probability of an original copper deposit oxidized then leached to a lower horizon.

The dimensions of the alteration zone are sufficiently large to warrant an exhaustive investigation next year.

The surface expression of the porphyry suggests the possibility of larger dimensions within reasonable depth.

Respectfully submitted,



Ron A. Granger.

APPENDED TO MT. FREEGOLD REPORT

TOPOGRAPHY:

(a) The porphyry mass is situated on the SW slope of Mt. Freegold between the 3500' and 4000' contours. Slopes are fairly gentle and fall as a rule in the 10° - 20° range.

(b) The Margarete Vein zone is above timber line between 4000' and 4500'. The zone is largely on the gently rounded top of the mountain and grades are less than 10° in general except on the NW extension where it follows the nose of the ridge downwards toward Kitchener Creek.

CLIMATIC FACTORS:

(a) The bulk of the porphyry mass is in ground free of permafrost; the exception being the eastern fringe which appears moderately frozen.

(b) The Margarete zone is largely in frozen ground.

DRAINAGE:

(a) Within the porphyry zone itself excess ground water appears absent except during spring runoff. The tributary seepages which keep Cabin Creek flowing weakly until November derive water from the permafrost areas above.

(b) The Margarete zone has a thawing permafrost type of drainage which is confined to the upper five feet of overburden except where the moss cover has been destroyed.

LEACHING: (significance in geochemical and geophysical prospecting.)

(a) 1. The porphyry mass is apparently deeply leached. The Dawson Range is unglaciated country and the front of last glaciation occupied the Yukon River Valley; penetrating, in valley bottoms, to within ten miles of Mt. Freegold on the east side.

Local experience to date indicates that leaching of copper minerals can be expected to be through to depths of up to 150' and can be an important factor in assay results to depths of several hundred feet. Rock above an enriched zone may be devoid of copper to depths approaching 100' below surface.

Geochemical results over such leached cap rocks can be expected to be very mild in the absence of upward ground water movement. Erratic anomalous highs will be encountered near springs and deepseated seepages if such exist near a deposit but these will not necessarily indicate areas of greatest interest.

LEACHING: Continued

Induced Polarization results have been rather misleading to date as higher readings will inevitably be indicative of pyrite halos and unleached zones. This is a simple concept to grasp but the isolation of an alternative approach is a difficult matter. Magnetic Surveys are complicated by the likelihood of moderately responsive Tertiary dikes and masses in areas where weak lows are being sought.

On Mt. Freegold the porphyry mass is well leached and of original and secondary minerals only limonitic cavities remain. Molybdenite has been found in quartz vein matter on dumps from old shafts. Fred Guder indicates that this material was found at ten to twenty foot depths. Porphyry on the same dumps is leached.

2. A bulldozer cut at 50W on L16S uncovered a large (12") float of extremely well leached vein matter. A specimen consisted of a quartz sponge showing 50% cavities filled with limonite stock works. The specimen assayed 0.40 oz. gold and 5.48 oz. silver. If the gold content can be downgraded due to concentration then the silver content can be expected to increase markedly with depth. This and similar veins will respond well to an arsenic geochemical survey on close centers; background will be 10p.p.m. and anomalous zones will contour in the 100 to 200 p.p.m. range.

3. Lead occurs in the soils, where tested, in a range between 10 and 40 p.p.m. with occasional values of 100 p.p.m. This may mean that Mo tests will be lower than otherwise expected but the writer has no data on this possibility.

4. Leaching has apparently been effective in removing the expected contained copper of the porphyry as the soils in the zone average in the 40 P.P.M. range. These values represent near surface material however and deeper tests may yield very different results.

(b) The sulphides in the Margarete vein zone are leached to a depth of about 20' and can be fairly sampled below this point. Carbonates of copper may indicate former argentiferous tetrahedrite.

SUMMARY:

The preliminary testing of soil above the leached zone of the porphyry was confined to one N-S traverse and only six samples

SUMMARY: Continued

were taken. These were treated by hot method extraction, by concentrated HCl for 4 hours, and by 1:1 HCl for 4 hours. The 1:1 HCl extraction was not acceptable but the other two methods were found suitably in agreement for all practical purposes.

A test of breccia zone soil was found to contain much higher quantities of Pb, Zn, Mo and As but was only average in Cu content. It is possible that leaching is not as efficient in this rock type.

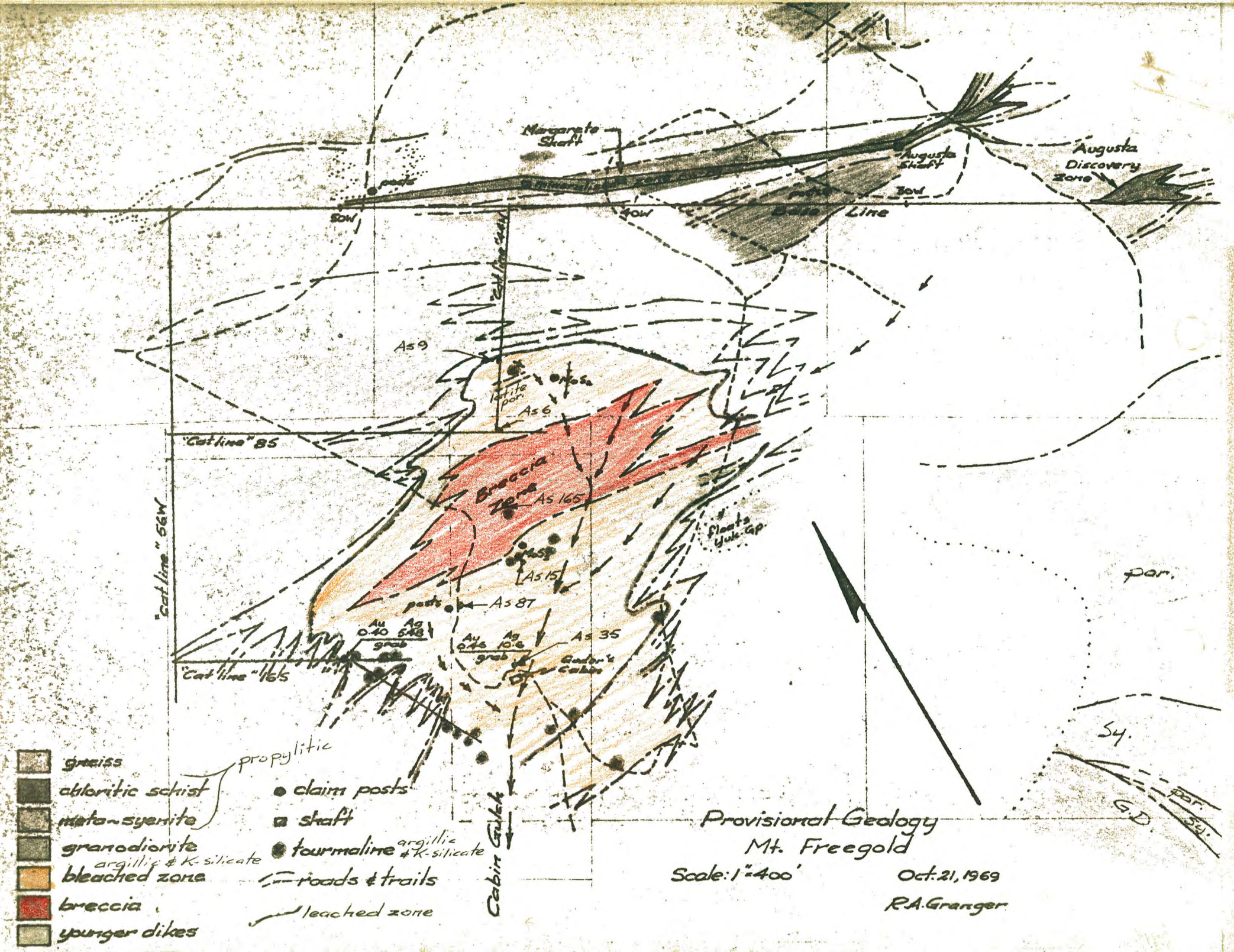
Soils taken near the known MoS<sub>2</sub> occurrences were found to be the lowest in assay result. No explanation is at hand for this.

Geochemical results to date tend to confirm the geological hypothesis that the mapped porphyry mass is the top of a hydrothermally altered and mineralized zone partially uncovered by erosion. Lead, zinc, and arsenic values are much more erratic and peak much higher than copper values. This can be representative of an envelope, or halo zone, around a porphyry copper deposit and in light of other known deposits in the Dawson Range may even be described as a fair probability.

It is important in geological mapping to recognize the tendency of the resistant meta-syenite to concentrate in the surface soil. This can give a misleading impression in altered areas where the porphyry weathers thoroughly to a gravelly soil with many floats of syenite in it. Bull dozer stripping discloses this condition at shallow depths.

RON GRANGER.

October 29th, 1969



- gneiss
- chloritic schist
- meta-syenite
- granodiorite
- bleached zone
- breccia
- younger dikes

- propylitic
- claim posts
- shaft
- tourmaline
- roads & trails
- leached zone

Provisional Geology  
Mt. Freegold

Scale: 1"=400'

Oct. 21, 1969

R.A. Granger



THIS AGREEMENT made in quadruplicate this                    day of  
A.D. 1969

**BETWEEN:**                    PAUL FRITZ GUDER, Prospector, of  
                                 Carmacks, in the Yukon Territory  
  
(hereinafter called "Guder")

OF THE ONE PART

**AND:**                            RONALD GRANGER, Prospector, of  
                                 Whitehorse, in the Yukon Territory  
  
(hereinafter called "Granger")

OF THE OTHER PART

**W H E R E A S:**

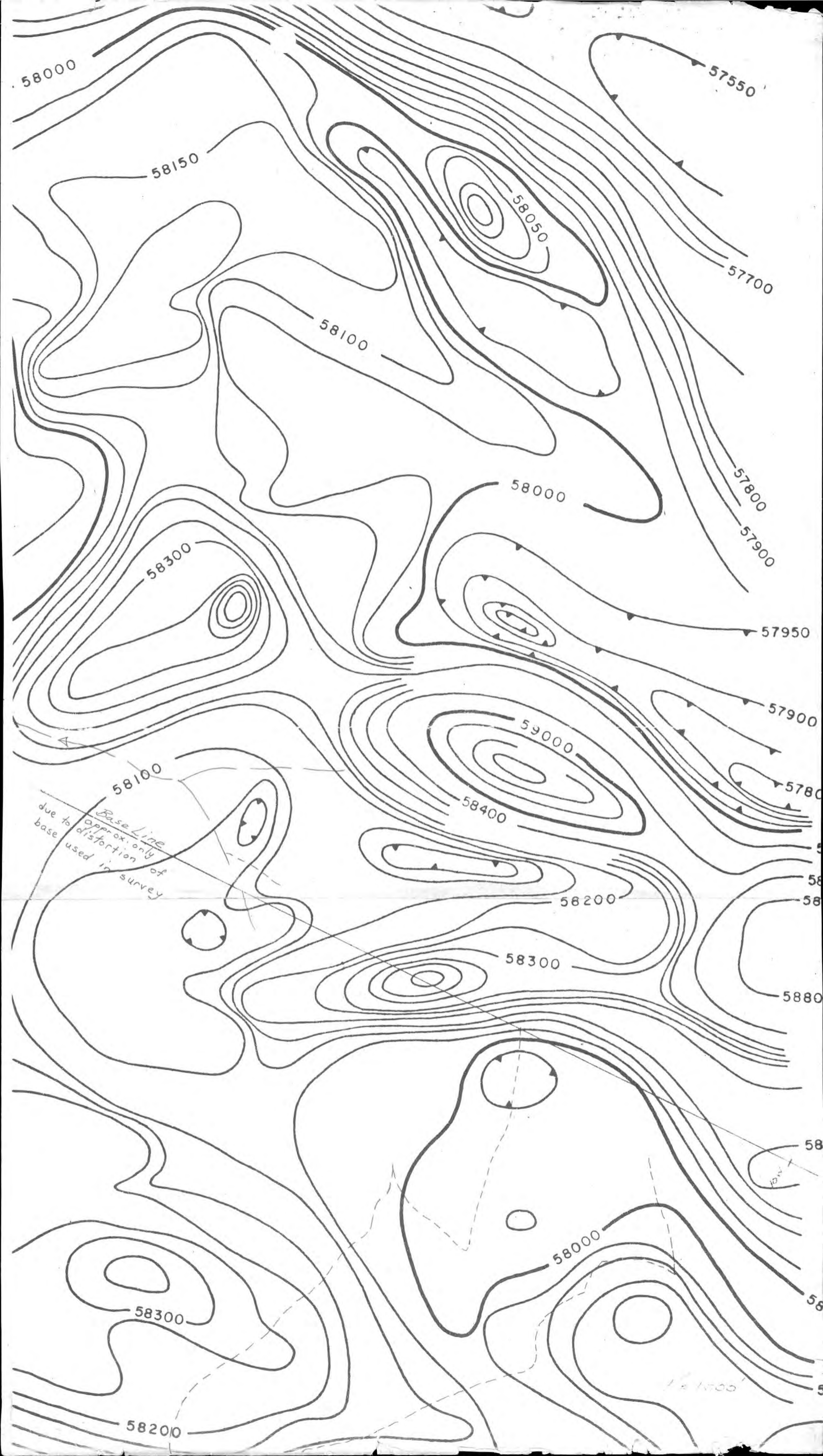
A. Guder is the duly recorded holder of those mineral claims situate in the Whitehorse Mining District and described as on Map Sheet No. 115 I-6 and more particularly described as:

✓ Excelsior 1	Grant No. 63639	} 1 Oct 1970
✓ Excelsior 2	Grant No. 63640	
✓ Excelsior 3	Grant No. 63641	
4 ✓ Liberty	Grant No. 63638	1 Oct 1970
✓ Augusta	Grant No. 15494	1 Oct 1970
✓ Margarite	Grant No. 15505	✓
3 ✓ Gold Star	Grant No. 15519	✓
5 Protection Fr.	Grant No. 15677	✓
✓ Vindicator 1	Grant No. 60422	✓
✓ Vindicator 2	Grant No. 60423	✓
✓ Peerless	Grant No. 15549 <sup>9</sup>	✓
✓ Progress 1	Grant No. 73464	} April 16/71
✓ Progress 2	Grant No. 73465	
✓ Shear Zone 1	Grant No. 60420	} 1 Oct 1970
✓ Shear Zone 2	Grant No. 60421	
✓ Green Stone 1	Grant No. 90465	} 6 Aug. 1970
✓ Green Stone 2	Grant No. 90466	
✓ Green Stone 3	Grant No. 90467	
✓ Green Stone 4	Grant No. 90468	
✓ Green Stone 5	Grant No. 91056	13 Oct 1970
* Green Stone 6 Fr.	Grant No. Y21094	10 Oct 1969
Hope	Grant No. Y21249	3 Nov 1969
Best 1	Grant No. Y25895	} 9 Sept 69
Best 2	Grant No. Y25896	
Best 3	Grant No. Y25897	
Best 4	Grant No. Y25898	
Best 5	Grant No. Y25899	
Best 6	Grant No. Y25900	

(all of which are hereinafter referred to as "the said claims");

Pauline 4255 - Nov. 4/69

Caribou  
OK.



58000

57550

58150

58050

57700

58100

57800

58000

57900

58300

57950

57900

59000

57800

58100

58400

Base Line  
approx. only  
due to distortion of  
base used in survey

58200

58800

58300

58800

58

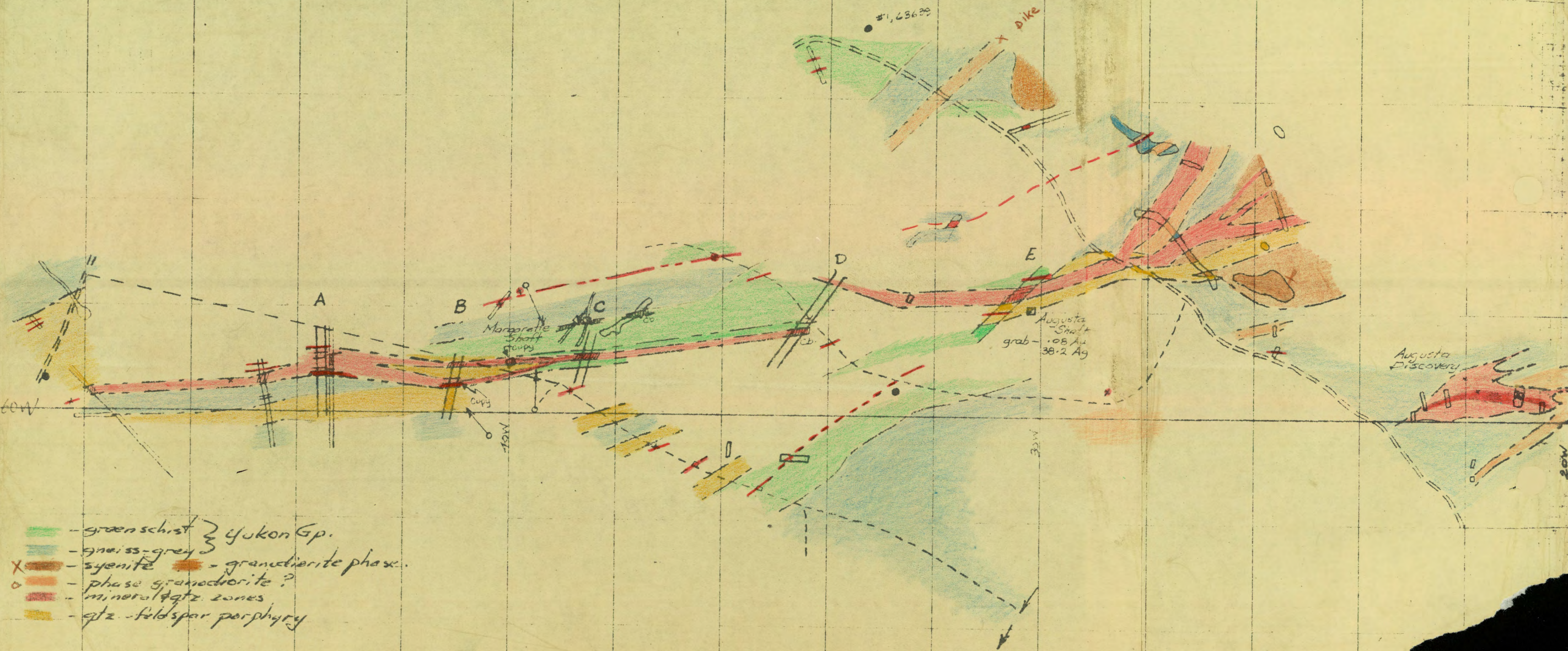
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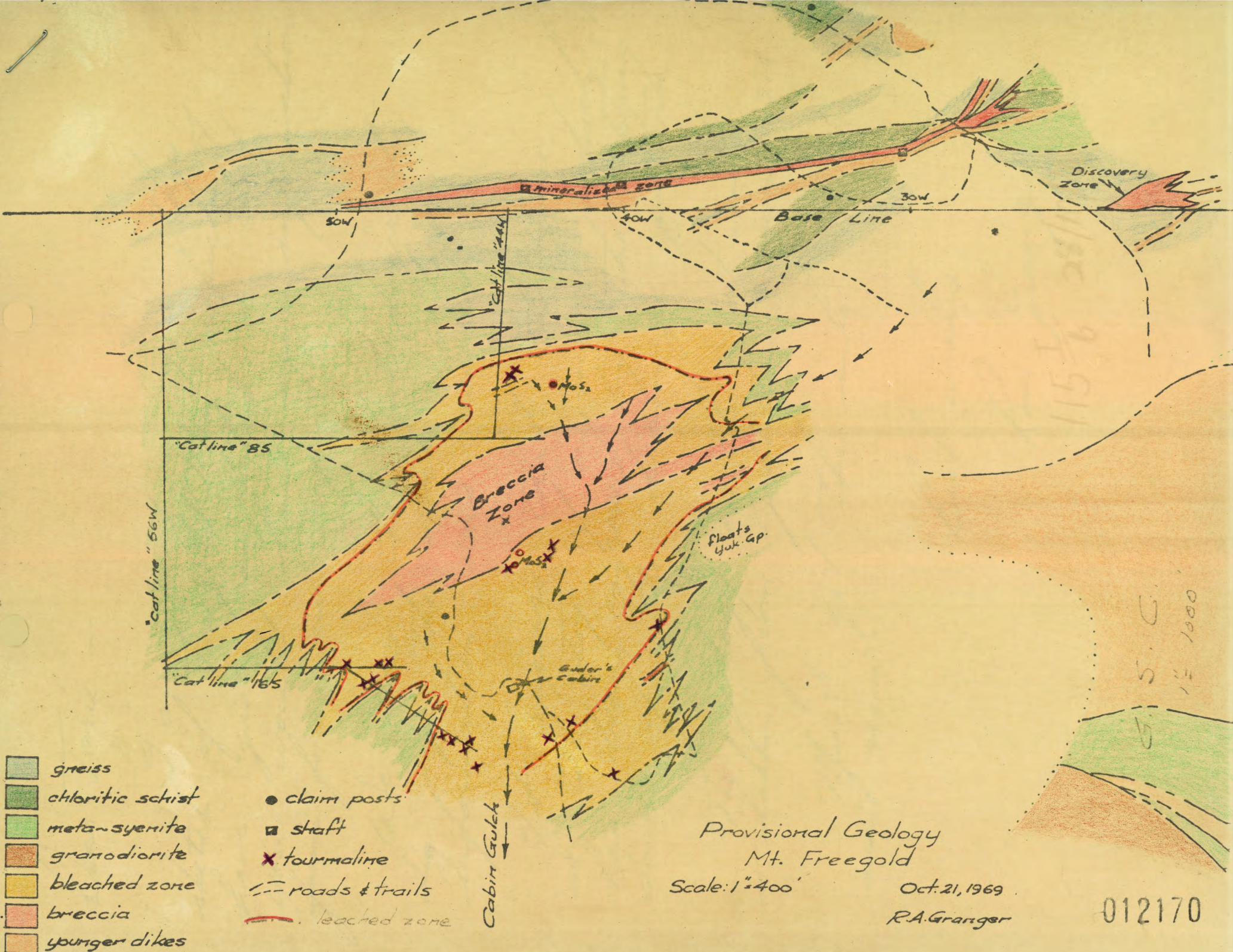
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58200

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- - greenschist } Yukon Gp.
- - gneiss-grey }
- X - syenite - granodiorite phase.
- - phase granodiorite?
- - mineral qtz. zones
- - qtz-feldspar porphyry



Dear Toru -

I am sending you this sketch of Freegold Mtn. which I have just completed so that you would have more information ~~from~~ for your report.

We used the bulldozer to dig up the rocks where information was needed.

It appears that the zone is the top of a mass which has been exposed by the cutting down of the drainage pattern.

The geology on the east side is taken from Johnston's memoir 214.

Must get this into the mail now.

Best wishes,

Ron Ganger.