

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]

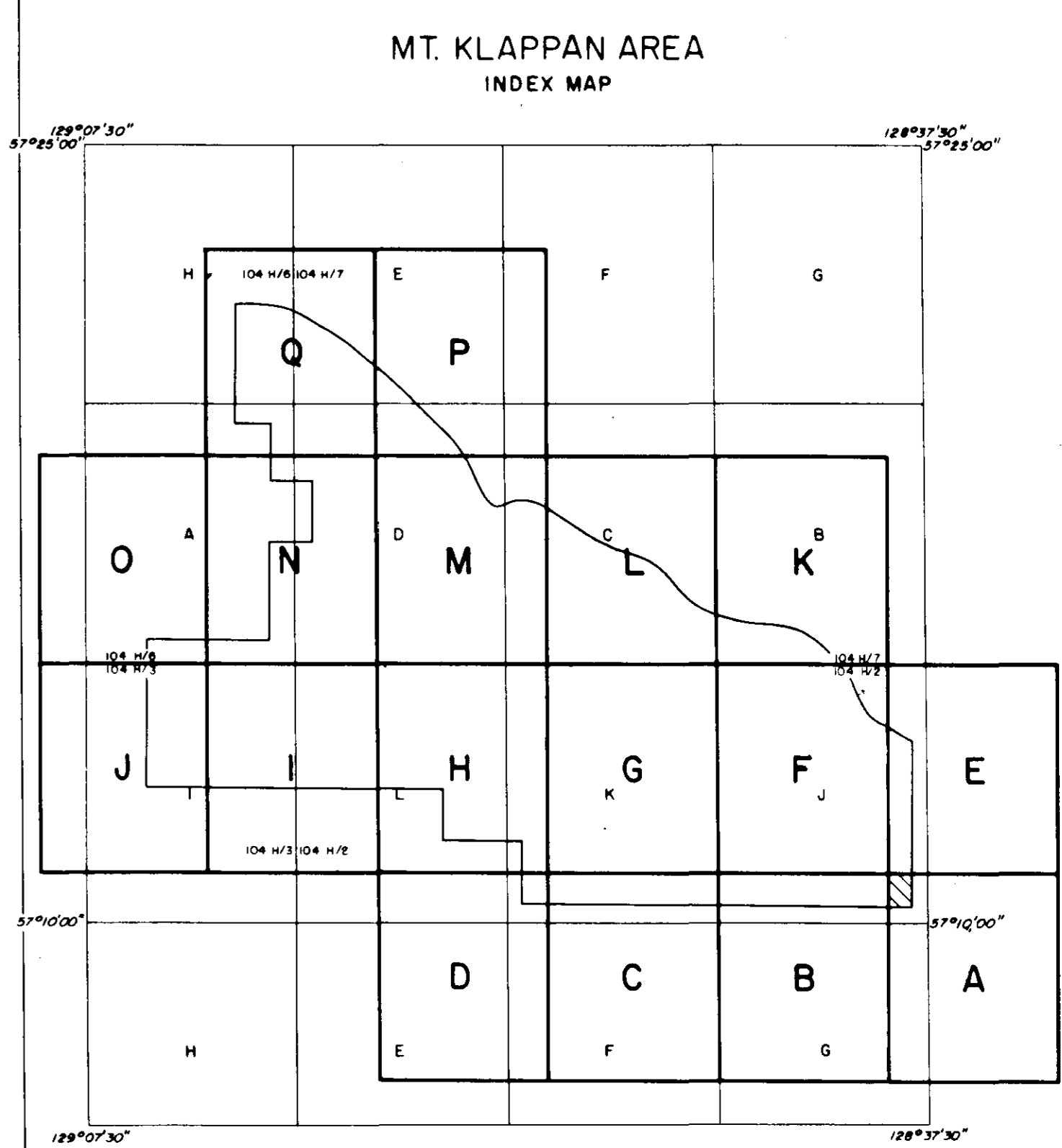
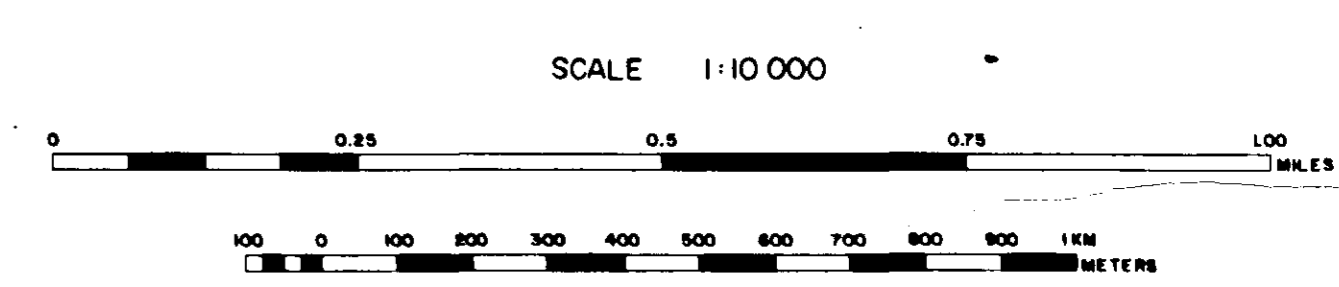
NOTES

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 82/82

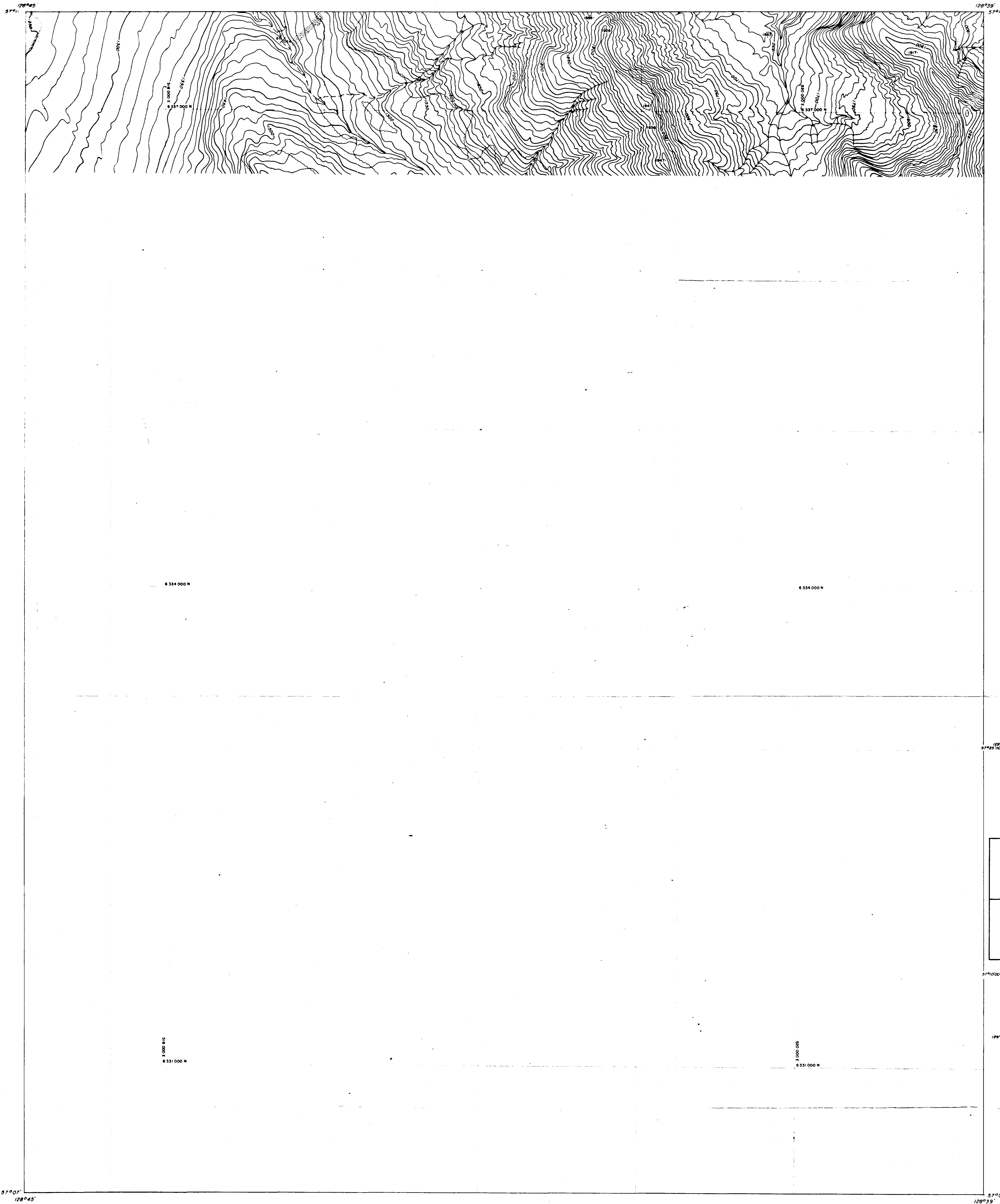
GULF CANADA RESOURCES INC.
Coal Division

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	---

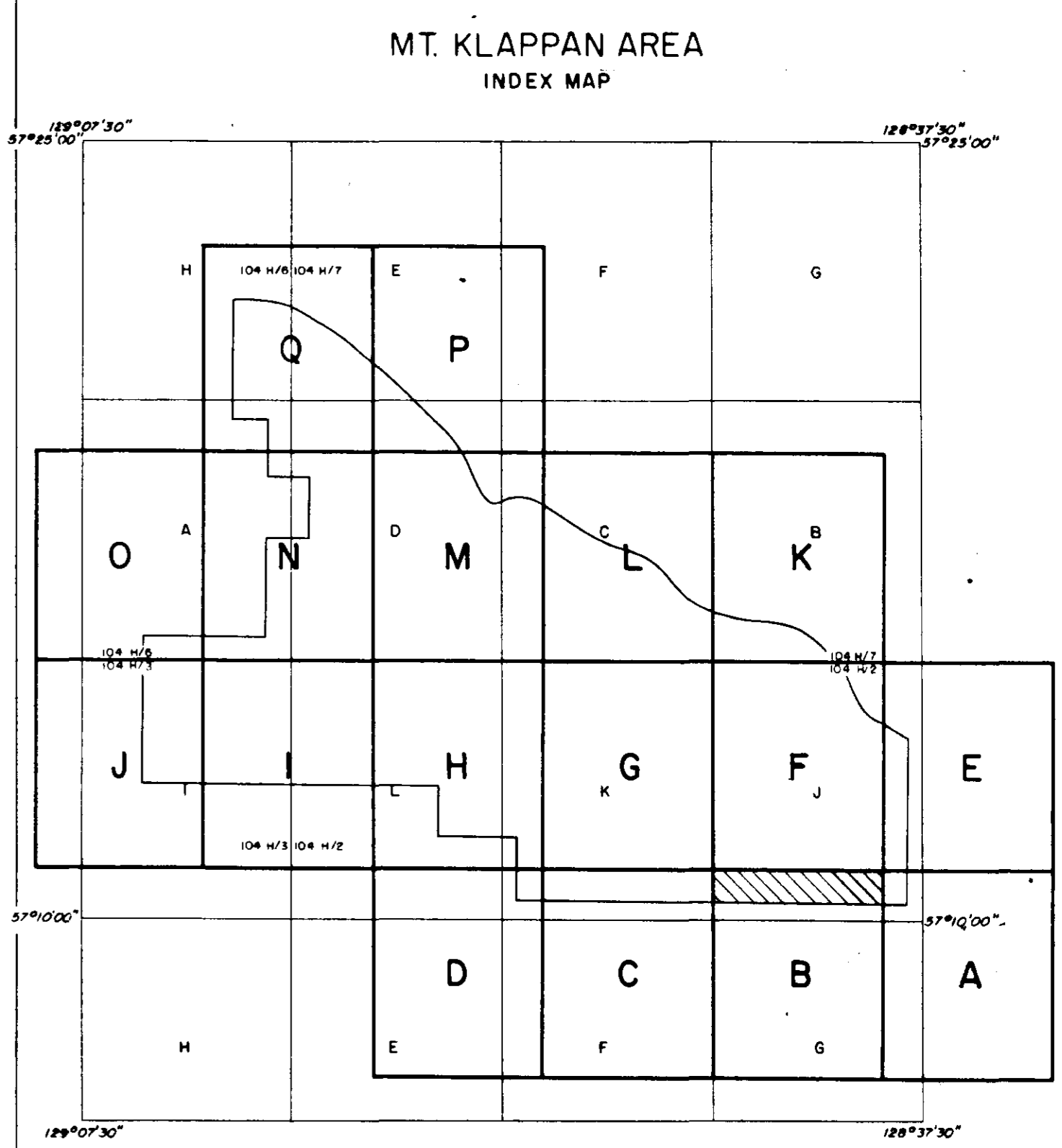
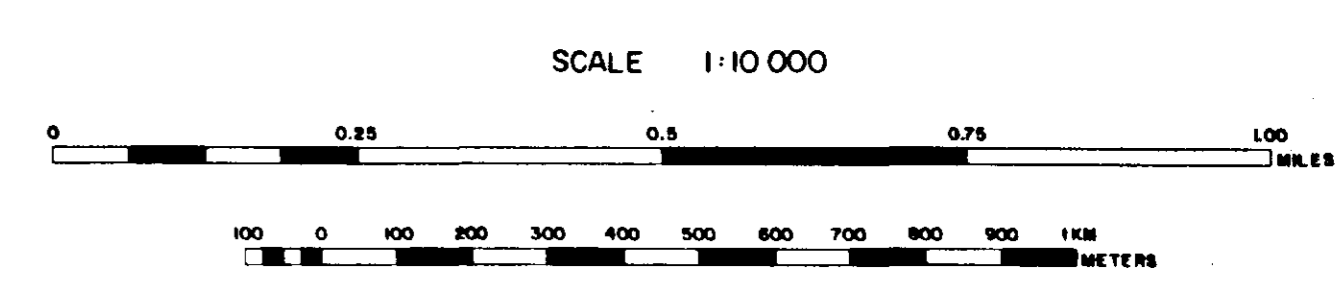
NOTES

CONTOUR INTERVAL: 10 METERS

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.

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

LEGEND

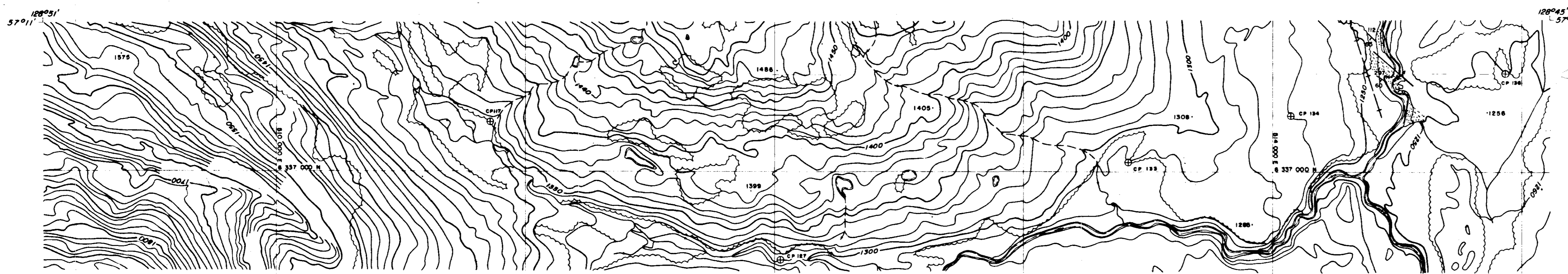
---	LICENCE BOUNDARY
---	GEOLOGICAL CONTACT (INFERRED)
---	COAL SEAM (OUTCROP, INFERRED)
---	ANTICLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
---	SYNCLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
---	OVERTURNED ANTICLINE (DEFINED, APPROXIMATE)
---	OVERTURNED SYNCLINE (DEFINED, 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

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

PREPARED BY: G. SEVE DATE: NOV '82 DRAWING NO. KPN-B2-002



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	---

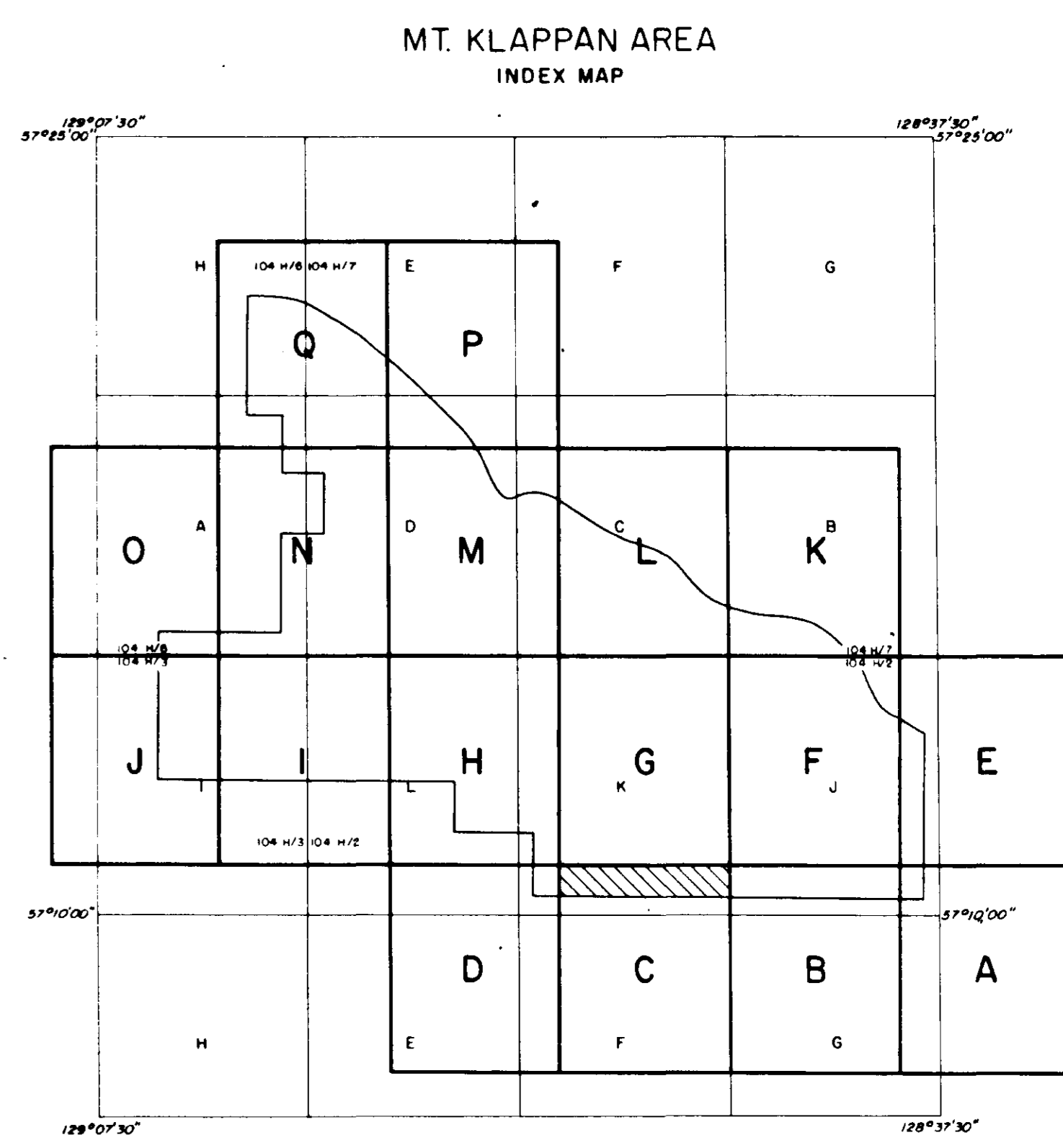
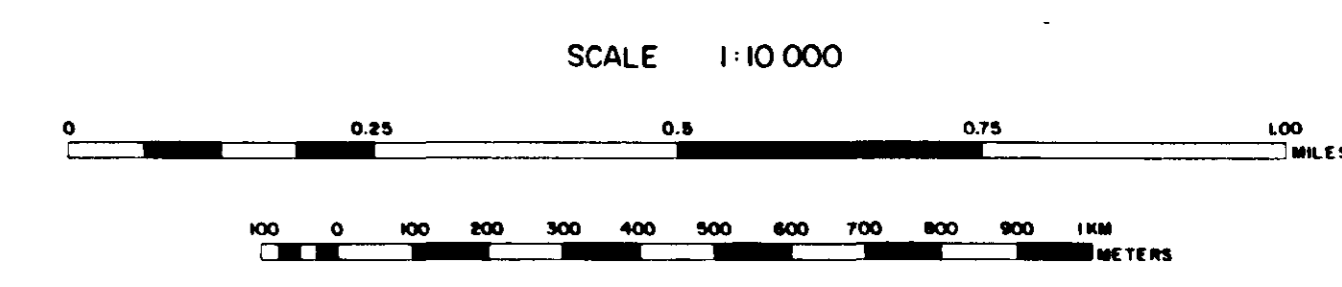
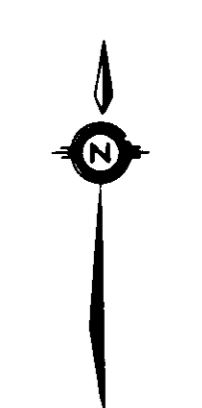
NOTES

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

---	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 C

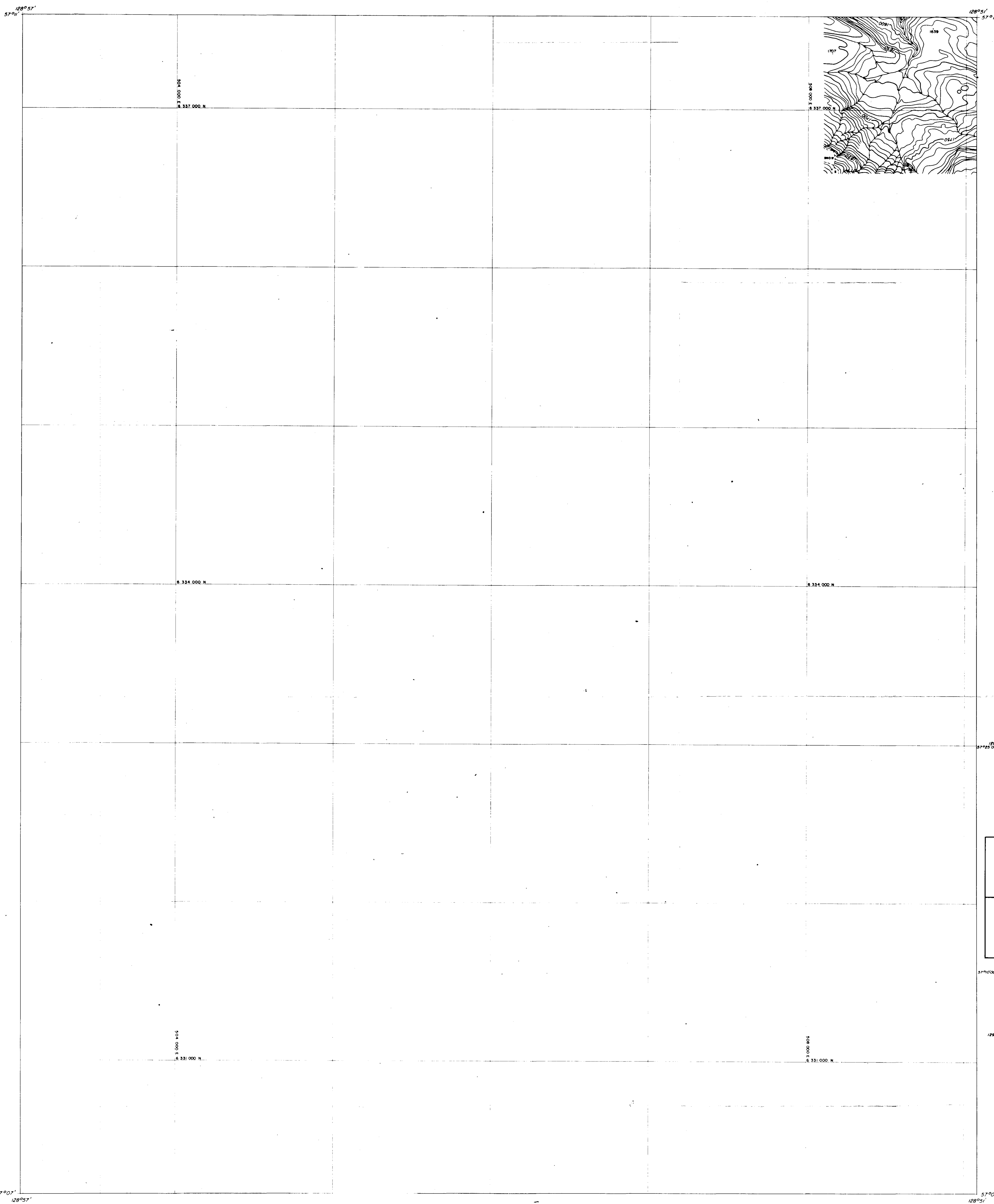
GEOLOGY

PREPARED BY: G. SEVE

APPROVED BY: B.P.F.

DATE: NOV. '82

DRAWING No. KPN-82-003



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]
FREE LINE	---	[Symbol]
CUT LINE	---	[Symbol]
CONTOURS, INDEX	---	[Symbol]
INTERMEDIATE	---	[Symbol]
DEPRESSION	---	[Symbol]
APPROXIMATE	---	[Symbol]
SPOT ELEVATION	---	[Symbol]
FIELD CONTROL POINT	---	[Symbol]

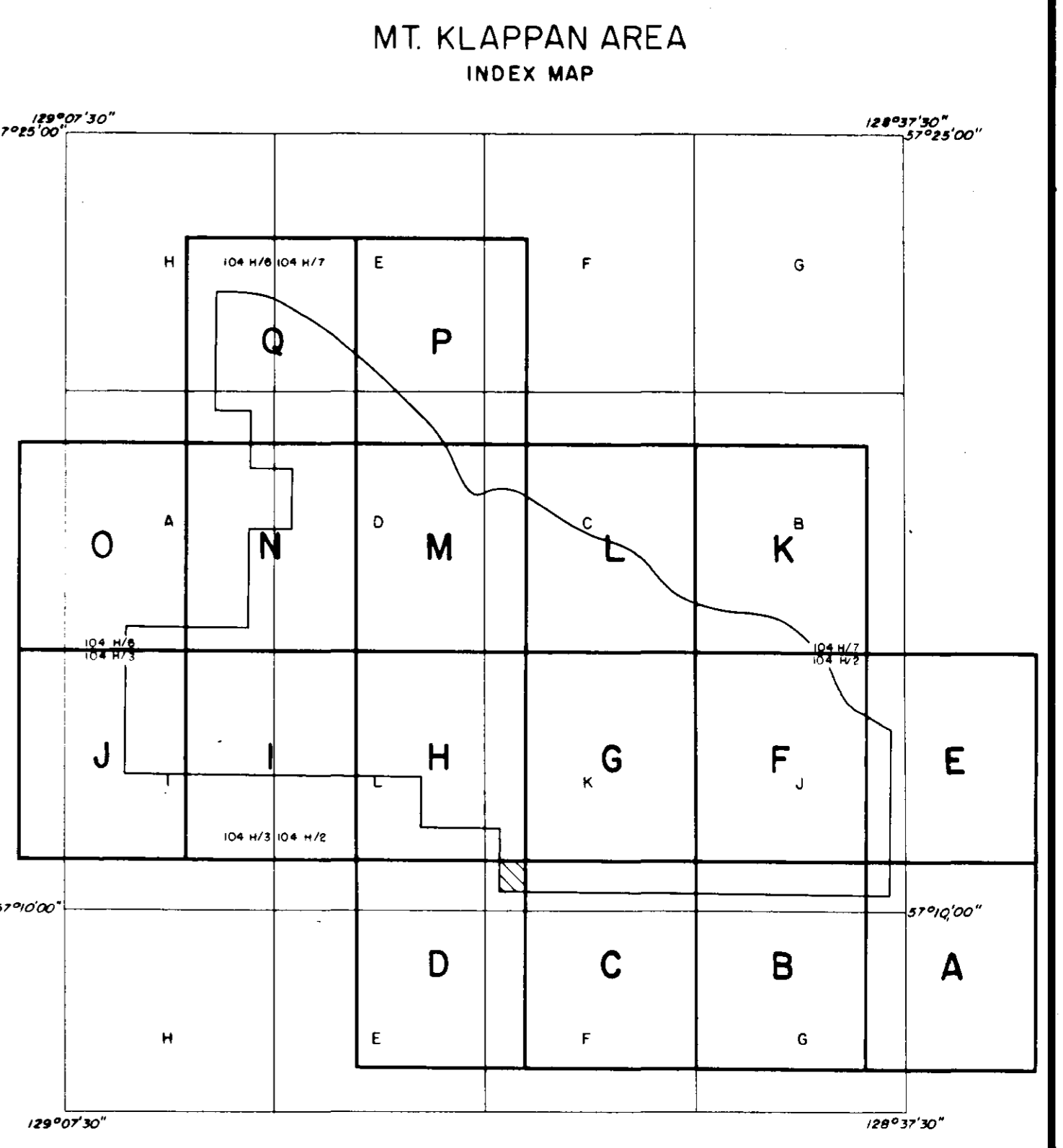
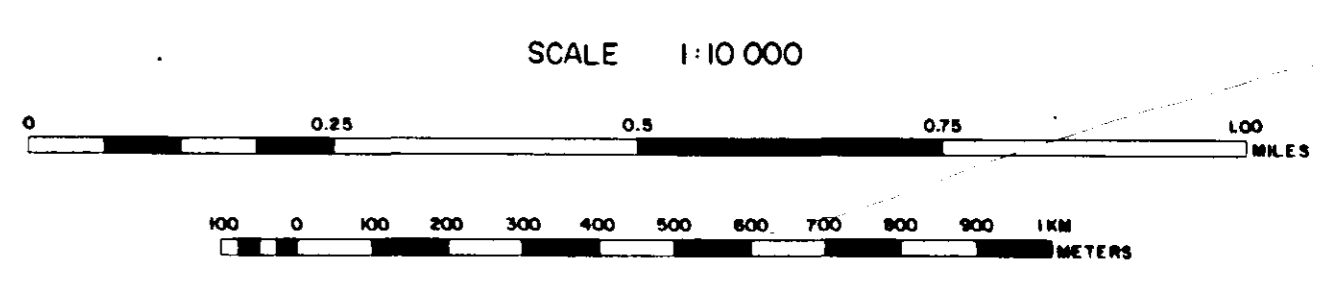
NOTES

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).



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)

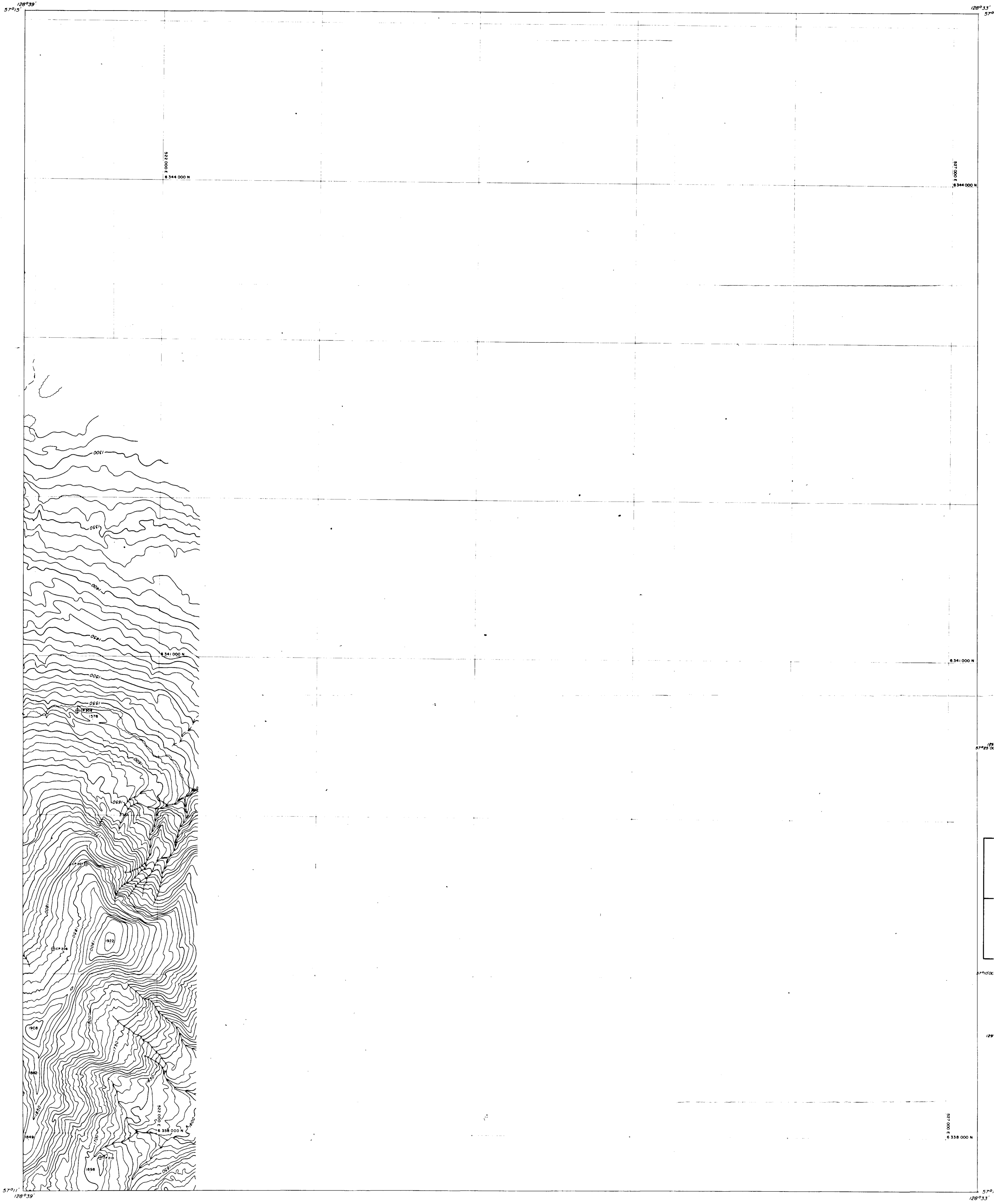
110

GULF CANADA RESOURCES INC.
Coal Division

CALGARY ALBERTA

MOUNT KLAPPAN COAL PROPERTY
MAP SHEET D
GEOLOGY

PREPARED BY: G. SEVE DRAWING No. KPN-82-004
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	---

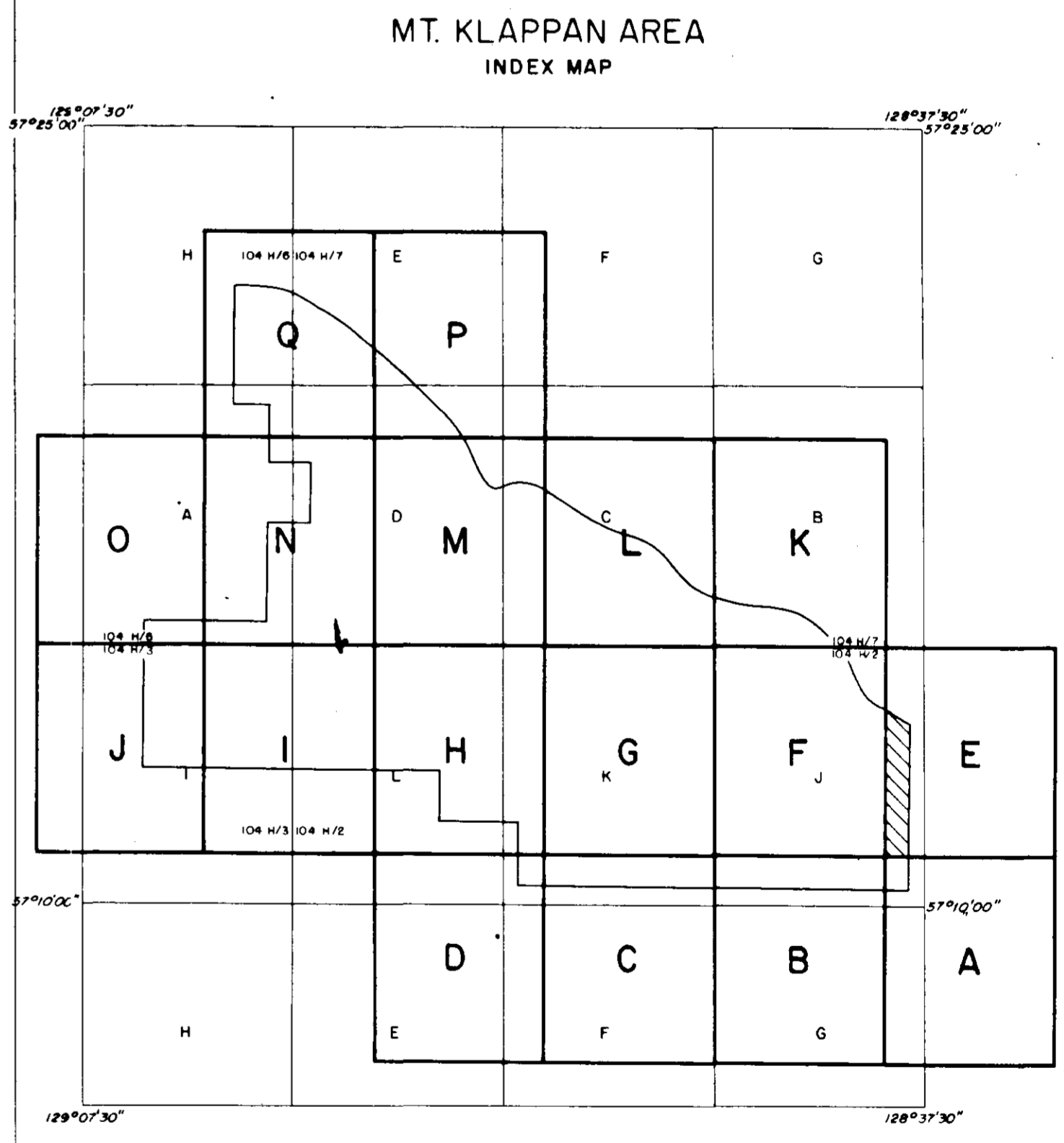
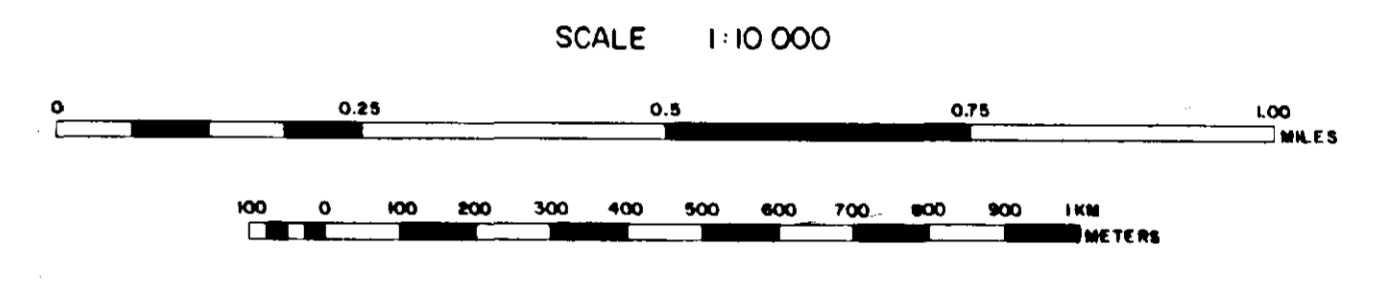
NOTES

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).



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 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 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	---

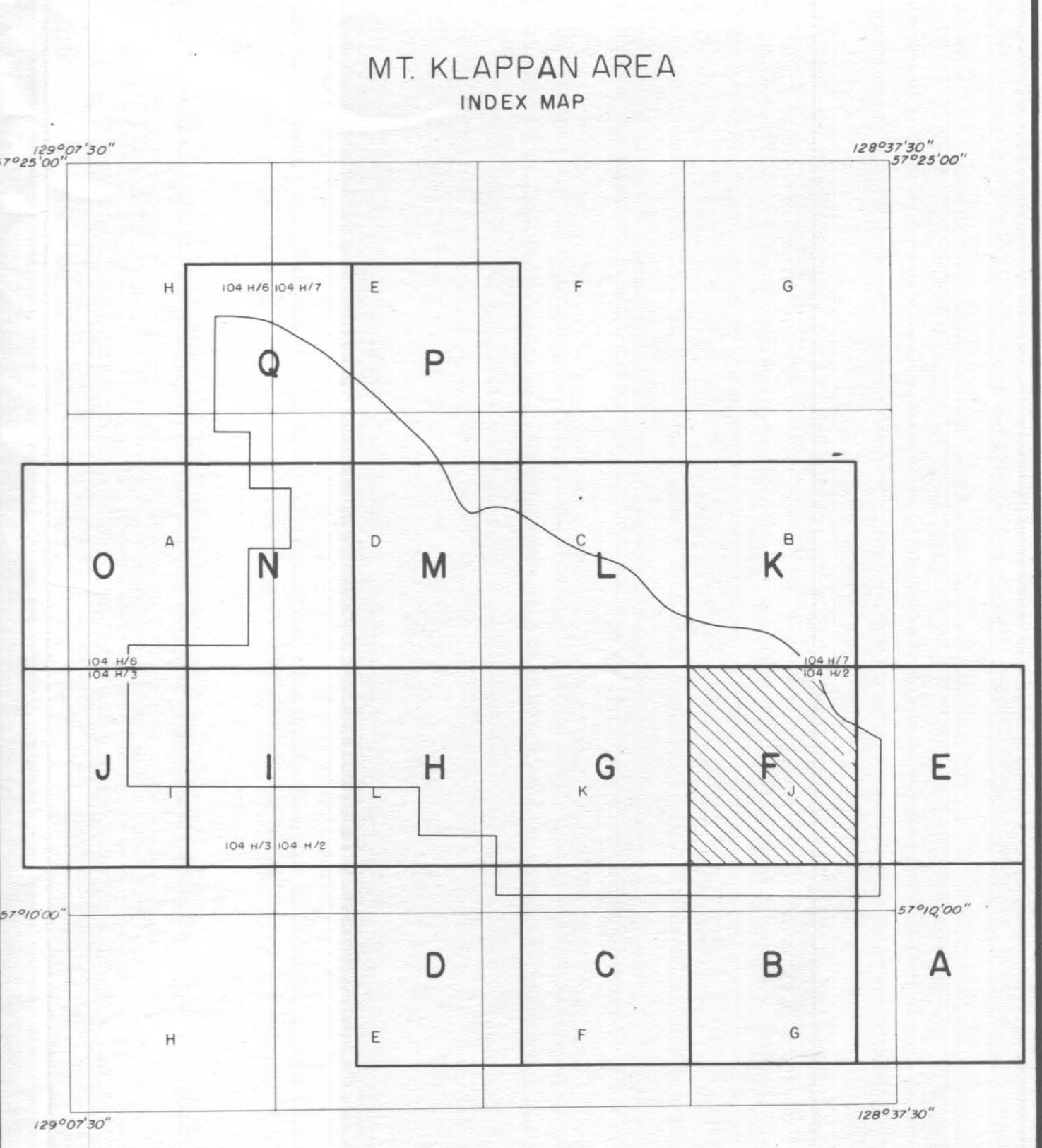
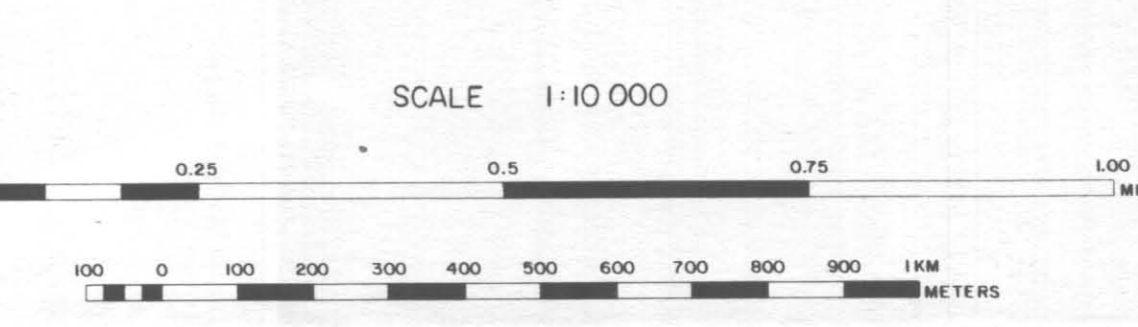
NOTES

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

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).



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

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)

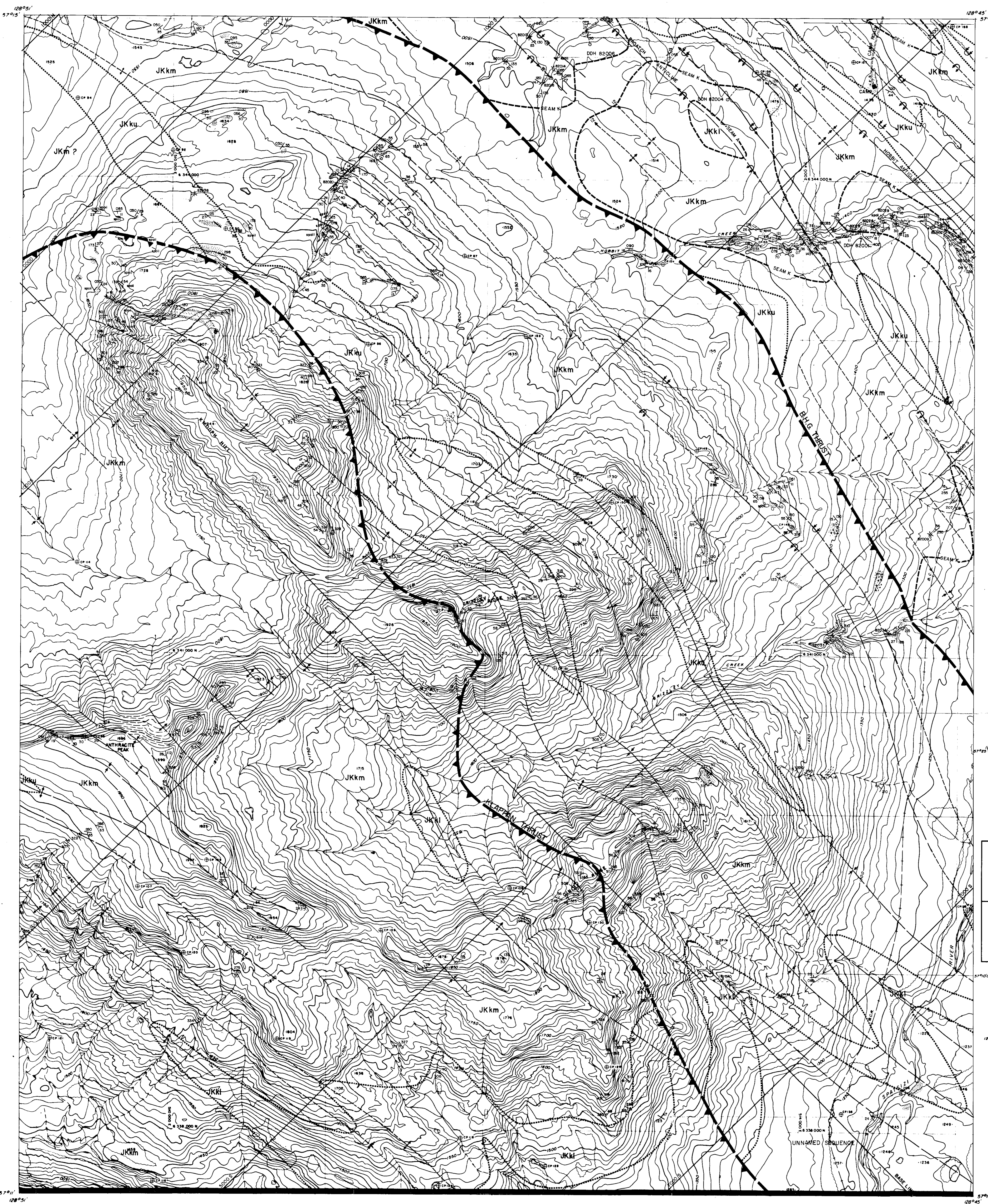
110

Co. Mt. Klappan 82(2)

GULF CANADA RESOURCES INC.
Coal Division ALBERTA

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

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

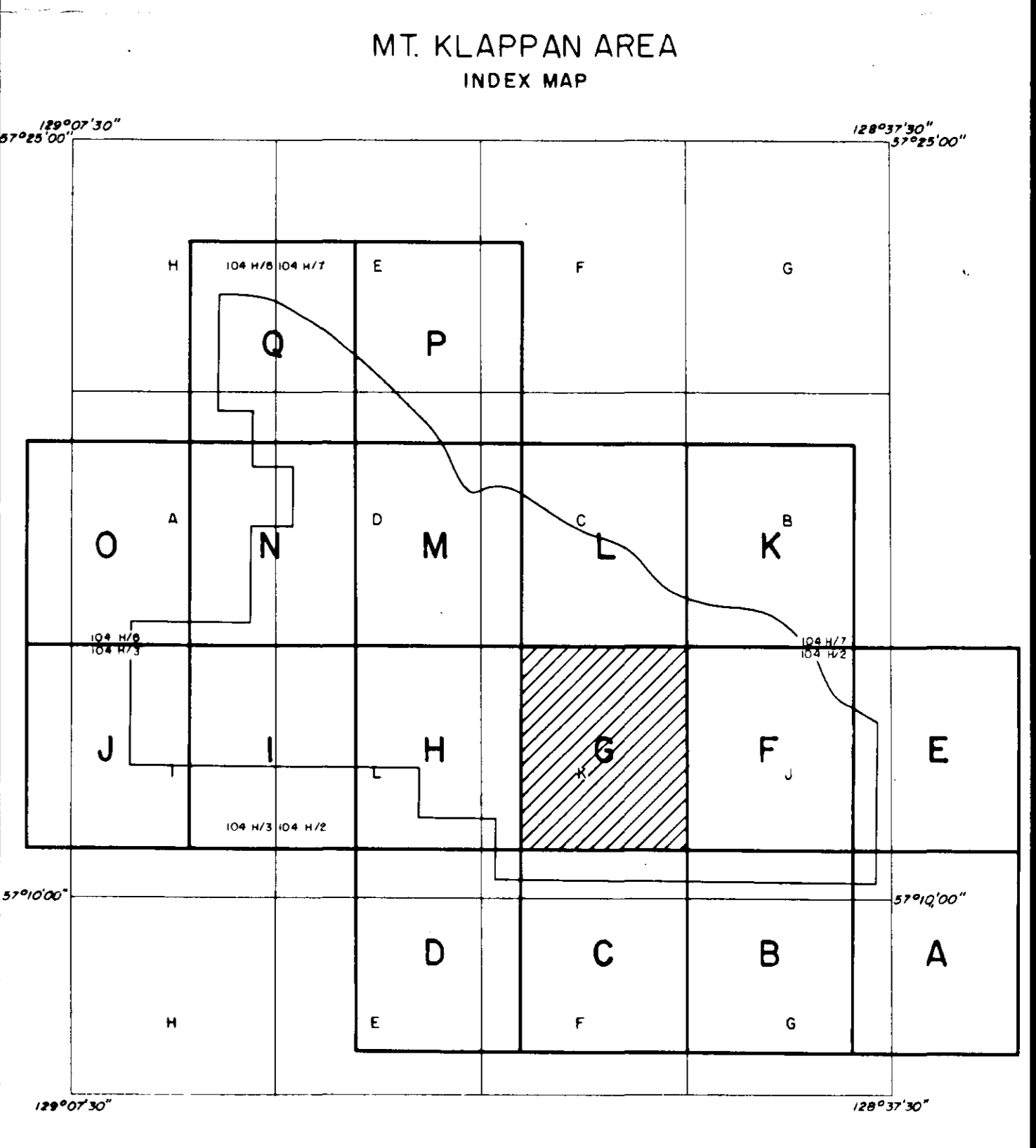
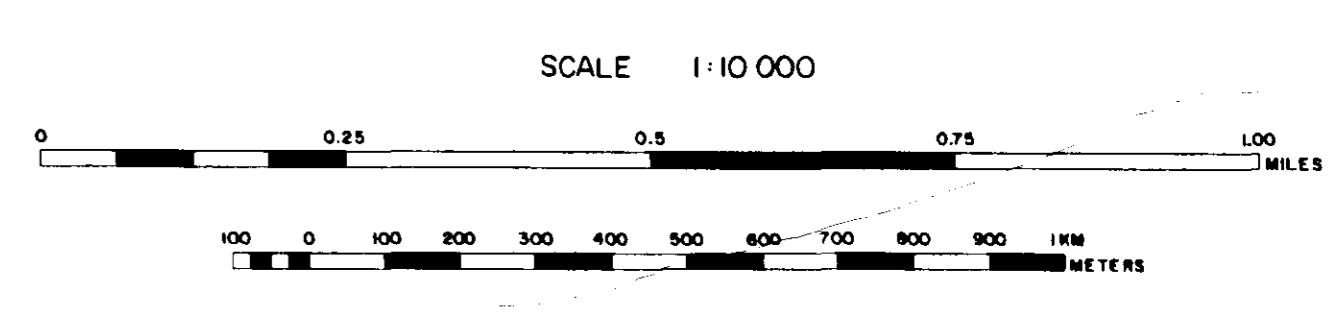
NOTES

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

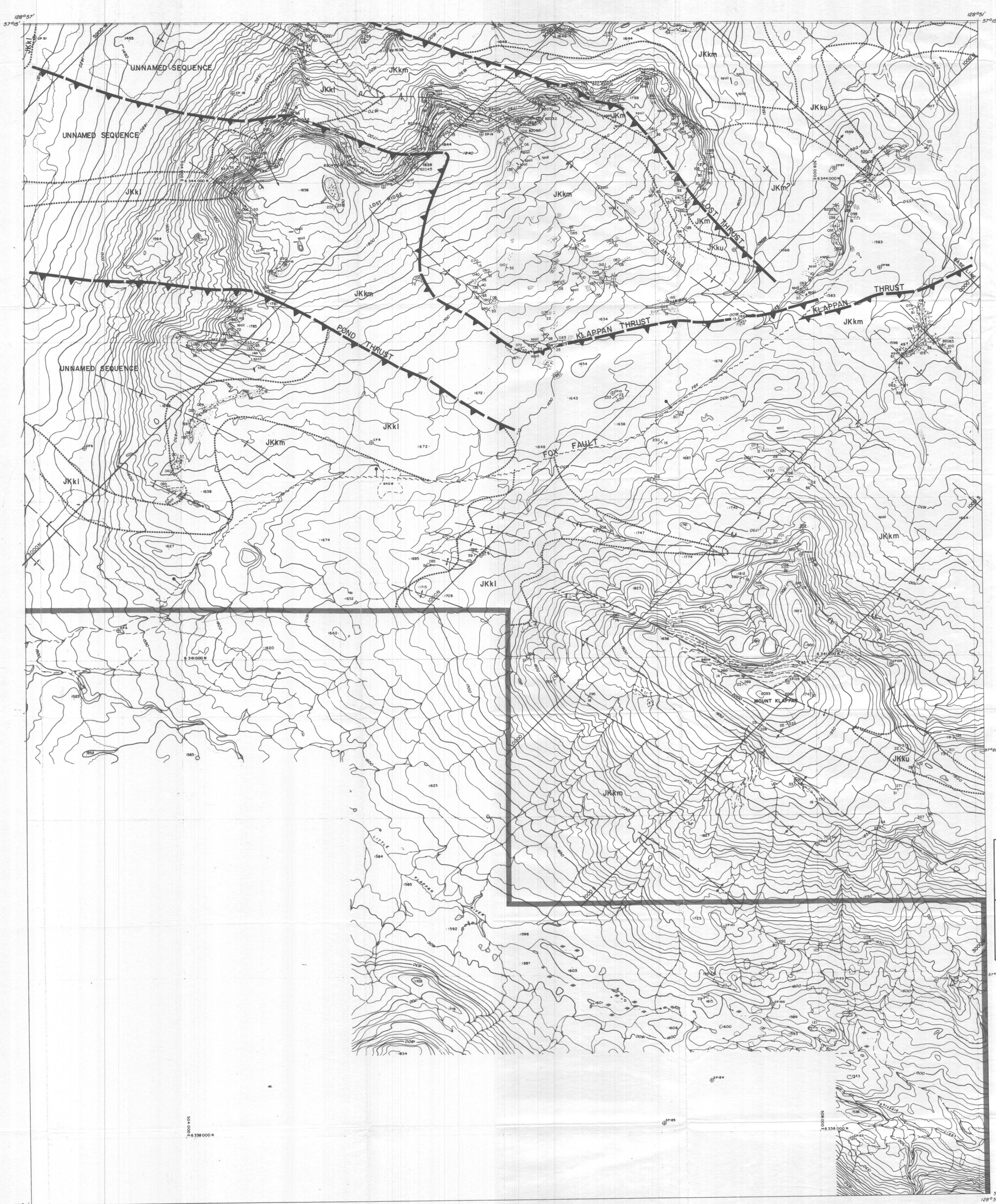
GULF CANADA RESOURCES INC.
Coal Division

CALGARY ALBERTA

MOUNT KLAPPAN COAL PROPERTY
MAP SHEET G
GEOLOGY

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

110



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	---

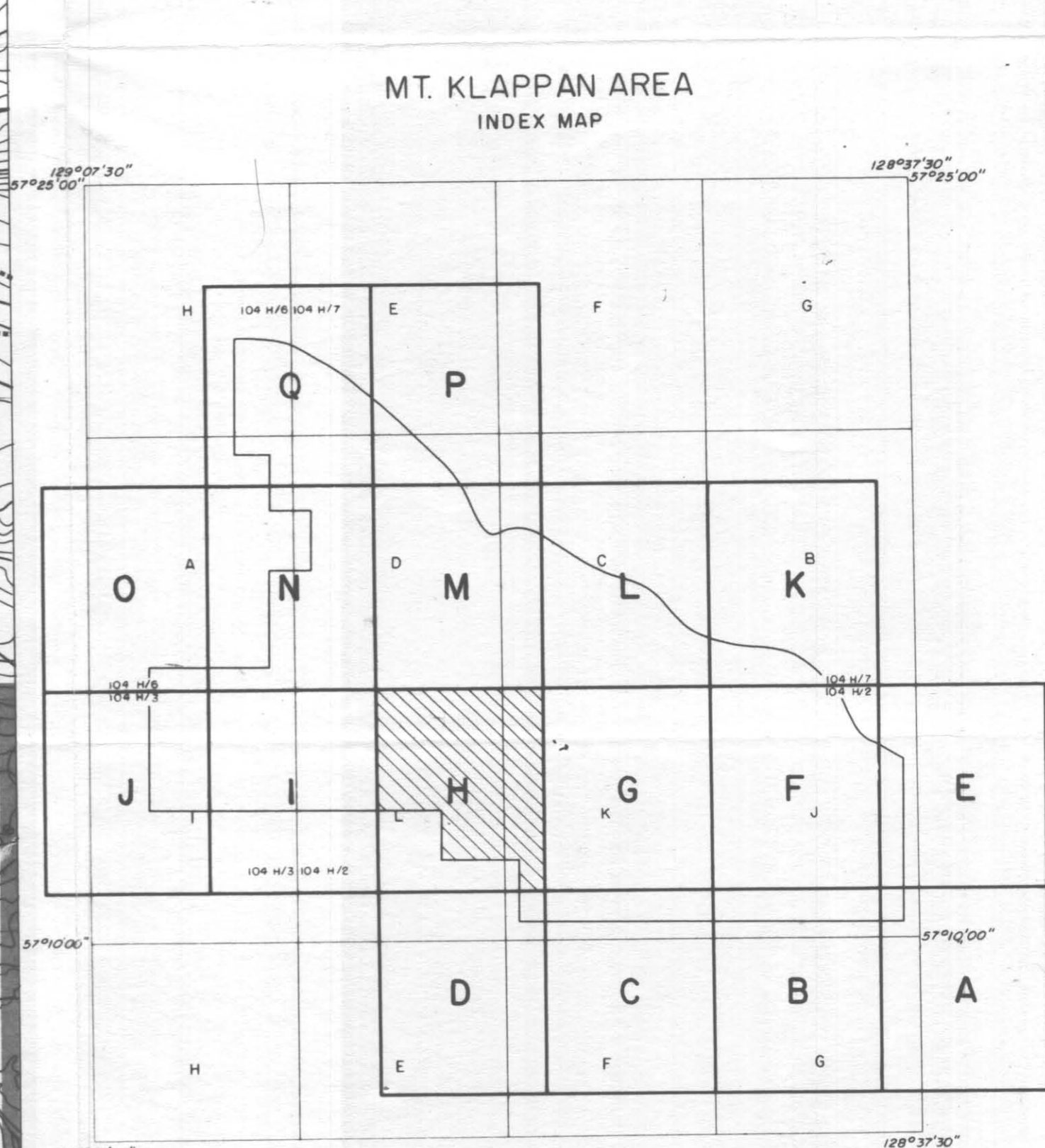
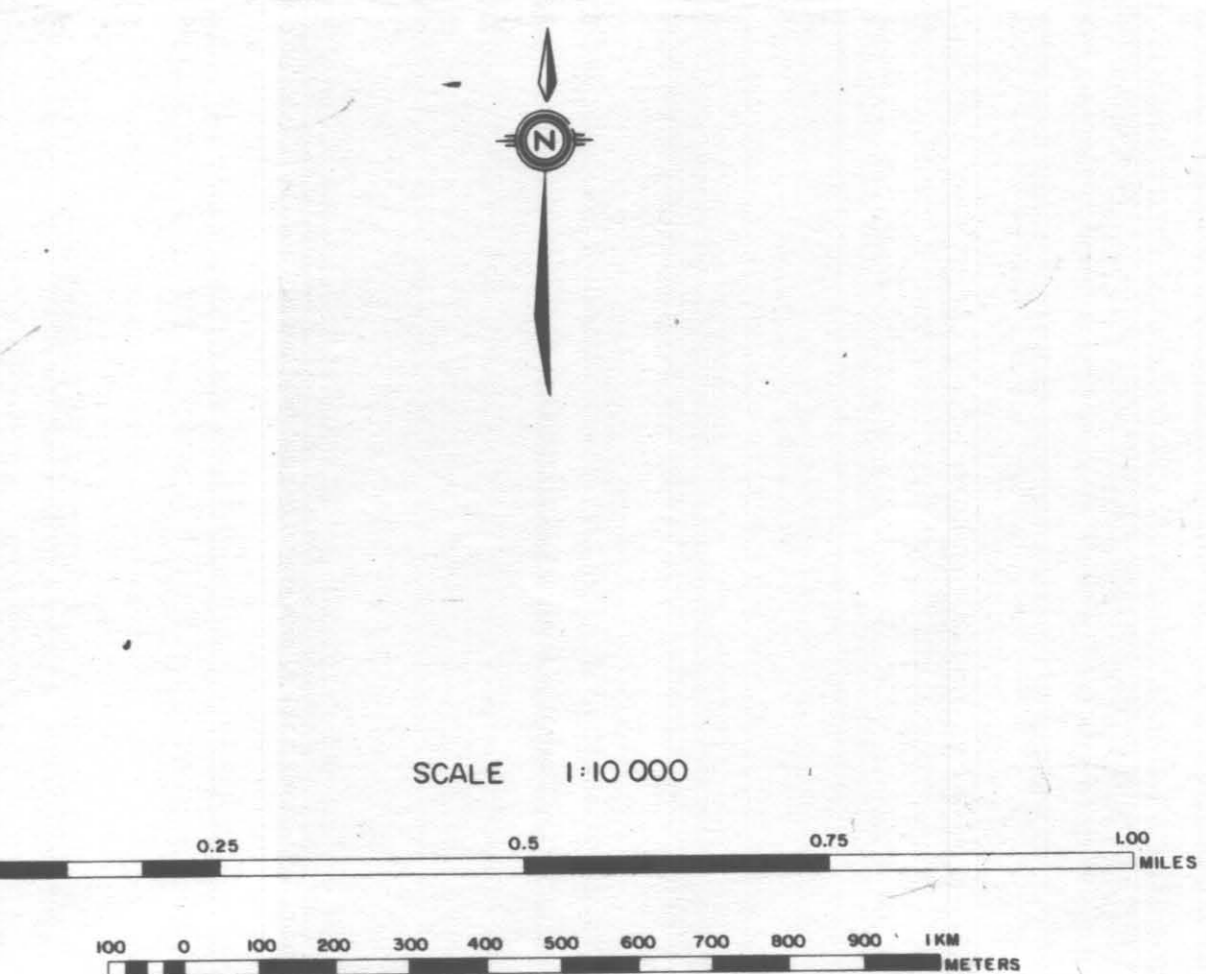
NOTES

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)

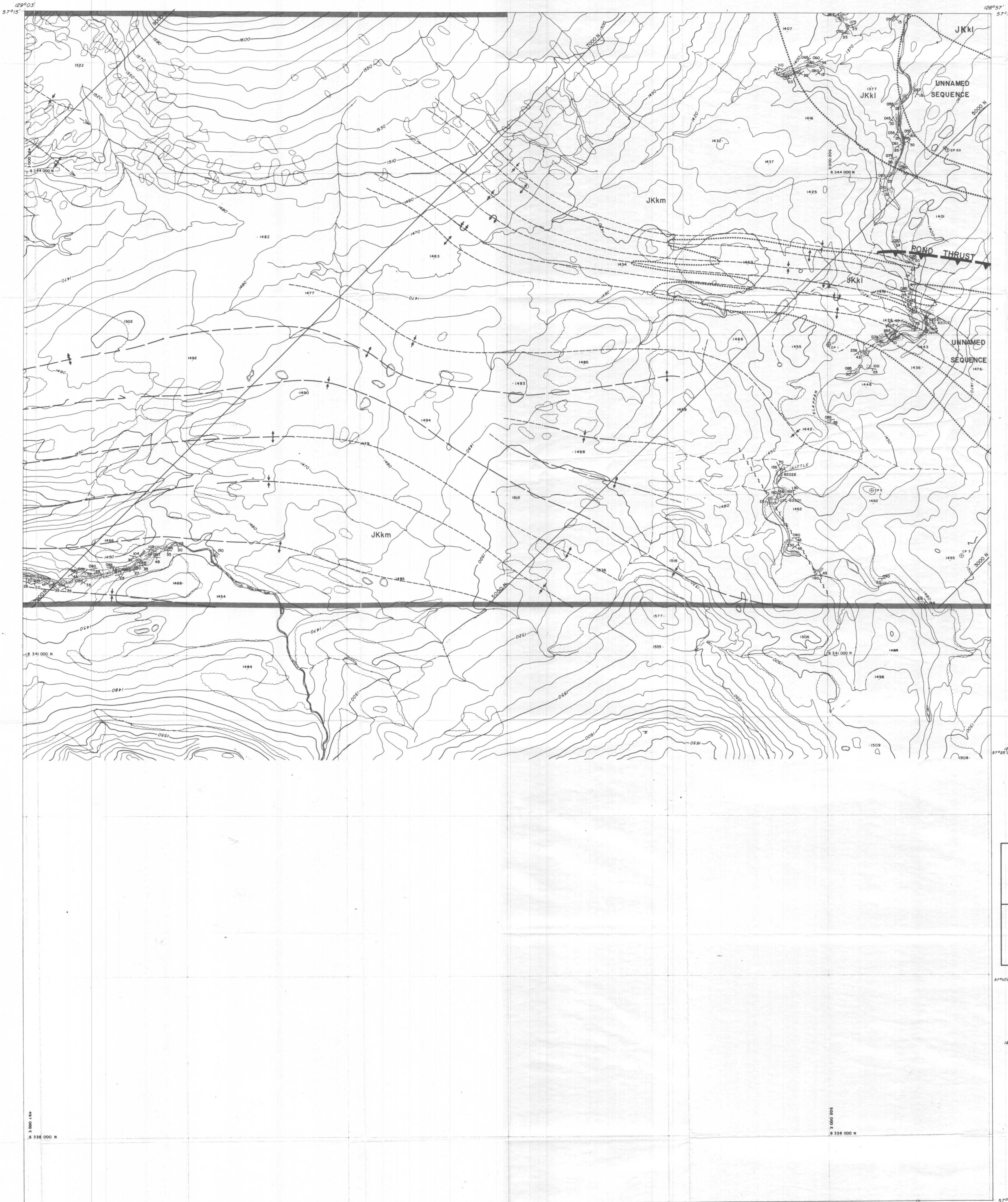
110

GULF CANADA RESOURCES INC. Coal Division 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	---

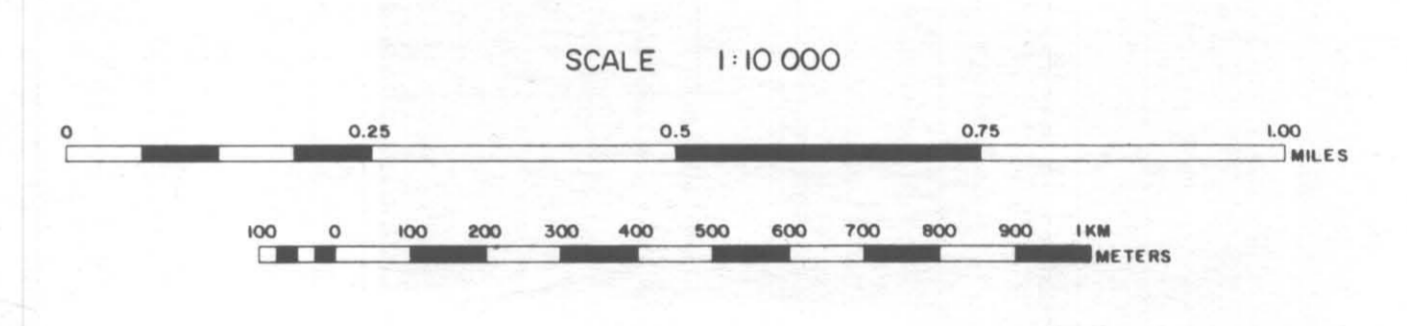
NOTES

CONTOUR INTERVAL 10 METERS

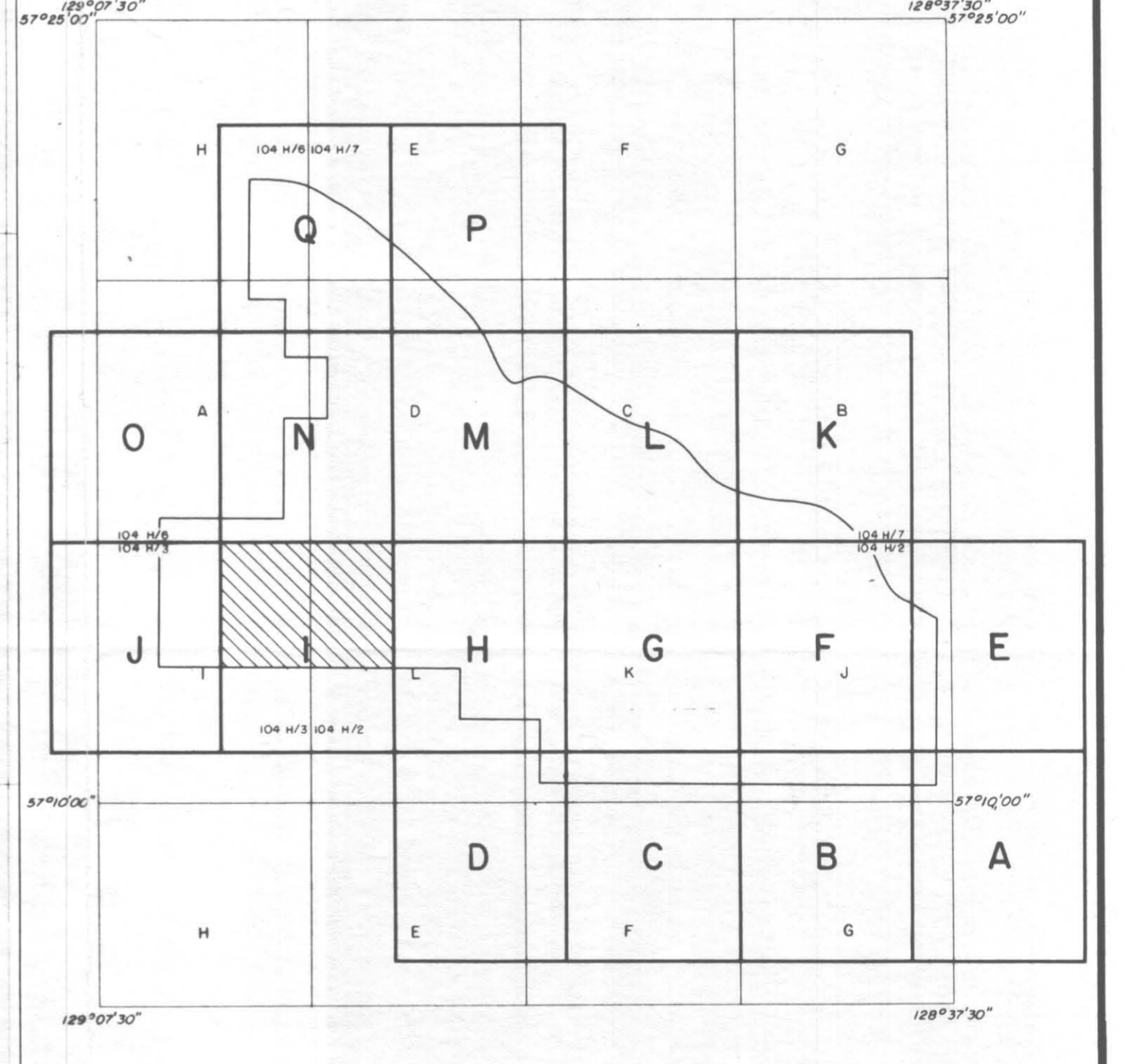
SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

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).



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

110

GR. MT. KLAPPAN 82(2A)

GULF CANADA RESOURCES INC.

Calgary Coal Division ALBERTA

MOUNT KLAPPAN COAL PROPERTY

MAP SHEET I

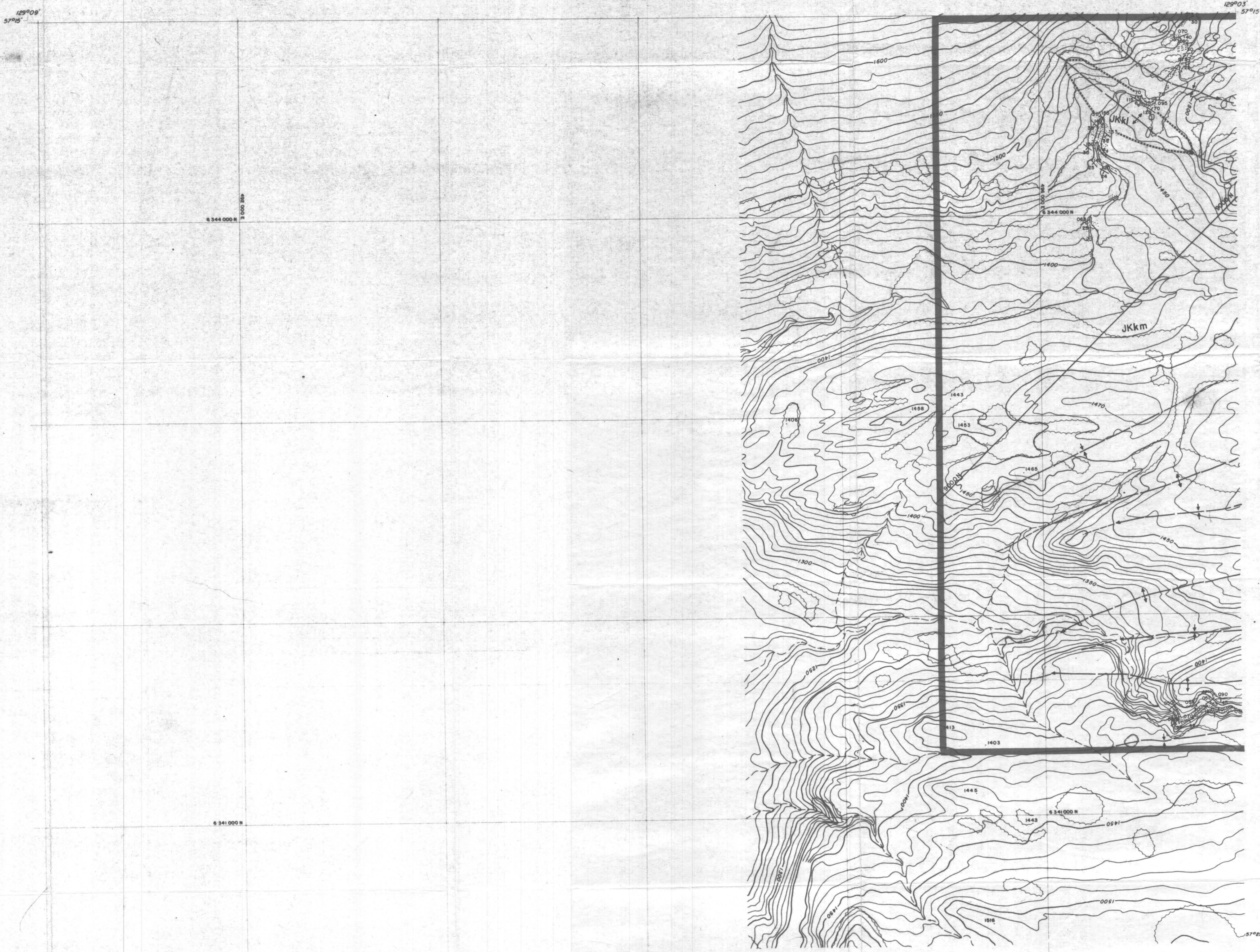
GEOLOGY

PREPARED BY: J. INNIS

APPROVED BY: B.P.F.

DATE: NOV. 82

DRAWING No. KPN-82-009



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]

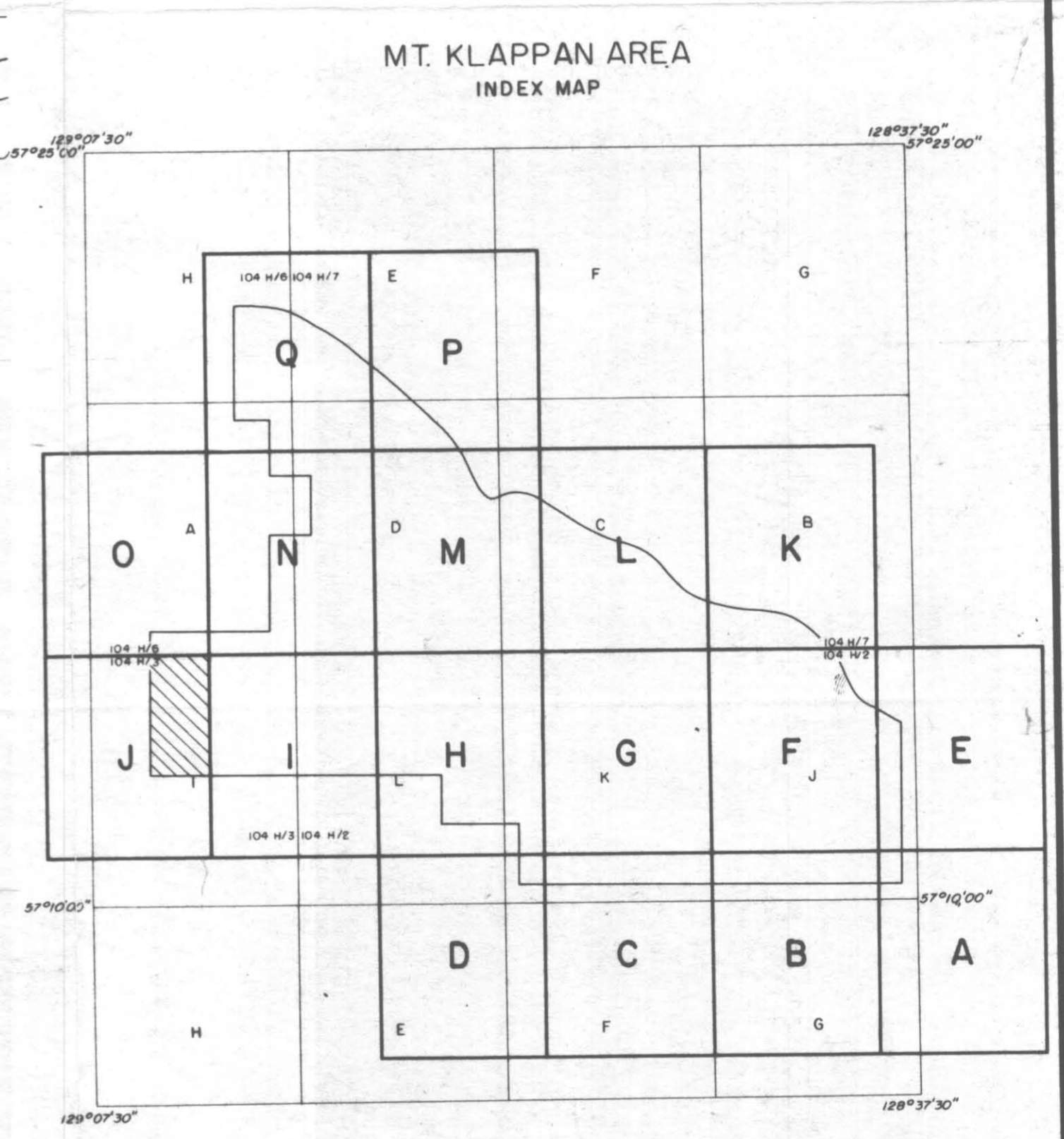
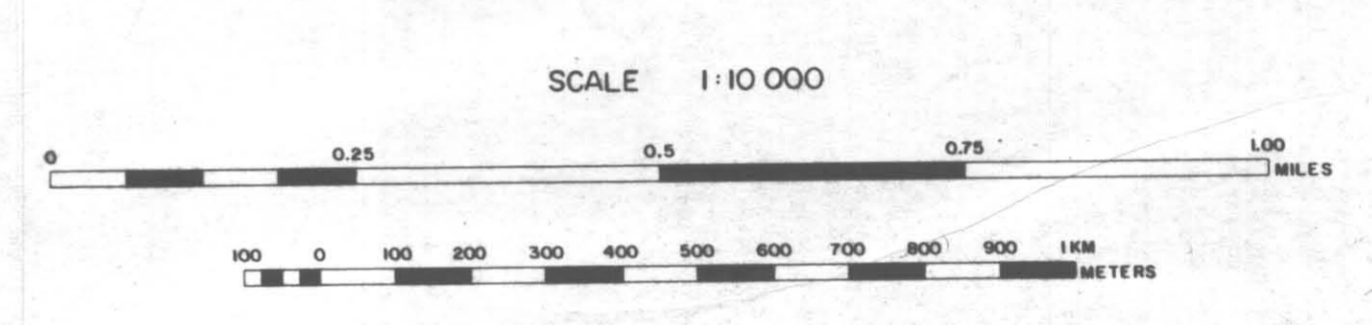
NOTES

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 UPTHURST 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.	
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

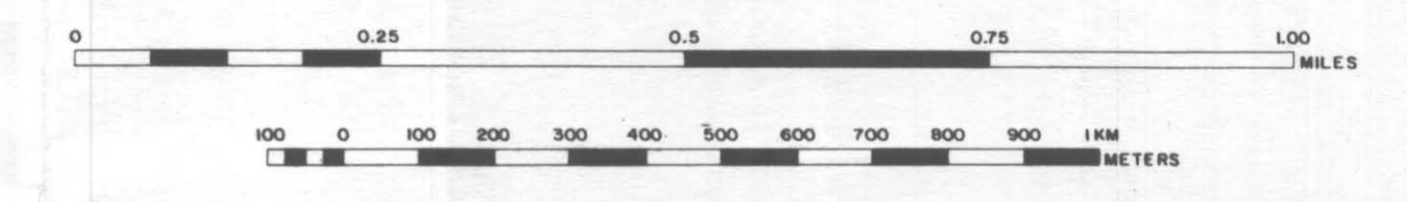
SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

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

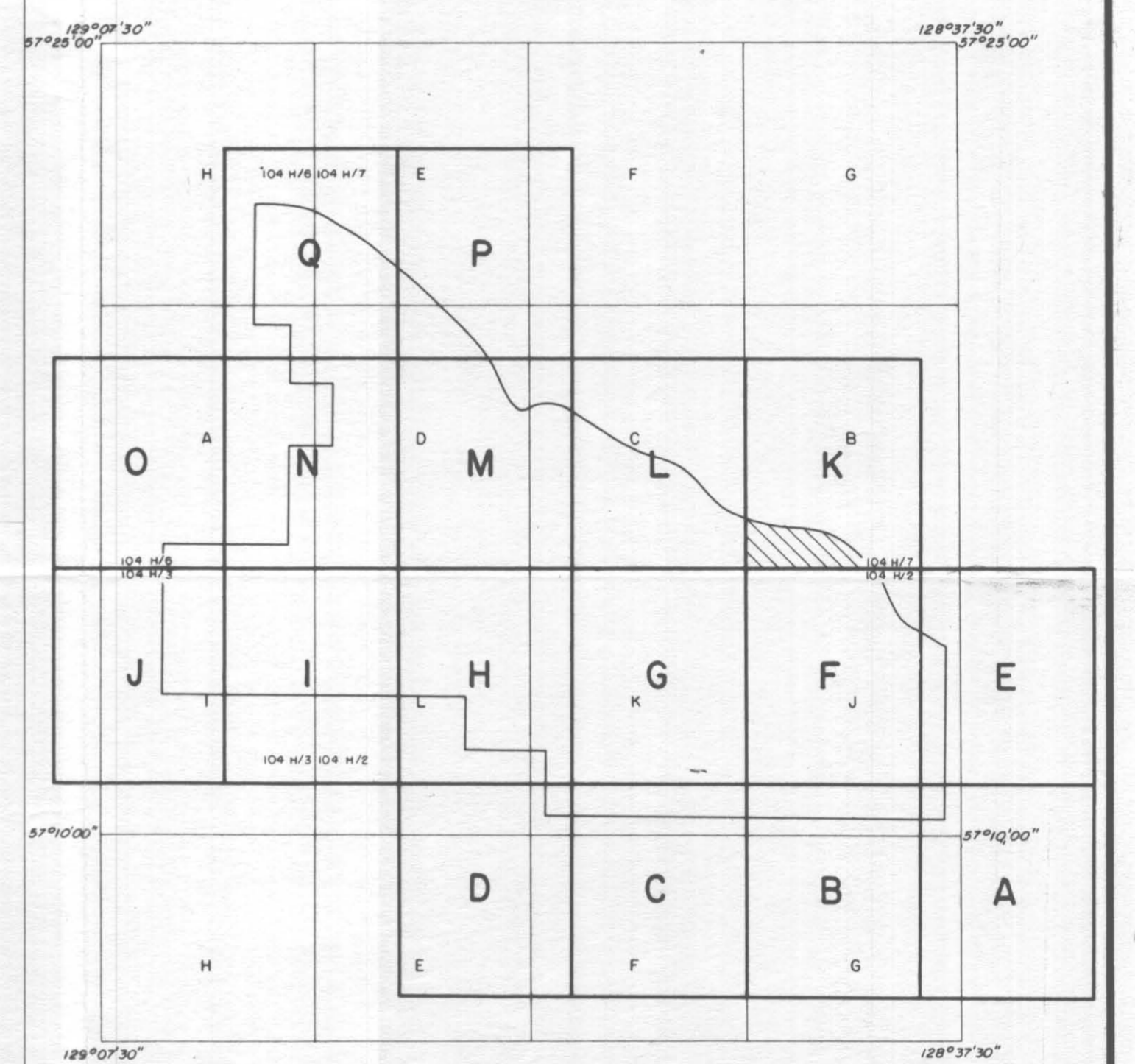
COMPILED BY WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD MCELLELLAN LTD. FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67 AT A SCALE OF 1:60 000 (APPROXIMATE).



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 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

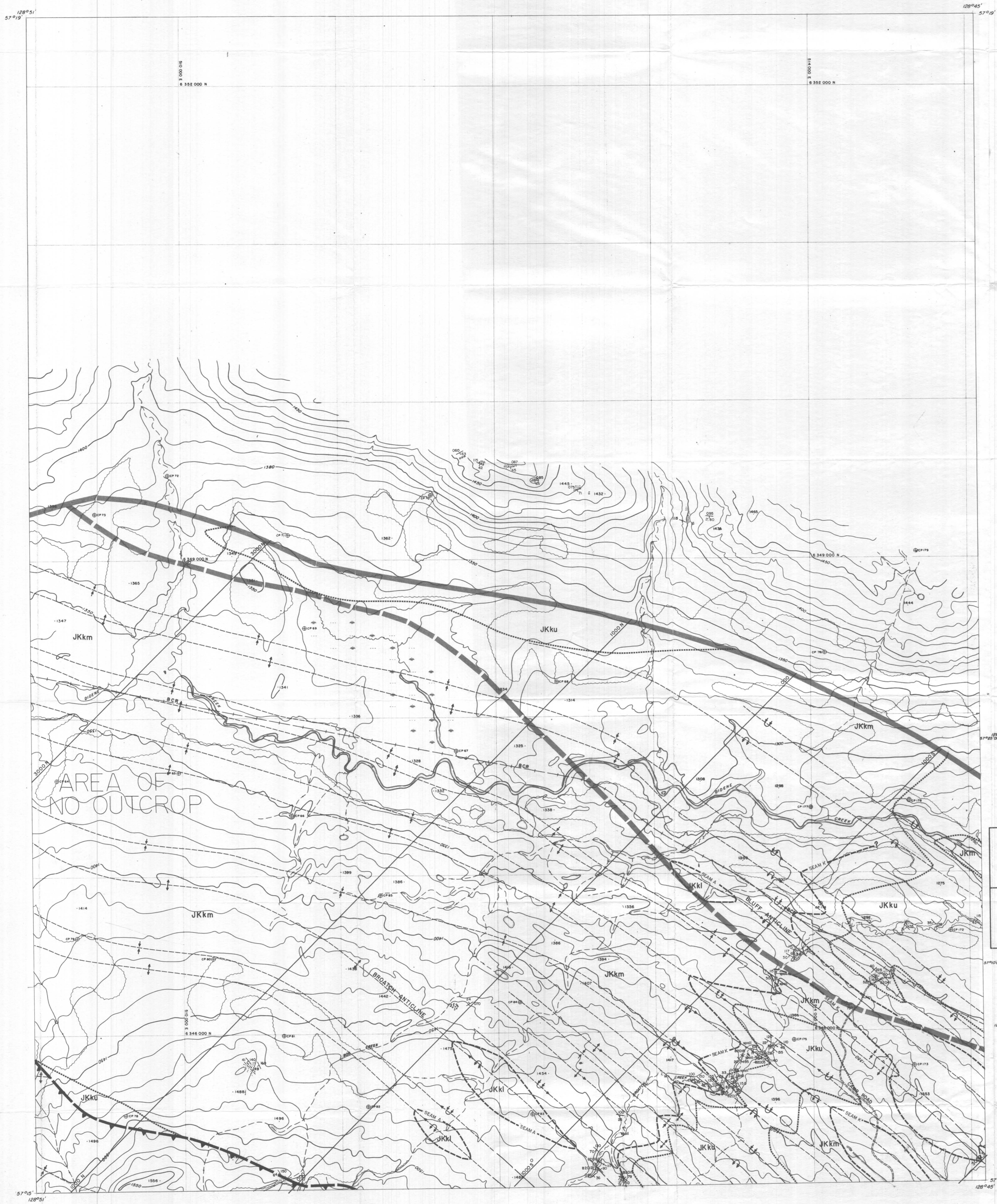
GULF CANADA RESOURCES INC.
Coal Division

CALGARY ALBERTA

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

PREPARED BY: G. SEVE DATE: NOV. '82 DRAWING No. KPN-82-011

APPROVED BY: B.P.F.



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	---

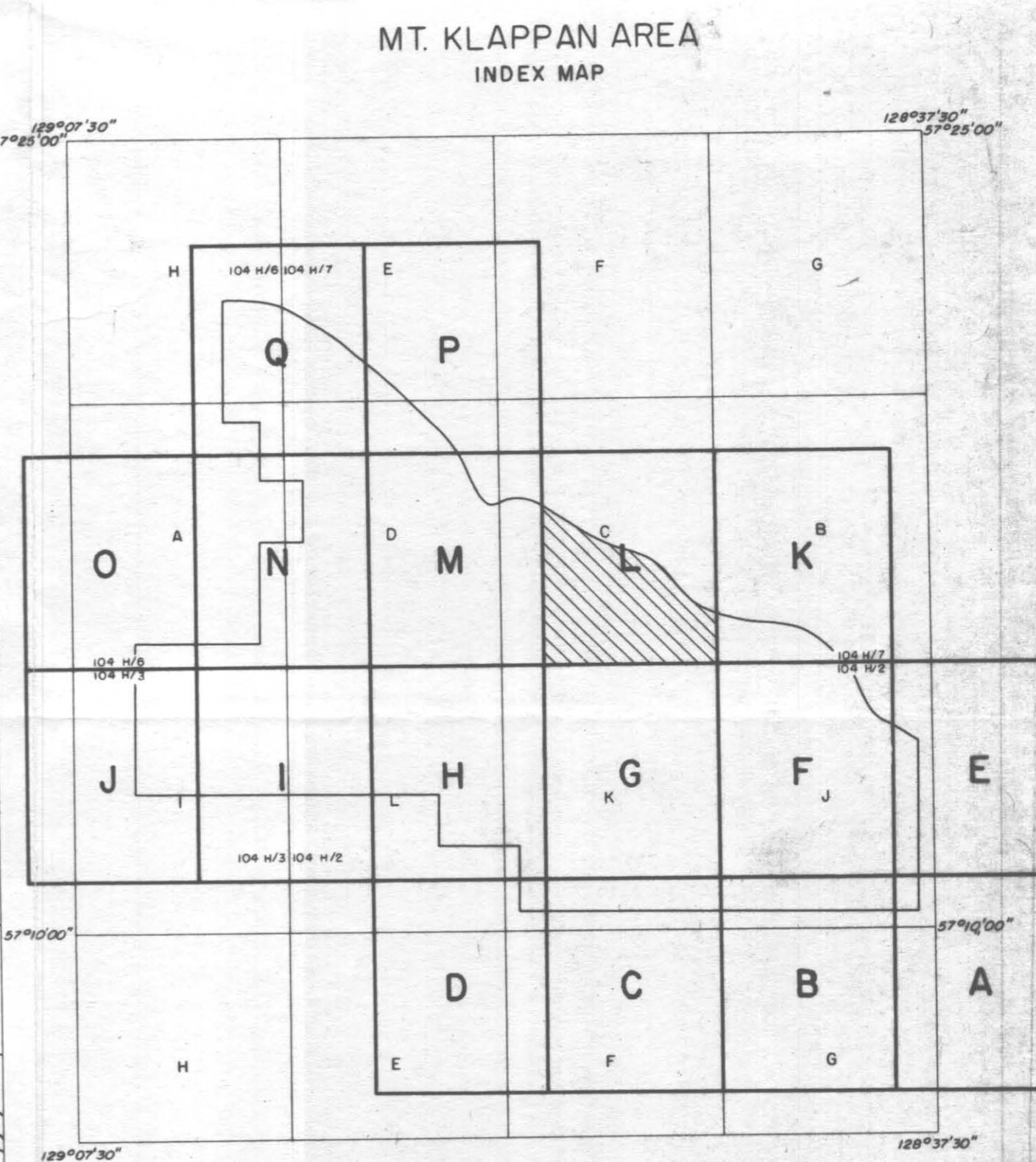
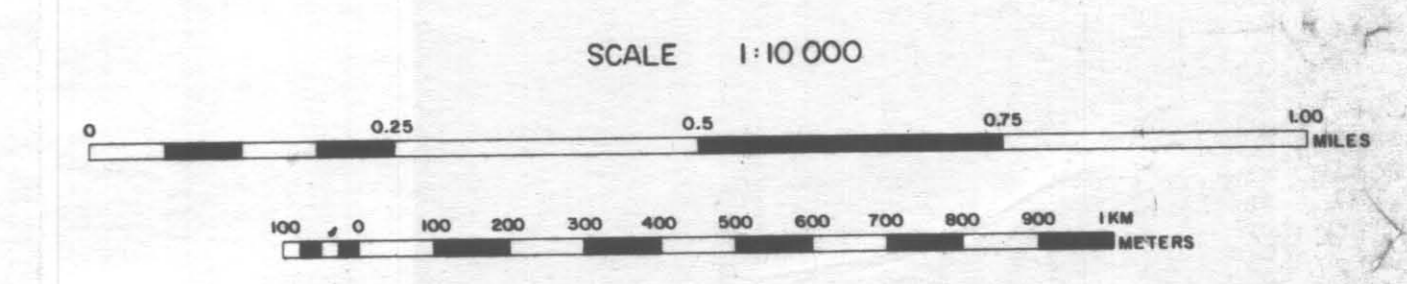
NOTES

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)

110

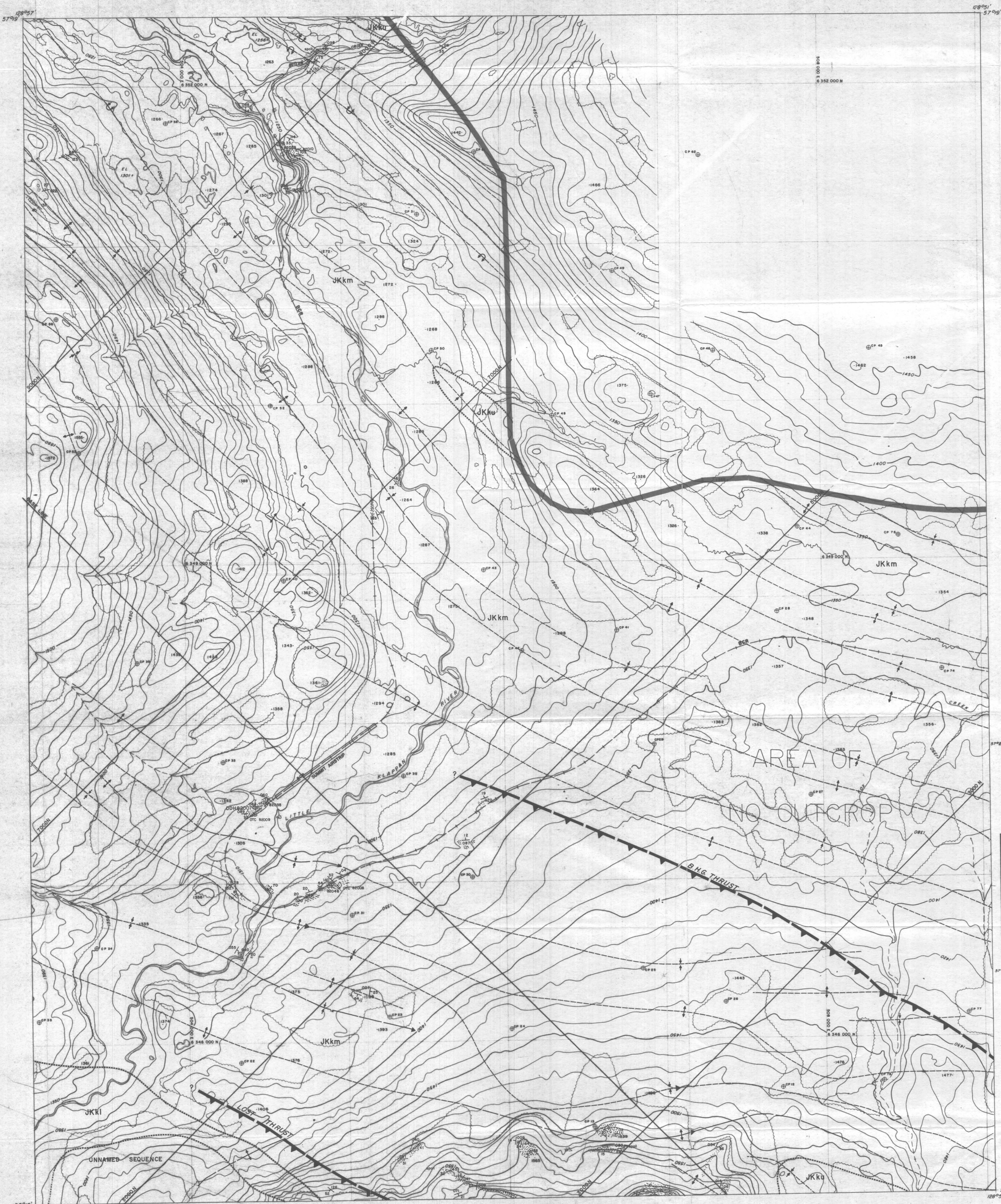
GULF CANADA RESOURCES INC.
Coal Division

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



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]

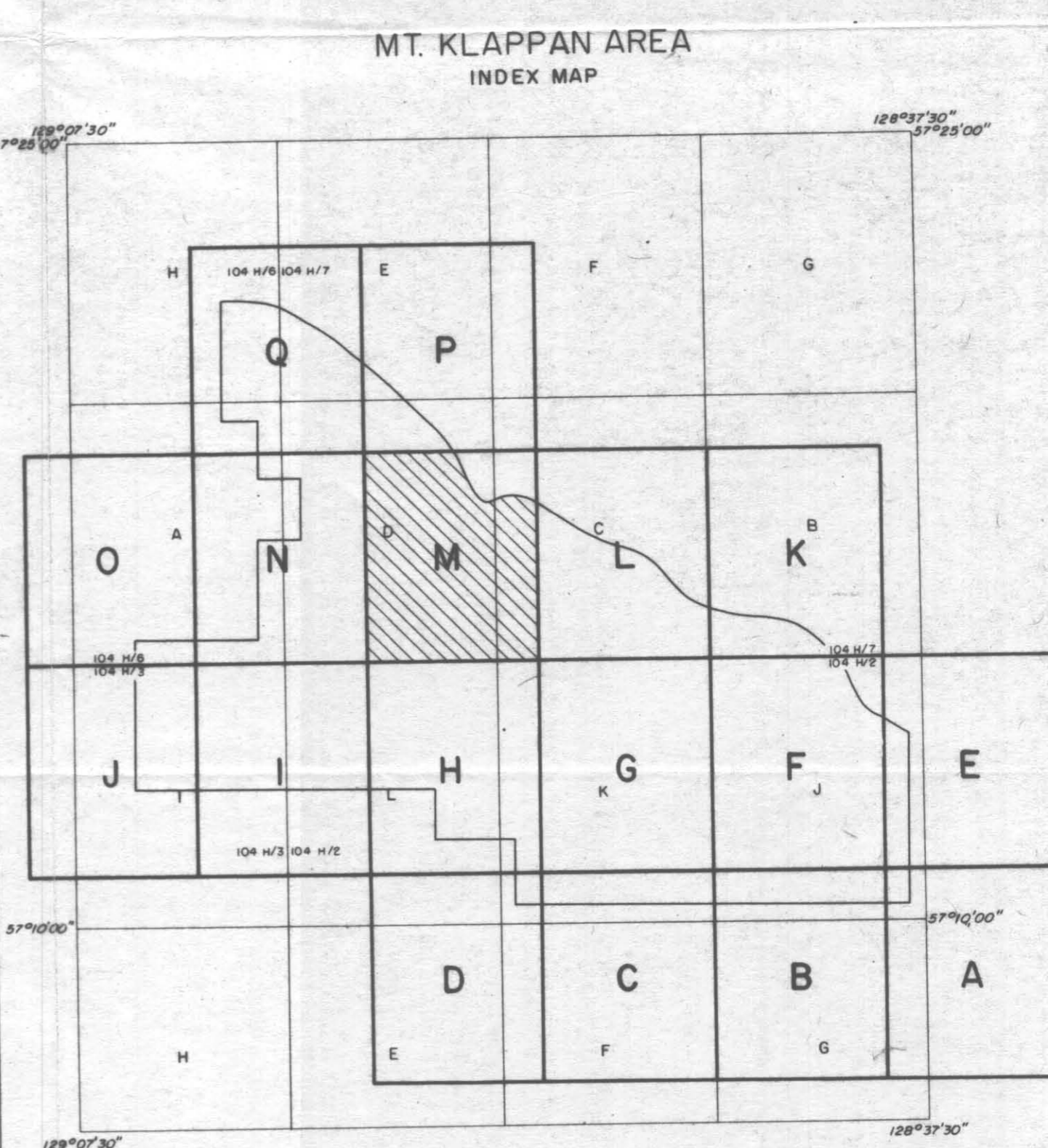
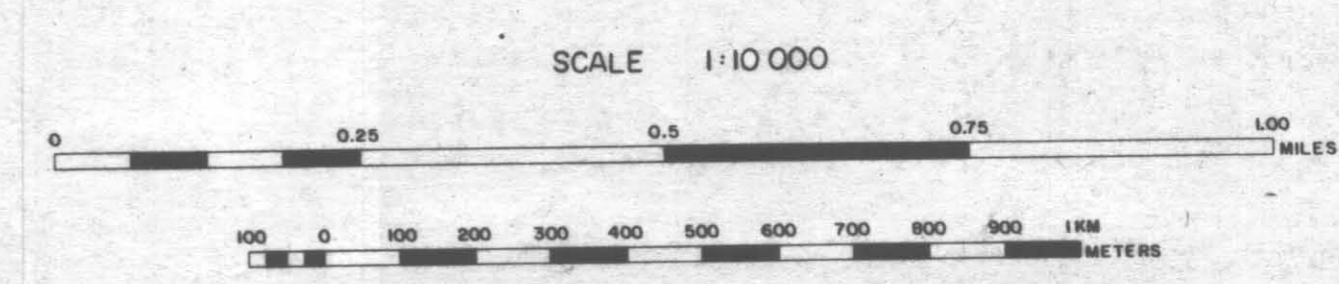
NOTES

CONTOUR INTERVAL 10 METERS

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

[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

GULF CANADA RESOURCES INC.
Coal Division

**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.



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

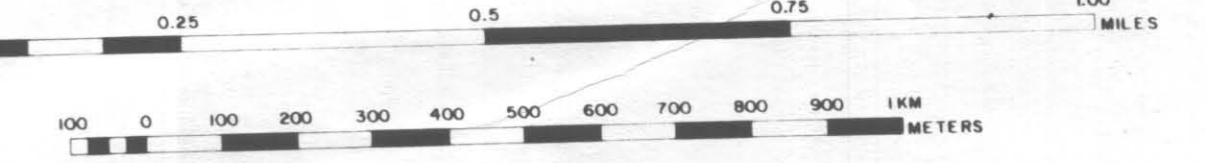
SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

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

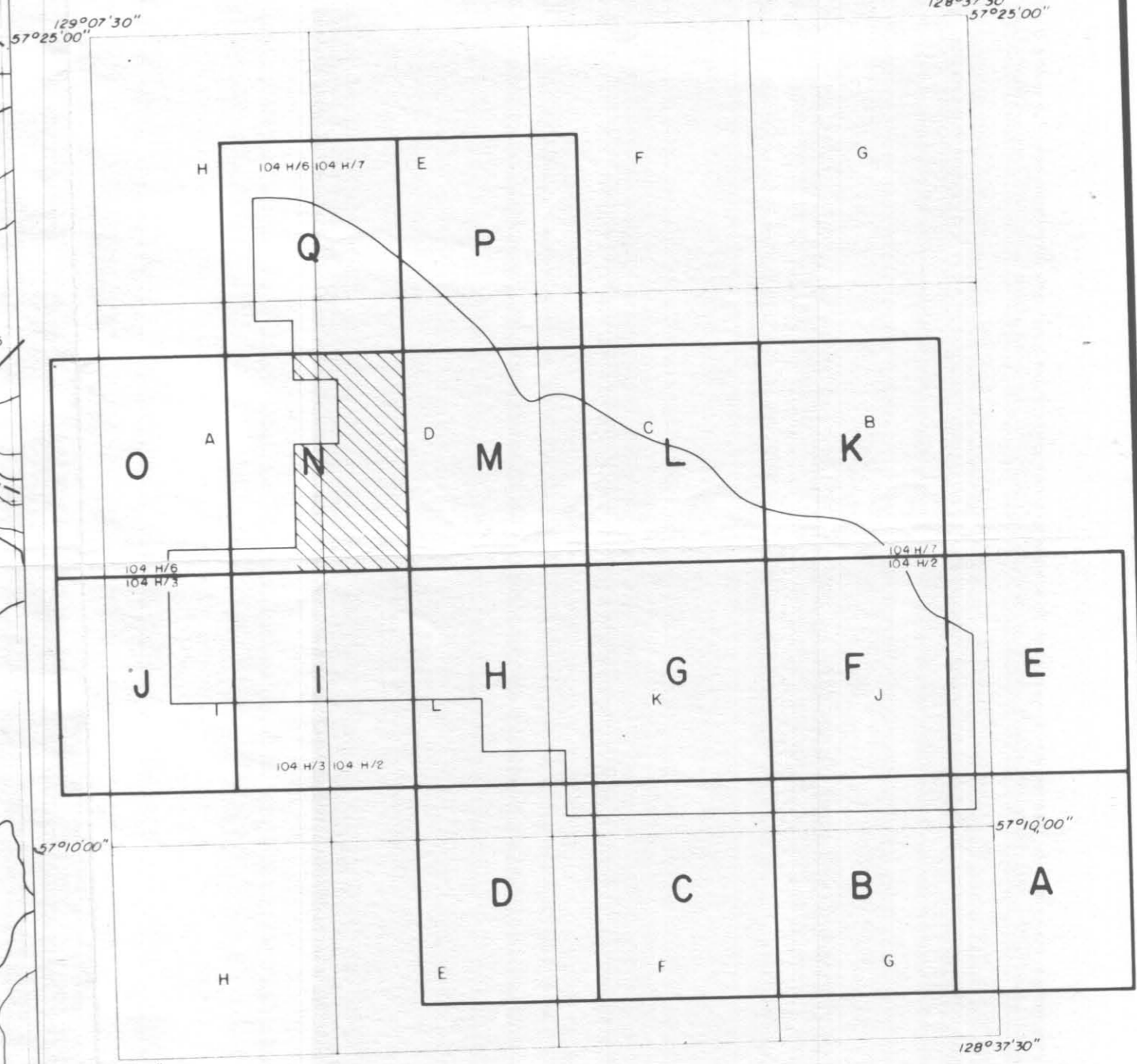
COMPILED BY WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD McLELLAN LTD., FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST 1967 AT A SCALE OF 1:60 000 (APPROXIMATE).



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 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.

110

Ge. Mt. Klappan 82(2)A

GULF CANADA RESOURCES INC.
Coal Division

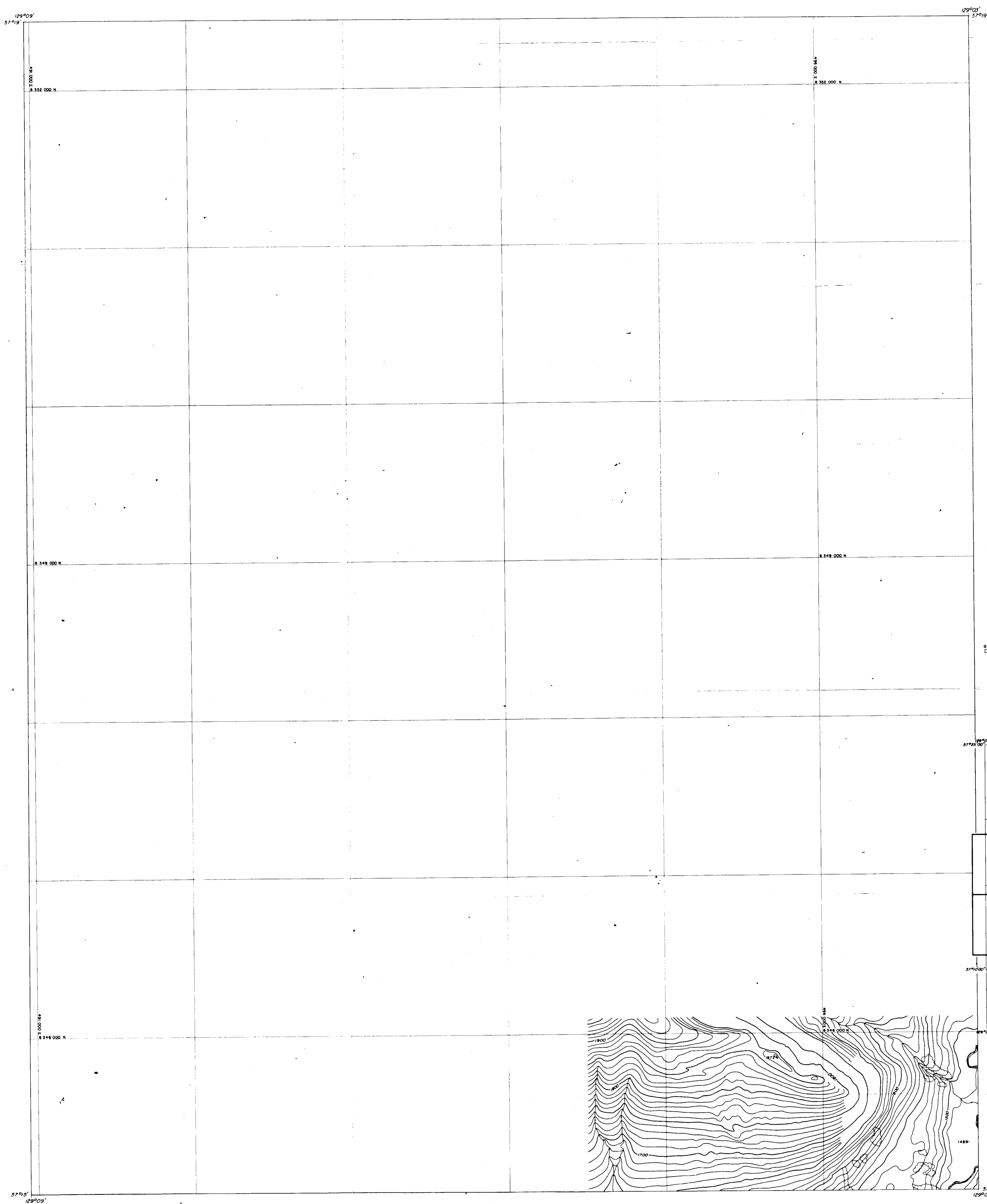
CALGARY ALBERTA

MOUNT KLAPPAN COAL PROPERTY
MAP SHEET N
GEOLOGY

PREPARED BY: E. Swanbergson
APPROVED BY: B.P.F.

DATE: Nov. 82

DRAWING No.
KPN-82-014



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	---

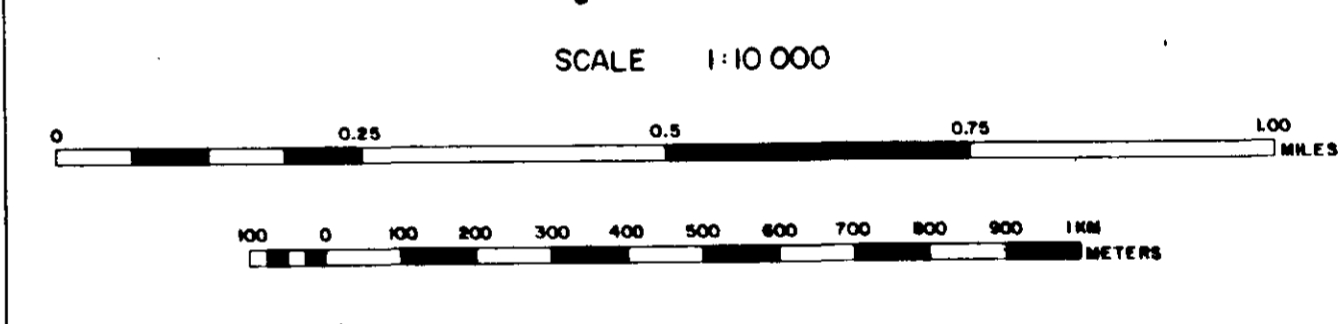
NOTES

CONTOUR INTERVAL 10 METERS

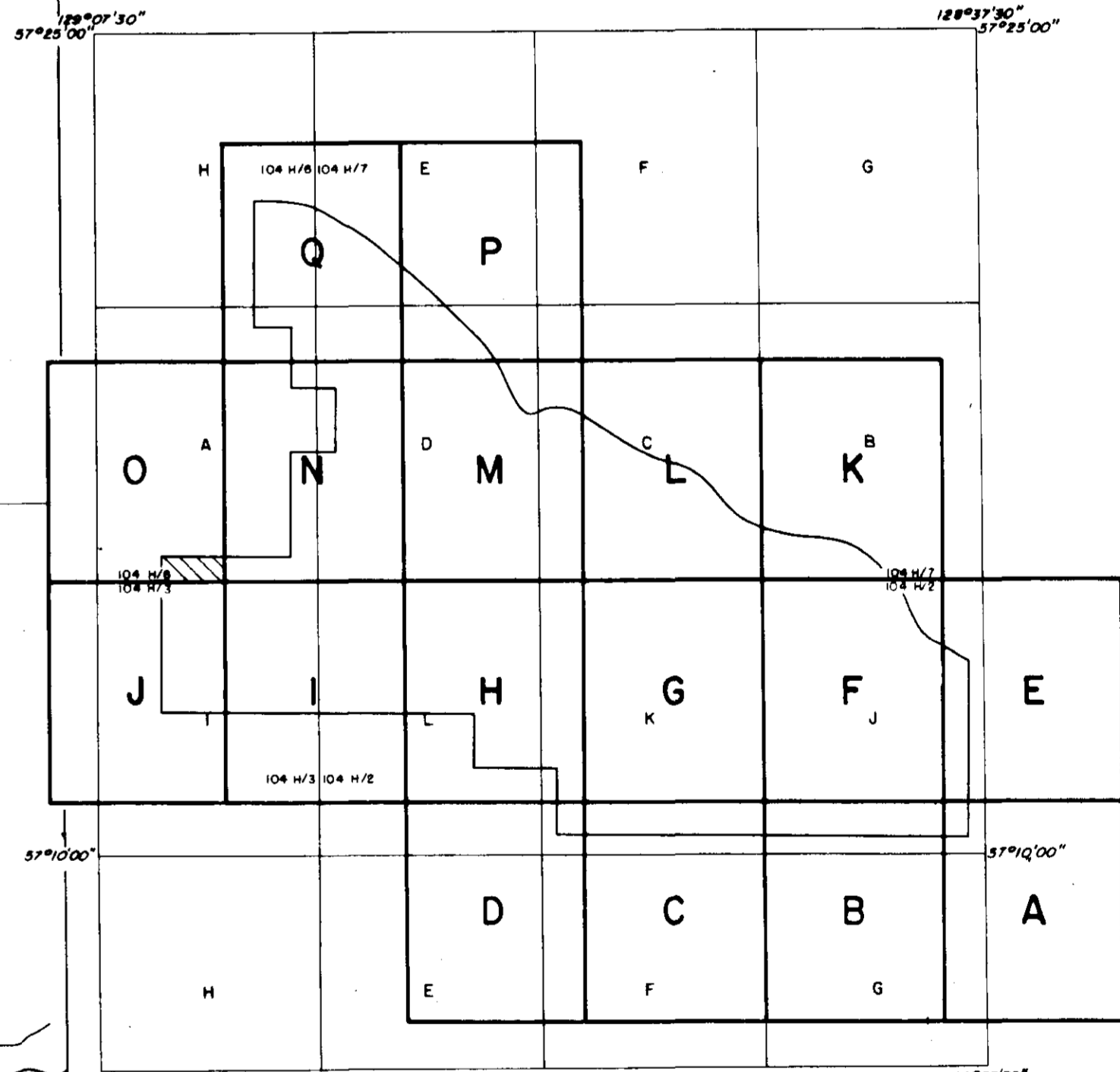
SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

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 82/27A

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

128°51' 57" W

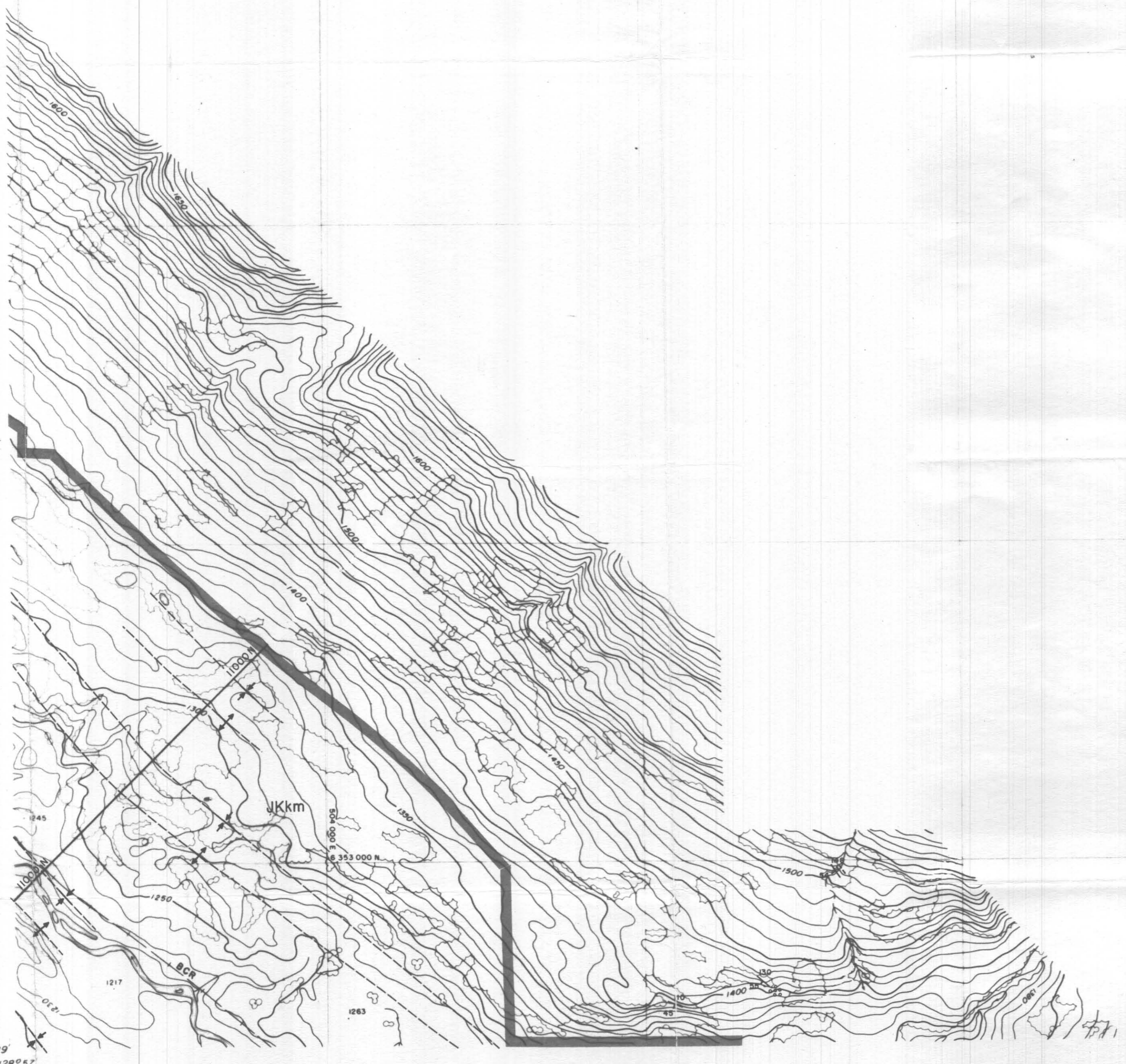
5330000 N

5330000 N

5356000 N

5356000 N

5353000 N



LEGEND

BUILDING	---
ROAD, HARD SURFACE	---
LOOSE SURFACE	---
CART TRACK	---
TRAIL	---
RAILROAD BED	---
RIVER	---
STREAM, DEFINITE	---
APPROXIMATE	---
SPLIT	---
LAKE	---
WATER LEVEL	EL. 808'
SWAMP	---
BEAVER DAM	---
TREE LINE	---
CUT LINE	---
CONTOURS, INDEX	---
INTERMEDIATE	---
DEPRESSION	---
APPROXIMATE	---
SPOT ELEVATION	7534
FIELD CONTROL POINT	① 10'
COAL LICENCE	---

NOTES

CONTOUR INTERVAL 10 METERS

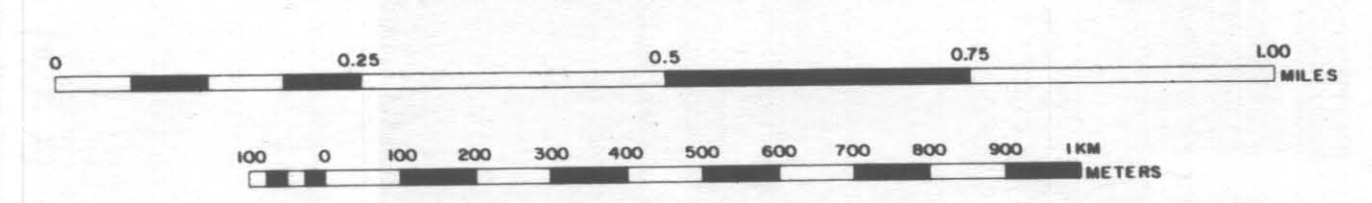
SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

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

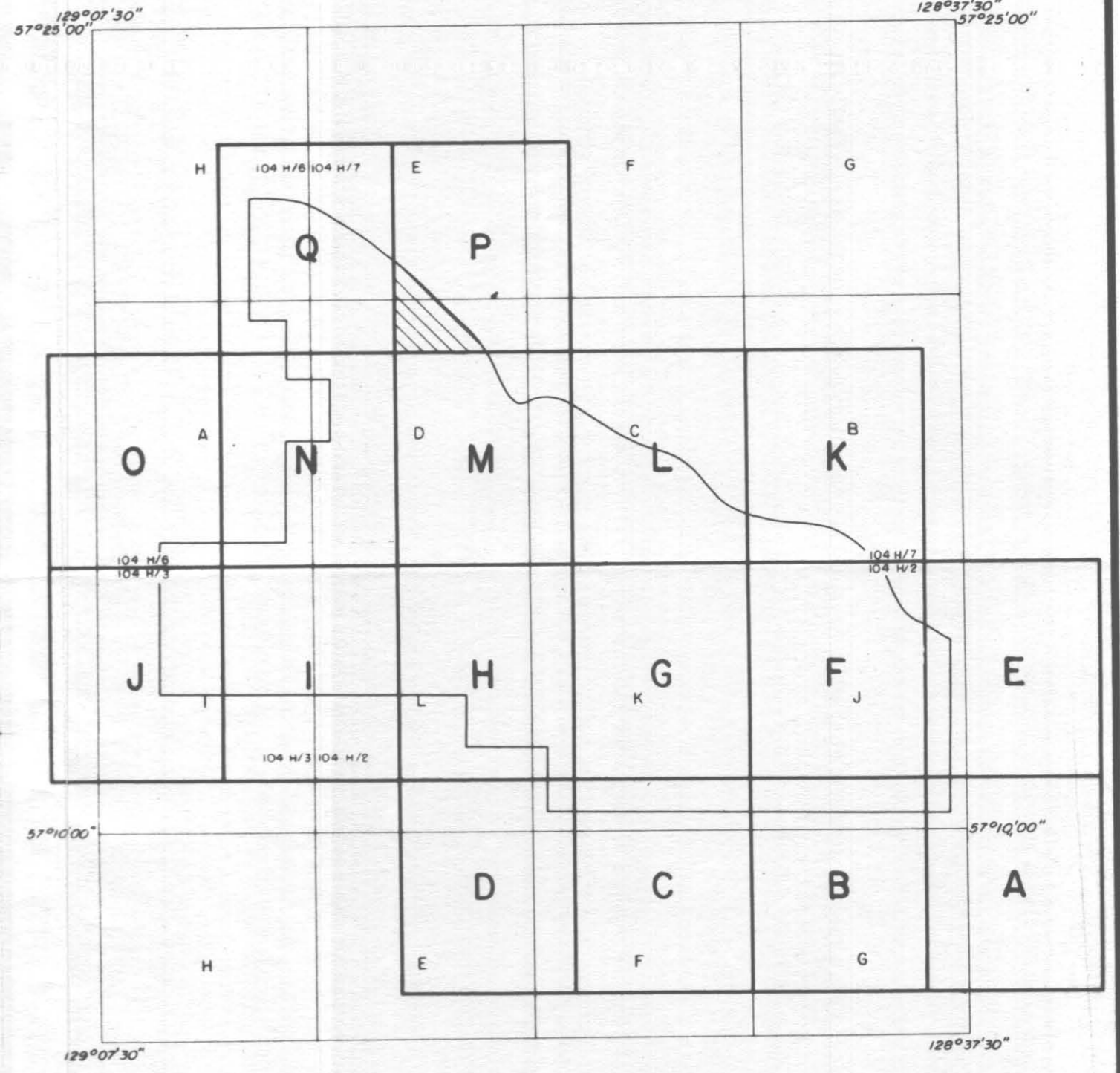
COMPILED BY WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD McLELLAN LTD., FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67 AT A SCALE OF 1:60 000 (APPROXIMATE).



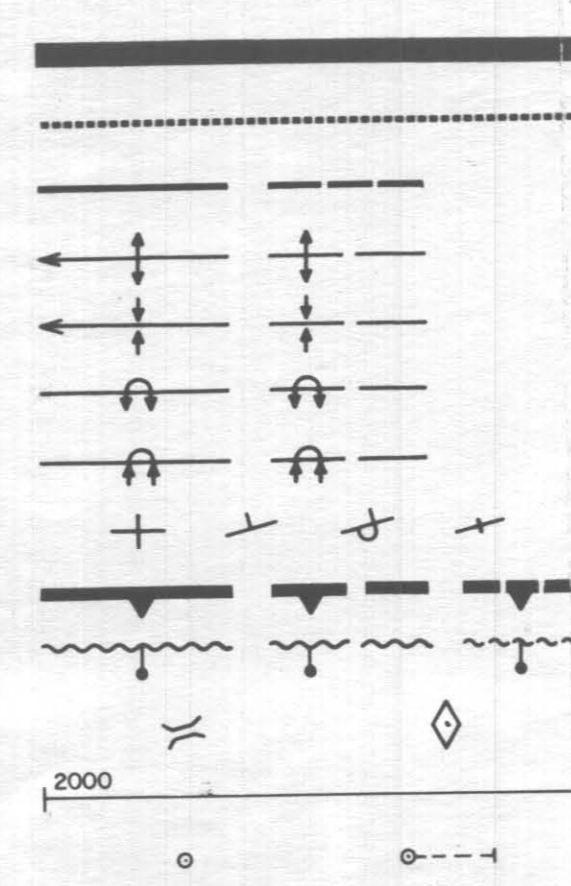
SCALE 1:10 000



MT. KLAPPAN AREA INDEX MAP



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.



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

110

Ge. Mt. Klappan 82(2)A

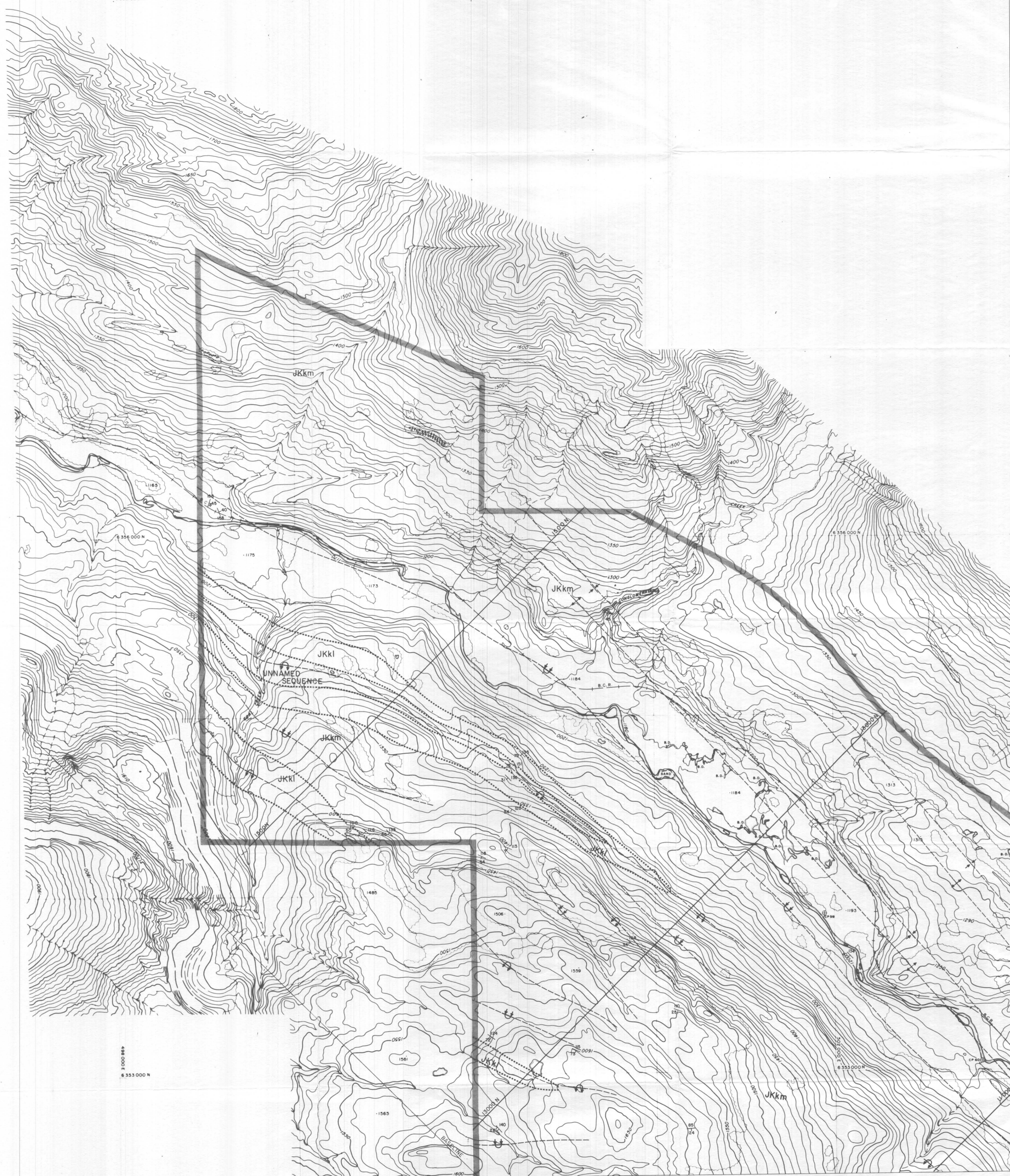
GULF CANADA RESOURCES INC.
Coal Division

CALGARY ALBERTA

MOUNT KLAPPAN COAL PROPERTY
MAP SHEET P
GEOLOGY

PREPARED BY: M. DUFORD
APPROVED BY: B. P. F.

DATE: Nov. 82
DRAWING No. KPN-82-016



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	—
TREE LINE	—
CUT LINE	—
CONTOURS, INDEX	—
CONTOURS, INTERMEDIATE	—
CONTOURS, APPROXIMATE	—
SPOT ELEVATION	—
FIELD CONTROL POINT	—
COAL LICENCE	—

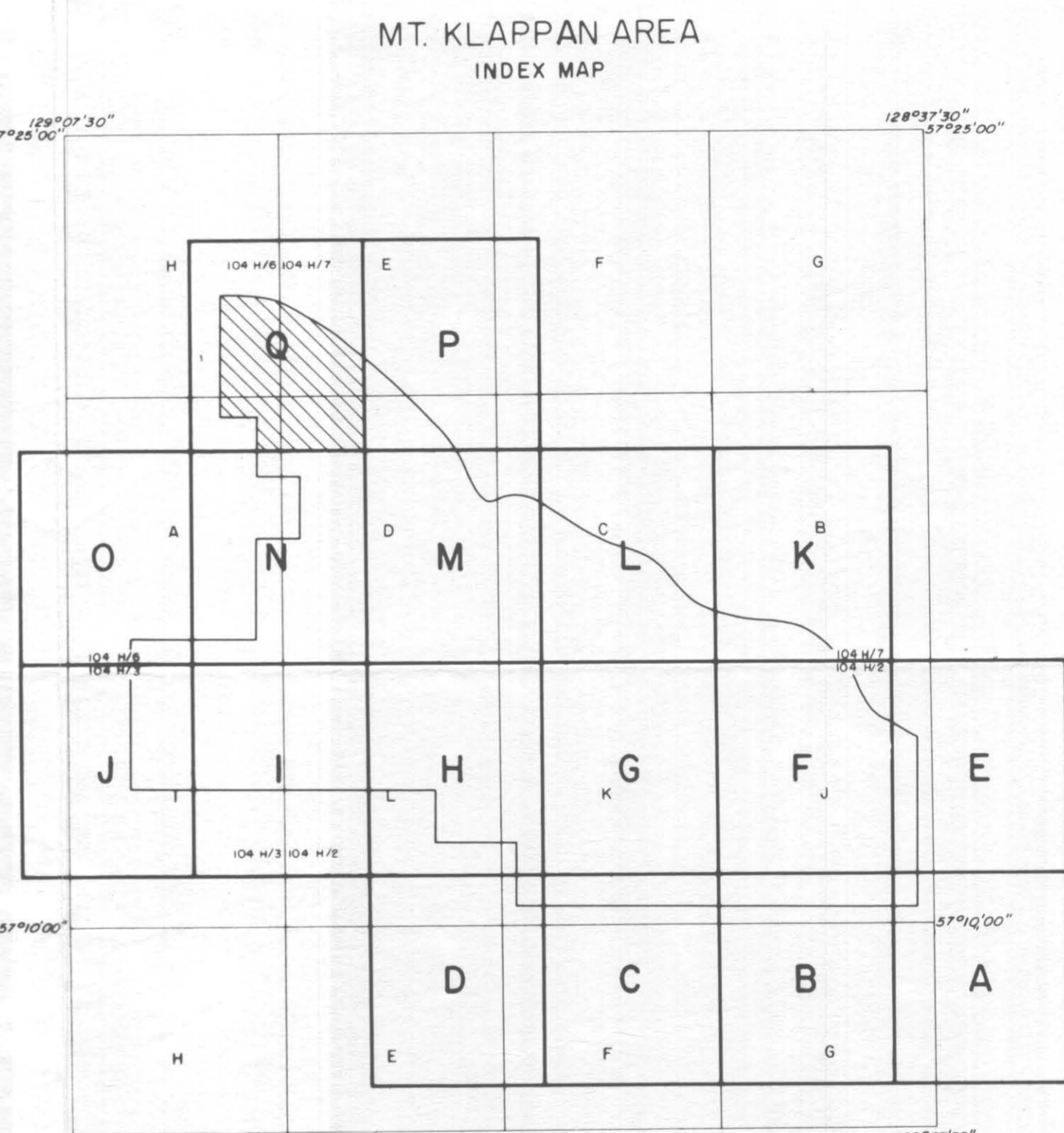
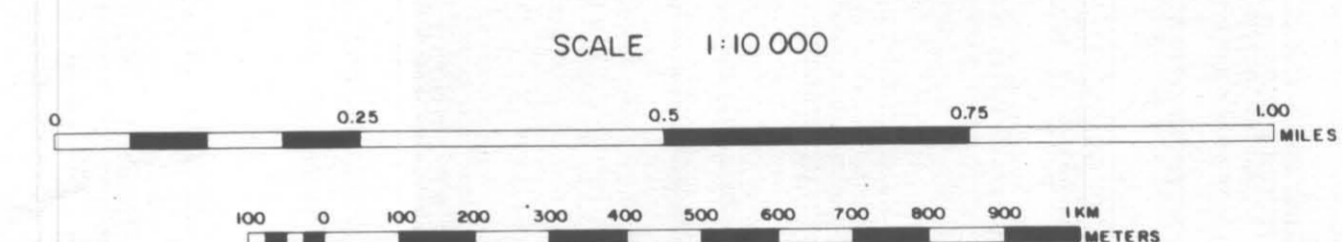
NOTES

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 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

—	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

Ge. Mt. Klappan 80(2)A

GULF CANADA RESOURCES INC.

Coal Division

CALGARY ALBERTA

MOUNT KLAPPAN COAL PROPERTY

MAP SHEET Q

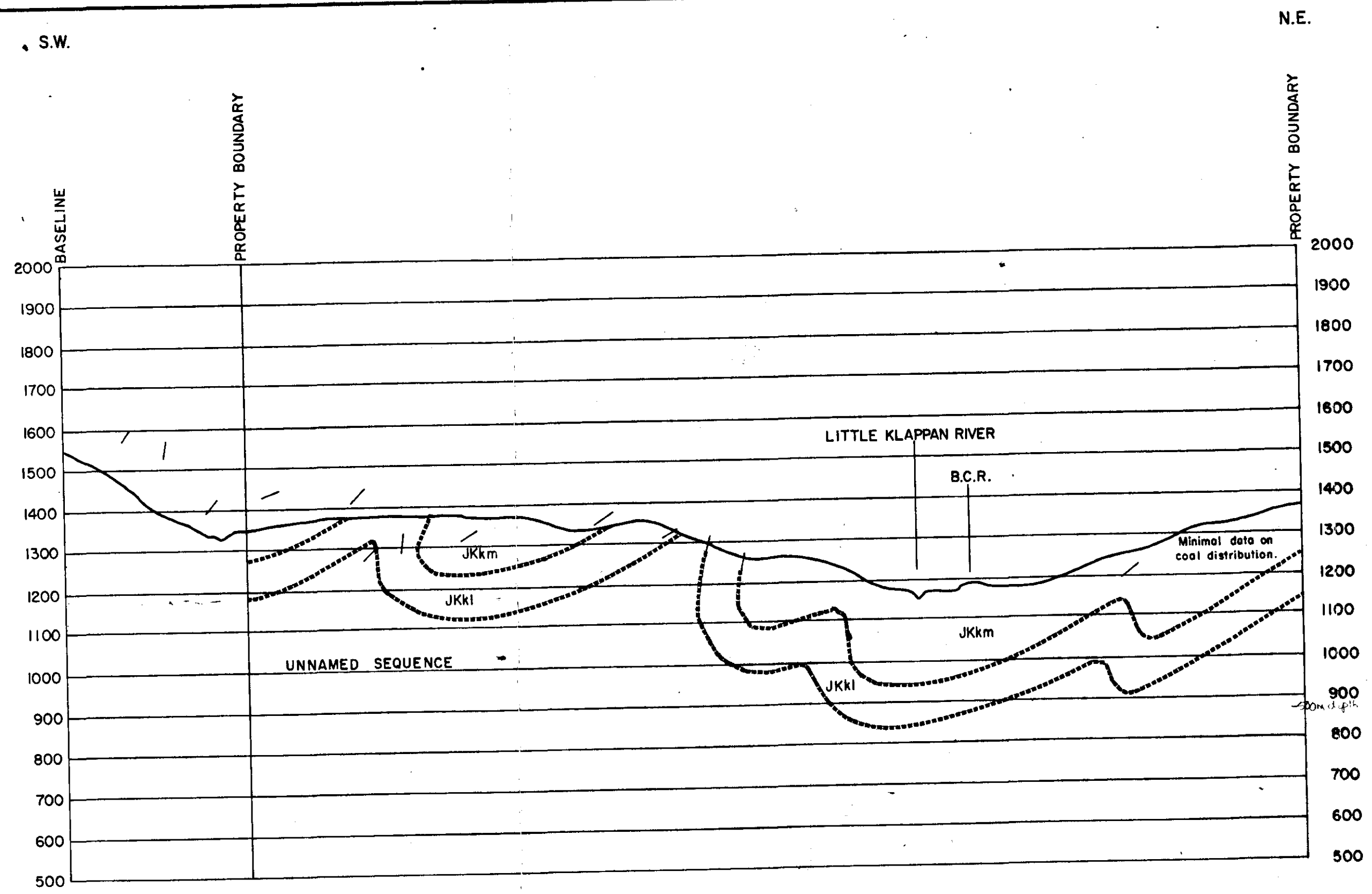
GEOLOGY

PREPARED BY: E. SWANBERGSON

APPROVED BY: B.P.F.

DATE: Nov. 82

DRAWING No. KPN-82-017



MALLOCH SEQUENCE

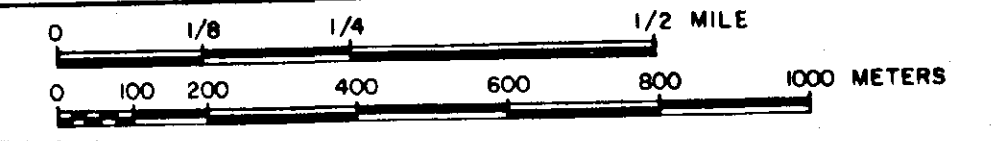
JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.

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)

ooooooo ooo ooo ooo o o o o CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)

ATTITUDE CONTROL POINT

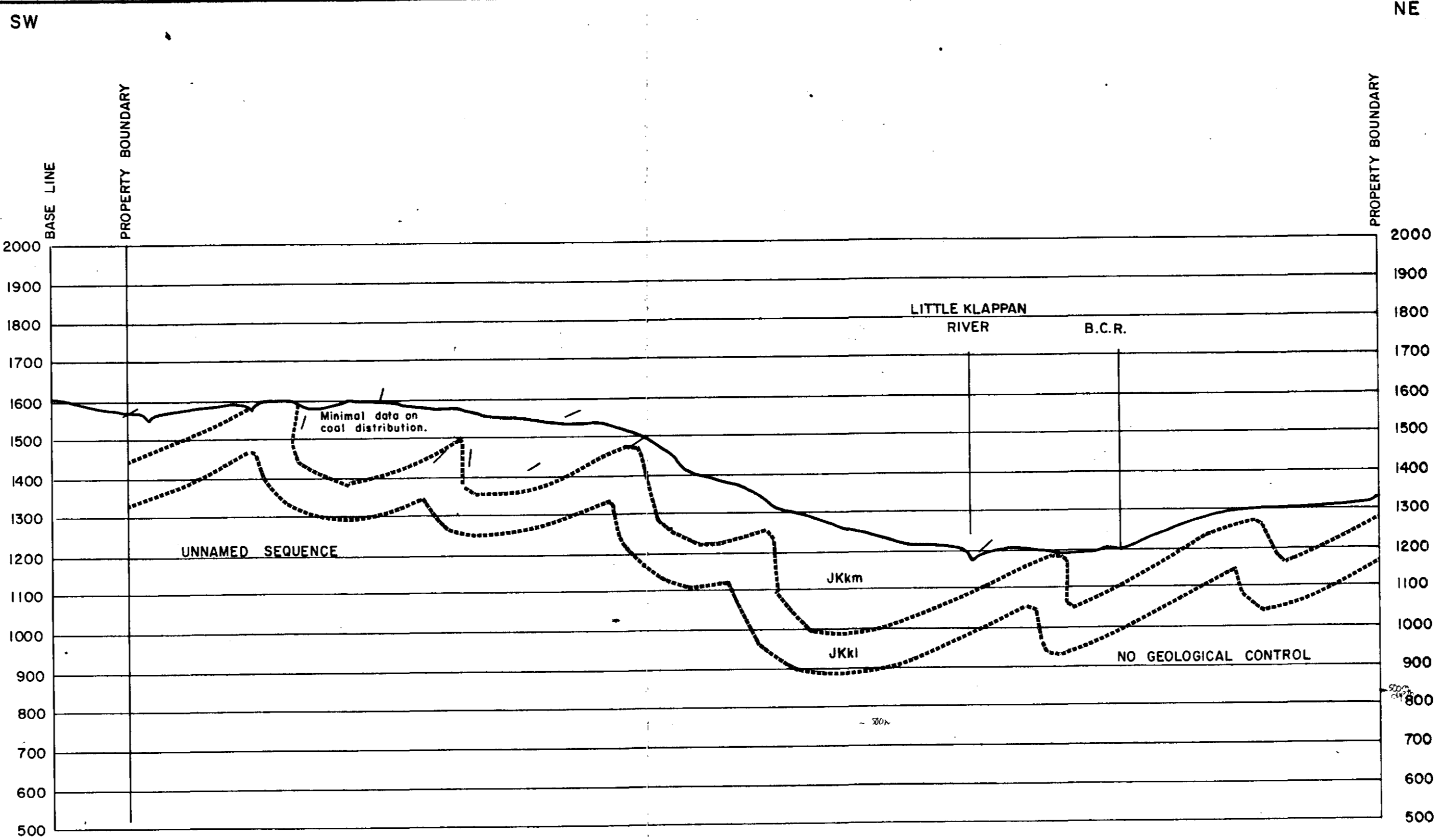
DDH 82001

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
1500N (EAST-WEST)

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



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.

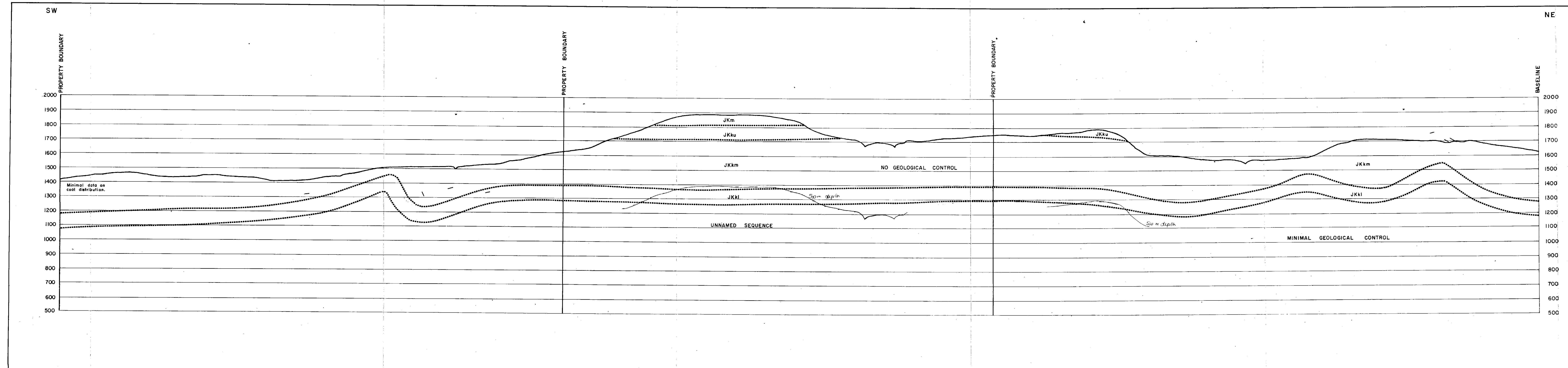
0 1/8 1/4 1/2 MILE
0 100 200 400 600 800 1000 METERS

Legend

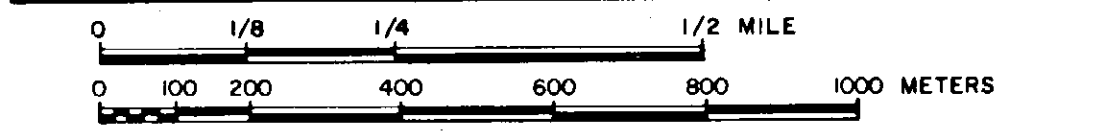
- GEOLOGICAL CONTACT (INFERRED)
- - - - COAL SEAM TRACE (DEFINED, APPROX.)
- ====>>> FAULT TRACE (DEFINED, APPROX., INFERRED)
- o o o o o o o o o o CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
- ATTITUDE CONTROL POINT
- DDH 82001
DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

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		
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

GULF CANADA RESOURCES INC.
Coal Division

CALGARY ALBERTA

Northwestern British Columbia

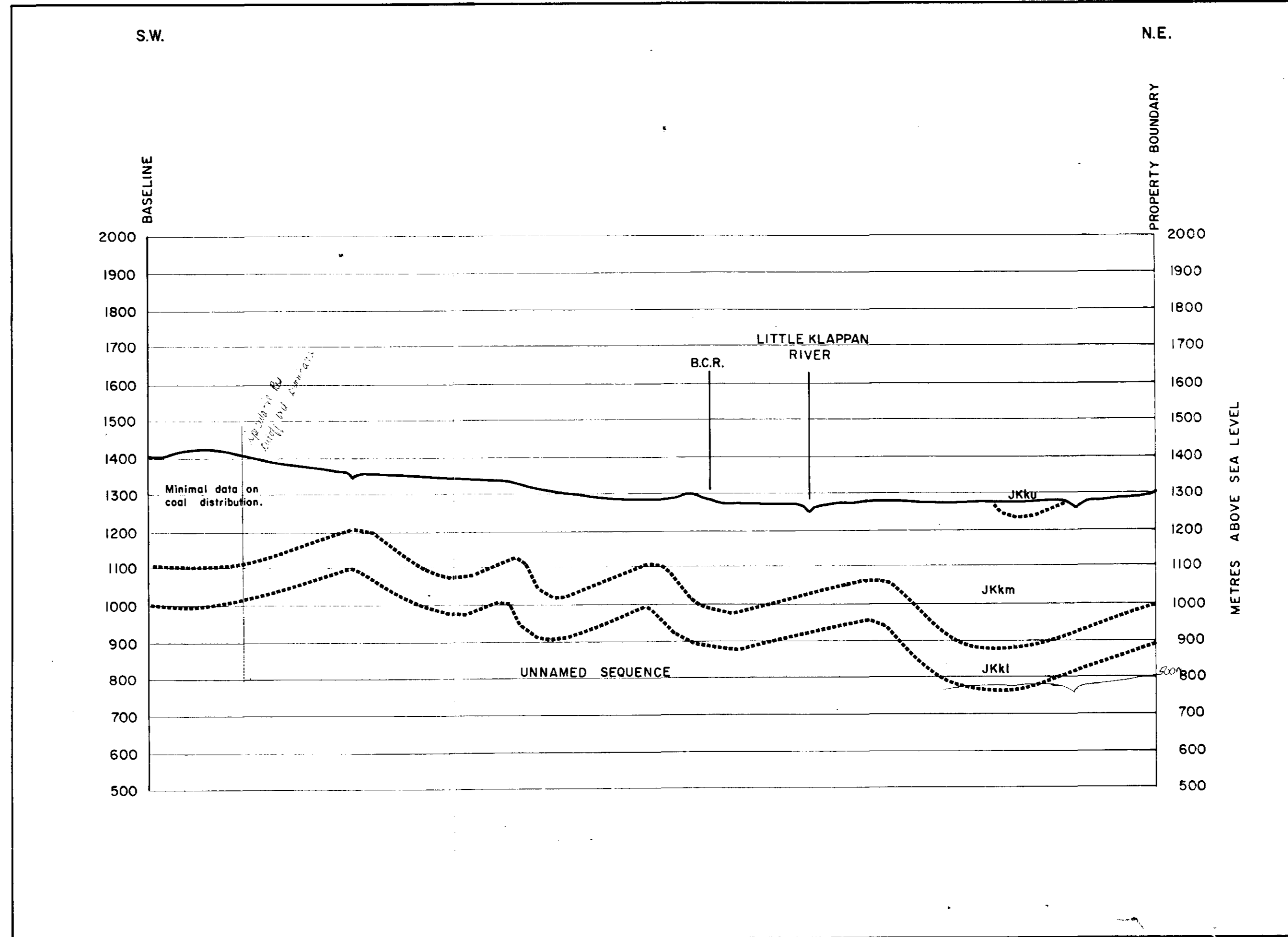
MT. KLAPPAN COAL PROPERTY

110

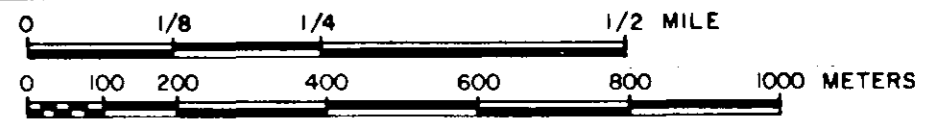
GEOLOGICAL CROSS-SECTION
900N (WEST)

PREPARED BY: E. SWANBERGSON SCALE 1:10,000

APPROVED BY: B.R.F. DATE: NOV. / 82 DRAWING No. KPN-82-022

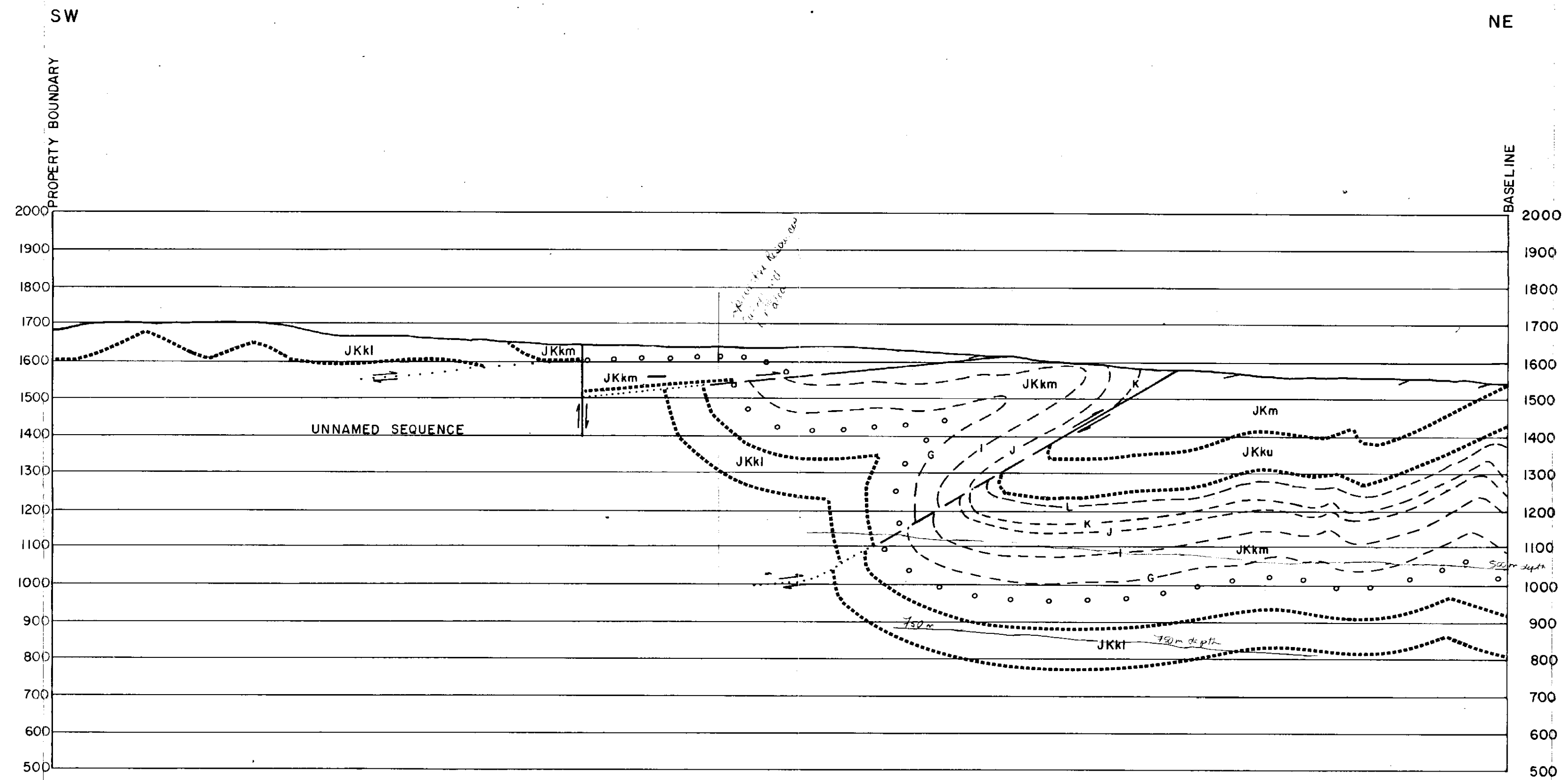


- MALLOCH SEQUENCE**
- JKm** Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku** Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm** Repeated coarsening upward sequences of fine to 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.

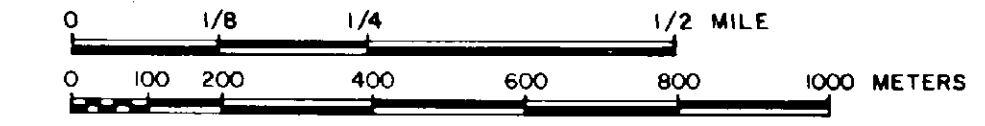


- Legend**
- GEOLOGICAL CONTACT (INFERRED)
 - COAL SEAM TRACE (DEFINED, APPROX.)
 - =====> FAULT TRACE (DEFINED, APPROX., INFERRED)
 - oooooo CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - ATTITUDE CONTROL POINT
 - DDH 82001 DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	110
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

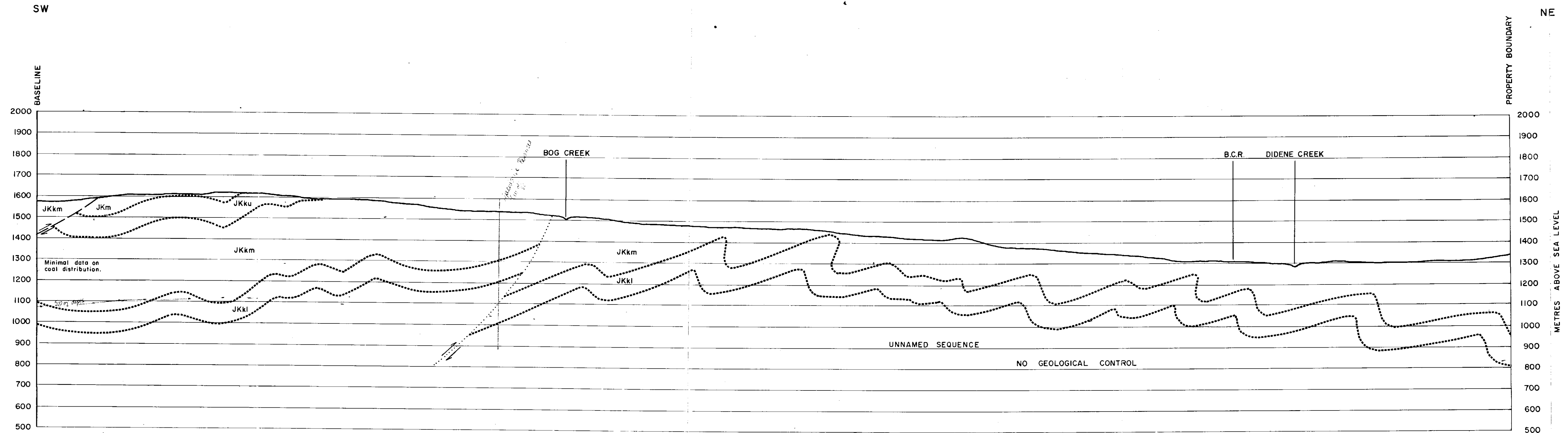


- MALLOCH SEQUENCE**
- JKm** Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku** Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm** Repeated coarsening upward sequences of fine to 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.

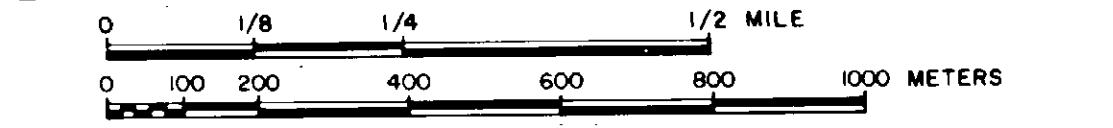


- Legend**
- GEOLOGICAL CONTACT (INFERRED)
 - COAL SEAM TRACE (DEFINED, APPROX.)
 - FAULT TRACE (DEFINED, APPROX., INFERRED)
 - o o o o o CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - ATTITUDE CONTROL POINT
 - DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	
Northwestern British Columbia		
MT. KLAPPAN COAL PROPERTY 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

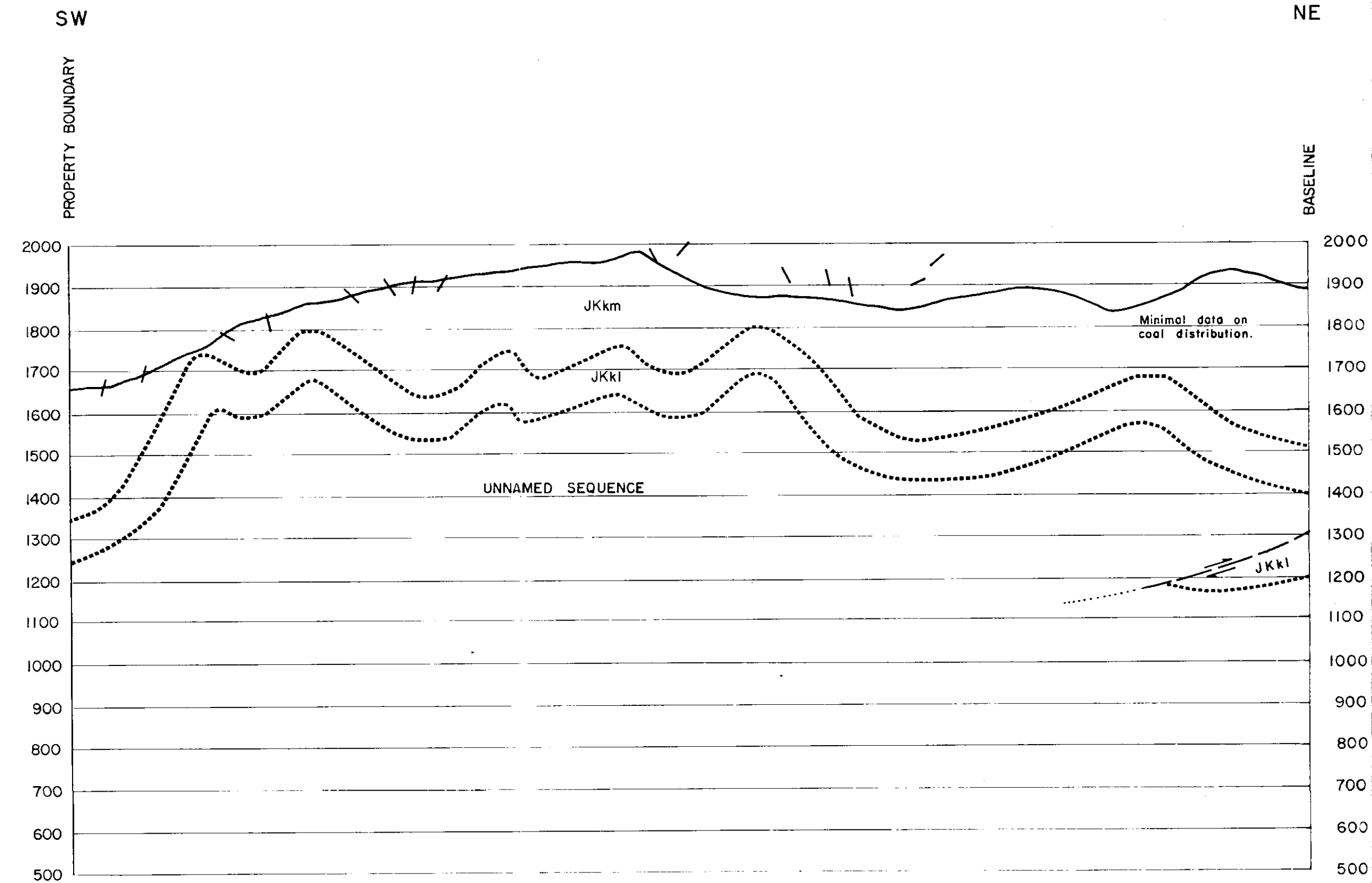


- MALLOCH SEQUENCE**
- JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm Repeated coarsening upward sequences of fine to medium-grained 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.

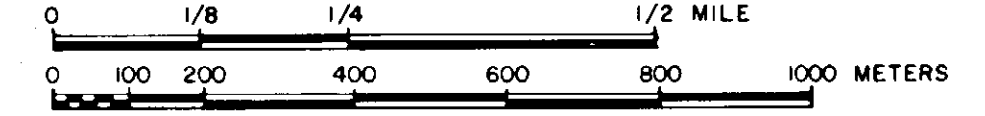


- Legend**
- GEOLOGICAL CONTACT (INFERRED)
 - - - - COAL SEAM TRACE (DEFINED, APPROX.)
 - - - -> FAULT TRACE (DEFINED, APPROX., INFERRED)
 - o o o o o CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - ATTITUDE CONTROL POINT
 - DDH 82001 DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

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

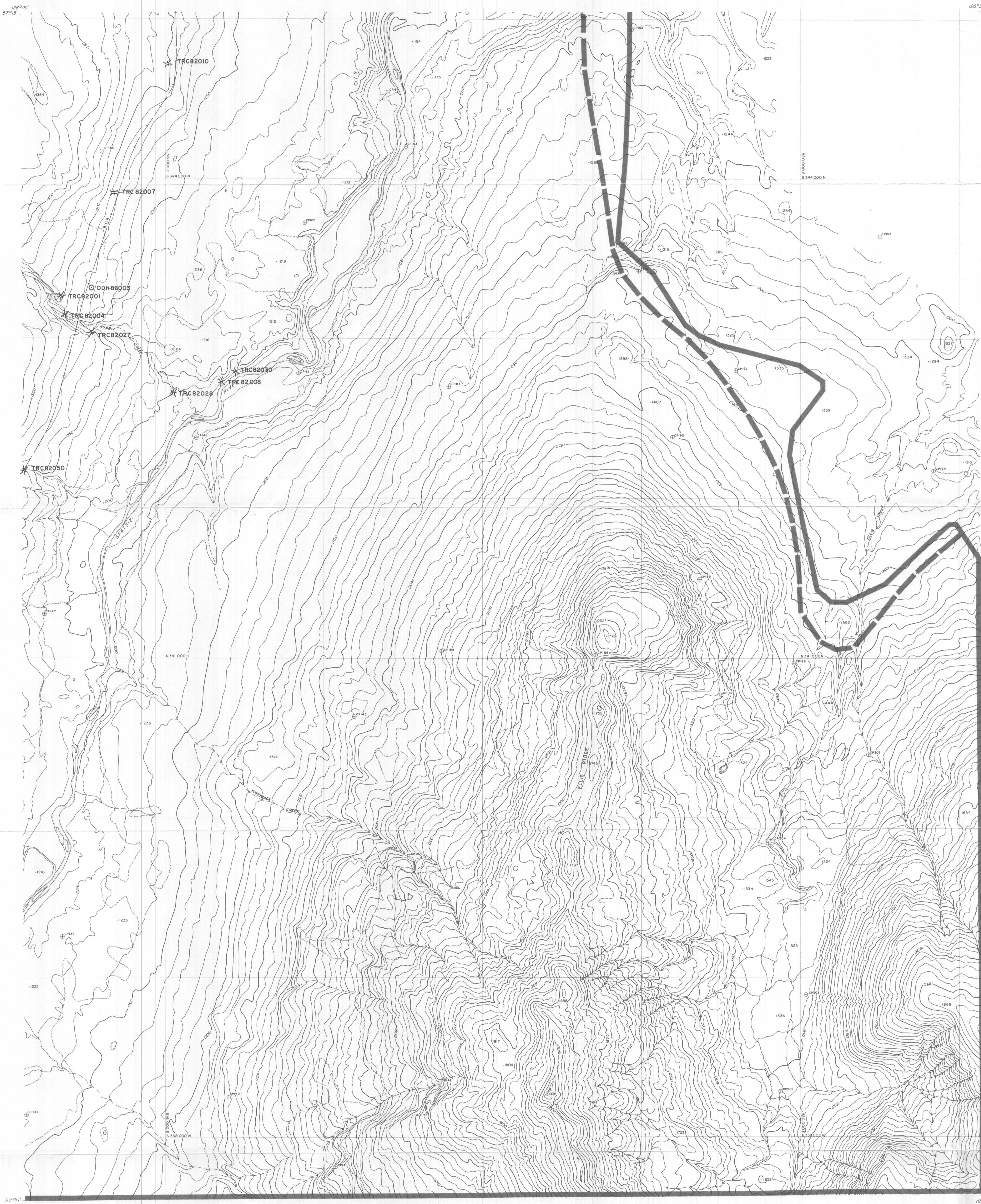


- MALLOCH SEQUENCE**
- JKm** Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku** Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm** Repeated coarsening upward sequences of fine to 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 CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - ▲ ATTITUDE CONTROL POINT
 - ▲ DIAMOND DRILL HOLE WITH ATTITUDE CONTROL
- DDH 82001
- CL- MT. KLAPPAN S2(D)

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



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	---	---

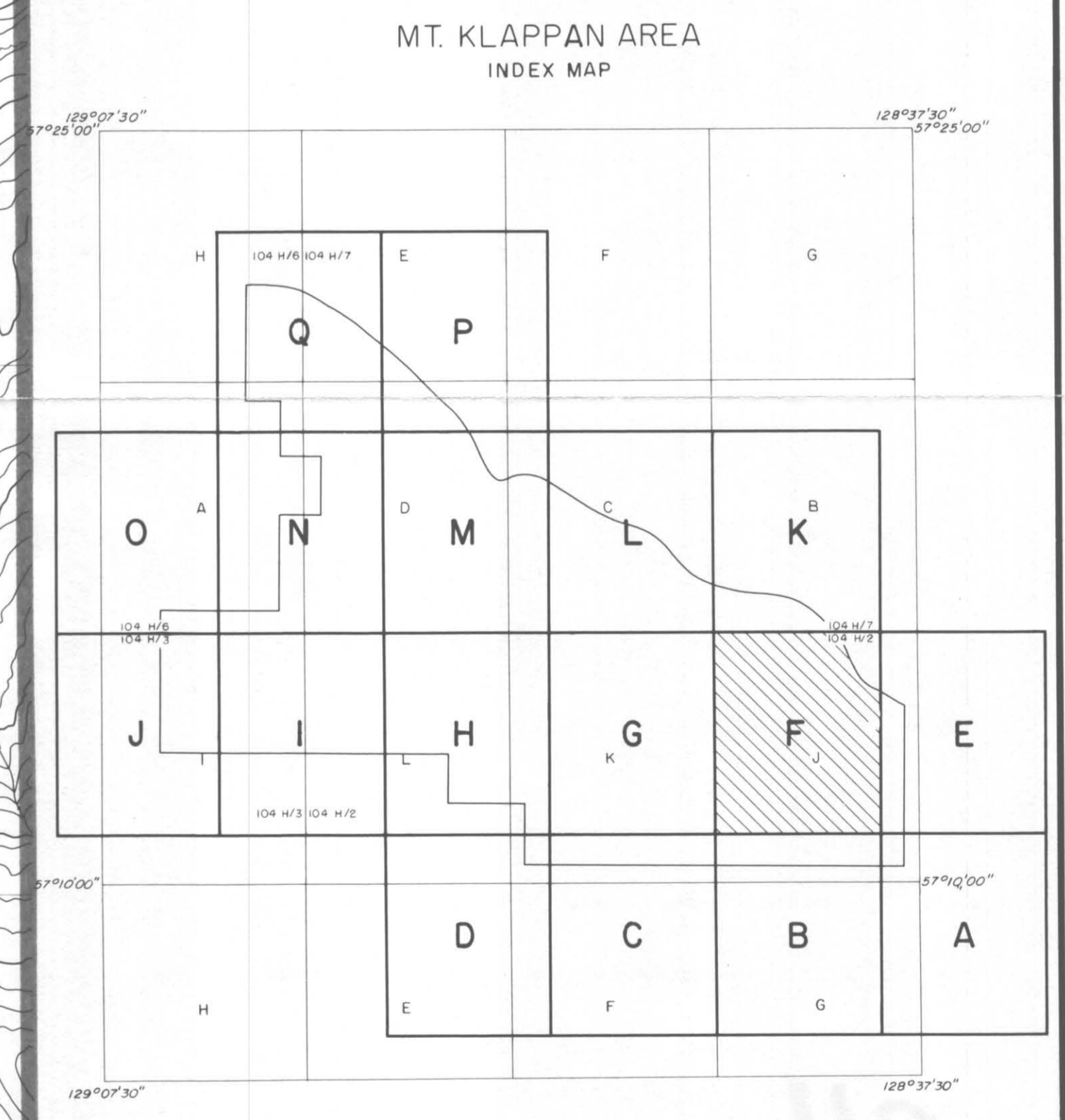
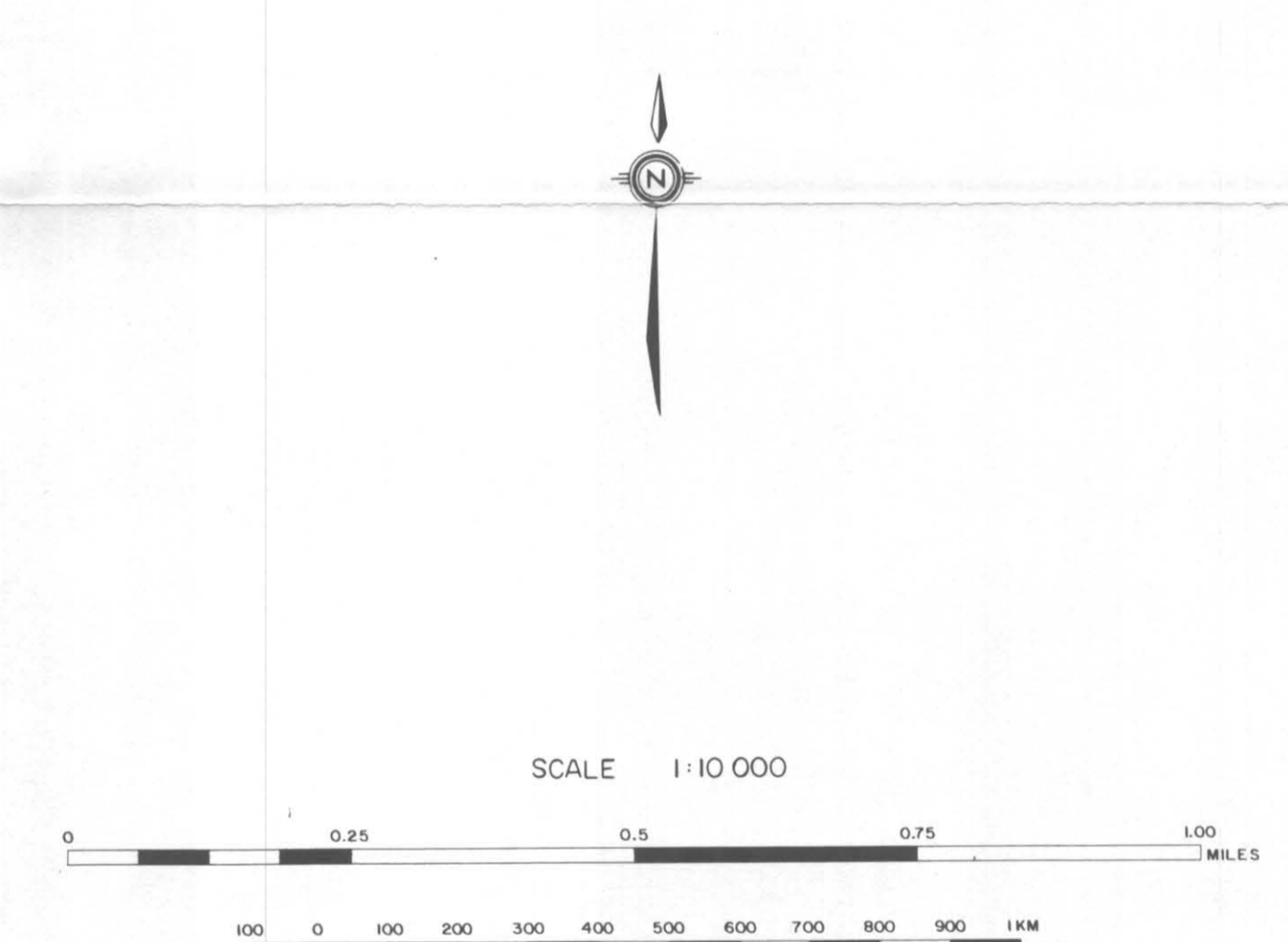
NOTES

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 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

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

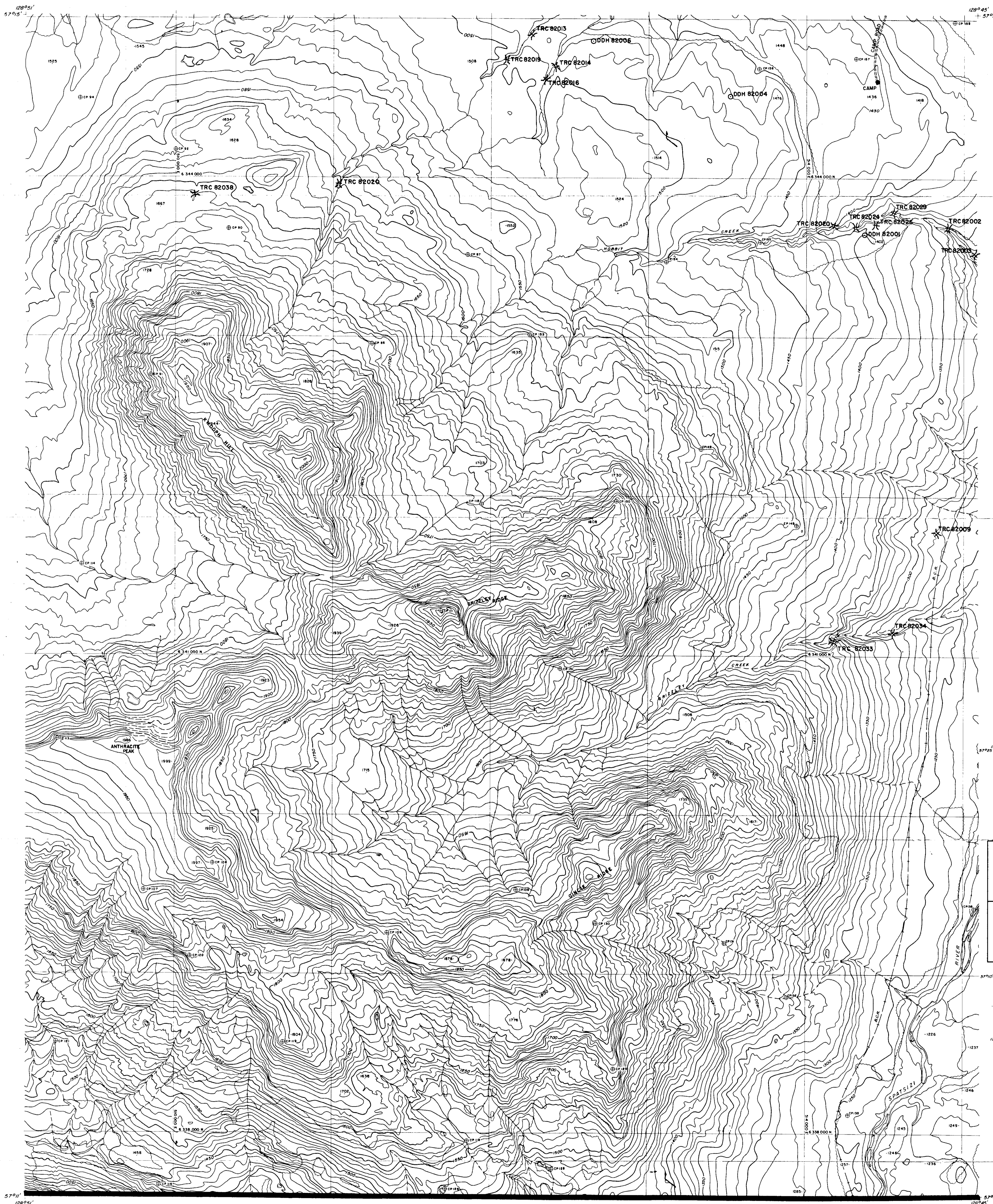
GULF CANADA RESOURCES INC.
 Coal Division

CALGARY ALBERTA

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

PREPARED BY: C. LOUIE DRAWING No. KPN-82-042
 APPROVED BY: B.P.F. DATE: NOV. 82

110



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]

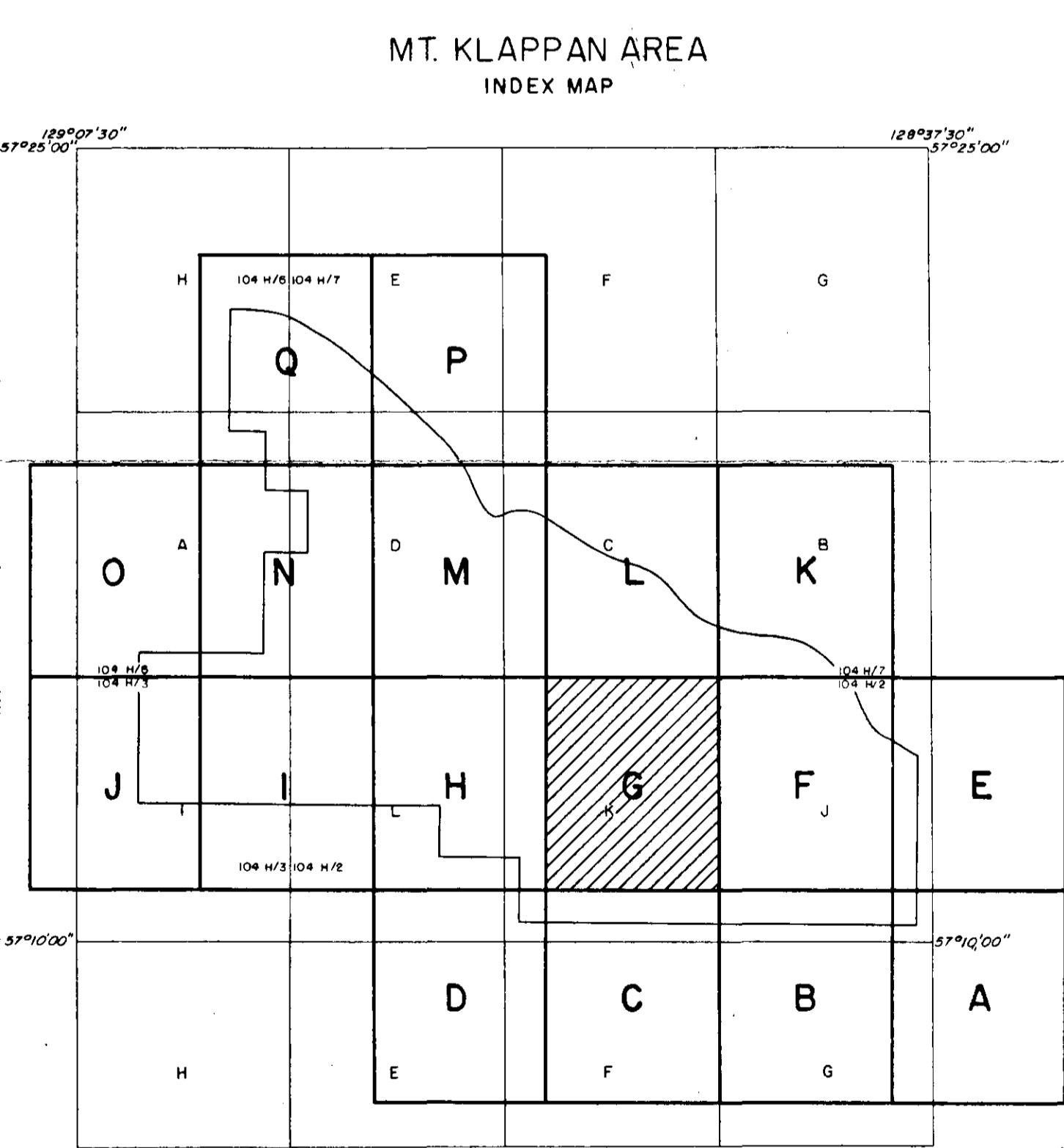
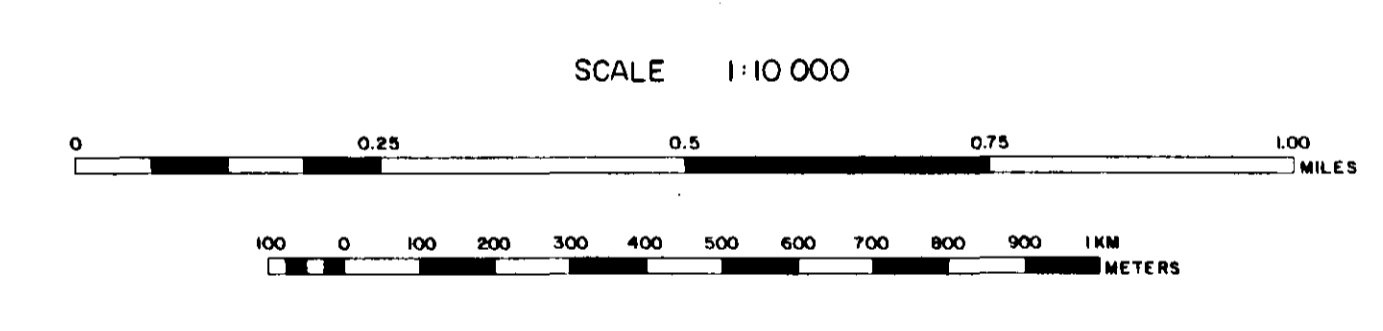
NOTES

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.

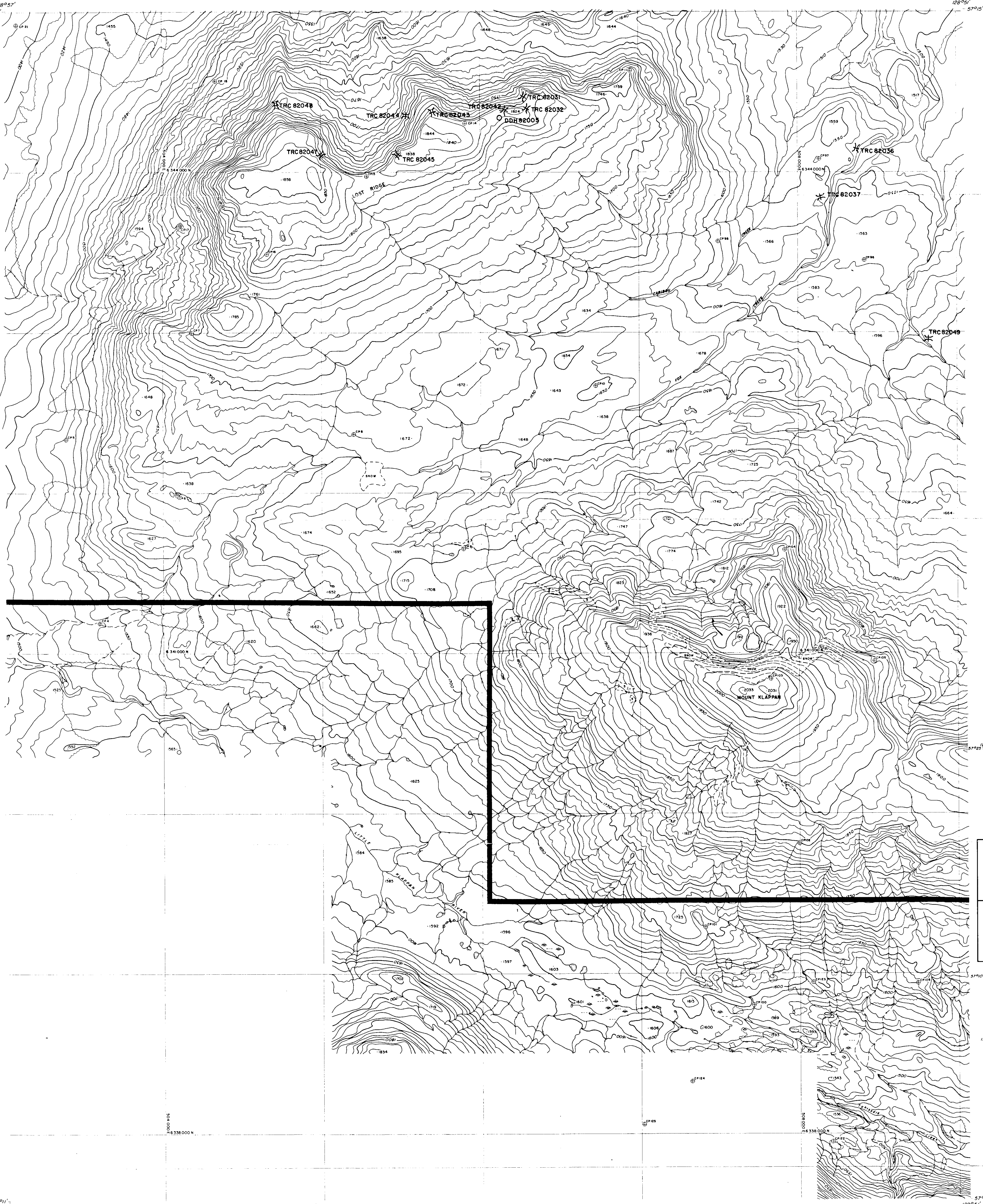
COMPILED BY:
WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD MULLER LTD.,
FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67
AT A SCALE OF 1:60,000 (APPROXIMATE).



110

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

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



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 ————
- CONTOURS, INTERMEDIATE ————
- DEPRESSION ————
- APPROXIMATE ————
- SPOT ELEVATION ————
- FIELD CONTROL POINT ————
- COAL LICENCE ————

NOTES

CONTOUR INTERVAL 10 METERS

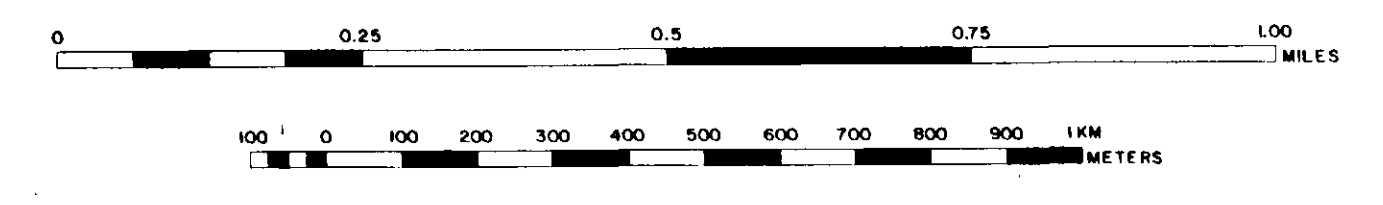
SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

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

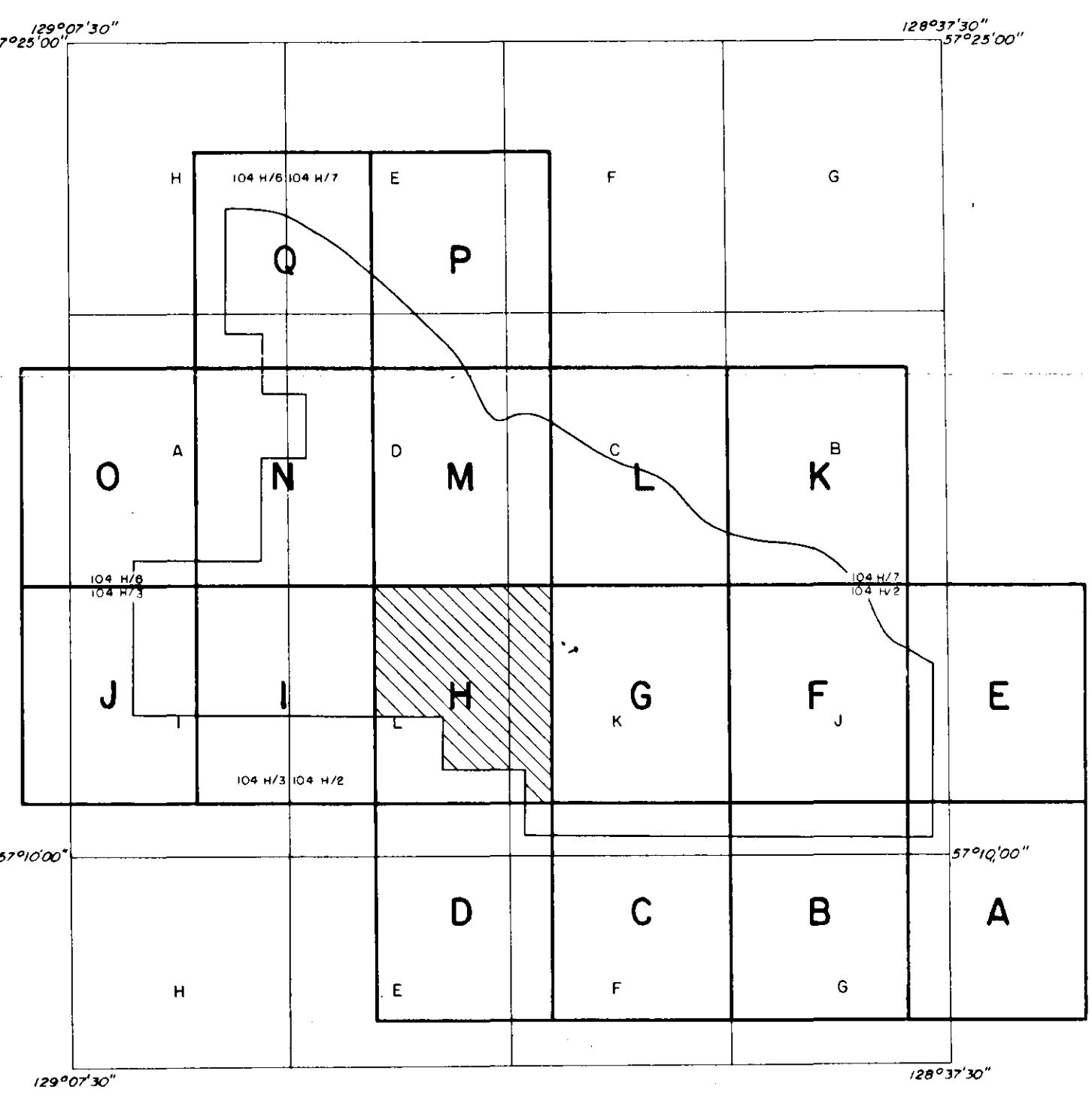
COMPILED BY WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD McLELLAN LTD., FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67 AT A SCALE OF 1:60,000 (APPROXIMATE).



SCALE 1:10,000



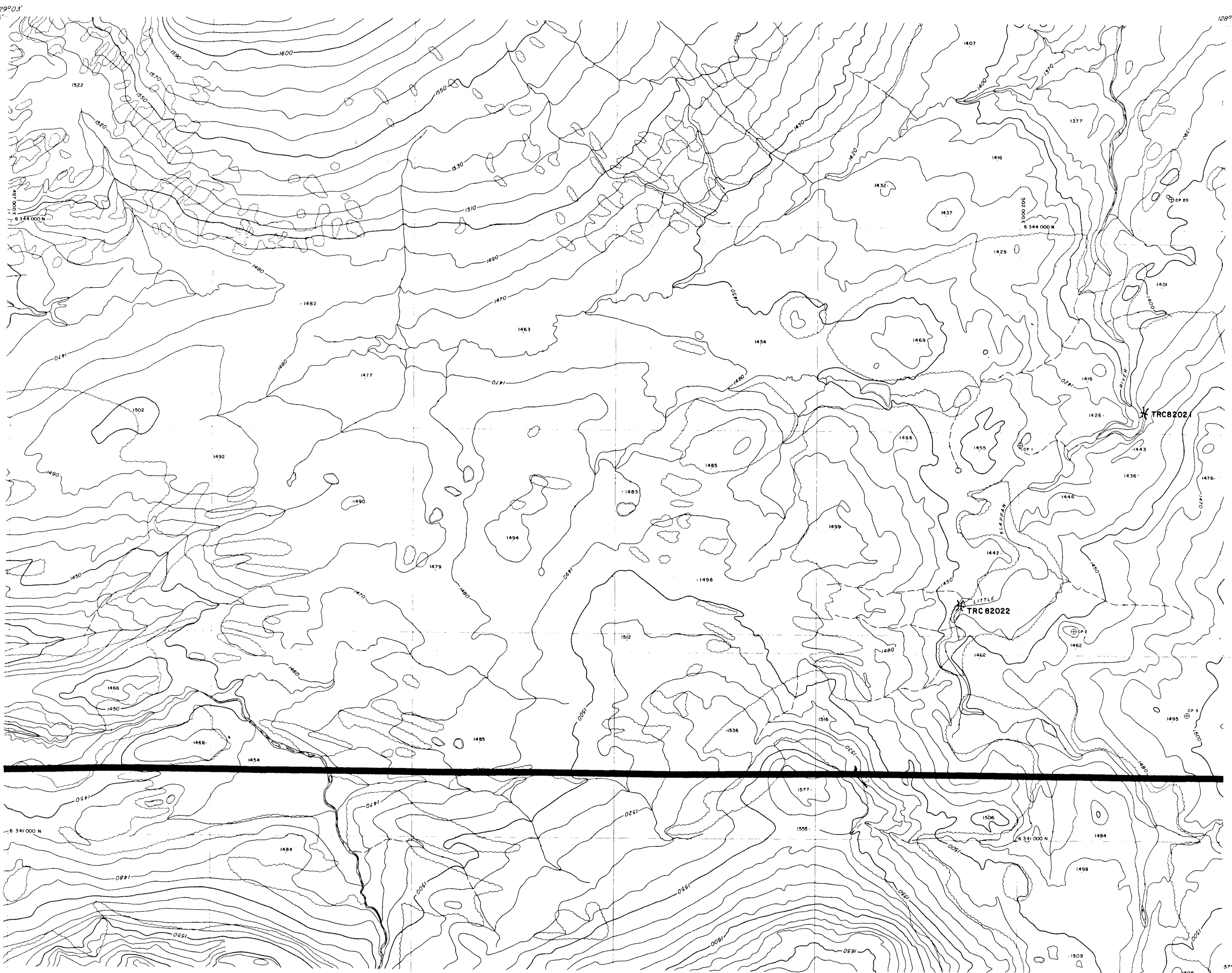
MT. KLAPPAN AREA INDEX MAP



110

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

GULF CANADA RESOURCES INC.		
CALGARY	Coal Division	
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	---	---

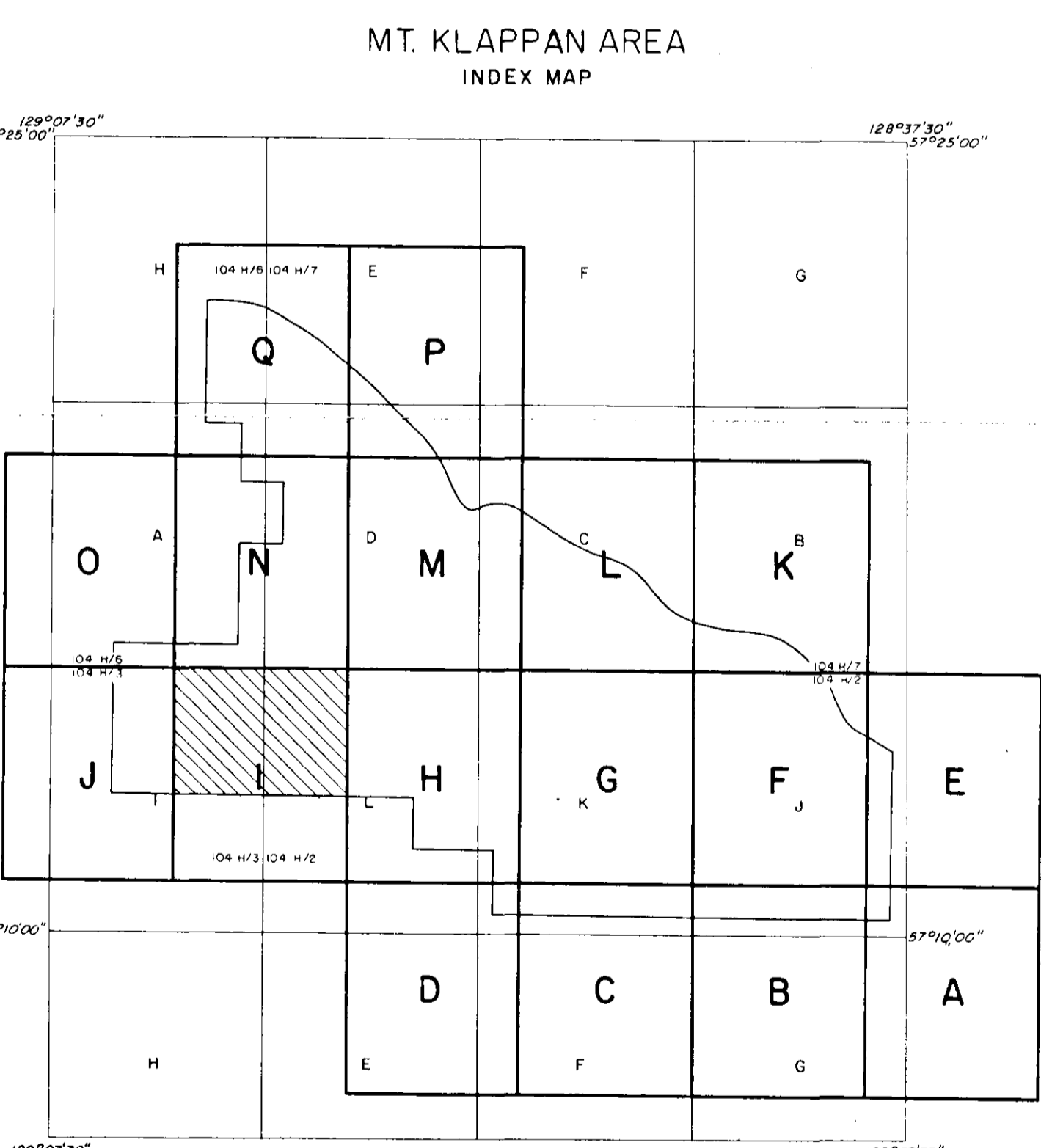
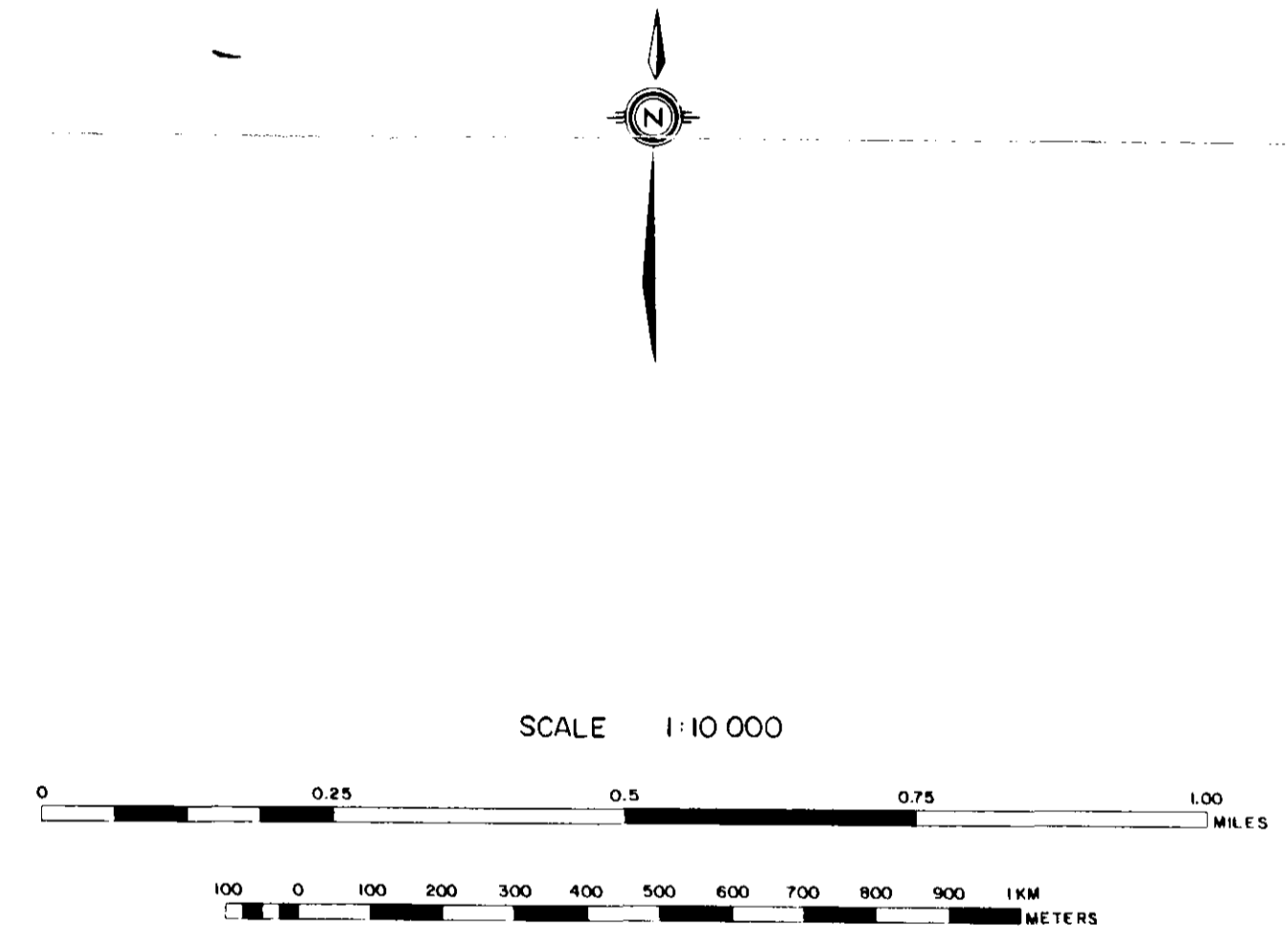
NOTES

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

57 91 57 91 57 91
128 05 128 05 128 05

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

110

GULF CANADA RESOURCES INC.	
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°19'

128°38'
57°19'

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]

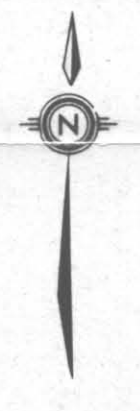
NOTES

CONTOUR INTERVAL 10 METERS

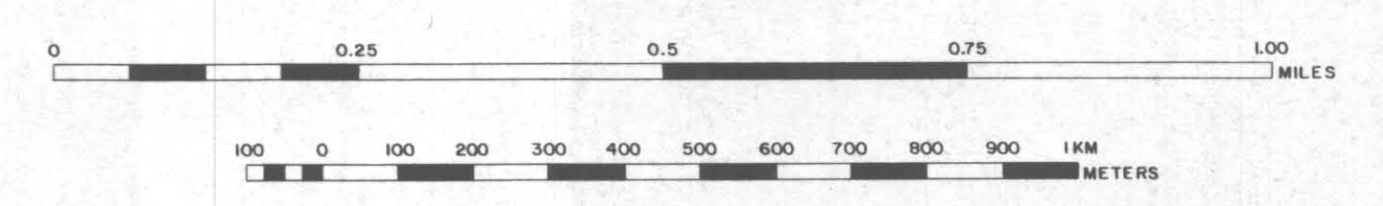
SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

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

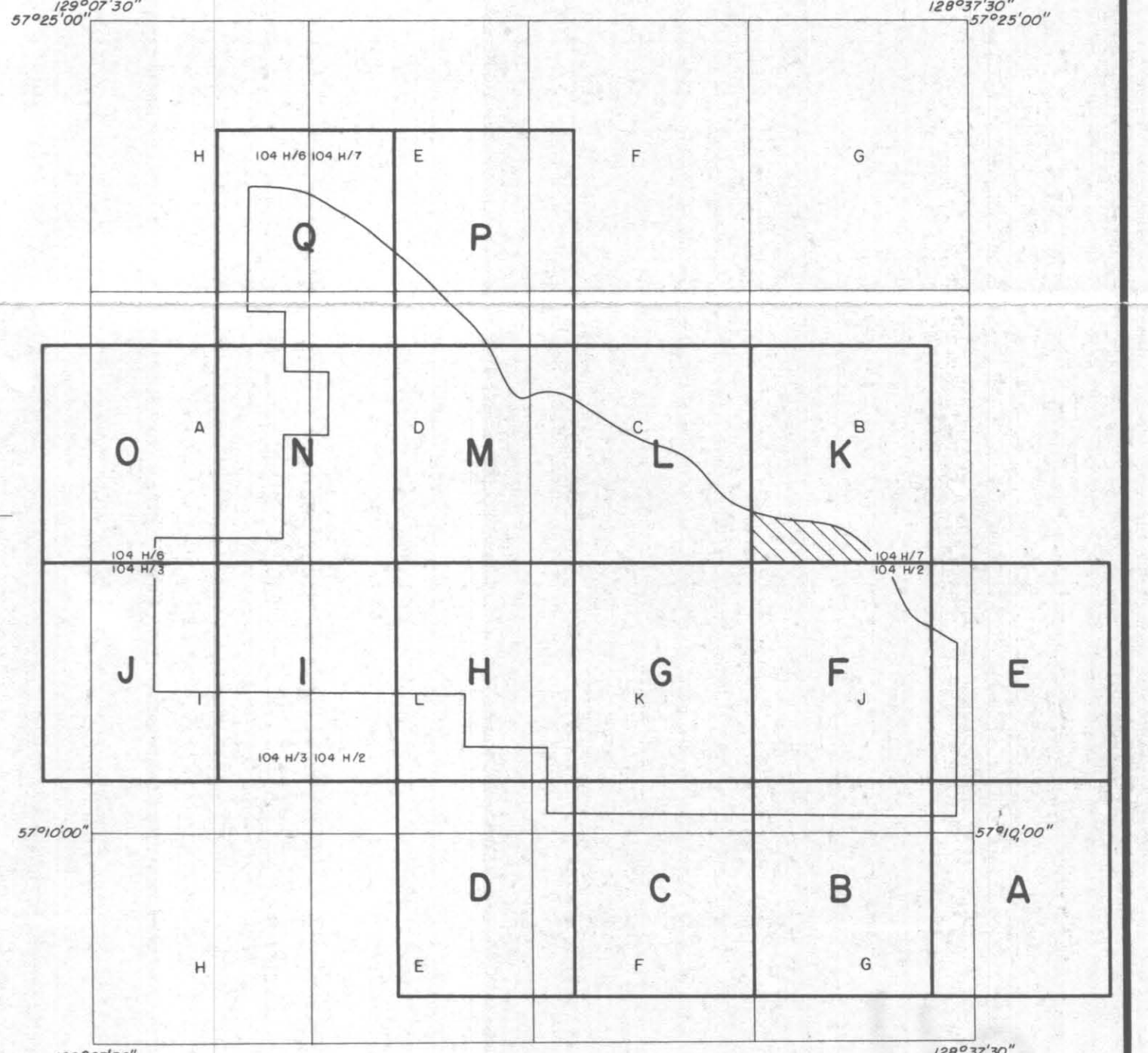
COMPILED BY WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD MCELLELLAN LTD., FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67 AT A SCALE OF 1:60000 (APPROXIMATE).



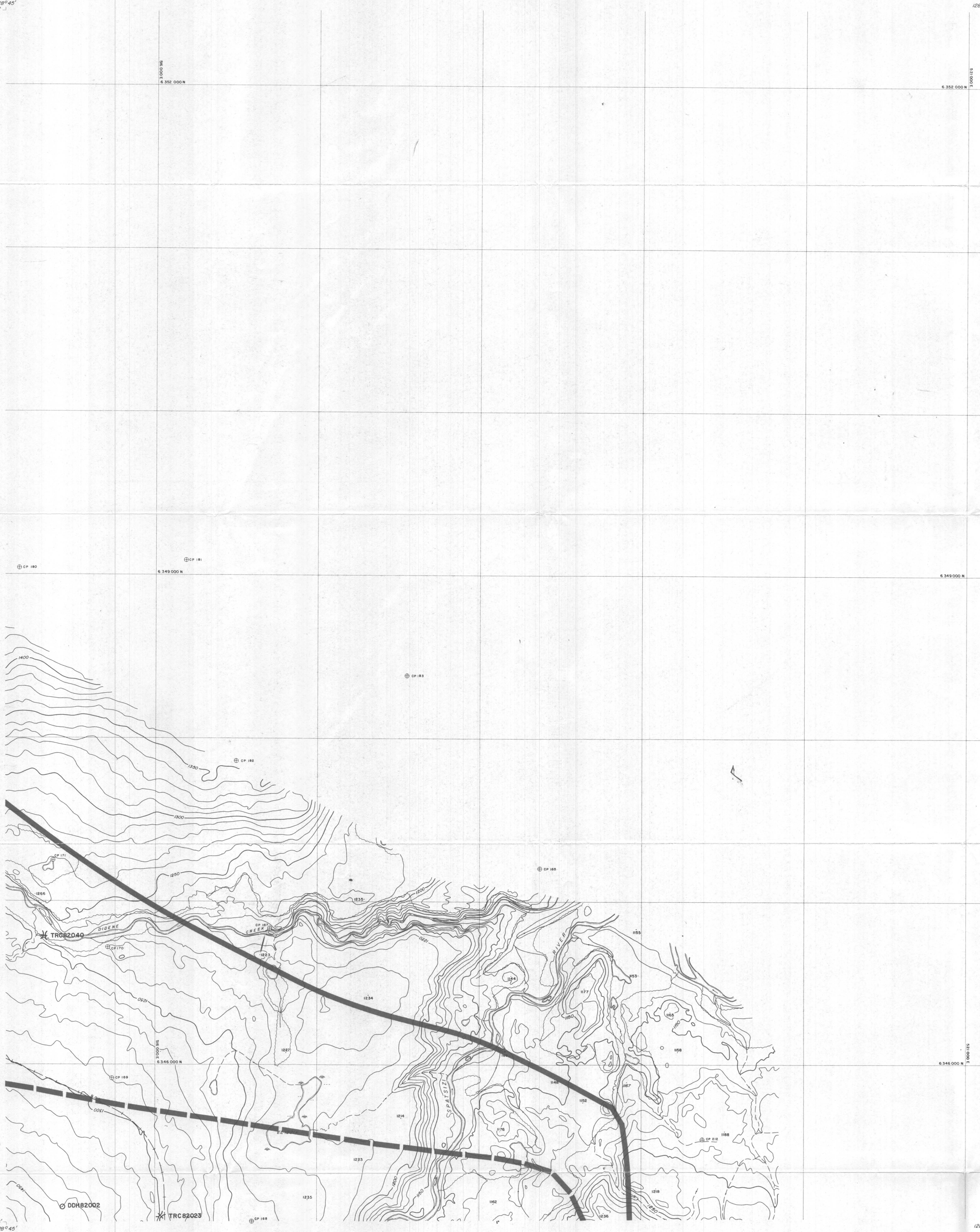
SCALE 1:10 000



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	EL. 505'
SWAMP	---
BEAVER DAM	---
TREE LINE	---
CUT LINE	---
CONTOURS, INDEX	---
INTERMEDIATE	---
APPROXIMATE	---
SPOT ELEVATION	7654
FIELD CONTROL POINT	5711
COAL LICENCE	---
REDEFINED PROPERTY BOUNDARY	---

NOTES

CONTOUR INTERVAL: 10 METERS

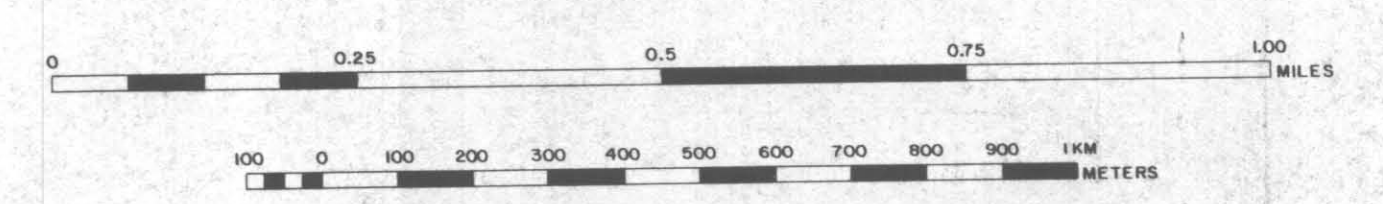
SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

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

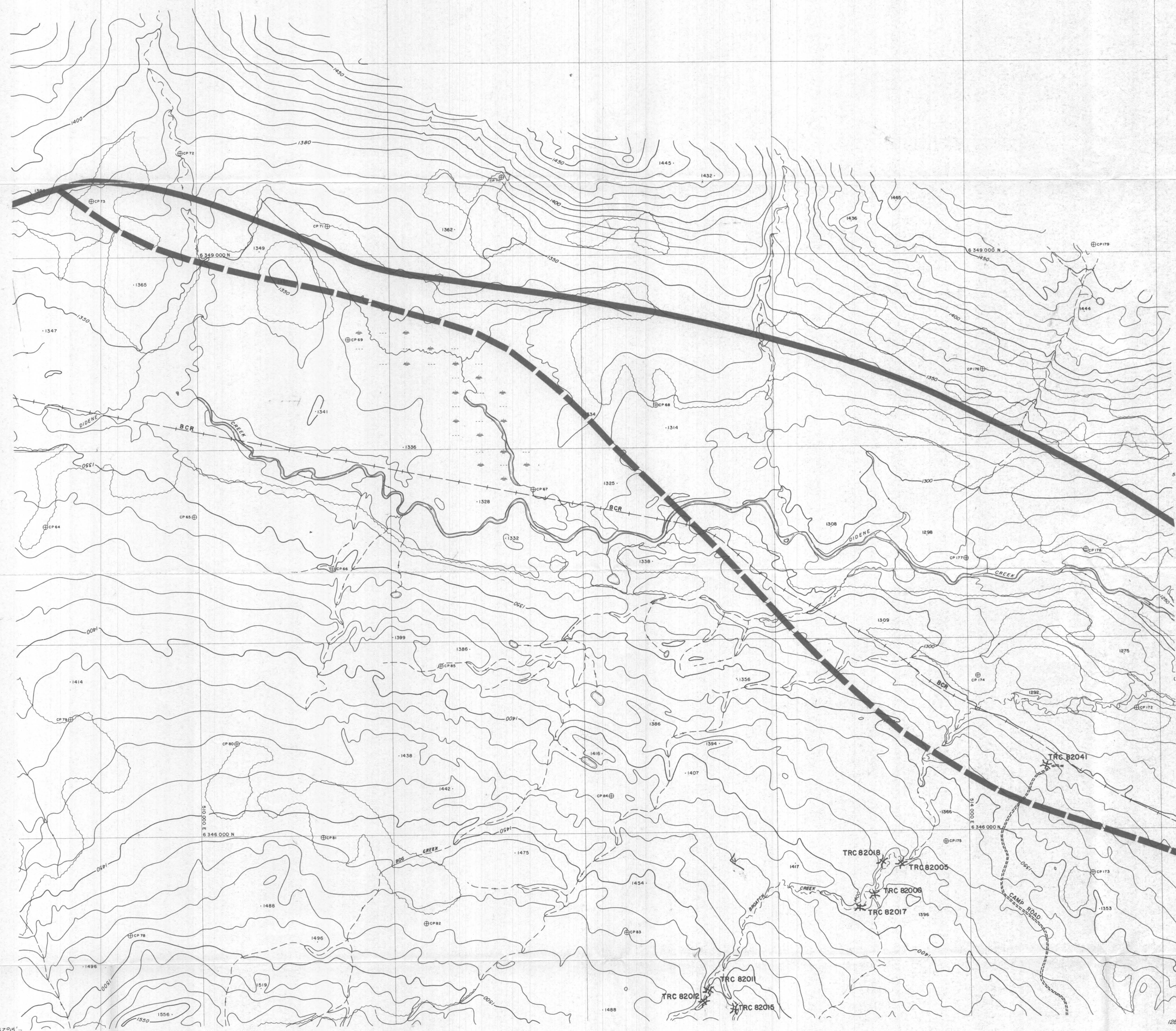
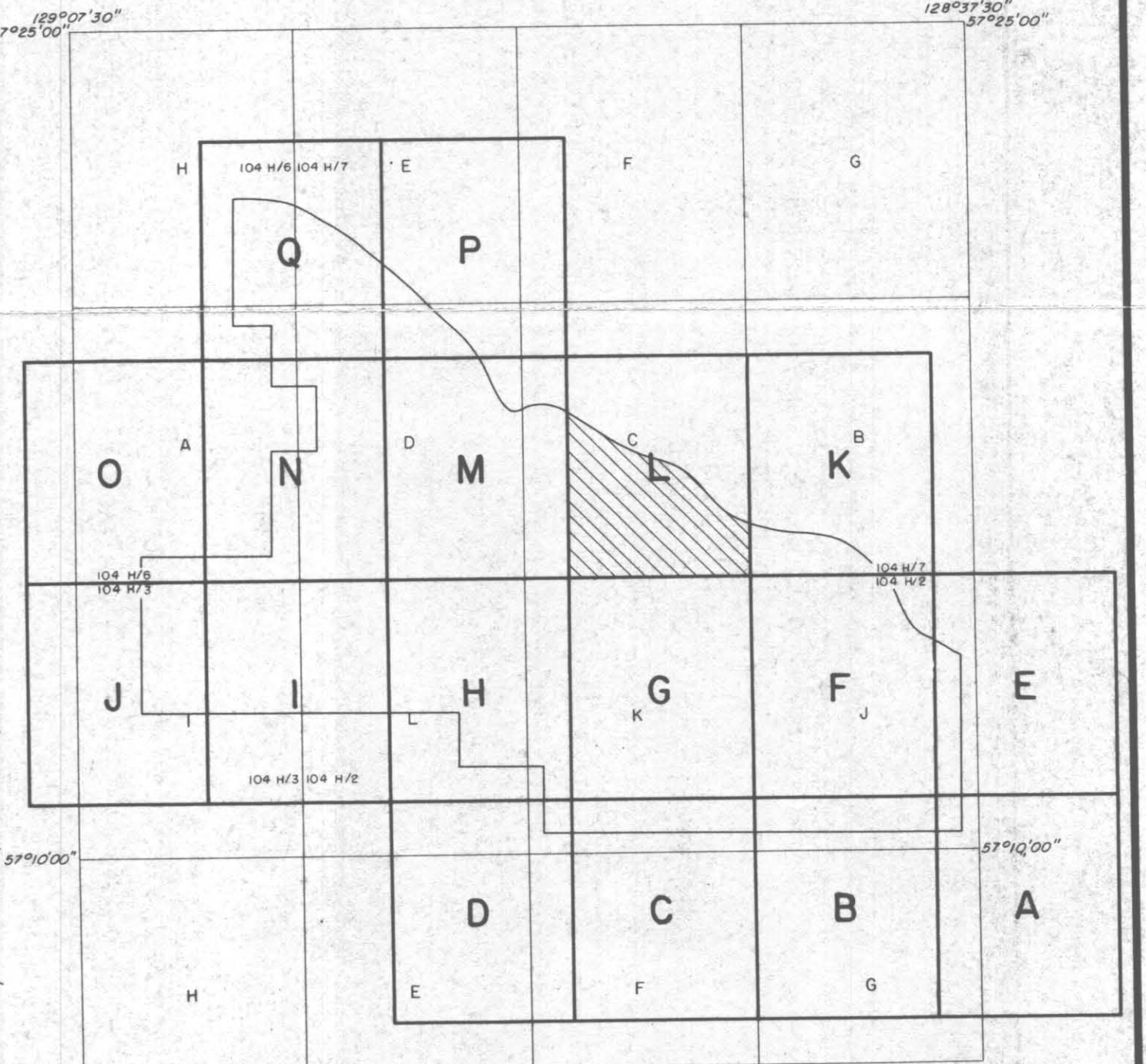
COMPILED BY:
WESTERN PHOTOGRAMMETRY, A DIVISION OF UNDERWOOD McLELLAN LTD.,
FROM FEDERAL GOVERNMENT AERIAL PHOTOGRAPHY FLOWN IN AUGUST/67
AT A SCALE OF 1:60,000 (APPROXIMATE).



SCALE 1:10,000



MT. KLAPPAN AREA INDEX MAP



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

110

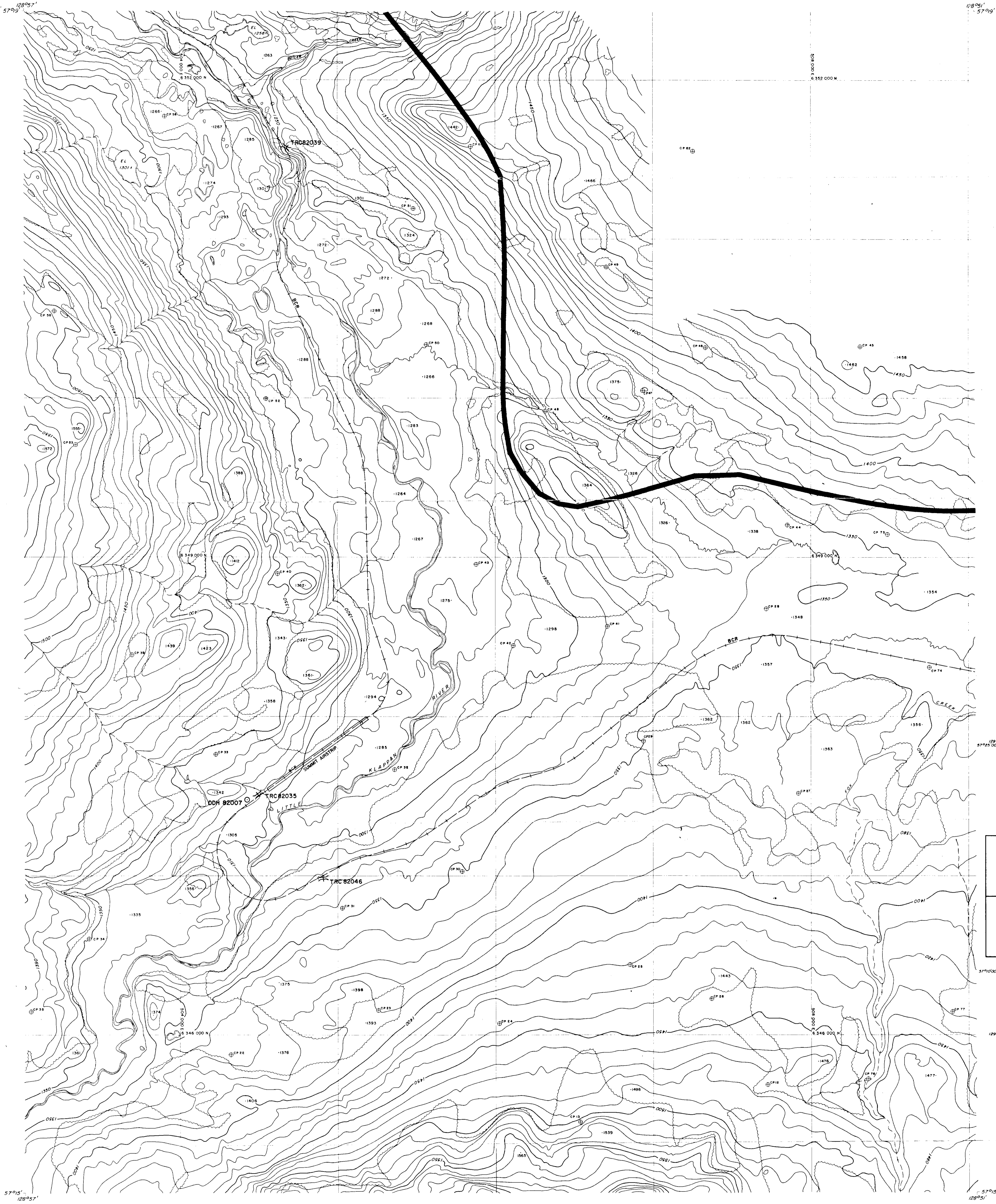
GULF CANADA RESOURCES INC.
 Coal Division

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	---

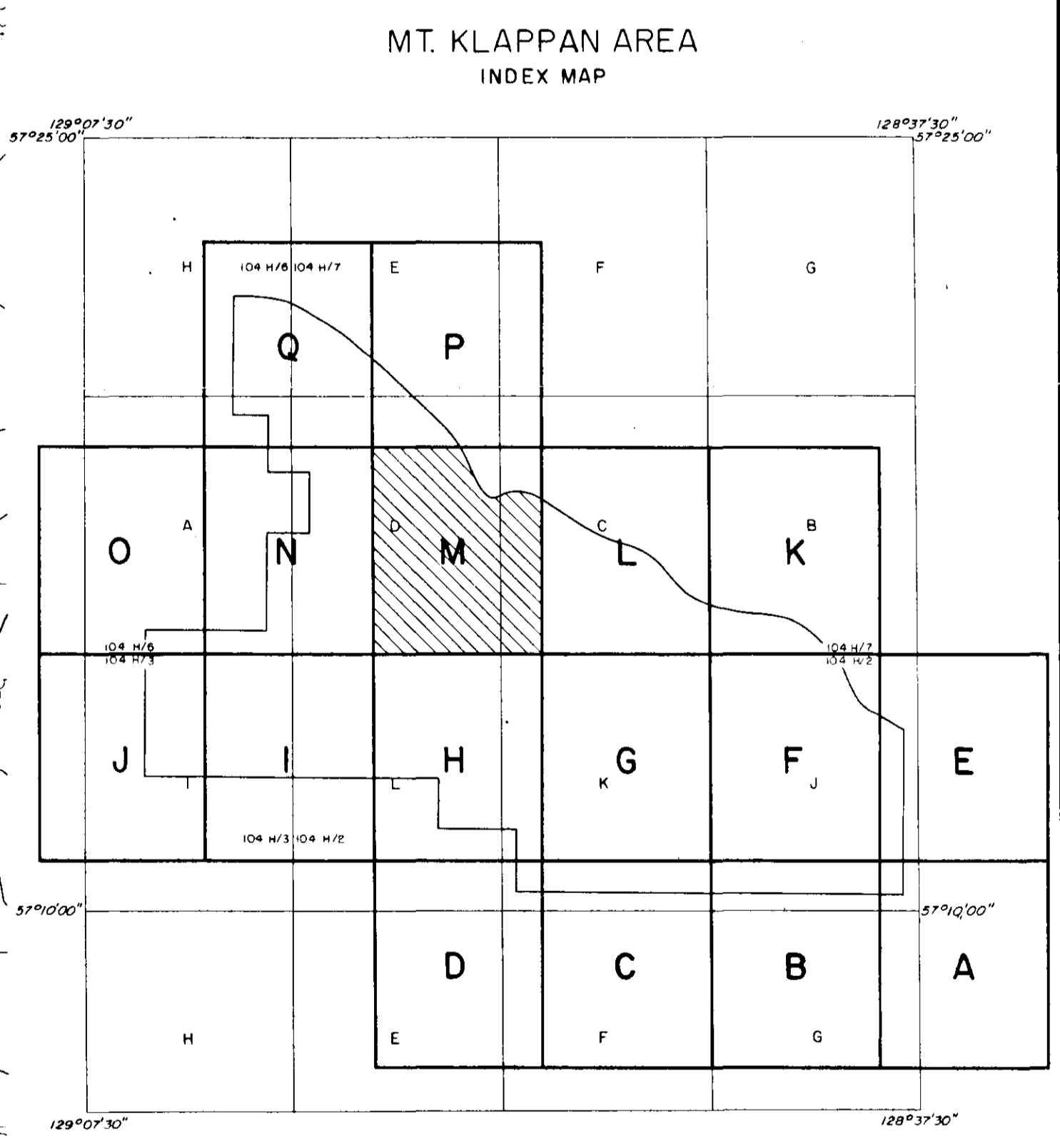
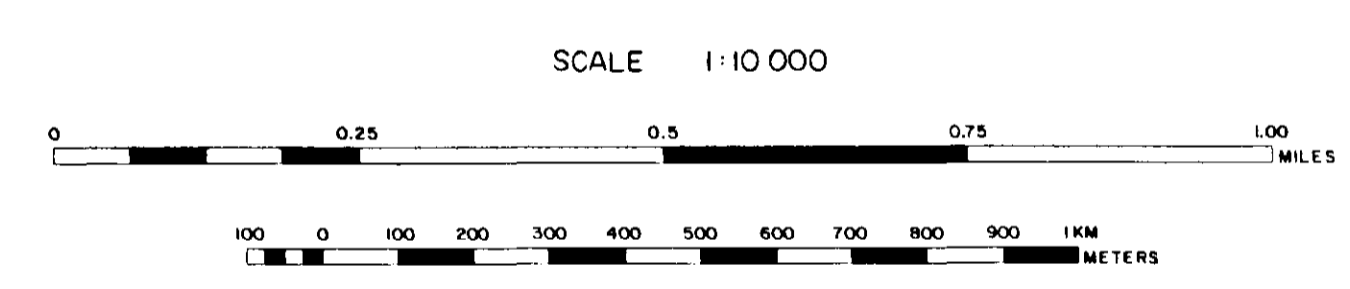
NOTES

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

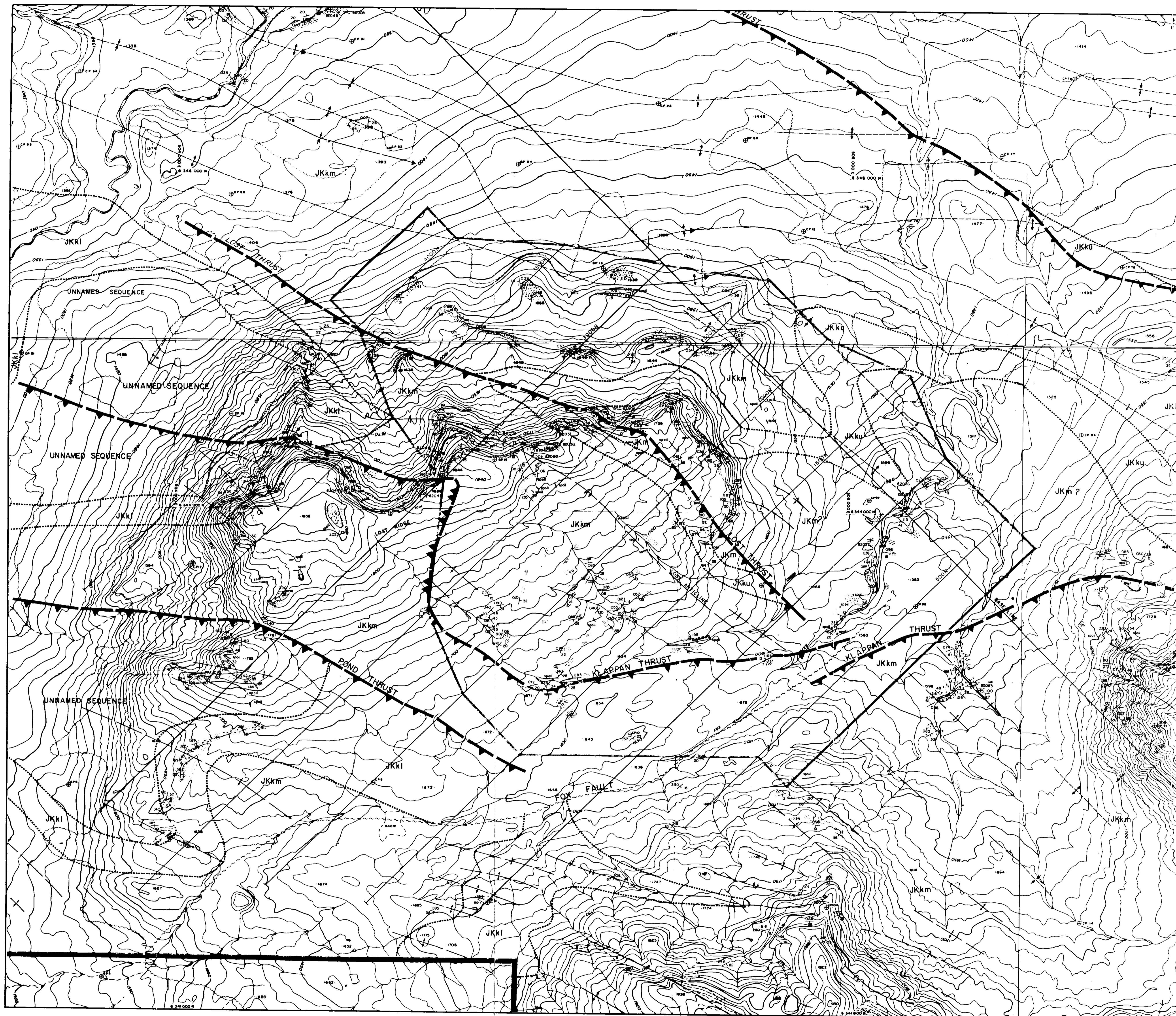
GULF CANADA RESOURCES INC.		
CALGARY	ALBERTA	
MOUNT KLAPPAN COAL PROPERTY MAP SHEET M		
TRENCH AND DRILL HOLE LOCATIONS		
PREPARED BY: C. LOUIE		DRAWING No.
APPROVED BY: B. P. F.		KPN-82-048
DATE: NOV. 82		

128° 57'

128° 50' 02"

57° 16' 04"

57° 16' 04"



57° 13' 08"

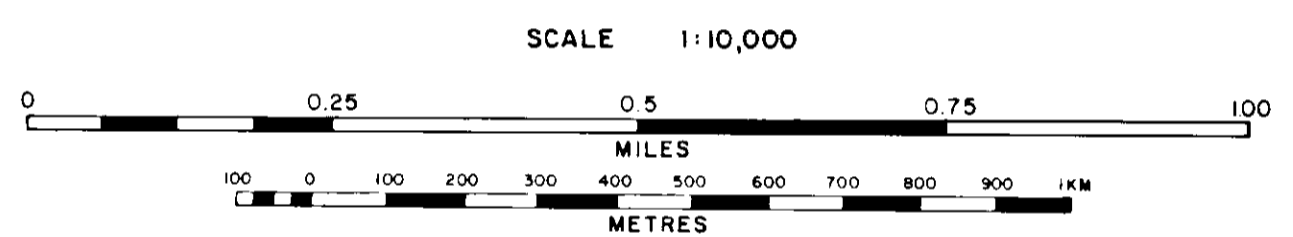
128° 57'

128° 50' 02"

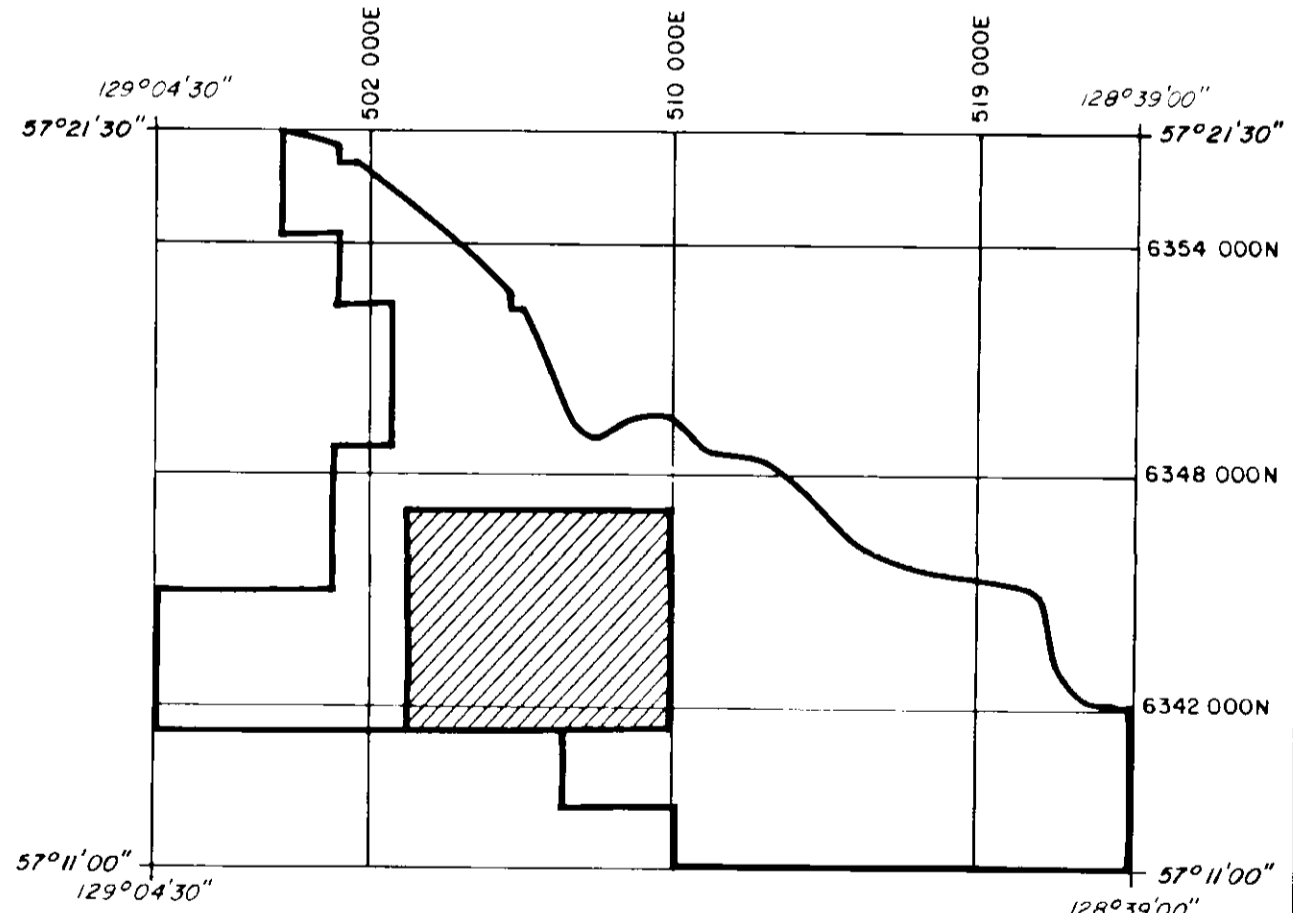
57° 13' 08"

LEGEND

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



LOST-FOX RESOURCE 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 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
- OVERTHROWN ANTICLINE (DEFINITE APPROXIMATE)
- OVERTHROWN SYNCLINE (DEFINITE APPROXIMATE)
- REGIONS (HORIZONTAL, INCLINED, OVERLAPPED, VERTICAL)
- THRUST FAULT (DEFINITE APPROXIMATE) ARROW INDICATES UPTHROW SIDE
- FAULT (DEFINITE APPROXIMATE) ARROW INDICATES DOWNTHROW SIDE
- 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 Alberta

MT. KLAPPAN COAL PROPERTY
 LOST-FOX RESOURCE AREA
 GEOLOGY

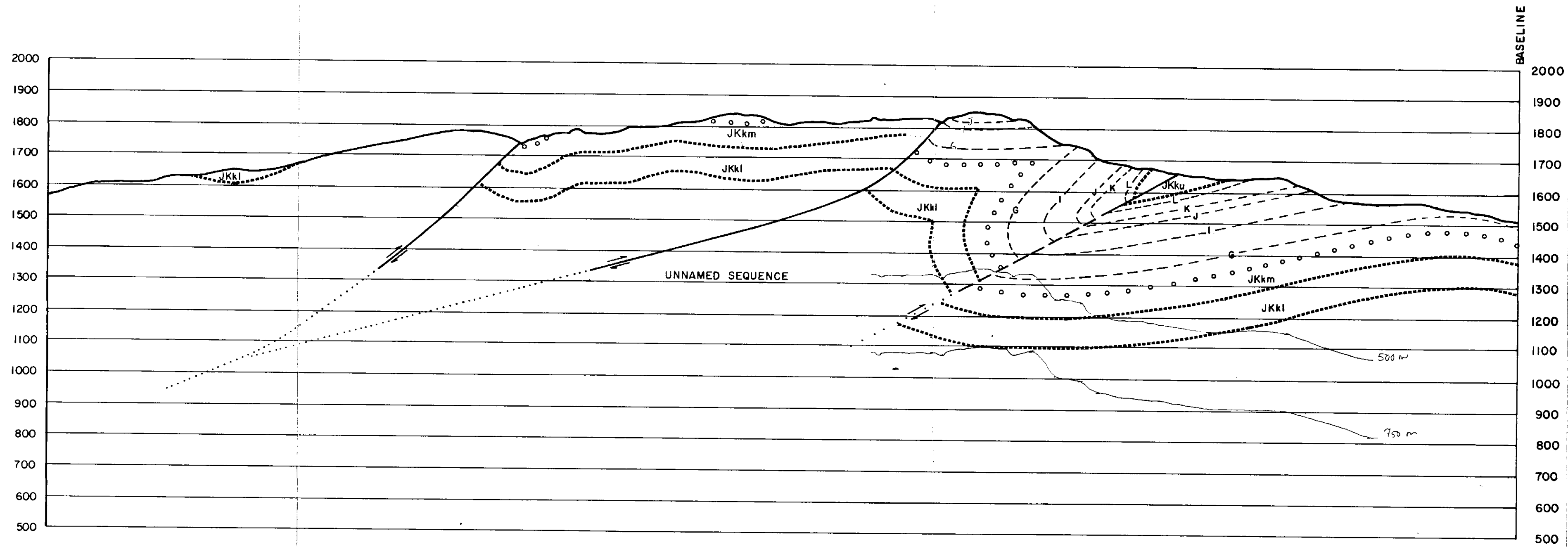
PREPARED BY: G. SEVE
 APPROVED BY: B. P.F.

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

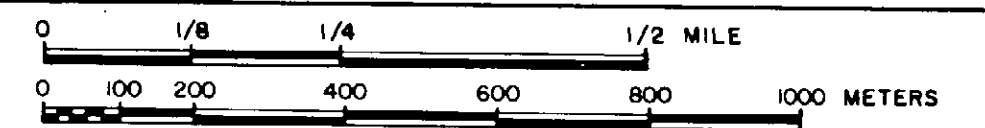
110

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

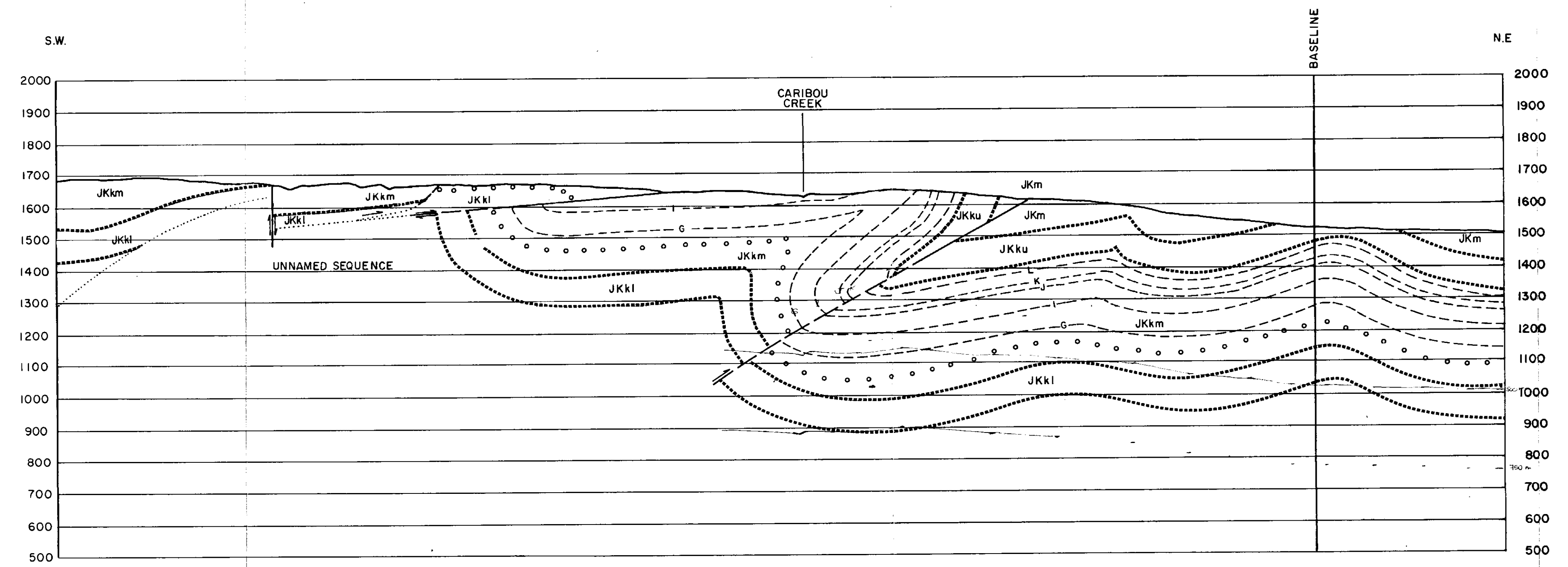
GULF CANADA RESOURCES INC.



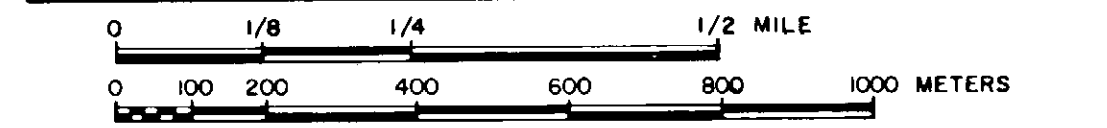
Coal Division
CALGARY ALBERTA

Northwestern British Columbia
MT. KLAPPAN COAL PROPERTY 110
 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

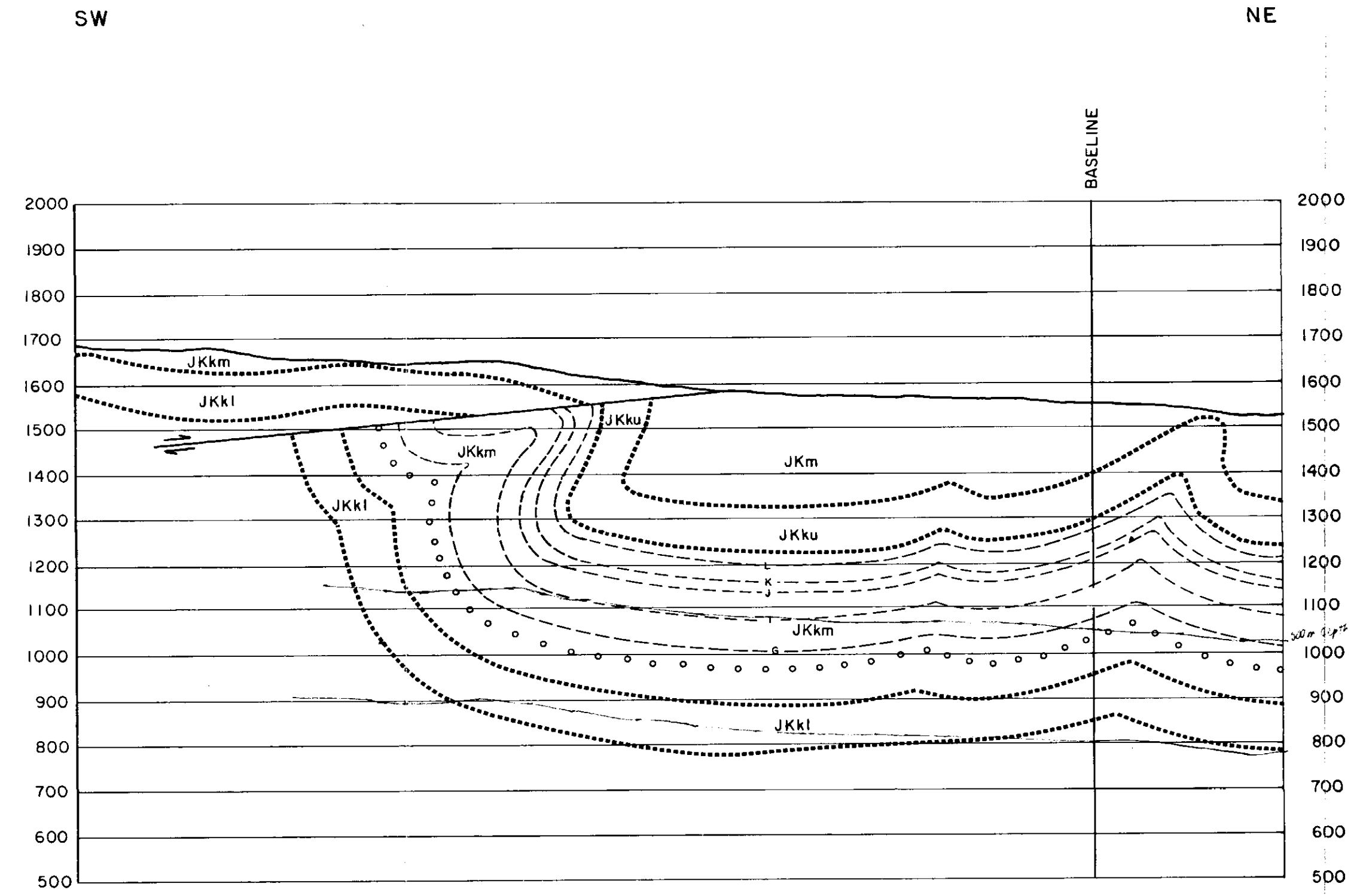


- MALLOCH SEQUENCE**
- JKm Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm Repeated coarsening upward sequences of fine to medium-grained 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.

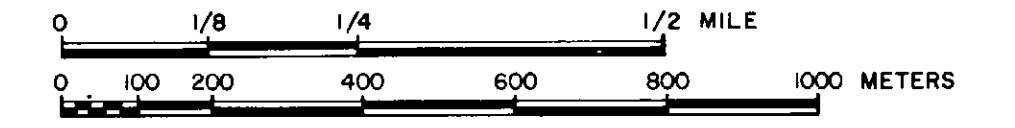


- Legend**
- GEOLOGICAL CONTACT (INFERRED)
 - COAL SEAM TRACE (DEFINED, APPROX.)
 - ==== FAULT TRACE (DEFINED, APPROX., INFERRED)
 - oooooo CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - ATTITUDE CONTROL POINT
 - DDH 82001 DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

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



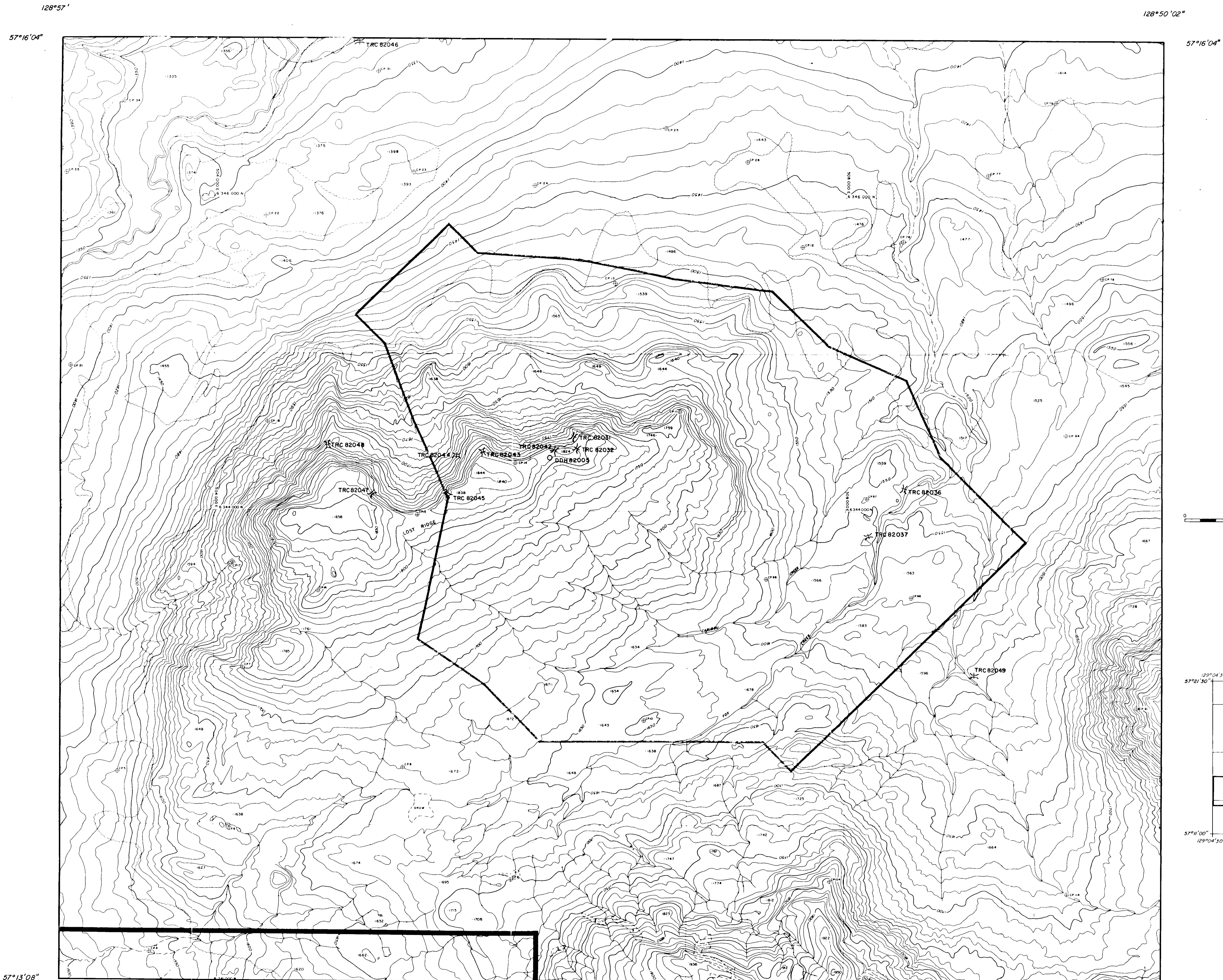
- MALLOCH SEQUENCE**
- JKm** Sequences of fine to coarse to granular sandstones, siltstone and claystone with rare thin coal.
- KLAPPAN SEQUENCE**
- JKku** Interbedded fine to medium grained sandstone, siltstone and claystone with minor coal.
 - JKkm** Repeated coarsening upward sequences of fine to 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

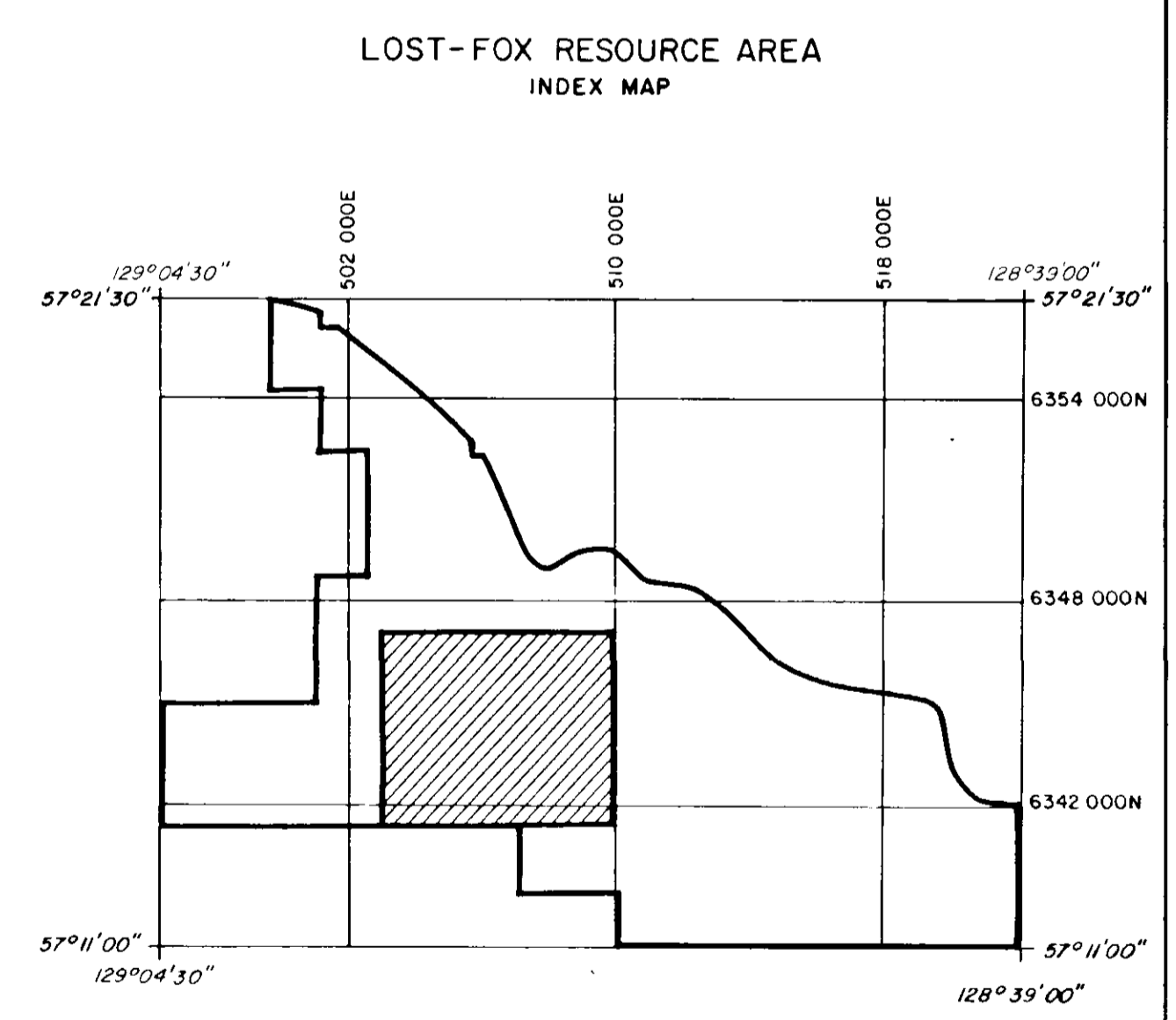
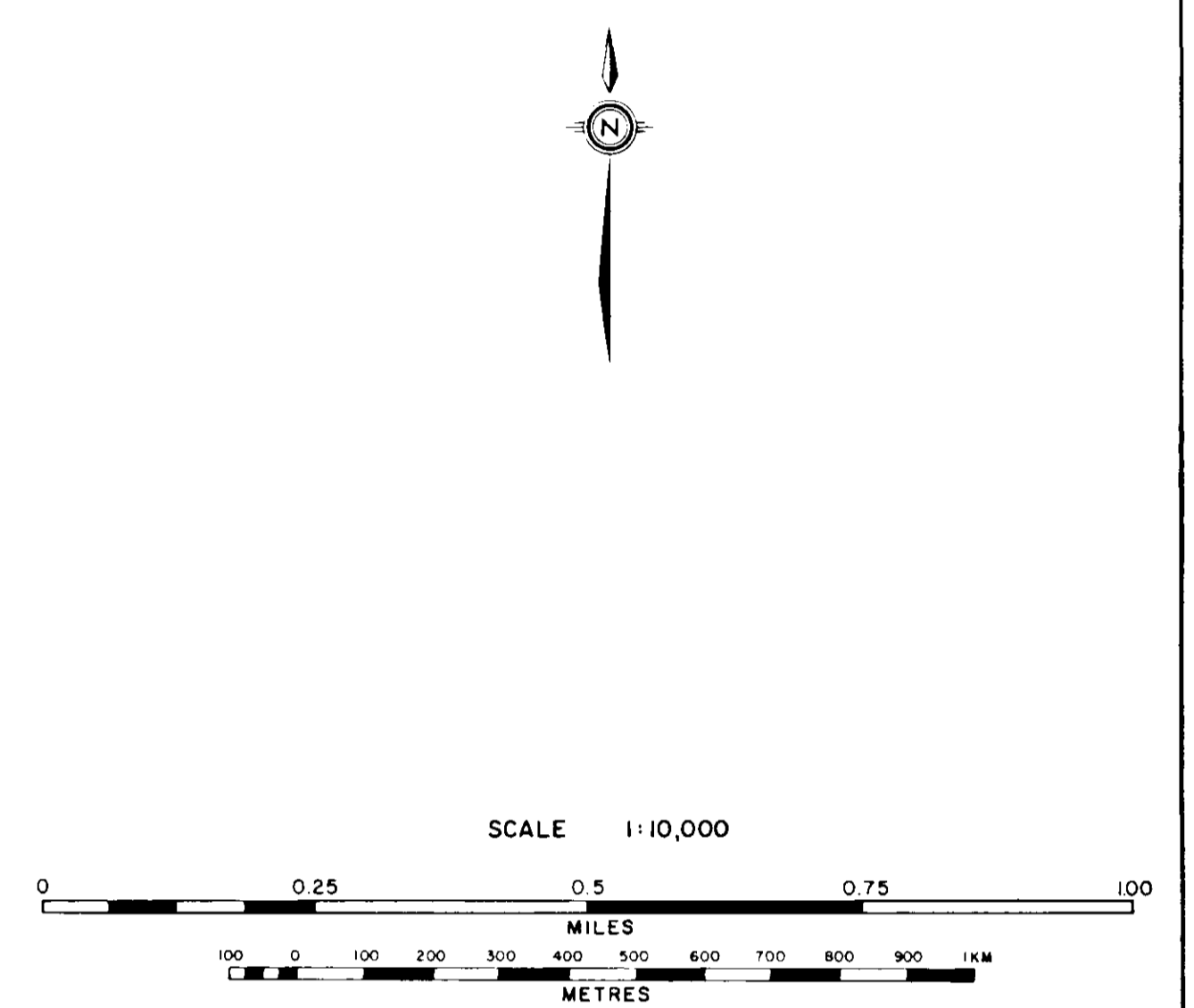
GER-MT. KLAPPAN 82(2)A

GULF CANADA RESOURCES INC.		
CALGARY	ALBERTA	
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. 102.1
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)

OVERLAPPED ANTICLINE (DEFINITE APPROXIMATE)

OVERLAPPED SYNCLINE (DEFINITE APPROXIMATE)

REGULATIONS (ANTICLINE, SYNCLINE, OVERLAPPED ANTICLINE)

TRUNCATED FAULT (DEFINITE APPROXIMATE, W/ARROW INDICATES DOWNTHROW SIDE)

FAULT (DEFINITE APPROXIMATE, INTERFERED) (SOLID CIRCLE INDICATES DOWNTHROW SIDE)

TRENCH LOCATION MEASURED SECTION 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 Coal Division Alberta

MT. KLAPPAN COAL PROPERTY

LOST-FOX RESOURCE AREA

TRENCH & DRILL HOLE LOCATIONS

PREPARED BY: G. SEVE SCALE: 1:110,000

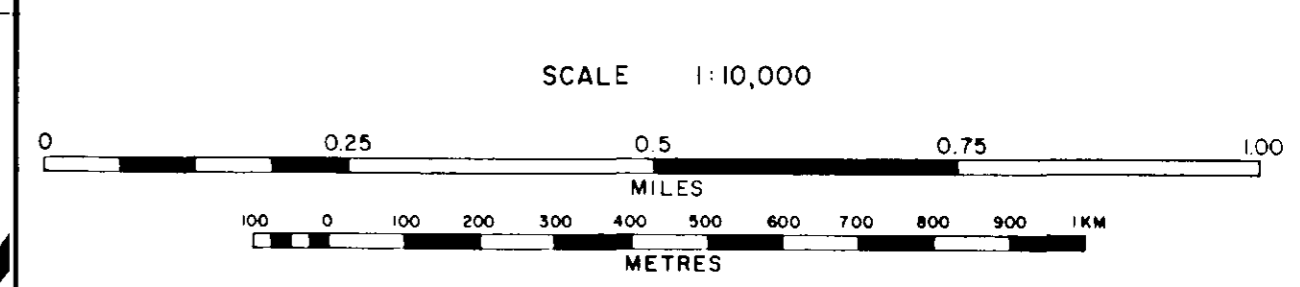
APPROVED BY: B. P. F. DATE: NOV. 82 DRAWING NO. WPA-82-258

128°41'04"
57°17'10"

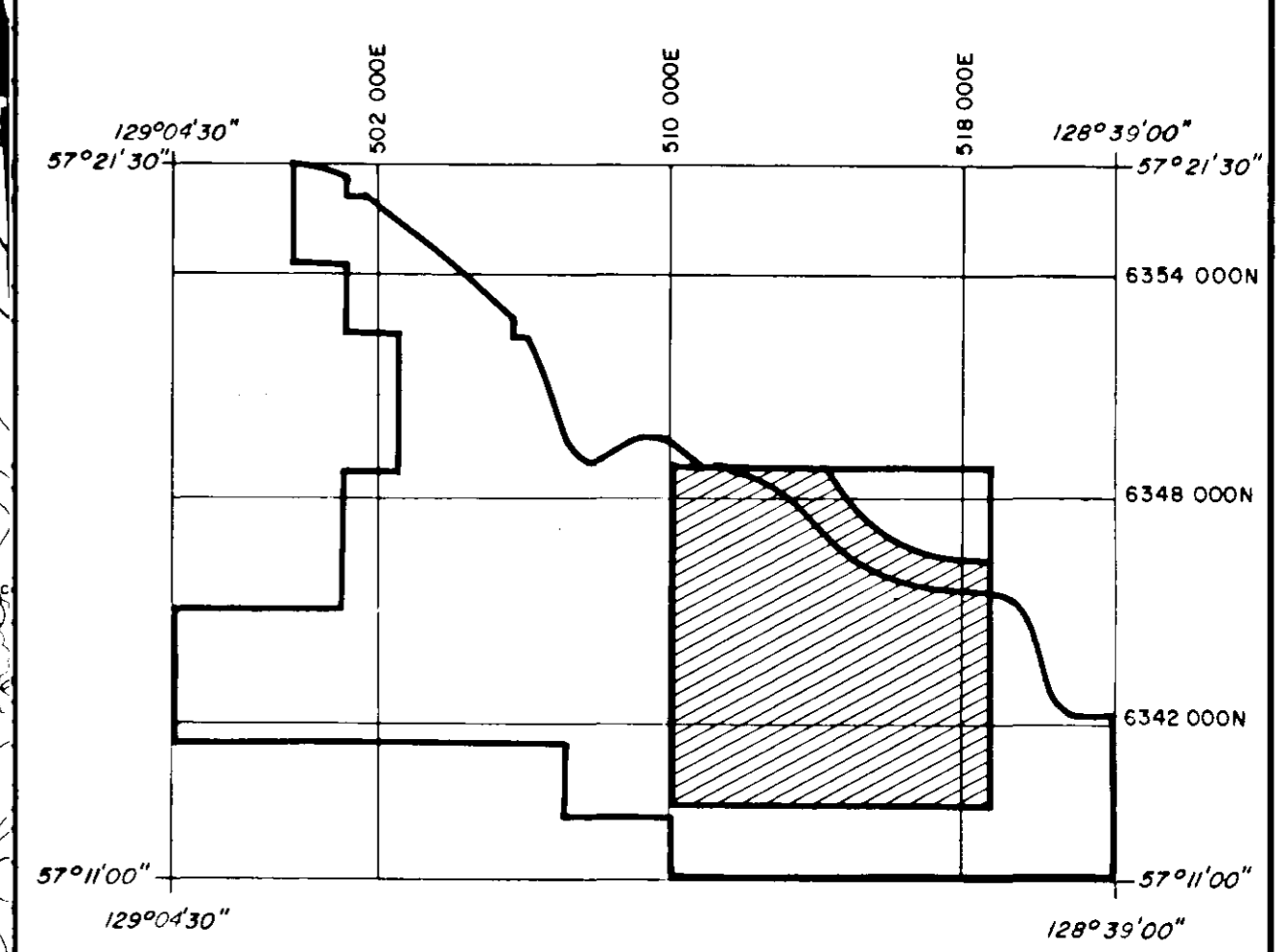


LEGEND

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

---	GEOLOGICAL CONTACT (INFERRED)
---	COAL SEAM (OUTCROP UNRECORDED)
---	ANTICLINE (DEFINITE, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
---	SYNCLINE (DEFINITE, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
---	OVERTHROWN ANTICLINE (DEFINITE, APPROXIMATE)
---	OVERTHROWN SYNCLINE (DEFINITE, APPROXIMATE)
---	BEDDING HORIZONTAL (LINE IN, OVERLINES VERTICAL)
---	THRUST FAULT (DEFINITE, APPROXIMATE, UNEMBEDDED) TEETH INDICATE UP/THROW SIDE
---	FAULT (DEFINITE, APPROXIMATE, INFERRED) SOLID CIRCLE INDICATES DOWNTHROW SIDE
---	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

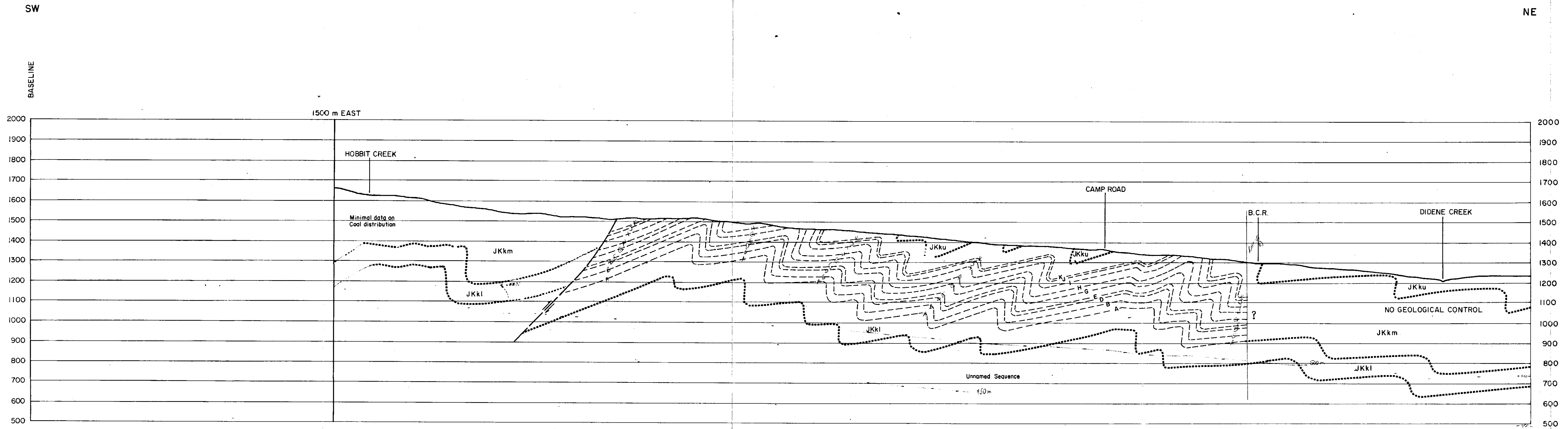
GULF CANADA RESOURCES INC.
Coal Division

MT. KLAPPAN COAL PROPERTY
HOBBIT - BROATCH
RESOURCE AREA
GEOLOGY

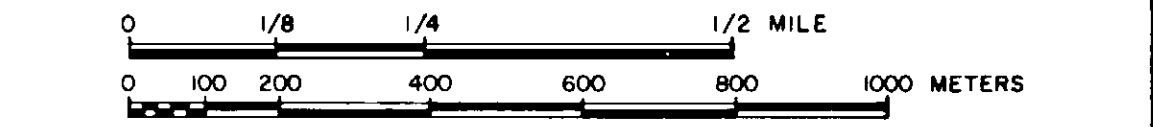
PREPARED BY: G SEVE
APPROVED BY: B.P.F.

SCALE 1:10,000
DATE: NOV. 82
DRAWING NO. KX82-259

117

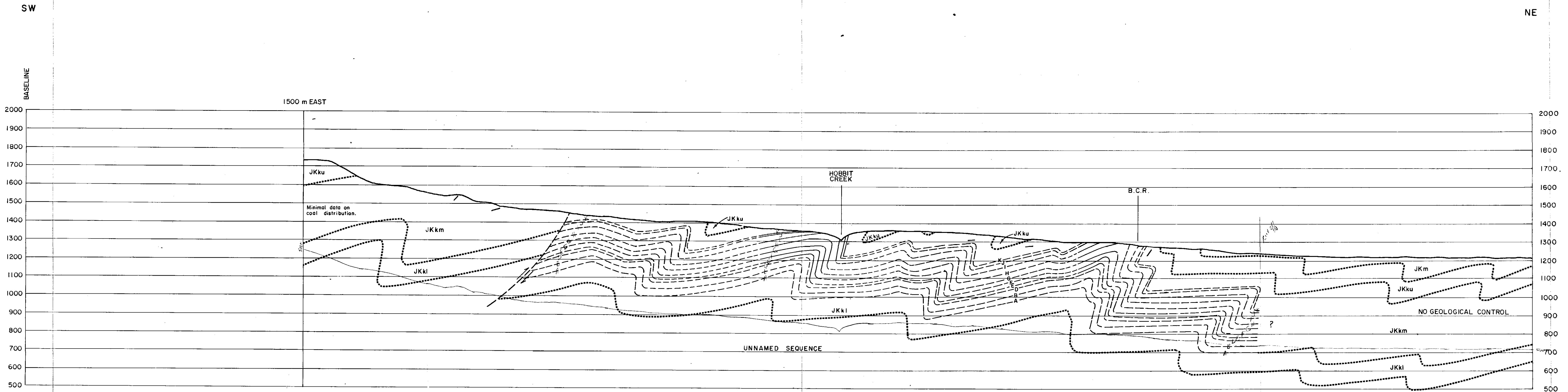


- MALLOCH SEQUENCE**
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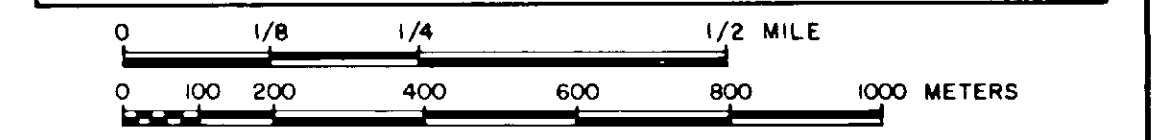


- Legend**
- GEOLOGICAL CONTACT (INFERRED)
 - COAL SEAM TRACE (DEFINED, APPROX.)
 - >--- FAULT TRACE (DEFINED, APPROX., INFERRED)
 - o-o-o-o-o CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - ▲ ATTITUDE CONTROL POINT
 - DDH 82001 DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

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



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

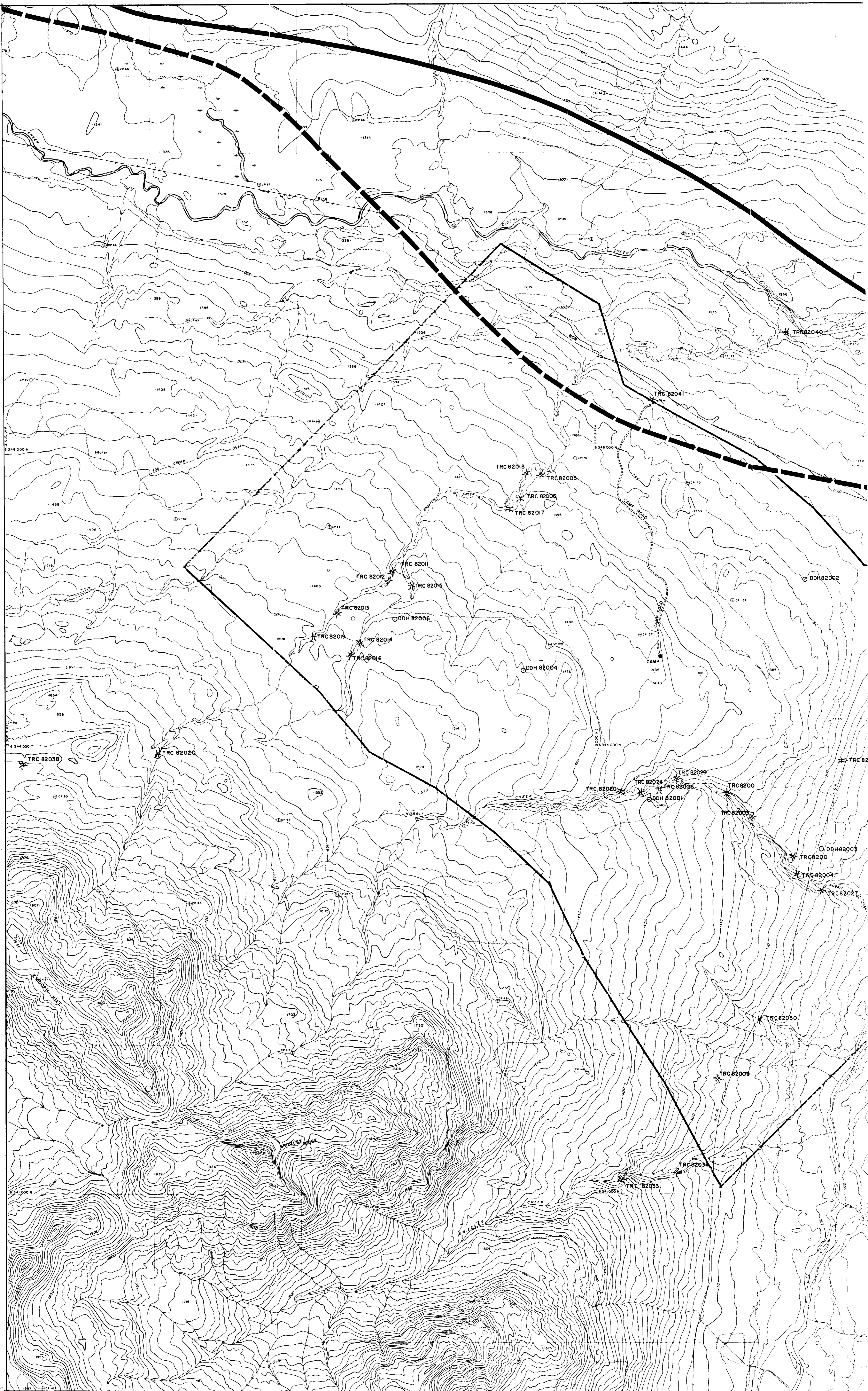


- Legend**
- GEOLOGICAL CONTACT (DEFINED, APPROX., INFERRED)
 - COAL SEAM TRACE (DEFINED, APPROX.)
 - FAULT TRACE (DEFINED, APPROX., INFERRED)
 - CONGLOMERATIC UNIT (DEFINED, APPROX., INFERRED)
 - ATTITUDE CONTROL POINT
 - DIAMOND DRILL HOLE WITH ATTITUDE CONTROL
- DBH 82001
- See mt klappan 50/50*

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

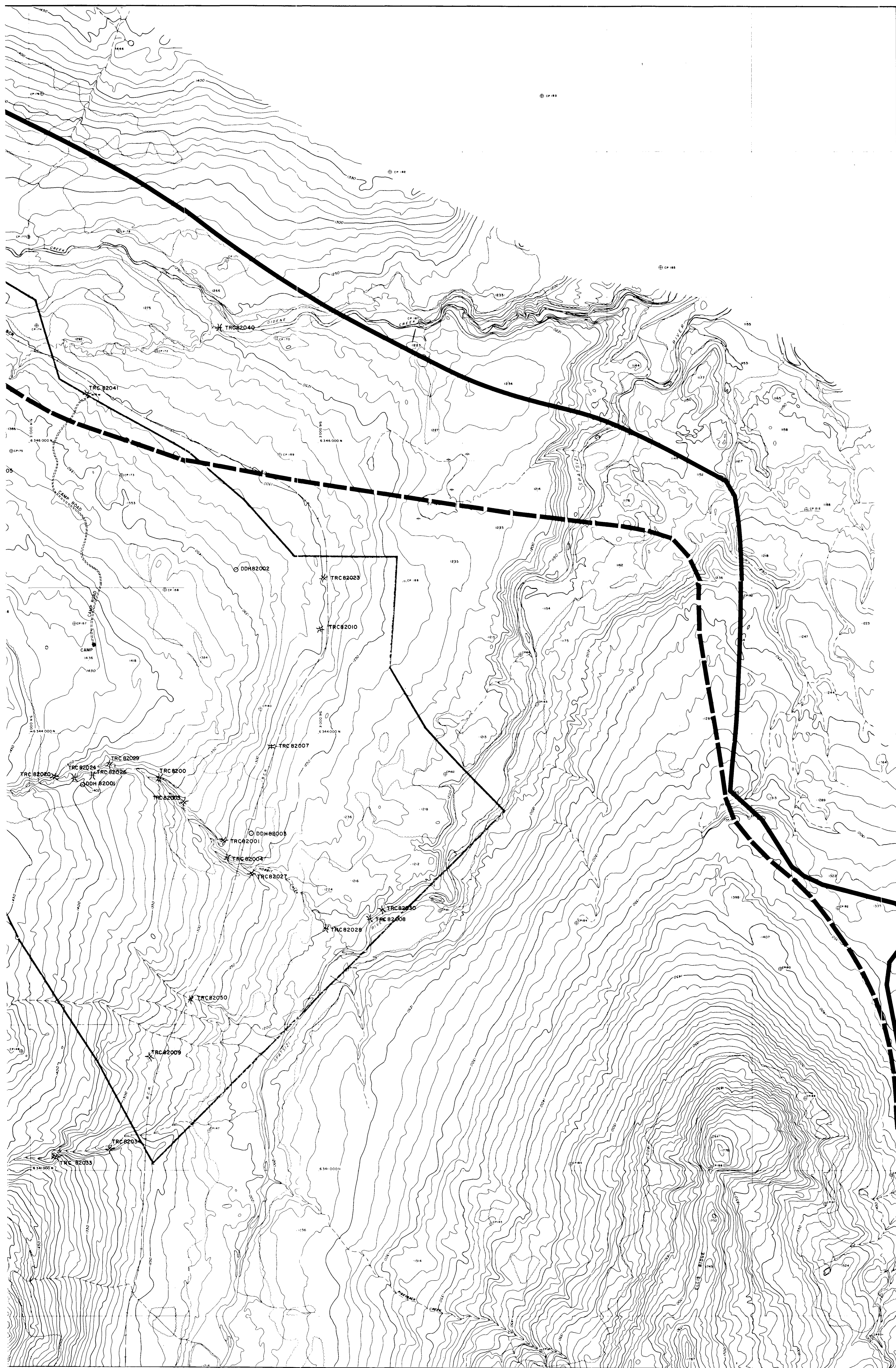
128° 50' 02"

57° 17' 10"



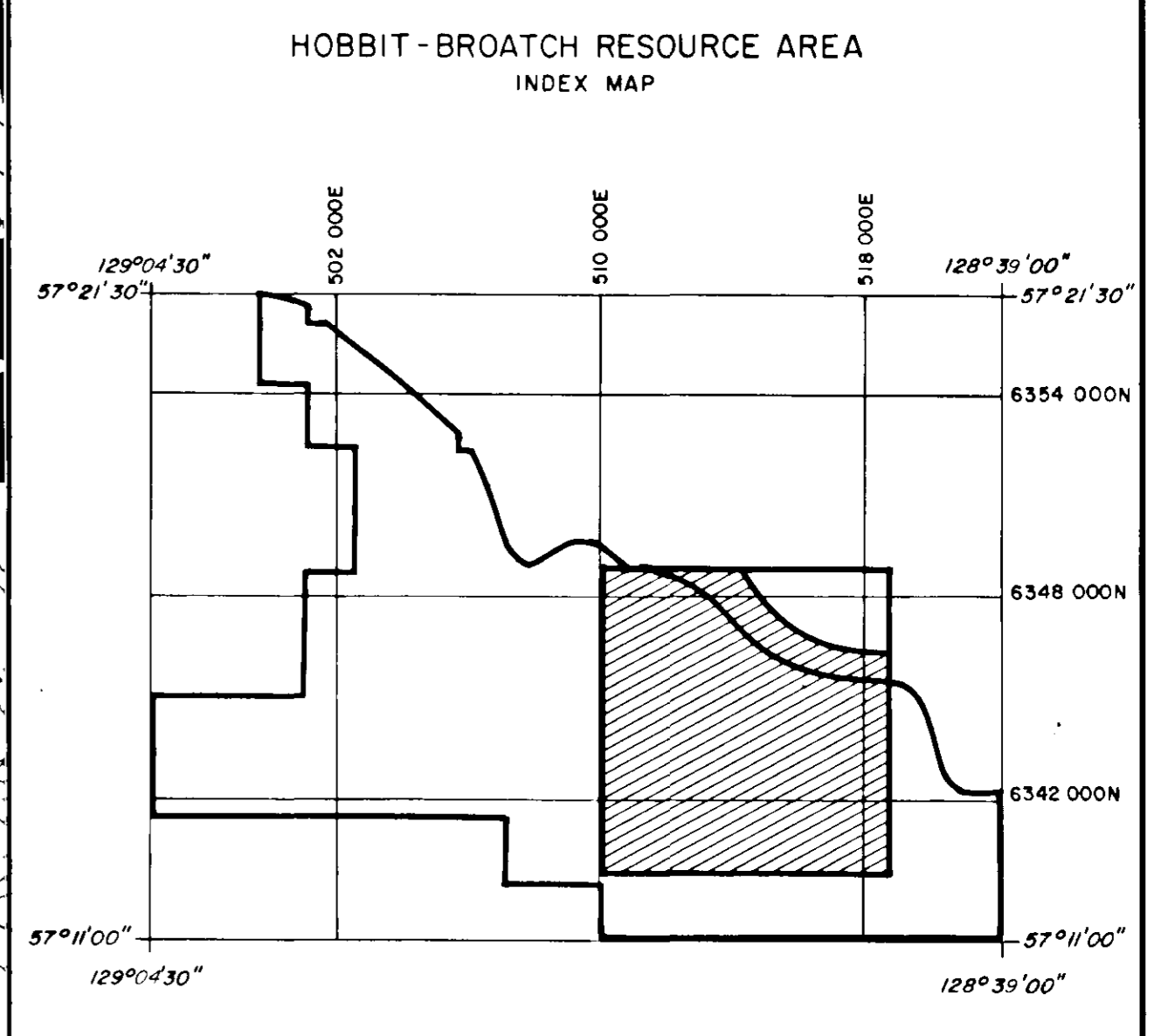
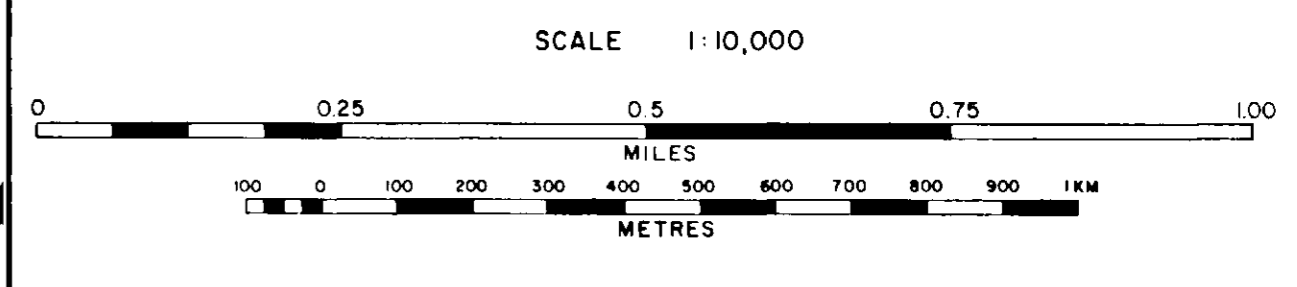
57° 12' 08"
128° 50' 02"

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	---	---



GEOLOGICAL LEGEND

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

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