

Copper Mt - Ingerbelle Area

- ① Any preference of ore for volcanic stratigraphic horizon (eg. at well-bedded tuff or volcanic sandstone interface). ??
- marker horizon of "delicately laminated metasilstone +/- tuff."
- ② Association of volcanic bx. + ore?
- ③ Copper Mt. stock contemporaneous or 'very' shortly after Nicola volc.? (197 m.y.) upper 1
cf. Bonanza - intrusives.
- ④ Copper Mt. Intrusions: silica poor (i.e. pyroxenite \rightarrow syenite); ^{concentration zoning}
- ⑤ Mineralization: cpy - br 76 m. tons at 0.53% Cu ^{at 15,000 ft.}
- not confined or preferential to any particular rk. type.
 \rightarrow Lost Horse better than Copper Mt. for "localizing".
eg. contact zone between Nicola + Lost Horse
- 400-500' ^{out} from stock. - fracture density dependent.
- ⑥ Alteration ^{important} chemical met'am. or metasomatism \rightarrow bio., aug., orthoclase, albite
SCAPOLITE at Ingerbelle - common
- ⑦ Ore controls - Fracturing +/- schistosity
- ⑧ Age relationship: Ore = stock \approx 193 \pm 7 my.
- ⑨ Geophysical Data: "redist'n of magnetite". How ~~do~~ aeromag. maps compare.

Report on field trip with U.B.C. Geology Dept.
Sun. Feb. 12 to Tues. Feb. 15

1972?

Sun. Feb. 13th

We visited the Ingerbelle area in the afternoon. We were first shown the rock types present in the area + then given a short talk about both the regional + local geology. Two geologists conducted the tour - Jim McGuen and Don ~~Hutchinson~~ ^{Hutchinson}. Jim mentioned that a 14-page report on the Ingerbelle deposit would be available very shortly and I asked him to send a copy along to AMOCO. A word of advice would be to take a good look at the rock specimens in the office - it's very difficult to do so in the mine area. The rocks are ^{very} highly altered. Significantly, the rocks are ~~not~~ quartz-poor. The volcanic stratigraphy in the area is not at all known but an estimate in the mine area would be approximately 500 to 800 feet of agglomerate overlain by approximately 70 feet of siltstone (tuff). Mineralization does not conform to local stratigraphic horizons within the volcanic rocks. A cream-coloured vein complex was at first believed to be quartz, but is now known to be scapolite. Many rocks have a distinct pinkish-orange colour and this is due to intense albitization (not potash metasomatism or orthoclase).

Two areas were ~~shown~~ toured. The first one was an old adit driven in the hill side. It is now locked and presumably will remain so. It can be seen in

the attached Xeroxed handout, the adit was mapped in extreme detail by a Japanese geologist. The geologists at the mine now say every time they go in the adit they have a hell of a time trying to decipher the geologic map. The two main rock types observed here were agglomerate and ~~the~~ fine grained feldspathized monzonite. Pyrite was the main sulphide observed. No moly was observed. The Gully Fault was examined ^{underground} ~~in~~. It consisted of anywhere from 1" to 40' of gouge material (commonly albitized).

I inquired about the use of geophysics in the area & the impression given by Jim McGuen was that neither mag nor T.P. was of any value. The mag showed up as intermediate values (no distinct highs or lows).

A study on rock geochemistry at Ingerbelle is presently being undertaken by a Ph.D. candidate at the University of Toronto.

The second area visited was the proposed open pit in the vicinity of what the mine people called "ORE ISLAND". The rock is extremely altered in the pit.

As a matter of interest, the average length of ore intersected was 72 feet.

SIMILCO

May 3/91

- CIM Tour 1 (Cannon/Similco)
- Tour Leader - TOS plus 17 participants
- Bill Epp - Expl'n Geol - Similco
- Ken Blower - Mine Manager
- Tim Smith - Mill Super!

oper. rate: 23,000 TPD

- Potential in-pit conveyor studied
- 6000 ft. long conveyor belt from pit(s) to mill across Similikameen R. (incl. 1700 ft. span across river) - tour walked across.

PHOTOS: ① Pit 2 ('lake') - looking NE over pit 2 with Virginia Zone (to rt.) + Habany Zone (to left - 'hill').

② Pit 3 (active) - looking south
View (3620 ft.) → lowest bench (3340 ft) ie. 280' depth
Phase 1 → 2 → 3

③ (20m tons left) → (40m tons) → (40m tons)

④ Looking N over pit 1 towards Ingerbelle pit & millsite

⑤ Old railroad on bank

SIMILCO - Bill EPP - ext^{ent} aerial slide

1972-1981 - ~~Copper 2 mtn.~~
1981 - ? ~~the or belle~~

→ sig. assn. of ore with magnetite!
Au av. .005 opt.

Ajax	.78	\$US
Bell	.81	cost/16
Brenda	.47	
Gibson	1.01	
HVC	.77	
Island	.62	
Similco	.82	
MT. Polley	.28	

MT. POLLEY - aerial slide

Geol. Res. 254 mt @ .256% Cu + .01 opt Au
(or .439% Cu equiv.)

Cont'd Au = 656,000 oz Au

Mineable 544 mt @ .383% Cu + 0.016 opt Au
(.663% Cu equiv.)

Cont'd Au = 864,000 oz Au

PLUS low grade .25 - .39% Cu equiv

Capital cost = \$ 131.41 million

Geol. res. worth \$2.6 billion
519 Pit res. worth \$763 million

~~Letter to ^{mine} Manager Ken Blower
re Bill Epp on CIM
Cannon + Similco~~ Four No

File → MT. Polley

KEG '91

(Apr. 8/91)

MINISTRY OF ENERGY, MINES AND
PETROLEUM RESOURCES

To:

Tom

Date:

Dec 09

From:

Ande

- | | |
|---|--|
| <input type="checkbox"/> For your approval. | <input type="checkbox"/> Prepare reply for my signature. |
| <input checked="" type="checkbox"/> For your information. | <input type="checkbox"/> Prepare draft of reply. |
| <input type="checkbox"/> For necessary action. | <input type="checkbox"/> Return to me. |
| <input type="checkbox"/> Send me copy of reply. | <input type="checkbox"/> File. |
| <input type="checkbox"/> For your comments. | <input type="checkbox"/> For signature. |
| <input type="checkbox"/> Wish to discuss. | |

Dec 08 MDRU Meeting re Porphyries
was too long winded 9-2:45 with
no lunch!

Some v. interesting genetic process/
fluid evolution modelling from
Virginia pit - Copper min by
Cliff Stanley. Sim long.

Cheers!

AP

Prod. 181 m tons
.6% Cu
.007 opt Au

51MILC - Steve Blower
Tues. Apr. 12/94
KEG 94

35,000
+PD

Reserves (Inventory)
115 m tons @

- Excellent slides!
(incl. airborne EM survey!)
Chopper

TULSEQUAH
Since 1987 ~ \$12m spend on expl'n

\$3.0m expl'n in '94

GOLDEN BEAR \$38 million for roasting plant. US \$247/oz - oper. cost
mine grade: 15 gpt Au - Good slides eq. x-sec. - Bear Main + Grizzly (below)
+ aerial (labelled) + Long. sec. + Fleece Run
Fleece Run - pre-ore felsic dyke (dated) ~ 7% of deposit ore (refractory) ct. carbonate hosted (93%)
Kodiak - carb. hosted (+ hem. fault group) - heap leach (non-refractory)

- talk to Dunham - fax him at the mine re-copies

Ashwood - Ron McMillan - TGS photo in Monthly Report (with Aldrick) - old (deceased) prospector (in Stewart)
'1100 zone' - plug near by
Both: ① VMS - Eskay style - host 'turbidites' (greywackes)
Targets ② Epithermal

S/M/LCO

Apr. 13/95

- Talk by Steve Blower at KFC '95
- Milling from low-grade Ingerbelle stockpile @ head grade of 0.26% Cu.
- Will blend new Ingerbelle fast ore with low-grade stock pile
- Alabaman zone drilled on 200 ft. cut
→ hope for 35 mt @ 0.32% Cu + Ag.