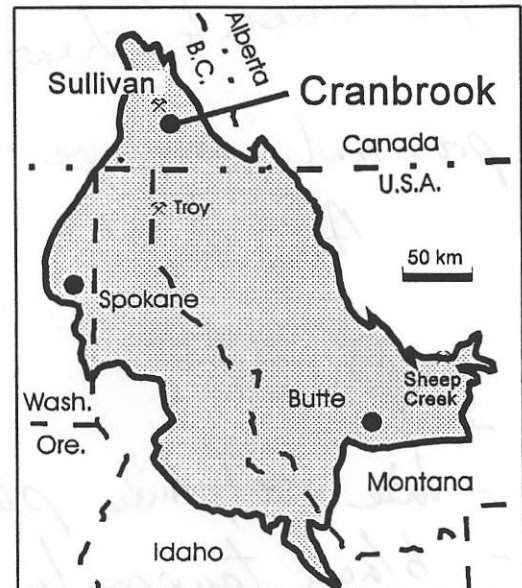


REVISED PROGRAM

METALLOGENY OF THE BELT-PURCELL BASIN: SOUTHERN B.C. AND NORTHERN U.S. ROCKIES WORKSHOP

Inn of the South
803 Cranbrook St.
Cranbrook, B.C.

This workshop reports on the results of multi-disciplinary geoscience projects to investigate the geology, mineral deposits and metallogeny of the northern Belt-Purcell Basin. The workshop is a unique opportunity for mineral explorationists, government geologists and university researchers to combine their efforts in advancing the understanding of the bedrock geology, surficial geology, geochemistry, geophysics and mineral deposits.



ORGANIZERS

Workshop co-ordinators:	Derek Brown, Trygve Hoy, David Lageson, Doug Anderson
Registration	Doug Anderson, Linda Hitchen, Valerie Smolik, East Kootenay Chamber of Mines
Technical programs	Derek Brown, Trygve Hoy
Poster session/core shack	Pat Stinson, Derek Brown
Field Trips	Derek Brown, Trygve Hoy, Doug Anderson
Fund-raising	Paul Wilton, Rick Walker
Advertising	Derek Brown, Dave Lefebure, Brian Grant, Dave Lageson
Office assistance	Mike Fournier, Cathi Bigelow, John Armitage

FIELD TRIP LEADERS

Trygve Hoy, Craig Leitch, Bob Turner, Marcia Knapp, Norris Del Bel Belluz, Don Winston, Doug Anderson, Paul Ransom, Derek Brown, Pat Stinson, John Balla

WORKSHOP SPONSORS

(as of September 28, 1994)

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- Bighorn Helicopters, Cranbrook
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- Cominco Ltd., Cranbrook
- Deakin Equipment, Vancouver
- Discovery Consultants, Vernon
- East Kootenay Chamber of Mines, Cranbrook
- Fiorentino Brothers Contracting Ltd., Cranbrook
- Gwen Resources Ltd., Kelowna
- Inco Exploration and Technical Services Ltd., Vancouver
- J.R.T. Communications (GPS consultants), Fernie
- Neville Crosby, Vancouver

Many thanks for their generous support to the workshop!

4.6% Cu, 11g As 2.23g/tm As

- gtz-siderite shear with Moyie Sill

proximal massive sulphides distal
As, Sb, Bi Mn

Ross

- late sulphide plug - Sn, rhodochrosite

- black tourmalinite in beds

- light brown tourmalinite in vein

Vine

mineralized Moyie dykes

vein retracts at more competent units, more sulphides

- brecciated gtz cemented by py - aspy - aspy associated with gtz

- late py - calcite

- early breccias have sericite ^{± chlorite} margins

- later Fe-chlorite with mineralization with gtz-carbonate gangue

- mineralization post-dyke

? relationship to Kootenay King

SUNDAY, OCTOBER 2, 1994:
Inn of the South, Ball Room

Regional Geology: [Chairs -- Derek Brown and Dave Lageson]

- 8:45 Welcoming remarks Hon. Anne Edwards (Minister of Energy, Mines and Petroleum Resources)
- 9:00 Introduction to the Workshop Derek Brown (BCGS) and Dave Lageson (TRGS)
- 9:15 Stratigraphic overview Don Winston (University of Montana)
- 9:45 Three dimensional crustal structure of the Purcell anticlinorium in the Cordillera of southwestern Canada Fred Cook (University of Calgary)
- 10:15 *Coffee break*
- 10:45 Thrust rotation model for the Belt-Purcell Basin Jim Sears (University of Montana)

Metallogeny and Sullivan Mine and Corridor: [Chair -- Doug Anderson]

- 11:05 Regional metallogeny -- Purcell Supergroup Trygve Hoy (BCGS)
- 11:30 The Sullivan - North Star Corridor: Regional scale alteration, fragmental rocks & mineralization associated with the Sullivan strataform Pb-Zn deposit, southeast British Columbia Bob Turner, Craig Leitch (GSC), Trygve Hoy (BCGS)
- 11:50 Fluid chemistry and wallrock alteration. Sullivan Sedex Zn-Pb deposit Craig Leitch (GSC)
- 12:10 Sullivan sub-basin Paul Ransom (Cominco)
- 12:30 **Lunch provided in Ball Room + poster session + rock displays in Club Room**

Mineral Deposits I: [Chair -- Jim Sears]

- 1:30 Rift-related base and precious metal deposits of the central Belt terrane: the relationship between sill intrusion, sedimentation, tectonics and mineralization in the lower Belt Supergroup Steve Buckley (Flathead Tribes) Jim Sears (University of Montana)
- 2:00 Geology of the Rock Creek Cu-Ag district, Sanders and Lincoln Counties, Montana John Balla (Asarco) Denise Saunders (Noranda Minerals)
- 2:30 Olympic Dam in Idaho? Clues from Precambrian Plate Reconstructions Gerry Ross (GSC-ISP)
- 3:00 *Coffee Break*

Mineral deposit "SNAP SHOTS" I: [Chair -- Dave Pighin]

- 3:30 Styles of mineralization within the Aldridge Formation Doug Anderson (Cominco)
- 4:00 Fors Dave Pighin (Consolidated Ramrod), Jim Britton (BCGS)
- 4:30 Vine Trygve Hoy, Dave Pighin
- 5:00 St. Joe Trygve Hoy, Dave Pighin
- 5:30 Dinner (individuals responsibility)
- 8:00 **CLUB ROOM:** Poster session, core shack and cash bar

Stratobound

Fors
Star
Dodge

Conduit

Sullivan
Stemwinder
Fors
Morning Glory (USAS)
Sullivan mine

Fors

- massive sulphide lens
- diss. po - some bedding + base metals extending 100's of m's from massive sulphide lens

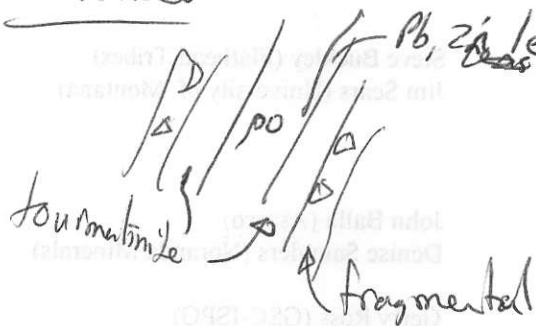
Dodge

- strata controlled po, gal, sphal in altered carbonate horizon $1\frac{1}{2}\%$ Zn over 1 to $1\frac{1}{2}$ over tourmalinized fragmental in Middle Atteridge

Star

- laterally extensive, tight marker control
- tourmalinites and tourmalinized fragmental blocks

Stemwinder



in 2mt of sulphides

- sulphide-matrix breccias

Vernis

Ume, St Eugene, Kellog - Quantrell vein system in Sullivan corridor

Diss

higher
in
strat. than
Sullivan

Caram, Star

- biotitic rocks, spotted with sphalerite, < 5% fracture-related mineralization
- galena-sphalerite rich layers with (cross-cut) with pink garnets Zn?
- Star has 1-2%_n over a number of outcrops

MONDAY, OCTOBER 3, 1994:
Inn of the South, Ball Room

Southeast B.C. Overview Session: [Chair -- Dave Lefebure]

- 8:30 Cranbrook District Office Andrew Whale (MEMPR)
- 8:45 Exploration highlights of southeast British Columbia Paul Wilton (MEMPR)
- 9:00 New geoscience products Dave Lefebure (BCGS)
- 9:20 Catchment basin analysis of RGS data Steve Sibbick & Wayne Jackaman (BCGS)
- 9:45 *Coffee break*

Rob Kell

Mineral Deposits II: [Chair -- Ian Lange]

- 10:30 The Coeur d'Alene type deposits: An analogue to turbidite-hosted vein-type gold deposits Ian Lange and Robert Kell (University of Montana)
- 10:50 Montana Sapphire Deposits cancelled David Baker
- 11:10 Origin and geologic controls on a Ag-Pb-Zn deposit in the Wallace Formation: SEDEX or Coeur d'Alene vein origin for the Gold Hunter deposit. Coeur d'Alene district, Idaho Terry Devoe (Hecla Mining)
Jed Thomas (Sage Resources)
- 11:30 Copper and platinum group element mineralization in mafic dikes of the Revais Creek Mining District. Flathead Indian Reservation. MT. Dan Lauer (University of Montana)

12:00 Lunch Break (individuals responsibility) + poster session + rock displays

- 1:40 Gas bubble and expansion crack origin of "molar tooth" calcite structures in Proterozoic Belt Supergroup, western Montana G. Furniss, J.F. Rittel, Don Winston (University of Montana)

Mineral Deposit "SNAP SHOTS" II: [Chair -- Rick Walker]

- 2:00 Iron Range Pat Stinson (BCGS), Derek Brown
- 2:30 Wilds Creek (Leg) Pb-Zn-Ba deposit Derek Brown, Peter Klewchuk
- 3:00 *Coffee Break*
- 3:30 Alkalic epithermal gold in the Flathead area Rob Cameron (Fox Geological)
- 4:00 Diamond potential of southeastern B.C. Rick Walker (Dynamic Exploration)
- 4:30 Marysville magnesite deposit Kirk Hancock (BCGS)

SUMMARY:

- 5:00 Summary remarks and discussion
- 8:00 **CLUB ROOM:** Poster session and cash bar

Aldridge Styles of Mineralization D. Anderson

BEDED

STRATABOUND

CROSS-CUTTING CONDUIT/FILL - FRAGMENTALS

VEINS

DISSEMINATED - fr. simple sulphides
- longer vertical dimension
than horizontal

Intensive - Related - Mayre sills
- qtz carbonate

Bedded

1) stratigraphy

LA - MA bedded

th weather marker
middle of the MA

2) Fragmentals

3) faulting

North Star - original discovery in 1892

- not immediately associated with tourmalinite
- qtz - sericite host

Vulcan

- bedded, discontinuous bedded galena + sphalrite
with arkose sediment with lots of
microcline

- major Fragmental ←
- distal characteristics although with
- no tourmalinite

Kootenay King

- brown & dark gray argillite sericite
- green calcareous argillite host to ore
- 22,000 tonnes 5.5% 8.5% Zn
- small volcanic unit along same
horizon down hill

Concentrator Hill

- po, sphal.
- 5-7 km from mine

Vine

stratiform zone - dark wacke - po zone
8-10 cm thick - up to 3 km from vein
at Sullivan horizon - distal aspy, up as well as gal, sphal, po