

A.R. 7853 p 3:

1969: Rockland mining drilled 5 holes  
 200' apart along with the Shear. Total  
 2188'. All had traces uranium  
 @ 519. values in 2 places, including  
 130' grad. 0.32% U, 5 105' of .42% U  
 1970: more DD, unsatisfactory results

P 1989-5, 1. (Co, only low in Park except here)

, 3 little suggested Shear Group

, 9. Rockland metavolcanic pendant rocks

, 11: willa volcanics are like Fels, low Sinemurian volcanics

- ~~There are 3 subtypes~~

- There are 3 varieties of feldspar  
 porphyry & quartz talite porphyry,  
 (early Jurassic intermediate porphyry,  
 associated @ Rockland volcanics).

- Pipe-like heterolithic intrusive breccia  
 which hosts willa Fe, -Cu-Ag mineralization  
 is contained within these intrusions.

- Zircon from quartz talite porphyry  
 yielded a ~~194~~  $194 \pm 3$  Ma uranium-lead  
 isotopic age

, 15: - is in a breccia pipe in Rockland volcanics  
 in a roof pendant in Nelson batholith

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EXPLAN IN BC 1987 p 421 - WUG dev. on a  
diagram

1987  
 1. The program is a 102' of 45' x  
 @ 21' width in 5' places only  
 5188' All - but two - numbered  
 1987. (Section 11A) - 2' wide  
 p 421

9 1987-2. 1. (in 1987) in 1987 (except here)  
 3. The 2' wide section group  
 2. 1987's meteorological budget roots  
 11: 1987's meteorological budget roots

- ~~There are 3 sections of 1987~~
- There are 3 sections of 1987  
 (each 1987's meteorological budget roots)  
 (each 1987's meteorological budget roots)
- 1987's meteorological budget roots  
 which 1987's meteorological budget roots  
 is contained within these 1987's meteorological budget roots
- Given for parts like budget roots  
 1987's meteorological budget roots  
 1987's meteorological budget roots
- 1987's meteorological budget roots  
 in a 1987's meteorological budget roots  
 in a 1987's meteorological budget roots

WILLA

EMPR EXPEN 1985-36

~~1985 EMPR IR~~ B.C.: Northair drove 521m (596 to go)  
1067 m tunnel,  
program for 3045 m U/G DD on a diabase target  
@ a ring dike breccia complex 300m long, 30m  
max width. (west zone) (Gives v. high reserves  
since replaced by newer figures. q.v.) Age dating  
was then in progress

- Rx now thought to be Lower Jurassic Rossland  
Fork. (Prev. mapped as JURASSIC (or Lower Jurassic)  
Stoan Group
- Type: Porphyry - breccia
- $45^{\circ} 55'$   $117^{\circ} 22.3'$  82F/14W

EMPR EXPEN 1985-36 A58, A60

~~1985 EMPR IR~~ B.C. ~~EMPR~~ Northair completed 2867 metre  
U/G DD programme. Reserves being upgraded. A total  
of 5235 m U/G DD completed in willa East zone,  
which appears to be down-faulted relative to W  
zone. (Reserve figures given)

#### DOMAIN 6 - NORTHWEST LINEAR

A northwest-trending linear zone of argillic and limonitic alteration extends 4 kilometres between Nansen and Sunset Mountains. Silicified stockworks and veins containing base metal values and gold occur within this domain (Hudson Bay and Soldier Boy; Map 3). These criteria were used to define this area of mineral potential. The Silver Crest showing 1 kilometre east of the main structure may be a splay fault and hence is included in this domain (Plate 8).

Early exploration work on the Hudson Bay showing developed a narrow irregular sulphide-bearing quartz vein.

#### DOMAIN 7 - BARNETT

The Barnett claim contains a northeast-striking shallow-dipping quartz vein that is exposed for approximately 500 metres, by trenching and three short crosscuts. The quartz vein, less than 30 centimetres wide, is sparsely mineralized with pyrite and galena. Argillic and sericitic alteration extends up to 10 centimetres into footwall and hangingwall granite.

Three grab samples of vein material returned low but consistent gold values and high silver values (Table 5). The anomalous stream sediment in McGuire Creek contained 76 parts per billion gold.

#### DOMAIN 8 - AL (WHEELER LAKE)

Mineral assessment of claims in the Wheeler Lake area is hindered by lack of exposure. Scarcity of outcrops led workers to propose a soil survey of the area in 1983. It is unknown whether this was undertaken. Seven trenches and a short adit expose narrow gold and silver-bearing quartz veins. Vein dimensions, orientation and continuity are unknown, but based on limited surface observations, the width is narrow (less than 5 centimetres).

#### DOMAINS 9 AND 10 - REVENUE AND ONTARIO/BALTIMORE

These two domains are suggested to have mineral potential based on past mineral production (Tables 3 and 4).

#### SEDIMENT-HOSTED VEINS

Potential for sediment-hosted veins is extremely low in the park. Only 5 per cent of the park is underlain by meta-sedimentary rocks and their character is silicic; most known deposits outside the park are in argillaceous sediments. Only the Keen Creek re-entrant, that consists of argillaceous metasedimentary

rocks, is a favourable domain (for example Cork Province, Wintrip and five other deposits). The most productive veins follow a northeast-striking joint system in the Slocan camp (Cairnes, 1934).

#### DOMAIN 11 - KEEN CREEK RE-ENTRANT

Seven silver-lead-zinc deposits occur within the Keen Creek re-entrant, most of which are north of the park. Based on past production and favourable geology additional silver-lead-zinc ore could be found in this area. However, gold values are negligible. Limited drilling, soil and silt geochemistry and geophysical survey activity by industry is ongoing in this domain. The deposits are located in a northeast-striking structure that parallels the average bedding attitude. The Slocan Group re-entrant does not extend south into the park's new boundaries.

#### WILLA-TYPE VOLCANIC BRECCIA PIPE

##### WILLA (AYLWIN CREEK) DEPOSIT (MINFILE 82FNW071)

Geology and mineralization at the Willa deposit, located 6 kilometres northwest of the park, has been described in detail by Heather (1985). A simplified breccia pipe model for Willa is illustrated in Figure 7-B. Development and exploration continued on the Willa deposit in 1987. Northair Mines Ltd., with its joint venture partners, BP Minerals Ltd. and Rio Algom Exploration Inc., has started exploration on the East zone, opened an upper level (1100-metre elevation) into the Main zone and driven a decline under the West zone. The deposit occurs in a pendant of Rossland Group rocks within the Nelson batholith.

Mineralization comprises chalcopyrite, pyrrhotite and microscopic gold in the intrusive breccia and adjacent host intrusions. Published reserves for the West zone are 549 700 tonnes grading 7.5 grams gold per tonne, 9.6 grams silver per tonne and 1.04 per cent copper (Northair Mines Ltd., 1987).

During the 1987 mapping we found no pendants with meta-volcanic rocks correlative with the Rossland Group. Hence potential for Willa-type deposits is very low. All pendants in the Nelson batholith within the park, are correlative with Slocan Group or older meta-sedimentary rocks.

#### EPITHERMAL GOLD

Characteristics of epithermal gold deposits are: shallow depth (less than 1.5 kilometres) and low