

# CONFIDENTIAL

1983 EXPLORATION WORK

THE TSABLE RIVER COAL LICENCE No. 7484

CUMBERLAND COAL FIELD, NELSON LAND DISTRICT

Lat. 49 deg.32'

Long. 124 deg. 52'

NTS Sheet 92 F/10

EAST CENTRAL VANCOUVER ISLAND

BRITISH COLUMBIA

Prepared For :

WELDWOOD OF CANADA LIMITED

VANCOUVER, BRITISH COLUMBIA

Prepared By :

GARDNER EXPLORATION CONSULTANTS

STEPHEN L. GARDNER, P. GEOL.  
NANAIMO, BRITISH COLUMBIA

Date Work Performed :

Aug. 26, 27, 1983

SUBMITTED SEPT 1983

0074 pt. 3

## TABLE OF CONTENTS

	Page No.
1.0 INTRODUCTION	1
1.1 Location and Description of Property	1
1.2 Topography and Access	1
1.3 Description of Work	1
1.4 Cost Summary	1
2.0 HISTORY OF MINING IN THE AREA	3
3.0 GEOLOGY	3
4.0 COAL POTENTIAL	4
5.0 CONCLUSIONS AND RECOMMENDATIONS	6

## LIST OF FIGURES AND ILLUSTRATIONS

FIGURE 1. - Location Map, Tsable River Coal Licence	2
FIGURE 2. - Surface Geology, Tsable River Coal Licence	5

1.0 Introduction

1.1 Location and Description of Property

The Tsable River Coal Licence, held by Weldwood of Canada Ltd., is located approximately 17.7 kilometers (11 mi.) south of Courtenay, B.C. along the east coast of Vancouver Island (see NTS map 92, F/10 - Comox). It lies at Latitude 49° 32', Longitude 124° 52'.

The licence <sup>area</sup> are covers District Lots 29 G, 30 G, 22 G and 23 G in the Nelson Land District. Total area of this licence block is approximately 148 hectares (366 acres). Figure 1 illustrates the location of the licence and its configuration.

The licence is a narrow strip contained between Weldwood of Canada Ltd. fee simple coal rights, and is merely a fractional area that is not part of the fee simple coal titles owned by that company. As such, the licence ensures continuity between the two fee simple blocks.

The licence area is located approximately 8 km (5 mi.) south of the old Union Bay Shipping Wharf.

1.2 Topography and Access

The Tsable River licence area is accessible from the Island Highway via the private MacMillan Bloedel logging road that runs on the north side of the Tsable River. An unused trail branches south from this road near the east edge of the licence area and crosses the river, affording access to the southern extremity of the licence area.

The north part of the licence (District Lots 29 G and 30 G) consists of a narrow rectangular block running east-west. Its eastern edge is accessible via the main power line that parallels the Island Highway (see Figure 1). The western and central part of this area is inaccessible by road.

Topography over the licence area is variable. The land rises gently to the west on the north part of the block from 60 meters above sea level near the power line to 250 meters at its westerly extent. This 250 meter elevation carries through the licence block to the south, except where the Tsable River has cut a valley up to 60 meters deep.

The Tsable River is the major drainage in the area. A secondary drainage is Hindoo Creek which drains the north part of the licence block.

1.3 Description of Work

The present work consisted of geologic mapping on a scale of 1 : 50,000 covering the the north part of licence no. 7484. This area was covered by a traverse up Hindoo Creek from its crossing at the Island Highway to its headwaters in swampy terrain on the west. The south part of the licence area was covered by a road inspection on the north side of the Tsable River and a foot traverse crossing the Tsable River to the southern extremity of the licence area. *No record of any previous work on the licence area.*

1.4 Cost Summary

The following is a summary of costs of the work :

ON-PROPERTY COSTS :	Surface mapping .....	\$ 821.00
OFF-PROPERTY COSTS:	Reporting .....	\$ 350.00
	Drafting and Repro.....	\$ 139.23
	Maps .....	\$ 6.42
		-----
	TOTAL EXPENDITURE*	\$1,316.65

\* COST : DOES NOT INCLUDE HEAD OFFICE AND ADMINISTRATION.

# WELDWOOD OF CANADA LTD. TSABLE RIVER COAL LICENCE LOCATION MAP

**FIG 1**

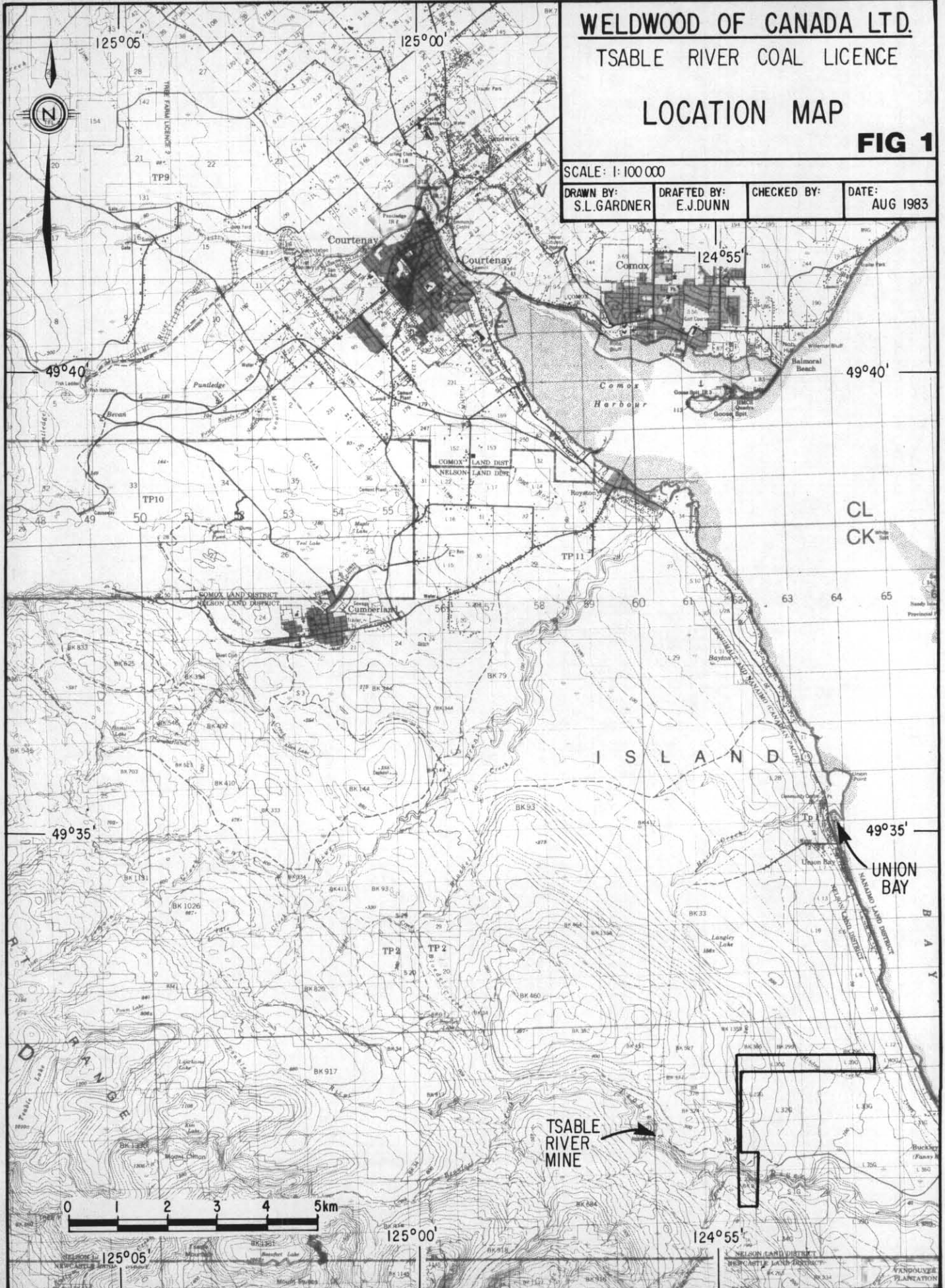
SCALE: 1: 100 000

DRAWN BY:  
S.L.GARDNER

DRAFTED BY:  
E.J.DUNN

CHECKED BY:

DATE:  
AUG 1983



## 2.0 History of Mining in the Tsable River Area

The Tsable River Mine is located 1.2 km due west of the licence block. Coal was mined from this area between the years 1946 to 1966. During this period approximately 1.6 million short tons were mined.

Up to 4 separate seams are found in the Tsable River borings, however only the lowermost seam was mined. The mine was characterized by areas of non-deposition of the lowermost seam because of its proximity to the basement.

The Tsable River Mine was the last coal mine to close on Vancouver Island. Although the last few years of production were mainly based on the robbing of pillars, old timers believe that a lot of good mineable coal reserves remain in the ground in the Tsable River area.

Coal produced from the Tsable River mine was a typical Vancouver Island coal, being ranked High Volatile Bituminous "A". It was used in domestic and industrial markets as a thermal coal.

## 3.0 Geology

The Tsable River licence block lies near the south end of the Comox Coal Basin. The Late Cretaceous Comox coal measures rest unconformably on the Triassic Karmutsen basalt in the Tsable River area. The basalts of the Karmutsen Formation make up the primary basement rock over much of central Vancouver Island. In this particular area, the Karmutsen Fm. is characterized by a highly irregular paleo-topographic surface. This is demonstrated on the licence block itself and immediately west of the licence block at the Tsable River mine, where volcanic outcroppings are visible a stones throw away from the mine portal. This variability of the paleo-topographic basement surface inhibits the generation of the lowermost coal measures in the Comox Formation in localized situations.

In general, the regional dip of the Comox coal measures in this area is to the north - north ~~east~~<sup>WEST</sup> at angles of 5 to 25 degrees. The average dip of the coal beds, according to old mine records, is in the order of 12 degrees.

The north - south part of the licence block (District Lots 22 G and 23 G) straddles a low ridge of Karmutsen volcanics that separates the Tsable River minesite from the lower, relatively flat-lying area to the east of the licence. This topographic feature may have had some effect on the generation of the coal measures in the vicinity of the Tsable River Mine, by providing a confining influence on the accumulation of vegetal matter associated with coal formation and shielding it from the transgression of the sea from the east.

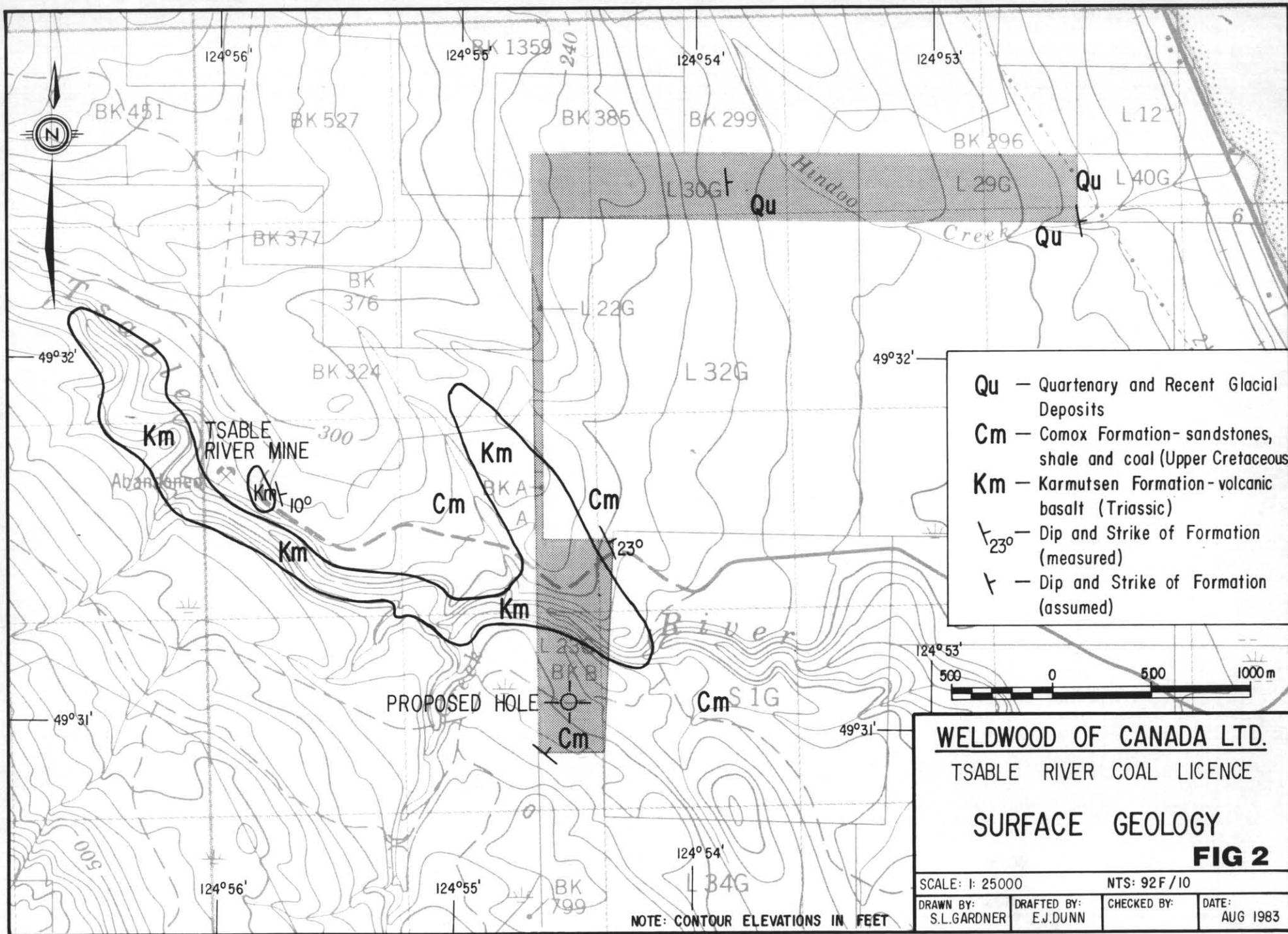
The north part of the licence block (District Lots 29 G and 30 G) is located in the lower-lying area to the east of the volcanic ridge. The topography on this part of the area rises gently to the west, but becomes steeper on the western edge of the volcanics. A traverse up Hindoo Creek from the Island Highway west to its headwaters yielded no rock outcrops - the north part of the licence block is covered by a mantle of glacial till up to 20 meters thick. It is not known from surface observations whether the volcanic ridge extends as far north as the westerly edge of Lot 30 G, however the topography would indicate that it does.

#### 4.0 Coal Potential

The potential for finding economic coal resources on the licence block is limited to two areas:

1. The north part of the licence area covering District Lots 30 G and 29 G: This area, lying east of the volcanic ridge, should be underlain by Comox Formation sandstones. However, surface mapping indicates that the entire area is covered by a mantle of glacial till up to 20 meters thick. At least 100 meters or more of Comox Formation should occur on the central and eastern parts of this area, with the Comox wedging out against the Karmutsen volcanics to the west. While this area has the potential for encountering economic coal seams in the Comox Formation, there is no evidence at this time to indicate that coal seams of a mineable thickness are located in this area.
2. The south-west part of the licence area covering District Lot 23 G: Surface geology indicates that a ridge of Karmutsen basalt runs in a north-west to south-east orientation right through this area (see Figure 2). However an outcrop of Comox Formation sandstone was observed on the north-east corner of Block 23 G. It is possible that a normal fault, with its downthrown side to the north-east occurs in this area (see Figure 2), exploring the Comox sandstones in close contact with the basement rock and dipping rather steeply to the north-east. However there are no surface indications to confirm this.

Surface geologic observations do not provide enough information to estimate coal reserves in this area, however the potential for encountering economic coal reserves on at least part of the licence area does exist.



## 5.0 Recommendations

The author recommends that the current strategy of maintaining continuity of coal rights ownership in the Tsable River area be pursued by keeping the Tsable River Licence Block in good standing. The reasons for this are as follows:

1. There is a distinct possibility that at least part of the licence area may contain economically recoverable coal seams.
2. Old records and previous work conducted by Weldwood of Canada in the general area surrounding the licence indicates that a significant coal reserve exists in this area which will presumably be developed some time in the future, at which time continuity of ownership will become very important.
3. The total area of the licence is relatively small and the costs of maintaining the licence are minor.
4. Drilling can be conducted on the licence which will have a direct bearing on geologic interpretations on the adjacent freehold area. This exploration can be applied against the work commitment on the licence, while still being of some benefit toward the evaluation of the freehold area.

Bearing in mind these points the author recommends that at least one rotary hole be drilled on the licence block in order to meet future work commitments. The proposed location of this hole is shown on Figure 2.

The drilling should be co-ordinated with a larger exploration program in order to keep the equipment mobilization costs at a minimum. The ideal case would be to co-ordinate the drilling with an intensive exploration effort on the adjacent freehold property, however if the exploration of the freehold is not contemplated at this time or in the near future, then the hole could be co-ordinated with work on other licence areas such as Hamilton Lake. In either case, the cost of drilling one hole would be less than \$5,000.00.