

LEGEND

BUILDING	[Symbol]
ROAD, HARD SURFACE	[Symbol]
ROAD, LOOSE SURFACE	[Symbol]
CART TRACK	[Symbol]
TRAIL	[Symbol]
RAILROAD BED	[Symbol]
RIVER	[Symbol]
STREAM, DEFINITE	[Symbol]
STREAM, APPROXIMATE	[Symbol]
SPLIT	[Symbol]
LAKE	[Symbol]
WATER LEVEL	[Symbol]
SWAMP	[Symbol]
BEAVER DAM	[Symbol]
TREE LINE	[Symbol]
CUT LINE	[Symbol]
CONTOURS, INDEX	[Symbol]
CONTOURS, INTERMEDIATE	[Symbol]
DEPRESSION	[Symbol]
DEPRESSION, APPROXIMATE	[Symbol]
SPOT ELEVATION	[Symbol]
FIELD CONTROL POINT	[Symbol]

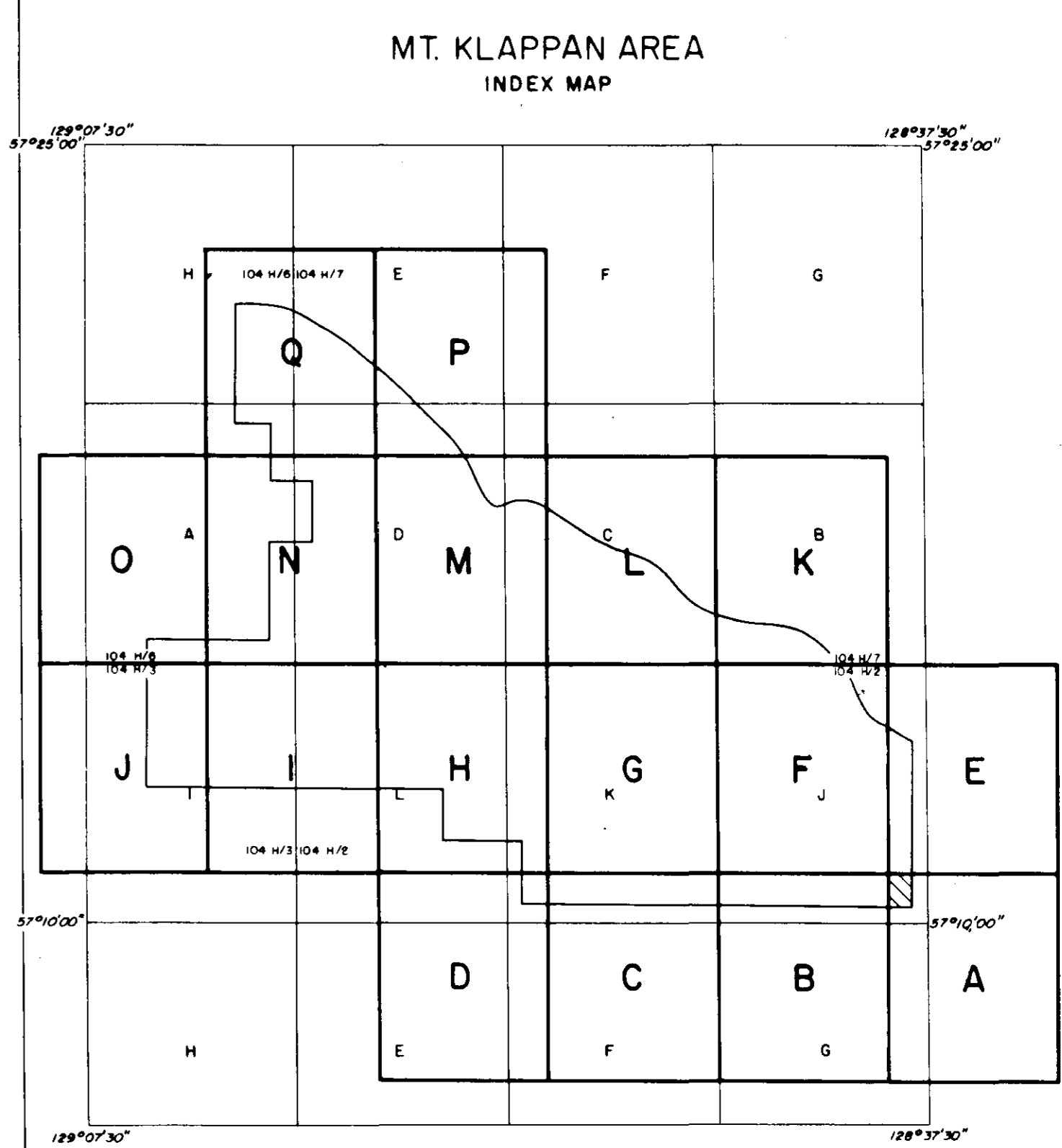
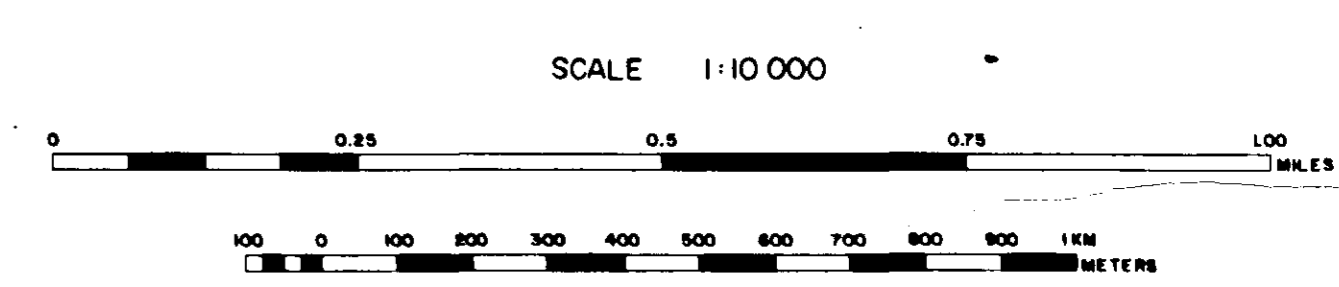
NOTES

CONTOUR INTERVAL 10 METERS

SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

RAILROAD BED LOCATION BASED ON DATA SUPPLIED BY B.C. RAIL.

COMPILED BY WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD McLELLAN LTD., FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67 AT A SCALE OF 1:60 000 (APPROXIMATE).



110

MALLOCH SEQUENCE	
[JKm]	Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
KLAPPAN SEQUENCE	
[JKku]	Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
[JKkm]	Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
[JKm]	Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

LEGEND

[Symbol]	LICENCE BOUNDARY
[Symbol]	GEOLOGICAL CONTACT (INFERRED)
[Symbol]	COAL SEAM (OUTCROP, INFERRED)
[Symbol]	ANTICLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
[Symbol]	SYNCLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
[Symbol]	OVERTURNED ANTICLINE (DEFINED, APPROXIMATE)
[Symbol]	OVERTURNED SYNCLINE (DEFINED, APPROXIMATE)
[Symbol]	BEDDING (HORIZONTAL, INCLINED, OVERTURNED, VERTICAL)
[Symbol]	THRUST FAULT (DEFINED, APPROXIMATE, INFERRED) TEETH INDICATE UP THRUST SIDE
[Symbol]	FAULT (DEFINED, APPROXIMATE, INFERRED) SOLID CIRCLE INDICATES DOWNTHRUST SIDE
[Symbol]	TRENCH LOCATION
[Symbol]	MEASURED SECTION LOCATION
[Symbol]	CROSS-SECTION LOCATION
[Symbol]	DIAMOND DRILLHOLE LOCATION (VERTICAL, INCLINED WITH SURFACE PROJECTION)

Gulf Mt Klappan 82/ah

GULF CANADA RESOURCES INC.

Coal Division

CALGARY ALBERTA

MOUNT KLAPPAN COAL PROPERTY

MAP SHEET A

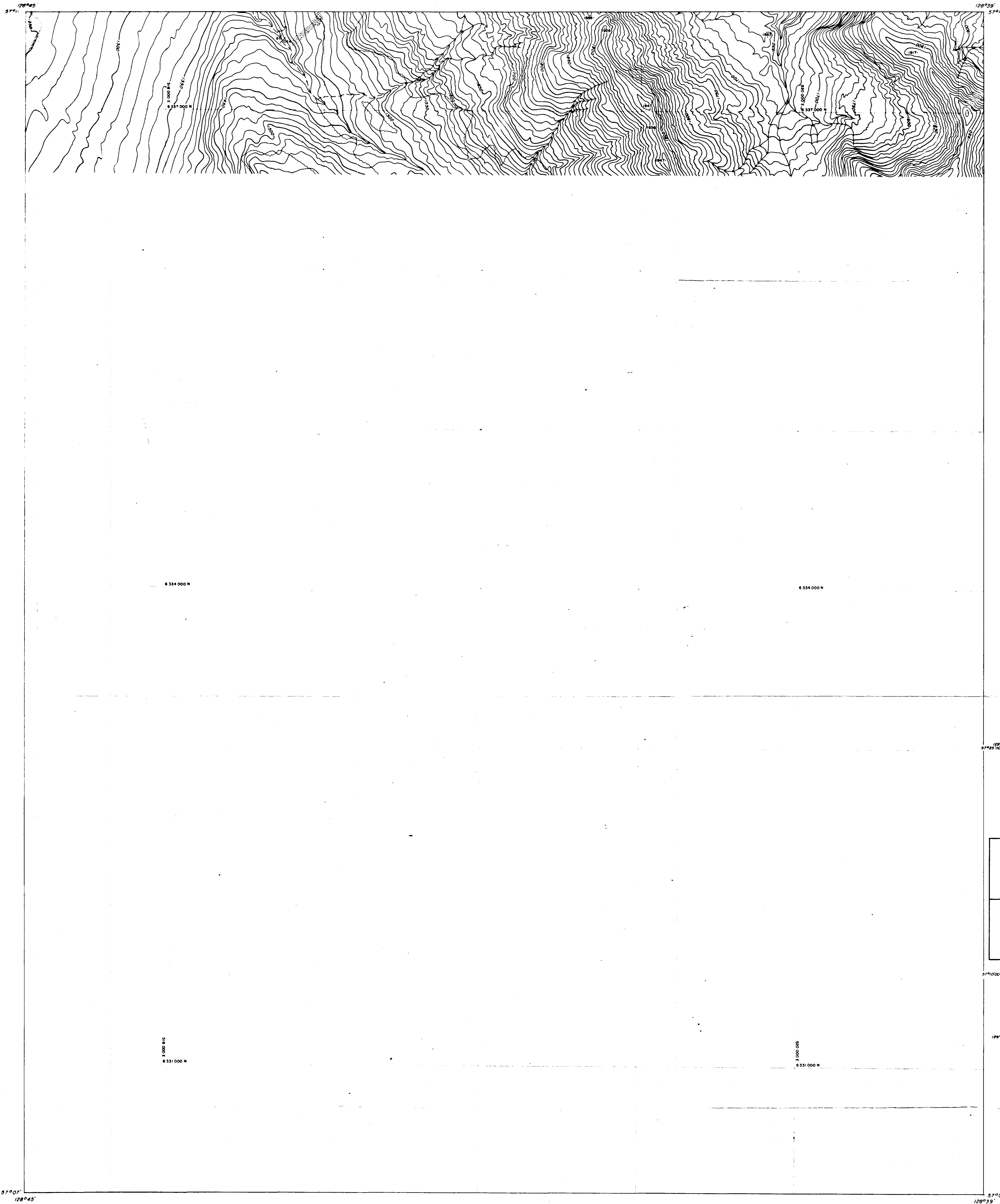
GEOLOGY

PREPARED BY: G. SEVE

APPROVED BY: B.P.F.

DRAWING No. KPN-82-001

DATE: NOV '82



LEGEND

BUILDING	---
ROAD, HARD SURFACE	---
LOOSE SURFACE	---
CART TRACK	---
TRAIL	---
RAILROAD BED	---
RIVER	---
STREAM, DEFINITE	---
APPROXIMATE	---
SPLIT	---
LAKE	---
WATER LEVEL	---
SWAMP	---
BEAVER DAM	---
TREE LINE	---
CUT LINE	---
CONTOURS, INDEX	---
INTERMEDIATE	---
DEPRESSION	---
APPROXIMATE	---
SPOT ELEVATION	---
FIELD CONTROL POINT	---

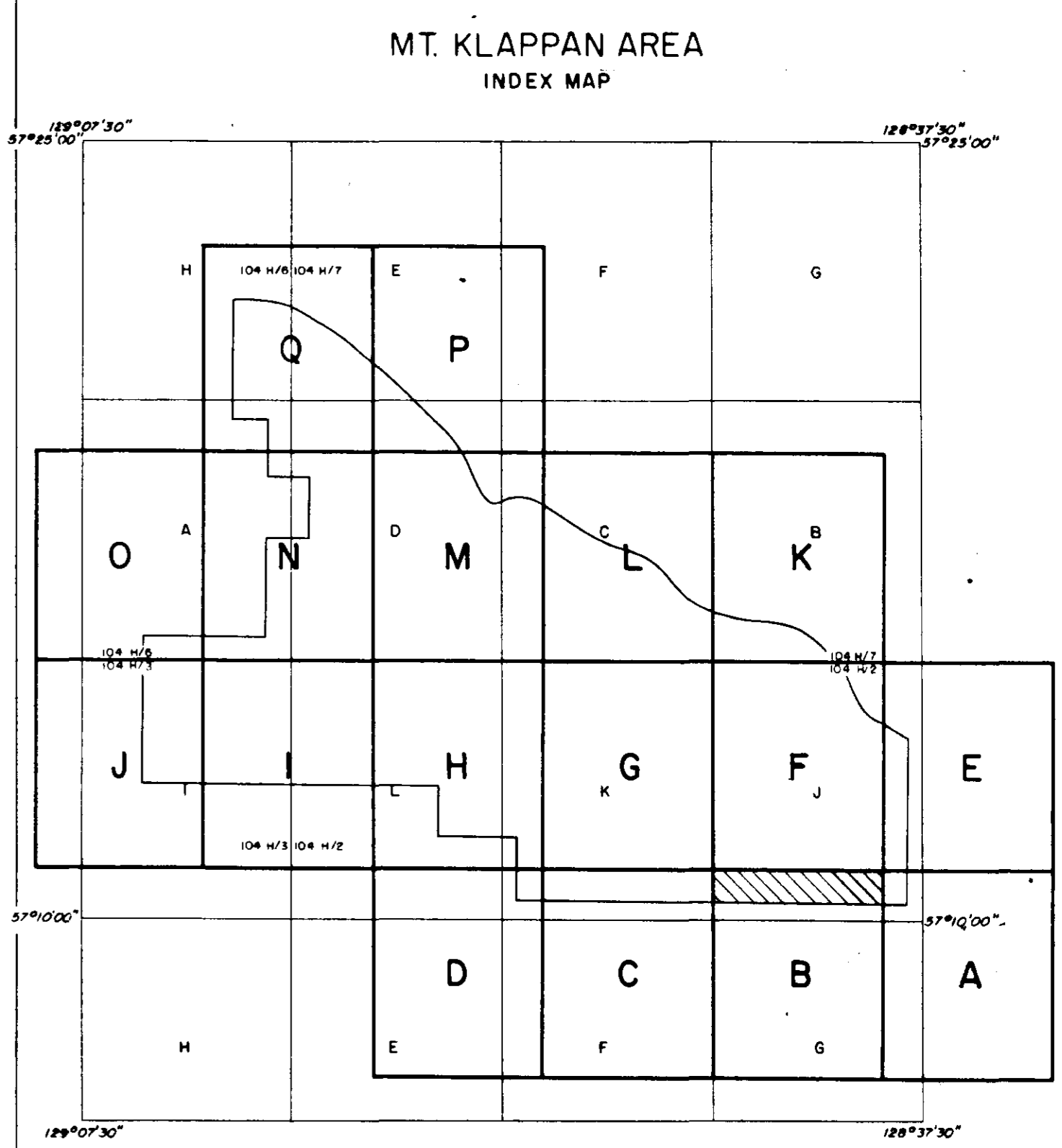
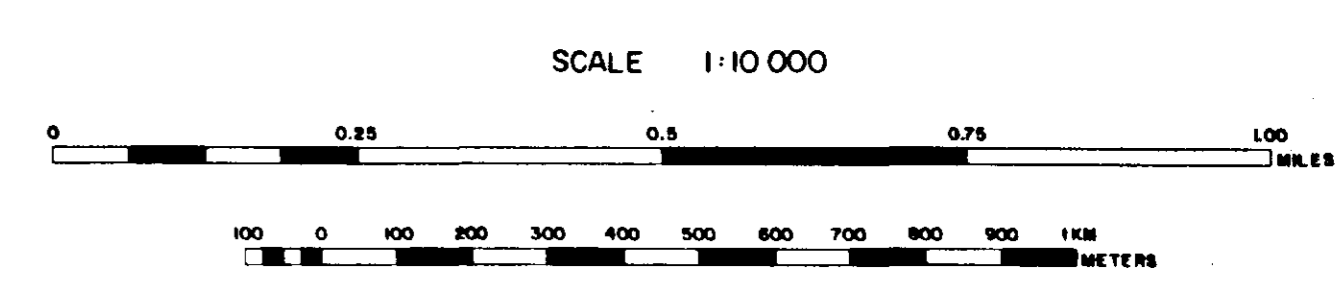
NOTES

CONTOUR INTERVAL: 10 METERS

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RAILROAD BED LOCATION BASED ON DATA SUPPLIED BY B.C. RAIL.

COMPILED BY: WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD MCELLELLAN LTD., FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67 AT A SCALE OF 1:60 000 (APPROXIMATE).



MALLOCH SEQUENCE

JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.

KLAPPAN SEQUENCE

JKku Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.

JKkm Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.

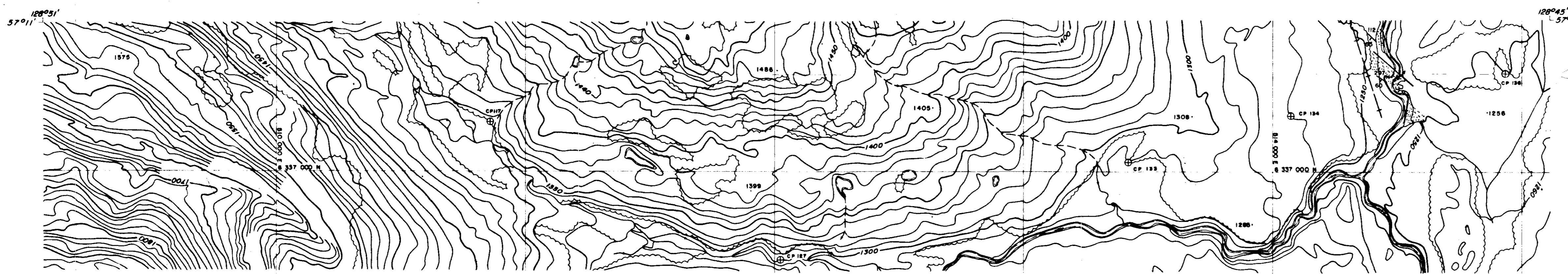
JKki Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

LEGEND

---	LICENCE BOUNDARY
---	GEOLOGICAL CONTACT (INFERRED)
---	COAL SEAM (OUTCROP, INFERRED)
---	ANTICLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
---	SYNCLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
---	OVERTURNED ANTICLINE (DEFINED, APPROXIMATE)
---	OVERTURNED SYNCLINE (DEFINED, APPROXIMATE)
---	BEDDING (HORIZONTAL, INCLINED, OVERTURNED, VERTICAL)
---	THRUST FAULT (DEFINED, APPROXIMATE, INFERRED) TEETH INDICATE UP THRUST SIDE
---	FAULT (DEFINED, APPROXIMATE, INFERRED) SOLID CIRCLE INDICATES DOWNTHRUST SIDE
---	TRENCH LOCATION
---	MEASURED SECTION LOCATION
---	CROSS-SECTION LOCATION
---	DIAMOND DRILLHOLE LOCATION (VERTICAL, INCLINED WITH SURFACE PROJECTION)

110

GULF CANADA RESOURCES INC.	
Coal Division	
CALGARY	ALBERTA
MOUNT KLAPPAN COAL PROPERTY	
MAP SHEET B	
GEOLOGY	
PREPARED BY: G. SEVE	DRAWING NO.:
APPROVED BY: B.P.F.	KPN-B2-002
DATE: NOV '82	



LEGEND

BUILDING	---
ROAD, HARD SURFACE	---
LOOSE SURFACE	---
CART TRACK	---
TRAIL	---
RAILROAD BED	---
RIVER	---
STREAM, DEFINITE	---
APPROXIMATE	---
SPLIT	---
LAKE	---
WATER LEVEL	---
SWAMP	---
BEAVER DAM	---
TREE LINE	---
CUT LINE	---
CONTOURS, INDEX	---
INTERMEDIATE	---
DEPRESSION	---
APPROXIMATE	---
SPOT ELEVATION	---
FIELD CONTROL POINT	---

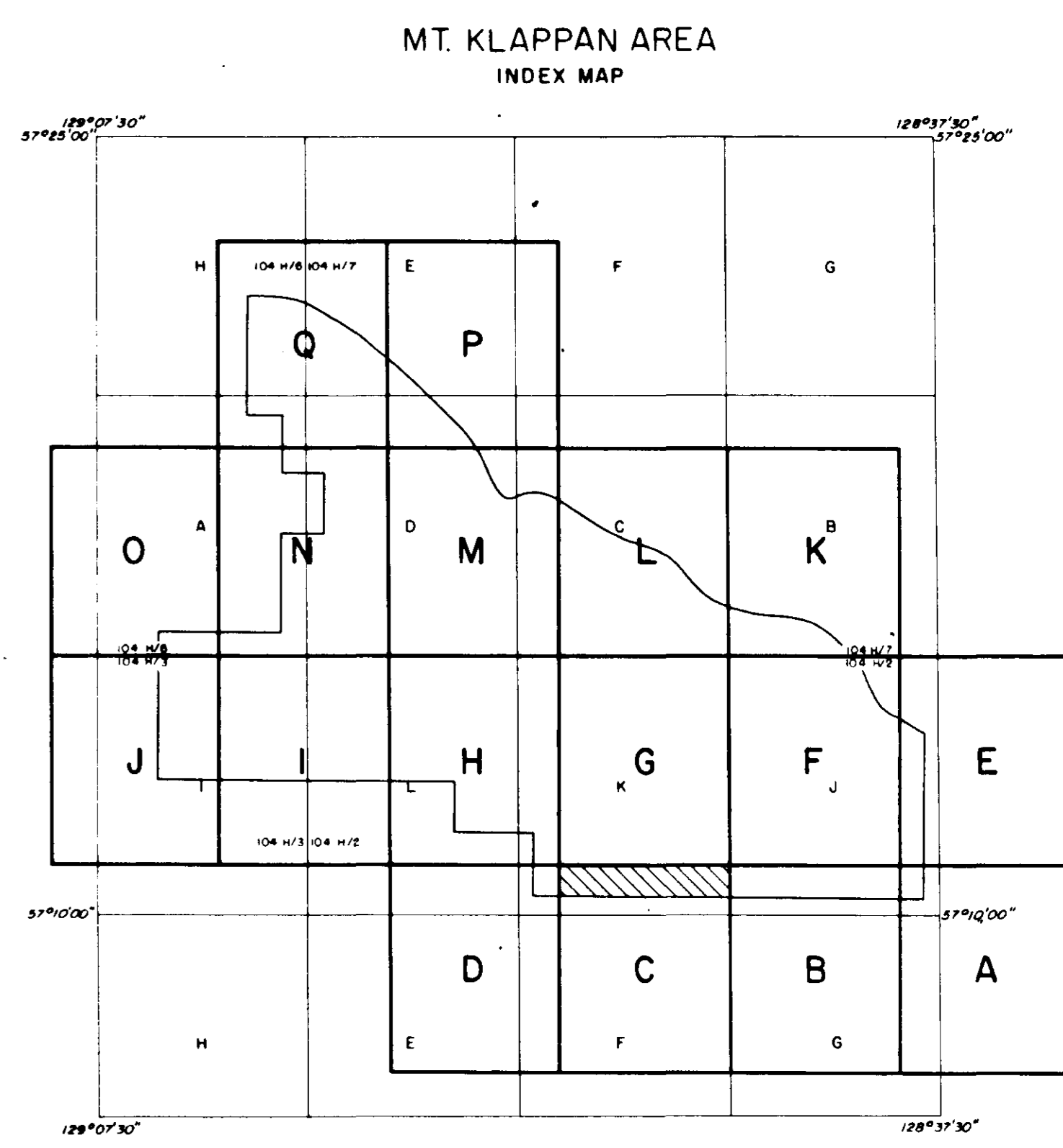
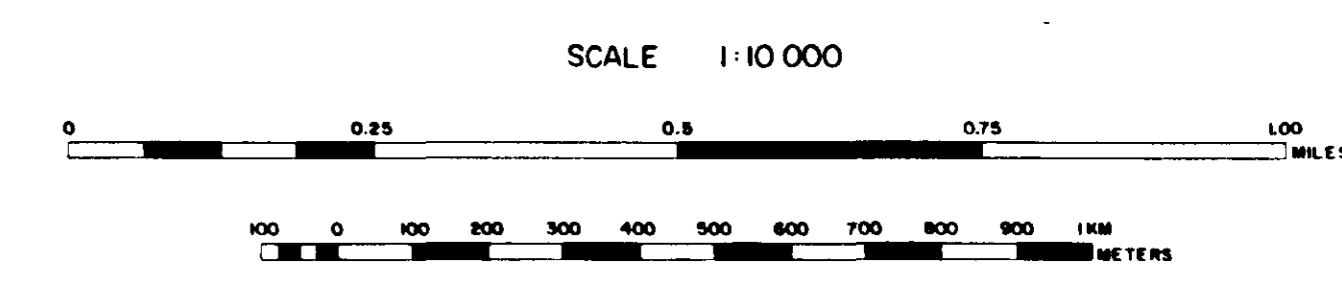
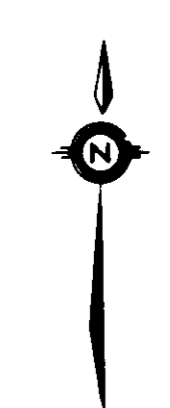
NOTES

CONTOUR INTERVAL 10 METERS

SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

RAILROAD BED LOCATION BASED ON DATA SUPPLIED BY B.C. RAIL.

COMPILED BY WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD MCELLELLAN LTD. FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67 AT A SCALE OF 1:60 000 (APPROXIMATE).



MALLOCH SEQUENCE

Jkm	Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
-----	--

KLAPPAN SEQUENCE

Jkku	Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
Jkkm	Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
Jkkl	Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

LEGEND

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---	BEDDING (HORIZONTAL, INCLINED, OVERTURNED, VERTICAL)
---	THRUST FAULT (DEFINED, APPROXIMATE, INFERRED) TEETH INDICATE UP THRUST SIDE
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---	TRENCH LOCATION
---	MEASURED SECTION LOCATION
---	CROSS-SECTION LOCATION
---	DIAMOND DRILLHOLE LOCATION (VERTICAL, INCLINED WITH SURFACE PROJECTION)

110

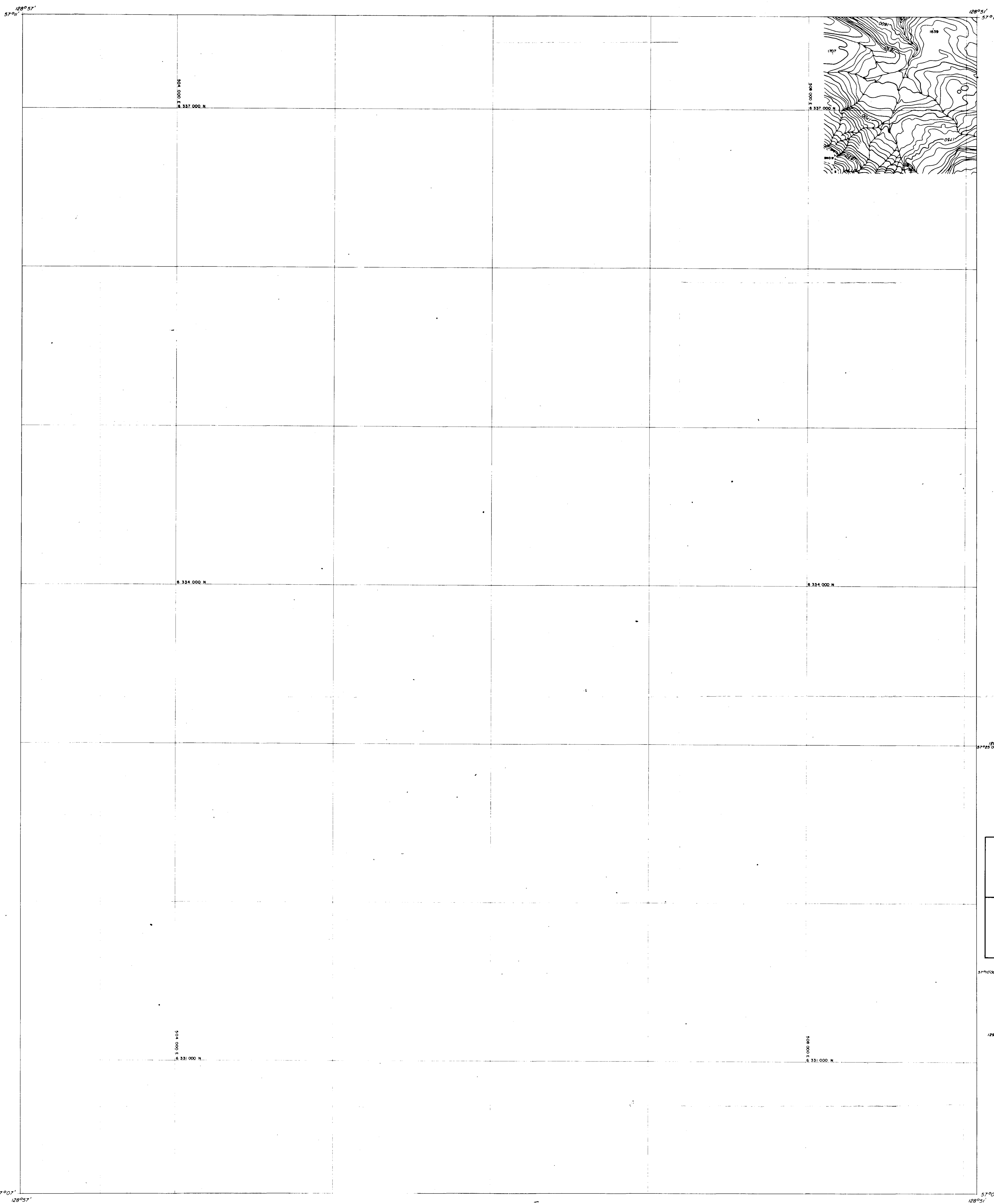
GULF CANADA RESOURCES INC.
Coal Division

CALGARY ALBERTA

MOUNT KLAPPAN COAL PROPERTY
MAP SHEET C
GEOLOGY

PREPARED BY: G. SEVE
APPROVED BY: B.P.F.

DRAWING No. KPN-82-003
DATE: NOV. '82



LEGEND

BUILDING	---	---
ROAD, HARD SURFACE	---	---
ROAD, LOOSE SURFACE	---	---
CART TRACK	---	---
TRAIL	---	---
RAILROAD BED	---	---
RIVER	---	---
STREAM, DEFINITE	---	---
STREAM, APPROXIMATE	---	---
SPLIT	---	---
LAKE	---	---
WATER LEVEL	---	---
SWAMP	---	---
BEAVER DAM	---	---
FREE LINE	---	---
CUT LINE	---	---
CONTOURS, INDEX	---	---
CONTOURS, INTERMEDIATE	---	---
CONTOURS, DEPRESSION	---	---
SPOT ELEVATION	---	---
FIELD CONTROL POINT	---	---

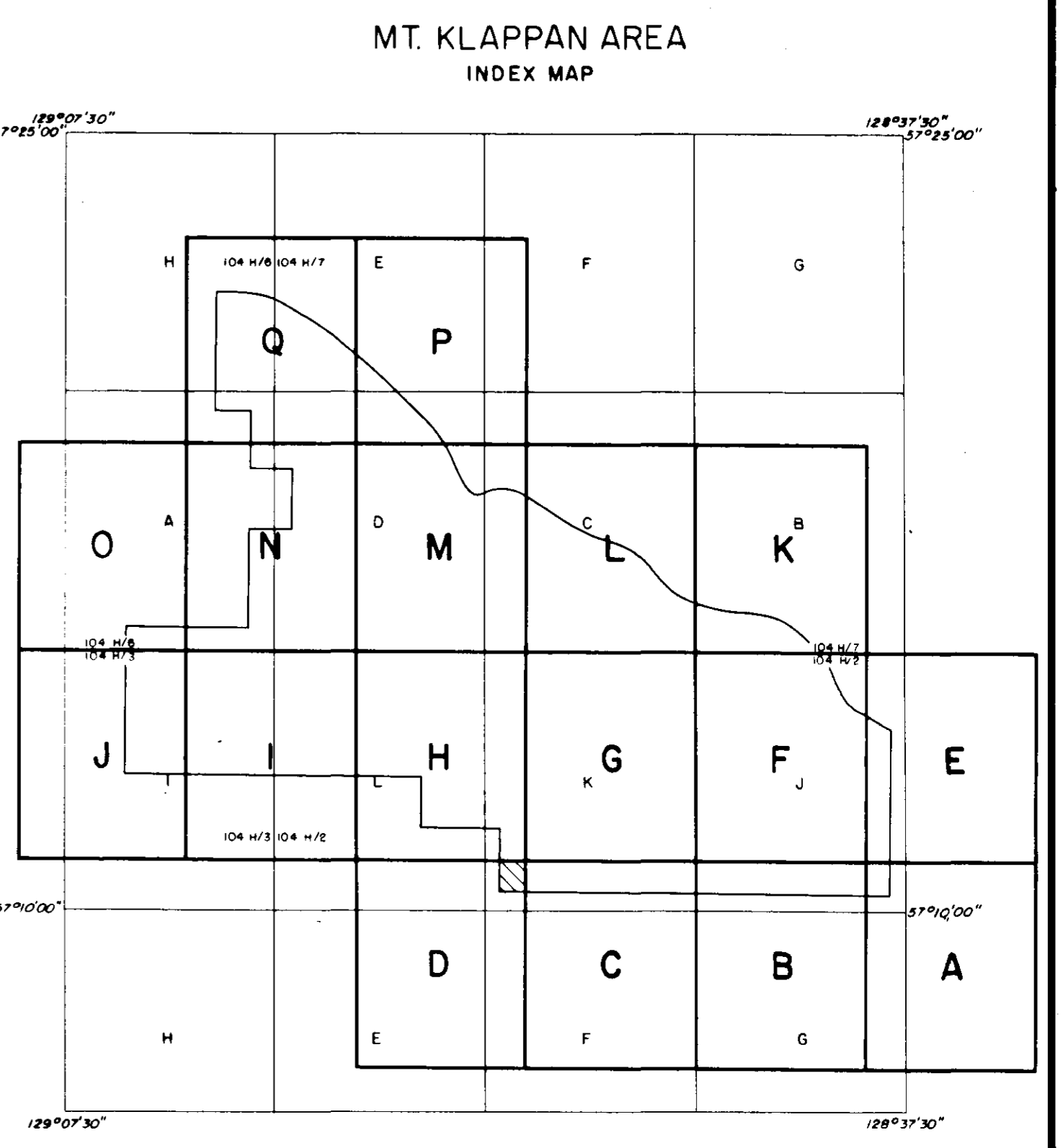
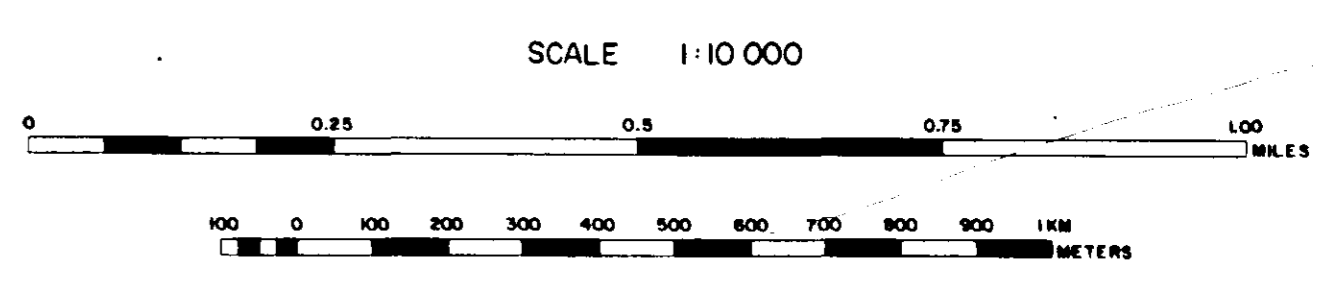
NOTES

CONTOUR INTERVAL 10 METERS

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RAILROAD BED LOCATION BASED ON DATA SUPPLIED BY B.C. RAIL.

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FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67
AT A SCALE OF 1:60 000 (APPROXIMATE).



MALLOCH SEQUENCE
JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
KLAPPAN SEQUENCE
JKku Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
JKkm Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
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---	CROSS-SECTION LOCATION
---	DIAMOND DRILLHOLE LOCATION (VERTICAL, INCLINED WITH SURFACE PROJECTION)

110

GULF CANADA RESOURCES INC.
Coal Division

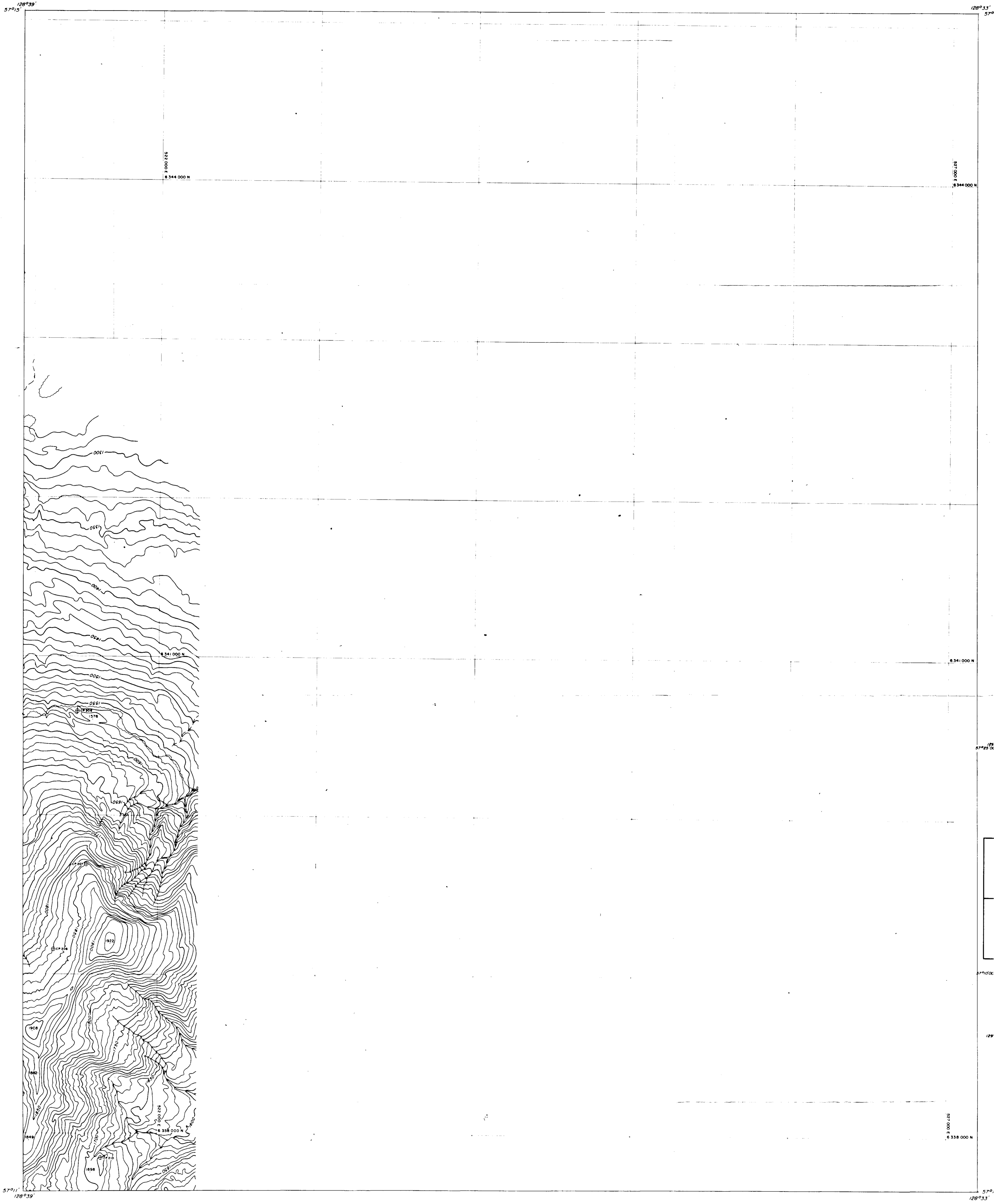
CALGARY ALBERTA

MOUNT KLAPPAN COAL PROPERTY
MAP SHEET D
GEOLOGY

PREPARED BY: G. SEVE
APPROVED BY: B.P.F.

DATE: NOV '82

DRAWING No.
KPN-82-004



LEGEND

BUILDING	---
ROAD, HARD SURFACE	---
LOOSE SURFACE	---
CART TRACK	---
TRAIL	---
RAILROAD BED	---
RIVER	---
STREAM, DEFINITE	---
APPROXIMATE	---
SPLIT	---
LAKE	---
WATER LEVEL	---
SWAMP	---
BEAVER DAM	---
TREE LINE	---
CUT LINE	---
CONTOURS, INDEX	---
INTERMEDIATE	---
DEPRESSION	---
APPROXIMATE	---
SPOT ELEVATION	---
FIELD CONTROL POINT	---

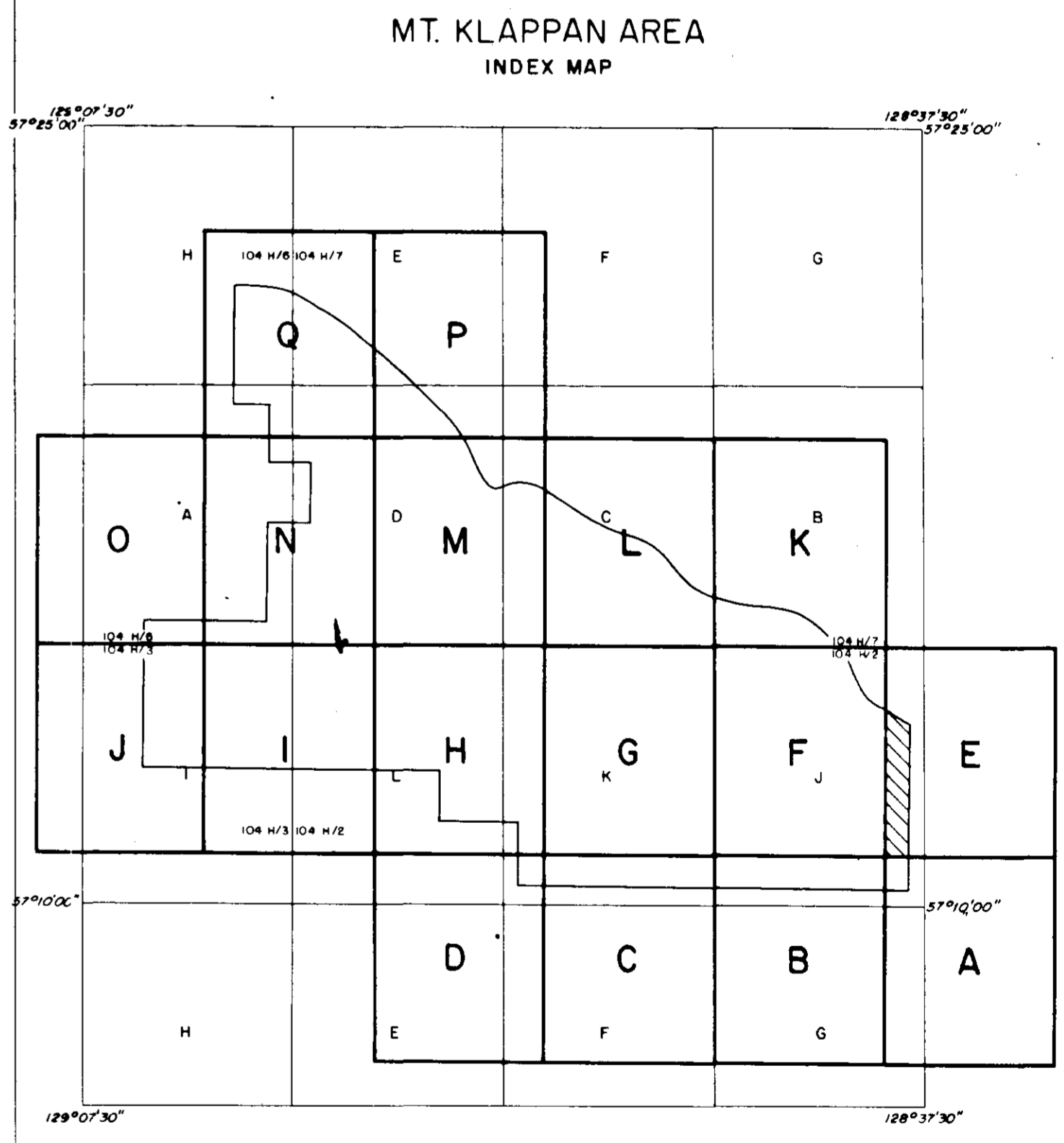
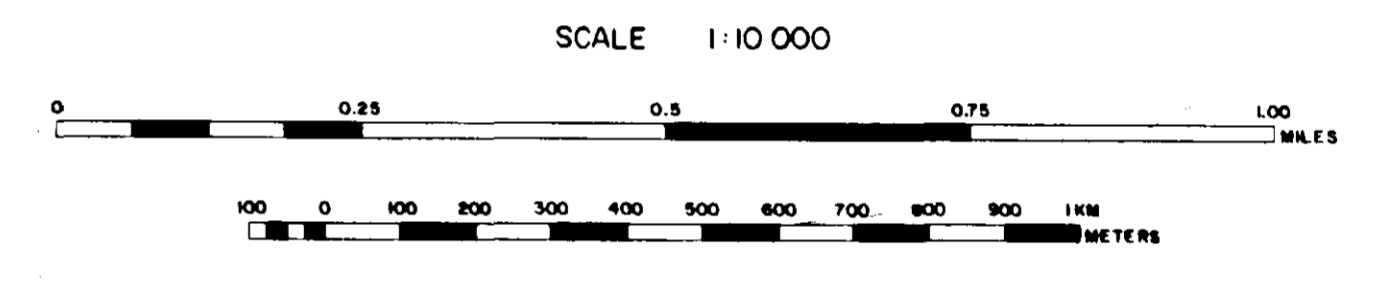
NOTES

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---	TRENCH LOCATION
---	MEASURED SECTION LOCATION
---	CROSS-SECTION LOCATION
---	DIAMOND DRILLHOLE LOCATION (VERTICAL, INCLINED WITH SURFACE PROJECTION)

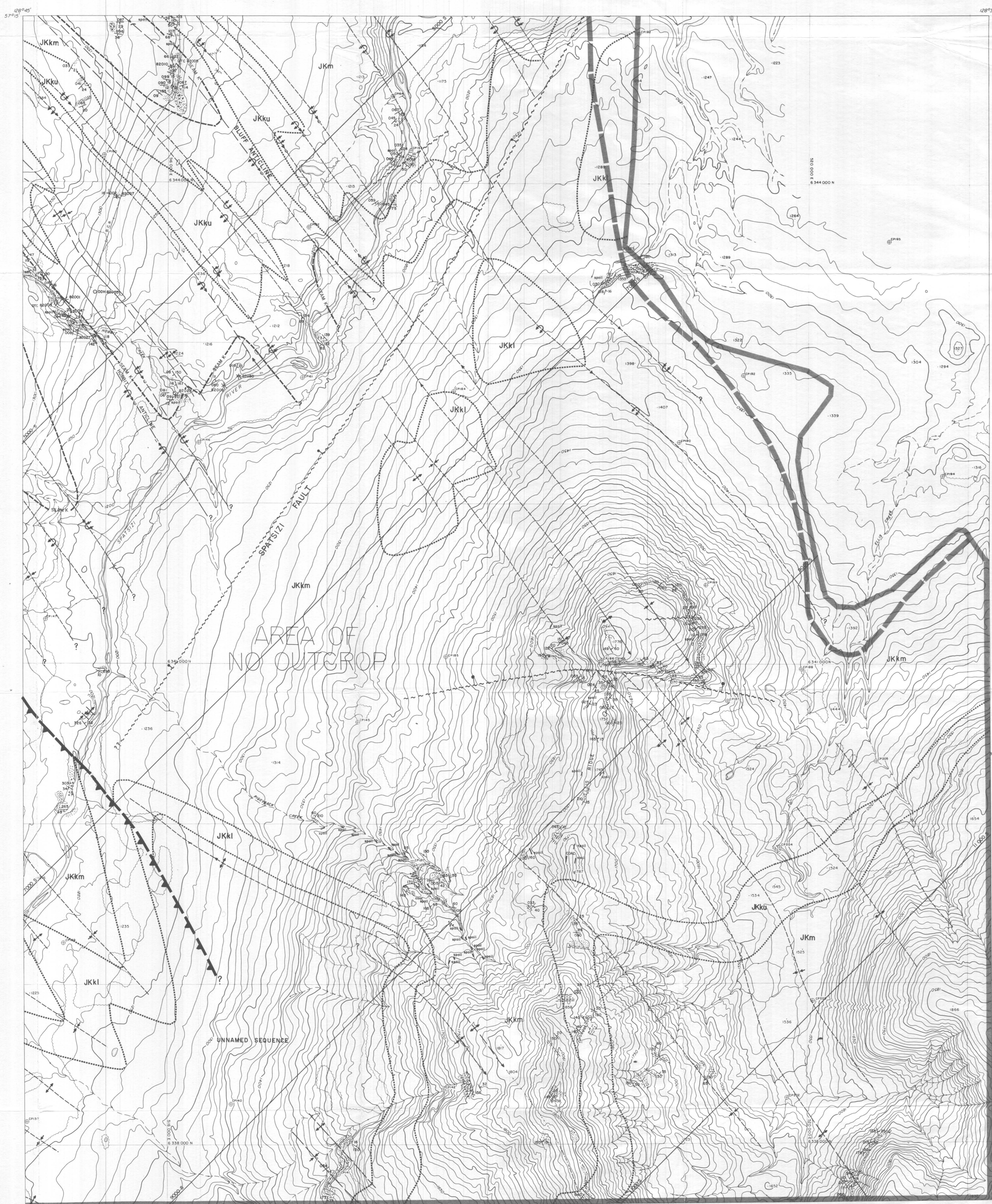
110

GULF CANADA RESOURCES INC.
Coal Division

CALGARY ALBERTA

MOUNT KLAPPAN COAL PROPERTY
MAP SHEET E
GEOLOGY

PREPARED BY: G. SEVE
APPROVED BY: B.P.F. DATE: NOV. '82 DRAWING No. KPN-82-005



LEGEND

- BUILDING
- ROAD, HARD SURFACE
- LOOSE SURFACE
- CART TRACK
- TRAIL
- RAILROAD BED
- RIVER
- STREAM, DEFINITE
- APPROXIMATE
- SPLIT
- LAKE
- WATER LEVEL
- SWAMP
- BEAVER DAM
- TREE LINE
- CUT LINE
- CONTOURS, INDEX
- INTERMEDIATE
- DEPRESSION
- APPROXIMATE
- SPOT ELEVATION
- FIELD CONTROL POINT
- COAL LICENCE
- REDEFINED PROPERTY BOUNDARY

NOTES

CONTOUR INTERVAL 10 METERS

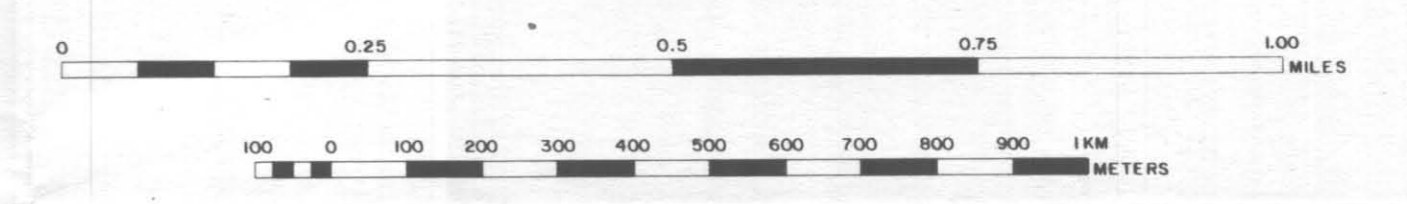
SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

RAILROAD BED LOCATION BASED ON DATA SUPPLIED BY B.C. RAIL

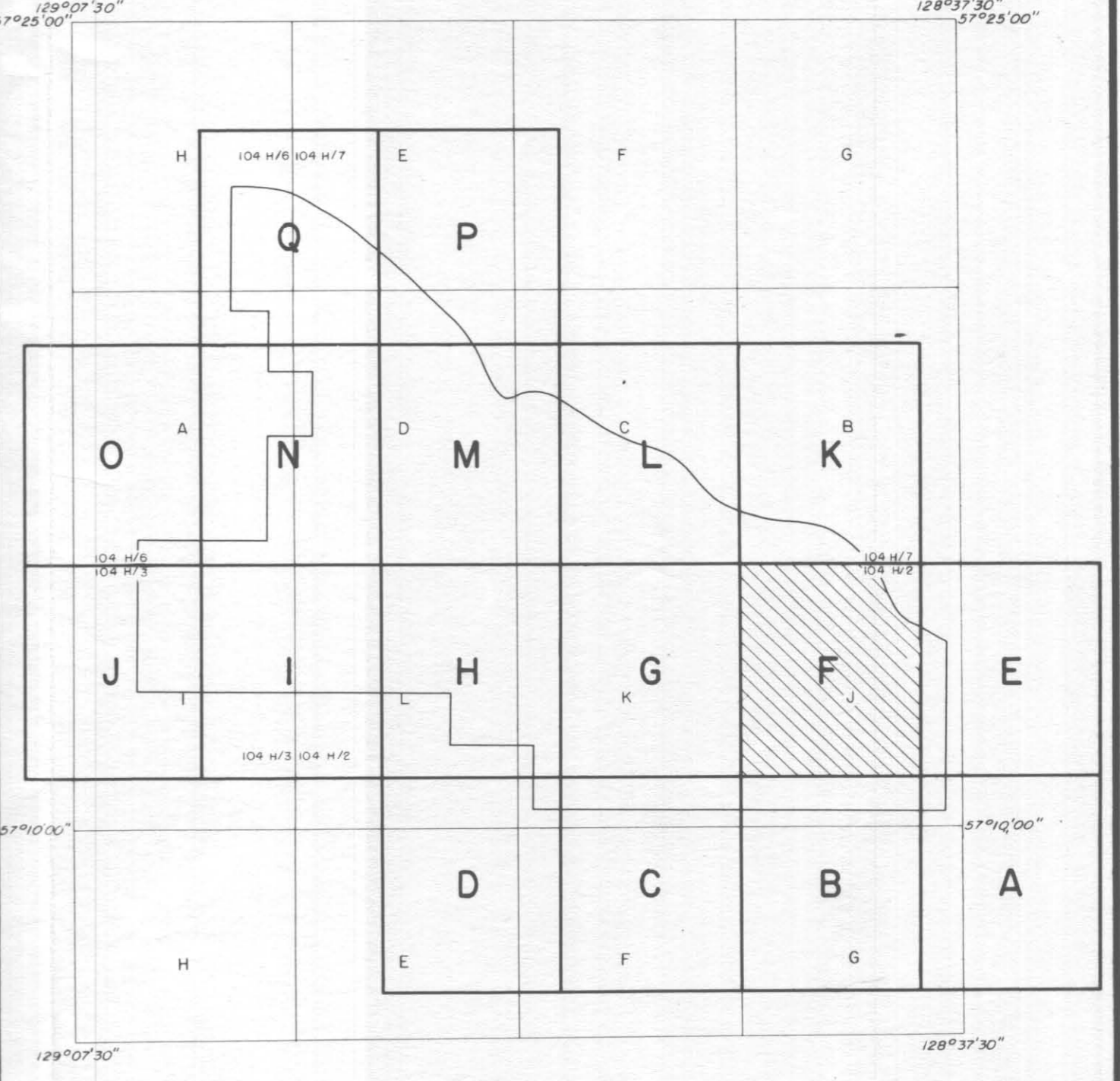
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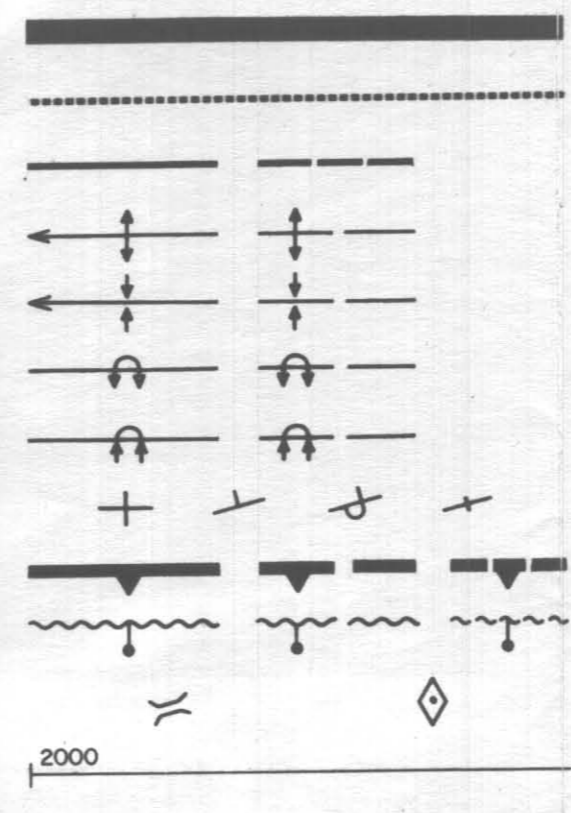
SCALE 1:10 000



MT. KLAPPAN AREA INDEX MAP



- MALLOCH SEQUENCE**
- JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
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LEGEND

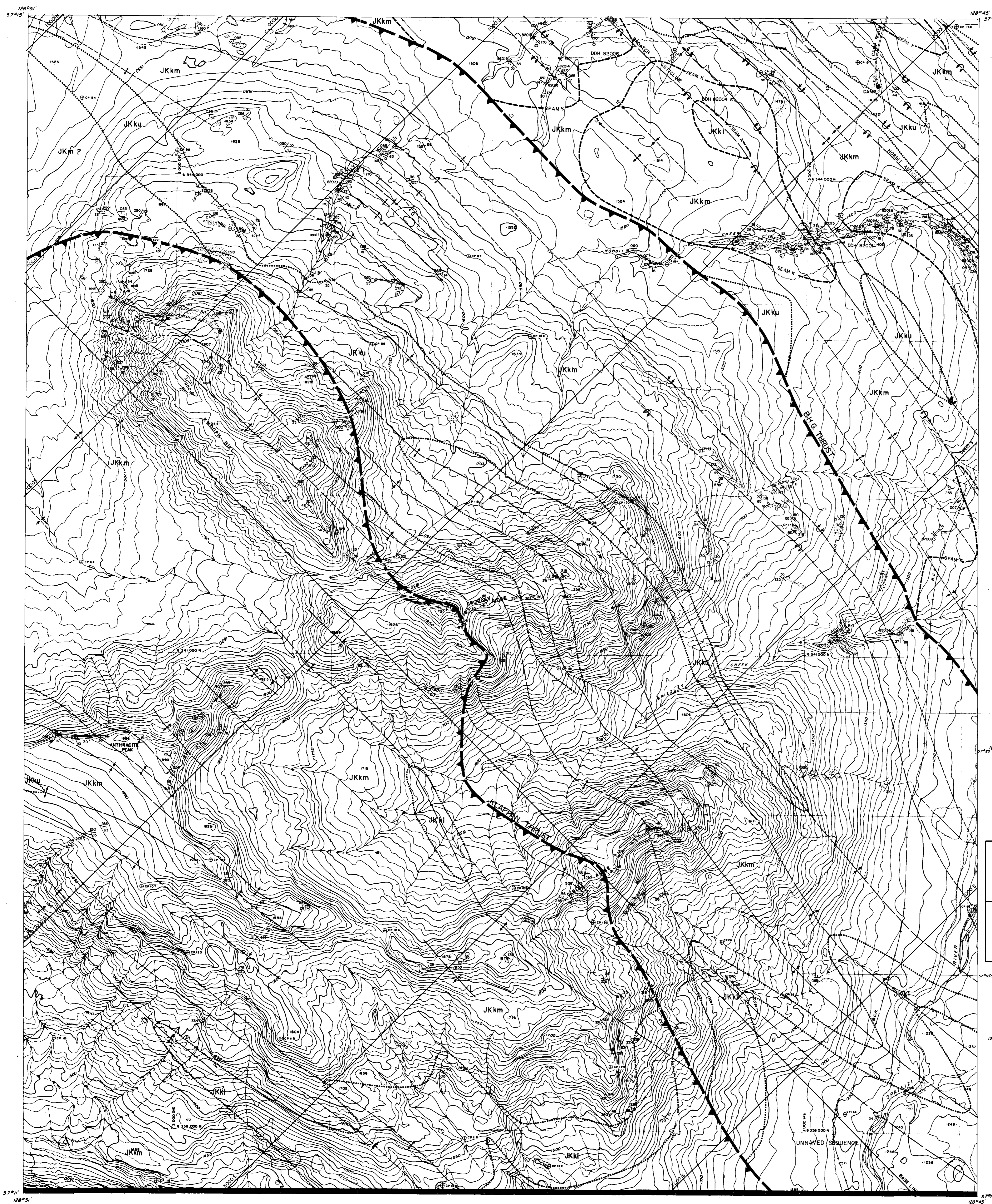
- LICENCE BOUNDARY
- GEOLOGICAL CONTACT (INFERRED)
- COAL SEAM (OUTCROP, INFERRED)
- ANTICLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
- SYNCLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
- OVERTURNED ANTICLINE (DEFINED, APPROXIMATE)
- OVERTURNED SYNCLINE (DEFINED, APPROXIMATE)
- BEDDING (HORIZONTAL, INCLINED, OVERTURNED, VERTICAL)
- THRUST FAULT (DEFINED, APPROXIMATE, INFERRED) TEETH INDICATE UP THRUST SIDE
- FAULT (DEFINED, APPROXIMATE, INFERRED) SOLID CIRCLE INDICATES DOWNTHROWN SIDE
- TRENCH LOCATION
- MEASURED SECTION LOCATION
- CROSS-SECTION LOCATION
- DIAMOND DRILLHOLE LOCATION (VERTICAL, INCLINED WITH SURFACE PROJECTION)

110

GULF CANADA RESOURCES INC.
Coal Division ALBERTA

**MOUNT KLAPPAN COAL PROPERTY
MAP SHEET F
GEOLOGY**

PREPARED BY: G. SEVE, M. DUFORD DRAWING No. KPN-82-006
APPROVED BY: B.P.F. DATE: NOV '82



LEGEND

BUILDING	---
ROAD, HARD SURFACE	---
LOOSE SURFACE	---
CART TRACK	---
TRAIL	---
RAILROAD BED	---
RIVER	---
STREAM, DEFINITE	---
APPROXIMATE	---
SPLIT	---
LAKE	---
WATER LEVEL	---
SWAMP	---
BEAVER DAM	---
TREE LINE	---
CUT LINE	---
CONTOURS, INDEX	---
INTERMEDIATE	---
DEPRESSION	---
APPROXIMATE	---
SPOT ELEVATION	---
FIELD CONTROL POINT	---
COAL LICENCE	---

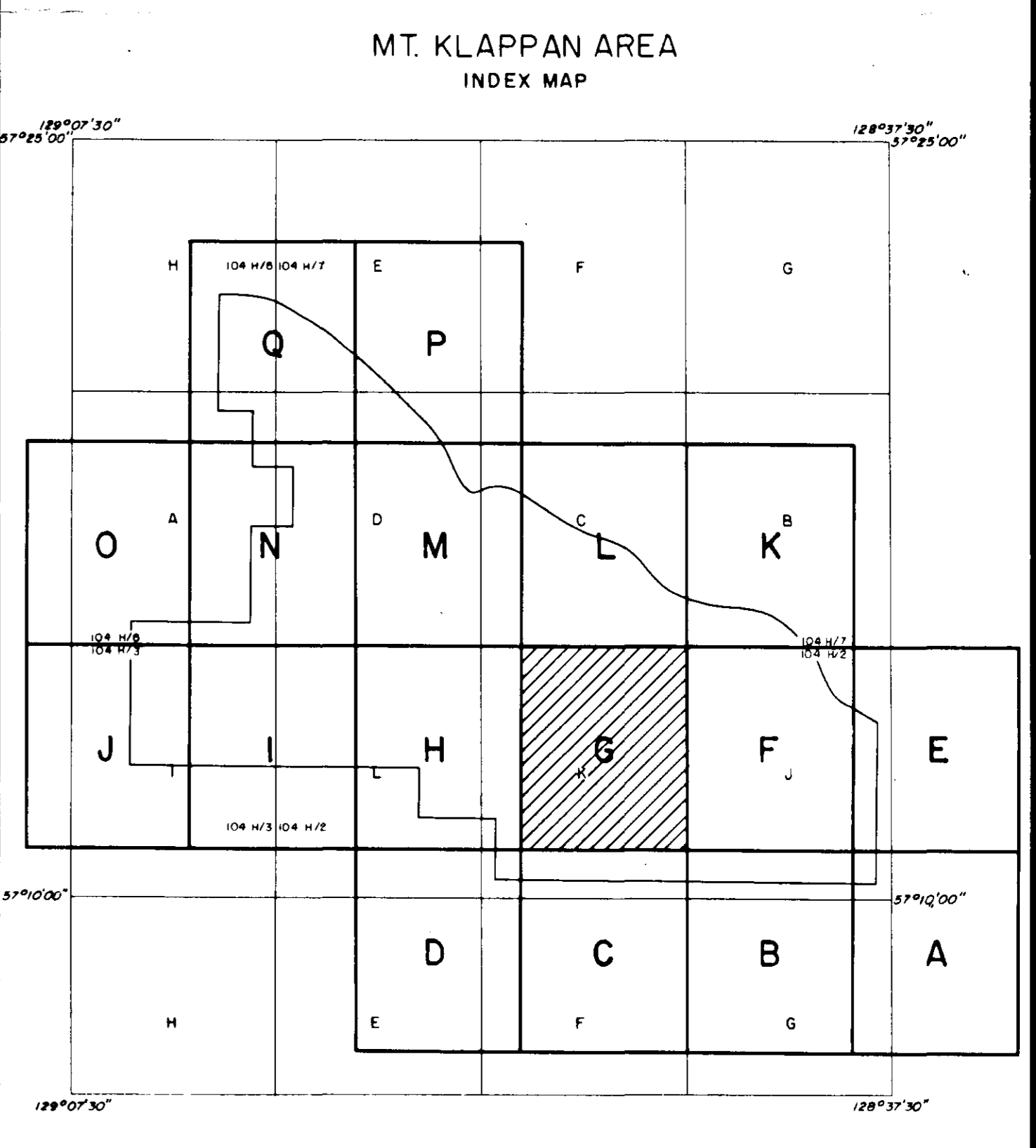
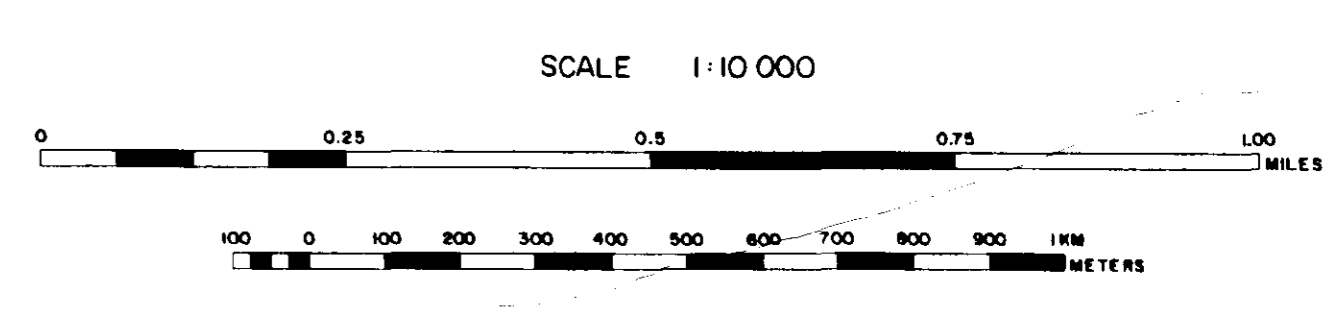
NOTES

CONTOUR INTERVAL: 10 METERS

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RAILROAD BED LOCATION BASED ON DATA SUPPLIED BY B.C. RAIL

COMPILED BY WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD MCELLELLAN LTD., FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67 AT A SCALE OF 1:60,000 (APPROXIMATE).



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JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.

KLAPPAN SEQUENCE

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JKki Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

LEGEND

LICENCE BOUNDARY

GEOLOGICAL CONTACT (INFERRED)

COAL SEAM (OUTCROP, INFERRED)

ANTICLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION

SYNCLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION

OVERTURNED ANTICLINE (DEFINED, APPROXIMATE)

OVERTURNED SYNCLINE (DEFINED, APPROXIMATE)

BEDDING (HORIZONTAL, INCLINED, OVERTURNED, VERTICAL)

THRUST FAULT (DEFINED, APPROXIMATE, INFERRED) TEETH INDICATE UP THRUST SIDE

FAULT (DEFINED, APPROXIMATE, INFERRED) SOLID CIRCLE INDICATES DOWN THRUST SIDE

TRENCH LOCATION MEASURED SECTION LOCATION

CROSS-SECTION LOCATION

DIAMOND DRILLHOLE LOCATION (VERTICAL, INCLINED WITH SURFACE PROJECTION)

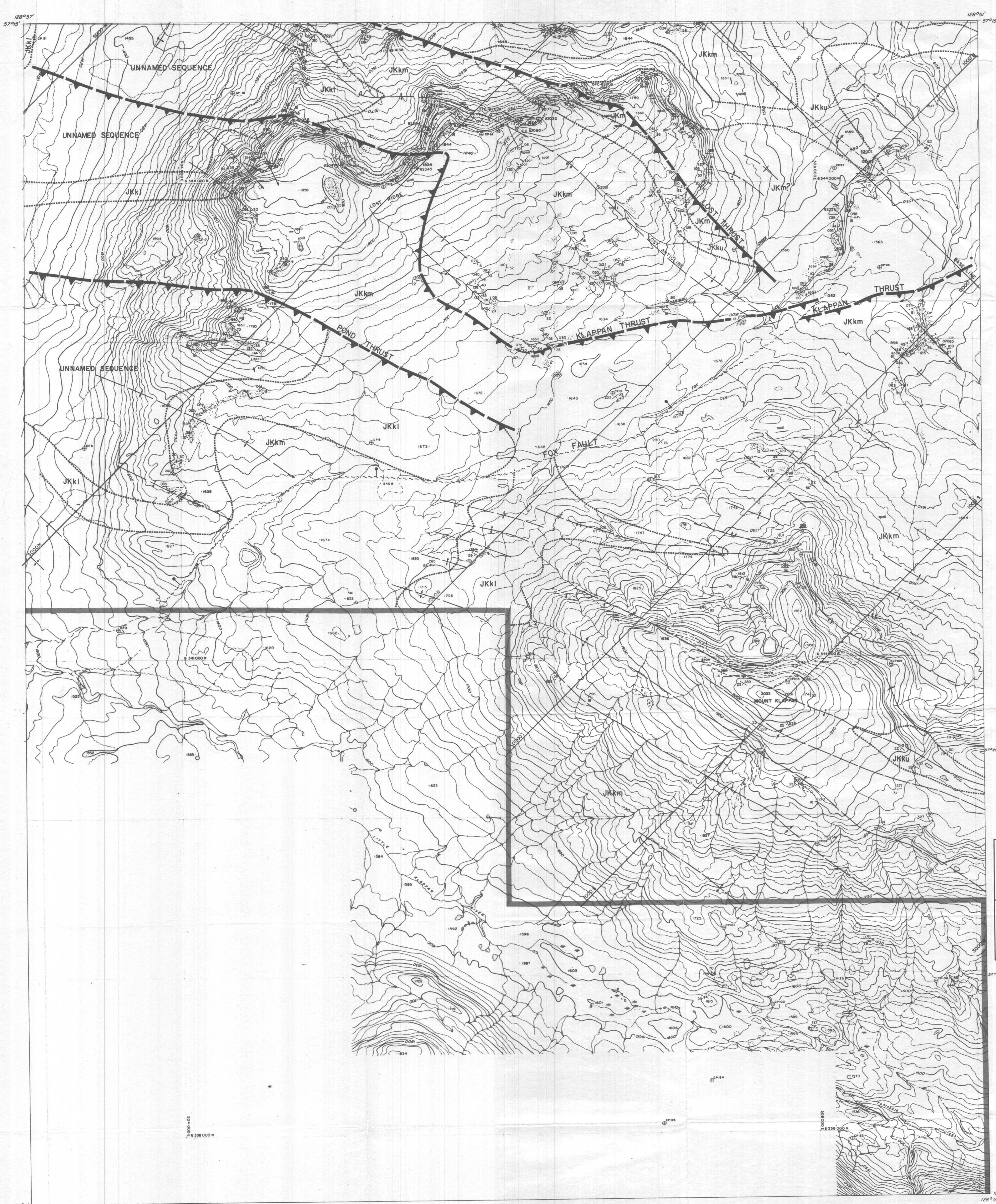
110

GULF CANADA RESOURCES INC.
Coal Division

CALGARY ALBERTA

MOUNT KLAPPAN COAL PROPERTY
MAP SHEET G
GEOLOGY

PREPARED BY: G. SEVE J. INNIS
APPROVED BY: B.P.F. DATE: NOV. '82 DRAWING No. KPN-82-007



LEGEND

BUILDING	---
ROAD, HARD SURFACE	---
LOOSE SURFACE	---
CART TRACK	---
TRAIL	---
RAILROAD BED	---
RIVER	---
STREAM, DEFINITE	---
APPROXIMATE	---
SPLIT	---
LAKE	---
WATER LEVEL	---
SWAMP	---
BEAVER DAM	---
TREE LINE	---
CUT LINE	---
CONTOURS, INDEX	---
INTERMEDIATE	---
DEPRESSION	---
APPROXIMATE	---
SPOT ELEVATION	---
FIELD CONTROL POINT	---
COAL LICENCE	---

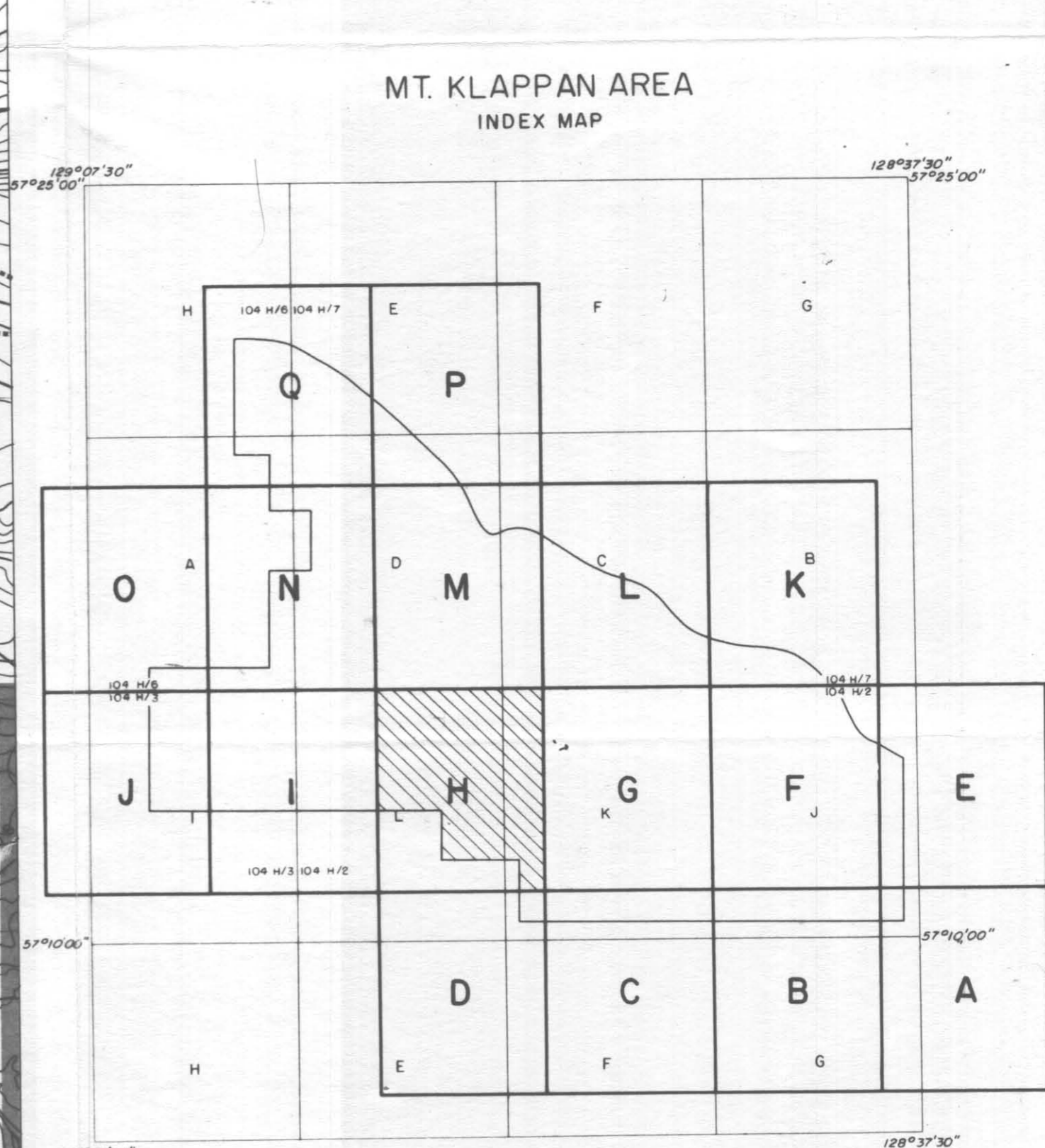
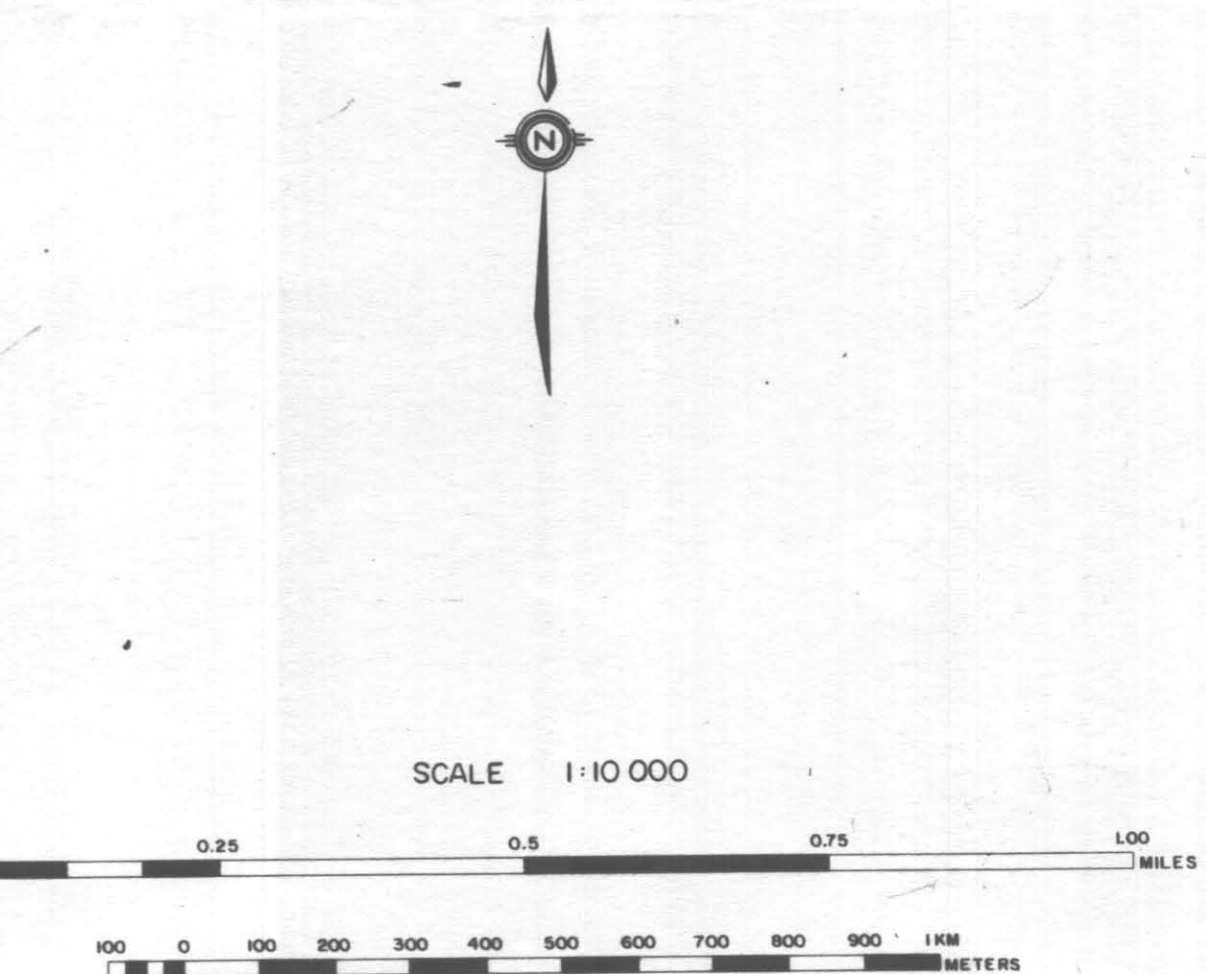
NOTES

CONTOUR INTERVAL 10 METERS

SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEOCENTRIC DATUM.

RAILROAD BED LOCATION BASED ON DATA SUPPLIED BY B.C. RAIL

COMPILED BY WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD MCELLELLAN LTD. FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67 AT A SCALE OF 1:60,000 (APPROXIMATE)



MALLOCH SEQUENCE

JKm	Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
-----	--

KLAPPAN SEQUENCE

JKku	Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
JKkm	Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
JKki	Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

LEGEND

---	LICENCE BOUNDARY
---	GEOLOGICAL CONTACT (INFERRED)
---	COAL SEAM (OUTCROP, INFERRED)
---	ANTICLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
---	SYNCLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
---	OVERTURNED ANTICLINE (DEFINED, APPROXIMATE)
---	OVERTURNED SYNCLINE (DEFINED, APPROXIMATE)
---	BEDDING (HORIZONTAL, INCLINED, OVERTURNED, VERTICAL)
---	THRUST FAULT (DEFINED, APPROXIMATE, INFERRED) TEETH INDICATE UP THRUST SIDE
---	FAULT (DEFINED, APPROXIMATE, INFERRED) SOLID CIRCLE INDICATES DOWNTHRUST SIDE
---	TRENCH LOCATION
---	MEASURED SECTION LOCATION
---	CROSS-SECTION LOCATION
---	DIAMOND DRILLHOLE LOCATION (VERTICAL, INCLINED WITH SURFACE PROJECTION)

110

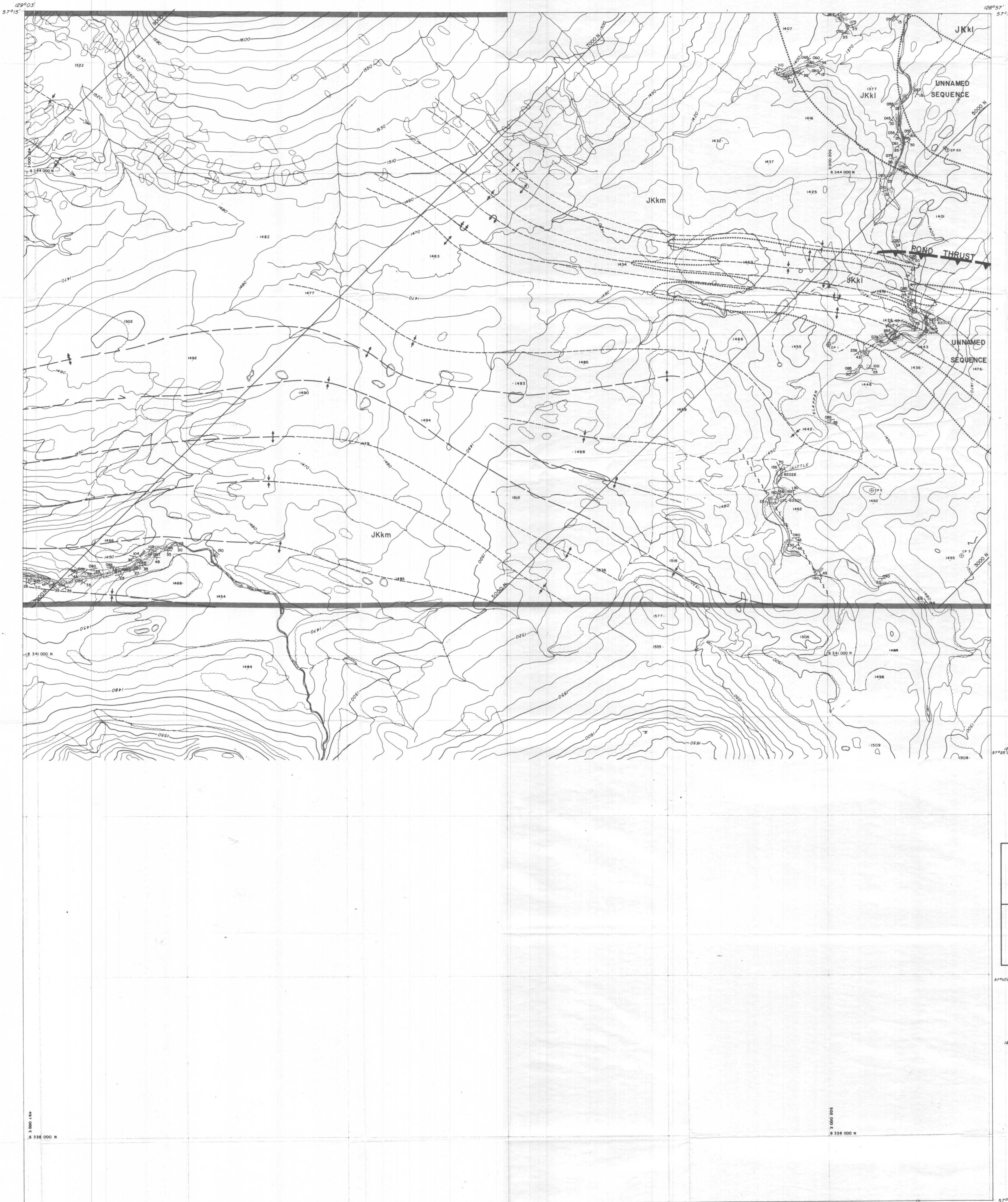
GULF CANADA RESOURCES INC. Coal Division

CALGARY ALBERTA

MOUNT KLAPPAN COAL PROPERTY MAP SHEET H GEOLOGY

PREPARED BY: J. INNIS DRAWING No. KPN-82-008

APPROVED BY: B.P.F. DATE: NOV. 82



LEGEND

BUILDING	---
ROAD, HARD SURFACE	---
LOOSE SURFACE	---
CART TRACK	---
TRAIL	---
RAILROAD BED	---
RIVER	---
STREAM, DEFINITE	---
APPROXIMATE	---
SPLIT	---
LAKE	---
WATER LEVEL	---
SWAMP	---
BEAVER DAM	---
TREE LINE	---
CUT LINE	---
CONTOURS, INDEX	---
INTERMEDIATE	---
DEPRESSION	---
APPROXIMATE	---
SPOT ELEVATION	---
FIELD CONTROL POINT	---
COAL LICENCE	---

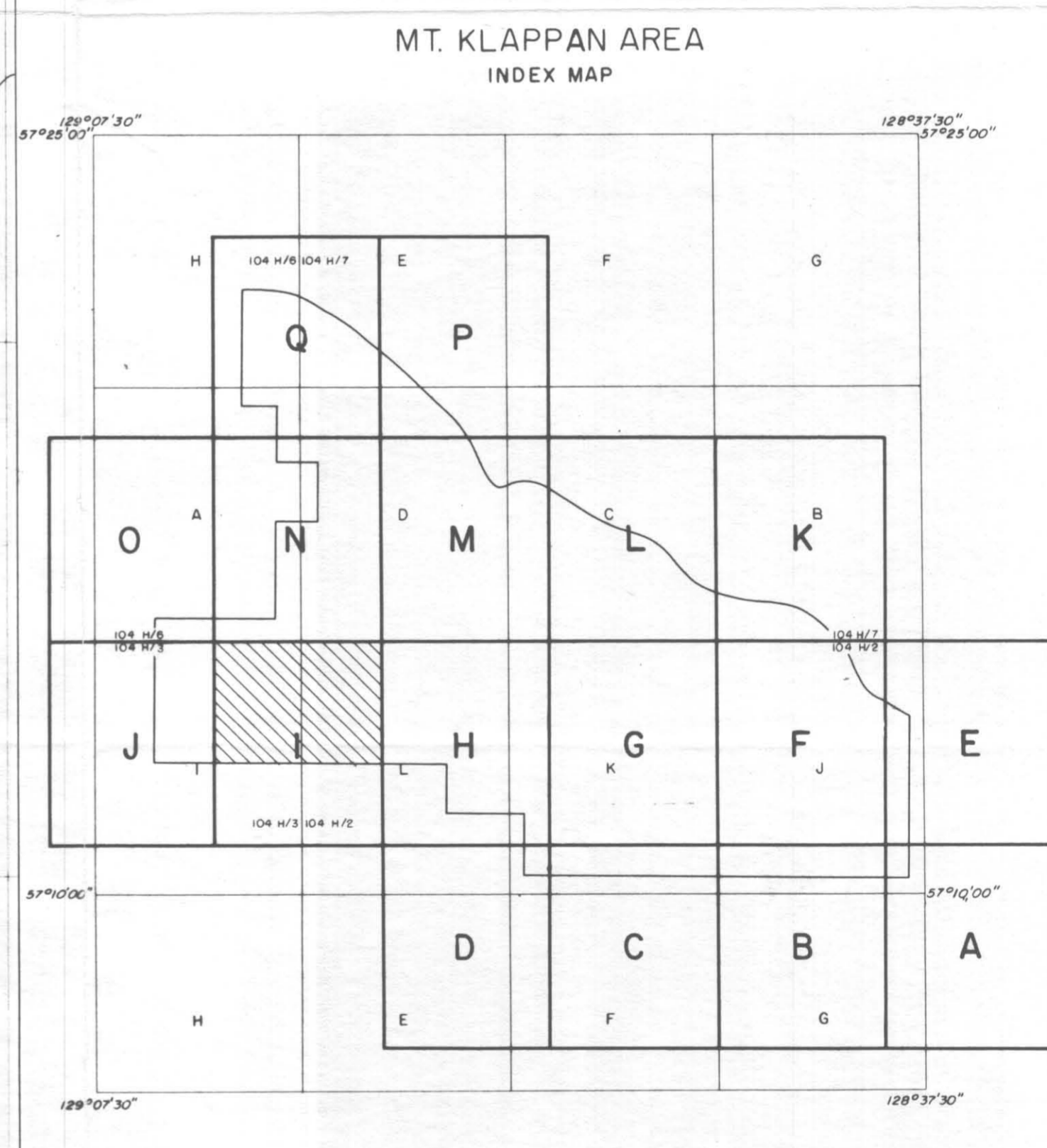
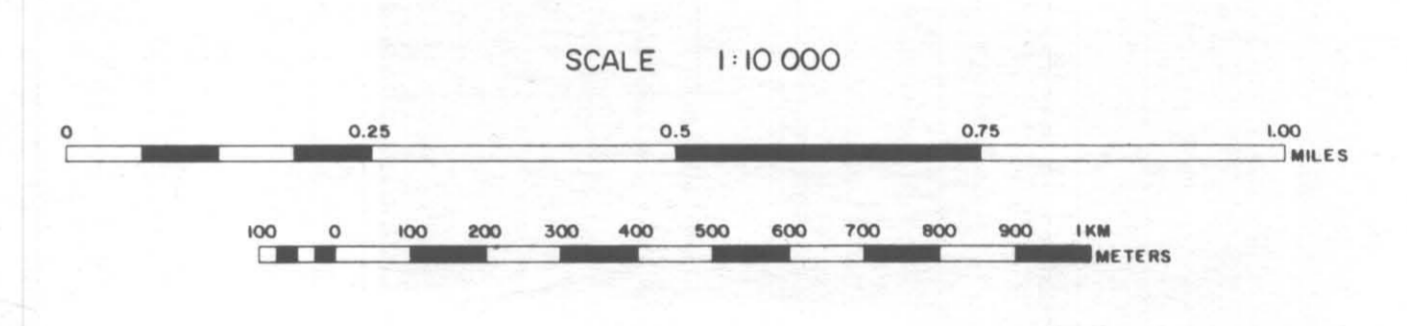
NOTES

CONTOUR INTERVAL 10 METERS

SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

RAILROAD BED LOCATION BASED ON DATA SUPPLIED BY B.C. RAIL.

COMPILED BY WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD McLELLAN LTD., FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67 AT A SCALE OF 1:60,000 (APPROXIMATE).



MALLOCH SEQUENCE	
JKm	Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
KLAPPAN SEQUENCE	
JKku	Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
JKkm	Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
JKki	Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

LEGEND

---	LICENCE BOUNDARY
---	GEOLOGICAL CONTACT (INFERRED)
---	COAL SEAM (OUTCROP, INFERRED)
---	ANTICLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
---	SYNCLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
---	OVERTURNED ANTICLINE (DEFINED, APPROXIMATE)
---	OVERTURNED SYNCLINE (DEFINED, APPROXIMATE)
---	BEDDING (HORIZONTAL, INCLINED, OVERTURNED, VERTICAL)
---	THRUST FAULT (DEFINED, APPROXIMATE, INFERRED) TEETH INDICATE UP THRUST SIDE
---	FAULT (DEFINED, APPROXIMATE, INFERRED) SOLID CIRCLE INDICATES DOWNTHRUST SIDE
---	TRENCH LOCATION
---	MEASURED SECTION LOCATION
---	CROSS-SECTION LOCATION
---	DIAMOND DRILLHOLE LOCATION (VERTICAL, INCLINED WITH SURFACE PROJECTION)

110

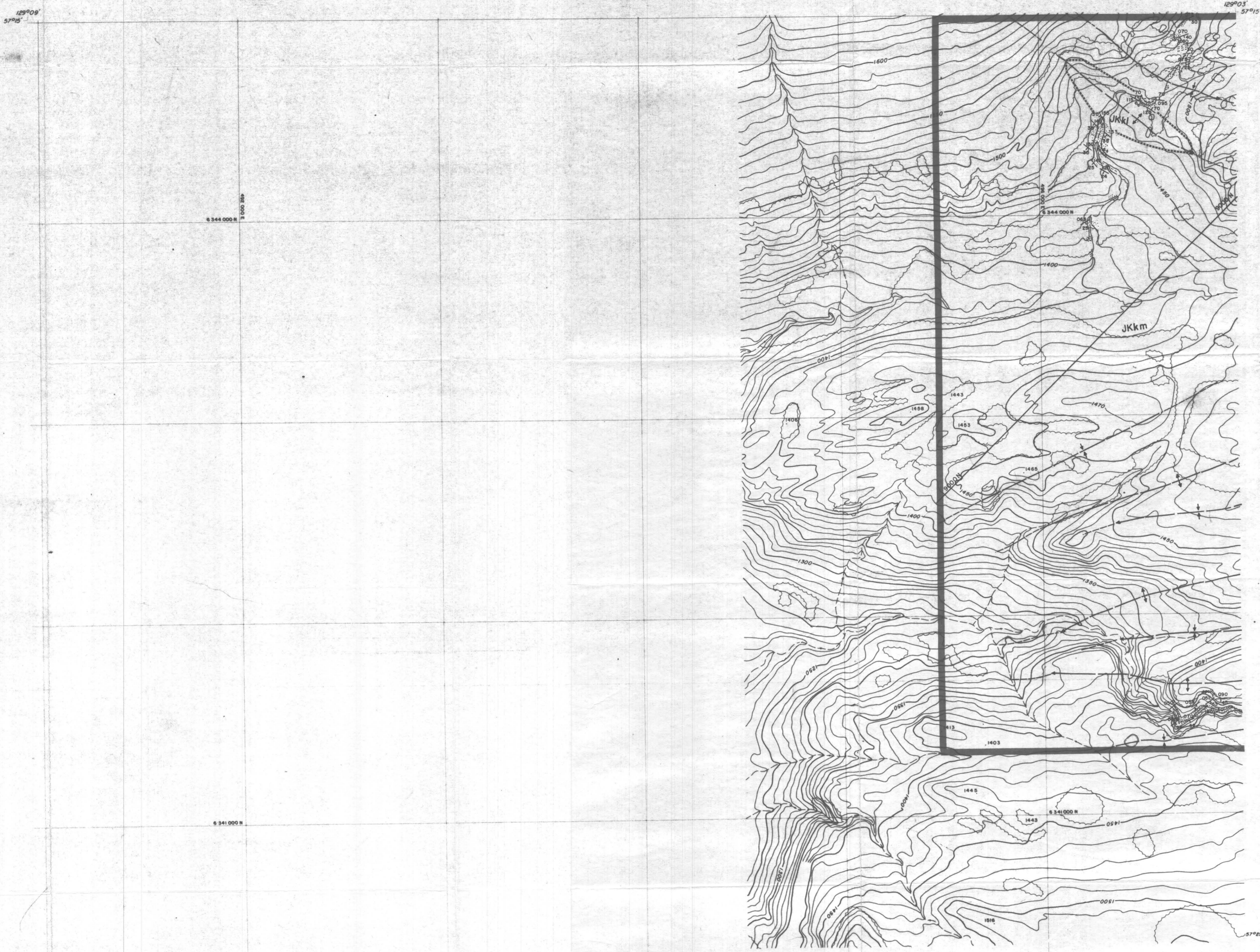
GULF CANADA RESOURCES INC. Coal Division

CALGARY ALBERTA

MOUNT KLAPPAN COAL PROPERTY MAP SHEET 1 GEOLOGY

PREPARED BY: J. INNIS DRAWING No. KPN-82-009

APPROVED BY: B.P.F. DATE: NOV. 82



LEGEND

BUILDING	[Symbol]
ROAD, HARD SURFACE	[Symbol]
ROAD, LOOSE SURFACE	[Symbol]
CART TRACK	[Symbol]
TRAIL	[Symbol]
RAILROAD BED	[Symbol]
RIVER	[Symbol]
STREAM, DEFINITE	[Symbol]
APPROXIMATE	[Symbol]
SPLIT	[Symbol]
LAKE	[Symbol]
WATER LEVEL	[Symbol]
SWAMP	[Symbol]
BEAVER DAM	[Symbol]
TREE LINE	[Symbol]
CUT LINE	[Symbol]
CONTOURS, INDEX	[Symbol]
INTERMEDIATE	[Symbol]
DEPRESSION	[Symbol]
APPROXIMATE	[Symbol]
SPOT ELEVATION	[Symbol]
FIELD CONTROL POINT	[Symbol]
COAL LICENCE	[Symbol]

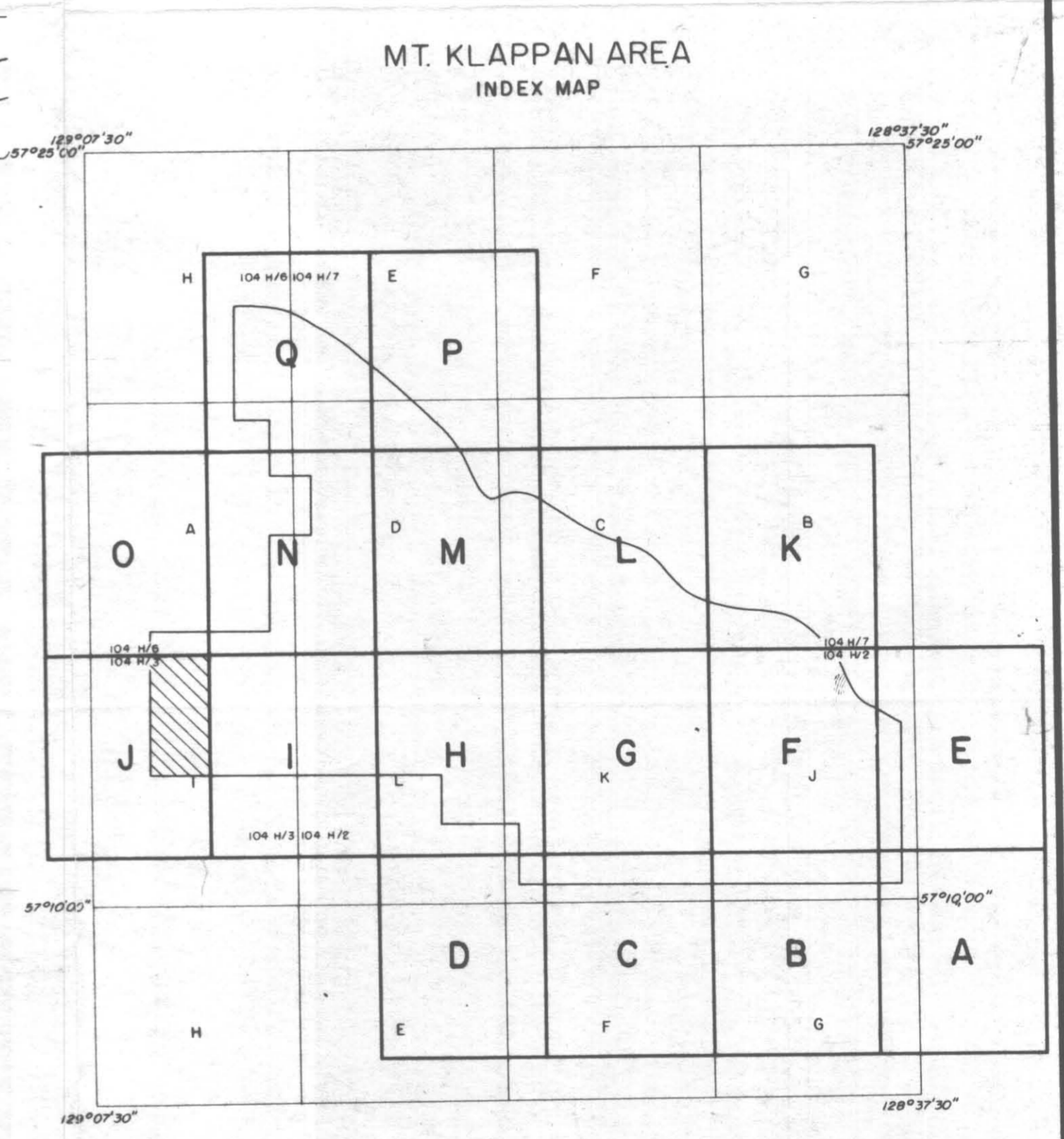
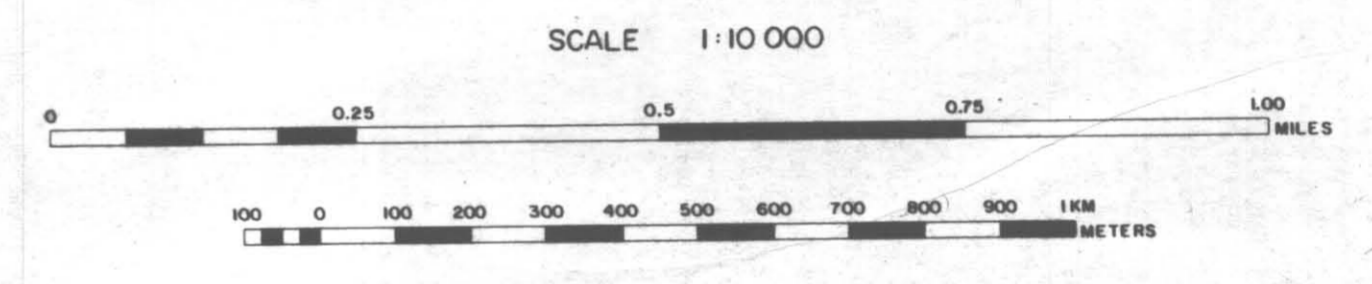
NOTES

CONTOUR INTERVAL 10 METERS

SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

RAILROAD BED LOCATION BASED ON DATA SUPPLIED BY B.C. RAIL.

COMPILED BY:
WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD MCELLELLAN LTD.,
FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67
AT A SCALE OF 1:6000 (APPROXIMATE).



MALLOCH SEQUENCE	
JKm	Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
KLAPPAN SEQUENCE	
JKku	Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
JKkm	Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
JKkl	Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

LEGEND

[Symbol]	LICENCE BOUNDARY
[Symbol]	GEOLOGICAL CONTACT (INFERRED)
[Symbol]	COAL SEAM (OUTCROP, INFERRED)
[Symbol]	ANTICLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
[Symbol]	SYNCLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
[Symbol]	OVERTURNED ANTICLINE (DEFINED, APPROXIMATE)
[Symbol]	OVERTURNED SYNCLINE (DEFINED, APPROXIMATE)
[Symbol]	BEDDING (HORIZONTAL, INCLINED, OVERTURNED, VERTICAL)
[Symbol]	THRUST FAULT (DEFINED, APPROXIMATE, INFERRED) TEETH INDICATE UP THRUST SIDE
[Symbol]	FAULT (DEFINED, APPROXIMATE, INFERRED) SOLID CIRCLE INDICATES DOWNTHRUST SIDE
[Symbol]	TRENCH LOCATION
[Symbol]	MEASURED SECTION LOCATION
[Symbol]	CROSS-SECTION LOCATION
[Symbol]	DIAMOND DRILLHOLE LOCATION (VERTICAL, INCLINED WITH SURFACE PROJECTION)

110

Ge. Mt. Klappan 50/62

GULF CANADA RESOURCES INC.
Coal Division

CALGARY ALBERTA

**MOUNT KLAPPAN COAL PROPERTY
MAP SHEET J
GEOLOGY**

PREPARED BY: J. INNIS	DRAWING No.
APPROVED BY: B.P.F.	DATE: Nov 82
	KPN-82-010

128°45' 57°15' 128°39' 57°15'

LEGEND

- BUILDING
- ROAD, HARD SURFACE
- LOOSE SURFACE
- CART TRACK
- TRAIL
- RAILROAD BED
- RIVER
- STREAM, DEFINITE
- APPROXIMATE
- SPLIT
- LAKE
- WATER LEVEL
- SWAMP
- BEAVER DAM
- TREE LINE
- CUT LINE
- CONTOURS, INDEX
- INTERMEDIATE
- DEPRESSION
- APPROXIMATE
- SPOT ELEVATION
- FIELD CONTROL POINT
- COAL LICENCE
- REDEFINED PROPERTY BOUNDARY

NOTES

CONTOUR INTERVAL 10 METERS

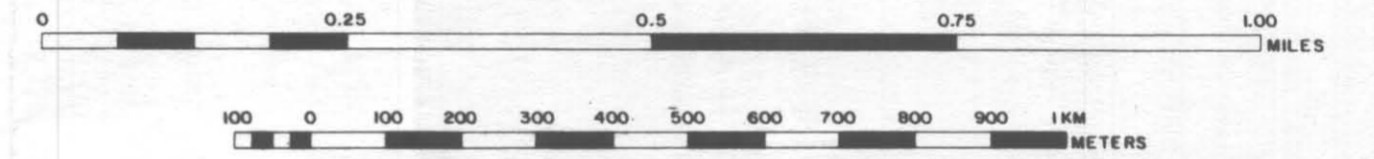
SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

RAILROAD BED LOCATION BASED ON DATA SUPPLIED BY B.C. RAIL

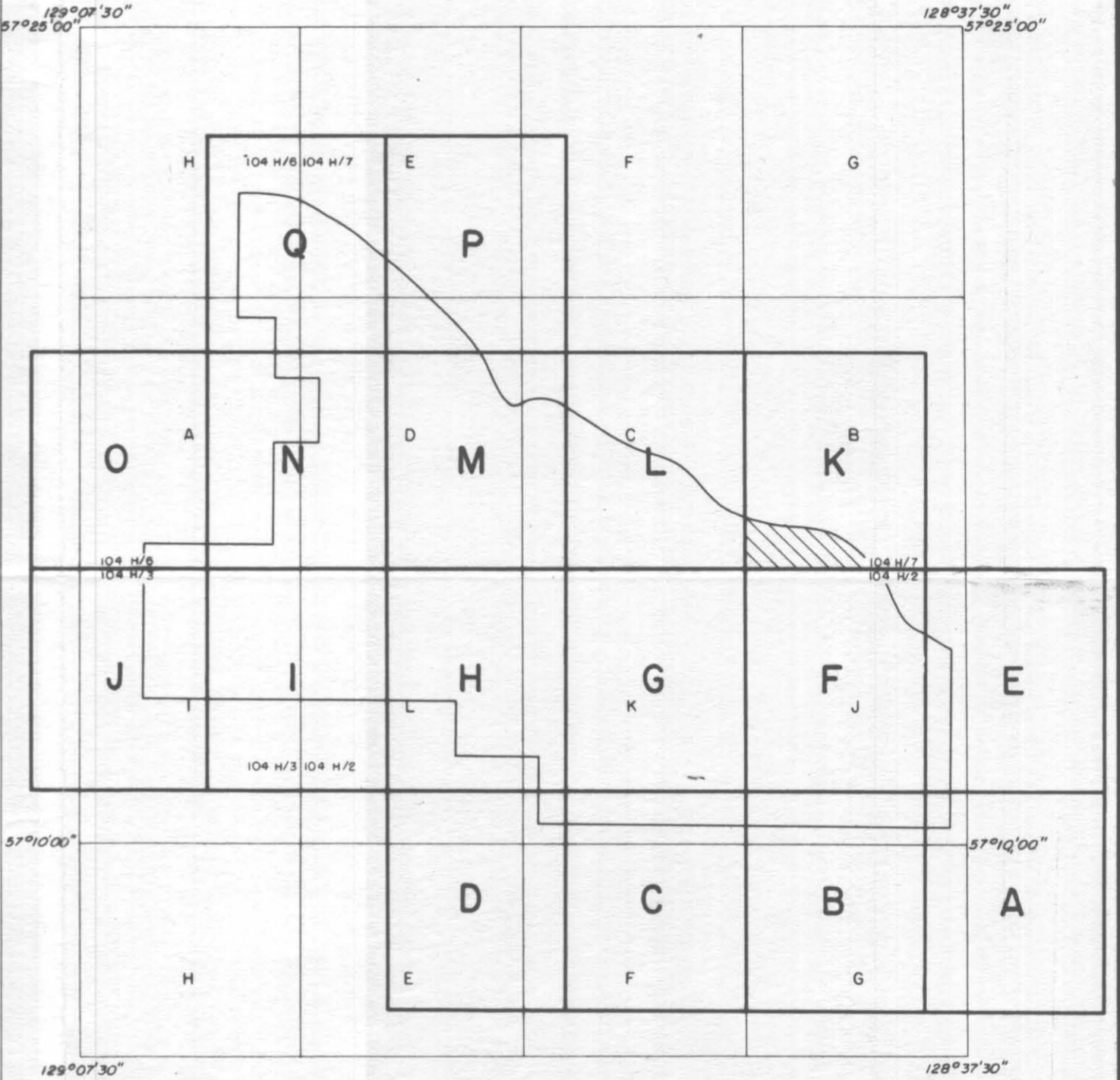
COMPILED BY WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD MCELLELLAN LTD. FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67 AT A SCALE OF 1:60 000 (APPROXIMATE).



SCALE 1:10 000



MT. KLAPPAN AREA INDEX MAP



LEGEND

- LICENCE BOUNDARY
- GEOLOGICAL CONTACT (INFERRED)
- COAL SEAM (OUTCROP, INFERRED)
- ANTICLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
- SYNCLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
- OVERTURNED ANTICLINE (DEFINED, APPROXIMATE)
- OVERTURNED SYNCLINE (DEFINED, APPROXIMATE)
- BEDDING (HORIZONTAL, INCLINED, OVERTURNED, VERTICAL)
- THRUST FAULT (DEFINED, APPROXIMATE, INFERRED) TEETH INDICATE UP THRUST SIDE
- FAULT (DEFINED, APPROXIMATE, INFERRED) SOLID CIRCLE INDICATES DOWNTHRUST SIDE
- TRENCH LOCATION
- MEASURED SECTION LOCATION
- CROSS-SECTION LOCATION
- DIAMOND DRILLHOLE LOCATION (VERTICAL, INCLINED WITH SURFACE PROJECTION)

- MALLOCH SEQUENCE**
- JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKki Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

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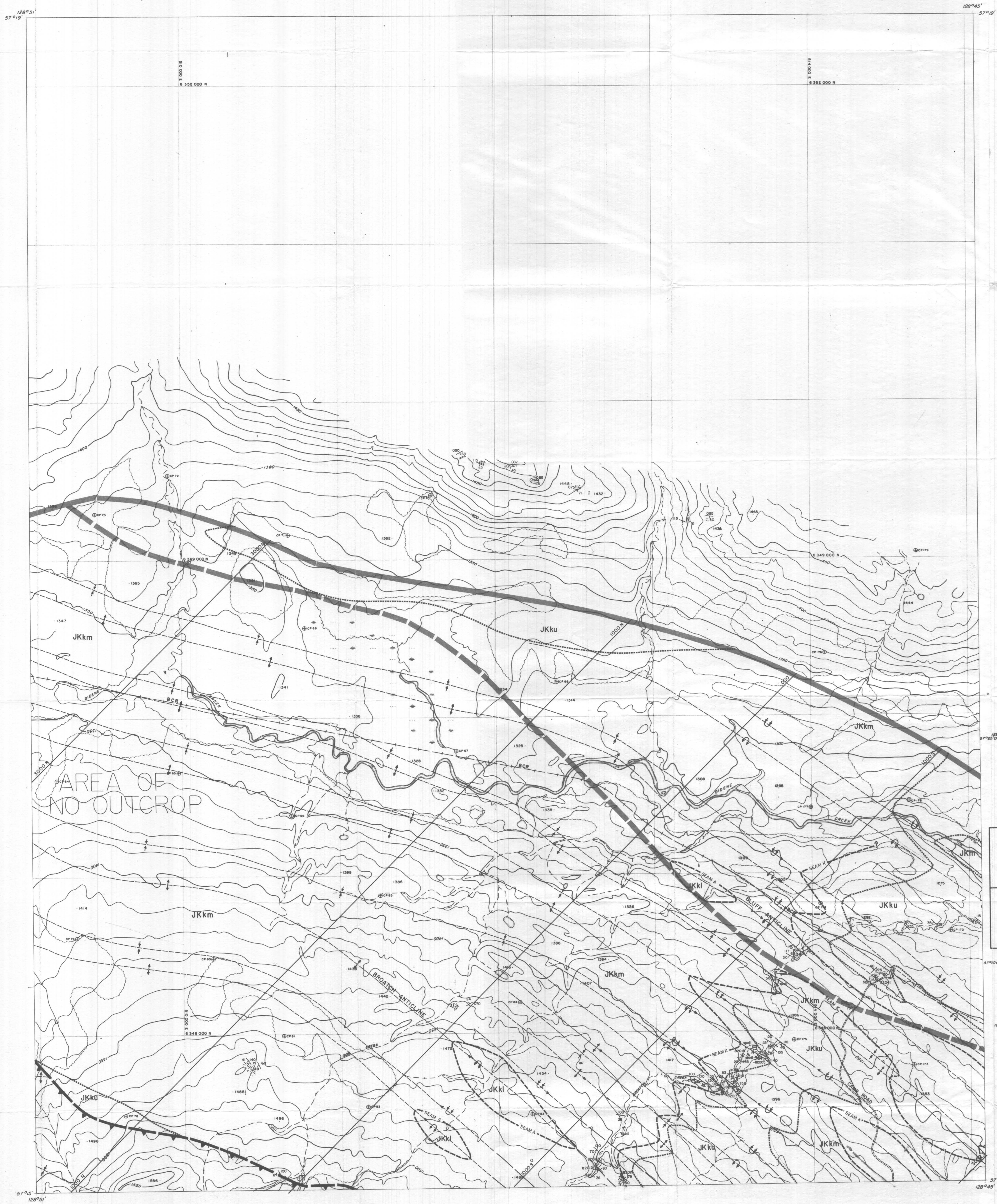
GULF CANADA RESOURCES INC.
Coal Division

CALGARY ALBERTA

MOUNT KLAPPAN COAL PROPERTY
MAP SHEET K
GEOLOGY

PREPARED BY: G. SEVE
APPROVED BY: B.P.F.

DATE: NOV. 82
DRAWING No. KPN-82-011



LEGEND

BUILDING	---
ROAD, HARD SURFACE	---
LOOSE SURFACE	---
CART TRACK	---
TRAIL	---
RAILROAD BED	---
RIVER	---
STREAM, DEFINITE	---
APPROXIMATE	---
SPLIT	---
LAKE	---
WATER LEVEL	EL. 800'
SWAMP	---
BEAVER DAM	---
TREE LINE	---
CUT LINE	---
CONTOURS, INDEX	1750
INTERMEDIATE	---
DEPRESSION	---
APPROXIMATE	---
SPOT ELEVATION	7854
FIELD CONTROL POINT	---
COAL LICENCE	---
REDEFINED PROPERTY BOUNDARY	---

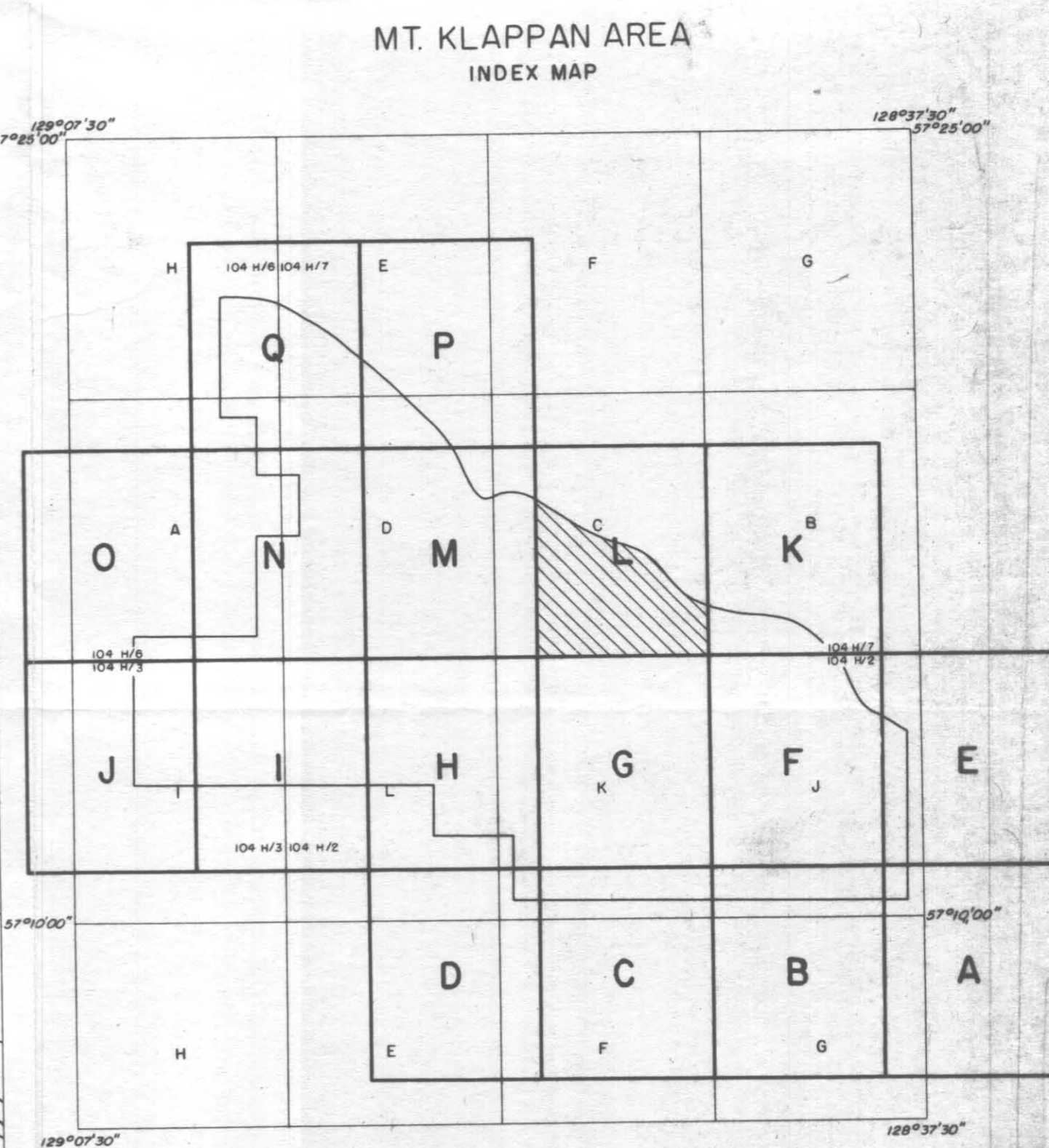
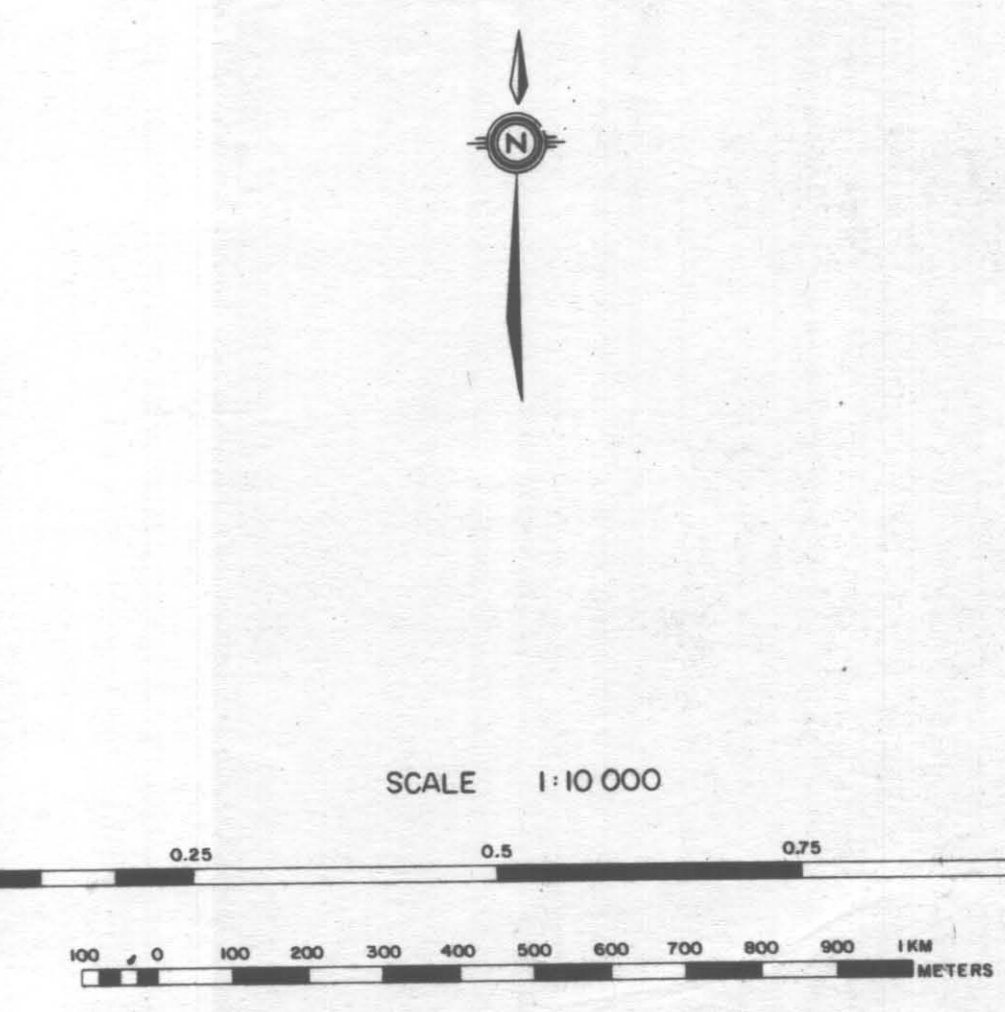
NOTES

CONTOUR INTERVAL 10 METERS

SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

RAILROAD BED LOCATION BASED ON DATA SUPPLIED BY B.C. RAIL.

COMPILED BY:
WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD MCELLENN LTD.,
FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67
AT A SCALE OF 1:60 000 (APPROXIMATE).



MALLOCH SEQUENCE

JKm	Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
-----	--

KLAPPAN SEQUENCE

JKku	Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
JKkm	Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
JKki	Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

LEGEND

---	LICENCE BOUNDARY
---	GEOLOGICAL CONTACT (INFERRED)
---	COAL SEAM (OUTCROP, INFERRED)
↑	ANTICLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
↓	SYNCLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
↑	OVERTURNED ANTICLINE (DEFINED, APPROXIMATE)
↓	OVERTURNED SYNCLINE (DEFINED, APPROXIMATE)
---	BEDDING (HORIZONTAL, INCLINED, OVERTURNED, VERTICAL)
↑	THRUST FAULT (DEFINED, APPROXIMATE, INFERRED) TEETH INDICATE UP THRUST SIDE
↓	FAULT (DEFINED, APPROXIMATE, INFERRED) SOLID CIRCLE INDICATES DOWNTHRUST SIDE
---	TRENCH LOCATION
---	MEASURED SECTION LOCATION
---	CROSS-SECTION LOCATION
---	DIAMOND DRILLHOLE LOCATION (VERTICAL, INCLINED WITH SURFACE PROJECTION)

GULF CANADA RESOURCES INC.
Coal Division

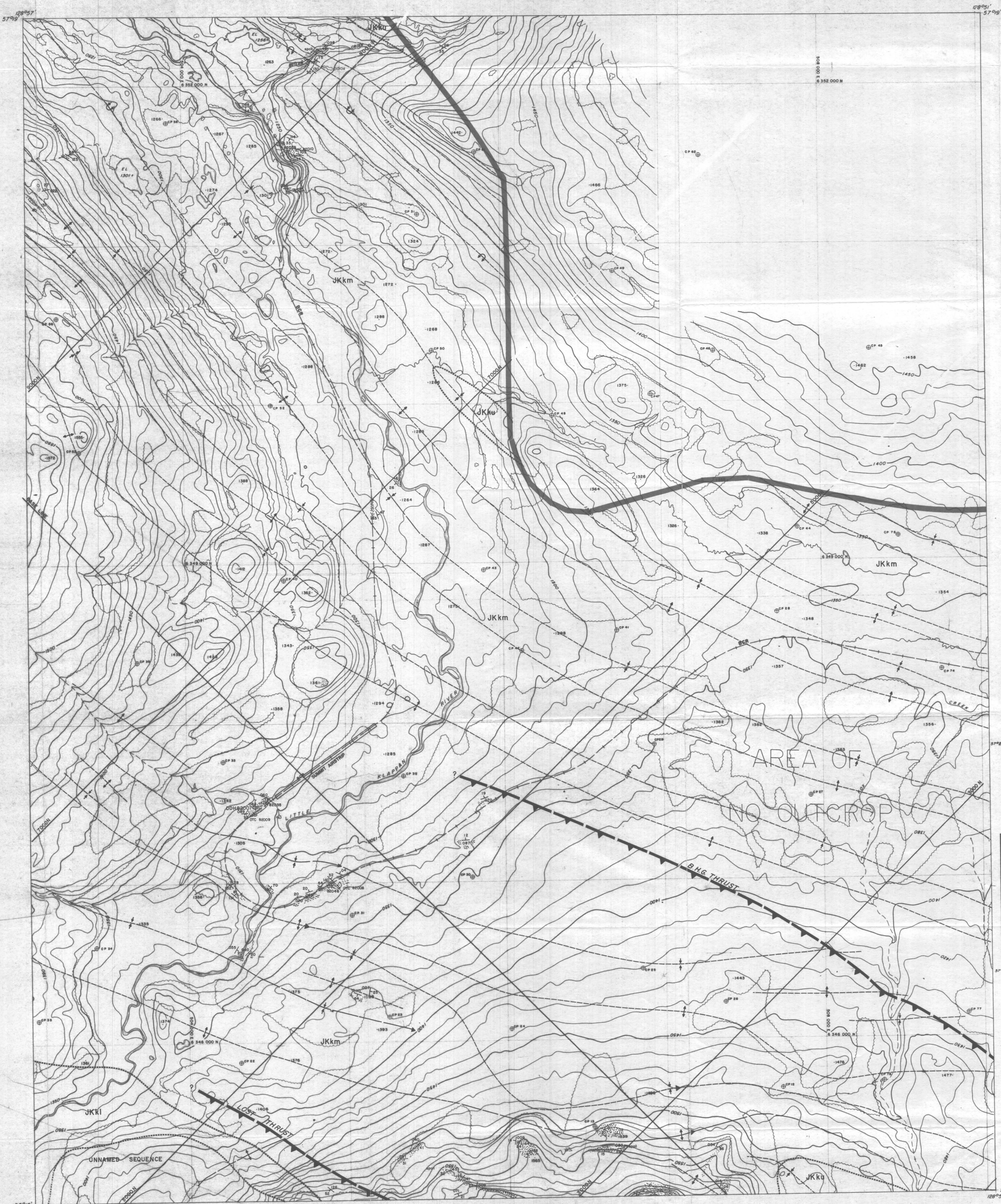
CALGARY ALBERTA

MOUNT KLAPPAN COAL PROPERTY
MAP SHEET L
GEOLOGY

PREPARED BY: J. INNIS G. SEVE
APPROVED BY: B.P.F. DATE: NOV. 82

DRAWING No. KPN-82-012

110



LEGEND

BUILDING	[Symbol]
ROAD, HARD SURFACE	[Symbol]
LOOSE SURFACE	[Symbol]
RAIL TRACK	[Symbol]
TRAIL	[Symbol]
RAILROAD BED	[Symbol]
RIVER	[Symbol]
STREAM, DEFINITE	[Symbol]
APPROXIMATE	[Symbol]
SPLIT	[Symbol]
LAKE	[Symbol]
WATER LEVEL	[Symbol]
SWAMP	[Symbol]
BEAVER DAM	[Symbol]
TREE LINE	[Symbol]
CUT LINE	[Symbol]
CONTOURS, INDEX	[Symbol]
INTERMEDIATE	[Symbol]
DEPRESSION	[Symbol]
APPROXIMATE	[Symbol]
SPOT ELEVATION	[Symbol]
FIELD CONTROL POINT	[Symbol]
COAL LICENCE	[Symbol]

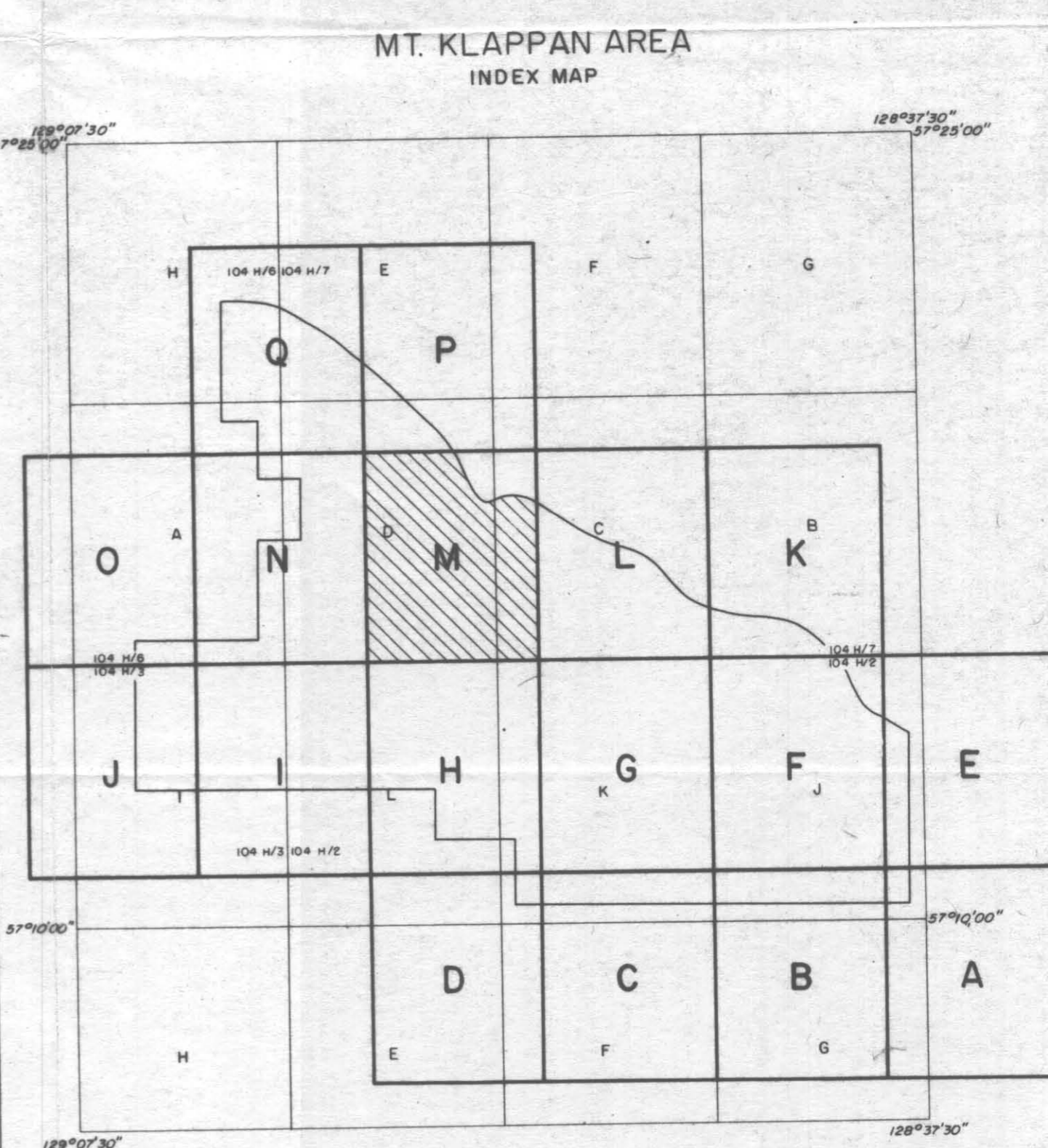
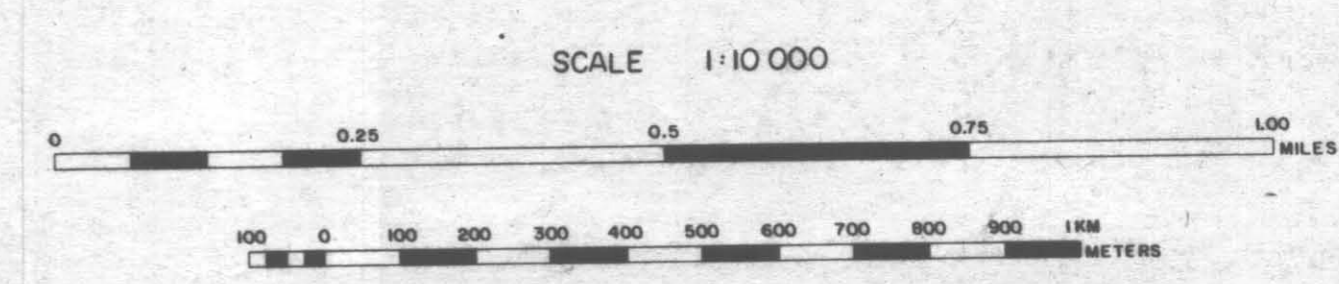
NOTES

CONTOUR INTERVAL 10 METERS

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RAILROAD BED LOCATION BASED ON DATA SUPPLIED BY B.C. RAIL

COMPILED BY WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD McLELLAN LTD., FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67 AT A SCALE OF 1:6000 (APPROXIMATE).



MALLOCH SEQUENCE

JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.

KLAPPAN SEQUENCE

JKku Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.

JKkm Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.

JKki Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

LEGEND

[Symbol]	LICENCE BOUNDARY
[Symbol]	GEOLOGICAL CONTACT (INFERRED)
[Symbol]	COAL SEAM (OUTCROP, INFERRED)
[Symbol]	ANTICLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
[Symbol]	SYNCLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
[Symbol]	OVERTURNED ANTICLINE (DEFINED, APPROXIMATE)
[Symbol]	OVERTURNED SYNCLINE (DEFINED, APPROXIMATE)
[Symbol]	BEDDING (HORIZONTAL, INCLINED, OVERTURNED, VERTICAL)
[Symbol]	THRUST FAULT (DEFINED, APPROXIMATE, INFERRED) TEETH INDICATE UP THRUST SIDE
[Symbol]	FAULT (DEFINED, APPROXIMATE, INFERRED) SOLID CIRCLE INDICATES DOWNTHRUST SIDE
[Symbol]	TRENCH LOCATION
[Symbol]	MEASURED SECTION LOCATION
[Symbol]	CROSS-SECTION LOCATION
[Symbol]	DIAMOND DRILLHOLE LOCATION (VERTICAL, INCLINED WITH SURFACE PROJECTION)

GULF CANADA RESOURCES INC.
Coal Division

CALGARY ALBERTA

**MOUNT KLAPPAN COAL PROPERTY
MAP SHEET M
GEOLOGY**

PREPARED BY: E. SWANBERGSON DATE: Nov. 82 DRAWING No. KPN-82-013
APPROVED BY: B.P.F.

110

57°03' 129°03'

128°57' 57°09'

LEGEND

- BUILDING
- ROAD, HARD SURFACE
- LOOSE SURFACE
- CART TRACK
- TRAIL
- RAILROAD BED
- RIVER
- STREAM, DEFINITE
- APPROXIMATE
- SPLIT
- LAKE
- WATER LEVEL
- SWAMP
- BEAVER DAM
- TREE LINE
- CUT LINE
- CONTOURS, INDEX
- INTERMEDIATE
- DEPRESSION
- APPROXIMATE
- SPOT ELEVATION
- FIELD CONTROL POINT
- COAL LICENCE

NOTES

CONTOUR INTERVAL 10 METERS

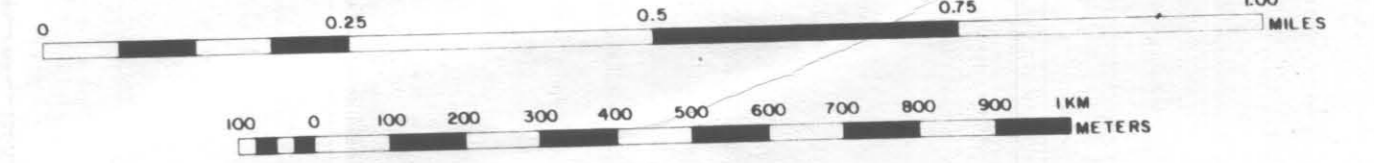
SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

RAILROAD BED LOCATION BASED ON DATA SUPPLIED BY B.C. RAIL

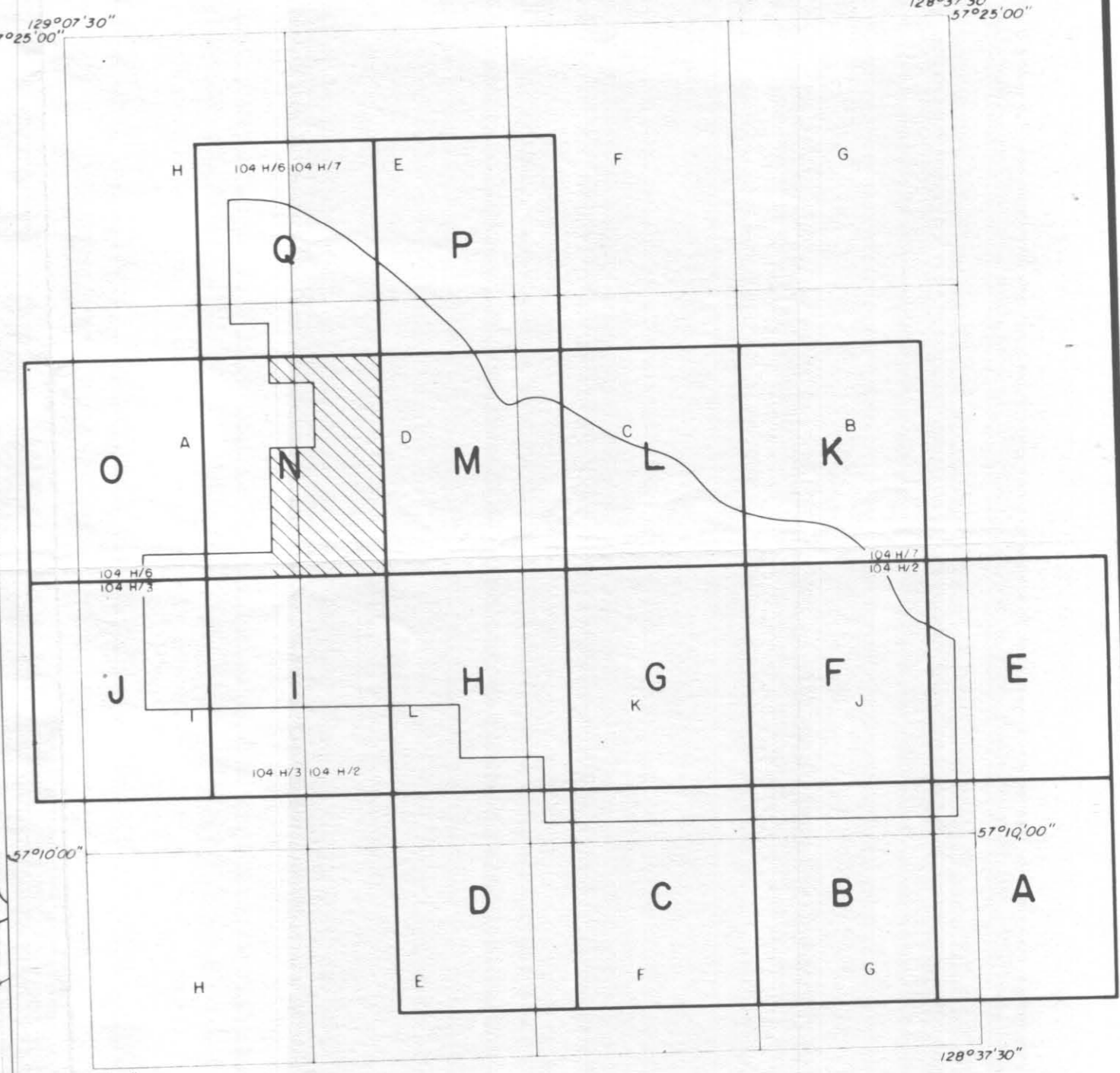
COMPILED BY WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD McLELLAN LTD., FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST 1967 AT A SCALE OF 1:60 000 (APPROXIMATE).



SCALE 1:10 000



MT. KLAPPAN AREA INDEX MAP



LEGEND

- LICENCE BOUNDARY
- GEOLOGICAL CONTACT (INFERRED)
- COAL SEAM (OUTCROP, INFERRED)
- ANTICLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
- SYNCLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
- OVERTURNED ANTICLINE (DEFINED, APPROXIMATE)
- OVERTURNED SYNCLINE (DEFINED, APPROXIMATE)
- BEDDING (HORIZONTAL, INCLINED, OVERTURNED, VERTICAL)
- THRUST FAULT (DEFINED, APPROXIMATE, INFERRED) TEETH INDICATE UPTHURST SIDE
- FAULT (DEFINED, APPROXIMATE, INFERRED) SOLID CIRCLE INDICATES DOWNTHRUST SIDE
- TRENCH LOCATION
- MEASURED SECTION LOCATION
- CROSS-SECTION LOCATION
- DIAMOND DRILLHOLE LOCATION (VERTICAL, INCLINED WITH SURFACE PROJECTION)

- MALLOCH SEQUENCE**
- JKm** Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku** Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm** Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKkl** Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

110

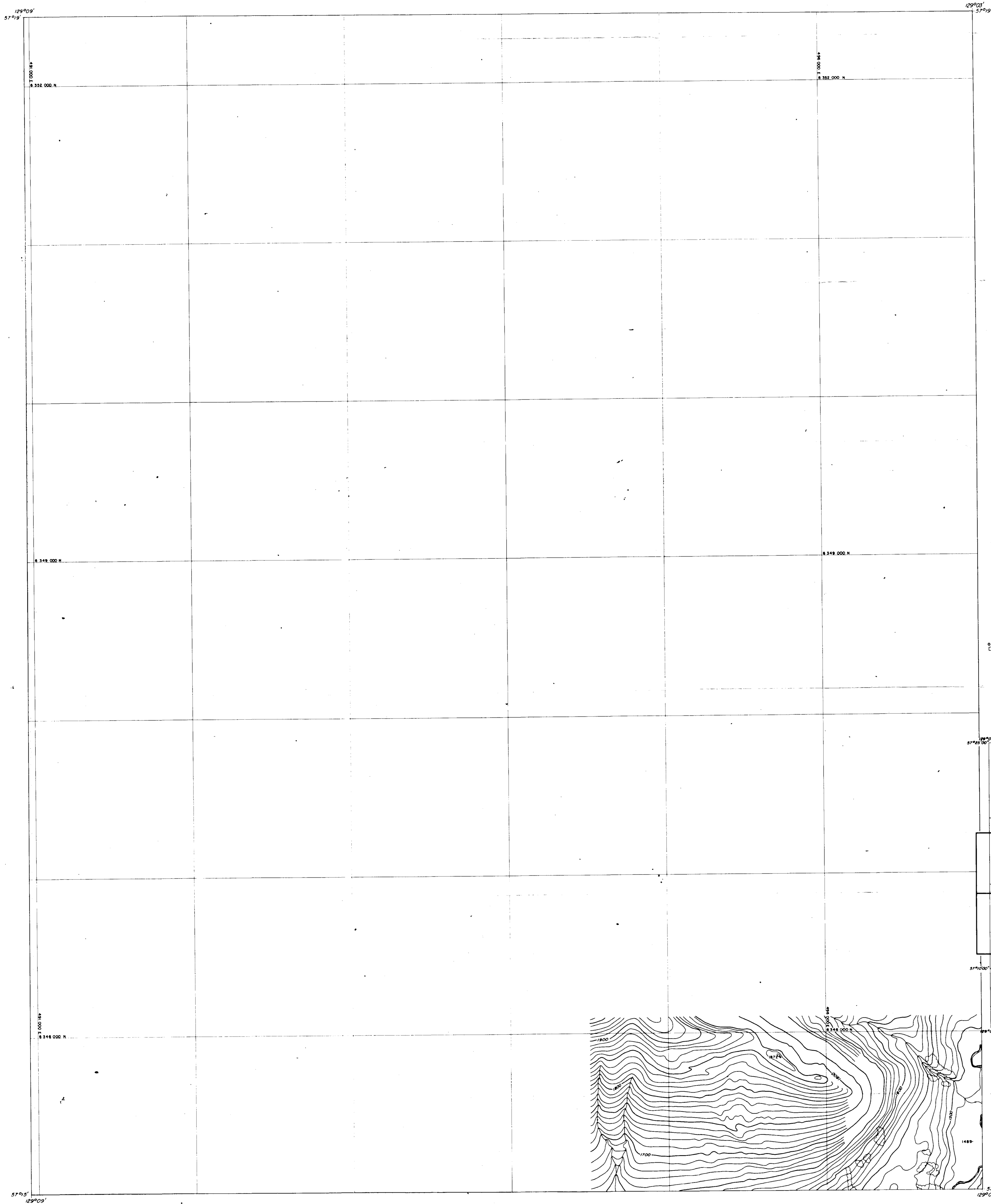
Gr. Mt. Klappan 82(2)

GULF CANADA RESOURCES INC.
Coal Division

CALGARY ALBERTA

**MOUNT KLAPPAN COAL PROPERTY
MAP SHEET N
GEOLOGY**

PREPARED BY: E. Swanbergson DRAWING No. KPN-82-014
APPROVED BY: B.P.F. DATE: Nov. 82



LEGEND

BUILDING	---
ROAD, HARD SURFACE	---
LOOSE SURFACE	---
CART TRACK	---
TRAIL	---
RAILROAD BED	---
RIVER	---
STREAM, DEFINITE	---
APPROXIMATE	---
SPLIT	---
LAKE	---
WATER LEVEL	---
SWAMP	---
BEAVER DAM	---
FREE LINE	---
CUT LINE	---
CONTOURS, INDEX	---
INTERMEDIATE	---
DEPRESSION	---
APPROXIMATE	---
SPOT ELEVATION	---
FIELD CONTROL POINT	---

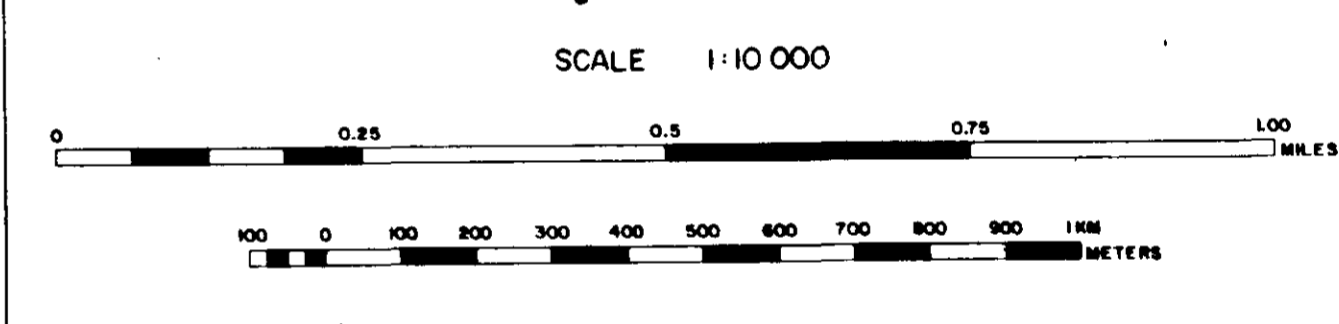
NOTES

CONTOUR INTERVAL 10 METERS

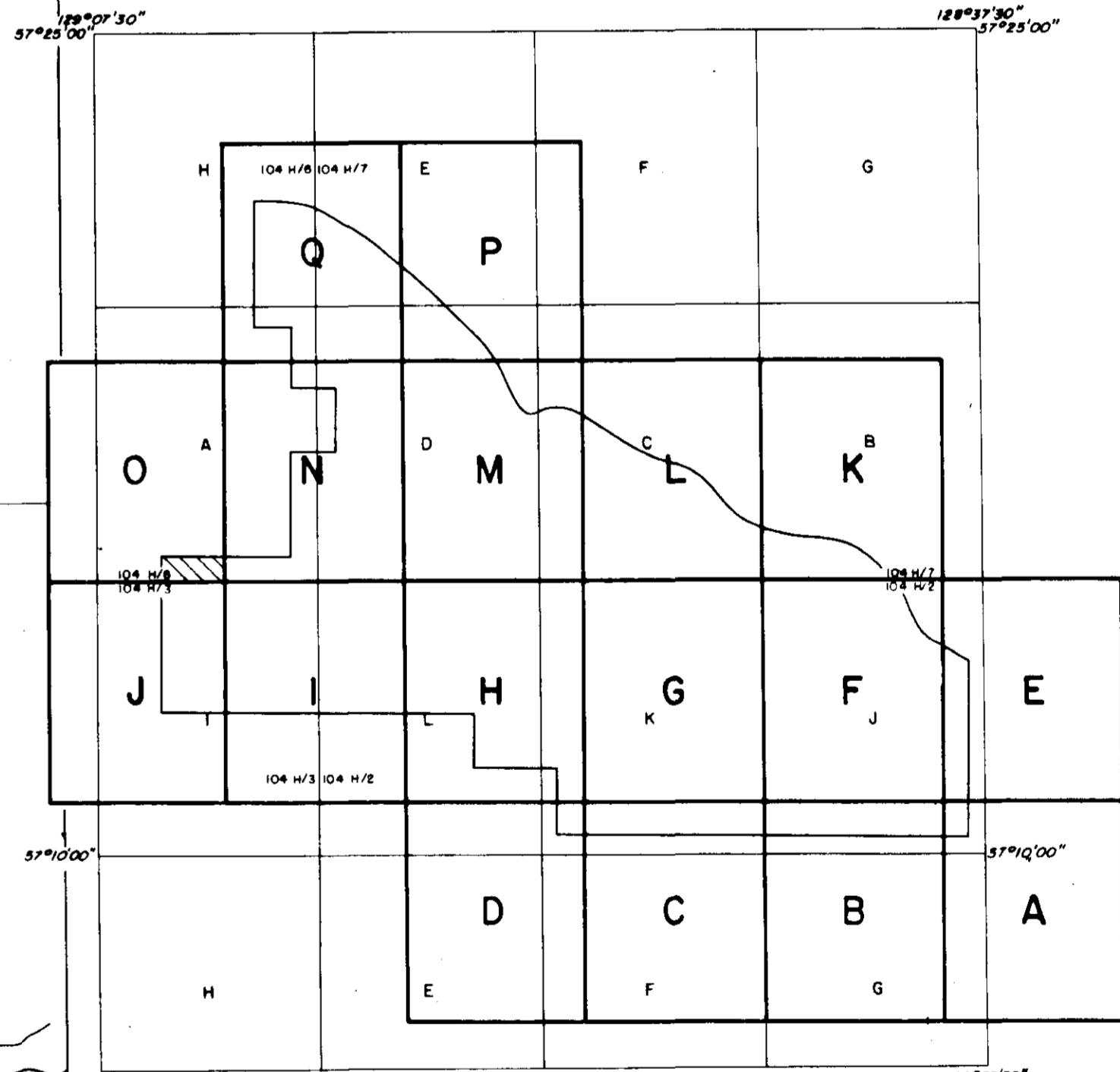
SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

RAILROAD BED LOCATION BASED ON DATA SUPPLIED BY B.C. RAIL.

COMPILED BY:
WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD McLELLAN LTD.,
FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST '67
AT A SCALE OF 1:60 000 (APPROXIMATE).



MT. KLAPPAN AREA INDEX MAP



MALLOCH SEQUENCE

JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.

KLAPPAN SEQUENCE

JKu Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.

JKm Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.

JKi Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

LEGEND

---	LICENCE BOUNDARY
---	GEOLOGICAL CONTACT (INFERRED)
---	COAL SEAM (OUTCROP, INFERRED)
---	ANTICLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
---	SYNCLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
---	OVERTURNED ANTICLINE (DEFINED, APPROXIMATE)
---	OVERTURNED SYNCLINE (DEFINED, APPROXIMATE)
---	BEDDING (HORIZONTAL, INCLINED, OVERTURNED, VERTICAL)
---	THRUST FAULT (DEFINED, APPROXIMATE, INFERRED) TEETH INDICATE UP THRUST SIDE
---	FAULT (DEFINED, APPROXIMATE, INFERRED) SOLID CIRCLE INDICATES DOWN THRUST SIDE
---	TRENCH LOCATION
---	MEASURED SECTION LOCATION
---	CROSS-SECTION LOCATION
---	DIAMOND DRILLHOLE LOCATION (VERTICAL, INCLINED WITH SURFACE PROJECTION)

110

Ge. Mt. Klappan 82/274

GULF CANADA RESOURCES INC.

Coal Division ALBERTA

MOUNT KLAPPAN COAL PROPERTY MAP SHEET O

GEOLOGY

PREPARED BY: G. SEVE
APPROVED BY: B.P.F.

DRAWING No. KPN-82-015
DATE: NOV. '82

128°51' 57" W
57°19' 23" N

128°51' 57" W
57°19' 23" N

LEGEND

- BUILDING
- ROAD, HARD SURFACE
- LOOSE SURFACE
- CART TRACK
- TRAIL
- RAILROAD BED
- RIVER
- STREAM, DEFINITE
- APPROXIMATE
- SPLIT
- LAKE
- WATER LEVEL
- SWAMP
- BEAVER DAM
- TREE LINE
- CUT LINE
- CONTOURS, INDEX
- INTERMEDIATE
- DEPRESSION
- APPROXIMATE
- SPOT ELEVATION
- FIELD CONTROL POINT
- COAL LICENCE

NOTES

CONTOUR INTERVAL 10 METERS

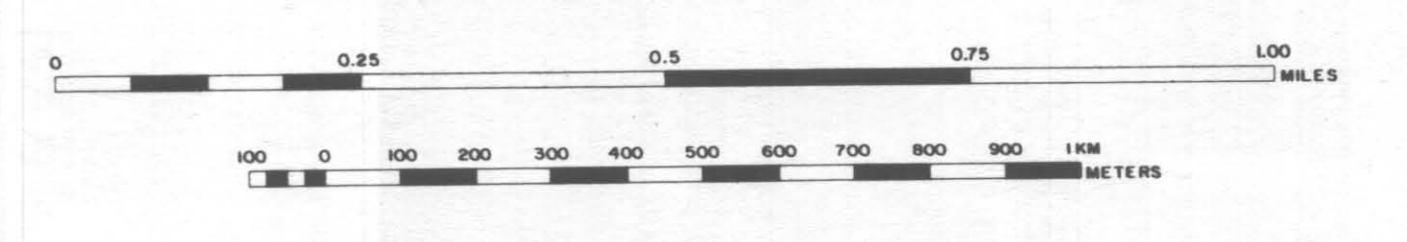
SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

RAILROAD BED LOCATION BASED ON DATA SUPPLIED BY B.C. RAIL.

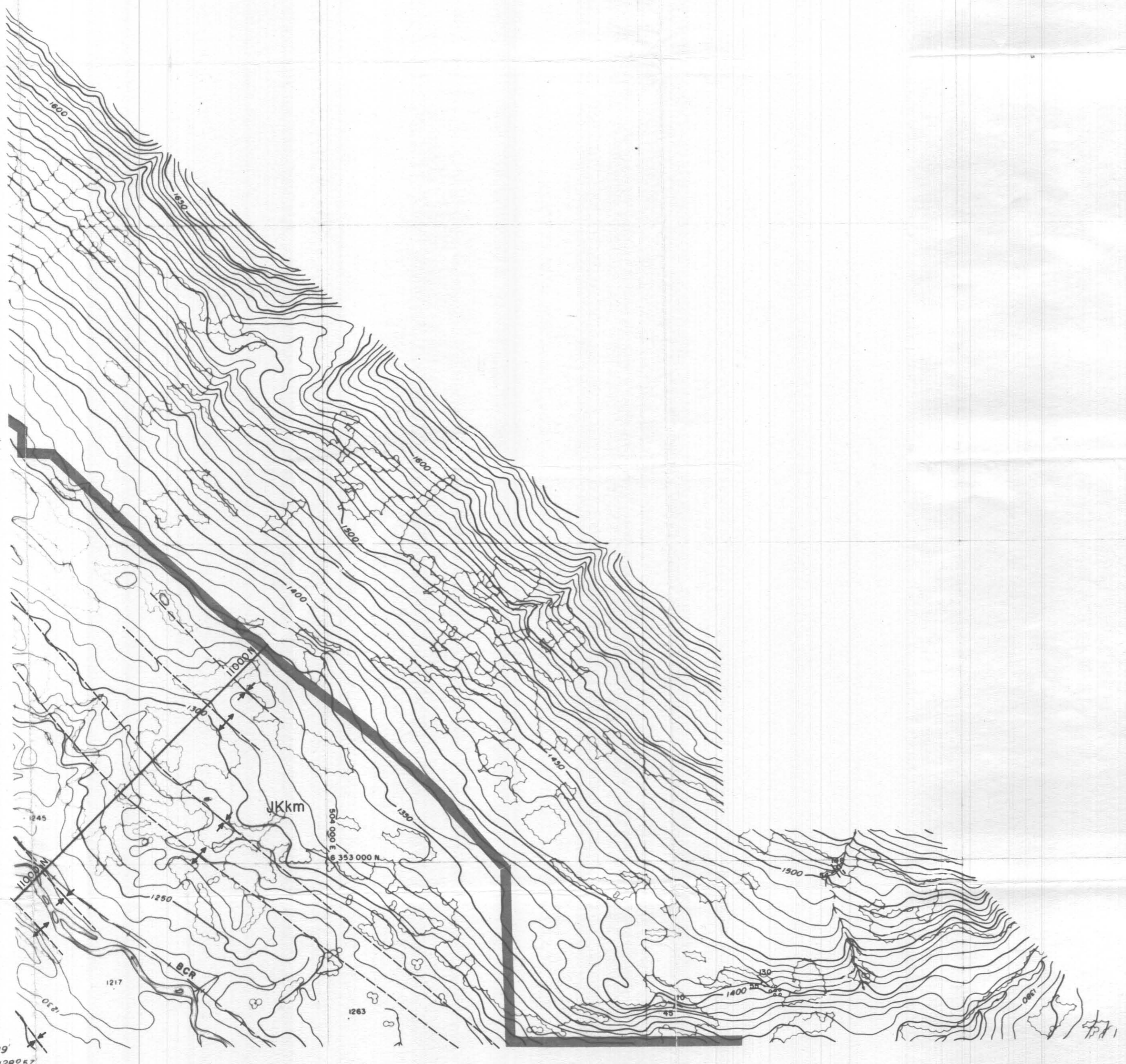
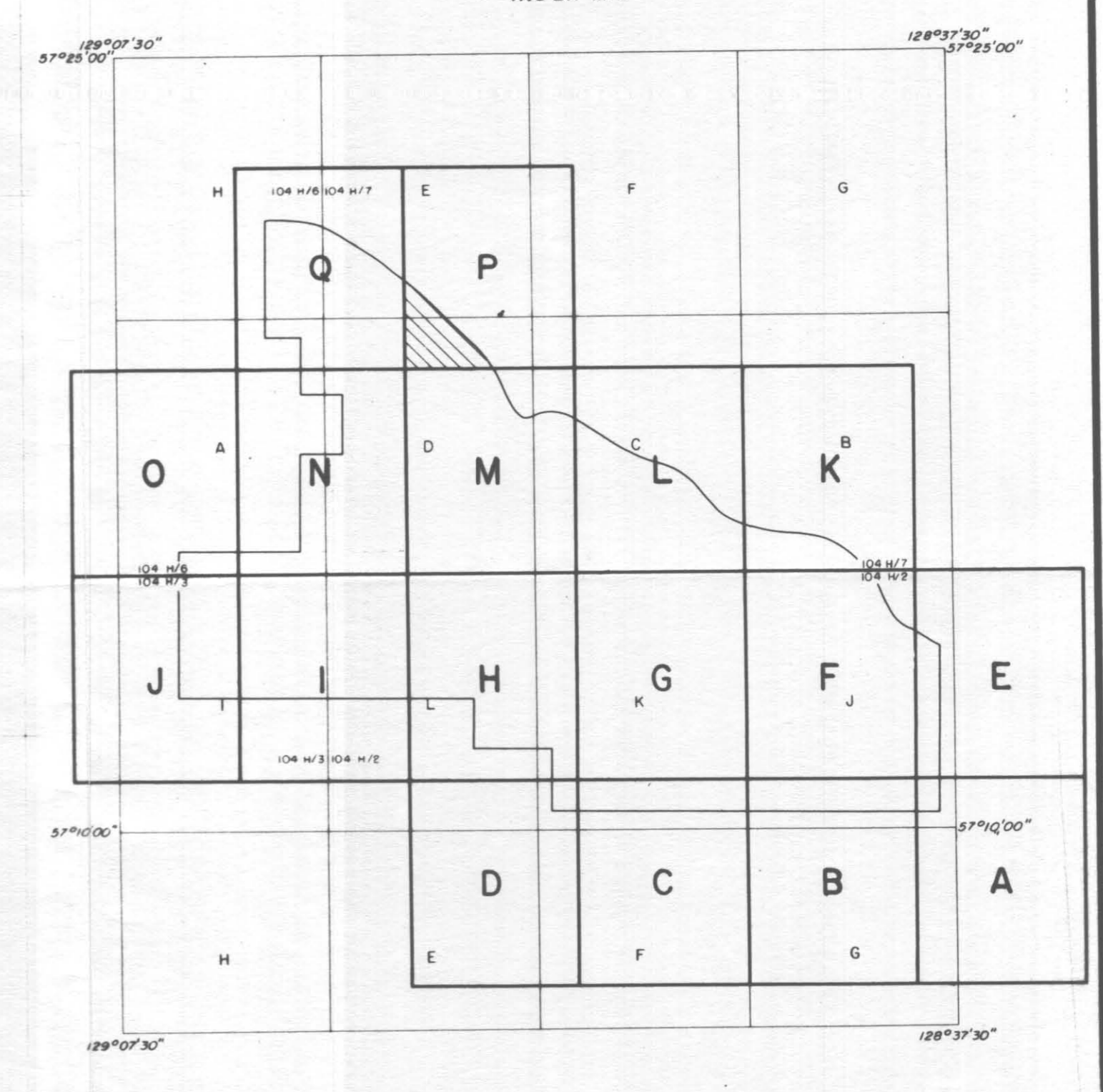
COMPILED BY WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD McLELLAN LTD., FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67 AT A SCALE OF 1:60,000 (APPROXIMATE).



SCALE 1:10,000



MT. KLAPPAN AREA INDEX MAP



LEGEND

- LICENCE BOUNDARY
- GEOLOGICAL CONTACT (INFERRED)
- COAL SEAM (OUTCROP, INFERRED)
- ANTICLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
- SYNCLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
- OVERTURNED ANTICLINE (DEFINED, APPROXIMATE)
- OVERTURNED SYNCLINE (DEFINED, APPROXIMATE)
- BEDDING (HORIZONTAL, INCLINED, OVERTURNED, VERTICAL)
- THRUST FAULT (DEFINED, APPROXIMATE, INFERRED) TEETH INDICATE UPTHROW SIDE
- FAULT (DEFINED, APPROXIMATE, INFERRED) SOLID CIRCLE INDICATES DOWNTHROWN SIDE
- TRENCH LOCATION
- MEASURED SECTION LOCATION
- CROSS-SECTION LOCATION
- DIAMOND DRILLHOLE LOCATION (VERTICAL, INCLINED WITH SURFACE PROJECTION)

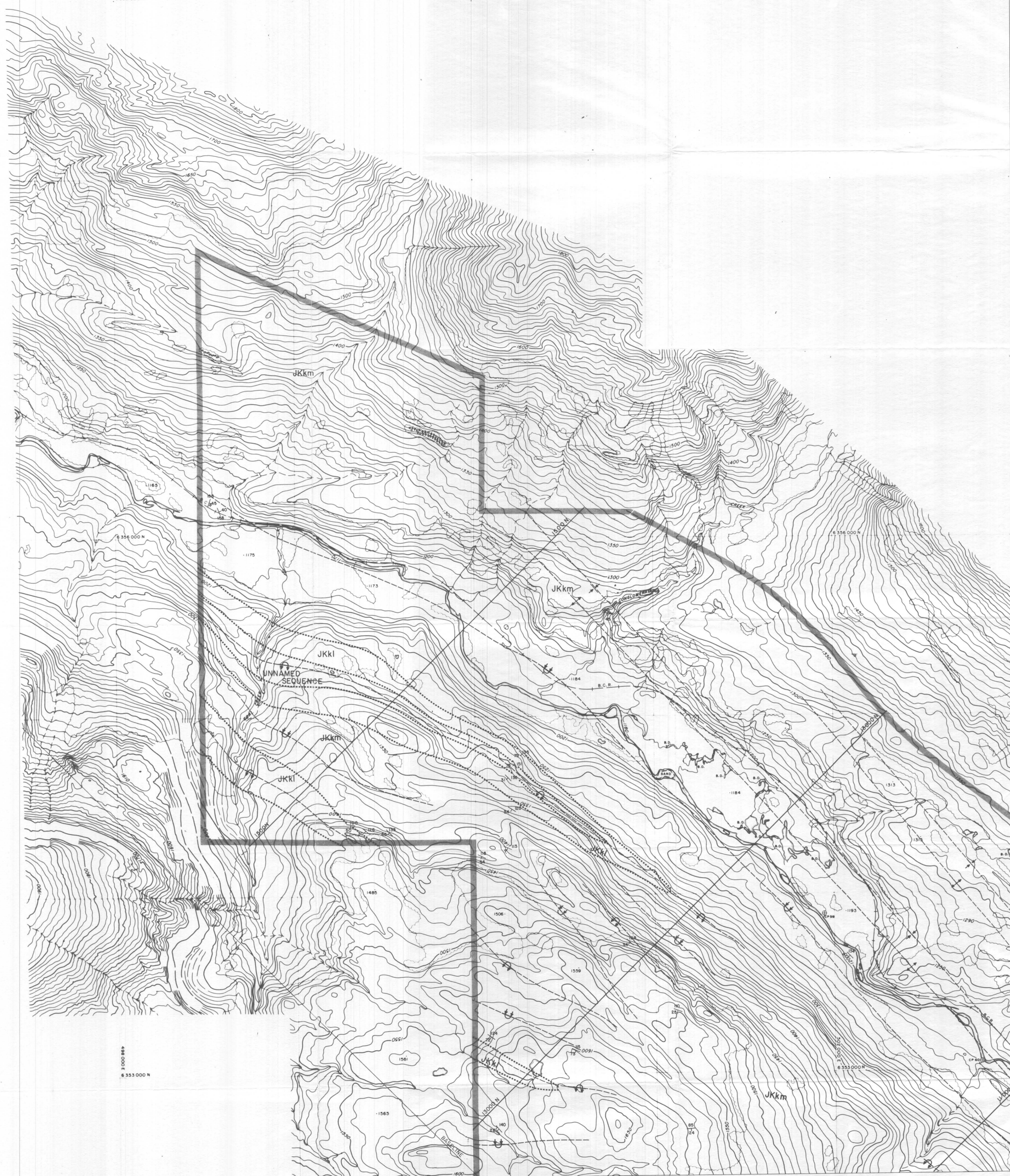
- MALLOCH SEQUENCE**
- JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKki Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

110

GULF CANADA RESOURCES INC.
Coal Division

MOUNT KLAPPAN COAL PROPERTY
MAP SHEET P
GEOLOGY

PREPARED BY: M. DUFORD DRAWING No. KPN-82-016
APPROVED BY: B. P. F. DATE: Nov. 82



LEGEND

BUILDING	[Symbol]
ROAD, HARD SURFACE	[Symbol]
ROAD, LOOSE SURFACE	[Symbol]
CART TRACK	[Symbol]
TRAIL	[Symbol]
RAILROAD BED	[Symbol]
RIVER	[Symbol]
STREAM, DEFINITE	[Symbol]
STREAM, APPROXIMATE	[Symbol]
SPLIT	[Symbol]
LAKE	[Symbol]
WATER LEVEL	[Symbol]
SWAMP	[Symbol]
BEAVER DAM	[Symbol]
TREE LINE	[Symbol]
CUT LINE	[Symbol]
CONTOURS, INDEX	[Symbol]
CONTOURS, INTERMEDIATE	[Symbol]
CONTOURS, APPROXIMATE	[Symbol]
SPOT ELEVATION	[Symbol]
FIELD CONTROL POINT	[Symbol]
COAL LICENCE	[Symbol]

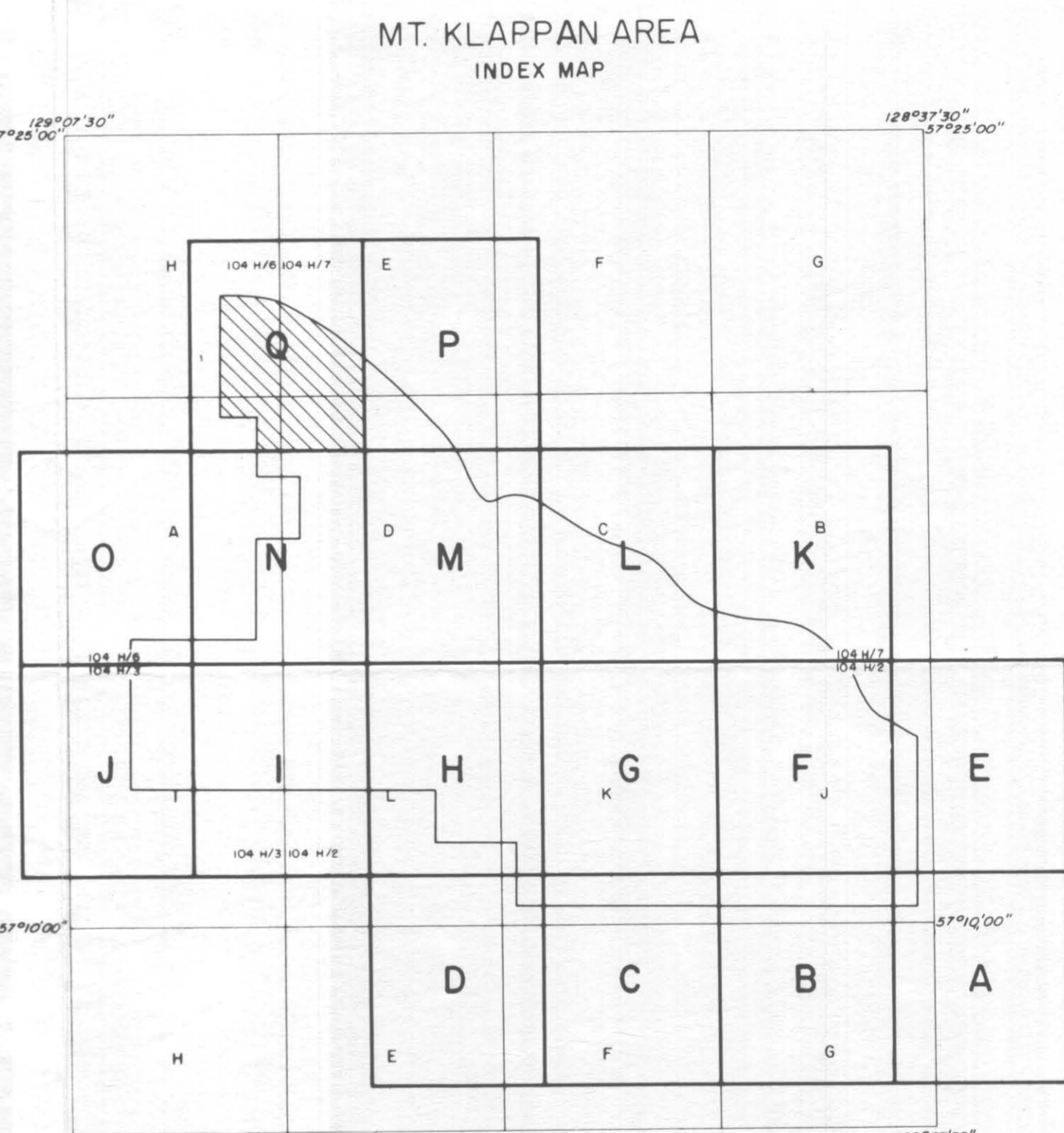
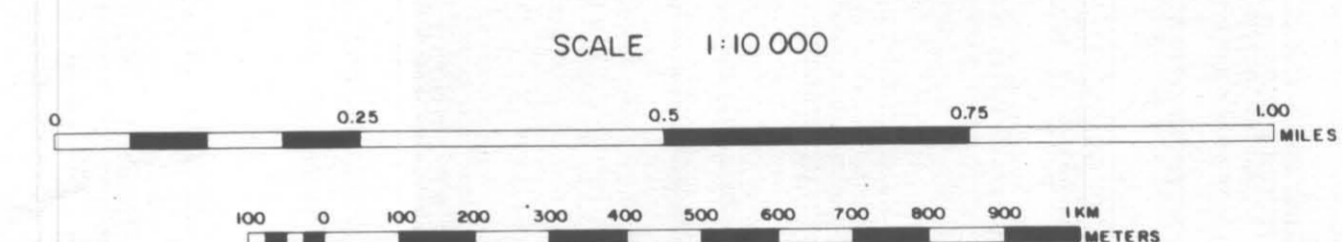
NOTES

CONTOUR INTERVAL 10 METERS

SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

RAILROAD BED LOCATION BASED ON DATA SUPPLIED BY B.C. RAIL.

COMPILED BY WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD MCELLEAN LTD. FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67 AT A SCALE OF 1:60,000 (APPROXIMATE).



MALLOCH SEQUENCE

JKm	Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
-----	--

KLAPPAN SEQUENCE

JKku	Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
JKkm	Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
JKkl	Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

LEGEND

[Symbol]	LICENCE BOUNDARY
[Symbol]	GEOLOGICAL CONTACT (INFERRED)
[Symbol]	COAL SEAM (OUTCROP, INFERRED)
[Symbol]	ANTICLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
[Symbol]	SYNCLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
[Symbol]	OVERTURNED ANTICLINE (DEFINED, APPROXIMATE)
[Symbol]	OVERTURNED SYNCLINE (DEFINED, APPROXIMATE)
[Symbol]	BEDDING (HORIZONTAL, INCLINED, OVERTURNED, VERTICAL)
[Symbol]	THRUST FAULT (DEFINED, APPROXIMATE, INFERRED) TEETH INDICATE UP THRUST SIDE
[Symbol]	FAULT (DEFINED, APPROXIMATE, INFERRED) SOLID CIRCLE INDICATES DOWN THRUST SIDE
[Symbol]	TRENCH LOCATION
[Symbol]	MEASURED SECTION LOCATION
[Symbol]	CROSS-SECTION LOCATION
[Symbol]	DIAMOND DRILLHOLE LOCATION (VERTICAL, INCLINED WITH SURFACE PROJECTION)

110

Ce. Mt. Klappan 80/29

GULF CANADA RESOURCES INC.

Coal Division

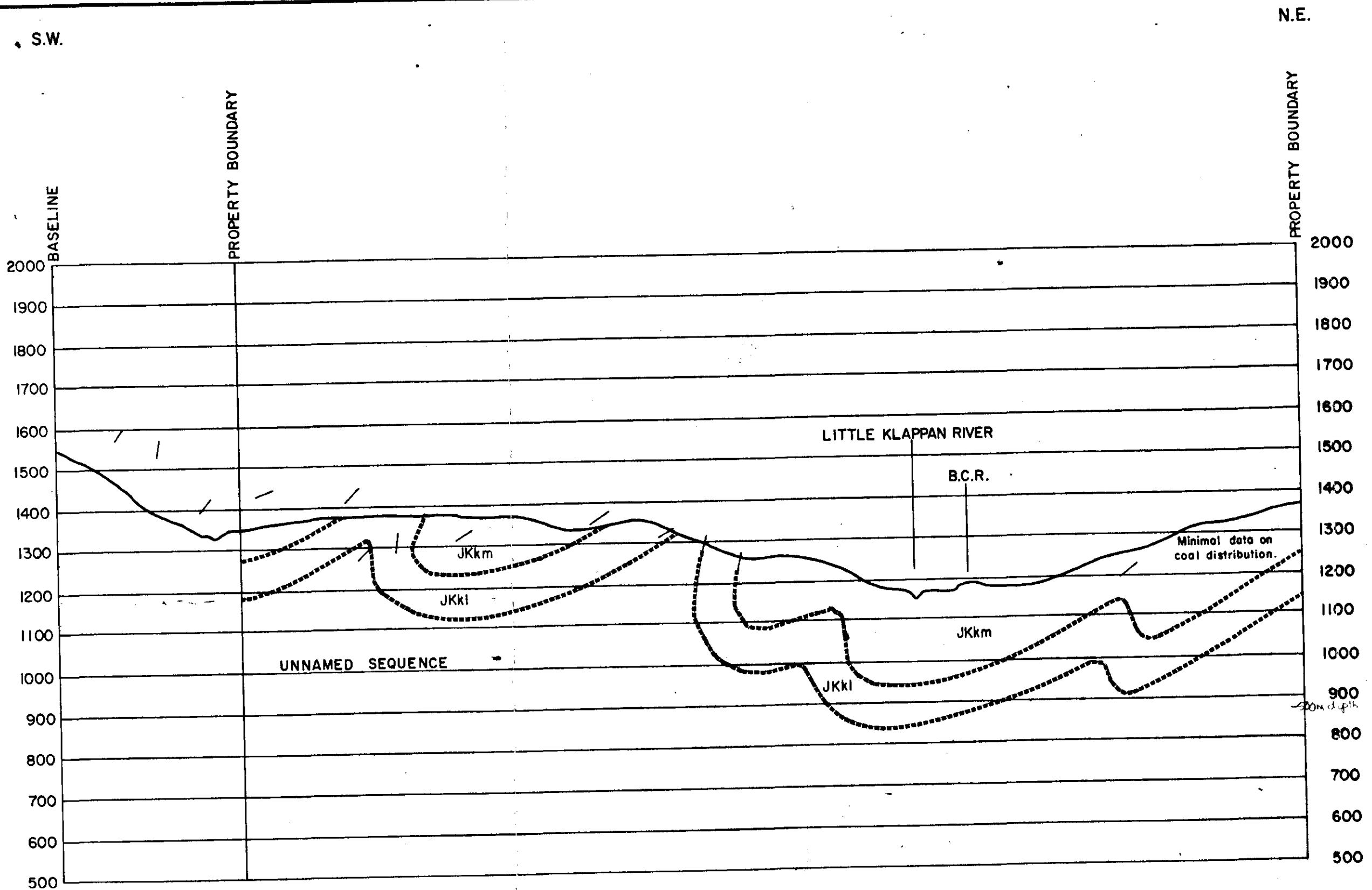
CALGARY ALBERTA

MOUNT KLAPPAN COAL PROPERTY

MAP SHEET Q

GEOLOGY

PREPARED BY: E. SWANBERGSON	DRAWING No. KPN-82-017
APPROVED BY: B.P.F.	DATE: Nov. 82



MALLOCH SEQUENCE

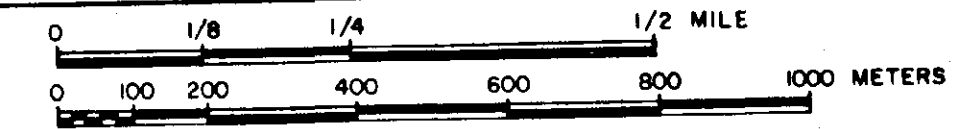
JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.

KLAPPAN SEQUENCE

JKku Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.

JKkm Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.

JKki Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.



Legend

- GEOLOGICAL CONTACT (INFERRED)
- - - - COAL SEAM TRACE (DEFINED, APPROX.)
- ||——— FAULT TRACE (DEFINED, APPROX., INFERRED)
- ooooooo ooo ooo ooo o o o o CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
- ATTITUDE CONTROL POINT
- DDH 82001 DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

GE. MT. KLAPPAN 82(2)

GULF CANADA RESOURCES INC.
Coal Division

CALGARY ALBERTA

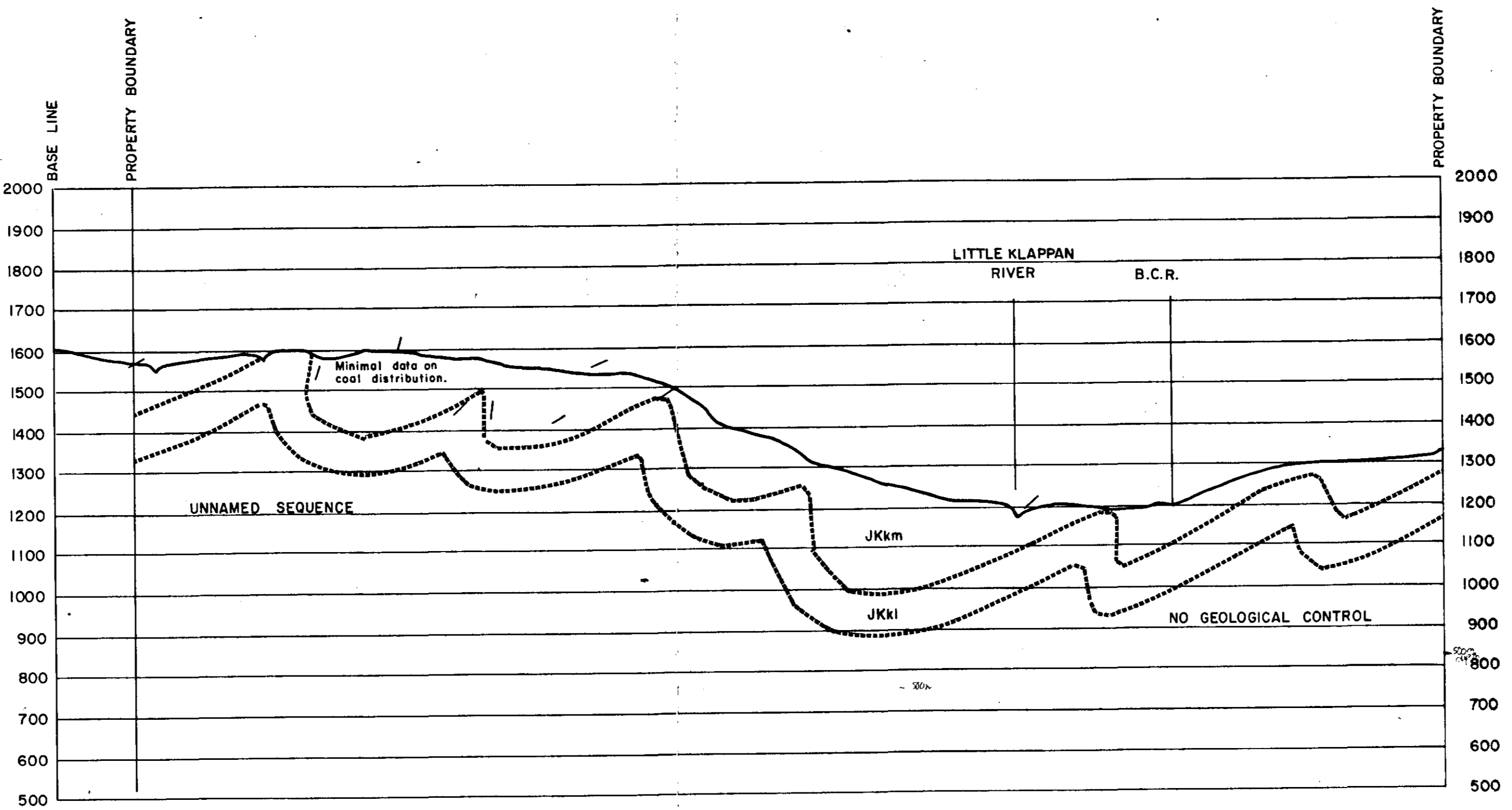
Northwestern British Columbia
MT. KLAPPAN COAL PROPERTY **110**

GEOLOGICAL CROSS-SECTION
1500N (EAST-WEST)

PREPARED BY: E. SWANBERGSON SCALE 1:10,000
APPROVED BY: B.P.F. DATE: SEPT. '82 DRAWING No. KPN-82-018

SW

NE



MALLOCH SEQUENCE

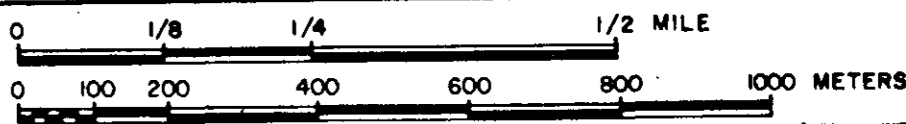
JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.

KLAPPAN SEQUENCE

JKku Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.

JKkm Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.

JKki Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.



Legend

- GEOLOGICAL CONTACT (INFERRED)
- COAL SEAM TRACE (DEFINED, APPROX.)
- FAULT TRACE (DEFINED, APPROX., INFERRED)
- o o o o CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
- ATTITUDE CONTROL POINT
- DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

GULF CANADA RESOURCES INC.

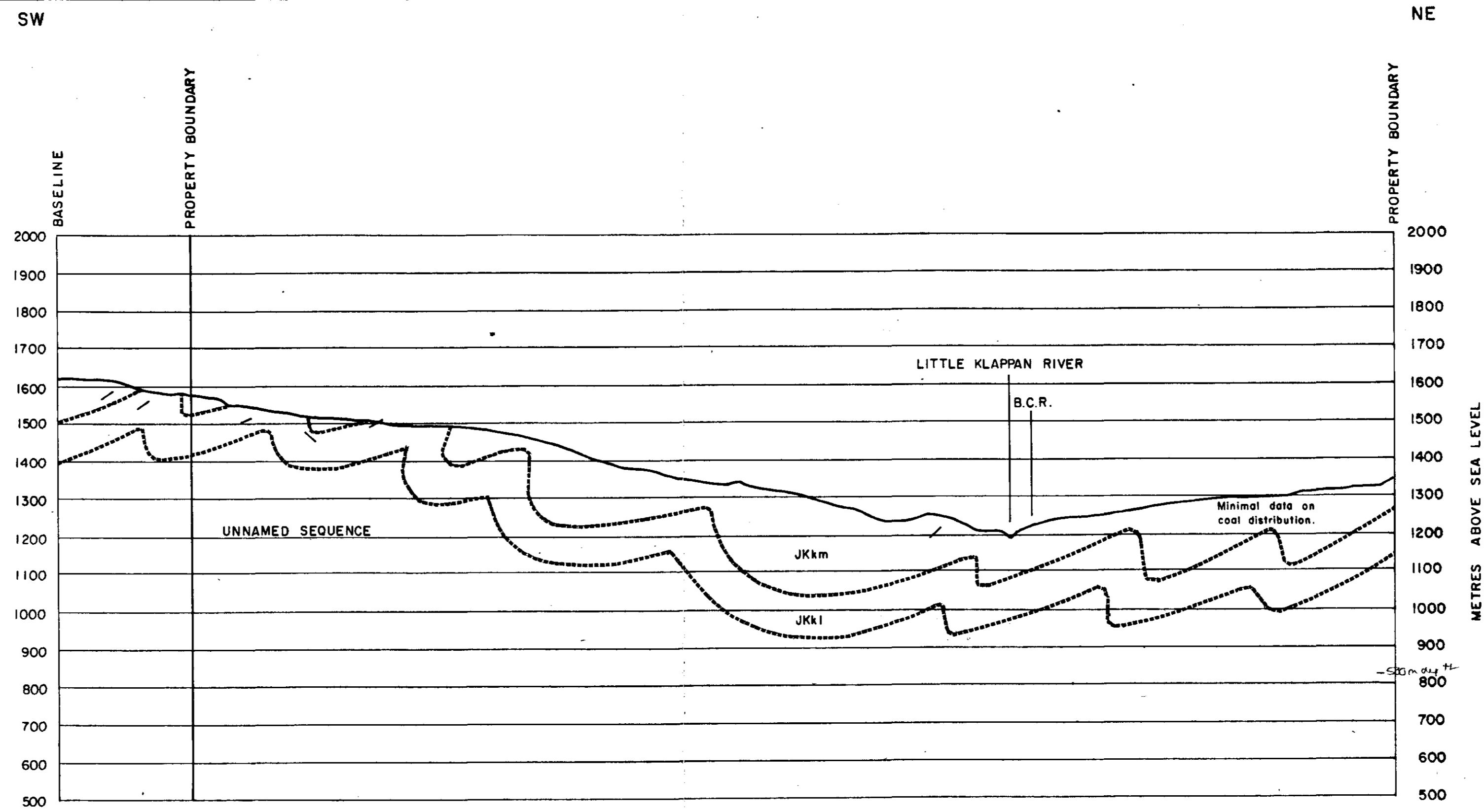
Coal Division **Alberta**



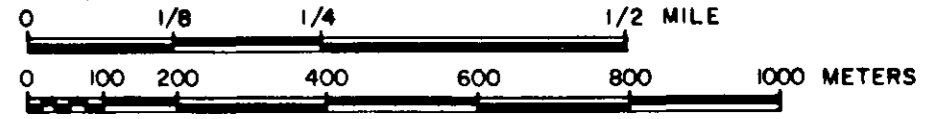
Northwestern British Columbia
MT. KLAPPAN COAL PROPERTY 110

GEOLOGICAL CROSS-SECTION
13,000 N (EAST - WEST)

PREPARED BY: E. SWANBERGSON SCALE 1:10,000
APPROVED BY: B.P.F. DATE: NOV. 82 DRAWING No. KPN-82-019



- MALLOCH SEQUENCE**
- JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKki Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.



- Legend**
- GEOLOGICAL CONTACT (INFERRED)
 - COAL SEAM TRACE (DEFINED, APPROX.)
 - > FAULT TRACE (DEFINED, APPROX., INFERRED)
 - o o o o o CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - ▲ ATTITUDE CONTROL POINT
 - DDH 82001 DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

GE-MT KLAPPAN 80/2A

GULF CANADA RESOURCES INC.
Coal Division

CALGARY ALBERTA

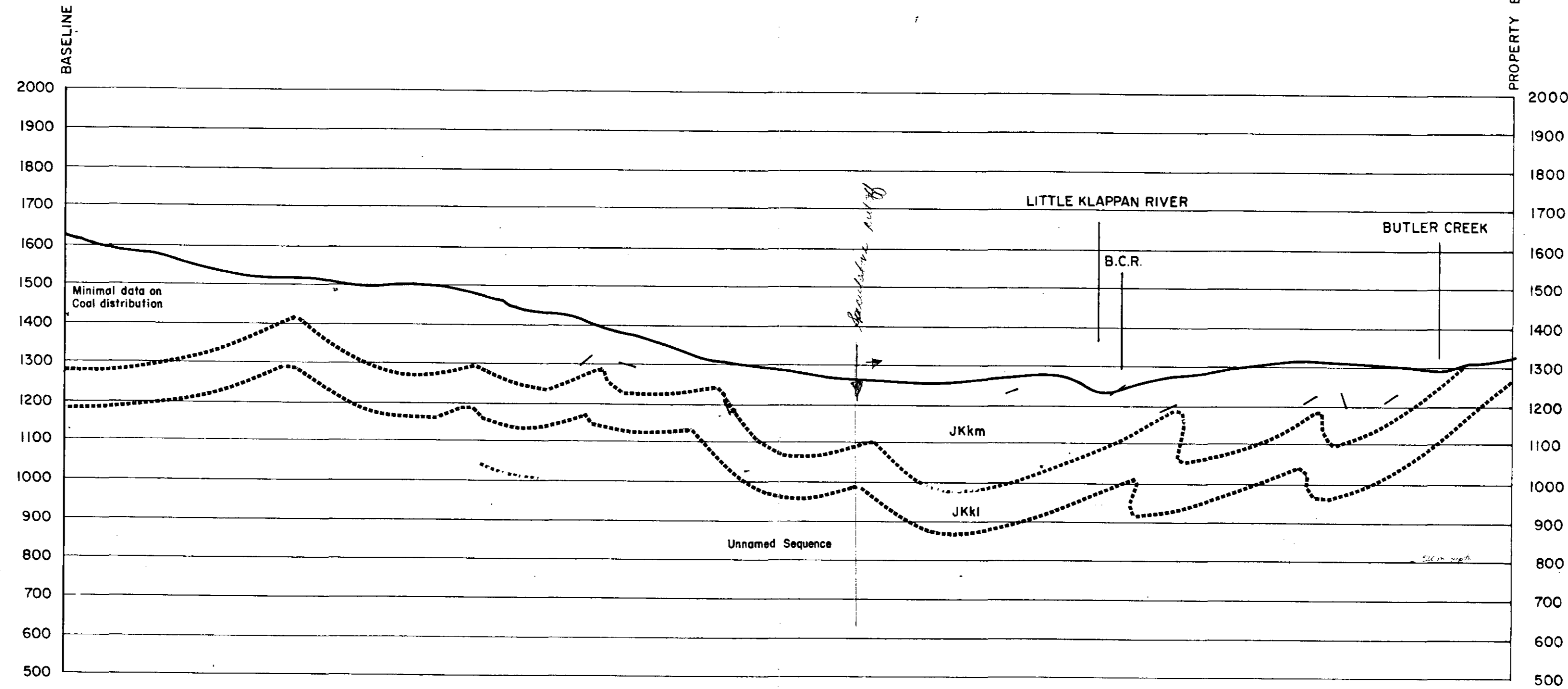
Northwestern British Columbia
MT. KLAPPAN COAL PROPERTY 110

GEOLOGICAL CROSS-SECTION
11000N (EAST - WEST)

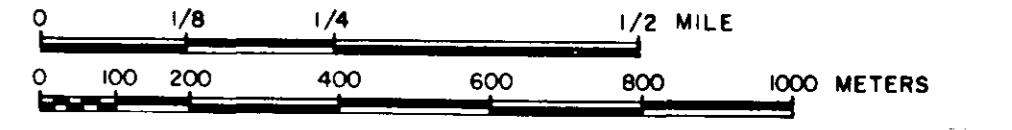
PREPARED BY: E. SWANBERGSON SCALE 1:10,000
APPROVED BY: B. P. F. DATE: NOV. / 82 DRAWING No. KPN-82-020

SW

NE



- MALLOCH SEQUENCE**
- JKm** Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku** Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm** Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKki** Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.



- Legend**
- GEOLOGICAL CONTACT (INFERRED)
 - - - - COAL SEAM TRACE (DEFINED, APPROX.)
 - - - -> FAULT TRACE (DEFINED, APPROX., INFERRED)
 - oooooo COGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - ▲ ATTITUDE CONTROL POINT
 - ▲ DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

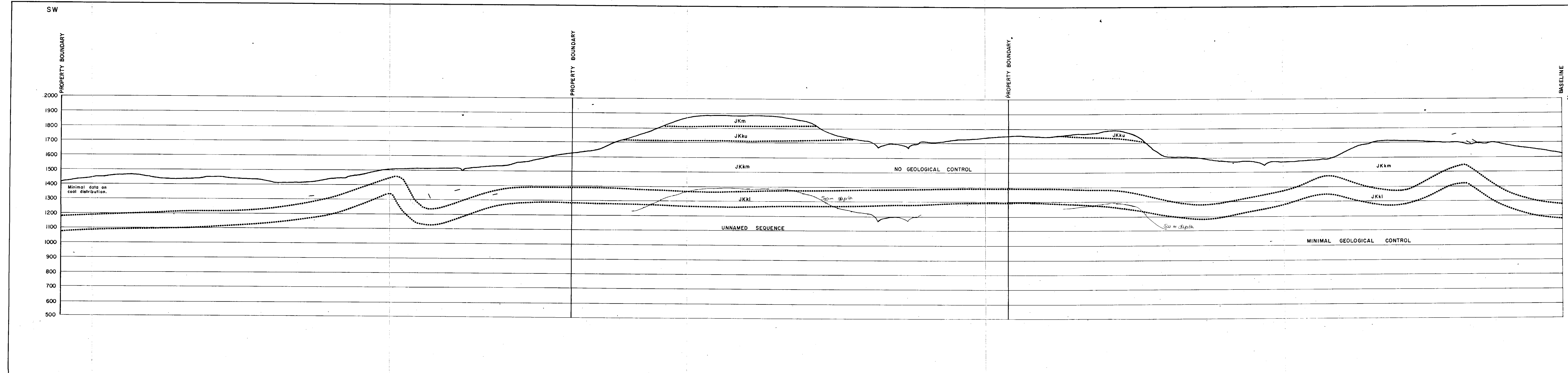
GULF CANADA RESOURCES INC.
Coal Division

CALGARY ALBERTA

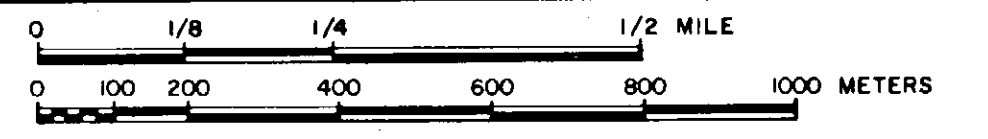
Northwestern British Columbia
MT. KLAPPAN COAL PROPERTY 110

GEOLOGICAL CROSS-SECTION
9000N (EAST)

PREPARED BY: E. SWANBERGSON	SCALE 1: 10,000
APPROVED BY: B. P. F.	DATE: NOV. / 82 DRAWING No. KPN-82-021



- MALLOCH SEQUENCE**
- JKm** Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku** Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm** Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKki** Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.



Legend

- GEOLOGICAL CONTACT (INFERRED)
- - - - COAL SEAM TRACE (DEFINED, APPROX.)
- ====> FAULT TRACE (DEFINED, APPROX., INFERRED)
- o-o-o-o-o CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
- x- ATTITUDE CONTROL POINT
- DDH 82001 DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

GULF CANADA RESOURCES INC.
Coal Division



CALGARY ALBERTA

Northwestern British Columbia
MT. KLAPPAN COAL PROPERTY

119

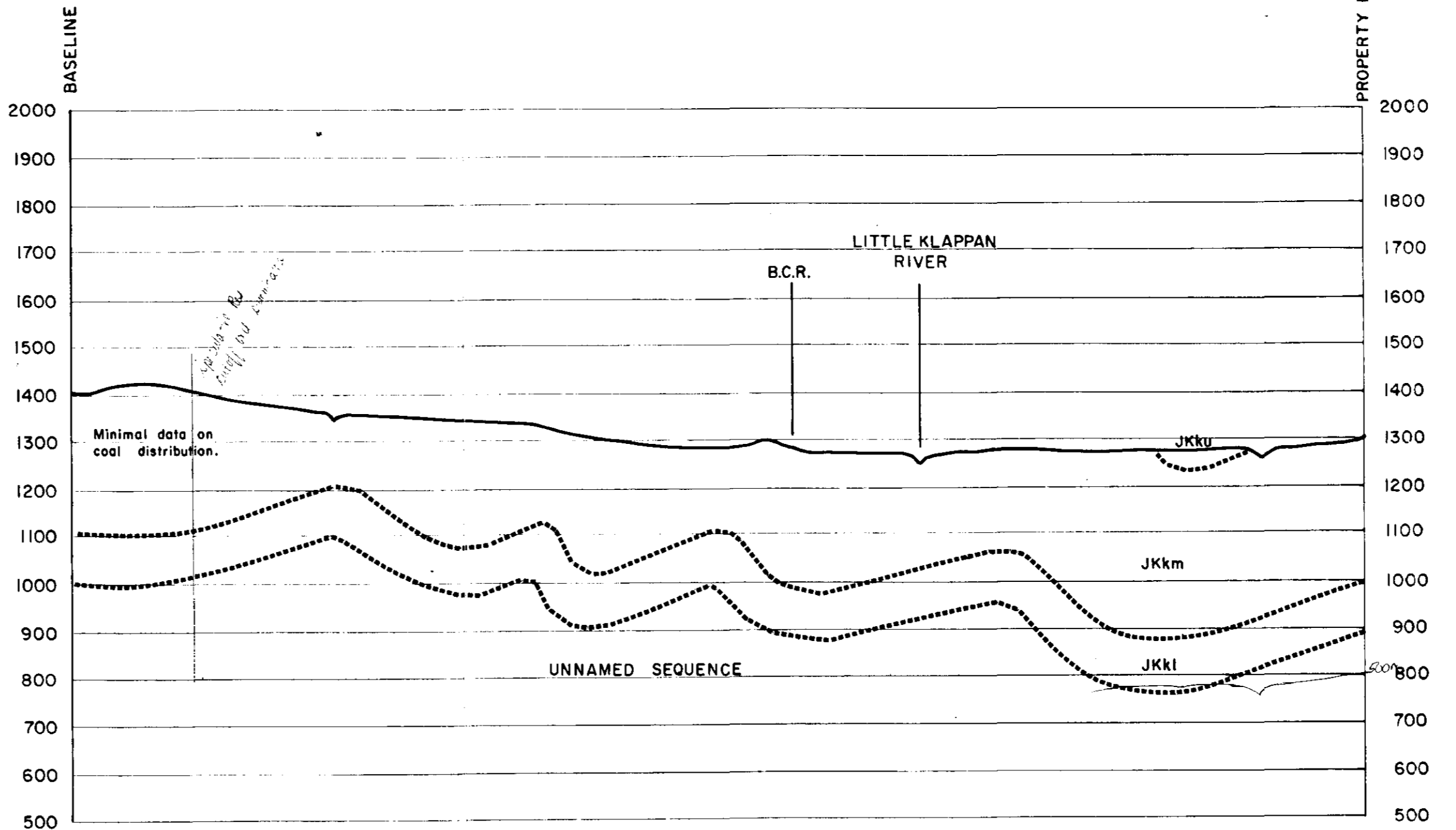
GEOLOGICAL CROSS-SECTION
900N (WEST)

PREPARED BY: E. SWANBERGSON
APPROVED BY: B.R.F.

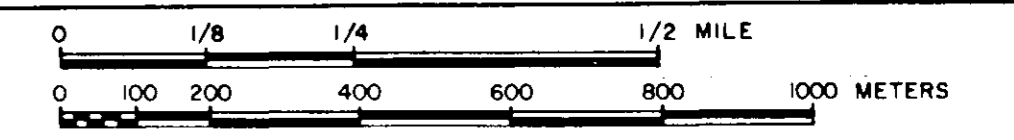
SCALE 1:10,000
DATE: NOV. / 82
DRAWING No. KPN-82-022

S.W.

N.E.



- MALLOCH SEQUENCE**
- JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKki Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

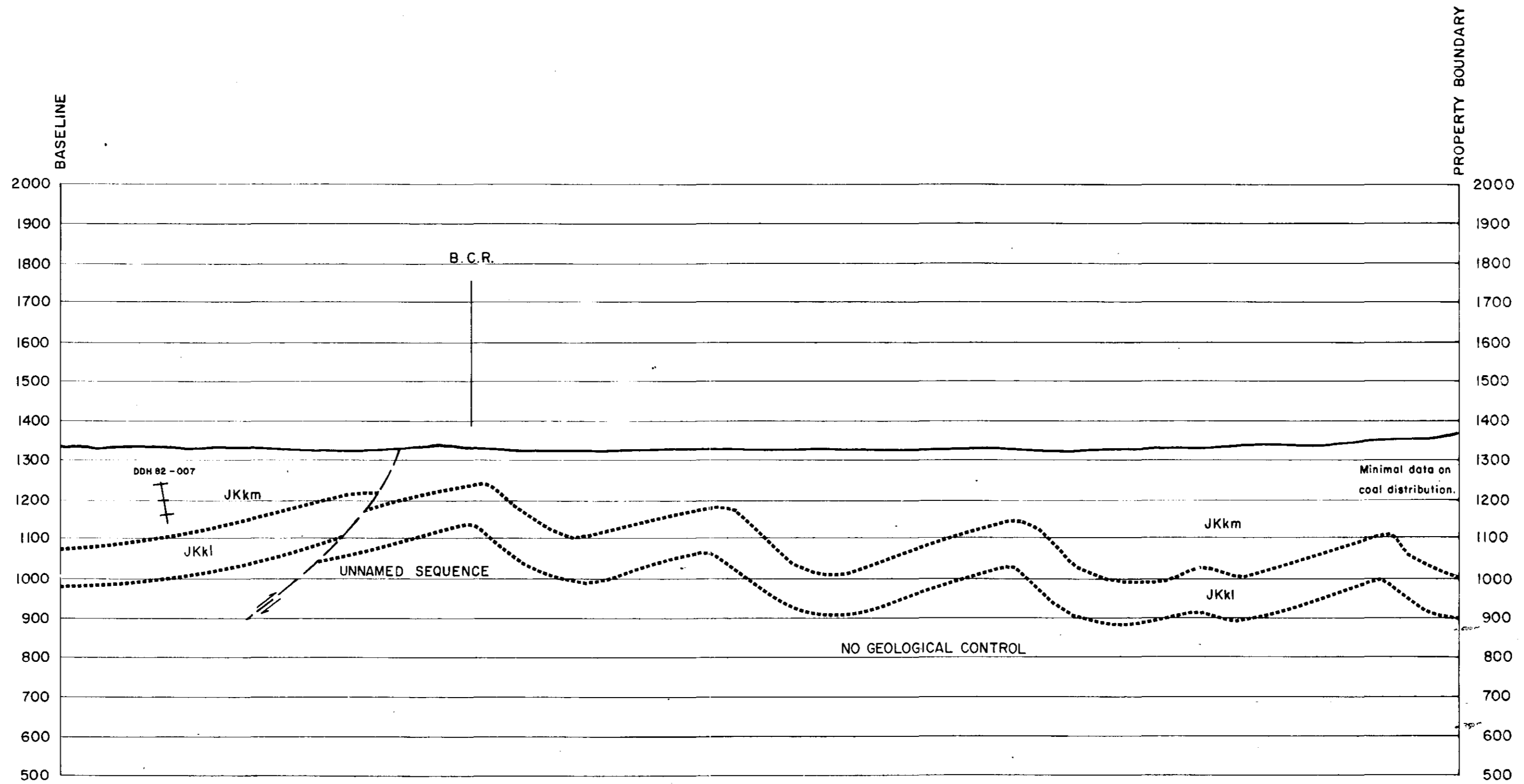


- Legend**
- GEOLOGICAL CONTACT (INFERRED)
 - - - - - COAL SEAM TRACE (DEFINED, APPROX.)
 - - - - -> FAULT TRACE (DEFINED, APPROX., INFERRED)
 - o o o o o CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - | ATTITUDE CONTROL POINT
 - DDH 82001 DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

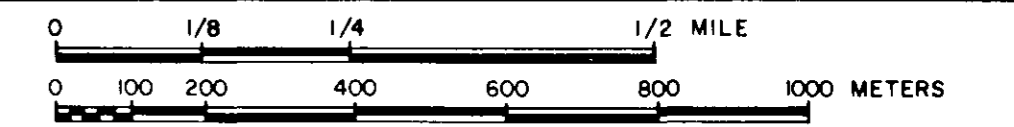
GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	<h1>110</h1>
Northwestern British Columbia		
MT. KLAPPAN COAL PROPERTY		
GEOLOGICAL CROSS-SECTION		
7000N (EAST)		
PREPARED BY: E. SWANBERGSON	SCALE 1: 10,000	
APPROVED BY: B.P.F.	DATE:	DRAWING No. KPN-82-023

S.W.

N.E.



- MALLOCH SEQUENCE**
- JKm** Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku** Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm** Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKkl** Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.



Legend

- GEOLOGICAL CONTACT (INFERRED)
- COAL SEAM TRACE (DEFINED, APPROX.)
- > FAULT TRACE (DEFINED, APPROX., INFERRED)
- o o o o o CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
- ATTITUDE CONTROL POINT
- DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

Northwestern British Columbia
MT. KLAPPAN COAL PROPERTY

GEOLOGICAL CROSS-SECTION
5000 N (EAST)

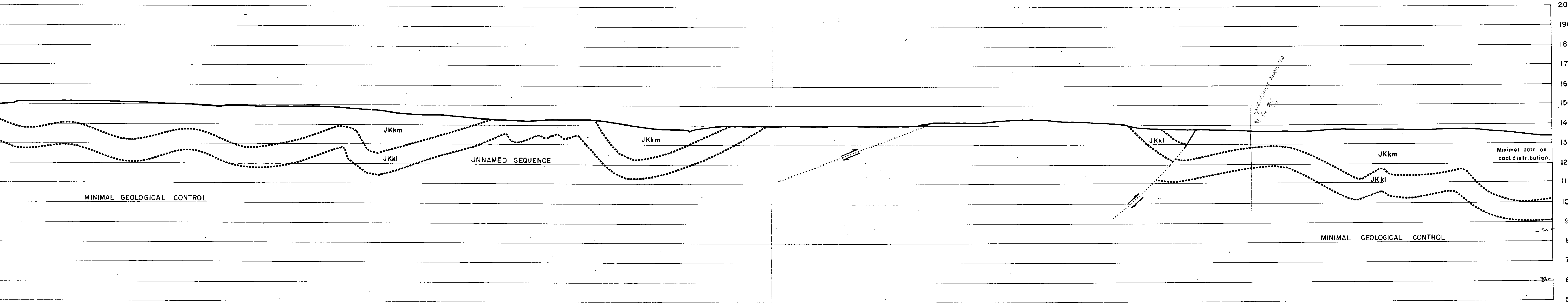
110

PREPARED BY: E. SWANBERGSON SCALE 1:10,000
APPROVED BY: B.P.F. DATE: SEPT., 82 DRAWING No. KPN-82-025

SW

PROPERTY BOUNDARY

2000
1900
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1700
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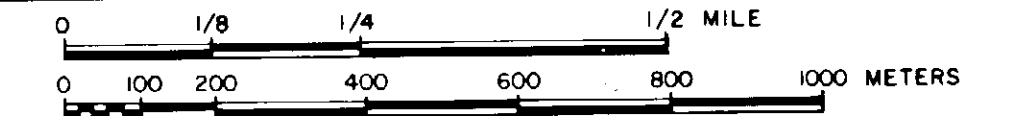
NE

BASELINE

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METRES ABOVE SEA LEVEL

- MALLOCH SEQUENCE**
 - JKm** Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
 - JKku** Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm** Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKkl** Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.



Legend

- GEOLOGICAL CONTACT (INFERRED)
- - - - COAL SEAM TRACE (DEFINED, APPROX.)
- - - - FAULT TRACE (DEFINED, APPROX., INFERRED)
- oooooo CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
- ATTITUDE CONTROL POINT
- DDH 82001 DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

GULF CANADA RESOURCES INC.

Coal Division



CALGARY

ALBERTA

Northwestern British Columbia

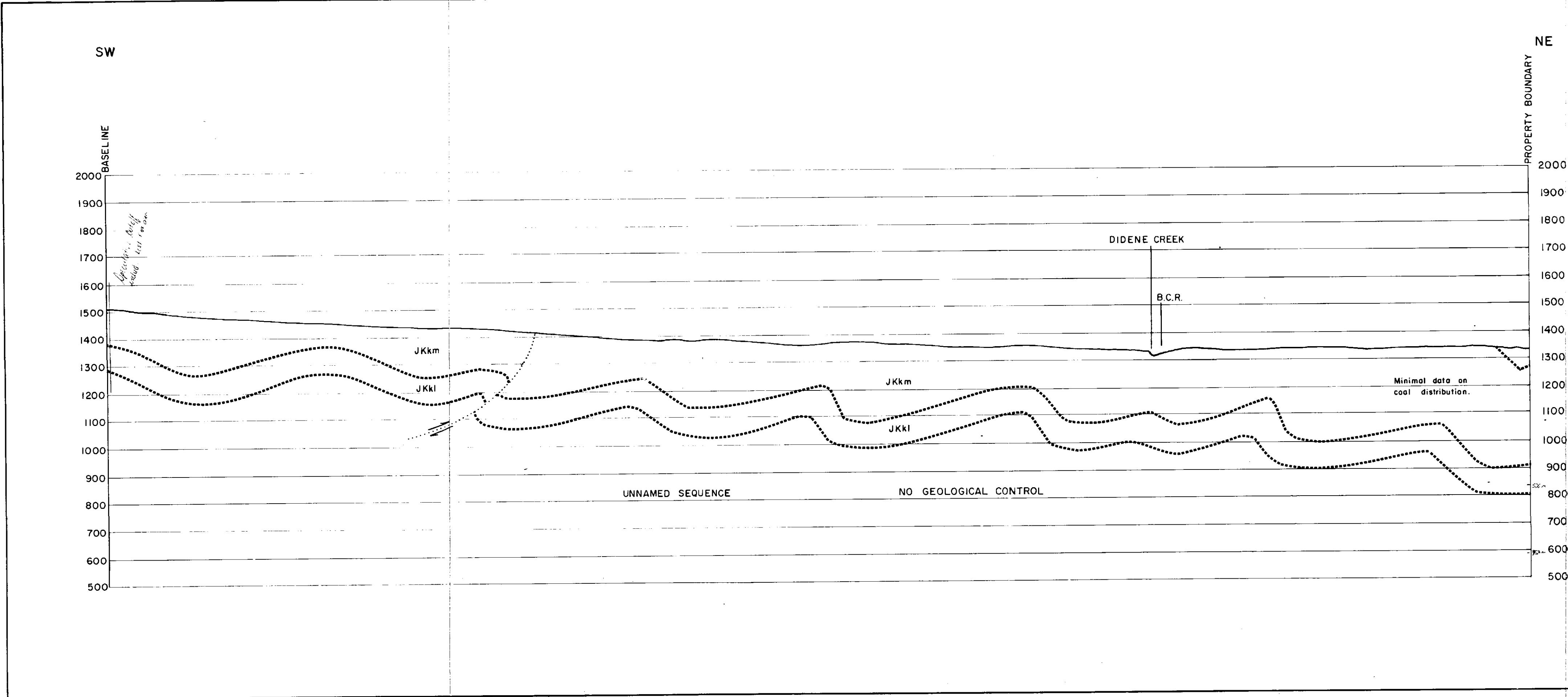
MT. KLAPPAN COAL PROPERTY

110

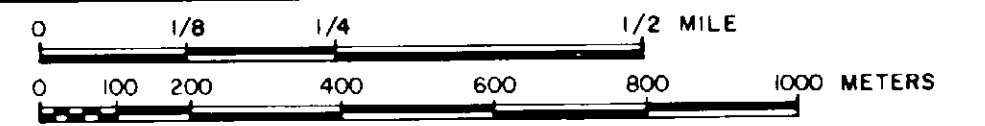
GEOLOGICAL CROSS-SECTION

5000 N (WEST)

PREPARED BY: J. INNIS SCALE 1:10,000
 APPROVED BY: B.P.F. DATE: NOV./82 DRAWING No. KPN-82-026



MALLOCH SEQUENCE	
JKm	Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
KLAPPAN SEQUENCE	
JKku	Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
JKkm	Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
JKki	Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

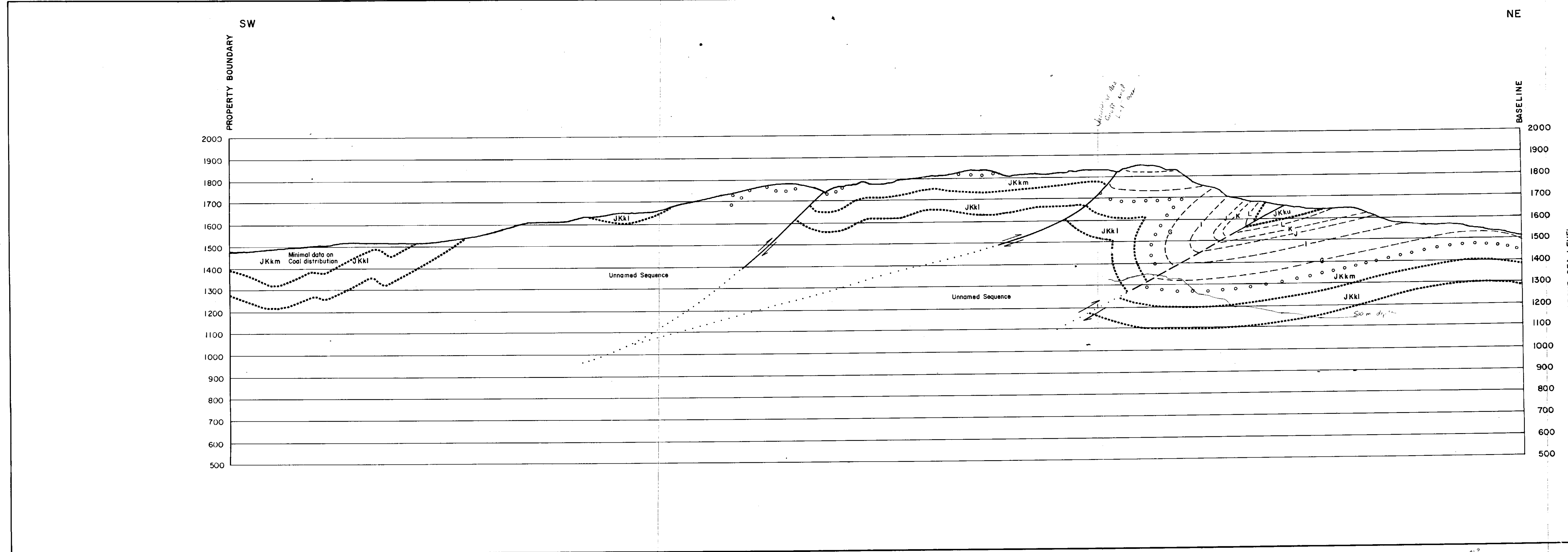


- Legend**
- GEOLOGICAL CONTACT (INFERRED)
 - COAL SEAM TRACE (DEFINED, APPROX.)
 - >--- FAULT TRACE (DEFINED, APPROX., INFERRED)
 - o CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - ▲ ATTITUDE CONTROL POINT
 - ▲ DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

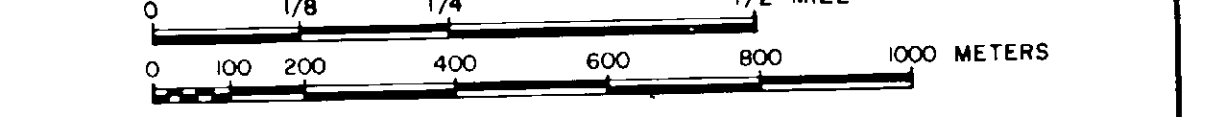
DDH 82001
GR-MT KLAPPAN 322A

GULF CANADA RESOURCES INC.		
CALGARY	Coal Division	
Northwestern British Columbia		
MT. KLAPPAN COAL PROPERTY		
110		
GEOLOGICAL CROSS-SECTION		
3000N (EAST)		

PREPARED BY: J. INNIS	SCALE: 1:10,000
APPROVED BY: B.P.F.	DATE: NOV. 82 DRAWING No. KPN-82-027

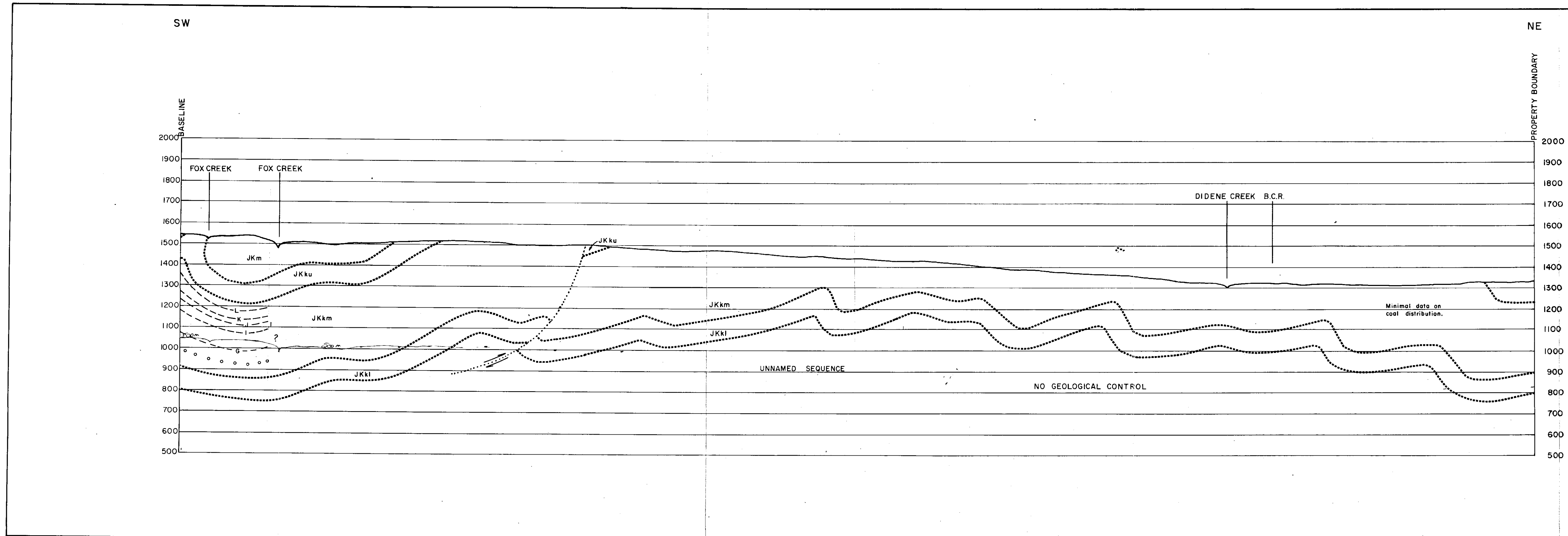


- MALLOCH SEQUENCE**
- JKm** Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku** Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm** Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKkl** Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

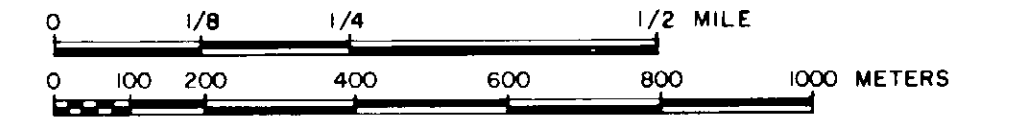


- Legend**
- GEOLOGICAL CONTACT (INFERRED)
 - - - - - COAL SEAM TRACE (DEFINED, APPROX.)
 - - - - - FAULT TRACE (DEFINED, APPROX., INFERRED)
 - o o o o o CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - ATTITUDE CONTROL POINT
 - DDH 82001 DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	
Northwestern British Columbia		
MT. KLAPPAN COAL PROPERTY		110
GEOLOGICAL CROSS-SECTION		
3000N (WEST)		
PREPARED BY: J. INNIS	SCALE 1: 10,000	
APPROVED BY: B.P.F.	DATE: NOV. 82	DRAWING No. KPN-82-028



- MALLOCH SEQUENCE**
- JKm** Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku** Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm** Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKkl** Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.



- Legend**
- GEOLOGICAL CONTACT (INFERRED)
 - COAL SEAM TRACE (DEFINED, APPROX.)
 - > FAULT TRACE (DEFINED, APPROX., INFERRED)
 - o-o-o-o-o CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - ▲ ATTITUDE CONTROL POINT
 - DDH 82001 ▲ DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

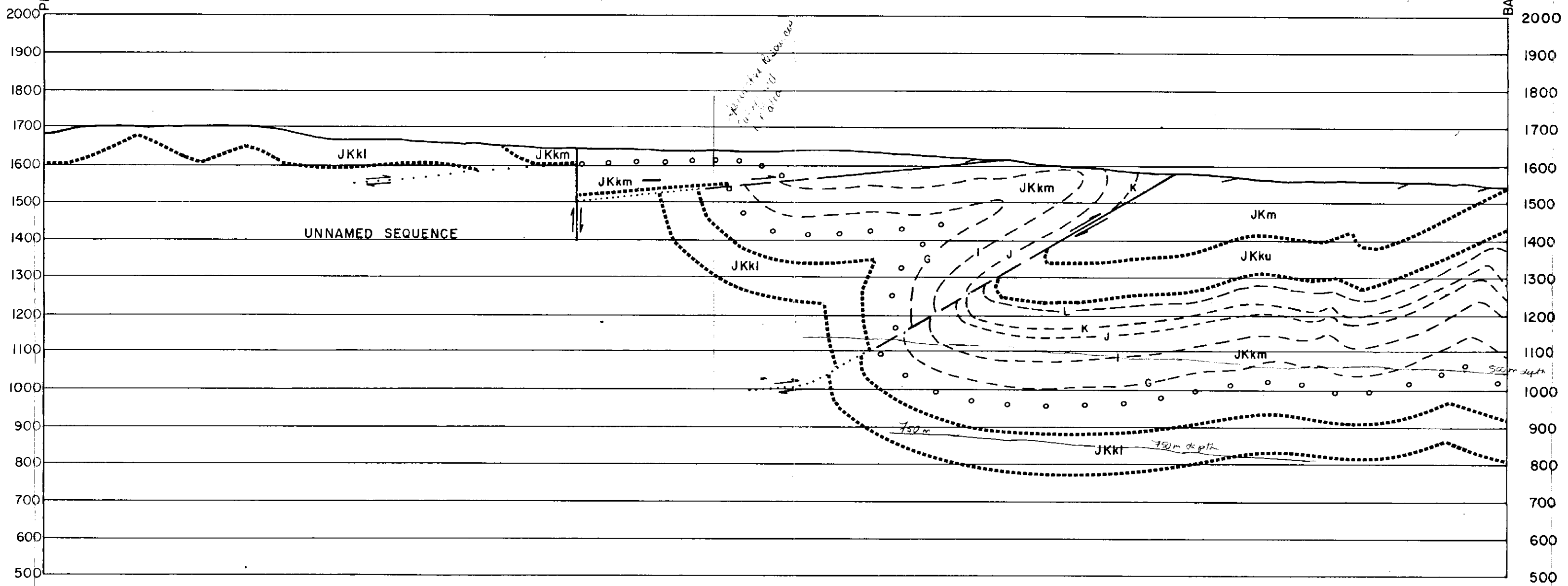
GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	
Northwestern British Columbia		
MT. KLAPPAN COAL PROPERTY		110
GEOLOGICAL CROSS-SECTION		
1000N (EAST)		
PREPARED BY: J. INNIS	SCALE 1:10,000	
APPROVED BY: B.P.F.	DATE: NOV. '82	DRAWING No. KPN-82-029

SW

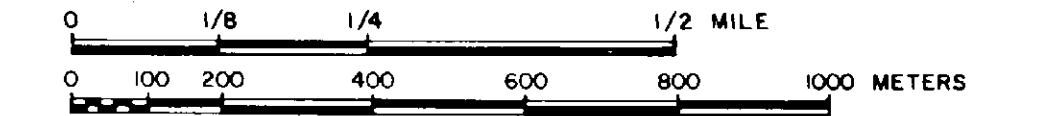
NE

PROPERTY BOUNDARY

BASELINE



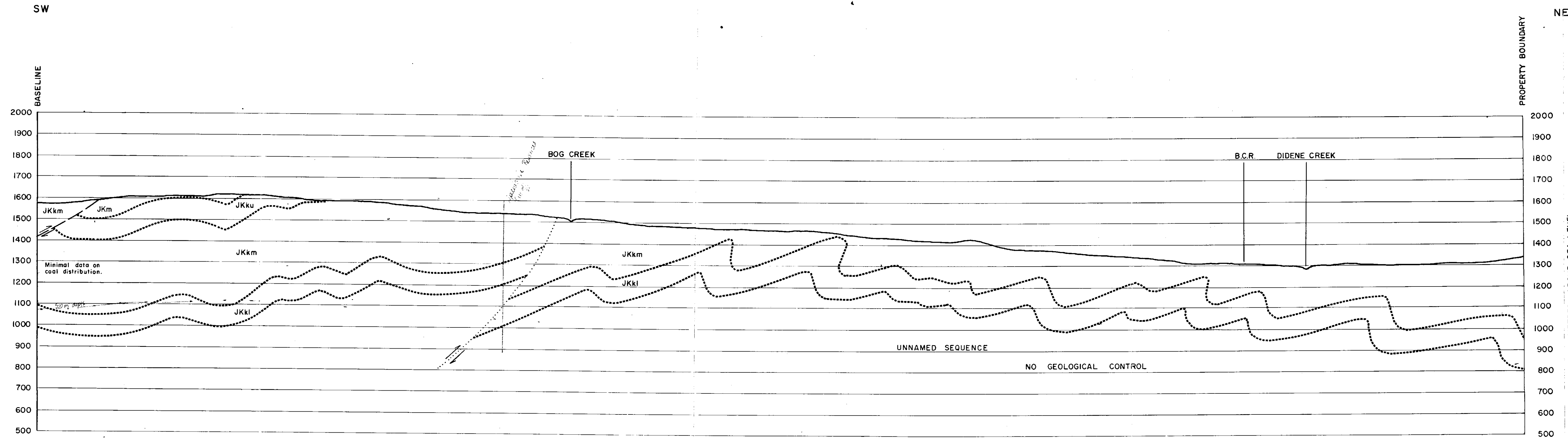
MALLOCH SEQUENCE	
JKm	Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
KLAPPAN SEQUENCE	
JKku	Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
JKkm	Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
JKki	Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.



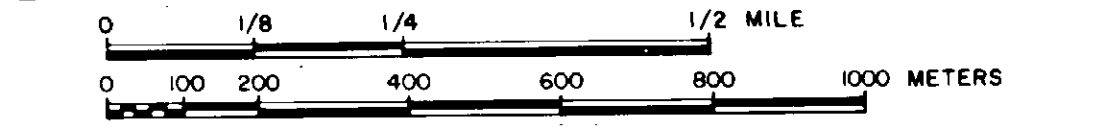
Legend

.....	GEOLOGICAL CONTACT (INFERRED)
-----	COAL SEAM TRACE (DEFINED, APPROX.)
==>-----	FAULT TRACE (DEFINED, APPROX., INFERRED)
oooooo	CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
▲	ATTITUDE CONTROL POINT
▲	DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	
Northwestern British Columbia		
MT. KLAPPAN COAL PROPERTY		
110		
GEOLOGICAL CROSS-SECTION		
1000 N (WEST)		
PREPARED BY: J. INNIS	SCALE 1:10,000	
APPROVED BY: B.P.F.	DATE: NOV., '82	DRAWING No. KPN-82-030

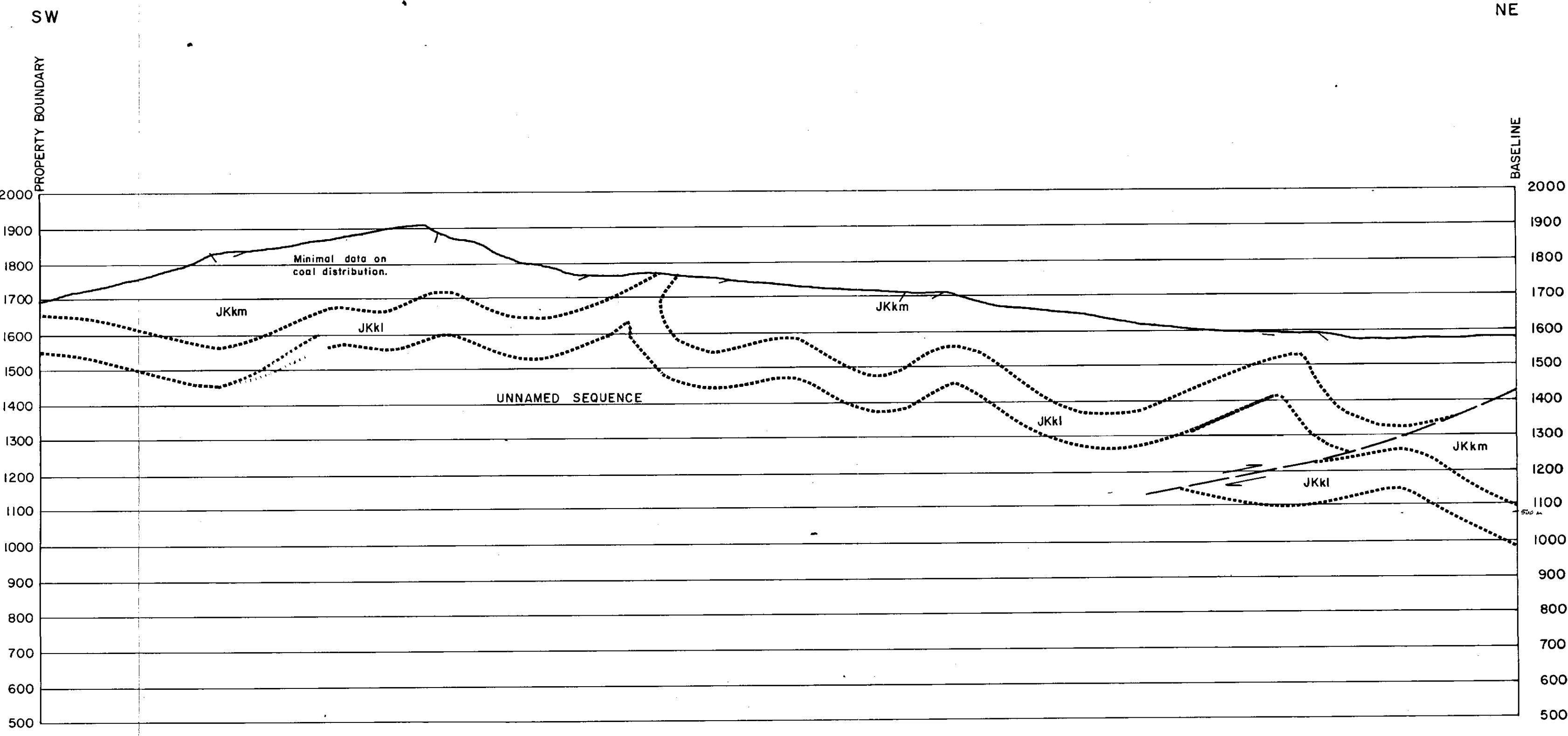


- MALLOCH SEQUENCE**
- JKm** Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku** Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm** Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKkl** Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

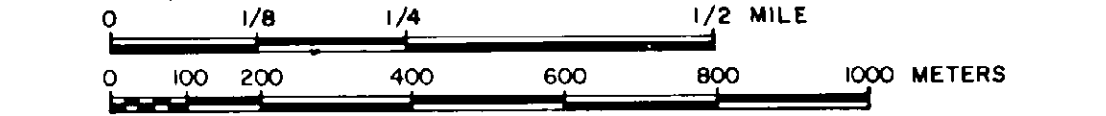


- Legend**
- GEOLOGICAL CONTACT (INFERRED)
 - COAL SEAM TRACE (DEFINED, APPROX.)
 - FAULT TRACE (DEFINED, APPROX., INFERRED)
 - CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - ATTITUDE CONTROL POINT
 - DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

GULF CANADA RESOURCES INC.		
CALGARY	Coal Division	ALBERTA
Northwestern British Columbia		110
MT. KLAPPAN COAL PROPERTY		
GEOLOGICAL CROSS-SECTION 0000 (EAST)		
PREPARED BY: J. INNIS		SCALE: 1:10,000
APPROVED BY: B. P. F.		DATE: NOV., 82 DRAWING No. KPN-82-031

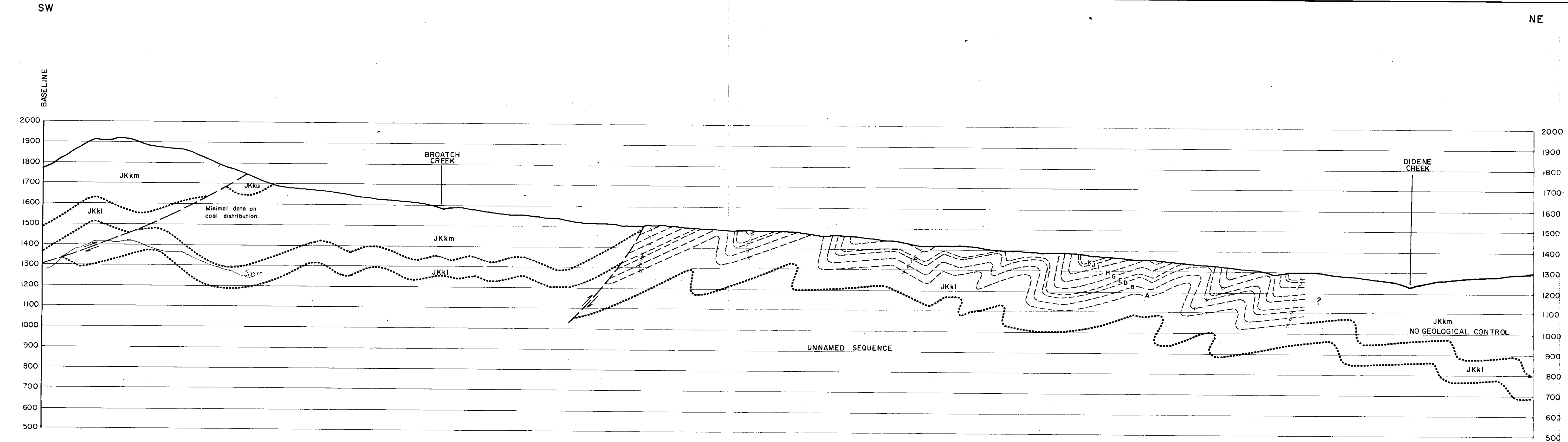


- MALLOCH SEQUENCE**
- JKm** Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku** Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm** Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKkl** Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

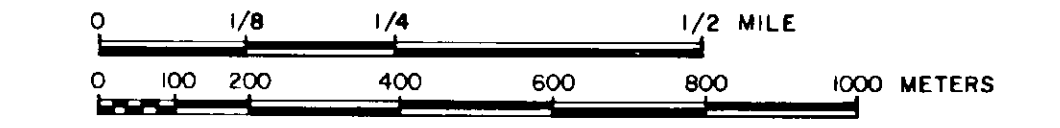


- Legend**
- GEOLOGICAL CONTACT (INFERRED)
 - COAL SEAM TRACE (DEFINED, APPROX.)
 - ==> FAULT TRACE (DEFINED, APPROX., INFERRED)
 - o o o o o o o o o o CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - ATTITUDE CONTROL POINT
 - DOH 82001 DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	
Northwestern British Columbia		
MT. KLAPPAN COAL PROPERTY 110		
GEOLOGICAL CROSS-SECTION		
0000 (WEST)		
PREPARED BY: J. INNIS	SCALE 1: 10,000	
APPROVED BY: B.P.F.	DATE: NOV. 82	DRAWING No. KPN-82-032



MALLOCH SEQUENCE	
JKm	Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
KLAPPAN SEQUENCE	
JKku	Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
JKkm	Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
JKki	Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.



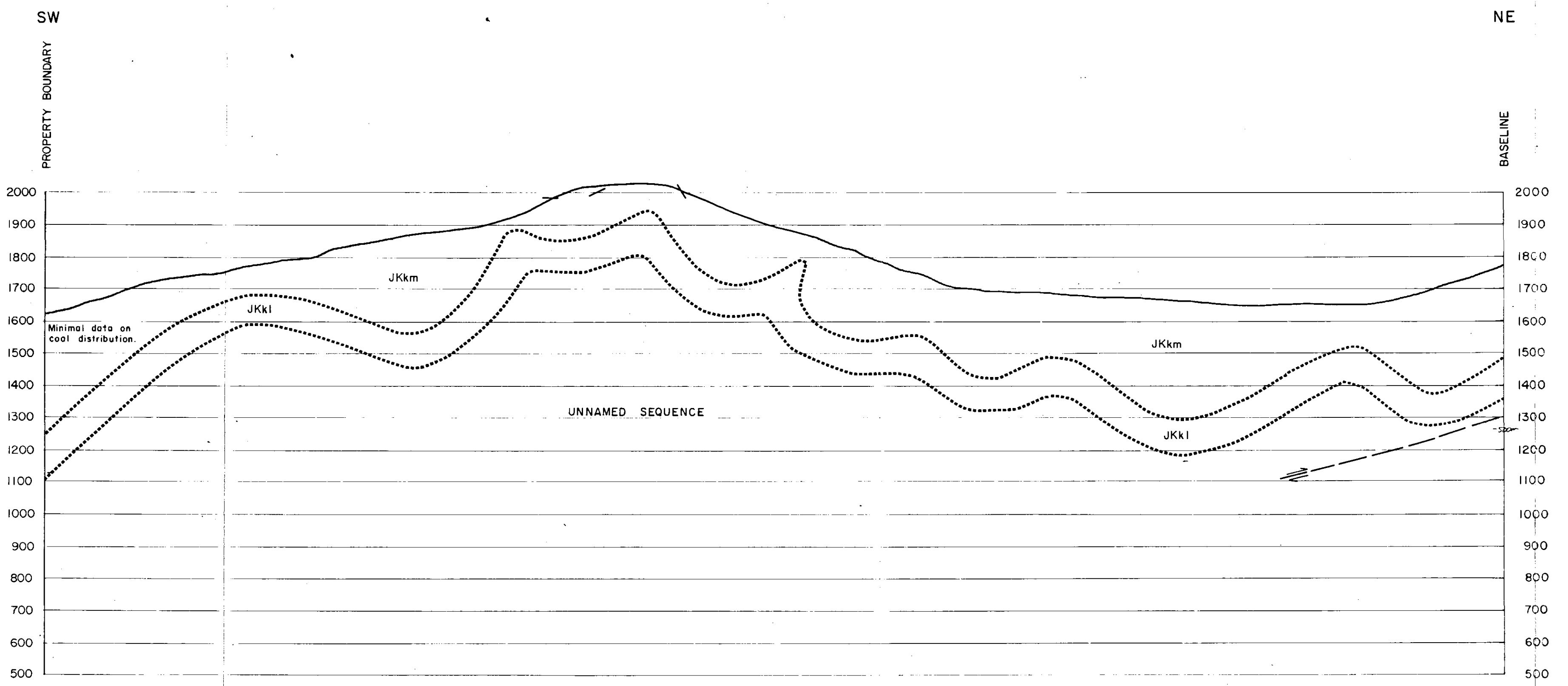
Legend	
	GEOLOGICAL CONTACT (INFERRED)
	COAL SEAM TRACE (DEFINED, APPROX.)
	FAULT TRACE (DEFINED, APPROX., INFERRED)
	CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
	ATTITUDE CONTROL POINT
	DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

GULF CANADA RESOURCES INC.
 Coal Division
 CALGARY ALBERTA



Northwestern British Columbia
MT. KLAPPAN COAL PROPERTY 110
 GEOLOGICAL CROSS-SECTION
 1000S (EAST)

PREPARED BY: G. SEVE SCALE 1: 10,000
 APPROVED BY: B. P.F. DATE: NOV. 82 DRAWING No. KPN-82-033

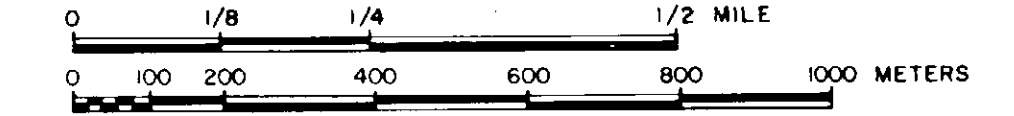


MALLOCH SEQUENCE

- JKm** Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.

KLAPPAN SEQUENCE

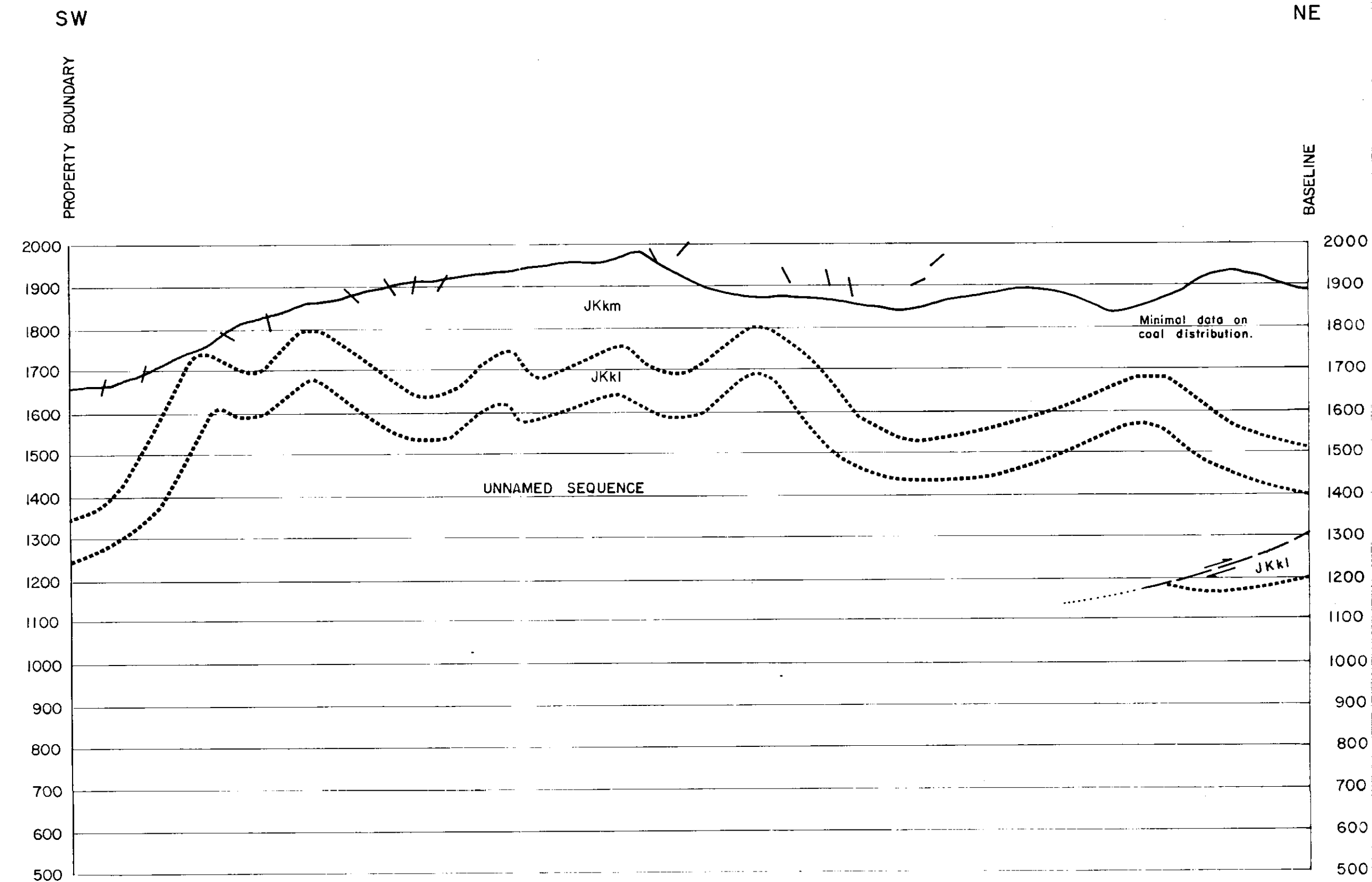
- JKku** Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
- JKkm** Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
- JKki** Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.



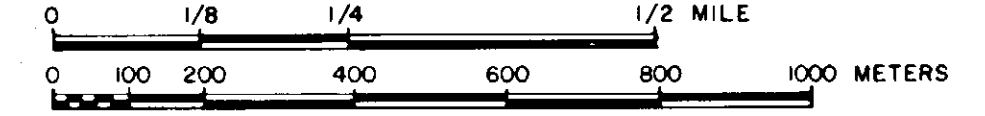
Legend

- GEOLOGICAL CONTACT (INFERRED)
- COAL SEAM TRACE (DEFINED, APPROX)
- //--- FAULT TRACE (DEFINED, APPROX, INFERRED)
- oooooo CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
- ▲ ATTITUDE CONTROL POINT
- ▲ DDH 82001 DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	
Northwestern British Columbia		
MT. KLAPPAN COAL PROPERTY 110		
GEOLOGICAL CROSS-SECTION		
1000 S (WEST)		
PREPARED BY: J. INNIS		SCALE 1: 10,000
APPROVED BY: B.P.F.	DATE: NOV. 1982	DRAWING No. KPN-82-034



- MALLOCH SEQUENCE**
- JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKkl Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.



- Legend**
- GEOLOGICAL CONTACT (INFERRED)
 - COAL SEAM TRACE (DEFINED, APPROX.)
 - =====> FAULT TRACE (DEFINED, APPROX., INFERRED)
 - o-o-o-o-o CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - ▲ ATTITUDE CONTROL POINT
 - ▲ DDH 82001 DIAMOND DRILL HOLE WITH ATTITUDE CONTROL
- Cor. Mt. Klappan 52(2)A*

GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	
Northwestern British Columbia		
MT. KLAPPAN COAL PROPERTY 110		
GEOLOGICAL CROSS-SECTION		
3000S (WEST)		
PREPARED BY: J. INNIS	SCALE 1:10,000	
APPROVED BY: B.P.F.	DATE: NOV., 1982	DRAWING No. KPN-82-036

SW

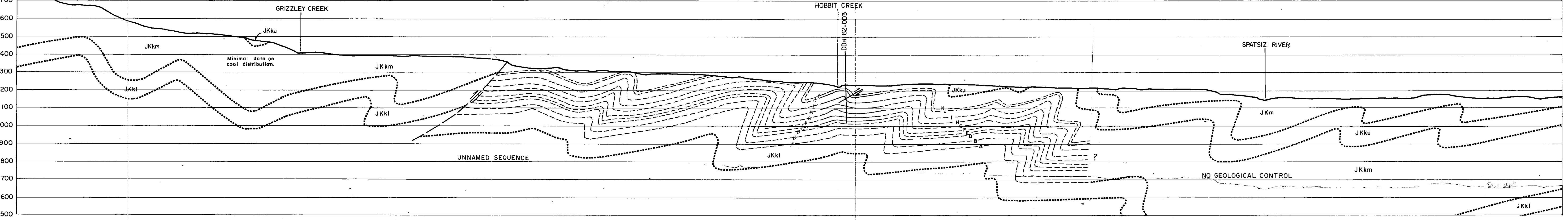
NE

BASELINE

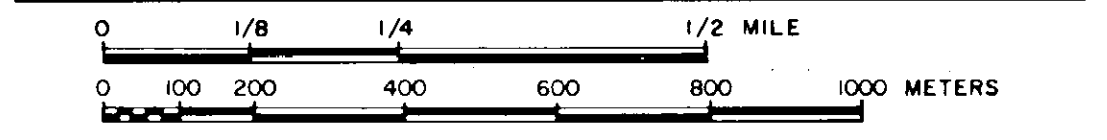
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METRES ABOVE SEA LEVEL



MALLOCH SEQUENCE	
JKm	Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
KLAPPAN SEQUENCE	
JKku	Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
JKkm	Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
JKki	Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.



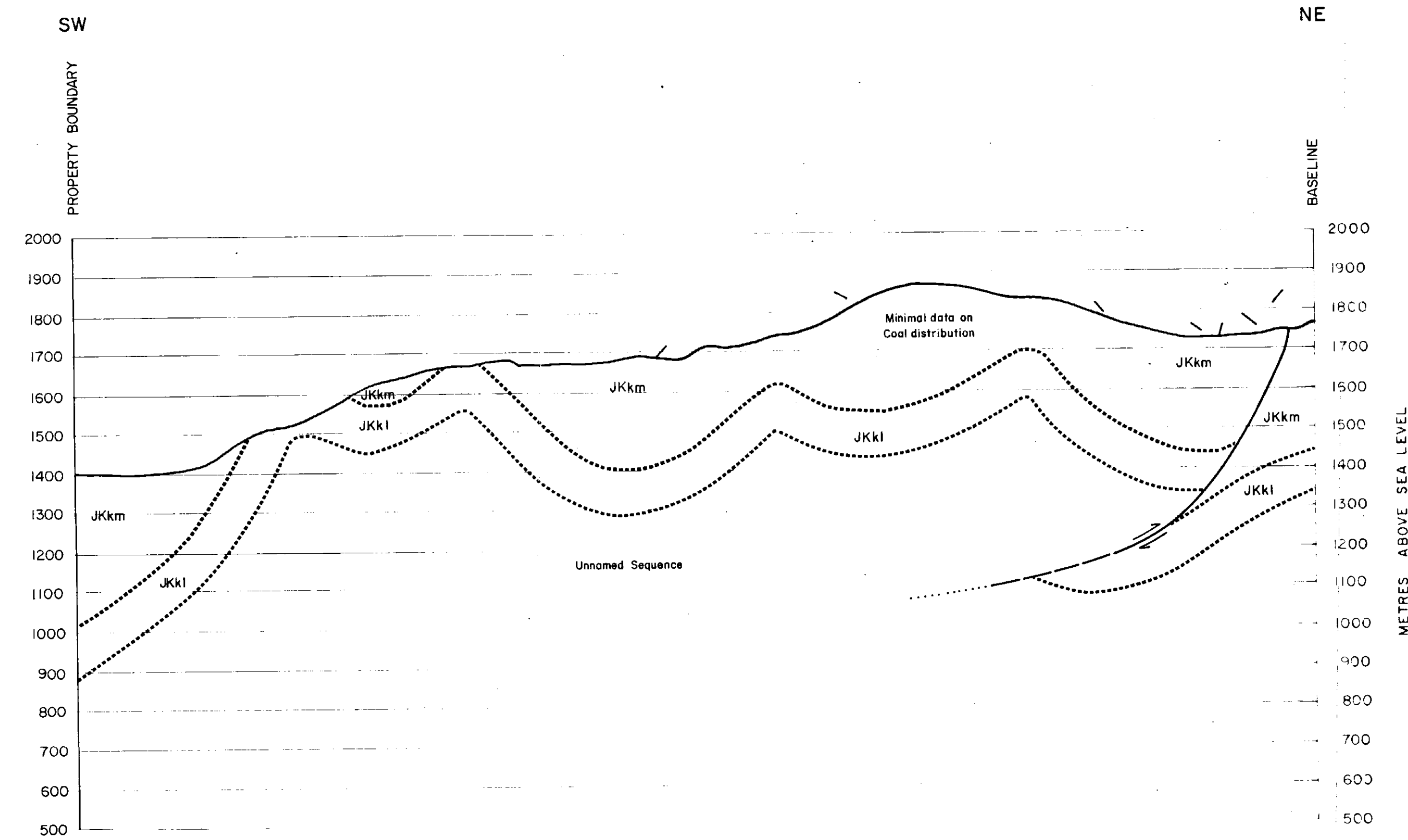
Legend

.....	GEOLOGICAL CONTACT (INFERRED)
---	COAL SEAM TRACE (DEFINED, APPROX.)
---	FAULT TRACE (DEFINED, APPROX, INFERRED)
o o o o o	CONGLOMERATIC UNIT (DEFINED, APPROX, INFERRED)
▲	ATTITUDE CONTROL POINT
▲	DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

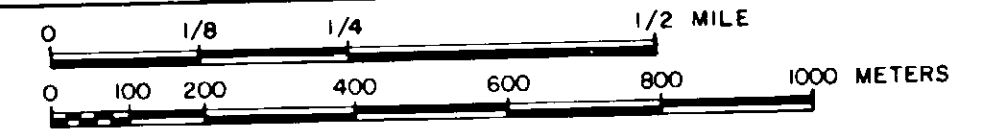
GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY		ALBERTA

Northwestern British Columbia
MT. KLAPPAN COAL PROPERTY
 Geological Cross-Section
 5000 S (EAST)

PREPARED BY: G. SEVE	SCALE 1:10,000
APPROVED BY: B.P.F.	DATE: NOV. 82 DRAWING No. KPN-82-037



- MALLOCH SEQUENCE**
- JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKkl Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.



Legend

- GEOLOGICAL CONTACT (INFERRED)
- COAL SEAM TRACE (DEFINED, APPROX)
- FAULT TRACE (DEFINED, APPROX, INFERRED)
- oooooo CONGLOMERATIC UNIT (DEFINED, APPROX, INFERRED)
- ATTITUDE CONTROL POINT
- DDH 82001 DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

GE. MT. KLAPPAN 5000 S

GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	
Northwestern British Columbia		
MT. KLAPPAN COAL PROPERTY		
110		
GEOLOGICAL CROSS-SECTION		
5000 S (WEST)		
PREPARED BY: J. INNIS	SCALE: 1:10,000	
APPROVED BY: B.P.F.	DATE: NOV. 1982	DRAWING No. KPN-82-038

SW

PROPERTY BOUNDARY

2000
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BASELINE

B.C.R.

SPATSIZI RIVER

UNNAMED SEQUENCE

Minimal data on coal distribution

NO GEOLOGICAL CONTROL

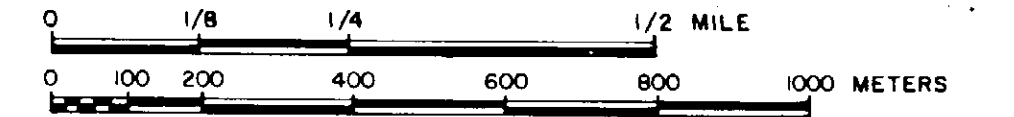
NE

PROPERTY BOUNDARY

2000
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METRES ABOVE SEA LEVEL

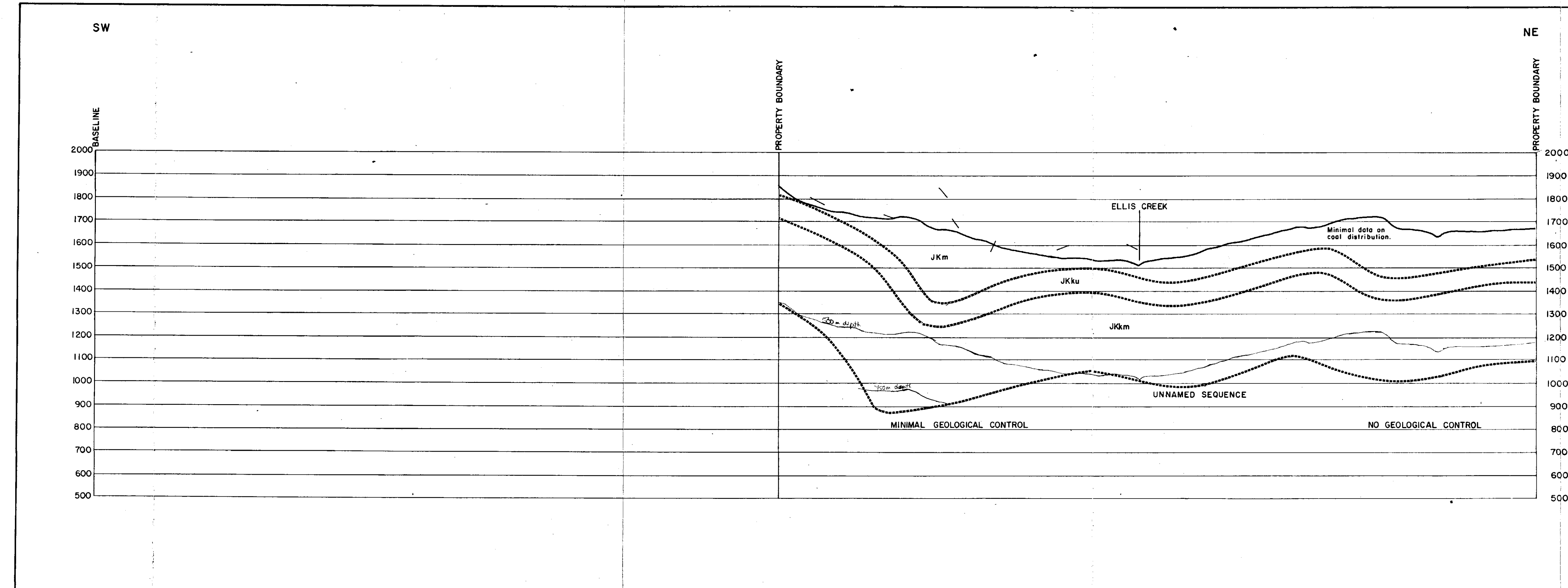
MALLOCH SEQUENCE	
JKm	Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
KLAPPAN SEQUENCE	
JKku	Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
JKkm	Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
JKkl	Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.



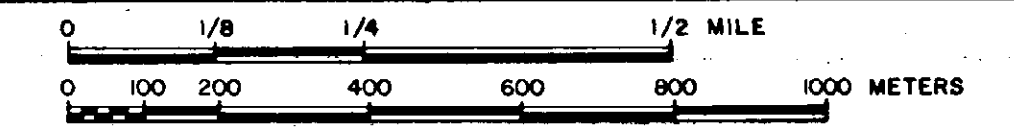
Legend

- GEOLOGICAL CONTACT (INFERRED)
- COAL SEAM TRACE (DEFINED, APPROX.)
- ==== FAULT TRACE (DEFINED, APPROX., INFERRED)
- ooooo CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
- ▲ ATTITUDE CONTROL POINT
- DDH 82001
▲ DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

GULF CANADA RESOURCES INC.		
CALGARY	Coal Division	
Northwestern British Columbia		
MT. KLAPPAN COAL PROPERTY		
110		
GEOLOGICAL CROSS-SECTION		
7000S (EAST)-(WEST)		
PREPARED BY: J. M. DUFORD	SCALE 1: 10,000	
APPROVED BY: B. P. F.	DATE: NOV. '82	DRAWING No. KPN-82-039



- MALLOCH SEQUENCE**
- JKm** Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku** Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm** Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKkl** Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.



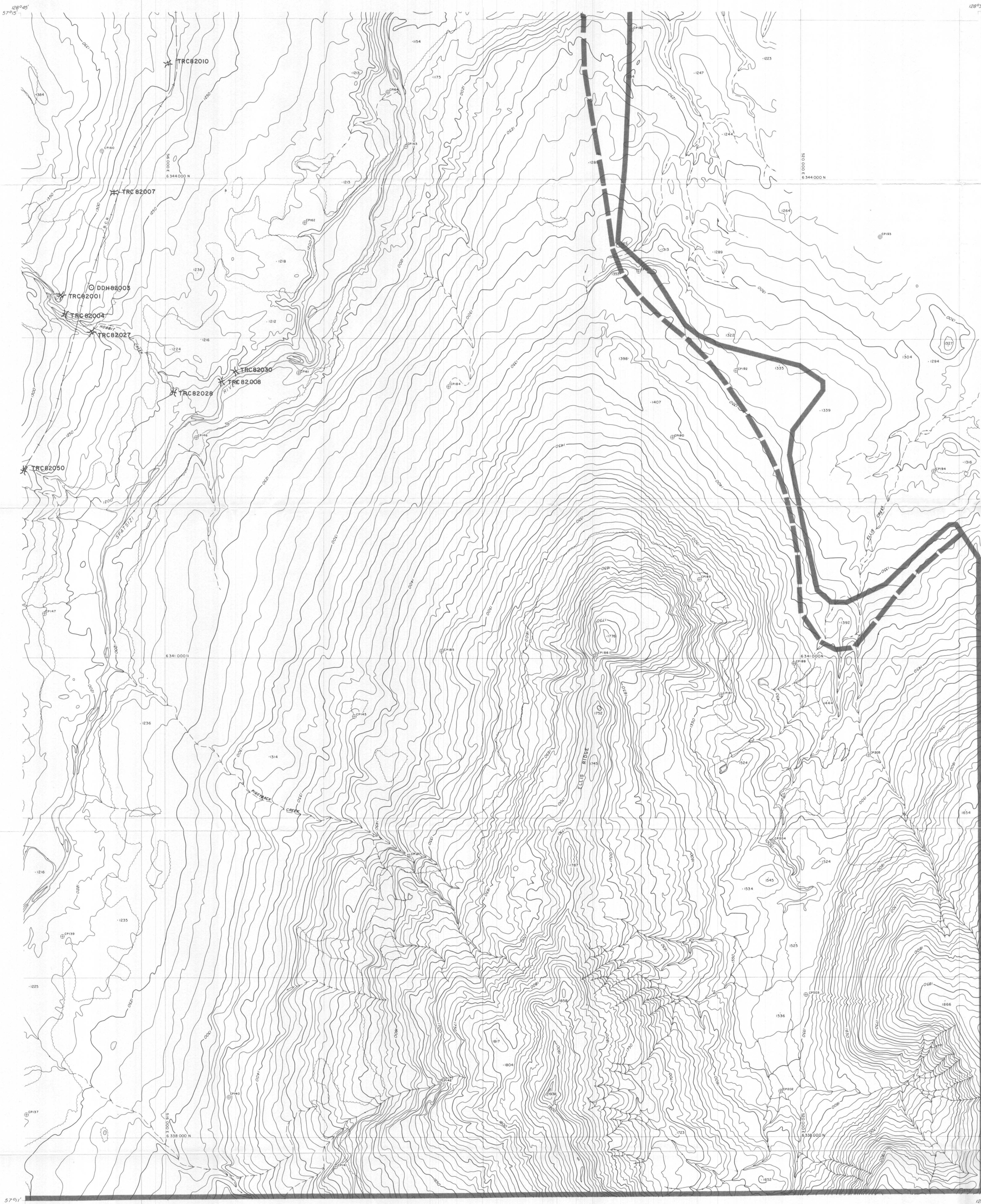
- Legend**
- GEOLOGICAL CONTACT (INFERRED)
 - COAL SEAM TRACE (DEFINED, APPROX.)
 - > FAULT TRACE (DEFINED, APPROX., INFERRED)
 - o-o-o-o-o CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - ▲ ATTITUDE CONTROL POINT
 - ▲ DDH 82001 DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

GULF CANADA RESOURCES INC.
Coal Division

CALGARY ALBERTA

Northwestern British Columbia
MT. KLAPPAN COAL PROPERTY
GEOLOGICAL CROSS-SECTION
11000 S (EAST)

PREPARED BY: J.M. DUFORD SCALE 1:10,000
APPROVED BY: B.P.F. DATE: SEPT. '82 DRAWING No. KPN-82-041



LEGEND

BUILDING	---	[Symbol]
ROAD, HARD SURFACE	---	[Symbol]
LOOSE SURFACE	---	[Symbol]
CART TRACK	---	[Symbol]
TRAIL	---	[Symbol]
RAILROAD BED	---	[Symbol]
RIVER	---	[Symbol]
STREAM, DEFINITE	---	[Symbol]
APPROXIMATE	---	[Symbol]
SPLIT	---	[Symbol]
LAKE	---	[Symbol]
WATER LEVEL	---	[Symbol]
SWAMP	---	[Symbol]
BEAVER DAM	---	[Symbol]
TREE LINE	---	[Symbol]
CUT LINE	---	[Symbol]
CONTOURS, INDEX	---	[Symbol]
INTERMEDIATE	---	[Symbol]
DEPRESSION	---	[Symbol]
APPROXIMATE	---	[Symbol]
SPOT ELEVATION	---	[Symbol]
FIELD CONTROL POINT	---	[Symbol]
COAL LICENCE	---	[Symbol]
REDEFINED PROPERTY BOUNDARY	---	[Symbol]

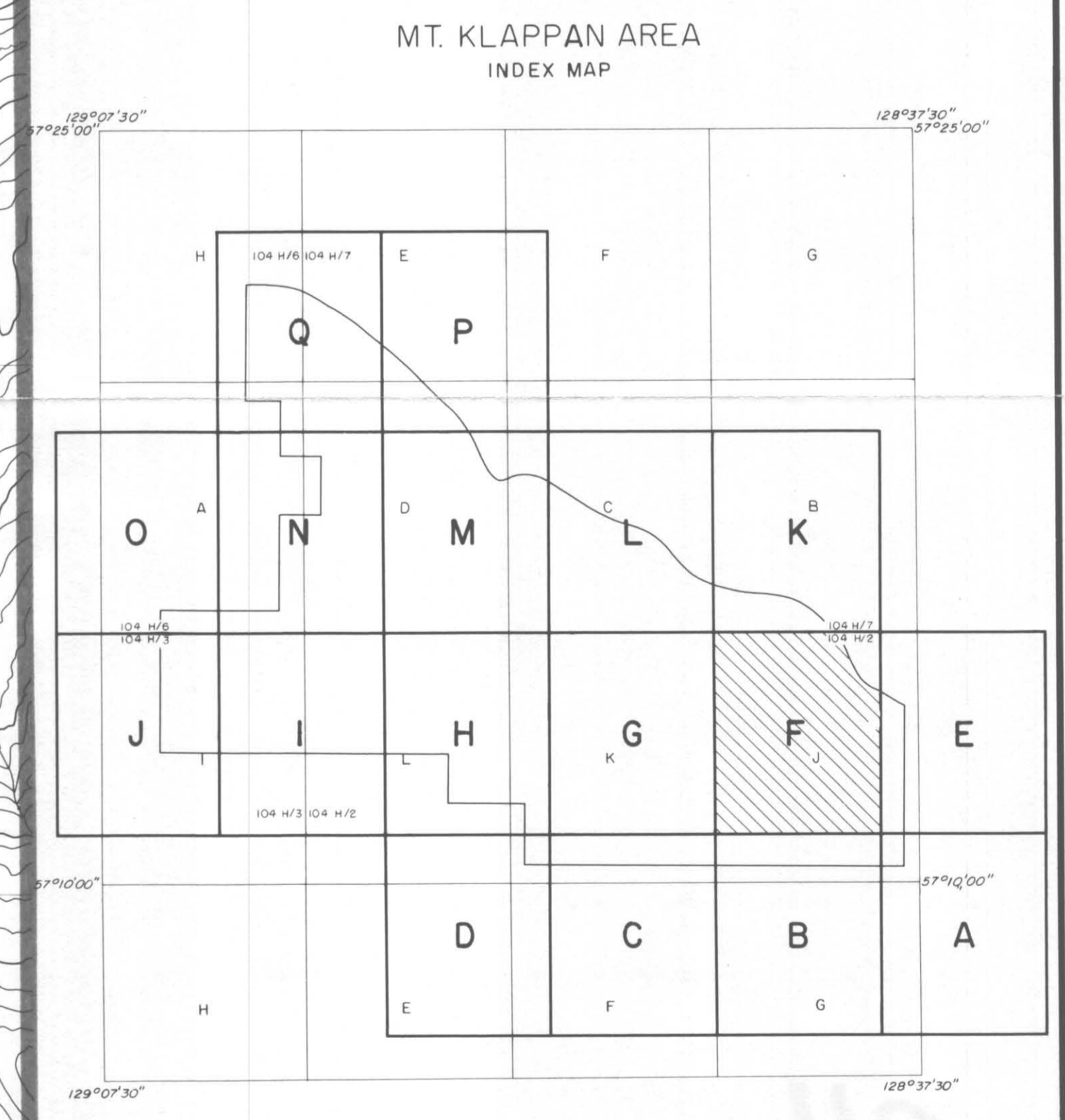
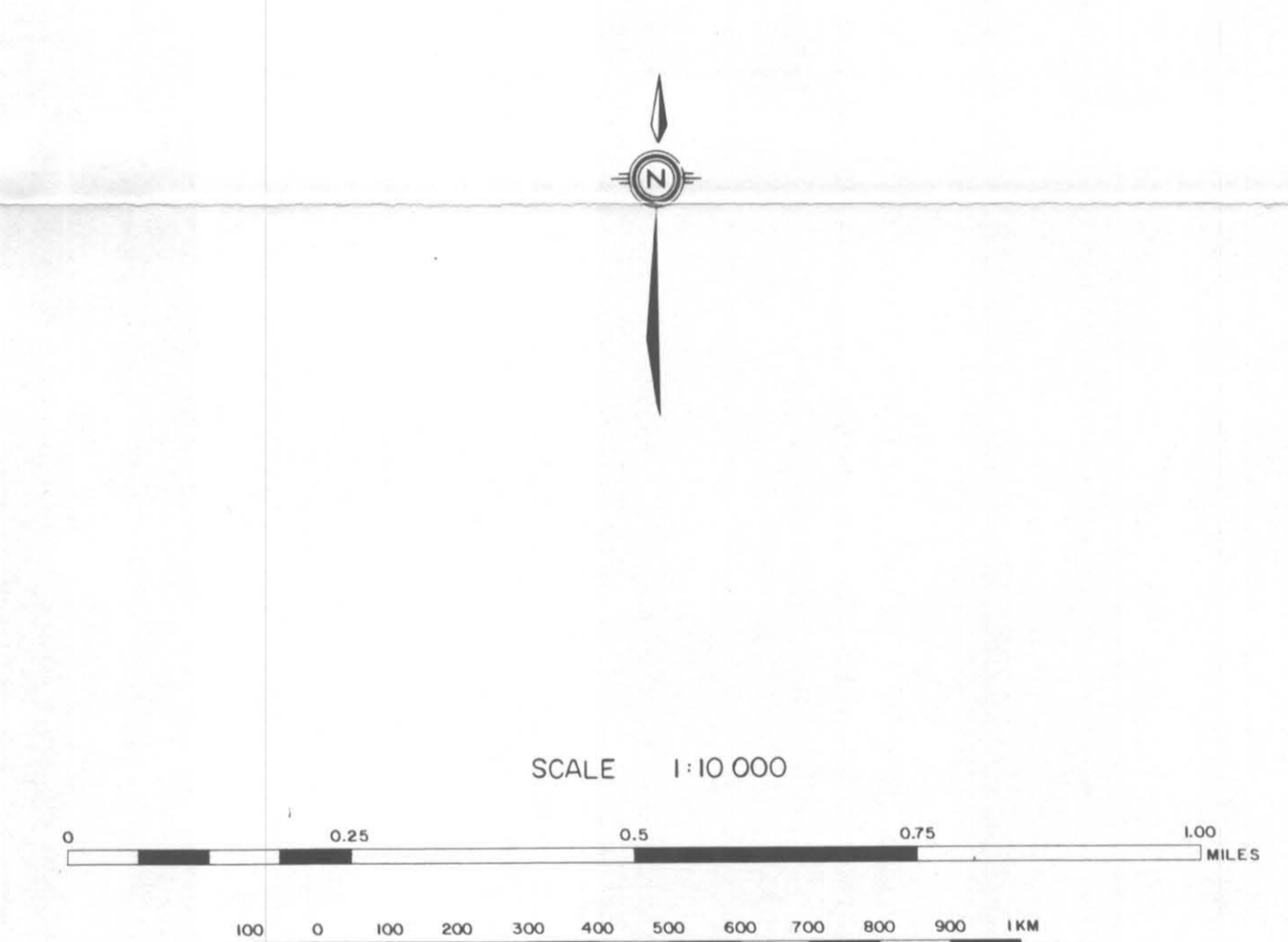
NOTES

CONTOUR INTERVAL: 10 METERS

SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

RAILROAD BED LOCATION BASED ON DATA SUPPLIED BY B.C. RAIL.

COMPILED BY: WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD McLELLAN LTD., FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67 AT A SCALE OF 1:60,000 (APPROXIMATE).

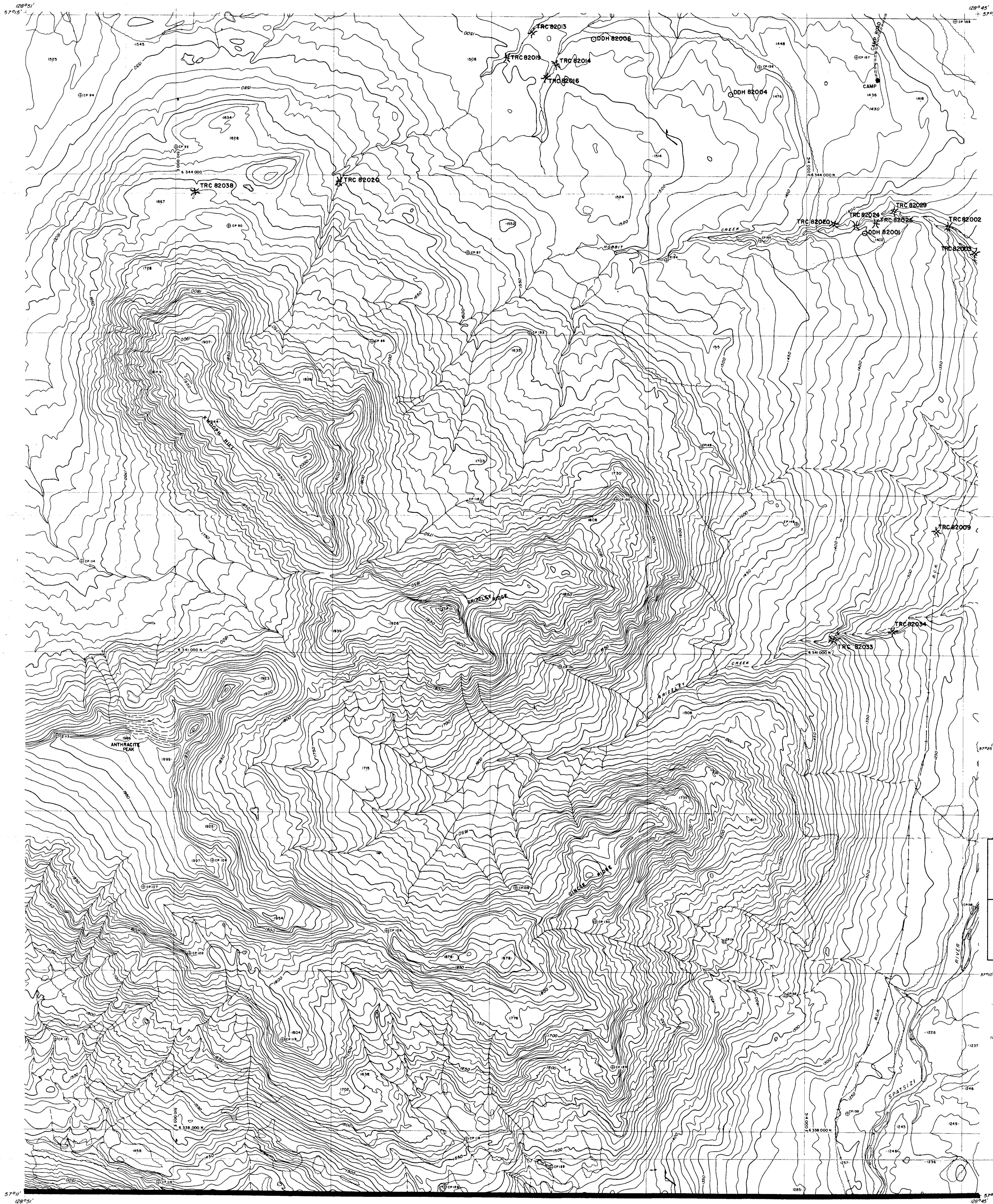


MADE IN CANADA - FABRIQUE AU CANADA

X TRC82037 TRENCH LOCATION AND NUMBER
 O DDH82005 DIAMOND DRILL HOLE LOCATION AND NUMBER

GULF CANADA RESOURCES INC.		
CALGARY ALBERTA		
MOUNT KLAPPAN COAL PROPERTY MAP SHEET F TRENCH AND DRILL HOLE LOCATIONS		
PREPARED BY: C. LOUIE	DATE: NOV. 82	DRAWING No. KFN-82-042
APPROVED BY: B.P.F.		

110



LEGEND

BUILDING	---	---
ROAD, HARD SURFACE	---	---
ROAD, LOOSE SURFACE	---	---
CART TRACK	---	---
TRAIL	---	---
RAILROAD BED	---	---
RIVER	---	---
STREAM, DEFINITE	---	---
STREAM, APPROXIMATE	---	---
LAKE	---	---
WATER LEVEL	---	---
SWAMP	---	---
BEAVER DAM	---	---
TREE LINE	---	---
CUT LINE	---	---
CONTOURS, INDEX	---	---
CONTOURS, INTERMEDIATE	---	---
CONTOURS, APPROXIMATE	---	---
DEPRESSION	---	---
SPOT ELEVATION	---	---
FIELD CONTROL POINT	---	---
COAL LICENCE	---	---

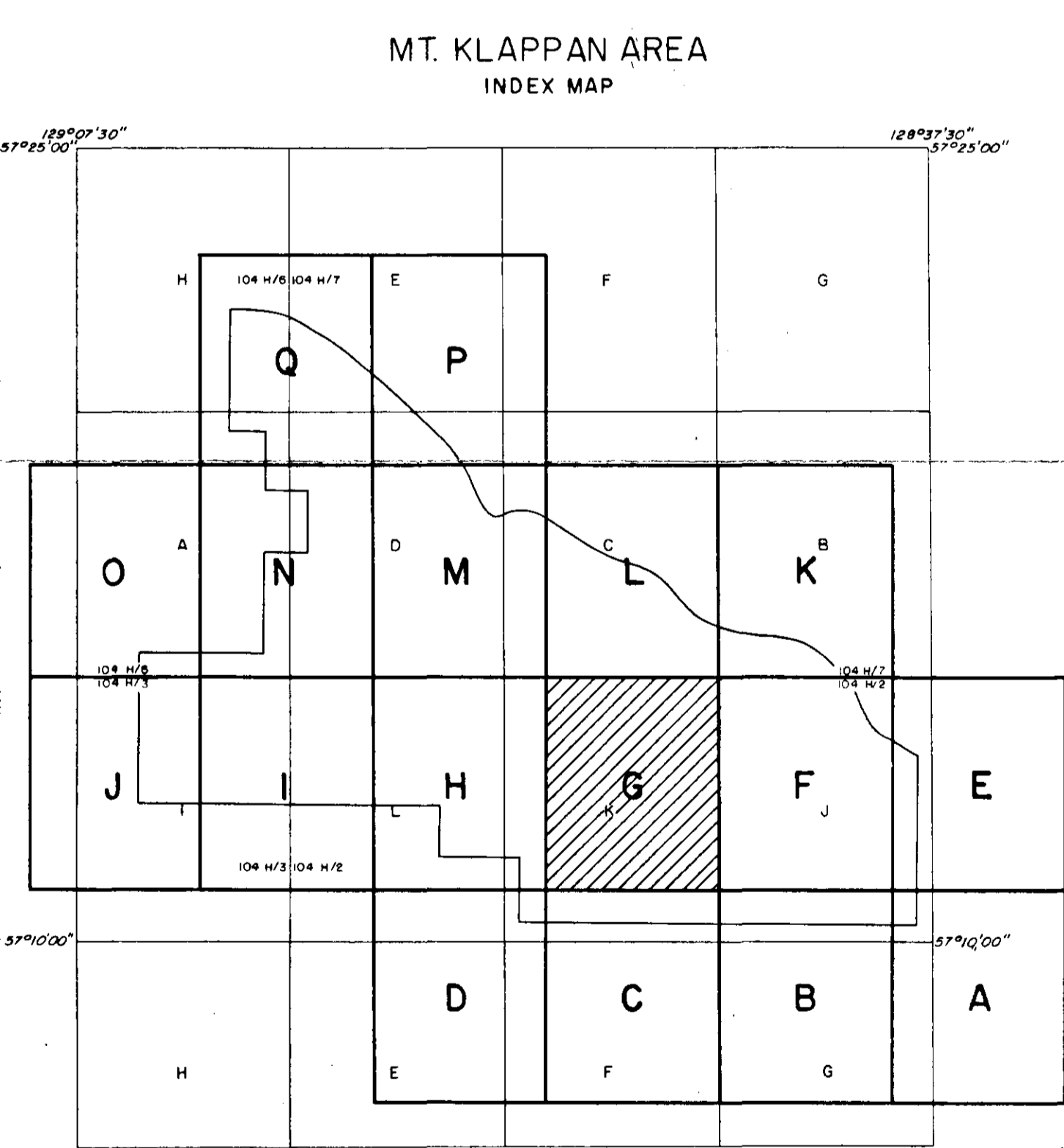
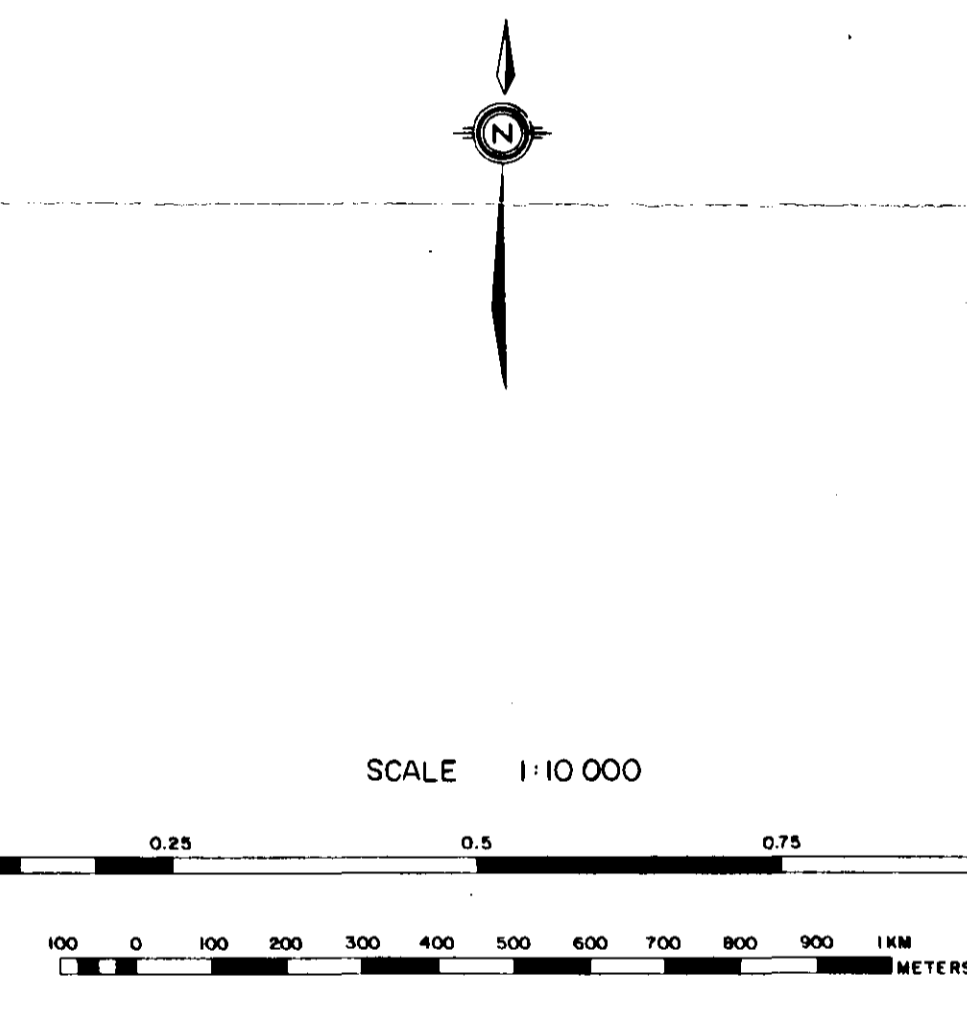
NOTES

CONTOUR INTERVAL 10 METERS

SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

RAILROAD BED LOCATION BASED ON DATA SUPPLIED BY B.C. RAIL.

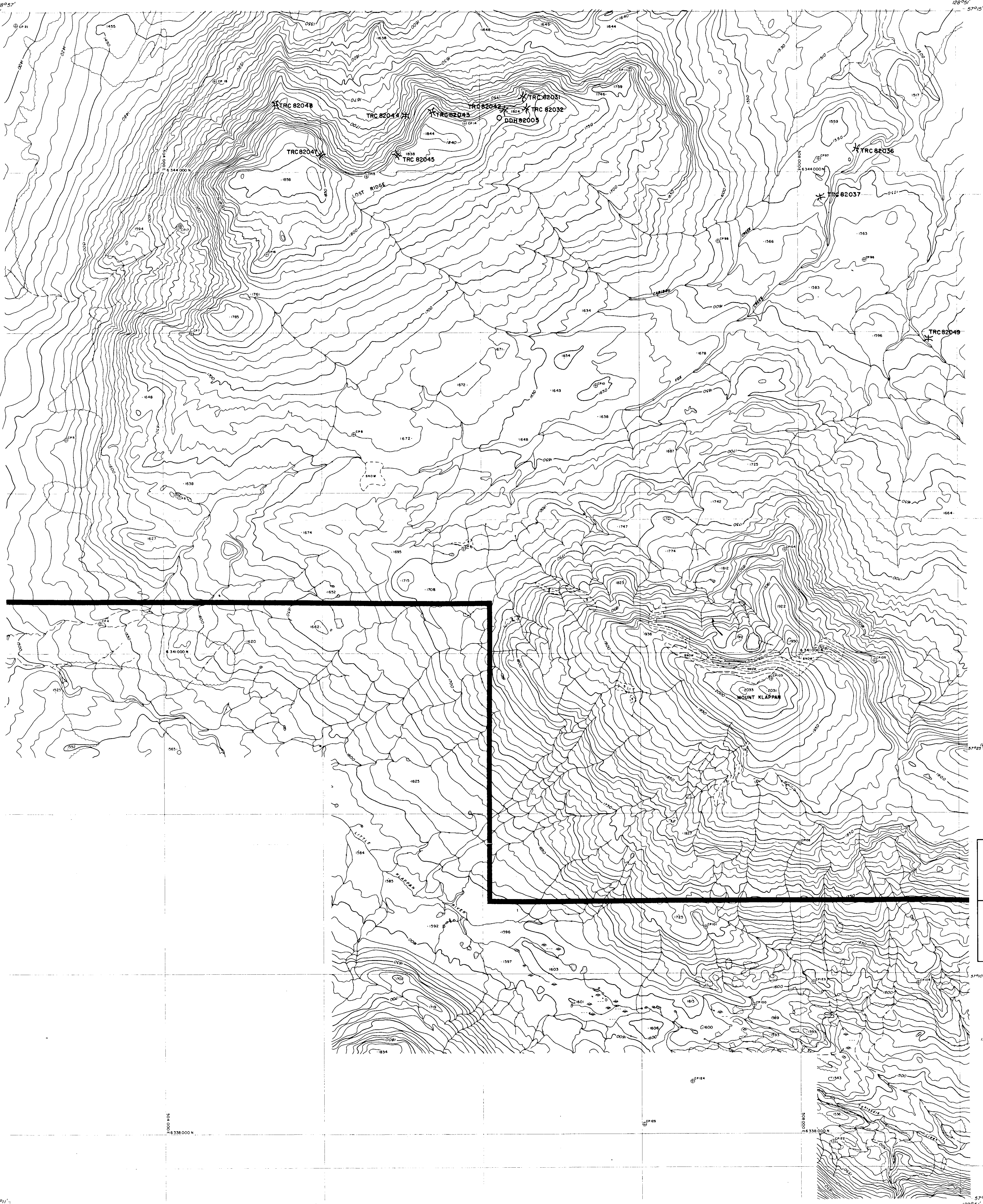
COMPILED BY:
WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD MULLER LTD.,
FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67
AT A SCALE OF 1:60,000 (APPROXIMATE).



110

TRC 82037 TRENCH LOCATION AND NUMBER
DDH 82005 DIAMOND DRILL HOLE LOCATION AND NUMBER

GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	
MOUNT KLAPPAN COAL PROPERTY		
MAP SHEET G		
TRENCH AND DRILL HOLE LOCATIONS		
PREPARED BY: C. LOUIE	DRAWING No.	
APPROVED BY: B.P.F.	DATE: NOV. 82	KPN-82-043



LEGEND

BUILDING	---	---
ROAD, HARD SURFACE	---	---
LOOSE SURFACE	---	---
CART TRACK	---	---
TRAIL	---	---
RAILROAD BED	---	---
RIVER	---	---
STREAM, DEFINITE	---	---
STREAM, APPROXIMATE	---	---
SPLIT	---	---
LAKE	---	---
WATER LEVEL	---	---
SWAMP	---	---
BEAVER DAM	---	---
TREE LINE	---	---
CUT LINE	---	---
CONTOURS, INDEX	---	---
INTERMEDIATE	---	---
DEPRESSION	---	---
APPROXIMATE	---	---
SPOT ELEVATION	---	---
FIELD CONTROL POINT	---	---
COAL LICENCE	---	---

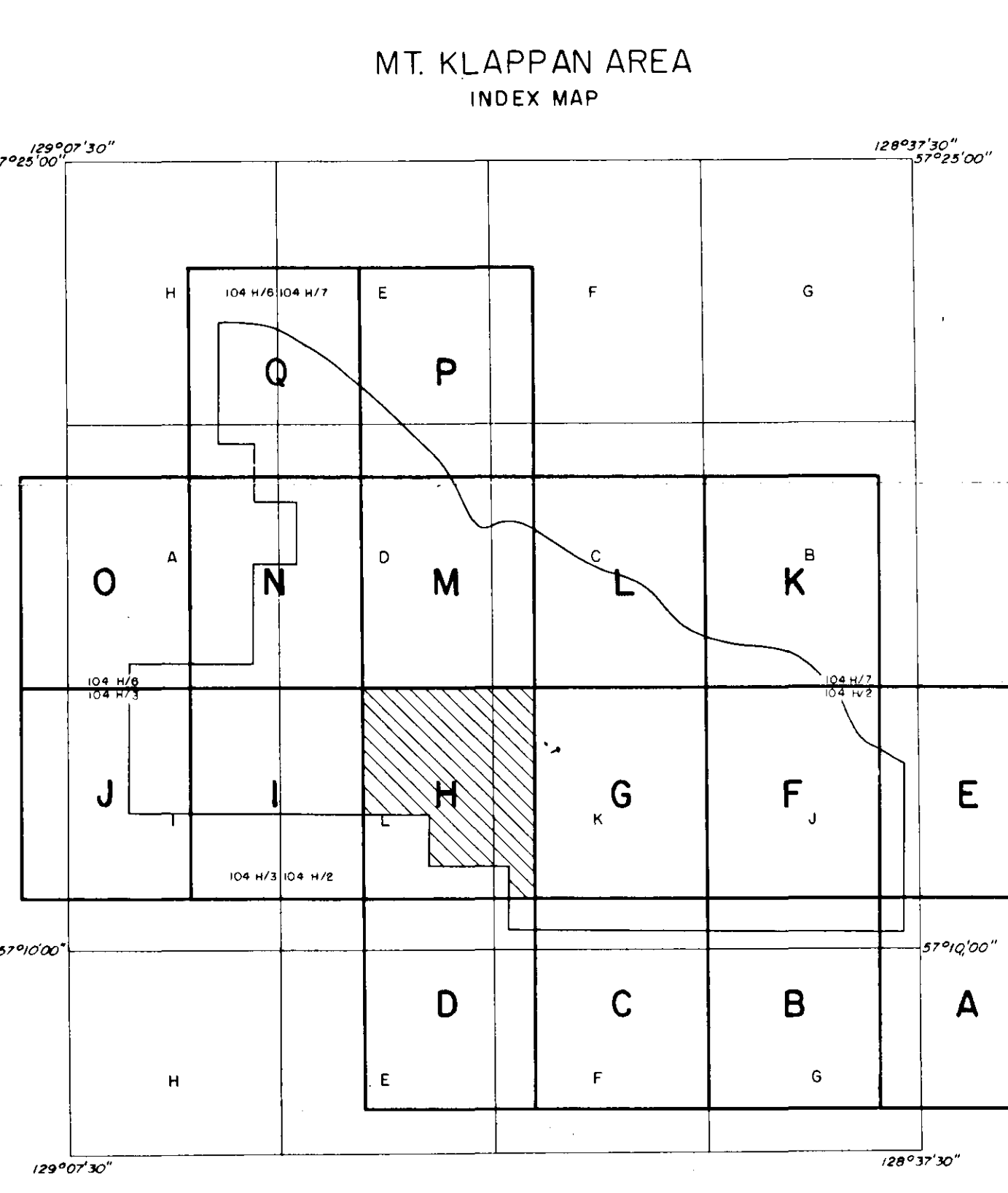
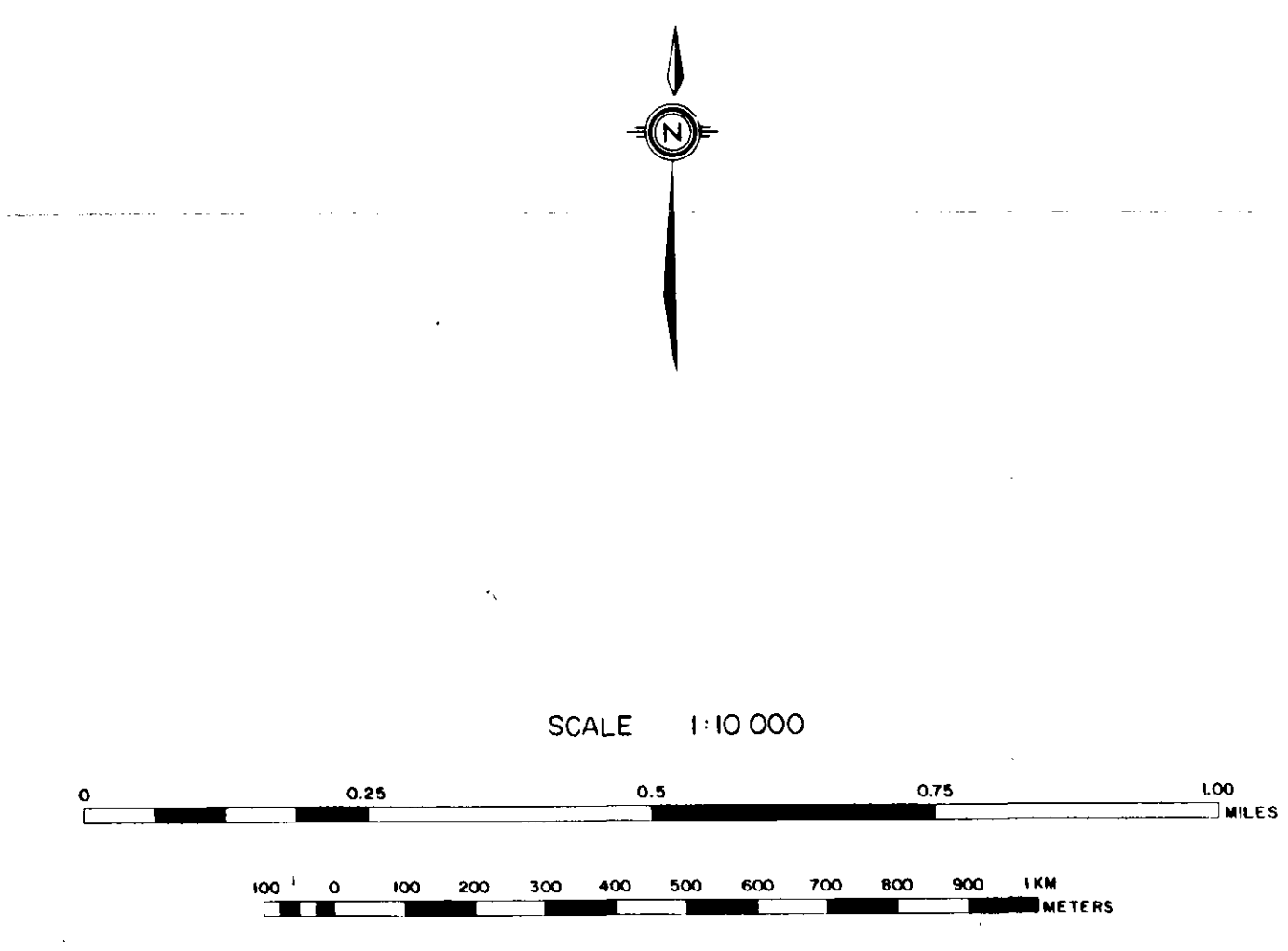
NOTES

CONTOUR INTERVAL 10 METERS

SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

RAILROAD BED LOCATION BASED ON DATA SUPPLIED BY B.C. RAIL

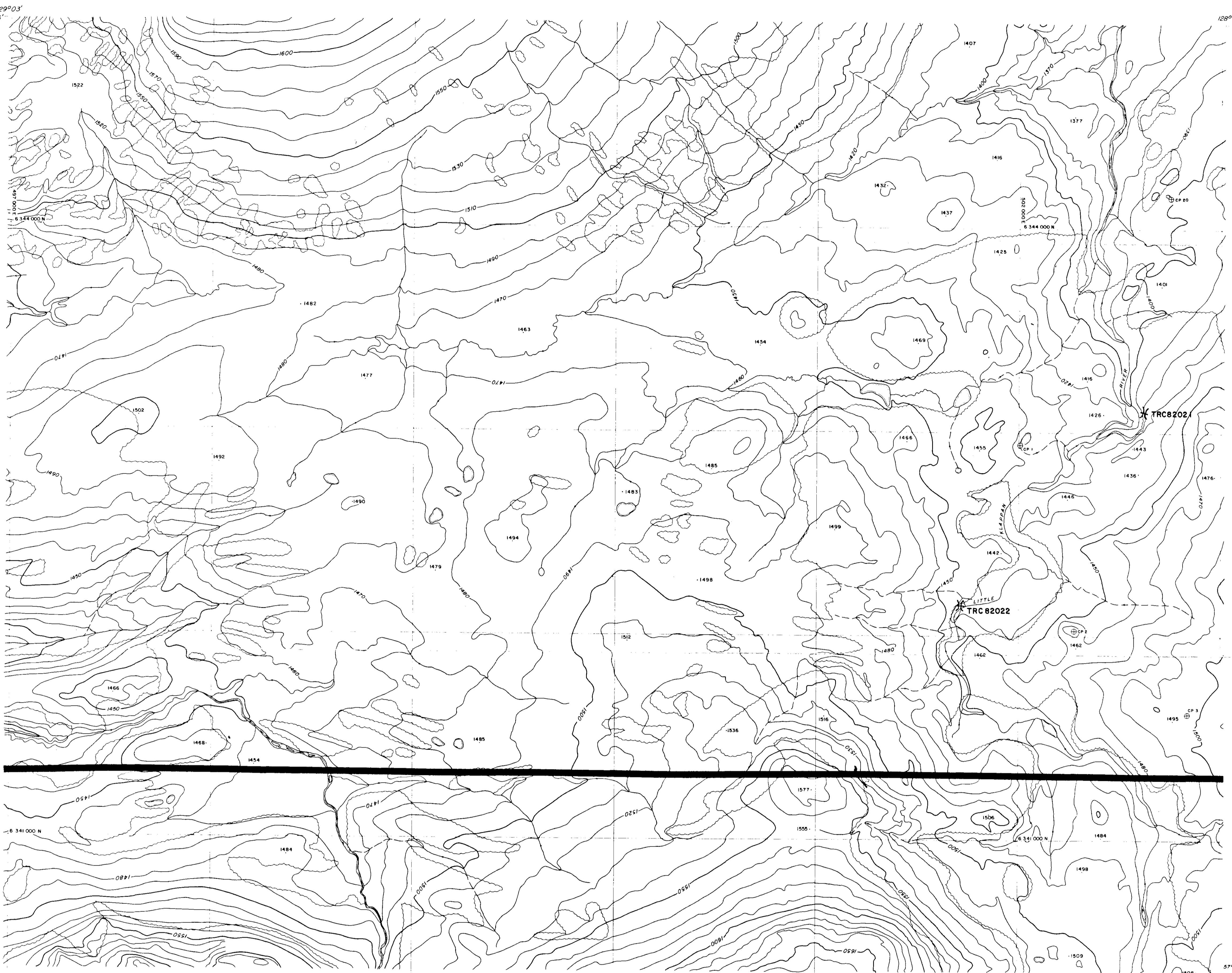
COMPILED BY WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD McLELLAN LTD., FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67 AT A SCALE OF 1:60,000 (APPROXIMATE).



110

X TRC 82037 TRENCH LOCATION AND NUMBER
 O DDH 82005 DIAMOND DRILL HOLE LOCATION AND NUMBER

GULF CANADA RESOURCES INC.		
CALGARY Coal Division ALBERTA		
MOUNT KLAPPAN COAL PROPERTY MAP SHEET H TRENCH AND DRILL HOLE LOCATIONS		
PREPARED BY: C. LOUIE	DATE: NOV. 82	DRAWING No. KPN-82-044
APPROVED BY: B.P.F.		



LEGEND

BUILDING	---	---
ROAD, HARD SURFACE	---	---
ROAD, LOOSE SURFACE	---	---
CART TRACK	---	---
TRAIL	---	---
RAILROAD BED	---	---
RIVER, DEFINITE	---	---
RIVER, APPROXIMATE	---	---
SPLIT	---	---
LAKE	---	---
WATER LEVEL	---	---
SWAMP	---	---
BEAVER DAM	---	---
TREE LINE	---	---
CUT LINE	---	---
CONTOURS, INDEX	---	---
CONTOURS, INTERMEDIATE	---	---
CONTOURS, APPROXIMATE	---	---
SPOT ELEVATION	---	---
FIELD CONTROL POINT	---	---
COAL LICENCE	---	---

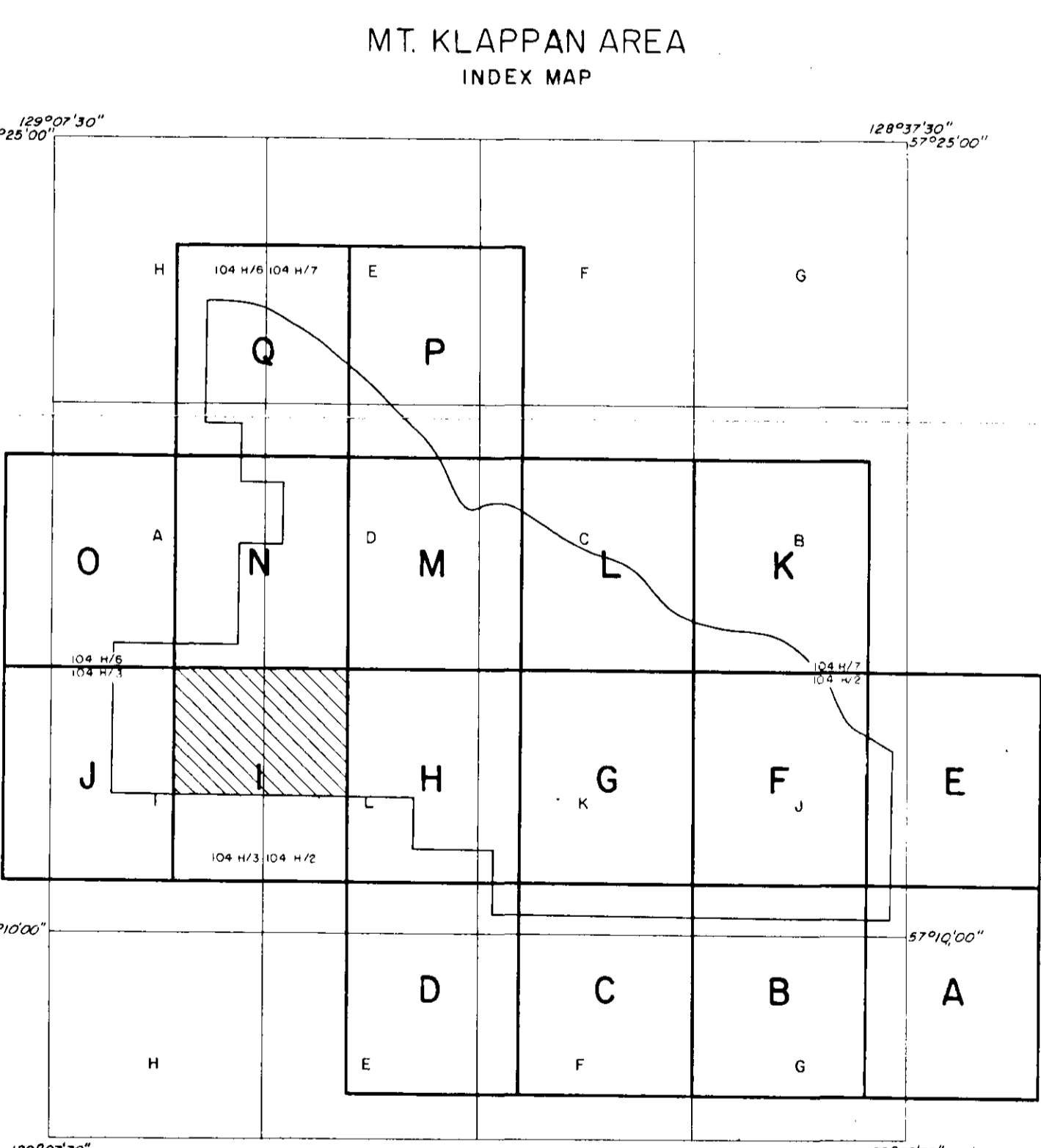
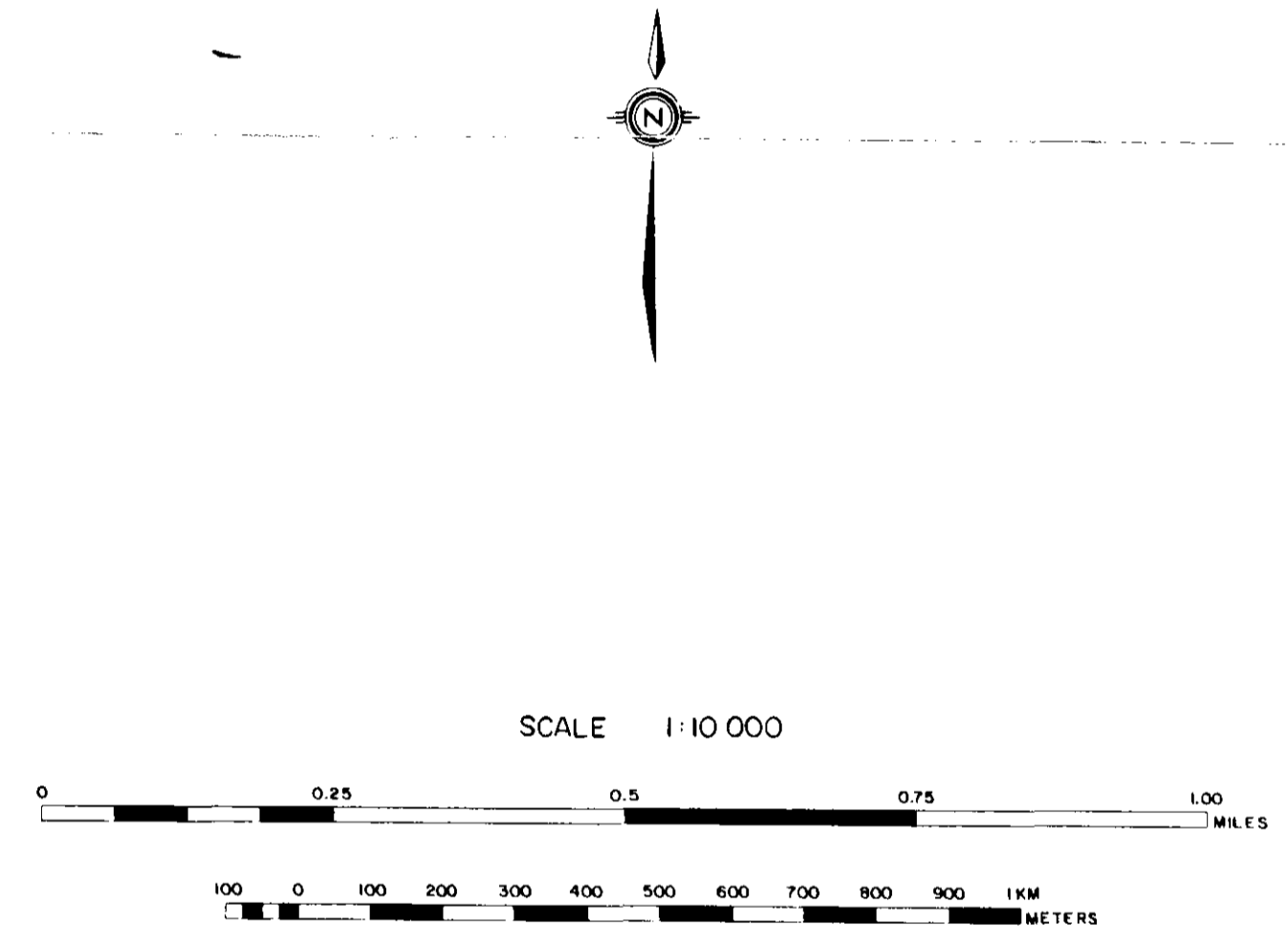
NOTES

CONTOUR INTERVAL 10 METERS

SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

RAILROAD BED LOCATION BASED ON DATA SUPPLIED BY B.C. RAIL

COMPILED BY WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD MCELLELLAN LTD., FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67 AT A SCALE OF 1:60000 (APPROXIMATE).



6 341 000 N
6 338 000 N
6 335 000 N

X TRC82037 TRENCH LOCATION AND NUMBER
O DHR2005 DIAMOND DRILL HOLE LOCATION AND NUMBER

110

GULF CANADA RESOURCES INC.	
Coal Division	
CALGARY	ALBERTA
MOUNT KLAPPAN COAL PROPERTY	
MAP SHEET I	
TRENCH AND DRILL HOLE LOCATIONS	
PREPARED BY: C. LOUIE	DRAWING No.
APPROVED BY: B.P.F.	DATE: NOV. 82 KPN-82-045

128°45'
57°09'

128°38'
57°09'

LEGEND

BUILDING	---	[Symbol]
ROAD, HARD SURFACE	---	[Symbol]
LOOSE SURFACE	---	[Symbol]
CART TRACK	---	[Symbol]
TRAIL	---	[Symbol]
RAILROAD BED	---	[Symbol]
RIVER	---	[Symbol]
STREAM, DEFINITE	---	[Symbol]
APPROXIMATE	---	[Symbol]
SPLIT	---	[Symbol]
LAKE	---	[Symbol]
WATER LEVEL	---	[Symbol]
SWAMP	---	[Symbol]
BEAVER DAM	---	[Symbol]
TREE LINE	---	[Symbol]
CUT LINE	---	[Symbol]
CONTOURS, INDEX	---	[Symbol]
INTERMEDIATE	---	[Symbol]
DEPRESSION	---	[Symbol]
APPROXIMATE	---	[Symbol]
SPOT ELEVATION	---	[Symbol]
FIELD CONTROL POINT	---	[Symbol]
COAL LICENCE	---	[Symbol]

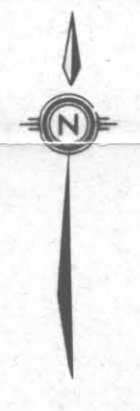
NOTES

CONTOUR INTERVAL 10 METERS

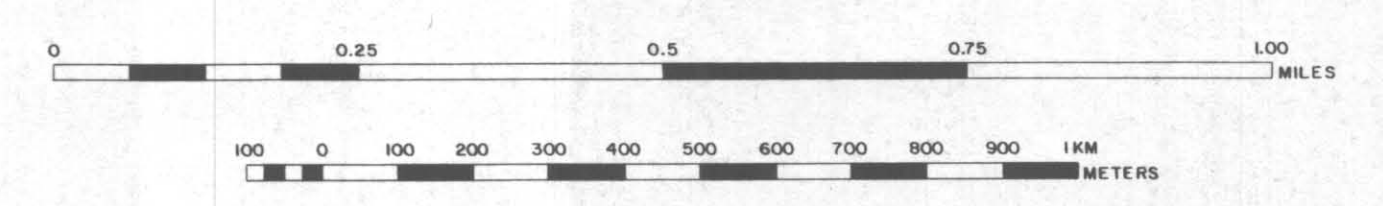
SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

RAILROAD BED LOCATION BASED ON DATA SUPPLIED BY B.C. RAIL.

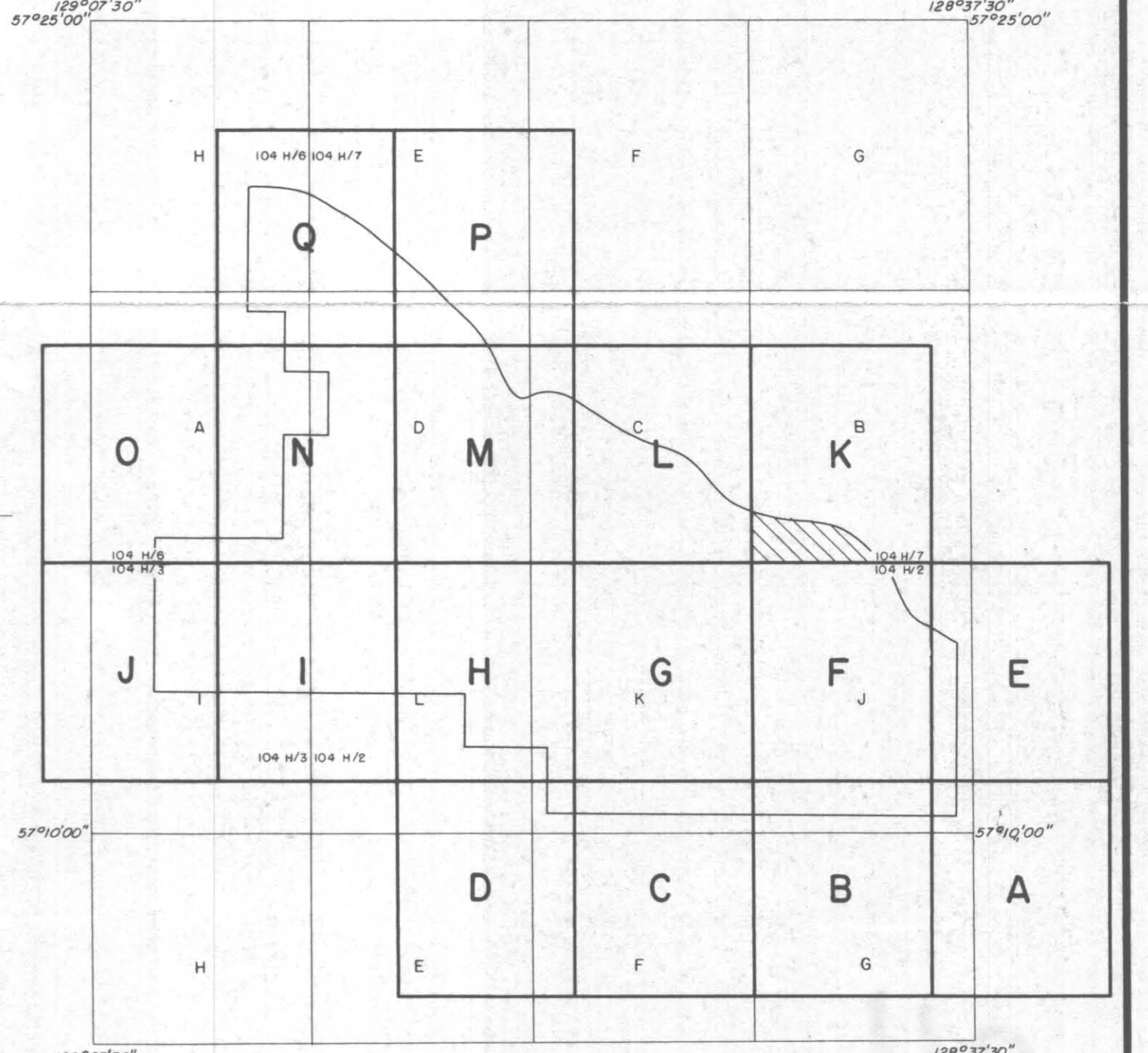
COMPILED BY WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD MCELLELLAN LTD., FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67 AT A SCALE OF 1:60000 (APPROXIMATE).



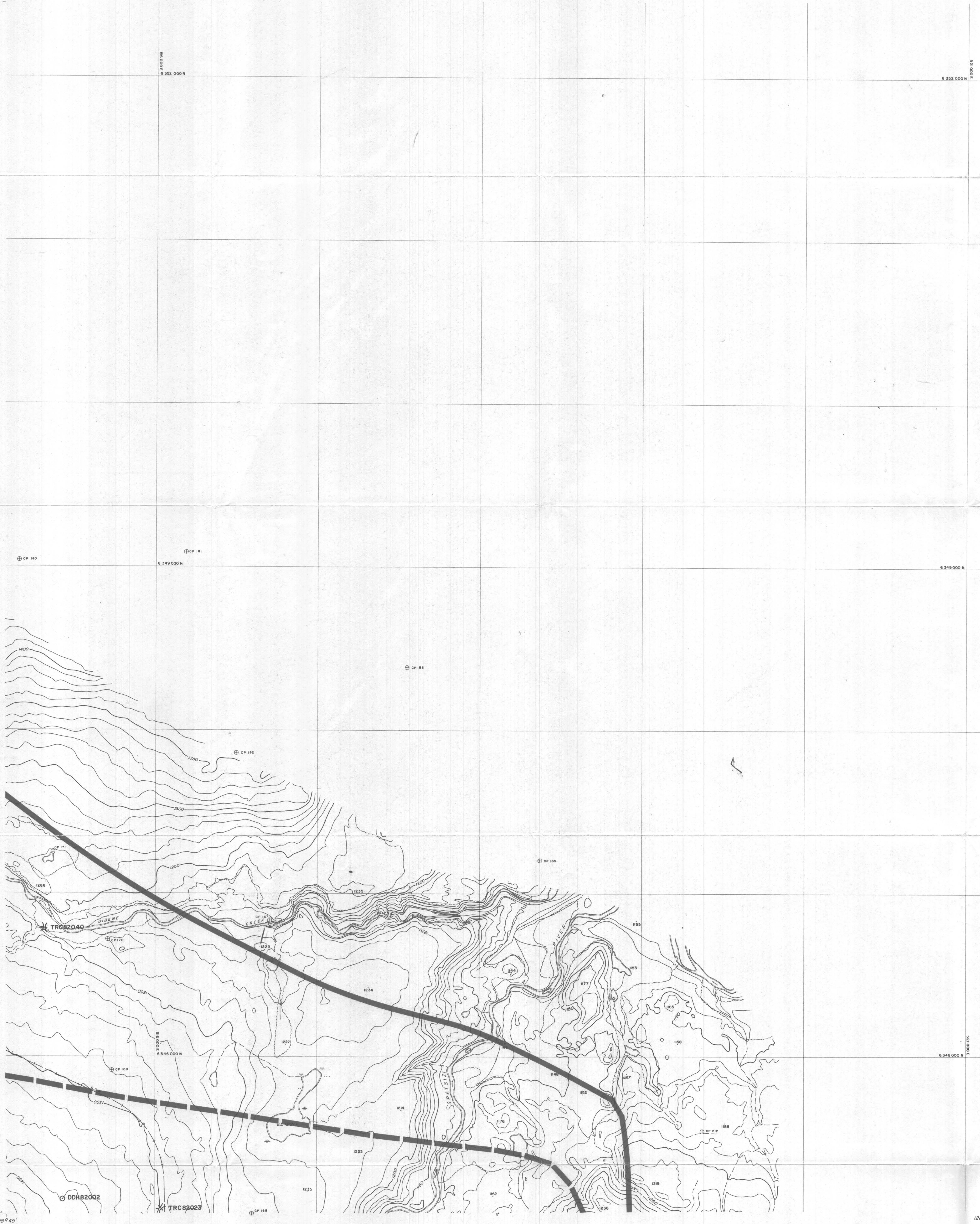
SCALE 1:10 000



MT. KLAPPAN AREA INDEX MAP



MADE IN CANADA - FABRIQUE AU CANADA



110

GULF CANADA RESOURCES INC.
Coal Division

CALGARY ALBERTA

MOUNT KLAPPAN COAL PROPERTY
MAP SHEET K
TRENCH AND DRILL HOLE LOCATIONS

PREPARED BY: C. LOUIE
APPROVED BY: B. P. F.

DRAWING No.
KPN-82-046

DATE: NOV. 82

TRC82037 TRENCH LOCATION AND NUMBER
DDH82005 DIAMOND DRILL HOLE LOCATION AND NUMBER

128°51'
57°19'

128°45'
57°09'

LEGEND

- BUILDING ————
- ROAD, HARD SURFACE ————
- LOOSE SURFACE ————
- CART TRACK ————
- TRAIL ————
- RAILROAD BED ————
- RIVER ————
- STREAM, DEFINITE ————
- APPROXIMATE ————
- SPLIT ————
- LAKE ————
- WATER LEVEL ————
- SWAMP ————
- BEAVER DAM ————
- TREE LINE ————
- CUT LINE ————
- CONTOURS, INDEX ————
- INTERMEDIATE ————
- APPROXIMATE ————
- SPOT ELEVATION ————
- FIELD CONTROL POINT ————
- COAL LICENCE ————
- REDEFINED PROPERTY BOUNDARY ————

NOTES

CONTOUR INTERVAL: 10 METERS

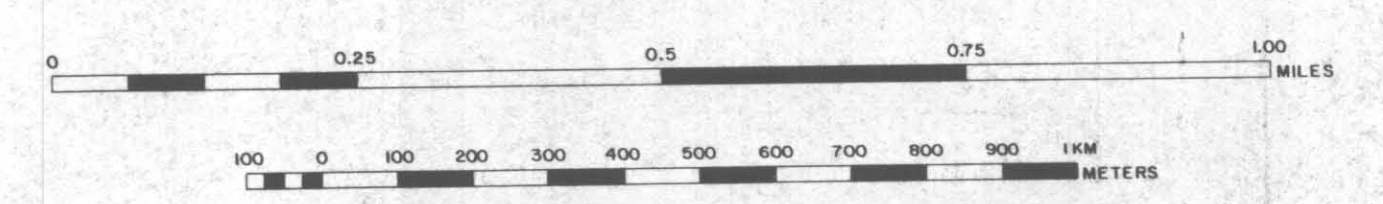
SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

RAILROAD BED LOCATION BASED ON DATA SUPPLIED BY B.C. RAIL.

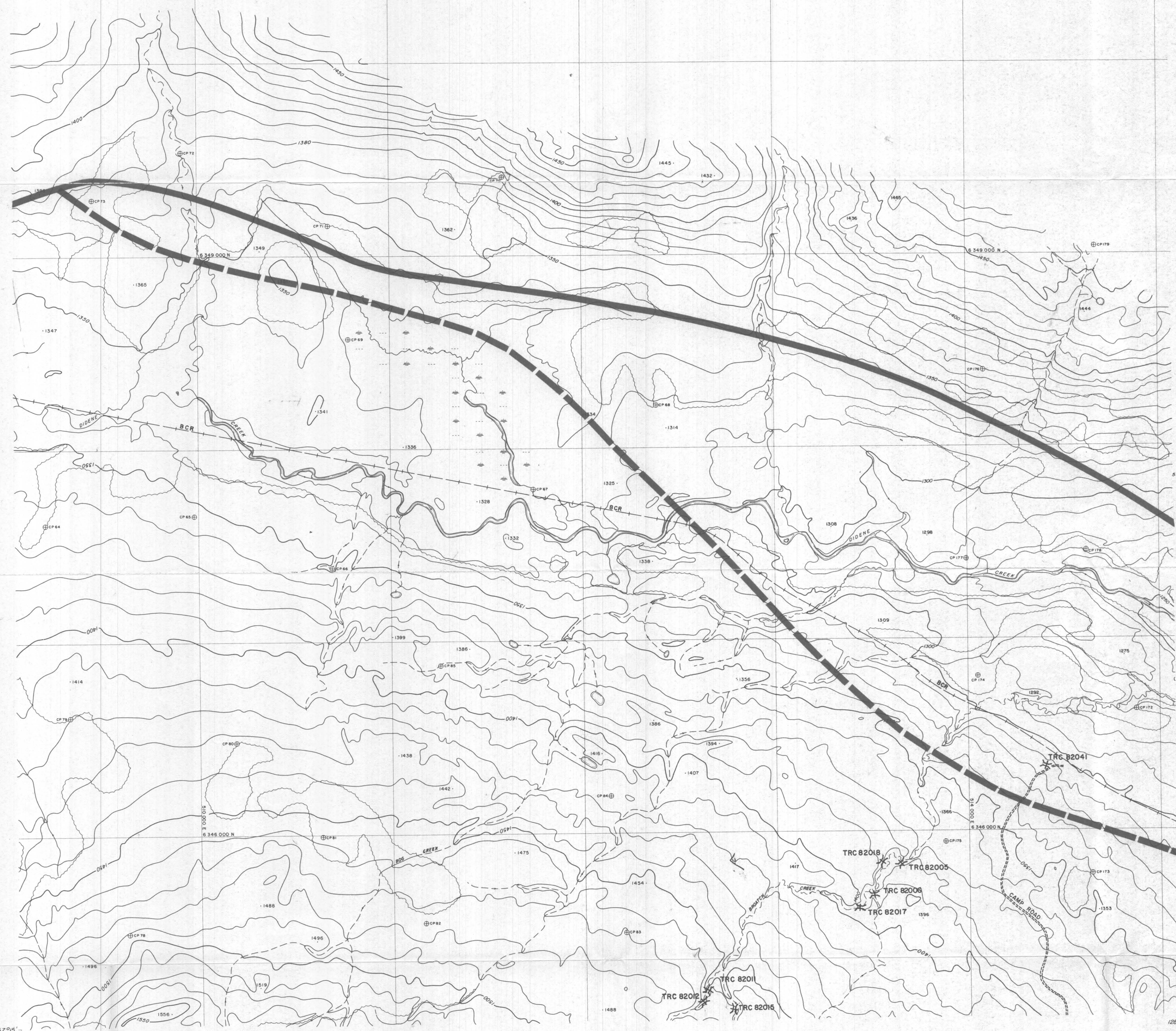
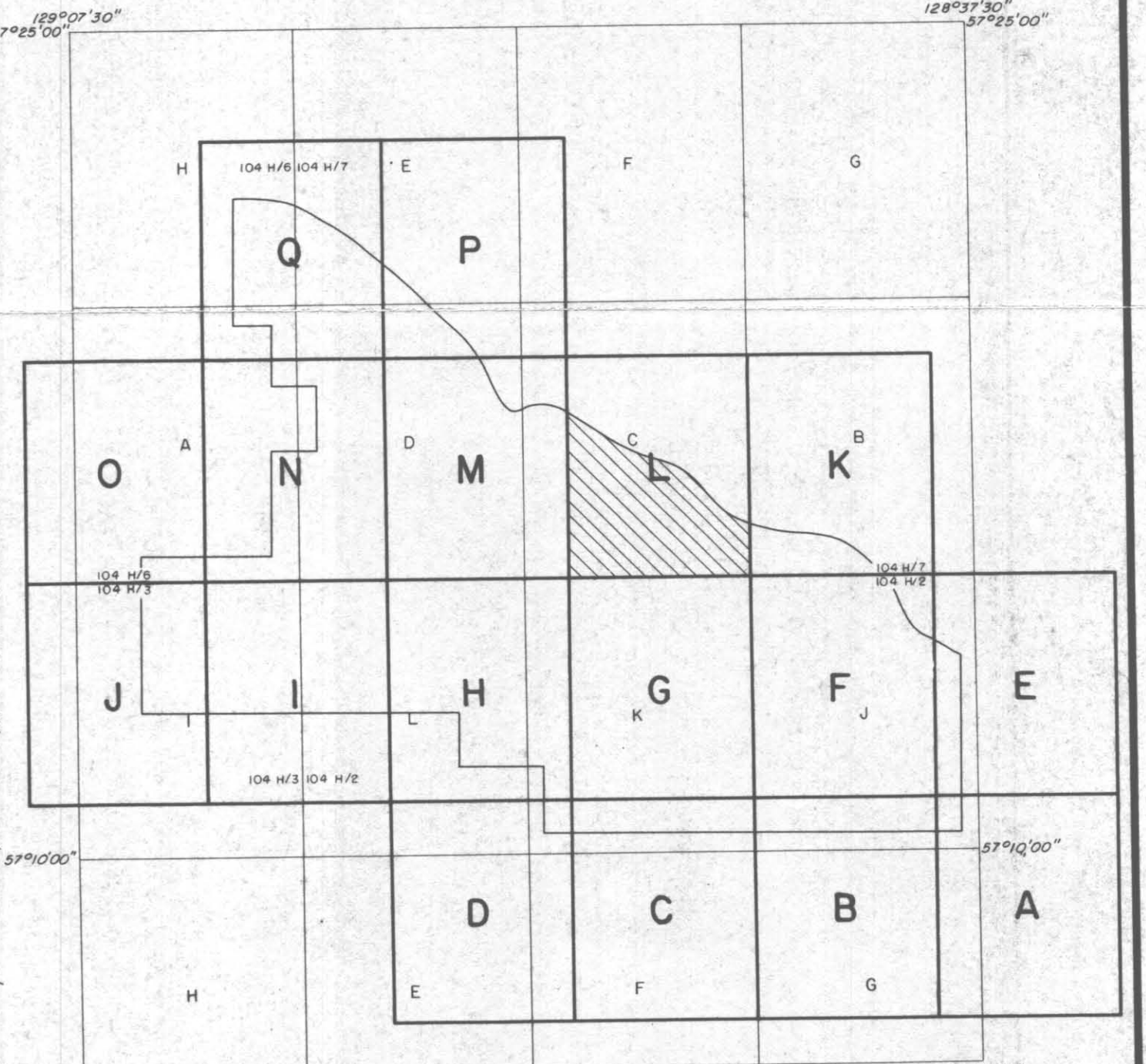
COMPILED BY:
WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD McLELLAN LTD.,
FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67
AT A SCALE OF 1:60,000 (APPROXIMATE).



SCALE 1:10,000



MT. KLAPPAN AREA INDEX MAP



110

- ✕ TRC 82037 TRENCH LOCATION AND NUMBER
- DDH 82005 DIAMOND DRILL HOLE LOCATION AND NUMBER

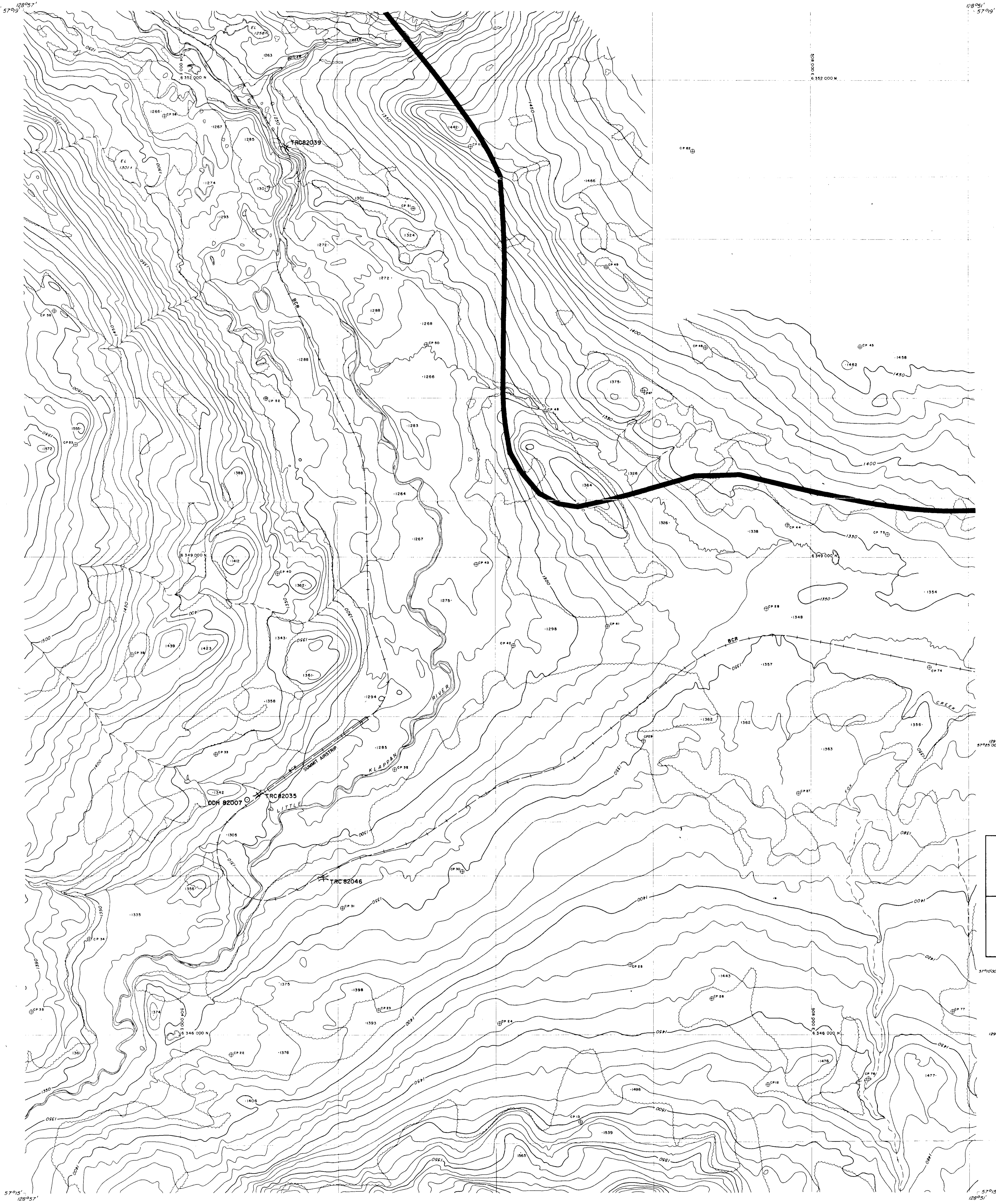
GULF CANADA RESOURCES INC.
Coal Division

CALGARY ALBERTA

**MOUNT KLAPPAN COAL PROPERTY
MAP SHEET L
TRENCH AND DRILL HOLE LOCATIONS**

PREPARED BY: C. LOUIE
APPROVED BY: B.P.F.

DRAWING No.
KPN - 82 - 047
DATE: NOV. 82



LEGEND

BUILDING	---
ROAD, HARD SURFACE	---
ROAD, LOOSE SURFACE	---
CART TRACK	---
TRAIL	---
RAILROAD BED	---
RIVER	---
STREAM, DEFINITE	---
STREAM, APPROXIMATE	---
LAKE	---
WATER LEVEL	---
SWAMP	---
BEAVER DAM	---
TREE LINE	---
CUT LINE	---
CONTOURS, INDEX	---
CONTOURS, INTERMEDIATE	---
DEPRESSION	---
APPROXIMATE	---
SPOT ELEVATION	---
FIELD CONTROL POINT	---
COAL LICENCE	---

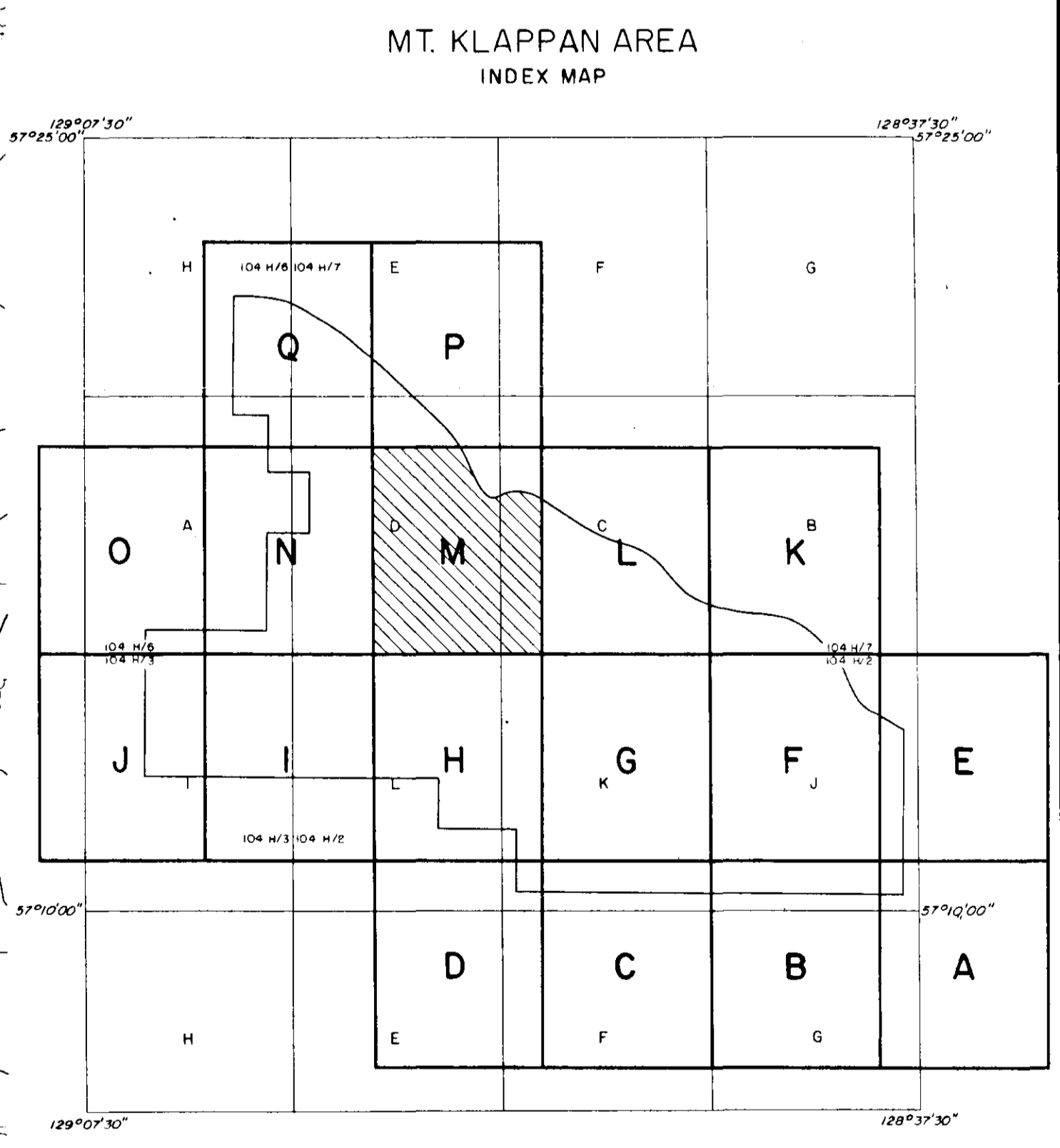
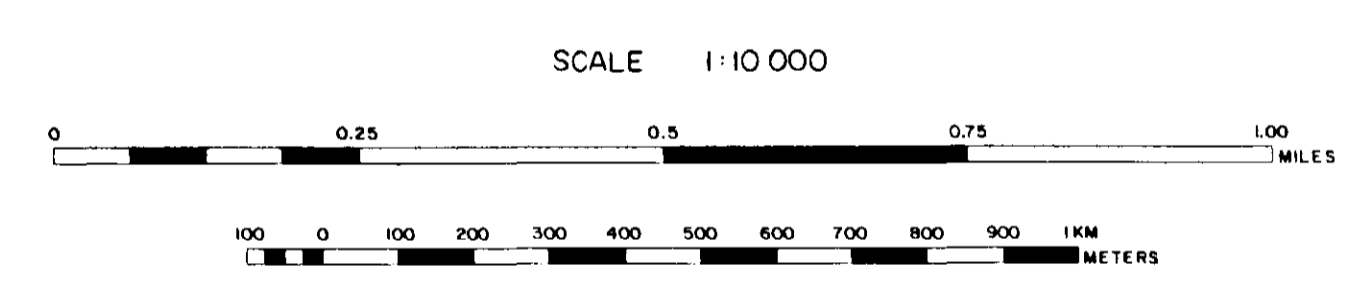
NOTES

CONTOUR INTERVAL 10 METERS

SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

RAILROAD BED LOCATION BASED ON DATA SUPPLIED BY B.C. RAIL.

COMPILED BY: WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD McLELLAN LTD., FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST '67 AT A SCALE OF 1:60000 (APPROXIMATE).



TRC82037 TRENCH LOCATION AND NUMBER
 DDH82005 DIAMOND DRILL HOLE LOCATION AND NUMBER

110

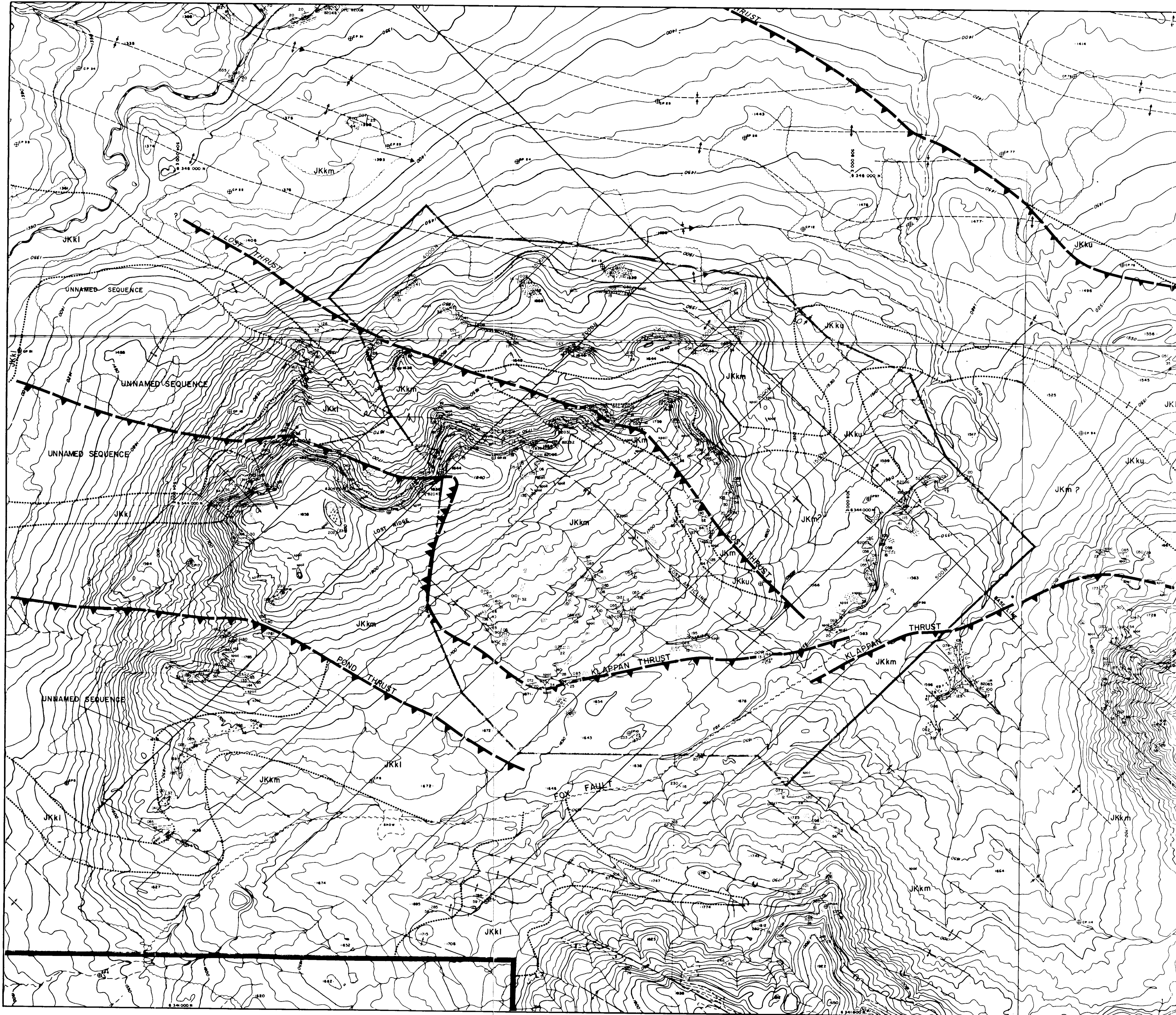
GULF CANADA RESOURCES INC.		
CALGARY	ALBERTA	
MOUNT KLAPPAN COAL PROPERTY MAP SHEET M		
TRENCH AND DRILL HOLE LOCATIONS		
PREPARED BY: C. LOUIE		DRAWING No.
APPROVED BY: B. P. F.		KPN-82-048
DATE: NOV. 82		

128° 57'

128° 50' 02"

57° 16' 04"

57° 16' 04"



57° 13' 08"

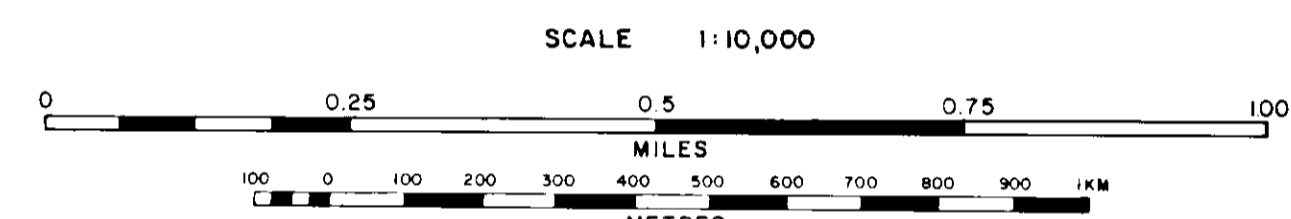
128° 57'

128° 50' 02"

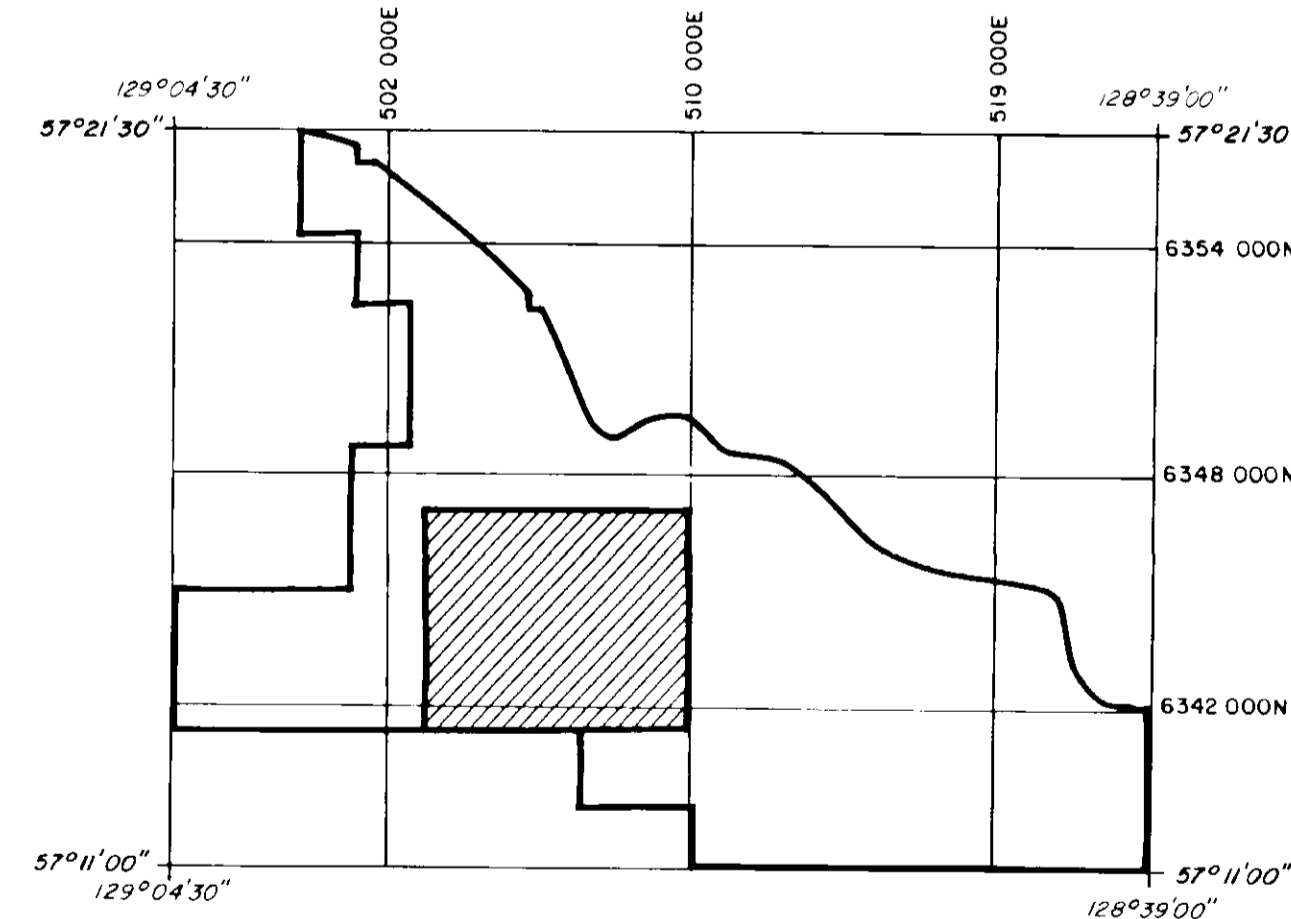
57° 13' 08"

LEGEND

- RAILROAD BED
- RIVER
- STREAM, DEFINITE
- APPROXIMATE
- SPLIT
- LAKE
- SWAMP
- WATER LEVEL
- TREE LINE
- CONTOURS, INDEX
- INTERMEDIATE
- DEPRESSION
- APPROXIMATE
- SPOT ELEVATION
- COAL LICENCE BOUNDARY



LOST-FOX RESOURCE AREA INDEX MAP



110

- MALLOCH SEQUENCE**
- JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare brachiopods towards the base.
 - JKki Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

LEGEND

- GEOLOGICAL CONTACT INTERFACES
- CONTOUR (DEFINITE APPROXIMATE)
- ANTICLINE (DEFINITE APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
- SYNCLINE (DEFINITE APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
- OVERTURNED ANTICLINE (DEFINITE APPROXIMATE)
- OVERTURNED SYNCLINE (DEFINITE APPROXIMATE)
- REGIONS (HORIZONTAL, INCLINED, OVERLAPPED, VERTICAL)
- THRUST FAULT (DEFINITE APPROXIMATE) ARROW INDICATES UPRIGHT SIDE
- FAULT (DEFINITE APPROXIMATE) ARROW INDICATES DOWNWARDSIDE
- TRENCH LOCATION
- CROSS SECTION LOCATION
- DIAMOND DRILLHOLE LOCATION (VERTICAL INCLINED WITH SURFACE PROJECTION)

GEOLOGICAL LEGEND

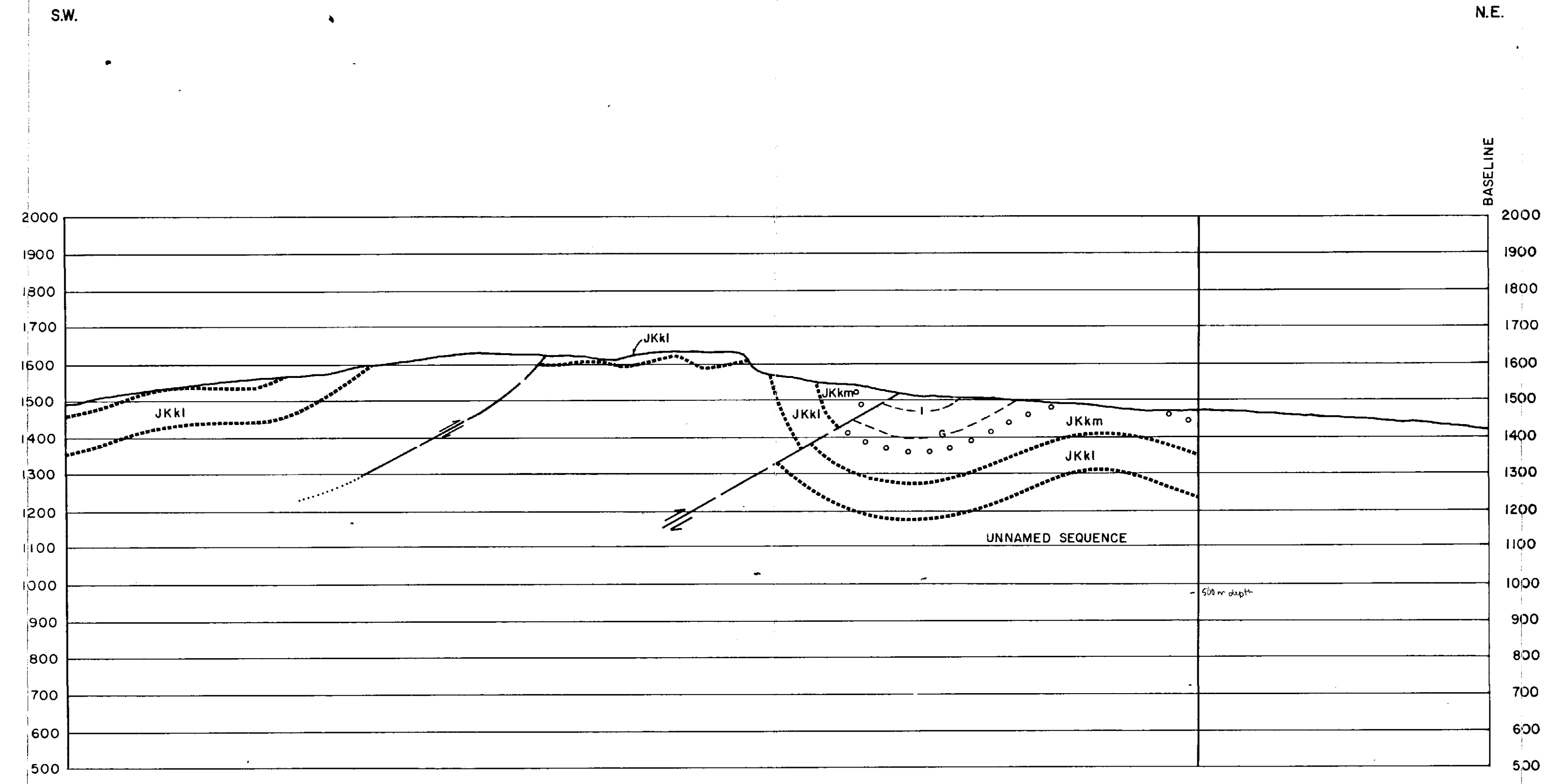
- CROSS SECTION LOCATION
- FIELD CONTROL POINT
- DIAMOND DRILL HOLE
- TRENCH LOCATION
- RESOURCE AREA BOUNDARY

GULF CANADA RESOURCES INC.
 Calgary Coal Division Alberta

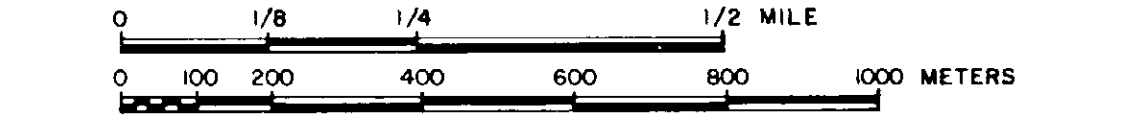
MT. KLAPPAN COAL PROPERTY
 LOST-FOX RESOURCE AREA GEOLOGY

PREPARED BY: G. SEVE
 APPROVED BY: B. P. F.

SCALE 1:10,000
 DATE NOV. 82 DRAWING NO. 2242-017

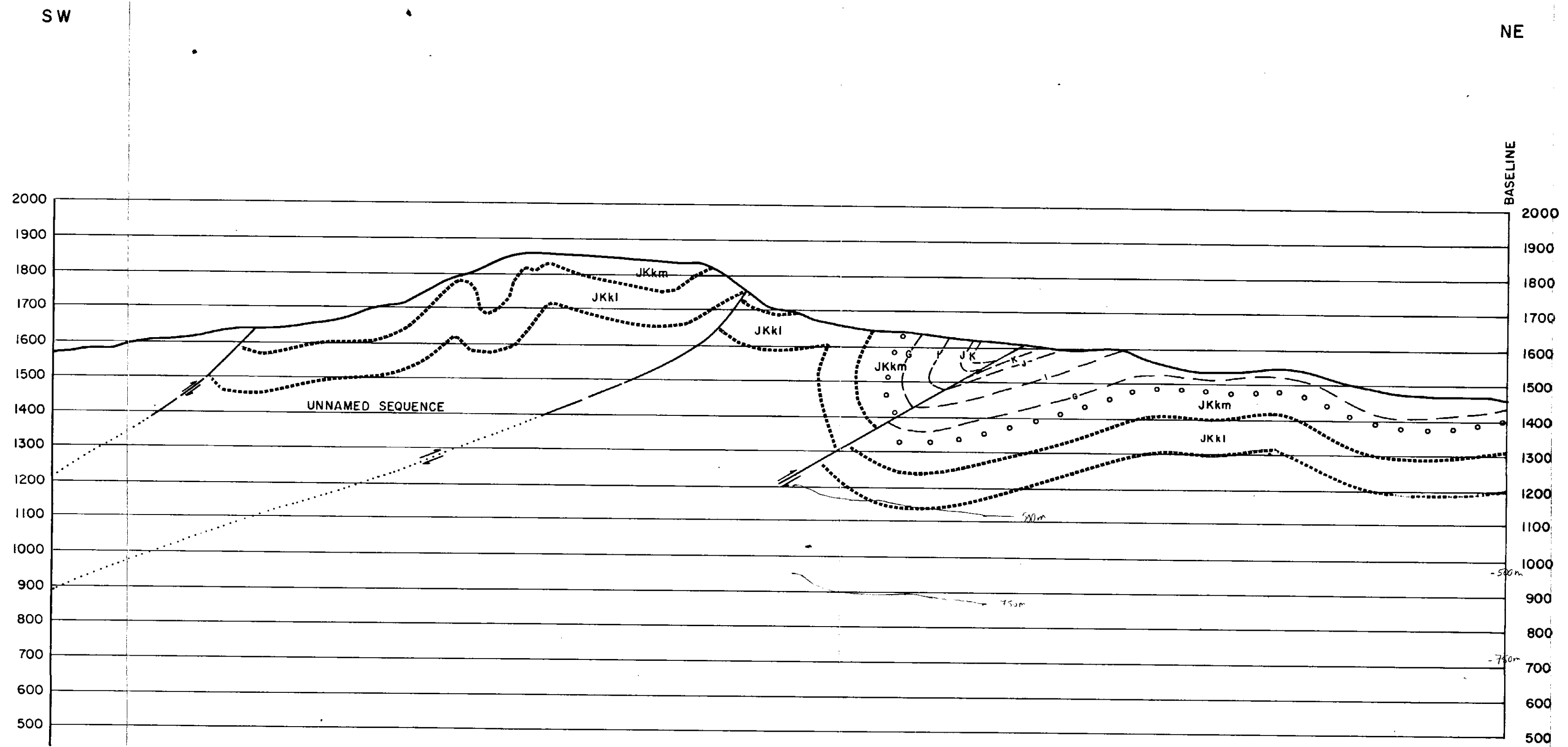


- MALLOCH SEQUENCE**
- JKm** Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku** Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm** Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKki** Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

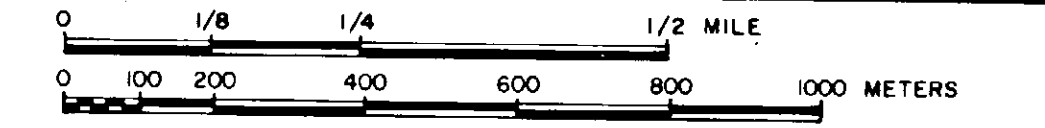


- Legend**
- GEOLOGICAL CONTACT (INFERRED)
 - COAL SEAM TRACE (DEFINED, APPROX.)
 - FAULT TRACE (DEFINED, APPROX., INFERRED)
 - oooooo CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - ATTITUDE CONTROL POINT
 - DDH 82001 DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	
Northwestern British Columbia		
MT. KLAPPAN COAL PROPERTY 110		
GEOLOGICAL CROSS-SECTION		
4000N (WEST)		
LOST-FOX RESOURCE AREA		
PREPARED BY: J. INNIS	SCALE 1:10,000	
APPROVED BY: B.P.F.	DATE: SEPT. 82	DRAWING No. KPN-82-050



- MALLOCH SEQUENCE**
- JKm** Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku** Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm** Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKki** Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.



- Legend**
- GEOLOGICAL CONTACT (INFERRED)
 - - - COAL SEAM TRACE (DEFINED, APPROX.)
 - - - - - FAULT TRACE (DEFINED, APPROX., INFERRED)
 - o o o o o CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - ▲ ATTITUDE CONTROL POINT
 - ▲ DDH 82001 DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

GULF CANADA RESOURCES INC.
 Coal Division
 CALGARY ALBERTA

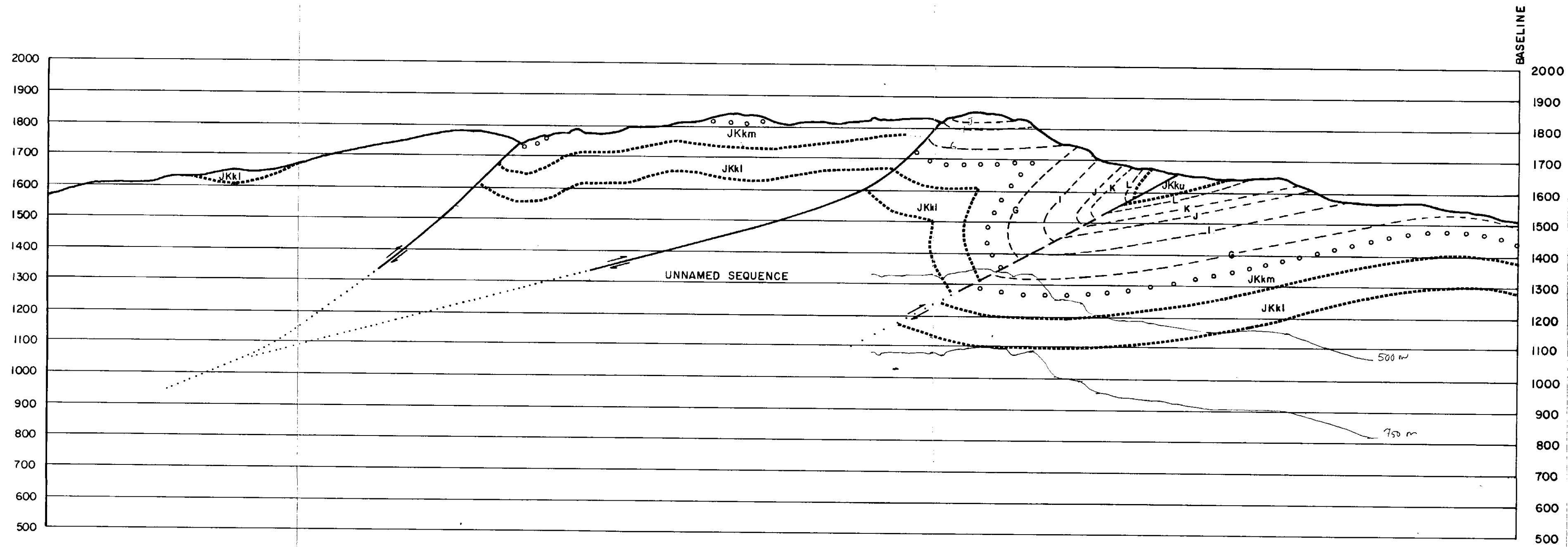
Northwestern British Columbia
MT. KLAPPAN COAL PROPERTY 110

**GEOLOGICAL CROSS-SECTION
 3500N (WEST)
 LOST-FOX RESOURCE AREA**

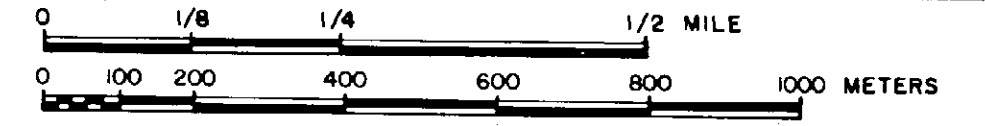
PREPARED BY: J. INNIS SCALE 1:10,000
 APPROVED BY: B.P.F. DATE: NOV. '82 DRAWING No. KPN-82-051

S.W.

N.E.



- MALLOCH SEQUENCE**
- JKm** Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku** Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm** Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKki** Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

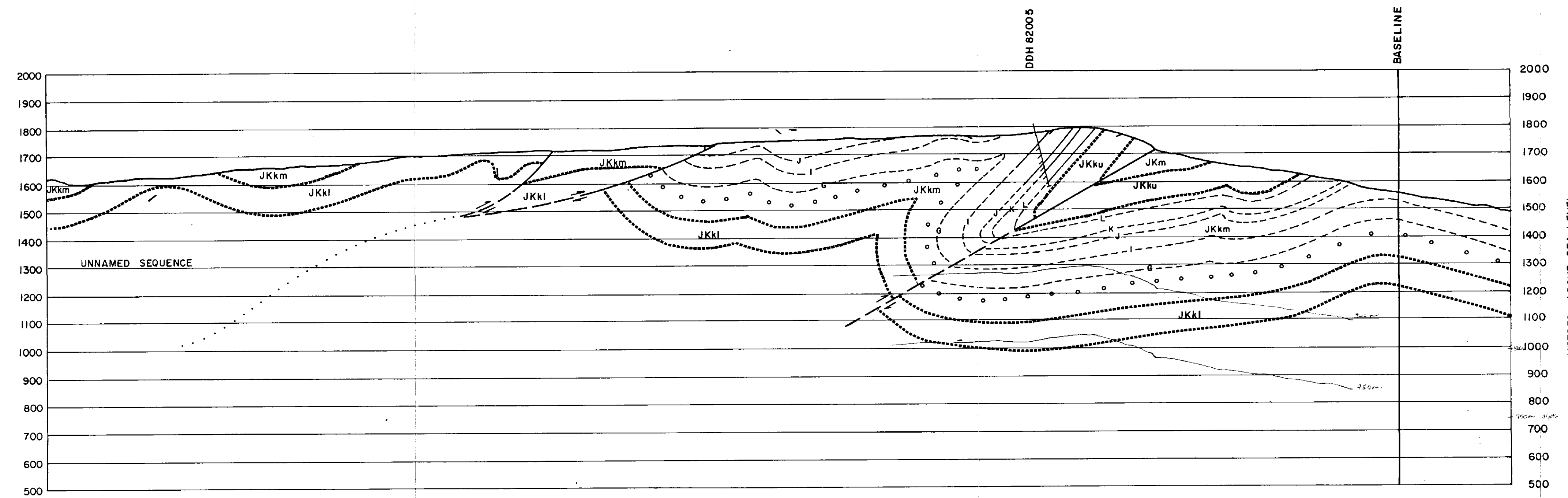


- Legend**
- GEOLOGICAL CONTACT (INFERRED)
 - - - - COAL SEAM TRACE (DEFINED, APPROX.)
 - - - -> FAULT TRACE (DEFINED, APPROX., INFERRED)
 - oooooo CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - ▲ ATTITUDE CONTROL POINT
 - ◆ DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	110
Northwestern British Columbia		
MT. KLAPPAN COAL PROPERTY		
GEOLOGICAL CROSS-SECTION 3000N (WEST) LOST-FOX RESOURCE AREA		
PREPARED BY: J. INNIS	SCALE 1:10,000	
APPROVED BY: B.P.F.	DATE: SEPT. 1982	DRAWING No KPN-82-052

SW

NE



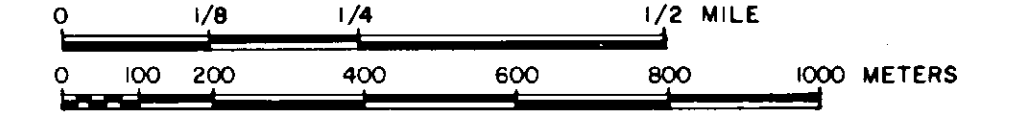
MALLOCH SEQUENCE

JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.

JKku Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.

JKkm Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.

JKkl Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.



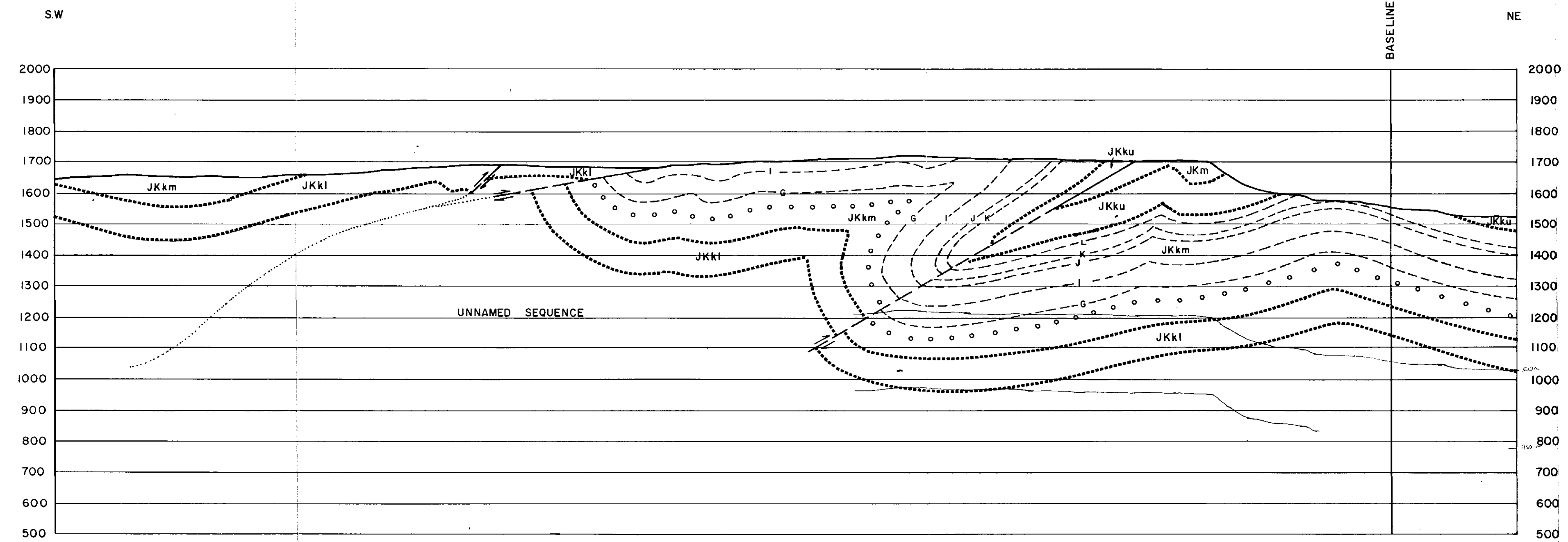
Legend

- GEOLOGICAL CONTACT (INFERRED)
- - - - - COAL SEAM TRACE (DEFINED, APPROX.)
- - - - - FAULT TRACE (DEFINED, APPROX., INFERRED)
- oooooo CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
- ATTITUDE CONTROL POINT
- DDH 82001
- DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

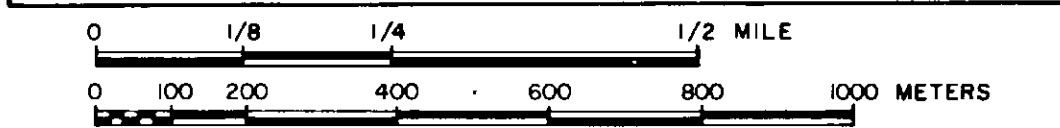
GULF CANADA RESOURCES INC.
 Coal Division
 CALGARY ALBERTA

Northwestern British Columbia
MT. KLAPPAN COAL PROPERTY 110
 GEOLOGICAL CROSS-SECTION
 2500N (WEST)
 LOST-FOX RESOURCE AREA

PREPARED BY: J. INNIS SCALE 1:10,000
 APPROVED BY: B.P.F. DATE: NOV., 82 DRAWING No. KPN-82-053



- MALLOCH SEQUENCE**
- JKm** Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku** Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm** Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKkl** Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

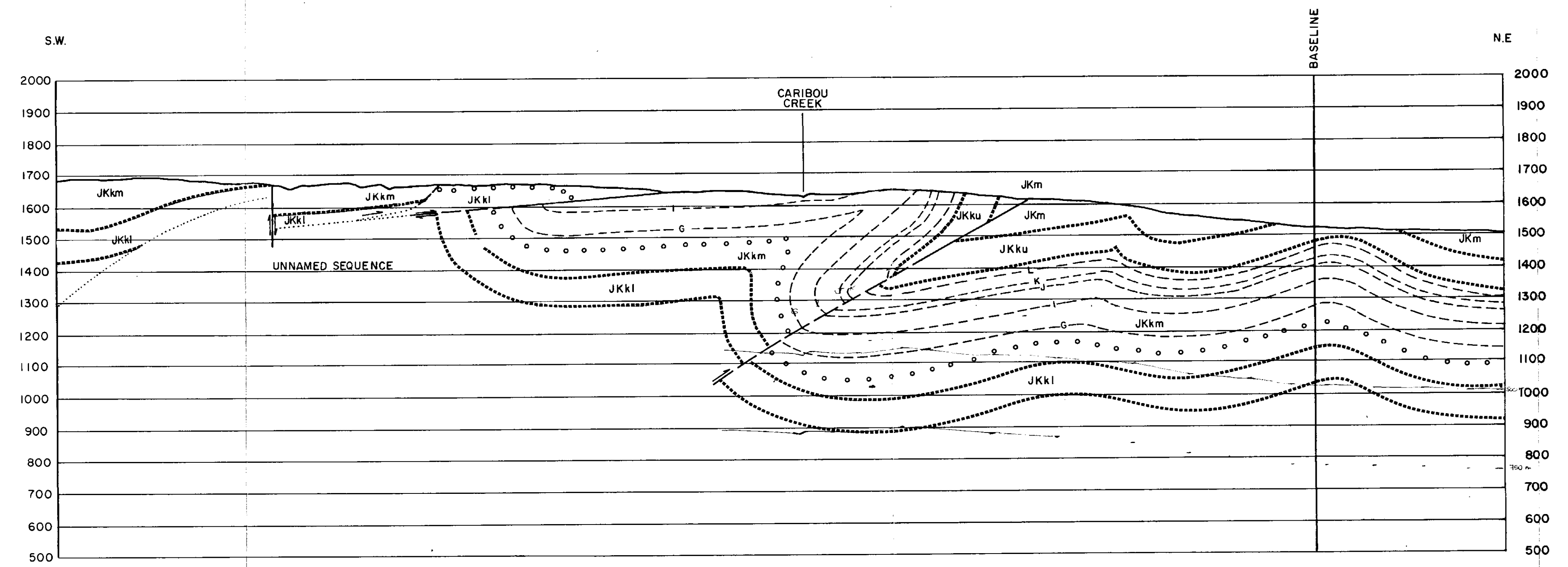


- Legend**
- GEOLOGICAL CONTACT (INFERRED)
 - COAL SEAM TRACE (DEFINED, APPROX.)
 - FAULT TRACE (DEFINED, APPROX., INFERRED)
 - CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - ATTITUDE CONTROL POINT
 - DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

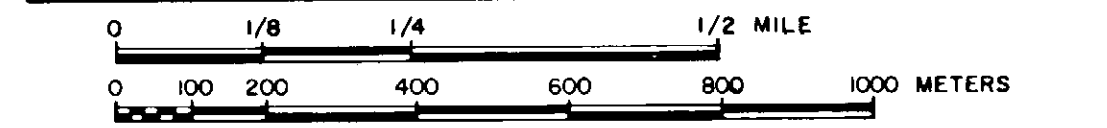
GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

Northwestern British Columbia
MT. KLAPPAN COAL PROPERTY 110
GEOLOGICAL CROSS-SECTION
2000N (WEST)
LOST-FOX RESOURCE AREA

PREPARED BY: J. INNIS SCALE 1:10,000
APPROVED BY: B.P.F. DATE: SEPT. 82 DRAWING No. KPN-82-054



- MALLOCH SEQUENCE**
- JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKkl Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

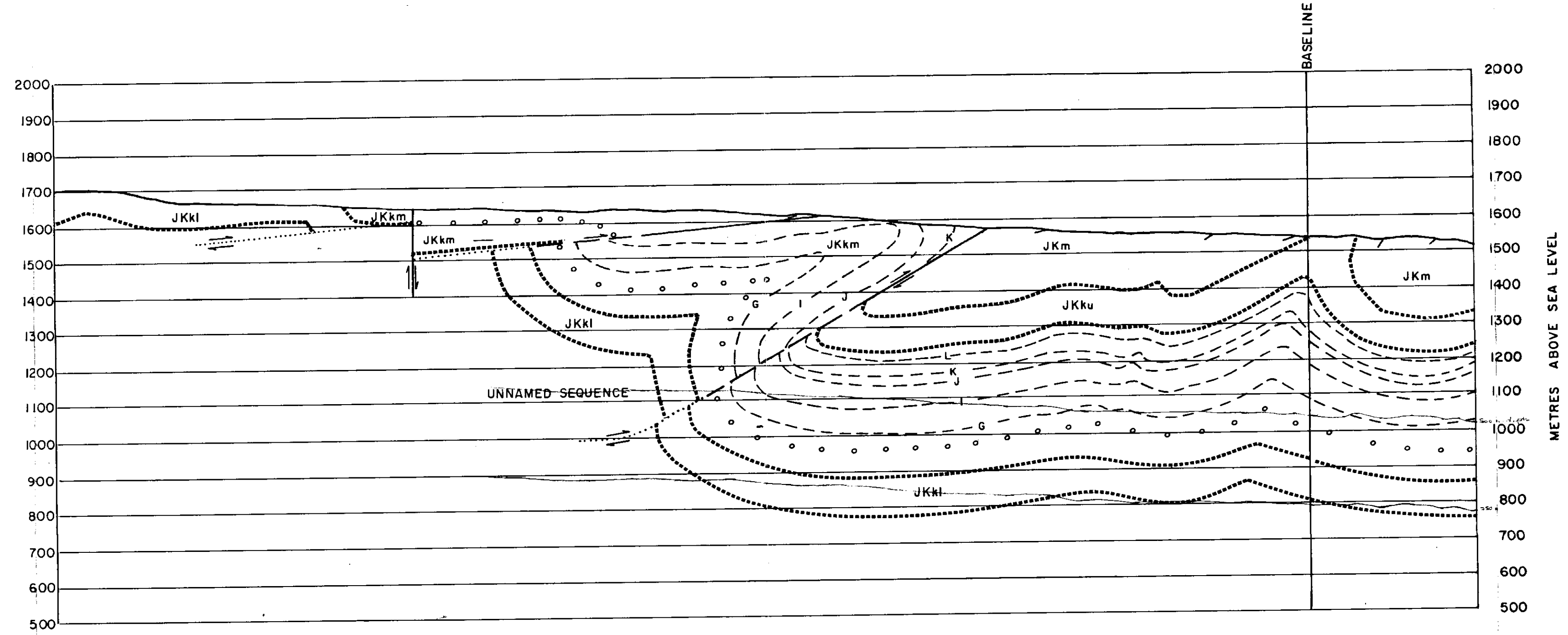


- Legend**
- GEOLOGICAL CONTACT (INFERRED)
 - COAL SEAM TRACE (DEFINED, APPROX.)
 - =====> FAULT TRACE (DEFINED, APPROX., INFERRED)
 - oooooo CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - ATTITUDE CONTROL POINT
 - DDH 82001 DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	110
Northwestern British Columbia		
MT. KLAPPAN COAL PROPERTY		
GEOLOGICAL CROSS-SECTION 1500N (WEST) LOST-FOX RESOURCE AREA		
PREPARED BY: J. INNIS	SCALE: 1:10,000	
APPROVED BY: B.P.F.	DATE: SEPT. 82	DRAWING No. KPN-82-055

S.W.

N.E.



MALLOCH SEQUENCE

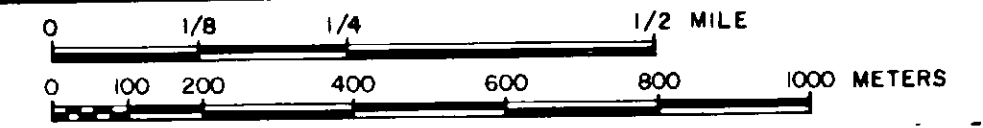
JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.

KLAPPAN SEQUENCE

JKku Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.

JKkm Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.

JKkl Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.



Legend

- GEOLOGICAL CONTACT (INFERRED)
- - - - - COAL SEAM TRACE (DEFINED, APPROX.)
- - - - - FAULT TRACE (DEFINED, APPROX., INFERRED)
- o o o o o CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
- ▲ ATTITUDE CONTROL POINT
- ▲ DDH 82001 DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

GR-MT. KLAPPAN 82(2)A

GULF CANADA RESOURCES INC.

Coal Division

CALGARY

ALBERTA

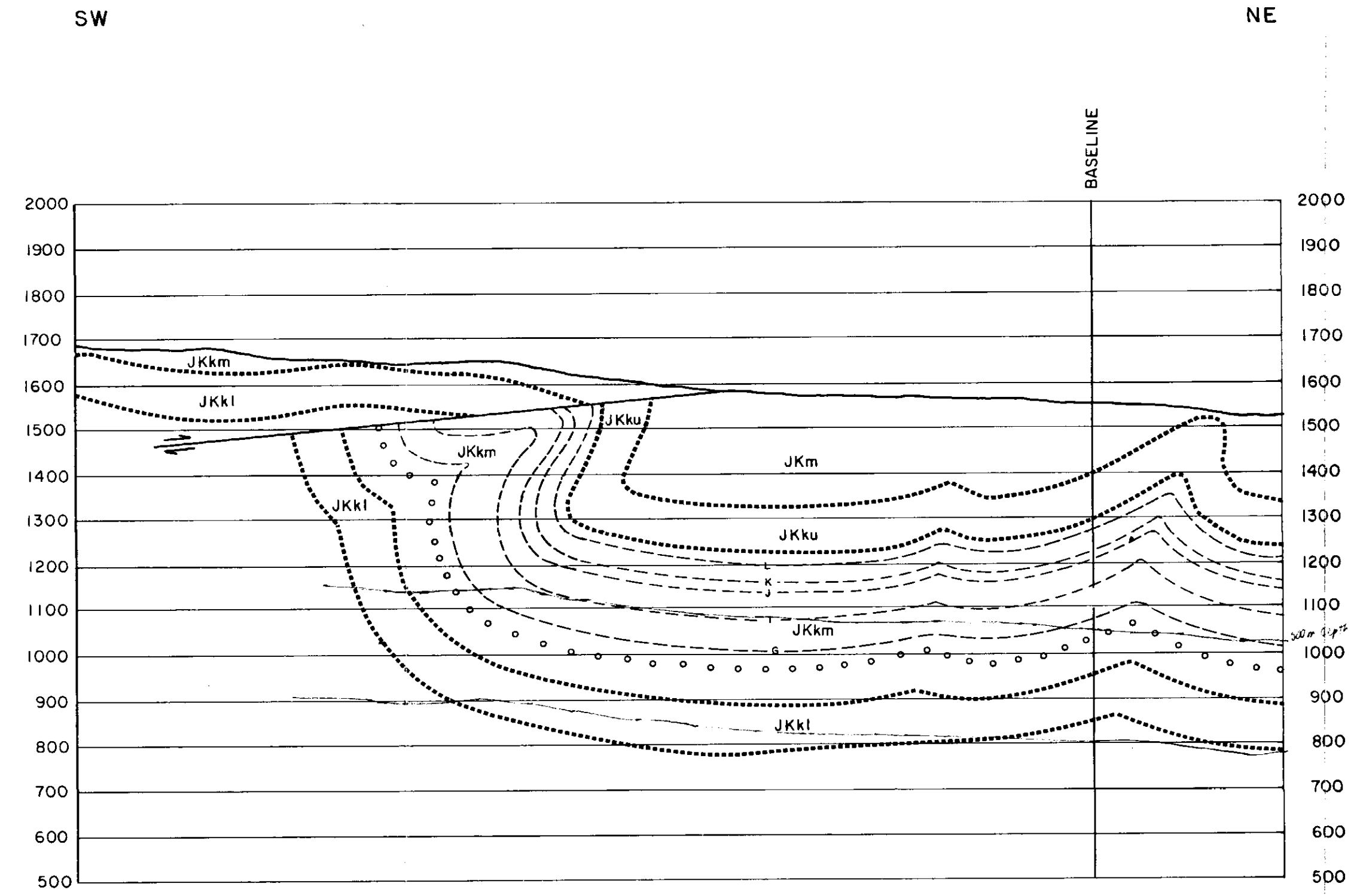


Northwestern British Columbia
MT. KLAPPAN COAL PROPERTY

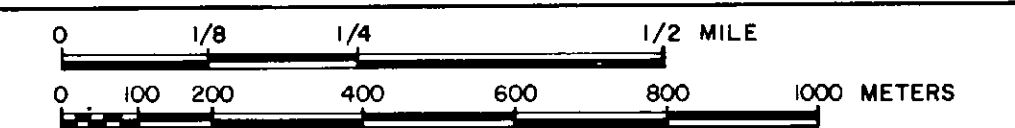
110

GEOLOGICAL CROSS-SECTION
1000N (WEST)
LOST-FOX RESOURCE AREA

PREPARED BY: J. INNIS	SCALE 1: 10,000
APPROVED BY: B.P.F.	DATE: SEPT. '82 DRAWING No. KPN-82-056



- MALLOCH SEQUENCE**
- JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKkI Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.



- Legend**
- GEOLOGICAL CONTACT (INFERRED)
 - COAL SEAM TRACE (DEFINED, APPROX.)
 - >--- FAULT TRACE (DEFINED, APPROX., INFERRED)
 - o-o-o-o-o CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - ATTITUDE CONTROL POINT
 - DDH 82001 DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

GR-MT. KLAPPAN 82(2)A

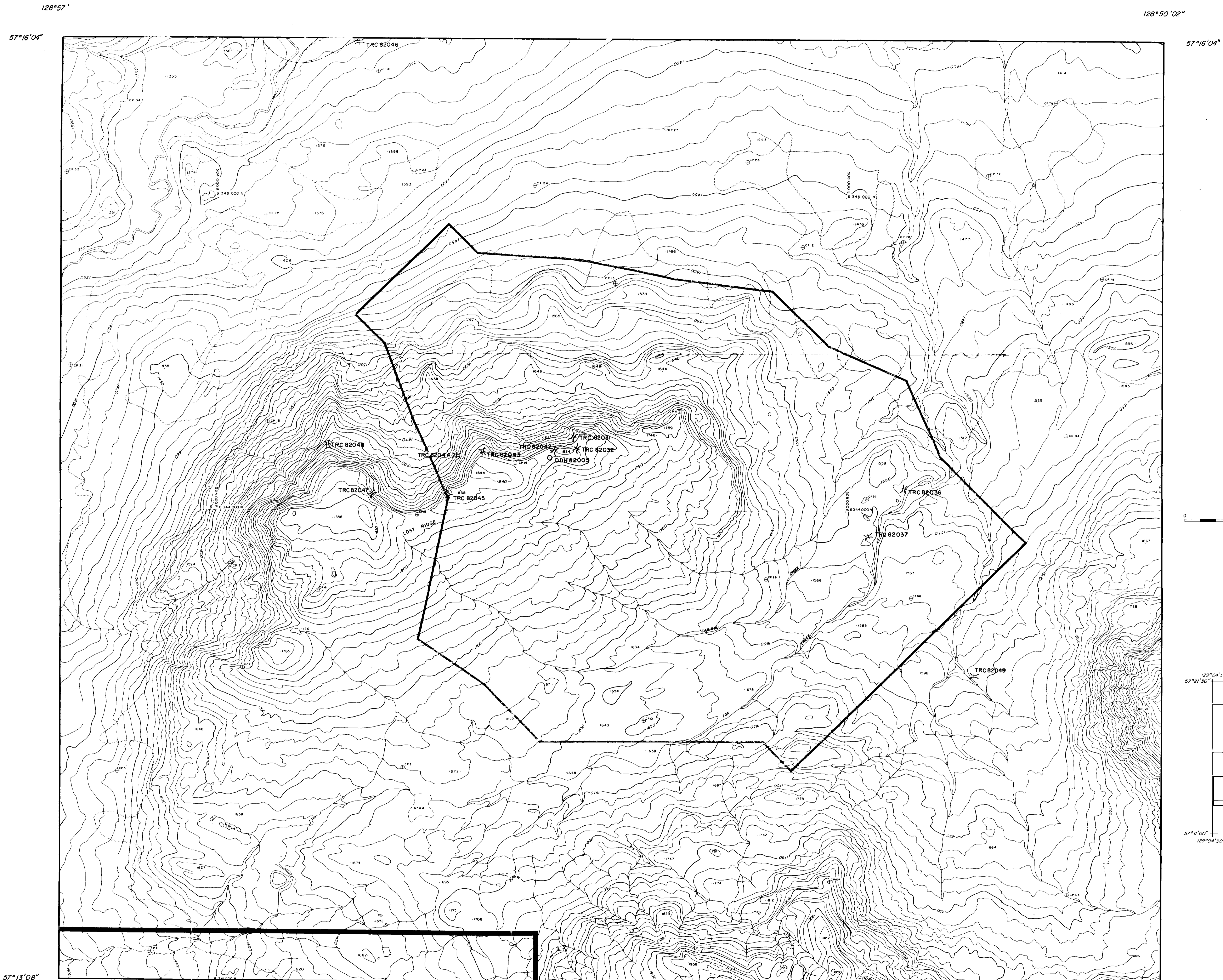
GULF CANADA RESOURCES INC.
Coal Division

CALGARYALBERTA

Northwestern British Columbia
MT. KLAPPAN COAL PROPERTY 110

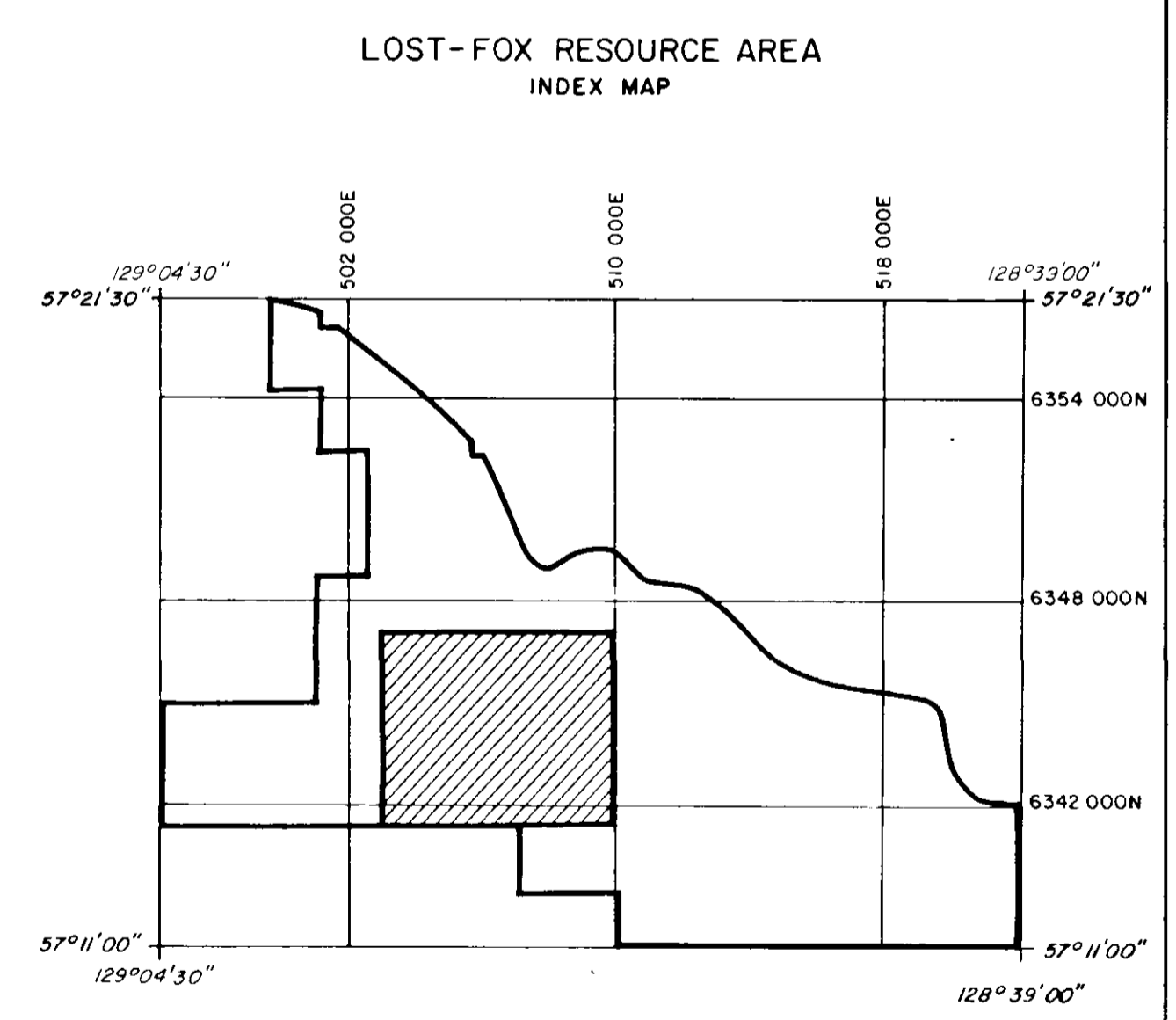
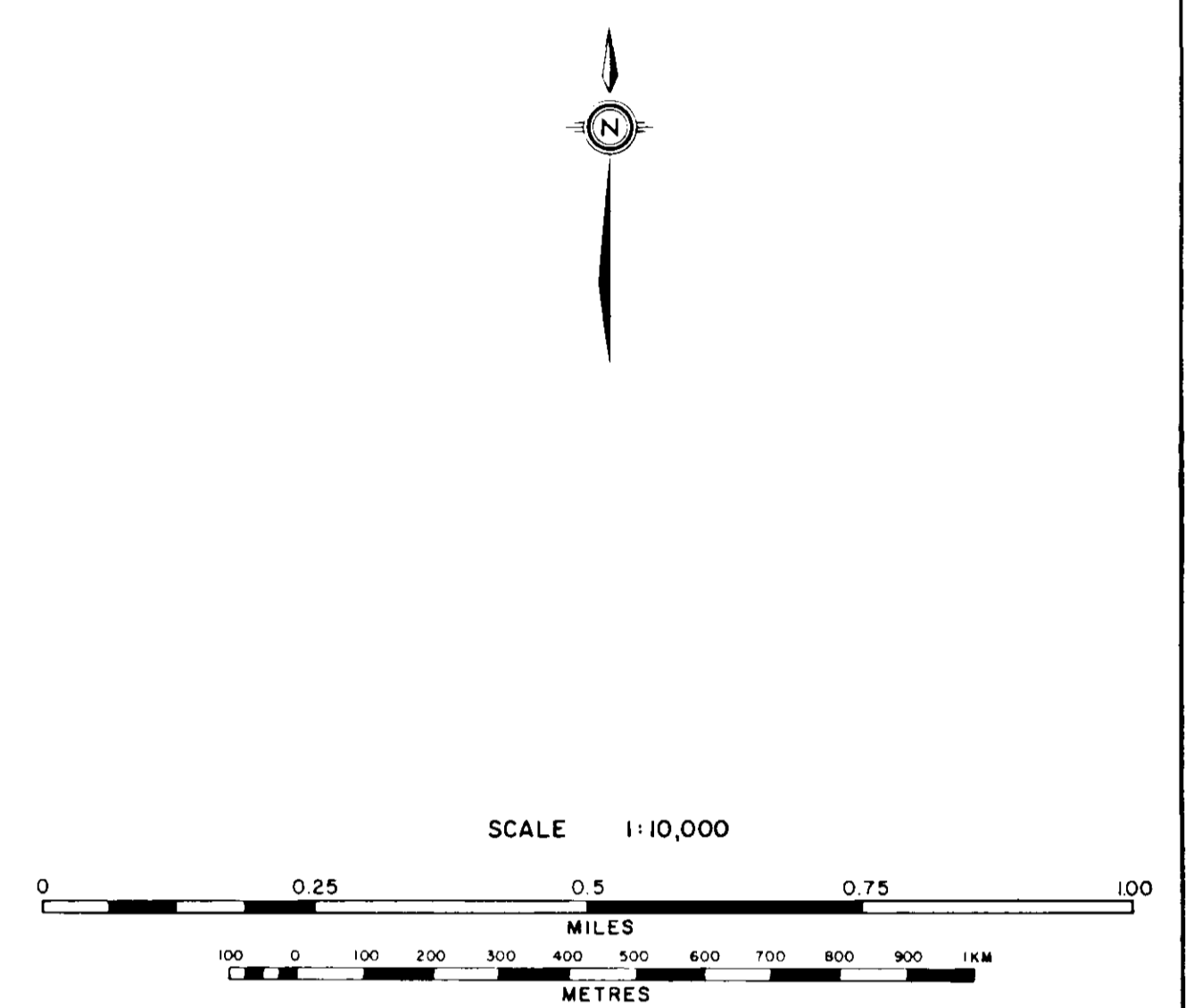
GEOLOGICAL CROSS-SECTION
500N (WEST)
LOST-FOX RESOURCE AREA

PREPARED BY: J. INNIS	SCALE: 1:10,000	
APPROVED BY: B.P.F.	DATE: NOV., 82	DRAWING No. KPN-82-057



LEGEND

RAILROAD BED	---
RIVER	---
STREAM, DEFINITE	---
APPROXIMATE	---
SPLIT	---
LAKE	---
SWAMP	---
WATER LEVEL	EL. 1021
TREE LINE	---
CONTOURS, INDEX	---
INTERMEDIATE	---
DEPRESSION	---
APPROXIMATE	---
SPOT ELEVATION	1634
COAL LICENCE BOUNDARY	---



MALLOCH SEQUENCE

JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.

KLAPPAN SEQUENCE

JKku Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.

JKkm Repeated coarsening upward sequences of fine to medium grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.

JKkl Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

LEGEND

---	RESOLVED CONTACT (INFERRED)
---	COAL SEAM OUTCROP, INFERRED
---	ANTICLINE (DEFINITE APPROXIMATE, ARROW INDICATES PLUNGE DIRECTION)
---	SYNCLINE (DEFINITE APPROXIMATE, ARROW INDICATES PLUNGE DIRECTION)
---	OVERTURNED ANTICLINE (DEFINITE APPROXIMATE)
---	OVERTURNED SYNCLINE (DEFINITE APPROXIMATE)
---	REGULATED CONTACT (INFERRED, UNDEVELOPED VERTICAL)
---	THOUST FAULT (DEFINITE APPROXIMATE, W/ARROW INDICATES DOWNTHROW SIDE)
---	FAULT (DEFINITE APPROXIMATE, UNDEVELOPED VERTICAL, INDICATES DOWNTHROW SIDE)
---	TRENCH LOCATION
---	CROSS SECTION LOCATION
---	DIAMOND DRILL HOLE LOCATION (VERTICAL, INCLINED WITH SURFACE PROJECTION)

GEOLOGICAL LEGEND

●	FIELD CONTROL POINT	●	CP 155
○	DIAMOND DRILL HOLE	○	DDH 82005
---	TRENCH LOCATION	---	
---	RESOURCE AREA BOUNDARY	---	

GULF CANADA RESOURCES INC.
 Calgary Alberta

MT. KLAPPAN COAL PROPERTY
LOST-FOX RESOURCE AREA
TRENCH & DRILL HOLE LOCATIONS

PREPARED BY: G. SEVE
 APPROVED BY: B. P. F.

SCALE 1:110,000
 DATE: NOV. 82
 DRAWING NO. WPA-82-258

128° 50' 02"

57° 17' 10"



57° 12' 08"

128° 50' 02"

MALLOCH SEQUENCE	
	Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
KLAPPAN SEQUENCE	
	Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
	Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
	Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

DRUG 52a

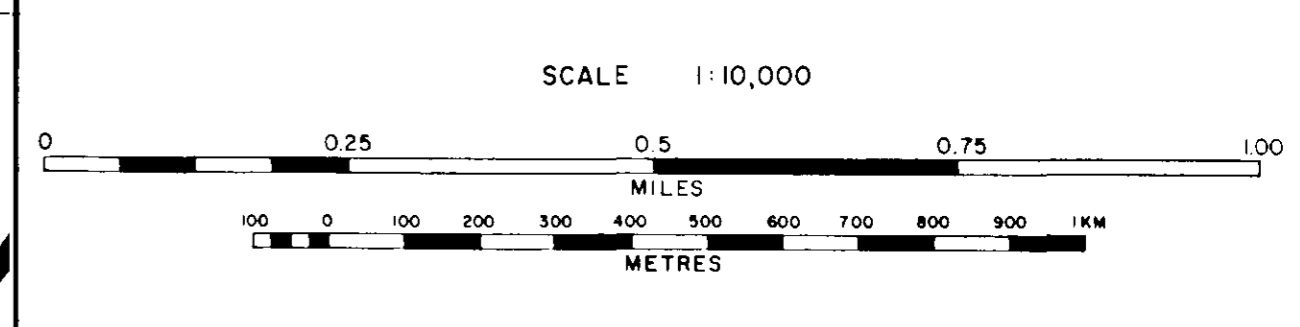
128°41'04"

57°17'10"

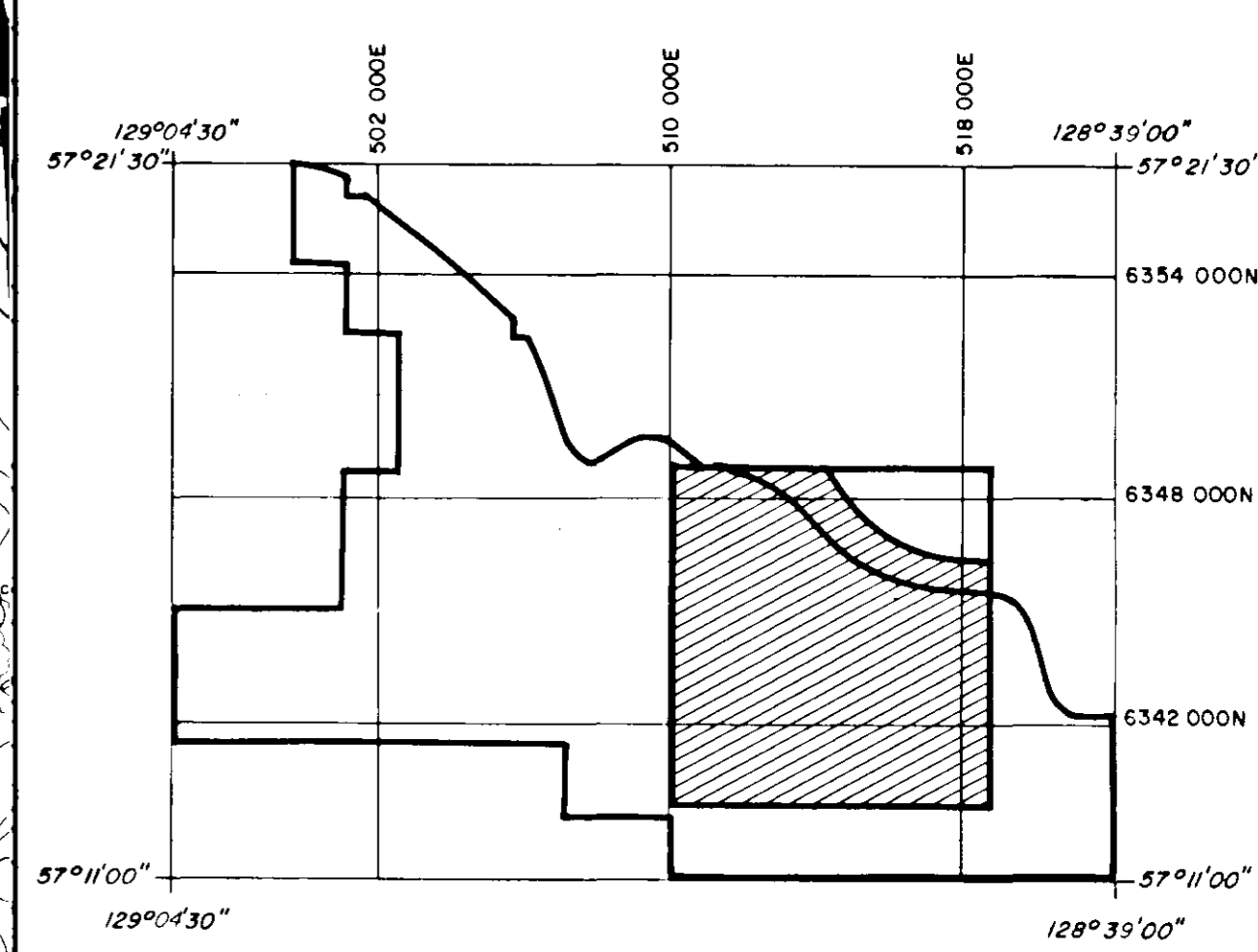


LEGEND

- RAILROAD BED - - - - -
- RIVER - - - - -
- STREAM, DEFINITE - - - - -
- APPROXIMATE - - - - -
- SPLIT - - - - -
- LAKE - - - - -
- SWAMP - - - - -
- WATER LEVEL - - - - -
- TREE LINE - - - - -
- CONTOURS, INDEX - - - - -
- INTERMEDIATE - - - - -
- DEPRESSION - - - - -
- APPROXIMATE - - - - -
- SPOT ELEVATION - - - - -
- COAL LICENCE BOUNDARY - - - - -
- REDEFINED LICENCE BOUNDARY - - - - -



HOBBIT - BROATCH RESOURCE AREA INDEX MAP



AREA OF NO OUTCROP

- MALLOCH SEQUENCE**
- JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal. Sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKki Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

- LEGEND**
- (SYMBOL) GEOLOGICAL CONTACT (UNDEFINED)
 - (SYMBOL) COAL SEAM (OUTCROP UNDEFINED)
 - (SYMBOL) ANTICLINE (DEFINED, APPROXIMATE; ARROW INDICATES PLUNGE DIRECTION)
 - (SYMBOL) SYNCLINE (DEFINED, APPROXIMATE; ARROW INDICATES PLUNGE DIRECTION)
 - (SYMBOL) OVERTURNED ANTICLINE (DEFINED, APPROXIMATE)
 - (SYMBOL) OVERTURNED SYNCLINE (DEFINED, APPROXIMATE)
 - (SYMBOL) BEYOND HORIZONTAL PLUNGE (DEFINED, APPROXIMATE)
 - (SYMBOL) THRUST FAULT (DEFINED, APPROXIMATE; UNDEFINED; TEETH; INDICATE UP/THROW SIDE)
 - (SYMBOL) FAULT (DEFINED, APPROXIMATE; UNDEFINED; SOLID CIRCLE; INDICATES DOWN/THROW SIDE)
 - (SYMBOL) TRENCH LOCATION
 - (SYMBOL) MEASURED SECTION LOCATION
 - (SYMBOL) CROSS SECTION LOCATION
 - (SYMBOL) DIAMOND DRILLHOLE LOCATION (VERTICAL, INCLINED WITH SURFACE PROJECTION)

GEOLOGICAL LEGEND

- CROSS SECTION LOCATION - - - - -
- FIELD CONTROL POINT - - - - -
- DIAMOND DRILL HOLE - - - - -
- TRENCH LOCATION - - - - -
- RESOURCE AREA BOUNDARY - - - - -

GULF CANADA RESOURCES INC.
 Calgary Alberta

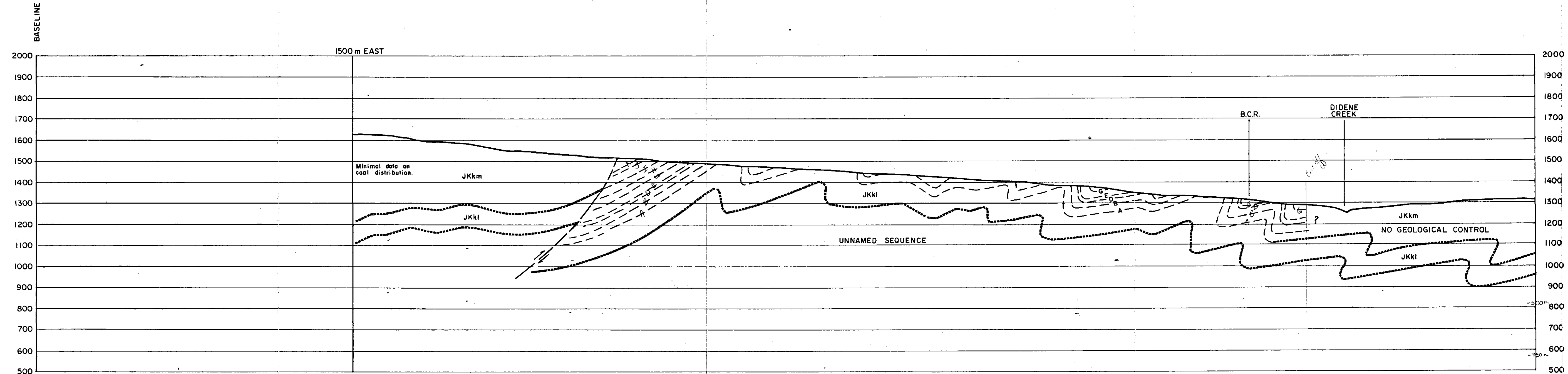
MT KLAPPAN COAL PROPERTY
HOBBIT - BROATCH
RESOURCE AREA
GEOLOGY

PREPARED BY: G SEVE SCALE 1:10,000
 APPROVED BY: B.P.F. DATE: NOV. 82 DRAWING NO. KX82-259

117

SW

NE

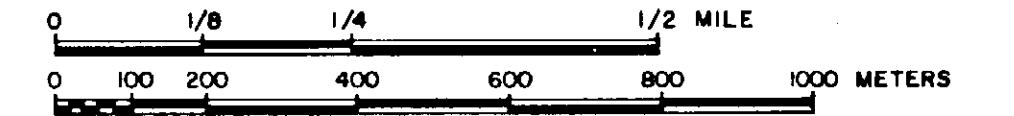


MALLOCH SEQUENCE

- JKm** Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.

KLAPPAN SEQUENCE

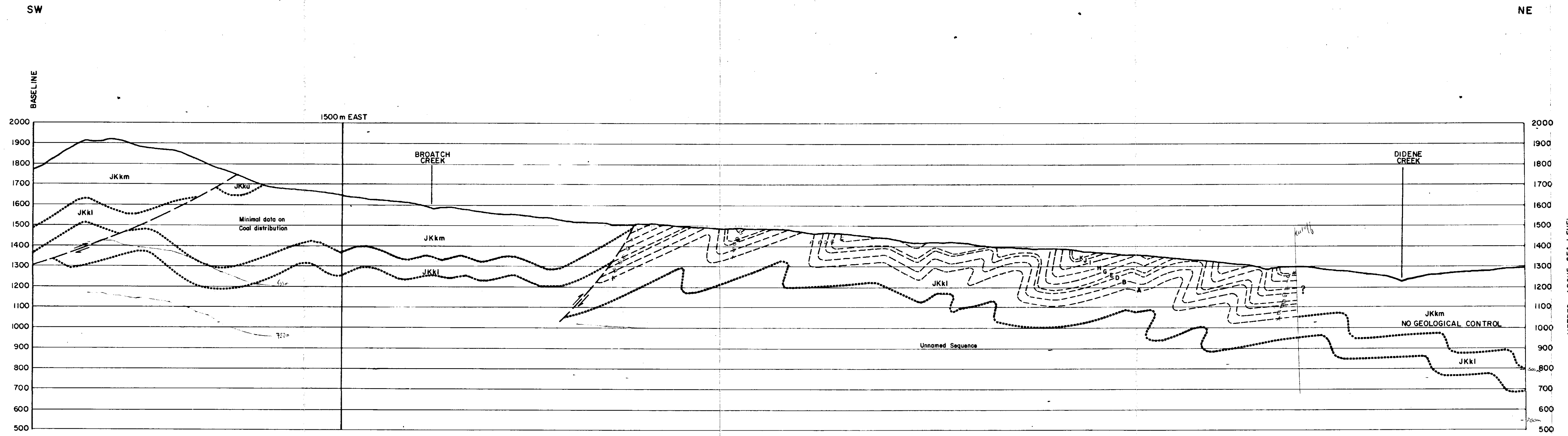
- JKku** Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
- JKkm** Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
- JKki** Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.



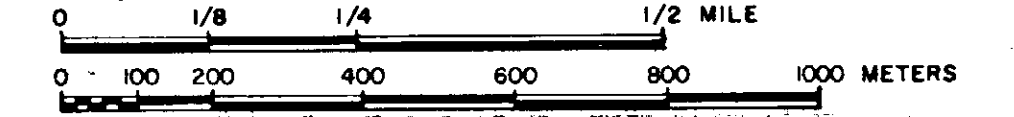
Legend

- GEOLOGICAL CONTACT (INFERRED)
- - - - COAL SEAM TRACE (DEFINED, APPROX.)
- ====> FAULT TRACE (DEFINED, APPROX., INFERRED)
- oo oo oo oo o o o o CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
- ▲ ATTITUDE CONTROL POINT
- DDH 82001 ▲ DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	
Northwestern British Columbia		
MT. KLAPPAN COAL PROPERTY 110		
GEOLOGICAL CROSS-SECTION		
500 S (EAST)		
HOBBIT-BROATCH RESOURCE AREA		
PREPARED BY: G. SEVE	SCALE	1 : 10,000
APPROVED BY: B.P.F.	DATE: NOV. 82	DRAWING No. KPN-82-060



- MALLOCH SEQUENCE**
- JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKki Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.



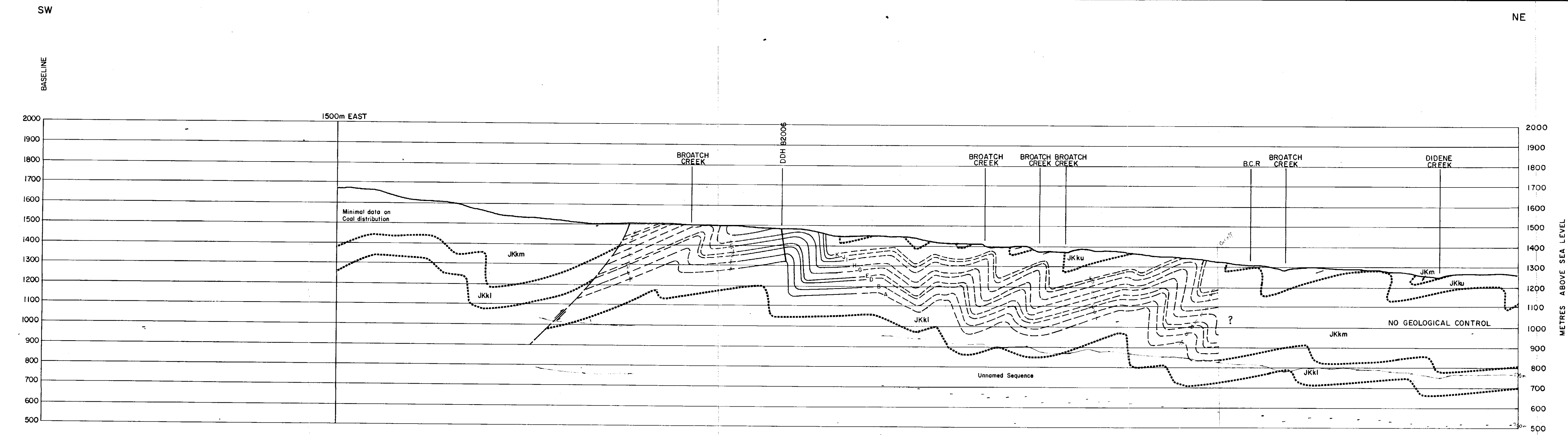
- Legend**
- GEOLOGICAL CONTACT (INFERRED)
 - - - - COAL SEAM TRACE (DEFINED, APPROX)
 - - - - FAULT TRACE (DEFINED, APPROX, INFERRED)
 - o o o o o CONGLOMERATIC UNIT (DEFINED, APPROX, INFERRED)
 - ▲ ATTITUDE CONTROL POINT
 - ▲ DDH 82001 DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

GULF CANADA RESOURCES INC.
 Coal Division
 CALGARY ALBERTA



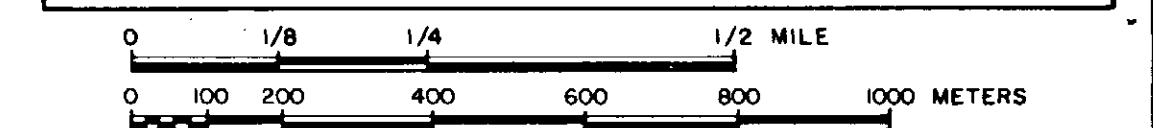
Northwestern British Columbia
MT. KLAPPAN COAL PROPERTY
 110
GEOLOGICAL CROSS-SECTION
1000S (EAST)
HOBBIT-BROATCH RESOURCE AREA

PREPARED BY: G. SEVE SCALE 1:10,000
 APPROVED BY: B.P.F. DATE: NOV. 82 DRAWING No. KPN-82-061



MALLOCH SEQUENCE
 JKkm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.

KLAPPAN SEQUENCE
 JKku Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 JKkm Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 JKkl Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.



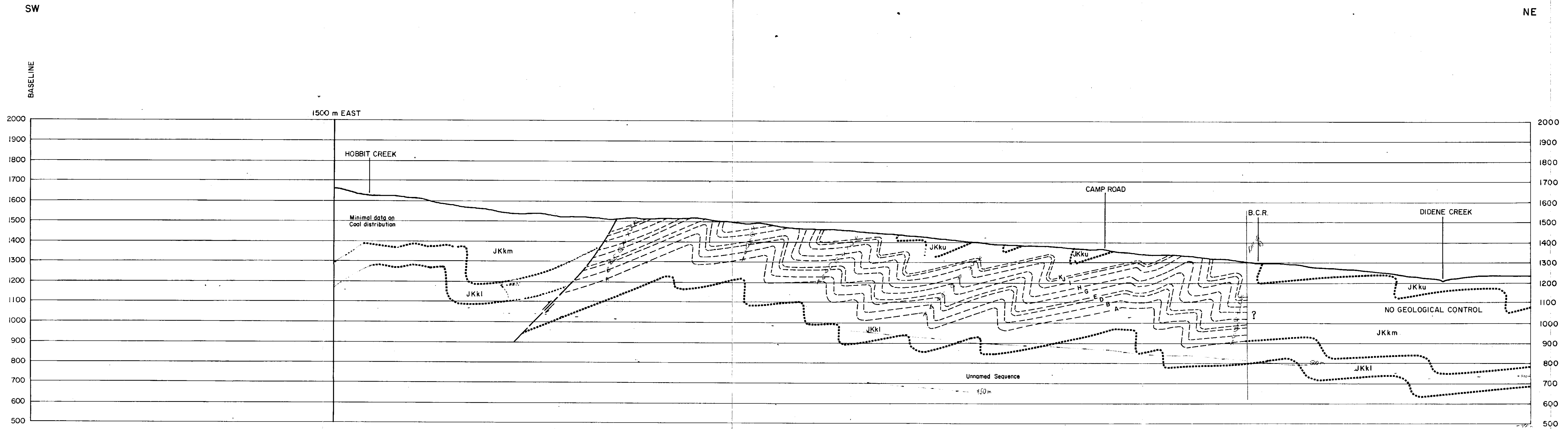
- Legend**
- GEOLOGICAL CONTACT (INFERRED)
 - COAL SEAM TRACE (DEFINED, APPROX.)
 - - - - - FAULT TRACE (DEFINED, APPROX., INFERRED)
 - oooooo CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - ▲ ATTITUDE CONTROL POINT
 - ▲ DDH 82001 DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

GULF CANADA RESOURCES INC.
 Coal Division
 CALGARY ALBERTA

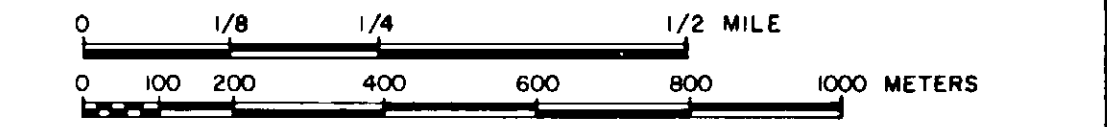
Northwestern British Columbia
MT. KLAPPAN COAL PROPERTY

GEOLOGICAL CROSS-SECTION
 1500 S (EAST)
 HOBBIT-BROATCH RESOURCE AREA

PREPARED BY: G. SEVE SCALE: 1 : 10,000
 APPROVED BY: B.P.F. DATE: NOV. 82 DRAWING No. KPN-82-062



- MALLOCH SEQUENCE**
- JKm** Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku** Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm** Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKkl** Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.



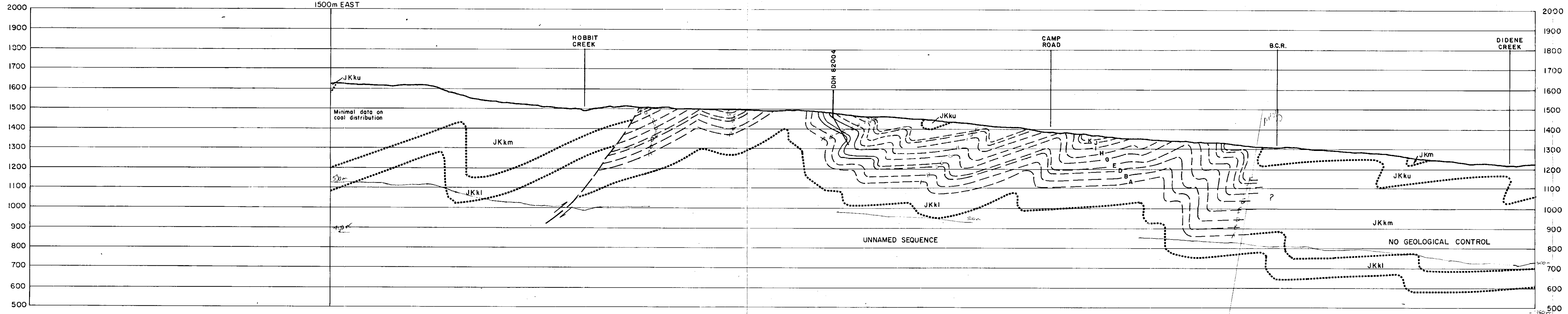
- Legend**
- GEOLOGICAL CONTACT (INFERRED)
 - COAL SEAM TRACE (DEFINED, APPROX.)
 - >--- FAULT TRACE (DEFINED, APPROX., INFERRED)
 - o-o-o-o-o CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - ▲ ATTITUDE CONTROL POINT
 - DDH 82001 ▲ DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	110
Northwestern British Columbia		
MT. KLAPPAN COAL PROPERTY		
GEOLOGICAL CROSS-SECTION		
2000 S (EAST)		
HOBBIT-BROATCH RESOURCE AREA		
PREPARED BY: G. SEVE	SCALE 1: 10,000	
APPROVED BY: B.P.F.	DATE: NOV. 82	DRAWING No. KPN-82-063

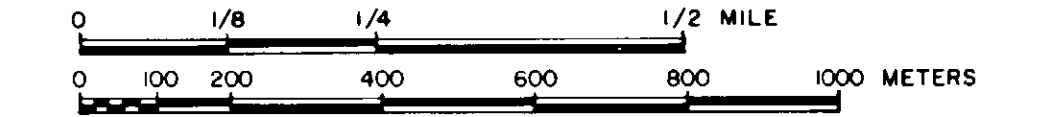
SW

NE

BASILINE



- MALLOCH SEQUENCE**
- JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKki Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

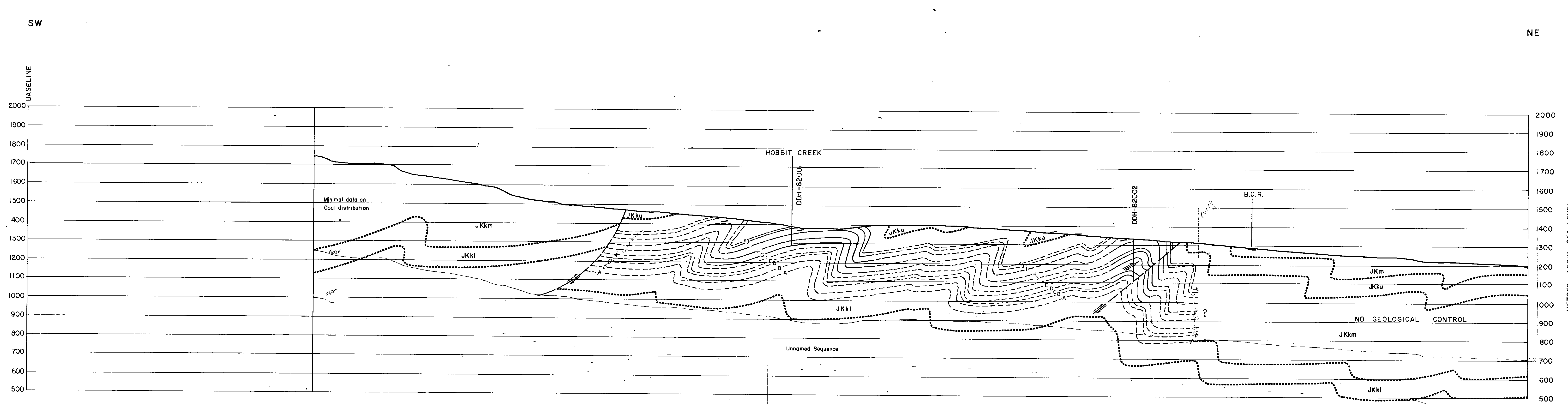


- Legend**
- GEOLOGICAL CONTACT (INFERRED)
 - COAL SEAM TRACE (DEFINED, APPROX.)
 - - - FAULT TRACE (DEFINED, APPROX., INFERRED)
 - o o o o CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - ATTITUDE CONTROL POINT
 - DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

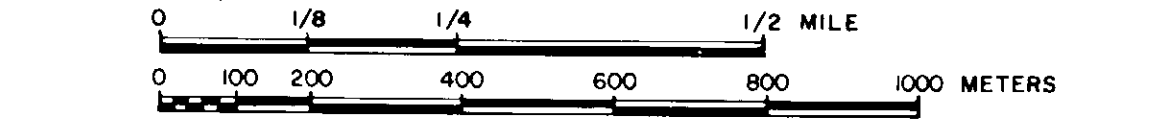
GULF CANADA RESOURCES INC.
 Coal Division
 CALGARY ALBERTA

Northwestern British Columbia
MT. KLAPPAN COAL PROPERTY 110
GEOLOGICAL CROSS-SECTION
2500 S (EAST)
HOBBIT-BROATCH RESOURCE AREA

PREPARED BY: G. SEVE SCALE 1: 10,000
 APPROVED BY: B.P.F. DATE: NOV.,82 DRAWING No. KPN-82-064



- MALLOCH SEQUENCE**
- JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKki Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.

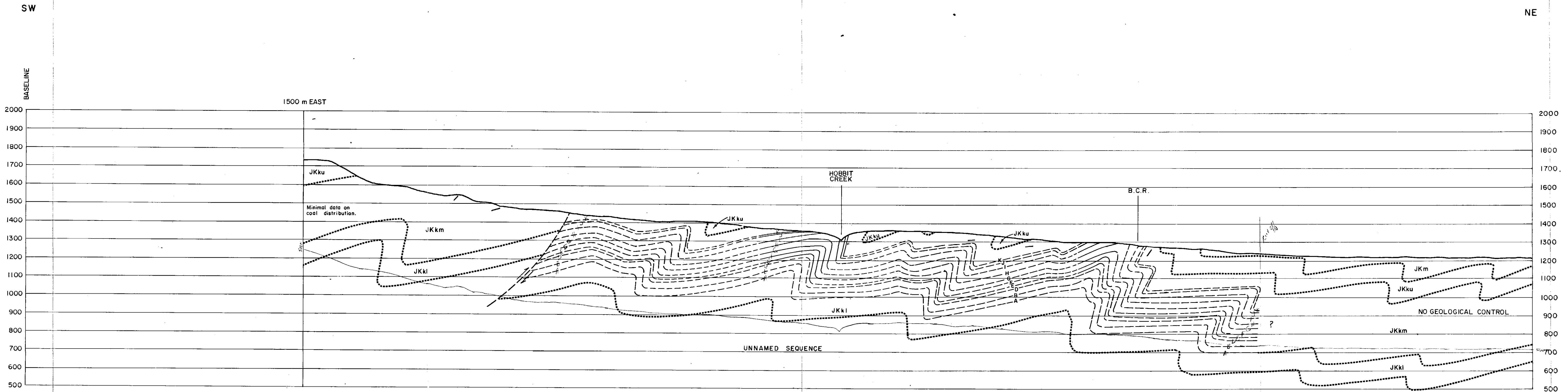


- Legend**
- GEOLOGICAL CONTACT (INFERRED)
 - COAL SEAM TRACE (DEFINED, APPROX.)
 - - - - - FAULT TRACE (DEFINED, APPROX., INFERRED)
 - ooooooo CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - ATTITUDE CONTROL POINT
 - DDH 82001 DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

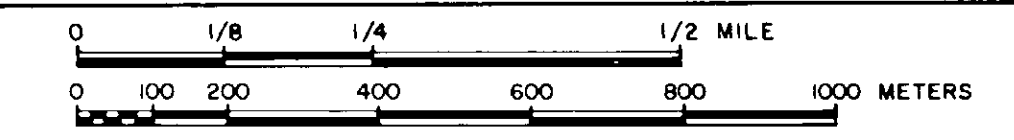
GULF CANADA RESOURCES INC.
 Coal Division
 CALGARY ALBERTA

Northwestern British Columbia
MT. KLAPPAN COAL PROPERTY
 GEOLOGICAL CROSS-SECTION
 3500 S (EAST)
 HOBBIT-BROATCH RESOURCE AREA

PREPARED BY: G. SEVE	SCALE: 1: 10,000
APPROVED BY: B.P.F.	DATE: NOV. 82 DRAWING No. KPN-82-066



- MALLOCH SEQUENCE**
- JKm** Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku** Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm** Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKkl** Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.



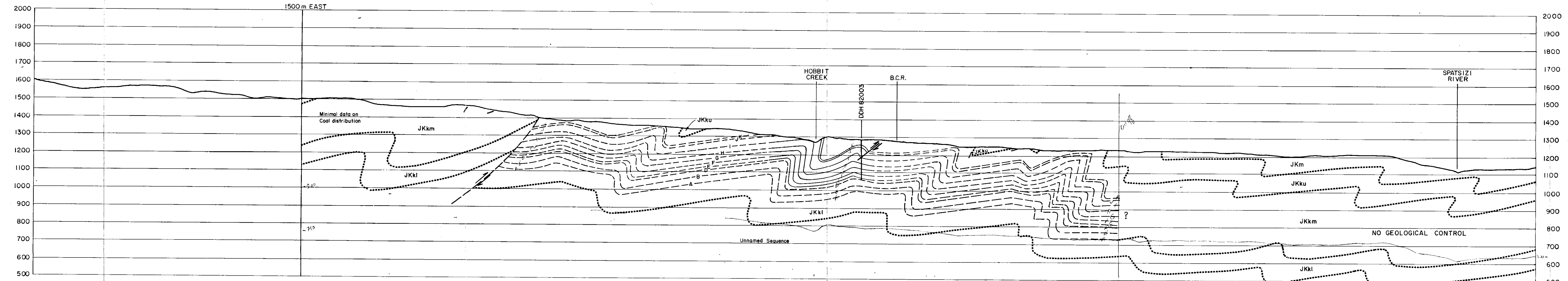
- Legend**
- GEOLOGICAL CONTACT (DEFINED, APPROX., INFERRED)
 - COAL SEAM TRACE (DEFINED, APPROX.)
 - FAULT TRACE (DEFINED, APPROX., INFERRED)
 - CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - ATTITUDE CONTROL POINT
 - DIAMOND DRILL HOLE WITH ATTITUDE CONTROL
- DBH 82001
- See mt klappan 50/51A*

GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	
Northwestern British Columbia		
MT. KLAPPAN COAL PROPERTY		
GEOLOGICAL CROSS-SECTION		
4000 S (EAST)		
HOBBIT-BROATCH RESOURCE AREA		
PREPARED BY: G. SEVE	SCALE 1:10,000	
APPROVED BY: B. P. F.	DATE: NOV. 82	DRAWING No. KPN-82-067

SW

NE

BASELINE



MALLOCH SEQUENCE

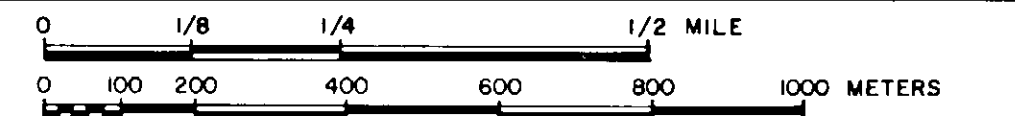
JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.

KLAPPAN SEQUENCE

JKku Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.

JKkm Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.

JKki Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.



Legend

- GEOLOGICAL CONTACT (INFERRED)
- COAL SEAM TRACE (DEFINED, APPROX.)
- FAULT TRACE (DEFINED, APPROX., INFERRED)
- o o o o o CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
- ▲ ATTITUDE CONTROL POINT
- ▲ DDH B2001 DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

C-3 MT Klappan S2(23)

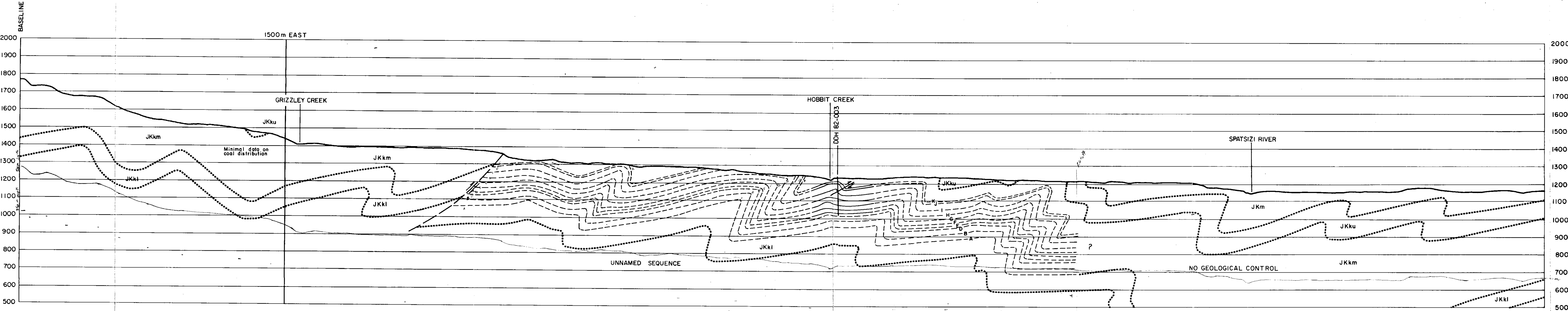
GULF CANADA RESOURCES INC.
 Coal Division
 CALGARY ALBERTA

Northwestern British Columbia
MT. KLAPPAN COAL PROPERTY
 GEOLOGICAL CROSS-SECTION
 4500 S (EAST)
 HOBBIT-BROATCH RESOURCE AREA

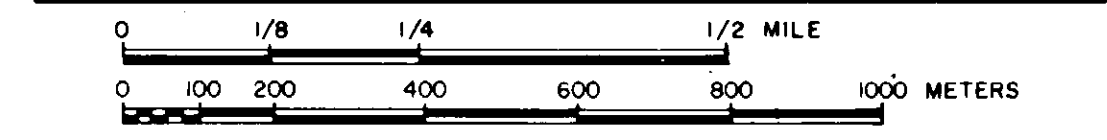
PREPARED BY: G. SEVE SCALE 1:10,000
 APPROVED BY: B.P.F. DATE: NOV., 82 DRAWING No. KPN-82-068

SW

NE



- MALLOCH SEQUENCE**
 - JKm** Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
 - JKku** Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm** Repeated coarsening upward sequences of fine to medium-grained sandstone, occasionally conglomeratic, siltstone, claystone and coal; sediments display cross-bedding and ripple marks and contain abundant plant fragments and rare bivalves towards the base.
 - JKki** Interbedded massive, fine grained sandstone and siltstones, containing bivalve fossils, with minor coal.



Legend

- GEOLOGICAL CONTACT (INFERRED)** (dotted line)
- COAL SEAM TRACE (DEFINED, APPROX.)** (dashed line)
- FAULT TRACE (DEFINED, APPROX., INFERRED)** (solid line with arrows)
- CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)** (line with circles)
- ATTITUDE CONTROL POINT** (triangle)
- DIAMOND DRILL HOLE WITH ATTITUDE CONTROL** (vertical line with triangle)

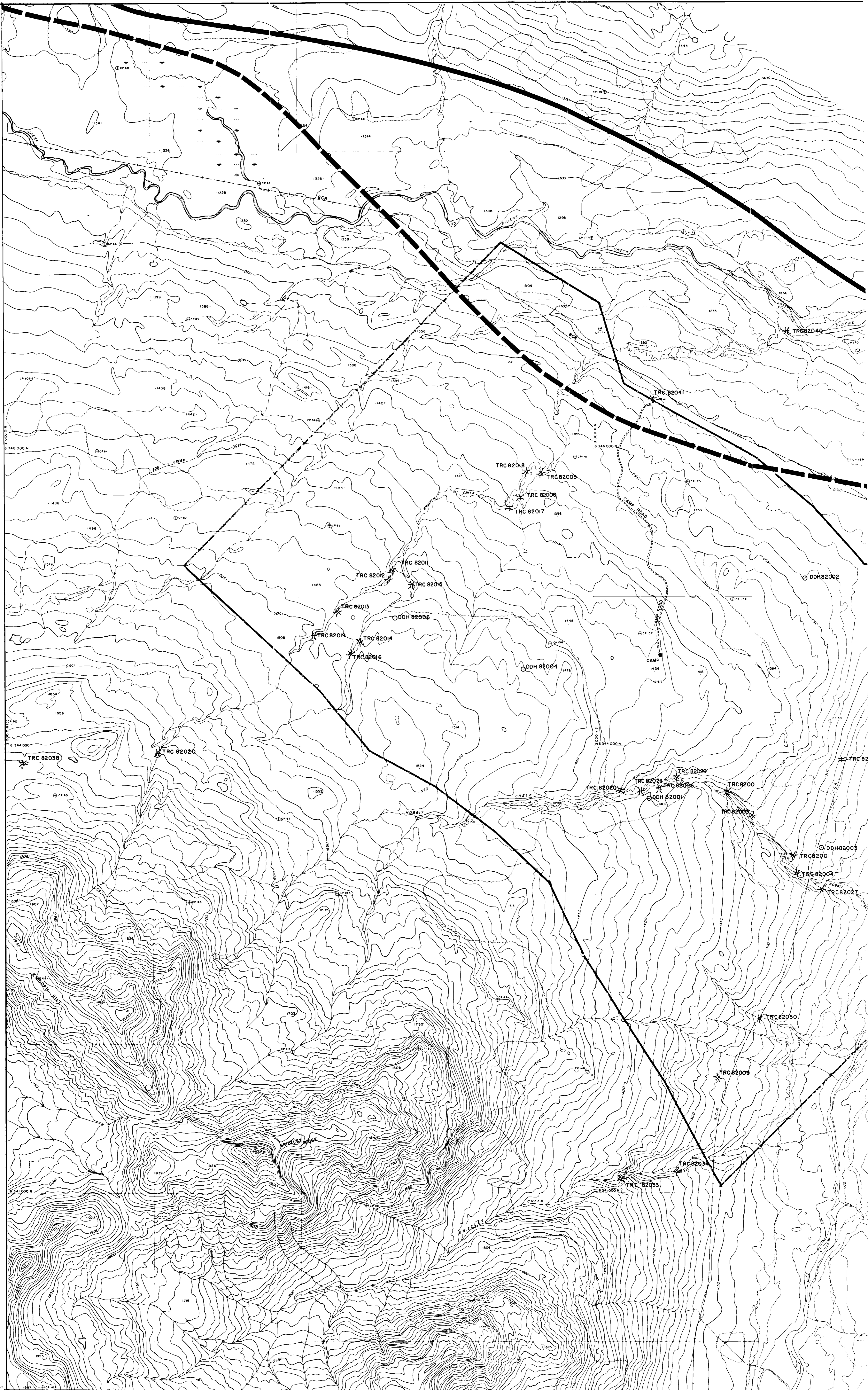
GULF CANADA RESOURCES INC.
 Coal Division
 CALGARY ALBERTA



Northwestern British Columbia
MT. KLAPPAN COAL PROPERTY
 GEOLOGICAL CROSS-SECTION
 5000 S (EAST)
 HOBBIT-BROATCH RESOURCE AREA

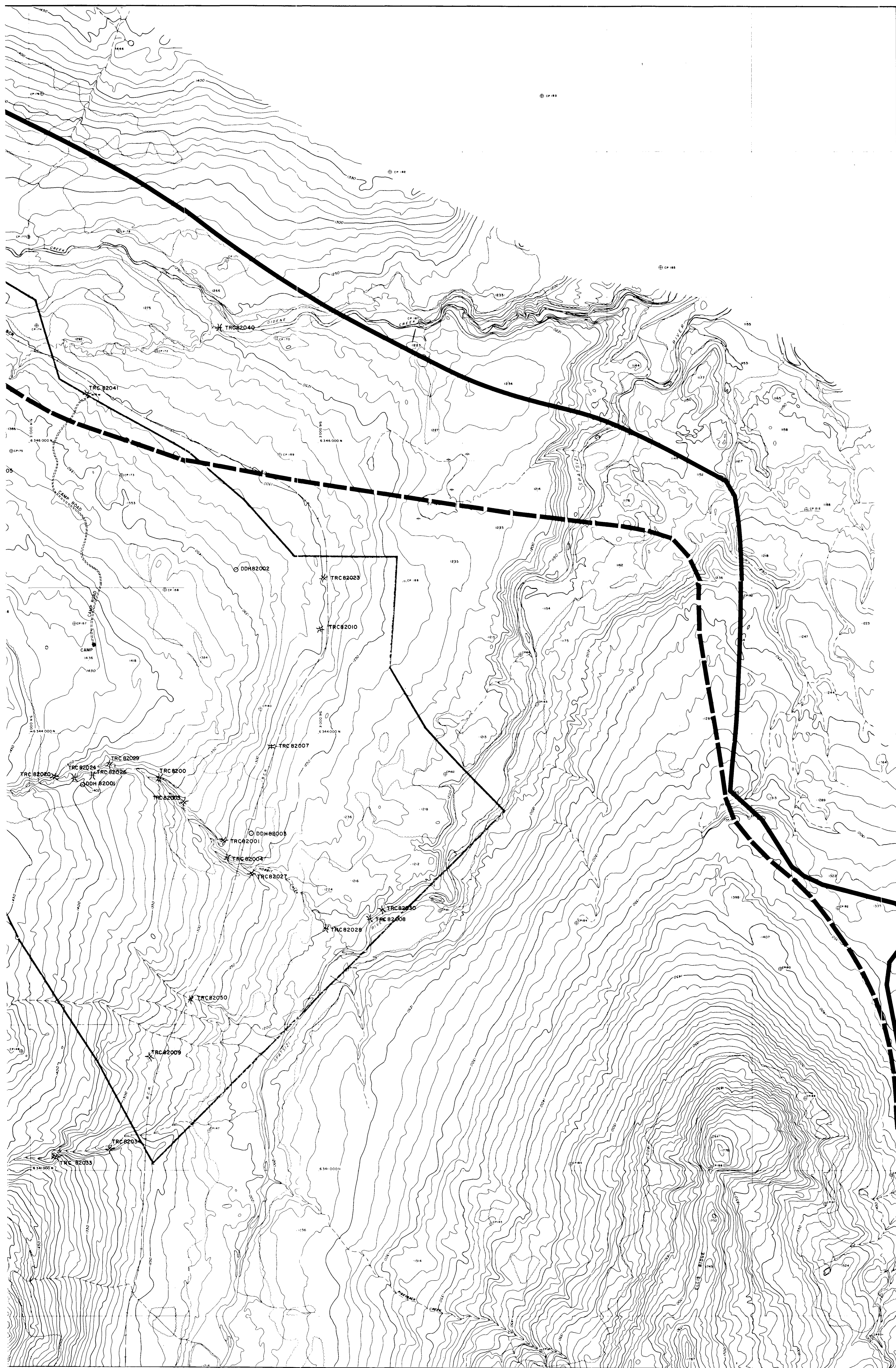
PREPARED BY: G. SEVE
 APPROVED BY: B.P.F. DATE: NOV. 82 SCALE 1:10,000 DRAWING No. KPN-82-069

128° 50' 02"
57° 17' 10"



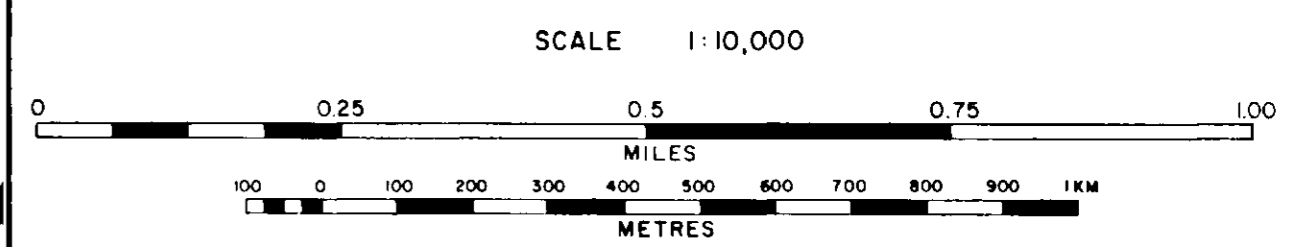
57° 12' 08"
128° 50' 02"

128°40'04"
57°17'10"

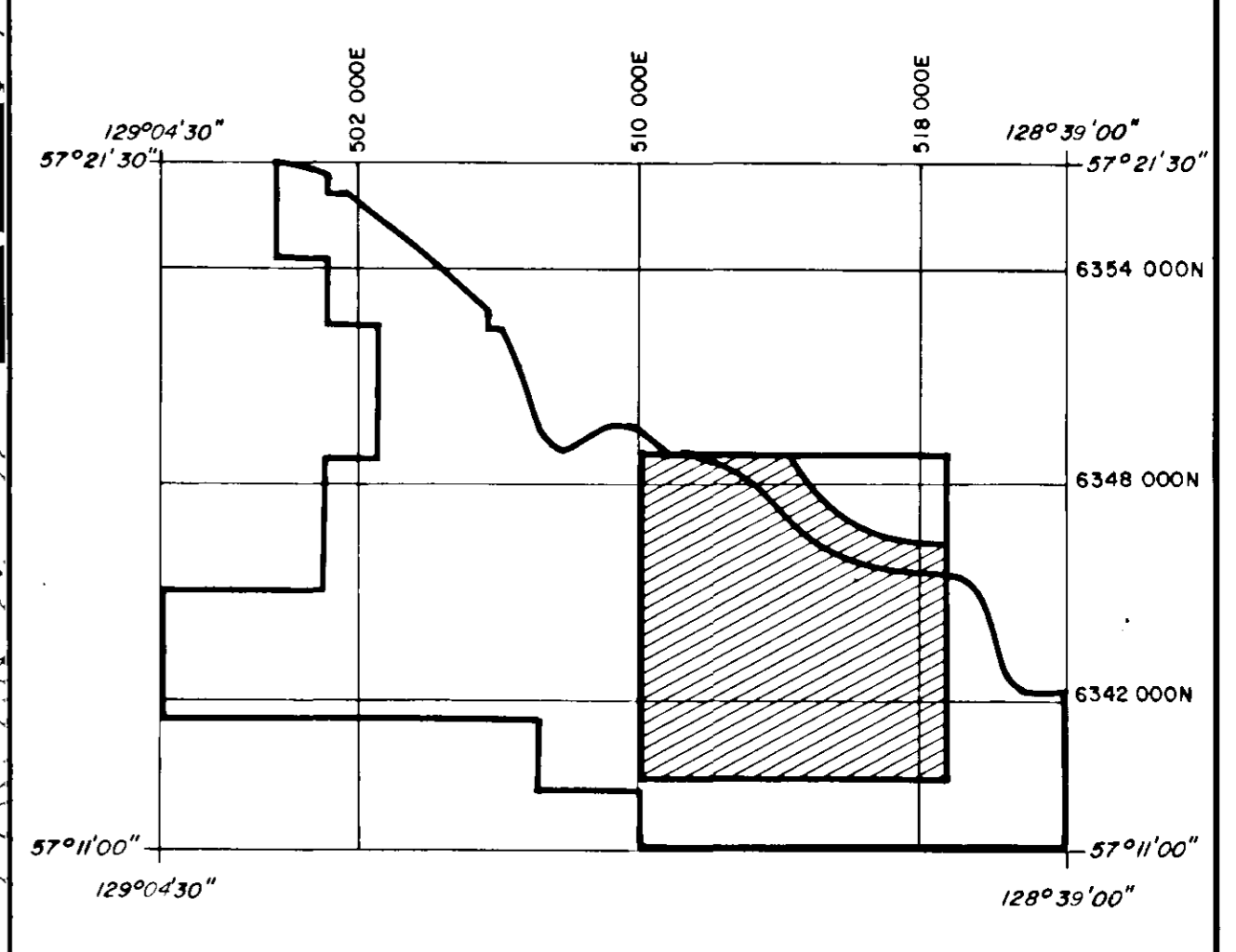


LEGEND

- RAILROAD BED - - - - -
- RIVER - - - - -
- STREAM, DEFINITE - - - - -
- APPROXIMATE - - - - -
- SPLIT - - - - -
- LAKE - - - - -
- SWAMP - - - - -
- WATER LEVEL - - - - -
- TREE LINE - - - - -
- CONTOURS, INDEX - - - - -
- INTERMEDIATE - - - - -
- DEPRESSION - - - - -
- APPROXIMATE - - - - -
- SPOT ELEVATION - - - - -
- COAL LICENCE BOUNDARY - - - - -
- REDEFINED LICENCE BOUNDARY - - - - -



HOBBIT-BROATCH RESOURCE AREA INDEX MAP



GEOLOGICAL LEGEND

- FIELD CONTROL POINT - - - - -
- DIAMOND DRILL HOLE - - - - -
- TRENCH LOCATION - - - - -
- RESOURCE AREA BOUNDARY - - - - -
- CP 155 - - - - -
- DDH 82002 - - - - -
- TRC - - - - -

GULF CANADA RESOURCES INC.
Coal Division ALBERTA

MT. KLAPPAN COAL PROPERTY
HOBBIT-BROATCH RESOURCE AREA
TRENCH & DRILL HOLE LOCATIONS

PREPARED BY: S. SEVE
APPROVED BY: S. P. F.

SCALE 1:10,000
DATE: NOV 82 (DRAWING No. KFN-82-07)