

RESULTS OF PHOTO-GEOLOGIC STUDY
SUKUNKA COAL FIELD
BY
V. HULBERT

OPEN FILE

GEOLOGICAL BRANCH
ASSESSMENT REPORT

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OPEN FILE ORIGINAL

RESULTS OF PHOTO-GEOLOGIC STUDY

SUKUNKA COAL FIELD

FOR

BRASCAN RESOURCES LIMITED

by

V. Hulbert

HULBERT & THOMSON CO. LTD.

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INTRODUCTION

A 5-day stereo-study-of aerial photographs has been undertaken with the objective of defining potential open pit reserves in the vicinity of the Brascan option area in the Sukunka River coal field. The results contained in this report are based in part on knowledge gained from others, but is largely the result of interpretations and impressions gained from the photographic study. Therefore, the results are subject to error and omission. However, it is believed that the most likely target areas for open pit coal in reasonable proximity to the proposed preparation plant have been defined and are worthy of further investigation under the terms outlined in this report.

SUMMARY

The geographic locations of potential open pit areas are related to the formations containing these reserves. The following areas have potential for surface mining:

- A. The highlands between Skeeter and Chamberlain Creeks are underlain by the Gates member of the Commotion formation. The interpreted outcrop of B seam has been plotted on the 1000-ft scale mapping. There is every indication of a moderate dip slope situation for the B seam horizon in the western area of the lands containing this coal. Pending more definite structural mapping, and assuming ten net feet of coal in the seam, there would appear to be a good prospect for up to two million tons of open pit coal in this area.

B. Skeeter - Chamberlain Seams.

Apart from the known outcrop areas of these seams in plates 1 to 4 inclusive, in the northern end of the explored area, there is no other apparent open pit potential for these seams. However, there is some photographic evidence that these seams may underlie the topographic terrace between the present mine portal area and Skeeter Creek. A fault is postulated to accommodate this supposition. Similarly, erosional remnants of the seams may be present in the vicinity of the gas well on the north side of the creek.

On this basis there appears to be some potential for low cover reserves of the two seams on both sides of Skeeter Creek. In situ reserves should be in excess of two million tons for the combined remnant areas

C. Middle Coal.

1) Burnt River - Sukunka River. The very preliminary photo study indicates a large portion of this area is underlain by near-surface strata of the lower sequence of the Gething Formation. Structure varies from moderate to extreme, with a preponderance of the former attitudes. If the "Middle Coal" of suitable quality and thickness, can be found in the area, there is a good possibility of establishing extensive reserves of open pit coal west of the Sukunka River.

2) Dip slope into Sukunka Valley near proposed plant site. A north-trending, west-dipping fault is postulated to surface some distance up the hill from the plant site. The lower reaches of the hill are underlain by the "Middle Coal"-bearing Lower Gething sequence, which has been thrust over the basal sandstone of the Upper Gething. Depending upon seam attitude, there is a fair possibility of defining a dip slope shovel and truck situation in these reserves. The deeper reserves could be amenable to

underground hydraulic mining.

The projected trace of the fault would indicate minimal reserves near valley floor to the north of Skeeter Creek.

RECOMMENDATIONS

No conclusive qualitative data are available for the Gates "B" seam or the "coaly horizons" in the Lower Gething sequence. However, there is every indication that the Gates coal is of adequate coking quality.

Analyses of the Lower Gething coal (DDHM-1A) show excellent ash and washability characteristics, with considerable doubt being cast on the coking quality.

Before any extensive exploratory effort is expended in either of these seams, the quality of both should be accurately defined by means of analysis of bulk and detailed channel samples of the unweathered coals. These samples should be taken from the previously outlined areas of interest. If analytical results are favorable, exploration programs should be conducted to define structure and reserves for each area. Exploration in each area should be staged to allow a re-assessment of economic viability between stages.

Gates Member - B Seam

Assuming governmental approval, it is suggested that the seam outcrop be defined by means of a bulldozed road along the roof contact of the seam. New aerial photographs should then be obtained and the outcrop configuration subsequently transcribed from the photos to the existing one-thousand-foot-scale mapping. A preliminary structural interpretation should be made from this information, along with definition of surface and underground mineable reserves. These data will be adequate for decision on whether to proceed with a full-scale exploration program on the property. Mapping on a scale of 1 inch to 200 ft would be necessary at this stage.

Middle Coal

1. Sukunka - Burnt River Area

Prior to any sampling procedures it will be necessary to confirm the existence of the Lower Gething sequence in the area. The Cadomin and Lower Gething conglomerates could be useful correlatable horizons. Assuming positive results, an attempt should be made to locate the Middle Coal outcrop for a sample adit. Based on the photostudy, the area in the vicinity of military grid reference 805225 appears to hold promise for this procedure. No further action should be taken until qualitative analyses are available for this coal. Coking tests of various blends of this coal and younger coals from the area should be included in this assessment. With favorable results, a Stage II exploration approach similar to the one proposed for the Gates member, could be implemented.

2. Dip Slope Near Plant Site

Due to the proximity to the plant site, this area could provide a valuable supplemental tonnage to the underground operation. It is recommended that an unweathered bulk sample be obtained from the seam for washing and coke blend testing. If results are favorable, an exploratory drilling program should be instituted to define structure, and thence the open pit and underground hydraulic mining potentials.

3. Skeeter and Chamberlain Seams

Weathering would appear to be the only problem, related to quality, of these seams in open pit mining. Therefore, exploration should be oriented towards definition of structure and economic reserves within the prescribed areas. Once the outcrop configurations have been located, an assessment of depth of oxidation can be made through incremental sampling and testing from outcrop at representative locations.

The following exploration procedure is suggested:

- 1) Definition of seam outcrop configuration be obtained through a combination of field traverse, bulldozer trenching, and photographic study;
- 2) Testing of depth of oxidation by means of shallow drill holes and/or trenching;
- 3) Structural mapping on 1000-ft scale;
- 4) Reserve estimates based on above;
- 5) Assessment of economic viability;
- 6) Obtain 200-ft mapping;
- 7) Accurate definition of structure, seam isopachs, and reserves, by drilling combined with previous information.