803776

Check Aug. '88

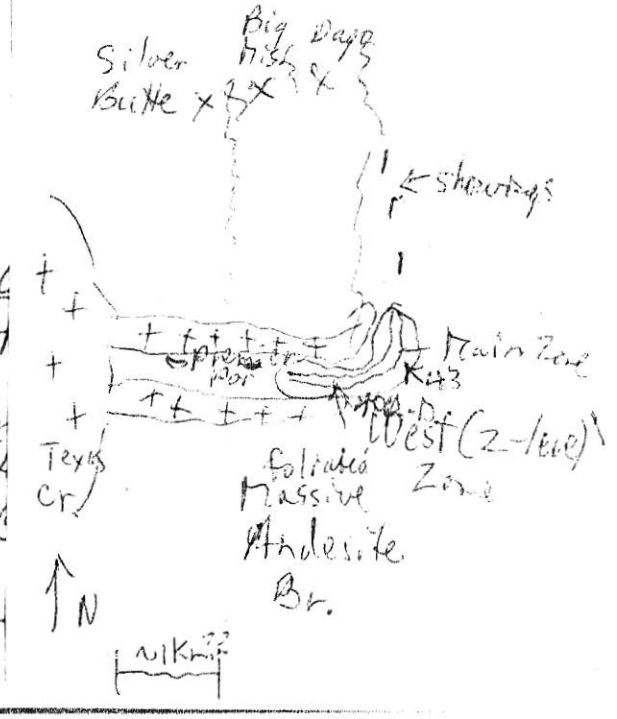
KQ-86-69A,B
69C
70
70A
70B,C
71 120E ✓
72 86-121 ✓
72A 86-121B ✓
72B
73
75 74 124A ✓
75A
75B
76B
77
78
79 86-109 to 115A (Sheet 3)
80
81
82
82A
82B
83
84
85
86
87

1986-2

1

Date	Sta.	Spec.	Location	Pages	
		KQ-86			
Aug 7/86	–	30-36	Kitsault Valley, BC	1-7	st 7/86
" 8/86	–	37-43	Premier, B.C.	8-12	
" 9/86	R6-1 to 3	44-54	N. Brucejack Ridge	12-16	rrace
" 10/86	R6-4-8	55-68	NE Mitchell Ridge	17-23	
" 11/86	R6-9-12	69-87	Snowfield Au Zone	23-29	
" 12/86	13-16	88-97	Mitchell Gl.-N. Side	29-34	(+
" 13/86	–	98-108	Peninsula Zone	35-37	ominco
" 14/86	17-19	109-118	Mitchell Gl.-S. Side	38-44	or ?
" 15/86	20	119-124	Hanging Gl + Snowfield Hole S-85-131	44-49	
" 16/86	21-22	125-132	Kerr Property, BC	49-51	rocks
" 16/86	–	133-136	West Zone, Brucejack	51	nentar

- system is probably a subvolcanic hydroth. syst. related to Texas Creek Granodiorite & Premier porphyry
- conceivably with ✱ syn volcanic exhalative systems above (Big Missouri ?, ?)



- most rocks in area including altered & mineralized rocks have been deformed with a weak foliation (incl. weakly dipping - with stretching lineations)
- some pencil cleavage rocks & sericitic rocks have better developed schistosity
- geometry of ore zones Premier Porphyry & other rock units is a puzzle & requires more work
- Argillaceous maroon zones in andesites could be oxidized (± weathered) flow tops
- they tend to be incompetent & zones of high strain
- lack of bedding is major problem
- S (or py) anomaly around ore

~50m lower
some uniform
porph - but lapilli
tuff (somewhat friable)
~30m lower possible
30cm thick maroon
xtl - lithic tuff bed
112°/55°NE possible
bedding

Reconnaissance -
Mitchell-Sulphurets Ridge
Cu Zone, Snowfields Au
Zone & Massive Ridge
to North of Brucejack Lake
- used company declination
of 025° but probably 4° off
Sunny Sat. Aug. 9/86
- 1st part @ Norm Tribe
(pilot + Paul Smith)
& Ken Hicks 1982 geology
graduate from UBC

- flying tour below
Hanging Glacier, Sulphurets
Au Zone & stopped at

top of ridge (topographic
high point - relatively flat
- old drill site) at Montgomery
copper showing
OR6-1 - collected 3
large samples ~20-30m
apart ~EW near top of
ridge & scattered pieces
of old EX. cone-syenite porph.
(Granduc vintage)
KQ-86-44 A, B, C, & D (core)
- rock is crudely
& difficult to identify
with many chloritic
surfaces - probably
alt., sheared, fractured &
metamorphosed Qz. Syenite
porph. - good cp & malach.
along fractures (possibly
~0.5+% av. Cu in area)
- samples are reasonable
representative of area (one
of best Cu zone in district)
- could be a branch
shear zone off main
structure

- then flew to Snowfield Au zone & walked ~ 3/4 mile N downhill
- entire Au zone on "bench" - uniform 0.08? oz/t Au in in very altered sericitic qz-py schist @ a few quartz stringers - quartz stringers increase downhill into large deformed intense quartz stockwork in py serc. schist (~20 to > 80% quartz veinlets in main stockwork
- if Mo in area it is not obvious - parts of zone will be difficult to sample
- typical of high silica rock of porph. Mo deposits
- looked at lower malachite stain areas; syen. porph. & granite

& then spent considerable time 14
examing possible flat shear zone to E of Iron Cap - * This late shear zone is probably main shear zone above Granite area & truncates the Brucejack Fault - graphitic seds between massive andesites.

Brucejack N. Peak (ridge)
~40m vert. below ridge top
KQ-86-45 [ORG-2]
- mas. med. green plag. phyric andesite ~ 1-2% dark lapilli (rounded) clasts

KQ-86-46 ~ -150-200m vert. below 45
- similar pl (hb) and. porph.

KQ-86-47 – ~100-150m vertically below 46 – same uniform plag. porph. ⓤ Some (~3-5%) dark plag. phyric clasts – photos

KQ-86-48 – ~150+m below 47
– similar plag. porph.
– some plag-hb porph. in area
– some py in narrow ~NS steep silicified zone in area
– ~50m lower 098°/37°S
v. crude orientation of doubtful upright pillows in same and. porph.

– ~50m lower same uniform porphyry but friable lapilli tuff – ~30m lower, possible 30cm thick maroon XTL-lithic tuff bed 112°/55°NE possible bedding

KQ-86-49 – ~ – another 20-30m
– mostly sl. maroon grey relatively mas. plag. phyric andesitic breccia – some blocks up to 20-20cm in diameter – local minor qz vein/network & cross-cutting breccia 145°/48°NE possible bedding in maroon-grey XTL tuffs

– down sl. some f.g. and. mas. units

~200m lower
KQ-86-50 – same plag. phyric mas. and ⓒ in 1% dark lapilli tuffs

KQ-86-51 – ~300m lower ~300m above

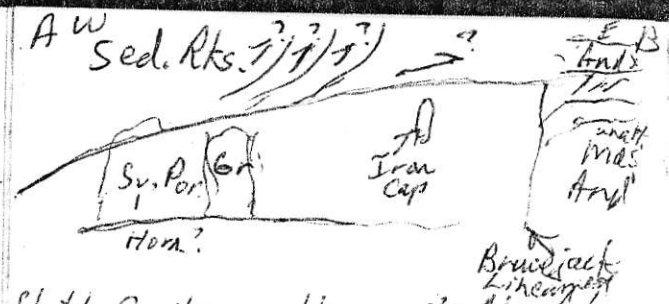
stream - some plag. phyric mas. sl. maroon - grey and. sl. fol.
- just above here good breccia @ blocks to 1m dia.
- foliation could be related to fault 158°/85° NE
poor bedding in foliated maroon xtl., lithic & lapilli tuffs
- 010°/45° NW possible bedding in maroon xtl. tuffs ~30m lower

KO-86-52
~50m lower in str. intensely alt. qz-serc. pyrite schist
152 148°/90° on schistosity which could // a fault trending Brucejack L.

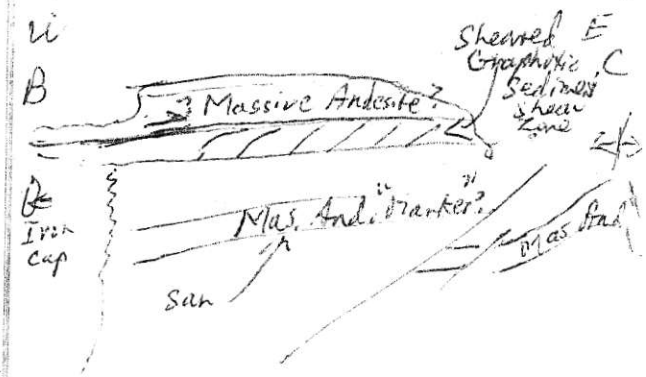
CR6-3 ~250m downstr. on delta - knob of o/c @ trench
- leached rusty o/c weath. qz-serc. py schist cut by white qz veins (~10%?)
KO-86-53 - weath

past end of lake in Trench #14 in Peninsula Zone
v. siliceous qz-serc. schist @ py dist. - pos. some sp streaks in o/c
KO-86-54

54A - some greenish honey jack sp patches surrounded by darker sp.



Sketch Section View to N. Along N side of Mitchell Glacier



Sketch of Possible Low Angle Fault Relationship Along N Side of Mitchell Glacier

North (east) Mitchell Ridge

17

Sunny Sun Aug. 10/86

- with Ken Hicks
- to check flat fault zones

- started east end of ridge

⊙R6-4 - 6400' elev.

- green andesitic breccia - both heterolithic & more or less monolithic
- some augite phyric
- some maroon breccia as well
- prominent fault surface

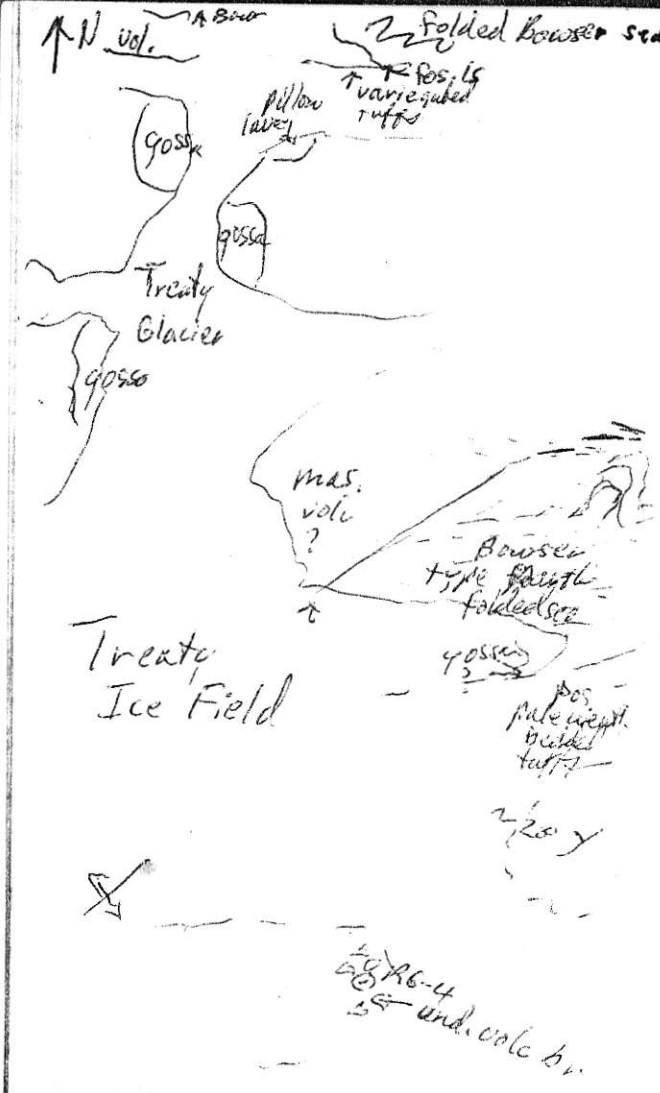
042°/69°S ~~&~~ E

pitch 147° of prominent qz rodding on surface

- photo green heterolithic volc. br. & 2 photos

KO-86 55 → mon.? br. @ hematitic matrix

005°/75°E maroon bedded tuffs [illegible]


↑N vol.
Folded Bowser sds
Pos is variegated tuffs
Pillow lavas
gossan
gossan
Treaty Glacier
gossan
mas. volc ?
Bowser type fault folded sds
Treaty Ice Field
gossan
Pos pale weath. bedded tuffs
~20°
Pos of bedded volc.
~20°
~25°
~20°
~20°
~20

of dacitic air fall & ash-flow tuff.
? - ~20-30m up in unit ~5+m thick welded? ash-flow tuff, [KQ-86-57] typical

[OR6-5]
- next knob (6850') crest of anticline
- west limb near crest 170°/85°W good axial clv.
- 40m S. on face good 015°/20°NW on bedded tuff, 020°/75°NW axial cleavage

- ~300' (100m) past (W) of knob [KQ-86-58] - typical of relatively mas. pale grey dacitic tuff fairly high unit but strat. below 86-57

- ~300m W along ridge in lowest saddle (6500' elev) bedding on same tuffs 025°/35°NW (good) - 025°/45°NW on axial cleavage (fair)

- minor fault in saddle which could be related to the high angle reverse fault 055°/45°SE plunge of rodding (slickensides) 195°/50°
- also 5m sliver of black & grey greywacke limy greywacke & siltst. probably caught up in fault zone

- base of next steep slope above def. seds
- green, buff - weath tuff & breccias - cgl. immature (w volc-clasts) well bedded

025°/20°NW good in small fault block?
- labile immature clasts in cgl.

- 050°/30°NW of fault at base of cliff above on point before went on sed. slope

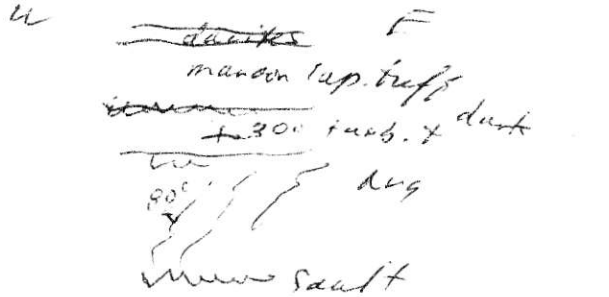
- ~70-80m along slope 090°/25°N good bedding on black cgl. & pencil arg.

- ~50-60m farther slaty clv. in bl. arg. (pencil clv.) 047°/85°SE good
- bedding largely destroyed

- ~50m farther good bedding in arg. sed. 105°/~~35~~ 40°NE

- upper N dip panel ~60m farther steeper contorted panel of sed below on small normal fault @ ~25cm displacement 025°/58°NW
~6400 elev.?

- ~30m farther W 065°/30°NW bedding good in upper panel in graded dark grey & black thin turbidites & argillites 075°/vert. on slaty clv. - not highly deformed but underlying beds more deformed



sketch view of slope

~150 m farther
(6120' elev.)
slaty clv. 095°/vert
bedding 080°/25°N
in bl. slates good
to arg.
- a few fault zone
- photo ash fall tuffs
in block from climb

⊙R6-6 - 6060' saddle
end of main knob
065°/60°NW prominent black
slaty clv. in slates
in draw
- probably steep fault
through draw @
seds. in fault

vol. br.

∃R6-7 - 5780' @
saddle & Brjack lin.
W E Possible drag on Brucejack Lineament
046°/75°NW ok
in good slaty clv.

in arg.
- 30m S fossiliferous
(pelecypods & gastrods)
in cleaved pale
grn ~grey siltst. or arg.
100°/40°NE good
on bedding
KQ-86-59 fossil
collection (poor)
- fos. are conc. in dark
limy siltst. & ls beds 10-30cm
thick - trigonia appear
to be most abundant
- gouge zone in arg. below
- 5600' - 105°/70°S on fol.
in qz-serc. py schist
immediately below
fault contact @ tuffs & br.
& sed. KQ-86-60 are
typical
- rusty schist zone
~20-30m wide
- then ~80m? def.
but relatively unaltered
and breccia
then top of main

rusty zone? 5440'
KQ-86-61 - typical
serc. - py - sil. alt
and.? - some (5-10%)
qs stringers in area
all sil. py rusty alt rk
- ~ 200m farther

⊙ R6-8 - on rusty point
- 5240' - before glacier
- photo of cliff to NE
- all gossan sil.
py rock
KQ-86-62

~ 150m farther & 150m before
main stream from glacier
4900' KQ-86-63
same siliceous py rk
2 spec. 10m apart

~150m farther
- 4700' @ str KQ-86-64
same py sil. rk
~5+% py (pervasive

64A - ~ 20-30m
W of str. on bench
in area with
patchy malachite
on fractures over
20+m - some of
streams from higher also malach.
~ 100m farther W 4700'
KQ-86-65 same py
alt. rk

~ 100m farther W ~4650'?
KQ-86-66 - same
siliceous pyritic altered
rock
~ 100m farther W ~4650'?
KQ-86-67 - same sil.
pyritic altered rock
near end of main o/c
in meadow area

- crossed about 150m
of talus to old drill site
(angled downhill ??) on
knob in talus - malachite



rusty zone? 5440'
KQ-86-61 - typical
serc. - py - sil. alt
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near end of main o/c
in meadow area

- crossed about 150m
of talus to old drill site
(angled downhill ??) on
knob in talus - malachite

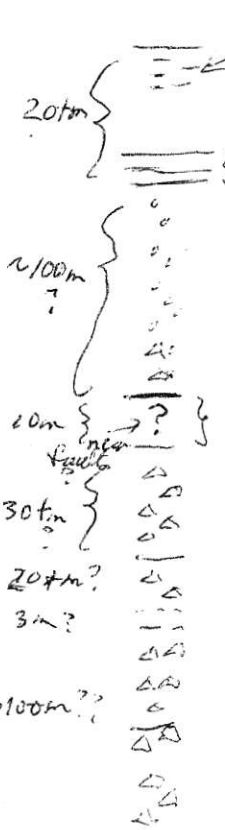
stained blocks in talus (from cliffs above - about glacier level) & unaltered (non-pyritic), drab olive grey sheared andesite breccia blocks - from above fault?

- flew around @ Norm & Fred after pick-up & landed at Kruchkowski's trench took sample of typical sil. pyr alt. rock @ qz veins from dump [KQ-86-68] typical - didn't check area for tetrahed., sp etc.

Summary

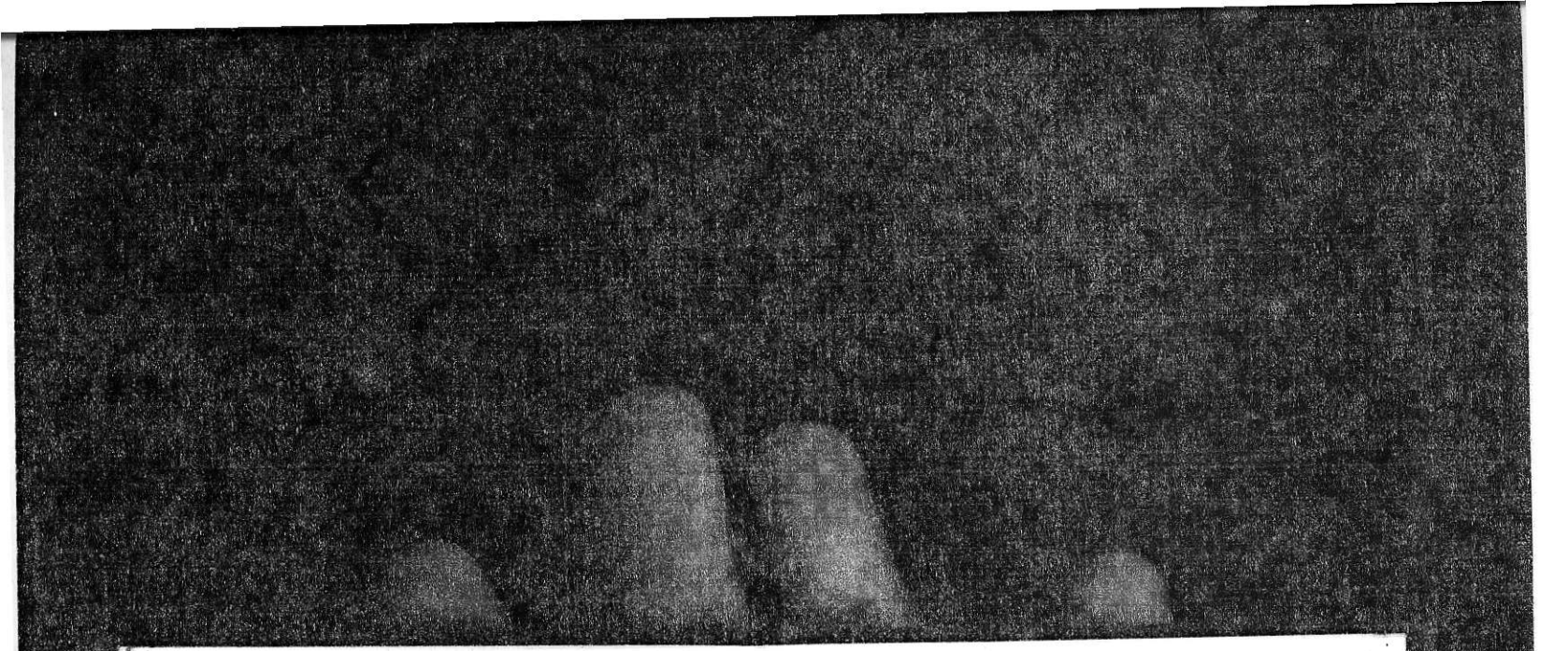
- most of Iron Cap Zone is so highly altered that original rock types are not identifiable - rocks is highly silicified (+ qz veining), pyritic (av. 5-10%?) & locally is very sericitic

- possible stratigraphic column in volcanics



↓ possibly relatively massive andesites lie below

Possible? Stratigraphic Column including marker maroon lapilli tuff & dacitic units (blot two major faults)



Snowfield Zone (Au) &
Adjacent Areas

Cloud & fog & rain Mon. Aug.

⊙ R6-9 - 5940'
- ~60m E on ridge
knob ~6020'
- variable alt. & sheared (foliated) pale to med. green and. Volc. br. (plag. phyric ~small phenos) & some mas. and.?
- KQ-86-69A - farthest E on ridge
py. alt. and. tuff-br.
- some qz-barite gash veins in area
- 69B ~10m W py green and. (br.?) but less alt
- 69C - chl. foliated sl. py and. br. ~10m W
080°/80° NW on foliation (cleavage)

- went to N down ~120m gentle snowfield ridge to W end of large o/c in snow 5550'
KQ-86-70A (chl.) same foliated sheared and br. minor py
70B ~30m NE
more pyritic area
70C - or 70B possible 4m-thick highly alt.? syenite? dyke? but?? dips N ~35-40° & is probably deformed
sh. and br.
~70-80m NE downhill 5500
- same chloritic dark green and. br. & lapilli tuff
- @ erractic rusty py zone KQ-86-71 from py zone

~100m horiz?
- down relatively steep
snow & o/c
variably alt. & sheared
dark grn chl. mas
& fragmental and.
- some py rusty sections
& " qz-cal.-bar.
gash veins

KQ-86-72 - sl bench
5180' ~5t. higher than
toe of glacier
- foliation 045°/65°N
& 20m E 090°/80°N (better)
- i.e. some contortion
near faults.
72A - 50cm thick
irregular fol.
K. Hicks Assay Sample "heavy" py zone 20-50%
Ag-bearing @ some tetrah., argentite?
& tr. galena?
~EW / 30°-50°N dip
(i.e. undulating - folded?)
- although large sample definitely high grade zone!
KQ-86-72B - ~4m E

typical dark grn
chl. fol. py (~3%)
andesite in area
- ~100m due E
claim post E. Ostensoe
1975 Grace claims
post 2W & 3S

- ~50m E of claim post
5180' pt. of o/c in ice
mainly dark grey fol.
essentially monolithic
andesite br. low in
py but KQ-86-73
is more pyritic sericitic
section on edge of o/c

① R6-10 - 5250'
- pt. of rusty rock
E side of glacier
~ ~30m vert. above
base of ice & top of
bench ~2300m past 73
- very rusty py
qz - serc. schist
KQ-86-74

- qz-py-Mo veins in float from uphill
- ~100m E 5240'
KQ-86-75 - same
qz - sericite - py
schist but @
Mo "rich" sample scattered qz - py ± Mo
def. veinlets (~10%) -
- some shear zones
- some ptygmatic veins
75A - py sericitic
schist (without Mo)
typical of area

~50m E 045°/vert.
on highly alt.
& sheared but
recognizable bedded
tuffs & lap-tuff
75B - sample of
qz-py - Mo veinlets
in area "high" grade

KQ-86-76 - 5250' ~50m
E
- selected qz-py-Mo
"higher grade mat."

but scattered in
veins throughout
qz-sericitic-py
schist (altered
frag and in area)

- 76A - still high grading
- but more representative
of Mo throughout
rock
- area over a few
sq. metres would
probably grade low
0.0X % Mo
- still Mo float from above
- ~30m farther E 5230'
~50' above bench
sl. better Mo 0.05% Mo
? 76B - slight
high grading but
more representative
- some Mo in O/C's
- ~100m across
base of snow
KQ-86-77 - dark weath

py alt. andesitic schist but some diss. Mo ± other min. (tetrah.?) & ~3-5% py
- some qz-bar gash veins in area

T-177 Snowfields Gold Zone
- 5340' - ~150m SE (uphill from 77
- KQ-86-78
- some Mo along slips & in small veinlets
- some br @ introduced matrix & some bedded tuffs

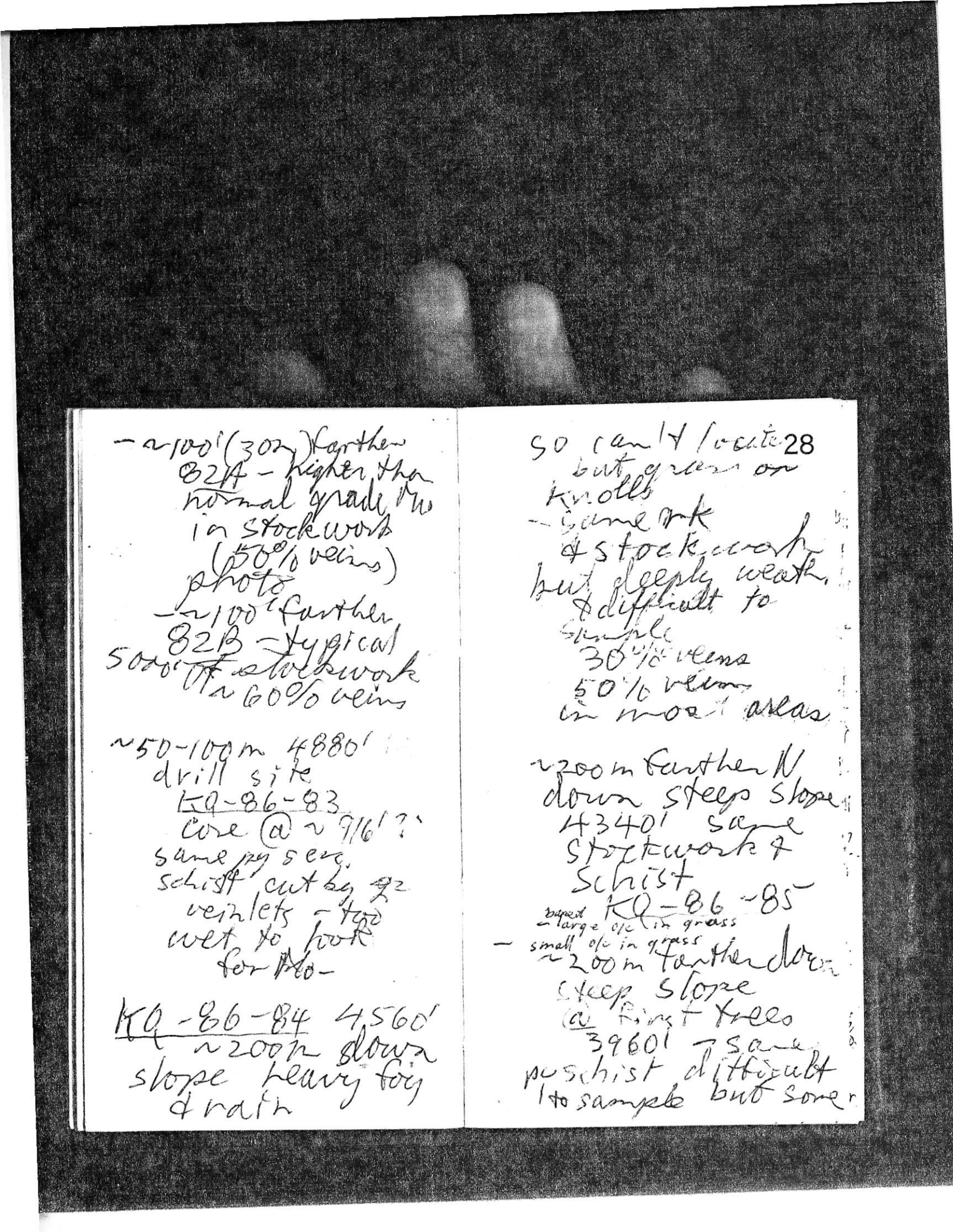
(1) RG11 - 5380' - ~120m farther E
- knob nr crevaces on glacier
- near Trench 358
- same py alt. and. br. @ ~5% diss tr. Mo ± qn?

KQ-86-79

~250m downhill (NNW?) 100m past drill site
KQ-86-80 - 5140'
py qz - sericite schist minor Mo (everywhere)
- ~20-30m before sample site D36 365
- very py (+10%) serc schist @ more qz stringers (~10%)
- ~100' before old Mo core boxes

KQ-86-81 - few pieces of core from ~750' deep in hole but no hole #.
- collar 5060'

KQ-86-82 - 5050'
~100' past drill site in qz stockwork (~30%) py & minor f.g. Mo in veinlets



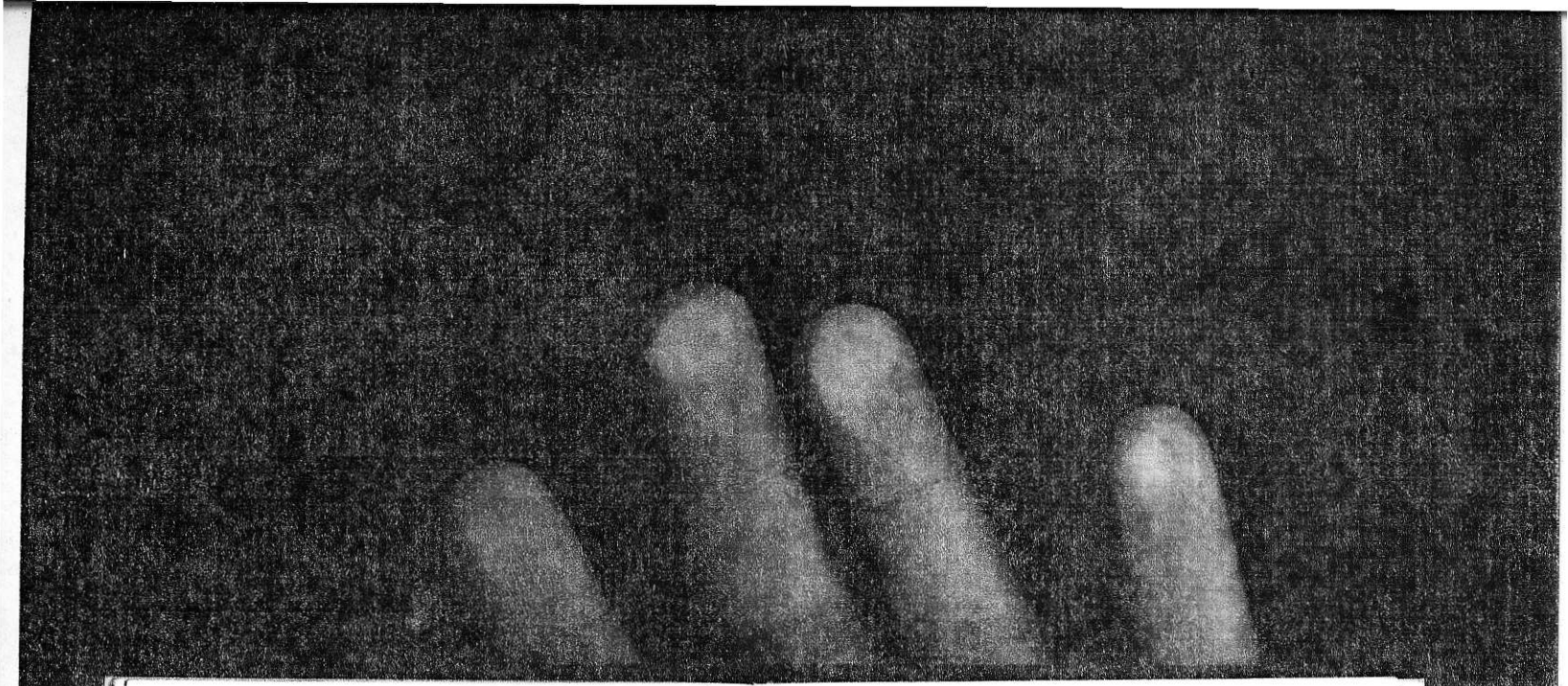
- ~100' (30m) farther
82A - higher than
normal grade Mo
in stockwork
(50% veins)
photo
- ~100' farther
82B - typical
5000' of stockwork
~60% veins

~50-100m 4880'
drill site
KQ-86-83
core @ ~916'?
same py sericite
schist cut by qz
veinlets - too
wet to look
for Mo -

KQ-86-84 4560'
~200m down
slope heavy fog
& rain

so can't locate
but grass on
knolls
- same rk
& stockwork
but deeply weath.
& difficult to
sample
30% veins
50% veins
in most areas

~200m farther N
down steep slope
4340' same
stockwork &
schist
KQ-86-85
- baped large o/c in grass
- small o/c in grass
~200m farther down
steep slope
@ first trees
3960' - same
pu schist difficult
to sample but some r



diss. Mo tep?
KQ-86-86

⊙R6-12
~200 m farther
base of slope
on bench near
old drill? camp
3750' ~ landslide
scarp N-dipping
py ser. schist @ qz+py
& minor Mo veinlets
sl. high grade sample
KQ-86-87

~70 m to top
of moraine

- much of hillside is
unstable because of
morainal debris & N.
dipping sericitic schist
- landslide scarps
include both surficial
material & rock

- on way out - sedimentary
rocks Mitchell-Sulphurets
Ridge to W of old lake site
appear to be highly deformed
with beds at slight angle
to each other
- from Sulphurets Glacier
upstream along Brucejack Cr.
much highly faulted, broken
& folded dark Bowser-type
sedimentary rocks - in
lower reaches especially
they don't appear to be altered

- Summary - scattered barite blades in qz-cal. gash veins
1) Throughout much of area
traversed - intensely altered
& foliated (~3-5:1 aspect ratios)
but recognizable andesite
breccia
2) From 300 to 500 m(t)? W of Snowfield
Zone to base of hill at end of
traverse (⊙R6-12) minor Mo (~0.005 to
0.04%?? Mo) throughout this broad
area - Most of minor Mo is
diss. in qz or in Mo slip/veinlets ∴ may not show up in geoch



Mitchell Glacier
(near toe) - North Side

Cloud, Fog,
Cold wind

Tues Aug. 12/86

① R6-13 - ~10m above ice
on o/c ~100' (30m) W
of small stream
~3100'
poor attitudes on small fault
145°/75° SW, on small
left apparent lateral fault

115°/80° NE small
reverse fault
- faulted & broken
small (aplitic?)
syenite dyklets
cutting dark green
chl py magnetite cp
meta. volc.? but
so highly faulted & alt.
difficult to tell
original rock type

- some suggestion
of andesitic frags.

- ~40m E KQ-86-88A
at station KQ-86-88B
- typical of heterogeneous
o/c's

- 030°/45° SE small
apparent left lateral
fault - faulted 50cm
granite porph. dyke

~100m WNW up along
hillside ~40m? above
ice 3260'
- on to knob @ fault?
granite porph. cuts
zenolith @ gz stockwork
photo & cut by
intermineral aplite
dyklets @ reaction
selevages
- could be original Cu
occurrence
(no locality KQ-86-41A)
- KQ-86-89 (typical)
~ 0.6-0.7% Cu as

cp? – ~100m? E of main stream
- 2 small samples chl. (biot) aplitic dyke;
- KQ-86-89A ~20m SW finer grained maroon granitic dyke @ diss. cp (py) ~0.3-0.4% Cu?
- KQ-86-89B – part of ~20-30m + chl. meta biot hornfelsic block? cut by ~50%? qs veinlets (mainly barren? but good (0.6% Cu?) diss. + veinlets cp (intermin. qs veins & intermin.)
- probably a series of faulted granite porph. dykes cut by ~0.3 – 0.5% Cu (cp) (py) mineralization?

KQ-86-89C (& 2 small 89B pec) aplitic dyke cutting maroon granite

Large pieces (70-100lbs??) of 89 & 89A were taken the check for zircons for radiometric dating

KQ-86-90A ~10m before stream ~3230' typical trachytic qz syenite porph. cut by 2cm thick aplite maroon granite dyklet minor diss. + veinlet cp & py (0.45-0.3% Cu?
~5m before stream 90B typical aplite maroon granite dyke (~80cm thick)
- at stream KQ-86-90C & 90D – good trachytoid
90C syenite cut by maroon feld. along white peg. minor cp & py
90D – trach. sy cut by aplite granite dyklet

~100m W? on steep slope 3180' ~80m? above ice
KQ-86-91 excellent cp 91A (high grade) is same trachytoid syenite
91 (average? grade)

good cp over ~10x10m

cut by maroon aplite granite
& hornfelsic volc. zenoliths
KQ-86-91B - location uncertain but probably ~30-50m SW of 91 (i.e. sl. downhill)
~ entire area seems
to be trachytic qz syenite
@ py dark green biotitic
volc. zenoliths -
cut by late aplite
maroon granite
dykes, dyklets, hairline?
veins & breccia filling
low grade Cu across
slope (~0.1 - 0.3% Cu)
@ sl > py than cp.

① R6-14 - 3080'
- small rock knob
on steep slope
>100m above ice
- ~100m farther
- same hornfelsic volc. zenoliths
KQ-86-92A & in
trachytic syenite
porph. (92B) - cut
by aplitic maroon
granite dykes (photo

92E →

of one 7-8cm wide
& 5cm segmatitic lenses
@ maroon feld. xtls growing
inwards from sides
(photos) & 92C in block
near o/c also mag.-
qz? veins in area
& same few % py &
minor cp - malach.
stains etc.
- also maroon granite
in matrix of breccia
- & float @ 2ndary
wh. K-spar? along fracture
(KQ-86-92D)
- ~30m E of station
KQ-86-92F - typical
trach. qz syenite
porph. cut by qz vein
@ cp & v. f.g. Mo?

- ~15m vert. lower 3000'
possible fault? sep
underlying sheared
vol. 068°/55°NW

KQ-86-92G (~50m W of sta)
just below possible fault surface
f.g. grey rock @ finely diss. py & cp

KQ-89-92H (~30m W)
& 20m² lower 2940'
- same f.g. grey rock @ v. good diss. cp. (+py ± bn tr??)

KQ-89-93A - ~50m farther
- 2880' into very siliceous alt f.g. rock @ ~3-4% diss. py & minor diss. Mo?
- ~10m v. lower similar rock 93B

- ~30m vert. lower 2840' into the good 090°/67°N schistosity
typical qz ser. py schist
KQ-86-93C

- typical of hill side below Snowfield Zone & Qtz stockwork

trach. sy porph br. & maroon grav
cp & py
55°
f.g. sil. qz py (Mo)
67°
py
Qz serc. py schist

- ~50m farther
KQ-86-93D
- 2820'
qz serc. py schist @ debi qz @ Mo? ± other f.g. diss. Minerals

- ~40m farther on top of large rounded o/c 2760' KQ-86-93E
qz serc. chl. py schist
262° 082°/45°NW schistosity good
- sl. greener than serc. & sil. o/c above



- some scattered qz-carb "shield-type greenstone o/c"

~2/3 way down o/c 2700'
schistosity 061°/NW
good
?50-70°?

~50m farther 2650'
KQ-86-94 (end of o/c)
chl. serc. py schist
@ some cp

- cover 100+m to stream
2500'
⊙R6-15 - 2500' toe of
glacier
- 10m sq probable
o/c KQ-86-95
of relative mas. med.
green chl. py alt
meta. and? ~3% py
qz stringer @ py + grey
met. mineral

~100m W along E
side of stream
qz serc. schist @
heavy py - some
folded (contorted)
qz py gn veins
2480' KQ-86-96

96A - ~20m N py cp
mo, gn - ie. many
exotics
K. Hicks
Assay
Sample

96B ~50m W of 96
large o/c in str.
many exotic
py gn cp etc.
- looks like good?
precious metal rock?
K. Hicks
Assay Sample

96C - ~20m NW of 96B
2440' py qz serc. schist
- end of o/c
067°/41°NW good schistosity
(W?)

- more sericitic to E
& few qz veins
@ exotics



⊙R6-16 - ~100-200 m? farther
- 2400'
- @ first bushes at stream
- ~5m low o/c at stream of highly silicified alt py pale grey rock minor cp ± other interesting minerals

KQ-86-97

Summary

1) Excellent day for mineralization
- Cp upper slope in syporph & gn
- Mo in silicified zone under cp & fault
- Minor Mo & Cp in qz-serc. schist & below glacier Cp, Mo, GN & tethr.

2) sy porph & contained andesitic zenoliths are brecciated locally & cut by maroon granite which includes aplitic & pegmatitic dykelets

3) fault ≈ 080°/55°N?? separates intrusive rocks uphill from qz-serc(chl)-py schists @ deformed qz veinlets downhill

North Brucejack Area - West Zone to Peninsula Zone 35

Sun & cloud - pm only Wed Aug. 13/86

- KQ-86-98 - from portal site - ~1m wide qz vein in face @ py, gn, sp, pyrargyrite & some electrum

- Fe-stained o/c's of siliceous serc. py schist near camp
- @ pt of o/c N. side of Cr near bridge med. green feld. phyric syenite or dorite? porph dyke
- KQ-86-99 - ~200m E of portal just before island in stream typical qz-serc.-py schist - rusty weathr.

KQ-86-100 - just before bay before peninsula - chloritic, sericitic schist (and?) @ variable pyrite - local rusty patches

100A - in valley @ end of bay ~10m+ wide highly qz veined zone (30-40%?) @ no prominent gossan (~30m past 100)

100B - S side of bay ~20m past 100A - edge of gossaned peninsula - similar qz stringer zone in schist(?) as 100A but perhaps more py? - ~10m further photo of typical qz stockwork

- KQ-86-101A - Trench 6 of Discovery Zone ~15cm wide qz vein @ py, gn & sp (very atypical - should be higher grade than av.

KQ-86-101B - Trench of discovery zone wh. qz & barite veins @ tetrah.? & pc (higher grade? than av. for trend - some mas. white barite veins in area

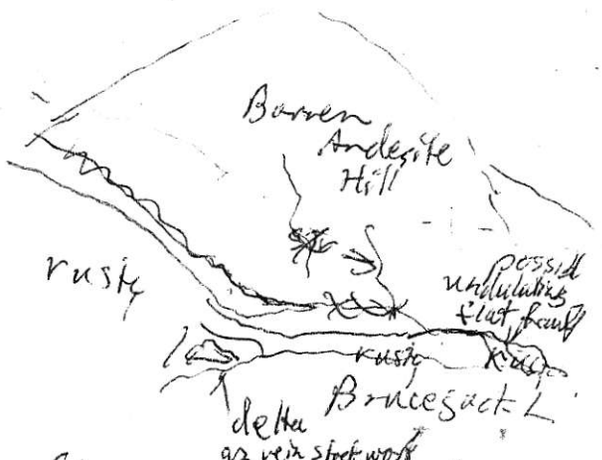


Sketch of Ridges to NE of Brucejack Lake

- ~½ way to Peninsula Zone - still intense

qz veining in py qz ser. schist KQ-86-102 typical @ trench 3 & abundant (10-20%??) mas white barite (barren veins (102A - typical of " veins)

Peninsula Zone SE end Trench #53 very intense quartz veining in py ser schist - KQ-86-103 typical of probable highest grade @ gn, sp, tetrah & py



Sketch of Hill N. of Lake

KQ-86-104 - Trench 2 37
typical of qz ser. py schist & qz veinlets in area - no obvious exotics

KQ-86-105 - Trench 54
reasonably typical of qz ser py schist & qz & bar.? veinlets @ sl. blue tint
105A - higher grade than average @ obvious galena

KQ-86-106 - Trench 18
- high grade gn, sp & tetrah & py
- sp in 1cm diameter clots @ dark veins & sl. greenish honey jack cores

KQ-86-107 - ~100m @ typical gossanettes of qz ser. py schist on flanks of Gossan Hill

KQ-86-108 - relatively mas. altered (meta.?) but not foliated & pyritic plag. (± completely alt. hb?) dior.? nonz. at o/c just east of bridge (for lithochem)

Summary

1) same intensely altered qz-serc.-py schist (chloritic where less alt.?) cut by numerous qz veinlets & barite veinlets in the mineralized zone
2) gn, sp, & tetrah? (very black & vitreous for ") in irregular deformed qz veins (~1 to 30cm) are the main indications of precious metals in the area
3) barite veins (white) look very much like the qz veins

Mitchell Glacier 38
South Side

Sun & cloud Thurs Aug. 14/86
- changed declination to 29°

OR6-17 - 3430
- @ large o/c near base of ice fall & ~ 70-80m NE of stream
- same qz serc.-py schist @ low % qz veins
068°/68°NW good on schistosity

KQ-86-109 - is typical
- can see some elongate andesite breccia fragments

KQ-86-110 - ~50m past str. ~same elev.
- same serc. qz py schist
110A - higher grade % Mo along qz veinlets & smeared along fol. ...

- moly in area appears to be erraetic widely spaced veinlets that probably wouldn't grade

- ~150m farther W along hillside 3380' (~50m vert. above ice)
- near end of the large slumped sericitic py schist o/c KQ-86-111 typical
- same Mo erractically scattered in qz veins but perhaps?? sl less than 110 area
- ~150-200m to str. just W of ⊙R6-12 uphill
- ~100m past stream ~3200 (~20-~~30m~~ above ice) large caving o/c of same qz serc py schist @ minor erractic Mo KQ-86-112A - probably atypical higher than av. Mo grade & higher qz vein content but otherwise shows typical py serc. schist
- at E end of o/c
- 112B - same area local sl. folded (photo) white bull qz veins @ greenish sp & py & cp in py serc. schist
- ~100m ? W ~3200 near W end of slumped o/c of qz py serc. schist KQ-86-112C is typical

⊙R6-18 - 3140' at ice - "nose" of more resistent o/c out into ice - relative? sharp increase in % qz deform stringer in qz serc py schist (KQ-86-112D is typical) - ~15-20%? irregular qz stringers @ py & some Mo
- area perhaps 0.02-0.03% Mo?
- 112E is typical of higher grade qz Mo py veins



- 15-20% qz veinlets only over average ~80-100m long then back into friable qz-serc. py schist but @ ~5-15%?? broken & folded qz py & minor Mo veins

at str. KQ-86-112F ~100m W of 112E - showing folded & contorted qz py Mo veins

- ~100m farther in S embayment in ice

3080' at ice KQ-86-112G qz serc. chl. - py schist typical of area

still some qz Mo vein & some diss cp 100°/48°S poor andesite ? or crude foliation

- ~100m before stream just before large bold rusty o/c

- large o/c being exposed from under ice at major stream 3000' buckle folds in ~30-35% qz veinlets

100°/~35°N att. of one vein @ fold hinges (lineation) 300°/27° plunge

qz py serc (chl) (less chl than previous 100m) schist @ minor diss. tetrah.? (±cp)? KQ-86-113 is typical of 3m area

113A - is typical of a couple of 2cm thick irregular high grade qz py cp tetrah. (Assay #1 sample for Newhawk)

113B - ~10m W typical of qz py veins in area @ minor Mo

113C - ~40m past 113B

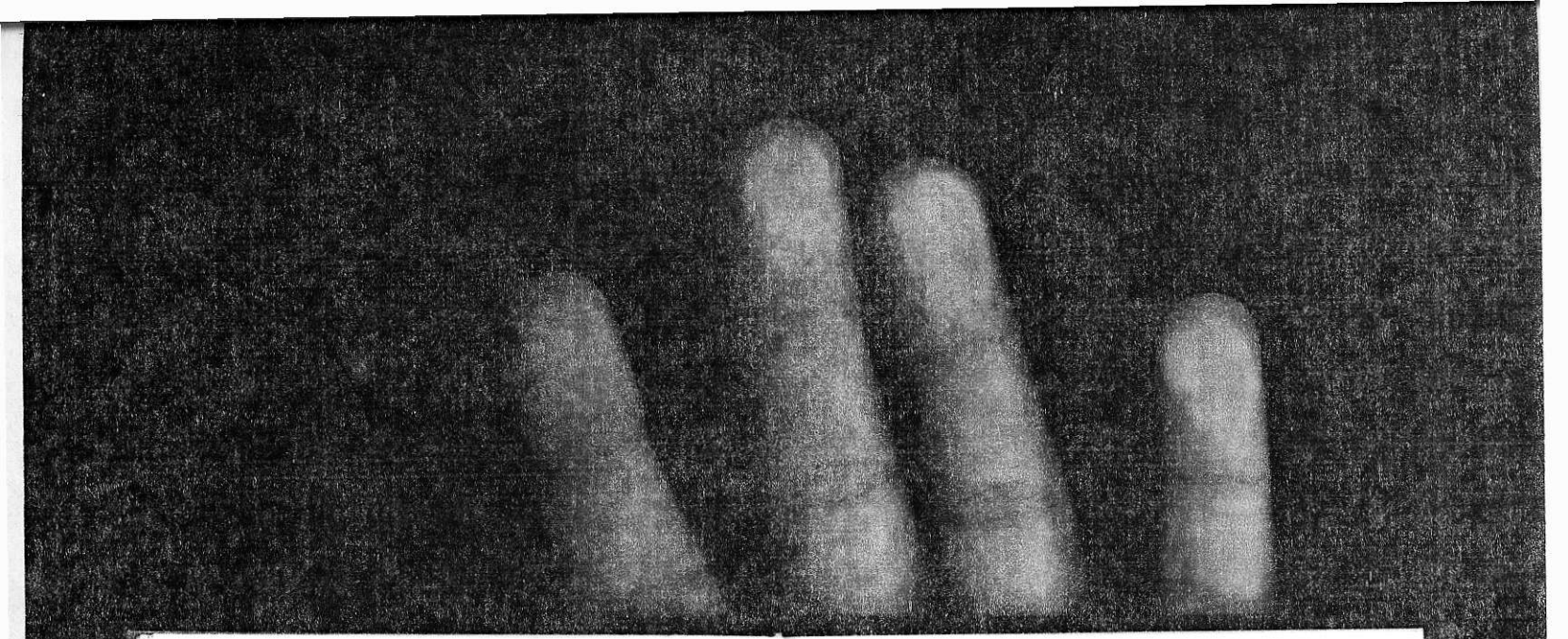
40-50% ~100m area @ abundant qz veins & v. high pyrite



& some Mo & cp
~70-80m farther 1137
more typical qz chl.
serc py (sl, schistose)
alt. and.(?) @ ~5-10% qz
veins - same to ⊙R6-19
@ much high py in
debris on slope

R6-19 - 3080' (pr J32)
- top of lower knob
~20-30m above ice
of the prominent
large rusty o/c
- KQ-86-114 is
typical of the pale green serc.
chl py sl schistose
alt and. cut by ~5-10% o/c
deformed qz veinlets @
py & some (minor) cp tr
but light is too bright to
distinguish py top
- 114A ~50m SW
same rk showing veins
- photo contorted veins

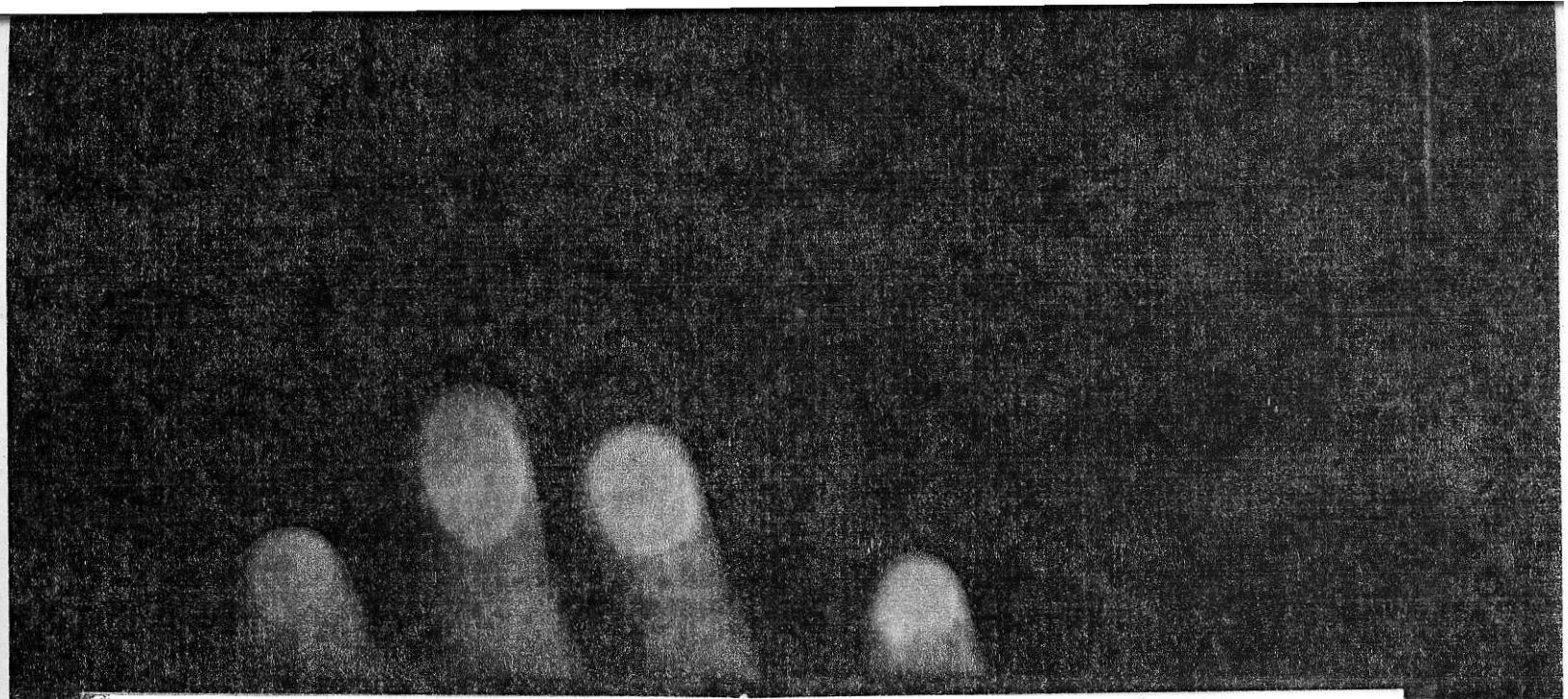
- ~200m farther
down steep slope
near base of large
o/c ~100m S of glacier
2680' - KQ-86-115
typical med. green
chl. serc py schist
(meta. and.?) @ minor
cp - ~5-10% qz
veinlets in o/c
~3-4% py
- ~100m N at base
of large o/c at
edge of ice 2550'
- same rk. type
@ ~3-4% py & minor
cp KQ-86-115A
- ice ends on S side
@ base of large
o/c but extends
~150-200m W on
N side
- ~100m W along edge 2510'
of ice o/c of the chloritic & magnetite
py schist @ ~3-4% diss.
py & ~0.3% cp? KQ-86-115B
~20-30% qz veins



& in same of o/c some sericitic & veined areas excellent diss. cp, py & tetrah.? (black lustrous) KQ-86-115C & small Assay # sample for Nowhawk - area should have excellent potential for precious metals - 115D - ~30m farther N base of same low o/c (only major o/c between toe of glacier & large o/c at ice falls

KQ-86-116 - ~100m farther W - typical med. green serc chl py alt. and? @ ~15-25% qz & carb. veins (Fe-bearing carb - produces shield-like o/cs - ~50m farther 2400' ~50m S of RQ-15 & KQ-86-95 & similar rock @ ~20% veins, ~5% py & minor cp (note elev. difference) - looks like good area for Au?

KQ-86-117 - ~150+m below glacier & ~150+m above KQ-86-96. o/c - 2390' ie almost flat to toe of ice ~15% qz veins in stockwork in relatively mas. chl. alt rk. ~4-5% py & 0.5% cp & minor metallic grey min (tetrah.?) - photo typical qz vein stockwork - directly below Str. @ prominent moraine stair - some sulphide-rich qz veins @ good cp



~150m SW of 117 & ~
150m SE of 96 - ~20m
S of stream KQ-86-117A
same dark green chl
py rk with micro
cp ~15-20% qz
veins
foliation 090°/65°N
good

KQ-86-118 - ~30m SE
of 96B o/c in str
(ie. well off strike)
typical py qz serc schist

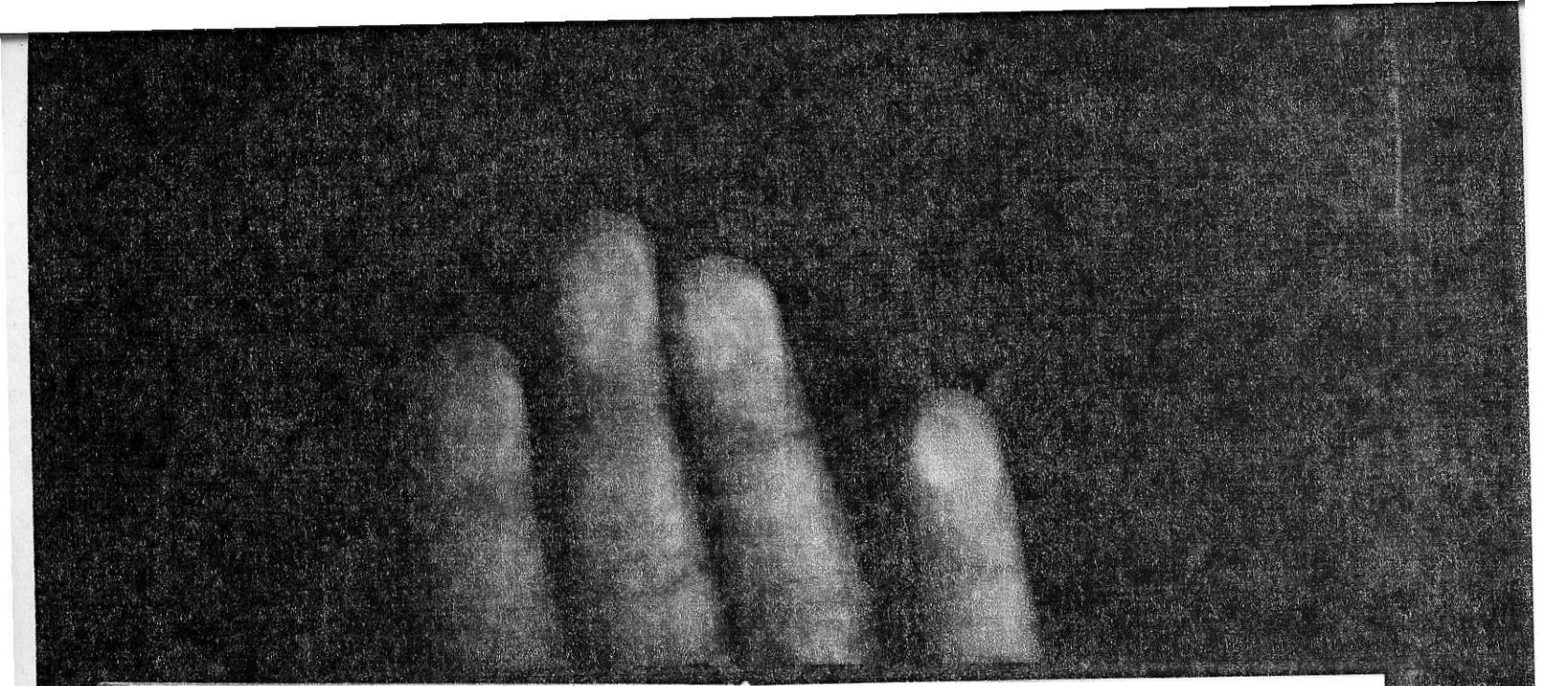
118A - ~20m SW - slight
to the S off strike
- exotic vein
@ sp cp etc.
Assay #3 for
Newhawk from 10cm vein

118B - ~100m SW downst
from 96B on
strike typical
py sericitic

2360'
schist @ contorted extremely
high py veins (2-20cm
thick scattered
throughout o/c (118C -
typical of py
Newhawk
Assay #4

118D - ~20m SW
extremely high grade over 20cm
end of o/c
Newhawk vein 50cm wide high
Assay #5 grade tetra cp sp py gn etc.
092°/~65°N
~1½m farther west ~
Newhawk Assay #6 2m thick vein
KQ-86-118E
Zone of interest
could be 6-7m
wide
- end of dug coxter
is here 4390
- elev camp 4450' 2hr later
Newhawk
Assay #7

KQ-86-118F - from
1m-wide stringer
zone immediately
west of 118E high grade
tetrah. cp py in qz serc schist



Summary

1) In mineralization all day - 1st low grade (0.005 - 0.02%? Mo) Mo min. to W end of Moly Zone @ low grade cp with pyrite in med. green, in part schistose, chlorite (serc.) and.? rocks @ ~10-20% qz veinlets to toe of glacier then Ag (Cu, Zn, Pb, Au?) mineralization @ some good width potential at end of traverse (KQ-86-118 & 96 (S & N of stream) localities)

2) Entire area seems mineralized & part of large zoned system

3) Mo is concentrated in areas @ intense quartz veining in intensely phyllically alt. qz-serc-py schist - low grade Cu is concentrated in medium green variably foliated andesitic(?) volc. rk? @ ~10-25% qz veins @ py & minor cp (also diss py & minor cp) - this chloritic rock conceivably originally could have been biotitic but no evidence for such transformation - potential precious metals veins are part of same system @ variable sericite & chl. alt.

4) syenite porphyry (± cross-cutting granite probably projects over top of traverse line along undulating fault (based mainly on weath. characteristics of (drab black without intense iron staining) intrusive rocks

5) the Mo bearing sericitic schists occur under undulating fault & project down valley N of toe of ice

Hanging Glacier ~~&~~
~~Lower Sulphurets Valley~~
~~North Side of Lake~~

Sunny Fri. Aug 15/86

ORG-20 - 4330'
- ~ 30-50m o/c
- on grassy meddow
- near top of trees
+ W of moraine
- highly fractured drab, medium green relatively massive altered rock (plag-hb porph.?)
- minor diss. py
KQ-86-~~119~~

~100m up & across moraine
- for ~ first 50m in bare o/c area just below bend in stream - same drab pl. - hb porph @ minor py @ gradually incr. alt to SE
KQ-86-120 - 4460
nr stream intense s/c alt. intrusive rk @ ~ 4-5% py (typical)
- not many veins in area
- I went across base of large bluff o/c @ bend in str. sl. higher elev. KQ-86-120A ~50m further - 20m post str, 7-8cm wide vein @ sp
- Ken went across top of o/c ~ 70-80m V. higher

- above str. pos. chlor alt seds in contact @ with ~ 30°N dip

~5m farther 10cm vert vein in crevasse @ py & grey met. mineral.
KQ-86-120B
& Newhawk Assay #8

then ~3-4m wide alt py pl-hb porph dyke ~NS/~60°W?

- bedding in alt. sil. seds 110°/4°N porn highly fractured py nks

- ~70-80m past (SSE) 120B & sl. lower elev.
KQ-86-120C - typical of py sil. alt seds 100°/38°N good but bedding is contorted & faulted

KQ-86-120D - worked back west under large ~4430'? o/c (overturned anticline) to ~30m E of str.

below small waterfall near KQ-86-120
- barite qz cal veins that pinch & swell ~1 to 20cm wide over ~10m ↑ 4 veins
120°/~85°SE general in
155°/80°SW upper o/c
& 110°/70°N in lower o/c
- py gal sp but no obvious electrum but right type of vein KQ-86-120B
~4430'? one large contorted barite xtls
& Assay #8 (Newhawk) from several veins
KQ-86-120E is typical of pyritic alt green o/c a few metres from veins
- small blasted pits in area at least one in qz bar cal py gn sp vein

- vein swarm continues across o/c ~100m SE KQ-86-121
4290'
qz bar cal py gal sp ruby silver tetrah from 1 of several anastomosing veins ~140°/70°N fair 1-4cm veinlets over ~1m & pos. > widths
Newhawk Assay #10
~15m v. lower on W end @ small str. @ white stain of large o/o

- sl S off strike & ~40m SE KQ-86-121A typical of veins @ ~~barite~~ comb. quartz margins & qz-sp-cal etc. cores (photos) of bar.-cal veins nearby
- ~100m along strike from 121 - KQ-86-121B

veins of similar nature found by Ken @ ruby silver minerals ← K. Hicks Assay Sample
KQ-86-121D - float block in same area @ good gn & electrum & other min.
20cm vein boulder ~100m S downhill
KQ-86-121C - similar 10cm vein @ galena & cp

KQ-86-122 - 4020'
~30m east of stream & 100m " of moraine pyritic alt. pl-hb?
~100m from 121C
~50m SE on contorted seds 148°/50°NE good on bedding in one fault panel
- some 1 to 2m faulted pl-hb porph. dykes cutting seds

py alt. seds & dyke

~200m farther at small str. 3980
KQ-86-123 - typical of py alt. rk
- some Premier type large k-spar porph

~50m farther 10m striking NE
KQ-86-124 3880'
cuts mag py veined alt. rk
- some py in rock but largely barren & post much of sulphide (py) in area - many highly sheared qz-carb-py veins & sheared mafic dykes?
near dyke contact

~30m farther KQ-86-124A
typical of relatively mas. alt. py host rocks in area - also some seds.?
copter arrived - following old RVK traverse path

Snowfield Au Zone
Core

S-85-131 - 499' deep
- reverse scan for general impressions
- Au relatively systematically decreases from ~0.08 Au/t near surface to ~0.02-0.03 at the bottom

499' to ~414':
- medium grey, relatively massive, light to moderately alt. porph. @ ~½%? 0.5 cm white feld. phenos ~5-10%(?) very f.g. diss. & fracture py - some mag. & reasonably abundant qz py mo veins 0.01-0.03 %Mo?? is possible
~1-2% late (post-sulph.) qz-Fe dol. (ankerite?) veins
Some dark chl. which could be after hydrothermal biotite

Specimens
- 485', 460', 450' (typical qz py mo vein), 410' (andesitic lap. tuff ???), (387, 386, 385, & 384' - relatively typical material for lithogeochem study) ~ typical spec.

≈414'?? - ~7' (casing)
highly alt., medium green-grey, slightly foliated, pyritic andesitic volcaniclastic rk.? (tuff-br.??)
perhaps sericite increases above ≈250'
~2-4% late qz-carb veins
- ~5-10% diss. py & "excellent" f.g. diss. & in quartz py stringer moly (~but only ~0.01-0.03% Mo? - similar to below
Spec. 350', 316', 284', 265' (230, 231', 232' & 233' geochem sample @ good 0.03?% Mo (typical))

- definitely more sericitic & foliated above 250' but still alt. @ schistose more chloritic section
~similar sulphide content & veining
~250' - ~180' sericitic
~180' - ~128' chl. (")
~128' - ~103' ser (chl.)
~103 - ~7' chl. (ser.) & v. schistose
Spec. (typical)
200', 160', 140', 110', (101', 100', 99' & 98' geochem sample)
64', 31'
(20', 19', 18', & 17' geochem sample)
↑ high mo

Summary
1) Au grade probably increases @ increase in sericite (qs), is moderate (0.04-0.05) in ser-chl. schist & is lower (0.03-0.04) in lower mas. grn. units & porph
2) low grade Mo throughout - might av. 0.01 to 0.03% Mo?

Kerr Property
(Cassiar - S. of
Sulphurets Gl.)

Cloud, snow Sat. Aug. 16/86
- photos deformed (faulted) seds down Brucejack Creek
Rick Meyers, Scott Casselman,
Terry McIntyre

⊙R6-21 - ~5100'
- Cassiar Camp
- mixed slaty
siltst. & arg & green
fol. pl. - hb porph dykes
(grung. alt. rk)
- N of small lake
⊙R6-22 - grid 100N & 100E 1634 m
Rick's grid centre many o/c's are leached
- ~300? m up ridge
to SSW 1615 m elev
99+15N & 99+65E
KQ-86-125 - typical
gz ser py schist
(w) ~3-4% diss. py.
uphill from "C" Zone
didn't collect any samples
previously because

o/c's are too leached
- some folded 1m post
py & alt dense and dykes

~70-80m farther up
ridge KQ-86-126
same gz ser py
schist & folded
and. dykes
1655 m elev
99+15N 98+50E
on small knob
~100m? before "B"
Zone
126A met pl - hb? sl. fol.
porph. (typical) ~30m
NW

- ~80m? up knob
same gz ser. schist cut
by and. dykes PP - in
127 ~30m before 127A chl. schist
KQ-86-127A97 50N & 97E
1720 m elev
- near N end
of B Zone incr.

qz stringers uphill
till ~15-20% @ 127A
which carry py & cp
127A - immediately E
of trench #13

KQ-86-128 - 1780m
- west side
of E Zone
~10 to 20m S
of high grade
1m trench 85 000 Au ppb

nackly fractured
grungy o/c
- edge of glossared
area 96+35N & 93+90E
KQ-86-128A
~1m west of high
grey trench 15-20cm
thick rel. mas
cp py (qz) vein.

1815m on base of upper
158°/53° SW bluff

on foliation above
slaty black seds
96N 93E
KQ-86-129
oriented sample
to look for deformation
fabric in shear zone?
165°/55° SW on main
fault 3m below
255°/56° lineation
125°/75° SW on
slaty clv. in black
slates below

upper part of trench
#4 "A" Zone
1795m elev
above d.d.h.
97+30N 94+30E
KQ-86-130
diss py + cp "B" Zone
KQ-86-132 bet. trenches 899 "B" Zone
py minor cp qz veins
KQ-86-131 - hb porph 1760m
97+25N 95+55E
- approaching diabase?
Summary D Au is very inconspicuous
but might be related to qz veins & cp

Brucejack West Zone

Rain Evening Aug 16/86

- short traverse to look at "syenite" (pl-hb porph) & West Zone Min.
- walked downstr. to KQ-86-133 A, B (loc. on map)
- typical drab meta (grungy) f.g. relatively equigranular pl.-hb porph. @ minor py
KQ-86-134 A, B - ~200m s uphill - same as 133
Esso map is accurate showing location of EW drusy qz (carb) veins & br. veins @ alt. rate that apparently die-out to W
KQ-86-135 A - typical py qz-veined sil. rk from Trench #85 135 B - "blue rk" higher grade stringers over ~1m on S end of trench
KQ-86-136 - bluish rk from Trench #93 (higher than aw gr)