

ALICE ARM DEPOSITS

Location: Along eastern margin of Coast Plutonic Complex, between Stewart & Terrace (incl. Qtz. Hill) - 160 km. N Pr. Rupert

History: Disc. - 1911 - Hg-Pb-Zn veins. 1916 - 1st prod. from Tidewater of 345 tonnes @ 1.6% MoS₂. 1930's - Kennco - Roundy Ck & Tidewater. 1959 - Kennco - B.C. Moly. 1967-1972 - Production = 10,400 tonnes Mo. 1973 - (China)

Age: 50 my

Geology: - small stocks gen. not exceeding 0.8 km in diam.
- por. QM - distinguished from Coast Plutonic
- most intrude Bowser sst, gwk, sh (L. Luri)
- some within Coast Plutonic g, Mally Mack, Penny Ck., Qtz Hill
- foretell & passive emplac. - seds. arched & domed around stocks
- elongated stocks = empl. along major fault zones
- south of Alice Arm - several MoS₂ stocks clustered near remnants of flat-lying Quat. bsst which prob. overlies feeders
Also Nass R. lava Eg. Kay, Valley, Ridge, Snafu, Moly Ck

Reserves: B.C. Moly (36 @ .7), Bell (35 @ .11), Ajax (294 @ .1), Roundy

Characteristics:

⇒ Localized by deep-seated faults & frac. systems
⇒ dist'n of Quat. + Rec. bsst.

- 1) oval or elongate stocks
- 2) QM por.
- 3) some zoned (eg. B.C. Moly)
- 4) several stages of intr.
- 5) post min. lamprophyric & bsst dykes striking NE
- 6) NW faults
- 7) bio hntls in seds.
- 8) 'Typical' alt'n
- 9) Better grades depend on struc. & lithology eg. frac.
- 10) Several stages of veining - all have late Qtz-carb ± py, PbS, ZnS, FeS, cpx + Ag-Pb-Bi Sulphosalts
- 11) py haloes

B.C. MOLY

Location: 6.5 km south Alice Arm

History: 1967-1972 - prod. (kennea) . 1973 → Climax

Age: 57 my

Geology: stock 1000 diam + eastern appendage 500 m long
composed of QD - prob. older phase.
- several granitoid phases + ages - central QM pm.
- late post-MoS₂ QFP truncates part of stock at depth
+ terminates ore-grade min. of NE part of ore zone
- lamp. dykes - NE swarms.
- hnf's + contact met'm (eg. up to 30% bio.)

Mineralization: - zone is a ring struc., slightly elliptical + elongated E-W

- ring occurs within + outward from intense gtz-or alt'n.
 - annular min. zone conforms roughly to north, east, + west contacts of stock; whereas, southern part of zone cuts across stock.
 - ring has best grades adj. to hnf's, contact.
- barren core!

- 4 separate but superimposed substages of MoS₂ min. followed by polymetallic vein stage. - esp. Pb = ^{poor}met.
 - dilution by lamp. dykes.
 - post-ore intr. + tungsten min. - appar. occurs thru. stock.
- MoS₂ in gtz. veins + hairline fracs; dissem. only in alkalites.

Alteration: gtz-or-ser → circular zone of intense alt'n
- outer zone = ser + gtz + or veinlets.

Reserves: 72,576,000 tonnes of 0.12% MoS₂
or 36,445,600 tonnes of 0.23% MoS₂ (1964)

BELL MOLY

Location: 10 km SE Alice Arm

History: Disc. - 1965 (Mastodon Mth. Bell), 1975 - Climax.

Age: 50 my

Geology: elliptical QM por, elongate NE 670m x 335m
- intr. into black sst + gwk with bio hnfls.

Mineralization: MoS₂ in am + hnfls, 4 stages as at B.L.M.

Reserves: 32 m. tonnes @ .11% MoS₂

ROUNDY CREEK

Location: 2.4 km. from tidewater

History: Disc. - early 1900's, 1965-71 (Sil. Chiffon) - 9300m ddk + 780m underpl. 1975 - Climax opt.

Age: 50 my

Geology: QM several phases; bio hnfls; seq by NW faults
- complex - parts sheet-like in form.

Mineralization: MoS₂ in am + hnfls.

Alteration: potassic zone partic.

→ 3 zones of min. - 1) eastern = 7m tonnes of 0.11% MoS₂, 2) central + southern = 1.35 m tonnes @ 0.347% MoS₂, 3) ^{northern} 35,000 tonnes @ .668% MoS₂
→ ddk + underpl. indicate zones of MoS₂ are lens-like + extrem. erratic.

ASAX

Location: 13 km NE Alice Arm

History: Disc. - 1965 - Newmont (1965-67) - 8100m ddk

Age: 50 my

Geology: 4 closely spaced stacks of QM (900m x 750m)
- bio hnfls; N-NW + E-NE faults

Mineralization: zoned (MoS₂ - po) ab. po.

- one has definite partial ring or arcuate shape with steeply dipping internal struc. as indicated by grade contours.

- barren core 490m x 300m oriented NW, however a MoS₂ zone 180m wide NE thru middle of core i.e. min. controlled by faults.

- part-ore faults have displaced ore in places.

- 4 stages of sulphide min.

i) initial qtz-po

ii) qtz-MoS₂-po

iii) qtz-MoS₂-po

iv) qtz-ZnS-py-PbS-4py.

Alteration: ser-bio-silic.

Reserves: ~ 294 m tonnes @ 0.12% MoS₂

ROUNDY CREEK

Sa. No.

R041

TS

DESCRIPTION

'Flow' MoS_2 in white gtz. fsp po.