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ENGINEERING REPORT ON LOT 166

MERRITT COALFIELD

BY

R. B. Bonar, Prof. Eng.

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4465 Dolores Place  
Victoria, B. C.  
October 10, 1967

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President, Imperial Metals  
and Power Ltd.  
Suite 501-535 Thurlow Street  
Vancouver 5, B. C.

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Bear Sir:

Enclosed is my report covering the plan and **vertical** sections of Lot 166, **which** was sent to you on Friday, October 6th. **The** sections are tracings and you can make as many copies as **desired**.

At the apex of the fold there are definite possibilities of strip mining, but the tonnage of coal that could be available to this type of mining will have to be proved by future drilling.

If **there are** any questions regarding the report, please give me a ring.

Pours very truly,

Robert B. **Bonar**, Prof. **Eng.**

Enc.

## ENGINEERING REPORT ON LOT 166, MERRITT COALFIELD

This report will deal **exclusively** with the area of Lot 166 from the **vicinity** of No. 3 North mine to Coldwater Hill. It is **obvious** that if Lot 166 is to be proven to have adequate **reserves** of coal to support a large operation, then the area stated above **is** the key and further diamond **drilling** will be necessary.

To facilitate the **spotting** of **drill** holes, the geology of the area was worked out from the **information** gained from previous **drill** holes and from the old mines in the area.

The **geological** structure at No. 3 North mine from the gravel road to the Coldwater River is a flat lying **syncline** with the **limbs** **pitching** to the northeast and southwest at about 30 degrees. If these **pitches** hold true then the four seams of coal believed to be below the No. 6 seam (No. 3 North mine) will outcrop at **approx-**  
**imately** the lines drawn on the plan. The **vertical** section D-D1 indicates this trend. It would also **explain** why the No. 14 diamond-drill hole did not intersect **any** coal seams.

The **vertical** section at Coldwater Hill indicates that the **seams** are rising **moderately** to the southwest and form a **fold** with the northeast **limbs** of the **syncline**. Nos. 8 and 4 seams are eroded as indicated by the hatched **lines** above the land surface. The fold would appear to plunge fairly gently in a **northwesterly** **direction**, flattening out as it approaches the northern boundary of Lot 166. **Vertical** section E-E1 indicates this flattening out trend.

In the Coldwater Hill area the diamond-drill hole No. 2, drilled to 842 feet, appears to have encountered no seams of coal of economical importance. However, when checking this hole with No. 3 hole, 300 feet to the west, it is **apparent** that the **results** as found do not check and I feel that one or both of these holes are not to be **relied** on.

### RESERVES

As indicated on the plan the **potential** reserves of the area enclosed by the orange **lines** are about 28,000,000 short tons. These reserves were calculated using a coal thickness of 31 feet which **included** Nos. 8, 4 and 1 seams and excluded No. 5 seam. However, this latter seam could prove to be of **value** and would substantially add to the reserves.

It must be understood that the calculated **reserves** are potential only. The **geological** structures as **shown** on the **plan** and **sections**, together with the seam **thicknesses**, must be proved by diamond **drilling**. The stratigraphical intervals and seam thickness are as shown in Mr. James Dickson's report on the area.

NORTH SECTION OF LOT 4

There is little or no information concerning this area which would enable one to draw any reasonable conclusion, however, I feel certain that the area contains the coal measures and future geological study and drilling could prove additional reserves.

RECOMMENDATIONS

It is recommended that drill holes Nos. 1A and 2A as shown on the plan and sections be drilled to prove the geological structure and seam thicknesses. The holes are shown inclined, being at right angles to the estimated pitch of the seams. This will lessen the cost of the holes.

Respectively submitted,

R. E. Bonar, Prof. Eng.

October 1967

## ENGINEERING REPORT ON LOT 166, MERRITT COALFIELD

This report will deal exclusively with the area of Lot 166 from the vicinity of No. 3 Mosth mine to Goldwater Hill. It is obvious that if Lot 166 is to be proved to have adequate reserves of **coal** to support a large operation, then the area stated above is **the** key and further diamond drilling **will** be necessary.

To facilitate the spotting of drill holes, the geology of the area was worked out from the information gained from previous drill holes and from the old mines in the area.

The geological structure at No. 3 North mine *from* the gravel road **to the** Goldwater River is a flat lying **syncline** with the limbs pitching to the northeast and southwest at about 30 degrees. If these pitches hold true then the four seams of coal believed to be below the No. 6 seam (No. 3 North mine) will **outcrop** at approximately the lines drawn on the plan. The vertical section **D-D1** indicates this trend. **It** would also explain why the No. 14 **diamond-drill hole** did not intersect any coal seams.

The vertical section at Coldwater Hill indicates that the seams are rising moderately to the southwest and form a fold with the northeast limbs of the syncline. Nos. 8 and 4 seams are eroded as indicated by the hatched lines above the land surface. The fold would appear to plunge fairly gently in a northwesterly **direction**, flattening out as it **approaches** the northern boundary of Lot 166. Vertical section **E-E1** indicates this **flattening** out trend.

**In the** Goldwater Hill area the diamond-drill hole No. 2, drilled to 342 feet, appears to have encountered no seams of coal of economical importance. However, when checking this hole with No. 3 hole, 300 feet to the west, it is apparent that the results as found do not check and **I** feel that one or both of these holes are not *to* be relied on.

### RESERVES

As indicated on the plan the potential reserves of the area enclosed by the orange **lines** are about **28,000,000** short tons. These reserves were calculated using a coal thickness of 31 feet which included Nos. 8, 4 and 1 seams and excluded No. 5 seam. However, this latter seam could prove to be of value and would substantially add to the reserves,

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**R. B. Bonar, Prof. Eng.**

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