



# **Crows Nest Resources**

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April 15, 1986

Ministry of Energy, Mines & Petroleum Resources  
525 Superior Street  
Victoria, B.C.  
V8V 1T7

Dear Sirs:

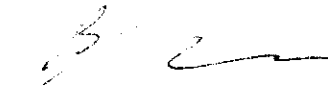
Enclosed please find our report on the Burnt Ridge Extension Project.

This report has been prepared by Mr. B. McKinstry, an employee of Crows Nest Resources Limited.

Mr. B. McKinstry, M.Sc., graduated in Geology from Carleton University, Ottawa in 1971. Prior to graduation, Mr. McKinstry worked as an assistant for a major mining firm and after graduation as a geologist with a mining firm, a research assistant at Carleton University and a geologist with a consulting firm. Mr. McKinstry has been employed by Crows Nest Resources Limited as a Staff Geologist since 1981, and is a member of the Association of Professional Engineers, Geologists and Geophysicists of Alberta.

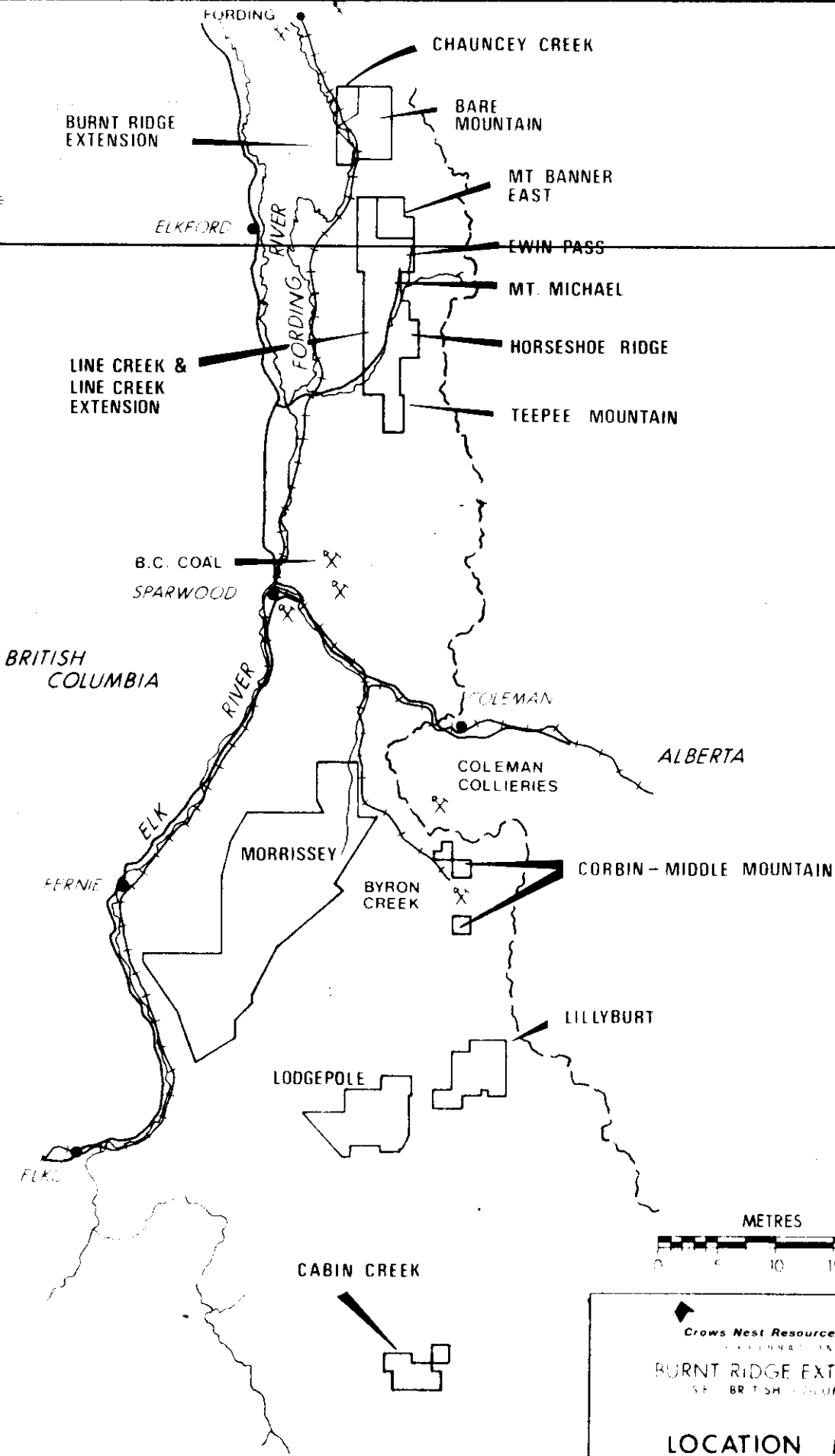
I consider the aforementioned geologist to be well qualified to undertake the responsibilities assigned on this project. I am satisfied that the attached report has been competently prepared and justly represents the information obtained from this project.

Yours very truly

  
B.C. Ryan, P. Geol.  
Manager - Geology

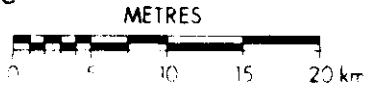
Enclosure

716



82J

82G



**Crows Nest Resources Limited**  
 INTERNATIONAL  
**BURNT RIDGE EXTENSION**  
 S.E. BRITISH COLUMBIA

**LOCATION MAP**

BY KENDE  
 MAP  
 AA-860

BURNT RIDGE EXTENSION

GEOLOGICAL REPORT ON COAL LICENCES  
272, 273 and 267

KOOTENAY LAND DISTRICT, BRITISH COLUMBIA

B.C. COAL LICENCE NUMBERS: 272, 273 AND ~~274~~ <sup>276</sup>

GROUP NUMBER: PART OF GROUP 214

OWNER: SHELL CANADA LIMITED

OPERATOR: CROWS NEST RESOURCES LIMITED

NTS: 82J/2

LONGITUDE: 114° 49' WEST

LATITUDE: 50° 05' NORTH

*WORK DONE JUNE - OCT 1985*

REPORT PREPARED BY:

B. McKINSTRY, P.GEOL. (Alta.)  
STAFF GEOLOGIST  
FEBRUARY, 1986

# BURNT RIDGE EXTENSION

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## 1.0 SUMMARY

Burnt Ridge Extension is the property name assigned by Crows Nest Resources Limited (CNRL) to a block of 3 coal Licences in Southeast B.C. The property is 10 air kilometres northeast of Elkford on the west side of the Fording River.

In this region coal-bearing rocks of the Jura-Cretaceous Kootenay Group are preserved in the core of the north trending Alexander Creek Syncline (Fording Syncline). This remnant of contiguous coal-bearing rocks is referred to as the Elk Valley Coal Field. (Pearson and Grieve 1980). There are three major coal mines located in the Elk Valley coal field; the Fording Mine 4 km to the north; Greenhills Mine 3 km to the west, and the Line Creek Mine 20 km to the south of Burnt Ridge Extension. The road and rail transport routes to the Fording Mine follow the Fording Valley at the eastern edge of the property.

The Kootenay Group is divided into three formations (Gibson 1979), a lowermost Morrissey formation, a middle Mist Mountain formation and an upper Elk formation with the Mist Mountain formation containing mineable quantities of coal. A complete section of Mist Mountain formation averaging 412m crops-out on the property. It contains an aggregate thickness of 62m of coal distributed in 13 coal seams or zones. Rank of the coal varies from medium to high volatile bituminous.

Strata on Burnt Ridge Extension dip 45° to 65° east, 5° to 30° steeper than the topographic slope which forms the west side of the Fording River Valley; the property is therefore amenable to open pit mining.

The in place coal resource for the property is about 80 million tonnes down to the elevation of the Fording River. Mineable reserves based on open pit geometry are about 63.0 million tonnes with a stripping ratio of 4.7 to 1 using a 1.5 specific gravity for coal in place. This pit has its west wall on the base of the 4 lower seam and descends eastward to an elevation of 1490 meters at its deepest level.

The 1985 exploration program included the drilling of 1 cored HQ size diamond drill hole and subsequent quality sampling. The total expenditure for the 1985 exploration program was \$64,397.12.

A 1986 exploration program, incorporating more road construction detailed geological mapping, and a diamond drilling program, is planned.



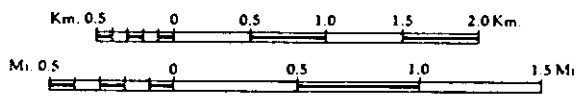
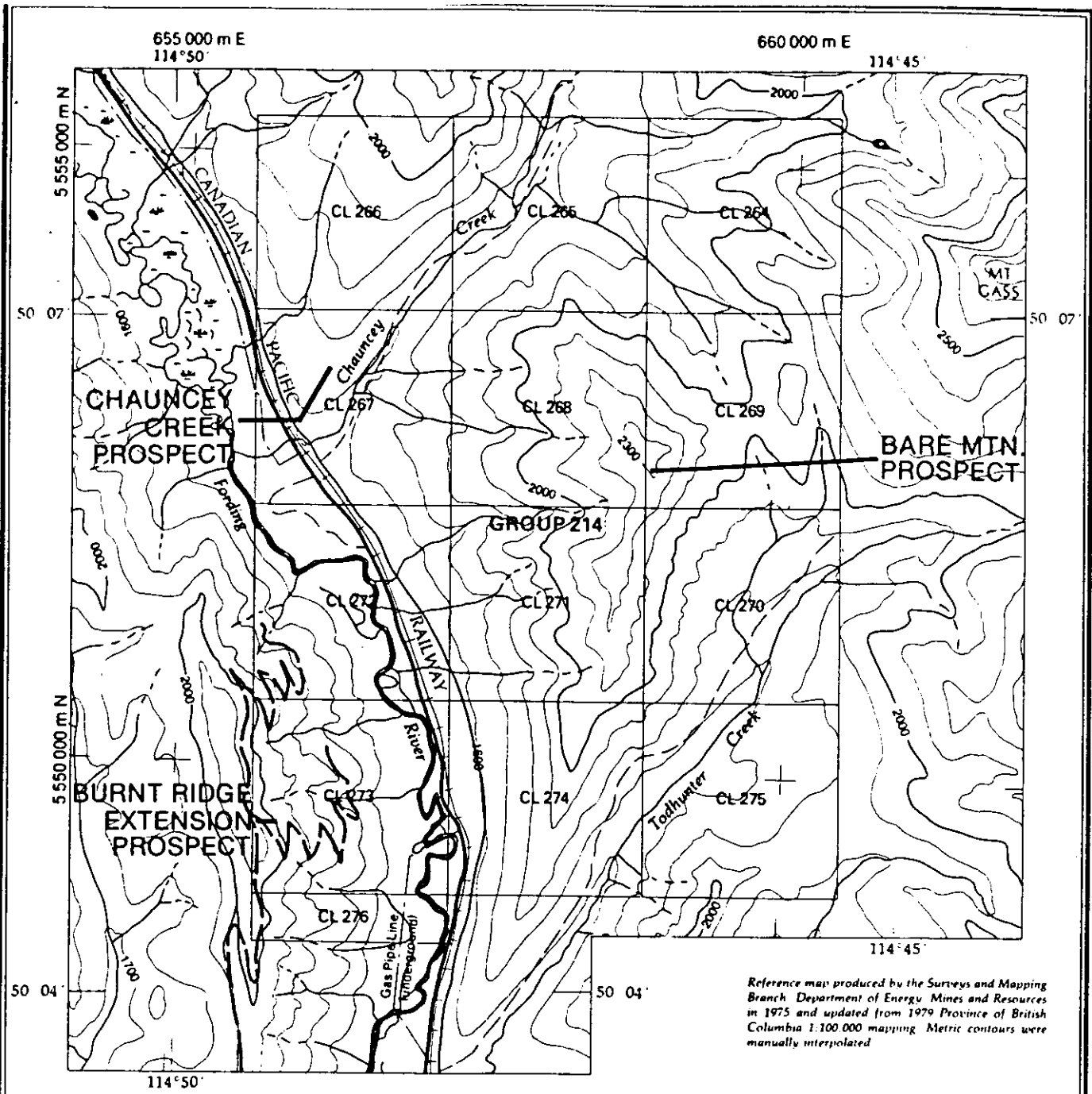
## 2.0 INTRODUCTION

### 2.1 Location, Physiography, Access (Enclosure 2)

Burnt Ridge Extension coal property which forms part of CNRL's "North Block" of coal licences is located in southeast B.C., 10 km northeast of Elkford. Latitude 50° 05' and longitude 114° 49' intersect on the property.

North Block is located in the physiographic region referred to as the Front Ranges of the Rocky Mountains (Holland 1964). The property covers part of a north trending ridge on the west side of the Fording River. The west side of the ridge is grass covered and dips more steeply than the east slope which except for patches is treed. The maximum height of the ridge is 2100m. A linear drainage pattern is established on the east slope where creeks are mostly small and seasonal. These creeks flow directly into the Fording River which meanders through a 1 km wide valley whose elevation is about 1540m.

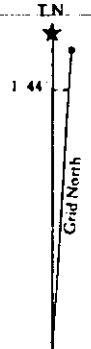
A paved road connects Elkford to Sparwood. The Fording Mine has constructed a paved road from Elkford to their mine site 4km north of Burnt Ridge Extension and 22 km from Elkford. This road and a parallel CPR rail line traverse the property where it overlies the Fording River Valley. Access to the ridge crest and upper slopes of the property is by a four wheel drive road which branches off the Fording Mine road 3 km south of the property.



Contour Interval 100m  
Transverse Mercator Projection  
Universal Transverse Mercator Grid Zone 11

ENCLOSURE 2

- Legend**
- Road; Highway, Main road
  - Road; Loose surface, Dry weather
  - Track or trail
  - Railway
  - River
  - Stream
  - Contours
  - Licence boundary
  - Access road (four wheel drive)



**Crows Nest Resources Limited**  
EXPLORATION

**BURNT RIDGE EXTENSION**  
S.E. BRITISH COLUMBIA

**ACCESS MAP**

NTS 82J/2

|                    |               |               |
|--------------------|---------------|---------------|
| AUTHOR DR. B. RYAN | SCALE 1:30000 | ENCLOSURE NO. |
| DATE 82-01         | REVISED       | AA-812        |
| TO ACCOMPANY       |               |               |

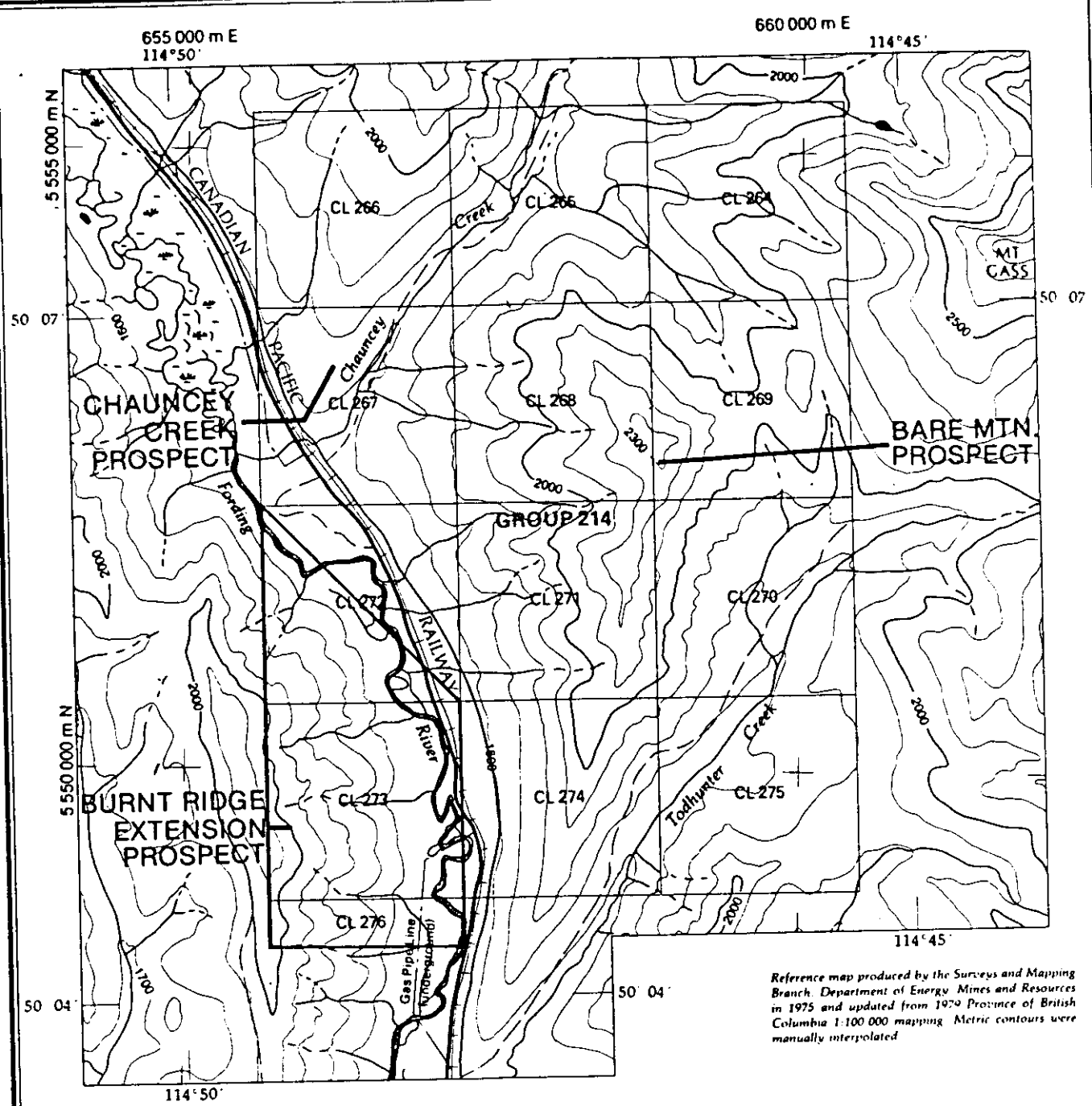
## 2.2 Coal Land Tenure/Property History

Burnt Ridge Extension forms part of CNRL's North Block Group 214 which comprises licences 264 to 276 inclusive. Burnt Ridge Extension is made up of 3 of these licences (276, 273 and 272) (Enclosure 3). The licences are held by Shell Canada Limited and are operated by its wholly owned subsidiary Crows Nest Resources Limited. Shell acquired the licences in 1978 when it acquired Crows Nest Industries (CNI) through purchase. CNRL personnel started mapping North Block in 1978 (Horachek and Fietz 1979), while more detailed mapping was undertaken in 1980 (Morris, 1981). In 1981 a major program of detailed geological mapping (scale 1:2000), road construction and drilling was undertaken (Ryan, 1982). The 1985 program has consisted of drilling a 323 meter HQ diamond hole on previously constructed road. The total cost of exploration on Burnt Ridge Extension in 1985 was \$64,397.12.

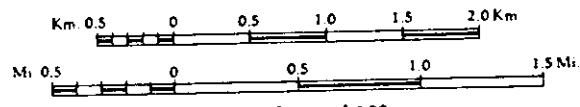
An application to extend term of licence is included (Enclosure 13).

## 2.3 Summary of 1985 Exploration Activities

The program was initiated on June 18, 1985 with mobilization of a D8K caterpillar tractor to upgrade existing access roads to the proposed drill site. A Longyear 44 drill rig was skidded to the site and drilling commenced on June 20, and was completed June 30. A total of 323 meters of HQ core was retrieved, sampled and stored at the Line Creek Mine storage facility. In October, the Line Creek reclamation department installed drainage berms and reseeded the access road to the drill site. All exploration activity occurred within licence 273.



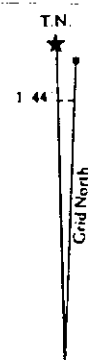
Reference map produced by the Surveys and Mapping Branch, Department of Energy Mines and Resources in 1975 and updated from 1979 Province of British Columbia 1:100 000 mapping. Metric contours were manually interpolated.



Contour Interval 100m  
 Transverse Mercator Projection  
 Universal Transverse Mercator Grid Zone 11

ENCLOSURE 3

- Legend**
- Road: Highway, Main road
  - Road: Loose surface, Dry weather
  - Track or trail
  - Railway
  - River
  - Stream
  - Contours
  - Licence boundary



**Crows Nest Resources Limited**  
EXPLORATION

**BURNT RIDGE EXTENSION**  
S.E. BRITISH COLUMBIA

**INDEX MAP**  
**TO COAL LICENSES**

NTS 82J/2

|              |          |         |          |              |
|--------------|----------|---------|----------|--------------|
| AUTHOR       | DR BRYAN | SCALE   | 1:50 000 | ENCLOSURE NO |
| DATE         | 82-01    | REVISED |          | AA-811       |
| To accompany |          |         |          |              |

Coordinate data for borehole BRE 85-1 are as follows:

|     |              |         |
|-----|--------------|---------|
| UTM | Northing:    | 5549790 |
| UTM | Easting:     | 656240  |
|     | Elevation:   | 1843    |
|     | Inclination: | 58.5°   |
|     | Azimuth:     | 250°    |

### 3.0 GEOLOGY

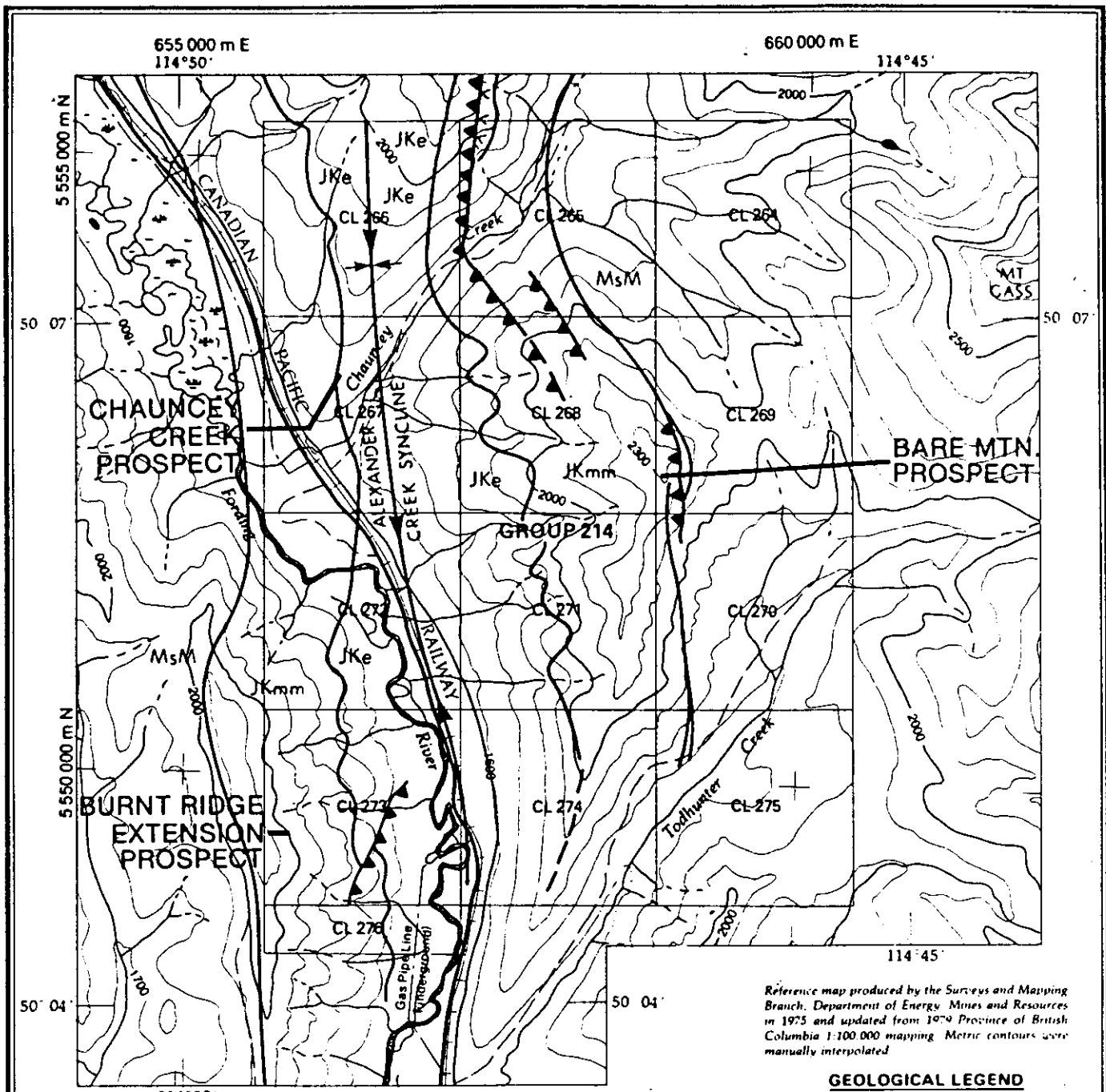
#### 3.1 Regional Geology and Stratigraphy (Enclosure 4)

North Block is located within the "Main Ranges" of the Rocky Mountains. This area is characterized by major northeast directed thrusts and associated north-south trending folds that stack and fold sedimentary rocks ranging in age from late Proterozoic to early Tertiary (Price and Mountjoy 1970).

Coal-bearing rocks of the Jurassic-Cretaceous Kootenay Group were disrupted by this tectonism and now survive in cores of major synclines and separate thrust sheets. Surviving coherent areas of the Kootenay Group define the three major coal fields of southeast B.C.; the Elk Valley, Crows Nest and Flathead coal fields.

North Block occupies part of the Elk Valley coal field. This coal field has been mapped by Pearson and Grieve (1980), Grieve (1981) and Grieve and Pearson (1983). Regionally it is sandwiched between the north trending Borgeau thrust to the west and Lewis thrust to the east. The coal-bearing rocks are preserved for most part in the core of the Alexander Creek Syncline and an en echelon smaller syncline to the west. The hinges of these folds plunge gently north or south forming culminations and depressions along the axial traces.

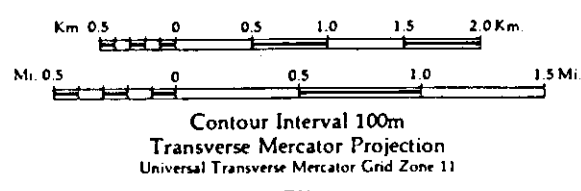
The stratigraphic nomenclature of the Jurassic-Cretaceous coal-bearing rocks of southeast B.C. (Kootenay Group) has been reviewed by Gibson (1979). This report adheres to the nomenclature suggested by Gibson (1979) (Table 1).



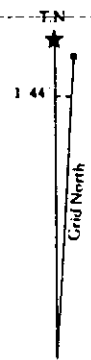
Reference map produced by the Surveys and Mapping Branch, Department of Energy, Mines and Resources in 1975 and updated from 1974 Province of British Columbia 1:100 000 mapping. Metric contours were manually interpolated.

**GEOLOGICAL LEGEND**

- JKe** Elk Formation
- JKmm** Mist Mtn. Formation
- MsM** Moose Mtn. Member
- Thrust Fault
- Syncline



- Legend**
- Road: Highway, Main road
  - Road: Loose surface, Dry weather
  - Track or trail
  - Railway
  - River
  - Stream
  - Contours
  - Licence boundary



**Crows Nest Resources Limited**  
EXPLORATION

BURNT RIDGE EXTENSION  
S.E. BRITISH COLUMBIA

**COMPILATION  
GEOLOGY MAP**

NTS 82J/2

|                |                |              |
|----------------|----------------|--------------|
| AUTHOR B. RYAN | SCALE 1:50 000 | ENCLOSURE No |
| DATE 82-01     | REVISED        | AA-813       |
| To Accompany:  |                |              |

The Fernie formation is composed of dark brown recessive weathering mudstones that near the top of the unit alternate with fine-grained sandstones and contains an upper Jurassic marine fauna.

The Kootenay Group is subdivided into three formations, (Table 1). The lowermost, Morrissey formation is subdivided into a lower and upper member. The upper Moose Mountain Member is a distinctive and critically important sandstone marker which is conformably and abruptly overlain by the coal-bearing Mist Mountain formation. The Moose Mountain Member is a grey-weathering, medium-grained, massive sandstone that was deposited in a shallow marine beach environment. The Mist Mountain formation is composed of sandstone, mudstone, siltstone, and coal; it was deposited in a deltaic environment that contained large swampy flood plains. The uppermost, Elk formation is composed of sandstone, siltstone, mudstone and thin coal seams and is considered to be a product of an alluvial plain depositional environment.

The lower Cretaceous Cadomin formation of the Blairmore Group is present to the south of the property in the core of the Alexander Syncline. It is composed of resistant chert pebble conglomerate derived from possibly braided stream and alluvial fan origin.



TABLE 1

| TABLE OF FORMATIONS (North Block) |                               |                 |   |   |   |
|-----------------------------------|-------------------------------|-----------------|---|---|---|
| ERA                               | PERIOD                        | FORMATION       | LITHOLOGY   | THICKNESS<br>(M)  |   |
| MESOZOIC                          | Lower Cretaceous              | Cadomin Fm.     | non-marine: sandstone, conglomerate and shale   | 360 - 1980  |   |
|                                   | LOWER CRETACEOUS AND JURASSIC | Pocaterra Creek | non-marine: sandstones, conglomerate, siltstones and shales   |   |   |
|                                   |                               | ELK FORMATION   | non-marine: interbedded medium to coarse grain sandstone, chert-pebble conglomerate with minor siltstone shale and uneconomic coals | 150 - 490   |   |
|                                   |                               | KOOTENAY GROUP  | MIST MTN. FORMATION   | non-marine and brackish: interbedded coal, siltstones, shales, and sandstones | 380 - 480                                   |
|                                   |                               |                 | MORRISSEY FORMATION   | Moose mtn.<br>-----<br>Weary Ridge  | non-marine: massive cliff-forming sandstone |
|                                   | Jurassic                      | Fernie Fm.      | marine: shales, siltstone, sandstone, limestone   | 180 - 380   |   |

### 3.2 Stratigraphy of Burnt Ridge Extension

The Moose Mountain member of the Morrissey formation is a resistant medium-coarse grained sandstone unit cropping out along the ridge top of the property and provides a western geological boundary (Enclosure 6). East of this unit is the Mist Mountain formation consisting of rhythmically interlayered mudstones, siltstones, coal seams and medium-fine grained channel sandstones. These strata dip uniformly east with values ranging from 10 to 70° but averaging 50°. The general outcrop pattern of coal seams is not overly complicated by folds or thrusts although on a more detailed scale seams thicken and thin along strike, rock splits appear and disappear and minor thrusts fold and disjoin the seams. The Mist Mountain section is about 410 meters thick from the Elk formation contact to the top of the Moose Mountain member (Enclosure 5). The upper section is dominated by recessively weathering mudstones, coal and siltstone while the lower 250 meters of section is characterized by 3 thick channel sandstones (2 sandstone, 4 sandstone and 6 sandstone respectively).

Seventeen (17) coal bands greater than 1 meter thick occur within the Mist Mountain formation but 14 of them occur stratigraphically above 4 sandstone and present the greatest economic potential for this property. The aggregate thickness of these seams comprises 21% of the composite stratigraphic thickness and provides a desirable overburden to coal ratio.

The Elk formation overlies the Mist Mountain formation with a gradational contact which on Burnt Ridge Extension is placed at the first occurrence of buff weathering resistant sandstone above seam 13.

### 3.3 Structural Geology

The property occupies part of the west limb of the north trending Alexander Creek Syncline. Further to the west the limb is broken by the north striking Erickson Normal Fault which down drops beds on its east side. The east limb of the Alexander Creek Syncline is complicated by the Ewin Pass thrust (also called the Fording thrust).

Beds strike uniformly north-south and dip east on Burnt Ridge Extension. Dips vary from 35 - 45° in the west near the Moose Mountain sandstone to 45 to 65° near the Elk contact. This change in dip may reflect a steepening of beds towards the core of the syncline or a stepped profile for the west limb (Enclosure 7). The latter is not unlikely and could be related to incipient east directed thrusts in the Moose Mountain sandstone.

Major east directed thrusts that post-date the Alexander Creek Syncline have not been identified. The east dipping thrust known to outcrop in the Elk in the south of Burnt Ridge Extension may represent a major pre "Alexander Creek Syncline" thrust.

Local east dipping, west directed thrusts are common in the lower part of the Mist Mountain section. They are evidenced by intense fracture zones up to 1m thick, drag folds and minor displacements in which the upper plate moves relatively westward. These thrusts probably formed at the same time as the Alexander Creek Syncline in response to a room problem in the core of the fold. Minor fold axes related to these thrusts trend northeast or south with shallow plunges; slickensides scatter widely but a majority plunge easterly. To date, no significant thrusting or folding is observed above 4 sandstone.

### 3.4 Coal Geology (Enclosure 5 & 9)

Surface outcrops of coal are moderately to highly fractured, bright to dull and contain numerous mudstone splits. The weighted average results of proximate analyses of drill samples are presented and discussed in section 3.5. A brief description of each seam follows.

Seam Number 1 is sandwiched between Moose Mountain sandstone and an overlying channel sand. In the south, it is a single seam greater than 5m thick with approximately 10% mudstone splits. In the north, seam 1 splits into a number of separate seams, in one location there are 5 coal splits with a cumulative thickness of 23m. In the three drill holes, the seam is split into 3 or more minor coal splits distributed over 20m. If the single 23m thickness intersection is excluded, then the average thickness of Seam 1 is 6.06m.

Seam Number 2 is generally a single seam averaging 3.25m true thickness. It is present in the 3 drill holes as a single or split seam. It appears to thin to the south of the map area.

Seam Number 3 has an average true thickness of 3.39m. In the north, it is composed of two distinct seams separated by a 1 meter mudstone split. In the south, the stratigraphic separation of seams 2 and 3 decreases and seam 3 becomes a single seam. The thickness of seam 3 in drillholes is about 1 meter, considerably less than its average thickness at surface.

4 seam is composed of two relatively thick coal bands, 4 upper and 4 lower, averaging 3.3 and 5.5 meters thick respectively. 4 lower overlies a series of stacked fining upward channel sandstones termed 4 sandstone. The siltstone/mudstone interlayers separating 4u and 4l comprise an average thickness of 6.2 meters although this can vary significantly throughout the property.

5 seam is also split into 5 upper and 5 lower subunits. However, 5 lower appears to thin and shale out south of drillhole 81-3. Average thicknesses for 5u and 5l are 1.7m and 2.3m respectively.

Only two drillholes have cored stratigraphy above 5 upper seam so that thicknesses may not be representative for the remaining seams. However, 6 seam in the vicinity of boreholes 85-1 and 81-2 appears to be split into an upper and lower seam with a mudstone parting between. In addition, 6 lower is quite shaley in appearance. Thicknesses for 6 upper and 6 lower are 7.2m and 4.2m respectively. 6 lower overlies 20-30 meters of resistant fine grained to coarse grained channel sandstone identified as 6 sandstone.

Seam 7 is distinguished by a prominent yellow weathering shale split less than 1 meter thick at surface. However, this split is not present at depth. Average thickness for the seam is 2.6m.

Seam 8 is usually clean and moderately fractured. It is exposed in 4 localities on surface in the southern half of the property averaging 2.57m. However, drilling thicknesses intersected average 1.5 meters.

Similarly surface thicknesses of seam 9 average 4.13m at five localities while drilling thicknesses average 3.8 meters. Seam 9 also appears to be a clean seam thinning to the south.

Drilling results from borehole 85-1 suggest seam 10 is split into a 2.5 meter lower unit separated from a 1.7 meter upper unit by 2.0 meters of mudstone. The lower unit is very clean while the upper unit has a very shaley footwall contact.

Seam 11 is more a zone of distinct coal bands separated by mudstone splits. The zone consists of five coal bands with the uppermost seam being the thickest and cleanest. In borehole 85-1 the coal bands from top to bottom had respective thicknesses of 2.7m, .25m, .75m, .31m and 1.1m distributed over 9.2 meters of section. Tentatively, the 2.7m thick coal band is referred to as 11 upper while the 1.1 meter thick unit is 11 lower.

Seam 12 is 2.2 meters thick in borehole 85-1 and includes a .4 meter parting in the center of the seam. This seam appears to be much thicker (6.79 meters) where intersected by the access road to hole 85-1 at surface.

The uppermost seam 13 is a bright clean seam 2.5 meters in thickness and also appears to be thicker at surface exposures.

#### 4.0 COAL QUALITY

Table 2 is a computer compilation of drilling results from the 1985 program while Table 3 is a listing of weighted average values for selected quality parameters using all available drilling information to date. Based upon volatile matter (DAF basis) and taking into account seam core recovery values, it appears that seams 8 - 13 inclusive can be classified as high volatile bituminous 'A' while the lower seams (4 lower - 7) have a medium volatile bituminous rank. Sulphur values for the most part remain less than 1% while heat content can vary from 7232 to 8170 calories/gram. FSI values appear to decrease downsection (i.e. into the lower seams) but are nowhere less than 4.0 on a 1.6 S.G. washed basis for those coal seams above 4 sandstone. Fluidity results on selected samples from seams 13, 10 lower, and 9 are also enclosed with this report and indicate the high volatile coals have some degree of fluidity. Proximate analyses for the coal sampled in hole 85-1 are included in Enclosure 12.

TABLE 3

| BEAM | AVE THICKNESS | ANAL TYPE | AVE ASHADD | THIK  | RESID MOIST | X ASH | X VOLS DAF | X CARBON | X SULPH | CALS    | FBI   | YIELD   | BEAM RCYV |        |       |       |
|------|---------------|-----------|------------|-------|-------------|-------|------------|----------|---------|---------|-------|---------|-----------|--------|-------|-------|
| 10L  | 2.60          | RAW       | 9.35       | 2.60  | .90         | 9.35  |            |          |         |         | 7.50  |         | 100.00    |        |       |       |
|      |               | WASH      | 5.05       | 2.60  | 1.04        | 5.05  | 31.05      | 64.75    | .71     | 7993.00 | 8.00  | 91.90   | 100.00    |        |       |       |
| 10U  | 1.85          | RAW       | 35.38      | 1.85  | .97         | 35.38 |            |          |         |         | 6.00  |         | 70.30     |        |       |       |
|      |               | WASH      | 11.10      | 1.85  | 1.30        | 11.10 | 29.77      | 61.52    | .77     | 7235.00 | 8.00  | 53.90   | 70.30     |        |       |       |
| 11   | 1.66          | RAW       | 39.74      | 1.45  | .94         | 34.39 |            |          |         |         | 5.00  |         | 81.50     |        |       |       |
|      |               |           |            | 2.65  | 1.00        | 13.73 |            |          |         |         |       | 8.00    |           | 100.00 |       |       |
|      |               |           |            | 1.34  | 1.10        | 78.43 |            |          |         |         |       | .00     |           | 92.60  |       |       |
|      |               |           |            | 1.20  | .83         | 32.40 |            |          |         |         |       | 7.00    |           | 100.00 |       |       |
|      |               |           |            | 1.45  | 1.36        | 12.79 | 31.05      | 59.19    | .98     | 7232.00 | 8.00  | 64.50   | 81.50     |        |       |       |
|      |               | WASH      | 9.10       | 2.65  | 1.27        | 6.09  | 31.14      | 63.79    | .66     | 7853.00 | 8.00  | 84.60   | 100.00    |        |       |       |
|      |               |           |            | 1.20  | 1.86        | 8.43  | 32.65      | 60.42    | .92     | 7505.00 | 8.00  | 66.50   | 100.00    |        |       |       |
|      |               |           |            | 2.60  | .77         | 29.38 |            |          |         |         | 7.00  |         | 95.40     |        |       |       |
|      |               |           |            | 2.60  | 1.02        | 12.04 | 33.82      | 57.54    | .84     | 7407.00 | 7.50  | 72.60   | 95.40     |        |       |       |
|      |               |           |            | 2.85  | .91         | 11.32 |            |          |         |         | 8.00  |         | 100.00    |        |       |       |
| 12   | 2.60          | RAW       | 29.38      | 2.60  | .77         | 29.38 |            |          |         |         | 8.00  |         | 100.00    |        |       |       |
|      |               | WASH      | 12.04      | 2.60  | 1.02        | 12.04 | 33.82      | 57.54    | .84     | 7407.00 | 7.50  | 72.60   | 95.40     |        |       |       |
|      |               | RAW       | 11.32      | 2.85  | .91         | 11.32 |            |          |         |         |       | 8.00    |           | 100.00 |       |       |
|      |               |           |            | 2.85  | 1.53        | 6.44  | 34.31      | 60.45    | .76     | 7765.00 | 8.00  | 91.90   | 100.00    |        |       |       |
|      |               | WASH      | 6.44       | 7.55  | .56         | 26.27 |            |          |         |         |       | 4.00    |           | 66.50  |       |       |
|      |               |           |            | 5.65  | .60         | 20.56 |            |          |         |         |       | 3.50    |           | 69.00  |       |       |
|      |               | 4L        | 6.22       | RAW   | 22.62       | 6.00  | .64        | 19.55    |         |         |       |         | 3.00      |        | 72.00 |       |
|      |               |           |            |       |             | 5.70  | .65        | 24.11    |         |         |       |         |           | 2.50   |       | 80.70 |
|      |               |           |            |       |             | 7.55  | .64        | 8.80     | 23.75   | 69.04   | .44   |         | 5.50      | 64.00  | 66.50 |       |
|      |               |           |            |       |             | 5.65  | .89        | 10.00    | 23.84   | 67.87   | .43   | 7563.00 | 5.00      | 72.00  | 69.00 |       |
| WASH | 9.75          |           |            | 6.00  | 1.10        | 9.37  | 24.07      | 67.98    | .41     | 7620.00 | 4.00  | 72.00   | 72.00     |        |       |       |
|      |               |           |            | 5.70  | 1.39        | 10.85 | 25.02      | 65.80    | .42     | 7432.00 | 4.50  | 76.30   | 80.70     |        |       |       |
|      |               |           |            | 4.80  | .51         | 22.82 |            |          |         |         | 7.00  |         | 100.00    |        |       |       |
|      |               |           |            | 3.30  | .75         | 24.62 |            |          |         |         | 4.50  |         | 100.00    |        |       |       |
| 4U   | 3.43          | RAW       | 25.22      | 3.62  | .74         | 28.09 |            |          |         |         | 6.00  |         | 88.40     |        |       |       |
|      |               |           |            | 2.00  | .62         | 7.92  | 25.18      | 68.43    | .48     |         | 6.50  | 65.00   | 100.00    |        |       |       |
|      |               |           |            | 4.80  | .55         | 7.77  | 25.04      | 68.72    | .49     | 7300.00 | 7.00  | 72.00   | 100.00    |        |       |       |
|      |               | WASH      | 7.34       | 3.30  | .49         | 7.03  | 23.31      | 70.77    | .44     | 7876.00 | 6.50  | 71.00   | 76.70     |        |       |       |
|      |               |           |            | 3.62  | 1.63        | 6.64  | 25.44      | 68.39    | .53     | 7818.00 | 7.50  | 72.30   | 88.40     |        |       |       |
|      |               |           |            | 4.60  | .85         | 19.89 |            |          |         |         | 4.50  |         | 28.20     |        |       |       |
| 5L   | 2.73          | RAW       | 17.76      | 1.80  | .55         | 10.29 |            |          |         |         | 7.50  |         | 41.70     |        |       |       |
|      |               |           |            | 1.10  | .66         | 19.98 |            |          |         |         |       | 7.50    |           | 82.70  |       |       |
|      |               |           |            | 3.40  | .65         | 20.89 |            |          |         |         |       | 6.50    |           | 70.00  |       |       |
|      |               |           |            | 4.60  | .91         | 6.02  | 24.34      | 70.42    | .61     |         | 6.00  | 70.00   | 28.20     |        |       |       |
|      |               | WASH      | 5.81       | 1.80  | 1.34        | 5.64  | 25.26      | 69.52    | .59     | 7963.00 | 7.50  | 89.00   | 41.70     |        |       |       |
|      |               |           |            | 1.10  | 2.50        | 5.20  | 24.42      | 69.76    | .63     | 7906.00 | 8.00  | 79.00   | 82.70     |        |       |       |
|      |               |           |            | 3.40  | 1.29        | 6.37  | 26.47      | 67.90    | .51     | 7869.00 | 7.50  | 79.40   | 70.00     |        |       |       |
|      |               |           |            | 1.45  | .64         | 39.87 |            |          |         |         | 1.50  |         | 66.20     |        |       |       |
| 5U   | 1.75          | RAW       | 30.04      | 1.35  | .53         | 21.34 |            |          |         |         | 1.50  |         | 43.00     |        |       |       |
|      |               |           |            | 2.45  | .71         | 28.91 |            |          |         |         | 4.00  |         | 85.70     |        |       |       |
|      |               | WASH      | 10.02      | 1.45  | .57         | 12.20 | 23.58      | 66.66    | .62     | 7467.00 | 5.50  | 47.00   | 66.20     |        |       |       |
|      |               |           |            | 1.35  | .49         | 9.37  | 22.11      | 70.21    | .76     | 7744.00 | 2.50  | 71.00   | 43.00     |        |       |       |
| 6L   | 1.75          | RAW       | 30.85      | 2.45  | 1.80        | 8.48  | 26.27      | 66.15    | .57     | 7750.00 | 7.50  | 70.80   | 85.70     |        |       |       |
|      |               |           |            | 1.70  | .71         | 25.63 |            |          |         |         | 1.00  |         | 45.30     |        |       |       |
|      |               |           |            | 1.75  | .59         | 29.25 |            |          |         |         | 7.00  |         | 97.10     |        |       |       |
|      |               | WASH      | 10.34      | 1.80  | .90         | 37.68 |            |          |         |         | 7.00  |         | 94.40     |        |       |       |
|      |               |           |            | 1.70  | .79         | 10.32 | 23.83      | 67.71    | .66     | 7438.00 | 2.00  | 66.00   | 45.30     |        |       |       |
|      |               |           |            | 1.75  | .54         | 10.98 | 25.84      | 65.62    | .96     | 7582.00 | 7.50  | 65.00   | 97.10     |        |       |       |
| 6L   | 1.75          | WASH      | 10.34      | 1.80  | 1.40        | 9.71  | 28.60      | 63.47    | .82     | 7410.00 | 7.50  | 53.80   | 94.40     |        |       |       |
| 6U   | 4.88          | RAW       | 19.76      | 3.45  | .75         | 11.98 |            |          |         |         | 7.50  |         | 95.60     |        |       |       |
|      |               |           |            | 1.20  | .59         | 20.67 |            |          |         |         |       | 4.50    |           | 83.30  |       |       |
|      |               |           |            | 10.00 | .90         | 26.63 |            |          |         |         | 6.00  |         | 77.50     |        |       |       |
|      |               | WASH      | 8.34       | 3.45  | 1.30        | 6.53  | 26.03      | 68.38    | .74     | 7832.00 | 8.50  | 86.00   | 95.60     |        |       |       |
|      |               |           |            | 1.20  | .65         | 9.40  | 24.25      | 68.14    | .63     | 7666.00 | 6.00  | 77.00   | 83.30     |        |       |       |
|      |               |           |            | 10.00 | 1.00        | 9.10  | 27.86      | 64.85    | .78     | 7671.00 | 8.00  | 70.80   | 77.50     |        |       |       |
| 7    | 2.95          | RAW       | 52.62      | 3.30  | .76         | 62.51 |            |          |         |         | 1.00  |         | 64.85     |        |       |       |
|      |               | WASH      | 8.47       | 2.60  | .96         | 42.74 |            |          |         |         | 5.50  |         | 91.10     |        |       |       |
| 8    | 1.68          | RAW       | 14.12      | 3.30  | .91         | 8.21  | 26.42      | 66.87    | 1.05    | 7774.00 | 8.50  | 26.00   | 64.85     |        |       |       |
|      |               | WASH      | 4.85       | 2.60  | 1.46        | 8.74  | 30.75      | 62.19    | 1.12    | 7631.00 | 8.50  | 51.40   | 91.10     |        |       |       |
| 9    | 3.88          | RAW       | 11.42      | 1.45  | .96         | 21.09 |            |          |         |         | 8.00  |         | 44.80     |        |       |       |
|      |               |           |            | 1.90  | 1.09        | 7.16  |            |          |         |         | 8.50  |         | 86.80     |        |       |       |
|      |               | WASH      | 6.00       | 1.45  | 1.42        | 4.60  | 26.82      | 68.77    | .94     | 8047.00 | 9.00  | 75.00   | 44.80     |        |       |       |
|      |               |           |            | 1.90  | 1.42        | 5.10  | 32.16      | 63.42    | .87     | 7967.00 | 8.50  | 96.60   | 86.80     |        |       |       |
| WASH | 6.00          | 2.95      | .97        | 6.19  |             |       |            |          |         | 8.50    |       | 64.10   |           |        |       |       |
|      |               | 4.80      | .90        | 16.66 |             |       |            |          |         | 7.50    |       | 92.50   |           |        |       |       |
| WASH | 6.00          | 2.95      | .86        | 3.85  | 26.51       | 70.03 | .97        | 8170.00  | 8.50    | 93.00   | 64.10 |         |           |        |       |       |
|      |               | 4.80      | 1.22       | 8.15  | 31.12       | 62.43 | .79        | 7685.00  | 8.00    | 82.50   | 92.50 |         |           |        |       |       |



## 5.0 COAL RESERVES

Ryan (1982) calculated a reserve estimate of  $63 \times 10^6$  tonnes of coal using a simplified pit design and three cross-sections. The pit design incorporated high and low wall angles of  $45^\circ$  and a pit floor 10 meters above the Fording River. The average overburden to coal ratio for this coal release is 4.7 to 1. Upper seam volumes were determined using road outcrop data available near borehole BRE 85-1. The down dip drill hole intersections of this hole encountered thicknesses similar to the road outcrops and it is felt that the new drilling data provides additional evidence to support this reserve figure. Of the  $63 \times 10^6$  tonnes coal present,  $39 \times 10^6$  tonnes are considered measured with the remainder indicated. The reader is referred to Ryan (1982) for a more detailed outline of the calculations.

6.0 RECOMMENDATIONS FOR FURTHER WORK

As outlined by Ryan (1982), an exploration program requiring the construction of a road access across the Fording River from the north end of the property is of prime importance. A detailed end plan of exploration activity for Burnt Ridge Extension has been filed with the required provincial authorities detailing future drill hole sites and permanent/temporary access routes on the property. This plan will be adhered to in future exploration. Immediate concern should be directed towards obtaining geological control of the upper seam geology in both the north and south ends of the property. With this in mind, a diamond drill hole is proposed near the south limit of the coal licences for 1986.

7.0 SELECTED BIBLIOGRAPHY

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Price, R.A. and E.W. Mountjoy, 1970, Geological Structure of the Canadian Rocky Mountains between Bow and Athabasca Rivers, Geological Association of Canada Special Paper, No. 6, pp 7 - 26.

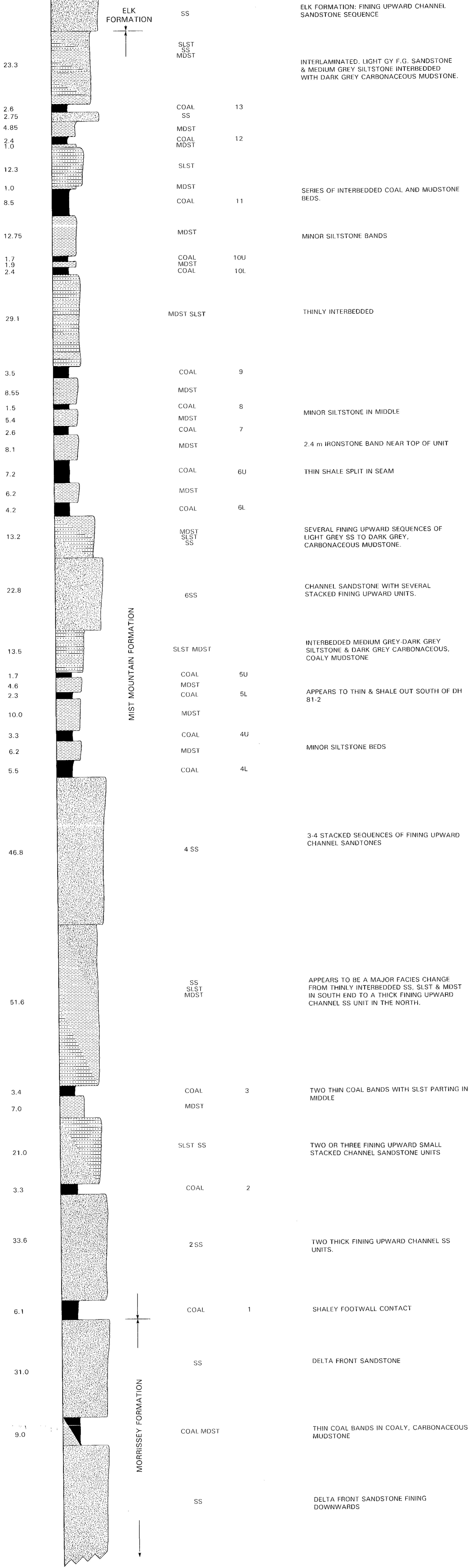
Ryan, B.D., 1982, Report on Coal Licences 272, 273 and 267. CNRL unpublished report.

TRUE THICKNESS (m) (AVERAGE)

LITHOLOGY

SEAM NAME

COMMENTS



ENCLOSURE 5

716

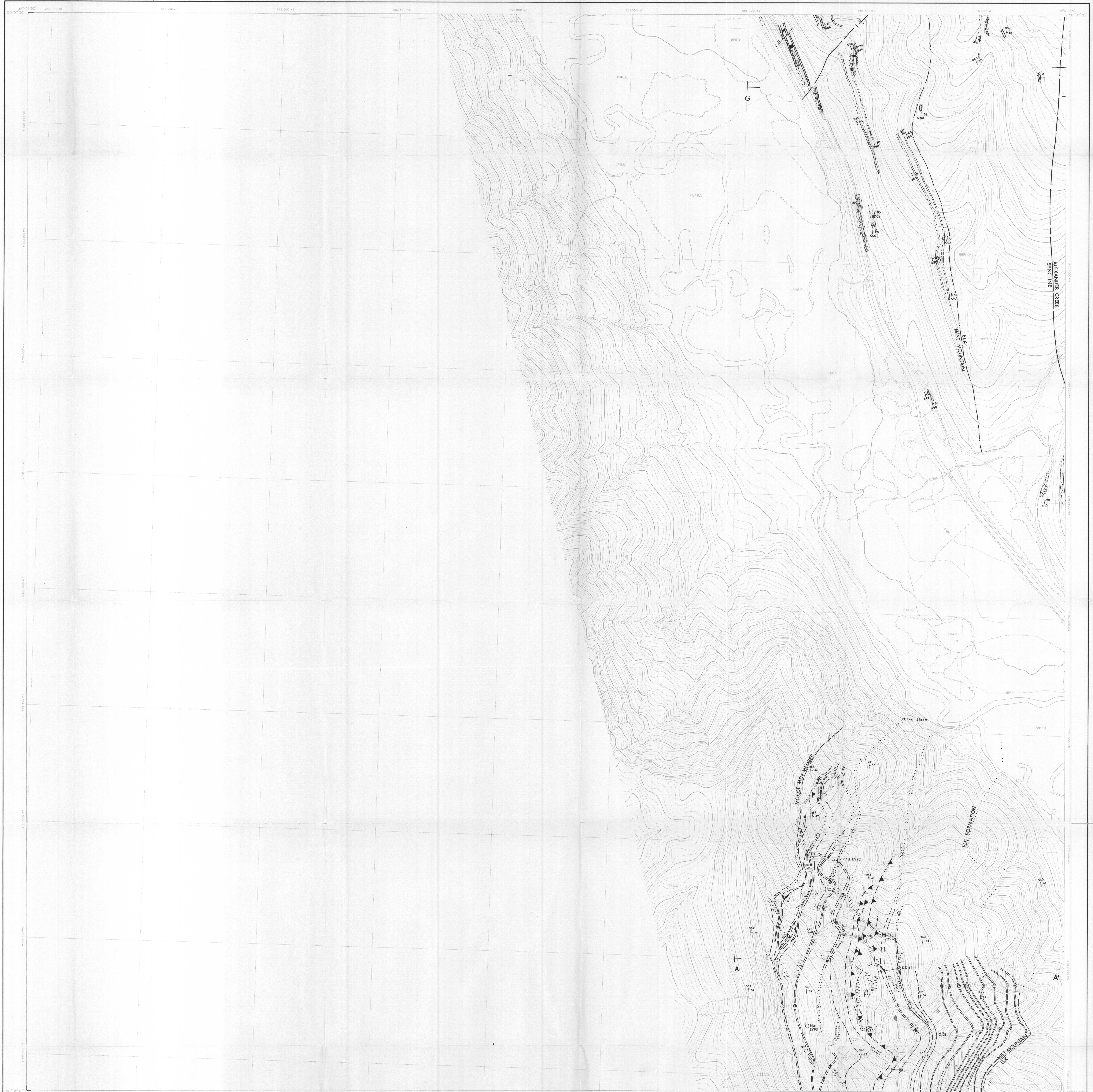
**Crows Nest Resources Limited**

BURNT RIDGE EXTENSION  
S.E. B.C.

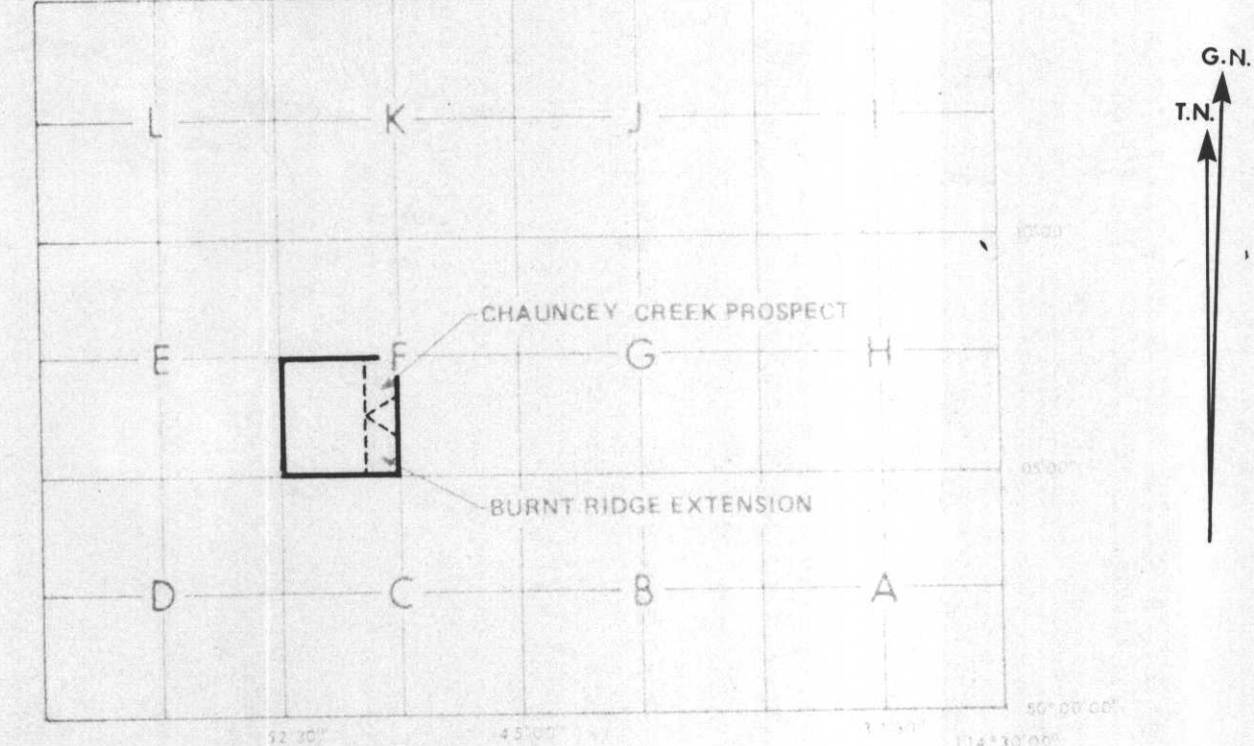
**COMPOSITE STRATIGRAPHIC SECTION**

SOURCE OF DATA:  
BOREHOLES 81-1, 81-2, 81-3, & 85-1

|                   |              |                    |
|-------------------|--------------|--------------------|
| AUTHOR: MCKINSTRY | SCALE: 1:500 | DRAWN BY: R.G.P.   |
| DATE: 85 12       | REVISED:     | DRAWING No: BR6U02 |
| To Accompany      |              |                    |



**MAP INDEX AND AERIAL PHOTO INDEX**



**REFERENCE**

|                |                    |
|----------------|--------------------|
| MAIN ROAD      | RIVER LAKE         |
| SECONDARY ROAD | INTERMITTENT RIVER |
| TRACK OR TRAIL | TREED AREA         |
| RAILWAY        | LINE OF TREES      |
| BRIDGE         | INDIVIDUAL TREES   |
| BRIDGE SUPPORT | VERTICAL INTERVAL  |
| SOFT TILL      | DEPRESSION         |
| SPURWAY        | SPOT HEIGHT        |
| DRILL HOLE     | CONTROL POINT      |

MAP PROJECTION: UNIVERSAL TRANSVERSE MERCATOR  
CENTRAL MERIDIAN REFERENCE: 117° W.

**JURASSIC-CRETACEOUS**

|                                       |   |
|---------------------------------------|---|
| <b>[JK]</b> Kootenay Group            | <b>[Covg]</b> CONGLOMERATE (Covg)           |
| <b>[JKe]</b> Elk Formation            | <b>[CsSt]</b> COARSE SANDSTONE (CsSt)       |
| <b>[JKmm]</b> Mist Mountain Formation | <b>[FSat]</b> FINE SANDSTONE (FSat)         |
| <b>[JKM]</b> Morrosey Formation       | <b>[Siltst]</b> SILTSTONE (Siltst)          |
| <b>[MOM]</b> Moose Mountain Member    | <b>[Mdsht/sh]</b> MUDSTONE/SHALE (Mdsht/sh) |
| <b>[WRM]</b> Weary Ridge Member       | <b>[C]</b> COAL                             |

SCALE 1:5000

**GEOLOGICAL LEGEND**

|                                   |   |
|-----------------------------------|---|
| <b>[F]</b> NORMAL FAULT           | <b>[S]</b> STRIATIONS                                 |
| <b>[TF]</b> DEFINED THRUST FAULT  | <b>[A]</b> ASSUMED CONTACT                            |
| <b>[ATF]</b> ASSUMED THRUST FAULT | <b>[AP]</b> APPROXIMATE CONTACT                       |
| <b>[BA]</b> BEDDING ATTITUDE      | <b>[DC]</b> DEFINED CONTACT                           |
| <b>[S]</b> SYNCLINE               | <b>[DDH]</b> DIAMOND DRILL HOLE (INCLINED VERTICALLY) |
| <b>[A]</b> ANTICLINE              | <b>[RDH]</b> ROTARY DRILL HOLE (BC COAL)              |
| <b>[CS]</b> COAL SEAMS            |   |

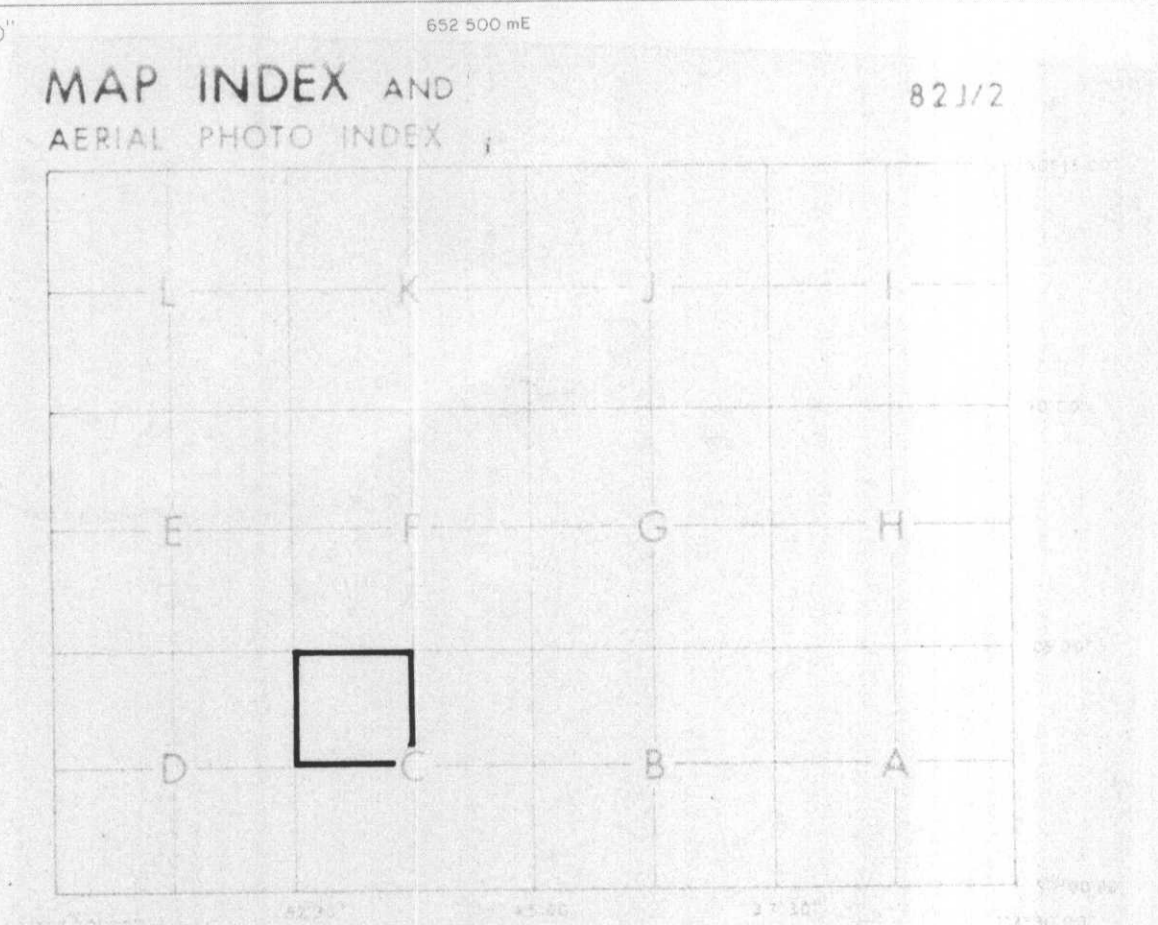
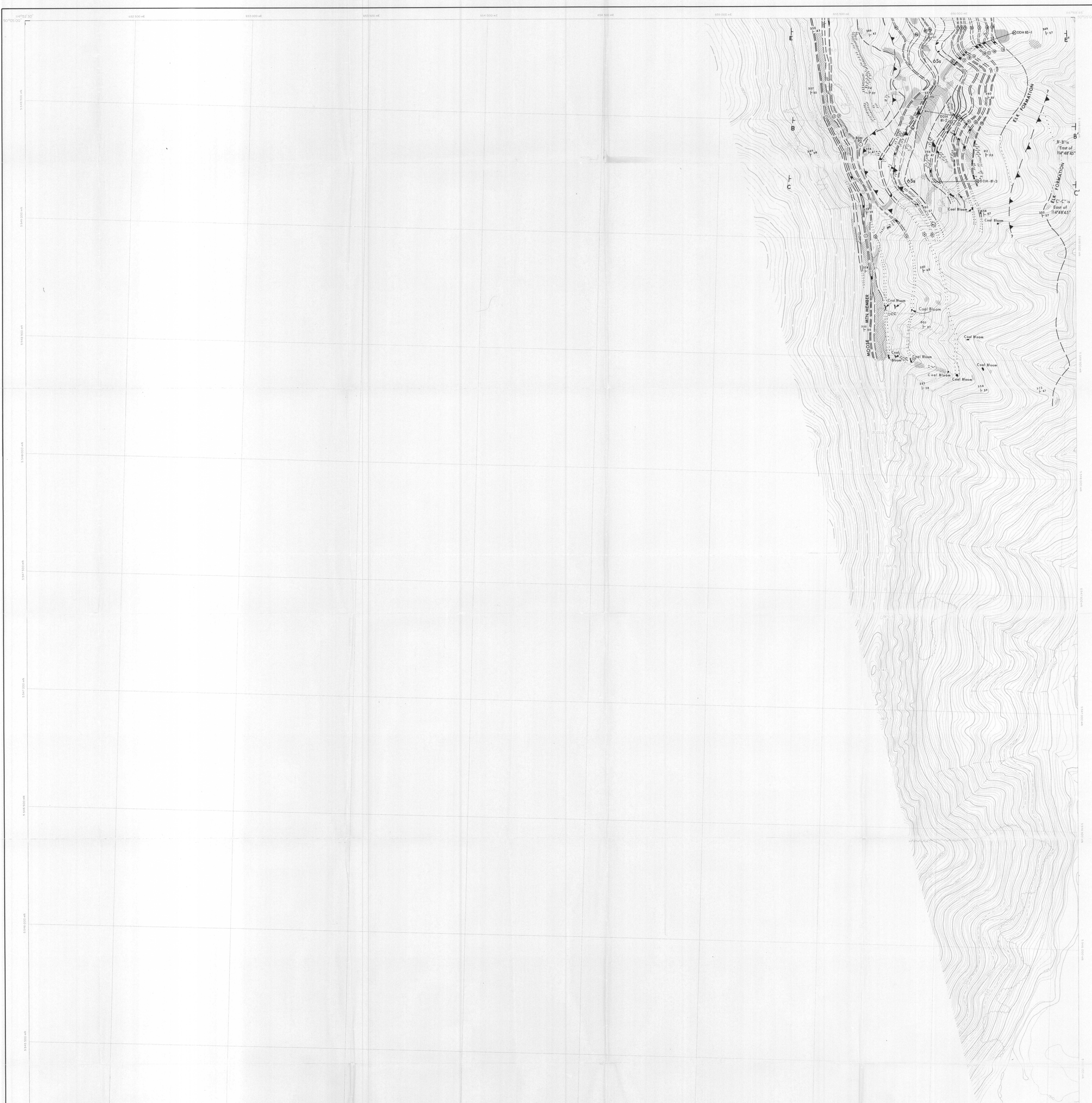
**Crows Nest Resources Limited**  
EXPLORATION

BURNT RIDGE EXTENSION - CHAUNCEY CREEK PROSPECT  
S.E.B.C.

**GEOLOGY MAP 716**

NTS. 82J2 UTM ZONE II

AUTHOR: B. McANDREW SCALE: 1:5000 METRES ENCLOSURE No:  
DATE: 82-01 REVISED: 85-11  
To Accompany DRAWING No: BR2U07



REFERENCE

|                |                    |
|----------------|--------------------|
| MAIN ROAD      | RIVER LAKE         |
| SECONDARY ROAD | INTERMITTENT RIVER |
| TRACK OR TRAIL | TREE AREA          |
| RAILWAY        | LINE OF TREES      |
| WEDGE FENCE    | INDIVIDUAL TREE    |
| BRIDGE CULVERT | VERTICAL INTERVAL  |
| CUT FILL       | DEPRESSION         |
| DRAIN          | SPICE HEIGHT       |
| DRIILL HOLE    | CONTROL POINT      |

MAP PROJECTION: UNIVERSAL TRANSVERSE MERCATOR  
CENTRAL MERIDIAN REFERENCE 117° W.

PREPARED BY  
NORTH WEST SURVEY CORPORATION (YUKON) LTD.

JURASSIC-CRETACEOUS

|     |                          |
|-----|--------------------------|
| ARK | Kootenay Group           |
| AK  | Elk Formation            |
| AKm | Must Mountain Formation  |
| AKs | Moose Mountain Formation |
| AKM | Moose Mountain Member    |
| WIM | Wary Ridge Member        |

|                          |
|--------------------------|
| CONGLOMERATE (Cong)      |
| COARSE SANDSTONE (CSst)  |
| FINE SANDSTONE (FSst)    |
| SILTSTONE (Siltst)       |
| MUDSTONE/SHALE (MudS/sh) |
| COAL                     |

GEOLOGICAL LEGEND

|  |   |
|--|---|
|  | NORMAL FAULT                            |
|  | DEFINED THRUST FAULT                    |
|  | ASSUMED THRUST FAULT                    |
|  | BEDDING ATTITUDE                        |
|  | SYNCLINE                                |
|  | ANTICLINE                               |
|  | COAL SEAMS                              |
|  | STRIATIONS                              |
|  | ASSUMED CONTACT                         |
|  | APPROXIMATE CONTACT                     |
|  | DEFINED CONTACT                         |
|  | DIAMOND DRILL HOLE (INCLINED, VERTICAL) |
|  | ROTARY DRILL HOLE (BC COAL)             |

**Crows Nest Resources Limited**  
EXPLORATION

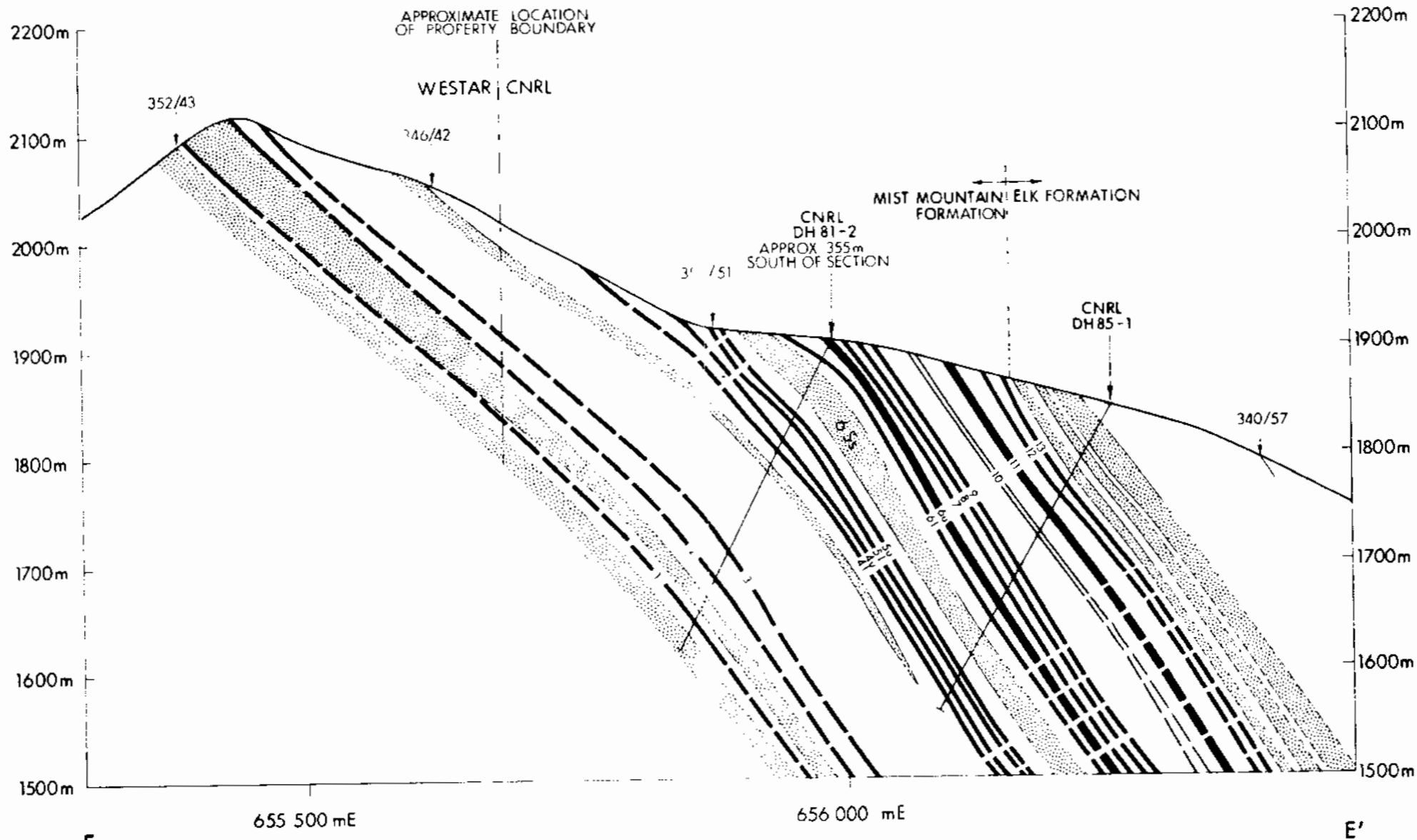
BURNT RIDGE EXTENSION  
S.E. B.C.

GEOLOGY MAP **716**

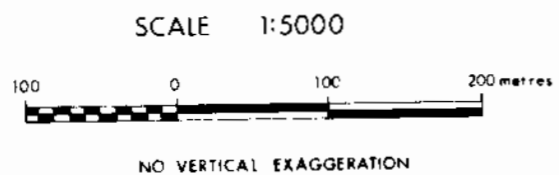
NTS.82J2 UTM ZONE II

|                      |                      |                    |
|----------------------|----------------------|--------------------|
| AUTHOR: B. McKENSTRY | SCALE: 1:5000 METRES | ENCLOSURE No:      |
| DATE: 82-01          | REVISED: 85-11       | DRAWING No: BR2U08 |
| To Accompany         |                      |                    |

# SECTION 5 549 900 NORTH



716



| LEGEND           |  |
|------------------|--|
| SANDSTONE        |  |
| COAL             |  |
| CONTACTS         |  |
| KNOWN            |  |
| INFERRED         |  |
| FAULT            |  |
| LICENSE BOUNDARY |  |

**Crows Nest Resources Limited**  
EXPLORATION

BURNT RIDGE EXTENSION  
S.E. B.C.

**GEOLOGICAL SECTION**  
SECTION 5 549 900 NORTH

AUTHOR: M. KIPSTRY [SCA] [100] [100] ENCLOSURE NO. [ ]  
DATE: 8/11/11 REVISED: [ ] DRAWING NO. BR2X12

BURNT RIDGE EXT  
 -----  
 DRILL HOLE # BRE85D-1  
 -----

04/09/86

LOG DATE 85/08/28  
 EXAMINED BY B. MCKINSTRY

| TOP   | BASE  | THICKNESS | MAJOR | SEAM  | SAMPLE# | REC %  | MINOR LITHOLOGY | REMARKS  | C.B.A. | DEPTH |
|-------|-------|-----------|-------|-------|---------|--------|-----------------|--|--------|-------|
| ----- | ----- | -----     | ----- | ----- | -----   | -----  | -----           | -----  | -----  | ----- |
| .00   | 3.20  | 3.20      | OB    |       |         |        |                 | CASING TO 3.2 METERS   |        |       |
| 3.20  | 9.65  | 6.45      | SLST  |       |         |        |                 | DARK-MEDIUM GREY. CARBONACEOUS<br>PLANT FRAGMENTS. OCC BANDS OF<br><br>LIGHT GREY REWORKED FG SS.<br>FEATURELESS BEDDING.<br>SEMI-STICK TO BROKEN. |        |       |
| 9.65  | 9.95  | .30       | COAL  | COAL  |         | 23.30  |                 | BRIGHT CLEATED RUBBLE  |        |       |
| 9.95  | 10.06 | .11       | SH    |       |         |        |                 | BLACK & COALY WITH<br>CARBONACEOUS PLANT FRAGMENTS.  |        |       |
| 10.06 | 10.53 | .47       | COAL  | COAL  |         | 10.60  |                 | BRIGHT & CLEATED   |        |       |
| 10.53 | 10.95 | .42       | SH    |       |         |        | COAL            | BRIGHT CLEATED COAL BANDS &<br>STRINGERS UP TO .03M THICK.<br>DARK GREY-BLACK.<br>BLOCKY & SLICKED   | 71     | 10.80 |
| 10.95 | 11.22 | .27       | COAL  | COAL  |         | 25.90  |                 | BRIGHT & CLEATED   |        |       |
| 11.22 | 11.42 | .20       | SH    |       |         |        |                 | AS AT 10.53M   |        |       |
| 11.42 | 11.55 | .13       | COAL  | COAL  |         | 100.00 |                 | AS AT 9.65M. VITRAIN BANDS<br>VISIBLE  |        |       |
| 11.55 | 11.87 | .32       | SH    |       |         |        |                 | SILTY, DK GY WITH OCC COAL<br>LENSES.  |        |       |



BURNT RIDGE EXT  
 -----  
 DRILL HOLE # BRE85D-1  
 -----

04/09/86

LOG DATE 85/08/28  
 EXAMINED BY B. MCKINSTRY

| TOP   | BASE  | THICKNESS | MAJOR | SEAM  | SAMPLE# | REC % | MINOR LITHOLOGY | REMARKS  | C.B.A. | DEPTH |
|-------|-------|-----------|-------|-------|---------|-------|-----------------|--|--------|-------|
| ----- | ----- | -----     | ----- | ----- | -----   | ----- | -----           | -----  | -----  | ----- |
| 11.87 | 12.07 | .20       | SS    |       |         |       |                 | VY SILTY. LIGHT-DARK GY.<br>INDISTINCT BEDDING. FG.  |        |       |
| 12.07 | 12.37 | .30       | SLST  |       |         |       |                 | SANDY, DK GY, MASSIVE.   |        |       |
| 12.37 | 12.67 | .30       | SS    |       |         |       |                 | LIGHT GY. CROSS-BEDDED & WAVY<br>CONVOLUTIONS. MICRO FRACTURES.<br><br>VERY THINLY BEDDED. WEAKLY<br>CALCAREOUS. |        |       |
| 12.67 | 13.61 | .94       | SLST  |       |         |       |                 | BURROWS. DK GY WITH<br>CARBONACEOUS PLANT FRAGMENTS.   |        |       |
| 13.61 | 13.95 | .34       | SS    |       |         |       |                 | AS AT 12.37 BUT NO VISIBLE<br>FRACTURES. MODERATELY<br>CALCAREOUS.   |        |       |
| 13.95 | 15.03 | 1.08      | SLST  |       |         |       |                 | SANDY WITH THIN LIGHT GY SS<br>BANDS. WELL DEVELOPED BDDG.   | 70     | 14.80 |
| 15.03 | 15.26 | .23       | SS    |       |         |       |                 | AS AT 12.37M. STRONGLY<br>CALCAREOUS.  |        |       |
| 15.26 | 16.35 | 1.09      | SLST  |       |         |       |                 | ALMOST MDST AT BASE.<br>MODERATELY LAMINATED. GY-DARK<br>GY.   |        |       |
| 16.35 | 17.20 | .85       | COAL  | COAL  | 1       | 70.60 |                 | SOFT POWDERY MUCK.   | 60     | 16.50 |
| 17.20 | 18.85 | 1.65      | SLST  |       |         |       |                 | INDISTINCT TO POORLY BDD.<br>DARK-MEDIUM GY. COALY & CARB<br>PLANT FGMTS.  | 68     | 17.50 |

BURNT RIDGE EXT  
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 DRILL HOLE # BRE85D-1  
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 EXAMINED BY B. MCKINSTRY

| TOP   | BASE  | THICKNESS | MAJOR | SEAM  | SAMPLE# | REC % | MINOR LITHOLOGY | REMARKS   | C.B.A. | DEPTH |
|-------|-------|-----------|-------|-------|---------|-------|-----------------|---|--------|-------|
| ----- | ----- | -----     | ----- | ----- | -----   | ----- | -----           | -----   | -----  | ----- |
| 18.85 | 40.20 | 21.35     | SS    |       |         |       |                 | FG, LIGHT-MEDIUM GY.<br>CHAOTIC-POORLY BDD. BURROWS.<br>SCOURING. COALY PLANT FGMTS<br>REWORKED BDDG.   | 67     | 20.40 |
|       |       |           |       |       |         |       |                 |   | 68     | 23.70 |
|       |       |           |       |       |         |       |                 |   | 75     | 27.40 |
|       |       |           |       |       |         |       |                 |   | 68     | 29.80 |
|       |       |           |       |       |         |       |                 |   | 63     | 32.80 |
|       |       |           |       |       |         |       |                 |   | 70     | 38.80 |
| 40.20 | 44.00 | 3.80      | SLST  |       |         |       |                 | DARK GY WITH CARB & COALY<br>PLANT FGMTS. POORLY BDD TO<br>MASSIVE.   |        |       |
| 44.00 | 47.40 | 3.40      | SS    |       |         |       |                 | FG, MEDIUM GY, WEAKLY BDD, SILTY.<br>WEAKLY CALCAREOUS  | 60     | 44.90 |
|       |       |           |       |       |         |       |                 |   | 54     | 47.30 |
| 47.40 | 53.55 | 6.15      | SS    |       |         |       |                 | MG, SALT & PEPPER. COAL FGMTS &<br>BANDS. COARSER GRAIN SIZE AT<br>BASE.<br>BDDG POOR TO INDISTINCT WITH<br>SOME X-BDDG. WEAKLY TO<br>NON-CALCAREOUS. | 58     | 49.30 |
| 53.55 | 59.00 | 5.45      | SLST  |       |         |       |                 | DARK GY. CARB PLANT FGMTS.<br>MASSIVE. BURROWS & REWORKED<br>BDDG AT BASE.  |        |       |
| 59.00 | 59.30 | .30       | SS    |       |         |       | SLST            | SILTY LAMINATIONS IN WAVY   |        |       |

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| TOP   | BASE  | THICKNESS | MAJOR | SEAM  | SAMPLE# | REC %  | MINOR LITHOLOGY | REMARKS   | C.B.A. | DEPTH |
|-------|-------|-----------|-------|-------|---------|--------|-----------------|---|--------|-------|
| ----- | ----- | -----     | ----- | ----- | -----   | -----  | -----           | -----   | -----  | ----- |
|       |       |           |       |       |         |        |                 | BDDG. SEVERAL MICRO-FRACTURES<br>CUT BDDG AT<br>HIGH ANGLE. SS IS LIGHT GY,FG.<br>SLST IS DARK GY.  |        |       |
| 59.30 | 60.00 | .70       | SLST  |       |         |        |                 | AS AT 53.55   | 57     | 59.40 |
| 60.00 | 60.50 | .50       | SS    |       |         |        | SLST            | AS AT 59.0  | 76     | 60.50 |
| 60.50 | 60.95 | .45       | SH    |       |         |        |                 | VERY DARK GY. COALY. MASSIVE.   |        |       |
| 60.95 | 71.60 | 10.65     | SS    |       |         |        | SLST            | INTERLAMINATIONS OF VY THIN<br>LIGHT GY SS & MEDIUM GY SLST<br>BANDS. BURROWS &<br>REWORKED BDDG. OCC WHITE CC<br>VEINS & COAL BANDS. SCOURING.<br>.75M OF CLEAN FG | 66     | 61.80 |
|       |       |           |       |       |         |        |                 | SS @ 65.M MDST RIP-UPS @ BASE.<br>MODERATELY-STRONGLY<br>CALCAREOUS.  | 60     | 64.50 |
|       |       |           |       |       |         |        |                 | SS @ 65.M MDST RIP-UPS @ BASE.<br>MODERATELY-STRONGLY<br>CALCAREOUS.  | 55     | 69.70 |
| 71.60 | 73.30 | 1.70      | MDST  |       |         |        |                 | FEATURELESS,DARK GY-BLK.<br>MASSIVE.  | 61     | 71.70 |
| 73.30 | 73.45 | .15       | SLST  |       |         |        |                 | MEDIUM-DARK GY,SANDY.   |        |       |
| 73.45 | 74.01 | .56       | SS    |       |         |        | SLST            | AS AT 60.95M. WEAKLY<br>CALCAREOUS.   |        |       |
| 74.01 | 74.41 | .40       | MDST  |       |         |        |                 | DARK GY-BLK,COALY   |        |       |
| 74.41 | 74.54 | .13       | COAL  | COAL  |         | 100.00 |                 | POWDER MUSH   |        |       |

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| TOP   | BASE  | THICKNESS | MAJOR | SEAM  | SAMPLE# | REC %  | MINOR LITHOLOGY | REMARKS   | C.B.A. | DEPTH |
|-------|-------|-----------|-------|-------|---------|--------|-----------------|---|--------|-------|
| ----- | ----- | -----     | ----- | ----- | -----   | -----  | -----           | -----   | -----  | ----- |
| 74.54 | 76.00 | 1.46      | MDST  |       |         |        |                 | DARK GY, COALY  | 65     | 74.60 |
| 76.00 | 76.88 | .88       | COAL  | COAL  | 2       | 90.90  |                 | SEAM CAN BE DIVIDED<br>DOWN-SECTION AS .32M<br>BRIGHT, CLEATED COAL: .05M<br>MDST: .07M BRIGHT & DULL COAL:<br>.05M MDST: .25M DULL, DIRTY<br>COAL: .06M<br>COALY MDST. |        |       |
| 76.88 | 77.18 | .30       | SH    |       |         |        |                 | COALY RUBBLE  |        |       |
| 77.18 | 79.34 | 2.16      | MDST  |       |         |        |                 | DARK GY-BLK, MASSIVE, COALY,<br>HARD. COALY PLANT FGMS &<br>SLICKED SURFACES.   |        |       |
| 79.34 | 81.90 | 2.56      | COAL  | 13    | 3       | 100.00 |                 | DULL WITH BRIGHT. SEMI-STICK.<br>SLICKED SURFACES. BASE IS<br>SHALEY  |        |       |
| 81.90 | 82.80 | .90       | SLST  |       |         |        |                 | DARK GY, COALY  |        |       |
| 82.80 | 85.00 | 2.20      | SS    |       |         |        | SLST            | AS AT 60.95M BUT WITH COALY<br>BANDS & BLEBS. RIP-UPS AT<br>BASE.   | 78     | 83.00 |
|       |       |           |       |       |         |        |                 |   | 67     | 84.00 |
| 85.00 | 90.50 | 5.50      | MDST  |       |         |        |                 | DARK-MEDIUM GY. POORLY BDD.<br>OCC COALY BANDS & SOME<br>ISOLATED LIGHT GY<br>SS BANDS.   | 67     | 87.80 |
|       |       |           |       |       |         |        |                 |   | 66     | 89.50 |

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| TOP    | BASE   | THICKNESS | MAJOR | SEAM  | SAMPLE# | REC %  | MINOR LITHOLOGY | REMARKS   | C.B.A. | DEPTH  |
|--------|--------|-----------|-------|-------|---------|--------|-----------------|---|--------|--------|
| -----  | -----  | -----     | ----- | ----- | -----   | -----  | -----           | -----   | -----  | -----  |
| 90.50  | 91.42  | .92       | COAL  | 12    | 4       | 96.80  |                 | BRIGHT, SEMI-STICK. VITRAIN BANDS.  |        |        |
| 91.42  | 91.85  | .43       | MDST  |       | 5       | 93.00  |                 | COALY, DARK GY-BLK.   |        |        |
| 91.85  | 92.80  | .95       | COAL  | 12    | 6       | 100.00 |                 | DULL WITH BRIGHT. .05M MDST INCLUDED ON FOOTWALL OF SEAM.   |        |        |
| 92.80  | 94.40  | 1.60      | MDST  |       |         |        |                 | AS AT 85.0M BUT WITH NUMEROUS VERY THIN COAL PARTINGS.  |        |        |
| 94.40  | 107.45 | 13.05     | SLST  |       |         |        |                 | MEDIUM GY. OCC BANDS OF LIGHT GY SS INTERBEDDED. SOME BURROWS. REWORKED BDDG & SCOURING @ 100.5. CC-FILLED JOINT SET @ RIGHT ANGLES TO BDDG. VERY THIN LIGHT GY SS WISPS AND BANDS COMMON @ BASE. | 65     | 97.50  |
|        |        |           |       |       |         |        |                 |   | 63     | 99.70  |
|        |        |           |       |       |         |        |                 |   | 63     | 101.40 |
|        |        |           |       |       |         |        |                 |   | 64     | 105.00 |
| 107.45 | 108.72 | 1.27      | MDST  |       |         |        |                 | OCC THIN WISPS OF LIGHT GY SS BANDS. OTHERWISE DARK GY. CARBONACEOUS PLANT FGMTS. POORLY BDD.   | 65     | 107.50 |
| 108.72 | 111.52 | 2.80      | COAL  | 11U   | 7       | 100.00 |                 | BRIGHT WITH DULL. CLEATED. SEMI-STICK TO FLAKEY.  |        |        |
| 111.52 | 113.20 | 1.68      | SH    |       | 8       | 75.00  |                 | VERY COALY. BLK. FLAKEY TO BLOCKY.  |        |        |

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 DRILL HOLE # BRE85D-1  
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| TOP    | BASE   | THICKNESS | MAJOR | SEAM  | SAMPLE# | REC %  | MINOR LITHOLOGY | REMARKS   | C.B.A. | DEPTH  |
|--------|--------|-----------|-------|-------|---------|--------|-----------------|---|--------|--------|
| -----  | -----  | -----     | ----- | ----- | -----   | -----  | -----           | -----   | -----  | -----  |
| 113.20 | 113.96 | .76       | COAL  |       | 9       | 100.00 |                 | SHALEY. DULL WITH OCC BRIGHT.<br>FLAKEY TO SEMI-STICK.  |        |        |
| 113.96 | 116.30 | 2.34      | MDST  |       |         | 100.00 |                 | DARK GY WITH COAL LENSES &<br>BANDS. CARB PLANT FGMTS.  |        |        |
| 116.30 | 116.68 | .38       | SS    |       |         | 78.90  |                 | COALY.FG.SLICKED. CC<br>FRACTURES.  |        |        |
| 116.68 | 118.10 | 1.42      | COAL  | 11L   | 10      | 77.50  |                 | SHALEY,FLAKEY,DULL.   |        |        |
| 118.10 | 120.80 | 2.70      | MDST  |       |         |        |                 | DARK GY-BLK. CARB PLANT FGMTS.  |        |        |
| 120.80 | 122.60 | 1.80      | IRST  |       |         |        |                 | LIGHT GY. VERY<br>CALCAREOUS,DENSE. NUMEROUS CC<br>VEINLETS.  |        |        |
| 122.60 | 124.50 | 1.90      | MDST  |       |         |        |                 | AS AT 118.05M   |        |        |
| 124.50 | 128.00 | 3.50      | SLST  |       |         |        |                 | INDISTINCT OCC LIGHT GY SS<br>BANDS & WAVY BEDS IN DARK GY<br>VERY FG SLST.<br>OCC BURROWS & CHAOTIC BDDG.<br>VERY THIN WHT CC VEINLETS &<br>FRACTURES. | 67     | 124.90 |
| 128.00 | 132.14 | 4.14      | MDST  |       |         |        |                 | AS AT 118.05M   | 65     | 128.20 |
| 132.14 | 133.82 | 1.68      | COAL  | 10U   | 11      | 73.80  |                 | VERY SHALEY,FLAKEY,SOFT MUSH.   | 62     | 132.05 |
| 133.82 | 135.90 | 2.08      | MDST  |       |         | 84.80  |                 | SEATROCK. DARK GY-BLK.  |        |        |

BURNT RIDGE EXT  
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| TOP    | BASE   | THICKNESS | MAJOR | SEAM  | SAMPLE# | REC %  | MINOR LITHOLOGY | REMARKS  | C.B.A. | DEPTH  |
|--------|--------|-----------|-------|-------|---------|--------|-----------------|--|--------|--------|
| -----  | -----  | -----     | ----- | ----- | -----   | -----  | -----           | -----  | -----  | -----  |
|        |        |           |       |       |         |        |                 | NUMEROUS VERY THIN COAL PARTINGS & COALY CARB PLANT FGMTS. NO BDDG EVIDENT.                      |        |        |
| 135.90 | 138.48 | 2.58      | COAL  | 10L   | 12      | 100.00 |                 | GOOD CLEAN SEAM. BRIGHT VITRAIN BANDS AT TOP TO POWDERY, DULL COAL AT BASE. NO VISIBLE PARTINGS. |        |        |
| 138.48 | 142.40 | 3.92      | MDST  |       |         |        |                 | SILTY @ 142.M BUT OTHERWISE DARK GY, CARBONACEOUS & MASSIVE.                                     |        |        |
| 142.40 | 143.50 | 1.10      | SLST  |       |         |        |                 | ALMOST A MDST. DARK GY WITH CARB PLANT FGMTS.  | 65     | 143.20 |
| 143.50 | 144.85 | 1.35      | MDST  |       |         |        |                 | AS AT 133.9M   |        |        |
| 144.85 | 146.00 | 1.15      | SLST  |       |         |        |                 | MEDIUM-DARK GY WITH MDST BANDS & COAL STRINGERS.   |        |        |
| 146.00 | 149.20 | 3.20      | MDST  |       |         |        |                 | AS AT 133.9M BUT SILTY IN PLACES.  | 60     | 146.50 |
|        |        |           |       |       |         |        |                 |  | 55     | 148.30 |
| 149.20 | 151.50 | 2.30      | SLST  |       |         |        |                 | AS AT 144.85M BUT SOME BURROWS.  | 67     | 151.50 |
| 151.50 | 152.80 | 1.30      | MDST  |       |         |        |                 | AS AT 133.9  |        |        |
| 152.80 | 157.05 | 4.25      | SLST  |       |         |        |                 | BECOMING MORE SANDY WITH   | 54     | 154.60 |

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| TOP    | BASE   | THICKNESS | MAJOR | SEAM  | SAMPLE# | REC %  | MINOR LITHOLOGY | REMARKS   | C.B.A. | DEPTH  |
|--------|--------|-----------|-------|-------|---------|--------|-----------------|---|--------|--------|
| -----  | -----  | -----     | ----- | ----- | -----   | -----  | -----           | -----   | -----  | -----  |
|        |        |           |       |       |         |        |                 | NUMEROUS THIN LIGHT GY SS<br>WISPS OUTLINING<br>BURROWING, SCOURING & LAMINAR<br>BDDG. DARK GY.       | 54     | 156.20 |
| 157.05 | 157.83 | .78       | MDST  |       |         |        |                 | DARK GY, SILTY.   |        |        |
| 157.83 | 159.13 | 1.30      | SLST  |       |         |        |                 | AS AT 152.8M RIP-UPS AT BASE &<br>CC-FILLED FRACTURES.  | 62     | 158.20 |
| 159.13 | 159.48 | .35       | MDST  |       |         |        |                 | SILTY   |        |        |
| 159.48 | 159.83 | .35       | COAL  | COAL  |         | 100.00 |                 | SOFT, POWDERY   |        |        |
| 159.83 | 160.15 | .32       | MDST  |       |         |        |                 | AS AT 133.9M  |        |        |
| 160.15 | 161.80 | 1.65      | SLST  |       |         |        |                 | WITH MDST BANDS. DARK GY.<br>INDISTINCT TO VAGUE BDDG. CARB<br>PLANT FGMTS.                           | 57     | 160.80 |
| 161.80 | 164.30 | 2.50      | MDST  |       |         |        |                 | AS AT 133.9M  |        |        |
| 164.30 | 165.60 | 1.30      | SLST  |       |         |        |                 | APPEARS CONCRETIONARY. MEDIUM<br>GY. STRONGLY CALCAREOUS.<br>BURROWS &<br>REWORKED BDDG @ BASE.       | 58     | 165.40 |
| 165.60 | 170.64 | 5.04      | MDST  |       |         |        |                 | BLK-DARK GY. CARBONACEOUS &<br>COALY PLANT FGMTS. NO VISIBLE<br>BDDG.<br>COALY BANDS & LENSES @ BASE. |        |        |



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| TOP    | BASE   | THICKNESS | MAJOR | SEAM  | SAMPLE# | REC % | MINOR LITHOLOGY | REMARKS   | C.B.A. | DEPTH  |
|--------|--------|-----------|-------|-------|---------|-------|-----------------|---|--------|--------|
| -----  | -----  | -----     | ----- | ----- | -----   | ----- | -----           | -----   | -----  | -----  |
| 170.64 | 175.29 | 4.65      | COAL  | 9     | 13      | 93.30 |                 | DULL & BRIGHT WITH OCC VITRAIN BANDS AT TOP. GOOD SEAM WITH LITTLE EVIDENCE OF SHALINESS. RUBBLE-FLAKEY. SLICKED COAL @ BASE. |        |        |
| 175.29 | 178.00 | 2.71      | MDST  |       |         |       |                 | AS AT 165.6M  |        |        |
| 178.00 | 178.70 | .70       | SLST  |       |         |       |                 | VERY THIN LIGHT -DARK GY LAMINATIONS. SLUMPED BDDG & VERY THIN CC MICROFRACTURES.   | 62     | 178.40 |
| 178.70 | 182.56 | 3.86      | MDST  |       |         |       |                 | AS AT 165.6M  | 67     | 180.60 |
| 182.56 | 184.26 | 1.70      | COAL  | 8     | 14      | 97.00 |                 | SOFT, POWDERY, DULL, SHALEY COAL.   |        |        |
| 184.26 | 190.40 | 6.14      | MDST  |       |         |       |                 | DARK GY, MASSIVE. SOMEWHAT SILTY WITH OCC SS STREAKS & WISPS.   | 62     | 184.90 |
| 190.40 | 193.20 | 2.80      | SLST  |       |         |       |                 | DARK GY WITH INTERLAMINATIONS OF LIGHT GY SS.<br><br>LAMINATIONS SHOW X-BDDG, SCOURING, MICRO-FRACTURES & DISTURBED BDDG.     | 60     | 191.30 |
| 193.20 | 194.30 | 1.10      | MDST  |       |         |       |                 | DARK GY-BLK. CARB PLANT FGMTS.  | 58     | 193.50 |
| 194.30 | 196.95 | 2.65      | COAL  | 7     | 15      | 89.40 |                 | STICK. BRIGHT WITH DULL. HARD.  |        |        |

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| TOP    | BASE   | THICKNESS | MAJOR | SEAM  | SAMPLE# | REC %  | MINOR LITHOLOGY | REMARKS   | C.B.A. | DEPTH  |
|--------|--------|-----------|-------|-------|---------|--------|-----------------|---|--------|--------|
| -----  | -----  | -----     | ----- | ----- | -----   | -----  | -----           | -----   | -----  | -----  |
|        |        |           |       |       |         |        |                 | SHALEY NEAR BASE.   |        |        |
| 196.95 | 197.45 | .50       | MDST  |       |         |        |                 | AS AT 193.2M  |        |        |
| 197.45 | 200.00 | 2.55      | IRST  |       |         |        |                 | OCC THIN TO VERY THIN WHT CC FRACTURES. PALE GRN-GY. VERY HARD, DENSE & CALCAREOUS. |        |        |
| 200.00 | 200.94 | .94       | SLST  |       |         |        |                 | LIGHT GY WITH LAMINAR TO X-BDD FEATURES & REWORKED BDDG.                            | 61     | 200.80 |
| 200.94 | 204.57 | 3.63      | MDST  |       |         |        |                 | DARK GY-BLK. CARB PLANT FGMTS & OCC VERY THIN SS STREAKS.                           | 66     | 202.70 |
| 204.57 | 210.73 | 6.16      | COAL  | 6U    | 16      | 72.20  |                 | SLICKED. SEMI-STICK TO POWDER. CLEAN SEAM. DULL WITH OCC VITRAIN BANDS.             |        |        |
| 210.73 | 211.95 | 1.22      | MDST  |       | 17      | 65.60  |                 | PARTING. COALY, DARK GY-BLK, CARBONACEOUS.  |        |        |
| 211.95 | 214.18 | 2.23      | COAL  | 6U    | 18      | 100.00 |                 |   |        |        |
| 214.18 | 215.22 | 1.04      | MDST  |       |         | 72.10  |                 | AS AT 200.94M   |        |        |
| 215.22 | 215.77 | .55       | COAL  | COAL  |         | 90.00  |                 |   |        |        |
| 215.77 | 217.46 | 1.69      | MDST  |       |         | 100.00 |                 | DARK GY, MASSIVE, DENSE. CARB PLANT FGMTS. COAL STRINGERS & BANDS.                  |        |        |

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| TOP    | BASE   | THICKNESS | MAJOR | SEAM  | SAMPLE# | REC %  | MINOR LITHOLOGY | REMARKS   | C.B.A. | DEPTH  |
|--------|--------|-----------|-------|-------|---------|--------|-----------------|---|--------|--------|
| -----  | -----  | -----     | ----- | ----- | -----   | -----  | -----           | -----   | -----  | -----  |
| 217.46 | 219.10 | 1.64      | COAL  | 6L    | 19      | 100.00 | MDST            | INTERLAMINATIONS OF BRIGHT, HARD CLEAN COAL BANDS & DENSE COALY CARBONACEOUS MDST. ROCK IS DARK GY-BLK. |        |        |
| 219.10 | 219.86 | .76       | MDST  |       |         |        |                 | LOST CORE. INTERPRETED FROM GEOPHYSICAL LOGS.   |        |        |
| 219.86 | 221.36 | 1.50      | COAL  | 6L    |         |        |                 | LOST COAL. ZERO RECOVERY  |        |        |
| 221.36 | 227.60 | 6.24      | MDST  |       |         |        |                 | AS AT 215.65M. COAL BAND AT 222.0-222.14M   |        |        |
| 227.60 | 230.25 | 2.65      | SLST  |       |         |        |                 | INTERLAMINATIONS OF DARK GY MDST & LIGHT GY SS. NUMEROUS VERY THIN WHT CC FRACTURES.                    |        |        |
| 230.25 | 231.00 | .75       | SS    |       |         |        |                 | VERY FINELY LAMINATED WITH SILTY WISPS DEFINING X-BDDG. SOME CC FRACTURES.                              | 52     | 230.80 |
| 231.00 | 232.20 | 1.20      | MDST  |       |         |        |                 | AS AT 215.65 BUT NO COAL.   |        |        |
| 232.20 | 236.40 | 4.20      | SLST  |       |         |        |                 | MEDIUM-DARK GY WITH OCC LIGHT GY SS BANDS. VERY POORLY BDD. SLICKED COALY FRACTURES.                    | 58     | 232.70 |
| 236.40 | 238.00 | 1.60      | SS    |       |         |        |                 | VERY SILTY. SUSPECTED CORING ALONG BDDG. FRACTURED & ANNEALED WITH WHT CC.                              | 61     | 238.00 |

BURNT RIDGE EXT  
 -----  
 DRILL HOLE # BRE85D-1  
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04/09/86

LOG DATE 85/08/28  
 EXAMINED BY B. MCKINSTRY

| TOP    | BASE   | THICKNESS | MAJOR | SEAM  | SAMPLE# | REC % | MINOR LITHOLOGY | REMARKS   | C.B.A. | DEPTH  |
|--------|--------|-----------|-------|-------|---------|-------|-----------------|---|--------|--------|
| -----  | -----  | -----     | ----- | ----- | -----   | ----- | -----           | -----   | -----  | -----  |
| 236.40 | 238.00 | 1.60      | SS    |       |         |       |                 | COALY SLICKED SURFACES.<br>DRILLERS LOST CIRCULATION<br>HERE. FG. MODERATELY<br>CALCAREOUS.   |        |        |
| 238.00 | 239.05 | 1.05      | SLST  |       |         |       |                 | MDST BANDS & LIGHT GY SS<br>WISPS. MEDIUM GY. COALY<br>SLICKED FRACTURES.   |        |        |
| 239.05 | 240.33 | 1.28      | MDST  |       |         |       |                 | AS AT 231.M   |        |        |
| 240.33 | 243.00 | 2.67      | SLST  |       |         |       |                 | LIGHT GY-WHT. SANDY WISPS<br>OUTLINE BDDG. MEDIUM-DARK GY.<br>COALY SLICKED<br>FRACTURES. WEAKLY BDD.   | 58     | 241.00 |
| 243.00 | 250.40 | 7.40      | SS    |       |         |       |                 | FG WITH DARK GY SILTY WISPS<br>OUTLINING BDDG. MEDIUM GY. WHT<br>CC FRACTURES.<br>RIP-UPS, BURROWING & DISTURBED<br>BDDG COMMON.                              | 62     | 243.30 |
|        |        |           |       |       |         |       |                 |   | 56     | 247.80 |
|        |        |           |       |       |         |       |                 |   | 60     | 249.30 |
|        |        |           |       |       |         |       |                 |   | 63     | 250.00 |
| 250.40 | 260.05 | 9.65      | SS    |       |         |       |                 | MG, SALT & PEPPER. COAL FGMTS &<br>BANDS. RIP-UPS PRESENT AS<br>DISCREET BANDS.<br>BDDG IS INDISTINCT TO<br>WELL-DEVELOPED AND LAMINAR.<br>VERY COALY @ BASE. | 61     | 252.00 |
|        |        |           |       |       |         |       |                 |   | 58     | 254.60 |
|        |        |           |       |       |         |       |                 |   | 65     | 257.00 |
|        |        |           |       |       |         |       |                 |   | 65     | 259.40 |

BURNT RIDGE EXT  
 -----  
 DRILL HOLE # BRE85D-1  
 -----

04/09/86

LOG DATE 85/08/28  
 EXAMINED BY B. MCKINSTRY

| TOP    | BASE   | THICKNESS | MAJOR | SEAM  | SAMPLE# | REC % | MINOR LITHOLOGY | REMARKS   | C.B.A. | DEPTH  |
|--------|--------|-----------|-------|-------|---------|-------|-----------------|---|--------|--------|
| -----  | -----  | -----     | ----- | ----- | -----   | ----- | -----           | -----   | -----  | -----  |
| 260.05 | 260.20 | .15       | SS    |       |         |       |                 | DIRTY WITH APPROX. 20% VISIBLE<br>PYRITE AS DISCREET BLEBS OR IN<br>BANDS.                  |        |        |
| 260.20 | 263.60 | 3.40      | SS    |       |         |       |                 | AS AT 250.4M BUT WITH MANY<br>MORE COAL PARTINGS & BLEBS.                                   | 60     | 263.60 |
|        |        |           |       |       |         |       |                 | RIP-UPS STILL COMMON AS TAN<br>BRN, ROUND TO SUB-ROUND SLST<br>OR MDST CLASTS.              |        |        |
| 263.60 | 271.00 | 7.40      | MDST  |       |         |       |                 | DARK GY-BLK. MASSIVE.<br>CARBONACEOUS WITH OCC COAL<br>STRINGERS.                           | 63     | 266.30 |
|        |        |           |       |       |         |       |                 |   | 63     | 268.60 |
|        |        |           |       |       |         |       |                 |   | 57     | 270.00 |
| 271.00 | 272.80 | 1.80      | SLST  |       |         |       |                 | DARK GY. OCC IRREGULAR PATCHES<br>OF LIGHT GY SANDY MATERIAL<br>DEFINING<br>DISTURBED BDDG. | 56     | 272.30 |
| 272.80 | 273.60 | .80       | MDST  |       |         |       |                 | AS AT 263.6M  |        |        |
| 273.60 | 275.00 | 1.40      | SLST  |       |         |       |                 | SIMILIAR TO ABOVE BUT MORE<br>SANDY WISPS OUTLINE BDDG.                                     | 60     | 274.40 |
| 275.00 | 281.84 | 6.84      | MDST  |       |         |       |                 | AS AT 263.6M BUT VERY COALY AT<br>BASE. COALY SURFACES ARE<br>SLICKED.                      | 46     | 279.70 |
| 281.84 | 284.45 | 2.61      | COAL  | SU    | 20      | 80.40 |                 | RUBBLE TO BROKEN. SLICKED<br>SURFACES. DULL, POWDERY COAL.                                  |        |        |

## BURNT RIDGE EXT

04/09/86

DRILL HOLE # BRE85D-1

LOG DATE 85/08/28  
EXAMINED BY B. MCKINSTRY

| TOP    | BASE   | THICKNESS | MAJOR | SEAM | SAMPLE# | REC % | MINOR LITHOLOGY | REMARKS  | C.B.A. | DEPTH  |
|--------|--------|-----------|-------|------|---------|-------|-----------------|--|--------|--------|
|        |        |           |       |      |         |       |                 | (283.55-283.75<br>MDST SPLIT).   |        |        |
| 284.45 | 286.57 | 2.12      | MDST  |      |         | 73.10 |                 | AS AT 275.0M 70.4% RECOVERY  |        |        |
| 286.57 | 289.82 | 3.25      | COAL  | 5L   | 21      | 73.20 |                 | SHEARED SOFT & DULL WITH<br>SHINEY SLICKED SURFACES. .1M<br>MDST BAND IN SEAM.<br>SOFT MUCKY COAL @ 288.   |        |        |
| 289.82 | 294.60 | 4.78      | MDST  |      |         |       |                 | AS AT 275.0M   | 55     | 291.30 |
|        |        |           |       |      |         |       |                 |  | 62     | 293.00 |
| 294.60 | 295.35 | .75       | SLST  |      |         |       |                 | WISPY SS BANDS IN MEDIUM-DARK<br>GY SLST MATRIX.   | 45     | 295.20 |
| 295.35 | 299.90 | 4.55      | MDST  |      |         |       |                 | DARK GY-BLK. CARB PLANT FGMTS.<br>MASSIVE TO WEAKLY BDD. HARD.<br>COALY @ BASE.  | 60     | 296.90 |
|        |        |           |       |      |         |       |                 |  | 60     | 299.60 |
| 299.90 | 303.15 | 3.25      | COAL  | 4U   | 22      | 98.50 |                 | SHALEY @ TOP. DULL WITH OCC<br>VITRAIN BANDS. MDST PARTING<br>FROM 301.6-302.M<br>SEMI-STICK TO RUBBLE. SLICKED<br>POLISHED SURFACES ARE COMMON. |        |        |
| 303.15 | 306.10 | 2.95      | MDST  |      |         |       |                 | AS AT 295.35M  |        |        |
| 306.10 | 307.60 | 1.50      | SLST  |      |         |       |                 | INTERLAMINATIONS OF WISPY  | 64     | 306.40 |

BURNT RIDGE EXT  
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 DRILL HOLE # BRE85D-1  
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04/09/86

LOG DATE 85/08/28  
 EXAMINED BY B. MCKINSTRY

| TOP    | BASE   | THICKNESS | MAJOR | SEAM  | SAMPLE# | REC % | MINOR LITHOLOGY | REMARKS   | C.B.A. DEPTH |
|--------|--------|-----------|-------|-------|---------|-------|-----------------|---|--------------|
| -----  | -----  | -----     | ----- | ----- | -----   | ----- | -----           | -----   | -----        |
|        |        |           |       |       |         |       |                 | LIGHT GY SS DEFINES LAMINAR TO<br>DISTURBED BDDG,<br>SCOURING & X-BDDG.   |              |
| 307.60 | 307.98 | .38       | MDST  |       |         |       |                 | AS AT 295.35M   | 58 307.70    |
| 307.98 | 313.74 | 5.76      | COAL  | 4L    | 23      | 79.90 |                 | BRIGHT VITRAIN BANDS IN<br>DULL, DIRTY MATRIX. MDST<br>PARTING FROM 309.85-310.M<br>CORE IS SEMI-STICK TO BROKEN<br>RUBBLE. | 70 312.80    |
| 313.74 | 319.40 | 5.66      | MDST  |       |         |       |                 | AS AT 295.35M   | 62 317.30    |
| 319.40 | 321.00 | 1.60      | SLST  |       |         |       |                 | AS AT 294.6M  | 60 321.00    |
| 321.00 | 323.25 | 2.25      | MDST  |       |         |       |                 | AS AT 295.35M. COALY STRINGERS<br>@ BASE. TD  |              |

| RATIO:<br>VOLUME WASTE/<br>VOLUME COAL | TRUE<br>THICKNESS | LITHOLOGY | SEAM<br>NAME | RAW<br>ASH | RAW<br>FSI | QUALITY (1.6 S.G.)    |                      |                     |              |       | CORE<br>RECOVERY |  |
|--|-------------------|-----------|--------------|------------|------------|-----------------------|----------------------|---------------------|--------------|-------|------------------|--|
|  |                   |           |              |            |            | (ADB)<br>CLEAN<br>ASH | (IAF)<br>CLEAN<br>VM | (ADB)<br>CLEAN<br>S | CLEAN<br>FSI | YIELD |                  |  |
|  | 2.88              | CASING    |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 5.82              | SLST      |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 2.22              | COAL/SH   |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 6.07              | SS/SLST   |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 19.26             | SS        |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 3.42              | SLST      |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 8.61              | SS        |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 16.28             | SS/SLST   |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 4.04              | SS/SLST   |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 2.72              |           |              |            |            |                       |                      |                     |              |       |                  |  |
| 21.5                                   | 2.09              | COAL      | 13           | 11.32      | 8.0        | 6.44                  | 34.3                 | .76                 | 8.0          | 91.95 | 100.0            |  |
|  | 2.57              | SS/SLST   |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 2.66              | MDST      |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 4.15              | COAL      | 12           | 29.38      | 7.0        | 12.04                 | 33.8                 | .84                 | 7.5          | 72.63 | 95.0             |  |
| 13.8                                   | 2.34              | MDST      |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 1.26              | SLST      |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 11.95             | MDST      |              |            |            |                       |                      |                     |              |       |                  |  |
| 11.45                                  | 1.17              | COAL      | 11 ZONE      | 13.73      | 8.0        | 6.09                  | 31.14                | .66                 | 8.0          | 84.6  | 100.0            |  |
|  | 2.39              | MDST      |              |            |            |                       |                      |                     |              |       |                  |  |
| 10.2                                   | 1.22              | COAL      |              | 32.4       | 7.0        | 8.43                  | 32.65                | .92                 | 8.0          | 66.5  | 100.0            |  |
|  | 1.08              | MDST      |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 2.38              | COAL      |              | 34.39      | 5.0        | 12.79                 | 31.05                | .98                 | 8.0          | 64.5  | 81.5             |  |
| 9.2                                    | 1.30              | MDST      |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 5.82              | SLST      |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 3.16              | MDST      |              |            |            |                       |                      |                     |              |       |                  |  |
| 8.95                                   | 3.65              | COAL      | 10U          | 35.38      | 6.0        | 11.10                 | 29.77                | .77                 | 8.0          | 53.8  | 70.3             |  |
|  | 1.67              | MDST      |              |            |            |                       |                      |                     |              |       |                  |  |
| 7.6                                    | 1.89              | COAL      | 10L          | 9.35       | 7.5        | 5.05                  | 31.05                | .71                 | 8.0          | 91.9  | 100.0            |  |
|  | 2.34              | SLST/MDST |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 28.86             | COAL      | 9            | 16.66      | 7.5        | 8.15                  | 31.11                | .79                 | 8.0          | 82.5  | 92.5             |  |
| 7.4                                    | 4.33              | MDST/SLST |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 6.31              | COAL      | 8            | 7.16       | 8.5        | 5.1                   | 32.15                | .87                 | 8.5          | 96.6  | 86.8             |  |
| 7.1                                    | 1.71              | MDST/SLST |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 3.56              | COAL      | 7            | 42.74      | 5.5        | 8.74                  | 30.74                | 1.12                | 8.5          | 51.4  | 91.1             |  |
| 6.5                                    | 2.34              | MDST/SLST |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 6.76              | COAL      | 6 ZONE       | 19.13      | 8.0        | 7.99                  | 29.15                | .87                 | 8.5          | 81.36 | 69.5             |  |
| 5.4                                    | 5.77              | MDST      |              | 18.04      | 6.0        | 9.85                  | 26.18                | .64                 | 7.0          | 81.65 | 100.0            |  |
|  | 1.0               | COAL      |              |            |            |                       |                      |                     |              |       |                  |  |
| 5.1                                    | 2.25              | MDST      |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 1.58              | COAL      |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 1.62              | COAL/MDST |              |            |            |                       |                      |                     |              |       |                  |  |
| 5.0                                    | 1.62              | MDST      |              | 37.68      | 7.0        | 9.71                  | 28.6                 | .82                 | 7.5          | 53.8  | 94.4             |  |
|  | 1.17              | COAL      |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 5.72              | MDST      |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 4.15              | SLST      |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 1.08              | MDST      |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 9.74              | SLST      |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 18.58             | 6SS       |              |            |            |                       |                      |                     |              |       |                  |  |
|  | 16.55             | SLST/MDST |              |            |            |                       |                      |                     |              |       |                  |  |
| 6.4                                    | 2.21              | COAL      | 5U           | 28.91      | 4.0        | 8.48                  | 26.27                | .57                 | 7.5          | 70.8  | 85.7             |  |
|  | 1.98              | MDST      |              |            |            |                       |                      |                     |              |       |                  |  |
| 5.85                                   | 3.07              | COAL      | 5L           | 20.89      | 6.5        | 6.37                  | 26.46                | .51                 | 7.5          | 79.4  | 70.0             |  |
|  | 9.0               | MDST/SLST |              |            |            |                       |                      |                     |              |       |                  |  |
| 5.65                                   | 3.26              | COAL      | 4U           | 28.09      | 6.0        | 6.64                  | 25.44                | .53                 | 7.5          | 72.3  | 88.4             |  |
|  | 3.97              | MDST      |              |            |            |                       |                      |                     |              |       |                  |  |
| 5.10                                   | 5.14              | COAL      | 4L           | 24.11      | 2.5        | 10.85                 | 25.02                | .42                 | 4.5          | 76.35 | 80.7             |  |
|  | 8.61              | MDST/SLST |              |            |            |                       |                      |                     |              |       |                  |  |

ELK FORMATION

MIST MOUNTAIN FORMATION

HIGH VOLATILE COAL

MEDIUM VOLATILE COAL

ENCLOSURE 9

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**Crows Nest Resources Limited**

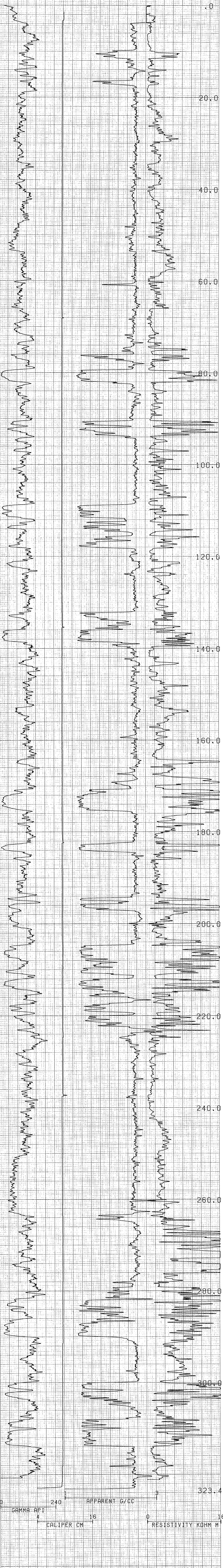
BURNT RIDGE EXTENSION  
S.E. B.C.

**TRUE THICKNESS STRATIGRAPHIC  
SECTION FOR DH85-1**

UTM ZONE 11

|                      |              |                    |
|----------------------|--------------|--------------------|
| AUTHOR: B. MCKINSTRY | SCALE: 1:500 | DRAWN BY: R.G.P.   |
| DATE: 85 11          | REVISED:     | DRAWING No. BR6U01 |
| To Accompany         |              |                    |





COMPU-LOG V8L2 PLOT 06-29-85  
 BRE-85-01  
 CROWNEST RESOURCES  
 BURNT RIDGE EXT.  
 HOLE DIAMETER : 10.0  
 PROBE # 9030A - 454  
 SENSOR #4 CAL STD CPS = 6588  
 SENSOR #4 CAL RUN CPS = 6577  
 SENSOR #4 CAL BIAS = 42  
 DATA V8L2WA TRUCK # 7922  
 K. SKARBD APPL.#2030L1

716

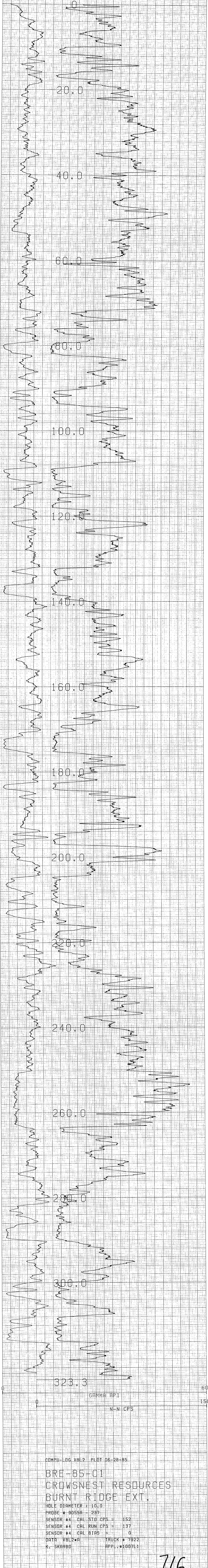
437

435

433

431

429



COMPU-LOG V8L2 PLOT 06-28-85  
 BRE-85-01  
 CROWNEST RESOURCES  
 BURNT RIDGE EXT.  
 HOLE DIAMETER : 10.0  
 PROBE # 9055A - 237  
 SENSOR #4 CAL STD CPS = 152  
 SENSOR #4 CAL RUN CPS = 137  
 SENSOR #4 CAL BIAS = 0  
 DATA V8L2\* A TRUCK # 7922  
 K. SKARBO APPL.#1007L1

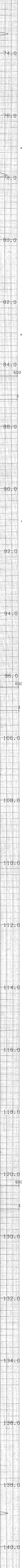
716

425

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# VERTICAL DEVIATION

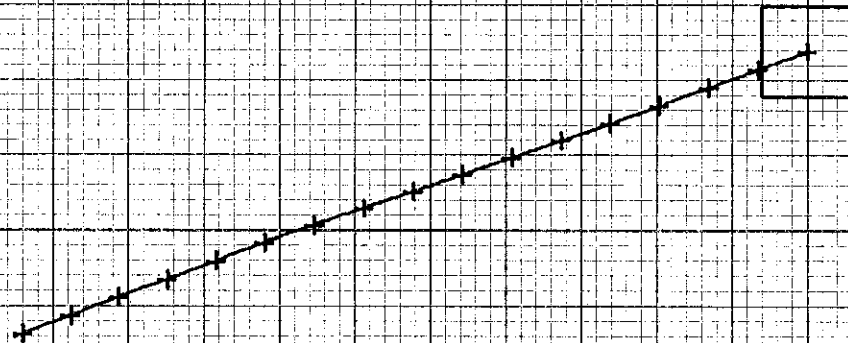
COMPU-LOG V8L1 DEVIATION  
DATA FROM : V8L2\*A

CLIENT : CROWNEST RESOURCES  
LOCATION : BURNT RIDGE EXT.  
HOLE ID : BRE-85-01  
DATE OF LOG : 06-29-85  
PROBE : 9055A 0237

SCALE: 15.00 M/DIV  
MAG DECL: 21.0  
TRUE DEPTH: 276.3 M  
AZIMUTH: 250.0  
DISTANCE: 167.75 M

+ = 20.0 M INCR  
Δ = TOP OF ZONE  
◇ = BOTTOM OF ZONE

TRUE NORTH ↑



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CENTURY GEOPHYSICAL CORPORATION

\* \* \* \* \* VERTICAL DEVIATION \* \* \* \* \*

COMPU-LOG V8L1 DEVIATION

CLIENT : CROWSNEST RESOURCES

HOLE ID : BRE-85-01

LOCATION : BURNT RIDGE EXT.

DATE OF LOG : 06-29-85

DATA FROM : V8L2\*A

PROBE : 9055A 0237

TD = TOTAL DEPTH  
 T = TOP OF ZONE  
 B = BOTTOM OF ZONE

| DEPTH     | TRUE DEPTH | NORTH DEV | EAST DEV | DISTANCE | AZIMUTH | SA   | SAB   |
|-----------|------------|-----------|----------|----------|---------|------|-------|
| .00       | .00        | .00       | .00      | .00      | .0      | .0   | .0    |
| 20.00     | 17.04      | -3.64     | -9.80    | 10.46    | 249.6   | 31.5 | 249.6 |
| 40.00     | 34.08      | -7.29     | -19.61   | 20.92    | 249.6   | 31.5 | 249.6 |
| 60.00     | 51.14      | -10.93    | -29.40   | 31.37    | 249.6   | 31.4 | 249.5 |
| 80.00     | 68.22      | -14.52    | -39.15   | 41.75    | 249.7   | 31.3 | 249.8 |
| 100.00    | 85.32      | -18.04    | -48.90   | 52.12    | 249.7   | 31.2 | 250.1 |
| 120.00    | 102.40     | -21.56    | -58.69   | 62.52    | 249.8   | 31.3 | 250.2 |
| 140.00    | 119.46     | -25.06    | -68.52   | 72.95    | 249.9   | 31.4 | 250.4 |
| 160.00    | 136.51     | -28.53    | -78.37   | 83.40    | 250.0   | 31.5 | 250.5 |
| 180.00    | 153.57     | -32.02    | -88.22   | 93.85    | 250.1   | 31.4 | 250.5 |
| 200.00    | 170.61     | -35.46    | -98.09   | 104.31   | 250.1   | 31.5 | 250.7 |
| 220.00    | 187.69     | -38.92    | -107.91  | 114.72   | 250.2   | 31.3 | 250.5 |
| 240.00    | 204.81     | -42.58    | -117.58  | 125.05   | 250.1   | 31.1 | 249.3 |
| 260.00    | 221.95     | -46.20    | -127.22  | 135.35   | 250.0   | 31.0 | 249.4 |
| 280.00    | 239.11     | -49.66    | -136.89  | 145.62   | 250.1   | 30.9 | 250.3 |
| 300.00    | 256.29     | -53.33    | -146.44  | 155.85   | 250.0   | 30.7 | 248.9 |
| 320.00    | 273.48     | -56.88    | -156.02  | 166.07   | 250.0   | 30.7 | 249.6 |
| TD 323.30 | 276.32     | -57.48    | -157.59  | 167.75   | 250.0   | 30.6 | 249.0 |

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Report on the Sealing of drillholes

Inspection District \_\_\_\_\_ Date of Report 29/06/85  
 Company CROWSNEST RESOURCES LTD Land District KOOTENAY  
 Well No. Number \_\_\_\_\_ Licence Number \_\_\_\_\_

1. Number of Drillhole. BRE 05-1
2. Surface elevation. \_\_\_\_\_
3. Type (Vertical, diamond, rotary, size etc. 60° ANGLE DIAMOND HQ
4. Drilled by: Name of Contractor D.W. COATES LTD  
 Name of Exploration Company CROWSNEST RESOURCES LTD
5. Date of completion. 29/06/85
6. Date of Sealing 29/06/85
7. Sealed by: Name of Contractor D.W. COATES LTD.  
 Name of Exploration Company CROWSNEST RESOURCES
8. (a) Has any casing, drill pipe, drill bits, core barrel, etc. been left in the hole?  
 (b) If so, give details and location. 3M CASING LEFT IN HOLE
9. (a) Was the drillhole sealed in the manner outlined in the Chief Inspectors Instructions? YES  
 (b) If No, give reasons and details of variation. \_\_\_\_\_
10. (a) Was the sealing effective? YES  
 (b) Details of any tests carried out. \_\_\_\_\_

11. I certify that the above drillhole has been effectively sealed in accordance with the instructions of the Chief Inspector of Mines.

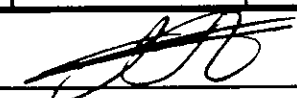
Signature [Signature]  
 Designation Inspector (D.W. CONTRS.)  
 Date June 29/85  
 Countersignature [Signature]  
 Designation CROWSNEST RESOURCES  
 Date 29/06/85

| LORING LABORATORIES LTD.<br>CERTIFICATE OF COAL TESTING |             |            |       | COMPANY           |                          | CROWSNEST RESOURCES LTD |        |       |        | FILE NO. | 27659         |       |       |  |
|---|-------------|------------|-------|-------------------|--------------------------|-------------------------|--------|-------|--------|----------|---------------|-------|-------|--|
|   |             |            |       | ATTENTION         |                          | B. MCKINSTRY            |        |       |        | DATE     | July 30, 1985 |       |       |  |
|   |             |            |       | PROJECT           |                          | BURNT RIDGE EXTENSION   |        |       |        | PAGE     | 1 of 9        |       |       |  |
| SAMPLE NUMBER   | SAMPLE TYPE | % RECOVERY |       | BASIS OF ANALYSIS | REC'D % H <sub>2</sub> O | % H <sub>2</sub> O      | % V.M. | % ASH | % F.C. | % S      | Btu/lb        | F.S.I | NOTES |  |
|   |             | SINK       | FLOAT |                   |                          |                         |        |       |        |          |               |       |       |  |
| #1<br>16.92-17.4  | Raw Coal    |            |       | As Received       | 12.17                    | -                       |        | 41.99 |        |          |               |       |       |  |
|   |             |            |       | Air Dried         | -                        | 1.52                    |        | 47.08 |        |          |               |       | 1     |  |
|   |             |            |       | Dry Basis         | -                        | -                       |        | 47.81 |        |          |               |       |       |  |
| #2<br>76.5-77.3   | Raw Coal    |            |       | As Received       | 4.76                     | -                       |        | 30.01 |        |          |               |       |       |  |
|   |             |            |       | Air Dried         | -                        | .93                     |        | 31.22 |        |          |               |       | 5     |  |
|   |             |            |       | Dry Basis         | -                        | -                       |        | 31.51 |        |          |               |       |       |  |
| #3<br>79.7-82.65  | Raw Coal    |            |       | As Received       | 6.66                     | -                       |        | 10.66 |        |          |               |       |       |  |
|   |             |            |       | Air Dried         | -                        | .91                     |        | 11.32 |        |          |               |       | 8     |  |
|   |             |            |       | Dry Basis         | -                        | -                       |        | 11.42 |        |          |               |       |       |  |
| #4<br>90.07-91.02                                       | Raw Coal    |            |       | As Received       | 6.11                     | -                       |        | 16.70 |        |          |               |       |       |  |
|   |             |            |       | Air Dried         | -                        | .77                     |        | 17.65 |        |          |               |       | 8     |  |
|   |             |            |       | Dry Basis         | -                        | -                       |        | 17.79 |        |          |               |       |       |  |
| #5<br>91.02-91.42                                       | Raw Coal    |            |       | As Received       | 1.73                     | -                       |        | 86.92 |        |          |               |       |       |  |
|   |             |            |       | Air Dried         | -                        | .98                     |        | 87.58 |        |          |               |       | 0     |  |
|   |             |            |       | Dry Basis         | -                        | -                       |        | 88.45 |        |          |               |       |       |  |
| #6<br>91.42-93.3  | Raw Coal    |            |       | As Received       | 4.74                     | -                       |        | 22.78 |        |          |               |       |       |  |
|   |             |            |       | Air Dried         | -                        | .91                     |        | 23.70 |        |          |               |       | 6     |  |
|   |             |            |       | Dry Basis         | -                        | -                       |        | 23.92 |        |          |               |       |       |  |

PURCHASE ORDER NUMBER:

# CN 24019

ANALYST:





# LORING LABORATORIES LTD.

## CERTIFICATE OF COAL TESTING

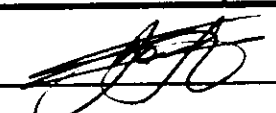
|           |                         |          |               |
|-----------|-------------------------|----------|---------------|
| COMPANY   | CROWSNEST RESOURCES LTD | FILE NO. | 27659         |
| ATTENTION | B. MCKINSTRY            | DATE     | July 30, 1985 |
| PROJECT   | BURNT RIDGE EXTENSION   | PAGE     | 2 of 9        |

| SAMPLE NUMBER       | SAMPLE TYPE | % RECOVERY |       | BASIS OF ANALYSIS | REC'D % H <sub>2</sub> O | % H <sub>2</sub> O | % V.M. | % ASH | % F.C. | % S | Btu/lb | F.S.I | NOTES |
|---------------------|-------------|------------|-------|-------------------|--------------------------|--------------------|--------|-------|--------|-----|--------|-------|-------|
|                     |             | SINK       | FLOAT |                   |                          |                    |        |       |        |     |        |       |       |
| # 7<br>109.05-111.8 | Raw Coal    |            |       | As Received       | 3.94                     | -                  |        | 13.32 |        |     |        | 8     |       |
|                     |             |            |       | Air Dried         | -                        | 1.00               |        | 13.73 |        |     |        |       |       |
|                     |             |            |       | Dry Basis         | -                        | -                  |        | 13.87 |        |     |        |       |       |
| # 8<br>111.8-113.05 | Raw Coal    |            |       | As Received       | 4.80                     | -                  |        | 75.50 |        |     |        | 0     |       |
|                     |             |            |       | Air Dried         | -                        | 1.10               |        | 78.43 |        |     |        |       |       |
|                     |             |            |       | Dry Basis         | -                        | -                  |        | 79.30 |        |     |        |       |       |
| # 9<br>113.05-114.4 | Raw Coal    |            |       | As Received       | 5.35                     | -                  |        | 30.92 |        |     |        | 7     |       |
|                     |             |            |       | Air Dried         | -                        | .83                |        | 32.40 |        |     |        |       |       |
|                     |             |            |       | Dry Basis         | -                        | -                  |        | 32.67 |        |     |        |       |       |
| #10<br>117.05-118.8 | Raw Coal    |            |       | As Received       | 7.11                     | -                  |        | 32.25 |        |     |        | 5     |       |
|                     |             |            |       | Air Dried         | -                        | .94                |        | 34.39 |        |     |        |       |       |
|                     |             |            |       | Dry Basis         | -                        | -                  |        | 34.72 |        |     |        |       |       |
| #11<br>132.5-134.1  | Raw Coal    |            |       | As Received       | 10.78                    | -                  |        | 31.88 |        |     |        | 6     |       |
|                     |             |            |       | Air Dried         | -                        | .97                |        | 35.38 |        |     |        |       |       |
|                     |             |            |       | Dry Basis         | -                        | -                  |        | 35.74 |        |     |        |       |       |
| #12<br>136.15-139.0 | Raw Coal    |            |       | As Received       | 5.54                     | -                  |        | 8.91  |        |     |        | 7½    |       |
|                     |             |            |       | Air Dried         | -                        | .90                |        | 9.35  |        |     |        |       |       |
|                     |             |            |       | Dry Basis         | -                        | -                  |        | 9.43  |        |     |        |       |       |

PURCHASE ORDER NUMBER: \_\_\_\_\_

# CN 24019

ANALYST: \_\_\_\_\_



# LORING LABORATORIES LTD.

## CERTIFICATE OF COAL TESTING

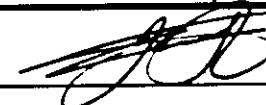
|           |                         |          |               |
|-----------|-------------------------|----------|---------------|
| COMPANY   | CROWSNEST RESOURCES LTD | FILE NO. | 27659         |
| ATTENTION | B. MCKINSTRY            | DATE     | July 30, 1985 |
| PROJECT   | BURNT RIDGE EXTENSION   | PAGE     | 3 of 9        |

| SAMPLE NUMBER        | SAMPLE TYPE | % RECOVERY |       | BASIS OF ANALYSIS | REC'D % H <sub>2</sub> O | % H <sub>2</sub> O | % V.M. | % ASH | % F.C. | % S | Btu/lb | F.S.I | NOTES |
|----------------------|-------------|------------|-------|-------------------|--------------------------|--------------------|--------|-------|--------|-----|--------|-------|-------|
|                      |             | SINK       | FLOAT |                   |                          |                    |        |       |        |     |        |       |       |
| #13<br>171.05-175.6  | Raw Coal    |            |       | As Received       | 6.39                     | -                  |        | 15.74 |        |     |        |       | 7½    |
|                      |             |            |       | Air Dried         | -                        | .90                |        | 16.66 |        |     |        |       |       |
|                      |             |            |       | Dry Basis         | -                        | -                  |        | 16.81 |        |     |        |       |       |
| #14<br>182.3-184.4   | Raw Coal    |            |       | As Received       | 12.01                    | -                  |        | 6.37  |        |     |        |       | 8½    |
|                      |             |            |       | Air Dried         | -                        | 1.09               |        | 7.16  |        |     |        |       |       |
|                      |             |            |       | Dry Basis         | -                        | -                  |        | 7.24  |        |     |        |       |       |
| #15<br>194.8-197.3   | Raw Coal    |            |       | As Received       | 7.25                     | -                  |        | 40.03 |        |     |        |       | 5½    |
|                      |             |            |       | Air Dried         | -                        | .96                |        | 42.74 |        |     |        |       |       |
|                      |             |            |       | Dry Basis         | -                        | -                  |        | 43.15 |        |     |        |       |       |
| #16<br>204.8-211.1   | Raw Coal    |            |       | As Received       | 7.27                     | -                  |        | 17.88 |        |     |        |       | 8     |
|                      |             |            |       | Air Dried         | -                        | .78                |        | 19.13 |        |     |        |       |       |
|                      |             |            |       | Dry Basis         | -                        | -                  |        | 19.28 |        |     |        |       |       |
| #17<br>211.1-212.03  | Raw Coal    |            |       | As Received       | 1.54                     | -                  |        | 89.22 |        |     |        |       | 0     |
|                      |             |            |       | Air Dried         | -                        | 1.11               |        | 89.61 |        |     |        |       |       |
|                      |             |            |       | Dry Basis         | -                        | -                  |        | 90.62 |        |     |        |       |       |
| #18<br>212.03-214.45 | Raw Coal    |            |       | As Received       | 3.87                     | -                  |        | 17.48 |        |     |        |       | 6     |
|                      |             |            |       | Air Dried         | -                        | .81                |        | 18.04 |        |     |        |       |       |
|                      |             |            |       | Dry Basis         | -                        | -                  |        | 18.19 |        |     |        |       |       |

PURCHASE ORDER NUMBER:

# CN 24019

ANALYST:



# LORING LABORATORIES LTD.

## CERTIFICATE OF COAL TESTING


|           |                         |          |               |
|-----------|-------------------------|----------|---------------|
| COMPANY   | CROWSNEST RESOURCES LTD | FILE NO. | 27659         |
| ATTENTION | B. McKINSTRY            | DATE     | July 30, 1985 |
| PROJECT   | BURNT RIDGE EXTENSION   | PAGE     | 4 of 9        |

| SAMPLE NUMBER       | SAMPLE TYPE                 | % RECOVERY |       | BASIS OF ANALYSIS | REC'D % H <sub>2</sub> O | % H <sub>2</sub> O | % V.M. | % ASH | % F.C. | % S | Btu/lb | F.S.I | NOTES |
|---------------------|-----------------------------|------------|-------|-------------------|--------------------------|--------------------|--------|-------|--------|-----|--------|-------|-------|
|                     |                             | SINK       | FLOAT |                   |                          |                    |        |       |        |     |        |       |       |
| #19<br>217.7-219.35 | Raw Coal                    |            |       | As Received       | 6.60                     | -                  |        | 35.51 |        |     |        |       | 7     |
|                     |                             |            |       | Air Dried         | -                        | .90                |        | 37.68 |        |     |        |       |       |
|                     |                             |            |       | Dry Basis         | -                        | -                  |        | 38.02 |        |     |        |       |       |
| #20<br>281.8-284.7  | Raw Coal                    |            |       | As Received       | 5.32                     | -                  |        | 27.57 |        |     |        |       | 4     |
|                     |                             |            |       | Air Dried         | -                        | .71                |        | 28.91 |        |     |        |       |       |
|                     |                             |            |       | Dry Basis         | -                        | -                  |        | 29.12 |        |     |        |       |       |
| #21<br>286.2-289.6  | Raw Coal                    |            |       | As Received       | 5.96                     | -                  |        | 19.77 |        |     |        |       | 6½    |
|                     |                             |            |       | Air Dried         | -                        | .65                |        | 20.89 |        |     |        |       |       |
|                     |                             |            |       | Dry Basis         | -                        | -                  |        | 21.03 |        |     |        |       |       |
| #22<br>300.0-303.45 | Raw Coal                    |            |       | As Received       | 3.39                     | -                  |        | 27.34 |        |     |        |       | 6     |
|                     |                             |            |       | Air Dried         | -                        | .74                |        | 28.09 |        |     |        |       |       |
|                     |                             |            |       | Dry Basis         | -                        | -                  |        | 28.30 |        |     |        |       |       |
| #23<br>308.2-314.0  | Raw Coal                    |            |       | As Received       | 3.54                     | -                  |        | 23.41 |        |     |        |       | 2½    |
|                     |                             |            |       | Air Dried         | -                        | .65                |        | 24.11 |        |     |        |       |       |
|                     |                             |            |       | Dry Basis         | -                        | -                  |        | 24.27 |        |     |        |       |       |
| Comp 4,5,6          | 4=31%<br>5=12.5%<br>6=56.5% |            |       | Air Dried         | -                        | .77                |        | 29.38 |        |     |        |       | 7     |
|                     |                             |            |       | Dry Basis         | -                        | -                  |        | 29.61 |        |     |        |       |       |
|                     |                             |            |       |                   |                          |                    |        |       |        |     |        |       |       |

PURCHASE ORDER NUMBER:

# CN 24019

ANALYST:



| <b>LORING LABORATORIES LTD.</b><br>CERTIFICATE OF COAL TESTING |             |            |       | COMPANY                |                          | CROWSNEST RESOURCES LTD |        |                |        |     | FILE NO. | 27659         |       |
|--|-------------|------------|-------|------------------------|--------------------------|-------------------------|--------|----------------|--------|-----|----------|---------------|-------|
|  |             |            |       | ATTENTION              |                          | B. MCKINSTRY            |        |                |        |     | DATE     | July 30, 1985 |       |
|  |             |            |       | PROJECT                |                          | BURNT RIDGE EXTENSION   |        |                |        |     | PAGE     | 5 of 9        |       |
| SAMPLE NUMBER  | SAMPLE TYPE | % RECOVERY |       | BASIS OF ANALYSIS      | REC'D % H <sub>2</sub> O | % H <sub>2</sub> O      | % V.M. | % ASH          | % F.C. | % S | Btu/lb   | F.S.I         | NOTES |
|  |             | SINK       | FLOAT |                        |                          |                         |        |                |        |     |          |               |       |
| Comp 16,17,18<br>16 = 64%<br>17 = 11.5%<br>18 = 24.5%          | Raw Coal    |            |       | Air Dried<br>Dry Basis | -<br>-                   | .90<br>-                |        | 26.63<br>26.87 |        |     |          | 6             |       |

PURCHASE ORDER NUMBER: \_\_\_\_\_ # CN 24019

ANALYST: 



Province of British Columbia  
Ministry of Energy, Mines and Petroleum Resources

**APPLICATION TO EXTEND TERM OF LICENCE**

I, Glenn C. Proudfoot (Name) agent for Shell Canada limited (Name)  
 (Address) (same) P.O. Box 2699, Station H (Address)  
Calgary, Alberta T2P 3Y9  
 Valid FMC No. 207 568

hereby apply to the Minister to extend the term of Coal Licence(s) No(s) 264 - 276 (Group 214)

for a further period of one year.

2. Property name NORTH BLOCK

3. I am allowing the following Coal Licence(s) No(s) to forfeit

4. I have performed, or caused to be performed, during the period June 18, 1985 to June 30, 1985, work to the value of at least \$ 64,397.17

on the location of coal licence(s) as follows:

**CATEGORY OF WORK**

| CATEGORY OF WORK              | Licence(s) No(s) | Apportioned Cost |
|-------------------------------|------------------|------------------|
| Geological mapping            |                  |                  |
| Surveys: Geophysical          |                  |                  |
| Geochemical                   |                  |                  |
| Other                         |                  |                  |
| Road construction             |                  |                  |
| Surface work                  |                  |                  |
| Underground work              |                  |                  |
| Drilling                      | <u>273</u>       | <u>55,179.36</u> |
| Logging, sampling and testing | <u>273</u>       | <u>6,229.15</u>  |
| Reclamation                   | <u>273</u>       | <u>1,444.00</u>  |
| Other work (specify)          |                  |                  |
| Off-property costs            |                  | <u>1,544.66</u>  |

5. The work performed on the location(s) is detailed in the attached report entitled BURNT RIDGE EXTENSION SE. B.C. GEOLOGICAL REPORT 1985

APRIL 16, 1986  
(Date)

Gen H  
(Signature)

Superior land - CNRL  
(Position)

(FORMS AND REPORT TO BE SUBMITTED IN DUPLICATE)

MONTREAL, Q.C.

**GEOLOGICAL MAPPING**Yes  No 

Area (Hectares) \_\_\_\_\_ Scale \_\_\_\_\_ Duration \_\_\_\_\_

Reconnaissance \_\_\_\_\_

Detail: Surface \_\_\_\_\_

Underground \_\_\_\_\_

Other\* (specify) \_\_\_\_\_

Total Cost \$ \_\_\_\_\_

**GEOPHYSICAL/GEOCHEMICAL SURVEYS**Yes  No 

Method \_\_\_\_\_

Grid \_\_\_\_\_

Topographic \_\_\_\_\_

Other\* (specify) \_\_\_\_\_

Total Cost \$ \_\_\_\_\_

**ROAD CONSTRUCTION**Yes  No 

Length \_\_\_\_\_

Width \_\_\_\_\_

On Licence(s) No.(s) \_\_\_\_\_

Access to \_\_\_\_\_

Total Cost \$ \_\_\_\_\_

**SURFACE WORK**Yes  No 

Length \_\_\_\_\_

Width \_\_\_\_\_

Depth \_\_\_\_\_

Cost \_\_\_\_\_

Trenching \_\_\_\_\_

Seam Tracing \_\_\_\_\_

Crosscutting \_\_\_\_\_

Other\* (specify) \_\_\_\_\_

Total Cost \$ \_\_\_\_\_

**UNDERGROUND WORK**Yes  No 

No. of Adits \_\_\_\_\_

Maximum Length \_\_\_\_\_

No. of Holes \_\_\_\_\_

Total Metres \_\_\_\_\_

Cost \_\_\_\_\_

Test Adits \_\_\_\_\_

Other workings\* \_\_\_\_\_

Total Cost \$ \_\_\_\_\_

**DRILLING**Yes  No 

Hole Size \_\_\_\_\_

No. of Holes \_\_\_\_\_

Total Metres \_\_\_\_\_

Cost \_\_\_\_\_

Core: Diamond \_\_\_\_\_

Wireline \_\_\_\_\_

Rotary: Conventional \_\_\_\_\_

Reverse circulation \_\_\_\_\_

Other\* (specify) \_\_\_\_\_

Contractor D.W. COATES LTD. (VANCOUVER, B.C.)Where is the core stored? LINE CREEK NINE SITETotal Cost \$ 55,179.36**LOGGING, SAMPLING AND TESTING**Yes  No Lithology: Drill samples Core samples Bulk samples Logs: Gamma-neutron Density 

Other\* (specify) \_\_\_\_\_

Testing: Proximate analysis FSI Washability Carbonization Petrographic Plasticity 

Other\* (specify) \_\_\_\_\_

Total Cost \$ 6,229.15**RECLAMATION**Yes  No Details Seeding + Fertilizing of Drill Site, Reclamation of RoadTotal Cost \$ 1,444.00**OTHER WORK (Specify details)**Yes  No 

Cost \_\_\_\_\_

Total Cost \$ \_\_\_\_\_

**OFF-PROPERTY COSTS**Yes  No Details Report GenerationTotal Cost \$ 1544.66Total Expenditures \$ 64,397.17April 16, 1986  
(Date)H. G. Rushton  
(Signature)  
**H. G. RUSHTON**  
(Position)

VICE-PRESIDENT DEVELOPMENT-CURL

\*A full explanation of other work is to be included.