

881960

Tom Schwets
Senior Regional
Geologist

Mt. Davidson (Pem) Minfile 93F 037

Geology:

- Host rocks are Hazelton Group bedded sedimentary (conformable) argillites, greywackes, sandstone, and siltstones as well as an intercalated sequence of mixed felsic (rhyolitic to dacitic) and mafic (andesitic to trachyandesitic) volcanic pyroclastic (ash and lapilli tuffs) and flow (flow banded; amygdaloidal andesite) rocks.
- Bedding attitudes are rare and generally flat or gently dipping to the west.
- Volcanic units (esp. from 1992 drilling) were sampled (by Granges) for whole rock (major oxide and trace elements) analyses.
- Thin sections (10) and polished sections (19) were interpreted by Leitch.
- Complex faulting has resulted in a repeat of units? (i.e. lack of data correlation).
- Soft sediment deformation textures present.

Hans Madesky work and interpretation:

- Diamond drill hole Dav-11 is distinctly lower silicification.

Leitch thin section interpretation:

- Scattered mafic sites - sulphides±chlorite in a matrix of quartz and clay-sericite.

Mineralization and Alteration: "Hydrothermal"

- a) Disseminated (and in amygdules) sulphides consisting of an average of 3-4% sphalerite, 1-2% pyrite and/or pyrrhotite, and traces of galena, arsenopyrite, chalcopyrite and tetrahedrite and boulangerite (+marcasite?). Free gold is suspected, but has not been identified.
- Zones with elevated gold values occur in both felsic and mafic volcanics, but mineralization and gold distribution does not appear to be lithologically controlled (eg. DAV-11: 14.28 g/t [0.416 oz/t] Au across 6.3 m, incl. 48.3 g/t [1.409 oz/t] Au across 1.3 m and BD-92-35: 0.72 g/t [0.021 oz/t] gold across 47.5 m).
- b) Breccia-hosted, c) Microfractures, d) Replacement/Nucleation
- Gold Zone:
 - appears to be (2 intervals) shear hosted in felsic fragmentals and flows
 - steeply dipping up to 70 m across (strike length ?)
 - includes a 0.7 m interval of massive sulphide (mainly pyrite)
- Silver Zone:
 - interpreted to be a relatively flat lying body up to 70 m thick containing an estimated reserve of 6 million tonnes grading 37 g/t silver and 0.05 g/t gold (Caelles, 1991).
- Structure:
 - existence of NW trending faults (geophys and drilling suggest that they dip steeply to the southwest and are post mineral structures
 - known, apparently two discrete mineralized zones on the property hosted in a northeast trending fault-bounded block roughly 5.75 km wide (seen on Fig. ?)

- Alteration:
- Phyllic - quartz sericite patches of fine grained green sericite±montmorillonite plus trace carbonate (dolomitic/ankeritic) and trace garnet (in felsic volcs.)
- Potassic - quartz, secondary biotite, sericite and clays. Minor secondary k-feldspar?, trace tourmaline identified by Leitch.
- Autobrecciation textures?
- Total sulphide content is generally low (trace to 5% disseminations). Locally zones of veins (sometimes 'massive')
- sulphides more abundant in seds(?)
- cross-cutting stringers of ZnS± PbS
- Arsenic - up to 1445 ppm (10 X higher in seds than in felsic volcanic rocks)
- Zone with abundant (up to 20%) black spherules up to 8mm in diameter, commonly with 1-2mm pyrite ±sphalerite cores. Between spherules, rock contains 5-8% fine grained disseminations- sulphides incl. 1-2% pyrite, trace to 4% PbS and up to 5% red-brown ZnS (Analogy (TGS) = Capoose 'replacement/nucleation')
- zone of felsic lapilli tuff with disseminated sulphides plus "whisps" paralleling foliation in sericite - sulphides replace fragments up to 1 cm in diameter
- apparent correlation of increase in gold content with presence of pyrite± pyrrhotite (and arsenic levels, too?)
- some sulphides associated with carbonate stringers in intermediate volcaniclastics
- no real evidence of veining
- pyrrhotite is the most common sulphide, often 'altered' to a mixture of secondary pyrite and lesser marcasite (esp. in felsic volcanics)
- sphalerite is widespread
- chalcopyrite is generally intimately bound as inclusions in ZnS or rarely pyrrhotite
- rutile is common in more mafic altered samples?
- specular hematite is relatively common
- traces of galena were identified in core

ANALOGY: intrusion (heat source ± mineral) at depth = hydrothermal circulating system, widespread phyllic alteration, deposition of disseminated sulphides (±brecciation). Local 'plumbing' may have caused circulating fluids to concentrate in zones resulting in higher grade mineralization.

Eg. Capoose, Equity Silver, Red Mountain -----> 'TRANSITIONAL'

RUN DATE: 07/28/92
RUN TIME: 08:40:24

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

PAGE: 1
REPORT: RGEN0100

MINFILE NUMBER: 093F 037

NATIONAL MINERAL INVENTORY:

NAME(S): PEM, MT. DAVIDSON

STATUS: Prospect
NTS MAP: 093F02W
LATITUDE: 53 10 22
LONGITUDE: 124 51 23
ELEVATION: 1559 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 10
NORTHING: 5892880
EASTING: 375925

COMMENTS: Diamond-drill hole collar (DAV-19), 3.5 kilometres north-northeast of the summit of Mount Davidson, 14 kilometres west from the west end of Kuyakuz Lake (Assessment Report 17032).

COMMODITIES: Gold

Silver

Zinc

Lead

Copper

MINERALS

SIGNIFICANT: Pyrite

Sphalerite

Galena

Chalcopyrite

COMMENTS: Unidentified black sulphide mineral

COMMENTS: Possible arsenopyrite

ALTERATION: Clay

Quartz

Limonite

Chlorite

ALTERATION TYPE: Argillic

Silicific'n

Oxidation

MINERALIZATION AGE: Unknown

ISOTOPIIC AGE:

DATING METHOD: Unknown

MATERIAL DATED:

DEPOSIT

CHARACTER: Breccia

CLASSIFICATION: Epithermal

Epigenetic

HOST ROCK

DOMINANT HOST ROCK: Volcanic

STRATIGRAPHIC AGE

GROUP

FORMATION

IGNEOUS/METAMORPHIC/OTHER

Cretaceous-Tertiary

Ootsa Lake

Undefined Formation

LITHOLOGY:

Rhyolite Tuff
Rhyolite Flow
Dacite Tuff
Rhyodacite Tuff
Andesitic Lapilli Tuff
Andesite Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane

TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Nechako Plateau

RESERVES

ORE ZONE: PEM

CATEGORY: Assay

YEAR: 1988

SAMPLE TYPE: Drill Core

COMMODITY

GRADE

Silver	62.5000	Grams per tonne
Gold	17.8000	Grams per tonne
Copper	0.0900	Per cent
Zinc	2.7600	Per cent

COMMENTS: Sample across 0.6 metres (Diamond-drill hole DAV-19).

REFERENCE: Assessment Report 17032

CAPSULE GEOLOGY

The Mount Davidson region is shown to be underlain by Cretaceous to Tertiary Ootsa Lake Group volcanic rocks. The area of the Pem occurrence is till covered but recent drilling has revealed an interbedded sequence of dominantly intermediate to felsic fragmental rocks and mafic units. The suite of rocks are commonly highly altered and brecciated, possibly reflecting faulting or fracturing. Lithologies intersected in diamond-drilling comprise rhyolite

MINFILE NUMBER: 093F 037

RUN DATE: 07/28/92
RUN TIME: 08:40:24

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

PAGE: 2
REPORT: RGEN0100

CAPSULE GEOLOGY

tuffs and minor flows, dacite tuffs, rhyodacite tuffs, andesitic lapilli tuffs and andesite tuffs. The rock units are variably oxidized, clay altered, silicified and highly brecciated. Limonite and chlorite occur as fracture-fillings.

Mineralized zones comprise brecciated, extremely altered felsic rocks with pyrite, sphalerite, galena, possibly arsenopyrite and an unidentified black sulphide mineral. A diamond-drill hole intersection across 0.6 metres assayed 17.8 grams per tonne gold, 62.5 grams per tonne silver, 2.76 per cent zinc and 0.09 per cent copper (Assessment Report 17032).

'Gold Zone'

BIBLIOGRAPHY

GSC MAP 1131A; 1424A
EMPR EXPL 1977-E185; 1979-214; 1980-321; 1982-288,289; 1985-C290;
1988-C155
EMPR ASS RPT 6384, 7803, 11051, 14242, *17032

DATE CODED: 890831
DATE REVISED: 890831

CODED BY: GO
REVISED BY: GO

FIELD CHECK: N
FIELD CHECK: N

Silver Zone (250m x 250m) (60-90m thick)
Drill indicated, open pit table
= 6 m tonnes @ 37g/t Ag + 0.05g/t Au
Ag: Au = 80 to 2000