– CIM Reporter Oct. 13/78

887921
Cinola

BABE

– total footage = 383 metres (1,278 ft) of which 110 metres (367 ft.) grades > 0.10 oz/ton Au.

– drill-indicated tonnage = 2.7 million tons @ 0.08 oz/ton Au, within which there are 1 m tons @ 0.10 oz/ton Au

BABE – 1979

DDH.

78-5-48 m Sil. cgl. – resorbed edges + silica flooding.

79-9-110 m As above with more silica flooding + py.

78-6-108 m As above.

78-6-106 m As above with silica flooding – well min.

78-6-136 m As above – well veined + min.

78-6-172 m Rhyolite bx. + silica flood + min. + native Au

78-8-10 m Silica flooding, etc.

79-3-118 m Good example of agate-type silica flooding. – in hot spring environment.

79-9-110 m Ab py + cpy? in host sil. rk.

78-6-134 m Late silica veining in cgl.

78-6-90 m Brownish (+ Au-Ag) vein in high silica rk.

Ken Saunders
669-1524
Rm. 827-543
Granville.

~~No. 6154 BABR~~

ANT and STIB

- Union Miniere 103F/8W 53°23'N 132°24'W

May 18/78

Elev. 200 m to 600 m

- Q.C. Timber Co. - rd. up Riley Ck. (Branch 8)

→ Courte Antimony prof. (Sol. 1 and 2 cls.) - located between the Ant and Stib cls. → reported to contain low grade antimony + gold min.

Geology

- seds + volcs of Yakoun Fmn. of Jur. age intruded + partly met'am by rhyolite dykes thought to be related to Masset Fmn. of Early Tertiary age.
- Yakoun seds. consist of lst, ss, + cgl
- Yakoun andesite agglomerates
- Yakoun Fmn. trends NW
- several dykes of med.-to-fn.gr. rhyolite intrude both seds. + volcs. → trend N70°W / V.

Geochem. Results

- long, linear, low order mag. gold anomalies possibly caused by rhyolitic or acid volc. lithologie

BABE VISIT

July 5/77

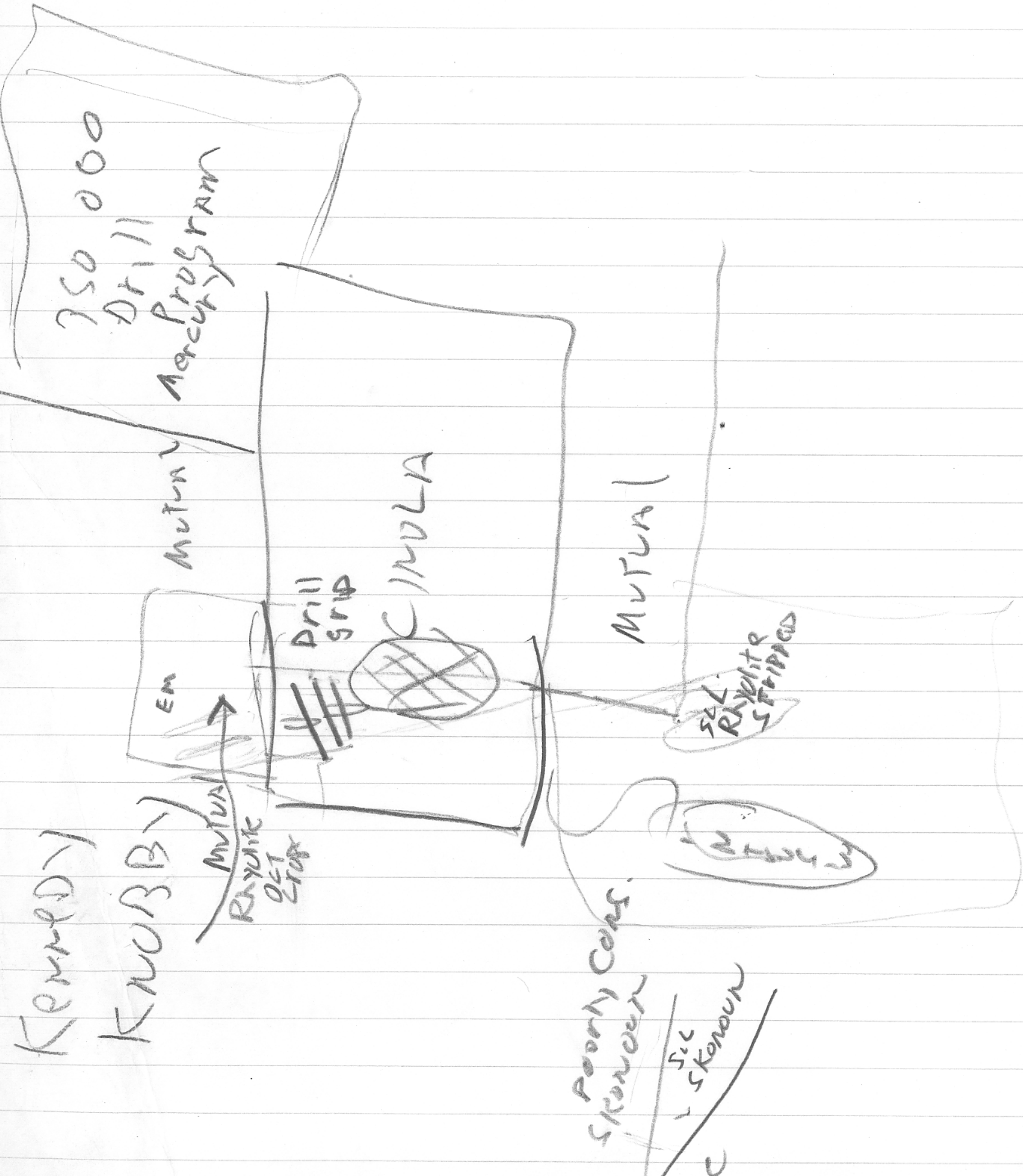
- Consolidated Cinola Mines Ltd.
- heavy logging on rd. south of Juskatla turn-off.
- camp with - Ken Saunders, pres.
  - 2 drillers
  - A. Roberts + assoc.

- ddh with BBS1 (~200' holes) = vertical
- 1st hole in area of Cominco 72-1
- 100 ft. grid along hill.
- Looked at Quintana 1975 ddh (1, 2, 5)
- → Holes up to 650' — all ended in 'greasy' shale = with greenish tinge.
  - holes collared in silicified congl. + ss.

- Ken Saunders splitting core

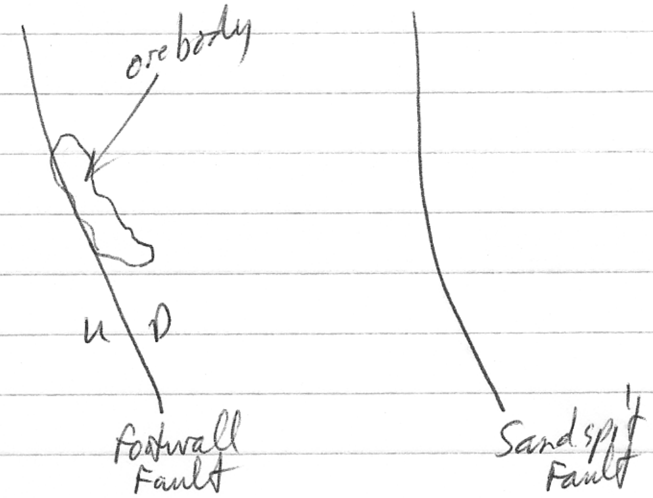
- on 2nd hole at time of visit

Chuck Kowall
Nov. 27/80 th



BABE

– Gold '81 Symposium (Sinclair, Champigny)



Comment by Gary Clifton (Fisher-Watt)
– Hg may be due to heat
[exact correlation to 'southern' deposits]

Quintana Minerals "Babe" gold property - Graham Is, Q.C. Is.

✓1. Highly silicified congl. (bx.) with cream coloured angular fragments in a md. grey 'matrix'. Quite vuggy with qtz. xls. in places

✓2. Very fn. gr. lt. grey siliceous qtz. eye 'porphyry' Apparent flow texture of darker coloured qtz. veinlets as in bedding + also random. Some vuggy qtz.

3. Similar to 2 but minor dissem. py.

4.✓ Dk. grey fn. gr. ~~shaly~~ rock (congl.) with up to ½" vuggy qtz. veins (possibly Au bearing).

5. Very siliceous breccia with mainly angular frags. (up to 3") of qtz.-eye (fsp) po (#2+3) in a md. grey matrix. Unique marcasite rims (⅛") around frags. in md. grey rock. Minor qtz. vuggy veins.

6.✓ Md. grey, fn. to md. gr. bedded sandstone with fossil carbonaceous leaves + roots! One major qtz. vein on side.

7.✓ Highly siliceous, fn. gr. breccia (congl.) - md. grey rock in lt. pink-grey 'matrix'. Both frags. + matrix - siliceous. Qtz. veinlet thru both matrix + frags.

8. Highly siliceous breccia - similar to 1. ~~Abundant marcasite rims~~

9. Similar to 5. Few more qtz. veins + vugs. + Marcasite ~~"flooding" in matrix~~ in.

10.✓ Dark grey to black, very fn. gr. siliceous rock with abundant qtz. veins (vuggy) lined with marcasite adj. to host rk. - also "flooding" in matrix

11. ✓ Flowage (welded tuff style) lt. grey broken bands + dk. grey 'matrix'. Minor vuggy qtz. vein <u>across</u> bands

12. ✓ Md. gr. highly minuted veined (brecciated) with qtz. veinlets bearing pyrite (~~marcasite?~~)

13. Cream coloured qtz. eye po with minor (1/8") qtz. veining

14. Similar to 2 + 3.

15. <u>Coarse</u> breccia (congl.) of buff coloured qtz. eye po frags (up to 2") set in a dk. grey to black fn. gr. matrix Marcasite rimming. Fsp. po. frags. are angular or 'eaten out' by matrix.

16. Very siliceous qtz. eye po with <u>abundant</u> silica veining (vuggy). Dissem. py (+ Au?)

17. ✓ Highly sil. bx. similar to <u>1</u> again with vuggy qtz. veins

18. ✓ Very crse. gr. brecciated rock with fn. gr. dk. grey <u>intruding</u> ~~&~~ lt. grey-pink ~~&~~ qtz. eye po. Abundant tiny qtz. veinlets <u>plus</u> vuggy qtz. & veins (1/4" to 1/2") with abundant pyrite. Peculiar brown "spotches"

19. ✓ Banded or pseudobanded siliceous rock with pyrite - Alt'd breccia

20. ✓ Very, very fn. gr. lt. grey silicified (sandstone?) congl.-bx. with pyrite.

21. Fn. gr. lt. grey (cream) siliceous rock (congl.-bx.) with qtz. veinlets

and vuggy qtz. veins. Apparent banding.

22. ✓ Same as 21

23. Cream to lt. grey altered (white) siliceous rock.

24. Qtz-eye fsp. po with abundant veinlets of dk. grey siliceous material with marcasite rimming. (Has brecciated the rock.)

25. Qtz. eye fsp po. with high grade Au qtz. (vuggy) vein.

31

Speaking

- site visit

(investment tps)

- June 17th

Moore-Yorkon

MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES

To: Graeme McLaren Date: Feb. 2/89

From: Tom Schroeter

- [ ] For your approval.
- [x] For your information.
- [x] For necessary action.
- [ ] Send me copy of reply.
- [ ] For your comments.
- [ ] Prepare reply for my signature.
- [ ] Prepare draft of reply.
- [ ] Return to me.
- [ ] File.
- [ ] For signature.
- [ ] Wish to discuss.

Re: Q.C.Is. — esp. CINOLA

John Deighton of City Res. dropped this off.

There is no mention at all of MINING in the zoning plan of Graham Island (map Schedule 'B') by the Skeena Queen Charlotte Regional District - By-Law No. ?, 1988 (prepared by UMA Engineering Ltd.) - Daft Nov. '88

Right now CINOLA sits in a AGRICULTURE - FORESTRY designation.

Tom

→ Specogna

HARMONY Apr. 26/07

(Cinola)

- @ CIM van Br luncheon

- Issue - Haida Nation

HDI - still persuing

"pretty good one"

FOUR SEASONS

Hotels and Resorts

BABE - SPECOGNA GOLD

CIMM - Oct. 14/76

- Reserves > 50 million tons of 0.06 g/ton Au and 0.1 g/ton Ag

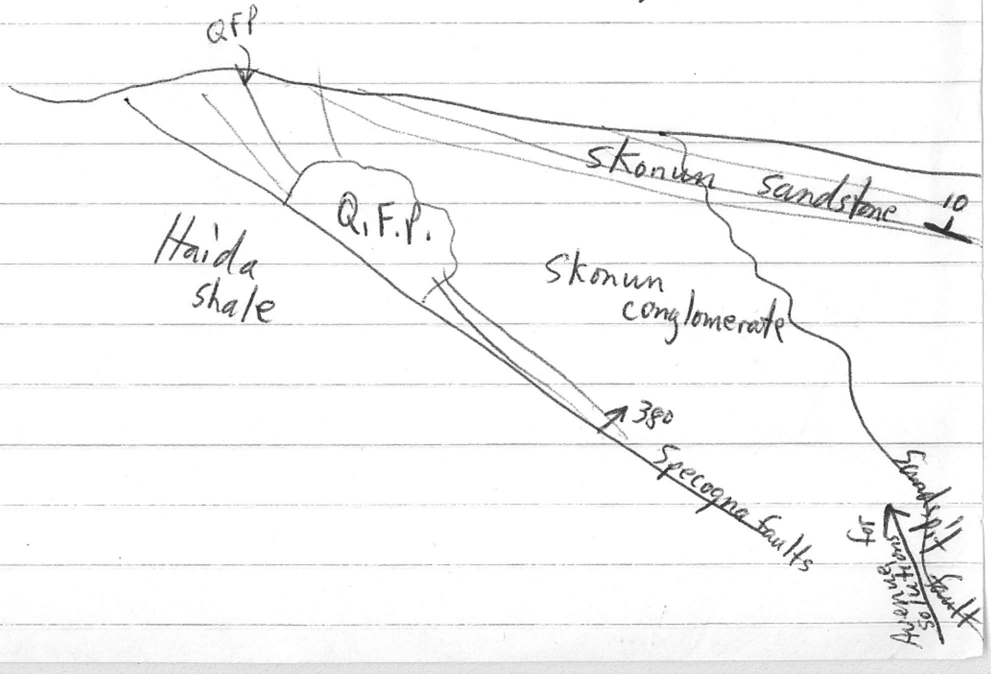
See Abstract p. 17

Conversion factor 1.4 ppm = 0.04 g/ton Au

- 22 ddh - 2 to 600 ft.
- Au is uniformly dist'd.
- Skonun seds. "surprisingly" unconsolidated.
- attitudes of 38° NE (Specogna fault) to 10° to NE
- no calcite in alt'd seds.
- Alteration fsp. → sericite (i.e. no clays)
- silicified Haida shale
- GEOCHEM - Mo - severely leached at surface

  Hg high ≥ 5000 ppb
  As " > 400 ppm
  Mo " = 25-50 ppm
  W " = 51-150 ppm

Controls
1. Permeability
2. Major structure
3. Heat source
4. Near surface



SPECOGNA (CINOLA) Jan. 11/99

- chat with Dave Copeland → see Handout Oct. 10/98

→ 1998 Exp. = $1.4M

($0.48K to end Sept. '98 + $0.9K = $1.4M

1999 → complete 'scoping' study and choose one (not 2) process 'routes'

→ enter EAP

~~* @0.6 g/t Au cut-off!~~ Res. = 64 M tonnes @ 1.52 g/t Au (3.13 Moz)

- est $2M "expl'n" exp.

→ investigate use of Premier mill to treat ore.

→ test financial market

- addition expl'n - depends on $!

- drilling (5 holes) on anomaly along strike to north in Dec. '98 → not that encourag. (assays not in, but core not all that good)

- deep drilling (2 holes) into system at depth → no ore intersecs. (i.e. still above "throttle point?")

- bio-oxidation tests ongoing - encouraging → may have doubled Au rec. in conc. i.e. to 70 g/t Au! (confid.)

Richard Haslinger
Lena Brandland

SPECOGNA

Oct. 23/98

next week – late season program – add. met. sa. from U/G [bio-ox. – need more material]
est. ~ 4 tonnes – column test; diff. processes
2.3 g/t Au av.

→ advance pre-scoping study (prior to pre-feas.)

Nov./Dec: surface ddh
~500m → N end of dep. – IP charge chargey resis.
(4 – 6 holes) – 300m

– review 4 deep holes on east side of deposit.
(eg. interested in ~ 150m below deepest int. eg. DDH 151 – @ 450m) → maybe one hole to
fluid incl.

Budget: – on Mon. 26th

→ Message: HD – 3 co. NOT exam. BC props. → deliver to Sen. Exec.

(cf. permitting eg. Specogna/Prosperity)

strategy for getting Haida on side? – Bruce Jenkins
– LRMP –

~~Nov. 4/98~~ – Richard Haslinger stated MM still trying to raise ~ $0.5M for program

1

BABE

Location: 17.6 km south of Port Clements.
History: Disc. - 1971 - Kennco, Cominco, Canex, Silv. Std., Quintana, Cons. Cinola
~ 30 ddh + $500,000 spent   Cons. Cinola = 21 ddh to end Dec. '78
Age: Miocene? 15 my?
Geology: Locus of Sandspit fault
- very fn. gr. por. rhyolite (post dates basal Masset Fmn) with exotic frags of argill. or charred wood.
- bx. common
- numerous multiple qtz veins - true fissures up to 1m wide, with outer Xlline qtz + inner cherty qtz + cockade + combs.
- minor sulphides in veins + adj. silic. bx. (dk. esp). - matrix carries fn. gr. py + marcasite, S.g. crse py + marc. at depth (ddh)
- also fn. qtz. stkwk merging into zones of complete silica.
- Specogna fault at 38° eastward - forms footwall to min - may have ~~been~~ controlled site of por. rhy. "dome".
Mineralization: - Gold min. not visible (except Marino) - present in dk. (carbonaceous) silic. bx. where it contains marc. rather than in veins
Marino Show - rel. unsilic. - cut by qtz. stkwk - Larger veinlets at 2cm - Visible fn. spongy Au in interstices in fn. gr. sugary qtz.
→ largely restricted to a subcircular zone 2800 ft x 1000 ft of silic. adj. to Specogna fault.
- tenor - highly variable
- anomalous Hg (5000 ppb), As (400 ppm), Sb, Te, Mo (25-50 ppm), W (51-150 ppm)
Alteration: - strong silica metasom., pervasive py & intense clay (fsps) in ss + gr. only not rhy.
- no real zoning, except Hg halo.
Production: (1975) - Marino show - 2.43 tonnes @ Au 115.6 ppm + Ag 51.68 ppm
Reserves (1975 Quintana) - 45 m tonnes @ 2.1 ppm (0.06 oz/ton) + 3.5 ppm Ag (0.1 oz/ton).   (1977 Cons. Cinola) - 625,000 drill indicated @ 0.069 Au + 0.127 Ag oz/ton.
Grades range 50.7 ppm Au to 245 ppm Au   [over]   [1.4 ppm = 0.04 oz/ton Au]

Possible Major Controls of Min.

① prox. to u/c
② prox. to major fault
③ perm. of host Skonun Fmn. of Miocene to Pliocene age
④ QFP dykes may be important in min. process.

CONCLUSIONS

→ min. post-dates Masset rhyolite + may be slightly older or possibly equiv. in age to upper Skonun (ie. Miocene - 15m

⇒ spatially assoc. with young acid volcs. along a major fault + is contained in an area of intense silic. carrying minor sulphides + very fn. gr. native precious metals reminiscent of hotsprings eg. Carlin

TOTAL VALE 1) @ 50 m tonnes = $500 m

@ $160 Au
$4.50 Ag

2) @ 625,000 tonnes = $7,260,000
[43,125 g Au; 79,375 g Ag]

Reserves:
34, 316, 000 tonnes
@ .056 g/t Au

CINOLA

- youngest epigenetic hydrothermal (or epithermal [hot springs type]) mineral deposit yet identified in Canada.

STRATIGRAPHY

Shale (Haida Fmn, Late Cretaceous)

↓

Conglomerate and Sandstone of the Skonun Fmn (Miocene)
- crse-gr. - dips 15° to 25° east
- polymictic cgl. with ab. sed. features (eg. X-beds, flame, ripple
- incl. wood fragments + pelecypods

→ ~~correlates with~~

ENVIRONMENT OF DEPOSITION AND AGE OF SKONUN SEDS.

- coarse nature, polymictic character + erosional contacts between cgl + ss ⟹ fluviatile envir. of dep., either as meandering or ~~river~~ braided river deposits.
- detritus likely derived ~~fr~~ + transported eastward from Early to Middle Tertiary volcs. of Masset Fmn.
- plant microfossils + fauna reveal early Middle Miocene age (17-15 Ma) for dep. of Skonun.

PORPHYRITIC RHYOLITE (Middle Miocene)

- elongate stock, + assoc. dykes
- cuts both shale + cgl. + ss. - contact often silic.
- Sandspit fault system prob. played important role in localization + form of stock
- K-Ar ~ 14 Ma

STRUCTURE

- Footwall fault - splay off Sandspit fault system - dips 55°E recog. by i) abrupt change from silic. sh to soft, fresh sh ii) slickensides in qltd por. rhy. + silic. sh. iii) Also - fault scarp on surface

[OVER]

- por. rhy. exposed both beneath & above footwall fault ∴ faulting in part after
- Dextral fault with some rel. movement downward on east block
  - absence of Mid-Miocene rx. west of fault, displaced geochem. anom, & drainage patt.

FORM & SETTING OF CINOLA DEPOSIT

- exists over an area of at least 1.3 km^3 - appears to terminate abruptly against footwall fault on the west, & disappears gradually to the north & east.
- depth extent unknown - but at least 350 m.
- characterized by prominent zone of silicification with a few per cent of pyrite & marcasite
- Gold & silver - widespread over same area.
- Au between 0.03 g (.001 oz) & 156 g (5.5 oz)
- High grade Au (i.e. >7 g (>.25 oz)) in qtz. veins sporadic throughout deposit & at contact zone of por. rhy. & Skonun cgl.
- rx. are highly anomalous in Hg & As & less so in Sb & W. + Mo
- degree of silicification increases towards por. rhy.
- several generations of veins x-cut host rx.
- large veins up to several metres = xcise, vuggy qtz & banding, show several episodes of veining.

  Sequence: Old ↓ Young
  - black to grey chalcedonic qtz
  - ↓ hematitic qtz
  - ↓ massive milky qtz
  - ↓ clear euhedral qtz.
  - ↓ calcite

- wall-rk silicification common (diff. to disting. between vein & host rk.)

CINOLA

WALL-ROCK ALTERATION

- quartz - illite - kaolinite - sericite - chlorite (+ iron hydroxides)
- Qtz in 2 generations:
  - i) cryptoxlline cement binding pebbles of orig. seds.
  - ii) blocky, clear Xls as void fillings, vugs + veins (2nd Generation)

2nd Generation - clearly rel. to gold min.

- Argillic Alt'n - extensive - illite + kaolinite (X-rayed)
  - result of hydrothermal alt'n.
- Superimposed silicification on argillic alt'n = advanced argillic
  i.e. illite + kaolinite during + after qtz + sulphide deposition
  i.e. overprinting!
- Zone of argillic alt'n (30% of Au-bearing rk. of clay) = eastern boundary of min. - Zone dips steeply west + Au < .4g/t (.014oz/t)
- Sericitic alt'n - on fsp in cgl + rhy.
- Chlorite - weak; iron oxides - surface

ORE MINERALOGY

- min. rx. contain 0.5 to 10% opaque min. (av. 3% by vol.)

2 General Assn:
- i) Pyrite - marcasite in silic. rx.
- ii) Py - marc - ZnS - cpy - PbS - native Au in qtz. veins

- 4 generations of pyrite noted.
- no definite correlation between sul. min. + gold abundances.
- no arseno, but As in py + marc. (also po in py/marc).
- Mercury min. (cinnabar + tiemannite [HgSe]) in qtz vein.
- Native gold - i) micron-size in all rk. types (silic.), ii) grains in qtz. veins
  iii) inclusions in cpy in qtz. veins.
  - all gold contain Ag (electronprobe analyses) ~ 1:1 (range 0.2 to 15:1)

[OVER]

AGE OF MINERALIZATION

- intrusion of por. rhy. + gold min. closely rel in space, time + genesis?
- qtz veins of min. system <u>cut</u> por. rhy. i.e. some min. <u>after</u> emplacement
- K-Ar age ~ 14 Ma (Au-bearing silic. + sericitized por. rhy) / 17.4 Ma - silic sh.
  - data indicates intrusive + mineralizing events confined to a max. interval of 3 million yrs.

CLASSIFICATION OF CINOLA DEPOSIT

- "CARLIN-TYPE" (as suggested by Richards et al, 1976) + now generally accepted.

Common Features:

1) small particle size for most of gold
2) Tertiary age of min. (14 Ma at Cinola)
3) trace-element abundances, esp. Hg, As, Sb.
4) argillic alt'n
5) assn. with major high angle faults
6) high porosity + permeability of host rk. (mostly <u>uncemented</u> cgl. + ss at Cinola)
7) close spatial assn. with felsic intrusions
8) low silver content.

GENETIC MODEL

1) Middle Tertiary - extrusion of Masset volcs over Haida sh. + activation, or continuation of, movement along Sandspit fault
2) early Middle Miocene - uplift + erosion of Masset volcs + older rx + subseq. dep. of Skonun cgl., ss + sst.
3) 14 Ma - intrusion of por. rhy. stock along Footwall fault, followed by devel of frac. system that provided struc. control of min. + physical limits to min. system

- pre-mineralization Skonum Fmn. - permeable, water-saturated pile of clastic seds.
  ⇒ convection cells in ~~Skonum~~ pore water in Skonum + frac. along Footwall fault.
- believed metals derived from Skonun Fmn. (i.e. fossil placer deposit?) - precip. promoted by abun. of organic material

CINOLA

Jan. 31/86

- Cordilleran Roundup - Poster Display

MINEABLE RESERVES ~ 38 m tonnes @ .056 oz/tonne

or 10,060,000 tons @ 0.097 oz/tonne

GEOLOGICAL RESERVES ~ 43,251,980 tonnes

@ 0.054 oz/tonne

BCGC Poster Display

Oct. '86

CINOLA DEPOSIT

CITY RESOURCES (CANADA)

The Cinola epithermal gold deposit is located on Graham Island on the Queen Charlotte Islands, 18 kilometres south of the town of Port Clements.

The deposit occurs at the fault contact between Cretaceous shales on the west and Miocene to Pliocene conglomerate and sandstone on the east, with a Miocene rhyolite porphyry plug between them. Ore, in a zone about 700 metres long by 300 metres wide, is contained primarily within highly silicified and argillized clastics and to a lesser extent in rhyolite porphyry.

To date nearly 49,000 metres of drilling and 460 metres of underground exploration has confirmed geological reserves of nearly 40 million tonnes averaging 1.9 grams of gold per tonne, with a higher grade section of 6.55 million tonnes averaging 3.43 grams of gold per tonne.

The company's objective is to develop this 82,284 kilogram god deposit by open pitting.

CINOLA - Robin Tolbert Oct. 30/87

Geol Reserves ~~.69 g/t~~ 40.7m tonnes @ 1.65 g Au/t

Mineable @ 1.71 cut-off = 24.8m tonnes @ 2.11 g Au/t
1.96:1 strip ratio

Contained 52.75 m g Au or 1.7 m oz Au

Total contained recoverabl. 47.5 g Au or 1.5 m oz Au

Milling rate 6000 tpd

GEOLOGY: Sedimentary Sequence
west of fault - Cret. Haida mudstones - minor Au
east " - Tertiary Skonun seds

(Base) boulder cgl. (250 m depth)
- reaction rims on clasts

Graben-style! (a la Lawyers)

matrix-supported cgl. - derived from Masset + Yakoun seds.
- mudflow bx (+ marcasite)
- from SW - debris flow (from fault scarp)

origin of logs from SW
- seq. of cgl. alternating cgl. (60%) + ss + sst (40%)
+ wood frags (carbonaceous material (logs) 25%
+ worm burrows

(Upper) - Sand-size debris flow → ss with pelecypods - maturation of fault scarp (marine)

CINOLA (cont'd)

2) INTRUSIVE RX.

early stage

- i) fluidized rhyolite - stoped in blocks of cgl. ('tootpasting' its way upwards) → includes flame textures of rhyolite into cgl.
- ii) rhyolite por. - up to 5% qtz ; 8% plag phenx.
- iii) porous, vuggy, py (up to 5%) - upper extension of rhy. (acid leached) - "worm rock" (Papua, NG)

Analogy: McGlaughin

3) HYDROTHERMAL ROCKS

a) - Hydrothermal Bx.
b) - Pervasive Silic.
c) - Argillic alt'n.

Argillic (Advanced) → Silic. → Hydrothermal Bx.

- kaolinite, illite

silica + reaction rims → flooding

hydrofracturing + hydrothermal bx

? - blue tinge on HW
- multiple veining
- fragment stoping
- fluidized frags
- re-bx.

- extensional veining → right lateral related to Sandspit - Spengna faults. (related to seismic events)

- evidence of boiling - qtz. after calcite
- 'meniscus' texture - sudden depressurization of supersat. silica = amorphous silica

- Silica sinter - near surface
→ Fan deposit in Papua, NG - scarp setting (Goodenough Is.)

(2)

Nov. 24/89

CINOLA – Sampling Workshop – MDRU – UBC

Rene Blair – ~~[illegible]~~ Barrack, Manager of Geology – took majority control of City Res.

– 500m of U/G devel. – extremely beneficial to devel. of database

– re-assessing ① metallurgy – redox
② pit optimization

– av drill spacing 30 m
– PC Explor used

Pre-'87 drilling: – re-logged in detail + data entered

1986-'87: assays entered

Sample Collection: av. 2m intervals / core sawn in ½ /
– percussion 'rejects' stored in pails under water (to prevent oxidation)
– percussion + diamond drill holes were twinned

U/G: mainly for metallurgical data / assay values have not (yet) been incorporated into data base
(author feels you can – Mt. Isa 'experience')

Assaying: Fire assay by Chemex
> 0.35 g/t Au re-assayed
– check assays on pulps (in Reno) – 278 sa. diff. = .006 g
– little bias
→ NO assay cutting (i.e. good reproducibility)

Specific Gravity: Fresh core / all rk. types tested

Geologic Interpretation: 23 X secs. at 30 m intervals
45 bench plans @ 6 m intervals
– epithermal model used ('Hot Spring') – made during relogging

Grade Model: 2 major features – i) Hydrothermal bx + ii) vertical veins outwards into seds
– assay sections – PC Explor
– contour at 3 cut off grades < 0.69 g/t, 1.2 g/t, 1.7 g/t – manual (arbitrary)

(OVER)

Reserve Model: only compiled after 'geologic' + 'grade' models devel[o]ped

- polygonal-technique (incl. S.G.) - assigned a 'geo-grade'

Final Reserve Compilation: - use of expensive "planimeter"! - manual

dilution?

Geostatistics: using 30m x 30m x 6m blocks

⟹ Excellent correlation between 'manual' + 'geostatistics'
- Grade-Tonnage curves - compares well

QUESTIONS: - Twinning of holes — "no bias"

vertical? angle holes

- Average dilution factor ~10% (TGS)

Dilution?

- all City holes (1986-87) inclined @ 50° → results compared favourably with vertical holes (pre-'86)

Sinclair - not an erratic gold deposit! (cf. most gold dep.)

Ladner Ck. (Carolin) – Joe Shearer

KEG '96
Apr. 1–3/96

Oct. 1/95 – now – > $2M
> 7000 m drilling total 600 ddh > 40,000 m [underground crusher]
$40M spent previously
1.5 km between Idaho + McMaster zones.
– listwanite, talc/carb. alt'n
– min. related to 'certain' horizons – eg. Ladner Gp. turbidites
py – po – arsenopy. ≡ albite + silica + carbonate
– really recognized shallow angle (eg. 25° N) fault(s)
New min. (~100 m to west u/G) in volcanics
– similarities between Bralorne + Ladner Ck. Terranes.

COTTONBELT – Ian Semple
< 3 min. 'horizons' – lower magnetite-rich (up to 10%) + garnet
+ Pb – Zn – Ag
kyanite – sillimanite metam grade
– above = copper-rich zone
– Gordon Gibson contract geol.
1996: ddh, incl. > 1000' into 'hinge' area.
Analogy: Broken Hill, Australia.

MICROGOLD – Ian Semple
Stump Lk. area
– target bonanza-type feeder zone(s)

KENESS
Apr. 98 – full prod.

Red Mtn.
est. cap. cost = C$100 million
Mine life – 10–15 yrs
Res. 100,000 tons @ .238 opt Au
(1.3 m @ threshold)
Sept. '96 – f/s devel. plan
Dec. '96 – complete feas.; start-up
Spring 1998

KEG '96

KEG '96
Apr. 1-3/96

SCHEDULE OF TALKS - NINTH ANNUAL KEG CONFERENCE

Wednesday April 3

8:30-9:20 AM	**KEG SOCIETY ANNUAL GENERAL MEETING AND ELECTIONS**	**ALL MEMBERS WELCOME**

SNAPSHOT SESSION - BC PROJECTS

Moderators: Moira Smith, Teck Explorations Ltd. and Ron Wells, Consultant

9:30 AM	Introduction	
9:35	Ladner Creek Gold Project, Southwest BC	Jo Shearer, Athabaska Gold Resources Ltd.
9:55	Cottonbelt Stratiform Pb-Zn-Cu-Ag-Au Project and Microgold Epithermal Au Project	Ian Semple, CanQuest Resource Corp.
10:15	Red-Chris Copper-Gold project, Northwest BC	Doug Blanchflower, American Bullion Minerals Ltd.
10:35	COFFEE	
11:05	Update on Royal Oak's Projects in BC	Jacques Houle, Royal Oak Mines Inc.
11:25	Willoughby Gold Project, Northwest BC	Dave Visagie, Camnor Resources Ltd
11:45	Harmony Gold Project, Queen Charlotte Islands	Richard Haslinger* and Mark Rebagliati, Misty Mountain Gold Ltd.
12:00 NOON	**DRILLER'S LUNCH**	

DEVONIAN-MISSISSIPPIAN VMS POTENTIAL IN BC AND YUKON

Moderators: Mike Cathro, Energy and Minerals Division and Scott Smith, Afton Operating Corp.

1:30 PM	Introduction	Mike Cathro
1:35	Wolverine Project, Yukon	Peter DeLancey, Atna Resources Ltd.
1:55	Kootenay Terrane: a Yukon-Tanana Analogue in BC	Bob Thompson, Geological Survey of Canada
2:15	Devonian-Mississippian VMS Potential from Yukon Border to Kootenays	Vic Preto* Trygve Höy and JoAnne Nelson, Geological Survey Branch
2:35	An Alternate Perspective on the Eagle Bay-Fennell Assemblage between Sicamous and Clearwater	Nels Vollo, Consultant
2:55	COFFEE	

Blue Light (near Midway NWBC)

TECHNICAL SESSION

3:20	Exploration Opportunities for VMS Deposits, Adams Lake to Clearwater, BC	Mike Cathro, Energy and Minerals Division
3:40	Reforma VMS deposit, Campo Morado Property, Mexico	Jim Oliver* and Mark Rebagliati, Farallon Resources Inc.
4:00	Update on Rainbow and Galaxy Copper Projects, Kamloops Area	Graeme Evans, Teck Exploration Ltd.
4:20	Eskay Creek Gold-Silver Deposit, Northwest BC	Andrew Kaip, Homestake Canada Inc.
4:40	Use of GPS and GIS in Exploration and Mining	Ralph Forbes, Atlas Information Management

VMS — between Mexico City + Acapulco

Start drilling (>0.5 m?)

* denotes speaker

Submitted to Victoria Aug.13/96

MINFILE NUMBER: 103F 034 NATIONAL MINERAL INVENTORY: 103F9 Au1

NAME(S): ~~SPECOGNA~~, CINOLA, GRAHAM ISLAND GOLD, BABE, SPECOGNA GOLD, HARMONY GOLD

STATUS: Developed Prospect
NTS MAP: 103F09E
LATITUDE: 53 31 40
LONGITUDE: 132 13 05
ELEVATION: 0170 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Main core zone. The Marino surface showing lies about 600 metres to the northwest (Assessment Report 11167).

MINING DIVISION: Skeena
UTM ZONE: 08
NORTHING: 5934368
EASTING: 684397

COMMODITIES: Gold Silver Mercury Copper Zinc

MINERALS
SIGNIFICANT: Pyrite, Sphalerite, Marcasite, Gold, Cinnabar, Chalcopyrite
ASSOCIATED: Quartz, Calcite, Hematite
ALTERATION: Kaolinite, Sericite, Illite, Chlorite, Alunite, Limonite, Clay, Silica
ALTERATION TYPE: Argillic, Silicific'n
MINERALIZATION AGE: Unknown. I thought it (rhyolite) was ~~xx~~ 14 Ma

Specogna rhyolite dike
[Note: marino rhyolite dyke = 18 Ma]

The Cinola Gold Deposit, Queen Charlotte Islands, British Columbia by N. Champigny and A.J. Sinclair, Department of Geological Sciences, The University of British Columbia, Vancouver, B.C. in Geology of Canadian Gold Deposits, CIM pp. 243-254.

DEPOSIT
CHARACTER: Disseminated, Stockwork, Vein, Breccia
CLASSIFICATION: Epithermal
TYPE: Epithermal Au-Ag; low sulphidation
SHAPE: Tabular
MODIFIER: Faulted
DIMENSION: 800 x 200 x 180 Metres STRIKE/DIP: 143/45E TREND/PLUNGE:
COMMENTS: The deposit is wedge-shaped; the width tapers with depth.

HOST ROCK
DOMINANT HOST ROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Tertiary	Undefined Group	Skonun	
Cretaceous	Queen Charlotte	Skidegate	

LITHOLOGY: Conglomerate
Sandstone
Siltstone
Mudstone
Argillite
Polymictic Breccia
Rhyolite
Rhyolite Breccia
Quartz Feldspar Rhyolite Porphyry
Lignite

GEOLOGICAL SETTING
TECTONIC BELT: Insular
TERRANE: Wrangell
PHYSIOGRAPHIC AREA: Queen Charlotte Ranges

INVENTORY

ORE ZONE: CINOLA

CATEGORY: Combined YEAR: 1988
QUANTITY: 40700000 Tonnes

COMMODITY	GRADE
Gold	1.6500 Grams per tonne

COMMENTS: Total proven and possible geological reserves.
REFERENCE: MDAP - Stage II Report, Cinola Gold, City Resources (Canada), 1988.

Update resources
31.3 million tonnes @ 2.29/t Au

ORE ZONE: CINOLA

CATEGORY: Inferred YEAR: 1988
QUANTITY: 2800000 Tonnes

COMMODITY	GRADE
Gold	1.7100 Grams per tonne

COMMENTS: Possible reserves.
REFERENCE: MDAP - Stage II Report, Cinola Gold, City Resources (Canada), 1988.

CAPSULE GEOLOGY

The Cinola deposit and surrounding area is underlain by three major formations, an intrusive igneous sequence, a major fault system and the mid-upper levels of an epithermal hot-spring-type precious metal system.

(low sulphidation, quartz-adularia sub-type)

CAPSULE GEOLOGY

The gold deposit is localized between the Sandspit fault to the east and the footwall Specogna fault 1500 metres to the west. Both faults strike at 143 degrees in the vicinity of the deposit. The Specogna fault is a normal right-lateral fault which dips about 45 to 50 degrees northeast and separates the Lower-Upper Cretaceous Skidegate Formation (Queen Charlotte Group) from a down-dropped block of Miocene-Pliocene Skonun Formation sediments (east of fault).

near the junction/intersection of the 2 faults

at least 300 m in thickness (62% cgl.; 31% arkosic sandstone; 7% sandstone + siltstone)

The Skonun Formation consists of a thick porous pebble conglomerate unit with north striking and gently east dipping interbeds of sandstone and siltstone. The Skidegate Formation is comprised of black-dark grey variably calcareous mudstone and argillites. These Skidegate rocks were previously known as the Upper Shale Member of the Haida Formation, but have since been reassigned to the Skidegate Formation (Hamilton and Cameron, 1988, Geological Survey of Canada Paper 88-1E). The Late Miocene-Late Oligocene Masset Formation, consisting of porphyritic andesites and basalts, underlies the area to the immediate northwest.

Lignite and related carbonaceous debris occur in all formations as fragments, varying from logs several centimetres in diameter to slivers and pink dust. The percentage of carbon ranges from 0.1 to 0.5 per cent.

Logs appear to be aligned parallel to the strike of the larger quartz veins (i.e. 0°...

At least two separate Miocene rhyolitic intrusions localized along the Specogna fault occur. A highly fluidised rhyolite appears to have ascended through unconsolidated coarse sediments (Skonun Formation) and become incorporated in a porridge-like mixture with boulder conglomerate. Other intrusive types include: 1) quartz-feldspar rhyolite porphyry, 2) hydrofractured rhyolite crackle breccia with stockworks of pyrite/silica veinlets, 3) a brecciated rhyolite with minor Skidegate mudstone fragments and 4) vuggy rhyolite with a honeycomb-like texture containing up to 10 per cent ubiquitous pyrite.

what is this?!

sub-types of rhyolite porphyry

The rhyolite intrusions predate or are contemporaneous with the epithermal hot-spring suite and are thought to have initiated the movement of meteoric water and the development of the system. The suite is composed of a "polymictic hydrothermal breccia" (Tolberg and Proc, 1988) and associated quartz and/or calcite veins and has been traced along the Specogna fault for at least 800 metres. Both sedimentary and intrusive rocks have been subjected to argillic alteration and silicification that extends laterally away from the hydrothermal breccia. Beyond the area of pervasive silicification is a region of argillically altered Skonun Formation sediments characterized by the presence of kaolinite-illite with minor alunite and sericite. Chloritic alteration is also reported.

Mineralization consists of a low grade groundmass encompassing all of the silicified lithologic units between the footwall fault to the west and the barren, argillic alteration zone to the east, (generally the contact between argillic alteration and silicification marks the 0.69 grams per tonne gold grade boundary). The gold is mostly free and extremely fine with occasional coarse accumulations. It also occurs within quartz and chert-filled fractures influenced by the lithological and stratigraphic units, changes in stratigraphic attitude, movement along the fault and degree of silicification.

Minerals identified in decreasing order of abundance include pyrite, marcasite, limonite, hematite, native gold, cinnabar, chalcopyrite ~~and~~ sphalerite, and pyrrhotite (Gosparrini, 1979)

Needs updating from 1994+'96 work? plus Schroeter Monthly Report, Aug. '96! prior to 1995

The orebody is essentially wedge-shaped and extends 800 metres northwest. The wedge is approximately 200 metres wide at surface, thinning with depth to 50 metres at sea level. The depth of the deposit is about 180 metres. The ore is distributed in four silicified lithologies. The Skonun Formation contains 55 per cent of the total ore tonnage; hydrothermal breccia, 30 per cent; rhyolite, 13.0 per cent and Skidegate Formation mudstone, 2.0 per cent.

More than 50,000 metres of drilling has established geological reserves of 43.5 million tonnes grading 1.65 grams per tonne gold at a 0.69 gram per tonne gold cutoff. Proven and probable mineable reserves at a 1.1 grams per tonne gold cutoff are 40.7 million tonnes grading 1.65 grams per tonne gold (Tolbert and Proc, 1988).

Total proven and possible reserves at Cinola are 40.7 million tonnes grading 1.65 grams per tonne gold; possible reserves are 2.8 million tonnes grading 1.71 grams per tonne gold (MDAP - Stage II Report, Cinola Gold, City Resources (Canada), 1988).

BIBLIOGRAPHY

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EMPR ASS RPT 2890, 3517, 5284, 5417, 6754, 7208, 8730, *11167, 14593, 15934, 16621, 17175, 18785, 20076
AEG (Precious Metals in the Northern Cordillera, 1982: Cinola Gold Deposit, Queen Charlotte Island, B.C., - A Geochemical Case History)
IPDM Jan/Feb, 1989

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EMPR PF (Consolidated Cinola Mines Ltd. Annual Report, 1979; *Sanders, K.G. (1980): The Cinola Gold Property, CIM District 6 Meeting; Consolidated Cinola Mines Ltd., Stage 2 Submission to Steering Commitee for Development of New Metal Mines, July 1980; City Resources Ltd. Annual Reports for 1986, 1987; Report on City Resources by T.C. Coombs Co., March 1987; *Tolbert, R.S. and Froc, N.V., (1988): Geology of the Cinola Gold Deposit, Queen Charlotte Islands, B.C.; City Resources, Press Release, January 31, 1989; Property description, November 21, 1994, Romulus Resources Ltd.)

Needs updating - 1995

EMPR FIELDWORK 1975, pp. 71-74; 1979, pp. 159-170

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EMPR GEM 1971-111,112; 1972-497,498; 1974-322

EMPR OF 1992-1

EMPR EXPL 1975-172,173; 1977-206; 1978-234; 1979-249; 1980-381; 1982-364; 1985-C365; 1987-C352

EMPR MAP 65 (1989)

GAC Field Trip Guidebook, Trip 8, 1983, pp. 12,13

CIM Sept. 1976, p. 64, Volume 69, Issue 803

CMJ April 1981, p. 69

W MINER June, Oct. 1980; Jan. 1981; Apr. pp. 64-65, 1982; Feb. pp. 54-59, 1984

EMR MP CORPFILE (Silver Standard Mines Limited; Quintana Minerals Corporation; Consolidated Cinola Mines Ltd.)

N MINER MAG October 1989

N MINER Aug.21, 1975; Jan.26,Jun.29,Jul.27,Dec.21, 1978; Jan.18,Feb.8,Apr.5, 1979; Jan.17,Apr.3,May 15,Dec.11, 1980; Jan.15,May 21,Oct.15,Nov.26, 1981; May 13,Aug.12,Sept.30, 1982; Apr.28,Sept.8,Dec.1, 1983; Jan.5,Aug.16, 1984; Mar.28, 1985; Oct.27,Nov.24, 1986; Jan.26,Mar.16,Apr.13,May 11,Dec.14, 1987; Aug.15, 1988; Feb.13, June 12, Oct.16, 1989; Apr.30, 1990

GCNL #230, 1975; #120,#197, 1977; #116,#125,#139,#160,#236,#241, 1978; #3,#4,#9,#25,#39,#65,#80,#102,#139,#169,#191,#192,#236, 1979; #64,#176,#229, 1980; #100,#122,#151,#168#182,#227,#230, #235, 1981; #31,#83,#124,#179, 1982; #241, 1983; #154,#179, #183,#197,#216, 1984; #52,#173,#212, 1985; #67,#217,#228,#237, 1986; #27,#88,#90,#111,#234, 1987; #21,#101, 1988; #31, 1989

Needs updates (esp. '95 + '96)

V STOCKWATCH July 10, 1989

Victoria Times, Jan. 30, 1979, p. 7

NW PROSP Dec.1986/Jan.1987; Jan./Feb., July/August, 1989

GSC P 86-20; 88-1E; 89-1H

GSC MAP 1385A

EMR MIN BULL MR 223 B.C. 281

DATE ADDED: 860611
DATE REVISED: ~~890224~~ 960812

CODED BY: LDJ
REVISED BY: ~~GJP~~ TGS

FIELD CHECK: N
FIELD CHECK: ~~N~~ Y

SME 1985 "Discoveries of Epithermal Precious Metal Deposits", Edited by V.F. Hollister, Chapter 13, pp. 137 - ~~139~~ 145.

SEG 1988, Cinola Gold Deposit, SEG Field Tour; Edited by A. Panteleyev and T.G. Schroeter, Sept. 23, 1988, pp. ?

RUN DATE: 06/11/96
RUN TIME: 16:59:54

MINFILE / pc
PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH - MINERAL RESOURCES DIVISION
MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES

PAGE: 8
REPORT: RGEN0200

MINFILE NUMBER: 103F 034 NAME: SPECOGNA STATUS: Developed Prospect

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1975	1	1	Silver	529	
			Gold	902	

SUMMARY TOTALS: 10)F 034 NAME: SPECOGNA

		Metric	Imperial
	Mined:	1 tonnes	1 tons
	Milled:	1 tonnes	1 tons
Recovery:			
	Silver:	529 grams	17 ounces
	Gold:	902 grams	29 ounces

Comments:

1975: Actual ore milled is less than 1 tonne.

Any data from bulk sampling (pilot mill testing) program (~1990) by Barrack Mines Ltd. ??!

My records show: 2 shipments of gold ore from Marino showing from Efrem Specogna to Tacoma smelter rec'd on June 26, 1975. ① Net weight = 5361 lbs (@.93% moisture) ⟹ 5311 lbs net dry wt.
Assay = 3.40 opt Au; 1.52 opt Ag; 0.01% Pb; 0.06% Cu; 0.01% Zn; 0.25% As; 0.03% Bi; 91.9% Si.

Metal Content (payable) = 8.2 ounces gold
3 ounces silver

② Net dry weight = 1278 lbs Assay = 16.45 opt Au; 6.72 opt Ag
Metal content (payable) = 9.7 oz gold; 4 oz silver

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i.e. Total prod. (payable) = 6639 lbs yielding 17.9 ounces gold