



**THE SEELEY LAKE COAL PROSPECT
(93M/4E)**

By G. V. White

INTRODUCTION

The Seeley Lake coal licences, held by D. Groot Logging Ltd. of Smithers, are located approximately 5 kilometres southwest of South Hazelton (Fig. 72). The seven coal licences cover 542 hectares and lie between the Skeena River and the Yellowhead Highway. Access to the property is by gravel road from Seeley Lake Park; much of the licence area has been logged and/or cleared for agricultural purposes.

Coal exposures on the property are poor; it was the mineral exploration arm of D. Groot Logging Ltd. which encountered coal in 1981 in Lower Cretaceous sediments of the Red Rose Formation. The company was drilling around a granitic intrusion on a mineral prospect when they encountered coal in one of their diamond-drill holes. The coal was analysed and found to be of anthracite to meta-anthracite rank. The company then completed step-out holes to determine the extent of the intersected coal seam.

Since the initial coal discovery in 1981, 20 diamond-drill holes have been completed, three in 1982, and 17 in 1983. Core from 10 of these holes were examined during the summer of 1984.

STRATIGRAPHY

The sedimentary sequence within the Seeley Lake licence area (Fig. 73) belongs to the lowermost unit of the Upper Jurassic to Lower Cretaceous Red Rose Formation (Sutherland Brown, 1960). The sequence consists of interbedded conglomerates, sandstones, siltstones, mudstones, and coals.

The sandstones are feldspathic and range from fine to coarse in grain size. In places they are carbonaceous and contain occasional plant fragments. The fine-grained sandstones are medium to dark grey in colour and range in thickness from 0.2 to 20 metres. The medium-grained sandstones are light to medium grey in colour; units range in thickness from 0.2 to 20 metres. The coarse-grained sandstones are light grey in colour and intervals of coarse sands range from 0.2 to 2 metres.

The conglomerates range from 0.2 to 17 metres in thickness. The matrix is variably fine to coarse sandstone. The units are poorly to well sorted reflecting a fluctuating energy level during sediment deposition. The clasts consist of subrounded to angular black to grey chert and volcanic rock and range up to 5 centimetres in size.

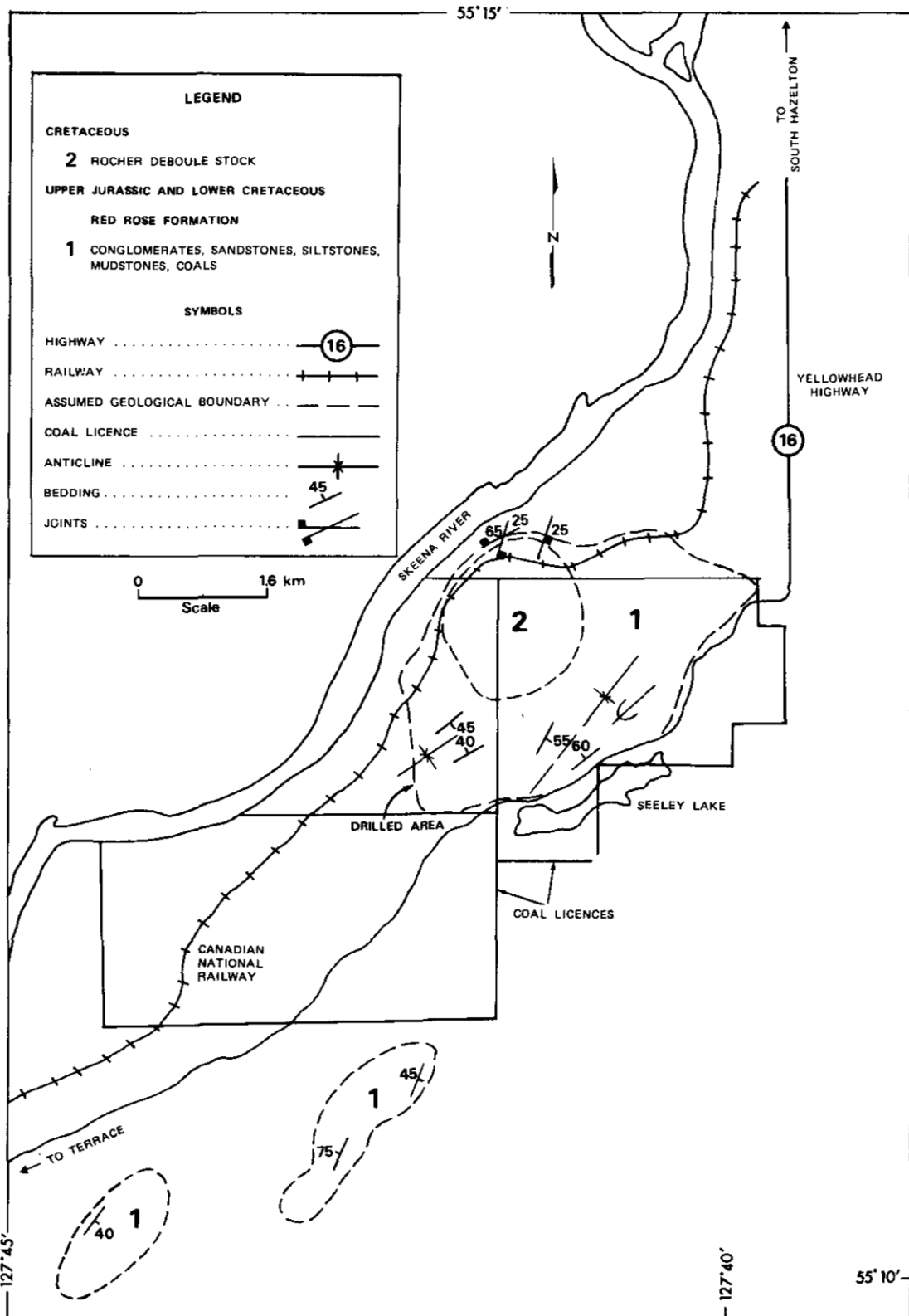


Figure 73. Geology of the Seeley Lake coal licence area.

The mudstones and siltstones are generally black, although locally dark grey; they range in thickness from 0.2 to 36 metres.

The coals are anthracite to meta-anthracite in rank. Individual coal seams range up to 1.5 metres in thickness and aggregate intervals, which include mudstone partings, can be up to 12 metres. The coals are generally associated with mudstones, siltstones, and fine-grained sandstones. Up to six coal seams have been identified in the drilled sections.

One of the Rocher Deboile stocks of Late Cretaceous to Tertiary age thermally metamorphosed the siltstones and mudstones (Sutherland Brown, 1960) and produced the higher rank anthracite to meta-anthracite of the Seeley Lake sequence (Koo, 1984).

DEPOSITIONAL ENVIRONMENT

Koo (1984) suggested that active pedimentation across the Skeena Arch and west of the Omineca Crystalline Belt prevailed during the development of coal in the Seeley Lake area.

Pronounced fining upward sequences occur with conglomerates and/or coarse sandstones marking the start of each cycle. Some of the sandstones are crossbedded. These sequences suggest that the coarser sediments were laid down by streams meandering across flood plains. The coals are probably limnic type and formed inland in freshwater swamps and channels. For this reason coal seams within the Red Rose Formation are likely to vary in thickness and in lateral extent.

CONCLUSIONS

The Seeley Lake coal licences are underlain by the Red Rose Formation of the Early Cretaceous Skeena Group. The sedimentary sequence within the study area consists of interbedded sandstones, mudstones, siltstones, conglomerates, and coals. The coals are of anthracite to meta-anthracite rank as a result of thermal metamorphism by a granitic intrusive body in close proximity to the licence area. The coal deposit represents a limnic-type deposit which is reflected in the fining upward cycles of the Seeley Lake sequence.

Potential for further coal seams exists within the Red Rose Formation sediments, both stratigraphically above and below the studied section. The lateral extent of the coal seams may be limited because of the nature of deposition; however, locally individual seams could be thick.

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