Sulphurets 803618

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Canada

Ministère de l'Énergie, des Mines et des Ressources
Commission géologique du Canada

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C.G.C. 146-S

Date	Sta. No.	Spec. No.	Location	Pages
August 18/93	-	KL-88 BB-94	Konkin Nunatak, Treaty Glacier	1-3
19	44	95	North of Mitchell Creek, B.C.	3-5 (10m)
20	-	96-97	Hanging Gl. - Sulphurets Gl.	6-8
21	-	-	Galena Hill Hole #93-422	8-9 Tikes
24	-	-	Snowfield & Josephine Holes #423	10-12 adding
25	45	98-101	Slope S of Mitchell Zone	13-18 m
26	46	102-104	Slope S of West Arm Suph. Gl.	19-22 beds
27	-	105	Sulphurets & Mitchell Faults	23-24
28	-	-	Toe of Jack Glacier	25-26 bowl
29	-	106	Red Mountain, B.C.	26-27

~

vel.

dding

2m)

Konkin Nunatak
Treaty Glacier 1

Wed. Aug. 18/93 Sunny

~30m N above OR3-31 (1810m)
208°/78° v. good on
well-bedded turbidites
upsidedown (score + grading)
– f.g. s.s. & mudst. some 1-15m
wacke & arenaceous cgl beds
– beds @ sed. rip-ups

~30m N (1848m) 223°/68° v. good (inverted)

~10m N (1851m) 320°/75° good on fault contact of
underlying inverted turbidites @ vel.
mas. f-g. to c.g. med. grey arenite 026°/84° good bedding
in overlying arenites
some limy concretion
– good but subtle bedding (1-2m)
only visible on good o/c
~80m N up ridge
1918m – feld.-clast m.g.
arenite KQ-93-93A

~30m (1962m) W part of o/c below S
high knob 020°/83° poor
on bedding

high knob
~35m E 234°/84° fair (at
distance) on bedding

~200m N across upper snow (1982m)
(saddle) - rubble o/c's
grungy seds.

- ~20m N ridge rubble (traceable
KQ-93-#1 Fossil Localit
Wetra-type pelecypods
& belemnites?

- ~25m N 138°/72° fair on poor
(1982m) buff-weath. gray bedded S.S. o/c
& 10-20cm interbedded
gray ls.

~35m NW up pebble ridge crest
(2025m) 325°/54° (& nightbe s/c
poor on
in gray ls beds
in buff-weath.
grey S.S.

~15m NW 172°/81° fair on same ls. bed
~30m N - ~30m thick unit of drab pale-weath
grn-grey pl. phyric and br.
on top of knob 1240m KQ-93-93B
to N sh. crumbly vol. br. & sed.
- crumbly rocks

- ~35m N across flat top
dark collar (trending
- 175°/82° fair to poor on sl. sh
immature c.g.s.s. & sed. br. in
and. br. unit
- ~25m NE down slope below snow cornice
2 more drill sites & ~ 2m? zone
93 pg grn cp in seds to and br.
KQ-93-93C difficult to tell
orientation of zone ~ conformable?
then to dark carb. sed. or in sh.?
~20m N & then buff-weath gray S.S.
(2020m) 320°/88° poor on bedded
#F-05.1 S.S. mudst. & ls interbedded
A'loc. S.S. mudst & ls same as to S
for ~250m to north along
ridge adjacent snow rubble
of buff-weath. flaggy S.S. (+minor other
rocks) but no good o/c
1870m 297°/64° fair
KQ-93-93D on sl. sh.
gray pebbly S.S. arenaceous
c.g. S.S. cgl & mac. mudst.
- many sed. clasts (e.g. mar. ")
in pebble beds
- gossan start ~40m vert. below
& trend ~NS? along cliffs

- for ~200m N along ridge
rubble - bench 1770m
10m E of snow directly above

Konkin Zone
KQ-93-94A — buff carb. ser. alt. rk. (sed.?)

~150m? N along edge of snow (Matt's bear problem)
(1750m) 178°/83° poor on poss. bedding
in pl. phyric dark maroon vol. br
(some frags. to 20cm KQ-93-94B
— for ~200m ENE down ridge crudy sh. grn-grey & then mar. br. & tuff
(poor gc)
(1622m) 198°/70° poor on poor clv. in mar. br.

~100m ENE same sh. mar + grn-grey crudy vol. br. @ more alt. patches downhill
(1580m) dd.h. collar trending E

~100m E ddh (1513m) KQ-93-94C
py alt. and. br ser. ~4-5% diss. py
5tm ~NS Zone

possibly ~030°/steep fault @ ~10m 3 wide alt. zone along it
15cm relic mus. py boulder in moraine — talus?

~40m E to snow at edge of ice (1442m)
145°/45° good on many 1 to 20cm py br. veins cutting pale sil. ser alt. rk
KQ-93-94D

— camp — 1385m

Summary

1) First part of traverse is probably inverted Stuhini Group turbidites in fault contact with grey arenite suite. Jack fm is near top of ridge & down north flank & is probably overlain upright by andesitic grn-grey & maroon breccias
2) KQ-93-94D locality adjacent ice is intensely alt. & mineralized w pyrite

North of Mitchell Creek

Thurs Aug 19/93 Sunny
- with Rick

⊙R7-43 - 2064 m
- top of high ridge N. of Mitchell Cl.

- 330°/83° v. good on reverse grading
- 50cm debris covers 10cm sand bed
- some S 10m Sed. bx - cgl unit

- ~250-300m W down ridge maint. debris bryo
(w more interbedded S.S. W
- 1640m - start of saddle (gradational contact)
- m. & c.g. grey S.S
~30m W. 180°/70° down in sed. lense or block
~30m W in saddle 308°/87°
(1925m) (possible topos N?) bl. mudst. & f.g. wacke

(1844m) ~70m S down snow-filled draw 200°/54° good on wacke beds upsidedown (photo inverted grading) 4
~25m S small fault in rock face 358°/54° W good (178°/54°)
~50m S 1750m W side of valley 220°/54° (upsidedown grading) good on bl. mudst & f.g. wacke
- good grading upsidedown 10m S
- ~70-80m down o/c & talus & ~30-40m of med. green grange pl.-bio porph at top of waterfalls (dyke) grange & sh. med. bn-grey arenaceous rock in lower cliffs
(1530m) KQ-88-563 on bench (~50m to bench)

~400m S downhill & ~300m W (1242m) small pale rusty o/c W side of alpine spruce KQ-93-954 - pale f.g. minor qz v.n.s
py (4-6%) sil. alt. rk

1194m – small o/c steep grass slope bet. trees
– pale alt. monz.? @ minor cp mag & py qz vns in o/c & 2 in LC samples
KQ-93-95B

– ~70-80m W (1200m) stand of large o/c (line of small cliffs west)
med. grn. alt. py (2-3%) pl-hb porph.?? KQ-93-95C
minor cp – mal. coatings on many fractures
~10% qz veins in o/c

~250m S down draw (1162m) top of moraine – no o/c

– went ~60+m? W to dry str. valley & N up valley ~70m to base of o/c (1108m)
KQ-93-95D
med. to pale grey hydrothermal?? br. @ ~3-4% py minor mag-1 & tr. cp – poss. 1 minor iol. cbs.

– monz. float in valley but no mal. stains
– ~5-10% qz veins in o/c

– ~35m NW through alder & raspberries (1120m) f.g. mag.-bearing monz.?
– no sulphides

– back 35m E to str. valley ~20m N 95D
py (4-5% disc.) med. grn-grey prophyritic alt. (chl. epid) pl-hb porph. ~5% qz vn in o/c

– ~200m S down str. (1010m) top of o/c in str. in moraine
KQ-93-95E
bar. mag.-bearing monz. (?)
~100m S down this stream & one to W to sta
– same mag-bearing porph monz.? to cp

⊙KR3-44 - 950m
- rock knob in moraine
same porph. monz.?
or syenite

KQ-93-95E ~15m NW of
LC fair silicate lithodem. @ 1 mineral tr cp
erratic qz-py veins
~30m S of Sta (903m)

KQ-93-95G pale grey hard sil. altd. rk
(monz.?) steep slope - alders, o/c, moraine
(w ~2-3% v.f.g py - probably still above fault?
- cover ~150m to Sta.
Mitchell Cr. (815m).

- Camp 1405m

Summary
1) No evidence of Jack Fm on ridge. For ~300-400m E-facing debris flow br-cgl units (w increasing interbedded sandstone. To the W bl. carb. mudst. & distal ~~fg~~. wacke & a few c.g. wacke beds inverted & also facing E (i.e. could be underlying s.s. cgl-brecc.?)
2) Little copper in mag-bearing monz. or stock on hill

Hanging Glacier to Sulphurets Glacier

Fri. Aug. 20/93 . Sunny cloud

- 1350m - bench at pond near electrum locality ~40m west of ice

80°/45° & 130°/33°
good or conjugate filled gash qz veins cutting fre. porph. - other gash veins less regular - one (w cp speck
- also some qz-cal. gash veins in dyke
- went ~70m up steep slope along ice ~no sign of interesting gash veins

- relocated KQ-89-118C electrum - ruby locality & Ken Hicks & KVK ruby localities -

Trench H91-1 – sample #4 goes across ruby locality several other trench lines to E cut the gash vein system but no trenches as far east as Ken Hick's ruby locality

– ~17m NW of RVK 1986 (KQ-86-121?) ruby locality across creek – ~1cm ~NS gash calcite vein @ ruby Ag patches

– ~7-8m W another small calcite gash vein @ ruby Ag – along strike to W more qz-cal barite veins @ minor gn & sp

(1387m) – ~50m N Y 30m E of stream Chuck Kowalls sulphide locality 1860S Newhart sample site

KQ-93-96A

buff weath. qz-carb stringer zone @ sp py gn? & tetrah. trending ~125°/steep ~7m wide

– sulphides appear to be erratic but nice looking zone 7

~150m S ~20m W of stn 25m E of base of moraine (1297m)

20+m o/c v. rusty-weath. pale sil.? (hard) py (7-10%) alt. rk. (hornfels?)

KQ-93-96B

– for ~250m S cover down moraine into trees (1200m) – head of dry str. valley o/c hill east

med. grn-grey chl. py (3-4%) alt. rk. @ grn. chl. clots (hornfelsic seds. ??)

KQ-93-96C

– for ~25m S med.-grn-grey sl. py pl-hb porph. then ~5m o/c of pale grey sil. v. py (7-10%) alt. rk. (1176m)

– ~25m cover to top of narrow canyon ~1% qz vns in o/c (1170m) 340°/66° fair ore seq bedded pale grn-grey py (6-7%) hornfels

sed. hom for ~25m &
then py (1-10% diss & fracture)
grn-grey alt. pl-hb porph
for 30m down canyon (1145m)
KQ-93-96D
some 1-4cm py veins in area
133°/40° fair on
on probable pl-hb
dykes in str. valley

— ~30m S ~1100m
FW rock is Sulph.
Porph. @ ~½-1%
diss. py

~ ~30m S (1082m)
needs to be sampled KQ-93-97A — typical
of Sulphenets Porph.
(LC fair - for silicate chem.)
~½+% diss py (alt. contact phase?)
- much better porphyritic
texture down stream
- ~30m S (1067m) base of slide on
W side

~30m S cover & then pale
? py (5-6%) highly alt. pl-hb porph
(1040m) (inclusion?) (on heavy boulders)
~15m SW (1030m) in trees near
top of good Sulph. Porph
KQ-93-97B (4% diss. py)

- ~40m SW base o/c (1012m)
v. rusty py (+cp?) pale to
med. grey alt. rk in
contact @ Sulph. Porph.
(Newhook sample tags
in area) — some qz veins
in o/c KQ-93-97C
- mag.
190°/76° py veins to 10-20cm
keeper spec. lost KQ-93-97D ~10m W of 97C
grungy py + mag. trend ~003°
— ~30m S 20 X 30m barren
(975m) diabase to diabasic dior. o/c
~25m E v. py hornfels

~25m S 290°/65° poor on
(946m) relic bedding in
v. hard pale green-white hornfels
— low sulphide

camp 1395m

Galena Hill
Drill Core

Sat. August 21/93 Cloudy, Showers

DDH # 93-422

208.8m deep
- most of hole is same py (5-10%) ser. schist @ ~5-15% qz veinlets - locally @ a higher % of veinlets
- some are polygonally deformed
~183 to 201m mostly unsplit dark more chl. core but still @ ~5-10% qz veinlets

16.6 - 20.5 ~80% veins some @ good tetrah.? - should be good grade section (some veinlets // core)

24.2 - 26.1m
~60% veins @ minor tetrah?

31.7 - 32.4m
- ~50% veinlets @ minor tetrah
47.4 - 47.6 ~50% veinlets @ good sp gn + tetrah.
57 - 59.8m
~50% veinlets (tr. gn)

65.1 - 65.2
~70% veinlets @ good tetrah.

78.5 - 78.7 - ~60% qz vn

80.3 - 82.4
- ~60% qz vn
tr sp gn + tetrah.

88.3 - ~89m
- ~60% qz vn
minor tetra. sp + gn

115.0 - 115.1 vein heavily min. @ sp gn tetrah. + minor cp

120.6 - 120.7 vein @ moderate sp gn tetrah.

129.9 - 130.1
~50% qz @ sp gn tetrah

157.0 - 157.6m
~ 40% qz veins @
minor sp & cp

160.6 - ~167m
~50-60% qz veins
@ modest scattered
sp gn & tetrah.
minor other mine veinlets

173 - 173.9
- ~30% qz vns.
minor min. veinlets

182.7 - 183 m
- ~30% qz vns

201.1 - 201.4
~70% qz @ extensive low Fe sp.

Summary - hole is uniform in rock type & scattered veins (w py, sp, gn, tetrah, cp) - stockwork zone

Specimens
8.0m, 17.4, 19.3m, 31.8, 46.6m, 115.5, 60m, 74.6m, 88, 107, 127.2, 140m, 176.9m, 194.4, 201.1, 208.7m

Snowfield and Josephine Drill Core

Tues August 24/93 fog, drizzle cold

Snowfield ddh #93-423
346m deep

- most of hole is fairly similar @ upper part being more sericitic @ fewer qz veinlets than lower part that is more dense & possibly (??) siliceous (?)

0 -
pale to med. grey
relatively massive ser.
py (4-6% diss & fracture)
altered rock

minor (<½% ?) minute qz-
py-mo veinlets

~82m – ~77m
med. grn – grey mod chl (ser) py alt section
- minor qz py mo & cal. veinlets

~77 – ~83m
more ser. (chl) section

~83 – ~127m
more chl med grey-grn (ser) py section
(w) more abundant calcite veinlets (i.e. considerably higher Ca & CO_2 content?)
- still minor scattered qz py mo veinlets

~127 – ~161m
mixed chl & ser section (w) calcite vns

~161m – ~176m
pale grey v. much more ser section (much less chl) & ~5-10% qz stringers (w) py spared mo & tenn?
- Some ptygmatic buckled veinlets & 1 drusy vein (w) qz tenn & py xtls

~176m – ~236m
mixed pale grey to sl. darker grn-grey ser. & sl. more chl? section ~1-3% qz veins

185.2 — 189m
amyg. chl. mafic dyke (2-3% py-alt)

~189 – ~198m
pale grey ser v. sil. qz vn section ~10-20% qz vns

≈ @ siliceous halos
(low mo, ~ 8-10% py) some
py veins (3cm)(192m)

≈ 236m
≈ 236
distinct change in rk.
type to denser sl. darker
(pale to med.) green-grey
intensely alt. rk (might
be sed hornfels ??)
~7-10% qz (py) veinlets
- some @ tr of cp
- some cal veinlets @ some specks cp
- much less mo ?? -no-
probably about same
- scattered qz py mo & mo
paint veinlets

: Some more sep. sections

Specimens

- 15m, 32, 50.7, 80.5m
(and. br.), 98, 116.5m,
125.6m (and. br.), 138.5, 169
(qz tenn, py xtls in drusy
vein), 174.5m, 185.8
(amyg. mafic dike), 189.5,
209.6, 224.5 (drusy qz
vein @ mo & tenn),
236m, 239.3, 250.1, 267.3,
277.2m, 295m, 305m,
316.7m, 333.7m, 338.6, &
342.7m

Josephine ddh #93-424

154.3m deep
(some oxidation to bottom of hole)

0 – 3.0m overburden

3.0 – 6.9m – heavily oxidized fragments

6.9 –
pale grey ser. py (2-5%??) highly altered and. – andesite bx.
(< ½% veinlets ?)
– v. minor qz py mo veinlets
70.7 – 71m highly alt. Pre-Porph. dyke?
73.1 – 77m " " " " ? Pr. Sen
~77 – ~99m minor relic alkali feld. xs
120 – 121.4 dark spots?
~129.5 – 133.4 ~60% pink feld. (or carb.??) vein network
~147 – 154.3 (bottom) ~20% scattered pink vn material in pale v. ser. py altered ort.
– no obvious tetrahedrite vein

Specimens
11.2m, 36.9m, 61m
68m (and. bx), 73m, 83m,
95.3m, 109, 120.8 (dark spots), 128 (local dark spots), 132.7 (pink vein network), 140m, 147m (pink material)

– still minor Mo in area & ser. py alt. andesite but negl. tetrahedrite veins & or stockwork

Slope S of Mitchell Zone

Wed. Aug. 25/93

Sunny & clouds (v. improved barometer)

OR3-45 — 1755m
— top pt. of o/c in ice
270°/82° fair on fol. in dark grn and. br.

~25m of ser. schist 266°/58° good on sheared bedding

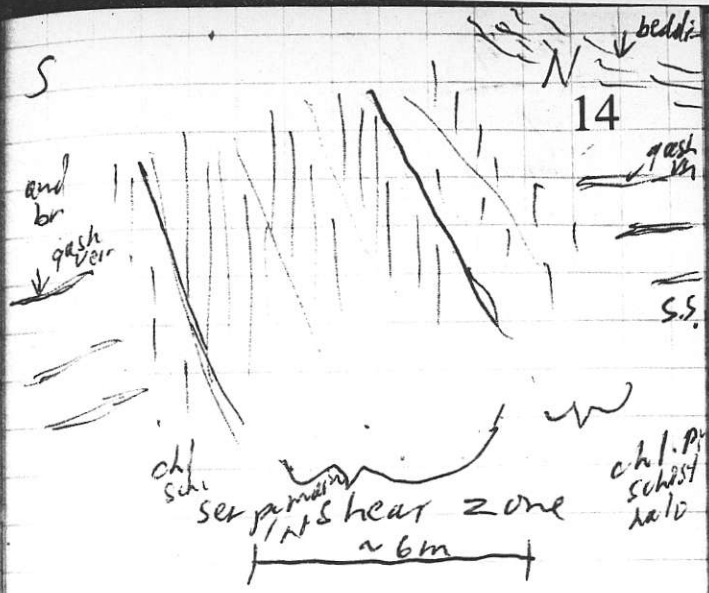
341°/58° good on lineated (slicken lines?) limy bedding surface
— patchy ser-py rusty alteration zone in and.
— area sampled previously

060°/17° fair on tension gash — fibre veins in and. ~12m S ser py schist

255°/80° ~ att. of bounding surface of ser py schist (hypothetical)

255°/83° fair on schistosity (curving) in ser py schist zone (intense for ~ 6-7m width) sh. ~ 10-20m wide

010°/12° fair on fibre gash veins N side of shear



1730m 220°/36° good on bedding in pebble arenite edge of snow ~20m N of sh.
— bedding steepens towards sh on N. side
276°/83° good on 10cm spaced clv in incomp. bed

1735m ~20-25m N of shear

KQ-93-98A

- typical c.g. pale to med grey S.S. (w) bl. ang. clasts
  - upright? - crude scour and in arenaceous pebbly (debris flow)

~80m W (1740m) (in snow) 276°/53° good on bedding

~50m WNW (1720m) (edge of snow) 293°/60° good on bedded pebbly arkoses some py-ser streaks in S.S

- rapid incr. in alt. N/E to ser. py alt. rt. ~60-70m NW (edge of snow) (1690m) cannot recognize sed. texture vague relic bedding

- ~70m N (~30m S of break slope) (1645m) 010°/65° fair on 50cm wide layered py (qz) vein

KQ-93-98B - vein plus ser py (schist) wallrock & 5cm py qz (qwer thin mo?) vein ~15m SW
  - ~2m alt. veined
  - poss. ? relic sed texture locally

- ~30m N (1623m) base of snow same py alt. ser (chl) rocks but can see relic and br.

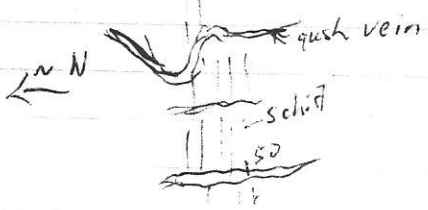
~30m NE across "flat" o/c (1608m) 132°/56° good on pale rusty qz vein (~50-70m) stock work zone cutting through py chl. grn. and br 297°/78° fair on schistosity within zone

KQ-93-98C Zone pinches & swells & bifurcates but is ~10m wide some v. pyritic veins minor gn sp tetrah? & grey min

- sample is from ~ 4 parts of the stockwork vein system
- py and bd & lap tuff to U cut by some serp py zones

~40m N /580m - 308/70° fair on v. questionable bedding in py and bx
- ~5% ptc in alt vol. poly & dark clast (chl) and bx cut by sh. along vein

- ~100m NNE ~50m S of orange moraine (1550m) - 293°/82° fair on sch. in ser py sch. zone in chl py schist
023°/50° good on tension gash qz-cal veins (some sigmoidal) cutting ser py schist



- flattened clasts on fol.
for ~70-80m NE towards 56A several small (0.5-2m) sh. qz py vein systems in ser py schist

below - chl. ser py (7-10%) schistose
- bedding is v. difficult to see but probably ? dips N.16

- ~40m S KQ-93-56B 325°/42° poor on subtle sh. bedding and poly lith. br. & dark clast
- then more br. dark clast

~150m NE to base of falls @ KQ-93-56A - 1477m
rel. mas. chl. and br.
- stream is probably in a fault as v. rusty py & ser. E of v. dark green bold o/c's west cut by narrow ~NW trending qz vein ser-py schist zones
- enter Newhart grid

~10m E of str. 243°/80° fair on ser. (py) schist

for ~70-80m E base of o/c above pale py ser intensely alt. moraine
(1470m) 245°/84° on 5-10cm "lines" that might be relic bedding???

KQ-93-98D v. pale ser py int. alt'd (~6-8% diss py) horn. seds???

for ~ 70-90m NE
(1436m) into next str. valley
v. rusty pale gry ser
alt. rk. KQ-93-98E
~ 5-7% diss py & minor
(<1%?) qz veins @
tr tenn & cp?
- ferricrete in str. valley

- ~ 25-30m N in str. (1409m)
same pale grey v. py (7-9%)
intensely alt. rk. KQ93-98F
- possibly ~5% qz stringers
but difficult to tell @
pervasive Fe stains &
coatings
- minor tenn??

- cover down broad stream
for ~ 200-220m
~50m before heather & trees
(1325m) - ~ 5 X 10 o/c
v. rusty sil. ser py (7-8%)
alt. rk. @ ~ 2-3% cp (0.8-1.2)
KQ-93-99A - Newhawk sample site

~ ~ 10m N Newhawk sample 13724
(1317m) 150°/66 fair 17
on 50cm ~~layered~~
qz py tenn? vein
KQ-93-99B

- ~ 100-120m NW (cover) to
KQ-93-57B&C site (1302m)

(1265m) ~ 100m W (cover) to head
on next two canyon
Newhawk sample #19731
hackley fractured pale
grey ser py (4-5% diss.)
mas. alt. rk. @ mod.
cp & mo KQ-93-100A
- minor small (~1cm) qz veins

- for ~ 70-90m down W
(1218m) at bend dry str. same pale
ser py (~3-4%) mas. alt.
rk. @ mod. cp KQ-93-100B
(~1% qz veins?)

- malachite stains on some rk faces in canyon

~30-40m N (1189m) - near mouth of canyon
- KQ-93-100C
- somewhat weathered med. brown - grey buff carb. alt.??
py (3-4%) mas sen?
uniform alt. rock.
@ mod. cp (~0.2-0.4%Cu)
~25m N to moraine (end of heather)

- crossed str ~80m W (1145m) base of falls & canyon ~30-40m above Mitchell Zone sen schist contact
- poss. flat fault W side of stream but no major N fault
- ~30m NW of str. (in upper plate) (1138m)
- med. grey intensely alt. rk. - (some biot alt.??)
KQ-93-101A ~2-3% py minor mag. & ~2-3% cp (~0.8-1%Cu)
- cp in pink veinlets ± span ± anhydrite? (X-ray)

- an excellent "copper" rock (difficult to break open) 18
i.e. tought breaks along fractures
- minor qz veins here ~5% toE?

- ~30m NW base of upper steep face - uppermost slump scarp (active very recently!!) (1133m) KQ-93-101B
- med. grey intensely alt. rk. @ ~1-2% cp (no py seen)
- v. difficult to obtain good specimen
- biotite alt.?
- ~40m W above top of Mitchell Zone?

- ~25m NW to contact @ (1111m) Mitchell Zone 276°/6° on one fault (photo)
- only approx orientation on sample!

KQ-93-101C — crudely oriented sample (5 l.)
~30cm above fault.
(arrow ~070°)
foliated ~// fault & cut by gash (qz-carb) veins
@ scattered cp specks
— ~50m W of str.
~30m N to bench on Mitchell Zone (1095m)
KQ-93-101D py
~70-80% qz veins
— more random orientation than to West — no cp tenn or mo observed
— camp 1387m

Summary

1) OR3-45 vol. are in fault contact along a sev. py shear (i.e. symmineral) X @ pebbly & lime arenaceous sedimentary rocks. Alteration increases rapidly N & W & lower and br. although clearly recognizable are also intensely altered & v. pyritic (5-10%).
2) KQ-93-98C vein-shear system is probably very extensive & continuous (rusty zone in dark sed. chl.)
3) Some excellent f.g. copper on lower slope
4) KQ-93-101C fault zone probably dip N.
5) Lower Mitchell Zone has active slump scarps

Slope S. of West Arm of Sulphurets Glacier 19

Thurs Aug. 26/93 Cloudy, rain, fog
— @ MAH
— photo W of kernhill
— let off top of talus in volcanics

— (1680m) base of cliff-top of talus
KQ-93-102A mas. med. grey-grn pl-(pyrox?? alt) phyric f.g. porph. subtle andesite breccia

~80-90m S 290°/45° fair on fault system between vol. & dark sed.
~30m 130°/80° on disrupted bedding

— ~50m SW adjacent ice ~25m above toe (1650m)
003°/35° good
on bl. mudst. & f.g. distal turbidites — upright on grading

~15m W (1640m)
KQ-93-102B typical bl. mudst f.g. greywacke (some f.g. py)

(1) R3-46 – 1622m
- N toe of ice-sl. rt bench
- 003°/20° (dip?) good on some bl. turbidites
- much local disruption of beds but good regional

- in the order of ~150-200m of dark sed. strat. section exposed in area

~50m N (1625m)
- 002°/38° good on well-bedded pale grey pyritic hornfels(!)
KQ-93-102C ~2-3m N of fault
hornfelsic alt. distal turbidites to N of fault
- more (~5%) f.g. py (±po?)

- ~50-60m? N (1600) fault zone

~120°/steep
265°/80° good on dv. in fault zone
flatter N-dipping N boundary faults (~50-60° N dip)
- separates pale py hornfelsic turbidites to S (up block) from bl seds + dark usually vol. to N (down block)
- ~~based~~ vol. v. dark grey w mica in prox. phases
- 230°/64° good on minor fault
- 030°/33° good on bedding N fault block

- ~70-80m NE fault 310°/70° branch of main fault down valley
- ~50m NNE (1550)
042°/28° fair on (bedding

10m SE 040°/35° fair on bedding

— on large scale bedding is faulted & contorted

~70m N 190°/75° on one fault in one draw - faults in every draw

~50m (1418m) top of o/c of talus base of slide
E 075°/50° fair on well-bedded bl. mudst & f.g. wacke
— ~20m W of dyke

~50m E
— approx att. of (1418m) dyke 160°/82° (W contact) jogs
blocky jointed pale-weath. red-grey f.g. diorite dyke (average 145°/75° contact)
KQ-93-103'A
cp. on fractures
— cuts 2 other small dykes in area
010°/52° good on dark sed E of dyke

~100m E (1400 m)
small o/c's in talus 21
heather another f.g. dior. dyke
~70m E ~1.5m
sl. rhy. (pale grn-grey) dykes sills
KQ-93-103B
(1390m) in contorted folded bl. mudst.
300°/65° 260°/80° folded & contorted bedding
~70m E (1367m)
340°/19° fair on contorted bl. mudst.
250°/83° (rhy. dykes
~70m E (1333m) base of wat.
030°/52° fair on 10 - 100cm f.g. to c.g. greywacke beds
~70m NE 1300m
030°/40° fair on bl. mudst.

20m 260m
upright 030°/46° exceller
for well bedded
f. arg & f.g wacke

~20m N 1230m
1m upright
(wacke bed
— end of o/c

— ~80m N (1200m)
KQ-93-103C
5-7m o/c med.
grey albite-hb.
porph. (i.e. sulphide
Porphyry)

Isoorpti 0/c 30m N
& 20m N (1172m)
(at Snow)

1180m 70m N
025/30° good
upright

black mudstone

~200m N glacier
1030m (over
moraine
~250m E ele
base of 50m o/c
040°/70° good
1025m on bedding
upright
(soft sed. deformation).
flame

50m S (1085m)
320°/22
fibre gash qz-carb
1022m 20m S
survey sta
190°/85° good
on bedding

330° fault
along edge of high o/c & ice
separating (buff weath) dacite
& grn vol. br. — v. dark mud clots
— v. minor granitoid clast
1222m Rhyb

240°/75° good on bedding facing SE
inverted grading

Camp 1388m

Summary

1) Probably 150 - 200m(?) black mudstone & grey wacke overlain by andesitic volcanic rocks. Several SE upright facings of units. Although main sedimentary unit can be traced across hillside much local disruption along numerous brittle faults.
2) Fine-grained diorite, grn, rhyolite & f.gr Sulph. Porph. cut sed. units
3) Hornfelsic alt. sed. in one small horst only.
4) S of KQ-93-104A buff weath carbonate alt. wackes in fault contact (~330°/steep) @ dark grey andesite breccia.

Faults Mitchell Zone & South Sulphurets Fault

Fri. Aug. 27/93 Cloudy, foggy

— @ Jack Henderson & Matt O'Keefe
⊙ R3-21
⊙ R8-28 fault knob 280°/22° slicken lines, "flat" surf.
260°/60° chloritic shear planes ~20m up in fa
evidence of brecciated chl. hornfelsic seds. (might be) high in hanging wall

— 1560m top of knob

154°/45° fault surface
285°/36° good slicken line
tension gashes
steps on gashes 096°/56° good evidence for oblique reverse motion

photos slickenlines + steps on gash fractures

(1335m) ~200m N 1375m
top of W canyon in moraine - 1st o/c
~70m N in canyon highly broken o/c
270°/80° on fractures

~150m-200 N down canyon (1258m)
highly broken ~~o/c~~ down canyon
- mostly completely leached
- scattered malch. stains
- pink + tan py syenite
~100m N of str. junction (1258m)
KQ-93-105A - mag.-bearing pink alt. sy (or monz.?)
@ ~2-3% diss. + fract. cp
- tr py minor diss. mag
~5% small qz vein stockwork
- poss. clots hydro. biotite
- mag. + mag cp qz veinlets
- anhydrite veins??

- ~30m N (1228m)
pink sy @ v. minor cp py + mag.
~1% qz veinlets
KQ-93-105B

~50m N (1147m)
same pink-white sy.
~1-2% py + v. minor cp mag.
KQ-93-105C

- ~50m N (1100m) ~30S of 3-74A
- alt. intr. rk @ mag. cp + py
(~0.5+% lic over sy o/c)
mal. stains + bright orange lichen
not be low-grade monz-sy dyke
KQ-93-105D anhydrite veins??

~150m NE to fault above Mitchell Zone
(1052m)
060°/12°

~150m E (1070m)
280°/10° good on
qz-py rods in ser py schist
~5m below fault in
~6-7m ser. py schist
zone beneath fault
030°/70° good on 1-2cm tension gash qz veins

~15m E (1070m)

120°/20° main fault surface

212°/28° good on internal schistosity in shear

intr. rt

vein system

(1090m) 25m SE

KQ-93-105E

intr. biot. alt. brn & pink grey intrusive at ~78m v. above fault

anhydrite veining

(w) mag ~1% opy & good cp (~0.8%/5m?)

Camp - 1370m

Summary

1) Both faults are thrusts probably with large displacement (ie. v. different rocks above & below with no piercement points

2) Locally v. good copper (105A, D, E) in the hangingwall plate - f.g. diss. fracture cp assoc. biot.?? alteration mag & py

3) In fractured, faulted area much Cu might have been leached from

Toe of Jack Glacier

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Sat. Aug. 28/93 Sun & cloud

- w Jack & Matt

- went to examine unconform.
- started near river - unconformity in this area is most cut by faults, shears, dykes & sills
- only very locally do red & grey mudst. sit on turbidite
- for ~1-1.5km S on uncon. sheared & faulted with complex, obscure geology

basal congl. on turbidites but not well exposed

~1060m ~2km W of ice (SW corner of Jack Gl.)

Superb locality of basal gal-br. (see frags mainly) on turbidite

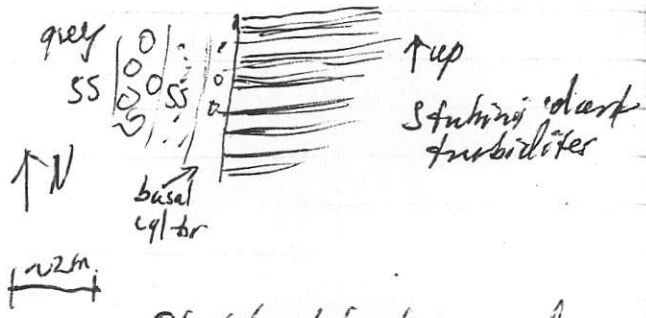
~400m+ of Stuhini

232°/88° youngs W good on Stuhini bedding

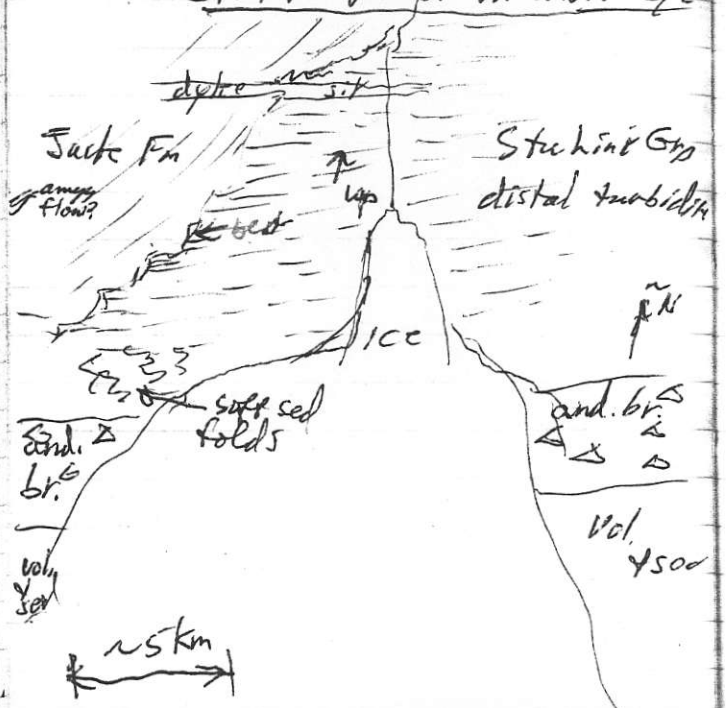
200°/90° - fair on unconformity

- several photos of contact, surroundings &

a cgl unit @ clasts to 60 cm about 5 or 6m?? above the unconformity



Sketch of best uncont. o/c



— to S much of unconformity is marked truncation of turbidites with pale green-grey massive mudstone uncont. overlying (photos) turbidites @ no basal cgl.

— *at a distance can clearly see that as Stuhini turbidites in this area are steeply dipping & upright at least 600 to 700m or more of Stuhini Group has been eroded under the unconformity

— to S turbidites are overlain by very schistose mudst. silts & f.g. S.S.? cut by large dykes — therefore, unconformity is largely obscured

— to W Jack Fm is highly deformed & v. schistose

— photos chert pebble-cobble cgl ~100-200m?? up in Jack Fm — X-beds (upright)

Red Mountain, B.C.

Sun. Aug. 29/93 Sunny

- @ Adrian Bray & Matt O'Keefe
- Craig Nelson, Garfield McVee, Marc Lafontaine, Scott, Dave Keywood, Christine, Harold, Desmond Geophysicist
- 5 subparallel en echelon ore zones - dips 45° SW & plunge 15° NW
- published ~ 1 million ounces gold @ 0.35 oz Au/t
- ~ $1 M spent on this year's program - good drill season
- production poss. by 1996
- zinc-rich zone (to 3%) peripheral to ore (@ py + po in veins & along bedding)

and more Cu + Mo at depth and anhydrite
- possibly zoned ore system above a porphyry deposit ???

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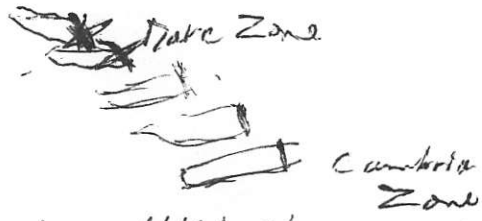

SW dip NW plunge of zone
- possibly green chloritic hornfelsic sed. rks. cut by porphyritic intrusions and breccia dykes @ altered porphyry & pyrite & possibly rock flour matrices ??
- multiple intrusions and possibly brecciation events in a dynamic ore-forming event
- pl-hb & qz porphyries
- late gash veins + flat faults

Specimens

KQ-93-105A – 3rd muck station – typical breccia dyke @ py alt. porphyry (?) matrix outside of ore

106B – breccia dykes (py & porphyry matrices) from dump

106C – typical pyrite ore (veins) (dump)

106D – peripheral sphalerite (py) mineralization (dump)

106E – altered porphyry samples (dump)

- gash calcite veins definitely cut pyrite veins indicating an early – poss. intrastone related ore formation
- 220 Ma for cirque stock
- 48 Ma Mc Adam Point intrusion

- Tellurides & Mariposite in ore