

**THE COAL POTENTIAL
OF THE
BOWSER BASIN - SOUTH**

EVALUATION AND RECOMMENDATIONS

OPEN FILE

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TEXACO CANADA RESOURCES LTD.

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EVALUATION

Texaco Canada Resources Ltd. acquired a multi-client report entitled "The Coal Potential of the Bowser Basin - South Half "TELKWA"™ by L.A. Smith Consulting & Development Ltd. and Marston & Marston Inc.

The report collects all the data in the public domain on the 19 coal occurrences described since the turn of the century. Only four of these are currently under lease by Crows Nest Resources Ltd. the only remaining coal lease holder. These leases are:

- Telkwa
- Zymoetz
- Thautil
- Denys Creek

Leases held near Kispiox, Chisholm Lake and Nanika Mountain have recently been dropped.

Coal prospects (23) have been identified covering almost all known outcrop and adjoining areas of potentially coal-bearing strata.

Stratigraphy

Coal occurrences range in age from upper Jurassic to Tertiary, Eocene.

The sedimentary rocks comprise a complex succession of conglomerates, greywackes, sandstones and shales, interbedded with volcanic flows, breccias and tuffs. Within this depositional environment, the peat accumulations, large enough to produce coal seams, appear to have a relatively small areal extent.

The four lease areas held by Crows Nest Resources are all on coal occurrences in the Red Rose Formation.

Structure

The southern Bowser Basin is dissected by numerous normal faults. Wherever detailed mapping has been carried out a high frequency of faulting has been documented. This structural complexity increases the difficulty in delineating the extent of coal occurrences, and correlating coal seams. The report does not give any cross sections. However, the sections indicated on the Hazelton Map Sheet (93M) are shown in Figure 1.

Intrusives

The potentially coal-bearing strata was intruded throughout the study area by plutons of upper Cretaceous to Eocene age. The geologic map indicates numerous isolated stocks of granodiorite. This may give a misleading areal extent if only a thin veneer of sedimentary strata covers the main pluton (see Figure 1).

Coal Rank and Quality

The coal occurrences vary in rank between high volatile bituminous and anthracitic. There appear to be no regional trends in coal rank, i.e. Telkwa samples give a rank of high volatile bituminous and semi-anthracitic.

The intrusion may well account for rank variation due to higher thermal gradients in their vicinity. Lava flows may also increase the coal rank locally.

Coal quality is quite variable. In the leased areas the ash content is generally less than 15%, with a heating value of 28 MJ/kg (12000 Btu/lb). The sulphur content is generally less than 1%; except at Denys Creek, where the raw coal

contains 2.6% sulphur. Although some samples have shown fair coking properties, the coals should only be considered as a thermal feedstock.

DISCUSSION AND RECOMMENDATIONS

The sedimentary succession in the Bowser Basin includes coal seams as documented by the L.A. Smith report. The Red Rose Formation appears to be the unit most likely to contain coal seams of commercial thickness. The four areas under lease are all on coal seams in the Red Rose Formation.

Any one coal deposit in this area is likely to be small by 'Eastern Slopes' standards. Telkwa, for example, is reported to have open pit reserves of 40 Mt at a strip ratio of less than 6 m³/t, with another 50 Mt at higher strip ratios.

There are a number of positive factors that make the southern Bowser Basin an attractive coal exploration target:

a. Infrastructure

- o The mainline CNR to the Ridley Island Coal Terminal passes through this area.
- o Townsites are scattered along the railway; Houston is only 400 km from Ridley Island and Smithers 350 km.
- o The Yellowhead Highway parallels the railway.

b. The Province of British Columbia looks favourable upon coal developments which cannot be said for Alberta.

c. Within 25 km of the CNR, there are a number of coal prospects on open crown land, unencumbered by Indian Reserves or Agricultural Land Reserves.

The following coal prospects fall within the 25 km distance to rail. They are listed in order of priority, based on stratigraphic units:

- Red Rose Formation
- Kitsuns Creek Sedimentary
- Undifferentiated Upper Jurassic and Lower Cretaceous.

1. Morice River Prospect

Located 10 - 25 km southwest of Houston. There are some Red Rose Formation outcrops but most of the area is covered by alluvium. Structurally this appears to be a down-dropped succession of fault blocks since the surrounding topographic highs are Lower Jurassic volcanics. The setting is very similar to that of the Telkwa deposit. Morice River lies along the same structural trend as Telkwa.

2. John Brown Creek Prospect

Located 5 - 15 km southwest of Moricetown, both north and south of Rocky Ridge. This prospect was not identified by L.A. Smith. Tipper (1976) mapped the exposures on the north side of Rocky Ridge as Red Rose Formation and the area south of the Ridge as Kitsun's Creek sediments. The boundary between the Hazelton and Smithers map sheets lies just north of John Brown Creek. The different geologic interpretation by Tipper (1976) and Richards (1980) obscure the northerly extent of this prospect.

3. Kitsun's Creek Prospect

Located between Skeena Crossing and the Zymoetz coal leases. The southern portion of this prospect, in the Smithers Sheet, was mapped as Red Rose Formation and Kitsun's Creek sediments. The northern

portion in the Hazelton sheet, was mapped as Bowser Lake Group - Intermediate Subdivision. This is a regional prospect.

4. Reisetter Creek Prospect

Located 5 - 20 km east of Moricetown, mapped as Kitsun's Creek sediments.

5. Cedarvale and Kitsumkalum Lake

These are regional prospects in the Nass River and Terrace Map Sheets. Upper Jurassic to Lower Cretaceous sediments are undifferentiated and the structure is generally unknown.

An extensive exploration program would have to be funded by TCRL to establish the coal potential in the southern part of the Bowser Basin.

The established infrastructure, proximity to a coal port and the desire by the Provincial Government to develop its coal deposits favour the expenditure of exploration dollars in this region rather than Alberta.

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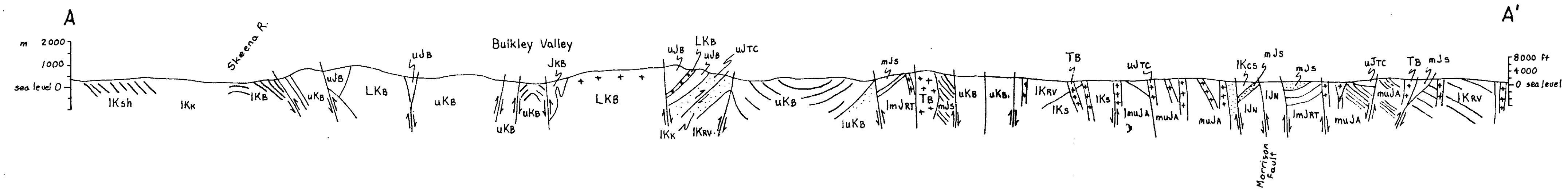
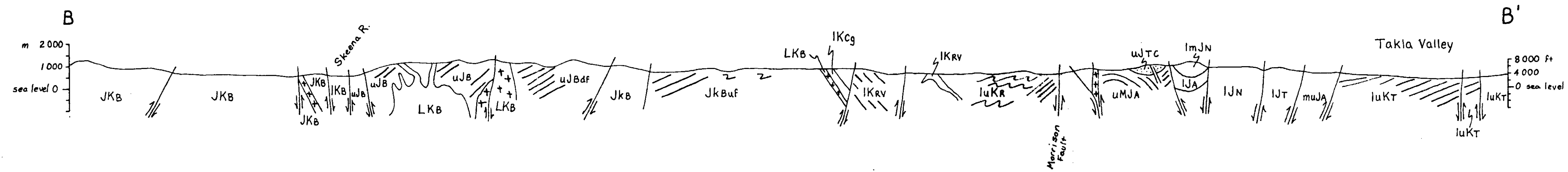
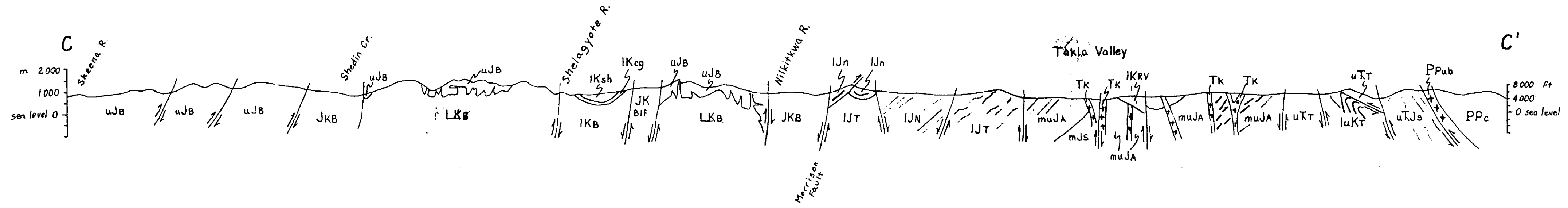


FIGURE 1
CROSS SECTIONS
HAZELTON MAP AREA

from
 T.A. Richards, 1980, Geol. Surv. Can.,
 O.F. No. 720