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CONFIDENTIAL

PRELIMINARY GEOLOGY OF THE
BURNT RIVER PROPERTY
(CoAL LIC. 3061-3088)
SUKUNKA RIVER AREA, B. C. (93 P 5/W)

by

R. S. Verzosa, P.Eng.

for

BRAMEDA RESOURCES LIMITED

MINING RECORDER
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VICTORIA, B. C.

December, 1975

GEOLOGICAL BRANCH
ASSESSMENT REPORT
Vancouver, B. C.

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INTRODUCTION

The Burnt River property of Brameda Resources Ltd., comprising 28 coal **licences** is located approximately 6 miles south of Chetwynd in the Peace River area of northeastern B. C. (Figure 1). Access into the property can only be either on foot **or** by helicopter.

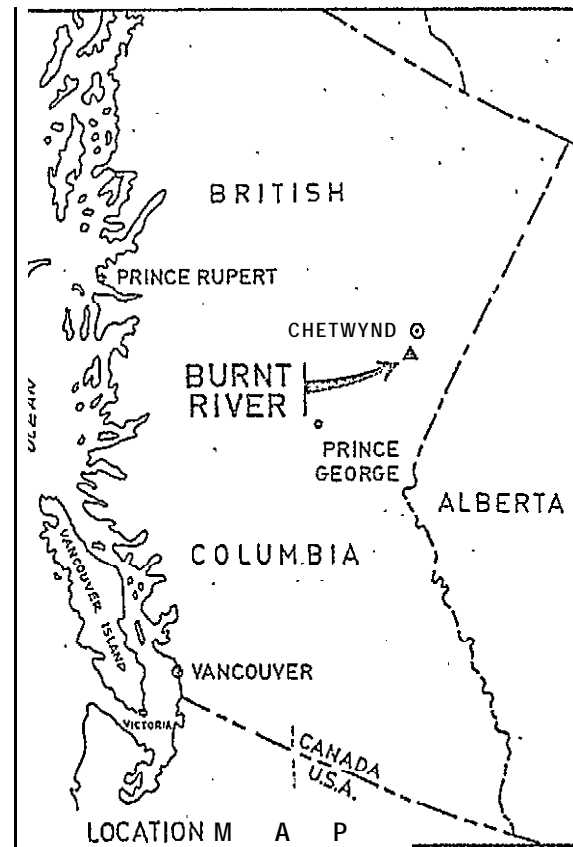
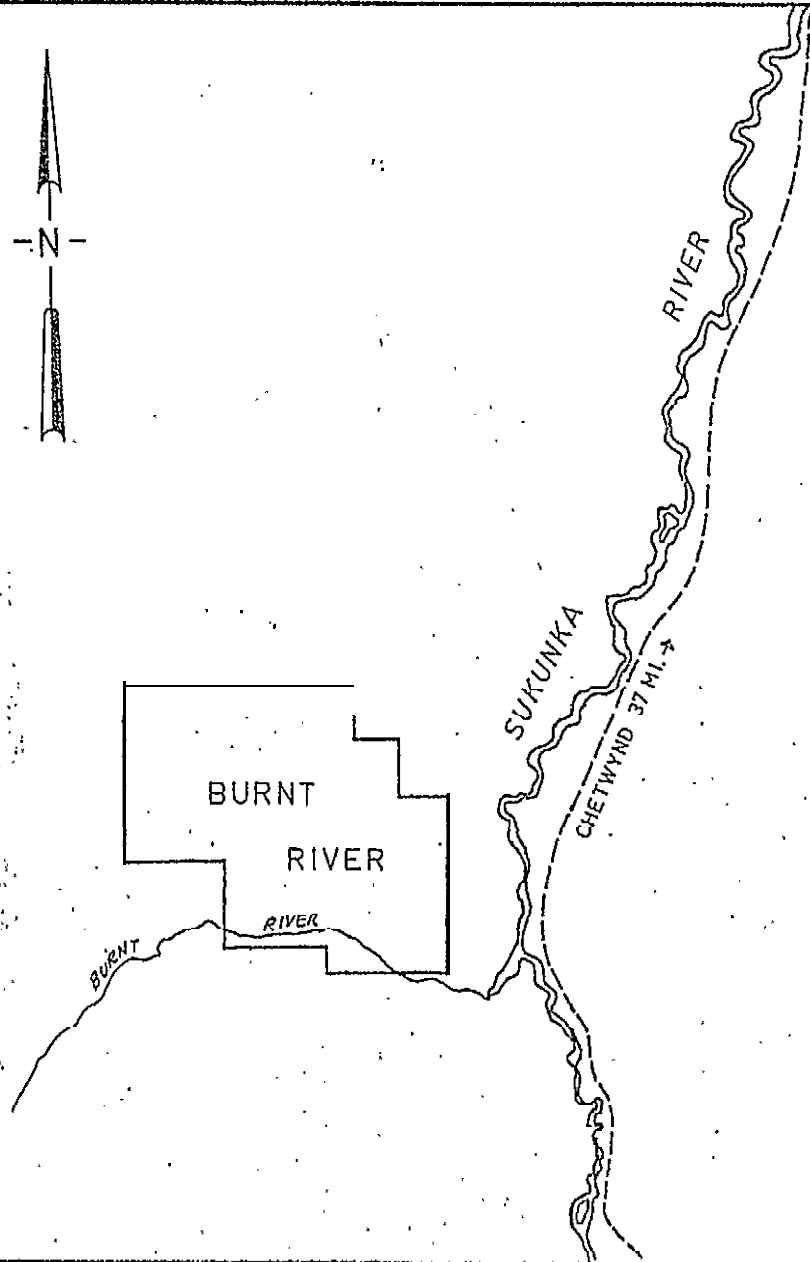
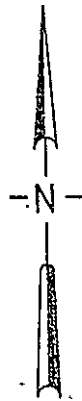
The topography in the area is moderate to very steep with elevations ranging from 750 to 1400 **metres** above sea level.

Early in Kay, 1975 preparations to carry out a geologic mapping and diamond drilling program in the area was initiated by Brameda Resources Ltd.

The main purpose of the ^{program} was to study the stratigraphic and structural **features** of the area and to examine and evaluate previously reported coal seam outcrops.

However, **only geologic** mapping of parts of the property was completed as the program had to be curtailed when it became evident that the B. C. government would be unable to grant a reclamation permit early enough to allow the completion of the drilling **program** during the summer months. On-property field work **was** carried out from June 6 to June 20, 1975, and in various periods during the month of September, 1975.

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FIGURE 1

SUMMARY AND CONCLUSIONS

Preliminary geologic mapping was carried out in the Burnt River property during the month of June, 1975. The area is difficult of access and outcrops are generally sparse except in steep topography.

It appears that the Lower **Cretaceous** in the area is represented by **conglomerate units** of the Cadomin Formation and at least the lower successions of the Gething **Formation**. The conglomerates appear unconformable upon shales, mudstones and sandstones that comprise successions possibly belonging to the partly Jurassic **Minnes** Group.

The strata are intensely deformed.

Two coal seams, within three hundred **stratigraphic** feet of each other appear important. Both occur in strata overlying the conglomerates although neither resemble the Chamberlain seam occurring near the top of the Gething Formation in the **Bullmoose Mountain** area to the south. Further geological field work is warranted.

STRATIGRAPHY

Geologic maps recently released by the G.S.C. show the northeast half of the property underlain by successions of the Gething, **Moosebar** and Commotion Formations. On the southwest half of the property successions of the muchblder **Minnes** group are shown underlying the Cadomin and **Gething** Formations.

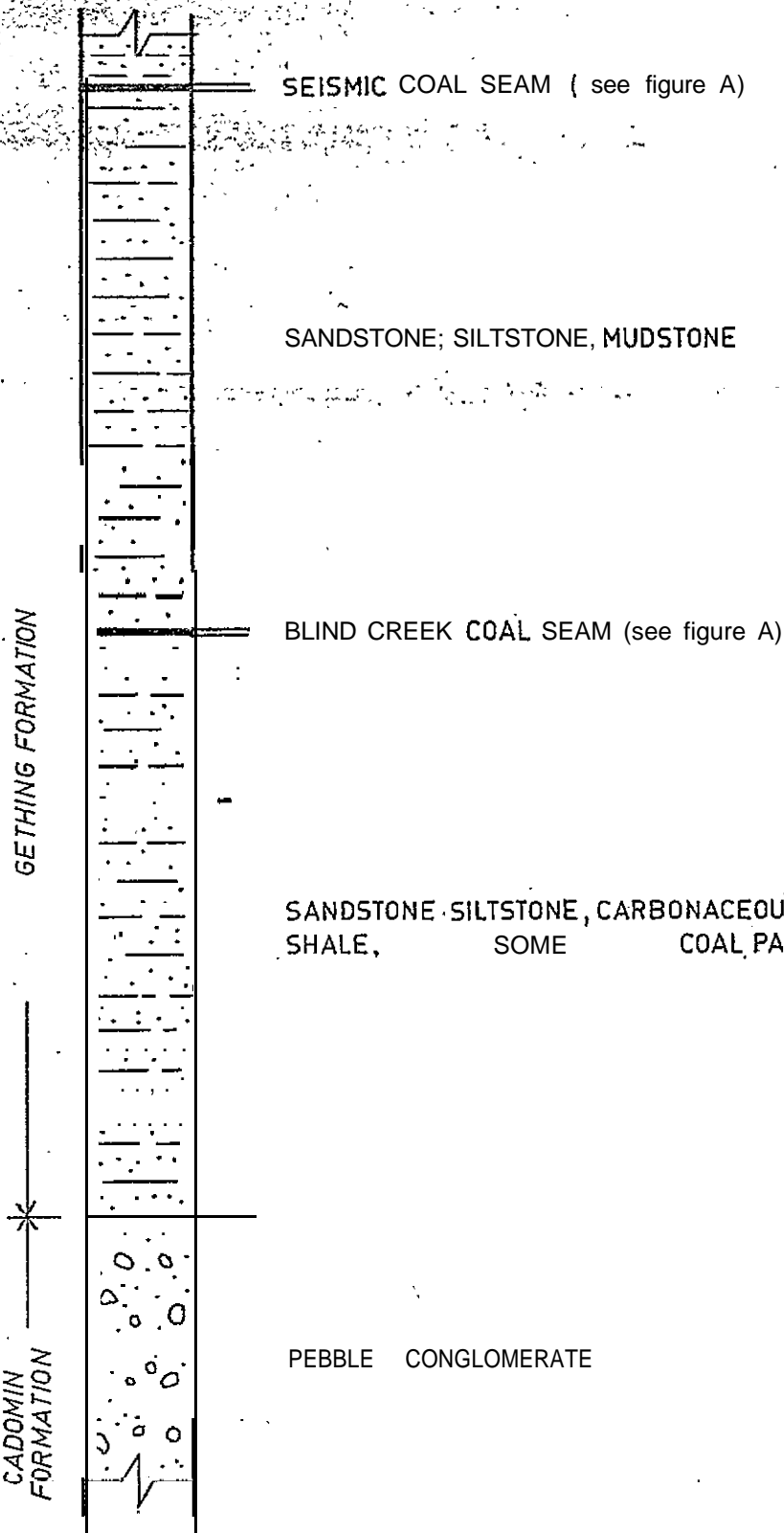
The recent mapping by the writer on the property, although of a very limited extent, seems to indicate that the conglomerates northeast of **Brazion** Creek could indeed be the Cadomin with the underlying shales, mudstones and sandstone& possibly belonging to the Minnes Group and the overlying shales and sandstones therefore, belonging to the **Gething**.

However, on the northeast half of the property particularly around Blind Creek the conglomeratic units mapped as the Gates Member of the Commotion Formation do not appear different from those found in the **Brazion** Creek area. While it can be argued that the conglomerates of the different Formations of the **Lower Cretaceous** in the **Sukunka** area are not lithologically distinct from each other the shales and sandstones that overlie the conglomerates in the Blind Creek area do not appear to belong to the distinct **Hullcross** Formation nor do the underlying shales and mudstones appear to belong to the **Moosebar** formation.

In general, the finer clastics that overlie the conglomeratic units abound in carbonaceous and/or coaly layers making them similar to units comprising parts of the Gething Formation in the Bullmoose Mountain area. The apparent lack of marker beds, widely covered intervals and structural complexities render the measurement of stratigraphic sections in the Burnt River area rather tenuous. Nevertheless, a tentative correlation chart based on lithology is proposed as follows:

Group	Burnt River		Bullmoose Mountain (Park Area)		Lithology
	Formation	Thickness (ft.)	Formation	Thickness (ft.)	
Bullhead	Gething	no data	Gething	1,405 (max.)	shale, mudstone, sandstone, coal Conglomerate
	Cadomin	170-360	Cadomin	300	
----- U n c o n f o r m i t y -----					
Minnes		no data	Nikanassin	(base not observed)	shale, mudstone, sandstone, some coal

The pre-Cadomin strata in the Bullmoose Mountain area have been mapped by others as the Nikanassin. The base of the Cadomin exposed along Brazion Creek in the Burnt River area exhibit channelling indicating its unconformable relationship with the underlying Minnes



GENERALIZED COLUMNAR SECTION OF THE BLIND CREEK AREA

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Group. A generalized columnar section of the Lower **Cretaceous** in the Blind Creek area is shown in Figure' 3.

STRUCTURE

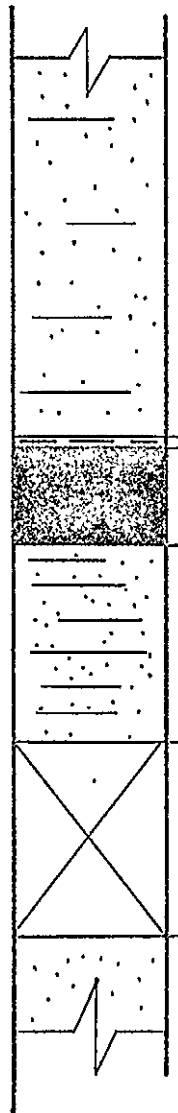
'There appears to be **only** one major **northwesterly** structural trend in the Burnt River property. The strata where mapped show tight folding with flanks close to vertical in some cases.

No fault of any significant **extent** was observed although 'some intensely sheared outcrops **were** noted.

COAL SEAMS

A number of coal **seam outcrops** ranging in thickness from a **few** inches to greater than 15 feet occur in the strata below and above the **conglomerate** units. In general the seams are associated with carbonaceous shales, mudstones and siltstones. In the Brazion Creek area the **seams** are generally thin (less than 5 feet) and may include as much as 30 per cent of shaly bands. In the Blind Creek area two seams of apparently **good quality** occur. Along Blind Creek a ten-foot **seam** (No. 1) occurs in **carbonaceous** interbedded **shale**, siltstone and sandstone (Figure 4).

BLIND CREEK COAL SEAM



SANDSTONE, VERY FINE GRAINED, THIN MEDIUM BEDDED, INTERBEDDED THIN-SILTSTONE AND SHALES

SHALE, DARK AND VERY CARBONACEOUS

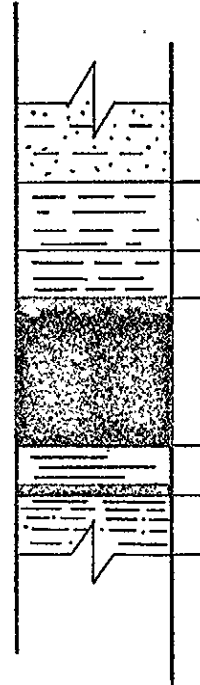
COAL SEAM, GENERALLY HARD AND BRIGHT

SANDSTONE, SILTSTONE AND SHALE, INTERBEDDED; GENERALLY VERY CARBONACEOUS WITH SOME COAL PARTINGS AND WISPS.

COVERED BY CREEK

SANDSTONE, FINE TO MEDIUM GRAINED, MASSIVE, CARBONACEOUS.

SEISMIC COAL SEAM



SANDSTONE WITH INTERBEDDED MUDSTONE

MUDSTONE-SILTSTONE, INTERBEDDED, IN PARTS CARBONACEOUS.

MUDSTONE, CARBONACEOUS.

COAL, GENERALLY WEATHERED, ALTERNATING DULL AND BRIGHT BANDS.

SHALE, VERY CARBONACEOUS, COAL SEAM AT BOTTOM

MUDSTONE-SILTSTONE, INTERBEDDED.

DETAIL OF COAL SEAM OUTCROPS

VERTICAL SCALE 1" = 20'

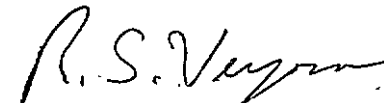
PR - BRU 75(1)A FIG. 4

The seam is generally hard with alternating bands of dull and bright coal.

Across a northeast seismic line near the headwaters of Blind Creek a coal seam (No. 2) greater than 15 feet in thickness is exposed. Including a four-foot shaly band near its base, the seam totals close to 20 feet in thickness (Figure 4). The seam is generally weathered and soft although shows alternating bright and dull coal bands. Two-pound grab samples taken from each of the two coal seams were submitted for proximate analysis, the results of which are appended in this report.

Structural interpretations suggest that the coal seam on the seismic line overlies the coal seam on Blind Creek by less than three hundred feet and that both occur in strata that appear to overlie the conglomerates. Both seams are not roofed nor floored by units that characterize the Chamberlain seam in the Bullmoose Mountain area some 16 miles to the southeast.

Respectfully submitted,


R. S. Verzosa, P.Eng.

GEOPHYSICAL ENGINEERING LIMITED

December, 1975
Vancouver, B. C.

COMMERCIAL TESTING & ENGINEERING CO.

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Please address all correspondence to:
147 Riverside Dr., North Vancouver, B.C. V7H 1T6Office: Tel. (604) 929-2228
Roberts Bank Tel. (604) 946-7021

November 19, 1975

TECK CORPORATION LTD.,
1199 West Hastings St.,
Vancouver, B.C.
V6E 2K5Sample Identification:

Report No. 64-11096

Seismic Coal

Coal Seam No 2'PROXIMATE' ANALYSISDRY BASIS

% Ash	2.61
% Volatile	23.55
% Fixed Carbon	73.84
	<u>100.00</u>
BTU	12681
% Sulfur	0.28
Free Swelling Index:	0

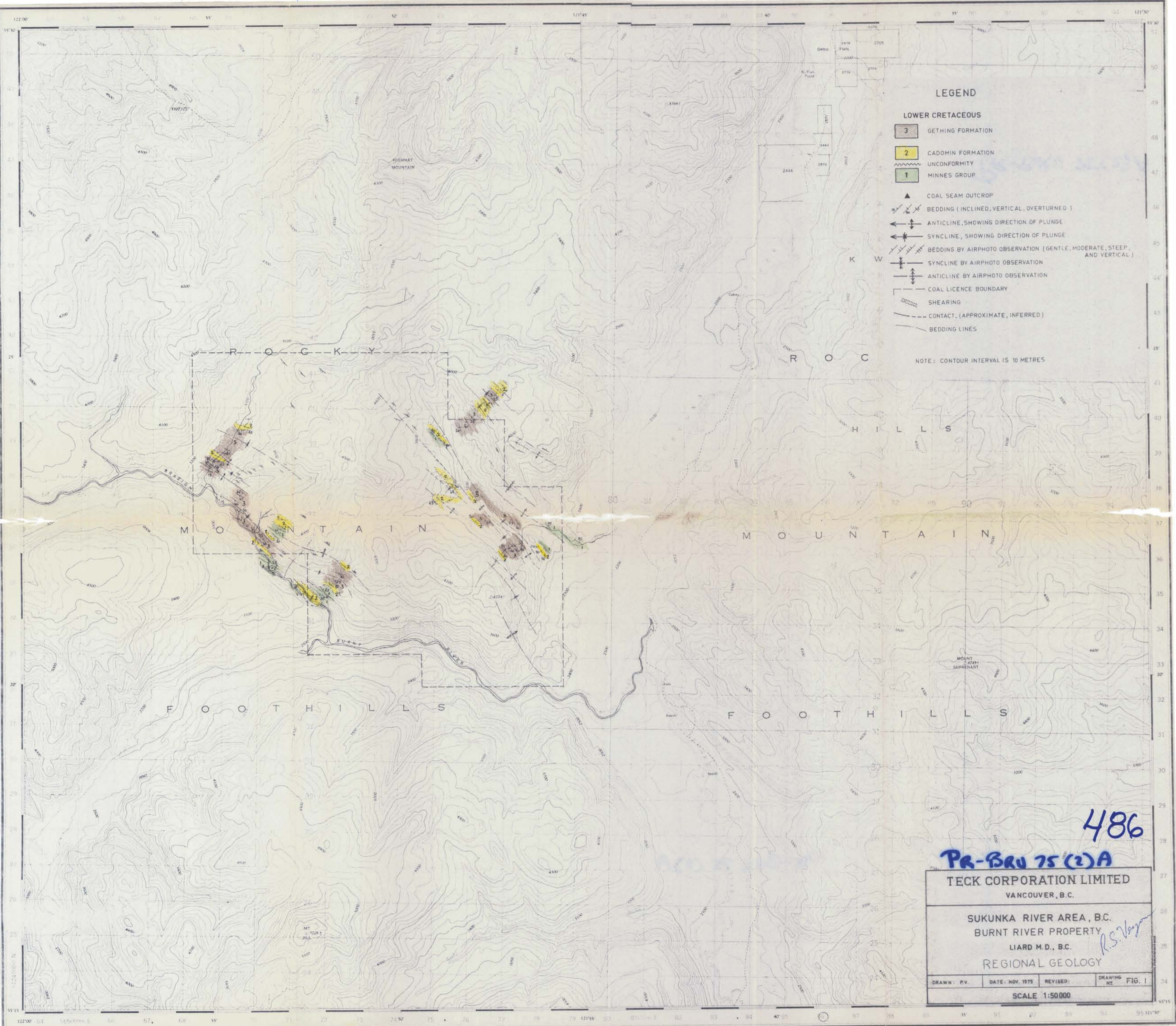
Respectfully Submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R.A. Houser,
District Manager

RAH/se





LEGEND

LOWER CRETACEOUS

- 3 GETHING FORMATION
- 2 CADOMIN FORMATION
- UNCONFORMITY
- 1 MINNES GROUP

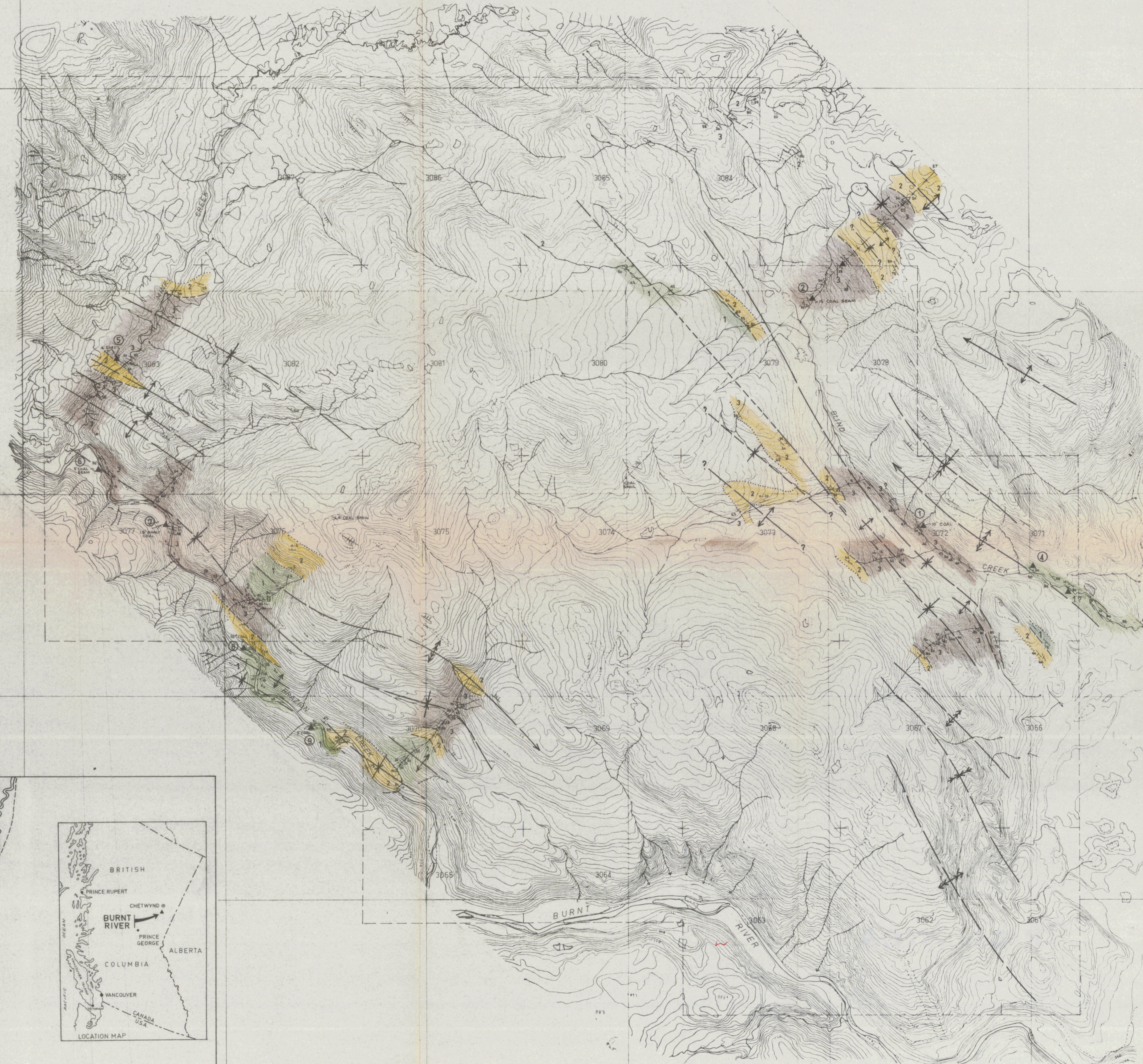
- COAL SEAM OUTCROP
- BEDDING (INCLINED, VERTICAL, OVERTURNED)
- ANTICLINE, SHOWING DIRECTION OF PLUNGE
- SYNCLINE, SHOWING DIRECTION OF PLUNGE
- BEDDING BY AIRPHOTO OBSERVATION (GENTLE, MODERATE, STEEP, AND VERTICAL)
- SYNCLINE BY AIRPHOTO OBSERVATION
- ANTICLINE BY AIRPHOTO OBSERVATION
- COAL LICENCE BOUNDARY
- SHEARING
- CONTACT, (APPROXIMATE, INFERRED)
- BEDDING LINES

NOTE: CONTOUR INTERVAL IS 10 METRES

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TECK CORPORATION LIMITED			
VANCOUVER, B.C.			
SUKUNKA RIVER AREA, B.C.			
BURNT RIVER PROPERTY			
LIARD M.D., B.C.			
REGIONAL GEOLOGY			
DRAWN: P.V.	DATE: NOV. 1975	REVISED:	DRAWING NO. FIG. 1
SCALE 1:50 000			



LEGEND

- LOWER CRETACEOUS
- 3 GETHING FORMATION
 - 2 CADOMIN FORMATION
 - UNCONFORMITY
 - 1 MINNES GROUP
- ▲ COAL SEAM OUTCROP
 - ⋈ BEDDING (INCLINED, VERTICAL, OVERTURNED)
 - ↔ ANTICLINE, SHOWING DIRECTION OF PLUNGE
 - ↔ SYNCLINE, SHOWING DIRECTION OF PLUNGE
 - ⋈ BEDDING BY AIRPHOTO OBSERVATION (GENTLE, MODERATE, STEEP, AND VERTICAL)
 - ↔ SYNCLINE BY AIRPHOTO OBSERVATION
 - ↔ ANTICLINE BY AIRPHOTO OBSERVATION
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 - SHEARING
 - - - CONTACT, (APPROXIMATE, INFERRED)
 - BEDDING LINES

NOTE: CONTOUR INTERVAL IS 10 METRES

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TECK CORPORATION LIMITED
VANCOUVER, B.C.

SUKUNKA RIVER AREA, B.C.
BURNT RIVER PROPERTY
LIARD M.D., B.C.

PRELIMINARY GEOLOGY

DRAWN: P.V.	DATE: NOV. 1975	REVISED:	DRAWING NO: FIG 2
1: 20000			

