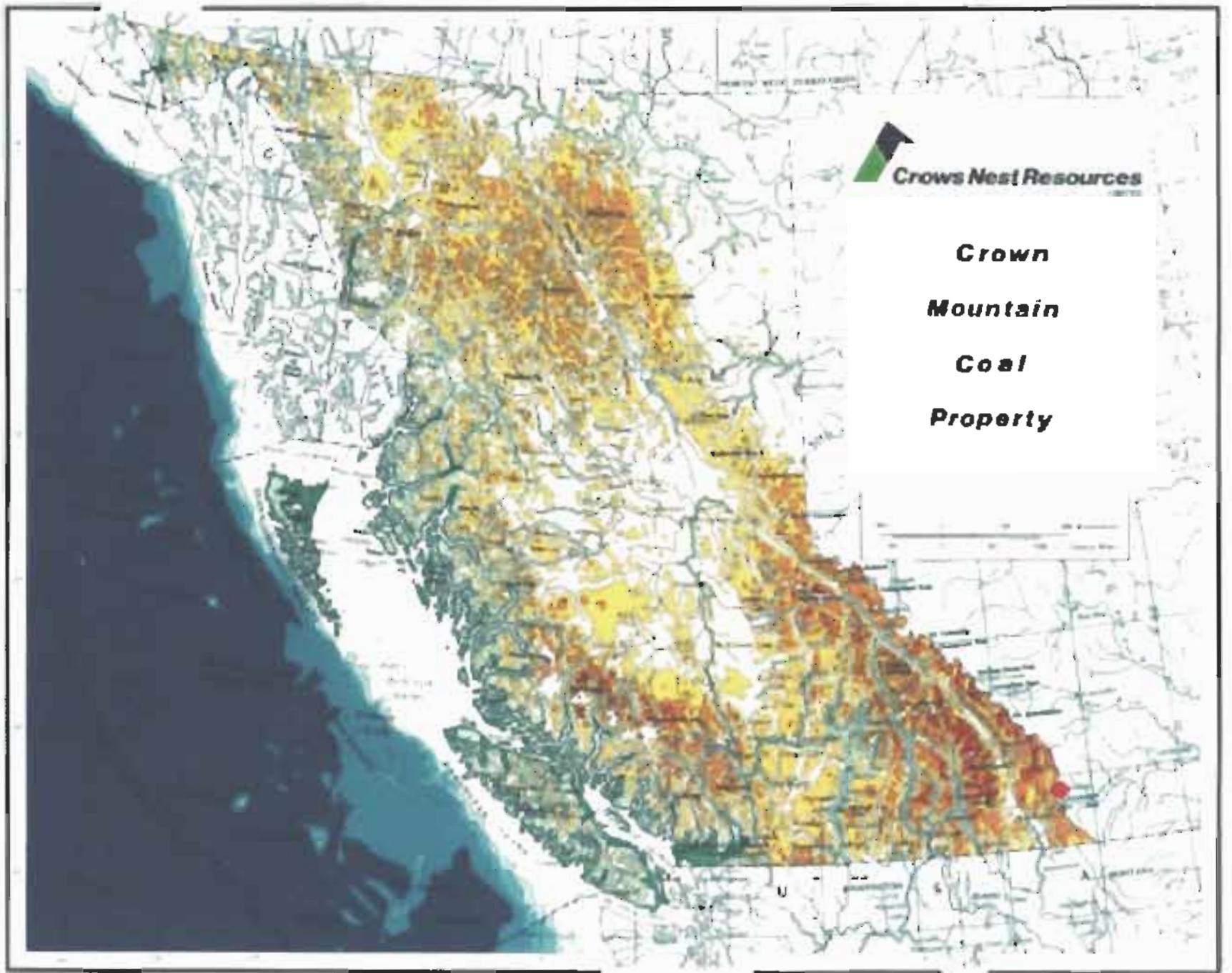


K-Crowm Mtn. 81(1)A

820/14/15
Crown Mountain Coal
Exploration 981
Nos. 305, 306, 307, 308, 309, 310, 311, 312, 408
Sharmen
P. Gilmer

393



Crows Nest Resources

**Crown
Mountain
Coal
Property**



January 31, 1982

Ministry of Energy, Mines and Petroleum Resources
British Columbia

Enclosed please find our report on the Crown Mountain Project

Mr. Patrick C. Gilmar planned and supervised the 1981 geological field program on Crown Mountain B.C. Coal Licences held by Shell Canada Resources Limited and operated by Crows Nest Resources Limited. Kevin Sharman did the field work and compiled the geological information for this report.

Pat Gilmar, B.Sc., graduated in Geology from the University of Calgary in 1978. Prior to his graduation Mr. Gilmar worked as a field assistant for a number of major mining companies in British Columbia and Alberta. Pat Gilmar has been employed with the company as a geologist since 1978.

Kevin Sharman, B.Sc., graduate in Geology from the University of Calgary in 1979.

Their work was carried out under the supervision of our District Manager, British Columbia, Mr. Frank Martonhegyi.

In my opinion, all of these personnel are fully qualified, by training and experience to prepare this report and this account of work done under their direct supervision.

Yours very truly,

H. G. Rushton, P. Geologist
Vice-President-Exploration

4/BIF.25

OPEN FILE
CONFIDENTIAL

CROWN MOUNTAIN

COAL EXPLORATION 1981

Coal Licences 305-313 Inclusive, 365, 366, 367, 371, 372
408 (15 licences, 2,561 ha)

Kootenay Land District, Southeast British Columbia

Held by: Shell Canada Resources Limited

Operated by: Crows Nest Resources Limited

National Topographic Series: 82 G/15 (Tornado Mountain)
and 82 G/10 (Crowsnest)

Latitude and Longitude: 49 degrees, 47 minutes north, 114 degrees,
44 minutes west

SUBMITTED: JAN. 27, 1982

Author: K. Sharman

Field Work: June-September, 1981

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APPENDICES

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| Appendix E ✓ | Geology Compilation Map | 1: 50,000 |
| Appendix F ✓ | Geology Maps (2) | 1: 5,000 |
| Appendix G ✓ | Structural Cross Sections (18) | 1: 5,000 |
| Appendix H ✓ | Trench Logs (12) | 1: 100 |
| Appendix I ✓ | Traverse Survey Map | 1: 5,000 |

1.0 SUMMARY

The Crown Mountain coal property is located in the Elk Valley Coalfield in southeast British Columbia. Fifteen coal licences, covering 2561 hectares are held by Shell Canada Resources Ltd. and operated by Crows Nest Resources Ltd.

Access to the property is east from Sparwood, B.C. along Highway #3, then north 8 km. up the valley of Alexander Creek. The property is divided into a north part (Crown Mountain) and a south extension along the steep lower slopes of Erickson Ridge.

The coal is contained within the Mist Mountain Formation of the Jurassic-Cretaceous Kootenay Group. Equivalent of the Line Creek area's No. 10 and No. 9 seams occur over most of the property, and an isolated area contains a seam correlative with the No. 8 seam at Line Creek.

The strata on the south extension generally dip westward into Erickson Ridge but are deformed into two synclines at the southern end of the property. The coal measures have been overridden by the Crown Mountain Thrust, which brings up Fernie Formation shales in its hanging wall.

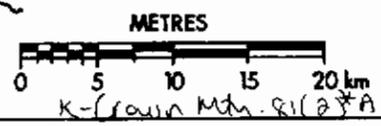
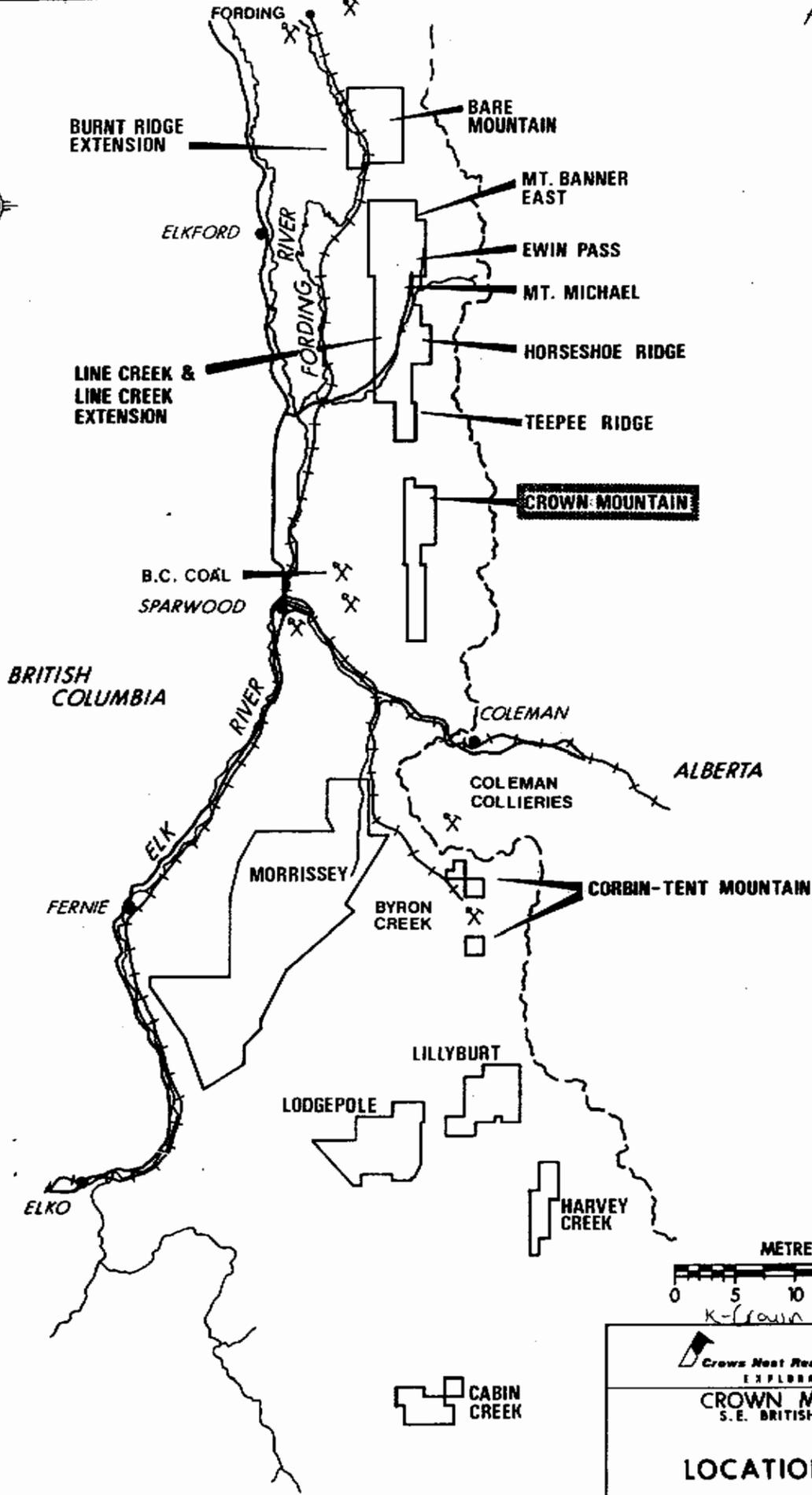
Prior to 1981, exploration on the south extension included scattered diggings into the coal seams, and in 1980 two weeks of reconnaissance mapping was done. Work in 1981 consisted of 2 months of mapping and hand trenching. In September a 2 1/2 tonne backhoe bulk sample was taken from the No. 8 seam near the top of Crown Mountain.

Mapping has delineated favorable open pit potential in the south part of the south extension. Geological in-place coal reserves were calculated to be 4.6 million tonnes raw coal at a ratio of 7.5 bank cubic metres per tonne. No quality analysis has been done but Medium Volatile Bituminous B coal is expected.

2.0 LOCATION

Enclosure 1 - Location Index Map

The Crown Mountain coal property is located in the Elk Valley Coalfield in southeastern British Columbia, 12 km N.E. of Sparwood, B.C., NTS maps 82 G/10 and 82 G/15. The licences are located at N. Lat. 49°47', W. Long. 114° 44'. The property is divided into two parts: the north part (Crown Mountain) comprising B.C. Coal Licences 308, 310, 312, 365, 366, 367, 371, and 408; and the south extension, comprising B.C. Coal Licences 305, 306, 307, 309, 311, and 313.



Crows Nest Resources Limited
EXPLORATION

CROWN MOUNTAIN
S.E. BRITISH COLUMBIA

LOCATION MAP

| | | |
|-------------------|-----------------|--------------------|
| AUTHOR: S. ABBOTT | SCALE: AS SHOWN | DISCLOSURE: 1 |
| DATE: 82-01-12 | REVISED: | DATE: 82-01-12 |
| By Approval: | | Drawing No. AA-784 |

3.0 ACCESS AND TOPOGRAPHY

Appendix A - Access Map

Access to the south extension of Crown Mountain is from the south on the Alexander Creek forestry road that leaves Highway #3 about 3 km west of the Alberta-British Columbia border. It is 8 km up this road to the southern end of the licences. This road parallels the southern licences for 7 km before crossing West Alexander Creek and heading over Crown Mountain to connect with the Grave Creek road.

The property is composed of two distinct parts: Crown Mountain in the north and the lower slopes of Erickson Ridge in the south extension. They are separated by West Alexander Creek.

The south extension consists of steep east-facing slopes and cliffs, dissected by sub-valleys whose creeks feed into Alexander Creek. Old logging trails lead up some of these valleys.

4.0 COAL LAND TENURE

Appendix B - B.C. Coal Licences Tenure Standing

Appendix C - Coal Licence Map

The Crown Mountain coal property consists of fifteen B.C. Coal Licences (305-313 inclusive, 365, 366, 367, 371, 372 and 408, Group No. 265) covering 2561 hectares of Crown Land. These licences are held by Shell Canada Resources Limited and operated by Crows Nest Resources Limited.

5.0 WORK DONE

5.1 PRIOR TO 1981

Work done on the Crown Mountain property before 1981 consists of the following:

North Part (Crown Mountain)

- In 1969, Crows Nest Industries did a program of road construction, bulldozer trenching, and drilling of 11 rotary drillholes.
- In 1979, Crows Nest Resources did a program of geological mapping, backhoe trenching, and drilling of 7 rotary holes. Location surveys of 33 geological control points were completed.

South Extension

- Old diggings in coal seams were found in 5 locations. It is not known when this work was done, but their overgrown nature suggests it was some time ago.

- Coal exploration trails on C.L. No. 307 are thought to have been done in 1969 at the same time as the work on the north part.

- In 1980, a consultant geologist hired by Crows Nest Resources did two weeks of reconnaissance mapping.

5.2 1981 WORK

Appendix D - Application to Extend Term of Licences

Appendix I - Traverse Survey Map

In 1981, about 2 months of 1:5000 scale detailed mapping was done on the south extension (C.L. No. 306, 307, and 311). Twelve hand trenches, for a total length of 264 m, were dug and 11 survey points for geological control were located by Sheltech Canada.

On the north part (Crown Mountain), a 2 1/2 tonne bulk sample was taken in the No. 8 seam using a tracked backhoe (Caterpillar 225). The sample barrels were flown out by helicopter. This work was done on C.L. No. 371.

6.0 GEOLOGY

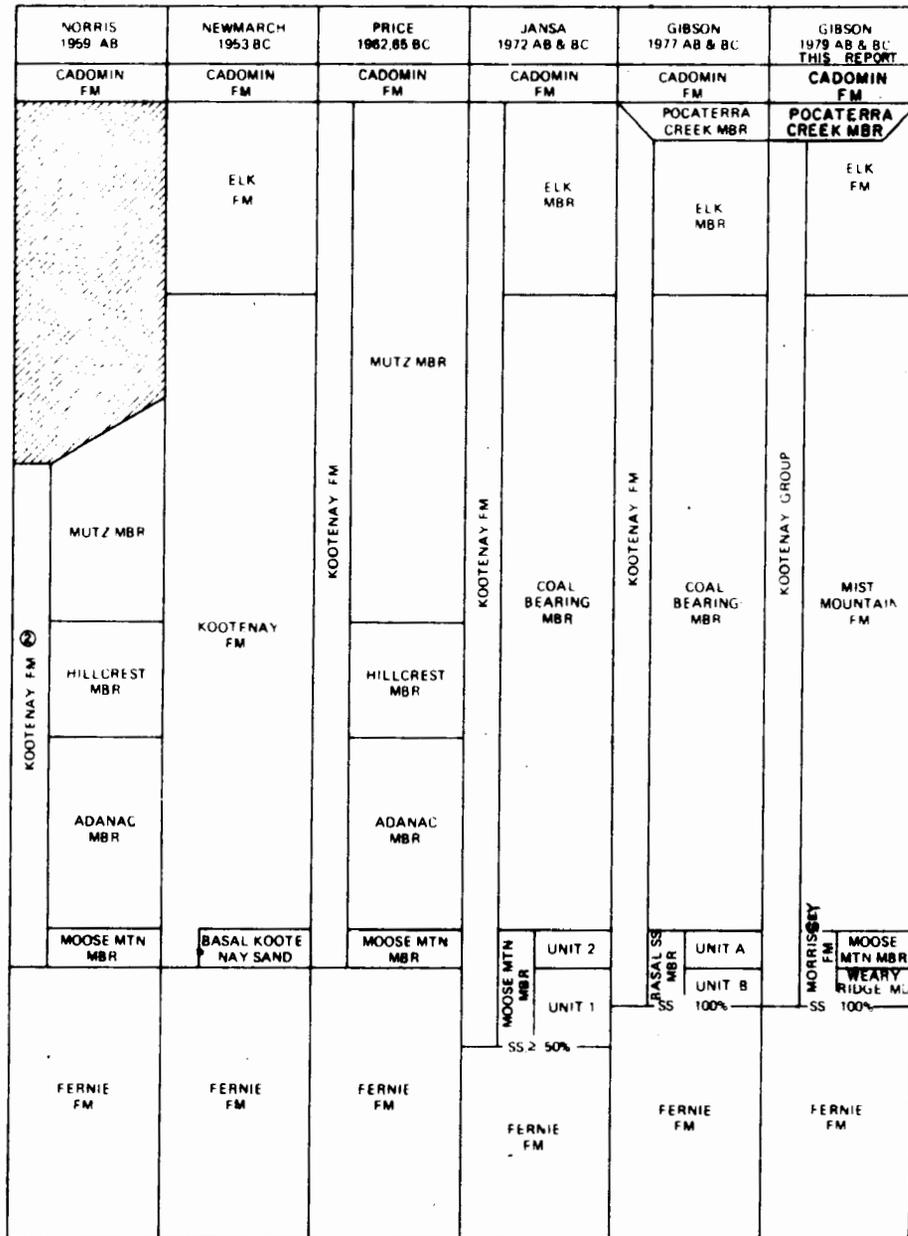
6.1 REGIONAL GEOLOGY

Enclosure 2 - Formational Diagram

Appendix E - Geology Compilation Map

Coal measures of the Elk Valley Coalfield occur in non-marine sediments of the Jurassic-Cretaceous Kootenay Group (Gibson, 1979). The Kootenay Group is underlain by marine sediments, mostly shales, of the Jurassic Fernie Formation. These grade upward into the Morrissey Formation, a package of fine to coarse grained cliff-forming sandstones. The Morrissey Formation is divided into the lower Weary Ridge Member, up to 55 m of fine grained sandstone; and the Moose Mountain Member, up to 36 m of medium to coarse grained sandstone. Above the Morrissey Formation is the Mist Mountain Formation, containing mudstone-shale, siltstone, sandstone, and coal. This is overlain by the Elk Formation, an interbedded succession of sandstone, siltstone, mudstone-shale conglomerate, and thin coal seams. Since this formation is not found at Crown Mountain, it will not be discussed further.

Structurally, the property lies within the Front Ranges of the Rocky Mountains. This region is characterized by numerous thrust



Crows Nest Resources Limited
EXPLORATION

SE BRITISH COLUMBIA

**FORMATIONAL DIAGRAM
CROWN MOUNTAIN**

| | | | | | |
|--------------|------------|---------|--------|---------------|----|
| AUTHOR | K. SHARMAN | SCALE | N.Y.S. | ENCLOSURE No. | 2 |
| DATE | OCT. 81. | REVISED | | DRAWING No. | 45 |
| To Accompany | | | | | |

faults, open to tight folding, and some normal faulting. The high mountains of the area are composed of parallel ridge systems of resistant Paleozoic carbonates, separated by thrust faults of large displacement.

The Crown Mountain property lies within the Lewis Thrust Sheet, between the Lewis Thrust that underlies the High Rock Range to the east, and the Alexander Thrust underlying Erickson Ridge to the west. A subsidiary of the Alexander Thrust, the Crown Mountain Thrust, brings the Fernie Formation up over the coal-bearing Kootenay Group rocks on the south extension.

6.2 DETAILED GEOLOGY

Enclosure 3 - Generalized Stratigraphic Section

Appendix F - Geology Maps (2)

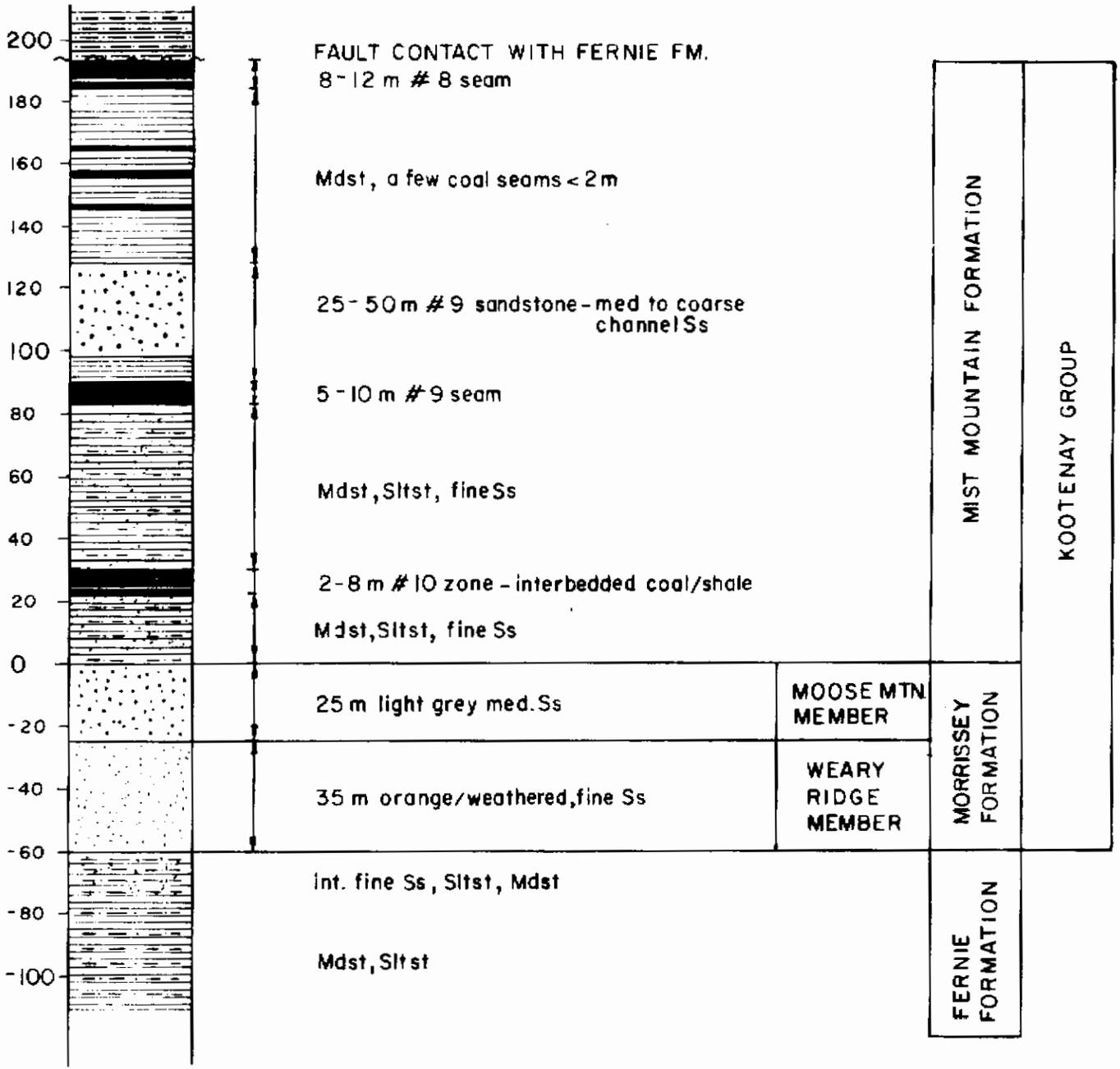
Appendix G - Structural Cross Sections (18)

Appendix H - Trench Logs (12)

The area of the south extension mapped in 1981 consists of a generally westward dipping package of the Kootenay Group overridden by the Crown Mountain Thrust, which brings shales of the Fernie Formation over the Kootenay. This picture is complicated on C.L. No. 311 by two tight to overturned synclines and a repeat of part of the Kootenay section.

The Moose Mountain Member is about 25 m thick, and the Weary Ridge Member is about 35 m thick. Up to 190 m of the Mist Mountain Formation has been preserved. The equivalents of the Line Creek area's No. 10 seam and No. 9 seam occur throughout the property, and the No. 8 seam equivalent is preserved in southeastern C.L. No. 309 and northeastern C.L. No. 306.

The No. 10 zone is represented by a 1.6 to 7.5 m section of coal and mudstone. This unit is quite recessive, and was only intersected in 3 hand trenches. The coal seams in this zone seem to be discontinuous and lens-like.



Crows Nest Resources Limited

CROWN MOUNTAIN - SOUTH EXTENSION, 1981.
S.E., BRITISH COLUMBIA

**GENERALIZED
STRATIGRAPHIC SECTION**

| | | |
|--------------------|---------------------|---------------------------|
| AUTHOR: K. SHARMAN | SCALE: VERT. 1:2000 | ENCLOSURE No: 3 |
| DATE: 81-10-20 | REVISED: | DRAWING No: HK-69R |
| To accompany | | |

The No. 9 seam is 4.8 to 10.6 m thick in the area mapped. It is cleaner than the No. 10 zone, with fewer mudstone interbeds, and more continuous.

The section between the No. 9 seam and the No. 8 seam contains several small coal seams in trench T-81-1, but these could not be followed and were not found elsewhere in the area mapped.

The No. 8 seam is preserved only in a small area around trench T-81-1. Here, it is structurally disturbed by thrusting, but is probably between 8 and 12 meters in thickness.

The Moose Mountain and Weary Ridge Members are prominent cliff-forming markers all along the area mapped. Another cliff-forming marker unit is a thick, medium to coarse grained channel sandstone. This is correlative with the No. 9 sandstone in the Line Creek area. Over most of the area mapped, it dips westward into the hill at 30° to 40°, but on C.L. No. 311, it is folded into 2 tight synclines that are stacked on one another by a thrust fault. The thrust is probably a subsidiary of Crown Mountain Thrust.

The lowermost syncline is overturned, with an axial plane dipping west at about 60°. The upper syncline is asymmetric, with an axial plane dipping west at about 75°-80°, but is not overturned. Since the No. 9 seam is stratigraphically 10 to 20 m below the No. 9 sandstone which is folded into the synclines there is a potential for thickening of the seam in the cores of the synclines.

There are tight minor folds in the immediate footwall of the Crown Mountain Thrust. These are exposed in roadcuts near section 6400S and also near 4200S. The dip of the thrust is not known exactly. However, the way that the contact swings up a major sub-valley in southern C.L. No. 306 suggests a maximum dip of about 50°. The dip could be less, down to a minimum of about 40°. This would mean that the seams could be truncated by the thrust further downdip than the cross sections show.

The thrust cuts down-section to the north, so that in C.L. No. 307, little Kootenay section is preserved below it.

Five normal faults were mapped. These faults strike E-W to NE-SW. They offset the entire Kootenay section and the Crown Mountain Thrust, and have displacements of about 25 to 50 m.

The southernmost two C.L. No. 305 and 313 were not mapped on the ground. No outcrop was visible from a helicopter, and it is unlikely that any Kootenay Group rocks are present. The band of Kootenay seems to be cut off at the south end of the ridge in C.L. No. 311. If the band continued south, outcrops of resistant Moose Mountain Member would almost certainly stand out.

7.0 COAL RESERVES AND MINEABILITY

Reserves were calculated for the south extension on C.L. No. 311 between cross sections 6700S and 7500S. Cross sections 6800S, 7000S, 7200S, and 7400S show the pit design that these reserves are based on. Geological in-place coal reserves were calculated to be 4.6 million tonnes at a ratio of 7.5 bank cubic meters per tonne. Table 1 shows the calculations by section and lists the assumptions made.

The best potential for open pit mineable reserves is the above area. The middle portion of the area mapped is likely to have high overburden ratios because the slope rises steadily above the coal measures. Another potentially low-ratio area is on southernmost C.L. No. 307. Here, a repeat of the No. 8 seam occurs near the top of the ridge.

TABLE 1

CROWN MTN. - SOUTH EXTENSION

GEOLOGICAL IN-PLACE COAL RESERVES (INFERRED)

| Cross Section | Coal Area (m ²) | Coal Vol. (m ³) | (S.G.=1.48) Tonnage COAL | Waste BCM (m ³) | Ratio BCM/Tonne Raw Coal |
|---------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|--------------------------|
| 6800S | 4,142 | 828,400 | 1,226,032 | 12,921,600 | 10.54:1 |
| 7000S | 3,924 | 784,800 | 1,161,504 | 12,715,200 | 10.95:1 |
| 7200S | 3,980 | 796,000 | 1,178,080 | 5,454,000 | 4.63:1 |
| 7400S | 3,580 | 716,000 | 1,059,680 | 3,909,000 | 3.69:1 |
| | | | 4,625,296 | 34,999,800 | |

Total Geologically In-place Coal Tonnage = 4,625,296

Ratio = $\frac{34,999,800 \text{ Waste BCM}}{4,625,296 \text{ Tonne Raw Coal}}$ = 7.57:1

Assumptions

1. Thicknesses of the seams are based on 1981 hand trenching information.
2. The area of influence for each cross section was taken to be 100 meters to either side of the section.
3. A specific gravity of 1.48 was used to calculate raw coal tonnages.
4. The proposed pit has 45° walls and a minimum 50 m wide floor.

8.0 QUALITY

One hand trench in the No. 9 seam was sampled in 1981 (T-81-11). The results of analysis have not been received yet. Coal of quality similar to the north part of Crown Mountain is expected (Medium Volatile Bituminous B). Analyses of this coal are included in the 1980 Crown Mountain Report.

Size - ash and washability data of the bulk sample taken from the No. 8 seam on the north part of Crown Mountain are presented in Enclosure 4.

HEAD RAW ANALYSIS

| ADM% | MOIST% | ASH% | VOL% | F.C.% | S% | C.V. Cal/gm | CALC. BASIS |
|------|--------|------|------|-------|------|----------------|----------------|
| 10.8 | 1.4 | 19.6 | 23.3 | 55.7 | 0.26 | 5546 | a.d.b. |
| | 12.0 | 17.5 | 20.8 | 49.7 | 0.23 | 4947 | a.r.b. |
| | | 19.9 | 23.6 | 56.5 | 0.26 | 5625 | d.b. |

SIZE CONSIST , a.d.b. ; BEFORE ATTRITION

| SIZE FRACTION | WT% | CUM WT% |
|---------------|------|------------|
| 50 mm x 25 mm | 13.9 | 13.9 |
| 25 mm x 12 | 14.7 | 28.6 |
| 12 x 6 | 6.8 | 35.4 |
| 6 x 0.6 | 44.0 | 79.4 |
| 0.6 x 0.3 | 7.6 | 87.0 |
| 0.3 x 0.15 | 5.9 | 92.9 |
| 0.15 x 0.075 | 3.8 | 96.7 |
| 0.075 x 0 | 3.3 | 100.0 |

WT% + 50 mm = 5.1 crushed to pass 50 mm

| SIZE AND RAW ANALYSIS, a.d.b. | | | | AFTER ATTRITION | |
|-------------------------------|------|-----|------|-------------------|------|
| SIZE FRACTION | WT% | RM% | ASH% | CUMULATIVE WT% | ASH% |
| 50 mm x 25mm | 0.9 | 1.1 | 81.1 | 0.9 | 81.1 |
| 25 x 12 | 3.3 | 1.8 | 59.6 | 4.2 | 64.2 |
| 12 x 6 | 9.8 | 2.4 | 39.5 | 14.0 | 46.9 |
| 6 x 0.6 | 44.9 | 3.1 | 19.9 | 58.9 | 26.3 |
| 0.6 x 0.3 | 14.0 | 4.0 | 9.5 | 72.9 | 23.1 |
| 0.3 x 0.15 | 10.2 | 4.2 | 8.5 | 83.1 | 21.3 |
| 0.15 x 0.075 | 10.0 | 4.8 | 8.7 | 93.1 | 19.9 |
| 0.075x 0 | 6.9 | 5.1 | 10.7 | 100.0 | 19.3 |

| SINK-FLOAT ANALYSIS:adb: 50 mmx6mm (Attrited) | | | | | |
|---|------|-----|------|------------|------|
| SG FRACTION | WT% | RM% | ASH% | CUMULATIVE | |
| | | | | WT% | ASH% |
| - 1.30 | 0.1 | 2.3 | 1.6 | 0.1 | 1.6 |
| 1.30- 1.35 | 0.3 | 2.1 | 1.7 | 0.4 | 1.7 |
| 1.35- 1.40 | 3.8 | 2.8 | 4.5 | 4.2 | 4.2 |
| 1.40- 1.45 | 7.6 | 3.2 | 5.8 | 11.8 | 5.2 |
| 1.45- 1.50 | 17.7 | 3.6 | 8.5 | 29.5 | 7.2 |
| 1.50- 1.55 | 7.9 | 2.5 | 16.9 | 37.4 | 9.2 |
| 1.55- 1.60 | 4.2 | 2.3 | 22.6 | 41.6 | 10.6 |
| 1.60- 1.70 | 5.1 | 2.0 | 31.0 | 46.7 | 12.8 |
| 1.70- 1.80 | 4.7 | 1.8 | 40.1 | 51.4 | 15.3 |
| +1.80- | 48.6 | 1.1 | 78.7 | 100.0 | 46.1 |
| | | | | | |

| SINK -FLOAT ANALYSIS,adb: 6mm x 0.6mm (Attrited) | | | | | |
|--|------|-----|------|------------|------|
| SG FRACTION | WT% | RM% | ASH% | CUMULATIVE | |
| | | | | WT% | ASH% |
| - 1.30 | 5.0 | 1.8 | 0.9 | 5.0 | 0.9 |
| 1.30 - 1.35 | 12.9 | 1.9 | 2.0 | 17.9 | 1.7 |
| 1.35 - 1.40 | 8.9 | 2.5 | 3.8 | 26.8 | 2.4 |
| 1.40 - 1.45 | 14.0 | 3.0 | 4.5 | 40.8 | 3.1 |
| 1.45 - 1.50 | 24.1 | 3.2 | 7.9 | 64.9 | 4.9 |
| 1.50 - 1.55 | 8.7 | 2.9 | 15.0 | 73.6 | 6.1 |
| 1.55 - 1.60 | 3.5 | 2.2 | 20.4 | 77.1 | 6.7 |
| 1.60 - 1.70 | 4.3 | 2.2 | 28.2 | 81.4 | 7.9 |
| 1.70 - 1.80 | 2.6 | 2.2 | 38.2 | 84.0 | 8.8 |
| +1.80 | 16.0 | 1.9 | 72.4 | 100.0 | 19.0 |
| | | | | | |

CLIENT : CROWS NEST RESOURCES LIMITED

PROJECT: CROWN MOUNTAIN BULK SAMPLE

LAB NO.: 907

SINK-FLOAT ANALYSIS,adb: 0.6mmx0.3 mm(Attrited)

| S.G. FRACTION | WT% | RM% | ASH% | CUMULATIVE | |
|---------------|------|-----|------|------------|------|
| | | | | WT% | ASH% |
| - 1.30 | 0.3 | 2.2 | 1.4 | 0.3 | 1.4 |
| 1.30 - 1.35 | 13.3 | 2.2 | 1.8 | 13.6 | 1.8 |
| 1.35 - 1.40 | 28.9 | 2.5 | 2.2 | 42.5 | 2.1 |
| 1.40 - 1.45 | 18.1 | 3.2 | 3.6 | 60.6 | 2.5 |
| 1.45 - 1.50 | 17.7 | 3.5 | 5.9 | 78.3 | 3.3 |
| 1.50 - 1.55 | 5.9 | 3.7 | 11.0 | 84.2 | 3.8 |
| 1.55 - 1.60 | 3.9 | 3.6 | 14.8 | 88.1 | 4.3 |
| 1.60 - 1.70 | 3.6 | 3.3 | 22.4 | 91.7 | 5.0 |
| 1.70 - 1.80 | 1.6 | 2.9 | 34.0 | 93.3 | 5.5 |
| + 1.80 | 6.7 | 1.4 | 69.1 | 100.0 | 9.8 |

FROTH FLOTATION TEST,adb:0.3mmx0 (Attrited)

| PRODUCT | WT% | RM% | ASH% | CUMULATIVE | |
|----------|------|-----|------|------------|------|
| | | | | WT% | ASH% |
| STAGE 1 | 8.5 | 5.3 | 9.4 | 8.5 | 9.4 |
| STAGE 11 | 5.0 | 5.5 | 9.1 | 13.5 | 9.3 |
| TAILINGS | 86.5 | 4.8 | 8.9 | 100.0 | 9.0 |

F.F. Parameters- Pulp Density=10%
 Reagent = 4:1=Ker:MIBC
 Dosage = 0.48 lb/Ton
 Conditioning Time= 60 seconds
 Stage 1 = 1st minute froth
 Stage 11 = 2nd minute froth

9.0 RECOMMENDATIONS FOR FURTHER WORK

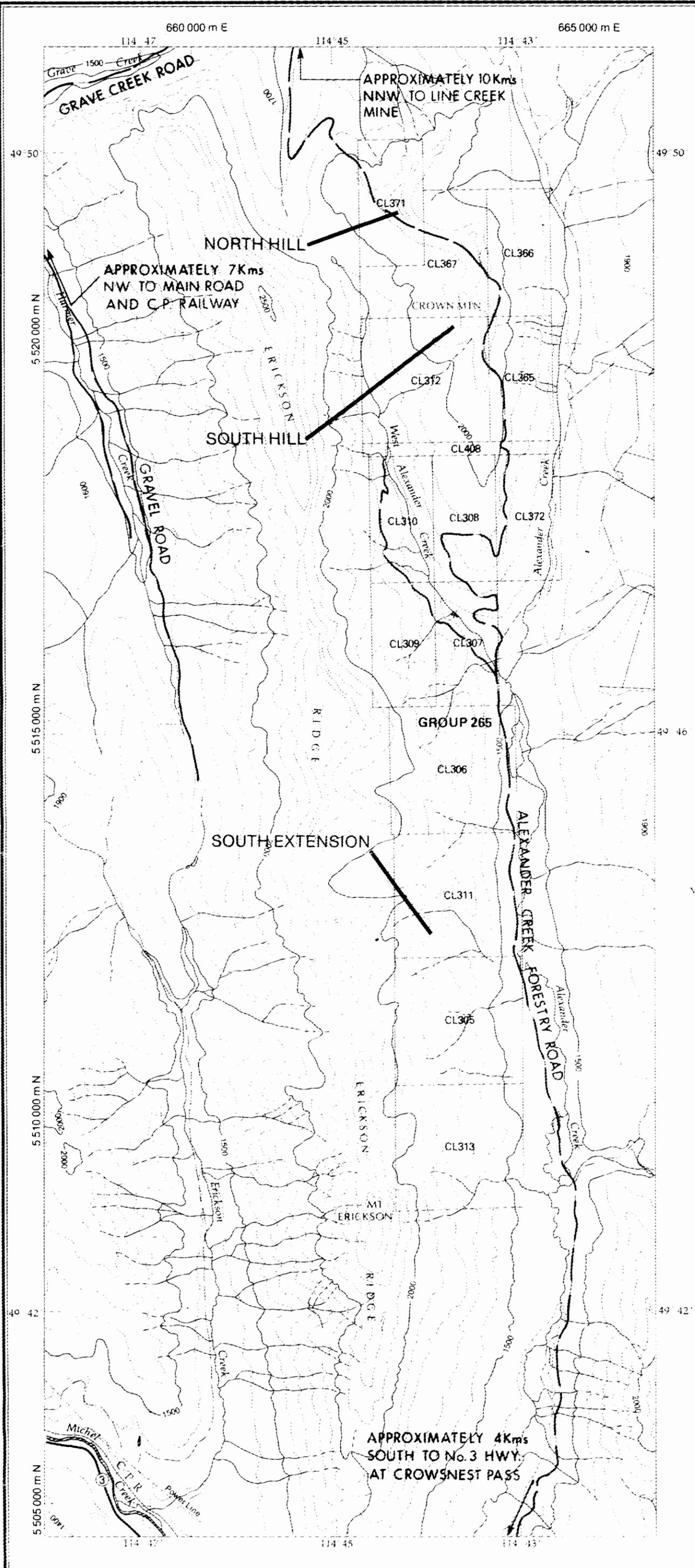
Mapping and hand trenching in 1981 showed two areas with open pit mining potential on the south extension. A program of rotary drilling would evaluate these areas more completely. New road construction could be kept to a minimum by upgrading existing trails for access and extending new roads onto the target areas. Backhoe trenching along these new roads could yield much information. If results from rotary drilling on C.L. No. 311 are good, a diamond drill hole could provide good structural and quality data.

At the same time as the machinery work, three weeks or so of detailed mapping and hand trenching should be done.

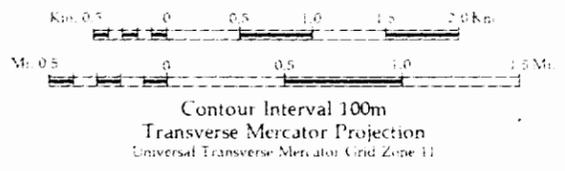
Reconnaissance of the southernmost two C.L. No. 305 and 313 have indicated the absence of any Kootenay Group rocks. No outcrops of the resistant Moose Mountain Member have been found, suggesting that coal bearing rocks have been eroded. It is therefore recommended that these two licences be dropped.

10.0 BIBLIOGRAPHY

- 1) Bell, D.E., 1980, Crown Mountain Coal Project, Geological Report for Work Done During 1979, unpublished Crows Nest Resources report.
- 2) Bell, D.E., 1981, Crown Mountain 1980 Geological Report, unpublished Crows Nest Resources report.
- 3) Gibson, D.W., 1979, The Morrissey and Mist Mountain Formations -- Newly Defined Lithostratigraphic Units of the Jura-Cretaceous Kootenay Group, Alberta and British Columbia: Bull. Canadian Petroleum Geol. V.27, No. 2, PP. 183-208.



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

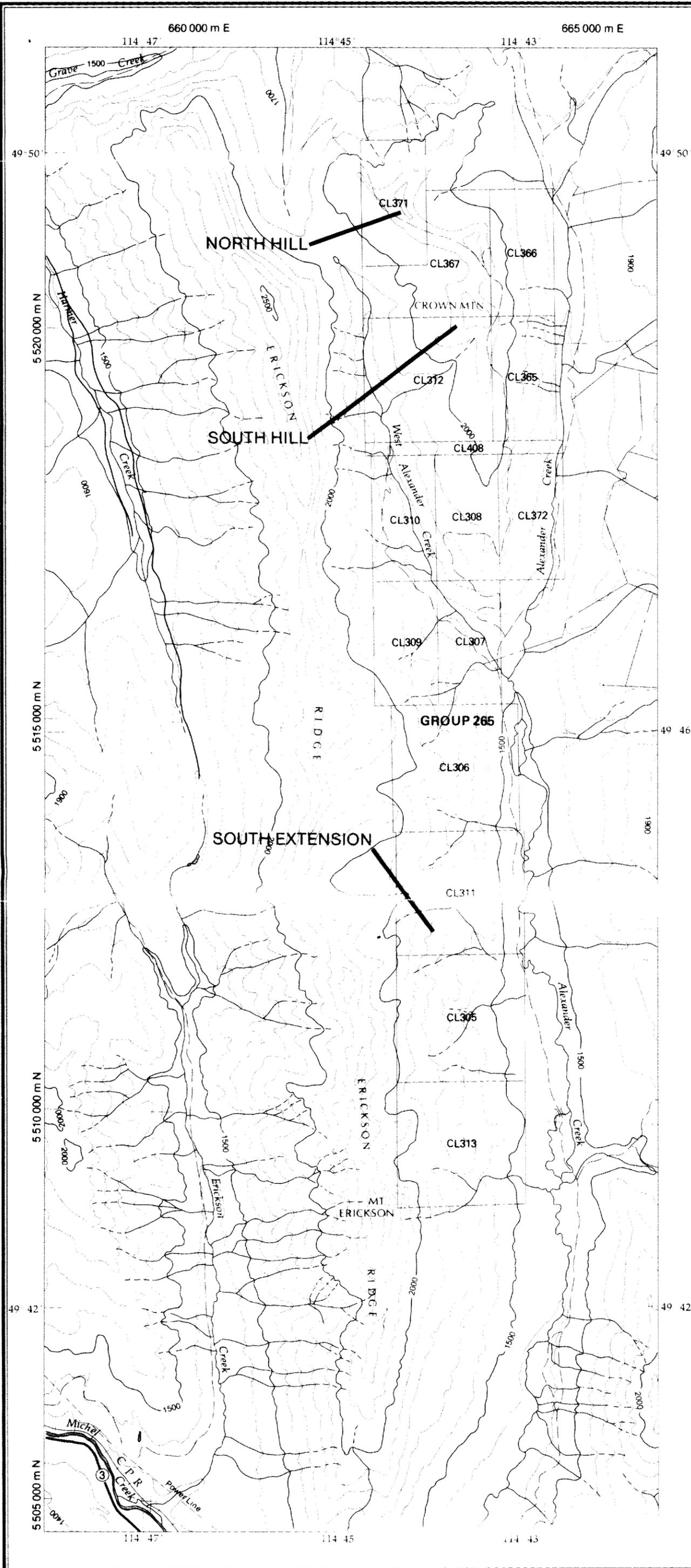


Reference map produced by the Surveys and Mapping Branch, Department of Energy, Mines and Resources in 1975 and updated from 1979 Province of British Columbia 1:100 000 map. Metric contours were manually interpolated.

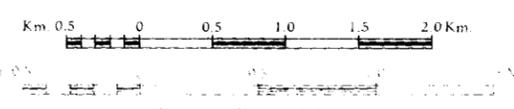
393

K-Crown Mtn 81(2)A*

| | |
|-------------------------------------|---------------|
| Crows Nest Resources Limited | |
| EXPLORATION | |
| CROWN MOUNTAIN | |
| S.E. BRITISH COLUMBIA | |
| ACCESS MAP | |
| N.T.S. 82G/10 & 82G/15 | |
| AUTHOR: S. ABBOTT | SCALE: 1:5000 |
| DATE: 82.01.19 | REVISED |
| APPENDIX A | |
| BA - 318 | |



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



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

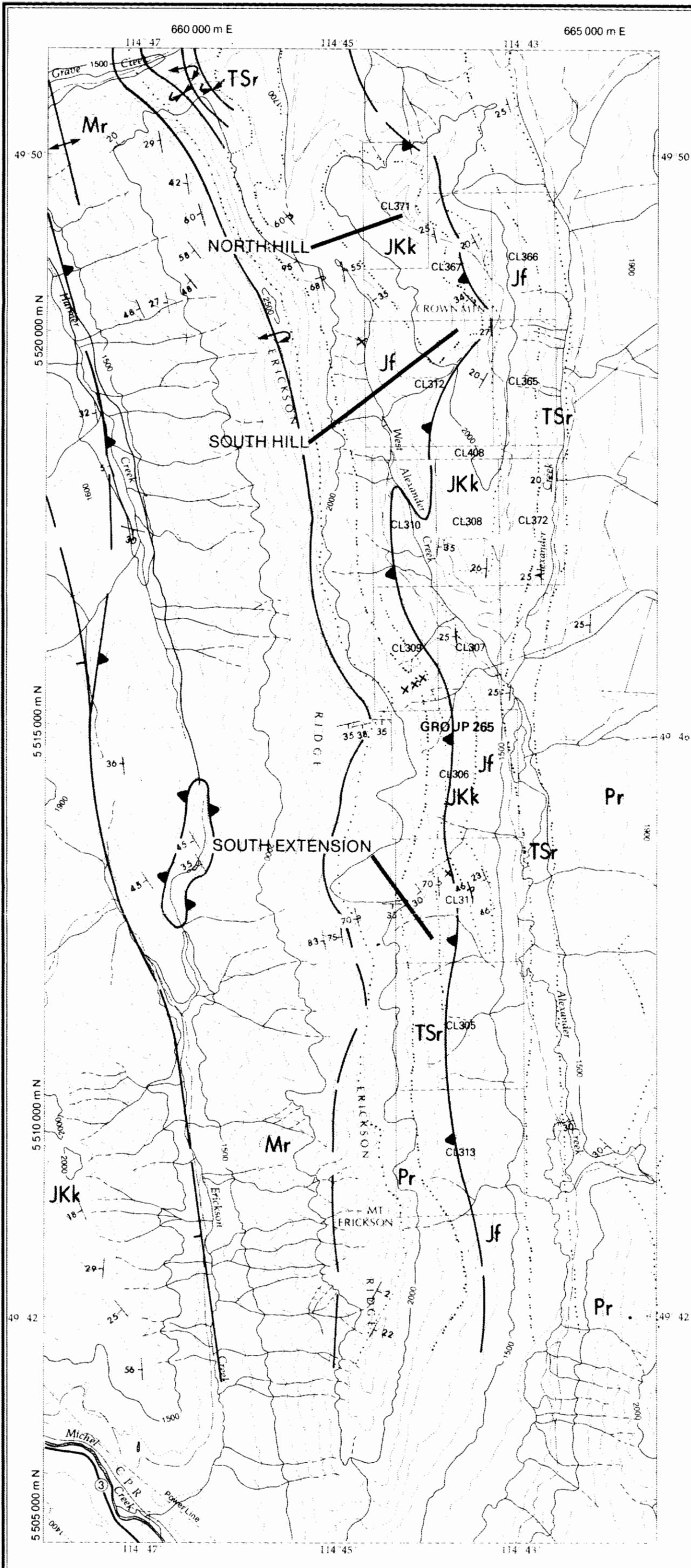


Reference map produced by the Survey and Mapping Branch, Department of Energy, Mines and Resources in 1975 and updated from 1979 Province of British Columbia 1:100,000 mapping. Metric contours were manually interpolated.

393

K-Crown Mtn. 8(2)A *1

| | |
|--|-------------|
| Crows Nest Resources Limited | |
| EXPLORATION | |
| CROWN MOUNTAIN S. E. BRITISH COLUMBIA | |
| COAL LICENCE MAP | |
| N.T.S. - 82G/10 & 82G/15 | |
| DATE: 82 01 14 | REVISION: 1 |
| APPENDIX C BA-316 | |



GEOLOGICAL LEGEND

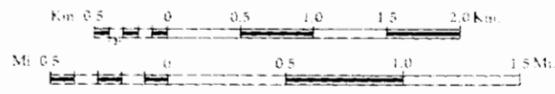
- JURASSIC - CRETACEOUS**
- JKk** Kootenay Group
- JURASSIC**
- Jf** Fernie Formation
- TRIASSIC**
- TSr** Spray River Group
- PERMIAN AND (?) PENNSYLVANIAN**
- Pr** Rocky Mountain Formation
- MISSISSIPPIAN**
- Mr** Rundle Group
- Met** Etherington Formation
- Mmh** Mount Head Formation
- Miv** Livingstone Formation

SYMBOL LEGEND

- STRIKE & DIP OF BEDDING
- PLUNGING SYNCLINE (symmetrical, overturned)
- PLUNGING ANTICLINE (symmetrical, overturned)
- THRUST FAULT (teeth on upper plate)
- NORMAL FAULT (lines on downthrown plate)
- FAULT OF UNKNOWN RELATIVE MOVEMENT
- GEOLOGICAL BOUNDARY (certain, assumed)
- SHELL MEASURED OUTCROP SECTION

Legend

- Road: Highway, Main road
- Road: Loose surface, Dry weather
- Track or trail
- Railway
- River
- Stream
- Contours 2000, 1500
- Licence boundary



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



Reference map produced by the Survey 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.

393

K-Crown Mtn 81(2)A *

Crows Nest Resources Limited
 EXPLORATION

CROWN MOUNTAIN
 S.E. BRITISH COLUMBIA

GEOLOGY COMPILATION

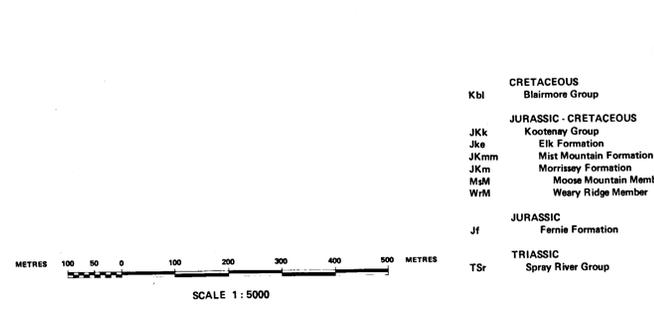
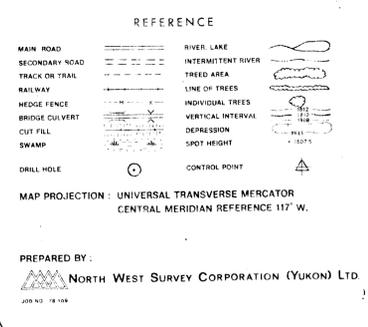
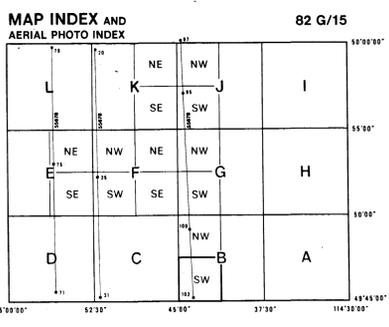
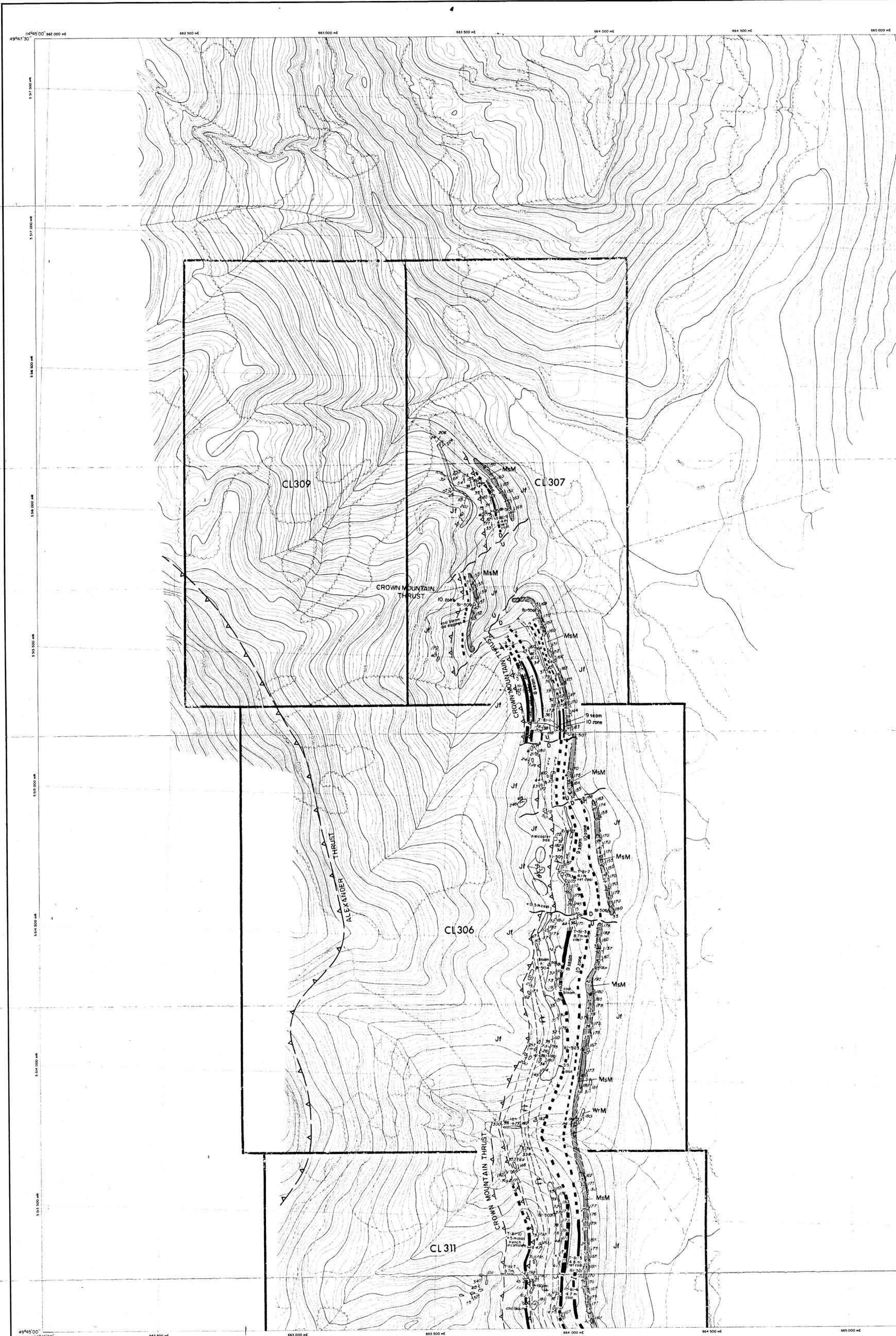
MAP

NTS-82G/10 & 82/15

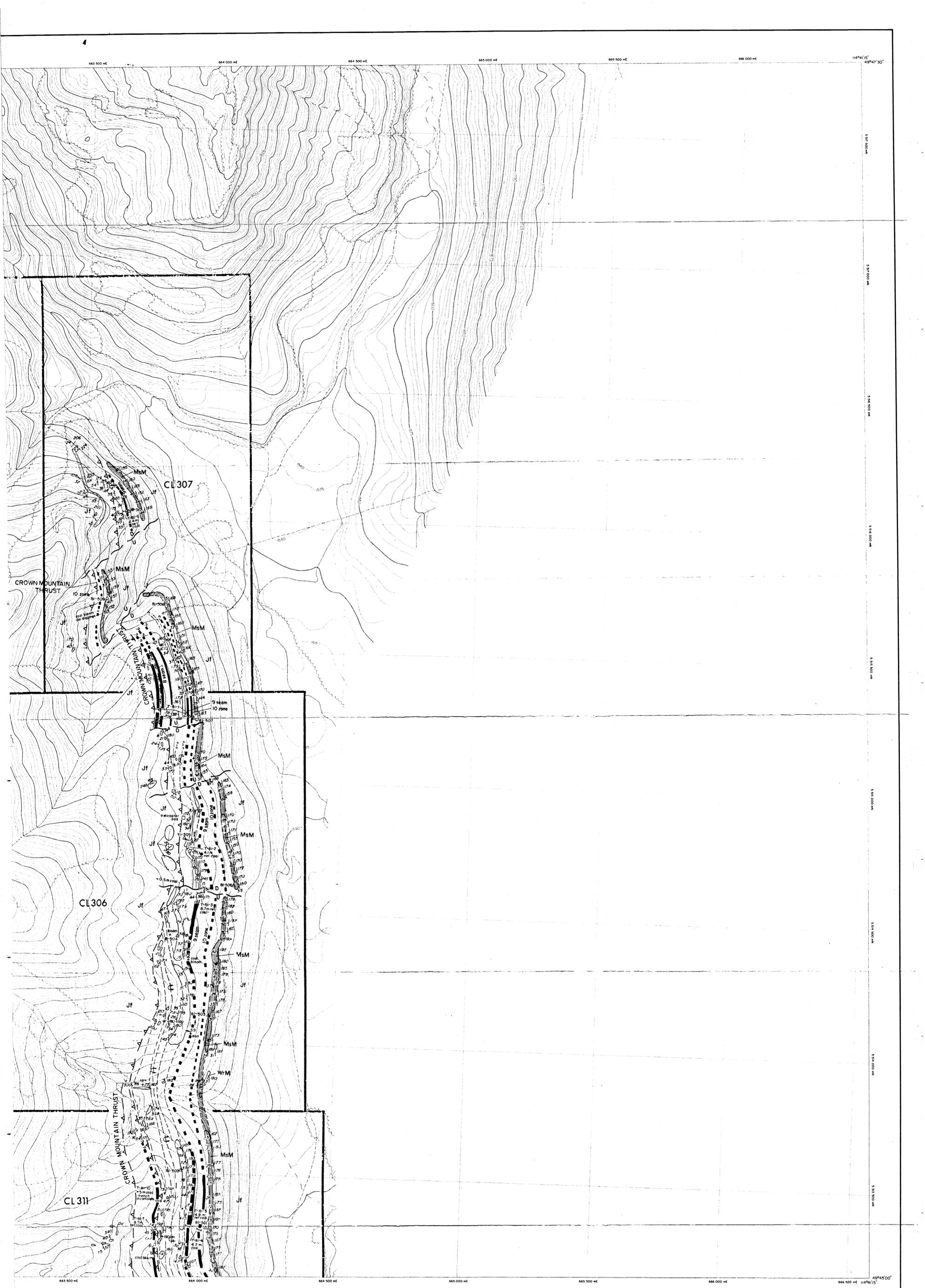
AUTHOR: S. ABBOTT SCALE: 1:50,000

DATE: 82.03.10

APPENDIX E
 BA-317



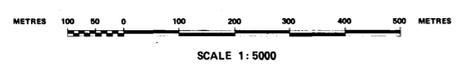
00393 (1a)



REFERENCE

| | |
|--|--------------------|
| | RIVER/LAKE |
| | INTERMITTENT RIVER |
| | TREAD AREA |
| | LINE OF TREES |
| | INDIVIDUAL TREES |
| | VERTICAL INTERVAL |
| | DEPRESSION |
| | SPOT HEIGHT |
| | CONTROL POINT |

UNIVERSAL TRANSVERSE MERCATOR
CENTRAL MERIDIAN REFERENCE 117° W.



GEOLOGICAL LEGEND

| | | | |
|------------------------------|-------------------------|--|---|
| CRETACEOUS | Blairmore Group | | Geological contact - defined, approx., assumed |
| JURASSIC - CRETACEOUS | Kootenay Group | | Bedding - inclined, vertical, overturned |
| | Elk Formation | | Syncline - defined, approx., assumed, overturned |
| | Mist Mountain Formation | | Thrust fault - defined, approx., assumed |
| | Morrissey Formation | | Normal fault - defined, approx., assumed showing sense of movement. |
| | Moose Mountain Member | | Hand trench |
| | Wearry Ridge Member | | 81-501 Survey point |
| JURASSIC | Fernie Formation | | |
| TRIASSIC | Spray River Group | | |

393 (b) K-Crown Mtn. S1(2)A * 1

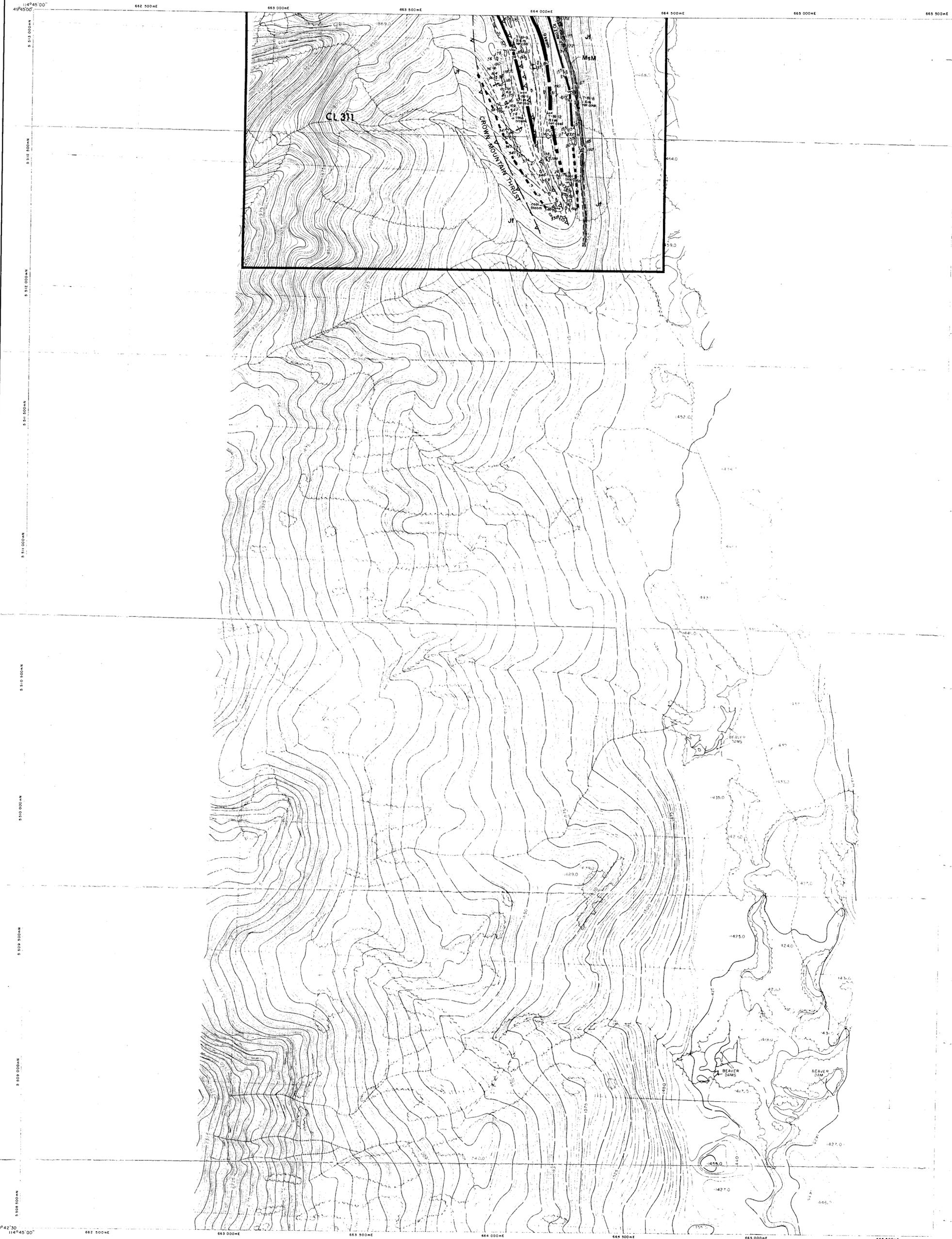
Crows Nest Resources Limited
EXPLORATION

CROWN MOUNTAIN - SOUTH EXT. 1981
S.E. BRITISH COLUMBIA

1981 GEOLOGY MAP
(NORTH SHEET)

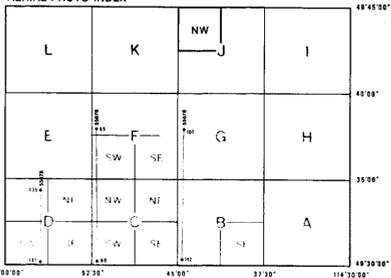
N.T.S. 82 G 10 **ZONE 11**

AUTHOR: K. SHARMAN SCALE: 1:5000 APPENDIX F
DATE: 81 10 19 REVISED: DRAWING NO: HK-91A
To: Accompany



MAP INDEX AND AERIAL PHOTO INDEX

82G/10



REFERENCE

- | | | |
|----------------|--------------------|------------|
| MAIN ROAD | INTERMITTENT RIVER | RIVER LAKE |
| SECONDARY ROAD | TREED AREA | |
| TRACK OR TRAIL | LINE OF TREES | |
| RAILWAY | INDIVIDUAL TREES | |
| HEDGE FENCE | VERTICAL INTERVAL | |
| BRIDGE CULVERT | DEPRESSION | |
| CUT FILL | SPOT HEIGHT | |
| SWAMP | | |
| DRILL HOLE | CONTROL POINT | |

MAP PROJECTION UNIVERSAL TRANSVERSE MERCATOR
CENTRAL MERIDIAN REFERENCE 117° W

PREPARED BY
NORTH WEST SURVEY CORPORATION (YUKON) LTD

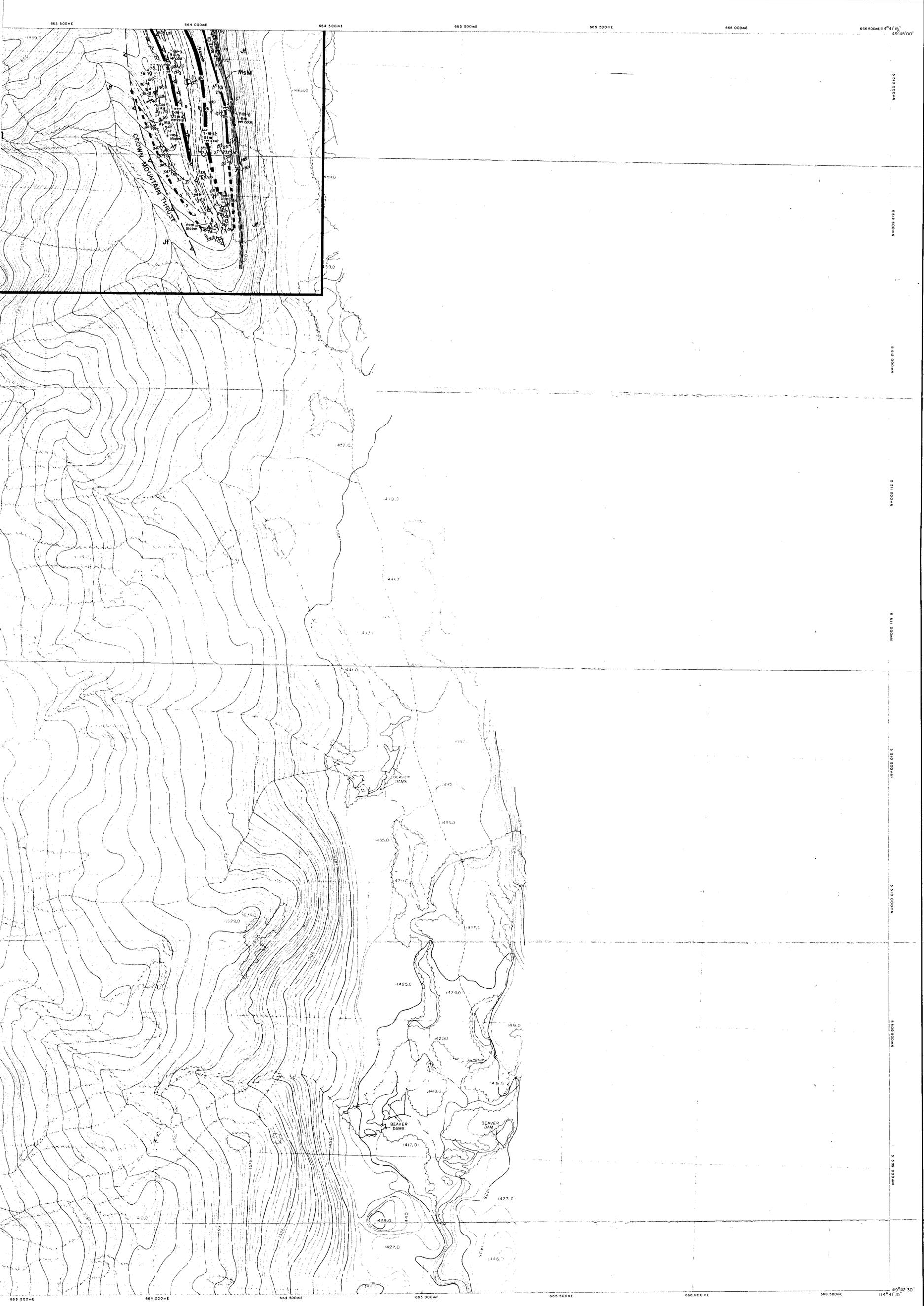
GEOLOGICAL LEGEND

- | | | |
|------|--|-----|
| Kbl | CRETACEOUS Blairmore Group | Geo |
| JKk | JURASSIC - CRETACEOUS Kooeney Group | Bed |
| Jke | Elk Formation | Syn |
| JKmm | Mist Mountain Formation | Thr |
| JKm | Morrissey Formation | Nor |
| MsM | Moose Mountain Member | |
| Wm | Weary Ridge Member | |
| Jf | JURASSIC Fernie Formation | Han |
| TSr | TRIASSIC Spray River Group | Sun |



SCALE 1:5000

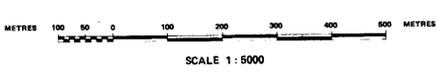
00393 (2)(a)



REFERENCE

- RIVER/LAKE
- INTERIM TENT RIVER
- TREED AREA
- LINE OF TREES
- INDIVIDUAL TREES
- VERTICAL INTERVAL IN ELEVATION
- SPOT HEIGHT
- CONTROL POINT

UNIVERSAL TRANSVERSE MERCATOR
CENTRAL MERIDIAN REFERENCE 117° W



GEOLOGICAL LEGEND

- | | |
|---|---|
| <p>CRETACEOUS Blairmore Group</p> <p>JURASSIC - CRETACEOUS Kootenay Group Elk Formation Mist Mountain Formation Morrissey Formation Moose Mountain Member Weary Ridge Member</p> <p>JURASSIC Fernie Formation</p> <p>TRIASSIC Spray River Group</p> | <p> Geographical contact - defined, approx., assumed</p> <p> Bedding - inclined, vertical, overturned</p> <p> Syncline - defined, approx., assumed, overturned</p> <p> Thrust fault - defined, approx., assumed showing sense of movement.</p> <p> T-81-1 Hand trench</p> <p> 81-501 Survey point</p> |
|---|---|

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②(b) K-Crown Mtn 81(2)A *1

Crows Nest Resources Limited
EXPLORATION

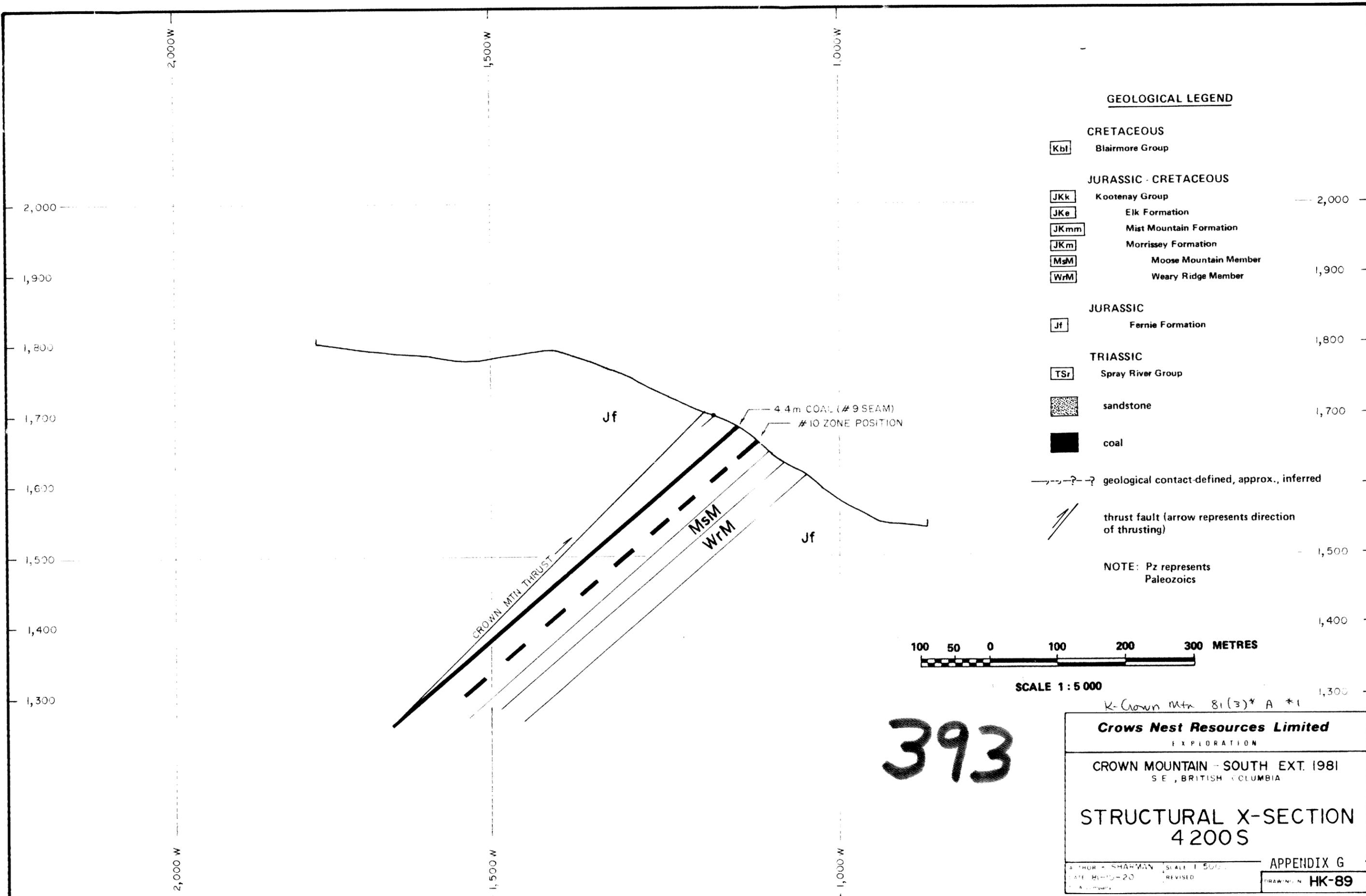
CROWN MOUNTAIN - SOUTH EXT. 1981
S.E. BRITISH COLUMBIA

1981 GEOLOGY MAP
(SOUTH SHEET)

ZONE II

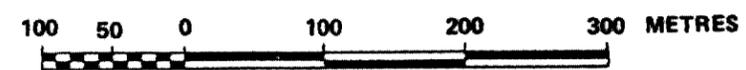
| | | |
|--------------------|---------------|--------------------|
| AUTHOR: K. SHARMAN | SCALE: 1:5000 | APPENDIX F |
| DATE: 81-10-14 | REVISED: | DRAWING NO: HK-91B |
| To Accompany | | |

R/C



GEOLOGICAL LEGEND

- CRETACEOUS**
- Kbl Blairmore Group
- JURASSIC - CRETACEOUS**
- JKk Kootenay Group
- JKe Elk Formation
- JKmm Mist Mountain Formation
- JKm Morrissey Formation
- MsM Moose Mountain Member
- WrM Weary Ridge Member
- JURASSIC**
- Jf Fernie Formation
- TRIASSIC**
- TSr Spray River Group
- sandstone
- coal
- geological contact-defined, approx., inferred
- thrust fault (arrow represents direction of thrusting)
- NOTE: Pz represents Paleozoics



SCALE 1 : 5 000

393

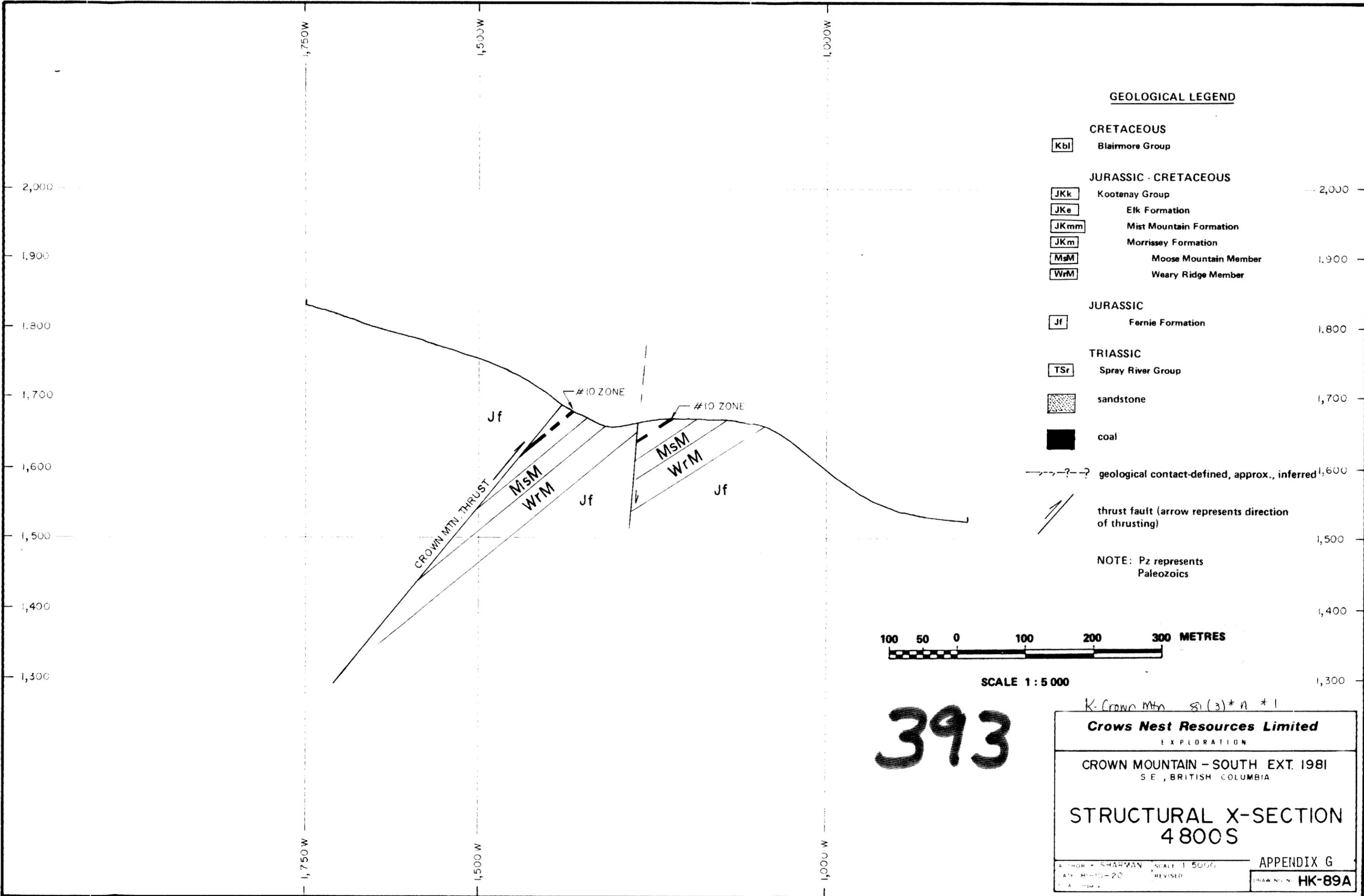
K-Crown Mtn 81(3)* A *1

Crows Nest Resources Limited
EXPLORATION

CROWN MOUNTAIN - SOUTH EXT. 1981
S.E., BRITISH COLUMBIA

STRUCTURAL X-SECTION
4200S

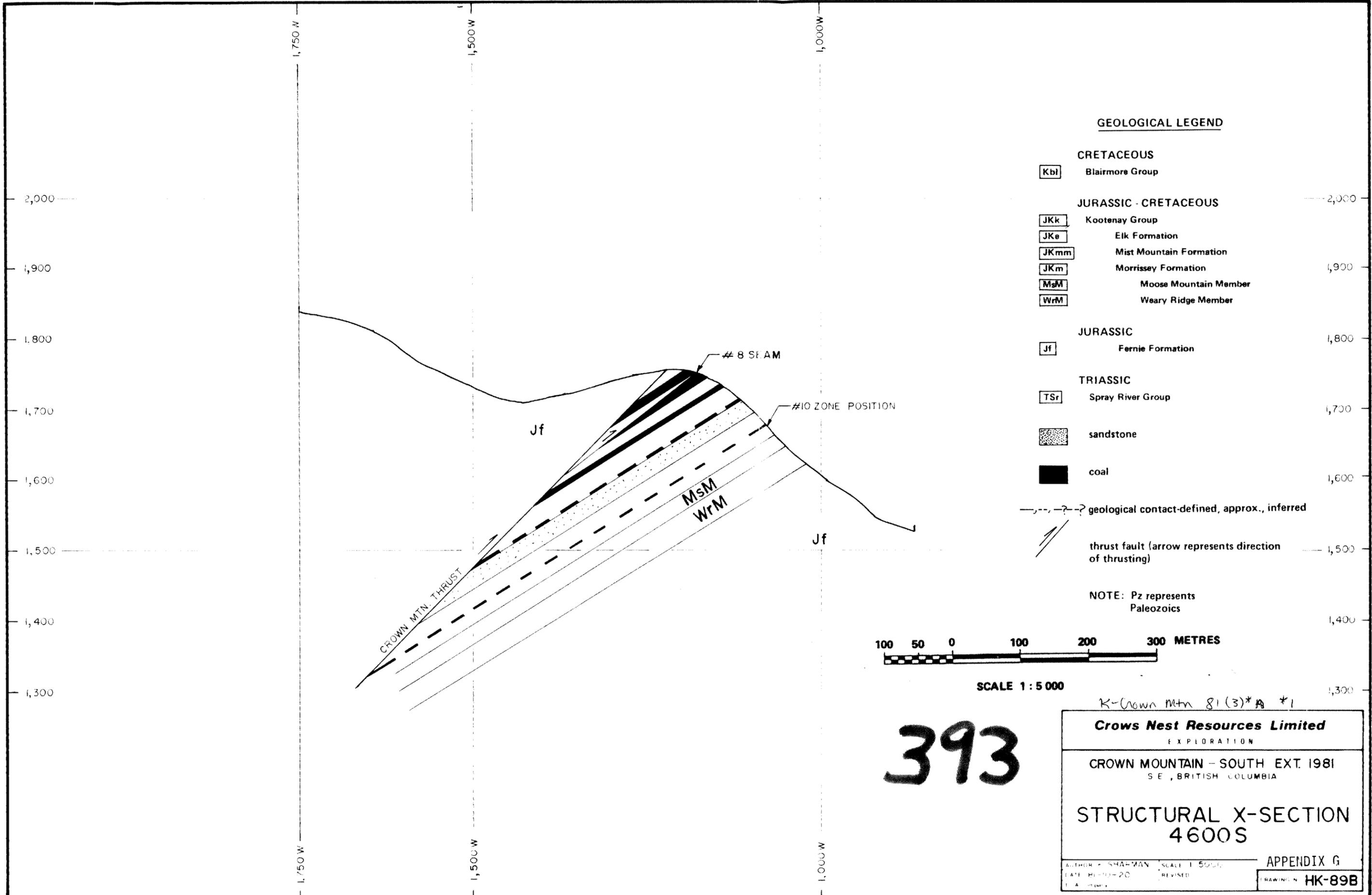
| | | |
|--------------------------|--------------|-------------------|
| AUTHOR - SHARMAN | SCALE 1:5000 | APPENDIX G |
| DATE REVISION - 20 | REVISED | |
| DRAWING NO. HK-89 | | |



393

K-Crown Mtn 81(3)*n*1

| | |
|--|---------------------------|
| Crows Nest Resources Limited | |
| EXPLORATION | |
| CROWN MOUNTAIN - SOUTH EXT. 1981 S.E., BRITISH COLUMBIA | |
| STRUCTURAL X-SECTION 4800S | |
| AUTHOR - SHARMAN | SCALE 1:5000 |
| DATE REVISED - 20 | REVISED |
| APPENDIX G | DRAWING NO. HK-89A |



GEOLOGICAL LEGEND

CRETACEOUS

[Kbl] Blairmore Group

JURASSIC - CRETACEOUS

[JKk] Kootenay Group

[JKe] Elk Formation

[JKmm] Mist Mountain Formation

[JKm] Morrissey Formation

[MsM] Moose Mountain Member

[WrM] Weary Ridge Member

JURASSIC

[Jf] Fernie Formation

TRIASSIC

[TSr] Spray River Group

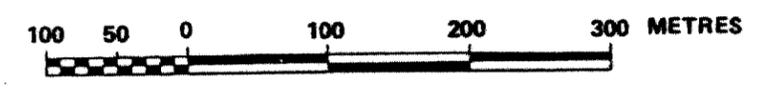
[stippled] sandstone

[black] coal

[dashed line with triangle] geological contact-defined, approx., inferred

[line with arrow] thrust fault (arrow represents direction of thrusting)

NOTE: Pz represents Paleozoics



SCALE 1 : 5 000

393

K-Crown Mtn 81(3)*A *1

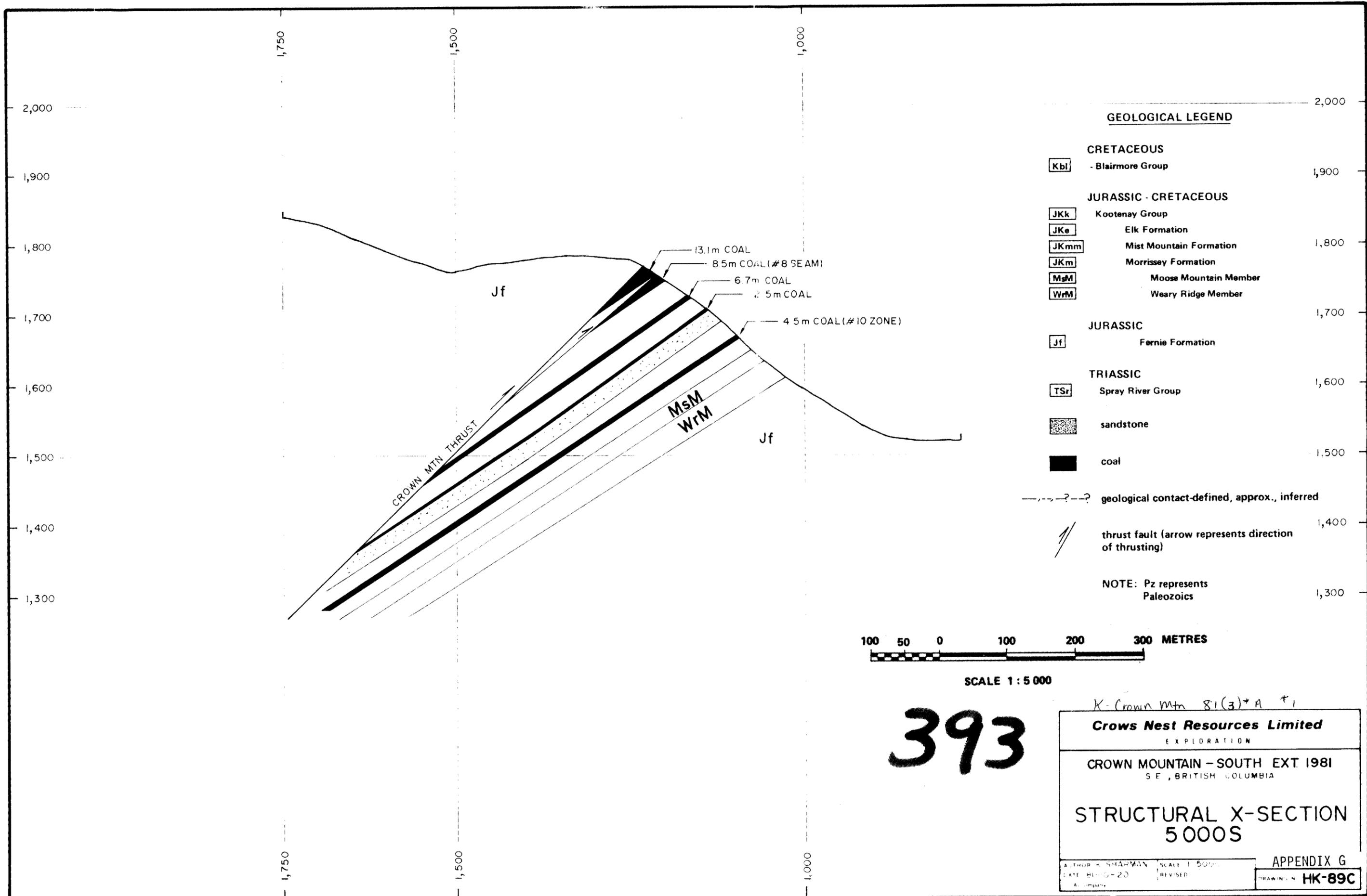
Crows Nest Resources Limited
EXPLORATION

CROWN MOUNTAIN - SOUTH EXT. 1981
S.E., BRITISH COLUMBIA

STRUCTURAL X-SECTION
4600S

AUTHOR: SHARMAN SCALE: 1:5000
DATE: 8-10-20 REVISED

APPENDIX G
DRAWING NO. **HK-89B**



GEOLOGICAL LEGEND

CRETACEOUS

Kbl - Blairmore Group

JURASSIC - CRETACEOUS

JKk Kootenay Group

JKe Elk Formation

JKmm Mist Mountain Formation

JKm Morrissey Formation

MsM Moose Mountain Member

WrM Weary Ridge Member

JURASSIC

Jf Fernie Formation

TRIASSIC

TSr Spray River Group

sandstone

coal

geological contact-defined, approx., inferred

thrust fault (arrow represents direction of thrusting)

NOTE: Pz represents Paleozoics



SCALE 1 : 5 000

393

K-Crown Mtn 81(3)*A *1

Crows Nest Resources Limited
EXPLORATION

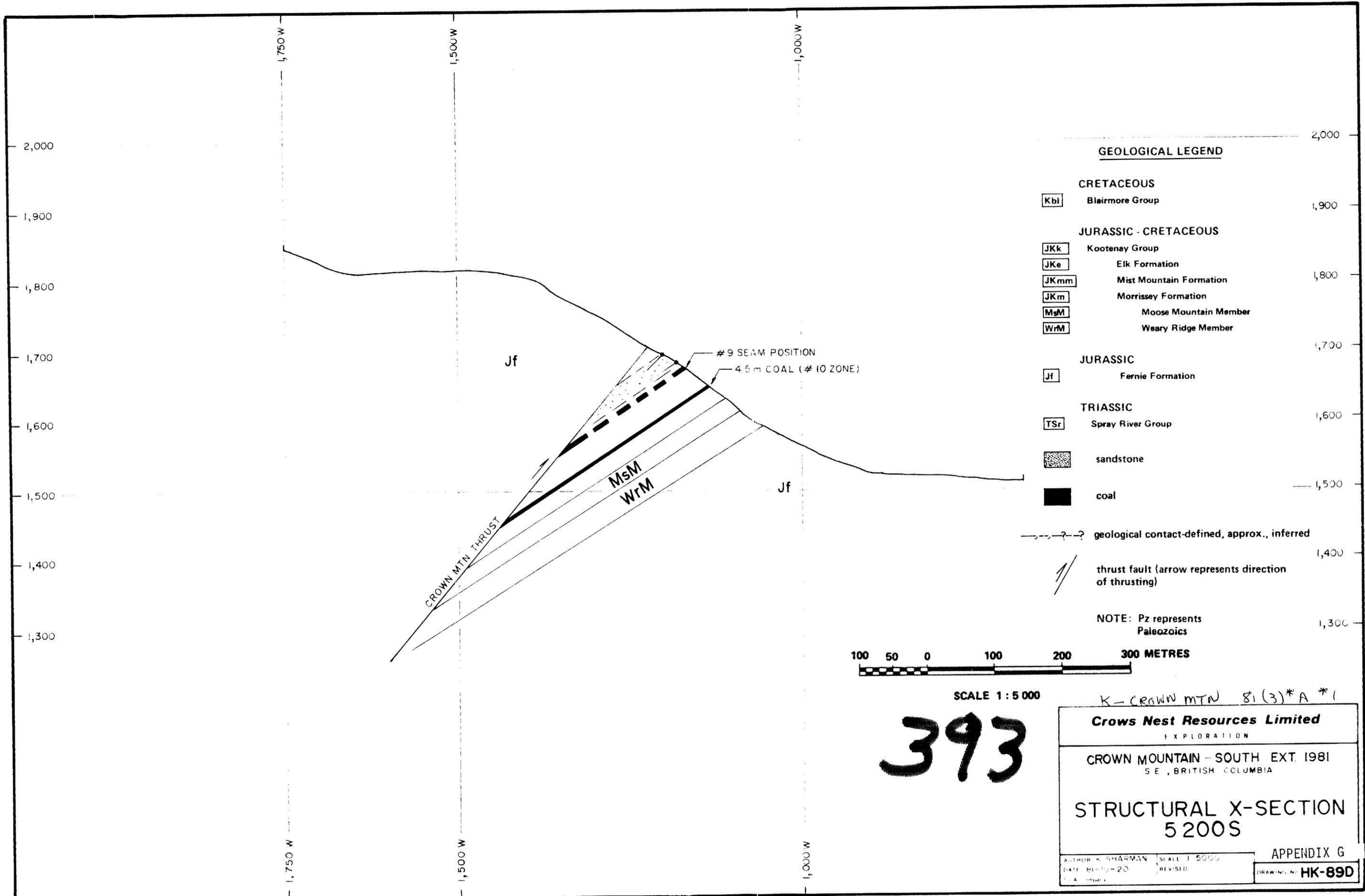
CROWN MOUNTAIN - SOUTH EXT 1981
S.E., BRITISH COLUMBIA

STRUCTURAL X-SECTION
5 000 S

AUTHOR: S. SHARMAN SCALE: 1:5000
DATE: 10-20-80 REVISED

APPENDIX G

DRAWING: HK-89C



GEOLOGICAL LEGEND

CRETACEOUS

Kbl Blairmore Group

JURASSIC - CRETACEOUS

JKk Kootenay Group

JKe Elk Formation

JKmm Mist Mountain Formation

JKm Morrissey Formation

MsM Moose Mountain Member

WrM Weary Ridge Member

JURASSIC

Jf Fernie Formation

TRIASSIC

TSr Spray River Group

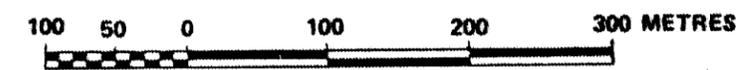
sandstone

coal

geological contact-defined, approx., inferred

thrust fault (arrow represents direction of thrusting)

NOTE: Pz represents Paleozoics



SCALE 1:5000

393

K-CROWN MTN 81(3)*A*1

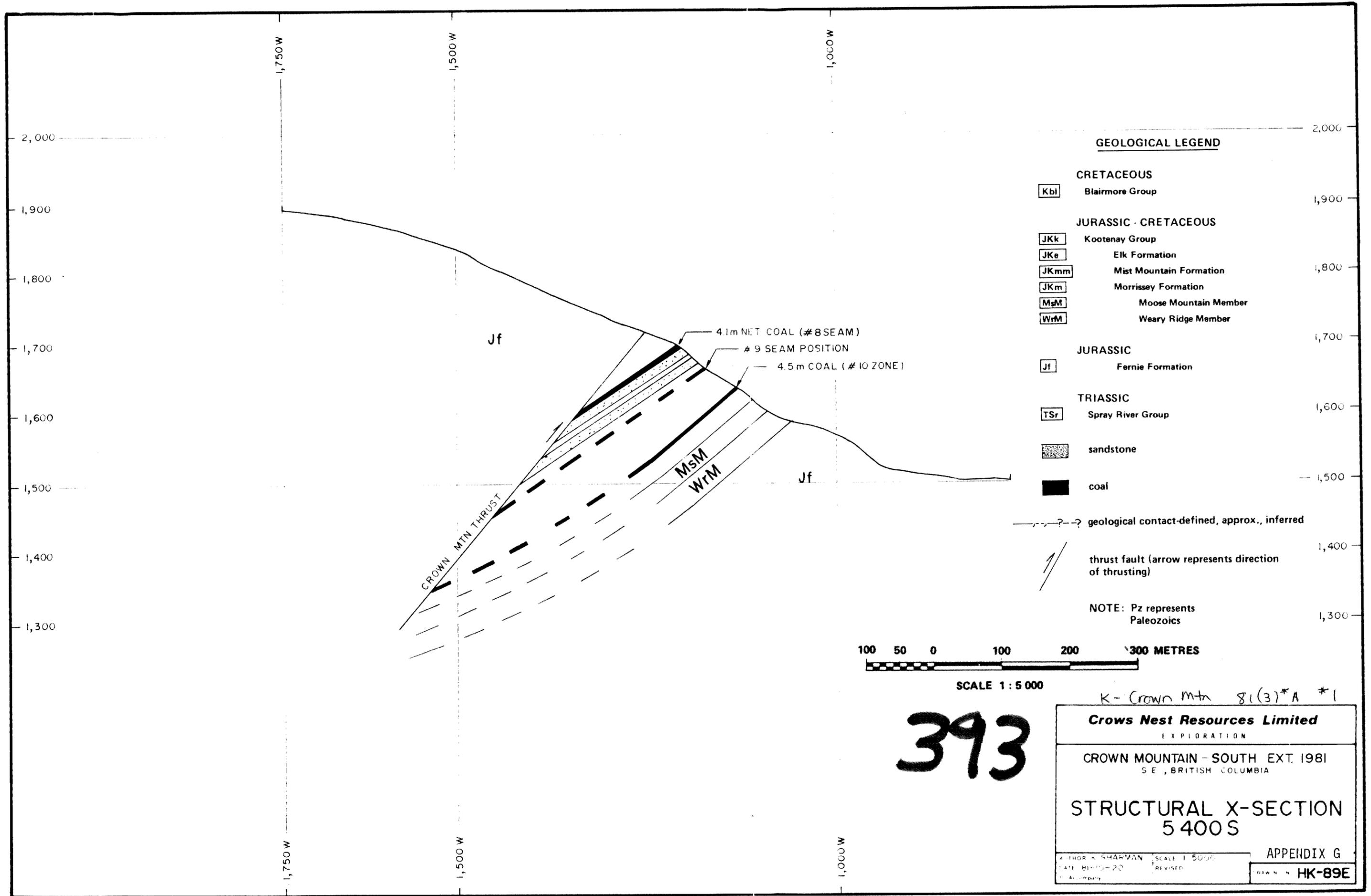
Crows Nest Resources Limited
EXPLORATION

CROWN MOUNTAIN - SOUTH EXT. 1981
S.E., BRITISH COLUMBIA

STRUCTURAL X-SECTION
5200S

AUTHOR: S. SHARMAN SCALE: 1:5000
DATE: 8-10-20 REVISED

APPENDIX G
DRAWING NO. **HK-89D**



GEOLOGICAL LEGEND

- CRETACEOUS**
- [Kbl] Blairmore Group
- JURASSIC - CRETACEOUS**
- [JKk] Kootenay Group
- [JKe] Elk Formation
- [JKmm] Mist Mountain Formation
- [JKm] Morrissey Formation
- [MsM] Moose Mountain Member
- [WrM] Weary Ridge Member

- JURASSIC**
- [Jf] Fernie Formation

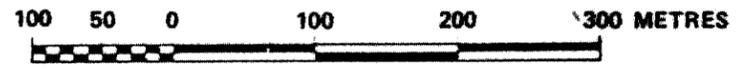
- TRIASSIC**
- [TSr] Spray River Group

- [sandstone] sandstone
- [coal] coal

---?--- geological contact-defined, approx., inferred

/// thrust fault (arrow represents direction of thrusting)

NOTE: Pz represents Paleozoics

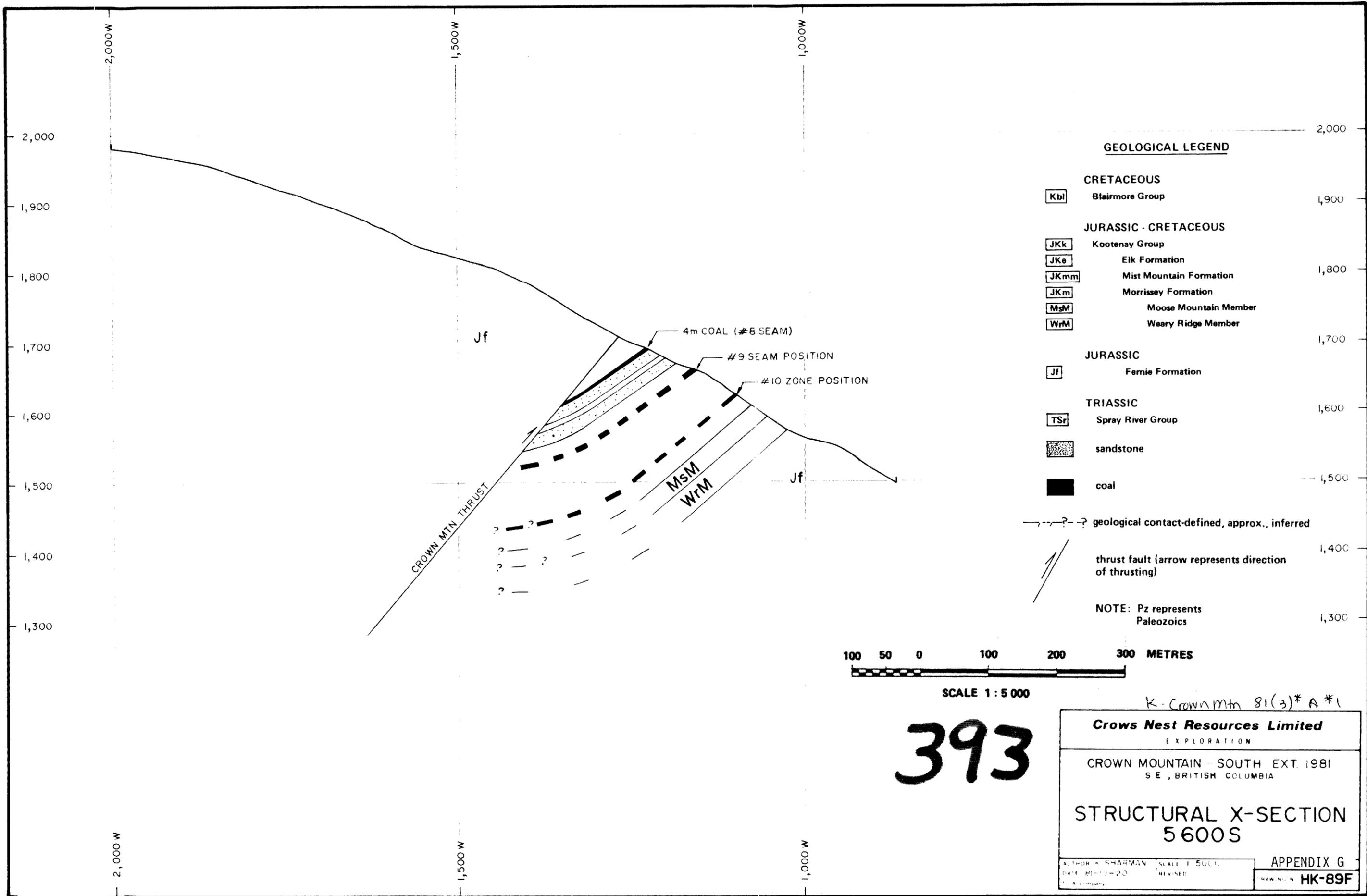


SCALE 1 : 5 000

393

K - Crown Mtn 81(3)*A *1

| | |
|--|---|
| Crows Nest Resources Limited | |
| EXPLORATION | |
| CROWN MOUNTAIN - SOUTH EXT. 1981 S.E., BRITISH COLUMBIA | |
| STRUCTURAL X-SECTION 5400S | |
| <small>AUTHOR: K. SHARMAN DATE: 8-10-20</small> | <small>SCALE: 1:5000 REVISED:</small> |
| APPENDIX G | |
| DRAWN BY: HK-89E | |



GEOLOGICAL LEGEND

- CRETACEOUS**
- Kbl** Blairmore Group
- JURASSIC - CRETACEOUS**
- JKk** Kootenay Group
 - JKe** Elk Formation
 - JKmm** Mist Mountain Formation
 - JKm** Morrissey Formation
 - MmM** Moose Mountain Member
 - WrM** Weary Ridge Member
- JURASSIC**
- Jf** Fernie Formation
- TRIASSIC**
- TSr** Spray River Group
- sandstone
 - coal
- ?---? geological contact-defined, approx., inferred
- thrust fault (arrow represents direction of thrusting)
- NOTE: Pz represents Paleozoics

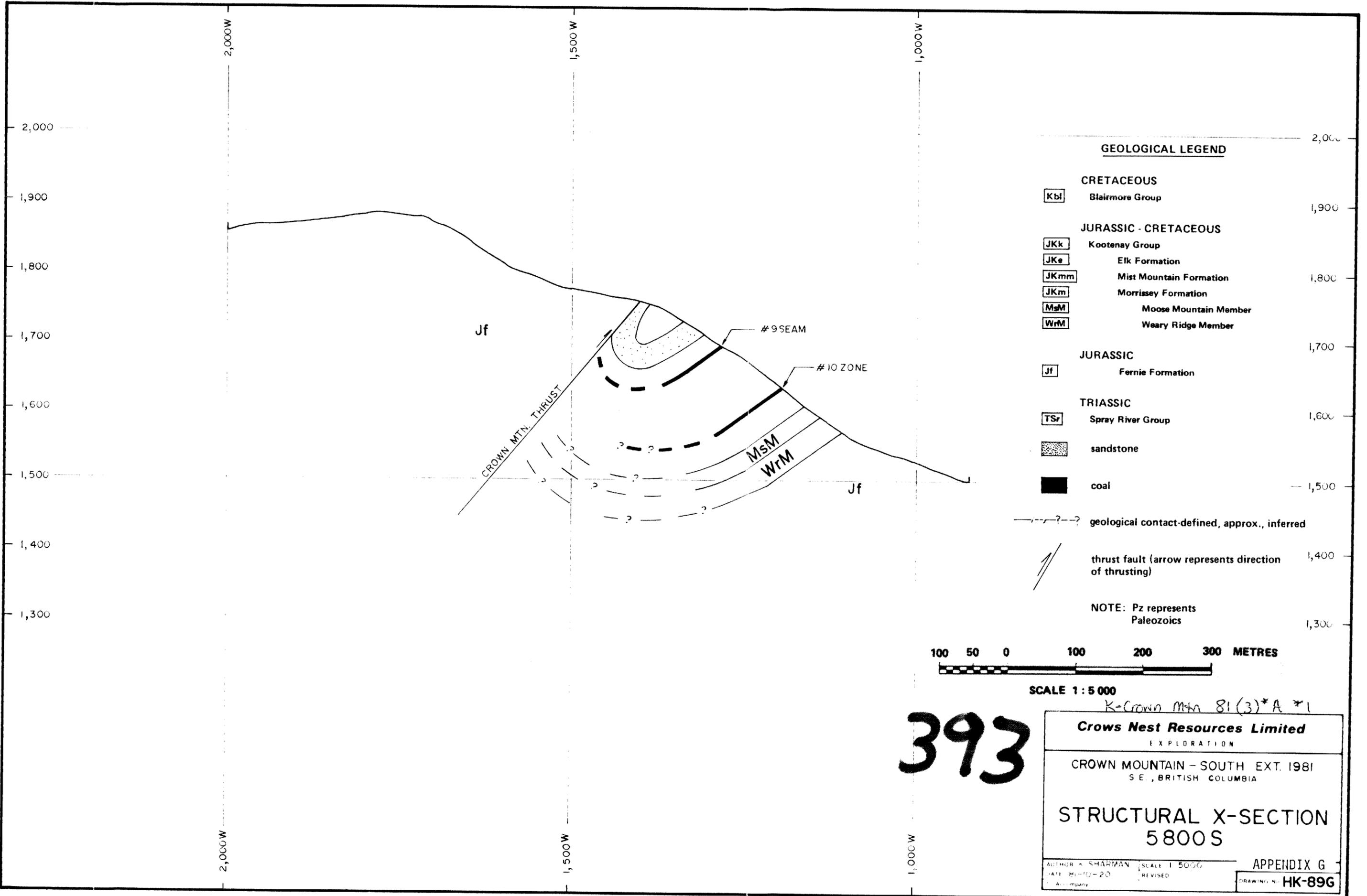
393

Crows Nest Resources Limited
EXPLORATION

CROWN MOUNTAIN - SOUTH EXT. 1981
S.E., BRITISH COLUMBIA

STRUCTURAL X-SECTION
5600S

APPENDIX G
AUTHOR: A. SHARMAN SCALE: 1:5000
DATE: 81-10-20 REVISED:
DRAWING: **HK-89F**



GEOLOGICAL LEGEND

- CRETACEOUS**
- Kbl Blairmore Group
- JURASSIC - CRETACEOUS**
- JKk Kootenay Group
- JKe Elk Formation
- JKmm Mist Mountain Formation
- JKm Morrissey Formation
- MsM Moose Mountain Member
- WrM Weary Ridge Member
- JURASSIC**
- Jf Fernie Formation
- TRIASSIC**
- TSr Spray River Group
- sandstone
- coal
- geological contact-defined, approx., inferred
- thrust fault (arrow represents direction of thrusting)

NOTE: Pz represents Paleozoics

100 50 0 100 200 300 METRES

SCALE 1 : 5 000

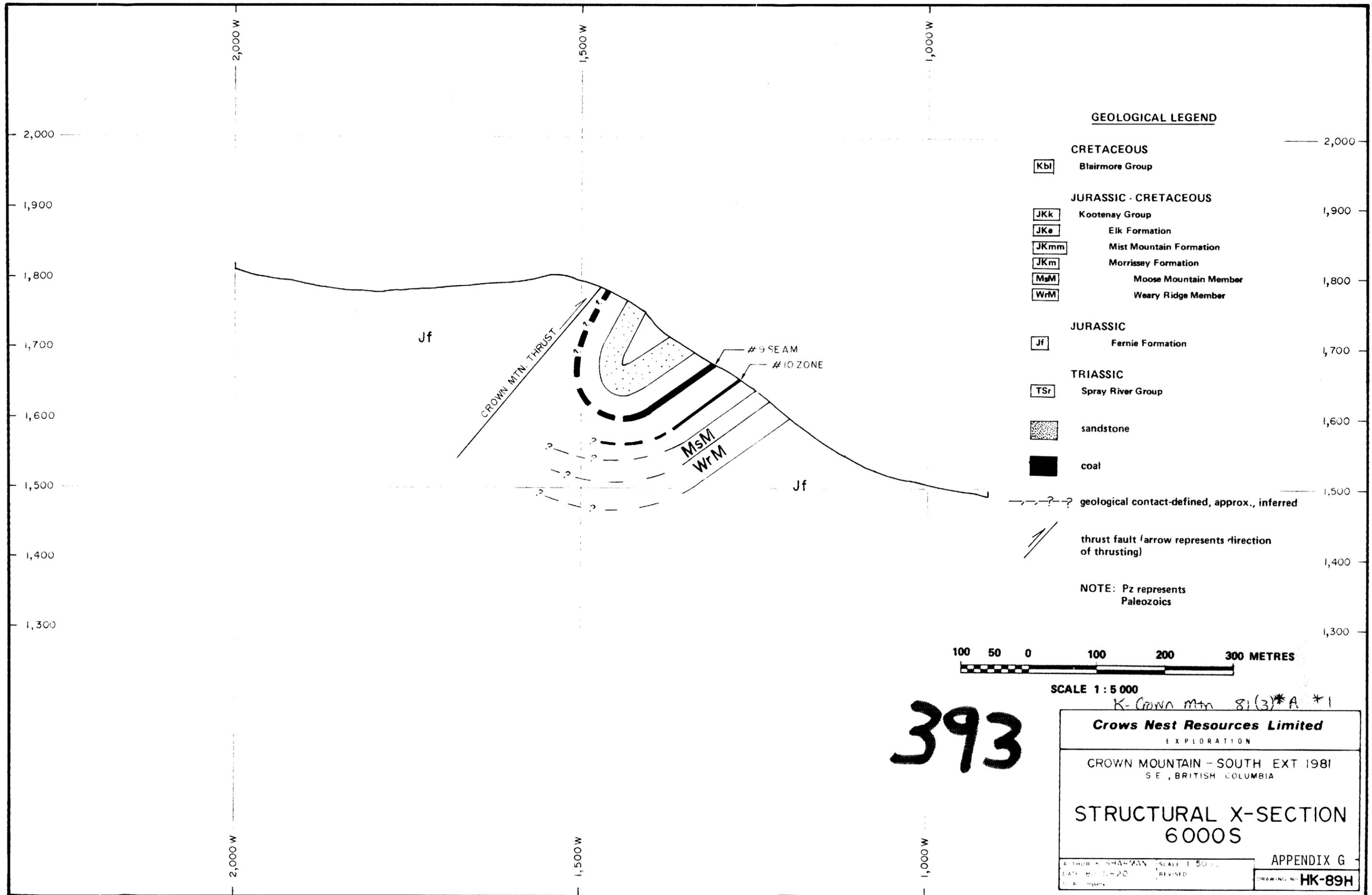
393

K-Crown Mtn 81(3)*A*1

| | |
|--|--|
| Crows Nest Resources Limited | |
| EXPLORATION | |
| CROWN MOUNTAIN - SOUTH EXT. 1981 S.E., BRITISH COLUMBIA | |
| STRUCTURAL X-SECTION 5800 S | |
| AUTHOR: A. SHARMAN DATE: 8-10-20 COMPANY: | SCALE: 1:5000 REVISED: DRAWING NO: HK-89G |

APPENDIX G

DRAWING NO: **HK-89G**



GEOLOGICAL LEGEND

CRETACEOUS
Kbl Blairmore Group

JURASSIC - CRETACEOUS

- JKk** Kootenay Group
- JKe** Elk Formation
- JKmm** Mist Mountain Formation
- JKm** Morrissey Formation
- MsM** Moose Mountain Member
- WrM** Weary Ridge Member

JURASSIC

Jf Fernie Formation

TRIASSIC

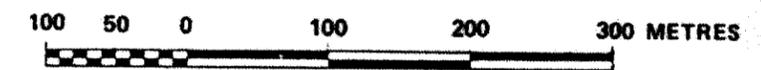
TSr Spray River Group

- sandstone
- coal

geological contact-defined, approx., inferred

thrust fault (arrow represents direction of thrusting)

NOTE: Pz represents Paleozoics



SCALE 1:5 000

393

*K-Crown mtn 81(3)*A *1*

Crows Nest Resources Limited
 EXPLORATION

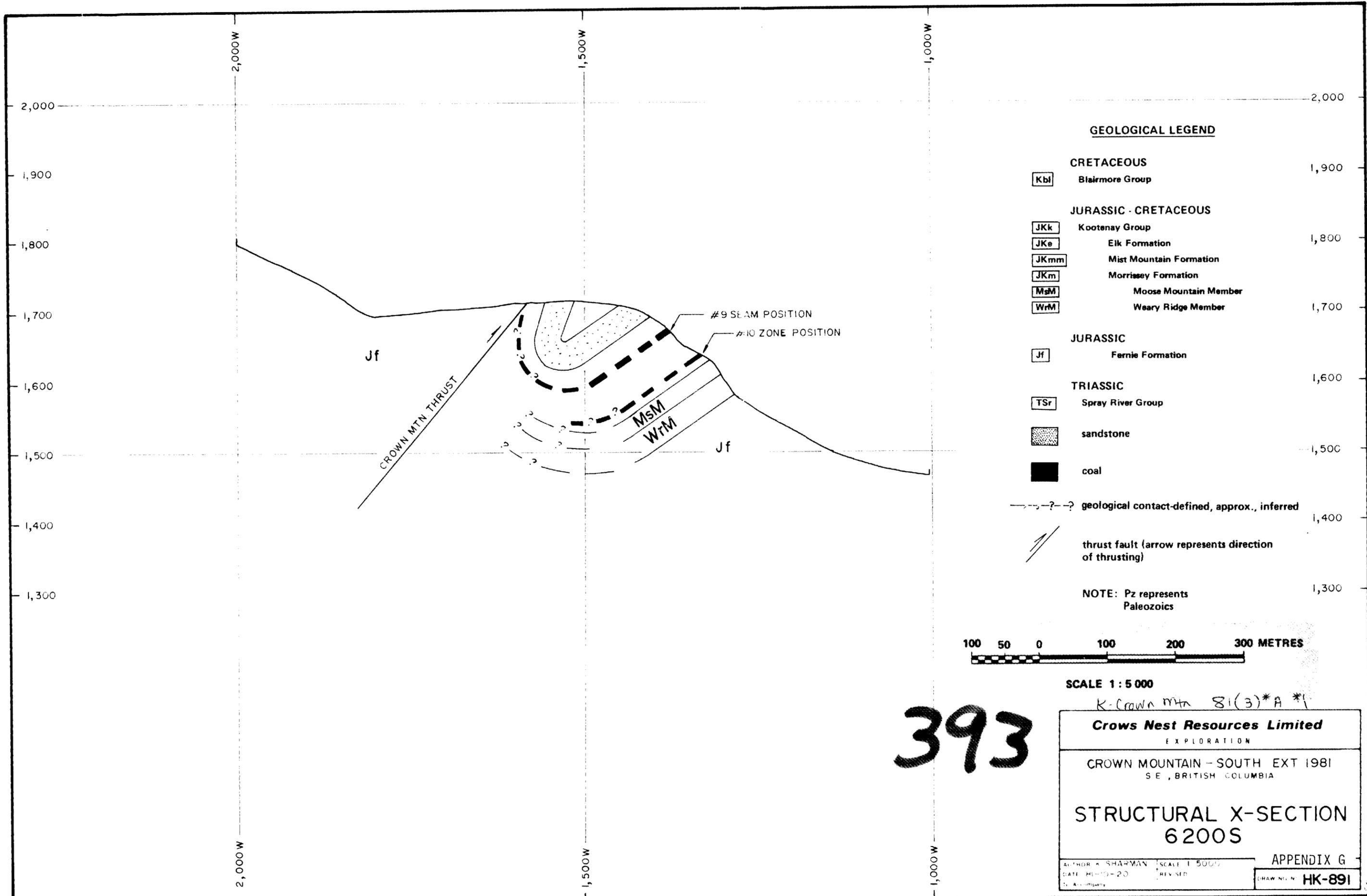
CROWN MOUNTAIN - SOUTH EXT 1981
 S.E., BRITISH COLUMBIA

**STRUCTURAL X-SECTION
 6000S**

Author: A. SHARMAN SCALE: 1:5000
 Date: 01-20-80 REVISED
 Title: 6000S

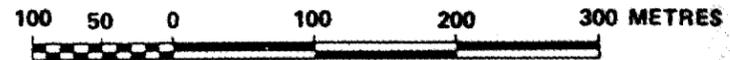
APPENDIX G

DRAWING NO. **HK-89H**



GEOLOGICAL LEGEND

- CRETACEOUS**
- Kbl Blairmore Group
- JURASSIC - CRETACEOUS**
- JKk Kootenay Group
- JKe Elk Formation
- JKmm Mist Mountain Formation
- JKm Morrissey Formation
- MsM Moose Mountain Member
- WrM Weary Ridge Member
- JURASSIC**
- Jf Fernie Formation
- TRIASSIC**
- TSr Spray River Group
- sandstone
- coal
- geological contact-defined, approx., inferred
- thrust fault (arrow represents direction of thrusting)
- NOTE: Pz represents Paleozoics

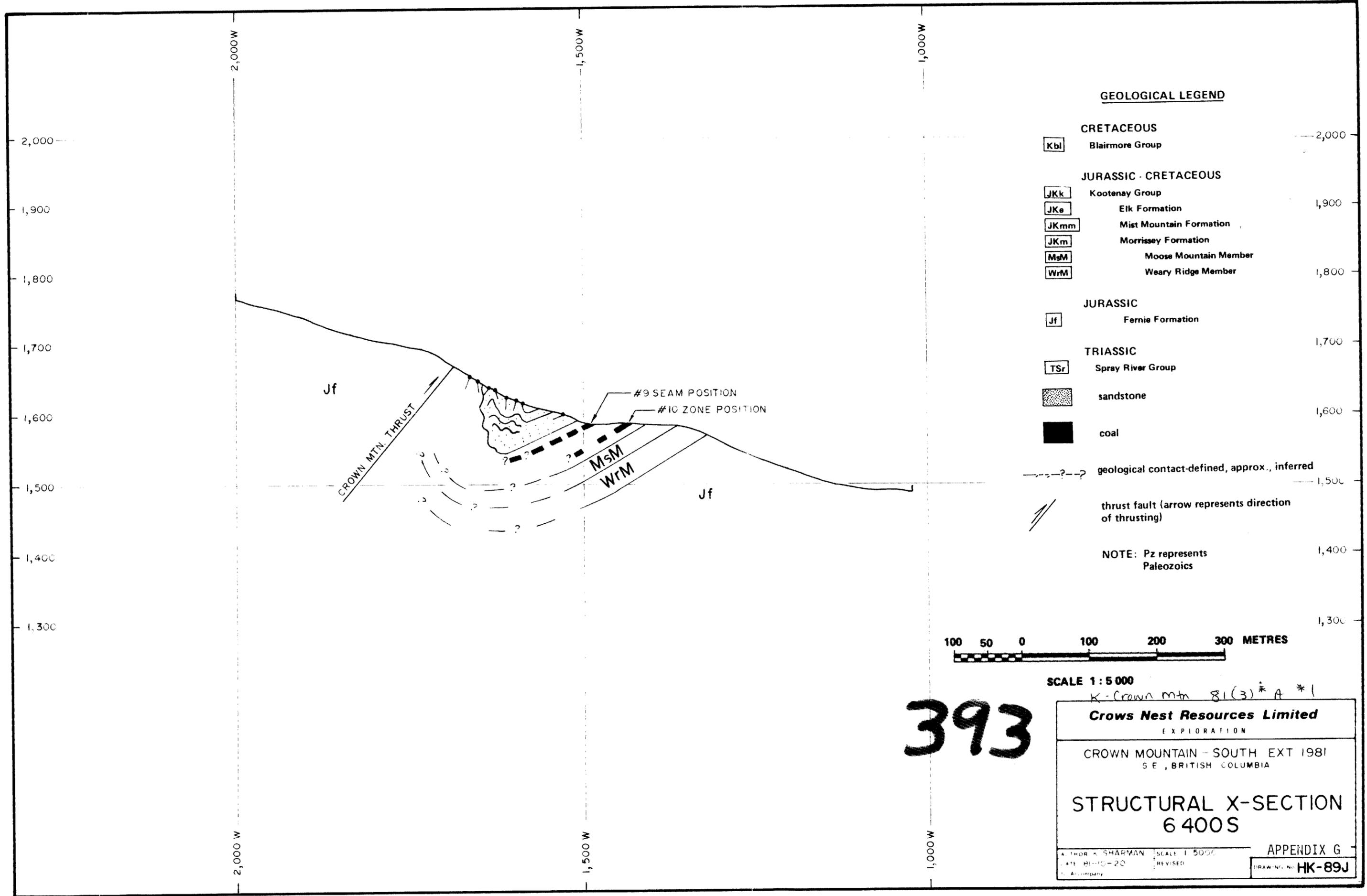


SCALE 1 : 5 000

K-Crown Mtn 81(3)*A*

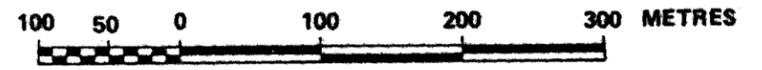
393

| | |
|---|--------------------------|
| Crows Nest Resources Limited | |
| EXPLORATION | |
| CROWN MOUNTAIN - SOUTH EXT 1981 S.E., BRITISH COLUMBIA | |
| STRUCTURAL X-SECTION 6200S | |
| AUTHOR: A. SHARMAN DATE: 11-10-20 | SCALE: 1:5000 REVISED |
| APPENDIX G DRAWING NO. HK-891 | |



GEOLOGICAL LEGEND

- CRETACEOUS**
- Kbl Blairmore Group
- JURASSIC - CRETACEOUS**
- JKk Kootenay Group
- JKe Elk Formation
- JKmm Mist Mountain Formation
- JKm Morrissey Formation
- MsM Moose Mountain Member
- WrM Weary Ridge Member
- JURASSIC**
- Jf Fernie Formation
- TRIASSIC**
- TSr Spray River Group
- sandstone
- coal
- geological contact-defined, approx., inferred
- thrust fault (arrow represents direction of thrusting)
- NOTE: Pz represents Paleozoics



SCALE 1:5000

393

K-Crown mtn 81(3)*A*1

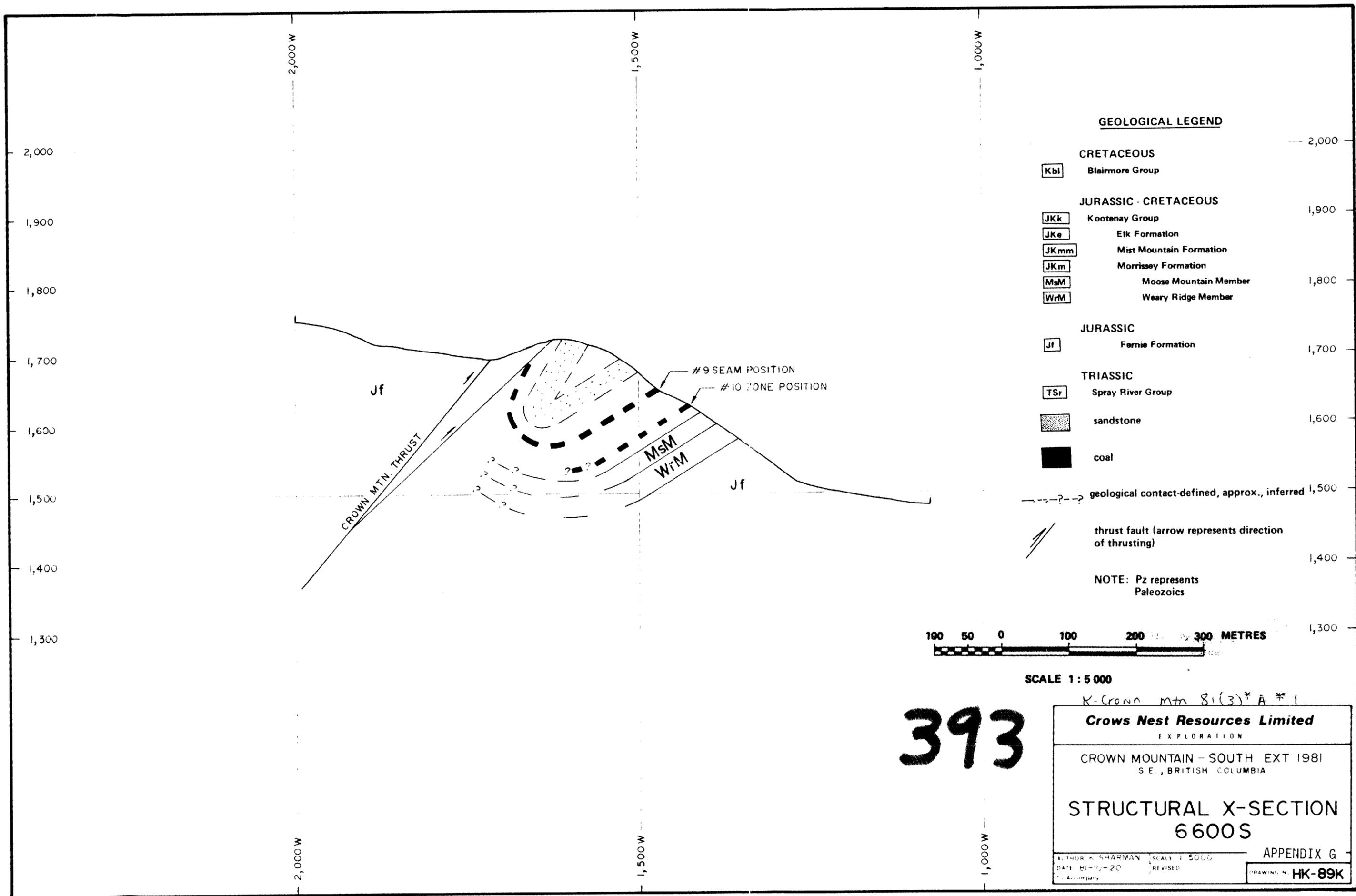
Crows Nest Resources Limited
EXPLORATION

CROWN MOUNTAIN - SOUTH EXT 1981
S.E., BRITISH COLUMBIA

STRUCTURAL X-SECTION
6400S

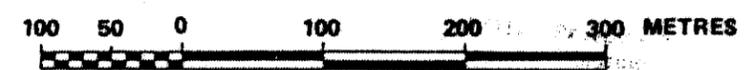
APPENDIX G

| | | |
|--------------------|---------------|---------------------------|
| AUTHOR: K. SHARMAN | SCALE: 1:5000 | DRAWING NO: HK-89J |
| DATE: 8/10/80 | REVISED | |



GEOLOGICAL LEGEND

- CRETACEOUS**
- Kbl** Blairmore Group
- JURASSIC - CRETACEOUS**
- JKk** Kootenay Group
- JKc** Elk Formation
- JKmm** Mist Mountain Formation
- JKrn** Morrissey Formation
- MsM** Moose Mountain Member
- WrM** Weary Ridge Member
- JURASSIC**
- Jf** Fernie Formation
- TRIASSIC**
- TSr** Spray River Group
- sandstone
- coal
- geological contact-defined, approx., inferred
- thrust fault (arrow represents direction of thrusting)
- NOTE: Pz represents Paleozoics



SCALE 1:5000

393

K-Crown Mtn 81(3)*A*1

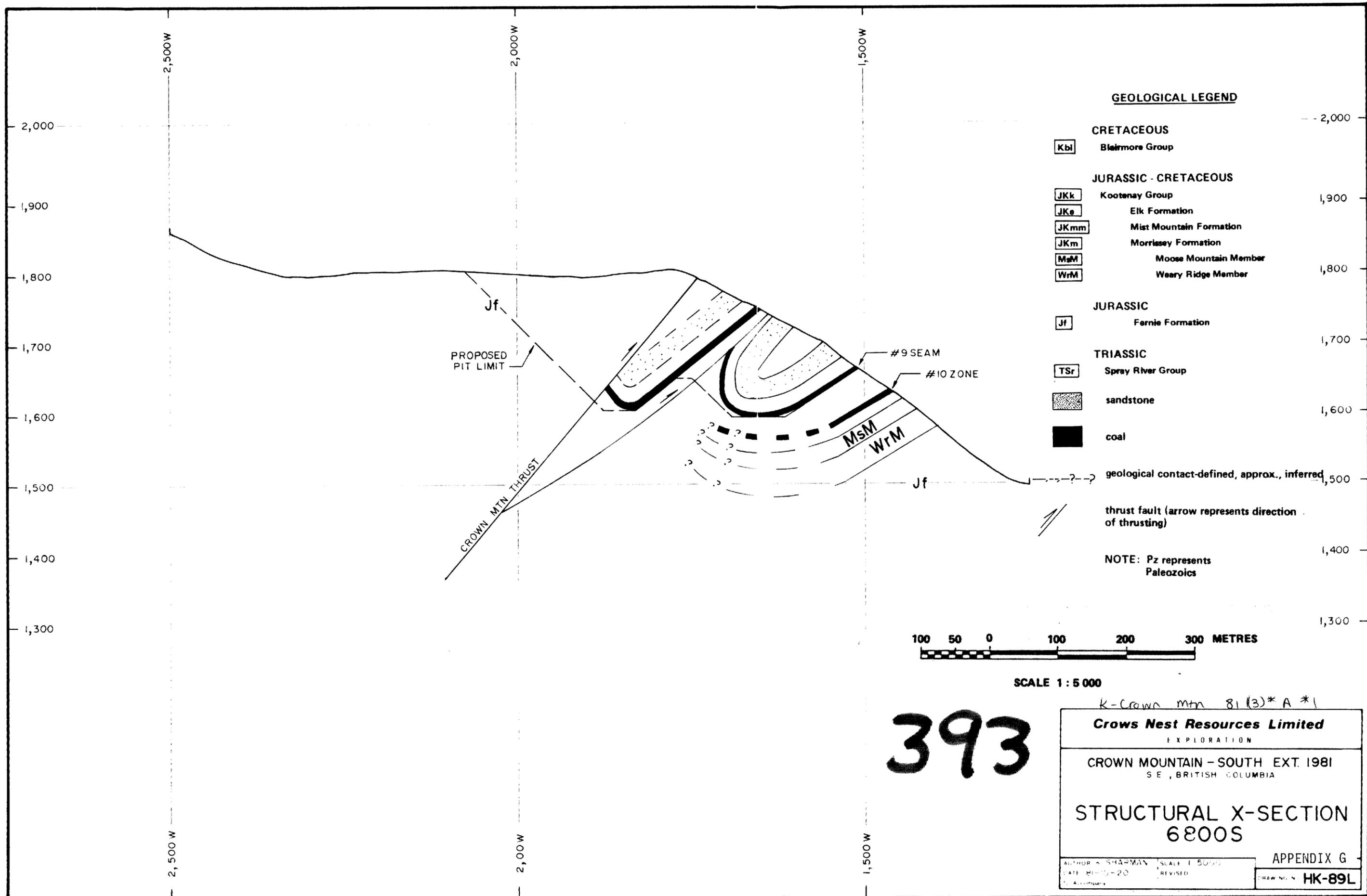
Crows Nest Resources Limited
EXPLORATION

CROWN MOUNTAIN - SOUTH EXT 1981
S.E., BRITISH COLUMBIA

STRUCTURAL X-SECTION
6600S

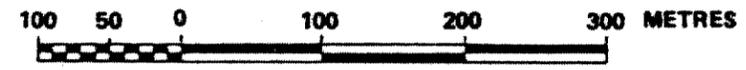
APPENDIX G

AUTHOR: A. SHARMAN | SCALE: 1:5000
DATE: 8-10-20 | REVISED:
DRAWING NO. **HK-89K**



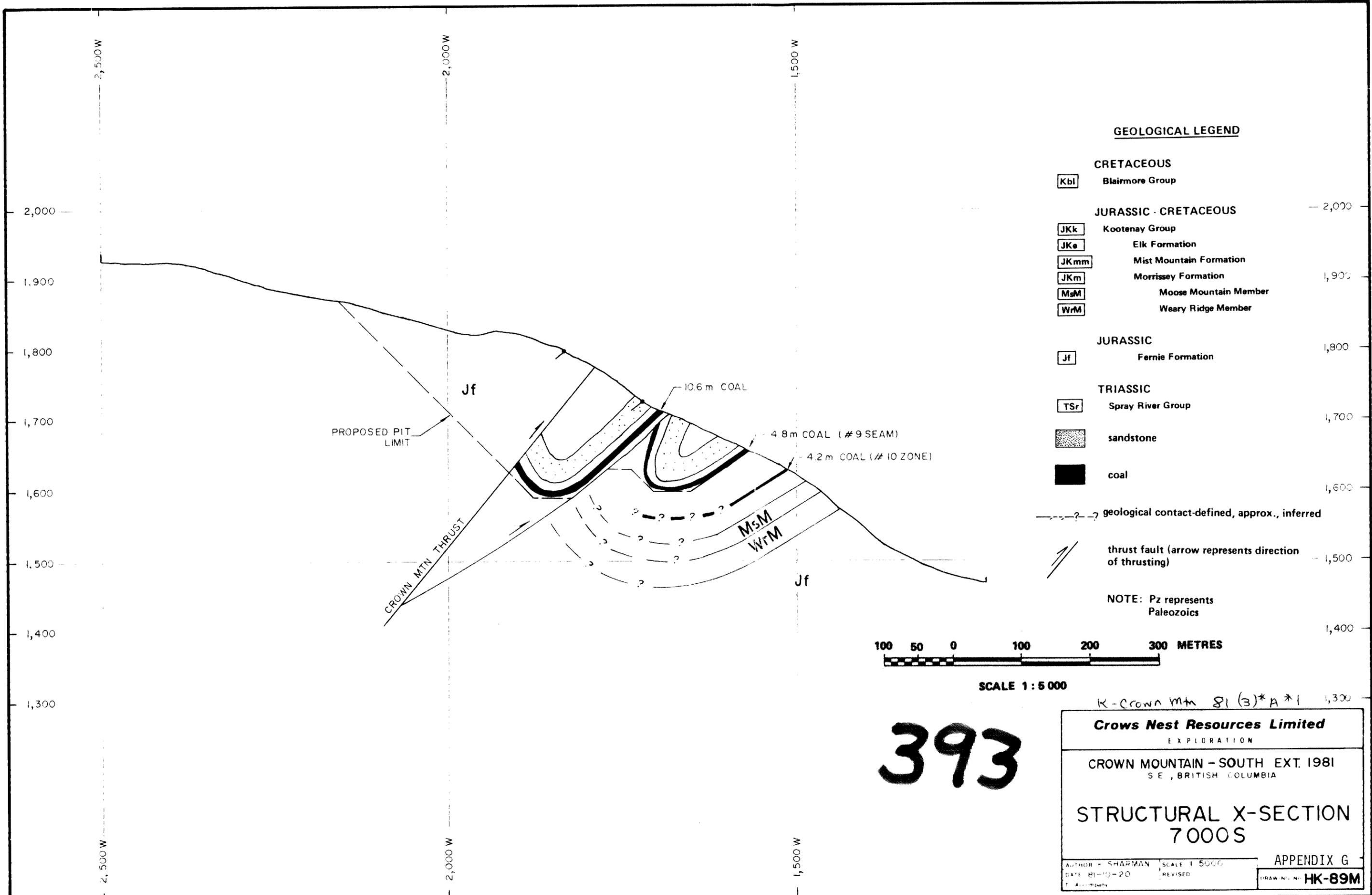
GEOLOGICAL LEGEND

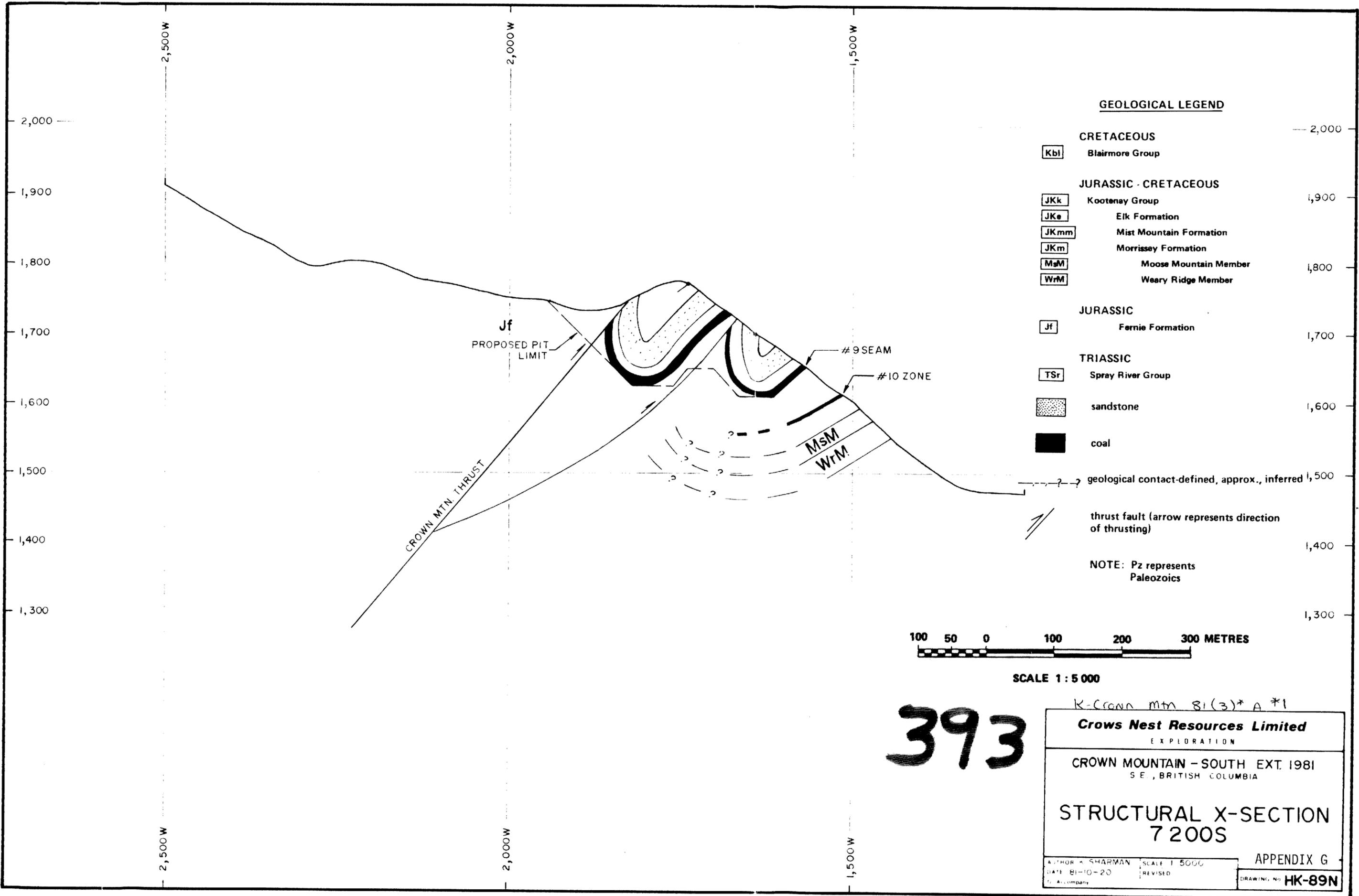
- CRETACEOUS**
- Kbl** Blairmore Group
- JURASSIC - CRETACEOUS**
- JKk** Kootenay Group
- JKe** Elk Formation
- JKmm** Mist Mountain Formation
- JKm** Morrissey Formation
- MsM** Moose Mountain Member
- WrM** Weary Ridge Member
- JURASSIC**
- Jf** Fernie Formation
- TRIASSIC**
- TSr** Spray River Group
- sandstone
- coal
- geological contact-defined, approx., inferred
- thrust fault (arrow represents direction of thrusting)
- NOTE: Pz represents Paleozoics



SCALE 1:5000

K-Crown mtn 81(3)*A*1





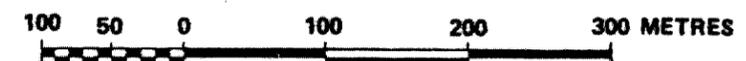
GEOLOGICAL LEGEND

- CRETACEOUS**
- [Kbl] Blairmore Group
- JURASSIC - CRETACEOUS**
- [JKk] Kootenay Group
- [JKe] Elk Formation
- [JKmm] Mist Mountain Formation
- [JKm] Morrissey Formation
- [MsM] Moose Mountain Member
- [WrM] Weary Ridge Member
- JURASSIC**
- [Jf] Fernie Formation
- TRIASSIC**
- [TSr] Spray River Group
- [stippled] sandstone
- [black] coal

geological contact-defined, approx., inferred

thrust fault (arrow represents direction of thrusting)

NOTE: Pz represents Paleozoics



SCALE 1 : 5 000

393

K-Crown Mtn 81(3)*A*1

Crows Nest Resources Limited
EXPLORATION

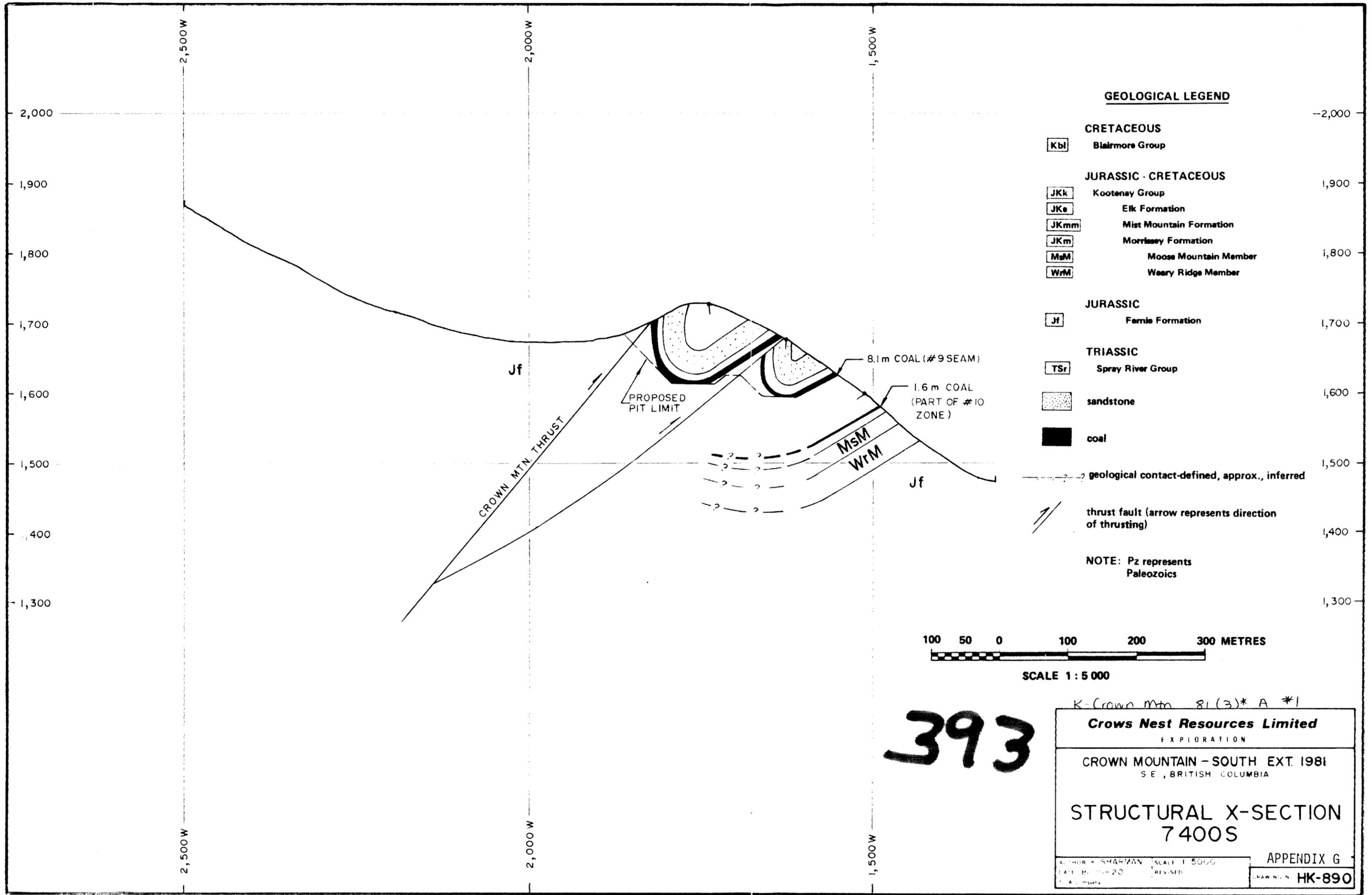
CROWN MOUNTAIN - SOUTH EXT. 1981
S.E., BRITISH COLUMBIA

STRUCTURAL X-SECTION
7200S

APPENDIX G

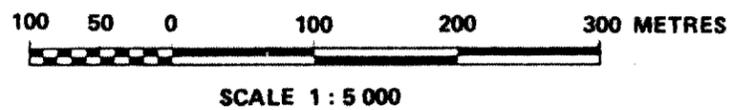
AUTHOR: A. SHARMAN SCALE: 1:5000
DATE: 81-10-20 REVISED
By: Company

DRAWING NO: **HK-89N**



GEOLOGICAL LEGEND

- CRETACEOUS**
- Kbl** Blairmore Group
- JURASSIC - CRETACEOUS**
- JKk** Kootenay Group
- JKc** Elk Formation
- JKmm** Mist Mountain Formation
- JKm** Morrisey Formation
- MsM** Moose Mountain Member
- WrM** Weary Ridge Member
- JURASSIC**
- Jf** Fernie Formation
- TRIASSIC**
- TSr** Spray River Group
- stippled sandstone
- solid black coal
- ?---? geological contact-defined, approx., inferred
- /// thrust fault (arrow represents direction of thrusting)
- NOTE: Pz represents Paleozoics



393

K-Crown Mtn 81(3)* A *1

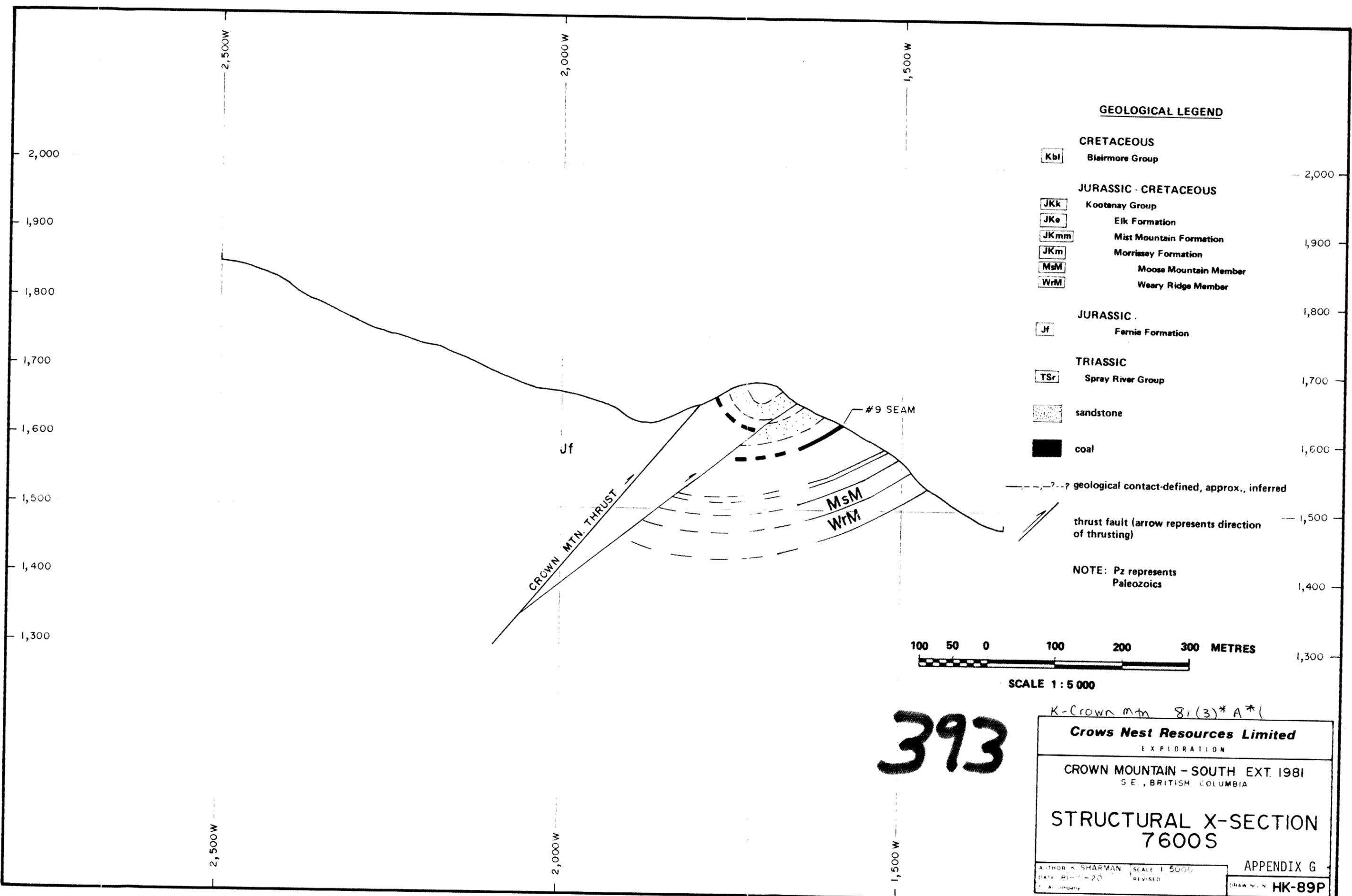
Crows Nest Resources Limited
EXPLORATION

CROWN MOUNTAIN - SOUTH EXT. 1981
S.E., BRITISH COLUMBIA

STRUCTURAL X-SECTION
7400S

APPENDIX G

AUTHOR: S. SHARMAN SCALE: 1:5000
DATE: 8/1/80 REVISED
DRAWING NO.: HK-890



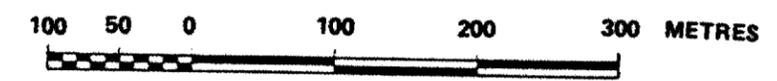
GEOLOGICAL LEGEND

- CRETACEOUS**
- Kbl Blairmore Group
- JURASSIC - CRETACEOUS**
- JKk Kootenay Group
- JKe Elk Formation
- JKmm Mist Mountain Formation
- JKm Morrissey Formation
- MsM Moose Mountain Member
- WrM Weary Ridge Member
- JURASSIC**
- Jf Fernie Formation
- TRIASSIC**
- TSr Spray River Group
- sandstone
- coal

---?---? geological contact-defined, approx., inferred

thrust fault (arrow represents direction of thrusting)

NOTE: Pz represents Paleozoics

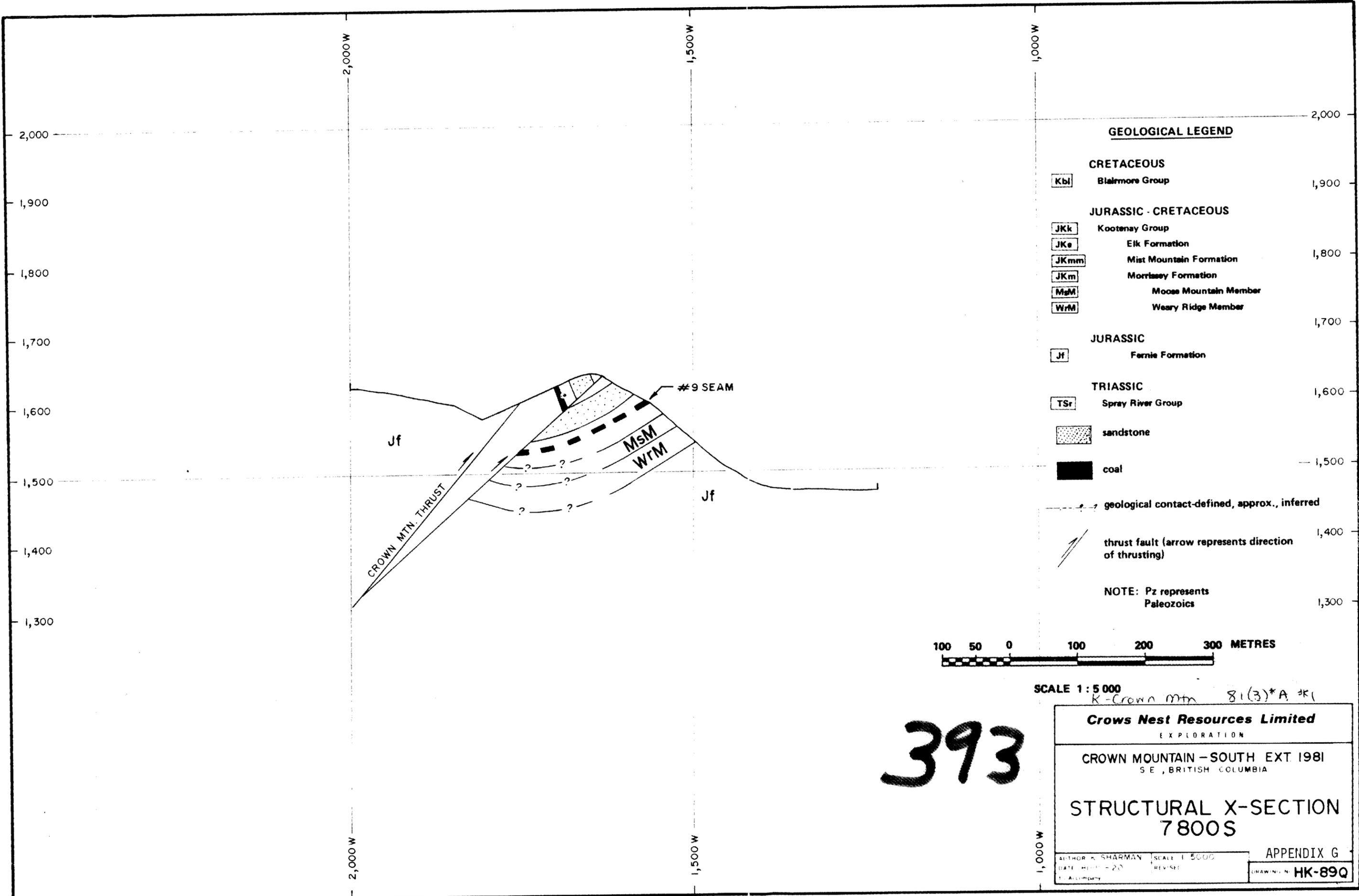


SCALE 1 : 5 000

393

K-Crown mtn 81(3)*A*

| | |
|--|---------------|
| Crows Nest Resources Limited | |
| EXPLORATION | |
| CROWN MOUNTAIN - SOUTH EXT. 1981 S.E., BRITISH COLUMBIA | |
| STRUCTURAL X-SECTION 7600S | |
| AUTHOR: K. SHARMAN | SCALE: 1:5000 |
| DATE: 8-10-20 | REVISED: |
| DRAWN BY: | APPENDIX G |
| HK-89P | |



GEOLOGICAL LEGEND

CRETACEOUS

Kbl Blairmore Group 1,900

JURASSIC - CRETACEOUS

JKk Kootenay Group
JKe Elk Formation 1,800
JKmm Mist Mountain Formation
JKm Morrissey Formation
MsM Moose Mountain Member
WrM Weary Ridge Member 1,700

JURASSIC

Jf Fernie Formation 1,600

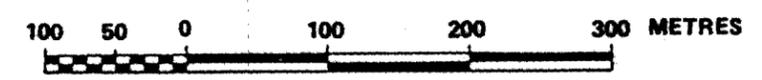
TRIASSIC

TSr Spray River Group 1,500

sandstone
 coal

geological contact-defined, approx., inferred
 thrust fault (arrow represents direction of thrusting)

NOTE: Pz represents Paleozoics 1,300



SCALE 1 : 5 000
 K-Crown mtn 81(3)*A *K1

393

| | |
|--|----------------------------|
| Crows Nest Resources Limited | |
| EXPLORATION | |
| CROWN MOUNTAIN - SOUTH EXT. 1981 S.E., BRITISH COLUMBIA | |
| STRUCTURAL X-SECTION 7800S | |
| AUTHOR: A. SHARMAN DATE: 11-1-20 COMPANY: | SCALE: 1:5000 REVISION: |
| APPENDIX G DRAWING NO. HK-89Q | |

393

K-Crown Mtn. 8/13/81 *1

APPENDIX H

STRATIGRAPHIC SECTION

| | |
|--|-------------------|
| DESIGNATION: TRENCH LOG | PART 1 OF 1 |
| AUTHOR: K. Sharman | DATE: 19 81-09-26 |
| SOURCE OF DATA: HAND TRENCH T - 81 - 1 | |

| |
|---------------------------|
| PROJECT: CROWN MOUNTAIN |
| AREA: SOUTH EXTENSION |
| LOCATION: SOUTH EXTENSION |

| SCALE | CONTROL POINT | INTERVAL | LITHOLOGY | STRIKE & DIP | DESCRIPTION | | SAMPLE |
|-------|---------------|----------|-----------|--------------|-------------|---|-------------|
| | | | | | MAIN | AMPLIFIED | |
| | | | | | | | |
| | | | | | | | SCALE 1:500 |
| 180 | | 1.1 | Mudstone | | Mudstone | Medium grey, slickensides | |
| | | 1.4 | COAL | | COAL | Soft, dull | |
| | | 1.0 | Mudstone | | Mudstone | Dark grey, slickensides | |
| | | 1.5 | COAL | | COAL | Soft, dull, slickensides | |
| | | 4.0 | Mudstone | 185/35W | Mudstone | Dark grey, orange weathered | |
| | | 7.0 | COAL | | COAL | Soft, powder | |
| | | 2.1 | Mudstone | | Mudstone | Medium grey, slickensides | |
| 160 | | | COAL | 180/42W | COAL | Soft, powder | |
| | | 6.0 | | | FAULT | | |
| 150 | | 2.5 | | 200/38W | Mudstone | Medium grey, slickensides | |
| | | | | | COAL | Hard, dull, slickensides | |
| 140 | | | | 203/42W | | | |
| 130 | | | | | Mudstone | Medium grey, slickensides | |
| 120 | | | | 168/40W | | | |
| 110 | | 1.9 | | 168/33W | COAL | Hard, dull with bright | |
| | | 4.8 | | | Siltstone | Dark grey, orange weathered | |
| | | | | | Mudstone | Dark grey, orange weathered | |
| 100 | | | | 167/30W | COAL | Hard, dull with bright | |
| | | | | | Mudstone | Dark grey | |
| | | | | 198/28W | Sandstone | Very fine grained, grey | |
| 90 | | .9 | | | Mudstone | Dark grey, minor siltstone | |
| | | | | | COAL | Hard, dull and bright | |
| | | | | | Mudstone | Dark grey, carbonaceous, slickensides | |
| 80 | | 2.5 | | 150/32W | Sandstone | Very fine grained | |
| | | | | | Mudstone | Dark grey | |
| | | | | | Sandstone | Very fine grained, medium grey | |
| | | | | | Mudstone | Dark grey | |
| 70 | | | | 160/34W | COAL | Hard, dull with bright | |
| | | | | | Sandstone | Fine grained, occasional siltstone interbeds | |
| | | | | | Sandstone | Fine grained, medium grey | |
| 60 | | | | 160/25W | Siltstone | Medium grey, brown weathered | |
| | | | | | Sandstone | Fine grained to very fine grained, brown thin to medium bedded, small scale crossbeds | |
| 50 | | | | | COVER | Talus from sandstone above; probably location of #9 Seam | |
| 40 | | | | | | | |
| 30 | | 4.5 | | | Mudstone | Dark grey | |
| | | | | | Siltstone | Dark grey and brown | |
| | | | | | Mudstone | Medium grey | |
| | | | | | COVER | | |
| | | | | | COAL/ Shale | COAL, soft, dull; Shale, carbonaceous, dark grey | |
| 20 | | | | | COAL | Soft, dull | |
| 10 | | | | 170/43W | Mudstone | Medium grey, orange weathered | |
| | | | | | Sandstone | Fine grained | |
| | | | | | Mudstone | Dark grey | |
| 0 | | | | 105/32W | Sandstone | Fine grained, brown | |
| | | | | | Siltstone | Dark grey | |
| | | | | | Sandstone | Fine grained | |
| | | | | | Mudstone | Medium grey | |
| | | | | | Sandstone | Medium grained, medium grey (MOOSE MTN. MBR) | |

NOTE: Measurements are True Thickness
Net Coal - 41.0m

393 (2)

STRATIGRAPHIC SECTION

DESIGNATION:

TRENCH LOG

PART 1 OF 1

PROJECT: CROWN MOUNTAIN

AUTHOR: S. Sharman

DATE: 19 81-10-02

AREA:

SOURCE OF DATA:

LOCATION: SOUTH EXTENSION

HAND TRENCH T-81-2

| SCALE | SEAM NUMBER | INTERVAL | LITHOLOGY | STRIKE & DIP | DESCRIPTION | | SAMPLE |
|-------|-------------|----------|-----------|--------------|-------------|--|-------------|
| | | | | | MAIN | AMPLIFIED | |
| | | | | | | | |
| | | | | | | | SCALE 1:100 |
| [m] | | | | | | | |
| 15 | | | | | | | |
| 14 | | | | | | | |
| 13 | | | | | | | |
| 12 | H.W. | .4 | | | Siltstone | Medium grey, orange weathered | |
| 11 | | | | | COAL | Soft, dull, minor shale interbeds | |
| 10 | | | | | Sandstone | Very fine grained, orange weathered | |
| 9 | | | | | Mudstone | Dark grey, carbonaceous, slickensides | |
| 8 | | | | | Sandstone | Very fine grained, thin bedded, orange weathered | |
| 7 | | .7 | | | Mudstone | Carbonaceous, dark grey | |
| 6 | | | | | COAL | Shaly, slickensides | |
| 5 | | | | | Mudstone | Medium grey, slickensides, orange weathered | |
| 4 | | | | | Siltstone | Medium grey, orange weathered | |
| 3 | | 1.5 | | | Mudstone | Medium grey, orange weathered | |
| 2 | | | | | COAL | Soft, dull | |
| 1 | | .55 | | | Mudstone | Medium grey, orange weathered | |
| 0 | F.W. | .95 | | | COAL | Dull, slickensides | |
| | | | | | COAL | Shaly | |
| | | | | 182/34W | Mudstone | Silty, dark grey | |

NOTE: Measurements are True Thickness
Net Coal - 4.1m

393 (L3)

STRATIGRAPHIC SECTION

DESIGNATION: TRENCH LOG PART 1 OF 1

PROJECT: CROWN MOUNTAIN

AUTHOR: K. Sharman DATE: 19 81-10-02

AREA:

SOURCE OF DATA:

LOCATION: SOUTH EXTENSION

HAND TRENCH T-81-3

| SCALE | SEAM NUMBER | INTERVAL | LITHOLOGY | STRIKE & DIP | DESCRIPTION | | SAMPLE |
|-------|-------------|----------|-----------|--------------|-------------|-----------|--------|
| | | | | | MAIN | AMPLIFIED | |

SCALE 1:100

| SCALE | SEAM NUMBER | INTERVAL | LITHOLOGY | STRIKE & DIP | DESCRIPTION | SAMPLE |
|-------|-------------|----------|-----------|--------------|---|--------|
| [m] | | | | | | |
| 25 | | | | | | |
| 24 | | | | 183/44W | Mudstone Dark grey | |
| 23 | H.W. | | | | Mudstone Carbonaceous, dark grey | |
| 22 | | | | | | |
| 21 | | .7 | | | COAL Soft, dull | |
| 20 | | | | | Mudstone Dark grey, orange weathered | |
| 19 | | | | | | |
| 18 | | 3.8 | | | COAL Soft, dull | |
| 17 | | | | | | |
| 16 | | | | | Mudstone Dark grey | |
| 15 | | | | | Sandstone/ Interbedded, sandstone very fine grained | |
| 14 | | | | | Siltstone | |
| 13 | | | | | Mudstone Medium grey | |
| 12 | | 1.9 | | | COAL Dull with bright | |
| 11 | | | | | Shale Coaly | |
| 10 | | | | | | |
| 9 | | | | | Mudstone Dark grey | |
| 8 | | | | | | |
| 7 | | | | | | |
| 6 | | | | | | |
| 5 | | | | 193/31W | Siltstone/ Interbedded, orange weathered | |
| 4 | | | | | Shale | |
| 3 | | | | | Shale Dark grey, fissile | |
| 2 | | .65 | | | COAL Dull with bright, slickensides | |
| 1 | | 1.7 | | | COAL/Shale Coal hard, dull, Shale dark grey, carbonaceous | |
| 0 | F.W. | | | 175/31W | Siltstone Medium grey, orange weathered | |

NOTE: Measurements are True Thickness
Net Coal - 8.75m

393 (L4)

K-Crown Mtn. 81(3)A *1

APPENDIX H

STRATIGRAPHIC SECTION

DESIGNATION:

TRENCH LOG

PART 1 OF 1

PROJECT: CROWN MOUNTAIN

AUTHOR: K. Sharman

DATE: 19 81-10-02

AREA:

SOURCE OF DATA:

HAND TRENCH T-81-4

LOCATION: SOUTH EXTENSION

| SCALE | SEAM NUMBER | INTERVAL | LITHOLOGY | STRIKE & DIP | DESCRIPTION | | SAMPLE |
|-------|-------------|----------|-----------|--------------|-------------|-----------|--------|
| | | | | | MAIN | AMPLIFIED | |

SCALE 1:100

[m]

6

5

4

3

2

1

0

H.W.

#10 Zone

4.2

F.W.

178/34W

168/41W

COAL

170/26W

Mudstone Medium grey

Soft, dull, slickensides

Siltstone Brown-grey plant fragments

NOTE: Measurements are True Thickness
Net Coal 4.2m.

393

K-Crown Mtn. 81(3)A *1

(LS)

APPENDIX H

STRATIGRAPHIC SECTION

DESIGNATION:

FRENCH LOG

PART 1 OF 1

PROJECT: CROWN MOUNTAIN

AUTHOR: K. Sharman

DATE: 19 81 - 10 - 02

AREA: SOUTH EXTENSION

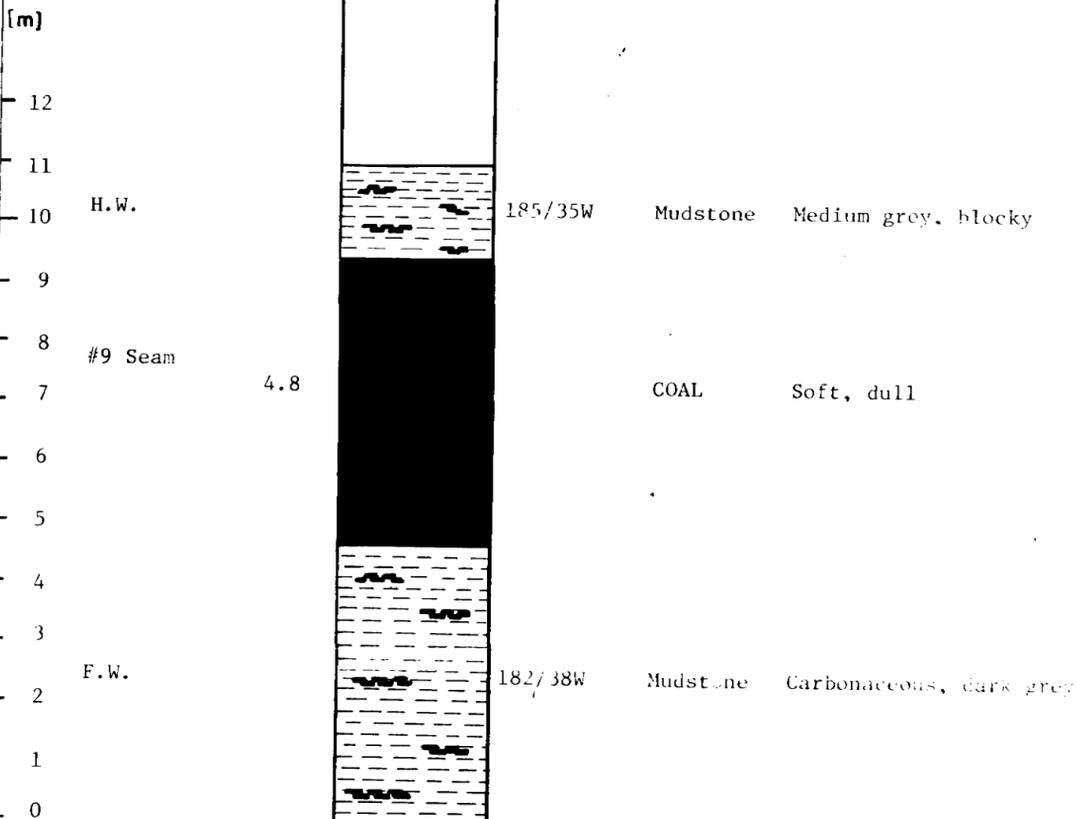
SOURCE OF DATA:

HAND TRENCH T-81-5

LOCATION:

| SCALE | SEAM NUMBER | INTERVAL | LITHOLOGY | STRIKE & DIP | DESCRIPTION | | SAMPLE |
|-------|-------------|----------|-----------|--------------|-------------|-----------|--------|
| | | | | | MAIN | AMPLIFIED | |

SCALE 1:100



NOTE: Measurements are True Thickness
Net Coal - 4.8m

393 ^{K-Crown Mtn. 8(L3)A * 1}
 (LB) | APPENDIX H

STRATIGRAPHIC SECTION

DESIGNATION: TRENCH LOG PART 1 OF 1

PROJECT: CROWN MOUNTAIN

AUTHOR: K. Sharman DATE: 1981-10-02

AREA:

SOURCE OF DATA: HAND TRENCH T-81-6

LOCATION: SOUTH EXTENSION

| SCALE | SEAM NUMBER | INTERVAL | LITHOLOGY | STRIKE & DIP | DESCRIPTION | | SAMPLE |
|-------|-------------|----------|-----------|--------------|-------------|-----------|--------|
| | | | | | MAIN | AMPLIFIED | |

SCALE 1:100

| | | | | | | | |
|-----|---------|-----|--|---------|----------|-------------------------------|--|
| [m] | | | | | | | |
| 6 | | | | | Mudstone | Medium grey | |
| 5 | | .25 | | | COAL | Soft, dull | |
| 4 | | .25 | | | Mudstone | Medium grey | |
| 4 | | | | 168/36W | COAL | Dull, soft | |
| 3 | | 1.3 | | | Mudstone | Medium grey | |
| 2 | #9 Seam | | | | COAL | Soft, slickensides | |
| 2 | | | | | COAL | Shaly | |
| 1 | | 2.0 | | | COAL | Soft, dull | |
| 0 | H.W. | | | | | | |
| | | | | 176/34W | Mudstone | Medium grey, orange weathered | |

NOTE: Measurements are True Thickness
 Net Coal - 4.4m

393 (L7)

K-Crown Mtn. 8(L3)A *1

APPENDIX H

STRATIGRAPHIC SECTION

DESIGNATION:

TRENCH LOG

PART 1 OF 1

PROJECT: CROWN MOUNTAIN

AUTHOR: K. Sharman

DATE: 19 81-10-02

AREA:

SOURCE OF DATA:

LOCATION: SOUTH EXTENSION

HAND TRENCH T-81-7

| SCALE | SEAM NUMBER | INTERVAL | LITHOLOGY | STRIKE & DIP | DESCRIPTION | | SAMPLE |
|-------|-------------|----------|-----------|--------------|-------------|-----------|--------|
| | | | | | MAIN | AMPLIFIED | |

SCALE 1:100

| SCALE | SEAM NUMBER | INTERVAL | LITHOLOGY | STRIKE & DIP | DESCRIPTION | SAMPLE |
|-------|-------------|----------|-----------|--------------|--|--------|
| 0 | H.W. | | | | | |
| 11 | | | | 191/30W | Siltstone Medium grey, orange weathered | |
| 10 | | 1.5 | | | COAL Medium hard, dull with bright | |
| 9 | | | | 197/45W | Mudstone Medium grey | |
| 8 | | | | | | |
| 7 | | 3.4 | | | COAL Hard, dull with bright | |
| 6 | #9 Seam | | | | | |
| 5 | | | | | Mudstone Medium grey, orange weathered, slickensides | |
| 4 | | 2.0 | | | COAL Hard, dull with bright | |
| 3 | | | | 193/37W | Mudstone Medium grey, slickensides | |
| 2 | | .9 | | | COAL Dull, soft | |
| 1 | | | | | Mudstone Coaly splits, medium grey | |
| 0 | F.W. | .9 | | | COAL Medium, hard, dull with bright | |
| | | | | 192/34W | Mudstone Medium grey | |

NOTE: Measurements are True Thickness
Net Coal - 8.7m

VQ24E

393

k-Crown Mtn. 81(3)A *1

(L8)

APPENDIX H

STRATIGRAPHIC SECTION

DESIGNATION:

TRENCH LOG PART 1 OF 1

PROJECT: CROWN MOUNTAIN

AUTHOR: K. Sharman DATE: 1981-10-02

AREA:

SOURCE OF DATA:

LOCATION: SOUTH EXTENSION

HAND TRENCH T-81-8

| SCALE | SEAM NUMBER | INTERVAL | LITHOLOGY | STRIKE & DIP | DESCRIPTION | | SAMPLE |
|-------|-------------|----------|-----------|--------------|-------------|-----------|--------|
| | | | | | MAIN | AMPLIFIED | |

SCALE 1:100

[m]
3
2
1
0

#10 Zone

0.6
1.0



Mudstone Dark grey, light grey weathered
COAL Shaly
COAL Soft, dull
Mudstone Coaly
162/35W Mudstone Carbonaceous, dark grey

NOTE: Measurements are True Thickness
Net Coal - 1.6m

393 (L9)

STRATIGRAPHIC SECTION

DESIGNATION:

TRENCH LOG

PART 1 OF 1

PROJECT: CROWN MOUNTAIN

AUTHOR: K. Sharman

DATE: 19 81-10-15

AREA:

SOURCE OF DATA:

LOCATION: SOUTH EXTENSION

HAND TRENCH T-81-9

| SCALE | Seam Number | INTERVAL | LITHOLOGY | STRIKE & DIP | DESCRIPTION | | SAMPLE |
|-------|-------------|----------|-----------|--------------|-------------|-----------|--------|
| | | | | | MAIN | AMPLIFIED | |

SCALE 1:100

| | | | | | | | | |
|----|---------|-----|--|---------|--|----------|-------------|--|
| 12 | H.W. | | | | | Mudstone | Medium grey | |
| 11 | | | | | | | | |
| 10 | | | | | | | | |
| 9 | | 6.0 | | | | COAL | Soft, dull | |
| 8 | | | | | | | | |
| 7 | | | | | | | | |
| 6 | #9 Seam | | | | | | | |
| 5 | | | | | | Mudstone | Dark grey | |
| 4 | | | | | | | | |
| 3 | | | | | | | | |
| 2 | | 3.6 | | | | COAL | Hard, dull | |
| 1 | | | | | | | | |
| 0 | F.W. | | | 150/55W | | Mudstone | Dark grey | |

NOTE: Measurements are True Thickness
Net Coal - 9.6m

393 (L10)

K-Crown Mtn. 81(3)A *1

APPENDIX H

STRATIGRAPHIC SECTION

DESIGNATION:

TRENCH LOG PART 1 OF 1

PROJECT: CROWN MOUNTAIN

AUTHOR: K. Sharma

DATE: 19 81-10-14

AREA:

SOURCE OF DATA:

LOCATION: SOUTH EXTENSION

HAND TRENCH T-81-10

| SCALE | SEAM NUMBER | INTERVAL | LITHOLOGY | STRIKE & DIP | DESCRIPTION | | SAMPLE |
|-------|-------------|----------|-----------|--------------|-------------|-----------|--------|
| | | | | | MAIN | AMPLIFIED | |

SCALE 1:100

[m]
6
5
4
3
2
1
0

F.W.

.6

2.0

.8

195/50W

190/45W

COAL Dull
Mudstone Carbonaceous, dark grey
COAL Dull
Mudstone Dark grey
COAL Dull
Mudstone Dark grey, orange weathered
COAL Dull

Mudstone Carbonaceous, dark grey

NOTE: Trench incomplete, should be lengthened
Measurements are True Thickness

393 (L11)

K-Crown Mtn. 81(3)A *1

APPENDIX H

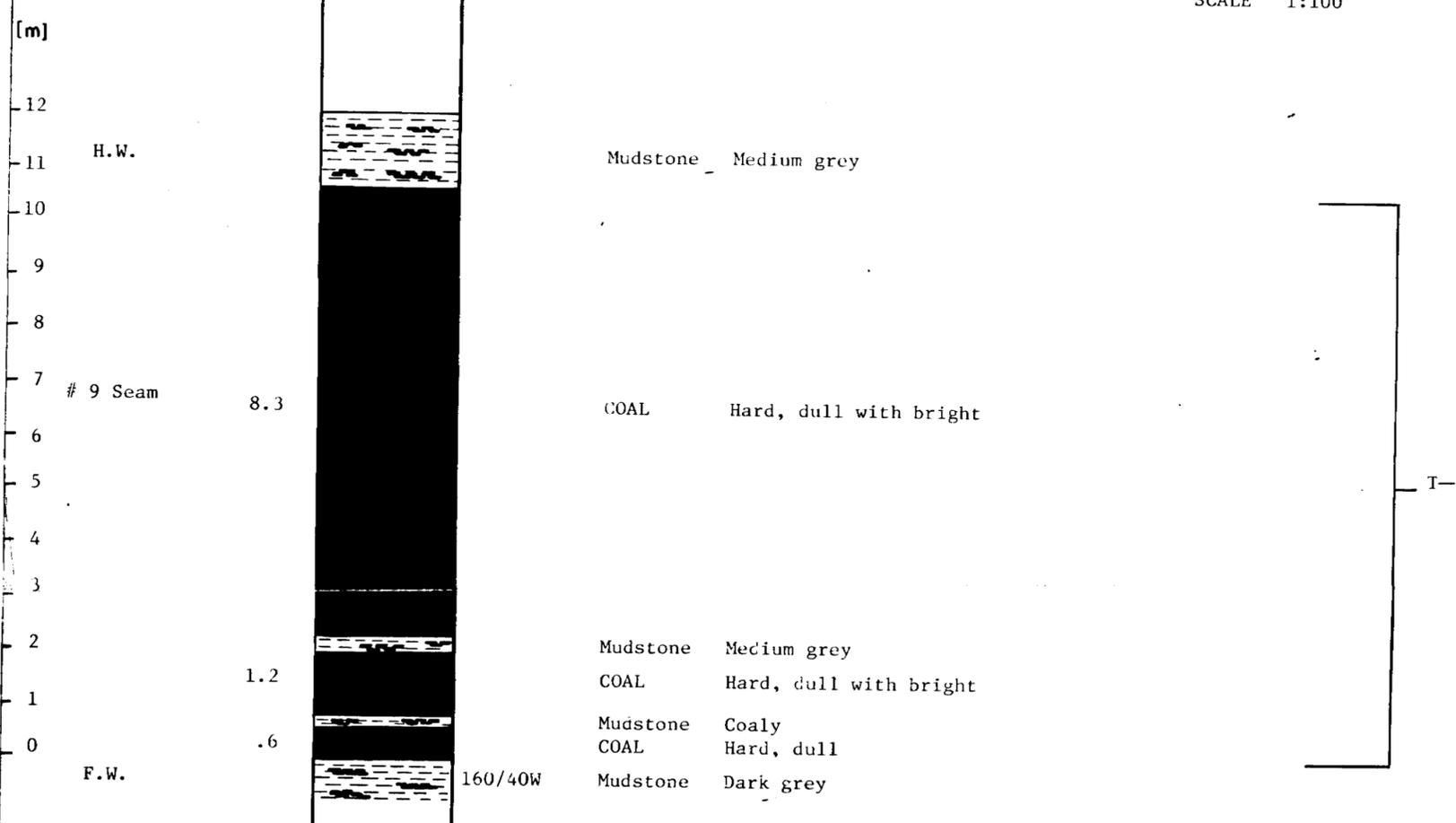
STRATIGRAPHIC SECTION

| | |
|--|-------------------|
| DESIGNATION: TRENCH LOG | PART 1 OF 1 |
| AUTHOR: K. Sharrin | DATE: 19 81-10-15 |
| SOURCE OF DATA: HAND TRENCH T-81-11 | |

| |
|---------------------------|
| PROJECT: CROWN MOUNTAIN |
| AREA: |
| LOCATION: SOUTH EXTENSION |

| SCALE | SEAM NUMBER | INTERVAL | LITHOLOGY | STRIKE & DIP | DESCRIPTION | | SAMPLE |
|-------|-------------|----------|-----------|--------------|-------------|-----------|--------|
| | | | | | MAIN | AMPLIFIED | |

SCALE 1:100



NOTE: Measurements are True Thickness

393 (L12)

STRATIGRAPHIC SECTION

DESIGNATION:

TRENCH LOG PART 1 OF 1

PROJECT: CROWN MOUNTAIN

AUTHOR: K. Sarman DATE: 19 81-10-14

AREA:

SOURCE OF DATA:

LOCATION: SOUTH EXTENSION

HAND TRENCH T-81-12

| SCALE | Seam Number | INTERVAL | LITHOLOGY | STRIKE & DIP | DESCRIPTION | | SAMPLE |
|-------|-------------|----------|-----------|--------------|-------------|-----------|--------|
| | | | | | MAIN | AMPLIFIED | |

SCALE 1:100

| SCALE | Seam Number | INTERVAL | LITHOLOGY | STRIKE & DIP | DESCRIPTION |
|-------|-------------|----------|-----------|--------------|-------------------------------------|
| [m] | | | | | |
| 11 | H.W. | | | 185/33W | Mudstone Dark grey |
| 10 | | 1.5 | | | COAL Hard, dull with bright |
| 9 | | | | | Mudstone Medium grey |
| 8 | | | | | COAL Soft, dull |
| 7 | | .8 | | | Mudstone Light grey |
| 6 | #9 Seam | | | 150/35W | |
| 5 | | | | | |
| 4 | | 3.4 | | | COAL Hard, dull to dull with bright |
| 3 | | | | | Mudstone Light grey |
| 2 | | | | | |
| 1 | | 2.4 | | 175/33W | COAL Hard, dull with bright |
| 0 | F.W. | | | | Mudstone Medium grey, slickensides |

NOTE: Measurements are True Thickness
Net Coal - 8.1m

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M E M O R A N D U M

DATE : JANUARY 26, 1982
TO : CROWS NEST RESOURCES LIMITED (C.N.R.L.)
FROM : SHELTECH CANADA
SUBJECT: CROWN MOUNTAIN (4151-P) - S.E. BRITISH COLUMBIA

All survey control in the Crown Mountain area is based on the Crows Nest Control Network using results established from the fall of 1980. The stations used were "103" and "Crown".

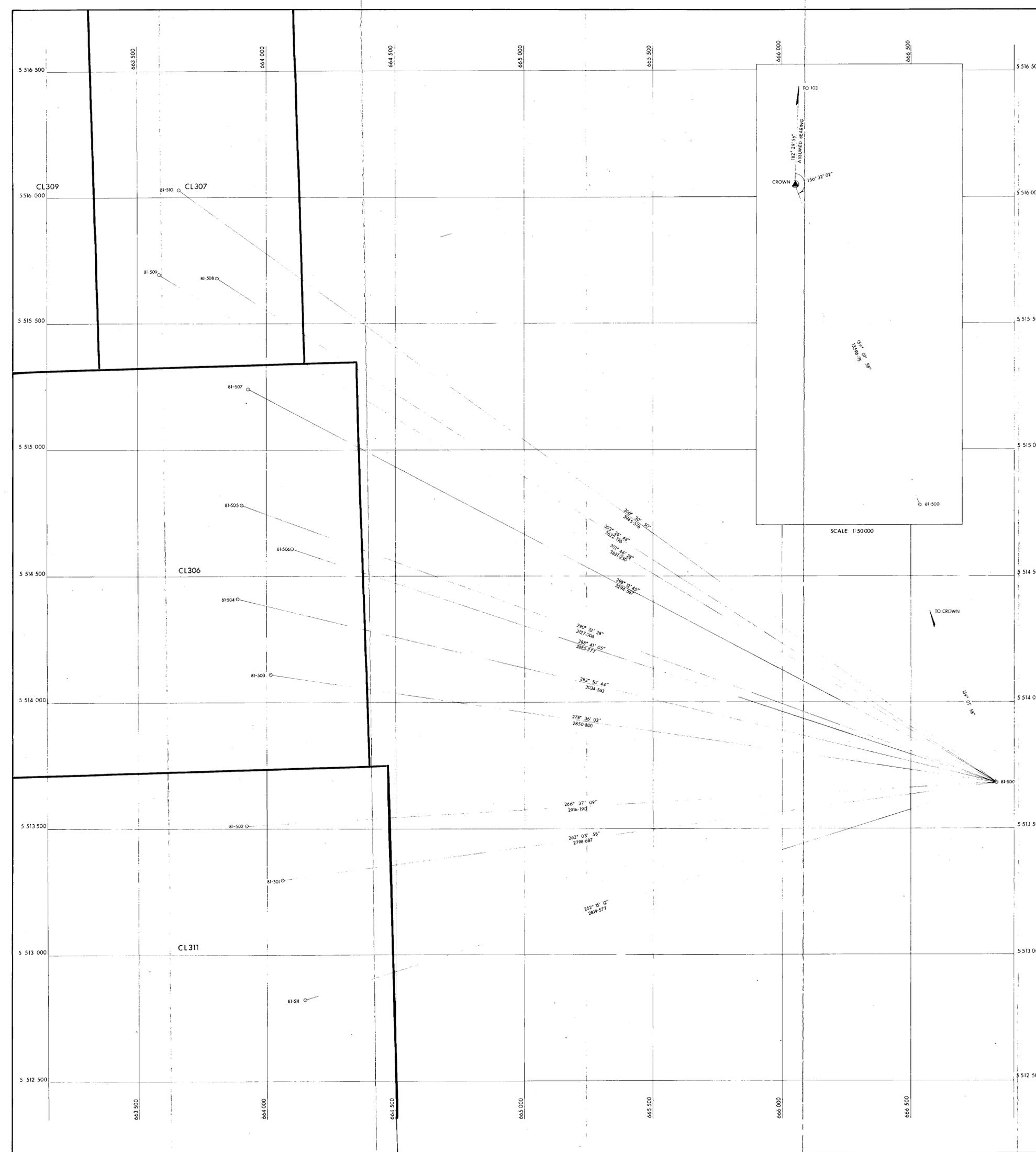
From these two stations a control station was established from which 10 points were surveyed. These ten stations are for future use by geologists.

Conventional survey methods using a 1" theodolite and electronic distance measuring equipment were used to obtain survey data. All calculations were done in the UTM system with distances being reduced to plane and bearings referenced to 117°W. The results were given to C.N.R.L. personnel in both tabular and map form.


A. L. Melton

RB/cm

s665



| STATION | GRID BEARING | HORIZ. DISTANCE | ELEVATION | DESCRIPTION | GRID COORDINATES | |
|---------|--------------|-----------------|-----------|----------------------|------------------|----------|
| | | | | | N | E |
| 81501 | A | 174.02.40 | 2.665 | 6" NAIL IN FIR | 5513293.1 | 664061.0 |
| | B | 237.32.40 | 3.89 | " | 5513293.8 | 664057.6 |
| | C | 338.51.15 | 4.07 | " | 5513299.4 | 664058.3 |
| 81502 | A | 186.58.40 | 4.91 | 6" NAIL IN FIR | 5513505.3 | 663922.6 |
| | B | 294.30.10 | 4.80 | " | 5513512.1 | 663917.1 |
| | C | 0.09.00 | 3.02 | " | 5513513.1 | 663921.5 |
| 81503 | A | 194.36.30 | 2.21 | 12" SPIKE IN GROUND | 5514106.3 | 664013.3 |
| | B | 246.35.00 | 2.24 | " | 5514107.5 | 664011.8 |
| | C | 8.14.50 | 3.46 | " | 5514111.9 | 664014.4 |
| 81504 | A | 192.15.50 | 2.97 | 12" SPIKE IN GROUND | 5514405.4 | 663885.6 |
| | B | 269.12.20 | 2.46 | " | 5514408.3 | 663883.7 |
| | C | 16.48.20 | 2.37 | " | 5514410.8 | 663886.9 |
| 81505 | A | 215.43.30 | 7.54 | 12" SPIKE IN GROUND | 5514773.2 | 663900.0 |
| | B | 277.24.30 | 2.82 | " | 5514779.7 | 663901.6 |
| | C | 328.41.00 | 4.58 | 6" NAIL IN 6" SPRUCE | 5514783.3 | 663902.1 |
| 81506 | A | 185.22.10 | 3.28 | 12" SPIKE IN GROUND | 5514603.3 | 664098.6 |
| | B | 290.28.95 | 2.46 | " | 5514607.4 | 664096.6 |
| | C | 332.32.50 | 3.84 | " | 5514610.0 | 664097.1 |
| 81507 | A | 216.14.45 | 4.94 | 12" SPIKE IN GROUND | 5515235.6 | 663926.5 |
| | B | 245.38.25 | 7.24 | " | 5515236.6 | 663922.8 |
| | C | 286.15.30 | 5.44 | " | 5515239.2 | 663924.0 |
| 81508 | A | 167.02.50 | 4.20 | 12" SPIKE IN GROUND | 5515674.4 | 663811.2 |
| | B | 250.12.30 | 2.77 | " | 5515677.6 | 663807.8 |
| | C | 300.11.30 | 5.15 | " | 5515681.1 | 663805.8 |
| 81509 | A | 182.30.40 | 2.27 | 12" SPIKE IN GROUND | 5515692.0 | 663584.0 |
| | B | 345.39.30 | 1.75 | " | 5515695.9 | 663583.6 |
| | C | 78.33.30 | 1.98 | 6" NAIL IN 6" | 5515694.7 | 663585.0 |
| 81510 | A | 167.59.50 | 4.89 | 12" SPIKE IN GROUND | 5516026.2 | 663662.5 |
| | B | 201.47.00 | 3.20 | " | 5516026.8 | 663663.3 |
| | C | 317.22.35 | 3.43 | " | 5516032.3 | 663659.2 |
| 81511 | A | 218.39.30 | 2.70 | 6" NAIL IN FIR | 5512820.6 | 664145.5 |
| | B | 310.38.40 | 6.13 | 6" NAIL IN POPLAR | 5512826.7 | 664142.5 |

GEOLOGICAL CONTROL POINTS

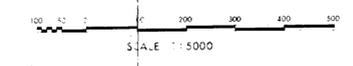
| STATION | NORTHING | EASTING | ELEV. |
|---------|------------|-----------|--------|
| 81501 | 5513295.79 | 664060.69 | 1599.1 |
| 81502 | 5513510.12 | 663921.48 | 1713.3 |
| 81503 | 5514108.43 | 664013.85 | 1628.1 |
| 81504 | 5514408.28 | 663886.20 | 1736.1 |
| 81505 | 5514779.30 | 663904.40 | 1712.0 |
| 81506 | 5514606.58 | 664098.91 | 1594.5 |
| 81507 | 5515239.58 | 663929.40 | 1663.6 |
| 81508 | 5515678.50 | 663810.23 | 1851.3 |
| 81509 | 5515684.26 | 663584.06 | 1720.9 |
| 81510 | 5516029.78 | 663661.48 | 1887.7 |
| 81511 | 5512822.66 | 664147.19 | 1574.9 |

CONTROL POINTS

| STATION | NORTHING | EASTING | ELEV. |
|---------|------------|-----------|--------|
| 103 | 5533521.87 | 662278.98 | 2158.1 |
| CROWN | 5526378.54 | 661967.21 | 2220.4 |
| 81500 | 5513682.09 | 666832.59 | 2222.8 |

UNLESS OTHERWISE NOTED ALL DISTANCES HAVE BEEN REDUCED TO THE UTM PLANE AND ARE IN METRES AND DECIMALS THEREOF
 ALL BEARINGS ARE GRID AND REFERRED TO 117° W
 SURVEY WAS PERFORMED BY Sheltech Canada, 1981

- LEGEND
- 6" NAIL
 - x 12" SPIKE
 - o 3" IRON RE-BAR WITH CAP
 - ⊙ CNRL CONTROL NETWORK
 - COAL LICENCE BOUNDARY (approximate)



393 (3)
 K. Crown M.A. SICP 71

Crows Nest Resources Limited
EXPLORATION

CROWN MOUNTAIN
S.E. BRITISH COLUMBIA

TRAVERSE SURVEY MAP

| | | |
|------------------|---------------|-------------------|
| AUTHOR: SHELTECH | SCALE: 1:5000 | APPENDIX 1 |
| DATE: 81.12.88 | REVISED: | DRAWING NO: HE-94 |
| To Accompany: | | |