

PRELIMINARY REPORT ON  
BULKLEY VALLEY COLLIERIES  
GOAT CREEK

J. H. BLACK

FEB. 9<sup>th</sup> 1952

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Preliminary Report on Bulkley Valley Collieries Limited

By J. M. Black

**CONFIDENTIAL**

The following notes constitute a preliminary report on Bulkley Valley Collieries Limited coal property on Goat Creek near Telkwa.

The property includes six lots, 381, 391, 392, 388, 389, and 390, which were Crown-granted in 1911. The writer believes a lease agreement permits Bulkley Valley Collieries Limited to mine the coal but did not check the ownership or agreement.

**CONFIDENTIAL**

Mr. Dockrill started to mine coal on Lot 391 in 1930 and continued doing so until 1937 when he arranged for the formation of the present company which has been mining coal mostly from Lot 391 since 1937.

All production was from No. 1 mine from 1930 to 1943 when No. 2 mine was opened. No. 2 mine is still being operated, but only a small amount of coal in pillars remains to be mined. No. 3 mine was opened in 1950 and most of the coal produced now comes from it. The coal from No. 3 mine is shipped to Columbia Cellulose Company Limited, mostly for use in a steam plant at Port Edward near Prince Rupert, and the remainder to Terrace. The output from No. 2 mine supplies the domestic market of Bulkley Valley.

Approximate Production

	Tons	Period
No. 1 mine	60,000	1930-1943
No. 2 mine	90,500	1943-1951
No. 3 mine	<u>23,500</u>	1950-1951
Total	174,000	

Of the tonnage mined to the end of 1951 95 per cent or more has come from Lot 391. The remainder has come from an extension of No. 2 mine northward into Lot 401. Figure 1 shows the location of the six lots under lease and Figure 2 shows the location of the three mines in Lots 391 and 401 and an area which is considered to be a probable reserve.

Starting in 1943 considerable drilling and trenching have been done to find areas underlain by seams of minable coal. In 1943, drilling by the Federal Government tested an area in the northwest part of Lot 401. The results obtained were not encouraging because the extension westward of seams exposed near Goat Creek have been removed by erosion.

Since 1943 drilling in other parts of Lots 391 and 401 has yielded more encouraging results, and the results from holes drilled southeast of No. 1 mine enabled the management to develop No. 3 mine which is

now in production.

The limits of No. 1 mine were a series of faults that broke the coal and made its extraction very difficult or squeezed the coal in some places from a thickness of 10 to 2 feet. The northwest limit of No. 2 mine was also at faults and to the southwest mining had to stop because the seam had been removed by erosion.

No. 3 mine is southeast of faults that limited the mining of the seam in No. 1 mine towards the southeast. In September 1951 the main slope of No. 3 mine had been driven 325 feet along the seam without faults large enough to disrupt the seam being encountered.

In the area designated as Block A, see Figure 2, the core from each of five holes drilled included at least one seam between 8 and 14 feet thick, that is, at least one seam as thick as the seam mined in No. 2 and No. 3 mines. For this reason it may be assumed that the coal in seams in Block A constitutes a probable reserve. The block has almost twice the areal extent of the outlines of mines 1 and 2 combined, and on the assumption that it may yield on a comparable basis to those two mines, may contain 250,000 to 300,000 tons of recoverable coal.

From No. 3 mine about 25,000 tons had been mined by the end of 1951 and subtracting this amount

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from the estimate reduces it to 225,000 to 275,000 tons at the end of 1951, or sufficient for 90 to 110 months production at 2,500 tons per month, the present rate of mining. The reserve therefore may be expected to last seven and half to nine years if the rate of extraction is not increased.

Squeezing of the seam or faulting may make it impossible to recover the estimated tonnage. On the other hand the presence in some of the cores of more than one seam of commercial importance may mean that it will be possible to mine more than one seam in parts of Block A. A final correlation of the seams in the drill cores has not been made and no conclusion can be drawn now as to the possibility of mining more or less than the estimated 250,000 to 300,000 tons.

There are few natural outcrops in the area except in and near Goat Creek and most of the area is covered with a thick layer of overburden. For this reason it is not possible to outline the extent of the coal-bearing series, but coal occurs at Telkwa River, 2 miles north of the north boundary of Lot 401, and the coal series has been reported to extend up Goat Creek for 3 miles southward from No. 1 mine so it seems probable that most of the six lots are underlain by the coal-bearing series. However the finding of minable seams

will depend upon exploratory work.

The existence of coal seams east of No. 1 mine and southeast of No. 3 mine has been demonstrated by core from drill-holes. Trenches and a few widely spaced holes show that seams occur near Goat Creek in the central and northern part of Lot 401. In addition it is known that coal was mined, before 1930 from a seam that outcrops in Goat Creek just north of the northern boundary of Lot 401. However, many of the holes that have been put down outside of Block A, were drilled to depths of 50 feet or less to try to locate seams close to the surface that could be strip mined. No additional reserves have been proven by drilling though coal has been cored in many of the holes.

Proven reserves blocked out by mine workings in September when the property was examined comprised a small tonnage along the main slope of No. 3 mine and some pillars in No. 2 mine. No estimate can be made of the total reserves or size of the deposit because of lack of information about the extent, continuity, and thickness of seams.

The life expectancy of No. 3 mine may be about seven and a half to nine years or less if the rate of mining is increased, as the management plans to do. If, as seems likely, other minable seams are discovered, coal

may be mined in the area for an indefinite period.

Most of the coal that can be mined from No. 2 mine will be removed by the end of the 1951-52 winter, and therefore the operation of this mine in the future does not require comment.

The seam being mined in No. 3 mine is 10 to 12 feet thick and mining this thickness of coal provides abundant head room for the miners and makes good working conditions. A conveyer-belt system with a capacity for conveying all the coal mined from the working faces to the mine tibble has been installed. An adequate amount of electrical energy is available from the British Columbia Power Commission. From these facts, it may be concluded that the mining of coal in No. 3 mine should be an efficient operation.

The output from No. 2 mine is separated into lump, nut, and slack coals and is sold for \$9.50, \$1.50, and \$7.50 per ton at the mine tibble. Since 1943 about 10,000 tons of this coal has been sold each year.

The run-of-mine coal from No. 3 mine has a high B.T.U. content and is wanted by the Columbia Cellulose Company Limited for burning under its steam boilers. That company is now buying the entire output from No. 3 mine, and the writer understands that the company would like to obtain about 100,000 tons per year. To meet this demand the management of Bulkley

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Valley Collieries Limited is planning to increase its output from No. 3 mine to 250 tons per day. The run-of-mine coal is sold for \$7.25 per ton delivered to coal bunkers at Telkwa.

February 9, 1952



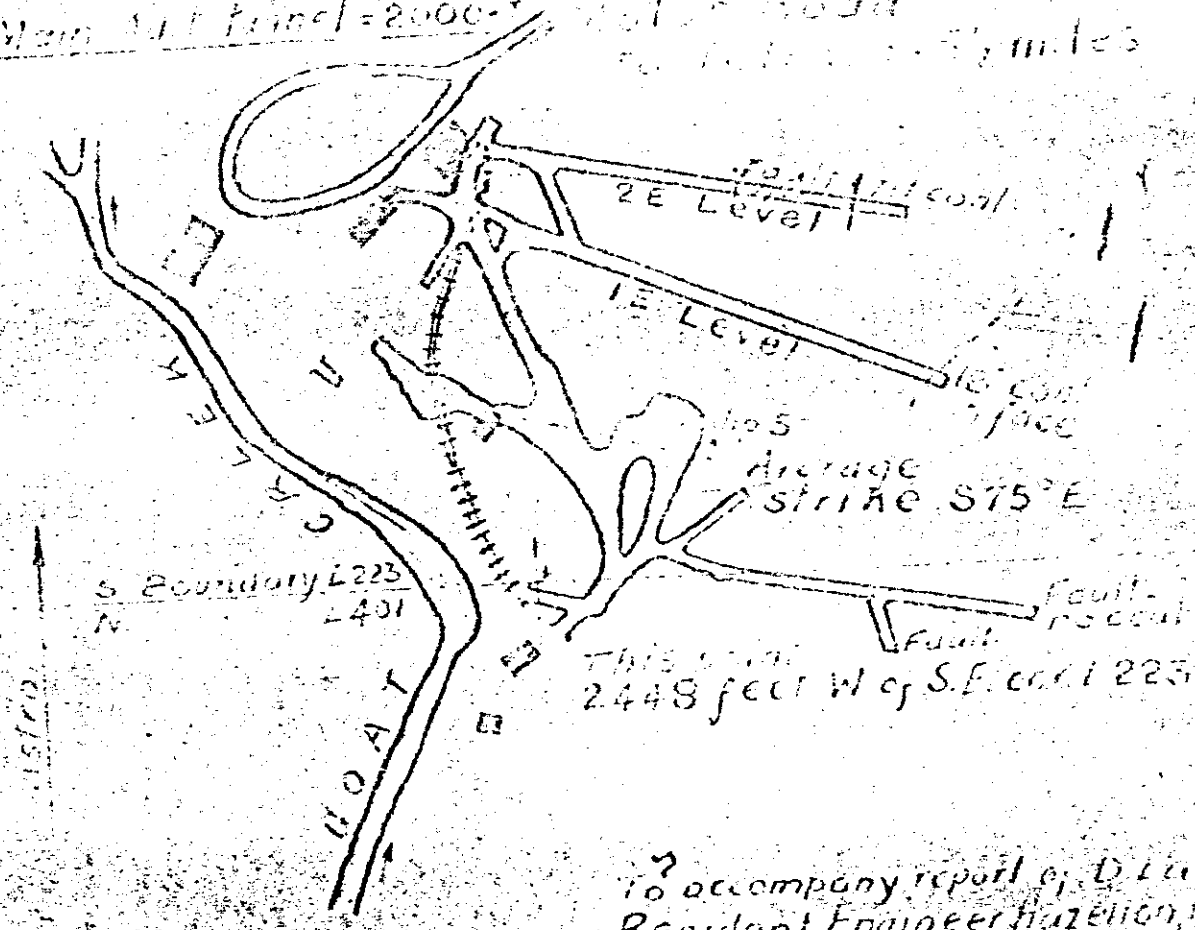


# DELKWA COLLIERIES, LTD.

34-127

El. of Main Mt. Point = 2000'

Dist. to Road 3 1/2 miles



To accompany report of D. L. L. Resident Engineer, Hazelton, 1925

Waltley - falling

Section after leach:	Sediments	10'	43
	Coal	3.5'	
	Sediments	12.0'	
	Coal?	1.0'	
	Sediments	1.5'	
	Coal	2'	
	Sediments	4.0'	
	Coal	5'	
	Sediments	2.0'	
Sediments	1.0'		

Volcanics  
Total coal 43 feet in 384' sediments  
The beds are continuous but  
folded, faulted and cross  
bedded. It's attitudes change  
rapidly.

mining  
mining operations could  
take advantage of these  
irregularities in the coal and  
surface trenching could be  
done quite cheaply & roughly

locate strip areas which  
could be followed by drilling.  
The areas between <sup>43</sup> Boat and  
Texas creeks have enough  
natural exposures to roughly  
give the location of coal bed  
mined in two 4 square and  
there is sufficient coal for  
many years strip operations  
which could be carried by  
a small amount of development.

This coal varies in thickness  
from 4 to 10 feet and, to an  
overburden depth of 30 feet,  
could be mined and hauled  
to Houston <sup>or Galveston</sup> at a cost of \$4.25 per  
ton. This figure could be  
maintained at deeper overburden  
depths if the volume <sup>mined</sup> increased  
to cover the additional stripping  
costs.

Business J. Corp 43

Share

Account 30/100 25/100  
 348 x 30 x 25 = 2500  
 $\frac{348 \times 30 \times 25}{100} = 2500$   
 $\frac{3 \times 3 \times 4}{25} = 1.44 T$

1.75 / T

LIFT

2 April 2000

30

Change to Shares

(1.10 Per Share Cost -  
 Expenses)

15

How to Share

(5 1/2 per 100)

1.50

Advances, 1/100

15 3.30

Continued 10%

40  
 4.25 / T

# Buckley Valley Collieries

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## Crew.

- 1 manager
- 1 Bookkeeper & weighmaster
- 2 Development Crew - Fenching & drilling
- 1 Ojorman and bullcock.
- 1 electrician
- 2 mechanics
- 2 crushermen - crushing & screening
- 3 pit truck drivers
- 1 Bulldozer operators <sup>stopper</sup>
- 2 shovel operators
- 6 haulage truck drivers
- 2 miners - pit blasting & control.

25 men      160 Tons per day  
50,000 Tons per year

## Costs

Wages	\$500 per day	\$150,000/yr
Equipment	\$1,200 per day	72,500/yr
Total	\$1,700 per day	212,500/yr

Smithy Hill

Section after leach:	Sediments	10'	B
	Coal	35'	
	Sediments	120'	
	Coal	13'	
	Sediments	15'	
	Coal	2'	
	Sediments	40'	
	Coal	5'	
	Sediments	20'	

Sediments 10' unconformity

Volcanic

Total coal 43 feet in 384' sediment  
The beds are continuous but  
faded, faulted and  
bedded. The altitudes change  
rapidly.

mining

mining operations could  
take advantage of these  
irregularities in the coal and  
surface trenching could be  
done quite cheaply to roughly

locate strip areas which  
could be followed by drilling.  
The areas between Gant and  
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natural exposures to roughly  
give the location of coal bed  
mined in two 4 mile and  
there is sufficient coal for  
many years strip operations  
which could be carried by  
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This coal varies in thickness  
from 4 to 10 feet and, to an  
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maintained at deeper overburden  
depths if the volume increased  
to cover the additional stripping  
costs.



B. ...

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S. ...

Account ...

... ..

$$\frac{313 \times 30 \times 25}{27} = \frac{7200}{27} =$$

$$\frac{3 \times 3 \times 4}{25} = 1.44$$

1.75 / T

30

LIFT

2 Men + ...

CROSS & ...

(Mr. ...)

15

Have to ...

(3 ...)

1.50

Administrative ...

15 3.35

... .. 10%

40

4.25 / T

# Bulpley Valley Collieries

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## Crew:

- 1 manager
- 1 Bookkeeper & weighmaster
- 2 Development crew - Fronding & drilling
- 1 Dry room and bullcock
- 1 electrician
- 2 mechanics
- 2 crushermen - crushing & screening
- 3 pit track drivers
- 1 Bulldozer operators
- 2 shovel operators
- 6 haulage truck drivers
- 2 miners - pit blasting & control.

25 men      160 Tons per day  
50,000 Tons per year

## Costs

Wages	\$500 per day	\$150,000/yr
Equipment	\$1,800 per day	72,500/yr
Total	\$680 per day	212,500/yr

2290 West 23rd Ave.,  
Vancouver, B. C.  
January 19th, 1966.

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Mr. J. D. Carnahan,  
General Manager,  
Bulkley Valley Collieries, Ltd.,  
Telkwa, B. C.

Dear Mr. Carnahan:

The following summarizes my conclusions from the 34 days of work which I recently have concluded as a consulting engineer for Bulkley Valley Collieries:

1. Past mining, trenching, and drilling on acreage owned by the company and under royalty lease from the Province contains a sizeable tonnage of high grade bituminous coal that can be strip mined.
2. I estimate that this contains more than 2,000,000 tons of recoverable coal and that including all mining, processing, transportation, and royalty costs together with a reasonable operating profit, that it can be laid down in Houston, B. C. for a cost of 25¢ per million British Thermal Units.
3. This compares to the cost of natural gas delivered to the pulp mill in Prince George of 42¢/Million BTU, and of bunker C oil delivered to the pulp mill in Prince Rupert of 41¢/Million BTU.

42¢  
Feb Prince George  
Bunker C @ 2.73/100  
Prince Rupert  
41¢ 6.5 x 10<sup>6</sup> BTU

In view of the significant annual saving that this coal will yield there is an opportunity to sell coal to the Houston pulp mill and thereby establish a healthy mining operation providing permanent employment for 25 men.

To realize this, I recommend that the following steps be taken to provide irrefutable proof to Bowaters-Bathurst that they can obtain this saving through burning coal:

1. Trenching and shallow diamond drilling should be done on tight spacing to completely prove out this tonnage.

2. Strip mining production should be started at a rate not less than 25,000 tons per year, thereby demonstrating to Bowaters-Bathurst the ability of Bulkley Valley Collieries, Ltd. to mine, process, and deliver coal to them at a rate approximating their requirement which is 50,000 tons per year.

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Conversation with Sandwell Engineering who are consulting to Bowaters-Bathurst indicates that design of the Houston mill will be finalized in 1967. If this design is to include a coal burning furnace it is essential that the above recommended drilling and strip mining production be in hand by that time.

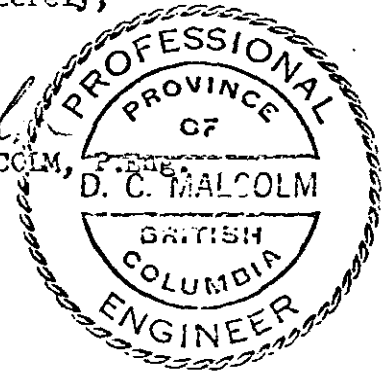
I suggest in approaching this that you understand clearly that the initiative to prove the attainability of this heat saving rests squarely with Bulkley Valley Collieries.

At the time of their final design Bowaters-Bathurst will simply take the least costly fuel which they can see is readily available.

Yours sincerely,



D. C. MALCOLM, P. Eng.



DCM:lr

This is to certify that I have no beneficial interest in Bulkley Valley Collieries;

That I am a registered geological engineer in the Province of British Columbia;

That my principal experience was gained as Senior Exploration Engineer for Consolidated Mining & Smelting Company from 1946-1955, where I was responsible for this company's mineral exploration in British Columbia;

That I also served as Resident Geologist for Phelps Dodge Corp. of Canada, Ltd. from 1958-1962, where I was responsible for mineral exploration of this company conducted in British Columbia.



D. C. MALCOLM, P. Eng.

FILE No. 2883

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CABLE ADDRESS "ELDRICO"

September 21, 1960

Bulkey Valley Collieries Ltd.,  
Telkwa,  
B.C.

Dear Sirs:

We have made analyses on sample of coal submitted  
and report as follows:

	<u>As Received</u>	<u>Dry Basis</u>
Moisture .....	1.4%	
Volatile matter .....	28.4%	28.8%
Fixed Carbon .....	59.4%	60.2%
Ash .....	10.8%	11.0%
	<hr/>	<hr/>
	100.0%	100.0%
Sulphur .....	1.98%	2.01%
Calorific value BTU's/lb.....	13,320	13,510

Respectfully submitted,  
G.S. ELDRIDGE & CO. LTD.

R.H. McIntosh  
Chief Chemist

RHMcI\*jl