TULAMEEN COAL BASIN

(92H/7)

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INTRODUCTION

The Tulameen coal basin is situated about 20 kilometres northwest of Princeton and is elliptical in plan being about 5 kilometres long by 3 kilometres wide. The long axis trends northwest to southeast, and the basin forms a plateau at about 1 200 metres elevation. On its northeast, north, and southwest sides, the basin is rimmed by ridges of more resistant volcanic and metavolcanic rocks. In the south, the sedimentary rocks are protected from erosion by a younger basalt cap rock. The major portion of the basin is drained by Collins Gulch, which flows northeast through a pronounced watergap in the volcanic rocks (*see* Fig. 16).

Field mapping was carried out in the Tulameen coal basin for the British Columbia Ministry of Mines and Petroleum Resources during May, June, and July. Mapping was done at a scale of 1:7920 on airphoto enlargements provided by Cyprus Anvil Mining Corporation. The data collected is be ng plotted on a 1:5000-scale orthophoto map, and will update and extend previous work done in the area. Periodic visits were made to the area throughout the summer and fall to check the progress of the exploratory trenching and drilling being done by Cyprus Anvil on coal licences optioned from Imperial Metals and Power Ltd.

STRATIGRAPHY

The oldest rocks in the area are Upper Triassic metavolcanic rocks of the Nicola Group which are mainly greenstones and greenschists. In the south, near Blakeburn, this rock unit is contact metamorphosed to hornfels and contains pyrrhotite mineralization where cut by hornblende porphyry dykes.

All other rocks in the area are of Tertiary age. The oldest Tertiary units are lavas and volcaniclastic rocks of andesitic composition. The volcanic rocks are well exposed along the southwest and north perimeters of the basin. They conformably underlie basinal sedimentary rocks in both these areas; elsewhere the sedimentary rocks are directly underlain by Nicola rocks.

The sedimentary succession consists of three units. The basal unit is predominantly arkosic sandstone with clayey matrix, poor cementation, and interbeds of siltstone and Tertiary andesitic volcanic rocks. It is up to 100 metres thick, but may not be present everywhere. The second unit is predominantly fissile shale, up to 200 metres thick, with interbeds of coal, ash, and sandstone. The uppermost unit is mostly arkosic sandstone and pebble conglomerate with interbedded shale, ash, and coal in the lower sections. It is up to 700 metres thick, and poorly exposed, as are all the sedimentary rocks.

The sedimentary units are unconformably overlain by a succession of at least five flat-lying basalt flows. There are two possible source areas for these flows. One is just northwest of the main cap, and the other is

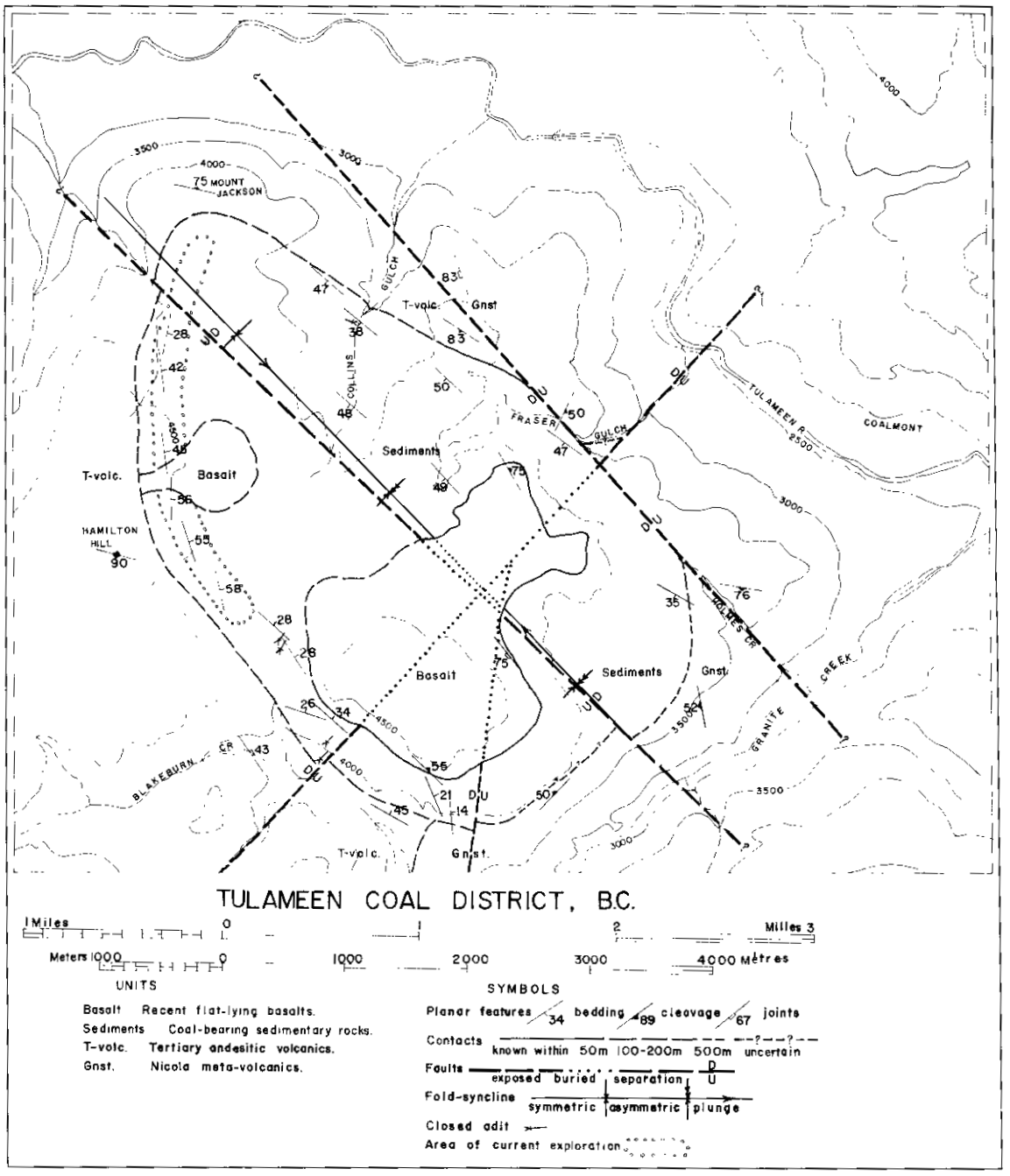

Figure 16. Tulameen Coal District.

in the northwest corner of the basin (*see* Fig. 16). The basalt forms extensive outcrops and has shed talus slopes which obscure the underlying strata.

STRUCTURE

The structure of the sedimentary rocks is a relatively simple syncline. In the northwest the fold is open, with both limbs dipping about 45 degrees. In the southeast, the syncline becomes asymmetric, with the northeast limb dipping 45 degrees, and the southwest limb dipping about 20 degrees. The fold trends northwest, and is doubly plunging toward the centre of the basin.

The basin is believed to be dissected by high-angle faults. At least two sets of lineations can be seen, one trending northwest and one trending northeast. Field data to substantiate these faults is sparse, but if correlation between coal seams proves feasible, offsets along these faults will be more accurately known.

COAL

Drilling by Cyprus Anvil has revealed at least three thick coal seams south of the northwest basalt occurrence. The main seam averages 15 to 20 metres. North of the basalt, volcanic layers are more abundant, and the seams can no longer be correlated. It is therefore not presently known if the seams are continuous.

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