



## THE BUBBLE HOTSPRING DEPOSIT BLACK DOME AREA (92O/8W)

By B. N. Church

### INTRODUCTION

The Bubble Hotspring deposit occurs on the Bubble claim group owned by Malabar Mines Ltd. The deposit is readily accessible on the old Porcupine Creek road 2.5 kilometres east of Black Dome Mountain and 25 kilometres south west of the Fraser River suspension bridge near the Gang Ranch (Figure 2-5-1). The airstrip half a kilometre southeast of the deposit is mostly overgrown by young spruce and jackpine trees.

### GEOLOGICAL SETTING

The property is extensively covered by glacial till and alluvium. Bedrock exposures are mostly along the main road near the centre of the property and on the hillside to the southwest.

The hotspring deposit is a bright yellow siliceous encrustation, 10 to 30 metres thick, forming a terraced structure immediately overlying rhyolite obsidian (Plates 2-5-1 and 2-5-2). It covers an area measuring at least 150 metres across, as viewed on a switchback on the Porcupine Creek road. The distinctly layered aspect and bossed surface of the deposit suggest a thermal spring origin. Opalescent quartz, including a small amount of fire opal, fills crosscutting fissures and interstices between the yellowstone layers.

Similar deposits occur near the Aurum Mines Ltd. perlite operation in the Empire Valley, 6 kilometres to the east (Z.D. Hora, personal communication, 1986). They are correlated with obsidian on Porcupine Creek dated  $26.1 \pm 0.9$  million years, which is similar to the age of the Black Dome basalt dated  $24.0 \pm 0.8$  million years (Faulkner, 1986; Mathews, *et al.*, 1984).

### DISCUSSION

Although the general geological setting of the Bubble Hotspring deposit is similar to the Blackdome mine a few kilometres to the west (that is, Eocene hornblende andesite and rhyolite country rocks), the obsidian immediately underlying the Bubble deposit is probably Miocene age and contemporaneous with the Black Dome basalt and the Porcupine Creek obsidian. Thermal and aqueous discharge from the cooling obsidian is the suspected origin of this yellowstone siliceous sinter deposit.

### REFERENCES

- B.C. Ministry of Energy, Mines and Petroleum Resources, Assessment Reports 10486 to 11261.
- Church, B.N. (1980): Exploration for Gold in the Black Dome Mountain Area, B.C. Ministry of Energy, Mines and Petroleum Resources, Geological Fieldwork, 1979, Paper 1980-1, pages 52-54.
- (1982): The Black Dome Mountain Gold-Silver Prospect, B.C. Ministry of Energy, Mines and Petroleum Resources, Geological Fieldwork, 1981, Paper 1982-1, pages 106-108.
- Faulkner, E.L. (1986): Blackdome Deposit (92O/7E, 8W), B.C. Ministry of Energy, Mines and Petroleum Resources, Geological Fieldwork, 1985, Paper 1986-1, pages 107-109.
- Mathews, W.H. and Rouse, G.E. (1984): The Gang Ranch-Big Bar Area, South-central British Columbia: Stratigraphy, Geochronology, and Palynology of the Tertiary Beds and their Relationship to the Fraser Fault, *Canadian Journal of Earth Sciences*, Volume 21, pages 1132-1144.

British Columbia Ministry of Energy, Mines and Petroleum Resources, Geological Fieldwork, 1986, Paper 1987-1.

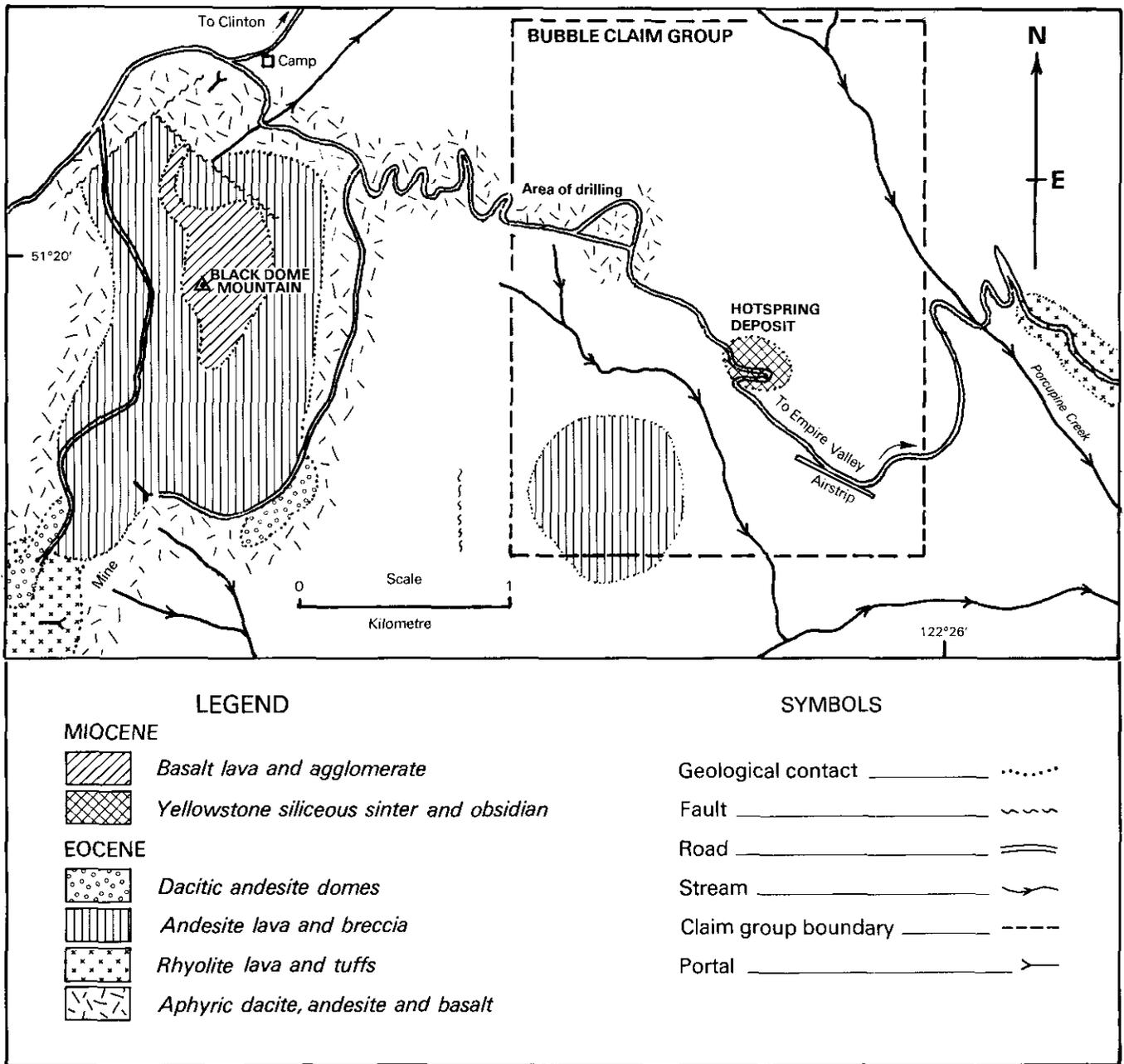


Figure 2-5-1. Geology in vicinity of the Bubble Hotspring deposit. Black Dome area.

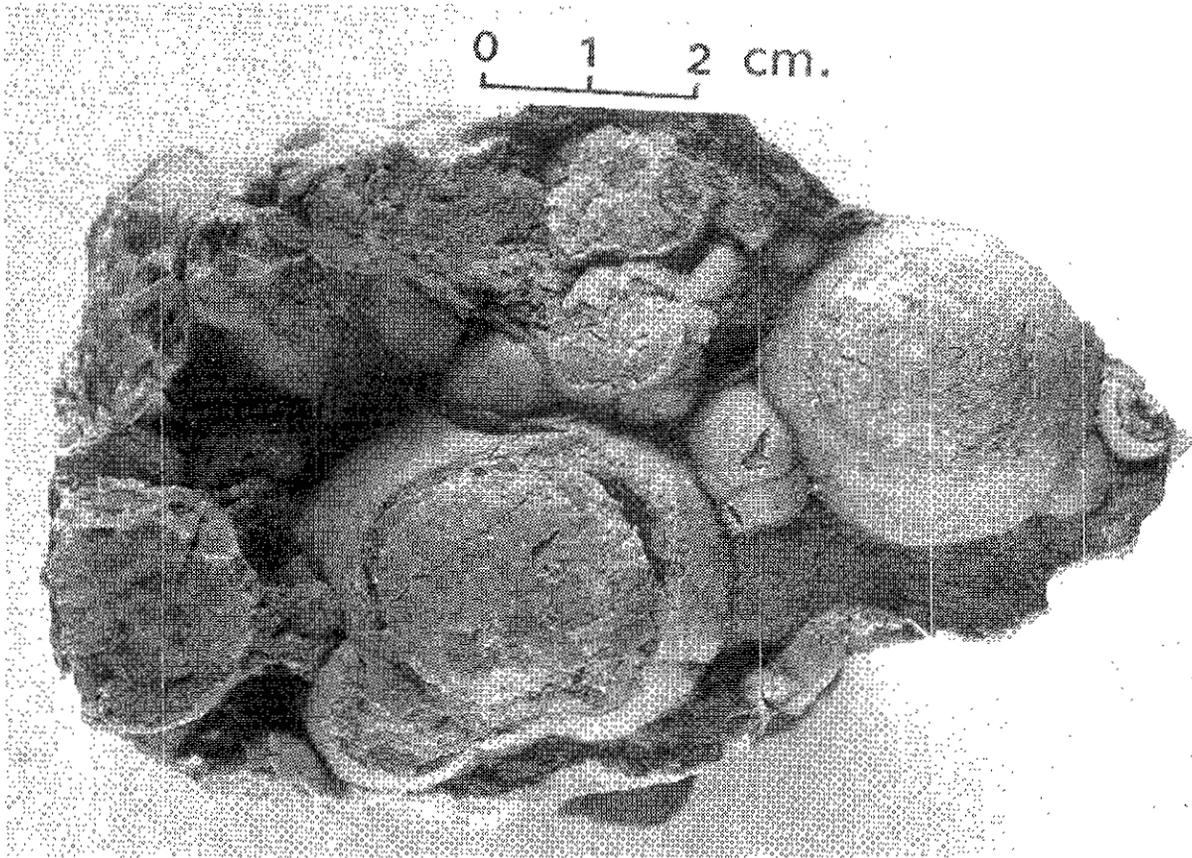


Plate 2-5-1. Bossed surface of yellowstone silica sinter.

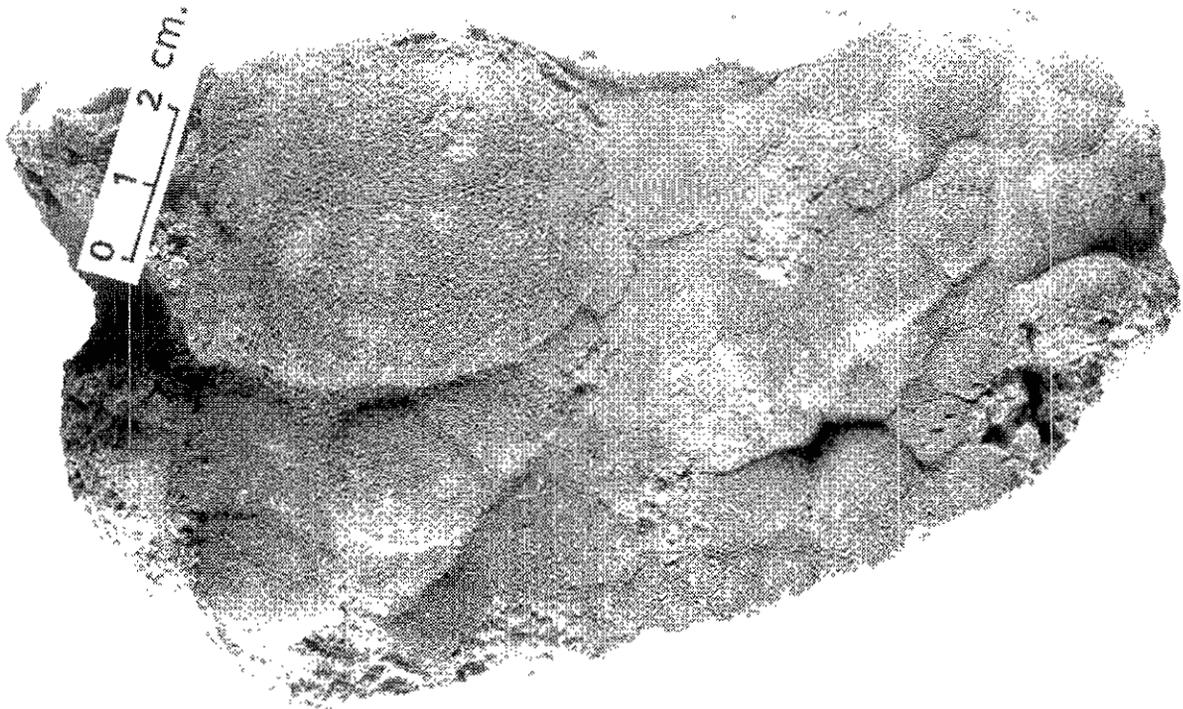


Plate 2-5-2. Yellowstone silica sinter, Bubble Hot Spring deposit.