TERTIARY GOLD COMPILATION

The Tertiary gold occurrence compilation was prompted by the realization that one of two greatest periods of gold accumulation in the earths history was the Tertiary. Whether this is an illusion or not is a matter for speculation as recent discoveries in the U.S.S.R. in paleozoic and Mesozoic terranes may change these figures (Boyles p. 114).

The first step taken was colouring the Tertiary rocks of British Columbia from Prince George south at a 1:1,000,000 scale. From this it becomes apparent that approximately 35% of southern British Columbia's surface geology is Tertiary in age.

The next phase was a systematic listing and short description of all gold occurrences within an arbitrarily chosen 10kms of Tertiary rocks or Tertiary ages of mineralization. Using this criteria all major gold camps have been included in the investigation with the sole exception of the Hedley area which was considered to be outside the 10km range.

Exploration Criteria

1) Gold or indicator mineral showing
2) Ultramafic rocks in area
3) Major faults and lineaments
4) Felsic intrusive rocks present
5) Transverse structures (Northeast trending faults in a dominantly Northwest trending regime
6) Alteration zones present (propylitic, argillic, potassic, silicification etc.)
7) Presence of a major fault or landsat lineament
8) Tertiary intrusive rocks present in the area
9) Sediment/volcanic contact
10) Mineralogic indicators
11) Porous, permeable units as possible hosts

A summary of the most interesting occurrences has been prepared using a chart form to display the characteristics of each. This compilation was limited

82E PENTICTON

82E/NE Kettle River

3. Union
   - 2km from Tertiary intrusive
   - minor landsat lineament adjacent to major fault
   - host is altered volcanic and calcareous sediments
   - silicification
   - fault NNE, galena, sphalerite & copper carbonate
   - 60,000 ounces produced

82E/NW Kelowna

Nothing of interest

- uraniferous Tertiary conglomerate and gravels could be checked for Au values

82E/SE Grand Forks

1. Providence
   - 2km to Tertiary felsic volcanics
   - gold - silver vein
   - sphalerite, galena, chalcopyrite, tetrahedrite
   - lead - zinc
   - hosted by sheared argillite and volcanics along contact of diorite stock
   - alkali porphyry dyke
   - silicified zone
   - over 5,000 ounces mined

2. Elkhorn
   - 2km from Tertiary felsic volcanics
   - minor landsat lineament
   - quartz vein, lead-zinc, sphalerite, chalcopyrite, tetrahedrite, galena, ruby silver, argentite
   - host volcanic fragmental rocks
   - over 5,000 ounces mined

34. Motherlode
- adjacent to Tertiary felsic volcanics
- fault contact
- limestone intruded by granodiorite and quartz syenites
- skarn
- some zones characterized by lack of magnetite
- chalcopyrite, sphalerite
- over 170,000 ounces mined

87. Caledonia
- <1km to Tertiary intrusive
- ultramafic rocks - chromite, magnetite in dunnite
- nickeliferous
- 8 ounces gold mined

91. Mastadon
- ultramafic body

55. Jewel
- 3km from Tertiary intrusive
- minor landsat lineament
- highly altered greenstone & quartzite in contact with Nelson intrusive
- chalcopyrite, pyrite, galena, tetrahedrite
- minor carb., sericite and chloritic material.
- 40,000 ounces mined

41. Lexington
- 3-4km from Tertiary felsic volcanic rocks
- paleozoic gneiss and schist bounded N and S by paleozoic or early mesozoic meta volcanics and meta-seds intruded by quartz-feldspar stock and serpentine and gabbro dyke
- pyrite and chalcopyrite occurs in fractures in serpentine
- skarn type?
- various tonnage estimates 170,000 tons of .46 with 2.4% Cu is the high grade zone
- Teck Corp.

42. City of Paris
- as above
- pyrite, chalcopyrite
- 655 ounces mined

32. Golden Crown
- 8km from Tertiary volcanics
- ore is gold vearing copper-pyrite and pyrrhotite in a quartz gangue

33. Winnipeg
- 8km from Tertiary rocks
- fissure in shear
- pyrite, arsenopyrite, chalcopyrite, pyrrhotite in quartz gangue
- 11,000 ounces mined

20. Knobhill
Phoenix Mine
- <5km to Tertiary intrusive rocks either direction
- interpreted as skarn type
- ore occurs in jasperoid and limestone of Brooklyn Formation and siliceous rocks of Knob Hill group
- intrusive of Tertiary pulaskite and augite porphyrite
- chalcopyrite & pyrite occur in garnet-epidote-calcite-quartz-chlorite gangue in limy rocks and to lesser extent in massive magnetite lenses
- gold in solid solution in minute blebs in pyrite and chalcopyrite grains
- 27,000,000 tons of .04 gold - produced a million ounces

82E/SW Penticton

6. Morning Star
- 5km from Tertiary felsic volcanics
- parallel quartz veins
- pyrite, galena, sphalerite with some free gold
- host argillites and schists of Anarchist series
- intruded by granites, quartz porphyry and dacite porphyry
- 14,000 ounces mined

10. Orofino
- <1km from Tertiary felsic volcanics
- adjacent to major fault
- Biotite schist intruded by quartz porphyry and granite
- Stringers conform to folding of schist
- quartz pyrite, sphalerite, galena, free gold
- 4,000 ounces produced

11. Twin Lakes
- major fault
- Tertiary rocks faulted over the host rocks
- diorite, granodiorite and granite
- quartz veins, galena
- 4,500 ounces produced

24,25
- chromite showings marked as ultramafics

26. Rock Creek Placer

27. Jones Place

20. Cariboo-Amelia
- 5km from Tertiary felsic rocks
- <1km from circular landsat feature
- finely banded seds quartzites and greenstones
- blue-quartz vein carries, pyrite, galena, sphalerite, some free gold
- over 80,000 ounces gold mined

78. Dusty Mac
- between major faults
- Tertiary light coloured pyroclastic rocks and thick lahar deposits of feldspathic andesite some sandstone and carbonaceous shales
- lens of quartz breccia
- pyrite, native silver, bornite, chalcopyrite
- produced 20,000 ounces