

OPEN FILE

TK-GOATHORN CREEK 65(1)A

TELKWA COAL BASIN

D.C. MALCOLM

JAN. 1966

GEOLOGICAL BRANCH
ASSESSMENT REPORT

00 250

250
~~CONFIDENTIAL~~

Section
 after
 Leach.

Sediments 30'
 Coal 35'

Sediments 120'

Coal 13'

Sediments 15'

Coal 2'

Sediments 40'

Coal 5'

Sediments 20'

Sediments 10'

unconformity

Volcanics

Total coal 43 feet in 384' section.

The beds are continuous but
 folded, faulted and cross
 bedded. Its attitudes 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 East and
Texas creeks have enough
natural exposures to roughly
give the location of coal bed
mined in No 4 mine and
there is sufficient coal for
many years strip operations
which could be outlined 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, at a cost of \$4.25 per
ton. This figure could be
maintained at deeper overburden
depths if the volume ^{mined} increased
to cover the additional stripping
costs.

Business Dr. Cost

STAIRS

Area 30' x 25' = 750
 Thickness of Stair 4"
 $\frac{3 \times 3 \times 750}{27} \times 2.1 = \frac{750}{27} = 27.78$
 $\frac{3 \times 3 \times 4}{27} = 1.44 T$

1.75 / T

LIFT

2 Apr to June

30

CRUSH & SCREEN

(No. Per Day Cost Estimate)

15

HAUL TO ROAD

(6 ft / min x 25 min)

1.50

ADMINISTRATIVE

15 / 3.8

CONTINGENCY @ 10%

40
4.25 / T

Bulpley Valley Cellar

Crew.

- 1 manager
- 1 Bookkeeper + weighmaster
- 2 Development Crew - trenching & drill
- 1 Dryman and bullock.
- 1 electrician
- 2 mechanics
- 2 crushmen - crushing & screen
- 3 pit truck drivers
- 1 Bulldozer operators ^{skipp}
- 2 Shovel operators
- 6 haulage truck drivers
- 2 miners - pit blasting center

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

Costs

Wages	\$ 5.00 per day	\$ 150,000
Equipment	\$ 1.80 per day	72,500
Total	\$ 6.80 per day	212,500

locate strip areas which
could be followed by drilling
the areas between East and
Texas creeks have enough
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 entered 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, ^{or Telford} at a cost of \$4.25 per
ton. This figure could be
maintained at deeper overburden
depths if the volume ^{mined} increased
to cover the additional stripping
costs.

Basement Or Cost

STAIR

1. Assume 50' x 25' (1000 sq ft)
 1. Thickness of Slab 4"

$$\frac{5 \times 5 \times 50 \times 25 \times 25}{27} = \frac{72250}{27} =$$

$$\frac{5 \times 5 \times 4}{27} = 1.44 \text{ AT}$$

1.75 / T

LIFT

2 More to Slab

30

CRUSH & SAND

(No. Poles Down Cost Equipment)

15

Haul To Red Hill

(6 ft/min x 25 mi)

1.50

ADMINISTRATIVE, PLAN

15

CONTINGENCY @ 10%

40

\$ 1.75 / -

Bulpley Valley Cellar

Crew

- 1 manager
- 1 Bookkeeper & weighmaster
- 2 Development Crew - trenching & drill
- 1 Dryman and bullock
- 1 electrician
- 2 mechanics
- 2 crushermen - crushing & screen
- 3 pit truck 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

<u>Costs</u>			
Wages	\$500 per day	\$	150,000
Equipment	\$1,80 per day		72,500
Total	\$680 per day		212,500

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

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.

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. *42¢ million BTU for Fob Prince George*
Bunker C @ 3.70/bbl
Prince Rupert
bbl. 6.5 x 10⁶ B.T.U.
Estimated Annual Saving 300,000 x 400,000

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.

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

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
D. C. MALCOLM, P. Eng.



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PHONE MUTUAL 4-1267
CABLE ADDRESS "ELDRICO"

September 21, 1960

Bulkley 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

Section see Koch's Report

McAdams Report.

#2. Three areas. if coal continues @ 4' thickness
the coal recoverable by strip mining is 2,000,000 tons

25¢ per 10⁶ BTU

Assume. Cal Val = 10,000 BTU/lb

Mine run expense 13,000 BTU/lb

Dilution allowed to reduce to 10,000 BTU/lb.

Transportation \$1⁵⁰/ton. assumes 2 1/2 mi haul
6' ton/mi

6' assumes hauled on highway by highway trucks
if mill is in Houston, new road would be cut
off highway, allowing oversize road for timber
haul. would reduce 6' rate

if

Lift 30' or based on 60' cut off.

Seam thickness assumed 4' stripping ratio 7:1

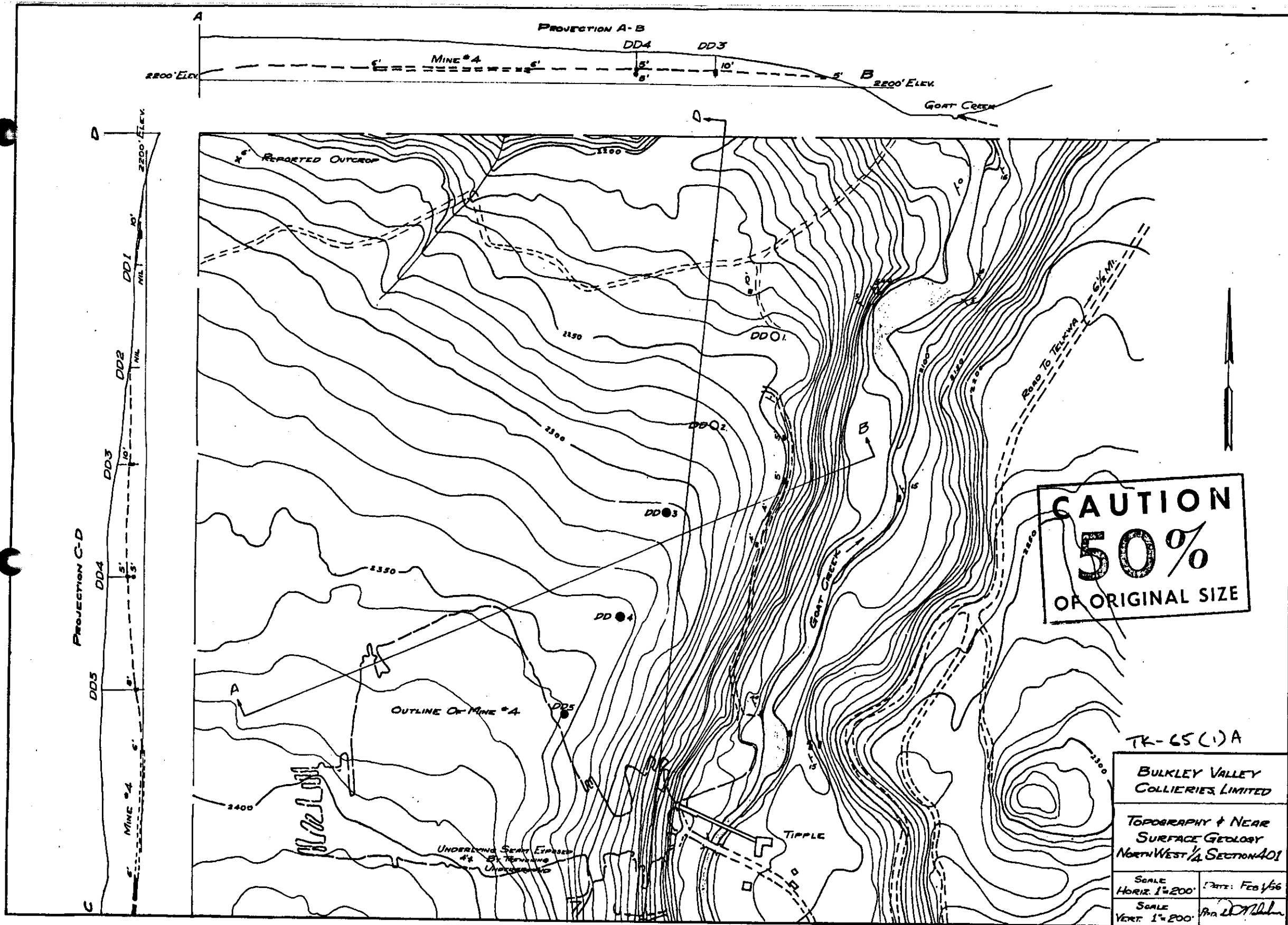
" could range to 10'

stripping ratio would be 3:1 @ that thickness

Royalty to Gov't to come out of after 12 75¢/ton
for profit.

Royalty would have to be paid on coal from land
now being acquired from the Gov't.

#3. 42' log comes from Harold - Adam Zimmerman. Ver. feasible through
Harold Wright.



CAUTION
50%
 OF ORIGINAL SIZE

TK-65(1)A

**BULKLEY VALLEY
 COLLIERIES LIMITED**

TOPOGRAPHY & NEAR
 SURFACE GEOLOGY
 NORTHWEST 1/4 SECTION 401

SCALE HORIZ. 1"=200'	DATE: FEB 1956
SCALE VERT. 1"=200'	BY: [Signature]