92F. Quinsam Coal

810007

COAL RESOURCE STUDY

OF

COMOX BASIN - NANAIMO SERIES

VANCOUVER ISLAND - BRITISH COLUMBIA

PREPARED FOR

WELDWOOD OF CANADA LIMITED

PREPARED BY

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VOLUME 1

WELDWOOD

OF CANADA LIMITED

VANCOUVER ISLAND RESOURCE STUDY

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VOLUME III - CAMPBELL RIVER AREA - MAPS, SECTIONS, E-LOGS
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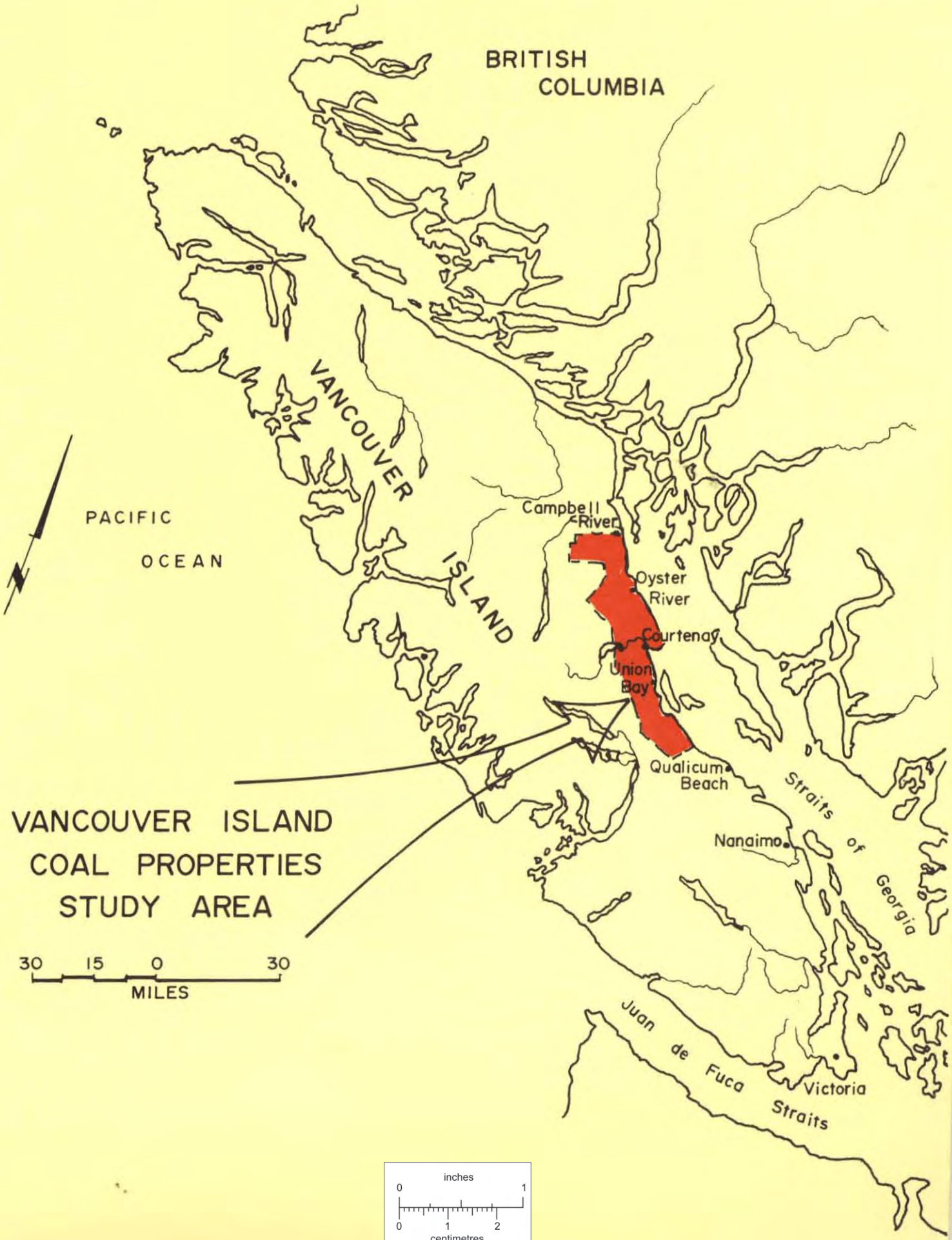

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SUMMARY

Coal mining on Vancouver Island contributed substantial to the economy of British Columbia and Canada until 1950.

The closure of the mines on Vancouver Island, and the loss of most records led to the belief that most of the coal on Vancouver Island had been mined out. This was supported by the mining methods that were carried on in the Island, whereby the coal operator was moving from area to area, which tended to imply the coal was running out. Thus with limited knowledge, and no real data Vancouver Island was removed from the list of potential coal reserves for British Columbia and Canada.

The subsequent location of records and the exploration, conducted has proven that coal reserves in the magnitude of one billion tons of coal exist on Vancouver Island, in the Comox-Nanaimo Series, about mid-island on the Strait of Georgia Coastline.

The movement of mining operators can be attributed to the unconformity of the Vancouver Group, basement, coupled with the structural faulting, either not known or not understood in the past.

The percentage of recoverable coal from the lower seam in all areas will be contingent on the methods of mining employed, taking into consideration that the faults may pose some structural constraints, or problems.

The majority of the coal considered to be economically extractable will require underground mining operations. However there is potentially some 96 million tons of coal available for strip mine operations.

The structural faulting while placing some constraints on mining, primarily in the down faulting displacements, (which may restrict mineable areas, and necessitate more entries), may in the final utilisation of the resource be a "double edge sword". Those same faults would form natural barriers should gasification of the upper non-mineable seams, prove feasible.

SUMMARY

The sulphur content of the coal, while higher than Alberta's prairie and foothill coal deposits, can be removed to a great extent through coal beneficiation. The major portions of the sulphur occur in a pyritic form and will readily wash out in the coal cleaning process.

Very definite economic advantages are available to these coal deposits, based on their tidewater situation, geographic location, and moderate climate.

Prompted by gloomy supply, and price projections for petroleum and natural gas, the world once again looks to coal as a primary source of energy and industrial chemicals. The synthesis-gas process to produce industrial chemicals is a process that gasifies coal to a hydrogen; carbon-monoxide synthesis gas, and go from that to such products as ammonia or methanol, from which a multitude of chemicals can be derived.

The location of the coal, the magnitude of the deposit, and the extraction or other utilisation of the resource, warrants serious consideration for exploitation of the coals on Vancouver Island, and may once more contribute substantially to the economy of British Columbia and Canada.

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PURPOSE OF STUDY

During the period of 1895 to the late 1940's the earlier coal rights owners Dunsmuir, and later Canadian Colleries carried out extensive mining in the Nanaimo and Comox areas. In the Comox Area, operations were primarily in the Cumberland area and later in the T'Sable River area. Production from these areas amounted to 32,729,000 tons.

In addition to the mining, the companies drilled about 225 test holes in three zones, Campbell River, Cumberland and T'Sable River areas.

The discovery of oil, in Alberta, in the late 1940's brought about the dieselization of the railways who were the major users of coal. Shortly thereafter industrial and residential users of coal converted to gas. Both occurrences caused the coal mines to cease operation and abandon the mining areas.

In 1962 Weldwood of Canada Limited acquired all of the assets of Canadian Colleries including the coal rights held fee simple by way of the Esquimalt and Nanaimo Railway Land Grant established in 1905.

In the early 1970's, Governmental changes with respect to mineral rights, increased prices of oil and gas, and depletion of existing energy throughout the world resulted in a resurgence in the use of coal. Weldwood of Canada Limited in 1973, as successors decided to examine the coal rights on Vancouver Island. (Preliminary Evaluation of Coal Resources on Vancouver Island, July 1974), to determine if any potentially mineable coal reserves were available, and to surrender any lands of no value.

The preliminary examination involved the compilation of all existing data which indicated a substantial reserve of coal still existed in the Comox Structure of the Nanaimo Series on Vancouver Island.

It was determined from the Preliminary Study, that several non-tested acreage was evident within the coal environment lands and in addition confirmation appeared necessary to evaluate the past data and establish the character of the coal both from a quality and quantity aspect.

The work covering these aspects was carried out during the summer and fall of 1975, and this forms the basis of this report.

SCOPE OF STUDY

The scope of work covered every aspect of a geological exploration program for new coal lands, as well as an examination of the accumulated coal waste piles. In addition an environmental assessment was carried out simultaneously to establish an inventory, should any mining occur in the area.

A brief description of the categories covered included the following outline.

1. Examination of all previous work in detail.
2. Detailed structural mapping of the total area.
3. Delineation of the areas of interest for both stripping and underground mining reserves.
4. Test drilling and coring of coal in all areas.
5. Geophysical logging of all test holes.
6. Analysis of all coal to established quality of the product.
7. Calculation of reserves.
8. Preliminary Environmental Assessment of the total area.
9. Mapping and Interpretation of results.
10. Reporting.

A total of 62 exploratory borings was completed out of which 53 were used for this report. The balance involved holes lost through circulatory or mechanical problems in the drilling process, and holes drilled out of the area to confirm structure.

All waste-slack piles were grid drilled and bulk sampled for analysis to evaluate the coal content.

ACKNOWLEDGEMENTS

The successful completion of any exploration program, is dependent on the abilities and co-operation of many individuals, each contributing their specialty, in order to obtain a better understanding of the area and to provide the best interpretation for the client.

The Vancouver Island Resource Study, conducted for the client, Weldwood of Canada Limited, had a very competent team, for which acknowledgement is due, and they are herewith listed with their contribution.

John E. Hughes P. Geologist	- Consulting Structural Geology
George Green P. Geologist	- Geological Supervisor
McAuley Drilling Co. Ltd.	- Drilling, Coring and Sampling
Great Guns Services Ltd.	- Geophysical Logging
Roke Enterprises Ltd.	- Geophysical Logging
Epec Consulting Western Ltd.	- Environmental Assessment
Bayrock-Reimchem Surfical Geology Ltd.	- Consulting Surfical Geology
Birtley Engineering Ltd.	- Coal Analysis
General Testing Ltd.	- Coal Analysis
Chem-Tech Industrial Designs Ltd.	- Drafting

Weldwood of Canada Ltd., provided the Administrative assistance for all financial, legal, and corresponding aspects, necessary for the completion of the program.

VANCOUVER ISLAND

COAL REPORT

GEOGRAPHY AND PHYSIOGRAPHY

The Vancouver Island coal properties are contained within 118,000 acres of land, along the west-central part of Vancouver Island. (Map 1).

The area is approximately 12 miles wide and 60 miles long, extending from Campbell River (50th Parallel) in the north to Horne Lake in the south. The east half of the property lies entirely within the Lowlands of the Coastal Trough Physiographic Division, which generally lies below the 2000 foot contour line. The west half is situated within Vancouver Island Ranges of the Insular Mountain Physiographic Division, and lies within the 3000 foot contour.

The topography consists mainly of low forested ridges, separated by narrow valleys, aligned in a northwest to southwest direction. Where the Lowlands meets with the old upland of the Insular Mountains of Pre-Cretaceous time there is an abrupt change to steep, rugged slopes, rising rapidly to 3000 feet.

The mountinous and undulating terrain of the area creates a high degree in fluctuation of the water levels in the streams, from the drainage areas within the area. (Figure 5, Page 27, Environmental Assessment of the Vancouver Island Properties).

There are six main rivers throughout the area: Quinsam, Oyster, Tsolum, Browns, Puntledge, and T'Sable, five having discharge in the mean flow rate of 300 cubic feet per second, and the Puntledge with a rate of 1200 cubic feet per second.

Access to the area is by way of Highway 19, the main highway from Nanaimo to Kelsey Bay. Off Highway there are numerous logging roads, trails, and old railway beds which provide ready access to almost all segments of the coal bearing lands. (Map 15).

GEOGRAPHY AND PHYSIOGRAPHY CONT'D

The areas along the main highway for less than one mile contain almost all of the population living in the area studied. As well, almost all tourism and recreation is confined to the same area. According to the Canadian Land Inventory only those portions of the study area, along with the coastal road described, are classified as having any capabilities for recreation, and in general the recreation is denoted as water-oriented recreation related to the rivers and Georgia Straits.

The largest community in the area is Campbell River with 10,000 occupants, and the other major towns would include: Courtenay, Comox, and Cumberland. In addition, there are several small villages. The total population within the area is about 35,000 people, with 23,000 within the larger centres and the balance scattered throughout the areas between those main towns noted.

GENERAL GEOLOGY

The economic coal deposits in the Comox Field, occur in the Late Cretaceous Nanaimo Series.

The Comox Basin is generally considered to be from the first depositional cycle (Muller-Jeletzky 1971) and was heavily eroded in parts, prior to the second depositional cycle, from which most of the Nanaimo coal was removed; in the Wellington, Newcastle and Douglas seams.

In the Comox Basin, some of the coal seams are missing, due to the eneven unconformity surface, just below the deposit. This is evident in the irregularities of the coal beds within the Cretaceous, throughout the entire Comox Basin.

These irregularity and erosional factors are a result of the depositional characteristics.

The Comox Basin, comprising sediments of the Nanaimo Group, extends from Mud Bay to Campbell River, a distance of sixty miles, with a maximum inland extension of twelve miles.

In the Comox Basin the Nanaimo Series comprises of a four-fold division of the Nanaimo sequence into Comox formation; the Comox formation, consisting largely of sandstones, (varies from 80 to 1,000 feet thick), and the other three divisions, Haslam, Extension-Protection, and Cedar District formations, comprising mainly shales, interbedded sandstones and conglomerate. The coal seams are all confined to the Comox formation which rests unconformibly on a Pre-Cretaceous surface of quite variable relief.

Fig. 2.1

Table of Formations

PERIOD	FORMATION	LITHOLOGY
Recent and Pleistocene	Alluvium Glacial Deposits	Swamp and river alluvium Stratified sands and gravels. Till
	Unconformity	
Tertiary	Constitution Hill Sills & Laccoliths	Quartz Diorite-Porphyry
	Intrusive Contact	
Upper Cretaceous	Nanaimo Series Formation Haslam Extension-Protection Cedar District	Shales with interbedded Sandstones and conglomerate
	Comox Formation	Sandstone with shales, conglomerate, and coal seams
	Unconformity	
Jurassic and Triassic	Vancouver Group	Meta Volcanics argillites

DESCRIPTION

VANCOUVER GROUP

The underlying basement rocks are hard, greenish fine, to visible crystalline rocks. They include amygdaloids, porphyries, tuffs and agglomerates which have been highly metamorphosed and in part recrystalized. They have in them bands of much altered and metamorphosed bands of argillites which are highly contorted and whose relations with the volcanics is not known. These volcanic rocks have been correlated with the Vancouver Volcanics of the Vancouver Group and are found practically all over the island.

NANAIMO SERIES

Resting unconformably on the Vancouver Group are the rocks of the Nanaimo Series. They have been subdivided into two formations. The Nanaimo Series Formation and the Comox Formation.

The Comox Formation is essentially a sandstone formation, the beds of which are thick bedded quartz sandstone with calcareous cement. In the northern portion of the area it has a decided greenish tint but still homogeneous and massive. The coal seams of economic importance all occur in the Comox Formation, in the lower one-third of the measure.

Overlying the Comox Formation and conformable with it are a three fold division of the Nanaimo Series, Haslam, Extension-Protection and Cedar District Formations. These are dominantly a shale formation. A fine grey clay shale with interbeds of sandstones and conglomerates. The shale is very homogeneous in colour and texture.

GENERAL GEOLOGY

TERTIARY INSTRUSIVE ROCKS

After these Cretaceous Strata were laid down and probably during Tertiary times the measures had intruded into them a laccolith of the cedar tree type, the trunk of which is Constitution Hill to the west of Headquarters. With this intrusion and originating from it, sills forced their way along between the strata for considerable distance. Anderson's Hill is the result of such a sill. There are also several such sills in the measure to west of Wolfe Lake. On both sides of the laccolith the measures have a severe tilt away from it indication a doming of the overlying strata.

RECENT AND PLEISTOCENE

The whole Lowland is drift covered with very few rocks exposures except in the stream beds. The stratified sands and gravels predominate below 700 feet elevation contour. Above this Till forms the surfical soil. Most of the stratified material is a coarse to medium sand with some gravel beds. (Sand and Gravel Study - Bayrock and Reimchem - For Weldwood of Canada Limited - 1975).

STRUCTURE

The Nanaimo strata of the Comox Basin are contained by downfaulting, depression and tilting to the northeast. They dip northeastwards at average of 5 to 7 degrees; younger formations outcrop progressively eastwards.

Three systems of faults are indicated: Linear faults of northwest trend; cross faults of northeast trend; oblique faults of several intermediate trends. The Linear faults tend to be dominant.

GENERAL GEOLOGY

STRUCTURE CONT'D

They have the greater displacements overall, and they exerted major control on the distribution of outcrops. The Linear system has two components of faulting, separated by about 20 to 30 degrees of azimuth. In places the indicated cross faults and oblique faults transect or offset the Linear faults; those of minor displacements terminate against the Linear faults. The tectonic pattern is one of block faulting in response to the prevailing northeast tilt.

Within the fault sectors, the Nanaimo beds tend to uniform dip, modified in places by slight warping. Narrow sectors of steep dipping beds probably strain related to faulting in underlying Vancouver rocks.

GEOLOGY

PREVIOUS WORK

The coal deposits of Vancouver Island have been the subject of intermittent geological investigations since their discovery in the middle of the nineteenth century.

In 1857, J.S. Newberry established the Cretaceous age of the coal bearing strata on the basis of its plant-fossils. James Hector (1811) on Palliser's exploratory expedition to Western Canada, produced a "Geological Sketch Map of Nanaimo" showing the then known outcrops of Douglas and Newcastle seams in Nanaimo and on Newcastle Island and some marine fossil localities; the fossils again established the Cretaceous age of the beds.

From 1871 to 1876 James Richardson investigated the Vancouver Island coalfields. He divided them into three main areas of deposition: the Comox, Nanaimo and Cowichan Basins (Richardson, 1872, 1873, 1878). He recorded the exploration and mining activities of that time, concerning himself mainly with the Comox Basin where development was in the initial stage. Many detailed sections of the exposed coal-bearing strata were measured and the general stratigraphic relationships were established of these and all overlying formational units of shale and of sandstone and conglomerate, as exposed in the Cumberland area and on Nearby Hornby Island. G.M. Dawson (1890) introduced the name "Nanaimo Group" to these beds and he considered the lower units to be correlative with the Chico of the Chico-Tejon Series in California.

By the start of the twentieth century coal mining was well established in the Nanaimo area and technical articles concerning the mines began appearing in the literature (Brewer, 1902; Sutton, 1904).

GEOLOGY

PREVIOUS WORK

C.H. Clapp spent the field seasons 1908 and 1913 mapping the geology of southeast Vancouver Island. Of the many detailed reports produced by him that on the Nanaimo Coalfield (1914a) is of most importance. He mapped the geology and established the stratigraphy of the Nanaimo Group in Nanaimo and Cowchan Basins and introduced a sequence of formational names. He also gave a synopsis of the economic geology and of coal mining of that time in the Nanaimo area.

In the fall of 1910, Clapp made a private report to the Tyee Copper Company regarding coal possibilities on Galiano, Mayne and Saturna Islands. This report was subsequently made public (Clapp, 1914b) when the company ceased prospecting.

During the summers of 1921 and 1922, J.D. MacKenzie studied the stratigraphy of the Comox Basin and continued Clapp's mapping of the southern and eastern parts of Vancouver Island (MacKenzie, 1922, 1923).

Following MacKenzie's death in 1923, T.B. Williams continued work in the Comox area which ultimately was incorporated into an unpublished doctoral dissertation (Williams, 1924). Formational names for the Comox area were introduced in this work and later expanded by Usher (1952).

The extensive work of A.F. Buckham (1947a,b) on the Nanaimo coalfield and other coal-bearing strata has only partially been published. However, some of his accumulated information is contained in J.L. Usher's publication (Usher, 1952).

With the declining production and eventual cessation of coal mining activity, geological publications have become increasingly concerned with regional stratigraphy and biochronology of the Nanaimo Group and correspondingly less attention has been paid to the coalfields.

GEOLOGY

PREVIOUS WORK

Thus, publications by Usher (1952), Bell (1957, McGugan (1962,1964) and Crickmay and Pocock (1963) have dealt with paleontology, paleobotany, micropaleontology, palynology and associated biostratigraphic problems of the Nanaimo Group.

Hacquebard et al. (1967) in a petrographic study of selected Canadian coals analysed material from the Nanaimo field, elucidating its probable environment of deposition.

Recent regional mapping by J.E. Muller (1963, 1965) together with paleontological studies by J.A. Jeletzky have resulted in joint publications (Muller and Jeletzky, 1967-1970) detailing the geology of the Nanaimo Group of Vancouver Island and the adjacent Gulf Islands.

J.E. Muller and M.E. Atchison in 1971, outlined the geology and history of the Vancouver Island Coal deposits. Using the Weldwood of Canada Limited records, acquired from their predecessor, Canadian Colleries, Muller and Atchison outlined the coal potential.

GEOLOGY

DEPOSITIONAL CHARACTERISTICS

Depositional environment of peat-bogs, later transformed into coal had a bearing on the physical characteristics of the coal seams and the enclosing strata. The Nanaimo Group seams were probably deposited in a paralic coal-basin (i.e. a coal-basin formed in a coastal Lowland area), and the environment was probably a lagoon, separated from the sea by sand-bars. (Muller-1971).

In the Cumberland coalfield, the coal-bearing Comox Formation was deposited directly upon the Pre-Cretaceous unconformity. Relief on this old erosional surface is significant, in the order of 1,600 feet across a span of five miles and locally as steep as 500 feet per mile (MacKenzie, 1922; Atchison, 1968). This paleotopography exerted a profound influence on the nature and distribution of the immediately overlying sediments.

One such effect was confinement of the Benson (fluvial) conglomeratic facies to paleotopographically low areas, i.e. stream and river channels.

Another effect was localization of coal swamps between emergent land areas and offshore sandbars. Thus in places in the Cumberland field, the lower coal seams are interrupted by paleotopographic 'highs' whereas the upper seams are continuous across these buried hills.

As paleotopographic influence were eliminated with burial of the Pre-Cretaceous unconformity, the subsequent distribution of sediments must have been the result of other factors.

Atchison (1968) demonstrated that coal seams in the Cumberland field, although usually of limited lateral extent, tended to be thicker and more abundant in the same regions. The recurrence of localized swamp conditions thus implied was attributed to repeated build-up and destruction of marginal sandbars together with the effects of differential compaction. Atchison proposed that periodic spreading of these marginal sand accumulations over the swamps followed by greater compaction of the swamp sediments would lead to re-establishment of sandbars on the margins of subsidence. Thus, new swamps would tend to redevelop above older swamp deposits.

GEOLOGY

DEPOSITIONAL CHARACTERISTICS

MacKenzie (1922) believed that the thicker seams were formed near the base of the measures and that higher seams are generally unworkable. He further described the coal as follows:

"Characteristically, the coal is associated with layers of grey or brownish-grey shale. Rarely, a band of clean coal is enclosed between a sandstone roof and floor, ... and frequently the coal is wholly enclosed in shale. Like the seams in other parts of Vancouver Island, these have no trace of anything resembling underclays, nor have rootless, tree stems, branches, or leaves been observed in association with the coal .... Apart from the clay shale associated with the seams, more or less fissle carbonaceous shale, and the brown compact shale known as 'bone' occur interbedded with the coal itself. These impurities vary from a lamina, of paper thinness, to bands occupying most of the thickness of the seam; and instances occur where the seam consists of shale, or of coal so high in sediment as to be unworkable. This is particularily the case where the seam closely approaches the Pre-Cretaceous rocks. Neither in the outcrops nor in the bore holes had a clean seam of coal been observed resting directly on the old colcanics, though dirty coal, or shale with coaly streaks, frequently does so .....

"The thickness of coal in any given seam may vary from a fraction of an inch to many feet, 25 feet of coal being the thickest obtained in any single seam. This, however, included a band of shale four inches thick, and the coal was soft and shaly. A solid bench of bright hard clean coal exceeding 30 inches in thickness is an unusual occurrence." .....

Three seams were found to be mineable in the Cumberland area: No. 1; (2 feet 6 inches to 7 feet thick), No. 2; (3 feet 6 inches to 3 feet 9 inches thick), and No. 4; (3 feet to 7 feet thick). The three seams are quite variable in thickness in different parts of the field and tend in places to be split up by rock bands and sections of inferior coal. No. 4 seam is the lowest seam and each seam is separated by over 100 feet of sandstone and shales. Because No. 4 seam is near the base of the Comox formation, and the Pre-Cretaceous basement is irregular there are areas where this and sometimes the other seams are displaced by the older rocks.

GEOLOGY

DEPOSITIONAL CHARACTERISTICS

The three seams generally dip northeasterly at about six degrees.

No. 4 seam is the most extensive worked of the three seams. The seam outcrops for about four miles between Coal Creek on the east and of Comox Lake, and the Puntledge River. It was mined to a very limited extent a Nos. 1 and 2 slopes, both near Coal Creek and in the vicinity of the old Chinatown. It was also mined from No. 6 shaft, about a mile down dip, under the west end of Cumberland, where the lower seam was cut at a depth of 814 feet. The No. 4 seam was mined on a large scale from No. 4 mine. The workings extended for nearly one and a half miles to the dip and for over two miles along the strike. The No. 4 seam was also mined at No. 7 Mine, in the vicinity of Puntledge River. Attempts to mine No. 4 seam further to the dip were less successful. At No. 8 Mine, where the seam was 1,000 feet from the surface, bands of rock and inferior coal resulted in it being unworkable except in an extremely limited area.

No. 2 seam was worked quite extensively from No. 5 Mine and also from No. 8 Mine which was the last producing mine in the Cumberland area.

No. 1 seam was worked to a small extent at No. 2 slope, and quite extensively at No. 5 and 6 Mines under several hundred feet of cover. (Buckham 1947).

WORKED OUT MINING AREAS

MINE NO.	ACRES	COAL THICKNESS (AVG)	S.G.	TONS/ACRE	MINED SHORT TONS
CUMBERLAND AREA - LOWER SEAM NO. 4					
No. 1	60	4'	1.75	9,504	570,240
No. 2	40	4'	1.75	9,504	380,160
No. 4	1400	4'	1.75	9,504	13,305,600
No. 5	130	4'	1.75	9,504	1,235,520
No. 6	50	4'	1.75	9,504	475,200
No. 7	280	4'	1.75	9,504	2,661,120
					18,627,840
CUMBERLAND AREA - UPPER SEAM - NO. 2					
No. 5	450	3.5'	1.75	8,316	3,742,200
No. 6	480	3.5'	1.75	8,316	3,991,680
No. 8	410	3.5'	1.75	8,316	3,991,680
					11,725,560
T'SABLE RIVER AREA - LOWER SEAM - NO. 4					
T'Sable River Mine					
	200	5'	1.75	11,880	2,376,000
TOTAL SHORT TONS EXTRACTED -					32,729,400

QUINSAM AREA

The Quinsam area is located to the south of the 50th parallel near Campbell and Beaver Tail Lakes, to Iron River. It is bounded on the east by the Vancouver Group, and to the west by the Weldwood property line. (Map 2)

The area has a few outcrops in the stream beds of the Quinsam River, Iron River, and Chute Creek. The surface of the Quinsam area is covered by extensive sand and gravel and tills at elevations of 700 to 1200 feet.

Before 1975, only three holes were drilled in the area (25-27-29) which provided the basis for the stratigraphy of the area. Map No. 2 combined maps of the Campbell River and Quinsam area summarize total drilling and geology of the Quinsam area.

STRATIGRAPHY

The Comox beds amount to about 650 feet in the area, and the basic contact appears to be an unconformity on the Island Intrusives. The lower members of the Comox includes the coal of economic interest. (Figure 1).

STRUCTURE

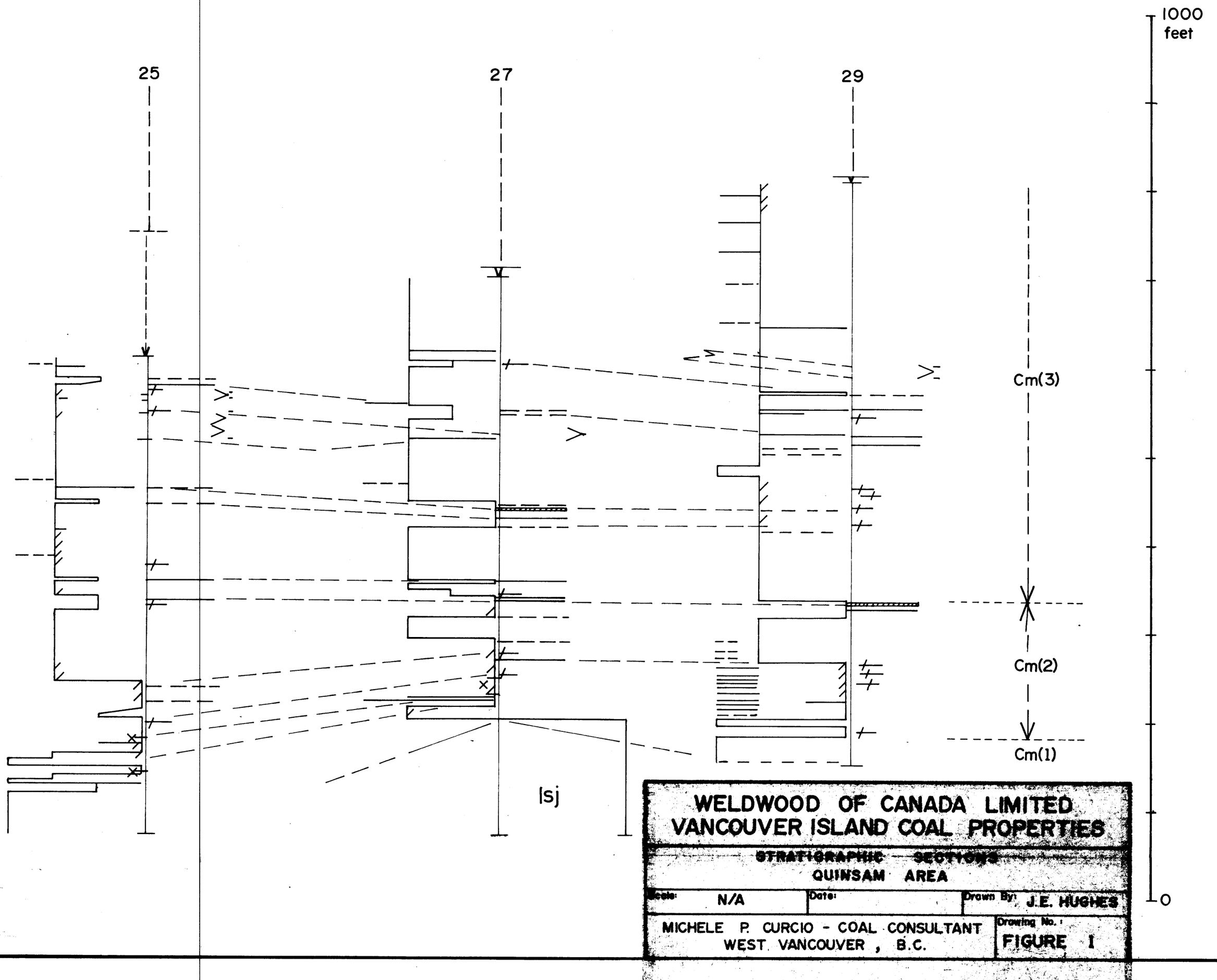
The west part of the Quinsam area consists of a wedge of Comox beds of prevailing east, and northeast dips; 12 degrees or less. The wedge thickness eastward from its eroded edge along the line of Beaver Tail, Snakehead, Gooseneck and Middle Quinsam Lakes. In this part, air photography indicates faulting of slight to moderate displacements along several trends, in a radical pattern.

The Comox and Nanaimo outcrop in the wast part of the area ends against northwesterly and northeasterly faults bounding the Quinsam area.

The Comox beds, and coal showings in the Iron and Quinsam Rivers, may be referred to a downfaulted sector, in part, of a complex of faults sectors which extend south of Quinsam Lake.

STRUCTURE CONT'D

Igneous rocks of the southeast and of Middle Quinsam Lakes, and southwest of the confluence of the Iron and Quinsam Rivers are left unclassified, and their origin as segregation, or salients of the Island Intrusives or post-Cretaceous Intrusives are to be determined.



WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES

STRATIGRAPHIC SECTIONS
QUINSAM AREA

Scale: N/A	Date:	Drawn By: J.E. HUGHES
MICHELE P. CURCIO - COAL CONSULTANT WEST VANCOUVER , B.C.		Drawing No.: FIGURE 1

CAMPBELL RIVER AREA

The Campbell River area is located to the south of the 50th parallel, east of the Vancouver Group that separates the Campbell River area and the Quinsam area, and south to the Oyster River. (Maps 2 and 3)

It is part of the Lowland on the east coast of Vancouver Island. The surface of the area forms a terrain of slight relief at elevations of 500 to 100 feet, declining eastward. Extensive deposits of till, sand and gravel and clays of lucustrine or marine origin cover the bedrock.

The Comox and coal measures are similar to the Quinsam area, and represent sedimentations in a formerly continuous area - later divided and separated by uplift of the Quinsam block.

One significant difference in these two areas is that in the Quinsam area the Comox beds overly the Island Intrusives, but in the Campbell River area the Comox beds overly the Vancouver Group.

STRATIGRAPHY

The beds in the drilled sections are assigned to the Comox Formation; there is no evidence for overlying units of Nanaimo strata. Figure 2 illustrates a representative section and correlations.

The Comox Formation amounts to 1,000 feet, and contains three members in descending order:

(3) Sandstones in thick sequences to 100 feet, with minor and lesser shales, and few thin conglomerates: few thin coal seams, less than 1.0 feet thick: thickness to 900 feet.

(2) Coal Measures: shales with lesser sandstones: numerous coal seams, many thin: coal accumulations in one to three zones, and including seams of economic interest: thickness 40 to 140 feet.

(1) Conglomerates and sandstones, with shales, and shales with conglomerates layers: thickness variable, 0 to 450 feet.

CAMPBELL RIVER AREA

STRATIGRAPHY CONT'D

The foregoing divisions seem consistent, and there are few variations. The boundaries of Member (2) are at different stratigraphic levels, indicating lateral changes in sedimentation. In drill holes 3 and 5, a conglomerate sequence of 80 to 85 feet thick, apparently of local distribution, occurs at comparable stratigraphic level at the base of Member (3) and 100 to 65 feet above the base of the Comox Formation. On the east, i.e. drill holes 5 and 9, Member (2) rests directly on volcanics of the Vancouver Group. On the south boundary of the coalfields along Oyster River, about 1340 feet of Comox beds were intersected in drill hole 13.

Member (1) is referred to the generalised term Benson Member, according to its stratigraphic position, overlying the Vancouver Group.

The records of drilling allow local correlations for seams in the Campbell coalfield. External correlations and identification with seams, of the Cumberland area are far less certain or nor feasible at present view (cf. Muller and Atchison, 1971).

STRUCTURE

The Campbell coalfield contains the north, terminal outcrop of Nanaimo beds in the Comox Basin. Its north boundary is poorly defined, as it is concealed by extensive sands, and gravels in terrace forms, south of John Hart and Campbell Lakes. In subsurface, the base of the Comox Formation dips southeast and eastwards from the north edge of the coalfield, and is again depressed by cross-faulting, Fault 1, for which a downthrow of 300 to 500 feet to the southeast can be inferred (Figure 3).

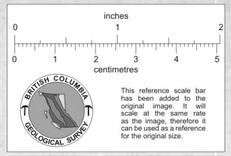
In the main part of the coalfield south of Latitude 50°00', the base of the Comox dips northeastward, at 1,000 feet per mile near its west border, to 100 feet per mile on the northeast. The west border is cross faulted, with offsets evident from outcrops of the Vancouver Group. A corresponding pattern of structure can be indicated in the nearby subcrop. Figure 3 indicates the cross faults 3 and 4, with downthrow to the order of 300 feet on the southeast.

STRUCTURE CONT'D

The indicated Fault 2, of linear trend, 147° (southeast), separates the Vancouver and Comox outcrops, about Latitude 50°00. To the south, Fault 2 displaces the Comox beds by downthrow on the northeast: seemingly the displacement is modified, and altered by cross faulting. Fault 2 in subsurface, is of interest (Figures 4 and 5). The record of drill hole 14 indicates early movement on the fault preceddings, and part contemporary with the accumulation of the Benson Member (3). Again, later movement occurred in post-Comox time as shown by northward trace of the fault. Fault 2 may terminate oblique and cross faulting on the west side; possibly the Cross Fault 4 may extend across on the northeast, but there is lack of evidence.

Along the west edge of the coalfield, adjacent to the Quinsam block, the boundary of the Vancouver and Comox beds is concealed by drift, and its nature is problematic. Projections from subsurface mapping indicate faulting with downthrow to northeast, for the contact of Cross Fault 3, and sedimentary contact, to the south, but such projections do not accommodate flexures which may be present, and which may accompany faults.

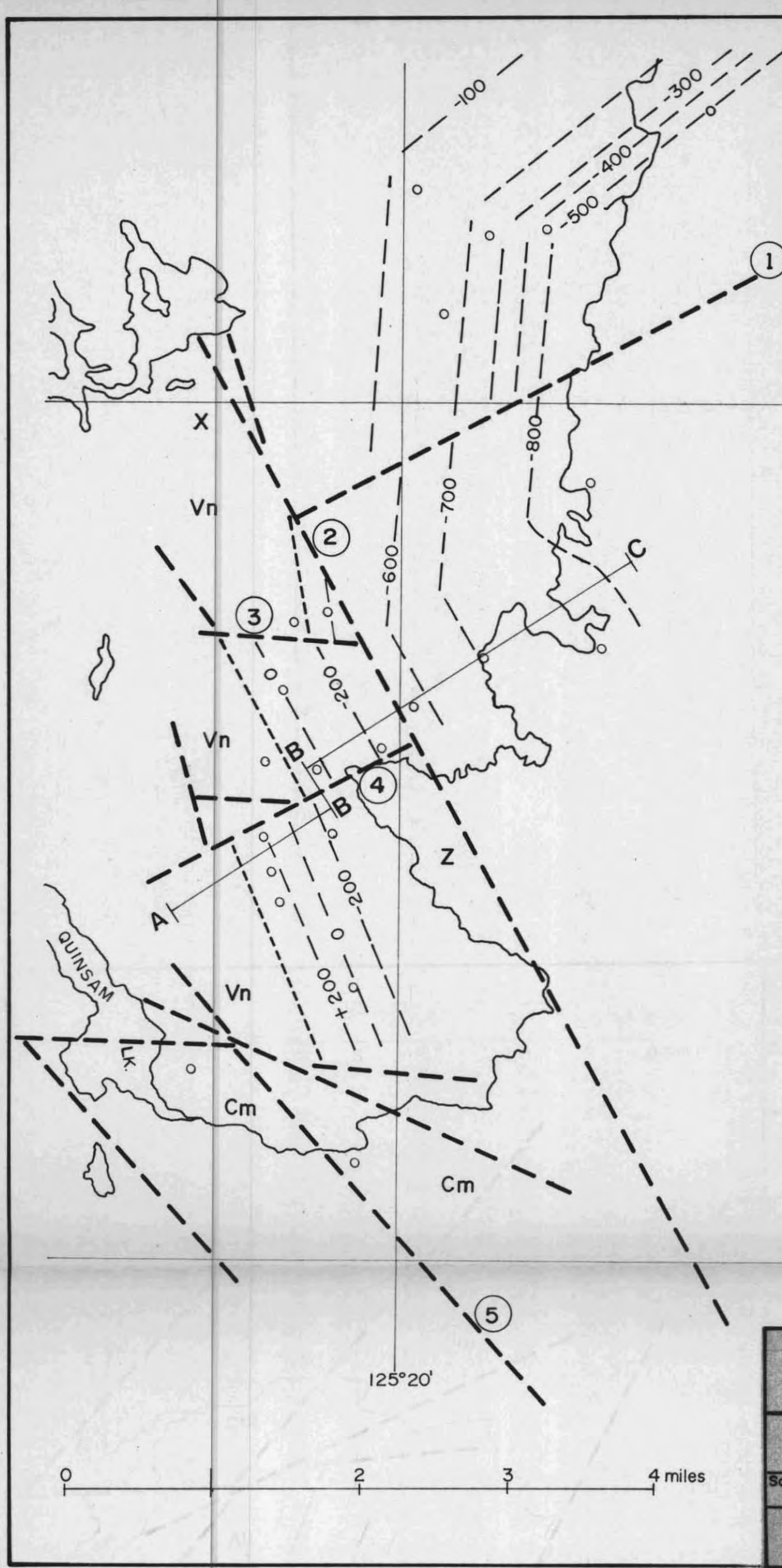
On the southern extension of the coalfield the Comox beds are contained in fault sectors of southeast trend. The linear Fault 5, east of Quinsam Lake continues southeastwards to Constitution Hill. The fault exerts a major control of the Comox outcrop, downthrowing these beds to the east, and separating them from the Vancouver lavas, which form the high ground on the border of the coastal plain.

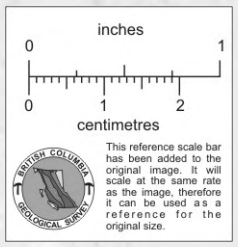


WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES

STRATIGRAPHIC SECTIONS
CAMPBELL RIVER AREA

Scale: N/A	Date:	Drawn By: J.E. HUGHES
MICHELE P. CURCIO - COAL CONSULTANT WEST VANCOUVER, B.C.		Drawing No.: FIGURE 2





This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

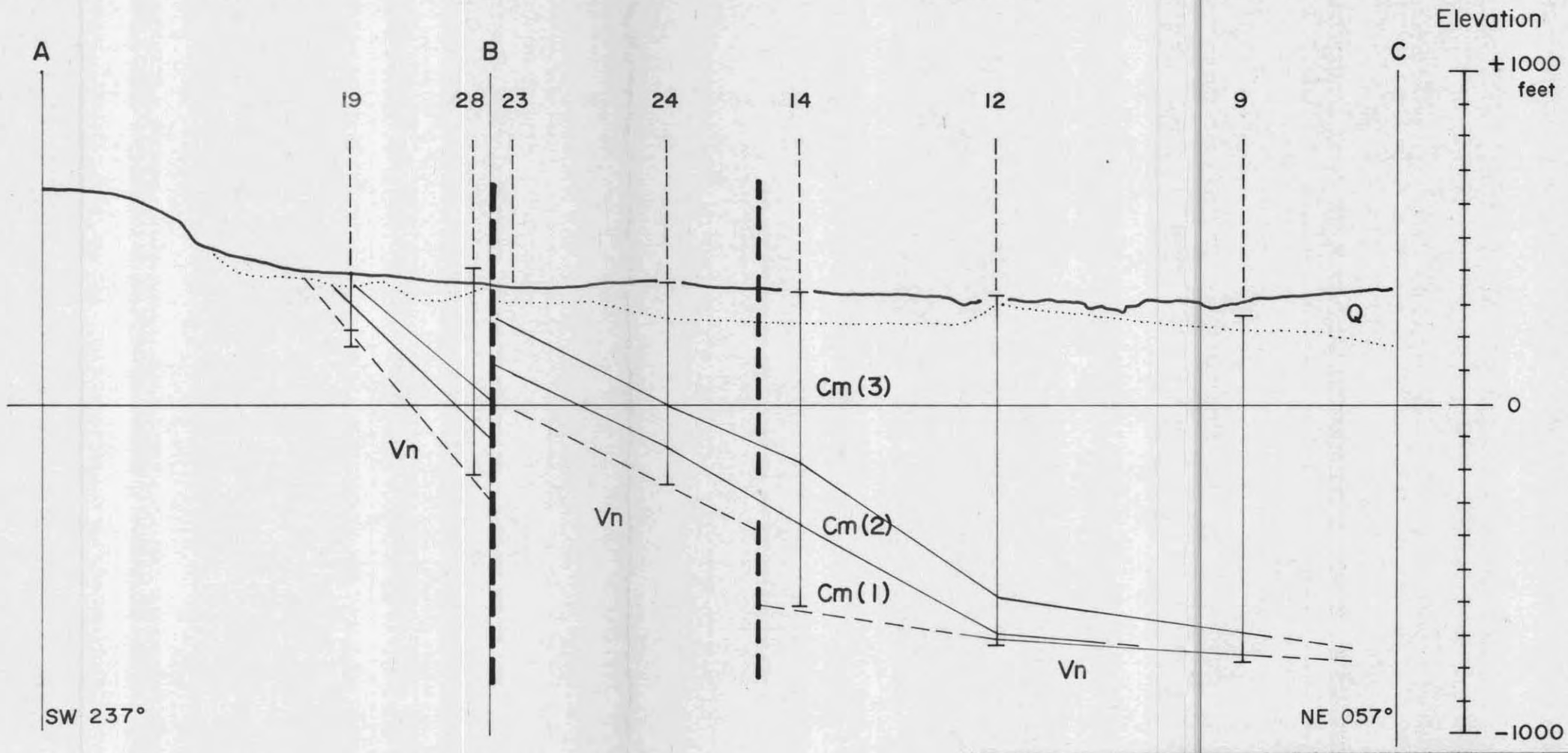
WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES

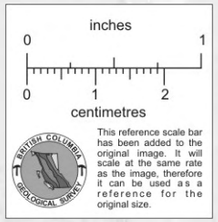
SUBSURFACE STRUCTURE
CAMPBELL RIVER AREA

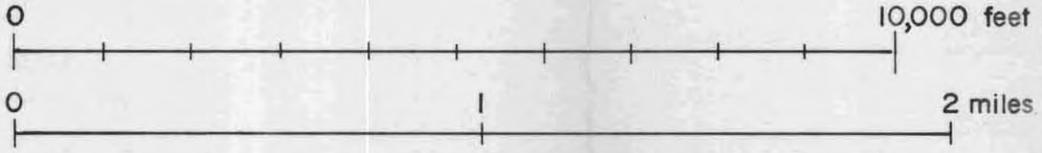
Scale:	Date:	Drawn By:
SHWN		J.E. HUGHES

MICHELE P. CURCIO - COAL CONSULTANT
WEST VANCOUVER , B.C.

Drawing No.: FIGURE 3







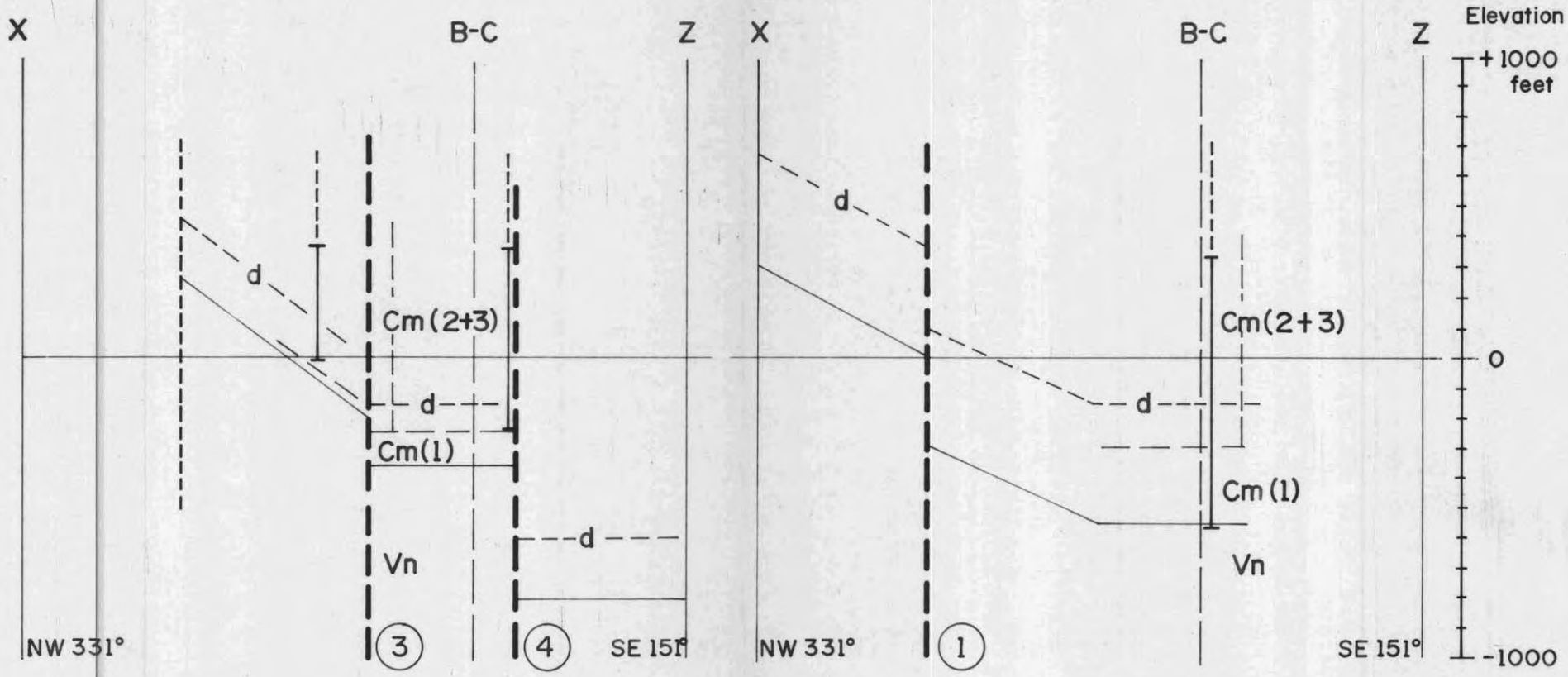
WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES

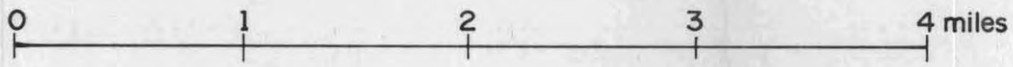
STRUCTURE SECTION A-B-C
CAMPBELL RIVER AREA

Scale:	Date:	Drawn By:
SHWN		J.E. HUGHES

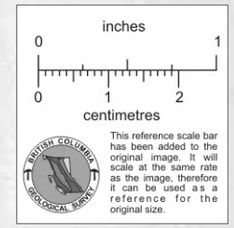
MICHELE P. CURCIO - COAL CONSULTANT
WEST VANCOUVER, B.C.

Drawing No.:
FIGURE 4





* Projections to vertical on line of fault 2.



WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES

STRUCTURE SECTION X Z
CAMPBELL RIVER AREA

Scale:	Date:	Drawn By:
SHWN		J.E. HUGHES

MICHELE P. CURCIO - COAL CONSULTANT
WEST VANCOUVER , B.C.

Drawing No.: FIGURE 5

ANDERSON LAKE AREA

The Anderson Lake Area is that area adjacent to and south of the Campbell River area on Oyster River to Browns River. (Map 3 and 4)

In the middle of the property lies Constitution Hill an old Pre-Cretaceous promontory.

The Tsolum River and Black Creek are the only streams of importance in the area. There is one good outcrop of coal on the Tsolum River in Section 6.

STRATIGRAPHY

The Comox beds, north of Constitution Hill are quite different in appearance and composition. The sandstones are very coarse and quartzitic in nature, with no apparent coal measures in the Comox until you cross the Oyster River to the north.

It is possible that this may have been a subsurface high, non-receptive to the Comox deposition, as it occurred in the Cumberland area or T'Sable River area.

The area, south of Constitution Hill, lies between two Tertiary Intrusives, and although, some coal was encountered in the Comox, the area is highly disturbed.

The number and size of faults, located in the area, makes any stratigraphic projection, impossible to define with any certainty.

The Comox Formation is in the range of about 600 feet, of thickness, where encountered.

STRUCTURE

The structure control north of Constitution Hill to the boundary, varies dramatically from the structure of Constitution Hill to the Browns River.

ANDERSON LAKE AREA

STRUCTURE CONT'D

The Comox in the north contains two linear block faults, that dip to the northeast at about 9°. The displacement between the two faults is calculated to be in excess of 400 feet. The only significant block lies east of the Tsolum River with an elevation of 500 feet.

South of Constitution Hill, the Comox occurs between Dove Creek and Browns Creek.

The west half of the Comox, bounded on the east by an uplifted Vancouver has a series of cross faults, in a radial pattern.

The Comox dips to the northeast, at 10 degrees in the north half of this block and 5 degrees in the south half.

From two outcrops and Anderson Lake #2 borehole there appears to be a downfault from the Vancouver Group and an uplifting caused by the Tertiary Intrusive to the east, caused the blocks to tilt, or lift, to the extent that the lower members in some blocks are near to surface and in others sheared away.

From the Intrusive east, there is a downfault from the Intrusive with a displacement of about 100'. This appears to be a more stable block and contacts the other Nanaimo Series at the linear Fault that extends northeast through the middle of Wolfe Lake. Here normal sequence is observed in the Comox and Nanaimo Series, of Comox and Haslam.

CUMBERLAND AREA

The Cumberland area is bounded on the north by the Browns River and the Trent River delineates the southern limits. Its eastern margin is the Straits of Georgia and the western boundary is the erosional edge of the Cretaceous coal bearing strata beyond which are exposed the older volcanic rocks of the Vancouver Group. (Map 5)

STRATIGRAPHY

The Upper Cretaceous strata of the Comox Group described under the term Nanaimo Series, overlies older rocks of the Vancouver Group with unconformity.

The Nanaimo strata has been subject to several classifications and these have been revised by Muller and Jeletzky (1970), following biostratigraphic zonation by McGugan (1964) and Zeletzky (ibid).

A four fold division of the Nanaimo sequence into; Comox, Haslam, Extension-Protection and Cedar District Formations, occur in ascending order, (with allowances for unconformity, or channelled, or other relationship) in both the Cumberland and T'Sable River areas.

Field work indicates that the term Extension-Protection applies to stratigraphic identities:

(1) In the Cumberland area, north of the Trent River - conglomerates with sandstone, and shales, and shales with pebble beds of limited extent and consistent stratigraphic levels, 200 to 600 feet above the Comox Formation.

(2) South of the Trent River in the T'Sable River area, a sequence of sandstone and conglomerates overly the Comox Formation and extend to a thickness of 800 feet or more.

The absence of Extension-Protection beds in parts of the Cumberland and T'Sable River areas, makes a division of the shale sequence above the Comox uncertain - though perhaps differences in lithology and zonation may allow for some distinction.

COMOX FORMATION

The formation consists of marine and non-marine types, with shales and coal measures. Sandstones form about 80% of the unit, and occur in thick intervals to 60 feet. In the Cumberland area, the coal measures are present in seven cyclothems which tend to be widespread. Coal seams of economic interest are in the lower part of the formation, in Cumberland and T'Sable areas. The base of the formation is marked by varied relief of 100 to 200 feet, and extremes of 300 feet. Conglomerate interbeds are recorded in lower intervals in several drill holes, but the formation lacks a continuous basal unit of the Benson type. In the Cumberland coalfield, the Comox formation is 600 to 800 feet thick, for the most part, and the range thickness 460 to 880 feet largely depends on the relief of the Karmutsen surface and degree of transititio to Haslam. In the T'Sable area, Comox beds underlying Nanaimo Series amount to 60 to 200 feet; and to the southeast, south of Langley Lake the formation attains thickness of 250 to 700 feet.

HASLAM

This unit, consists of shales and mudstone, and in places contains few, thin beds of sandstones. Its contact with the Comox formation is marked by abrupt change of sedimentation, and in places a transition of interbedded shales and sandstones. Haslam where distinguished by overlying Extension-Protection is 200 to 300 feet thick. Elsewhere, and where mapping depends on records of drilling, the shales, Haslam and Cedar District are not separated. Therefore, Haslam is mapped only in parts of the Cumberland area, but it is considered in the T'Sable area south of Langely Lake, and south of T'Sable River.

EXTENSION-PROTECTION

The unit is mapped from exposures and records of drilling, and recognized in the Cumberland area. The beds comprise a sequence of conglomerates and sandstones, and in the upper part shales, and shales with conglomerate layers. In its fullest development Extension-Protection attains a thickness of 300 to 400 feet, present in subcrop.

NANAIMO SERIES

The term describes an assembleage of sandstones and conglomerates, - applying to outcrop and subcrop south of the Trent to the T'Sable River. Conglomerates form two or three intervals; a few shales intervals are present in the upper part. Nanaimo Series as defined here may include correlatives of the Extension-Protection, and not presently distinguished. Thickness of 600 to 800 feet can be ascribed to the Nanaimo Series. It includes about 800 feet of beds, in partial exposures at Bloedel Creek, but the upper boundary is concealed against an indicated fault.

CEDAR DISTRICT

In the Cumberland area it is continuous with outcrops which are assigned to the vancouverense zone, by Jeletzky (Muller and Jeletzky 1970). This ground is separated by faulting from outcrop and subcrop, mapped as the composite unit Haslam-Cedar District. The Cedar District consists of a sequence of shales, and shales with interlaminated siltstones; few thin beds, and passages of sandstones are recorded from drilling. It represents the youngest Cretaceous beds of the area. The combined shale sequence of Haslam-Cedar District amounts to 900 feet along the east coast.

STRUCTURAL GEOLOGY

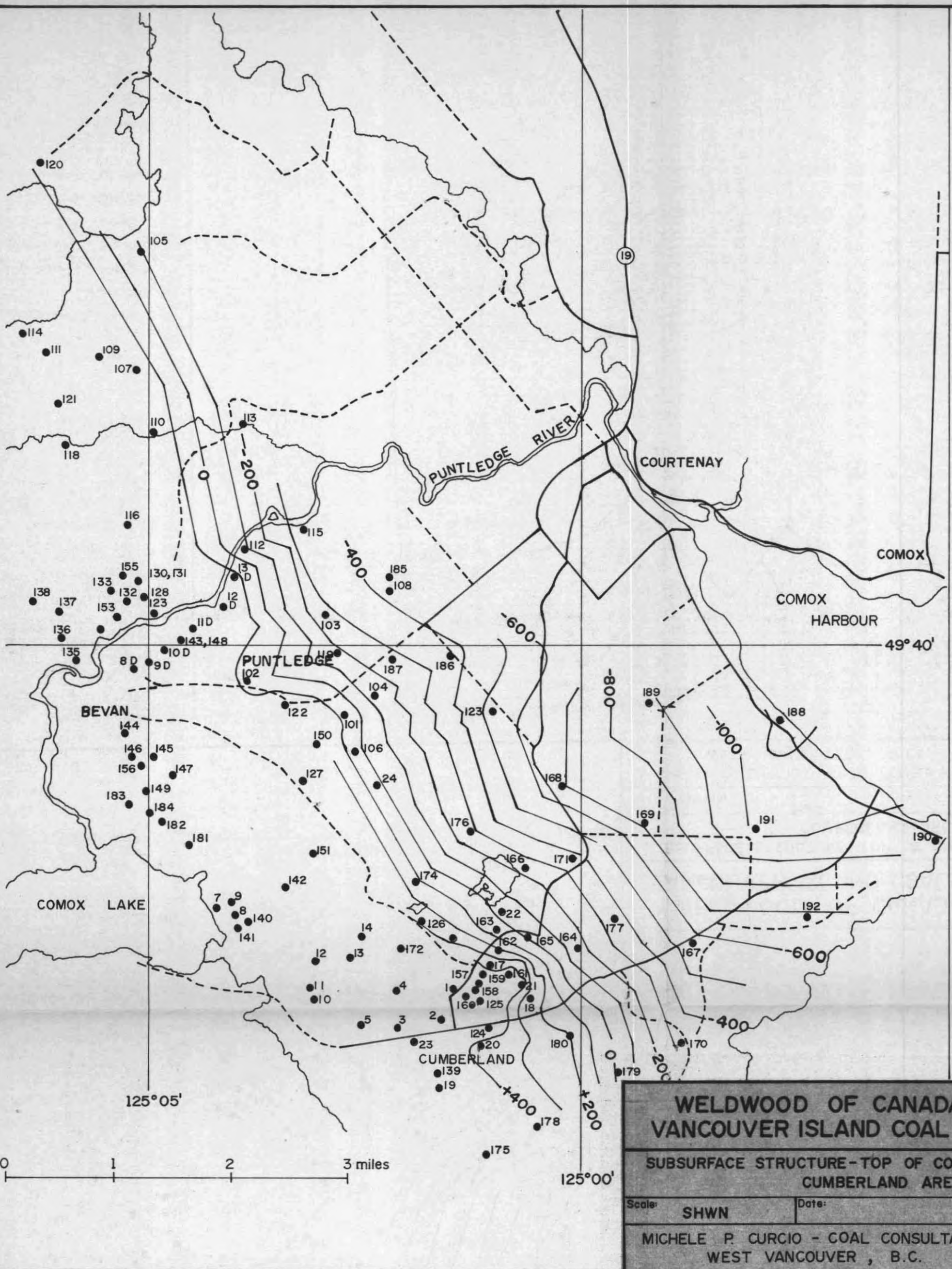
Subsurface mapping, Figure 6, illustrates its general structure, and indicates the relief of the floor on which Comox sediments accumulated. Structures on the top and base of the Comox Formations share the same outlines. The main features: the prevailing northeast dip of about 500 feet per mile: and uplift in a salient of easterly trend passing through Cumberland.

The structure of the coalfield also includes faulting. Muller and Atchison (1971) record linear faults from plans of underground workings. Other faulting can be indicated, and much of its pattern explained by accommodation to movement on the north flank of the Cumberland uplift: the fault displacements are downthrown to the north and east. Seemingly a cross fault and branching faults close part of the Cumberland uplift on the south.

CUMBERLAND AREA

STRUCTURAL GEOLOGY CONT'D

On the west border of the area, Comox beds are downthrown against Karmutsen lavas, along a line of faulting trending northwest near Perseverance Creek. Comox outliers and fault sector are present west of this fault line on higher ground near Hamilton Lake and the Trent River. A stock quartz diorite (?) of Tertiary age intrudes Comox beds between Puntledge and Browns River, near the west border of the Cumberland area. Records of drilling nearby refer to conglomerates in the upper member of the Comox section.



WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES

SUBSURFACE STRUCTURE - TOP OF COMOX FORMATION
CUMBERLAND AREA

Scale:	Date:	Drawn By:
SHWN		J.E. HUGHES

MICHELE P. CURCIO - COAL CONSULTANT
WEST VANCOUVER, B.C.

Drawing No.: FIGURE 6

T'SABLE RIVER AREA

The T'Sable River area extends from Trent River in the north to Rosewell Creek in the south. Its eastern margin is the Strait of Georgia, and the western boundary is the erosional edge of the Cretaceous coal bearing strata, beyond which are exposed the older volcanic rocks of the Vancouver Group. (Map 6)

STRATIGRAPHY

The stratigraphy of the T'Sable River area is described in the Cumberland area outline, as the two are related.

STRUCTURE

The area here defined extends from the Trent River to Rosewall Creek, and includes the coalfield of its main and south parts.

The T'Sable River cuts obliquely across the structural trend. Drilling and exposures along the valley show two subdivisions of the area: (1) north of the former T'Sable mine, ground with major outcrop of Nanaimo Series (2) on the south, and south of Langely Lake, outcrops of the Comox Formation in its full development, together with overlying shales of the Haslam and Cedar District Formations.

Comox outcrops are bounded on the west by a line of deformation and displacement with faulting of linear trend and downthrow to the east, - (Beaufort Fault Line). This line is marked by a fault extending from Bradley Lake to the Cumberland area. Its trace along the upper reaches of Bloedel Creek is obscurred by drift.

Linear faulting, (the Langely Fault Line), is inferred to extend from Langely Lake to Bloedel Creek. It is shown by a distinct lineament, and is probably a compound fault. This fault line may continue south of the T'Sable River.

STRUCTURE CONT'D

The sector enclosed by the Beaufort and Langely Fault lines contains the Nanaimo succession to shales of Haslam, and Cedar District Formation. The prevailing dip is to the northeast. Outcrops are distributed by faulting on several trends. Fault displacements are moderate, and for the most part, range about 250 feet and less. Downthrow to the northeast and east is inferred for linear and oblique faults. Views on fault displacements are subject to uncertainty for reasons of unconformity, or change in stratigraphy, and reference to boundaries of the Nanaimo Series.

The valley of Bloedel Creek and the interfleuve to the Trent River, is seemingly contained by faulting. Evidence for faults is open to question, as it referred to the mapping of Nanaimo Series, for which transgressive boundaries can be indicated. Along Bloedel Creek, beds of Nanaimo Series dip northeastwards in a step pattern, with two raises marked by dips of 20 to 25 degrees.

ECONOMIC SIGNIFICANCE

Through the area, seven cyclothems of coal measure, are consistent in the Comox Formation. Within the cyclothems the seams vary from one foot, to several feet in thickness.

The seams of economic mining importance are considered to be in the range of three feet to fifteen feet. These occur in the lower members of the Comox. Other seams are in a matrix of shale with coal, and they are in thickness of one foot to two feet, and occur in the upper members of the Comox.

The bottom seams occur in the lowest member of the Comox Formation and are the thickest, consistent seams. The lowest seam lies very close to the unfonformed basalt and varies in thickness from five feet to eleven feet, depending on the highs or lows of the basalt.

The second seam, occurs about 100 to 170 feet above the lowest seam and has an average thickness of five feet.

The higher seams are distributed at fairly consistent stratigraphic intervals, within the highest member of the Comox.

The strip coal zone, in the Quinsam area consist of one major seam with a thickness of thirteen to fifteen feet; which implies the coal may have been laid down during a different period of the Comox Series deposits, of other areas.

The strip coal zone in the Anderson Lake area, consists of the two coal seams in the lower Comox and are separated by less than twenty feet of Comox.

The strip coal zone at Hamilton Lake, in the Cumberland area, consists of the three coal seams of the lower Comox and are separated by less than four feet of shale parting, between the highest three foot seam and the lower two five foot seams, which are separated by six inches of shale parting.

ECONOMIC SIGNIFICANCE CONT'D

Mining the underground coals would appear to favour a long wall mining system since both the hanging wall and footwall comprise of sandstone and the dips are gentle (5^{o} to 12^{o}). No shales are evident in the Comox, except where the coal seams occur.

In view of the location of these coals on tidewater, the stripping of the coal seams, where applicable, could go to greater ratio's; equivalent to the offset of transportation costs of other coal mines, to bring their product to tidewater.

Although the coal characteristics in some samplings, indicate some coking qualities, on the whole, the coal is a High Volatile "A" Bituminous coal, suitable for thermal electric generation. Blend or form coke processes, may be a second use for the coal.

The faults that occur in most of the area, form natural boundaries if coal gasification were considered, and in this respect they could have very significant economic advantages to obtain the maximum use of the coal resource, even after mining became uneconomical by whatever process was employed.

The total area has numerous railbeds, and secondary roads throughout, making almost any method of transport to the ocean feasibly economical.

The deep sea port facilities used for earlier mining was located in Union Bay, on the Straits of Georgia and these could be re-employed without too much effort or cost.

Finally, the Vancouver Island would attract a solid labour force for mining, in view of the location and moderate climate.

EXPLORATION PROCEDURES AND METHODS

During the period of January to September, 1975, a comprehensive exploration program was carried out on the Vancouver Island, Comox - Nanaimo Series.

The program consisted of structural mapping in detail, test drilling, geophysical logging and coring of coal seams for analysis.

Due to the size of the area studied, it was decided to delineate the total land into five zones. These were labelled:

Quinsam Area
Campbell River Area
Anderson Lake Area
Cumberland Area
T'Sable River Area

Each zone was defined by certain distinct geographic and geologic factors. (i.e. major rivers or lakes, and major structure contacts).

The procedures employed chronologically were; structure mapping, location of bore holes, test drilling and coring, electro-logging, mapping, and interpretation.

All test drilling was carried out using two contracted rotary drills, truck mounted. One employed a down hole hammer, and the other employed reverse circulation. Both employed air for cutting returns wherever possible. For coring the coal measures, water was employed in the circulation system.

All coring carried out obtained a core of 2 7/8" diameter. All cores obtained were correlated to both the drillers log, and the geophysical log which was obtained upon completion of the drilled, borehole.

Coal obtained from either core, or wash sampling was sent to a commercial laboratory for analysis, and washability tests, to establish the coal characteristics of the Comox Basin coals.

EXPLORATION PROCEDURES AND METHODS

The geophysical equipment employed in the first phase of the program was a Comprobe tool with three selected channels, caliper, gamma, and density.

During the second phase, the geophysical tool employed consisted of four channels, caliper, gamma, density, and resistivety. In a few cases a fifth channel was tried which consisted of a nuetron graph.

Profile - sections were drafted using the old boreholes of earlier years, along with the boreholes and geophysical logs of the 1975 program and mapped to compute reserves.

All mapping was carried out on a scale of 1" = 1320 feet.

Throughout the exploration program, supervision of the drilling and geophysical aspects were overseen by a resident field geologist.

In some area where earlier mining occurred, (Cumberland and T'Sable River), the old mine plans were obtained from government records. Personal communication from miners employed in these areas were also useful in the evaluation of the property. A brief description of seams worked in these zones were supplied by McKenzie (1922), and Buckham (1947) and appear in this report within the section - Geology - Previous Work - Depositional Characteristics.

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VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Echo Lake #1

LOCATION - Quinsam Area

ELEVATION - 1080

DATE - July 1975

Type of Cuttings	FEET FROM	TO
Gravel and Clay	0	102
Grey Siltstone	102	132
Red Shale	132	147
Sandstone	147	148
Coal	148	153
Grey Shale and Siltstone	153	183
Basalt	183	205

1680
150
930

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Echo Lake #2

LOCATION - Quinsam Area

ELEVATION - 1150

DATE - July 1975

Type of Cuttings		FEET FROM	TO
Gravelly Sand with Boulders		0	10.5
Grey Hard Sandstone		10.5	44
Brown Shale with Coal Traces		44	47
Grey Shale with Coal Traces		47	64
Grey Silty Shale		64	114
Coal		114	122
Grey Silty Shale	Coal 106 – 108	122	142
Sandstone		142	146
Basalt	Shale 108 – 111	146	169
Grey - Red Shale		169	175
Basalt	Coal 111 – 122	175	205

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Echo Lake #3

LOCATION - Quinsam Area

ELEVATION - 950

DATE - July 1975

Type of Cuttings	FEET FROM	TO
Gravel and Boulders	0	19
Sandstone	19	88.3
Shale with Coal Stringers	88.3	90
Dark Grey Sandstone	90	93.5
Shale with Coal Stringers	93.5	95.2
Sandstone	95.2	96
Carbonaceous Shale	96	97
Sandstone	97	167.5
Grey Shale	167.5	171
Green Sandstone	171	192.8
Shale with Coal Stringers	192.8	193.5
Sandstone	193.5	314
Dark Grey Shale	314	319.3
Coal and Shale	319.3	324.5
Grey Shale with Coal Traces	324.5	330
Coal with Grey Shale	330	331
Grey Shale with Coal Traces	331	335
Grey Shale	335	361
Grey Shale with Coal Traces	361	366
Coal with Grey Shale	366	368
Coal with Grey Shale Bands	368	371
Grey Shale	371	372
Coal with Shale Bands	372	375
Coal	375	377.5
Grey Shale	377.5	383
Greyish-Green & Brown Sandstone	383	390
Reddish Brown Shale	390	414
Green Sandstone (Basalt)	414	435

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Echo #4

LOCATION - Quinsam Area

ELEVATION - 1035

DATE - July 1975

Type of Cuttings	FEET FROM	TO
Gravel, Boulders and Clay	0	18
Gravel & Till	18	46
Sandstone	46	165
Grey Shale	165	167
Coal	167	167.5
Grey Shale with Coal Traces	167.5	173
Grey Shale & Silt	173	179.5
Brown & Carbonaceous Shale with Coal Traces	179.5	185.5
Grey Shale	185.5	246.6
Coal	246.6	247
Grey Shale with Coal Stringers	247	254
Coal	254	264.5
Coal	264.5	265.5
Shale	265.5	268.3
Siltstone	268.3	275
Shale	275	281
Greyish-Green Siltstone	281	285
Grey & Brown Shale Soft	285	297
Green Sandstone	297	305

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Echo Lake #5

LOCATION - Quinsam Area

ELEVATION - 1040

DATE - July 1975

Tupe of Cuttings	FEET FROM	TO
Gravel & Till	0	95
Sandstone	95	100
Grey-Green Sandstone	100	107.5
Shale	107.5	125
Siltstone	125	137
Sandstone	137	159
Shale	159	160
Coal	160	161
Coal	161	172
Grey Shale	172	176.5
Sandstone	176.5	176.7
Grey Shale	176.7	179.5
Red Shale	179.5	183
Grey Shale	183	188
Red Shale	188	194
Grey Shale	194	200
Red Shale	200	213
Basalt	213	241

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Echo Lake #6

LOCATION - Quinsam Area

ELEVATION - 1090

DATE - July 1975

Type of Cuttings	FEET FROM	TO
Gravel	0	20
Gravel & Boulder	137	303
Fractured & Altered Basalt (Traces of Native Copper	202	218

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Echo Lake #7

LOCATION - Quinsam Area

ELEVATION - 1040

DATE - July 1975

Type of Cuttings	FEET FROM	TO
Sandstone	0	10
Light Grey Sandstone	10	83
Dark Grey Sandstone - Coarse (Hard)	83	86
Light Grey Sandstone	86	127.5
Coal	127.5	128.3
Shale	128.3	129
Coal Some Shale Partings	129	138
Shale	138	138.6
Coal	139	141.5
Grey Shale	141.5	149
Sandstone	149	209
Dark Sandstone	209	212
Grey Shale with Coal Traces	212	214
Sandstone	214	235
Sandstone	235	236
Siltstone	236	240
Shale	240	242
Coal	242	242.3
Shale	242.3	249
Carbonaceous & Brown Shale	249	264
Brown Siltstone	264	269
White Sandstone	269	277
Dark Grey Siltstone	277	282
Grey-Green Sandstone (Basalt)	282	300

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Echo Lake #8

LOCATION - Quinsam Area

ELEVATION - 1010

DATE - July 1975

Type of Cuttings	FEET FROM	TO
Gravel	0	10
Light Grey Sandstone	10	40
Sandstone (Coal Traces 73-73, 75-75.3)	40	78
Carbonaceous Shale & Brown Shale	78	78.5
Sandstone	78.5	180.5
Coal	180.5	188
Shale	188	189
Coal	189	190.5
Sandstone	190.5	192.5
Coal with Shale Partings	192.5	195
Shale	195	199
Sandstone	205	273
Brown Shale	273	275
Siltstone	275	285
Sandstone	285	310

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Miller Creek #1

LOCATION - Quinsam Area

ELEVATION - 697

DATE - August 1975

Type of Cuttings	FEET FROM	TO
Sandstone	0	148
Conglomerate	148	156
Sandstone	156	170
Conglomerate	170	185
Sandstone	185	187
Conglomerate	187	204
Siltstone	204	254
Carbonaceous Shale	254	256
Siltstone	256	370
Shale	370	411
Sandstone	411	449
Coal	449	453
Carbonaceous Shale	453	460
Sandstone	460	518
Siltstone	518	531
Sandstone	531	554
Carbonaceous Shale	554	558
Sandstone	558	685
Siltstone	685	707
Sandstone	707	714
Siltstone	714	724
Carbonaceous Shale	724	732
Siltstone - traces of coal	732	768
Sandstone	768	886
Shale	886	889
Coal	889	893
Carbonaceous Shale	893	895
Coal	895	898
Carbonaceous Shale	898	905
Coal	905	908
Shale	908	920
Basalt	920	935

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Miller Creek #2

LOCATION - Quinsam Area

ELEVATION - 980

DATE - August 1975

Type of Cuttings	FEET FROM	TO
Sandstone	0	38
Carbonaceous Shale	38	39
Sandstone	39	46
Shale	46	55
Sandstone	55	79
Carbonaceous Shale	79	87
Shale - some coal traces	87	121
Sandstone	121	144
Shale	144	170
Quartz	170	220

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Miller Creek #3

LOCATION - Quinsam Area

ELEVATION - 920

DATE - August 1975

Type of Cuttings	FEET FROM	TO
Gravel and Till	0	204
Sandstone	204	258
Carbonaceous Shale	258	263
Siltstone	263	265
Sandstone	265	280
Carbonaceous Shale	280	294
Sandstone	294	381
Basalt	381	400

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

HOLE NO. - Campbell River #1

LOCATION - Campbell River Area

ELEVATION - 340

DATE - July 1975

Type of Cuttings	FEET FROM	TO
Sand and Gravel	0	62
Sandstone	62	85
Shale	85	95
Sandstone	95	111
Coal	111	112
Carbonaceous Shale	112	132
Grey Sandstone	132	151
Carbonaceous Shale	151	173.5
Siltstone	173.5	244
Grey Sandstone	244	340
Grey Shale	340	345
Sandstone	345	408
Siltstone	408	418
Carbonaceous Shale	418	423
Grey Siltstone	423	477
Grey Sandstone	477	531
Shale	531	584
Sandstone	584	650
Siltstone	650	665
Grey Shale	665	710
Sandstone	710	732
Grey Shale	732	758
Sandstone	758	890
Red Shale	890	892
Grey Shale	892	917
Sandstone	917	920
Conglomerate	920	932
Carbonaceous Shale	932	934
Conglomerate	934	973
Carbonaceous Shale	973	1010

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Campbell River #2

LOCATION - Campbell River Area

ELEVATION - 450

DATE - July 1975

Type of Cuttings	FEET FROM	TO
Gravel and Boulders	0	8
Gravel and Till	8	52
Sand and Gravel	52	205

Lost Circulation
Unable to Complete

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Dove Creek #1

LOCATION - Campbell River Area

ELEVATION - 430

DATE - June 1975

Type of Cuttings	FEET FROM	TO
Sand and Gravel	0	17
Sandstone	17	23
Grey Sandstone	23	61
Dark Grey Shale	61	65
Coal	65	68.9
Sandstone	68.9	90
Grey Sandstone	90	122.5
Grey Shale - carbonaceous - coal stringers	122.5	131.8
Grey Sandstone	131.8	159.5
Grey Shale	159.5	160
Grey Sandstone	160	181
Grey Silty Shale	181	189
Grey Sandstone	189	197
Grey Shale - coal stringers	197	208
Grey Sandstone	208	251.5
Carbonaceous Shale, Coal	251.5	253.7
Grey Shale	253.7	254.9
Grey Sandstone	254.9	265
Grey Sandstone	265	276
Coal	276	279.1
Black Shale	279.1	282
Dark Grey Sandstone	282	297.6
Coal	297.6	298.8
Siltstone	298.8	303
Sandstone	303	366
Shale, Siltstone - coal stringers	366	379
Hard Sandstone - dark grey	379	380
Hard Shale - dark grey	380	387
Sandstone - dark grey	387	394
Grey Shale	394	407
Sandstone	407	414
Coal	414	415.5
Grey Shale	415.5	418
Grey Sandstone	418	419.5
Grey Shale	419.5	423
Grey Sandstone	423	481

cont'd ...

Borehole No. 1 - Dove Creek

Type of Cuttings	FEET FROM	TO
Carbonaceous Shale, Coal	481	483
Grey Sandstone	483	486
Carbonaceous Shale, Coal	486	487.1
Grey Sandstone	487.1	490
Grey Shale	490	493.5
Coal	493.5	497
Black Shale	497	502
Siltstone	502	504
Sandstone	504	514
Siltstone and Shale - dark grey	514	527
Sandstone - dark grey	527	531.5
Coal and Shale	531.5	532.5
Sandstone with Shale stringers	532.5	565
Soft Grey Shale	565	572
Basalt	572	578
Dark Grey Shale	578	581
Basalt	581	597

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Oyster River #1

LOCATION - Campbell River Area

ELEVATION - 400

DATE - June 1975

Type of Cuttings	FEET FROM	TO
Grey Sandstone	0	65
Sandstone	65	115
Sandstone - dark grey, very hard	115	170
Sandstone - dary grey, very hard	170	177
Grey Sandstone	177	188.5
Grey-Green Sandstone	188.5	209
Hard Green Sandstone	209	230
Sandstone	230	245.5
Dark Grey Shale	245.5	251
Grey Sandstone	251	259
Grey Shale	259	276
Soft Brown Shale	276	293
Grey Sandstone	293	304
Sandstone - very hard	304	327
Grey Sandstone	327	351
Grey Shale	351	373.5
Coal	373.5	377
Grey Shale	377	379
Grey Siltstone	379	401
Grey Shale	401	407
Grey Sandstone	407	442
Sandstone	442	451
Sandstone	451	473
Siltstone	473	477
Sandstone	477	522
Grey Sandstone	522	594
Sandstone	594	607
Carbonaceous Shale	607	610
Grey Sandstone - hard	610	636
Hard Grey Shale	636	638
Sandstone - black, green	638	654
Sandstone	654	665

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Oyster River #2

LOCATION - Campbell River Area

ELEVATION - 480

DATE - June 1975

Type of Cuttings	FEET FROM	TO
Gravel and Till	0	36
Sandstone	36	70
Silty Shale	70	95
Sandstone	95	111
Brown Shale and Carbonaceous Shale	111	112
Sandstone	112	116
Coal and Brown Shale	116	117
Brown Shale	117	119
Brown and Grey Shale - some coal traces	119	121
Grey Shale	121	133
Grey Siltstone	133	135
Sandstone	135	217
Brown and Carbonaceous Shale	217	219.2
Sandstone	219.2	272
Grey and Brown Shale	272	276
Brown Shale with Bentonite & Coal traces	276	277
Grey Shale	277	292
Grey Siltstone	292	305
Sandstone	305	354
Red Siltstone	354	359
Grey Shale	359	365
Sandstone	365	380
Sandstone	380	395
Siltstone	395	425
Sandstone	425	435
Silty Shale	435	452
Carbonaceous Shale - Coal Traces	452	458
Silty Shale	458	472
Carbonaceous Shale - Coal Traces	472	475
Siltstone	475	490
Sandstone	490	493
Carbonaceous Shale	493	503
Sandstone	503	507
Carbonaceous Shale	507	510
Grey Siltstone	510	548
Red and Grey Siltstone and Sandstone	548	566

cont'd ...

BOREHOLE NO. 2 - Oyster River

Type of Cuttings	FEET FROM	TO
Sandstone	566	576
Sandstone - very coarse	576	642
Sandstone	642	670
Sandstone	670	679
Red and Grey Siltstone and Shale	679	710
Shale (green and grey) with Quartz	710	730
Oxidized Basalt	730	755

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Quinsam River #1

LOCATION - Campbell River Area

ELEVATION - 390

DATE - July 1975

Type of Cuttings	FEET FROM	TO
Gravel	5	16
Grey Sandstone	16	54
Grey Sandstone	54	67
Sandstone	67	102
Grey Siltstone	102	104
Sandstone	104	165
Grey Sandstone	165	202
Grey Shale	202	211
Grey Sandstone - faulty formation	211	276
Grey Shale	276	282
Red Shale	282	285
Sandstone	285	365
Grey Sandstone	365	423
Shaley Siltstone	423	428.2
Sandstone	428.2	478
Red Shale	478	482
Sandstone	482	495
Sandstone - dark grey with Shale stringers	495	568.9
Sandstone - carbonaceous	568.9	569.1
Grey Sandstone	569.1	658
Red Shale	658	665
Grey Sandstone - faulty formation	665	671
Red Shale	671	672
Grey Shale	672	674
Red Shale	674	680
Grey Sandstone	680	682

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Quinsam Lake #1

LOCATION - Campbell River Area

ELEVATION - 680

DATE - July 1975

Type of Cuttings	FEET FROM	TO
Gravel and Boulders	0	38
Grey Shale	38	50
Siltstone	50	88
Silty Shale	88	117
Sandstone	117	129
Siltstone	129	140
Red Shale	140	182
Sandstone	182	237
Coal and Carbonaceous Shale	237	241
Sandstone	241	338
Grey Shale with Soft Sandstone Bands	338	380
Grey Siltstone	380	411
Sandstone	411	421
Brown Shale and Siltstone (some carbonaceous shale)	421	430
Sandstone	430	436
Carbonaceous Shale	436	442
Silty Shale	442	452
Sandstone	452	508
Carbonaceous Shale - Coal Traces	508	528
Sandstone	528	536
Carbonaceous Shale	536	551
Silty Shale with Carbonaceous Layers	551	562
Grey Siltstone	562	654
Red and Grey Siltstone and Shales	654	707
Siltstone	707	709
Basalt (oxidized) - Traces of Native Copper	709	729

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Anderson Lake #1

LOCATION - Anderson Lake Area

ELEVATION - 1320

DATE - June 1975

Type of Cuttings	FEET FROM	TO
Sandstone	0	48
Siltstone	48	52
Sandstone	52	145
Coal	145	145.5
Black Shale - coal traces	145.5	150
Sandstone	150	236
Carbonaceous Shale	236	237
Coal	237	237.5
Carbonaceous Shale	237.5	242
Coal	242	242.5
Carbonaceous Shale with Pyrites	242.5	245
Coal with Pyrites	245	245.5
Carbonaceous Shale	245.5	256
Grey Siltstone	256	275
Carbonaceous Shale	275	281
Soft Sandstone	281	305
Carbonaceous Shale	305	314
Siltstone	314	353
Carbonaceous Shale	353	355
Siltstone	355	364
Sandstone	364	370
Siltstone	370	381
Sandstone	381	422
Carbonaceous Shale	422	426
Siltstone	426	428
Carbonaceous Shale	428	430
Siltstone	430	439
Carbonaceous Shale	439	444
Siltstone	444	445
Carbonaceous Shale	445	451
Hard Sandstone	451	478
Soft Sandstone	478	479.5
Carbonaceous Shale	479.5	484
Sandstone	484	550
Carbonaceous Shale	550	557

cont'd ...

Borehole No. 1-Anderson Lake

Type of Cuttings	FEET FROM	TO
Silty Shale	557	565
Carbonaceous Shale	565	575
Siltstone	575	606
Carbonaceous Shale	606	618
Siltstone	618	626
Sandstone	626	641
Carbonaceous Shale	641	655
Hard Sandstone - white	655	680
Brown Sandstone	680	735
Siltstone	735	784
Carbonaceous Shale - coal lenses	784	798
Silty Shale	798	800
Carbonaceous Shale - coal stringers	800	801
Carbonaceous Shale	801	807
Siltstone	807	818
Sandstone	818	830

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Anderson Lake #2

LOCATION - Anderson Lake Area

ELEVATION - 1440

DATE - June 1975

Type of Cuttings	FEET FROM	TO
Weathered Siltstone	0	4
Coal	4	8.5
Grey Shale	8.5	11
Coal	11	15.5
Grey Shale	15.5	20.3
Siltstone	20.3	23.5
Sandstone	23.5	45.5
Coal	45.5	46.5
Carbonaceous Shale	46.5	47
Coal	47	47.5
Grey Shale	47.5	48
Siltstone	48	52
Carbonaceous Shale	52	53.5
Siltstone	53.5	60
Carbonaceous Shale	60	71
Sandstone	71	89
Siltstone	89	92
Sandstone	92	98
Siltstone	98	106
Carbonaceous Shale	106	116
Sandstone	116	127
Carbonaceous Shale	127	129
Sandstone	129	150
Carbonaceous Shale	150	154
Sandstone	154	171
Siltstone	171	179
Silty Shale	179	188
Siltstone	188	191
Carbonaceous Shale	191	193
Sandstone	193	196
Silty Shale	196	203
Sandstone	203	207

cont'd ...

Borehole No. 2 - Anderson Lake

Type of Cuttings	FEET FROM	TO
Carbonaceous Shale	207	209
Siltstone	209	216
Carbonaceous Shale	216	221
Sandstone	221	255
Siltstone	255	263
Sandstone	263	269
Siltstone	269	277
Sandstone	277	347
Siltstone	347	355
Silty Shale	355	359
Sandstone	359	375
Basalt	375	400

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Anderson Lake #3

LOCATION - Anderson Lake Area

ELEVATION - 1410

DATE - July 1975

Type of Cuttings	FEET FROM	TO
Sandstone	0	37
Grey Shale	37	46
Carbonaceous Shale & Coal Trace	46	48
Silty Shale	48	50
Siltstone	50	54
Carbonaceous Shale	54	64
Carbonaceous Shale & Coal Trace	64	69
Shale	69	70
Siltstone	70	86
Carbonaceous Shale & Coal Trace	86	87
Coal	87	88
Silty Shale	88	90
Carbonaceous Shale	90	91
Siltstone	91	104
Sandstone	104	108
Sandstone Grey	108	109
Carbonaceous Shale	109	109.7
Sandstone Dark Grey	109.7	112.6
Coal	112.6	115.2
Shale Black	115.2	116
Sandstone Grey	116	118
Shale with Coal Stringer	118	120.2
Sandstone Dark Grey	120.2	127.9
Carbonaceous Shale with Coal Stringer	127.9	133.2
Coal	133.2	133.8
Shale	133.8	134.2
Sandstone Grey Fine	134.2	147.5
Soft Grey Shale	147.5	149
Black Shale	149	151
Conglomerate	151	153
Dark Grey Sandstone	153	156
Sandstone Salt & Pepper	156	176
Black Siltstone	176	181
Dark Grey Sandstone	181	186.5
Shale with Coal Stringer	186.5	189
Shale Soft Dark Grey	189	191

cont'd ...

Borehole No. 3 - Anderson Lake

Type of Cuttings	FEET FROM	TO
Grey Siltstone	191	194
Grey Sandstone	194	211
Black Siltstone	211	220.8
Coal	220.8	224.5
Carbonaceous Shale	224.5	230
Black Siltstone	230	231
Dark Grey Sandstone	231	243
Salt & Pepper Sandstone	243	252
Sandstone	253	266
Siltstone	266	269
Sandstone	269	293
Siltstone	293	299
Sandstone	299	300
Siltstone	300	304
Carbonaceous Shale	307	325
Sandstone	325	350
Sandstone Salt & Pepper	350	355
Sandstone	355	357
Hard Siltstone	357	360
Basalt		

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Anderson Lake #4

LOCATION - Anderson Lake Area

ELEVATION - 1515

DATE - July 1975

Type of Cuttings	FEET FROM	TO
Sandstone	0	51
Carbonaceous Shale	51	53.2
Coal	53.2	54.8
Carbonaceous Shale	54.8	61
Grey Shale	61	67.5
Coal	67.5	71.5
Shale	71.5	72
Coal	72	75
Shale	75	79
Sandstone	79	103.5
Coal	103.5	104.5
Shale	104.5	109
Sandstone	109	314
Siltstone	314	319
Sandstone	319	325
Siltstone	325	338
Shale	338	341
Siltstone	341	344.2
Carbonaceous Shale	344.2	356
Sandstone	356	374.2
Coal	374.2	374.9
Shale	374.9	375.3
Coal	375.3	380.2
Shale	380.2	383
Siltstone	383	388
Shale	388	399.2
Coal	399.2	403.2
Shale	403.2	424
Sandstone	424	433
Basalt	433	448

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Anderson Lake #5

LOCATION - Anderson Lake Area

ELEVATION - 1490

DATE - July 1975

Type of Cuttings	FEET FROM	TO
Sandstone	0	7
Hard Sandstone	7	29
Carbonaceous Shale	29	33.5
Coal	33.5	35.5
Carbonaceous Shale	35.5	37
Grey Shale	37	38
Siltstone	38	39
Sandstone	39	45
Carbonaceous Shale	45	46
Grey Shale	46	47
Siltstone	47	48
Carbonaceous Shale	48	49
Grey Shale	49	50
Carbonaceous Shale & Coal Trace	50	51
Grey Shale	51	51.5
Carbonaceous Shale	51.5	52
Carbonaceous Shale & Coal Trace	52	53
Sandstone	53	56
Siltstone	56	58
Grey Shale	58	68
Carbonaceous Shale	68	72
Grey Shale	72	73
Carbonaceous Shale	73	75.5
Coal	75.5	76
Carbonaceous Shale & Coal Trace	76	78
Sandstone	78	82
Sandstone Hard Grey	80	167
Sandstone with Shale	167	169
Carbonaceous Shale with Coal Stringers	169	176
Siltstone Dark Grey	176	179.6
Coal	179.6	180.2
Shale with Coal Stringers	180.2	184
Coal	184	185
Shale	185	186
Sandstone Grey	186	198

cont'd ...

Borehole No. 5 - Anderson Lake

Type of Cuttings	FEET FROM	TO
Sandstone	198	220
Carbonaceous Shale	220	221
Grey Shale	221	223
Siltstone	223	224
Sandstone	224	245
Carbonaceous Shale & Coal Trace	245	246
Sandstone	246	262
Carbonaceous Shale	262	263
Coal & Carbonaceous Shale	263	264
Carbonaceous Shale	264	269
Siltstone	269	278
Carbonaceous Shale	278	282
Siltstone	282	283
Sandstone	283	313
Siltstone	313	314
Carbonaceous Shale	314	316
Sandstone	316	317
Carbonaceous Shale	317	319
Silty Shale	319	320
Carbonaceous Shale	320	322
Siltstone	322	326
Carbonaceous Shale	326	328
Silty Shale	328	330
Coal	330	332
Siltstone	332	335
Sandstone	335	336
Carbonaceous Shale	336	340
Carbonaceous Shale	340	343
Dark Grey Sandstone	343	346
Black Shale	346	349
Siltstone	349	353
Sandstone	353	371.4
Carbonaceous Shale with Coal Stringers	371.4	378
Siltstone	378	380
Dark Grey Sandstone	380	383
Grey Shale	383	386
Sandstone	386	400
Grey Shale	400	402
Soft Black Shale	402	404.5
Siltstone	404.5	419.3
Quartz	419.3	421
Sandstone White	421	429
Soft Grey Shale	429	431
Sandstone	431	442
Quartz	442	453
Sandstone White with Quartz	453	460
Sandstone & Quartz	460	462

cont'd ...

Borehole No. 5 - Anderson Lake

Type of Cuttings	FEET FROM	TO
Siltstone	462	464
Sandstone	464	467
Hard Sandstone & Quartz	467	470
Siltstone	470	486
Sandstone	486	517
Sandstone Grey	519	525
Carbonaceous Shale	525	526
Siltstone	526	527.5
Carbonaceous Shale with Coal	527.5	529.5
Sandstone Fine Grey	529.5	536
Hard Black Sandstone	536	540
Basalt	540	547

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Anderson Lake #6

LOCATION - Anderson Lake Area

ELEVATION - 1620

DATE - July 1975

Type of Cuttings	FEET FROM	TO
Gravel & Boulders	0	6
Frac. Shale	6	9
Sandstone	9	10.5
Carbonaceous Shale	10.5	11.5
Coal	11.5	13.5
Brown Shale	13.5	15
Shaley Coal	15	15.6
Grey Shale	15.6	17
Sandstone	17	26.2
Shale with Coal	26.2	27
Sandstone	27	33
Siltstone	33	35
Carbonaceous Shale	35	36
Coal	36	37.5
Carbonaceous Shale	37.5	42
Grey Shale	42	43
Carbonaceous Shale & Coal Trace	43	44
Grey Shale	44	45
Carbonaceous Shale	45	47
Grey Shale	47	48
Sandstone	48	51
Grey Shale	51	53
Siltstone	53	54
Grey Shale	54	55
Sandstone	55	60
Carbonaceous Shale	60	63
Siltstone	63	66
Grey Shale	66	69
Carbonaceous Shale & Coal Trace	69	70
Grey Shale	70	71
Carbonaceous Shale	71	72
Siltstone	72	73
Sandstone	73	116
Siltstone	116	148
Carbonaceous Shale	148	160

cont'd ...

Borehole No. 6 - Anderson Lake

Type of Cuttings	FEET FROM	TO
Black Siltstone	162	169
Carbonaceous Shale Brown-Black	169	171
Dark Grey Sandstone Coarse	171	190
Black Siltstone	190	191.5
Sandstone	191.5	218
Conglomerate Basalt	218	219
Grey Sandstone	219	221
Soft Grey Shale	221	22.5
Conglomerate	22.5	226
Sandstone	226	308
Hard Sandstone	308	323
Sandstone Conglomerate	323	359
Basalt	359	372

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Anderson Lake #7

LOCATION - Anderson Lake Area

ELEVATION - 1495

DATE - July 1975

Type of Cuttings	FEET FROM	TO
Sandstone	0	53
Carbonaceous Shale	53	56
Siltstone	56	57
Grey Shale	57	58
Sandstone	58	129
Carbonaceous Shale	129	135
Coal	135	135.5
Carbonaceous Shale	135.5	139
Coal	139	141
Carbonaceous Shale	141	146
Siltstone	146	148
Carbonaceous Shale	148	149
Coal	149	150
Carbonaceous Shale	150	151
Sandstone	151	189

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Anderson Lake #9

LOCATION - Anderson Lake Area

ELEVATION - 850

DATE - August 1975

Type of Cuttings	FEET FROM	TO
Gravel and Clay	0	61
Sandstone	61	76
Carbonaceous Shale	76	90
Basalt	90	117

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Anderson Lake #10

LOCATION - Anderson Lake Area

ELEVATION - 955

DATE - August 1975

Type of Cuttings	FEET FROM	TO
Gravel and Boulders	0	41
Basalt	41	50

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Anderson Lake #11

LOCATION - Anderson Lake Area

ELEVATION - 829

DATE - August 1975

Type of Cuttings	FEET FROM	TO
Sand and Gravel	0	42
Basalt	42	52

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Browns River #2

LOCATION - Anderson Lake Area

ELEVATION - 620

DATE - June 1975

Type of Cuttings	FEET FROM	TO
Gravel	0	30
Brown Clay, Gravel and Boulders	30	46
Soft Sandstone	46	63
Grey Sandstone	63	78
Coal with Shale Stringers	78	80
Carbonaceous Shale	80	81
Grey Sandstone	81	87
Grey Sandstone	87	103
Soft Sandstone	103	126
Carbonaceous Shale with Coal Traces	126	133
Siltstone	133	140
Carbonaceous Shale	140	142
Sandstone	142	192
Grey Sandstone	192	209
Black Shale	209	215
Brown Shale	215	227.5
Coal and Carbonaceous Shale	227.5	228.5
Coal	228.5	234.5
Coal	234.5	237
Grey Sandstone	237	245
Sandstone	245	274
Siltstone	274	282
Sandstone	282	290
Carbonaceous Shale	290	296
Sandstone	296	315
Carbonaceous Shale - Coal Traces	315	337
Grey Sandstone	337	345
Grey Sandstone	345	360
Black Shale - some Coal Traces	360	402
Green and Grey Siltstone	402	403
Basalt	403	425

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Browns River #3

LOCATION - Anderson Lake Area

ELEVATION - 490

DATE - August 1975

Type of Cuttings	FEET FROM	TO
Gravel	0	35
Sandstone	35	80
Shale	80	106
Carbonaceous Shale	106	108
Coal	108	109.5
Carbonaceous Shale	109.5	123
Sandstone	123	144
Carbonaceous Shale	144	146
Sandstone	146	156
Carbonaceous Shale	156	159
Sandstone	159	184
Siltstone	184	190
Coal	190	192
Carbonaceous Shale	192	194
Sandstone	194	264
Grey Shale	264	287
Coal	287	290
Grey Shale	290	293
Sandstone	293	368
Shale	368	386
Carbonaceous Shale	386	388
Coal	388	389
Carbonaceous Shale	389	410
Sandstone	410	416
Basalt	416	430

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Headquarters Creek #1

LOCATION - Anderson Lake Area

ELEVATION - 250

DATE - June 1975

Type of Cuttings	FEET FROM	TO
Grey Shale - small sandstone stringers	0	38
Grey Siltstone	38	75
Hard Grey Siltstone	75	112
Grey Shale	112	126
Hard Grey Siltstone	126	174
Dark Grye Sandstone - hard	174	175
Hard Grey Siltstone	175	239
Grey Siltstone	239	257
Grey Sandstone	257	262
Grey Silty Shale	262	356
Grey Sandstone	356	361
Grey Siltstone	361	376
Hard, Dark Grey Siltstone	375	426
Hard Sandstone	426	480
Grey Sandstone	480	675
Sandstone - grey, hard	675	690
Siltstone, dark grey	690	709
Sandstone	709	717

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Tsolum River #1

LOCATION - Anderson Lake Area

ELEVATION - 260

DATE - June 1975

Type of Cuttings	FEET FROM	TO
Clay Top Soil	0	4
Soft Water-Soaked Shale	4	27
Muddy Shale	27	29
Grey Sandstone	29	47
Grey Shale Carbonaceous - Coal Stringers	47	58
Grey Sandstone	58	82
Grey Shale - Coal Stringers	82	100
Grey Sandstone	100	104.5
Grey Shale	104.5	131
Grey Sandstone	131	150
Grey Shale - Coal Stringers	150	153
Grey Sandstone	153	155
Grey Shale	155	159
Grey Sandstone	159	167.2
Carbonaceous Shale	167.2	169
Coal	169	169.9
Carbonaceous Shale	169.9	174
Coal	174	176
Shale	176	182
Dark Grey Siltstone	182	184
Shale - Coal Stringers	184	189
Soft, Grey Shale	189	194.8
Coal	194.8	198
Soft, Brown Shale	198	224.8
Coal	224.8	225.6
Shale	225.6	231
Coal	231	232.5
Shale - Coal Stringers	232.5	275.3
Coal	275.3	276.5
Shale	276.5	281
Sandstone - (Salt Water)	281	288
Soft, Grey Shale	288	301
Sandstone	301	305
Soft, Grey Shale	305	318
Hard, Grey Shale	318	333
Grey Siltstone	333	343
Basalt	343	365

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Tsolum River #2

LOCATION - Anderson Lake Area

ELEVATION - 420

DATE - June 1975

Type of Cuttings	FEET FROM	TO
Till and Weathered Siltstone	0	6
Sandstone	6	366
Brown Shale with Coal Traces	366	367
Sandstone	367	376
Brown Carbonaceous Shale - Coal Traces	376	380.5
Grey Shale	380.5	382.5
Grey Siltstone	382.5	385
Sandstone	385	458
Brown Shale and Coal	458	458.6
Grey Shale	458.6	459.5
Carbonaceous Shale	459.5	459.8
Grey Shale	459.8	462
Carbonaceous Shale - Coal Traces	462	463
Grey Shale	463	466
Sandstone	466	498
Brown Siltstone	498	505
Carbonaceous Shale Layers	505	542
Brown Shale - Sandstone Stringers	542	565
Grey Siltstone	565	576
Grey Shale - Coal Streamers	576	577
Grey Sandstone	577	611
Carbonaceous Shale - Coal Streamers	611	620.5
Coaly Shale	620.5	631
Grey Sandstone	631	693
Brown Shale and Carbonaceous Shale	693	700
Sandstone	700	701
Grey and Brown Siltstone	701	725
Sandstone	725	777

Borehole No. 1 - Browns River

Type of Cuttings	FEET FROM	TO
Grey Sandstone	521	533
Dark Siltstone	533	542
Grey Sandstone	542	557
Grey Shale	557	561
Coal	561	564.2
Grey Shale	564.2	575
Sandstone	575	607
Soft Brown Shale	607	609
Grey Sandstone	609	644
Brown Shale with Coal stringers	644	650.6
Coal	650.6	653.6
Brown Shale - soft	653.6	659
Grey Shale	659	660
Grey Sandstone	660	664
Black Shale - hard	664	667
Hard Sandstone - dark grey	667	681
Grey Sandstone - soft	681	695
Basalt	695	717

Borehole No. 1 - Browns River

Type of Cuttings	FEET FROM	TO
Grey Sandstone	521	533
Dark Siltstone	533	542
Grey Sandstone	542	557
Grey Shale	557	561
Coal	561	564.2
Grey Shale	564.2	575
Sandstone	575	607
Soft Brown Shale	607	609
Grey Sandstone	609	644
Brown Shale with Coal stringers	644	650.6
Coal	650.6	653.6
Brown Shale - soft	653.6	659
Grey Shale	659	660
Grey Sandstone	660	664
Black Shale - hard	664	667
Hard Sandstone - dark grey	667	681
Grey Sandstone - soft	681	695
Basalt	695	717

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Trent River #1

LOCATION - Cumberland Area

ELEVATION - 460

DATE - May 1975

Type of Cuttings	FEET FROM	TO
Silt-Till - cobbles, sand, boulders	0	11.8
Grey Shale	11.8	57.5
Grey Sandstone - hard	57.5	61.8
Grey Shale - slight water at 62'	61.8	72
Hard Sandstone	72	74.5
Soft, Grey Sandstone	74.5	86
Grey Shale	86	88.6
Grey Sandstone	88.6	101
Grey Shale	101	103
Grey Sandstone	103	243.8
Carbonaceous Shales - few thin coal bands	243.8	250.5
Grey Sandstone - mostly soft - odd shale stringer	250.5	352.4
Shaley Siltstone	352.4	362
Grey Shale	362	366
Shaley Siltstone	366	373.6
Grey Coarse Sandstone	373.6	416
Grey Shale	416	417.5
Coal Stringer - shale	417.5	418.8
Grey Shale	418.8	421
Grey Sandstone	421	436
Grey Sitlstone	436	442
Grey Shale-Coal Stringers	442	445.6
Grey Siltstone	445.6	447
Grey and Brown Siltstone - carbonaceous shale stringers to 452'	450	457
Grey Sandstone	457	504.8
Carbonaceous Shales	504.8	511
Grey Sandstone	511	532
Grey Siltstone	532	559.5
Grey and Brown Shales - odd coal stringer	559.5	567
Grey Shale - coal traces	567	576
Grey Sandstone	576	636
Grey Shale - coal stringers	636	644.2
Grey Silty Shale	644.2	648
Grey Sitlstone	648	651
Green Sandstone - (Basalt)	651	664

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Trent River #2

LOCATION - Cumberland Area

ELEVATION - 760

DATE - May 1975

Type of Cuttings	FEET FROM	TO
Soft Grey Sandstone	0	9
Hard Grey Sandstone	9	11
Soft Grey Sandstone	11	34
Hard Grey Sandstone	34	37
Soft Grey Sandstone	37	49
Grey Sandstone	49	124
Coal	124	124.8
Grey Silty Shale	124.8	126
Coal	126	128
Grey Shale	128	129.5
Coal	129.5	130
Sandstone	130	198
Grey Shale	198	199.2
Grey Sandstone	199.2	215
Hard Sandstone - dark grey	215	223
Siltstone - grey black	223	228.5
Siltstone and Shale with coal stringers	228.5	240
Sandstone and Shale - grey	240	287
Coal	287	288.5
Shale and Siltstone - black	288.5	290
Soft Siltstone	290	312
Hard Grey Sandstone	312	329
Grey Sandstone	329	335
Shaley Coal	335	343
Grey Shale	343	344.4
Sandstone	344.4	380
Grey Shale	380	384
Dark Sandstone	384	385
Grey Sandstone	385	389
Dark Sandstone	389	389.6
Dark Shale	389.6	390.6
Dark Sandstone	390.6	397
Sandstone	397	424
Shale	424	427
Grey Sandstone	427	451

cont'd ...

Borehole No. 2 - Trent River

Type of Cuttings	FEET FROM	TO
Shale - coal stringers	451	453.9
Sandstone	453.9	501
Coal	501	505.4
Grey Sandstone	505.4	510
Coal	510	513
Shale - coal stringers	513	515
Grey Shale - soft, light grey	515	519
Hard Sandstone - silty	519	522
Hard Sandstone - grey black	522	525
Basalt	525	534.9

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - T'Sable River #2

LOCATION - T'Sable River Area

ELEVATION - 350

DATE - May 1975

Type of Cuttings	FEET FROM	TO
Sand and Gravel	0	39
Grey Silty Shale	39	110.8
Grey Sandstone	110.8	117
Sandstone	117	136
Black Siltstone	136	147
Hard Shale - carbonaceous	147	156
Dark Grey Siltstone	156	187
Dark Grey Sandstone	187	192
Grey Sandstone	192	201
Grey Shale	201	208
Grey Sandstone	208	237
Dark Grey Sandstone	237	252.7
Carbonaceous Shale	252.7	255
Shale and Siltstone	255	259
Sandstone	259	261.5
Coal and Shale	261.5	262.3
Soft Brown Shale	262.3	263.5
Dark Brown Siltstone	263.5	265.5
Hard Sandstone - grey black	265.5	301
Dark Grey Sandstone	301	320
Sandstone	320	346.5
Coal and Shale	346.5	347.9
Shale	347.9	349
Siltstone	349	352.5
Coal	352.5	353.5
Siltstone and Sandstone	353.5	355
Grey Shale	355	356.1
Grey Sandstone	356.1	405.5
Coal	405.5	409.8
Grey Sandstone	409.8	412
Grey Shale	412	419
Grey Sandstone	419	507
Grey Sandstone	507	527
Dark Brown Shale	527	530.5
Coal with Shale	530.5	543.5
Siltstone - grey black	543.5	550
Grey Sandstone	550	565.8
Coal and some shale	565.8	567.8

cont'd ...

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - T'Sable River #1

LOCATION - T'Sable River Area

ELEVATION - 460

DATE - May 1975

Type of Cuttings	FEET FROM	TO
Sand and Gravel	0	23
Sandstone - light grey	23	25
Grey Sandstone	25	61
Carbonaceous Shale - coal traces	61	65.4
Grey Sandstone	65.4	79
Grey Shale	79	80.3
Grey Sandstone	80.3	147
Soft Sandstone - light grey	147	163
Hard Sandstone - grey, black & white	163	181
Coal	181	186
Coal and Shale	186	188
Soft Siltstone - dark grey shale stringers	188	194
Sandstone	194	216.5
Shale - coal stringers	216.5	218
Siltstone and Sandstone - grey, hard	218	232
Grey Sandstone	232	238
Grey Silty Shale	238	252.6
Shale	252.6	261.8
Grey Shaley Siltstone	261.8	269
Shale	269	272.6
Grey Siltstone	272.6	282
Shale - Coal traces	282	287
Coal	287	292
Grey Shale	292	293.6
Grey Sandstone	293.6	296
Grey Shaley Siltstone	296	326
Basalt	326	357

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - T'Sable River #3

LOCATION - T'Sable River Area

ELEVATION - 380

DATE - May 1975

Type of Cuttings	FEET FROM	TO
Gravel	0	8
Grey Shale	8	10
Soft Grey Shale	10	37.5
Siltstone	37.5	74
Sandstone - dark grey	74	80
Soft Grey Shale	80	137
Sandstone	137	139
Grey Sandstone	139	175
Sandstone	175	196
Coal	196	198
Carbonaceous Shale and Coal	198	200
Sandstone	200	208
Grey Sandstone - medium & fine grain - few bentonitic bands	208	236
Sandstone	236	263
Carbonaceous Shale	263	263.5
Grey Sandstone	263.5	266
Sandstone	266	274
Shale - Coal trace	274	284
Brown Sandstone	284	292
Shale	292	298
Sandstone	298	314
Grey Sandstone	314	353.5
Grey and Brown Shale	353.5	354.3
Coal and Carbonaceous Shale	354.3	355.5
Grey Sandstone	355.5	358
Carbonaceous Shale and Coal	358	360
Grey Sandstone	358	360
Carbonaceous Shale - coal traces	369	371
Grey Sandstone	371	378
Sandstone	378	396
Carbonaceous Shale - coal traces	396	397
Sandstone	397	408
Grey and Brown Sandstone	408	473.3

cont'd ...

Borehole No. 2 - T'Sable River Area

Type of Cuttings	FEET FROM	TO
Dark Grey Siltstone	567.8	574
Grey Siltstone	574	593
Hard Sandstone	593	643
Grey Sandstone	643	647
Grey Shale	647	654.4
Coal	654.4	666.5
Grey Shale	666.5	725
Carbonaceous Shale	725	755
Grey and Brown Shales	755	768
Grey Sandstone	768	779
Grey and Brown Shales	779	782.5
Grey Sandstone	782.5	792.8
Sand	792.8	799
Grey and Brown Siltstone - shaley	799	803
Carbonaceous Shale with Sandstone stringers	803	845

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - T'Sable River #3

LOCATION - T'Sable River Area

ELEVATION - 380

DATE - May 1975

Type of Cuttings	FEET FROM	TO
Gravel	0	8
Grey Shale	8	10
Soft Grey Shale	10	37.5
Siltstone	37.5	74
Sandstone - dark grey	74	80
Soft Grey Shale	80	137
Sandstone	137	139
Grey Sandstone	139	175
Sandstone	175	196
Coal	196	198
Carbonaceous Shale and Coal	198	200
Sandstone	200	208
Grey Sandstone - medium & fine grain - few bentonitic bands	208	236
Sandstone	236	263
Carbonaceous Shale	263	263.5
Grey Sandstone	263.5	266
Sandstone	266	274
Shale - Coal trace	274	284
Brown Sandstone	284	292
Shale	292	298
Sandstone	298	314
Grey Sandstone	314	353.5
Grey and Brown Shale	353.5	354.3
Coal and Carbonaceous Shale	354.3	355.5
Grey Sandstone	355.5	358
Carbonaceous Shale and Coal	358	360
Grey Sandstone	358	360
Carbonaceous Shale - coal traces	369	371
Grey Sandstone	371	378
Sandstone	378	396
Carbonaceous Shale - coal traces	396	397
Sandstone	397	408
Grey and Brown Sandstone	408	473.3

cont'd ...

Borehole No. 3 - T'Sable River Area

Type of Cuttings	FEET FROM	TO
Coal - few carbonaceous shale stringers	473.3	483
Brown Shale - silty	483	488
Grey Sandstone	488	489
Shale	489	499
Sandstone	499	510
Shale - coal trace	510	532
Soft Brown Sandstone	532	538
Sandstone	538	556
Shale - coal trace	556	558
Sandstone	558	565
Grey Sandstone	565	573
Carbonaceous Shales - coal traces	573	578.5
Coal - carbonaceous shale stringers	578.5	585.5
Carbonaceous Shales - coal traces	585.5	592.5
Grey Sandstone	592.5	595
Sandstone	595	598
Shale	598	610
Carbonaceous Shale - coal trace	610	613
Siltstone	613	632
Grey and Brown Siltstone	632	674
Grey Sandstone	674	708
White Sandstone	708	717
Grey Siltstone	717	732
Siltstone	732	736
Sandstone	736	750
Basalt	750	773

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Allan Lake #1

LOCATION - T'Sable River Area

ELEVATION - 650

DATE - May 1975

Type of Cuttings	FEET FROM	TO
Sand and Gravel	0	2
Sandstone - light grey	2	25
Grey Sandstone	25	57.5
Brown and Carbonaceous Shales	57.5	60.2
Coal and Carbonaceous Shale interbedded	60.2	64.6
Brown Shale	64.6	67.2
Grey Sandstone	67.2	147.5
Grey Siltstone	147.5	152.3
Carbonaceous and Brown Shales - coal traces	152.3	156
Grey Siltstone	156	182.5
Grey Sandstone	182.5	238.5
Brown Siltstone - shaley bands	238.5	247.8
Grey Sandstone - silty bands	247.8	262.7
Brown and Carbonaceous Shales - odd coal trace	262.7	275.5
Grey Siltstone	275.5	278
Brown and Carbonaceous Shales - odd coal trace	278	280
Sandstone	280	281
Brown Shale - traces of coal	281	291
Coal	291	291.3
Siltstone	291.3	294.5
Coaly Shale	294.5	295.5
Coal	295.5	296.5
Silty Brown Shale	296.5	305
Hard Light Grey Sandstone	305	309
Siltstone	309	322
Shale - 0.1' coal @ 322.5'	322	322.8
Grey Siltstone	322.8	326
Grey Sandstone	326	366
Brown Fine Grained Siltstone	366	387
Shale and Coal	387	391.3
Brown and Silty Shale and Siltstone	391.3	401
Light Grey Sandstone	401	458
Siltstone	458	470
Grey Siltstone	470	476.5

cont'd ...

Borehole No. 1 - Allan Lake

Type of Cuttings	FEET FROM	TO
Coal - few carbonaceous shale bands	476.5	485.2
Coal Carbonaceous Shales	485.2	493
Brown Siltstone	493	509
Grey Basalt	509	520

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Langley Lake #1

LOCATION - T'Sable River Area

ELEVATION - 480

DATE - May 1975

Type of Cuttings	FEET FROM	TO
Till - rocks	0	4
Grey Sandstone - weathered	4	14.5
Grey Shale - silty	14.5	19.8
Grey Siltstone - few shaley bands	19.8	92.4
Grey Sandstone	92.4	94.5
Conglomerate	94.5	101
Grey Sandstone - medium to coarse	101	241
Conglomerate	241	257.3
Grey Sandstone - silty bands	257.3	444
- at 258' - 0.9' carbonaceous shale and coal		
Conglomerate	444	448.5
Grey Sandstone	448.5	450
Sandstone	450	455
Conglomerate	455	458
Grey Sandstone	458	494
Grey Shale - silty	494	513
Grey Sandstone	513	522
Grey and Brown Shales - silty bands	522	526
- carbonaceous shale and coal bands - 524' - 526'		
Grey and Brown Sandstone	526	550
Hard Sandstone with small conglomerate layers	550	575
Grey and Brown Sandstone	575	581
Conglomerate and Sandstone banded	581	601

Borehole No. 1 - Allan Lake

Type of Cuttings	FEET FROM	TO
Coal - few carbonaceous shale bands	476.5	485.2
Coal Carbonaceous Shales	485.2	493
Brown Siltstone	493	509
Grey Basalt	509	520

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Bradley Lake #2

LOCATION - T'Sable River Area

ELEVATION - 675

DATE - May 1975

Type of Cuttings	FEET FROM	TO
Till - some Gravel	0	14
Grey Sandstone	14	17
Grey Shale - fractured basalt - fault	17	41
Fractured Rock Sandstone Basalt - fault formation	41	57

(Hole was abandoned due to drilling difficulties beyond reasonable risk.)

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Langely Lake #2

LOCATION - T'Sable River Area

ELEVATION - 370

DATE - May 1975

Type of Cuttings	FEET FROM	TO
Gravel and Sand	0	27
Grey Shale	27	58
Soft Grey Shale	60	71
Hard Black Sandstone	71	74
Soft Grey Shale	74	94
Dark Grey Shale	94	126
Grey Sandstone	126	128
Grey Silty Shale	128	140
Hard Silty Shale - dark grey	140	200
Grey Silty Shale	200	243.5
Grey Siltstone	243.5	370
Grey Sandstone	370	371.8
Grey Silty Shale	371.8	510
Grey Shale - soft	510	553.5
Hard Siltstone	553.5	556
Dark Grey Shale - soft	556	575
Coarse Sandstone - grey, hard	575	586
Hard Sandstone - dark grey	586	600
Soft Brown Shale	600	601.3
Sandstone	601.3	605
Grey Shale	605	611
Dark Grey Sandstone - hard	611	624
Grey Shale	624	625
Grey Shale	625	648
Grey Silty Shale	648	698.5
Grey Sandstone	698.5	715

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Cook Creek #1

LOCATION - T'Sable River Area

ELEVATION - 480

DATE - June 1975

Type of Cuttings	FEET FROM	TO
Sand - few pebbles	0	17
Gravel	17	22
Grey and Brown Silty-Till - odd stones	22	52.5
Gravel - few sand bands	52.5	100
Cemented Gravel and Boulders	100	155
Basalt and Metamorphosized Sandstone	155	185
Basalt	185	188

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Bradley Lake #1

LOCATION - T'Sable River Area

ELEVATION - 975

DATE - May 1975

Type of Cuttings	FEET FROM	TO
Sand and Gravel	0	8
Clay-Till and Boulders	8	18.3
Coal, Shale and Carbonaceous Shale	18.3	20.3
Brown Shale	20.3	30
Grey Sandstone	30	35.6
Coal	35.6	37.3
Brown, Silty Shale	37.3	45
Coal & Shale	45	46.4
Brown & Grey Shale	46.4	48
Soft Light Grey Sandstone	48	107.7
Brown Shale - trace of coal	107.7	112
Silty Shale	112	116.7
Coal with Shale	116.7	120.8
Shale	120.8	122
Brown Siltstone	122	138
Grey Siltstone	138	146
Grey Sandstone	146	160
Coal - Shaley	160	187.5
Shale	187.5	188.5
Light Grey Sandstone	188.5	190
Brown Sandstone	190	238
Brown Sandstone with Shale	238	239
Silty Grey Brown Shale	239	242
Brown & Grey Siltstone - few carbonaceous and brown shale bands at 263' 0.9' carbonaceous shale and coal at 301' 1.2' carbonaceous shale and coal at 305' 0.8' carbonaceous shale and coal	242 250	250 310
Grey Sandstone	310	317
Brown and Grey Siltstone	317	325
Grey Sandstone - medium	325	336
White Sandstone - coarse	336	342
Coal - odd carbonaceous shale band	342	352
Grey Shale - soft	352	353
Brown Siltstone	353	363
Basalt	363	380

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Rosewall #1

LOCATION - T'Sable River Area

ELEVATION - 315

DATE - May 1975

Type of Cuttings	FEET FROM	TO
Sand and Gravel	0	22
Soft Grey Shale	22	26
Hard Black Siltstone	26	29
Conglomerate	29	36
Soft Grey Shale	36	37
Sand	37	43
Shattered Sandstone-Shale	43	84
Conglomerate	84	94

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

BOREHOLE NO. - Bloedel Creek #1

LOCATION - T'Sable River Area

ELEVATION - 320

DATE - June 1975

Type of Cuttings	FEET FROM	TO
Sand, Gravel and Boulders	0	8
Cemented Gravel and Rock	8	31
Grey Clay and Rocks	31	36
Silt-Till, Boulders, Gravel and Sand Bands	36	97
Gravel and Sand	97	106
Boulders	106	109
Dense Grey-Till, Gravel and Boulders	109	132
Shale - Grey	132	178
Sandstone	178	190
Grey Shale - silty	190	231
Grey Shale	227	313
Grey Shaly Siltstone	313	371
Grey Sandstone	371	376
Siltstone - grey, soft	376	463
Soft Grey Shale	463	514
Sandstone - grey (salt water)	514	519
Grey Shale - soft	519	529
Grey Siltstone	529	533
Soft Grey Shale	533	537

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

HOLE NO. - Cowie Creek #2

LOCATION - T'Sable River Area

ELEVATION - 585

DATE - August 1975

Type of Cuttings	FEET FROM	TO
Gravel and Boulders	0	42

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

HOLE NO. - Cowie Creek #1

LOCATION - T'Sable River Area

ELEVATION - 690

DATE - August 1975

Type of Cuttings	FEET FROM	TO
Gravel and Boulders	0	53
Basalt	53	55

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

HOLE NO. - Coal Creek #2

LOCATION - T'Sable River Area

ELEVATION - 510

DATE - August 1975

Type of Cuttings	FEET FROM	TO
Sand and Gravel	0	92
Fractured Basalt-Bouldary	92	212

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

HOLE NO. - Coal Creek #1

LOCATION - T'Sable River Area

ELEVATION - 300

DATE - July 1975

Type of Cuttings	FEET FROM	TO
Gravel-Till-Boulders	0	193
Sandstone	193	203
Shale	203	207
Sandy Shale	207	387
Basalt Boulders (?)	387	---

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

HOLE NO. - Coal Creek #2

LOCATION - T'Sable River Area

ELEVATION - 510

DATE - August 1975

Type of Cuttings	FEET FROM	TO
Sand and Gravel	0	92
Fractured Basalt-Bouldary	92	212

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

HOLE NO. - Coal Creek #3

LOCATION - T'Sable River Area

ELEVATION - 600

DATE - August 1975

Type of Cuttings	FEET FROM	TO
Sand and Gravel	0	53

WELDWOOD OF CANADA LIMITED

VANCOUVER ISLAND
RESOURCE STUDY

HOLE NO. - Coal Creek #4

LOCATION - T'Sable River Area

ELEVATION - 605

DATE - August 1975

Type of Cuttings	FEET FROM	TO
Gravel and Till	0	225

QUALITY OF COAL

The coal in the Comox-Nanaimo series deposits on Vancouver Island is a High Volatile A, Bituminous classification.

Two main seams in the lower cyclothem of the Comox were analysed for their chemistry, and these are indicated as Seam A, being the lowest, and Seam B, the next coal measure above.

In the T'Sable River and Cumberland Areas, the two seams exist very consistently. These areas, have fairly uniform ash and sulphur contents in both seams. (Table I-IV)

Further north, into the Anderson Lake Area, post deposition disturbances, primarily in the form of Tertiary Intrusives, along with a higher Vancouver Lava, has resulted in very definite increases in both ash and sulphur content. (Table III-IV)

The Anderson Lake Area appears to have been influenced in the northern portions by Constitution Hill, and in the southern portions by both Constitution Hill and a Tertiary Intrusive north of Browns River.

During their period of occurrance they had a definite influence on the coal measures not only in quality but in depositional changes. In the later case, the coal measures were disturbed by faults. In two limited fault blocks, the coal seams are near surface and tilted. In the other blocks which were downfaulted, the Vancouver Lava displaced the coal, during the Tertiary Intrusive period.

These depositional disturbances have had a major influence on the coal chemistry.

From Constitution Hill north and west into the Campbell River and Quinsam areas, the quality of coal is much different. This shows up distinctly in both the ash and sulphur contents. (Table II.) Here they are much lower in percentum then those coal seams south of the Browns River.

For example in the dry Mm-free Calorific Value determination of Seam 'B' (Table IV), the standard error is 2,762 and the standard deviation is 4.784. Hence, the validity of such a data is questionable.

Standard deviation (σ) is used as a statistical method for describing the variation in the values of observation from the arithmetic mean, and is calculated as follows:

$$\text{Standard deviation } (\sigma) = \sqrt{\frac{[(X_1 - X_m)^2 + (X_2 - X_m)^2 +}{n}}$$

Where X_1, X_2, X_3 are observations

X_m = Arithmetic mean of the observations

n = number of observations

Standard error, $S_{\bar{x}}$, determination gives in absolute terms the range within which the arithmetic mean, X_m , may vary

$$\text{Standard error } S_{\bar{x}} = \pm \frac{\sigma}{\sqrt{n}}$$

Where σ = Standard deviation

n = Number of observations

The analytical data, statistically compiled was not carried forward into the washability tests. All washabilities were conducted on the basis of after screening, the air dryed samples, and can only be considered as an indication.

It is obvious that with variation differences over the northern and southern zones, numerous tests would be required to obtain meaningful results.

In order that such wide apparent variations in the ash content and consequently the fixed carbon can be equated to a common denominator for the purpose of rank classification and comparison between the seams or the same seam traced through different areas the Approximation Formula (ASTM D-388) was adopted. Here the fixed carbon is calculated on a dry mineral-matter-free basis (dry Mm-free basis) according to the following formula:

$$\text{Dry Mm-free FC} = \frac{\text{FC}}{[100 - (M + 1.1A + 0.1S)]} \times 100$$

Where: Mm = mineral matter
FC = % of fixed carbon
M = % of moisture
A = % of ash, and
S = % of sulphur

Seam 'A' the oldest and the most consistent seam in spatial distribution has been recorded in all the three areas. The dry Mm-free F.C. in the T'Sable River - Cumberland Area and the Anderson Lake Area are 60.13 and 60.90 respectively while that of Quinsam and Campbell River area is 54.82. A much greater depth of burial (300' to 636.0') and epigenetic effects in the former regions could be the main factors for the higher dry Mm-free F.C. However, the Quinsam-Campbell River area appears to be reflecting the more natural state of the coal seam.

Similarly, the Mm-free Calorific Value determination in the T'Sable River area appears to be unusually high both for Seam 'A' and the overlying seam 'B'. As such for the purposes of comparison, it was determined to restrict the comparables to mineral-matter-free fixed carbon only.

All the analytical data has been statistically verified by determining the standard deviation (σ) and the standard error, $S_{\bar{x}}$, in the determination of the arithmetic mean X_m.

For example in the dry Mm-free Calorific Value determination of Seam 'B' (Table IV), the standard error is 2,762 and the standard deviation is 4.784. Hence, the validity of such a data is questionable.

Standard deviation (σ) is used as a statistical method for describing the variation in the values of observation from the arithmetic mean, and is calculated as follows:

$$\text{Standard deviation } (\sigma) = \sqrt{\frac{[(X_1 - X_m)^2 + (X_2 - X_m)^2 +}{n}}$$

Where X_1, X_2, X_3 are observations

X_m = Arithmetic mean of the observations

n = number of observations

Standard error, $S_{\bar{x}}$, determination gives in absolute terms the range within which the arithmetic mean, X_m, may vary

$$\text{Standard error } S_{\bar{x}} = \pm \frac{\sigma}{\sqrt{n}}$$

Where σ = Standard deviation

n = Number of observations

The analytical data, statistically compiled was not carried forward into the washability tests. All washabilities were conducted on the basis of after screening, the air dryed samples, and can only be considered as an indication.

It is obvious that with variation differences over the northern and southern zones, numerous tests would be required to obtain meaningful results.

The best method to obtain reliable data on the coal washability would require bulk testing. It would be relatively simple to obtain bulk samples from the seams in Quinsam and Hamilton Lake as the Quinsam Area, and Cumberland Area have large exposed outcrops. This could be accomplished by blasting and tunnelling into the sections, to obtain bulk sample.

In the T'Sable River Area, the mine entry could be opened for very little cost, dewatered, and bulk sampled.

By doing this, a very definite coal recovery could be established across the total area.

In addition examination of the areas would prove to be beneficial for future mining, by examination of the coal seams in place, as well as hanging and footwall characteristics.

Composite float samples at 1.60 specific gravity were analysed for Ash Fusion on the T'Sable River Area.

The results of these were as follows:

ASH FUSION TEMPERATURES (^{O}F)

	Initial Deformation	Softening	Hemesphirical	Fluid
Oxidizing	2600	2600+		
Reducing	2480	2510	2540	2600

This coal would appear to be within acceptable limits, for some metalurgical processes.

Sodium and potassium analysis of coals were in the range of 0.18% to 0.31% for Sodium, and 0.33% to 0.70% for potassium, across the total area. These were based on composite samples from each hole tested.

Analysis of all the ash composites produced the following averages of minerals present.

Na20	1.05%	Al203	26.71%
K20	1.38%	S102	43.40%
Mg0	0.62%	S03	6.48%
Ca0	8.68%	P205	0.58%
Fe203	6.93%	T102	0.49%

The Alumina Oxide of 26.71% would be of economic importance, if a sufficient size coal operation were to proceed, allowing for the recovery of suitable quantities of Alumina Oxide to be economically interesting to Aluminum Producers.

TABLE I

T'SABLE RIVER & CUMBERLAND AREA:

SEAM 'A'

HOLE AND LAB NO.	DEPTH FT.	RESIDUAL MOISTURE %	ASH %	VOL. MATTER %	FIXED CARBON %	SULPHUR %	CAL.VAL BTU/lb.	DMMF FIXED CARBON %	DMMF CAL.VAL BTU/lb.
T'SABLE RIVER #1 3077	287.0-292.0	0.5	36.6	30.9	32.0	1.8	12,140	54.18	20,555
T'SABLE RIVER #2 3070-74	655.0-665.0	0.7	29.8	26.8	42.7	1.80	9,310	64.37	14,034
T'SABLE RIVER #3	577.0-585.0	1.5	34.6	26.1	37.8	1.13	9,106	62.66	15,094
TRENT RIVER #1 (3213)	636.0-644	0.6	47.7	22.2	29.5	1.45	9,280	63.05	19,835
TRENT RIVER #2 (3082-3083)	335.0-343.0	0.6	39.9	28.3	31.2	1.70	10,870	56.38	19,642
							Mean:	60.13	17,832
							Std. Deviation σ :	4.06	2,706
							Std.Error	1.815	1,210

TABLE II

QUINSAM AREA

SEAM 'A'

HOLE AND LAB NO.	DEPTH FT.	RESIDUAL MOISTURE %	ASH %	VOL. MATTER %	FIXED CARBON %	SULPHUR %	CAL.VAL BTU.lb.	DMMF FIXED CARBON %	DMMF CAL.VAL BTU/lb.
ECHO LAKE #2									
7507-1409	114.5-123.0	4.92	25.80	32.78	36.50	0.19	10,146	54.74	15,216
ECHO LAKE #4									
7507-2311	254.5-268.3	6.0	14.99	35.06	43.95	0.27	11.791	56.72	15,217
ECHO LAKE #5									
7507-2311	161.0-173.0	5.66	21.04	35.81	37.49	0.24	10,948	52.68	15,382
	*[161.0-170.5	5.67	13.56	38.43	42.34	0.20	12,180	53.33	15,341]
ECHO LAKE #7									
7508-0612	129.0-138.0	0.55	17.03	38.22	44.20	5.93	11,642	55.16	14,530
ECHO LAKE #8									
7508-0612	180.0-191.0	0.53	29.54	33.55	36.38	5.97	9,876	54.81	14,878
	**[180.0-186.0	0.55	20.50	36.37	42.58	4.37	11,142	55.69	14,572]
						Mean		54.82	15,045
						Std.Devn σ		1.29	305
						Std.Error		0.58	136

* Bottom 2.5' eliminated from the seam--not considered in the mean determination

** Bottom 5.0' eliminated from the seam--not considered in the mean determination

TABLE IV

T'SABLE RIVER & CUMBERLAND AREA:

SEAM 'B'

HOLE AND LAB NO.	DEPTH FT.	RESIDUAL MOISTURE %	ASH %	VOL. MATTER %	FIXED CARBON %	SULPHUR %	CAL.VAL BTU/lb.	DMMF FIXED CARBON %	DMMF CAL.VAL BTU/lb.
T'SABLE RIVER #1 3076	181.0-186.0	0.9	47.3	26.4	25.4	2.10	11,775	54.20	25,128
T'SABLE RIVER #2	536.9-540.3	0.98	38.3	24.6	37.1	1.80	8,290	65.42	14,618
***[Seam 'C'	405.5-409.5	0.80	28.2	27.6	43.4	1.75	10,110	63.82	14,867]
T'SABLE RIVER #3	474.0-484.0	1.50	37.9	25.5	35.1	1.19	8,723	61.91	15,387
							Mean:	60.51	18,378
							Std.Devn. σ	4.69	4,784
							Std.Error	2.71	2,762

ANDERSON LAKE AREA:

SEAM 'B'

ANDERSON LAKE #2	11.0-15.5	1.90	40.74	14.99	42.37	4.28	8,669	80.16	16,400

***Seam 'C' is a local development only.

TABLE III

ANDERSON LAKE AREA:

SEAM 'A'

HOLE AND LAB NO.	DEPTH FT.	RESIDUAL MOISTURE %	ASH %	VOL. MATTER %	FIXED CARBON %	SULPHUR %	CAL.VAL BTU/lb.	DMMF FIXED CARBON %	DMMF CAL.VAL BTU/lb.
TSOLUM RIVER #2									
7507-0708	535.0-541.0	2.0	69.96	17.58	10.46	4.21	4,075	50.72	19,760
BROWN RIVER #2									
7507-0708	229.5-234.5	1.8	59.18	15.92	23.10	6.03	5,548	71.08	17,071
							Mean:	60.90	18,415
							Std. Devn. σ	10.18	1,344
							Std. Error	7.2	951

QUINSAM AREA

WELDWOOD OF CANADA

Vancouver Island Resource Study

LAB NO. 7508-0612

- INITIAL SAMPLES BEFORE SCREENING

	On Dry Basis						
	Residual Moisture %	Ash %	Vol. Matter %	Fixed Carbon %	Sulfur %	Calorific Value BTU/lb	F.S.I.
Echo Lake # 3 320 - 325'	1.0	33.89	32.52	33.59	1.33	9,279	1/2
Echo Lake # 7 129 - 133'	0.5	17.91	36.90	45.19	4.88	11,512	1
Echo Lake # 7 133 - 138'	0.6	16.34	39.28	44.38	6.77	11,746	1
Echo Lake # 8 180 - 183'	0.6	17.95	36.94	45.11	3.72	11,518	1
Echo Lake # 8 183 - 186'	0.5	23.04	35.80	41.16	5.01	10,766	1
Echo Lake # 8 186 - 191'	0.5	40.40	30.17	29.43	7.88	8,357	1/2

QUINSAM AREA

WELDWOOD OF CANADA

Vancouver Island Resource Study

LAB NO. 7508-0612

- WASHABILITY TEST

	Float Sink in 1.45 Sp. Gr.		Analysis of Float Portion on Dry Basis					
	Float %	Sink %	Ash %	Vol. Matter %	Fixed Carbon %	Sulfur %	Calorific Value BTU/lb	F.S.I.
Echo Lake # 3 320 - 325'	59.0	40.5	7.01	41.77	51.22	1.51	13,055	1
Echo Lake # 7 129 - 133'	66.8	32.6	7.42	40.61	51.97	2.90	12,995	1-1/2
Echo Lake # 7 133 - 138'	69.8	29.3	5.35	41.43	53.22	2.88	13,319	1
Echo Lake # 8 180 - 183'	73.0	26.5	9.75	39.02	51.23	2.59	12,656	1
Echo Lake # 8 183 - 186'	58.3	40.8	5.38	40.46	54.16	2.84	13,312	1
Echo Lake # 8 186 - 191'	34.2	65.4	4.82	41.74	53.44	1.89	13,379	1

QUINSAM AREA

WELDWOOD OF CANADA

Vancouver Island Resource Study

LAB NO. 7508-0612

- WASHABILITY TEST

	Float Sink in 1.60 Sp. Gr.		Analysis of Float Portion on Dry Basis					
	Float %	Sink %	Ash %	Vol. Matter %	Fixed Carbon %	Sulfur %	Calorific Value BTU/lb	F.S.I.
Echo Lake # 3 320 - 325'	60.9	38.6	8.88	40.76	50.36	1.53	12,845	1
Echo Lake # 7 129 - 133'	77.7	21.9	9.36	40.07	50.57	2.91	12,776	1-1/2
Echo Lake # 7 133 - 138'	81.6	18.1	5.74	41.67	52.59	3.18	13,286	1
Echo Lake # 8 180 - 183'	83.7	15.4	11.04	38.57	50.39	2.74	12,527	1
Echo Lake # 8 183 - 186'	63.8	35.9	6.71	39.63	53.66	3.43	13,148	1
Echo Lake # 8 186 - 191'	34.4	64.7	7.57	40.74	51.69	2.31	13,014	1

QUINSAM AREA

WELDWOOD OF CANADA

Vancouver Island Resource Study

LAB. NO. 7507-2311/1

RESULTS ON DRY BASIS

DRILL CORE SAMPLES	MOISTURE %	ASH %	VOLATILE MATTER %	FIXED CARBON %	REMARKS
Echo Lake # 3 368 - 371'	5.6	19.08	32.48	48.44	47% reject.
Echo Lake # 3 371 - 375'	5.4	25.26	31.75	42.99	69.8% reject.
Echo Lake # 3 375 - 377.5'	4.8	56.28	22.37	21.35	Low grade throughout, no reject.
Echo Lake # 4 254.5 - 259'	5.2	7.99	37.18	54.83	No reject.
Echo Lake # 4 259 - 263.2'	4.9	11.53	36.16	52.31	No reject.
Echo Lake # 4 263.2 - 264.5'	5.3	10.83	36.55	52.62	No reject.
Echo Lake # 4 264.5 - 268.3'	8.4	28.53	30.85	40.62	Box damaged in transit, core somewhat mixed. 61.5% reject.
Echo Lake # 5 161 - 166'	5.3	11.36	39.90	48.74	No reject.
Echo Lake # 5 166 - 170.5'	6.1	16.01	36.81	47.18	No reject.
Echo Lake # 5 170.5 - 173'	5.6	49.46	25.83	24.71	Low grade throughout, no reject.

QUINSAM AREA

WELDWOOD OF CANADA

Vancouver Island Resource Study

LAB NO. 7507-2311

- WASHABILITY TEST

	Float Sink in 1.45 Sp. Gr.		Analysis of Float Portion on Dry Basis					
	Float %	Sink %	Ash %	Vol. Matter %	Fixed Carbon %	Sulfur %	Calorific Value BTU/lb	F.S.I.
Echo Lake # 3 368 - 371'	76.2	23.5	4.59	40.70	54.71	0.29	13,479	1/2
Echo Lake # 3 371 - 375'	49.0	51.0	10.22	36.74	53.04	0.27	12,201	1/2
Echo Lake # 3 375 - 377.5'	18.0	82.0	10.97	34.99	54.04	0.24	12,111	1/2
Echo Lake # 4 254.5 - 259'	91.0	9.0	4.79	38.19	56.03	0.30	13,449	1
Echo Lake # 4 259 - 263.2'	87.0	13.0	6.20	39.14	54.66	0.33	13,238	1
Echo Lake # 4 263.2 - 264.5'	84.8	15.0	8.94	37.58	53.48	0.32	12,373	1/2
Echo Lake # 4 264.5 - 268.3'	53.0	47.0	5.35	39.44	55.12	0.30	13,335	1/2
Echo Lake # 5 161 - 166'	80.7	19.0	6.04	42.10	51.86	0.28	13,241	1
Echo Lake # 5 166' - 170.5'	76.7	23.0	5.91	40.80	53.29	0.28	13,271	1
Echo Lake # 5 170.5 - 173'	44.0	56.0	5.71	40.18	54.11	0.25	13,285	1

QUINSAM AREA

WELDWOOD OF CANADA

Vancouver Island Resource Study

LAB NO. 7507-2311

- WASHABILITY TEST

	Float Sink in 1.60 Sp. Gr.		Analysis of Float Portion on Dry Basis					
	Float %	Sink %	Ash %	Vol. Matter %	Fixed Carbon %	Sulfur %	Calorific Value BTU/lb	F.S.I.
Echo Lake # 3 368 - 371'	79.8	20.0	6.24	37.07	56.69	0.23	13,151	1/2
Echo Lake # 3 371 - 375'	84.0	16.0	14.99	38.56	46.45	0.21	11,545	1/2
Echo Lake # 3 375 - 377.5'	30.5	69.5	15.18	33.93	50.89	0.19	11,532	1/2
Echo Lake # 4 254.5 - 259'	93.6	6.2	5.47	38.86	55.67	0.28	13,257	1
Echo Lake # 4 259 - 263.2'	90.4	9.4	6.47	38.41	55.12	0.30	13,105	1
Echo Lake # 4 263.2 - 264.5'	94.5	5.3	9.36	38.30	52.34	0.30	12,499	1/2
Echo Lake # 4 264.5 - 268.3'	58.0	42.0	6.48	38.22	55.30	0.29	13,079	1/2
Echo Lake # 5 161 - 166'	88.2	11.5	6.45	41.44	52.11	0.28	13,083	1
Echo Lake # 5 166' - 170.5'	82.1	18.0	6.47	39.96	53.57	0.26	13,085	1
Echo Lake # 5 170.5 - 173'	54.2	45.6	7.88	38.55	53.57	0.23	12,709	1

ANDERSON LAKE AREA

WELDWOOD OF CANADA

Vancouver Island Resource Study

LAB NO. 7507-0708

	RESULTS ON DRY BASIS						
DRILL CORE SAMPLES	MOISTURE %	ASH %	VOLATILE MATTER %	FIXED CARBON %	SULPHUR %	F.S.I.	CALORIFIC VALUE (BTU's/lb)
Anderson Lake #2 11 - 15.5'	1.9	40.74	14.99	44.27	4.28	1/2	8669
Tolsum River #2 535 - 541'	2.0	69.96	17.58	12.46	4.21	0	4075
Brown River #2 229.5 - 234.5'	1.8	59.18	15.92	24.90	6.03	1	5548
Brown River #2 78 - 81'	1.9	67.34	14.05	18.61	3.18	1	4431

FLOAT (Minus 3 Mesh, Plus 65 Mesh)

	Specific Gravity 1.45	ASH	Specific Gravity 1.60	ASH
Anderson Lake #2 11 - 15.5'	39.3%	8.14%	48.3%	10.93%
Tolsum River #2 535 - 541'	11.5%	10.40%	14.9%	15.11%
Brown River #2 229.5 - 234.5'	23.6%	7.45%	27.9%	9.20%
Brown River #2 78 - 81'	13.0%	9.66%	15.7%	11.79%

WELDWOOD OF CANADA

Vancouver Island Resources Study

T'Sable #3 Core Samples

LAB NO. 3237

DEPTH 196'-198'

SIZE AND RAW ANALYSES

Size Fraction	Wt %	Ash %	Cum Wt %	Cum Ash %	R.M.	V.M.	F.C.	S.	B.T.U.	F.S.I.
1/4" X 65M	92.1	28.5	92.1	28.5						
65M X 0	7.9	43.8	100.0	29.7	1.6	25.6	29.0	3.12	7,750	2 1/2

	R.M.	Ash %	Vol.	F.C.	S.	B.T.U.	F.S.I.
Raw	1.6	30.0	31.7	36.7	3.87	10,025	4

SINK-FLOAT ANALYSES 1/4" X 65M

S.G. Fraction	Wt %	Ash %	Cum Wt %	Cum Ash %	R.M.	V.M.	F.C.	S.	B.T.U.	F.S.I.
-1.45	52.8	12.4	52.8	12.4	0.9	34.7	52.0	3.58	12,980	7 1/2
1.45-1.60	14.6	29.8	67.4	16.2	1.1	29.6	39.5	4.56	10,340	3
+1.60	32.6	54.1	100.0	28.5	1.1			4.02		

Above results are all on an air dried basis.

WELDWOOD OF CANADA

Vancouver Island Resources Study

T'Sable #3 Core Samples

LAB NO. 3241

DEPTH 354'-355'

SIZE AND RAW ANALYSES

Size Fraction	Wt %	Ash %	Cum Wt %	Cum Ash %	R.M.	V.M.	F.C.	S.	B.T.U.	F.S.I.
1/4" X 65M	95.0	20.6	95.0	20.6						
65M X 0	5.0	22.7	100.0	20.7	1.4	30.9	45.0	1.80	10,930	5

	R.M.	Ash %	Vol.	F.C.	S.	B.T.U.	F.S.I.
Raw	1.5	19.4	28.7	50.4	1.13	11,775	5

SINK-FLOAT ANALYSES 1/4" X 65M

S.G. Fraction	Wt %	Ash %	Cum Wt %	Cum Ash %	R.M.	V.M.	F.C.	S.	B.T.U.	F.S.I.
-1.45	70.5	8.9	70.5	8.9	0.9	31.8	58.4	1.20	13,280	6 1/2
1.45-1.60	9.4	29.2	79.9	11.3	1.1	25.4	44.3	1.10	10,475	3 1/2
+1.60	20.1	57.5	100.0	20.6	1.3			1.03		

Above results are all on an air dried basis.

WELDWOOD OF CANADA

Vancouver Island Resources Study

T'Sable #3 Core Samples - "B" Seam

LAB NO. 3242

DEPTH 474'-479'

SIZE AND RAW ANALYSES

Size Fraction	Wt %	Ash %	Cum Wt %	Cum Ash %	R.M.	V.M.	F.C.	S.	B.T.U.	F.S.I.
1/4" X 65M	90.1	40.3	90.1	40.3						
65M X 0	9.9	40.9	100.0	40.4	1.4	25.6	32.1	0.81	8,190	3 1/2

	R.M.	Ash %	Vol.	F.C.	S.	B.T.U.	F.S.I.
Raw	1.5	42.3	24.2	32.0	0.59	8,145	3 1/2

SINK-FLOAT ANALYSES 1/4" X 65M

S.G. Fraction	Wt %	Ash %	Cum Wt %	Cum Ash %	R.M.	V.M.	F.C.	S.	B.T.U.	F.S.I.
-1.45	40.1	11.2	40.1	11.2	0.9	33.1	54.8	0.77	13,485	8
1.45-1.60	12.3	33.6	52.4	16.5	0.9	27.7	37.8	0.53	9,680	3
+1.60	47.6	66.5	100.0	40.3	1.2			0.44		

Above results are all on an air dried basis.

WELDWOOD OF CANADA

Vancouver Island Resources Study

T'Sable #3 Core Samples - "B" Seam

LAB NO. 3243

DEPTH 479'-484'

SIZE AND RAW ANALYSES

Size Fraction	Wt %	Ash %	Cum Wt %	Cum Ash %	R.M.	V.M.	F.C.	S.	B.T.U.	F.S.I.
1/4" X 65M	92.1	32.6	92.1	32.6						
65M X 0	7.9	42.5	100.0	33.4	1.5	25.4	30.6	1.74	7,615	3

	R.M.	Ash %	Vol.	F.C.	S.	B.T.U.	F.S.I.
Raw	1.4	33.5	26.7	38.4	1.80	9,300	4

SINK-FLOAT ANALYSES 1/4" X 65M

S.G. Fraction	Wt %	Ash %	Cum Wt %	Cum Ash %	R.M.	V.M.	F.C.	S.	B.T.U.	F.S.I.
-1.45	46.9	12.8	46.9	12.8	0.6	32.4	54.2	1.13	13,155	8
1.45-1.60	18.4	28.2	65.3	17.1	0.7	27.9	43.2	1.49	10,480	3 1/2
+1.60	34.7	61.8	100.0	32.6	0.7			2.90		

Above results are all on an air dried basis.

WELDWOOD OF CANADA

Vancouver Island Resources Study

T'Sable #3 Core Samples - "A" Seam

LAB. NO. 3244

DEPTH 577'-580'

SIZE AND RAW ANALYSES

Size Analyses	Wt %	Ash %	Cum Wt %	Cum Ash %	R.M.	V.M.	F.C.	S.	B.T.U.	F.S.I.
1/4" X 65M	92.1	28.4	92.1	28.4						
65M X 0	7.9	44.2	100.0	29.6	1.3	24.2	30.3	1.13	7,300	4

	R.M.	Ash %	Vol.	F.C.	S.	B.T.U.	F.S.I.
Raw	1.6	27.2	28.0	43.2	0.73	10,415	7

SINK-FLOAT ANALYSES 1/4" X 65M

S.G. Fraction	Wt %	Ash %	Cum Wt %	Cum Ash %	R.M.	V.M.	F.C.	S.	B.T.U.	F.S.I.
-1.45	56.7	10.5	56.7	10.5	0.9	32.0	56.6	0.68	13,435	8
1.45-1.60	18.8	28.8	75.5	15.1	0.9	28.1	42.2	0.62	10,245	4
+1.60	24.5	69.5	100.0	28.4	1.4			1.19		

Above results are all on an air dried basis.

T'SABLE RIVER AREA

WELDWOOD OF CANADA

Vancouver Island Resource Study

T'Sable #3 Core Samples - "A" Seam

LAB NO. 3245

DEPTH 580'-585'

SIZE AND RAW ANALYSES

Size Fraction	Wt %	Ash %	Cum Wt %	Cum Ash %	R.M.	V.M.	F.C.	S.	B.T.U.	F.S.I.
1/4" X 65M	93.1	39.6	93.1	39.6						
65M X 0	6.9	36.8	100.0	39.4	1.2	27.6	34.4	1.80	8,310	4

	R.M.	Ash %	Vol.	F.C.	S.	B.T.U.	F.S.I.
Raw	1.4	39.1	25.0	34.5	1.37	8,320	4 1/2

SINK-FLOAT ANALYSES 1/4" X 65M

S.G. Fraction	Wt %	Ash %	Cum Wt %	Cum Ash %	R.M.	V.M.	F.C.	S.	B.T.U.	F.S.I.
-1.45	31.8	13.4	31.8	13.4	0.9	31.1	54.6	0.75	12,990	8
1.45-1.60	19.0	29.2	50.8	19.3	0.8	27.3	42.7	0.83	10,195	4
+1.60	49.2	60.6	100.0	39.6	0.9			1.31		

Above results are all on an air dried basis.

WELDWOOD OF CANADA LIMITED

COAL RESOURCE STUDY
VANCOUVER ISLAND

PARAMETERS USED IN COMPUTING RESERVES

The coal reserves calculated occur in three categories:-

Proven Reserves
Probable Reserves
Possible Reserves

Proven Reserves; are coal seams which have been proven by borehole data and structure correlation, over a sufficient size area, to be considered proven in three dimension.

Probable Reserves; are coal seams which are shown in representative outcrops, or with limited borehole data, correlated with structure to be considered reliable in two dimension.

Possible Reserves; are coal seams which occur in at least one borehole, or outcrops, which can be correlated to the structure. Where structures, dip and strike are consistent with surrounding areas, this was considered to be reliable in one dimension.

Coal seam occurring only in the lower member of the Comox and Nanaimo Series, were used in computing reserves. The lower figures that appear under the heading, Average Thickness of Seam, always occur in the lowest cyclothem, above the Vancouver Group, and the second figure above, denotes those seams which occur in the second cyclothem, in the Comox-Nanaimo Series, above the lowest seam.

Although seams from one foot to two feet occur in the other five cyclothems these were considered to be questionable under current economic mining conditions, and therefore not included in the calculation of reserves.

Since the total area was subject to faulting which resulted in tilting, and displacement, each area was broken down into zone areas, and each area computed separately. A distance of 200 feet along faults, intrusives, boundaries and rivers was left out of reserve calculations.

The computation of all coal reserves is based on an average specific gravity of 1.75, and a tonnage factor of 198 short tons per inch, per acre.

COAL RESERVES

AREA	TYPE OF MINING	STRIP RATIO	AVG COAL THICKNESS	ACRES	S.G.	SHORT TONS ACRE	PROVEN	PROBABLE	POSSIBLE
QUINSAM AREA									
S	Strip	14:1	12'	1833	1.75	28,512	52,262,496	---	---
A	Strip	30:1	12'	629	1.75	28,512	---	17,934,048	---
B	Underground		12'	640	1.75	28,512	18,247,680	---	---
C	Underground		12'	520	1.75	28,512	---	14,826,240	---
D	Underground		12'	3543	1.75	28,512	---	---	101,018,016
CAMPBELL RIVER AREA									
A	Underground		12'	2600	1.75	28,512	---	---	74,131,200
B	Underground		12'	1188	1.75	28,512	---	---	33,872,256
ANDERSON LAKE AREA									
S	Strip	5:1	8'	143	1.75	19,008	2,718,144	---	---
SP	Strip	12:1	8'	328	1.75	19,008	---	6,234,624	---
A	Underground		5'	878	1.75	11,880	---	---	10,430,640
B	Underground		6'	593	1.75	14,256	---	---	8,453,808
C	Underground		6'	932	1.75	14,256	---	---	13,286,592

COAL RESERVES

AREA	TYPE OF MINING	STRIP RATIO	AVG COAL THICKNESS	ACRES	S.G.	SHORT TONS ACRE	PROVEN	PROBABLE	POSSIBLE
CUMBERLAND AREA									
Worked Out Area									
Mine 1	- No. 2 Seam		3.5'	60	1.75	8,316	498,960	---	---
Mine 2	- No. 2 Seam		3.5'	40	1.75	8,316	332,640	---	---
Mine 4	- No. 2 Seam		3.5'	1400	1.75	8,316	11,642,400	---	---
Mine 7	- No. 2 Seam		3.5'	280	1.75	8,316	2,328,480	---	---
Mine 8	- No. 4 Seam		4'	410	1.75	9,504	3,896,640	---	---
A	Underground		5'	3662	1.75	11,880	---	43,504,560	---
	Underground		8'	3662	1.75	19,008	---	69,607,296	---
B	Underground		3.5'	2825	1.75	8,316	---	23,492,700	---
	Underground		6'	2825	1.75	14,256	40,273,200	---	---
C	Underground		4'	3493	1.75	9,504	---	33,197,472	---
	Underground		4'	3493	1.75	9,504	33,197,472	---	---
	Underground		3'	3493	1.75	7,128	24,898,104	---	---
D	Underground		3.5'	427	1.75	8,316	3,550,932	---	---
	Underground		3.5'	427	1.75	8,316	3,550,932	---	---
E	Underground		3.5'	2235	1.75	8,316	---	18,586,260	---
			5.0'	2235	1.75	11,880	---	26,551,800	---
F	Strip	3:1	7'	808	1.75	16,632	---	14,438,656	---
G	Strip	3:1	7'	188	1.75	16,632	---	3,126,816	

COAL RESERVES

AREA	TYPE OF MINING	STRIP RATIO	AVG COAL THICKNESS	ACRES	S.G.	SHORT TONS ACRE	PROVEN	PROBABLE	POSSIBLE
T'SABLE RIVER AREA									
A	Underground		6.0'	392.5	1.75	14,256	---	5,595,480	---
			3.5'	392.5	1.75	8,316	---	3,264,030	---
B-Propline	Underground		6.0'	1175	1.75	14,256	---	16,750,800	---
			3.5'	1175	1.75	8,316	---	9,771,300	---
B-Underwater	Underground		6.0'	3515	1.75	14,256	---	---	50,109,840
			3.5'	3515	1.75	8,316	---	---	29,230,740
C	Underground		6.0'	1197	1.75	14,256	17,064,432	---	---
	Underground		8.0'	1197	1.75	19,008	22,752,576	---	---
D	Underground		8.0'	545	1.75	19,008	10,359,360	---	---
	Underground		3.5'	275	1.75	8,316	2,286,900	---	---
E	Underground		9.0'	68	1.75	21,384	---	1,454,112	---
F	Underground		9.0'	502	1.75	21,384	---	---	10,734,768
	Underground		6.0'	502	1.75	14,256	---	---	7,156,512
G-Prop	Underground		5.0'	7105	1.75	11,880	---	---	84,407,400
H	Underground		4.0'	210	1.75	9,504	---	1,995,840	---
	Underground		5.0'	210	1.75	11,880	---	2,494,800	---
I	Underground		9.0'	355	1.75	21,384	7,591,320	---	---
	Underground		3.5'	355	1.75	8,316	2,952,180	---	---
J	Underground		3.5'	4780	1.75	8,316	---	---	39,750,480
	Underground		4.0'	4780	1.75	9,504	---	---	45,429,120
K	Underground		3.5'	2210	1.75	8,316	---	---	18,378,360

TOTAL COAL RESERVES

BY TYPE IN SHORT TONS

QUINSAM AREA		
Strip Reserves	70,196,544	
Underground Reserves	134,091,396	
Total Reserves		204,288,480
CAMPBELL RIVER AREA		
Underground Reserves	108,003,456	
Total Reserves		108,003,456
ANDERSON LAKE AREA		
Strip Reserves	8,952,768	
Underground Reserves	32,171,040	
Total Reserves		41,122,808
CUMBERLAND AREA		
Strip Reserves	17,565,472	
Underground Reserves	335,213,208	
Total Reserves		352,778,680
T'SABLE RIVER AREA		
Underground Reserves	389,530,350	
Total Reserves		389,530,350
TOTAL RESERVES ALL AREAS		1,095,723,774

SUMMARY OF RESERVES

IN SHORT TONS

AREA	TYPE	PROVEN	PROBABLE	POSSIBLE
QUINSAM AREA				
	Strip	52,262,496	17,934,048	---
	Underground	18,247,680	14,826,240	101,018,016
CAMPBELL RIVER AREA				
	Underground	---	---	108,003,456
ANDERSON LAKE AREA				
	Strip	2,718,144	6,234,624	---
	Underground	---	---	32,170,040
CUMBERLAND AREA				
	Strip	---	17,565,472	---
	Underground	120,273,120	214,940,088	---
T'SABLE RIVER AREA				
	Underground	63,006,768	41,326,362	285,197,220
TOTAL		256,508,208	312,826,834	526,388,734

TOTAL STRIP COAL - 96,714,784

TOTAL UNDERGROUND COAL - 999,008,990

TOTAL RESERVES - 1,095,723,774

C O N C L U S I O N S

The coal deposits on Vancouver Island are not only substantial in quantity, but offer great possibilities for strip mining, underground mining, and gasification.

The coal is a High Volatile A Bituminous classification, affording a variety of uses such as thermal, form-coke, and the manufacture of industrial chemicals.

A composite analysis of the ash composition provides some interesting possibilities in the manufacture of both aluminum and cement.

With the unique location of these deposits on tidewater, marketing to any area of need in the world can be met competitively.

Vancouver Island is a sensitive area in terms of the environment. However our preliminary environment impact assessment would indicate that mining of coal would be allowed in the area.

In addition to the large coal deposits, our studies have indicated a sand and gravel reserve of 250 million cubic yards of gravel.

The two resources, coal and aggregate, form separate operations for extraction and marketing, but enhance each other in other important factors. The main factors relate to island transportation, water loading facilities, and reclamation.

Finally it has been determined that a sufficient quantity of marketable coal can be recovered from existing waste piles, suitable for thermal or industrial use. A waste reclamation operation, could be implemented independently or integrated with other mining operations; profitably.

****

RECOMMENDATIONS

The past data, along with the 1975 exploration program has resulted in the determination of large coal and aggregate deposits.

In order to determine the mining feasibilities of both these products, additional exploration is required.

Each block, in every area, should be drilled on a grid pattern to confirm the structure and determine the mineable reserves in detail.

A comprehensive chemistry study of the coal is necessary to establish the best uses of the coal and to establish reliable quality control, through beneficiation.

Studies on transportation, water loading facilities, should be considered, for both the coal and aggregate, simultaneously.

Marketing studies of all products including coal, aggregate, and ash derivatives should be commenced.

Finally, since the eventual removal of these resources will have some environmental effects on the Island, a continuous environmental study should be carried out in conjunction with any future work on the Weldwood of Canada Limited, rights and property.

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ANNUAL COAL PRODUCTION

FROM THE

VANCOUVER ISLAND COAL FIELDS

ANNUAL COAL PRODUCTION IN LONG TONS FROM
VANCOUVER ISLAND COALFIELDS

1836 - 1852	10,000	Mining in Suquash area
1852		Governer Douglas sends McKay to Winthuysen Inlet(Nanaimo) to take possession of coal.
1852 - 1866	181,437	Hudson's Bay Company pits at Nanaimo and Southfield.
1862		Vancouver Coal Mining and Land Company takes over mines from Hudson's Bay Co.
1867	31,239	
1868	44,005	
1869	35,802	Coal discovered at Wellington.
1870	29,843	
1871 1872 1873	148,459	Dunsmuir, Diggle and Co. operations in Wellington field begins.
1874	81,061	
1875	97,644	
1876	140,184	
1877	139,692	First strike (for 0.20/hour increase.)
1878	190,848	
1879	232,390	
1880	272,362	
1881	299,514	
1882	288,572	
1883	214,955	Dunsmuir buys out partners.
1884	393,866	
1885	333,024	
1886	335,192	Douglas Mine closed.
1887	434,055	Explosion in Number One Mine kills 150 men.

1941	647,958	
1942	738,600	
1943	729,989	
1944	689,714	
1945	557,778	
1946	547,468	
1947	493,998	Production started at Tsable River Mine.
1948	399,089	
1949	536,935	
1950	511,953	
1951	479,841	
1952	359,313	
1953	236,230	No. 8 Mine closes - last major mine in Cumberland field
1954	183,269	
1955	186,708	
1956	178,309	
1957	178,182	
1958	162,251	
1959	133,205	
1960	81,350	
1961	69,696	
1962	72,612	
1963	67,369	
1964	57,307	
1965	37,670	
1966	15,556	
1967	333	Tsable River Mine closed

Total Production 1836 - 1967.....71,751,696 long tons.

1914	1,072,314	
1915	1,020,942	
1916	1,492,761	
1917	1,695,721	
1918	1,666,211	
1919	1,699,348	
1920	1,698,254	
1921	1,625,931	
1922	1,754,656	Peak production.
1923	1,574,663	California oil production begins to make inroads on coal consumption.
1924	1,486,322	
1925	1,412,757	
1926	1,293,175	
1927	1,331,325	
1928	1,277,533	Western Fuel Co. sold to Canadian Collieries Ltd.
1929	1,120,805	
1930	988,805	Reserve Mine development suspended.
1931	831,925	Extension Mine abandoned
1932	749,006	Granby Mine closed
1933	613,203	
1934	574,508	
1935	630,213	
1936	713,037	
1937	818,447	No. 10 South Wellington Mine opened.
1938	684,398	No. 1 Mine in Nanaimo closed.
1939	717,334	All of Wester Fuel operations shut down.
1940	732,659	

1941	647,958	
1942	738,600	
1943	729,989	
1944	689,714	
1945	557,778	
1946	547,468	
1947	493,998	Production started at Tsable River Mine.
1948	399,089	
1949	536,935	
1950	511,953	
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1964	57,307	
1965	37,670	
1966	15,556	
1967	333	Tsable River Mine closed

Total Production 1836 - 1967.....71,751,696 long tons.

ADDENDUM NUMBER ONE

WASTE SLACK PILES

COMOX DISTRICT

VANCOUVER ISLAND

WELDWOOD OF CANADA LIMITED

VANCOUVER, BRITISH COLUMBIA

WASTE SLACK PILE

SUMMARY

Waste Slack Pile evaluation by test drilling and laboratory analysis has proven that there is commercially recoverable coal available, by processing the waste.

The evaluation of gross tonnage established by test drilling has proven that two separate types of piles were establisehd through the earlier mining operation.

One type consisted of the fines from the washery tipple processing, and the other type consisted of rock from entry work and bone and rock from hand picking operations before tipple processing.

The laboratory analysis results bear out the matrix of the various piles. In the rock piles the ash content averaged 90%, while in the tipple fines, the ash content averaged 65%.

In working out a recovery of coal an ash level of 60%, and a specific gravity of 1.75 was used.

Based on those factors it was determined that the salvage would be 31% of the waste, containing 22% ash, and having an average calorific value of 11,300 B.T.U./lb.

SLACK PILE DATA

LOCATION		AREA (FT^3)	BULK RAW SPECIFIC GRAVITY	NET TONS (SHORT) 60% ASH	SALEABLE AT 1.75 S.G.-22% ASH (31% - RECOVERY) @ 13,000 B.T.U.
UNION BAY		24,746,725	2.0 = 125 #	1,546,670	479,468
BEVAN		11,414,709	2.0 = 125 #	713,419	221,160
CHINATOWN		4,082,480	2.0 = 125 #	255,155	79,098
PIDGEON LAKE:					
	S.W.	All Rock			
	S.E.	8,868,155	2.0 = 125 #	554,260	171,820
	N.W.	53,536,832	2.0 = 125 #	3,346,052	1,037,276
	N.E.	1,514,835	2.0 = 125 #	94,677	29,349
COMOX LAKE		37,500,000	2.0 = 125 #	2,343,750	726,562
T O T A L				8,853,983	2,744,733

PROCEDURES AND METHODS FOR INVESTIGATION

A drilling program, using a Double Wall, reverse circulation drilling rig was employed.

The piles were grid patterned on a 100 to 200 foot spacing, and drilled through the waste matrix to ground elevation. All the material recovered was bagged, in two foot intervals, each hole, and shipped in plastic containers to a commercial laboratory for analysis and washability tests.

In addition to the drill holes, a cross section of test pits was conducted on each pile, using a backhoe, to obtain bulk samples of in place material. This was also submitted to the commercial laboratory for grindability, and subsequently run through a test pilot wash plant to establish the coal recovery, and chemical analysis of the final product.

Upon completion of the tests, it was determined that about 31% of the total product was recoverable at an ash content of 22%.

Mapped sections in the various piles (Maps 16,17,18 & 19) indicate a recovery of about 2.7 million tons of coal, along with a configuration of the piles, in place.

SYNOPSIS OF TESTS PERFORMED ON UNION BAY, PIDGEON LAKE, BEVAN, COMOX AND CHINA AREAS FOR WELDWOOD OF CANADA LIMITED BY BIRTLEY ENGINEERING - CALGARY, ALBERTA

The samples submitted were taken by reverse air drill and channel methods. The size consist of the reverse air samples dictated a modification of the initial work flow sheet which was intended for material more closely resembling the channel samples.

REVERSE AIR SAMPLE TREATMENT

The samples were sorted and composites made up for each hole drilled. Raw ash on a dry basis was determined for each hole. After assessing the ash contents it was decided to make 60% ash the cut-off point at which further work would be practical.

On the samples less than 60% ash screen analyses were performed and ash on a dry basis again determined to ascertain whether any meaningful variations in ash occurred in relation to size consist. Ash values remained fairly constant throughout the size range so float-sink separations were carried out on the raw reverse air samples.

From these recoveries it was decided that a cut point of approximately 1.75 S.G. a yield of 25 - 30% could be expected with content of 20 - 25% ash.

CHANNEL SAMPLE TREATMENT

Raw splits were taken of the channel samples for ash determination on a dry basis from Union Bay, Comox and China areas. Representative splits were not possible because of insufficient material but nevertheless an indication of ash was necessary to decide which samples merited the extra work. From the screen analyses data it was decided to crush the samples below 60% ash to minus 3/4" and float-sink this material. The data thus derived indicated a slightly higher yield at about 30% for a product of 20-25% ash.

PLANT WASH

For the plant wash the material left over from the reverse air and channel samples below 60% ash on which float sink was performed was thrown together without regard to proportion.

The heavy medium and water cyclone circuits were used and overall recovery of 31% at 22% ash was achieved which compared closely with the results washability program.

Surprisingly a Free Swelling Index of 3 1/2 was determined on the clean coal product unfortunately with a sulphur content of 1.8% although calorific values were excellent at 11,300 BTU's per lb.

WELDWOOD OF CANADA

WATER-ONLY CYCLONE WASH (PRIMARY)

Date of Wash: June 6, 1975

Gauge Pressure - 20 psi

Vortex Finder Length - L - 4 3/4

Feed Pulp Density - ± 10%

Feed - Ash 62.6 28M x 0 of Plant Feed = 46.4% weighted
- S. 1.56

Overflow - Ash 22.4 Ash % Yield - 26.3%

Underflow - Ash 73.1

Filter Cake	R.M.	Ash	V.M.	F.C.	S.	B.T.U.
28M x 0 350 lbs.		22.4	27.8	49.8	1.32	11,320

WELDWOOD OF CANADA

BULK WASHING DATA - Composite of Union Bay, China and Comox LAB NO. 3235

Date Sample Washed: June 6, 1975

Estimated Total Weight of Sample (air dried) - 2,500 lbs.

Air Dried Moisture of Sample - 1%

Ash % of Feed - 59.7%

S% of Feed - 2.13

Overall Yield - 31% @ 22.2 Ash

Clean Mix (H.M. Clean Coal + W.O. Cyclone Clean Coal)

Ash	V.M.	F.C.	S.	B.T.U.
22.2	27.9	49.9	1.79	11.350

WELDWOOD OF CANADA

H.M. CYCLONE WASH

Date of Wash: June 6, 1975

S.G. of Separation: - 1.75

Ash Content of Feed (A.D.B.) - 57.2

Cleaned Coal (Wt. (A.D.) - 460 lbs.

Cleaned Coal Ash Content - 22.1

Reject Wt. (A.D.) - 880

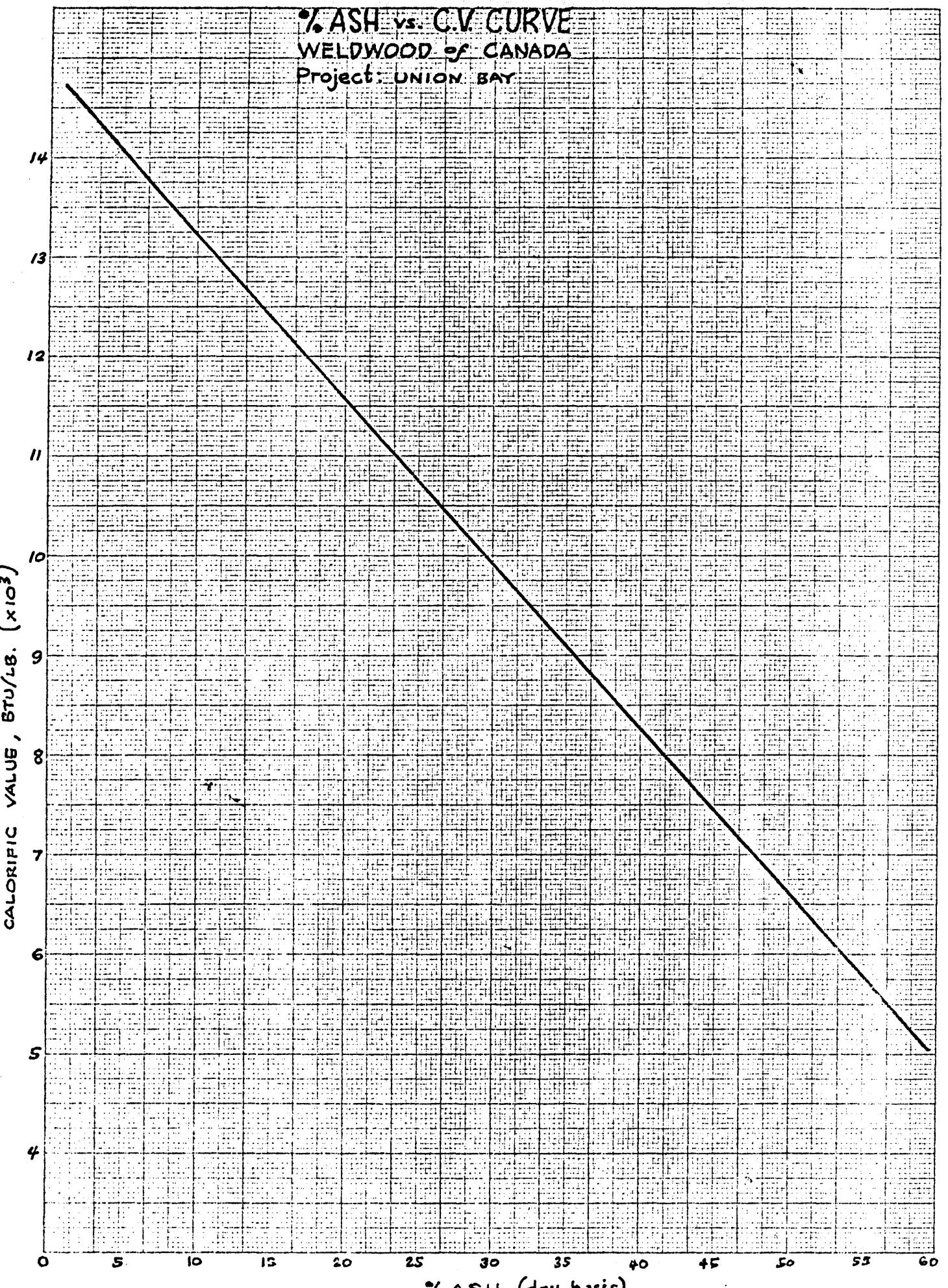
Reject Air Dried Moisture - 6%

Reject Ash Content - 77.5

Weighted Yield - 34.3%

Calc. Yield - 36.6%

Clean Coal	R.M.	Ash	V.M.	F.C.	S.	B.T.U.	F.S.I.
3/4 x 28M		22.1	28.0	49.9	2.10	11,370	3 1/2


% ASH vs. C.V. CURVE
WELDWOOD of CANADA
Project: UNION BAY
CALORIFIC VALUE, BTU/LB. (x10³)
14
13
12
11
10
9
8
7
6
5
4
0
5
10
15
20
25
30
35
40
45
50
55
60

WELDWOOD OF CANADA

PROJECT: Union Bay Reverse Air Circulation Samples

Hole Composite Raw Samples

LAB NO.		MOIST	ASH %
2996		1.7	74.9
B-1	1' - 11'		76.2
2997		2.6	69.2
B-2	0' - 20'		71.0
2998		2.6	53.5
B-2, S-1	0' - 4'		54.9**
2999		2.1	66.9
B-3	5' - 31'		68.3
3000		2.7	61.8
B-3, S-1	0' - 10'		63.5
3001		3.6	65.9
B-3, N-1	3' - 31'		68.4
3002		2.7	63.7
B-4	5' 43'		65.5
3003		2.8	57.1
B-4, S-1	0' - 28'		58.7**
3004		2.5	48.5
B-4, S-2	2' - 6'		49.7**
3005		2.9	64.8
B-4, N-1	3' - 37'		66.7

** With Size Analyses

WELDWOOD OF CANADA

PROJECT: Union Bay Reverse Air Circulation Samples
Hole Composite Raw Samples

LAB NO.		MOIST	ASH %
3006		3.2	61.4
B-4, N-2	2' - 24'		63.4
3007		2.1	64.1
B-5	2' - 52'		
3008		2.2	60.4
B-5, S-1	0' - 34'		61.8
3009		2.2	57.3
B-5, S-2	2' - 23'		58.6**
3010		2.4	67.3
B-5, S-3	3' - 13'		69.0
3011		2.0	63.2
B-5, N-1	2' - 46'		64.5
3012		2.3	63.5
B-5, N-2	2' -		65.0
3013		2.3	58.0
B-5, N-3	0' - 22'		59.4**
3014		1.8	64.1
B-6	0' - 48'		65.3
3015		1.7	63.7
B-6, S-1	0' - 38'		64.8

WELDWOOD OF CANADA

PROJECT: Union Bay Reverse Air Circulation Samples
Hole Composite Raw Samples

LAB NO.		MOIST	ASH %
3016		2.0	55.8
B-6, S-2	3' - 23'		56.9**
3017		2.5	57.3
B-6, S-3	3' - 17'		58.8**
3018		2.4	64.6
B-6, N-1	1' - 39'		66.2
3019		1.9	64.2
B-6, N-2	0' - 32'		65.4
3020		2.6	57.3
B-6, N-3	2' - 10'		58.8**
3021		2.1	61.8
B-7	2' - 30'		63.1
3022		2.2	58.8
B-7, S-1	0' - 26'		60.1
3023		2.0	49.0
B-7, S-2	0' - 23'		50.0**
3024		1.9	63.3
B-7, N-1	3' - 31'		64.5
3025		2.2	65.0
B-7, N-2	0' - 22'		66.5

** With Size Analyses

WELDWOOD OF CANADA

PROJECT: Union Bay Reverse Air Circulation Samples
Hole Composite Raw Samples

LAB NO.		MOIST	ASH %
3026		2.9	58.5
B-7, N-3	4' - 14'		60.2
3027		1.4	67.0
B-8	2' - 18'		68.0
3028		2.0	46.7
B-8, S-1	0' - 18'		46.9**
3029		1.3	38.9
B-8, S-2	0' - 6'		39.4**
3030		3.1	59.8
B-8, N-1	2' - 20'		61.7
3031		2.1	63.1
B-8 cyclone sample			64.5
3032		1.8	59.8
B-6 N-1	cyclone sample		60.9

** With Size Analyses

WELDWOOD OF CANADA
Union Bay Reverse Air Circulation Samples B-2, S-1, 0' - 4' Lab No. 2998

SIZE ANALYSES (on hole composites having raw ash db 60%)

SIZE FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
+ 1/4"	3.1	54.2 54.9	3.1	54.2	1.3	Air Dry Basis Dry Basis
1/4" x 6M	7.3	58.4 59.1	10.4	57.1	1.2	Air Dry Basis Dry Basis
6M x 28M	39.4	52.2 53.0	49.8	53.2	1.5	Air Dry Basis Dry Basis
28M x 100M	29.8	52.8 53.7	79.6	53.1	1.6	Air Dry Basis Dry Basis
100M x 0	20.4	55.4 56.4	100.0	53.4 54.4	1.8	Air Dry Basis Dry Basis

SINK-FLOAT ANALYSES (on hole composite - raw)

S.G. FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
- 1.35	4.2	6.2 6.3	4.2	6.2	1.5	Air Dry Basis Dry Basis
1.35 - 1.40	5.8	9.5 9.7	10.0	8.1	1.6	Air Dry Basis Dry Basis
1.40 - 1.50	6.2	17.2 17.5	16.2	11.6	1.5	Air Dry Basis Dry Basis
1.50 - 1.60	6.1	27.2 27.7	22.3	15.9	1.8	Air Dry Basis Dry Basis
1.60 - 1.80	21.9	45.7 48.2	44.2	30.6	5.1	Air Dry Basis Dry Basis
+ 1.80	55.8	69.9 74.1	100.0	52.5 55.5	5.7	Air Dry Basis Dry Basis

WELDWOOD OF CANADA
Union Bay Reverse Air Circulation Samples B-4, S-1, 0' - 28' LAB NO. 3003

SIZE ANALYSES (on hole composites having raw ash db 60%)

SIZE FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
+ 1/4"	4.2	83.7 84.6	4.2	83.7	1.1	Air Dry Basis Dry Basis
1/4" x 6M	10.8	64.9 65.8	15.0	70.2	1.4	Air Dry Basis Dry Basis
6M x 28M	44.4	58.1 59.1	59.4	61.1	1.7	Air Dry Basis Dry Basis
28M x 100M	21.2	52.6 53.8	80.6	58.9	2.2	Air Dry Basis Dry Basis
100M x 0	19.4	55.9 57.3	100.0	58.3 59.4	2.6	Air Dry Basis Dry Basis

SINK-FLOAT ANALYSES (on hole composite - raw)

S.G. FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
- 1.35	12.3	9.9 10.0	12.3	9.9	.9	Air Dry Basis Dry Basis
1.35 - 1.40	2.3	23.2 23.4	14.6	12.0	1.0	Air Dry Basis Dry Basis
1.40 - 1.50	1.2	26.0	15.8	13.1	.9	Air Dry Basis Dry Basis
1.50 - 1.60	2.4	33.4 33.8	18.2	15.7	1.1	Air Dry Basis Dry Basis
1.60 - 1.80	6.0	47.3 48.0	24.2	23.6	1.4	Air Dry Basis Dry Basis
+ 1.80	75.8	73.1 76.1	100.0	61.1 63.5	3.9	Air Dry Basis Dry Basis

WELDWOOD OF CANADA
Union Bay Reverse Air Circulation Samples B-4, S-2, 2' - 6' LAB NO. 3004

SIZE ANALYSES (on hole composites having raw ash db 60%)

SIZE FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
+ 1/4"	4.8	54.6 55.3	4.8	54.6	1.2	Air Dry Basis Dry Basis
1/4" x 6M	10.1	47.1 47.6	14.9	49.5	1.1	Air Dry Basis Dry Basis
6M x 28M	37.1	50.9 51.6	52.0	50.5	1.3	Air Dry Basis Dry Basis
28M x 100M	35.7	49.4 50.2	87.7	50.1	1.6	Air Dry Basis Dry Basis
100M x 0	12.3	49.4 50.3	100.0	50.0 50.7	1.8	Air Dry Basis Dry Basis

SINK-FLOAT ANALYSES (on hole composite - raw)

S.G. FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
- 1.35	8.2	8.8 8.9	8.2	8.8	1.4	Air Dry Basis Dry Basis
1.35 - 1.40	8.3	9.9 10.0	16.5	9.4	1.3	Air Dry Basis Dry Basis
1.40 - 1.50	7.4	19.4 19.6	23.9	12.5	1.2	Air Dry Basis Dry Basis
1.50 - 1.60	7.9	30.8 31.2	31.8	17.0	1.4	Air Dry Basis Dry Basis
1.60 - 1.80	20.3	46.3 48.4	52.1	28.4	4.3	Air Dry Basis Dry Basis
+ 1.80	47.9	69.4 74.5	100.0	48.1 51.0	6.9	Air Dry Basis Dry Basis

WELDWOOD OF CANADA
Union Bay Reverse Air Circulation Samples B-5, S-2, 2' - 23' LAB NO. 3009

SIZE ANALYSES (on hole composites having raw db ash 60%)

SIZE FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
+ 1/4"	10.6	51.1	10.6	51.1	1.4	Air Dry Basis
		51.8				Dry Basis
1/4" x 6M	13.5	58.4	24.1	55.2	1.3	Air Dry Basis
		59.2				Dry Basis
6M x 28M	45.2	60.5	69.3	58.7	1.4	Air Dry Basis
		61.4				Dry Basis
28M x 100M	22.4	56.0	91.7	58.0	1.7	Air Dry Basis
		57.0				Dry Basis
100M x 0	8.3	55.2	100.0	57.8	1.9	Air Dry Basis
		56.3		58.7		Air Dry Basis

SINK-FLOAT ANALYSES (on hole composite - raw)

S.G. FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
- 1.35	4.2	6.5	4.2	6.5	1.3	Air Dry Basis
		6.6				Dry Basis
1.35 - 1.40	2.3	11.5	6.5	8.3	1.2	Air Dry Basis
		11.6				Dry Basis
1.40 - 1.50	3.1	19.5	9.6	11.9	1.3	Air Dry Basis
		19.8				Dry Basis
1.50 - 1.60	4.2	31.3	13.8	17.8	1.5	Air Dry Basis
		31.8				Dry Basis
1.60 - 1.80	14.0	52.5	27.8	35.3	1.9	Air Dry Basis
		53.5				Dry Basis
+ 1.80	72.2	67.4	100.0	58.5	4.9	Air Dry Basis
		70.9		61.1		Dry Basis

WELDWOOD OF CANADA
Union Bay Reverse Air Circulation Samples B-6, S-2, 3' - 23' LAB NO. 3016

SIZE ANALYSES (on hole composites having raw db ash 60%)

SIZE FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
+ 1/4"	4.0	59.7 60.2	4.0	59.7	0.9	Air Dry Basis Dry Basis
1/4" x 6M	12.4	58.3 58.8	16.4	58.6	0.9	Air Dry Basis Dry Basis
6M x 28M	46.4	54.7 55.4	62.8	55.7	1.3	Air Dry Basis Dry Basis
28M x 100M	27.1	53.0 53.9	89.9	54.9	1.7	Air Dry Basis Dry Basis
100M x 0	10.1	51.8 52.7	100.0	54.6	1.8	Air Dry Basis Dry Basis

SINK-FLOAT ANALYSES (on hole composite - raw)

S.G. FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
- 1.35	9.7	9.6 9.7	9.7	9.6	1.2	Air Dry Basis Dry Basis
1.35 - 1.40	6.0	13.8 14.0	15.7	11.2	1.1	Air Dry Basis Dry Basis
1.40 - 1.50	5.6	21.7 21.9	21.3	14.0	1.1	Air Dry Basis Dry Basis
1.50 - 1.60	3.4	31.7 32.2	24.7	16.4	1.4	Air Dry Basis Dry Basis
1.60 - 1.80	10.6	41.9 42.6	35.3	24.1	1.7	Air Dry Basis Dry Basis
+ 1.80	64.7	70.6 72.6	100.0	54.2 55.6	2.8	Air Dry Basis Dry Basis

WELDWOOD OF CANADA
Union Bay Reverse Air Circulation Samples B-6, S-3, 3' - 17' LAB NO. 3017

SIZE ANALYSES (on hole composites having raw db ash 60%)

SIZE FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
+ 1/4"	2.3	65.5 66.4	2.3	65.5	1.4	Air Dry Basis Dry Basis
1/4" x 6M	7.5	61.0 61.8	9.8	62.1	1.3	Air Dry Basis Dry Basis
6M x 28M	43.3	61.3 62.2	53.1	61.4	1.5	Air Dry Basis Dry Basis
28M x 100M	33.8	55.3 56.3	86.9	69.1	1.8	Air Dry Basis Dry Basis
100M X 0	13.1	55.2 56.4	100.0	58.5 59.5	2.1	Air Dry Basis Dry Basis

SINK-FLOAT ANALYSES (on hole composite - raw)

S.G. FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
- 1.35	6.0	9.1 9.2	6.0	9.1	1.6	Air Dry Basis Dry Basis
1.35 - 1.40	3.3	10.4 10.5	9.3	9.6	1.1	Air Dry Basis Dry Basis
1.40 - 1.50	7.2	14.8 15.0	16.5	11.8	1.3	Air Dry Basis Dry Basis
1.50 - 1.60	4.5	24.5 24.9	21.0	14.6	1.7	Air Dry Basis Dry Basis
1.60 - 1.80	10.4	41.7 42.5	31.4	23.5	1.9	Air Dry Basis Dry Basis
+ 1.80	68.6	70.6 73.1	100.0	55.8 57.7	3.4	Air Dry Basis Dry Basis

WELDWOOD OF CANADA
Union Bay Reverse Air Circulation Analyses B-6, N-3, 2' - 10' LAB NO. 3020

SCREEN ANALYSES (on hole composites having raw db ash 60%)

SIZE FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
+ 1/4"	2.8	64.9 65.6	2.8	64.9	1.0	Air Dry Basis Dry Basis
1/4" x 6M	11.3	61.3 62.0	14.1	62.0	1.1	Air Dry Basis Dry Basis
6M x 28M	39.0	59.8 60.6	53.1	60.4	1.3	Air Dry Basis Dry Basis
28M x 100M	32.1	55.1 56.9	85.2	58.4	3.1	Air Dry Basis Dry Basis
100M x 0	14.8	55.3 57.4	100.0	57.9 59.2	3.6	Air Dry Basis Dry Basis

SINK-FLOAT ANALYSES (on hole composite - raw)

S.G. FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
- 1.35	2.7	8.2 8.3	2.7	8.2	1.1	Air Dry Basis Dry Basis
1.35 - 1.40	1.5	12.2 12.3	4.2	9.6	1.1	Air Dry Basis Dry Basis
1.40 - 1.50	2.5	19.5 19.7	6.7	13.3	1.1	Air Dry Basis Dry Basis
1.50 - 1.60	3.5	29.3 29.7	10.2	18.8	1.2	Air Dry Basis Dry Basis
1160 - 1.80	6.3	44.3 45.0	16.5	28.5	1.5	Air Dry Basis Dry Basis
+ 1.80	83.5	68.4 71.8	100.0	61.8 64.7	4.8	Air Dry Basis Dry Basis

WELDWOOD OF CANADA B-8, S-1, 0' - 18' LAB NO. 3028
Union Bay Reverse Air Circulation Samples

SIZE ANALYSES (on hole composites having raw db ash 60%)

SIZE FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
+ 1/4"	6.3	41.0 41.5	6.3	41.0	1.1	Air Dry Basis Dry Basis
1/4" x 6M	9.1	44.6 45.1	15.4	43.1	1.0	Air Dry Basis Dry Basis
6M x 28M	35.4	49.6 50.2	50.8	47.6	1.1	Air Dry Basis Dry Basis
28M x 100M	29.8	48.0 48.6	80.6	47.8	1.2	Air Dry Basis Dry Basis
100M x 0	19.4	48.4 49.1	100.0	47.9 48.5	1.4	Air Dry Basis Dry Basis

SINK-FLOAT ANALYSES (hole comp. - raw)

S.G. FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
- 1.35	9.7	5.6 5.7	9.7	5.6	1.1	Air Dry Basis Dry Basis
1.35 - 1.40	9.8	11.4 11.6	19.5	8.5	1.3	Air Dry Basis Dry Basis
1.40 - 1.50	13.3	17.1 17.3	32.8	12.0	1.0	Air Dry Basis Dry Basis
1.50 - 1.60	6.5	28.9 29.3	39.3	14.8	1.4	Air Dry Basis Dry Basis
1.60 - 1.80	13.9	41.5 42.3	53.2	21.8	1.9	Air Dry Basis Dry Basis
+ 1.80	46.8	70.2 72.0	100.0	44.4 45.5	2.5	Air Dry Basis Dry Basis

WELDWOOD OF CANADA B-8, N-1, 0' - 6' LAB NO. 3029
Union Bay Reverse Air Circulation Samples

SIZE ANALYSES (on hole composites having raw ash db 60%)

SIZE FRACTION	WT %	ASH %	CUM WT %	SUM ASH %	R.M. %	CALC. FACTORS
+ 1/4"	26.0	29.5 29.8	26.0	29.5	1.1	Air Dry Basis Dry Basis
1/4" x 6M	13.2	37.4 37.7	39.2	32.2	0.8	Air Dry Basis Dry Basis
6M x 28M	38.2	43.8 44.3	77.4	37.9	1.1	Air Dry Basis Dry Basis
28M x 100M	13.6	39.4 40.0	91.0	38.1	1.4	Air Dry Basis Dry Basis
100M x 0	9.0	37.2 37.8	100.0	38.0 38.4	1.6	Air Dry Basis Dry Basis

SINK-FLOAT ANALYSES (on hole composite - raw)

S.G. FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
- 1.35	26.1	6.1 6.2	26.1	6.1	1.4	Air Dry Basis Dry Basis
1.35 - 1.40	7.7	11.1 11.3	33.8	7.2	1.4	Air Dry Basis Dry Basis
1.40 - 1.50	10.9	20.5 20.7	44.7	10.5	1.2	Air Dry Basis Dry Basis
1.50 - 1.60	11.3	30.9 31.3	56.0	14.6	1.3	Air Dry Basis Dry Basis
1.60 - 1.80	17.2	42.2 42.8	73.2	21.1	1.5	Air Dry Basis Dry Basis
+ 1.80	26.8	68.2 69.5	100.0	33.7 34.3	1.9	Air Dry Basis Dry Basis

WELDWOOD OF CANADA
Bulk Samples from Union Bay Site LAB NO. 3042

SIZE AND RAW ANALYSES B4-N2

SIZE ANALYSES	ASH %	WT %	CUM WT %	CUM ASH %	R.M.	CALC. FACTORS
3" x 1 1/2"						
1 1/2" x 3/4"	15.8	64.2	15.8	64.2	4.5	Air Dry Basis
		67.2				Dry Basis
3/4" x 1/2"	6.5	60.5	22.3	63.1	2.3	Air Dry Basis
		61.9				Dry Basis
1/2" x 1/4"	20.4	59.9	42.7	61.6	4.7	Air Dry Basis
		62.9				Dry Basis
1/4" x 28M	44.3	54.5	87.0	58.0	2.9	Air Dry Basis
		56.1				Dry Basis
28M x 100M	8.4	51.9	95.4	57.4	5.2	Air Dry Basis
		54.7				Dry Basis
100M x 0	4.6	56.7	100.0	57.4	8.1	Air Dry Basis
		61.7		59.7		Dry Basis
Head Raw		58.9			3.2	
		60.8				

SINK-FLOAT ANALYSES (3/4" x 0 raw)

S.G. FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
- 1.35	5.3	6.5	5.3	6.5	1.1	Air Dry Basis
		6.6				Dry Basis
1.35 - 1.40	2.6	13.2	7.9	8.7	1.3	Air Dry Basis
		13.4				Dry Basis
1.40 - 1.50	5.2	20.9	13.1	13.5	1.4	Air Dry Basis
		21.2				Dry Basis
1.50 - 1.60	6.0	31.1	19.1	19.1	1.9	Air Dry Basis
		31.7				Dry Basis
1.60 - 1.80	14.5	50.5	33.6	32.6	2.5	Air Dry Basis
		51.8				Dry Basis
+ 1.80	66.4	71.2	100.0	58.2	5.2	Air Dry Basis
		75.1		61.1		Dry Basis

WELDWOOD OF CANADA
Bulk Samples from Union Bay Site

LAB NO. 3043

SIZE AND RAW ANALYSES B6-S2

SIZE FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
3" x 1 1/2"	2.2	58.2	2.2	58.2	1.5	Air Dry Basis
		59.1				Dry Basis
1 1/2" x 3/4"	14.2	54.9	16.4	55.3	1.2	Air Dry Basis
		55.6				Dry Basis
3/4" x 1/2"	12.5	51.1	28.9	53.5	1.2	Air Dry Basis
		51.7				Dry Basis
1/2" x 1/4"	19.5	52.0	48.4	52.9	1.4	Air Dry Basis
		52.7				Dry Basis
1/4" x 28M	40.2	50.1	88.6	51.6	2.1	Air Dry Basis
		51.2				Dry Basis
28M x 100M	8.5	48.7	97.1	51.4	2.8	Air Dry Basis
		50.1				Dry Basis
100M x 0	2.9	48.4	100.0	51.3	5.2	Air Dry Basis
		51.1		52.3		Dry Basis
Head Raw		50.7			1.8	Air Dry Basis
		51.6				Dry Basis

SINK-FLOAT ANALYSES (3/4" x 0 raw)

S.G. FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
- 1.35	12.3	8.8	12.3	8.8	0.9	Air Dry Basis
		8.9				Dry Basis
1.35 - 1.40	3.3	13.3	15.6	9.8	0.9	Air Dry Basis
		13.4				Dry Basis
1.40 - 1.50	6.3	20.9	21.9	13.0	0.9	Air Dry Basis
		21.1				Dry Basis
1.50 - 1.60	7.4	34.6	29.3	18.4	1.1	Air Dry Basis
		35.0				Dry Basis
1.60 - 1.80	13.0	51.2	42.3	28.5	1.6	Air Dry Basis
		52.0				Dry Basis
+ 1.80	57.7	70.8	100.0	52.9	2.8	Air Dry Basis
		72.8		54.2		Dry Basis

WELDWOOD OF CANADA
Bulk Samples from Union Bay Site

LAB NO. 3044

SIZE AND RAW ANALYSES B6-N2

SIZE FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
3" x 1 1/2"	5.1	73.7	5.1	73.7	1.8	Air Dry Basis
		75.1				Dry Basis
1 1/2" x 3/4"	15.1	66.5	20.2	68.3	1.6	Air Dry Basis
		67.6				Dry Basis
3/4" x 1/2"	11.6	61.6	31.8	65.9	1.5	Air Dry Basis
		62.5				Dry Basis
1/2" x 1/4"	19.0	60.8	50.8	64.0	1.8	Air Dry Basis
		61.9				Dry Basis
1/4" x 28M	36.7	56.7	87.5	60.9	2.6	Air Dry Basis
		58.2				Dry Basis
28M x 100M	8.8	52.7	96.3	60.2	4.4	Air Dry Basis
		55.1				Dry Basis
100M x 0	3.7	50.3	100.0	59.8	6.4	Air Dry Basis
		53.7		61.3		Dry Basis
+ 3"	1.7					
Head Raw		59.8			2.3	
		61.2				

SINK-FLOAT ANALYSES (3/4" x 0 raw)

S.G. FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
- 1.35	6.8	5.9	6.8	5.9	0.9	Air Dry Basis
		6.0				Dry Basis
1.35 - 1.40	2.3	13.5	9.1	7.8	1.1	Air Dry Basis
		13.7				Dry Basis
1.40 - 1.50	3.9	21.8	13.0	12.0	1.0	Air Dry Basis
		22.0				Dry Basis
1.50 - 1.60	4.1	30.7	17.1	16.5	1.1	Air Dry Basis
		31.0				Dry Basis
1.60 - 1.80	16.4	53.9	33.5	34.8	1.9	Air Dry Basis
		54.9				Dry Basis
+ 1.80	66.5	69.7	100.0	58.0	3.7	Air Dry Basis
		72.4		60.0		Dry Basis

WELDWOOD OF CANADA

Union Bay Samples from Old Stock (For BTU Only)

LAB NO.	R.M. %	B.T.U./lb.	CALC. FACTORS
3052 (BO-S9)	2.0	6,605	Air Dry Basis
Raw		6,740	Dry Basis
3053 (BO-S8)	1.9	8,175	Air Dry Basis
Raw		8,335	Dry Basis
3054 (BO-S7)	2.4	7,215	Air Dry Basis
Raw		7,390	Dry Basis
3055 (BO-S6)	1.8	8,405	Air Dry Basis
Raw		8,560	Dry Basis
3056 (BO-S10)	1.7	4,925	Air Dry Basis
Raw		5,010	Dry Basis

WELDWOOD OF CANADA

PROJECT: Bevan Reverse Air Circulation Samples

LAB NO.	CLIENT I.D.	MOIST	ASH %
2937R	Bevan BO 5' - 19'	1.3	76.7
2938	Bevan B1 3' - 14'	1.5	68.1
2939	Bevan B2 1' - 23'	1.7	65.2
2940	Bevan B2, N1 0' - 26'	1.4	66.7
2941	Bevan B3, N2 0' - 32'	2.0	67.0 68.4
2942	Bevan B3, N2 0' - 30'	1.4	72.7 73.7
2943	Bevan B3E 3' - 27'	1.3	71.7 72.6
2944	Bevan B4, N1 0' - 36'	1.2	75.2 76.1
2945	Bevan B4 0' - 26'	1.6	73.8 75.0
2946	Bevan B5, N1 1' - 37'	1.8	70.4 71.7
2947	Bevan B5 0' - 28'	1.8	72.1 73.4

WELDWOOD OF CANADA

Bevan Reverse Air Circulation Samples

LAB NO.	CLIENT I.D.	MOIST	ASH %
2948	Bevan Base 6 1' - 27'	1.1	74.4 75.2
2949	Bevan B6, N1 1' - 33'	2.8	70.2 72.2
2950	Bevan B6, N2 1' - 37'	2.0	70.9 72.3
2951	Bevan B6, N3 0' - 34'	1.0	75.2 76.0
2952	Bevan B7, N2 1' - 37'	1.6	68.8 69.9
2953	Bevan B7, N1 0' - 36'	1.4	73.2 74.2
2954	Bevan B7, N3 0' - 36'	1.4	67.6 68.6
2955	Bevan B7, N4 0' - 30'	1.3	75.7 76.7
2956	Bevan B7 0' - 34'	1.3	71.8 72.7
2957	Bevan B7, S1 0' - 24'	1.7	71.2 72.4
2958	Bevan B8 0' - 28'	1.8	77.1 78.5

WELDWOOD OF CANADA

PROJECT: Pidgeon Lake Reverse Air Circulation Samples

LAB NO.	CLIENT I.D.	MOIST	ASH %
2959	(S.E. BO) 1' - 15'	1.3	72.5 73.5
2960	(BO S.W.) 1' - 13'	2.0	60.9 62.1
2961	(BO N.E.) 0' - 26'	3.2	50.1 51.8
2962	(BO N.W.) 0' - 14'	1.4	57.8 58.6
2963	(B1 N.E.)	6.4	70.0 74.8
2964	(B1 S.E.) 1' - 7'	1.0	62.8 63.4
2965	(B1, N1, N.W.) 0' - 18'	3.1	63.1 65.1
2966	(B1 N.W.) 0' - 31'	2.2	69.0 70.6
2967	(B2 S.E.) 0' - 19'	2.4	63.5 65.1
2968	(B2 S.W.) 0' - 8'	1.2	66.6 67.4
2969	(B2 N.E.) 0' - 12'	2.1	62.0 63.3

WELDWOOD OF CANADA

PROJECT: Pidgeon Lake Reverse Air Circulation Samples

LAB NO.	CLIENT I.D.	MOIST	ASH %
2970	(N.E. B2 E1) 0' - 18'	2.3	71.8 73.5
2971	(B2, N1) 0' - 20'	2.7	64.3 66.1
2972	(B2, N2) 0' - 6'	1.6	89.1 90.5
2973	(B2 N.W.) 1' - 3'	1.7	66.6 67.8
2974	(B3 S.E. 1W) 0' - 4'	2.3	70.8 72.5
2975	(B3 S.E. 2W) 0' - 10'	1.8	68.2 69.5
2976	(B3 S.E.) 0' - 32'	1.5	61.5 62.4
2977	(B3 S.W.) 0' - 8'	1.2	75.2 76.1
2978	(B3 N.E. E1) 0' - 24'	2.4	72.1 73.9
2979	(B3 N.E.) 0' - 24'	2.8	64.1 65.9
2980	(B3 N.W.) 1' - 13'	2.4	64.4 68.0

WELDWOOD OF CANADA

PROJECT: Pidgeon Lake Reverse Air Circulation Samples

LAB NO.	CLIENT I.D.	MOIST	ASH %
2981	(B3 N.W. N1) 0' - 42'	4.8	65.2 68.5
2982	(B3 N2) 0' - 26'	4.7	62.3 65.4
2983	(B4 S.E.) 0' - 34'	3.4	60.5 62.6
2984	(B4 S.W.) 0' - 8'	1.0	67.1 67.8
2985	(B4 N.E.) 0' - 26'	5.3	65.5 69.2
2986	(B4 N.E. E1) 0' - 28'	4.8	63.8 67.0
2987	(B4 N.E. E2) 0' - 10'	3.1	71.3 73.6
2988	(B4 N.W.) 2' - 44'	3.2	64.2 66.3
2989	(B4 N.W.) cyclone sample	1.3	69.5 70.4
2990	(B4 N.W. N1) 3' - 21'	5.1	67.0 70.6
2991	(B4 N2) 0' - 24'	3.9	60.4 62.9

WELDWOOD OF CANADA

PROJECT: Pidgeon Lake Reverse Air Circulation Samples

LAB NO.	CLIENT I.D.	MOIST	ASH %
2992	(B4 Ne) 0' - 6'	3.7	90.5 94.0
2993	(B5 N.W.) 3' - 43'	3.4	65.0 67.3
2994	(B5 N.E.) 0' - 14'	2.2	68.5 70.0
2995	(B5 S.E.) 0' - 12'	2.6	70.5 72.4

WELDWOOD OF CANADA
Bulk Samples from Comox Site

LAB NO. 3039

SIZE AND RAW ANALYSES — Comox #1

SIZE FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
3" x 1 1/2"	23.7	71.8	23.7	71.8	0.7	Air Dry Basis
		72.3				Dry Basis
1 1/2" x 3/4"	16.5	70.1	40.2	71.1	0.9	Air Dry Basis
		70.7				Dry Basis
3/4" x 1/2"	7.0	66.0	47.2	70.3	0.9	Air Dry Basis
		66.6				Dry Basis
1/2" x 1/4"	13.1	64.3	60.3	69.0	1.1	Air Dry Basis
		65.0				Dry Basis
1/4" x 28M	32.4	54.9	92.7	64.1	1.7	Air Dry Basis
		55.8				Dry Basis
28M x 100M	5.1	49.2	97.8	63.3	4.1	Air Dry Basis
		51.3				Dry Basis
100M x 0	2.2	54.8	100.0	63.1	3.9	Air Dry Basis
		57.0		64.0		Dry Basis
+ 3"	7.6					
Head Raw		57.4			1.6	

SINK-FLOAT ANALYSES (on 3/4" x 0 Raw)

S.G. FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
- 1.35	12.8	6.1	12.8	6.1	0.9	Air Dry Basis
		6.2				Dry Basis
1.35 - 1.40	3.9	11.6	16.7	7.4	0.6	Air Dry Basis
		11.7				Dry Basis
1.40 - 1.50	3.3	20.0	20.0	9.5	0.6	Air Dry Basis
		20.1				Dry Basis
1.50 - 1.60	3.5	31.6	23.5	12.8	0.7	Air Dry Basis
		31.8				Dry Basis
1.60 - 1.80	7.7	46.6	31.2	21.1	0.9	Air Dry Basis
		47.0				Dry Basis
+ 1.80	68.8	78.8	100.0	60.8	1.4	Air Dry Basis
		79.9		61.6		Dry Basis

WELDWOOD OF CANADA
Bulk Samples from Comox Site

LAB NO. 3040

SIZE AND RAW ANALYSES — Comox #2

SIZE FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
3" x 1 1/2"	16.1	71.3	16.1	71.3	1.9	Air Dry Basis
		72.7				Dry Basis
1 1/2" x 3/4"	8.0	68.6	24.1	70.4	1.7	Air Dry Basis
		69.8				Dry Basis
3/4" x 1/2"	6.6	66.2	30.7	69.5	1.9	Air Dry Basis
		67.5				Dry Basis
1/2" x 1/4"	16.0	63.4	46.7	67.4	1.7	Air Dry Basis
		64.5				Dry Basis
1/4" x 28M	37.8	54.1	84.5	61.5	1.9	Air Dry Basis
		55.1				Dry Basis
28M x 100M	10.4	56.8	94.9	60.9	2.2	Air Dry Basis
		58.1				Dry Basis
100M x 0	5.1	65.6	100.0	51.2	3.8	Air Dry Basis
		68.2		62.4		Dry Basis
+ 3"	8.1					
Head Raw		54.7			5.6	

SINK-FLOAT ANALYSES (on 3/4" x 0 Raw)

S.G. FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
- 1.35	14.6	6.4	14.6	6.4	0.9	Air Dry Basis
		6.5				Dry Basis
1.35 - 1.40	2.5	10.5	17.1	7.0	0.8	Air Dry Basis
		10.6				Dry Basis
1.40 - 1.50	5.4	17.0	22.5	9.4	0.9	Air Dry Basis
		17.2				Dry Basis
1.50 - 1.60	2.9	31.0	25.4	11.9	1.0	Air Dry Basis
		31.3				Dry Basis
1.60 - 1.80	4.8	52.3	30.2	18.3	1.2	Air Dry Basis
		52.9				Dry Basis
+ 1.80	69.8	81.1	100.0	62.1	2.3	Air Dry Basis
		83.0		63.5		Dry Basis

WELDWOOD OF CANADA
Sample: Bulk from China Site

LAB NO. 3036

SIZE AND RAW ANALYSES China #1

SIZE FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
3" x 1 1/2"	17.4	74.5	17.4	74.5	0.7	Air Dry Basis
		75.0				Dry Basis
1 1/2" x 3/4"	15.6	63.1	33.0	69.1	1.1	Air Dry Basis
		63.8				Dry Basis
3/4" x 1/2"	7.4	57.0	40.4	66.9	1.3	Air Dry Basis
		57.8				Dry Basis
1/2" x 1/4"	14.8	53.5	55.2	63.3	1.4	Air Dry Basis
		54.3				Dry Basis
1/4" x 28M	36.1	49.1	91.3	57.7	1.1	Air Dry Basis
		49.6				Dry Basis
28M x 100M	5.5	48.0	96.8	57.1	2.2	Air Dry Basis
		49.1				Dry Basis
100M x 0	3.2	54.1	100.0	57.0	2.3	Air Dry Basis
		55.4		57.7		Dry Basis
+ 3"	9.9					
Head Raw		53.1			1.9	

SINK-FLOAT ANALYSES (on 3/4" x 0 Raw*)

S.G. FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
- 1.35	17.1	5.0	17.1	5.0	1.4	Air Dry Basis
		5.1				Dry Basis
1.35 - 1.40	4.5	10.5	21.6	6.1	1.1	Air Dry Basis
		10.6				Dry Basis
1.40 - 1.50	5.1	18.1	26.7	8.4	0.9	Air Dry Basis
		18.3				Dry Basis
1.50 - 1.60	4.0	29.3	30.7	11.1	0.9	Air Dry Basis
		29.6				Dry Basis
1.60 - 1.80	5.1	44.3	35.8	15.9	1.0	Air Dry Basis
		44.7				Dry Basis
+ 1.80	64.2	77.0	100.0	55.1	1.4	Air Dry Basis
		78.1		55.9		Dry Basis

* All +3/4" material crushed down to pass 3/4" screen

WELDWOOD OF CANADA
Sample: Bulk from China Site

LAB NO. 3041

SIZE AND RAW ANALYSES China #2

SIZE FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
3" x 1 1/2"	13.6	44.0	13.6	44.0	1.0	Air Dry Basis
		44.4				Dry Basis
1 1/2" x 3/4"	13.4	46.5	27.0	45.2	1.0	Air Dry Basis
		47.0				Dry Basis
3/4" x 1/2"	8.9	47.6	35.9	45.8	1.0	Air Dry Basis
		48.1				Dry Basis
1/2" x 1/4"	17.0	47.2	52.9	46.3	1.1	Air Dry Basis
		47.7				Dry Basis
1/4" x 28M	39.6	42.3	92.5	44.6	1.2	Air Dry Basis
		42.8				Dry Basis
28M x 100M	5.6	41.2	98.1	44.4	1.6	Air Dry Basis
		41.9				Dry Basis
100M x 0	1.9	47.0	100.0	44.4	5.0	Air Dry Basis
		49.5		44.9		Dry Basis
+ 3"	12.1					
Head Raw		51.2			1.4	Air Dry Basis

SINK-FLOAT ANALYSES (on 3/4" x 0 Raw*)

S.G. FRACTION	WT %	ASH %	CUM WT %	CUM ASH %	R.M. %	CALC. FACTORS
- 1.35	21.0	5.5	21.0	5.5	1.4	Air Dry Basis
		5.6				Dry Basis
1.35 - 1.40	8.0	9.4	29.0	6.6	1.2	Air Dry Basis
		9.5				Dry Basis
1.40 - 1.50	11.6	18.0	40.6	9.8	1.5	Air Dry Basis
		18.3				Dry Basis
1.50 - 1.60	5.1	29.8	45.7	12.1	1.4	Air Dry Basis
		30.2				Dry Basis
1.60 - 1.70	5.9	42.5	51.6	15.6	1.7	Air Dry Basis
		43.2				Dry Basis
+ 1.80	48.4	74.3	100.0	44.0	1.7	Air Dry Basis
		75.6		44.7		Dry Basis

*All +3/4" material crushed down to pass 3/4" screen

ADDENDUM NUMBER TWO

CAMPBELL RIVER AND QUINSAM AREA

BOREHOLE LOGS

(1895 - 1940)

WELDWOOD OF CANADA LIMITED

VANCOUVER-BRITISH COLUMBIA

CAMPBELL RIVER AREA AND QUINSAM AREA

BOREHOLES

BOREHOLE NO.	AREA	SECTION OR LOT	ELEVATION (FEET)	TOTAL DEPTH (FEET)
2	Out of Area	1476	62	371
3	Out of Area	707	382	525
4	Out of Area	1476	-	658
5	Out of Area	704	245	516
6	Out of Area	704	222	674
7	Out of Area	705	363	544
8	C.R.	4	480	808
9	C.R.	25	270	1055
10	C.R.	8	654	231
11	C.R.	33	470	643
12	C.R.	27	329	1058
13	C.R.	24	450	1354
14	C.R.	22	341	960
15	C.R.	29	700	424
16	C.R.	25	351	1251
17	C.R.	21	376	598
18	C.R.	21	396	409
19	C.R.	16	398	226
20	C.R.	28	370	178
21	C.R.	16	408	194
22	C.R.	28	370	375
23	C.R.	21	364	359
24	C.R.	22	364	604
25	Quinsam Area	41	925	683
26	C.R.	21	356	86
27	Quinsam Area	120	980	646
28	C.R.	16	410	625
29	Quinsam Area	242	1025	667
30	C.R.	16	450	276
31	C.R.	16	500	421

WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES
CAMPBELL RIVER AREA

Bore Hole No. 2

Elevation: 62' Depth: 371' 0"

Location:

	Thickness	Depth
Overburden	244' 0"	244' 0"
Sandstone	5' 0"	249' 0"
Shale (grey)	16' 0"	265' 0"
Shale (brown)	20' 0"	285' 0"
Sandstone	1' 0"	286' 0"
Shale (grey)	10' 0"	296' 0"
Trap (?)	2' 0"	298' 0"
Shale (brown) 1" coal at 299"	4' 0"	302' 0"
Shale, coal streak at 303'	12' 0"	314' 0"
Trap	6' 0"	320' 0"
Trap with shale streaks	10' 0"	330' 0"
Trap	41' 0"	371' 0"

WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES
CAMPBELL RIVER AREA

Bore Hole No. 3

Elevation: 382' Depth: 525' 0"

Location: Campbell River

	Thickness	Depth
Overburden	344' 0"	344' 0"
Conglomerate	83' 0"	427' 0"
Sandstone	5' 0"	432' 0"
Shale	2' 0"	434' 0"
Sandstone with shale streaks	6' 0"	440' 0"
Sandstone with shale streaks & coal markings	15' 0"	455' 0"
Sandstone	2' 0"	457' 0"
Shale	4' 9"	461' 9"
Shale and coal	0' 6"	462' 3"
Coal	3' 3"	465' 6"
Shale and coal	0' 8"	466' 2"
Coal	1' 7"	467' 9"
Shale and coal	0' 10"	468' 7"
Shale	9' 9"	478' 4"
Coal	1' 1"	479' 5"
Bony coal	0' 10"	480' 3"
Shale	2' 0"	482' 3"
Shale and coal	4' 9"	487' 0"
Shale, stratified with coal	15' 0"	502' 0"
Sandy shale	9' 0"	511' 0"
Sandstone	1' 0"	512' 0"
Trap	13' 0"	525' 0"

WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES
CAMPBELL RIVER AREA

Bore Hole No. 4

Elevation: Depth: 658' 0"

Location: Campbell River

	Thickness	Depth
Overburden	206' 0"	206' 0"
Sandstone	7' 0"	213' 0"
Sandstone with coal markings	20' 0"	233' 0"
Sandstone	27' 0"	260' 0"
Shale	1' 0"	261' 0"
Sandstone	39' 0"	300' 0"
Shale	1' 0"	301' 0"
Sandy shale	10' 0"	311' 0"
Sandstone	30' 0"	341' 0"
Sandstone (coarse)	10' 0"	351' 0"
Sandstone	16' 0"	367' 0"
Sandy shale	10' 0"	377' 0"
Sandstone	17' 0"	394' 0"
Sandy shale	1' 0"	395' 0"
Sandstone	36' 0"	431' 0"
Shale	20' 0"	451' 0"
Sandstone	1' 6"	452' 6"
Fireclay	0' 6"	453' 0"
Shale	2' 0"	455' 0"
Sandstone	19' 0"	474' 0"
Shale	14' 0"	488' 0"
Sandy shale	7' 0"	495' 0"
Shale with coal markings	10' 0"	505' 0"
Sandy shale with coal markings	9' 0"	514' 0"
Sandstone	2' 0"	516' 0"
Sandy shale	2' 0"	518' 0"
Sandstone	1' 6"	519' 6"
Shale	22' 6"	542' 0"
Sandy shale	6' 6"	548' 6"
Sandstone	21' 6"	570' 0"
Shale (grey)	13' 0"	583' 0"
Shale	33' 0"	616' 0"
Shale (brown and grey)	22' 0"	638' 0"
Trap	20' 0"	658' 0"

WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES
CAMPBELL RIVER AREA

Bore Hole No. 5

Elevation: 245' Depth: 516' 0"

Location: Campbell River

	Thickness	Depth
Overburden	306' 0"	306' 0"
Sandstone with coal markings	2' 0"	308' 0"
Sandstone	30' 0"	338' 0"
Sandy shale	0' 6"	338' 6"
Sandstone	16' 6"	355' 0"
Sandy shale	8' 0"	363' 0"
Sandstone	5' 6"	368' 6"
Conglomerate	82' 6"	451' 0"
Shale	1' 0"	452' 0"
Coal	1' 0"	453' 0"
Shale	1' 6"	454' 6"
Coal	0' 10"	455' 4"
Shale	34' 8"	490' 0"
Coal	0' 4"	490' 4"
Shale	4' 4"	494' 8"
Coal	1' 1"	495' 9"
Shale	3' 6"	499' 3"
Coal	0' 3"	499' 6"
Shale	1' 6"	501' 0"
Shale with coal markings	3' 6"	504' 6"
Shale (grey)	2' 6"	507' 0"
Shale (brown)	2' 0"	509' 0"
Trap	7' 0"	516' 0"

WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES
CAMPBELL RIVER AREA

Bore Hole No. 6

Elevation: 222' Depth: 674' 0"

Location: Campbell River

	Thickness	Depth
Overburden	265' 0"	265' 0"
Sandstone	20' 0"	285' 0"
Shale	2' 0"	287' 0"
Sandstone	5' 0"	292' 0"
Shale	15' 0"	307' 0"
Sandstone	8' 0"	315' 0"
Shale	18' 0"	333' 0"
Sandstone	30' 0"	363' 0"
Shale	2' 0"	365' 0"
Sandstone	2' 0"	367' 0"
Shale	8' 0"	375' 0"
Shale with coal markings	18' 0"	393' 0"
Shale	4' 0"	397' 0"
Sandy shale	4' 0"	401' 0"
Sandstone	7' 0"	408' 0"
Sandstone with coal markings	11' 0"	419' 0"
Sandstone	1' 0"	420' 0"
Shale	9' 0"	429' 0"
Sandy shale	1' 0"	430' 0"
Sandstone with coal markings	9' 6"	439' 6"
Shale	1' 6"	441' 0"
Sandstone	5' 0"	446' 0"
Sandstone with coal markings	21' 0"	467' 0"
Shale with coal markings	3' 0"	470' 0"
Shale	5' 0"	475' 0"
Sandy shale	5' 0"	480' 0"
Shale	49' 0"	529' 0"
Sandy shale	4' 0"	533' 0"
Sandstone	4' 0"	537' 0"
Sandstone with coal markings	31' 0"	568' 0"
Sandstone	8' 6"	576' 6"
Shale	4' 4"	580' 10"
Coal and shale	0' 8"	581' 6"
Coal	1' 9"	583' 3"
Shale	0' 2"	583' 5"
Coal	2' 2"	585' 7"
Shale	5' 0"	590' 7"
Coal	0' 6"	591' 1"
Shale	0' 1"	591' 2"
Coal	3' 11"	595' 1"

Bore Hole No. 6 cont'd

	Thickness	Depth
Shale	0' 6"	595' 7"
Coal	1' 2"	596' 9"
Shale	0' 2"	596' 11"
Sandstone	36' 1"	633' 0"
Shale	2' 6"	635' 6"
Coal	5' 6"	641' 0"
Shale	0' 2"	641' 2"
Coal	3' 1"	644' 3"
Shale with coal streaks	10' 9"	655' 0"
Shale	15' 0"	670' 0"
Trap	4' 0"	674' 0"

WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES
CAMPBELL RIVER AREA

Bore Hole No. 7

Elevation: 363' Depth: 543' 10"

Location: Campbell River

	Thickness	Depth
Overburden	185' 4"	185' 4"
Sandstone	12' 8"	198' 0"
Sandstone with bands of sandy shale	3' 4"	201' 4"
Sandstone	9' 8"	211' 0"
Sandy shale	2' 0"	213' 0"
Sandstone and laminated sandy shale	9' 0"	222' 0"
Sandy shale with coarse sandstone grains	2' 0"	224' 0"
Shale	2' 6"	226' 6"
Sandstone and laminated sandy shale	6' 0"	232' 6"
Sandy shale with coal markings	1' 4"	233' 10"
Sandstone with interlaminated sandy shale	3' 6"	237' 4"
Shale. One heavy coal mark	5' 2"	242' 6"
Shale with carbonate markings	5' 0"	247' 6"
Sandy shale interlaminated with sandstone	9' 6"	257' 0"
Sandstone with a few shale flakes	25' 6"	282' 6"
Sandstone with shale bands and flakes	2' 6"	285' 0"
Interbanded shale and sandy shale	4' 4"	289' 4"
Sandstone. Some shale.	4' 2"	293' 6"
Sandy shale. Carbonate veinlets	3' 6"	297' 0"
Sandstone, interbanded with sandy shale	13' 0"	310' 0"
Sandy shale with calcite veinlets	7' 0"	317' 0"
Interlaminated sandstone and sandy shale	4' 3"	321' 3"
Sandstone. Laminated with few shale bands and flakes. Few coal markings	35' 3"	356' 6"
Sandstone, laminated	16' 9"	373' 3"
Sandstone. Interbanded with shale & sandstone bands	4' 6"	377' 9"
Sandstone	3' 3"	381' 0"
Sandy shale (grey)	3' 6"	384' 6"
Sandy shale (reddish)	1' 0"	385' 6"
Sandy shale (dark grey)	1' 2"	386' 8"
Sandstone, some sandy shale & bands of shale	15' 4"	402' 0"
Sandstone	21' 8"	423' 8"
Sandy shale (grey)	2' 4"	426' 0"
Sandy shale (reddish)	7' 0"	433' 0"
Shale with carbonate veins	8' 0"	441' 0"
Interbanded sandstone & sandy shale	4' 3"	449' 3"
Sandstone with few shale pebbles to ½"	38' 9"	488' 0"

Bore Hole No. 7 cont'd

	Thickness	Depth
Sandstone with numerous shale flakes	1' 0"	489' 0"
Conglomerate, rounded pebbles average 1", max. 3"	5' 0"	494' 0"
Sandstone, cross bedded	2' 0"	496' 0"
Sandy shale. scant coal marks	7' 0"	503' 0"
Shale	0' 5"	503' 5"
Coal	1' 1"	504' 6"
Shale	0' 2"	504' 8"
Coal	1' 4"	506' 0"
Shale and sandy shale	3' ½"	509' ½"
Shale with coal markings	0' 7½"	509' 8"
Coal and shale	0' 4"	510' 0"
Coal	1' 7½"	511' 7½"
Shale	0' ½"	511' 8"
Coal	0' 8"	512' 4"
Shale	0' 3"	512' 7"
Coal	0' 5"	513' 0"
Coal and shale	0' 7½"	513' 7½"
Sandstone	0' 2"	513' 9½"
Shale	0' 10"	514' 7½"
Coal	1' 10"	516' 5½"
Shale (brown)	0' 4½"	516' 10"
Shale (grey)	1' 7"	518' 5"
Coal	2' 7"	521' 0"
Shale with coal markings	0' 9"	521' 9"
Shale	2' 1"	523' 10"
Shale speckled with 1/8" sandstone grains	0' 1"	523' 11"
Shale with a 2" band of sandy shale	2' 2"	526' 1"
Shale conglomerate sand grains & pebbles to 1" in shale	1' 2"	527' 3"
Sandstone	0' 3"	527' 6"
Trap (weathered)	11' 4"	538' 10"
Trap	5' 0"	543' 10"

WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES
CAMPBELL RIVER AREA

Bore Hole No. 8

Elevation: 480' Depth: 808' 8"

Location: Campbell River

	Thickness	Depth
Boulders and sand	20' 0"	20' 0"
Sandstone	5' 0"	25' 0"
Sandstone with coal markings	1' 0"	26' 0"
Sandstone	9' 0"	35' 0"
Sandstone with coal markings	1' 0"	36' 0"
Sandstone	13' 3"	49' 3"
Shale with coal markings	0' 9"	50' 9"
Shale with coal markings 1½" coal	2' 1½"	52' 10½"
Sandy shale	3' 8½"	56' 7"
Shale	3' 0"	59' 7"
Sandstone with a few shale layers	7' 0"	66' 7"
Sandstone	5' 0"	71' 7"
Sandstone with shale nodules & coal markings	3' 10"	75' 5"
Sandstone	12' 2"	87' 7"
Sandstone with shale nodules & coal markings	2' 4"	89' 11"
Sandstone. Faint Bedding	6' 8"	96' 7"
Sandstone	5' 0"	101' 7"
Sandstone with shale nodules	0' 8"	102' 3"
Sandstone	4' 4"	106' 7"
Sandstone with a few coal markings, bedding layers	6' 0"	112' 7"
Shale with coal markings	4' 0"	116' 7"
Sandy shale	20' 0"	136' 7"
Shale becoming sandy at 140'	6' 0"	142' 7"
Sandstone. Thin bedding	4' 0"	146' 7"
Sandstone	14' 9"	161' 4"
Shale and sandstone	3' 3"	164' 7"
Sandstone with shale layers	2' 0"	166' 7"
Sandstone	11' 8"	178' 3"
Sandy shale	17' 11"	196' 2"
Sandstone	6' 5"	202' 7"
Sandstone (coarse)	14' 0"	216' 7"
Sandstone with shale nodules to 1"	3' 6"	220' 1"
Sandstone	25' 8"	245' 9"
Sandy shale	3' 10"	249' 7"
Shale	9' 0"	258' 7"
Shale with fine sandy layers	16' 0"	274' 7"

Bore Hole No. 8 cont'd

	Thickness	Depth
Sandstone with thin coal markings & shale layers	6' 0"	280' 7"
Sandstone	26' 7"	307' 2"
Rounded shale nodules to 1" resembling conglomerate	0' 1"	307' 3"
Sandy shale	2' 4"	309' 7"
Shale with coal markings	2' 0"	311' 7"
Shale with a few coal markings	10' 8"	322' 3"
Coal with thin calcite veinlets	0' 10"	323' 1"
Bone, coal, shale (in that order)	0' 7"	323' 8"
Bony coal	2' 5"	326' 1"
Shale	0' 6"	326' 7"
Shale and bone	0' 3"	326' 10"
Coal	1' 1"	327' 11"
Shale with a few coal marks & silty layers	3' 8"	331' 7"
Shale	2' 4"	333' 11"
Bony coal	0' 6"	334' 5"
Shale	0' 3"	334' 8"
Coal	0' 6"	335' 2"
Bony shale	0' 5"	335' 7"
Bony coal	0' 6"	336' 1"
Coal	2' 6"	338' 7"
Bony coal	0' 6"	339' 1"
Coal	0' 6"	339' 7"
Shale	1' 8"	341' 3"
Dirty coal	0' 8"	341' 11"
Coal	0' 10"	342' 9"
Shale with siltstone bands & coal markings	5' 8"	348' 5"
Coal	2' 10"	351' 3"
Shale with coal markings silty bands & coal layers	7' 4"	358' 7"
Coal	1' 2"	359' 9"
Shale	1' 7"	361' 4"
Sandy shale	0' 7"	361' 11"
Shale	0' 4"	362' 3"
Coal	0' 6"	362' 9"
Shale	0' 2"	371' 11"
Mixed coal and shale layers	0' 6"	372' 5"
Shale	4' 0"	376' 5"
Sandy shale grading into sandstone with shale (Sandstone 378' 6" 0 380')	10' 0"	386' 5"
Sandstone with few coal markings	20' 0"	406' 5"
Sandstone with shale layers	11' 0"	417' 5"
Sandstone with heavy coal markings, thin shale streaks	2' 1"	419' 6"
Dirty coal	0' 11"	420' 5"
Shale	1' 8"	421' 1"
Coal with many shale lenses	0' 4"	421' 5"
Shale with many thin coal layers	0' 6"	421' 11"

Bore Hole No. 8 cont'd

	Thickness	Depth
Coal	0' 8"	422' 7"
Shale with many coal layers	0' 10"	423' 5"
Bony coal	2' 0"	425' 5"
Shale	1' 7"	427' 0"
Very dirty, bony coal	0' 9"	427' 9"
Shale with many white blebs of calcite	2' 8"	430' 5"
Sandstone	2' 6"	432' 11"
Shale, grading through sandy shale to sandstone	7' 6"	440' 5"
Conglomerate (3/8") with few layers of sandy shale and sandstone	52' 0"	492' 5"
Sandstone	1' 6"	493' 11"
Shale with small rounded blebs of calcite	0' 6"	494' 5"
Shale grading into sandy shale	15' 0"	509' 5"
Sandy shale	6' 0"	515' 5"
Sandy shale grading into cross-bedded sandstone	5' 3"	520' 8"
Conglomerate with interbedded sandstone and few shale layers	23' 9"	544' 5"
Sandstone. Last 6" shale	7' 9"	552' 2"
Sandy shale grading into shale	1' 0"	553' 2"
Shale with coal markings	0' 4"	553' 6"
Conglomerate. Subangular shale fragments in sandstone matrix	2' 2"	555' 8"
Sandstone	1' 0"	556' 8"
Conglomerate with shale pebbles to ½" sandstone matrix	5' 0"	561' 8"
Sandstone. Some thin shale pieces and layers	48' 0"	609' 8"
Sandy shale	1' 0"	610' 8"
Sandstone	1' 0"	611' 8"
Sandy shale. Banded	18' 0"	629' 8"
Sandstone. Some thin shale bands	1' 0"	630' 8"
Banded sandstone and shale	1' 0"	631' 8"
Sandstone with indistinct shale banding	2' 0"	633' 8"
Conglomerate interformational pebbles to ½"	0' 9"	634' 5"
Sandy shale	52' 3"	686' 8"
Shale. Faintly banded	17' 0"	703' 8"
Sandy shale	6' 0"	709' 8"
Shale	19' 0"	728' 8"
Sandy shale	1' 0"	729' 8"
Shale (broken)	30' 0"	759' 8"
Shale (red and green)	10' 0"	769' 8"
Shale (red)	2' 0"	771' 8"
Banded shale (red and green)	3' 0"	774' 8"
Shale (with red bands)	7' 0"	781' 8"
Shale (red)	3' 0"	784' 8"
Shale (broken)	3' 0"	787' 8"
Sandy shale	6' 6"	794' 2"
Conglomerate	4' 6"	798' 8"
Shale (red)	10' 0"	808' 8"

WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES
CAMPBELL RIVER AREA

Bore Hole No. 9

Elevation: 270' Depth: 1055' 0"

Location: Campbell River

	Thickness	Depth
Sandy Clay	34' 0"	34' 0"
Gravel and boulders	10' 0"	44' 0"
Sandstone	2' 0"	46' 0"
Shale with sandstone bands	8' 0"	54' 0"
Shale	1' 0"	55' 0"
Sandstone	3' 0"	58' 0"
Shale	13' 0"	71' 0"
Sandstone	7' 0"	78' 0"
Shale with sandstone bands	18' 0"	96' 0"
Sandstone with shale streaks	6' 0"	102' 0"
Sandy shale	8' 0"	110' 0"
Shale with coal markings	3' 0"	113' 0"
Shale	10' 0"	123' 0"
Sandstone	23' 0"	146' 0"
Shale with sandstone streaks	4' 0"	150' 0"
Sandstone. Fine conglomerate between 160' & 170'	44' 0"	194' 0"
Sandy shale with sandstone bands	9' 0"	203' 0"
Sandstone with shale streaks	3' 0"	206' 0"
Shale	3' 0"	209' 0"
Shale with coal markings	1' 3"	210' 3"
Shale	1' 6"	211' 9"
Shale with coal markings	0' 6"	212' 3"
Shale and coal	0' 2"	212' 5"
Shale and sandstone streaks	3' 7"	216' 0"
Shale and sandstone streaks	2' 6"	218' 6"
Shale	2' 6"	221' 0"
Sandy shale	2' 0"	223' 0"
Sandstone	34' 0"	257' 0"
Conglomerate	2' 0"	259' 0"
Sandstone	8' 0"	267' 0"
Shale	10' 0"	277' 0"
Sandstone (1" coal at 351')	116' 0"	393' 0"
Sandstone with shale	2' 0"	395' 0"
Sandstone	96' 0"	491' 0"
Shale	7' 0"	498' 0"
Sandstone with shale streaks	6' 0"	504' 0"
Shale with scattered coal markings	2' 6"	506' 6"
Shale with coal markings	0' 6"	507' 0"

Bore Hole No. 9 cont'd

	Thickness	Depth
Shale	1' 6"	508' 6"
Sandstone	5' 6"	514' 0"
Sandstone	23' 0"	537' 0"
Sandstone with bands of shale	7' 0"	544' 0"
Sandstone and shale streaks	8' 0"	552' 0"
Shale with coal markings	2' 0"	554' 0"
Shale	2' 0"	556' 0"
Shale and sandstone streaks	7' 0"	563' 0"
Sandstone	62' 0"	625' 0"
Sandstone (broken)	12' 6"	637' 6"
Coal	0' 1"	637' 7"
Sandstone	30' 5"	668' 0"
Sandstone (broken)	8' 0"	676' 0"
Shale	10' 0"	686' 0"
Sandstone	24' 0"	710' 0"
Shale	15' 0"	725' 0"
Conglomerate	0' 6"	725' 6"
Shale	4' 6"	730' 0"
Sandy shale with sandstone streaks	11' 0"	741' 0"
Shale	2' 0"	743' 0"
Sandstone	13' 0"	756' 0"
Sandstone and shale streaks	6' 0"	762' 0"
Sandstone (broken)	7' 0"	769' 0"
Sandstone	3' 0"	772' 0"
Sandstone	43' 0"	815' 0"
Shale	3' 0"	818' 0"
Sandy shale	6' 0"	824' 0"
Shale with sandstone streaks	4' 0"	828' 0"
Shale	7' 0"	835' 0"
Sandstone	23' 0"	858' 0"
Shale	8' 0"	866' 0"
Sandstone and shale streaks	9' 0"	875' 0"
Shale	9' 0"	884' 0"
Sandy shale with sandstone bands	6' 0"	890' 0"
Shale	8' 6"	898' 6"
Shale (red)	0' 6"	899' 0"
Sandy shale	2' 6"	901' 6"
Shale (red)	0' 6"	902' 0"
Sandy shale with sandstone streaks	6' 0"	908' 0"
Shale	10' 0"	918' 0"
Sandstone	20' 0"	938' 0"
Sandstone with scattered shale	5' 0"	943' 0"
Conglomerate	3' 0"	946' 0"
Sandstone with shale bands	9' 0"	955' 0"
Conglomerate	5' 0"	960' 0"
Shale (broken)	6' 0"	966' 0"
Shale	3' 0"	969' 0"
Shale	10' 2"	979' 2"
Sandy shale	3' 6"	982' 8"
Sandstone with shale bands	2' 6"	985' 2"

Bore Hole No. 9 cont'd

	Thickness	Depth
Shale. Slight sandstone in blebs	9' 2"	994' 4"
Coal	1' 6"	995' 10"
Shale and coal	0' 3"	996' 1"
Shale	2' 6"	998' 7"
Coal and shale	0' 4"	998' 11"
Coal	0' 6"	999' 5"
Coal and shale	0' 3"	999' 8"
Shale	16' 0"	1015' 8"
Coal	4' 10"	1020' 6"
Coal and shale	0' 4"	1020' 10"
Coal	6' 2"	1027' 0"
Shale	0' 9"	1027' 9"
Shale and coal	0' 6"	1028' 3"
Trap (shale on top)	26' 9"	1055' 0"

WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES
CAMPBELL RIVER AREA

Bore Hole No. 10

Elevation: 654' Depth: 232' 0"

Location: Campbell River

	Thickness	Depth
Gravel, boulders, clay, etc.	50' 0"	50' 0"
Sand	87' 0"	137' 0"
Gravel, boulders, sand, clay	8' 0"	145' 0"
Sandstone	9' 0"	154' 0"
Sandstone with shale markings	10' 0"	164' 0"
Shale with sandstone streaks	2' 0"	166' 0"
Shale	13' 0"	179' 0"
Shale (broken)	3' 0"	182' 0"
Sandstone	6' 0"	188' 0"
Shale	3' 0"	191' 0"
Sandy shale	2' 0"	193' 0"
Conglomerate	5' 0"	198' 0"
Trap	34' 0"	232' 0"

WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES
CAMPBELL RIVER AREA

Bore Hole No. 10

Elevation: 654' Depth: 231' 6"

Location: Campbell River

	Thickness	Depth
Gravel, Boulders, Clay, etc.	50' 0"	50' 0"
Sand	87' 0"	137' 0"
Gravel, boulders, sand, clay	8' 0"	145' 0"
Sandstone with shale streaks	20' 5"	165' 5"
Sandstone and shale	6' 7"	172' 0"
Sandstone with sandy shale	2' 6"	174' 6"
Sandy shale with shale streaks	9' 6"	184' 0"
Sandstone	1' 0"	185' 0"
Conglomerate	2' 6"	187' 6"
Trap - tuffaceous appearance	3' 0"	190' 6"
Trap - with hematite	2' 0"	192' 6"
Trap - with chlorite	1' 0"	193' 6"
Trap	38' 0"	231' 6"

WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES
CAMPBELL RIVER AREA

Bore Hole No. 11

Elevation: 470' Depth: 642' 11½"

Location:

	Thickness	Depth
Overburden	12' 0"	12' 0"
Sandstone with many thin shale streaks	0' 6"	12' 6"
Bony shale and coal	0' 4"	12' 10"
Shale	1' 2"	14' 0"
Shale (broken)	10' 0"	24' 0"
Shale. Last 6" sandy	10' 0"	34' 0"
Shale with thin layers of sandy shale	1' 0"	35' 0"
Sandstone with considersble shale	5' 4"	40' 4"
Shale and coal	0' 5"	40' 9"
Coal with 25% bone and shale	0' 8"	41' 5"
Shale with coal markings	7' 0"	48' 5"
Shale & coal. 50% coal bands to ½"	1' 1"	49' 6"
Shale and bone	0' 11"	50' 5"
Bondy coal	0' 10"	51' 3"
Shale, slight coal	2' 10"	54' 1"
Shaly sandstone	1' 3"	55' 4"
Conglomerate (shale in shaly sandstone)	4' 0"	59' 4"
Sandstone with sandy shale	1' 6"	60' 10"
Sandstone	5' 5"	66' 3"
Conglomerate	3' 0"	69' 3"
Sandy shale	2' 5"	71' 8"
Sandstone	2' 2"	73' 10"
Conglomerate	2' 11"	76' 9"
Sandstone	0' 4"	77' 1"
Sandy shale	3' 9"	80' 10"
Shale	5' 0"	85' 10"
Sandy shale	4' 8"	90' 6"
Sandstone with sandy shale	0' 6"	91' 0"
Sandy shale	2' 1"	93' 1"
Shale with coal markings	2' 9"	95' 10"
Sandstone with sandy shale	3' 0"	98' 10"
Sandy shale	1' 11"	100' 9"
Shale	1' 5"	102' 2"
Sandy shale	6' 8"	108' 10"
Shale	20' 0"	128' 10"
Sandy shale	3' 6"	132' 4"
Shale	6' 6"	138' 10"
Sandy shale with coal markings	1' 2"	140' 0"

Bore Hole No. 11 cont'd

	Thickness	Depth
Sandy shale	3' 3"	143' 3"
Shale	1' 7"	144' 10"
Shale and conglomerate	4' 0"	148' 10"
Conglomerate	2' 2"	151' 0"
Sandstone and shale markings	1' 6"	152' 6"
Shale	1' 4"	153' 10"
Sandy shale	11' 0"	164' 10"
Shale	2' 0"	166' 10"
Coal and shale	0' 4"	167' 2"
Shale with coal markings	4' 1"	171' 3"
Shale	0' 7"	171' 10"
Coal	0' 2½"	172' ½"
Shale	1' 5"	173' 5½"
Coal	0' 8½"	174' 2"
Shale	0' 5⅝"	174' 7⅝"
Shale and coal	0' 3"	174' 10⅝"
Shale	0' 10"	175' 8⅝"
Sandy shale	0' 4"	176' ½"
Shale with sandstone	1' 10"	177' 10½"
Coal and shale	0' 2"	178' ½"
Sandstone	59' 11"	237' 11½"
Conglomerate	1' 8"	239' 7½"
Shale with sandstone	3' 8"	243' 3½"
Shale	17' 1"	260' 4½"
Sandstone	0' 7"	260' 11½"
Conglomerate	7' 4"	268' 3½"
Shale	0' 8"	268' 11½"
Conglomerate	2' 0"	269' 1½"
Shale and coal	0' 8"	269' 9½"
Shale	0' 10"	270' 7½"
Sandy shale	1' 8"	272' 3½"
Sandstone	3' 4"	275' 7½"
Shale	1' 6"	277' 1½"
Sandy shale	2' 0"	279' 1½"
Shale	2' 1"	281' 2½"
Shale and coal	0' 1"	281' 3½"
Shale	2' 0"	283' 3½"
Coal	0' 4½"	283' 8"
Shale	1' 6"	285' 2"
Coal and shale	0' 2½"	285' 4½"
Shale	4' 0"	289' 4½"
Coal and shale	0' 2"	289' 6½"
Shale	1' 5"	290' 11⅝"
Shale with coal markings	1' 2"	292' 1½"
Shale	1' 2"	293' 3½"
Sandy shale	1' 10"	295' 1½"
Shale	1' 10"	296' 11⅝"

Bore Hole No. 11 cont'd

	Thickness	Depth
Sandy shale	4' 0"	300' 11½"
Shale	9' 9"	310' 8½"
Sandstone	24' 3"	334' 11½"
Shale	4' 0"	338' 11½"
Shale with coal markings	13' 4½"	352' 4"
Coal and shale	0' 1½"	352' 5½"
Shale with coal markings	1' 0"	353' 5½"
Sandy shale grading to sandstone	4' 6"	357' 11½"
Shale grading to sandy shale	5' 8"	363' 7½"
Shale	3' 6"	367' 1½"
Shale with sandy cross beds	1' 7"	368' 8½"
Intraformational conglomerate	1' 0"	369' 8½"
Sandstone	2' 7"	372' 3½"
Conglomerate	12' 8"	384' 11½"
Sandstone	6' 6"	391' 5½"
Sandstone grading to conglomerate	1' 0"	392' 5½"
Conglomerate. Shale interbedded	3' 6"	395' 11½"
Shale	2' 0"	397' 11½"
Sandstone	7' 0"	404' 11½"
Conglomerate	0' 6"	405' 5½"
Shale	0' 6"	405' 11½"
Shale (green)	7' 0"	412' 11½"
Shale. Many coal markings	6' 0"	418' 11½"
Shale	6' 10½"	425' 10"
Bone and coal	0' 3½"	426' 1½"
Shale and bone	0' 4"	426' 5½"
Shale. Thin coal seam 3/8"	0' 3"	426' 8½"
Shale	1' 0"	427' 8½"
Shale with coal markings (black shale)	1' 6"	429' 2½"
Shale with coal markings (brown shale)	2' 3"	431' 5½"
Sandy shale. Few coal markings	19' 6"	450' 11½"
Shale	15' 6"	466' 5½"
Shale with few thin coal markings	1' 6"	467' 11½"
Sandy shale grading to sandstone. One coal mark 1/3"	2' 0"	469' 11½"
Sandstone with few thin interbeds shale. One coal mark 1"	3' 4"	473' 3½"
Sandstone grading to conglomerate thin shale interbeds	3' 10"	477' 1½"
Shale. Scattered coal markings	5' 6"	482' 7½"
Shale. Numberous thin coal markings	4' 9"	487' 4½"
Sandy shale	1' 11"	489' 3½"
Conglomerate. Interbeds shale containing numerous coal marks	0' 8"	489' 11½"
Shale. Thin coal markings	8' 10"	498' 9½"
Coal and shale	0' 2"	498' 11½"
Shale	1' 0"	499' 11½"
Shale. Few coal markings	6' 6"	506' 5½"
Sandstone grading to conglomerate few coal markings	2' 0"	508' 5½"
Sandy shale	16' 6"	524' 11½"

Bore Hole No. 11 cont'd

	Thickness	Depth
Sandy shale with sandstone cross beds	2' 6"	527' 5½"
Sandstone. One coal mark	2' 6"	529' 11½"
Conglomerate. One coal mark	0' 7"	530' 6½"
Sandstone. Thin coal markings	0' 3"	530' 9½"
Sandy shale	21' 2"	551' 11½"
Coal and shale	0' 1½"	552' 1"
Shale with coal markings	0' 4"	552' 5"
Shale	0' 8"	553' 1"
Sandstone	2' 10½"	555' 11½"
Conglomerate with sandstone interbeds. Few coal markings	10' 0"	565' 11½"
Conglomerate	6' 0"	571' 11½"
Shale	2' 0"	573' 11½"
Shale (broken)	7' 0"	580' 11½"
Sandy shale	1' 0"	581' 11½"
Sandy shale grading to sandstone. Cross bedded	4' 2"	586' 1½"
Conglomerate	13' 4"	599' 5½"
Shale (broken)	12' 6"	611' 11½"
Shale (last few feet broken)	11' 0"	622' 11½"
Sandstone with shale interbeds	10' 0"	632' 11½"
Trap conglomerate	6' 0"	638' 11½"
Shale	4' 0"	642' 11½"

Bore Hole No. 12 cont'd

	Thickness	Depth
Conglomerate. Also shale fragments to	3' 6"	439' 3"
Sandstone. Few bands sandy shale	5' 9"	445' 0"
Sandstone	19' 0"	464' 0"
Sandstone with numerous shale bands & blebs	2' 7"	466' 7"
Sandstone	4' 0"	470' 7"
Shale grading to cross bedded sandstone	3' 5"	474' 0"
Sandy shale laminated beds of sandstone	10' 0"	484' 0"
Sandstone laminated with sandy shale	4' 0"	488' 0"
Shale, slightly sandy	2' 6"	490' 6"
Sandy shale	1' 6"	492' 0"
Sandstone. Fairly well laminated	15' 9"	507' 9"
Sandstone. Fairly well laminated with much shale breccia	0' 3"	508' 0"
Sandstone	3' 5"	511' 5"
Sandstone. Few faint laminations	7' 2"	518' 7"
Sandstone with many thin laminations of shale blebs	2' 0"	520' 7"
Sandstone	10' 5"	531' 0"
Shale	0' 6"	531' 6"
Sandstone	5' 0"	536' 6"
Sandstone (coarse)	3' 6"	540' 0"
Sandstone (medium-coarse)	11' 0"	551' 0"
Sandstone laminated with fine sandstone and shale blebs	3' 7"	554' 7"
Sandstone laminated with shale specks	3' 0"	557' 7"
Sandstone. Few shale bleb layers	6' 2"	563' 9"
Sandstone (laminated)	0' 4"	564' 1"
Sandstone	8' 11"	573' 0"
Sandstone. Few shale fragments & irregular coal markings	8' 2"	581' 2"
As above with much shale breccia	1' 3"	582' 5"
Shale	1' 4"	583' 9"
Sandstone with thin coal markings	1' 11"	585' 8"
Sandy shale	3' 6"	589' 2"
Shale	0' 8"	589' 10"
Sandstone	3' 7"	593' 5"
Sandstone, well laminated	5' 7"	599' 0"
Sandy shale	2' 0"	601' 0"
Shale, slightly sandy	10' 4"	611' 4"
Sandstone and sandy shale	3' 4"	614' 8"
Shale	3' 3"	617' 11"
Sandstone. Few shale blebs	2' 9"	620' 8"
Sandstone	18' 0"	638' 8"
Sandstone, considerable shale in lenses	6' 4"	645' 0"
Sandstone	3' 10"	648' 10"
Broken sandstone with a layer of shale breccia fragments	0' 6"	649' 4"
Sandstone (medium)	10' 8"	660' 0"
Sandstone (coarse)	7' 8"	667' 8"

Bore Hole No. 12 cont'd

	Thickness	Depth
Sandstone	20' 0"	225' 0"
Sandstone with few shale blebs	7' 6"	232' 6"
Conglomerate. Many shale blebs to ½" x 1" in sandstone	0' 8"	233' 2"
Sandstone	6' 8"	239' 10"
Conglomerate. Many thin shale blebs in sandstone	0' 9"	240' 7"
Sandstone. Few calcite veinlets	15' 1"	255' 8"
Sandstone with many shale blebs and curved coaly markings 1/8" x 2"	1' 2"	256' 10"
Sandstone and sandy shale. Few small shale blebs	0' 8"	257' 6"
Sandstone. Few shale blebs at 263' - 264'	7' 6"	265' 0"
Sandstone with numerous shale blebs & pebbles ½" x 1½"	3' 0"	268' 0"
Sandstone	13' 0"	281' 0"
Conglomerate. Many rounded shale pebbles ½' x 3/4" in sandstone	0' 6"	281' 6"
Sandstone	9' 6"	291' 0"
Conglomerate. Large rounded shale pebbles in sandstone	0' 5"	291' 5"
Sandy shale and shale	5' 7"	297' 0"
Shale. Few thin coal markings	0' 10"	297' 10"
Sandy shale & intra cross bedded sandstone	5' 4"	303' 2"
Sandstone. Last 4" with small shale pebbles	21' 10"	325' 0"
Sandstone grading to conglomerate last 1"	10' 0"	335' 0"
Sandstone	2' 6"	337' 6"
Conglomerate with many rounded shale pebbles to ½" x 2"	0' 9"	338' 3"
Sandstone	1' 6"	339' 9"
Shale	3' 3"	343' 0"
Shale. Few plant remains	2' 0"	345' 0"
Sandstone. Cross bedded	10' 0"	355' 0"
Sandstone	17' 0"	372' 0"
Coal. Very slight bone	0' 7"	372' 7"
Shale	0' 6"	373' 1"
Shale. Few coal markings	5' 5"	378' 6"
Shale. Coal lenses to ½"	1' 0"	379' 6"
Shale	5' 6"	385' 0"
Sandy shale with sandstone cross beds	3' 8"	388' 8"
Shale. One band sandstone	3' 0"	391' 8"
Sandy shale	4' 4"	396' 0"
Sandstone with much shale	5' 6"	401' 6"
Sandy shale & cross bedded sandstone	3' 6"	405' 0"
Shale	1' 6"	406' 6"
Shale with several coal marks 1/8"	2' 2"	408' 8"
Shale	0' 8"	409' 4"
Sandy shale	1' 2"	410' 6"
Sandstone. Few rounded shale pebbles 1/8" x ½"	4' 6"	415' 0"
Sandstone	20' 0"	435' 0"
Conglomerate	0' 7"	435' 7"
Coal	0' 2"	435' 9"

Bore Hole No. 12 cont'd

	Thickness	Depth
Conglomerate. Also shale fragments to	3' 6"	439' 3"
Sandstone. Few bands sandy shale	5' 9"	445' 0"
Sandstone	19' 0"	464' 0"
Sandstone with numerous shale bands & blebs	2' 7"	466' 7"
Sandstone	4' 0"	470' 7"
Shale grading to cross bedded sandstone	3' 5"	474' 0"
Sandy shale laminated beds of sandstone	10' 0"	484' 0"
Sandstone laminated with sandy shale	4' 0"	488' 0"
Shale, slightly sandy	2' 6"	490' 6"
Sandy shale	1' 6"	492' 0"
Sandstone. Fairly well laminated	15' 9"	507' 9"
Sandstone. Fairly well laminated with much shale breccia	0' 3"	508' 0"
Sandstone	3' 5"	511' 5"
Sandstone. Few faint laminations	7' 2"	518' 7"
Sandstone with many thin laminations of shale blebs	2' 0"	520' 7"
Sandstone	10' 5"	531' 0"
Shale	0' 6"	531' 6"
Sandstone	5' 0"	536' 6"
Sandstone (coarse)	3' 6"	540' 0"
Sandstone (medium-coarse)	11' 0"	551' 0"
Sandstone laminated with fine sandstone and shale blebs	3' 7"	554' 7"
Sandstone laminated with shale specks	3' 0"	557' 7"
Sandstone. Few shale bleb layers	6' 2"	563' 9"
Sandstone (laminated)	0' 4"	564' 1"
Sandstone	8' 11"	573' 0"
Sandstone. Few shale fragments & irregular coal markings	8' 2"	581' 2"
As above with much shale breccia	1' 3"	582' 5"
Shale	1' 4"	583' 9"
Sandstone with thin coal markings	1' 11"	585' 8"
Sandy shale	3' 6"	589' 2"
Shale	0' 8"	589' 10"
Sandstone	3' 7"	593' 5"
Sandstone, well laminated	5' 7"	599' 0"
Sandy shale	2' 0"	601' 0"
Shale, slightly sandy	10' 4"	611' 4"
Sandstone and sandy shale	3' 4"	614' 8"
Shale	3' 3"	617' 11"
Sandstone. Few shale blebs	2' 9"	620' 8"
Sandstone	18' 0"	638' 8"
Sandstone, considerable shale in lenses	6' 4"	645' 0"
Sandstone	3' 10"	648' 10"
Broken sandstone with a layer of shale breccia fragments	0' 6"	649' 4"
Sandstone (medium)	10' 8"	660' 0"
Sandstone (coarse)	7' 8"	667' 8"

Bore Hole No. 12 cont'd

	Thickness	Depth
Sandstone (medium - coarse)	9' 8"	677' 4"
Sandy shale	1' 1"	678' 5"
Shale Very thin coal markings	0' 9"	679' 2"
Sandstone. One coal mark 3/8" x 2"	1' 4"	680' 6"
Shale (green)	2' 0"	682' 6"
Shale(grey)	1' 0"	683' 6"
Sandstone and sandy shale	2' 6"	686' 0"
Sandstone	3' 10"	688' 10"
Shale	5' 0"	693' 10"
Sandstone	1' 4"	695' 2"
Shale, slightly sandy	0' 5"	695' 7"
Sandstone. Few shale fragments	10' 4"	705' 11"
Shale with coal layers 1/8"	0' 1"	706' 0"
Sandstone. Few pieces shale breccia	11' 1"	717' 1"
Shale	3' 4"	720' 5"
Sandstone. Few shale lenses	1' 3"	721' 8"
Shale	2' 9"	724' 5"
Sandy shale, laminated	2' 9"	727' 2"
Sandstone	0' 2"	727' 4"
Sandy shale	3' 0"	730' 4"
Sandstone	2' 10"	733' 2"
Sandy shale & laminated sandstone	1' 8"	734' 10"
Sandstone	4' 0"	738' 10"
Sandstone	20' 2"	759' 0"
Intraformational conglomerate	1' 0"	760' 0"
Sandstone	0' 10"	760' 10"
Shale	3' 8"	764' 6"
Sandy shale	3' 1"	767' 7"
Sandstone	4' 0"	771' 7"
Sandstone (laminated with sandy shale	3' 2"	774' 0"
Sandstone	0' 7"	775' 4"
Sandstone (laminated with sandy shale	2' 8"	778' 0"
Sandstone with several laminated shale blebs	1' 10"	779' 10"
Sandstone	16' 4"	796' 2"
Intraformational conglomerate. Shalelenses in sandstone	1' 10"	798' 0"
Sandstone, few large shale fragments	1' 9"	799' 9"
Sandstone. Few extalline & shale pebbles to ½"x1"	21' 11"	821' 8"
Sandstone. Few tiny pebbles last 6"	7' 0"	828' 8"
Sandstone and sandy shale	2' 8"	831' 4"
Shale. Few plant remains	2' 11"	834' 3"
Shale	0' 6"	834' 9"
Sandy shale	1' 5"	836' 2"
Sandstone grading to shale	2' 3"	838' 5"
Sandy shale and shale	6' 9"	845' 2"
Sandstone. Thinly laminated	2' 1"	847' 3"
Sandstone grading to sandy shale	1' 4"	848' 7"
Sandy shale	1' 3"	849' 10"
Shale	5' 0"	854' 10"

WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES
CAMPBELL RIVER AREA

Bore Hole No. 13

Elevation: 450' Depth: 1354' 3"

Location: Campbell River

	Thickness	Depth
Overburden	9' 0"	9' 0"
Sandstone	28' 0"	37' 0"
Sandstone with shale	3' 0"	40' 0"
Sandstone with floating pebbles at 118-120; 130-140 and 150-156	116' 0"	156' 0"
Sandy shale grading to shale	4' 0"	160' 0"
Shale	0' 6"	160' 6"
Bone	0' 2"	160' 8"
Shale with thin coaly markings	1' 10"	162' 6"
Sandstone with sandy shale	6' 0"	168' 6"
Shale	1' 6"	170' 0"
Shale with coaly markings	0' 6"	170' 6"
Sandy shale and sandstone	4' 3"	174' 9"
Bony shale	0' 3"	175' 0"
Shale partly sandy. Few coaly markings	6' 9"	181' 9"
Black carboniceous shale. Few thin coaly markings	0' 7"	182' 4"
Sandstone	6' 6"	188' 10"
Sandstone grading into shale with coal markings	0' 9"	189' 7"
Shale. Few coaly markings	3' 0"	192' 7"
Coal and shale	0' 1½"	192' 8½"
Sandy shale. Few coaly markings	4' 4½"	197' 1"
Sandstone	10' 10"	207' 11"
Conglomerate with rounded pebbles to 1"	1' 8"	209' 7"
Shale	0' 6"	210' 1"
Conglomerate	1' 6"	211' 7"
Sandy shale and sandstone	3' 0"	214' 7"
Sandstone	3' 0"	217' 7"
Shale	1' 0"	218' 7"
Sandstone and sandy shale	2' 0"	220' 7"
Shale	1' 6"	222' 1"
Sandy shale	12' 9"	234' 10"
Sandstone. Thin shale beds top 2'.	10' 9"	245' 7"
Sandstone. One calcite veinlet	15' 6"	261' 1"
Conglomerate pebbles to 3/4" in coarse sandstone	5' 0"	266' 1"
Shale. Many thin coal markings to ½" thick	2' 0"	268' 1"
Sandy shale	1' 0"	269' 1"

Bore Hole No. 12 cont'd

	Thickness	Depth
Shale	2' 2"	1002' 11"
Sandstone	0' 6"	1003' 5"
Shale, somewhat sandy	5' 0"	1008' 5"
Shale & sandy shale (grey)	4' 4"	1012' 9"
Shale and sandy shale (red)	9' 10"	1022' 7"
Sandy shale (dark red)	1' 5"	1024' 0"
Sandy shale (green)	0' 10"	1024' 10"
Sandstone, sandy shale & laminated conglomerate	2' 10"	1027' 8"
Sandy shale	2' 6"	1030' 2"
Conglomerate with bands of sandstone	6' 0"	1036' 2"
Trap, conglomerate. Boulders trap with a few granite fragments	4' 6"	1040' 8"
Altered trap	5' 0"	1045' 8"
Altered trap. 99% chlorite	10' 6"	1056' 2"
Trap	1' 6"	1057' 8"

Bore Hole No. 13 cont'd

	Thickness	Depth
Sandstone (medium)	6' 0"	422' 7"
Sandstone (fine)	4' 0"	426' 7"
Sandstone (coarse)	6' 5"	433' 0"
Sandstone (fine)	3' 7"	436' 7"
Sandstone (coarse)	10' 0"	446' 7"
Sandstone (medium-coarse)	14' 7"	461' 2"
Shale with sandy shale	0' 5"	461' 7"
Sandstone	11' 6"	473' 1"
Sandstone with shale fragments	1' 6"	474' 7"
Sandstone	10' 0"	484' 7"
Sandstone. Shale blebs last 3'	13' 4"	497' 11"
Shaly conglomerate	0' 4"	498' 3"
Sandstone	23' 7"	521' 10"
Sandstone with scattered pebbles	0' 5"	522' 3"
Sandstone	9' 6"	531' 9"
Shale. Some coal markings to 1/8"	1' 0"	532' 9"
Coal	0' 6"	533' 3"
Sandy shale. Faint brown structures	0' 4"	533' 7"
Sandy shale. Intraformational conglmerate below	5' 0"	538' 7"
Sandstone	16' 0"	554' 7"
Sandstone with few floating pebbles to 3/4" Also some coal marks	2' 6"	557' 1"
Sandy shale and shale	2' 11"	560' 0"
Shale. Brown structures	0' 3"	560' 3"
Shale. One coal marking 1/8" thick	1' 5"	561' 8"
Shale. Brown structures	0' 5"	562' 1"
Sandy shale	12' 2"	574' 3"
Sandstone with shale	0' 7"	574' 10"
Sandstone	17' 3"	592' 1"
Conglomerate	2' 0"	594' 1"
Sandstone. Few scattered pebbles	10' 6"	604' 7"
Sandstone (medium)	15' 0"	619' 7"
Sandstone (coarse)	3' 0"	622' 7"
Sandy shale and shale	2' 6"	625' 1"
Sandstone	14' 6"	639' 7"
Sandy shale	1' 3"	640' 10"
Shale. Coal markings to ½"	0' 2"	641' 0"
Sandy shale. One coal marking	2' 8"	643' 8"
Bone and coal	0' 2"	643' 10"
Shale with blotches of sandstone	0' 2½"	644' ½"
Coal and bone	0' 2"	644' 2½"
Sandy shale	2' 7½"	646' 10"
Sandy shale and sandstone	2' 9"	649' 7"
Shale and sandy shale	8' 0"	657' 7"
Shale	0' 4"	657' 11"
Sandy shale	4' 6"	662' 5"
Sandstone and sandy shale inter cross bedded	6' 8"	669' 1"
Sandy shale	0' 6"	669' 7"
Intraformational conglomerate sandy shale fragments in sandstone	0' 6"	670' 1"

Bore Hole No. 13 cont'd

	Thickness	Depth
Shale many thin coal markings	0' 4"	269' 5"
Shale becoming sandy shale	0' 2"	269' 7"
Sandy shale	1' 0"	270' 7"
Shale	0' 7"	271' 2"
Shale. Few coal markings to 1" thick	2' 10"	274' 0"
Coal. Good slight pyrite	0' 5½"	274' 5½"
Shale, few thin coal markings	6' 9½"	281' 3"
Sandstone	0' 6"	281' 9"
Shale. Patches with brown structures few thin coal markings 1/8"	6' 2"	287' 11"
Sandstone	0' 3"	288' 2"
Shale. Faint brown structures very thin coal marks	1' 5"	289' 7"
Shale. Brown structures, coal markings	1' 0"	290' 7"
Coal	0' 4½"	290' 11½"
Bony shale and coal	0' 2"	291' 1½"
Coal	0' 8"	291' 9½"
Shale	0' 8½"	292' 6"
Coal and shale	0' 3"	292' 9"
Shale. One lense coal 2" thick at 296'	3' 10"	296' 7"
Sandy shale	1' 0"	297' 7"
Sandstone with sandy shale	4' 8"	302' 3"
Sandstone with shale	4' 4"	306' 7"
Shale with numerous coal markings	1' 2"	307' 9"
Shale. Brown structures many thin coal markings	2' 0"	309' 9"
Sandstone with sandy shale. One 3/4" coal marking at 313'	3' 8"	313' 5"
Sandy shale and shale. 30° bedding angle	1' 2"	314' 7"
Shale. Brown structures,	½"1' 4½"	315' 11½"
Coal and bone	0' 1½"	316' 1"
Shale. One thin sandstone bed	0' 6"	316' 7"
Coal and bone	0' 4"	316' 11"
Sandstone	2' 5"	319' 4"
Shale. Faint brown structures	0' 10"	320' 2"
Bony shale	0' 9"	320' 11"
Sandy shale	1' 9"	322' 8"
Sandstone	26' 8"	349' 4"
Conglomerate	2' 6"	351' 10"
Sandstone. Few shale blebs & angular fragments. One floating pebbles 356'	14' 2"	366' 0"
Shale	0' 7"	366' 7"
Sandstone (medium)	20' 0"	386' 7"
Sandstone (coarse)	7' 6"	394' 1"
Sandstone and sandy shale	1' 2"	395' 3"
Sandstone. Few coal markings shale nodules	1' 4"	396' 7"
Sandstone. Numerous shale blebs	3' 0"	399' 7"
Sandstone (coarse to medium)	7' 0"	406' 7"
Sandstone (medium)	7' 0"	413' 7"
Sandstone. Numerous shale blebs . Few coal markings to ½" thick	3' 0"	416' 7"

Bore Hole No. 13 cont'd

	Thickness	Depth
Sandstone (medium)	6' 0"	422' 7"
Sandstone (fine)	4' 0"	426' 7"
Sandstone (coarse)	6' 5"	433' 0"
Sandstone (fine)	3' 7"	436' 7"
Sandstone (coarse)	10' 0"	446' 7"
Sandstone (medium-coarse)	14' 7"	461' 2"
Shale with sandy shale	0' 5"	461' 7"
Sandstone	11' 6"	473' 1"
Sandstone with shale fragments	1' 6"	474' 7"
Sandstone	10' 0"	484' 7"
Sandstone. Shale blebs last 3'	13' 4"	497' 11"
Shaly conglomerate	0' 4"	498' 3"
Sandstone	23' 7"	521' 10"
Sandstone with scattered pebbles	0' 5"	522' 3"
Sandstone	9' 6"	531' 9"
Shale. Some coal markings to 1/8"	1' 0"	532' 9"
Coal	0' 6"	533' 3"
Sandy shale. Faint brown structures	0' 4"	533' 7"
Sandy shale. Intraformational conglmerate below	5' 0"	538' 7"
Sandstone	16' 0"	554' 7"
Sandstone with few floating pebbles to 3/4" Also some coal marks	2' 6"	557' 1"
Sandy shale and shale	2' 11"	560' 0"
Shale. Brown structures	0' 3"	560' 3"
Shale. One coal marking 1/8" thick	1' 5"	561' 8"
Shale. Brown structures	0' 5"	562' 1"
Sandy shale	12' 2"	574' 3"
Sandstone with shale	0' 7"	574' 10"
Sandstone	17' 3"	592' 1"
Conglomerate	2' 0"	594' 1"
Sandstone. Few scattered pebbles	10' 6"	604' 7"
Sandstone (medium)	15' 0"	619' 7"
Sandstone (coarse)	3' 0"	622' 7"
Sandy shale and shale	2' 6"	625' 1"
Sandstone	14' 6"	639' 7"
Sandy shale	1' 3"	640' 10"
Shale. Coal markings to ½"	0' 2"	641' 0"
Sandy shale. One coal marking	2' 8"	643' 8"
Bone and coal	0' 2"	643' 10"
Shale with blotches of sandstone	0' 2½"	644' ½"
Coal and bone	0' 2"	644' 2½"
Sandy shale	2' 7½"	646' 10"
Sandy shale and sandstone	2' 9"	649' 7"
Shale and sandy shale	8' 0"	657' 7"
Shale	0' 4"	657' 11"
Sandy shale	4' 6"	662' 5"
Sandstone and sandy shale inter cross bedded	6' 8"	669' 1"
Sandy shale	0' 6"	669' 7"
Intraformational conglomerate sandy shale fragments in sandstone	0' 6"	670' 1"

Bore Hole No. 13 cont'd

	Thickness	Depth
Sandstone. Few scattered pebbles	15' 6"	685' 7"
Sandstone with more pebbles	2' 0"	687' 7"
Sandstone	9' 0"	696' 7"
Shale. Few coal markings to 1/8"	1' 0"	697' 7"
Shale	3' 4"	700' 11"
Sandstone and shale	1' 8"	702' 7"
Shale. Few coal markings to 1/8"	3' 0"	705' 7"
Sandy shale and sandstone	1' 0"	706' 7"
Shale and sandy shale	3' 4"	709' 11"
Sandy shale	2' 9"	712' 8"
Sandstone. Few thin interbeds of sandy shale	3' 11"	716' 7"
Sandstone	40' 0"	756' 7"
Sandstone. Few pebbles at 763'	8' 0"	764' 7"
Sandstone	8' 6"	773' 1"
Sandy shale and shale	3' 2"	776' 3"
S ndstone with shale beds	2' 4"	778' 7"
Sandy shale & sandstone. Grading to sandy shale	5' 0"	783' 7"
Sandy shale. Few thin coal markings	2' 10"	786' 5"
Sandy shale	7' 2"	793' 7"
Sandstone and sandy shale	3' 3"	796' 10"
Sandy shale	0' 4"	797' 2"
Bony shale	0' 2"	797' 4"
Sandy shale (brown and green)	6' 3"	803' 7"
Sandy shale (green)	3' 6"	807' 1"
Sandstone and sandy shale	12' 0"	819' 1"
Shale. Few thin coal markings	3' 0"	822' 1"
Sandy shale and sandstone	1' 0"	823' 1"
Shale. Few sandy layers, thin coal markings	8' 3"	831' 4"
Shale. Many thin coal markings 1/40"	0' 8"	832' 0"
Shale. Severed coal markings 1/16" x 2"	0' 6"	832' 6"
Sandstone. One coal marking 1/8" x 4"	1' 1"	833' 7"
Sandstone and sandy shale	3' 2"	836' 9"
Sandy shale	2' 0"	838' 9"
Sandy shale. Very few tiny coal marks	2' 2"	840' 11"
Sandy shale and sandstone	2' 8"	843' 7"
Sandstone and sandy shale	3' 0"	846' 7"
Shale. Slightly sandy. Few thin coal markings. One coal marking ½"	2' 0"	848' 7"
Sandy shale	5' 0"	853' 7"
Sandy shale. Few sandstone beds	10' 0"	863' 7"
Sandstone	10' 0"	873' 7"
Sandstone with a few rounded shale pebbles	19' 0"	892' 7"
Conglomerate pebbles to 2" in sandstone	0' 3"	892' 10"
Sandstone	2' 11"	895' 9"
Sandstone with many shale pebbles	0' 8"	896' 5"
Sandstone and sandy shale	7' 2"	903' 7"
Sandy shale. Few thin sandstone beds. One coal mark	6' 0"	909' 7"
Sandstone	7' 9"	917' 4"

Bore Hole No. 13 cont'd

	Thickness	Depth
Conglomerate	3' 4"	1238' 9"
Sandy shale and sandstone	4' 6"	1243' 3"
Shale with few coal markings ½"	0' 8"	1243' 11"
Sandy shale	0' 6"	1244' 5"
Shale with a few thin plant remains	0' 4"	1244' 9"
Shale. Several coal markings ¼' - ½"	1' 0"	1245' 9"
Sandy shale	4' 3"	1250' 0"
Shale	1' 6"	1251' 6"
Bony shale and 15% coal	0' 4"	1251' 10"
Shale with several thin bony layers containing coal marks to ½"	5' 5"	1257' 3"
Shale with few bony layers	4' 0"	1261' 3"
Shale. Few coal markings ½" bony layers	6' 0"	1267' 3"
Sandy shale	1' 0"	1268' 3"
Sandstone with intermingled shale	0' 10"	1269' 1"
Coal. Some bone, calcite	0' 3"	1269' 4"
Shale and coal (40% coal)	0' 5"	1269' 9"
Shale. Few coal markings	6' 6"	1276' 3"
Sandy shale (blotchy)	4' 0"	1280' 3"
Sandy shale (red)	34' 8"	1314' 11"
Sandy shale (grey)	5' 0"	1319' 11"
Sandstone with pebbles (½" x ½"), scattered more or less in layers	2' 4"	1322' 3"
Conglomerate (pebbles rounded 1") in sandstone.	32' 0"	1354' 3"

Bore Hole No. 13 cont'd

	Thickness	Depth
Sandy shale, well laminated	4' 10"	1078' 1"
Sandstone, few thin coal marks	1' 6"	1079' 7"
Bony shale, few lenses coal	0' 3"	1079' 10"
Shale	3' 6"	1083' 4"
Sandy shale and sandstone	2' 0"	1085' 4"
Bony coal	0' 4"	1085' 8"
Bony shale	1' 3"	1086' 11"
Shale	1' 3"	1088' 2"
Sandstone and sandy shale	3' 4"	1091' 6"
Shale. Several coal markings to ½"	1' 1"	1092' 7"
Coal	0' 4"	1092' 11"
Bony coal and shale	0' 3"	1093' 2"
Shale. Few coal markings to ½"	1' 5"	1094' 7"
Coal. Slight bone	3' 6"	1098' 1"
Shale and bone	1' 0"	1099' 1"
Bony coal	0' 6"	1099' 7"
Shale with coal markings	1' 6"	1101' 1"
Sandy shale and well laminated sandstone	8' 1"	1109' 2"
Sandstone with shale streaks	15' 0"	1124' 2"
Shale. 35% coal in lenses to ½"	0' 10"	1125' 0"
Coal	0' 6"	1125' 6"
Coal and shale	0' 2"	1125' 8"
Coal	0' 7"	1126' 3"
Coal, some bone, sandy shale	0' 6"	1126' 9"
Shale. 10% coal in thin lenses	0' 3"	1127' 0"
Shale and coal (35% coal)	1' 5"	1128' 5"
Shale with sandstone streaks	18' 0"	1146' 5"
Coal	0' 5"	1146' 10"
Shale with sandstone streaks	2' 7"	1149' 5"
Coal	1' 0"	1150' 5"
Shale with many coal markings 1/8"	5' 0"	1155' 5"
Coal with streaks of pyrite	0' 8"	1156' 1"
Sandy shale and sandstone	6' 6"	1162' 7"
Bone with 25% coal	0' 5"	1163' 0"
Shale and coal (20% coal)	0' 4"	1163' 4"
Bone with 35% coal	0' 8"	1164' 0"
Shale	1' 0"	1165' 0"
Speckled sandy shale and sandstone	2' 6"	1167' 6"
Sandstone	0' 8"	1168' 2"
Sandy shale and sandstone	6' 3"	1174' 5"
Sandstone with shaly blotches	6' 0"	1180' 5"
Shale	1' 0"	1181' 5"
Sandstone with scattered pebbles	13' 0"	1194' 5"
Sandstone and laminated sandy shale	1' 8"	1196' 1"
Sandstone	6' 0"	1202' 1"
Conglomerate. Pebbles ½" x 3/8"	2' 1"	1204' 2"
Sandstone with fine conglomerate	2' 8"	1206' 10"
Coalic sandstone grading to fine conglomerate	3' 6"	1210' 4"
Conglomerate pebbles to 1" subangular	3' 6"	1213' 10"
Sandstone (coarse)	6' 2"	1220' 0"
Sandstone (medium-fine)	15' 5"	1235' 5"

Bore Hole No. 14 cont'd

	Thickness	Depth
Sandstone with laminations of sandy shale	4' 0"	332' 6"
Sandstone. Well laminated with sandy shale	0' 3"	332' 9"
Sandstone	8' 6"	341' 3"
Sandstone with scattered shale pebbles 3/4" x ¼" One coal mark 3/8" x 1½". One band of sandy shale	0' 5"	341' 8"
Sandstone	7' 2"	348' 10"
Shale	1' 8"	350' 6"
Sandstone	1' 6"	352' 0"
Shale. Few coal markings	2' 0"	354' 0"
Sandstone	2' 8"	356' 8"
Shale	3' 0"	359' 8"
Shale	4' 9"	364' 5"
Sandstone laminated with sandy shale	2' 3"	366' 8"
Sandstone	30' 0"	396' 8"
Sandstone	6' 0"	402' 8"
Shale	0' 11"	403' 7"
Sandy shale	0' 7"	404' 2"
Sandstone	2' 3"	406' 5"
Sandstone. Many calcite filled fractures ¼"	3' 7"	410' 0"
Sandstone	8' 0"	418' 0"
Sandy shale	2' 6"	420' 6"
Shale	0' 6"	421' 0"
Sandstone. Laminated with sandy shale	6' 0"	427' 0"
Sandstone	24' 0"	451' 0"
Sandstone with many scattered pebbles xtalline Also ¼" shale blebs	3' 0"	454' 0"
Sandstone. Few pebbles to 3/4" x 2"	6' 7"	460' 7"
Sandstone. Few bands of fine conglomerate	2' 6"	463' 1"
Sandstone. Few shale fragments 1/8" x ½"	3' 3"	466' 4"
Shale, slightly sandy	1' 1"	467' 5"
Sandy shale	16' 9"	484' 2"
Sandy shale	3' 10"	488' 0"
Sandy shale with many coal markings to 1/8" thick	0' 10"	488' 10"
Sandy shale	1' 6"	489' 4"
Sandstone	2' 2"	491' 6"
Shale	0' 6"	492' 0"
Sandy shale with thin sandy streaks	0' 10"	492' 10"
Sandy shale	1' 6"	493' 4"
Sandy shale	11' 1"	504' 5"
Sandstone. Several bands of boulders 1½" Ø scattered throughout	12' 0"	516' 5"
Sandstone	5' 0"	521' 5"
Conglomerate. Boulders average 2" Ø	16' 4"	537' 9"
Sandstone with a few pebbles	1' 3"	539' 0"
Conglomerate, boulders 2" Ø. Last 8" gritty sandstone	3' 6"	542' 6"
Sandy shale (grey)	1' 0"	543' 6"
Sandy shale (red)	8' 6"	552' 0"
Sandy shale (grey)	0' 5"	552' 5"

WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES
CAMPBELL RIVER AREA

Bore Hole No. 14

Elevation: 341' Depth: 959' 6"

Location: Campbell River

	Thickness	Depth
Overburden	90' 3"	90' 3"
Sandstone. Few shale specks and blebs	46' 9"	137' 0"
Sandstone	10' 2"	147' 2"
Sandstone. Shale specks	2' 5"	149' 7"
Sandstone	7' 5"	157' 0"
Shale	0' 3"	157' 3"
Sandstone with scattered shale blebs	1' 5"	158' 8"
Sandstone	4' 0"	162' 8"
Sandstone (cross-bedded)	7' 5"	170' 1"
Sandstone	0' 11"	171' 0"
Sandstone, shale specks	5' 0"	176' 0"
Sandstone	14' 0"	190' 0"
Sandstone. Shale specks and blebs	19' 6"	209' 6"
Shale	3' 0"	212' 6"
Sandstone. Few shale fragments	3' 0"	215' 6"
Shale	0' 6"	216' 0"
Sandstone	2' 0"	218' 0"
Shale, faintly sandy	10' 0"	228' 0"
Shale	2' 8"	230' 8"
Sandstone	11' 3"	241' 11"
Sandstone	3' 5"	245' 4"
Shale	0' 2"	245' 6"
Sandstone	12' 4"	257' 10"
Sandstone	6' 0"	263' 10"
Sandy shale. Many sandstone laminations. Few thin coal marks	10' 6"	274' 4"
Sandy shale with sandstone laminations	6' 0"	280' 4"
Sandstone	2' 0"	282' 4"
Sandstone. Few laminations of shale specks	17' 6"	299' 10"
Sandstone	3' 2"	303' 0"
Sandstone	4' 0"	307' 0"
Shale	0' 9"	307' 9"
Sandstone	2' 3"	310' 0"
Shale	11' 0"	321' 0"
Sandstone	1' 0"	322' 0"
Sandy shale	1' 0"	323' 0"
Sandstone and sandy shale	5' 6"	328' 6"

Bore Hole No. 14 cont'd

	Thickness	Depth
Sandstone with shale fragments	0' 9"	879' 0"
Sandy shale	5' 0"	884' 0"
Sandstone. Few coal lenses 1/8" thick	1' 6"	885' 6"
Conglomerate. Pebbles average 1" Ø nearly all trap	23' 0"	908' 6"
Sandy shale (red)	12' 0"	920' 6"
Sandy shale	1' 0"	921' 6"
Conglomerate	8' 0"	929' 6"
Sandy shale (red)	4' 0"	933' 6"
Sandy shale	18' 0"	951' 6"
Sandy shale (red)	5' 0"	956' 6"
Conglomerate	3' 0"	959' 6"

Bore Hole No. 14 cont'd

	Thickness	Depth
Sandy shale (red)	1' 0"	553' 5"
Sandstone with intermixed shale	3' 6"	556' 11"
Conglomerate. Pebbles over 1" Ø	4' 1"	561' 0"
Conglomerate. Pebbles over ½" Ø scattered. Much shale in ground mass	10' 0"	571' 0"
Shale	2' 6"	573' 6"
Coal (poor recovery)	2' 4"	575' 10"
Shale with coal markings	0' 4"	576' 2"
Shale. Few coal markings	2' 6"	578' 8"
Sandy shale. Laminated with sandstone	9' 4"	588' 0"
Shale and sandy shale	14' 0"	602' 0"
Sandy shale. Laminated with sandstone	0' 5"	602' 5"
Bone	0' 1"	602' 6"
Coal (fair recovery(	1' 6"	604' 0"
Shale. Many thin coal markings	0' 4"	604' 4"
Sandy shale. Coal marks to ½" thick	3' 8"	608' 0"
Sandy shale	8' 0"	616' 0"
Sandy shale with a few bands of sandstone	10' 0"	626' 0"
Sandy shale. Numerous coal marks to 1/16"	5' 10"	631' 10"
Coal (poor recovery)	1' 0"	632' 10"
Sandy shale	5' 10"	638' 8"
Sandy shale	6' 1"	644' 9"
Sandy shale (red)	1' 3"	646' 0"
Sandy shale (grey)	6' 0"	652' 0"
Sandstone(very fine grained)	2' 0"	654' 0"
Sandstone (very coarse)	12' 0"	666' 0"
Sandy shale. Few tiny coal markings	0' 6"	666' 6"
Sandstone (very coarse). Few shale fragments and streaks scattered throughout.	20' 6"	687' 0"
Conglomerate	15' 0"	702' 0"
Sandstone with bands of sandy shale	10' 0"	712' 0"
Sandy shale with some bands of shale	10' 0"	722' 0"
Sandy shale	16' 0"	738' 0"
Sandstone	15' 0"	753' 0"
Sandstone with bands of conglomerate, scant shale streaks and fragments	35' 0"	788' 0"
Sandstone & sandy shale. Slight conglomerate	10' 0"	798' 0"
Sandstone(coarse) with laminations of fine-grained sandstone & conglomerate in sandy shale	20' 0"	818' 0"
Sandy shale	3' 0"	821' 0"
Sandstone with shale mixed throughout. Few coal marks and shale lenses	3' 0"	824' 0"
Sandy shale and sandstone	4' 0"	828' 0"
Sandstone mixed with shale	12' 0"	840' 0"
Conglomerate	5' 0"	845' 0"
Sandstone	10' 0"	855' 0"
Conglomerate. Pebbles average 3/8". Few bands of sandy shale	11' 0"	866' 0"
Sandy shale	12' 3"	878' 3"

Bore Hole No. 16 cont'd

	Thickness	Depth
Shale	2' 0"	348' 0"
Sandstone	11' 0"	359' 0"
Shale	3' 6"	362' 6"
Sandstone	1' 6"	364' 0"
Shale	3' 0"	367' 0"
Shale	2' 0"	369' 0"
Sandstone	6' 0"	375' 0"
Shale	1' 0"	376' 0"
Sandy shale	2' 0"	378' 0"
Sandstone	18' 0"	396' 0"
Sandstone. Few shale fragments 3/8" Ø	23' 0"	419' 0"
Sandstone	7' 0"	426' 0"
Sandy shale	5' 0"	431' 0"
Shale	6' 0"	437' 0"
Sandy shale	1' 0"	438' 0"
Shale	3' 0"	441' 0"
Sandstone, slight sandy shale	3' 0"	444' 0"
Shale	9' 0"	453' 0"
Sandstone	6' 0"	459' 0"
Sandstone, Few shale fragments	36' 0"	495' 0"
Shale	2' 0"	497' 0"
Coal with shale	0' 2"	497' 2"
Shale	3' 6"	500' 8"
Shale with thin beds of sandstone	1' 0"	501' 8"
Sandy shale	4' 4"	506' 0"
Sandstone	2' 0"	508' 0"
Sandstone	33' 0"	541' 0"
Sandstone	8' 0"	549' 0"
Sandstone. Few shale fragments	12' 6"	561' 6"
Conglomerate with 30% shale fragments	1' 0"	562' 6"
Sandstone	4' 0"	566' 6"
Sandstone	5' 6"	572' 0"
Sandstone	14' 8"	586' 8"
Sandstone	0' 10"	587' 6"
Sandstone	4' 6"	592' 0"
Sandstone. Few shale fragments	65' 6"	657' 6"
Sandstone	1' 6"	659' 0"
Sandstone withnumerous small shale fragments	19' 6"	678' 6"
Shale	0' 6"	679' 0"
Sandstone	21' 4"	700' 4"
Shale, slightly sandy	3' 9"	704' 1"
Sandstone. Few shale fragments	27' 7"	731' 8"
Sandstone. Many shale laminations	3' 0"	734' 8"
Shale. Few scattered coal marks	7' 10"	742' 6"
Calcite-coal. 75% calcite in thin veinlets	0' 1"	742' 7"
Shale	14' 5"	757' 0"
Sandy shale with interbedded sandstone	12' 6"	769' 6"
Sandstone	8' 8"	778' 2"
Shale, very few coal markings	1' 0"	779' 2"
Shale with coal markings	0' 10"	780' 0"

WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES
CAMPBELL RIVER AREA

Bore Hole No. 16

Elevation: 351' Depth: 1251' 4"

Location: Campbell River

	Thickness	Depth
Sand and clay	16' 0"	16' 0"
Sand and clay with bands of gravel	14' 0"	30' 0"
Clay	34' 0"	64' 0"
Gravel	1' 0"	65' 0"
Clay with bands of gravel	9' 0"	74' 0"
Boulder	1' 0"	75' 0"
Gravel & boulders (clay?) (till)	2' 0"	77' 0"
Nest of boulders in gravel (clay?) (till)	10' 0"	87' 0"
Gravel and boulders (clay?) (till)	37' 0"	124' 0"
Clay with bands of gravel & boulders	50' 0"	174' 0"
Sand and gravel in clay	22' 0"	196' 0"
Sandstone	4' 0"	200' 0"
Sandstone	15' 0"	215' 0"
Shale	14' 0"	229' 0"
Sandy shale, laminated with sandstone	2' 0"	231' 0"
Shale, slightly sandy	3' 0"	234' 0"
Sandstone. Few thin coal marks	1' 0"	235' 0"
Sandy shale. Few coal markings	5' 0"	240' 0"
Sandstone with a few shale fragments	7' 0"	247' 0"
Sandy shale with sandstone laminations	11' 0"	258' 0"
Sandstone	7' 0"	265' 0"
Sandstone and sandy shale	5' 0"	270' 0"
Shale	7' 0"	277' 0"
Shale with coal markings	1' 6"	278' 6"
Coal	0' 2"	278' 8"
Shale with coal	0' 4"	279' 0"
Coal	0' 2"	279' 2"
Shale	2' 0"	281' 2"
Coal	0' 2"	281' 4"
Shale with coal markings	1' 8"	283' 0"
Shale	3' 0"	286' 0"
Sandstone	2' 0"	288' 0"
Shale	2' 0"	290' 0"
Sandy shale	7' 0"	297' 0"
Shale	9' 0"	306' 0"
Sandstone	19' 6"	325' 6"
Sandstone, laminated with sandy shale	1' 3"	326' 9"
Sandstone with interlaminated shale	5' 3"	332' 0"
Shale. Few coal markings	8' 0"	340' 0"
Sandstone	6' 0"	346' 0"

Bore Hole No. 16 cont'd

	Thickness	Depth
Shale	2' 0"	348' 0"
Sandstone	11' 0"	359' 0"
Shale	3' 6"	362' 6"
Sandstone	1' 6"	364' 0"
Shale	3' 0"	367' 0"
Shale	2' 0"	369' 0"
Sandstone	6' 0"	375' 0"
Shale	1' 0"	376' 0"
Sandy shale	2' 0"	378' 0"
Sandstone	18' 0"	396' 0"
Sandstone. Few shale fragments 3/8" Ø	23' 0"	419' 0"
Sandstone	7' 0"	426' 0"
Sandy shale	5' 0"	431' 0"
Shale	6' 0"	437' 0"
Sandy shale	1' 0"	438' 0"
Shale	3' 0"	441' 0"
Sandstone, slight sandy shale	3' 0"	444' 0"
Shale	9' 0"	453' 0"
Sandstone	6' 0"	459' 0"
Sandstone, Few shale fragments	36' 0"	495' 0"
Shale	2' 0"	497' 0"
Coal with shale	0' 2"	497' 2"
Shale	3' 6"	500' 8"
Shale with thin beds of sandstone	1' 0"	501' 8"
Sandy shale	4' 4"	506' 0"
Sandstone	2' 0"	508' 0"
Sandstone	33' 0"	541' 0"
Sandstone	8' 0"	549' 0"
Sandstone. Few shale fragments	12' 6"	561' 6"
Conglomerate with 30% shale fragments	1' 0"	562' 6"
Sandstone	4' 0"	566' 6"
Sandstone	5' 6"	572' 0"
Sandstone	14' 8"	586' 8"
Sandstone	0' 10"	587' 6"
Sandstone	4' 6"	592' 0"
Sandstone. Few shale fragments	65' 6"	657' 6"
Sandstone	1' 6"	659' 0"
Sandstone withnumerous small shale fragments	19' 6"	678' 6"
Shale	0' 6"	679' 0"
Sandstone	21' 4"	700' 4"
Shale, slightly sandy	3' 9"	704' 1"
Sandstone. Few shale fragments	27' 7"	731' 8"
Sandstone. Many shale laminations	3' 0"	734' 8"
Shale. Few scattered coal marks	7' 10"	742' 6"
Calcite-coal. 75% calcite in thin veinlets	0' 1"	742' 7"
Shale	14' 5"	757' 0"
Sandy shale with interbedded sandstone	12' 6"	769' 6"
Sandstone	8' 8"	778' 2"
Shale, very few coal markings	1' 0"	779' 2"
Shale with coal markings	0' 10"	780' 0"

Bore Hole No. 16 cont'd

	Thickness	Depth
Shale, faintly sandy	2' 3"	782' 3"
Sandy shale with beds of sandstone	4' 0"	786' 3"
Sandstone	1' 9"	788' 0"
Sandy shale	0' 5"	788' 5"
Sandstone with shale fragments	17' 0"	805' 5"
Sandstone	8' 7"	814' 0"
Sandstone with scattered xtalling pebbles 3/8"Ø	10' 0"	824' 0"
Same as above with large shale fragments and one coal mark ½"	0' 8"	824' 8"
Sandstone	7' 0"	831' 8"
Conglomerate with 15% pebbles xtalline rocks to 1"Ø	5' 0"	836' 8"
Sandstone	13' 4"	850' 0"
Sandstone with shale pebbles	28' 8"	878' 8"
Shale	10' 0"	888' 8"
Shale, slightly sandy	1' 8"	890' 4"
Sandy shale becoming quite sandy	3' 6"	893' 10"
Sandstone	21' 4"	915' 2"
Shale	2' 0"	917' 2"
Sandstone with laminated sandy shale	2' 4"	919' 6"
Shale (begin driller)	14' 6"	934' 0"
Sandstone	9' 0"	943' 0"
Sandy shale	2' 0"	945' 0"
Shale	6' 0"	951' 0"
Sandy shale	3' 0"	954' 0"
S ndstone	34' 0"	988' 0"
Shale and sandstone	1' 0"	989' 0"
Sandstone	11' 0"	1000' 0"
Shale	2' 0"	1002' 0"
Sandy shale	2' 0"	1004' 0"
Shale with sandstone structures	5' 0"	1009' 0"
Shale	4' 0"	1013' 0"
Sandy shale	6' 0"	1019' 0"
Sandstone with shale structures	4' 0"	1023' 0"
Sandstone	28' 0"	1051' 0"
Shale	2' 0"	1053' 0"
Sandy shale	2' 0"	1055' 0"
Sandstone	2' 0"	1057' 0"
Sandstone with shale structures	6' 0"	1063' 0"
Shale	0' 6"	1063' 6"
Sandy shale	4' 6"	1068' 0"
Sandy shale with bands of sandstone	4' 0"	1072' 0"
Sandstone	5' 0"	1077' 0"
Shale	9' 6"	1086' 6"
Shale with sandstone structures	2' 0"	1088' 6"
Sandstone	44' 6"	1133' 0"
Shale	5' 6"	1138' 6"
Sandstone	18' 0"	1156' 6"
Shale	6' 6"	1163' 0"

Bore Hole No. 16 cont'd

	Thickness	Depth
Shale	6' 0"	1169' 0"
Sandstone	1' 6"	1170' 6"
Shale	9' 6"	1180' 0"
Sandstone	1' 0"	1181' 0"
Shale with sandstone structures	9' 0"	1190' 0"
Sandstone with shale structures	5' 0"	1195' 0"
Conglomerate	1' 0"	1196' 0"
Shale	2' 0"	1198' 0"
Altered (decomposed) trap	14' 0"	1212' 0"
Trap	39' 4"	1251' 4"

WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES
CAMPBELL RIVER AREA

Bore Hole No. 17

Elevation: 376' Depth: 598' 0"

Location: Campbell River

	Thickness	Depth
Overburden	3' 0"	3' 0"
Sandstone	30' 0"	33' 0"
Sandy shale	2' 0"	35' 0"
Shale	6' 6"	41' 6"
Shale, faintly sandy	1' 6"	43' 0"
Shale	2' 0"	45' 0"
Sandy shale	1' 4"	46' 4"
Shale	2' 8"	49' 0"
Sandstone	16' 0"	65' 0"
Sandstone (broken)	5' 0"	70' 0"
Sandstone	12' 0"	82' 0"
Sandstone with a few rounded shale fragments	3' 0"	85' 0"
Sandy shale with a few coal markings and sandstone laminationa	8' 0"	93' 0"
Sandstone and sandy shale	39' 0"	132' 0"
Sandy shale	0' 3"	132' 3"
Sandstone with numerous small shale fragments	5' 0"	137' 3"
Sandy shale (grey)	8' 9"	146' 0"
Sandy shale (red)	3' 0"	149' 0"
Sandy shale (grey)	1' 8"	150' 8"
Sandstone with a few scattered xtalline pebbles 3/4" Ø in th top 20'	39' 4"	190' 0"
Sandy shale	12' 0"	202' 0"
Sandy shale (red)	10' 6"	212' 6"
Sandy shale grading to sandstone	2' 0"	214' 6"
Sandy shale	9' 0"	223' 6"
Sandstone with broad bands of sandy shale	3' 6"	227' 0"
Sandstone	5' 6"	232' 6"
Sandstone with coal markings	2' 6"	235' 0"
Sandstone (white)	2' 3"	237' 3"
Sandstone (grey)	2' 0"	239' 3"
Sandstone. Top 1" with many xtalline pebbles ½"Ø	3' 0"	242' 3"
Conglomerate. Cobbles maximum 3" Ø	17' 9"	260' 0"
Sandstone with scattered xtalline pebbles to 1" Ø	11' 0"	271' 0"
Sandy shale	0' 8"	271' 8"
Bony shale	0' 2"	271' 10"
Bony coal	0' 6"	272' 4"
Sandy shale. Several ½" coal marks	2' 6"	274' 10"
Shale	2' 0"	276' 10"

Bore Hole No. 17 cont'd

	Thickness	Depth
Sandy shale becoming sandstone	3' 10"	280' 8"
Sandstone	12' 0"	292' 8"
Shale with numerous small coal marks	1' 10"	294' 6"
Sandstone thinly laminated with sandy shale	44' 9"	339' 3"
Coal with some sulfur bands & calcite streaks. Otherwise good.	1' 1"	340' 4"
Shale with 3/8" coal markings	1' 0"	341' 4"
Coal with a few 1/8" shale & sulfur lenses	0' 6"	341' 10"
Sandy shale. Top 5' contains numerous coal marks to 3/8"	8' 2"	350' 0"
Sandstone, well laminated with sandy shale and V.F.G. sandstone	4' 4"	354' 4"
Sandy shale with increasing amounts of coal lenses. Last 1" bony coal	1' 8"	356' 0"
Shale. Many small coal markings	0' 8"	356' 8"
Sandstone laminated with sandy shale. Few small coal markings	1' 3"	357' 11"
Shale with many small coal markings. Few ½" x 2". Coal markings	2' 7"	360' 6"
Coal (bony on top and bottom)	1' 2"	361' 8"
Bony shale	1' 2"	362' 10"
Sandy shale with sandstone laminations. Several ½" coal lenses. Many thin coal markings	10' 0"	372' 10"
Shale and coal	0' 2"	373' 0"
Coal	1' 2"	374' 2"
Coal and shale	0' 6"	374' 8"
Coal	2' 0"	376' 8"
Shale and coal	0' 4"	377' 0"
Coal	2' 10"	379' 10"
Shale and coal	0' 2"	380' 0"
Sandstone laminated with sandy shale. Few 1" coal lenses	5' 6"	385' 6"
Sandstone	8' 6"	394' 0"
Sandstone with a few thin laminations of sandy shale	29' 6"	423' 6"
Conglomerate	3' 0"	426' 6"
Sandstone	5' 6"	432' 0"
Conglomerate	1' 0"	433' 0"
Sandy shale grading to sandstone	1' 0"	434' 0"
Sandstone	2' 0"	436' 0"
Sandstone with bands of conglomerate	58' 0"	494' 0"
Conglomerate	2' 0"	496' 0"
Sandstone	2' 0"	498' 0"
Conglomerate in a sandy shale matrix	4' 0"	502' 0"
Sandy shale	12' 0"	514' 0"
Conglomerate in a sandy shale matrix	1' 6"	515' 6"
Sandy shale	1' 6"	517' 0"
Conglomerate in a sandy shale matrix	2' 0"	519' 0"

Bore Hole No. 17 cont'd

	Thickness	Depth
Sandy shale	4' 6"	523' 6"
Conglomerate in a sandy matrix	1' 6"	525' 0"
Sandy shale	1' 0"	526' 0"
Conglomerate in a sandy matrix	0' 6"	526' 6"
Sandy shale (red)	13' 6"	540' 0"
Sandy shale (grey)	1' 0"	541' 0"
Sandy shale (red)	2' 6"	543' 6"
Conglomerate in a shale matrix	3' 0"	546' 6"
Sandy shale	1' 6"	548' 0"
Conglomerate in a sandy shale matrix	0' 6"	548' 6"
Sandy shale	1' 0"	549' 6"
Conglomerate in a sandy shale matrix	7' 6"	557' 0"
Sandy shale	2' 0"	559' 0"
Trap conglomerate	4' 0"	563' 0"
Sandy shale with a few pebbles & coal marks	4' 0"	567' 0"
Trap conglomerate	3' 0"	570' 0"
Shale	6' 0"	576' 0"
Trap conglomerate	22' 0"	598' 0"

WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES
CAMPBELL RIVER AREA

Bore Hole No.19

Elevation: 398' Depth: 226' 0"

Location: Campbell River

	Thickness	Depth
Overburden	52' 0"	52' 0"
Sandy shale with bands of sandstone	6' 8"	58' 8"
Sandy shale with coal markings	1' 0"	59' 8"
Sandy shale with bands of sandstone	1' 6"	61' 2"
Sandstone. Few thin coal markings	4' 0"	65' 2"
Sandstone and sandy shale	3' 2"	68' 4"
Sandy shale with bands of sandstone	12' 4"	80' 8"
Sandstone. Some sandy shale & coal markings	0' 4"	81' 0"
Coal	0' 6"	81' 6"
Sandy shale laminated with sandstone	6' 0"	87' 6"
Conglomerate	3' 6"	91' 0"
Conglomerate. Some small shale lenses, few tiny coal marks	21' 0"	112' 0"
Sandy shale (grey)	13' 0"	125' 0"
Sandy shale (red)	11' 6"	136' 6"
Sandy shale (grey)	10' 3"	146' 9"
Sandstone	10' 2"	156' 11"
Sandstone. Few scattered pebbles	1' 8"	158' 7"
Conglomerate. Nearly all subangular trap pebbles to 3" Ø. Averaging 1" Ø	5' 8"	164' 3"
As above with several 12" bands of sandy shale	18' 9"	183' 0"
Altered trap with hematite bands and thin calcite stringers	10' 0"	193' 0"
Altered trap	3' 6"	196' 6"
Altered trap. Boulders show deep weathering	17' 6"	214' 0"
Trap. Hematite replacement at two shear zones.' Native copper from 203' - 227'	12' 0"	226' 0"

Bore Hole No. 18 cont'd

	Thickness	Depth
Coal	0' 4"	197' 6"
Coal in thin bony bands	0' 4"	197' 10"
Sandy shale with many coal markings	0' 8"	198' 6"
Sandy shale with numerous coal markings 1/8"	12' 6"	211' 0"
Coal	2' 0"	213' 0"
Shale	0' 4"	213' 4"
Shale (brown)	0' 2"	213' 6"
Shale	0' 3"	213' 9"
Coal	3' 8"	217' 5"
Shale and coal	0' 10"	218' 3"
Laminated sandstone & sandy shale	4' 3"	222' 6"
Sandstone with a few shale blebs and very thin coal markings	6' 0"	228' 6"
Sandy shale (grey)	10' 0"	238' 6"
Sandy shale (red)	22' 0"	260' 6"
Sandy shale (grey)	6' 0"	266' 6"
Sandstone and sandy shale	9' 0"	275' 6"
Sandstone	5' 6"	281' 0"
Conglomerate. (quartz grains, maximum 3/8" - 3/4" in sandstone)	16' 0"	297' 0"
Conglomerate.(coarser and more pebbles than above)	3' 0"	300' 0"
Conglomerate (as next above). Subangular pebbles ½" Ø	7' 0"	307' 0"
Coarse conglomerate (as next above)	0' 2"	307' 2"
Shaly conglomerate. 15% angular. Quartz pebbles in sandy shale	1' 10"	309' 0"
Conglomerate (similar to above) angular 1" Ø pebbles with a few shaly bands. One coal mark 1/8"	5' 0"	314' 0"
Sandy shale speckled with quartz grains	4' 6"	318' 6"
Trap conglomerate. Subangular, Trap cobbles maximum 8" Ø, average 2" Ø with ground mass showing small amounts of sandy shale. Carbonate rings around many of the cobbles 1/8" thick. Few thin bands of shale. No coal marks	88' 6"	407' 0"
Trap (?)	2' 0"	409' 0"

WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES
CAMPBELL RIVER AREA

Bore Hole No.19

Elevation: 398' Depth: 226' 0"

Location: Campbell River

	Thickness	Depth
Overburden	52' 0"	52' 0"
Sandy shale with bands of sandstone	6' 8"	58' 8"
Sandy shale with coal markings	1' 0"	59' 8"
Sandy shale with bands of sandstone	1' 6"	61' 2"
Sandstone. Few thin coal markings	4' 0"	65' 2"
Sandstone and sandy shale	3' 2"	68' 4"
Sandy shale with bands of sandstone	12' 4"	80' 8"
Sandstone. Some sandy shale & coal markings	0' 4"	81' 0"
Coal	0' 6"	81' 6"
Sandy shale laminated with sandstone	6' 0"	87' 6"
Conglomerate	3' 6"	91' 0"
Conglomerate. Some small shale lenses, few tiny coal marks	21' 0"	112' 0"
Sandy shale (grey)	13' 0"	125' 0"
Sandy shale (red)	11' 6"	136' 6"
Sandy shale (grey)	10' 3"	146' 9"
Sandstone	10' 2"	156' 11"
Sandstone. Few scattered pebbles	1' 8"	158' 7"
Conglomerate. Nearly all subangular trap pebbles to 3" Ø. Averaging 1" Ø	5' 8"	164' 3"
As above with several 12" bands of sandy shale	18' 9"	183' 0"
Altered trap with hematite bands and thin calcite stringers	10' 0"	193' 0"
Altered trap	3' 6"	196' 6"
Altered trap. Boulders show deep weathering	17' 6"	214' 0"
Trap. Hematite replacement at two shear zones.' Native copper from 203' - 227'	12' 0"	226' 0"

WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES
CAMPBELL RIVER AREA

Bore Hole No. 20

Elevation: 370' Depth: 178' 0"

Location: Campbell River

	Thickness	Depth
Sand	169' 0"	169' 0"
Trap (somewhat altered)	3' 0"	172' 0"
Trap (unaltered)	6' 0"	178' 0"

WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES
CAMPBELL RIVER AREA

Bore Hole No. 21

Elevation: 408' Depth: 194' 0"

Location: Campbell River

	Thickness	Depth
Broken & weathered conglomerate cobbles to 3" in diameter	23' 0"	23' 0"
Medium sandstone white, laminated with shale and coarse sandstone, few small coal marks	7' 0"	30' 0"
Dark sandy shale with many thin lenses of fine white sandstone	12' 0"	42' 0"
Medium sandstone white, with blotchy laminae of shale	0' 7"	42' 7"
Shale, faintly sandy, with faint brown streaks and coal marks	2' 0"	44' 7"
Dark sandy shale with thin laminae or lenses of fine white sandstone	17' 9"	62' 4"
Dark sandy shale with few thin bands yellowish-brown very fine grain sandstone	10' 8"	73' 0"
Medium-coarse white sandstone. Few shale fragments, coal marks	9' 7"	82' 7"
Dark sandy shale with bands of yellow, very fine grain sandstone	9' 9"	92' 4"
Shale and coal	0' 4"	92' 8"
Coal	0' 4"	93' 0"
Shale with coal marks	0' 8"	93' 8"
Coal	0' 5"	94' 1"
Brown shale and coal	0' 10"	94' 11"
Coal	0' 2"	95' 1"
Shale and coal	0' 2"	95' 3"
Coal	1' 6"	96' 9"
Shale and coal	0' 4"	97' 1"
Light grey sandy shale, few thin lenses of white fine grain sandstone	6' 1"	103' 2"
Medium sandstone with laminae of dark sandy shale	5' 5"	108' 7"
Very coarse white sandstone	11' 5"	120' 0"
Fine white conglomerate with a few rounded shale fragments	13' 0"	133' 0"
Sandy shale, grey	10' 4"	143' 4"
Sandy shale, maroon	4' 4"	147' 8"
Grey sandy shale becoming speckled and grading to grey medium sandstone with shale	2' 0"	149' 8"
Conglomerate, white, fine	3' 6"	153' 2"

Bore Hole No. 21 cont'd

	Thickness	Depth
Sandy shale medium	5' 2"	158' 4"
Sandy shale, grey	5' 1"	163' 5"
Bony coal	0' 2"	163' 7"
Shale with coal marks	0' 2"	163' 9"
Grey shale, faintly sandy	0' 6"	164' 3"
Bone with thin lenticles of coal	0' 3"	164' 6"
Sheared shale with few coal marks	2' 5"	166' 11"
Coarse white sandstone	10' 8"	177' 7"
Sandy shale, red, speckled	2' 10"	180' 5"
Coarse conglomerate cobbles trap to 3" in diameter in red sandy shale matrix	13' 7"	194' 0"

WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES
CAMPBELL RIVER AREA

Bore Hole No. 22

Elevation: 370' Depth: 475' 6"

Location: Campbell River

	Thickness	Depth
Overburden	142' 0"	142' 0"
Sandstone, becoming laminated	6' 6"	148' 6"
Sandstone with scattered xtalline pebbles to 2"Ø	16' 6"	165' 0"
Sandy shale	10' 0"	175' 0"
Sandstone (fine becoming medium)	2' 0"	177' 0"
Sandstone (medium becoming coarse)	5' 0"	182' 0"
Conglomerate. Pebbles to 2" Ø	35' 0"	217' 0"
Shale with much coaly matter	0' 11"	217' 11"
Coal and shale	0' 10"	218' 9"
Shale with coal markings	0' 6"	219' 3"
Coal	0' 8"	219' 11"
Shale and coal	0' 6"	220' 5"
Shale	1' 2"	221' 7"
Coal and shale	0' 5"	222' 0"
Shale with coal markings	4' 0"	226' 0"
Coal	1' 0"	227' 0"
Shale with coal markings and bands of coal to 4" thick	5' 2"	232' 2"
Shale	2' 10"	235' 0"
Coal	1' 0"	236' 0"
Shale and coal	0' 6"	236' 6"
Coal	1' 0"	237' 6"
Shale	8' 10"	346' 4"
Coal and shale	0' 5"	346' 9"
Shale with coal markings on the top and bottoms portions	3' 6"	350' 3"
Coal	0' 6"	350' 9"
Shale with coal markings on the top & bottom portions	5' 3"	356' 0"
Coal	0' 6"	356' 6"
Shale	3' 6"	360' 0"
Sandstone with shale streaks	7' 0"	367' 0"
Coarse sandstone verging on conglomerate with a few thin shale bands	42' 0"	409' 0"
Sandy shale with blotches of sandstone	3' 4"	412' 4"
Sandy shale (red)	1' 9"	414' 1"
Sandy shale (grey)	2' 5"	416' 6"
Sandy shale (red)	0' 9"	417' 3"
Sandy shale (grey)	1' 3"	418' 6"
Sandy shale (red)	25' 4"	443' 10"
Sandy shale (red and grey)	6' 10"	450' 8"

Bore Hole No. 22 cont'd

	Thickness	Depth
Sandy shale (grey) becoming more shaly	7' 0"	457' 8"
Laminated sandy shale and sandstone	1' 0"	458' 8"
Conglomerate with xtalline pebbles to ½" Ø	5' 9"	464' 5"
Sandstone	0' 7"	465' 0"
Conglomerate with xtalline pebbles to ½" Ø	10' 6"	475' 6"

WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES
CAMPBELL RIVER AREA

Bore Hole No. 23

Elevation: 364' Depth: 359' 0"

Location: Campbell River

	Thickness	Depth
Overburden	42' 0"	42' 0"
Sandstone. Scattered small xtalline pebbles top 2'	21' 10"	63' 10"
Conglomerate with small shale lenses	5' 2"	69' 0"
Laminated sandstone and sandy shale	2' 6"	71' 6"
Sandstone	5' 0"	76' 6"
Shale	1' 6"	78' 0"
Shale, slightly sandy	6' 8"	84' 8"
Sandy shale	3' 4"	88' 0"
Laminated sandstone and sandy shale	6' 0"	94' 0"
Sandstone with thin laminations of sandy shale	5' 0"	99' 0"
Sandstone. Scattered xtalline & shale pebbles to 1" Ø	9' 6"	108' 6"
Conglomerate. Broken pebbles over 1" Ø	8' 0"	116' 6"
Sandstone. One layer of pebbles at 124'	13' 6"	130' 0"
Sandy shale with thin bands of sandstone. One 2" coal lense at 147'	25' 0"	155' 0"
Coal	3' 2"	158' 2"
Shale	0' 1"	158' 3"
Coal	1' 5"	159' 8"
Shale and coal	0' 3"	159' 11"
Coal	1' 0"	160' 11"
Shale and coal	0' 4"	161' 3"
Shale	0' 8"	161' 11"
Coal	0' 3"	162' 2"
Shale with many coal lenticles	0' 4"	162' 6"
Shale with coal markings	3' 6"	166' 0"
Coal. Bottom ½ with thin bony bands	1' 6"	167' 6"
Shale with few coal markings	3' 6"	171' 0"
Sandstone. Thin laminations of shale	5' 0"	176' 0"
Bony shale with sandstone lenses	0' 3"	176' 3"
Coal with sulfur and bone bands	0' 5"	176' 8"
Shale. Few bands & laminations of sandstone	8' 9"	185' 5"
Coal	2' 11"	188' 4"
Shale. Few thin coal markings	3' 0"	191' 4"
Sandy shale with a few bands of sandstone	17' 11"	209' 3"
Thinly laminated sandstone and sandy shale	4' 6"	213' 9"
Fairly sandy shale with a few thin bands of sandstone	10' 3"	224' 0"
Sandstone & shale. Few coal marks	0' 7"	224' 7"

Bore Hole No. 23 cont'd

	Thickness	Depth
Shale. Several coal marks to 1" thick	8' 11"	233' 6"
Coal and bony shale	0' 6"	234' 0"
Sandy shale. Few coal & sandstone lenses	1' 0"	235' 0"
Coal	5' 3"	240' 3"
Shale	0' 6"	240' 9"
Shale and coal	9' 4"	241' 1"
Shale	3' 3"	244' 4"
Sandy shale (quite sandy)	9' 0"	253' 4"
Sandy shale	2' 0"	255' 4"
Snadstone with intermixed shale	2' 8"	258' 0"
Sandy shale (grey)	6' 0"	264' 0"
Sandy shale (red)	18' 8"	272' 8"
Sandstone with some sandy shale	6' 10"	279' 6"
Conglomerate (¼" xtalline pebbles)	31' 0"	310' 6"
Shale becoming very sandy	1' 0"	311' 6"
Conglomerate	17' 6"	339' 0"
Sandstone with intermixed shale	1' 0"	340' 0"
Conglomerate	4' 0"	344' 0"
Shale becoming shaly conglomerate. Angular xtalling pebbles to ¼" Ø throughout	2' 0"	346' 0"
Sandy shale	4' 0"	350' 0"
Shaly conglomerate & sandy shale with numerous layers of angular pebbles to ½" Ø. Few thin coal marks	5' 0"	355' 0"
Trap conglomerate. Boulders in altered trap to 10"	4' 0"	359' 0"

WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES
CAMPBELL RIVER AREA

Bore Hole No. 25

Elevation: 925' Depth: 683' 0"

Location: Campbell River

	Thickness	Depth
Overburden	139' 0"	139' 0"
Sandstone	8' 6"	147' 6"
Sandstone with a few ¼" pebbles	1' 6"	149' 0"
Sandstone	1' 0"	150' 0"
Sandy shale with coal markings	0' 6"	150' 6"
Sandstone with a few shale streaks	2' 0"	152' 6"
Sandstone	13' 8"	166' 2"
Coal (poor recovery)	0' 8"	166' 10"
Coal and shale	0' 8"	167' 6"
Sandstone with several thin bands of shale & coal specks	1' 6"	169' 0"
Sandstone	2' 6"	171' 6"
Sandstone with a shale matrix	0' 2"	171' 8"
Coal (poor recovery)	1' 4"	173' 0"
Sandstone with thin coal markings	2' 0"	175' 0"
Coal and sandstone. Thickest seam 2"	0' 6"	175' 6"
Sandstone. Top 18" with coal markings	6' 0"	181' 6"
Sandstone with streaks & bands to 6" wide Fe_3O_4	8' 0"	189' 6"
Sandstone	13' 6"	203' 0"
Sandstone with 25% coal in veinlets to ¼"	0' 10"	203' 10"
Sandstone. Few bands to 6" wide with much Fe_3O_4	4' 10"	208' 8"
Sandstone	2' 0"	210' 8"
Sandstone with thin bands of Fe_3O_4	24' 9"	235' 5"
Sandstone with a shale matrix and several ½" coal markings	0' 9"	236' 2"
Sandstone	11' 10"	248' 0"
Sandstone, broke 257'-260' & 268'-269'	24' 0"	272' 0"
Sandstone with scattered xtalline pebbles to 2" Ø	16' 5"	288' 5"
Shale	0' 1"	288' 6"
Coal	0' 4"	288' 10"
Sandstone with bands of coal to ¼"	1' 0"	289' 10"
Sandstone	13' 0"	302' 10"
Sandy shale with coal markings	0' 5"	303' 3"
Shale and coal	0' 5"	303' 8"
Sandy shale & sandstone with coal lenses	0' 6"	304' 2"
Coal	0' 2"	304' 4"
Sandstone	2' 3"	306' 7"
Coal	0' 11"	307' 6"

Bore Hole No. 24 cont'd

	Thickness	Depth
Sandstone	1' 3"	327' 3"
Conglomerate	25' 9"	353' 0"
Sandstone with a shaly matrix	1' 9"	354' 9"
Shale with a few layers of sandstone	3' 9"	358' 6"
Sandy shale and sandstone	24' 4"	382' 10"
Shale and coal	0' 3"	383' 1"
Coal	1' 2"	384' 3"
Shale with coal markings	1' 0"	385' 3"
Coal	0' 3"	385' 6"
Shale and coal	0' 3"	385' 9"
Shale	0' 9"	386' 6"
Shale with coal markings	0' 3"	386' 9"
Shale	1' 8"	388' 5"
Shale with coal markings	0' 5"	388' 10"
Shale and coal	0' 10"	389' 8"
Coal	0' 3"	389' 11"
Coal and shale	0' 2"	390' 1"
Coal	0' 10"	390' 11"
Shale with coal markings	0' 4"	391' 3"
Sandy shale with a few thin bands of sandstone	1' 0"	392' 3"
Coal	0' 8"	392' 11"
Bony shale	0' 5"	393' 4"
Shale with thin sandy bands	15' 8"	409' 0"
Sandstone with much laminated sandy shale	8' 0"	417' 0"
Sandy shale becoming shale with bands of sandstone	19' 0"	436' 0"
Sandstone laminated with thin shaly bands. Few coal marks	12' 0"	448' 0"
Shale. Few tiny coal markings	6' 8"	454' 8"
Shale and coal	0' 6"	455' 2"
Coal	2' 6"	457' 8"
Shale and coal	0' 11"	458' 7"
Shale with coal markings	0' 6"	459' 1"
Shale	2' 8"	461' 9"
Shale and coal	0' 3"	462' 0"
Coal	0' 8"	462' 8"
Coal and shale	0' 2"	462' 10"
Coal	1' 2"	464' 0"
Sandy shale	11' 0"	475' 0"
Sandy shale	2' 3"	477' 3"
Sandstone (grey)	3' 0"	480' 3"
Sandstone (white)	2' 2"	482' 5"
Sandstone with thin coal markings	4' 8"	487' 1"
Sandy shale	0' 11"	488' 0"
Sandstone (white)	1' 10"	489' 10"
Sandstone (greyish yellow)	4' 2"	494' 0"
Sandstone (white)	6' 0"	500' 0"
Conglomerate with bands of sandstone & shale	11' 0"	511' 0"
Sandstone and very sandy shale	6' 0"	517' 0"
Conglomerate with bands of sandstone	16' 0"	533' 0"

Bore Hole No. 25 cont'd

	Thickness	Depth
Shale and coal	0' 2"	307' 8"
Sandstone (yellowish)	11' 4"	319' 0"
Sandstone (white)	7' 3"	326' 3"
Sandstone (yellowish)	10' 0"	336' 3"
Sandstone	2' 6"	338' 9"
Sandstone with streaks & lenses of sandy shale	23' 7"	362' 4"
Sandstone with streaks of sandy shale	7' 1"	369' 5"
Intraformational conglomerate	0' 6"	369' 11"
Sandy shale with coal markings to 1/8"	3' 1"	373' 0"
Sandy shale with 25% coal in thin lenses	2' 0"	375' 0"
Sandy shale with coal markings	3' 0"	378' 0"
Sandstone with tiny scattered shale specks	13' 6"	391' 6"
Shale with many coal markings	1' 3"	392' 9"
Coal	1' 0"	393' 9"
Shale with many thin coal markings	1' 3"	395' 0"
Sandstone with sandy shale matrix	4' 6"	399' 6"
Sandstone with a few shale streaks	12' 6"	412' 0"
Shale with coal & sandstone streaks	1' 5"	413' 5"
Sandy shale & shale with coal marks	2' 0"	415' 5"
Coal	2' 2"	417' 7"
Shale with many coal marks to ¼"	1' 2"	418' 9"
Sandy shale with a few coal marks to 2" Ø and sandstone	3' 1"	421' 10"
Sandstone with a blotchy shale matrix	5' 0"	426' 10"
Shale with a few coal markings	0' 9"	427' 7"
Shale with many thin coal markings	0' 2"	427' 9"
Coal and shale	0' 10"	428' 7"
Sandstone (medium - coarse)	44' 7"	473' 2"
Sandstone (medium)	7' 7"	480' 9"
Sandstone with a few xtalline pebbles	2' 9"	483' 6"
Sandstone with streaks of sandy shale	21' 6"	505' 0"
Sandstone with shale streaks	4' 10"	509' 10"
Coal and shale	0' 2"	510' 0"
Shale with coal markings	1' 8"	511' 8"
Sandy shale	3' 0"	514' 8"
Shale and coal	0' 4"	515' 0"
Coal	0' 6"	515' 6"
Coal and shale	0' 2"	515' 8"
Shale with coal markings	1' 6"	517' 2"
Sandy shale	1' 0"	518' 2"
Coal	0' 2"	518' 4"
Shale with coal markings	0' 2"	518' 6"
Coal	0' 5"	518' 11"
Shale with coal markings	0' 4"	519' 3"
Shale	11' 0"	530' 3"
Shale with coal markings	1' 3"	531' 6"
Shale and coal	0' 2"	531' 8"
Coal	0' 6"	532' 2"
Shale	8' 8"	540' 10"

Bore Hole No. 24 cont'd

	Thickness	Depth
Conglomerate with a few thin bands of very sandy shale	25' 0"	558' 0"
Sandy shale with intraformational conglomerate	2' 7"	560' 7"
Conglomerate pebbles increasing to 2" Ø	12' 5"	573' 0"
Sandy shale	9' 0"	582' 0"
Sandstone with sandy shale bands	1' 6"	583' 6"
Shale with scattered small pebbles and one 2" thick coal seam	0' 6"	584' 0"
Sandy shale	13' 0"	597' 0"
Sandy shale with scattered coal marks	2' 3"	599' 3"
Sandy shale	4' 9"	604' 0"

Bore Hole No. 25 cont'd

	Thickness	Depth	
Shale and coal	0' 2"	307' 8"	
Sandstone (yellowish)	11' 4"	319' 0"	
Sandstone (white)	7' 3"	326' 3"	
Sandstone (yellowish)	10' 0"	336' 3"	
Sandstone	2' 6"	338' 9"	
Sandstone with streaks & lenses of sandy shale	23' 7"	362' 4"	
Sandstone with streaks of sandy shale	7' 1"	369' 5"	
Intraformational conglomerate	0' 6"	369' 11"	
Sandy shale with coal markings to 1/8"	3' 1"	373' 0"	
Sandy shale with 25% coal in thin lenses	2' 0"	375' 0"	
Sandy shale with coal markings	3' 0"	378' 0"	
Sandstone with tiny scattered shale specks	13' 6"	391' 6"	
Shale with many coal markings	1' 3"	392' 9"	
Coal	1' 0"	393' 9"	Coal
Shale with many thin coal markings	1' 3"	395' 0"	
Sandstone with sandy shale matrix	4' 6"	399' 6"	
Sandstone with a few shale streaks	12' 6"	412' 0"	
Shale with coal & sandstone streaks	1' 5"	413' 5"	
Sandy shale & shale with coal marks	2' 0"	415' 5"	
Coal	2' 2"	417' 7"	
Shale with many coal marks to ½"	1' 2"	418' 9"	
Sandy shale with a few coal marks to 2" Ø and sandstone	3' 1"	421' 10"	
Sandstone with a blotchy shale matrix	5' 0"	426' 10"	
Shale with a few coal markings	0' 9"	427' 7"	
Shale with many thin coal markings	0' 2"	427' 9"	
Coal and shale	0' 10"	428' 7"	
Sandstone (medium - coarse)	44' 7"	473' 2"	
Sandstone (medium)	7' 7"	480' 9"	92' 510 415
Sandstone with a few xtalline pebbles	2' 9"	483' 6"	
Sandstone with streaks of sandy shale	21' 6"	505' 0"	
Sandstone with shale streaks	4' 10"	509' 10"	
Coal and shale	0' 2"	510' 0"	
Shale with coal markings	1' 8"	511' 8"	
Sandy shale	3' 0"	514' 8"	
Shale and coal	0' 4"	515' 0"	
Coal	0' 6"	515' 6"	
Coal and shale	0' 2"	515' 8"	
Shale with coal markings	1' 6"	517' 2"	Conly
Sandy shale	1' 0"	518' 2"	
Coal	0' 2"	518' 4"	Zone
Shale with coal markings	0' 2"	518' 6"	
Coal	0' 5"	518' 11"	
Shale with coal markings	0' 4"	519' 3"	
Shale	11' 0"	530' 3"	
Shale with coal markings	1' 3"	531' 6"	
Shale and coal	0' 2"	531' 8"	
Coal	0' 6"	532' 2"	
Shale	8' 8"	540' 10"	

Bore Hole No. 25 cont'd

	Thickness	Depth
Sandy shale	5' 0"	545' 10"
Shale with sandstone bands	6' 0"	551' 10"
Shale with coal markings	2' 0"	553' 10"
Shale with coal markings	0' 2"	554' 0"
Shale with coal markings	1' 4"	555' 4"
Shale and coal	0' 5"	555' 9"
Shale (broken)	16' 3"	572' 0"
Shale	4' 0"	576' 0"
Sandy shale	2' 0"	578' 0"
Sandy shale (red)	2' 0"	580' 0"
Sandy shale	8' 0"	588' 0"
Sandstone	4' 0"	592' 0"
Sandstone with bands of conglomerate & coal marks	6' 0"	598' 0"
Conglomerate	8' 0"	606' 0"
Shale	3' 0"	609' 0"
Shale (red)	8' 0"	617' 0"
Sandstone	4' 0"	621' 0"
Conglomerate	4' 0"	625' 0"
Shale	3' 0"	628' 0"
Sandstone with coal markings	1' 0"	629' 0"
Sandy shale	6' 0"	635' 0"
Conglomerate	7' 0"	642' 0"
Broken conglomerate	8' 0"	650' 0"
Conglomerate (broken)	33' 0"	683' 0"

Bore Hole No. 27 cont'd

	Thickness	Depth
Sandy shale with considerable coal lenses ½"	7' 5"	293' 0"
Coal	0' 6"	293' 6"
Sandstone	11' 6"	305' 0"
Sandstone with a few scattered small xtalline pebbles	32' 0"	337' 0"
Sandstone with a blotchy matrix and a few shale fragments	18' 0"	355' 0"
Coal and bone	1' 0"	356' 8"
Shale with sandstone grains & layers	2' 0"	358' 8"
Sandstone	8' 7"	367' 3"
Sandy shale with sandstone grains and layers.' Fairly numerous coal lenses to ½"	7' 9"	375' 0"
Coal with thin shale bands	1' 3"	376' 3"
Shale	0' 10"	377' 1"
Coal	0' 4"	377' 5"
Shale	0' 5"	377' 10"
Coal	0' 10"	378' 8"
Shale	0' 2"	378' 10"
Coal	0' 2"	379' 0"
Shale with coal markings	0' 6"	379' 6"
Sandy shale	5' 0"	384' 6"
Shale with coal markings	5' 0"	389' 6"
S ndy shale	3' 0"	392' 6"
Shale with coal markings	2' 7"	395' 1"
Coal	0' 8"	395' 9"
Shale with coal markings	1' 9"	397' 6"
Sandstone	8' 0"	405' 6"
Sandstone with many small xtalline pebbles	16' 0"	421' 6"
Coal	0' 6"	422' 0"
Shale with coal markings	0' 4"	422' 4"
Shale	1' 0"	423' 4"
Bony shale and coal	0' 4"	423' 8"
Shale with some sandy layers	1' 6"	425' 2"
Sandy shale with small coal markings	19' 0"	444' 2"
Coal	1' 9"	445' 11"
Bone & coal with some sand grains	1' 1"	447' 0"
Sandy shale with some coal markings	2' 0"	449' 0"
Sandstone	1' 0"	450' 0"
Sandy shale with scattered coal markings	18' 8"	468' 8"
Sandy shale (maroon)	17' 0"	485' 8"
Sandy shale (grey)	2' 8"	488' 4"
Sandstone with bands of sandy shale	2' 7"	490' 11"
Conglomerate xtalline pebbles to ½" Ø	0' 5"	491' 4"
Sandy shale	7' 0"	498' 4"
Sandstone with bands of sandy shale. Few bands of coarse sandstone near the bottom	13' 2"	511' 6"
Diorite (altered)	0' 6"	512' 0"
Diorite	134' 0"	646' 0"

WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES
CAMPBELL RIVER AREA

Bore Hole No. 27

Elevation: 980' Depth: 646' 0"

Location: Campbell River

	Thickness	Depth
Overburden	11' 0"	11' 0"
Sandstone with a few small scattered xtalline pebbles	94' 2"	105' 2"
Sandy shale with a few coal markings	3' 10"	109' 0"
Sandstone with shale lenses & small pebbles	6' 0"	115' 0"
Sandstone with a few lenses and bands of shale. Few small xtalline pebbles	36' 0"	151' 0"
Sandstone with a few small bands of conglomerate	6' 5"	157' 5"
Shale	1' 1"	158' 6"
Shale and bony coal	0' 7"	159' 1"
Coal - very poor quality	0' 4"	159' 5"
Sandstone with shale bands containing coal markings	2' 8"	163' 1"
Shale with thin sandstone layers & tiny coal marks	0' 11"	164' 0"
Sandstone with tiny coal markings	2' 0"	166' 0"
Bony shale	0' 2"	166' 2"
Coal	0' 2"	166' 4"
Sandy shale with thin coal markings and lenses of sandstone	5' 0"	171' 4"
Sandstone with a few shale blotches	16' 8"	188' 0"
Sandstone with 10% Fe_3O_4	2' 0"	190' 0"
Sandstone	2' 6"	192' 6"
Shale. Top half sandy speckled	2' 0"	194' 6"
Sandstone (blotchy and banded)	21' 6"	216' 0"
Sandstone	7' 0"	223' 0"
Sandstone with a few scattered xtalline pebbles	36' 6"	259' 6"
Sandstone	7' 5"	266' 11"
Coal and shale	0' 4"	267' 3"
Coal	0' 4"	267' 7"
Shale and coal	0' 5"	268' 0"
Shale with thin coal markings	2' 4"	270' 4"
Coal with thin bony bands	2' 4"	272' 8"
Shale and coal	0' 8"	273' 4"
Coal	1' 0"	274' 4"
Shale and coal	0' 3"	274' 7"
Coal	2' 0"	276' 7"
Shale with coal lenses to 3/8" thick	0' 10"	277' 5"
Shale with sandy lenses & a few coal markings	5' 7"	283' 0"
Coal with a few thin shale partings	2' 1"	285' 1"
Bony coal and shale	0' 6"	285' 7"

Bore Hole No. 27 cont'd

	Thickness	Depth
Sandy shale with considerable coal lenses ½"	7' 5"	293' 0"
Coal	0' 6"	293' 6"
Sandstone	11' 6"	305' 0"
Sandstone with a few scattered small xtalline pebbles	32' 0"	337' 0"
Sandstone with a blotchy matrix and a few shale fragments	18' 0"	355' 0"
Coal and bone	1' 0"	356' 8"
Shale with sandstone grains & layers	2' 0"	358' 8"
Sandstone	8' 7"	367' 3"
Sandy shale with sandstone grains and layers.' Fairly numerous coal lenses to ⅛"	7' 9"	375' 0"
Coal with thin shale bands	1' 3"	376' 3"
Shale	0' 10"	377' 1"
Coal	0' 4"	377' 5"
Shale	0' 5"	377' 10"
Coal	0' 10"	378' 8"
Shale	0' 2"	378' 10"
Coal	0' 2"	379' 0"
Shale with coal markings	0' 6"	379' 6"
Sandy shale	5' 0"	384' 6"
Shale with coal markings	5' 0"	389' 6"
Sandy shale	3' 0"	392' 6"
Shale with coal markings	2' 7"	395' 1"
Coal	0' 8"	395' 9"
Shale with coal markings	1' 9"	397' 6"
Sandstone	8' 0"	405' 6"
Sandstone with many small xtalline pebbles	16' 0"	421' 6"
Coal	0' 6"	422' 0"
Shale with coal markings	0' 4"	422' 4"
Shale	1' 0"	423' 4"
Bony shale and coal	0' 4"	423' 8"
Shale with some sandy layers	1' 6"	425' 2"
Sandy shale with small coal markings	19' 0"	444' 2"
Coal	1' 9"	445' 11"
Bone & coal with some sand grains	1' 1"	447' 0"
Sandy shale with some coal markings	2' 0"	449' 0"
Sandstone	1' 0"	450' 0"
Sandy shale with scattered coal markings	18' 8"	468' 8"
Sandy shale (maroon)	17' 0"	485' 8"
Sandy shale (grey)	2' 8"	488' 4"
Sandstone with bands of sandy shale	2' 7"	490' 11"
Conglomerate xtalline pebbles to ½" Ø	0' 5"	491' 4"
Sandy shale	7' 0"	498' 4"
Sandstone with bands of sandy shale. Few bands of coarse sandstone near the bottom	13' 2"	511' 6"
Diorite (altered)	0' 6"	512' 0"
Diorite	134' 0"	646' 0"

WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES
CAMPBELL RIVER AREA

Bore Hole No. 28

Elevation: 410' Depth: 624' 10"

Location: Campbell River

	Thickness	Depth
Overburden	3' 0"	3' 0"
Sandstone	30' 0"	33' 0"
Shale with considerable coal in thin lenses	1' 0"	34' 0"
Shale	2' 0"	36' 0"
Sandy shale	2' 0"	38' 0"
Sandstone with one 1" coal mark	3' 6"	41' 6"
Sandstone with streaks of shale	0' 9"	42' 3"
Sandstone	8' 9"	51' 0"
Sandy shale	10' 1"	61' 1"
Sandstone (grey)	2' 2"	63' 3"
Sandstone (white)	25' 9"	89' 0"
Shale with coal markings	0' 6"	89' 6"
Sandy shale	2' 0"	91' 6"
Shale with coal markings	1' 6"	93' 0"
Sandy shale	1' 0"	94' 0"
Shale	1' 6"	95' 6"
Sandy shale	3' 0"	98' 6"
Sandstone with numerous shale fragments in the bottom 6'	29' 6"	128' 0"
Shale	3' 0"	131' 0"
Sandstone with a blotchy shale matrix	1' 4"	132' 4"
Sandy shale (grey)	4' 6"	136' 10"
Sandy shale (faintly maroon)	8' 0"	144' 10"
Sandy shale (grey)	1' 2"	146' 0"
Sandstone with laminations of sandy shale. Few coal marks	4' 6"	150' 6"
Shale	1' 0"	151' 6"
Sandy shale	4' 0"	155' 6"
Sandstone (blotchy)	1' 0"	156' 6"
Sandstone	5' 6"	162' 0"
Sandstone with a few shale fragments	15' 0"	177' 0"
Shale (red)	1' 0"	178' 0"
Shale (grey)	1' 7"	179' 7"
Sandy shale (red)	8' 1"	187' 8"
Sandy shale (grey)	3' 4"	191' 0"
Sandy shale (red)	6' 6"	197' 6"
Sandy shale (grey)	1' 8"	199' 2"
Sandstone	2' 3"	201' 5"

Bore Hole No. 28 cont'd

	Thickness	Depth
Sandstone with a few angular shale fragments	26' 7"	228' 0"
Shale	2' 0"	230' 0"
Sandstone with bands of conglomerate, a few coal markings and shale fragments	10' 0"	240' 0"
Laminated sandstone and sandy shale	4' 6"	244' 6"
Sandstone	39' 6"	284' 0"
Conglomerate. Cobbles to 3" Ø	13' 0"	297' 0"
Sandstone with thin coal markings & shale fragments	6' 0"	303' 0"
Conglomerate. Cobbles to 2" Ø in sandstone	7' 0"	310' 0"
Sandstone with few scattered pebbles	13' 6"	323' 6"
Sandstone and sandy shale	2' 6"	326' 0"
Sandy shale with a few bands of sandstone(broken)	9' 0"	335' 0"
Above, with thin bands of sandstone	4' 0"	339' 0"
Sandy shale with bands of sandstone	7' 4"	346' 4"
Sandstone with thin laminations of sandy shale	1' 1"	347' 5"
Sandy shale with bands of sandstone	3' 9"	351' 2"
Sandstone with thin laminations of sandy shale	5' 4"	356' 6"
Sandy shale with bands of sandstone	18' 0"	374' 6"
Sandstone with thin bands of sandy shale	2' 9"	377' 3"
Sandy shale and sandstone	8' 9"	386' 0"
Coal	0' 2"	386' 2"
Shale and coal	0' 6"	386' 8"
Shale with a few thin coal marks	2' 4"	389' 0"
Coal and shale	0' 2"	389' 2"
Shale with thin coal markings	1' 0"	390' 2"
Shale, sandy shale and a few coal marks	3' 10"	394' 0"
Shale & sandstone (laminated)	6' 0"	400' 0"
Shale	21' 0"	421' 0"
Coal	0' 8"	421' 8"
Shale and coal	0' 4"	422' 0"
Coal	0' 6"	422' 6"
Coal and shale	0' 3"	422' 9"
Coal	0' 3"	423' 0"
Shale	2' 0"	425' 0"
Shale	8' 0"	433' 0"
Shale with dark blotches	5' 4"	438' 4"
Sandstone	3' 6"	441' 10"
Sandy shale (red)	2' 6"	444' 4"
Sandy shale (grey)	2' 0"	446' 4"
Sandy shale (red)	3' 6"	449' 10"
Shale, faintly sandy	9' 3"	459' 1"
Sandstone laminated with sandy shale	6' 2"	465' 3"
Conglomerate	6' 7"	471' 10"
Shale	4' 0"	475' 10"
Sandy shale	4' 0"	479' 10"
Sandstone with bands of conglomerate	6' 0"	485' 10"
Conglomerate	2' 0"	487' 10"
Sandstone with laminations of sandy shale	15' 0"	502' 10"
Sandstone (coarse)	3' 0"	505' 10"
Sandstone (fine)	9' 0"	514' 10"

Bore Hole No. 28 cont'd

	Thickness	Depth
Sandy shale	7' 6"	522' 4"
Conglomerate. Pebbles to 1" Ø	3' 6"	525' 10"
Sandy shale. One thin band of conglomerate pebbles	7' 6"	533' 4"
Sandstone with much shale in the matrix	2' 9"	536' 1"
Sandy shale	7' 0"	543' 1"
Sandy shale with xtalline pebbles to ¼" Ø	6' 9"	549' 10"
Sandy shale	1' 0"	550' 10"
Shale and conglomerate	2' 0"	552' 10"
Sandy shale	5' 0"	557' 10"
Sandstone	1' 0"	558' 10"
Conglomerate	6' 0"	564' 10"
Sandy shale	3' 6"	568' 4"
Sandy shale (grey)	1' 0"	569' 4"
Conglomerate. Subangular. Poorly-sorted pebbles	6' 0"	575' 4"
Sandy shale	2' 0"	577' 4"
Sandy shale (red)	2' 0"	579' 4"
Conglomerate	7' 0"	586' 4"
Sandy shale. One 1/8" coal marking	4' 6"	590' 10"
Sandy shale	5' 0"	595' 10"
Sandy shale & sandstone, with thin bands of conglomerate	2' 0"	597' 10"
Sandstone	2' 0"	599' 10"
Conglomerate	5' 0"	604' 10"
Sandy shale	4' 0"	608' 10"
Sandy shale with scattered pebbles	3' 0"	611' 10"
Sandstone	0' 8"	612' 6"
Conglomerate	1' 0"	613' 6"
Sandy shale with pebbles	1' 0"	614' 6"
Sandy shale	5' 4"	619' 10"
Conglomerate with pebbles to ½" Ø and thin bands of sandy shale	5' 0"	624' 10"

WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES
CAMPBELL RIVER AREA

Bore Hole No. 29

Elevation: 1025' 465 Depth: 666' 11"

Location: Campbell River 540

	Thickness	Depth
Overburden	8' 0"	8' 0"
Sandstone with dark shaly matrix	13' 9"	21' 9"
Sandstone (top 3' with pebbles to 3/4")	10' 3"	32' 0"
Sandstone with dark shaly matrix	2' 0"	34' 0"
Sandstone	17' 7"	51' 7"
Conglomerate	0' 8"	52' 3"
Sandstone (2" pebbles at 75', broken 75'-80')	30' 1"	82' 4"
Conglomerate	3' 8"	86' 0"
Sandstone	1' 7"	87' 7"
Sandstone with large, broken irregular masses of sandy shale	0' 5"	88' 0"
Sandstone (V.C.) with few thin bands and laminations grey sandstone (V.F.)	15' 0"	103' 0"
Sandstone (top 5' broken, bottom 5' with few tiny pebbles)	17' 0"	120' 0"
Sandstone (few thin bands sandy shale and fine conglomerate)	19' 4"	139' 4"
Sandstone(numerous bands fine conglomerate and few thin bands grey sandstone)	19' 1"	158' 5"
Sandstone (few thin bands becoming conglomerate)	10' 8"	169' 1"
Sandy shale	3' 3"	172' 4"
Sandstone	41' 9"	214' 1"
Sandstone (greenish, much Fe_3O_4	13' 0"	227' 1"
Sandstone with 1" marcasite & coal at 243-6'	19' 7"	246' 8"
Coal and shale (much sulfur)	0' 4"	247' 0"
Shale with marcasite and coal markings	0' 6"	247' 6"
Sandstone	15' 6"	263' 0"
Coal (some bone and sandstone)	0' 7"	263' 7"
Bony coal (some marcasite)	0' 4"	263' 11"
Sandstone with thin bands bone and coal	1' 1"	265' 0"
Sandstone	4' 4"	269' 4"
Sandstone with numerous bands 1-3" wide of bone and coal	3' 9"	273' 1"
Sandstone	21' 7"	294' 8"
Coal	0' 8"	295' 4"
Sandstone and coal	0' 8"	296' 0"
Coal	0' 5"	296' 5"
Sandstone	4' 0"	300' 5"

Bore Hole No. 29 cont'd

	Thickness	Depth
Coal	0' 2"	300' 7"
Sandstone with coal markings	2' 9"	303' 4"
Coal with sandstone layers	1' 0"	304' 4"
Coal	1' 0"	305' 4"
Shale (dark and speckled)	1' 4"	306' 8"
Sandstone	5' 11"	312' 7"
Sandy shale (slightly speckled)	0' 7"	313' 2"
Sandstone	15' 5"	328' 7"
Conglomerate (pebbles to 1") with sandstone bands	12' 7"	341' 2"
Sandstone	8' 10"	350' 0"
Sandy shale with coal markings	4' 5"	354' 5"
Sandstone with shaly matrix and a few coarse coal marks	5' 0"	359' 5"
Sandstone	5' 3"	364' 8"
Sandstone with shly matrix	0' 11"	365' 7"
Sandstone (broken 365')	9' 10"	376' 4"
Very sandy shale, few coal markings	1' 7"	377' 11"
Sandstone with shaly matrix	2' 6"	380' 5"
Sandstone	9' 4"	389' 9"
Sandy shale with coal markings	5' 8"	395' 5"
Sandstone	2' 0"	397' 5"
Sandstone	3' 0"	400' 5"
Sandy shale, black and broken	1' 3"	401' 8"
Sandstone	26' 4"	428' 0"
Sandstone(med. coarse, few bands very coarse)	18' 5"	446' 5"
Sandstone with few scattered shale fragments some what broken)	36' 4"	482' 9"
Coal	4' 6"	487' 3"
Shale and coal	0' 3"	487' 6"
Coal	2' 6"	490' 0"
Brown shale	0' 10"	490' 10"
Coal and shale	0' 4"	491' 2"
Shale	0' 10"	492' 0"
Coal	2' 5"	494' 5"
Coal and shale	0' 8"	495' 1"
Shale	6' 2"	501' 3"
Sandstone	3' 0"	504' 3"
Bony shale	0' 4"	504' 7"
Sandstone	14' 0"	518' 7"
Sandstone with bands of conglomerate	25' 8"	544' 3"
Sandstone	7' 0"	551' 3"
Shale with coal markings	5' 0"	556' 3"
Conglomerate	2' 0"	558' 3"
Shale with coal markings	7' 0"	565' 3"
Conglomerate	2' 0"	567' 3"
Shandy shale with coal markings	1' 0"	568' 3"
Conglomerate	1' 0"	569' 3"
Shale with coal markings and bands of conglomerate	6' 0"	575' 3"
Shale	4' 0"	579' 3"
Conglomerate	1' 0"	580' 3"

Bore Hole No. 29 cont'd

	Thickness	Depth
Sandy shale	2' 0"	582' 3"
Conglomerate	5' 0"	587' 3"
Sandy shale	7' 0"	594' 3"
Conglomerate	1' 0"	595' 3"
Sandstone and shale	2' 0"	597' 3"
Conglomerate	1' 0"	598' 3"
Sandy shale	1' 0"	599' 3"
Conglomerate	3' 0"	602' 3"
Shale	4' 0"	606' 3"
Sandy shale with bands of conglomerate	12' 0"	618' 3"
Conglomerate. Angular pebbles to ½" Ø last 6" contains much sandy shale	5' 0"	623' 3"
Sandy shale. One ½" coal markings	3' 2"	626' 5"
Sandy shale with angular conglomerate pebbles and thin bands . Few calcite and coal marks	9' 0"	635' 5"
Conglomerate. Mostly diorite pebbles in small quantity of reddish sandy matrix	27' 10"	663' 3"
Sandy shale. Few bands of conglomerate	1' 2"	664' 5"
Conglomerate (same as next above)	2' 6"	666' 11"

WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES
CAMPBELL RIVER AREA

Bore Hole No. 30

Elevation: 450' Depth: 117' 0"

Location: Campbell River

	Thickness	Depth
Gravel	2' 0"	2' 0"
Clay with gravel	12' 0"	14' 0"
Gravel and boulders	6' 0"	20' 0"
Sand and gravel with boulders	4' 0"	24' 0"
Coarse white sandstone - broken	10' 0"	34' 0"
Coarse conglomerate - pebbles to 1" diam. broken	4' 0"	38' 0"
Coarse white sandstone- few scattered pebbles	9' 0"	47' 0"
Light brown, faintly sandy shale	2' 0"	49' 0"
Darker brown, faintly sandy shale, brownish	0' 10"	49' 10"
Brown shale with sandstone becoming medium sandstone with shale matrix	6' 0"	55' 10"
Shale, hard, brown; brown streak, broken	0' 6"	56' 4"
Sandy shale, hard, dark brown, broken	3' 8"	60' 0"
Shale, hard, dark brown, brown streak, faintly sandy	1' 9"	61' 9"
Sandy shale, light brown, one ½" coal markings	1' 0"	62' 9"
Shale, hard, dark brown, brown streak, few coal markings; sulphur at 63'	3' 5"	66' 2"
Coal and bone	0' 3"	66' 5"
White sandstone; lenses of bony shale	0' 1"	66' 6"
Coal	5' 8"	72' 2"
Shale	1' 2"	73' 4"
Coal	0' 4"	73' 8"
Shale with coal markings	1' 0"	74' 8"
Coal	0' 4"	75' 0"
Shale	0' 2"	75' 2"
Coal	0' 6"	75' 8"
Brown shale	0' 6"	76' 2"
Coal	0' 8"	76' 10"
Brown shale	6' 2"	83' 0"
Coal	0' 8"	83' 8"
Shale	6' 10"	90' 6"
Shale with coal markings	0' 6"	91' 0"
Coal	0' 4"	91' 4"
Broken shale	1' 8"	93' 0"
Broken shale with coal markings	2' 8"	95' 8"
Coal	0' 8"	96' 4"
Broken shale	4' 0"	100' 4"
Shale and coal	0' 3"	100' 7"

Bore Hole No. 31 cont'd

	Thickness	Depth
Dark shale with light shale layers	10' 0"	204' 0"
Shale with sandstone streaks	4' 0"	208' 0"
Sandstone with shale streaks	2' 0"	210' 0"
Shale	2' 0"	212' 0"
Shale with sandstone streaks	2' 6"	214' 6"
Shale	1' 0"	215' 6"
Sandstone and shale layers	1' 6"	217' 0"
Shale	2' 0"	219' 0"
Broken sandstone with shale streaks	3' 6"	222' 6"
Sandstone with coal	0' 6"	223' 0"
Broken sandstone with coal markings	1' 0"	224' 0"
Broken shale	1' 0"	225' 0"
Broken sandstone and shale layers	2' 0"	227' 0"
Broken shale	1' 0"	228' 0"
Sandstone with coal markings	0' 6"	228' 6"
Shale and coal	0' 2"	228' 8"
Coal	1' 2"	229' 10"
Broken shale	2' 0"	231' 10"
Broken shale with coal markings	1' 2"	233' 0"
Broken shale	1' 6"	234' 6"
Broken shale and coal	0' 6"	235' 0"
Broken shale with coal markings	2' 0"	237' 0"
Broken shale	9' 0"	246' 0"
Broken sandstone with shale streaks	5' 0"	251' 0"
Sandstone with coal markings	1' 0"	252' 0"
Shale	11' 0"	263' 0"
Soft dark shale	1' 6"	264' 6"
Shale with coal markings	0' 9"	265' 3"
Coal	0' 10"	266' 1"
Shale and coal	0' 3"	266' 4"
Shale	0' 8"	267' 0"
Shale and coal markings	2' 0"	269' 0"
Shale	2' 0"	271' 0"
Broken sandy shale	3' 0"	274' 0"
Broken shale with coal markings	0' 6"	274' 6"
Shale and coal	0' 2"	274' 8"
Sandy shale	1' 4"	276' 0"
Soft sandstone (not caving)	7' 0"	283' 0"
Sandstone - speckled with red spots & coal markings	3' 0"	286' 0"
Sandstone - red speckled	1' 0"	287' 0"
Sandstone with coal markings	12' 0"	299' 0"
Broken shale	2' 0"	301' 0"
Broken sandstone & shale with coal markings	0' 6"	301' 6"
Broken fine sandstone	0' 6"	302' 0"
Sandy shale	6' 0"	308' 0"
Shale with coal markings	1' 0"	309' 0"
Broken shale with scattered coal markings	6' 0"	315' 0"
Dark shale with coal markings	0' 6"	315' 6"
Shale	1' 0"	316' 6"

WELDWOOD OF CANADA LIMITED
VANCOUVER ISLAND COAL PROPERTIES
CAMPBELL RIVER AREA

Bore Hole No. 31

Elevation: 500' Depth: 421' 0"

Location: Campbell River

	Thickness	Depth
Nothing recorded	3' 0"	3' 0"
Broken sandstone	5' 0"	8' 0"
Nothing recorded	1' 0"	9' 0"
Broken sandstone	14' 0"	23' 0"
Sandstone	6' 0"	29' 0"
Shale with sandstone streaks	4' 0"	33' 0"
Shale with sandstone streaks	5' 0"	38' 0"
Sandy shale	9' 0"	47' 0"
Sandstone	35' 0"	82' 0"
Sandy shale	6' 0"	88' 0"
Sandy shale (red)	3' 0"	91' 0"
Fine sandstone	4' 0"	95' 0"
Shale (red)	3' 0"	98' 0"
Fine sandstone	10' 0"	108' 0"
Sandstone	7' 0"	115' 0"
Shale with sandstone streaks	1' 6"	116' 6"
Sandstone	13' 6"	130' 0"
Shale	0' 6"	130' 6"
Shale and sandstone	0' 6"	131' 0"
Sandstone with coal markings	1' 0"	132' 0"
Sandstone	7' 6"	139' 6"
Conglomerate	0' 6"	140' 0"
Sandstone	3' 6"	143' 6"
Conglomerate	4' 0"	147' 6"
Sandstone with bands of conglomerate	14' 6"	162' 0"
Shale	6' 0"	168' 0"
Sandstone with shale and conglomerat markings	3' 6"	171' 6"
Conglomerate	0' 6"	172' 0"
Broken shale	2' 0"	174' 0"
Broken dark shale	1' 0"	175' 0"
Broken brown shale	1' 0"	176' 0"
Dark shale	2' 0"	178' 0"
Dark shale with coal markings	1' 0"	179' 0"
Shale	2' 0"	181' 0"
Shale with coal markings	1' 0"	182' 0"
Shale with sandstone streaks	6' 0"	188' 0"
Shale	2' 0"	190' 0"
Shale with sandstone streaks	4' 0"	194' 0"

Bore Hole No. 31 cont'd

	Thickness	Depth
Dark shale with light shale layers	10' 0"	204' 0"
Shale with sandstone streaks	4' 0"	208' 0"
Sandstone with shale streaks	2' 0"	210' 0"
Shale	2' 0"	212' 0"
Shale with sandstone streaks	2' 6"	214' 6"
Shale	1' 0"	215' 6"
Sandstone and shale layers	1' 6"	217' 0"
Shale	2' 0"	219' 0"
Broken sandstone with shale streaks	3' 6"	222' 6"
Sandstone with coal	0' 6"	223' 0"
Broken sandstone with coal markings	1' 0"	224' 0"
Broken shale	1' 0"	225' 0"
Broken sandstone and shale layers	2' 0"	227' 0"
Broken shale	1' 0"	228' 0"
Sandstone with coal markings	0' 6"	228' 6"
Shale and coal	0' 2"	228' 8"
Coal	1' 2"	229' 10"
Broken shale	2' 0"	231' 10"
Broken shale with coal markings	1' 2"	233' 0"
Broken shale	1' 6"	234' 6"
Broken shale and coal	0' 6"	235' 0"
Broken shale with coal markings	2' 0"	237' 0"
Broken shale	9' 0"	246' 0"
Broken sandstone with shale streaks	5' 0"	251' 0"
Sandstone with coal markings	1' 0"	252' 0"
Shale	11' 0"	263' 0"
Soft dark shale	1' 6"	264' 6"
Shale with coal markings	0' 9"	265' 3"
Coal	0' 10"	266' 1"
Shale and coal	0' 3"	266' 4"
Shale	0' 8"	267' 0"
Shale and coal markings	2' 0"	269' 0"
Shale	2' 0"	271' 0"
Broken sandy shale	3' 0"	274' 0"
Broken shale with coal markings	0' 6"	274' 6"
Shale and coal	0' 2"	274' 8"
Sandy shale	1' 4"	276' 0"
Soft sandstone (not caving)	7' 0"	283' 0"
Sandstone - speckled with red spots & coal markings	3' 0"	286' 0"
Sandstone - red speckled	1' 0"	287' 0"
Sandstone with coal markings	12' 0"	299' 0"
Broken shale	2' 0"	301' 0"
Broken sandstone & shale with coal markings	0' 6"	301' 6"
Broken fine sandstone	0' 6"	302' 0"
Sandy shale	6' 0"	308' 0"
Shale with coal markings	1' 0"	309' 0"
Broken shale with scattered coal markings	6' 0"	315' 0"
Dark shale with coal markings	0' 6"	315' 6"
Shale	1' 0"	316' 6"

Bore Hole No. 31 cont'd

	Thickness	Depth
Sandy shale	5' 0"	321' 6"
Sandy shale (red)	17' 6"	339' 0"
Broken sandy shale with bands of coarse sandstone	16' 0"	355' 0"
Broken conglomerate	1' 9"	356' 9"
Coal	0' 3"	357' 0"
Sandstone with coal	0' 2"	357' 2"
Broken sandstone	17' 10"	375' 0"
Sandstone	8' 0"	383' 0"
Broken hard sandstone	3' 0"	386' 0"
Sandstone	3' 0"	389' 0"
Hard sandstone	5' 0"	394' 0"
Sandstone with shale streaks	15' 0"	409' 0"
Shale with sandstone markings	2' 0"	411' 0"
Broken shale	1' 0"	412' 0"
Shale	9' 0"	421' 0"

ADDENDUM NUMBER THREE

CUMBERLAND AREA

and

ANDERSON LAKE AREA

BOREHOLE LOGS

(1895 - 1940)

WELDWOOD OF CANADA LIMITED

VANCOUVER-BRITISH COLUMBIA

CUMBERLAND AREA

and

ANDERSON LAKE AREA

BOREHOLES

BOREHOLE NO.	AREA	ELEVATION (FEET)	TOTAL DEPTH (FEET)
1	C-A	489	517
2	C-A	-	533
#	C-A	-	528
4	C-A	-	556
5	C-A	-	401
6	C-A	-	909
7	C-A	-	132
8	C-A	-	150
9	C-A	-	221
10	C-A	-	369
11	C-A	-	405
12	C-A	-	458
13	C-A	-	504
14	C-A	-	664
17	C-A	456	536
18	C-A	-	549
19	C-A	565	375
20	C-A	-	412
21	C-A	445	588
22	C-A	441	1056
23	C-A	485	558
24	C-A	359	-
8D	C-A	-	198
9D	C-A	-	312
10D	C-A	-	637
11D	C-A	-	724
12D	C-A	-	882
13D	C-A	304	991
101	C-A	286	923
102	C-A	323	1017
103	C-A	269	1367
104	C-A	2	1177
105	Anderson	444	1180
106	C-A	323	1020
107	Anderson	267	552
108	C-A	217	1086
109	Anderson	276	289
110	C-A	-	464
111	Anderson	-	464
112	C-A	-	1077
113	C-A	-	1160
114	Anderson	-	561
115	C-A	-	1198
116	C-A	375	681
117	Anderson	-	901

cont'd ...

CUMBERLAND AREA

and

ANDERSON LAKE AREA

BOREHOLES

BOREHOLE NO.	AREA	ELEVATION (FEET)	TOTAL DEPTH (FEET)
118	C-A	-	583
119	C-A	-	1040
120	Anderson	-	1301
121	Anderson	-	640
122	C-A	351	920
123	C-A	287	1575
124	C-A	465	500
125	C-A	494	389
126	C-A	486	853
127	C-A	516	791
128	C-A	409	664
129	C-A	377	614
130	C-A	408	518
131	C-A	408	602
132	C-A	434	500
133	C-A	435	481
134	C-A	445	384
135	C-A	461	275
136	C-A	500	305
137	C-A	655	521
138	C-A	677	585
139	C-A	563	419
140	C-A	546	120
141	C-A	555	80
142	C-A	514	490
143	C-A	393	588
144	C-A	494	268
145	C-A	496	456
146	C-A	498	310
147	C-A	516	389
148	C-A	392	574
149	C-A	507	381
150	C-A	372	857
151	C-A	535	787
153	C-A	438	372
155	C-A	436	608
156	C-A	502	183
157	C-A	470	263
158	C-A	474	342
159	C-A	469	366
160	C-A	493	425
161	C-A	456	268
162	C-A	440	756
163	C-A	438	1034

cont'd ...

CUMBERLAND AREA

and

ANDERSON LAKE AREA

BOREHOLES

BOREHOLE NO.	AREA	ELEVATION (FEET)	TOTAL DEPTH (FEET)
164	C-A	449	1217
165	C-A	442	1144
166	C-A	439	1292
167	C-A	312	1472
168	C-A	339	1862
169	C-A	276	1634
170	C-A	390	1349
171	C-A	370	1445
172	C-A	508	405
173	C-A	466	796
174	C-A	441	1015
175	C-A	563	443
176	C-A	399	1370
177	C-A	322	1399
178	C-A	600	629
179	C-A	440	941
180	C-A	442	738
181	C-A	479	289
182	C-A	497	251
183	C-A	452	49
184	C-A	517	201
185	C-A	212	1322
186	C-A	244	1128
187	C-A	276	1252
188	C-A	-	1950
189	C-A	-	1931
190	C-A	-	1651
191	C-A	-	1879
192	C-A	2187	1455