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MOUNT KLAPPAN
COAL PROJECT
GEOLOGICAL REPORT
SUMMIT - NASS - SKEENA
AREA
1984

APPENDIX III

VOLUME I

DIAMOND DRILL HOLE DATA
AND COAL QUALITY

VOLUME II

COAL TRENCH DATA
AND COAL QUALITY

GULF CANADA RESOURCES INC.
COAL DIVISION

MOUNT KLAPPAN COAL PROJECT

GEOLOGICAL REPORT

1984

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APPENDIX III

VOLUME I

DIAMOND DRILL HOLE DATA
AND COAL QUALITY



GULF CANADA RESOURCES INC.

COAL DIVISION

710

APPENDIX III
VOLUME I

DIAMOND DRILL HOLE DATA
AND
COAL QUALITY

PAGES CONTAINING
CONFIDENTIAL QUALITY
DATA HAVE BEEN REMOVED

PREFACE

Within the Summit-Nass-Skeena mapping blocks two diamond drill holes have been drilled; both of which lie within the Summit Area.

APPENDIX III

VOLUME I

DIAMOND DRILL HOLE DATA AND COAL QUALITY

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KPNSSDDH 82007

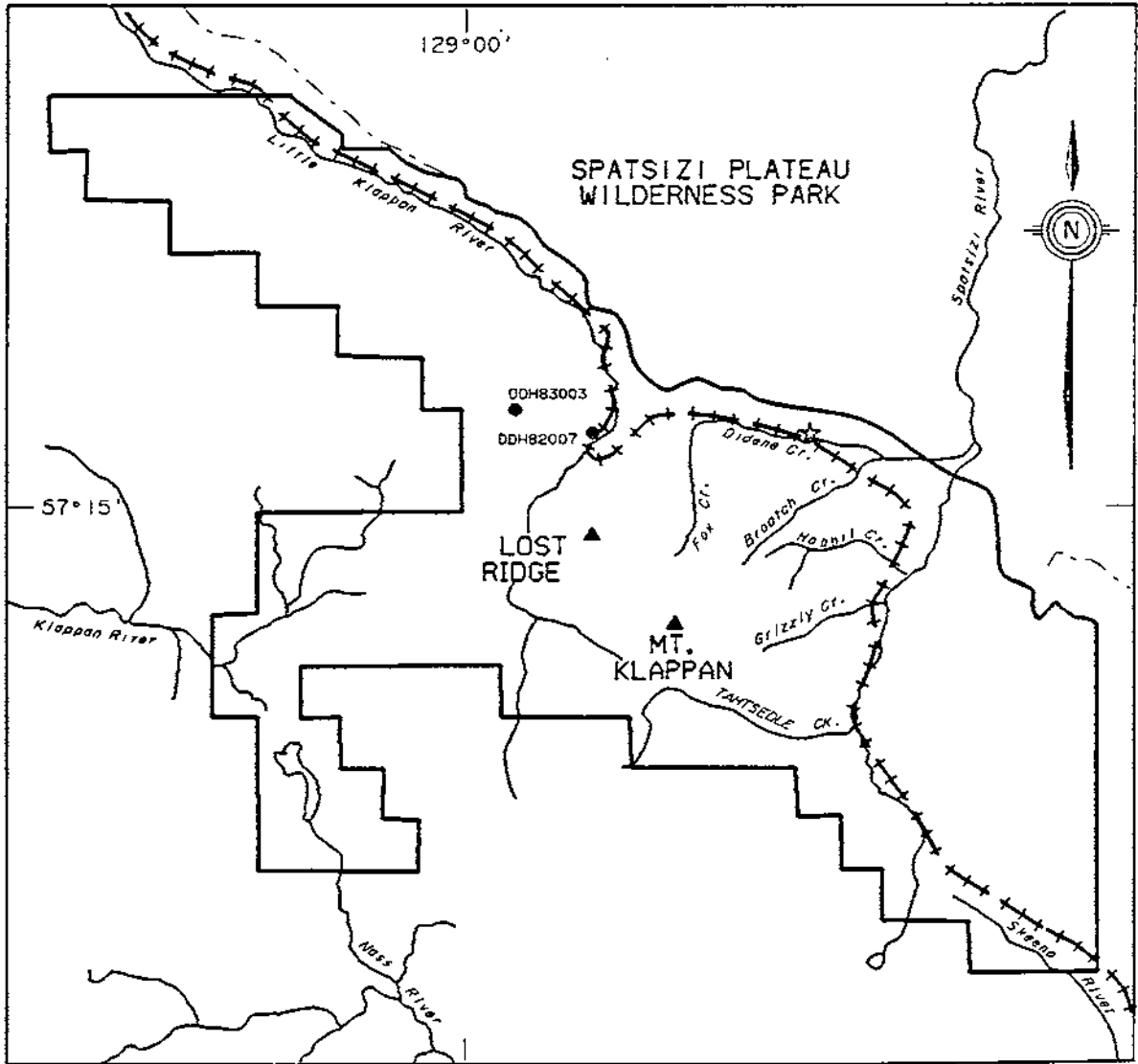
Location Map
Data Source Summary
Generalized Strip Log
Lithologic Description
Sample Summary
Apparent and True Thickness Coal Seam Data Sheets
 Coal Quality Analyses
Drill Hole Strip Log (1:200)
Geophysical Logs (deviation printout and plot, 1:40, 1:200)

KPNSSDDH 83003

Location Map
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KPNSSDDH 82007

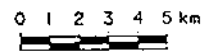
**MOUNT KLAPPAN COAL PROPERTY
DRILL HOLE LOCATIONS
SUMMIT - NASS - SKEENA AREAS**



LEGEND

- +---+--- PREPARED RAIL BED
- - - - - PROVINCIAL PARK BOUNDARY
- HQ DIAMOND DRILL HOLE - 1983, 1982
- LICENCE AREA
- ☆ DIDENE CREEK CAMP

SCALE



GULF CANADA RESOURCES INC.
06/12/84



===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSSDDH82007

DATE - 12/03/84

- HISTORY -

START DATE - 09/04/82
END DATE - 09/06/82

CONTRACTOR - J.T.THOMAS
GEOLOGIST - INNIS

OPERATOR - GCRI
SURVEYOR -

REMARKS - INCLINED HOLE

- LOCATION -

PROVINCE - BC
ELEVATION - 1315.00

ZONE - 9
NORTHING - 6347475.00
EASTING - 504420.00

LICENCE/LEASE NUMBER - 7174

LATITUDE - 571620
LONGITUDE - 1285536

- ORIENTATION -

LENGTH - 130.15

INCLINATION - 70.0
AZIMUTH - 5.0

CORE SIZE - 95.8

CEMENT -
PLUG - Y
PIEZ -

CASING DEPTH (M) - 3.05
AQUIFER DEPTHS (M) - 0.00
0.00
LOST CIRC. DEPTHS (M) - 0.00
0.00

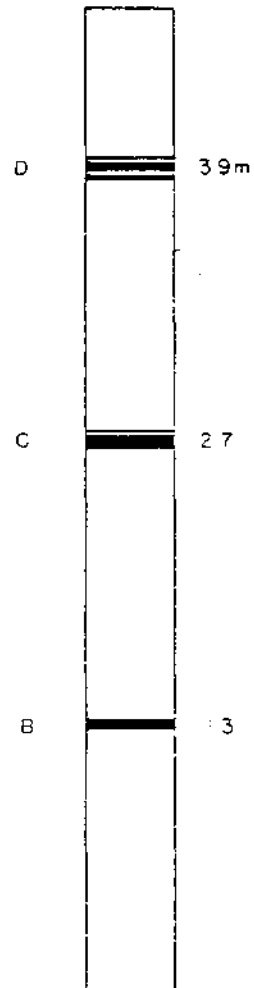
*** NOTE *** 0 INDICATES NO VALUE

=====

MT. KLAPPAN COAL PROPERTY

DDH82007

SEAM SEAM THICKNESS



SCALE - 1:1000

DRILL HOLE
LITHOLOGIC DESCRIPTION

84/12/03

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	3.45	3.45			OVERBURDEN	
* 90	3.45	4.57	1.12			SANDSTONE	MG. WEL. S-P. GY. MAS. BRKN WEATHERED
87	4.57	4.70	0.13			SANDSTONE	MG. WEL. S-P. GY. MAS. BRKN
85	4.70	5.43	0.73			SANDSTONE	MG. WEL. S-P. GY. MAS. SLD
81	5.43	6.01	0.58			SANDSTONE	MG. WEL. S-P. GY. MAS. VBRKN
77	6.01	7.10	1.09			SANDSTONE	MG. WEL. S-P. GY. MAS. BRKN FEW QTZ VEINS
73	7.10	7.42	0.32			SANDSTONE	SLTY. FG-.MOD. S-P. GY. MB. BRKN SLTST STRKS
* 72	7.42	7.67	0.25			SANDSTONE	SLTY. FG-.MOD. S-P. GY. MB. BRKN
71	7.67	7.87	0.20			SANDSTONE	SLTY. FG-.MOD. S-P. GY. MB. BRKN
* 70	7.87	8.31	0.44			SANDSTONE	CLYY. FG. MOD. S-P. GY. LAM. WRMBU. SLD INTBD SS AND SLTST

* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
• 74	8.31	8.95	0.64			CLAYSTONE	SSY.DK.GY.LAM.WRMBU.SLD
72	8.95	9.56	0.61			CLAYSTONE	SSY.DK.GY.LAM.WRMBU.BRKN
70	9.56	10.16	0.60			CLAYSTONE	SSY.DK.GY.LAM.WRMBU.SLD
68	10.16	10.97	0.81			CLAYSTONE	SSY.DK.GY.LAM.WRMBU.VBRKN
66	10.97	11.08	0.11			CLAYSTONE	SSY.DK.GY.LAM.WRMBU.SLD
• 65	11.08	11.59	0.51			CLAYSTONE	SSY.DK.GY.LAM.WRMBU.SLD
67	11.59	11.81	0.22			SANDSTONE	CLYY.FG.MOD.S-P.GY.LAM.WRMBU.SLD
68	11.81	12.08	0.27			SANDSTONE	CLYY.FG.MOD.S-P.GY.LAM.WRMBU.SLD
• 72	12.08	13.77	1.69			CLAYSTONE	SSY.DK.GY.LAM.WRMBU.SLD
71	13.77	13.91	0.14			CLAYSTONE	SSY.DK.GY.LAM.WRMBU.VBRKN

• DENOTES MEASURED BCA



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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	71	13.91	14.14	0.23		CLAYSTONE	SSY.DK.GY.LAM.WRMBU.SLD
*	70	14.14	16.06	1.92		CLAYSTONE	SSY.DK.GY.LAM.WRMBU.SLD
	72	16.06	16.98	0.92		CLAYSTONE	SSY.DK.GY.LAM.WRMBU.SLD
	73	16.98	17.27	0.29		CLAYSTONE	SSY.DK.GY.LAM.WRMBU.SLD
	74	17.27	17.92	0.65		CLAYSTONE	SLTY.DK.GY.LAM.SLD V FEW WRMBUR
	75	17.92	18.16	0.24		CLAYSTONE	DK.GY.LAM.SLD COALY STREAKS
	76	18.16	18.84	0.68		CLAYSTONE	DK.GY.LAM.SLD COALY STREAKS AND PLANT FOSSILS
	76	18.84	19.03	0.19		CLAYSTONE	PYR.DK.GY.LAM.SLD
	77	19.03	19.06	0.03		CLAYSTONE	DK.GY.LAM.SLD
	77	19.06	19.08	0.02		COAL	C-1.BLK.BRKN RECOVERY ON FOLLOWING SEAM IS 68%

* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: 55 DATA SOURCE: DDH82007

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
77	19.08	19.13	0.05			CLAYSTONE	CARB.BLK.BRKN V FINE COALY STREAKS
77	19.13	19.19	0.06			CLAYSTONE	CARB.BLK.BRKN BANDED WITH C-1 UP TO 0.5CM
77	19.19	19.24	0.05	04740	D	COAL	C-1.BLK.SLD
77	19.24	19.28	0.04	04740	D	CLAYSTONE	CARB.BLK.BRKN COALY STREAKS OF C-1
77	19.28	19.31	0.03	04740	D	COAL	C-1.BLK.SLD
* 77	19.31	19.35	0.04	04740	D	CLAYSTONE	CARB.BLK.BRKN
78	19.35	19.41	0.06	04740	D	COAL	C-3.BLK.SLD BANDED C-1
79	19.41	19.50	0.09	04740	D	CLAYSTONE	CARB.BLK.BRKN STREAKED WITH C-1, QTZ VEINING
80	19.50	19.55	0.05	04740	D	CLAYSTONE	CARB.BLK.SLD STREAKED C-2, QTZ VEINING
81	19.55	19.59	0.04	04741	D	COAL	C-2.BLK.SLD

* DENDTES MEASURED BCA



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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
* 82	19.59	19.73	0.14	04741	D	COAL	C-1.BLK.SLD MNR CLYST, STREAKS 4%
82	19.73	19.75	0.02	04741	D	CLAYSTONE	CARB.BLK.SLD STREAKED C-1
82	19.75	19.82	0.07	04741	D	COAL	C-1.BLK.SLD
82	19.82	20.06	0.24	04741	D	COAL	C-1.BLK.SLD CLYST STREAKS 10%
82	20.06	20.11	0.05	04741	D	CLAYSTONE	CARB.BLK.SLD
82	20.11	20.21	0.10	04741	D	COAL	C-1.BLK.SLD
82	20.21	20.22	0.01	04741	D	CLAYSTONE	CARB.BLK.SLD
82	20.22	20.36	0.14	04741	D	COAL	C-1.BLK.SLD
82	20.36	20.37	0.01	04741	D	CLAYSTONE	CARB.BLK.SLD
82	20.37	20.53	0.16	04741	D	COAL	C-1.BLK.SLD

* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
82	20.53	20.55	0.02	04741	D	CLAYSTONE	CARB.BLK.SLD
82	20.55	20.57	0.02	04741	D	COAL	C-1.BLK.SLD
82	20.57	20.59	0.02	04741	D	CLAYSTONE	CARB.BLK.SLD C-1 STREAKS
82	20.59	20.63	0.04	04741	D	CLAYSTONE	CARB.BLK.SLD
82	20.63	20.66	0.03	04741	D	COAL	C-1.BLK.SLD
82	20.66	20.71	0.05	04741	D	CLAYSTONE	CARB.BLK.SLD C-1 STREAKS
82	20.71	20.73	0.02	04741	D	ROCK LOSS	
82	20.73	21.17	0.44	04741	D	COAL	C-1.BLK.SLD
82	21.17	21.18	0.01	04741	D	CLAYSTONE	CARB.BLK.SLD
82	21.18	21.34	0.16	04741	D	COAL LOSS	
82	21.34	21.51	0.17	04741	D	ROCK LOSS	

* DENOTES MEASURED BCA



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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
82	21.51	21.56	0.05	04741	D	COAL	C-1.BLK.SLD
82	21.56	21.59	0.03	04741	D	COAL	C-1.BLK.SLD
82	21.59	21.63	0.04	04741	D	COAL	C-2.BLK.SLD CLYST STREAKS
82	21.63	21.70	0.07	04741	D	COAL	C-2.BLK.VBRKN
82	21.70	21.73	0.03	04741	D	CLAYSTONE	CARB.BLK.BRKN
82	21.73	21.86	0.13	04741	D	COAL	C-2.BLK.BRKN
82	21.86	21.91	0.05	04741	D	CLAYSTONE	CARB.BLK.SLD C-1 STREAKS
82	21.91	21.93	0.02	04741	D	COAL	C-1.BLK.SLD
82	21.93	22.23	0.30	04741	D	ROCK LOSS	
82	22.23	22.40	0.17	04741	D	COAL LOSS	
82	22.40	22.77	0.37	04741	D	ROCK LOSS	

* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: 5S DATA SOURCE: DDH82007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
82	22.77	22.92	0.15	04741	D	CLAYSTONE	CARB.BLK.VBRKN SOME C-1 STREAKS
82	22.92	22.94	0.02	04741	D	COAL	C-1.BLK.BRKN PYRITIC
82	22.94	22.97	0.03	04741	D	CLAYSTONE	CARB.BLK.SLD
82	22.97	23.00	0.03	04741	D	CLAYSTONE	CARB.BLK.SLD C-1 BANDS 50%
82	23.00	23.06	0.06	04741	D	COAL LOSS	
82	23.06	23.10	0.04	04741	D	COAL	C-1.BLK.SLD
82	23.10	23.11	0.01			CLAYSTONE	CARB.BLK.SLD
82	23.11	23.29	0.18			CLAYSTONE	CARB.BLK.BRKN C-1 BANDS
82	23.29	23.32	0.03			COAL	C-2.BLK.SLD
* 82	23.32	23.47	0.15			CLAYSTONE	CARB.BLK.BRKN C-1 STREAKS

* DENOTES MEASURED BCA



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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDHB2007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
82	23.47	23.49	0.02			COAL	C-1.BLK.SLD
82	23.49	23.50	0.01			CLAYSTONE	CARB.BLK.SLD C-1 STREAKS
82	23.50	23.62	0.12			CLAYSTONE	DK.GY.SLD CARB PLANT FOSSILS
82	23.62	23.74	0.12			CLAYSTONE	DK.GY.BRKN CARB PLANT FOSSILS
83	23.74	24.23	0.49			CLAYSTONE	SLTY.DK.GY.SLD CARB PLANT FOSSILS
• 83	24.23	24.73	0.50			SANDSTONE	SLTY.FG.WEL.M.GY.VTHNB.SSD.SLD
84	24.73	24.95	0.22			SANDSTONE	MG.WEL.S-P.GY.MB.SLD
84	24.95	25.09	0.14			SANDSTONE	SLTY.FG.WEL.M.GY.LAM.XBDG.SLD
84	25.09	25.11	0.02			SANDSTONE	MG.WEL.S-P.GY.MAS.SLD
86	25.11	26.78	1.67			SANDSTONE	MG.WEL.S-P.GY.MAS.SLD

• DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
88	26.78	27.12	0.34			SANDSTONE	MG.WEL.S-P.GY.MAS.SLD
88	27.12	27.35	0.23			SANDSTONE	MG.WEL.S-P.GY.MAS.SLD
• 90	27.35	28.81	1.46			SANDSTONE	MG.WEL.S-P.GY.MAS.BRKN MNR SLTST CLAST BANDS
• 75	28.81	29.29	0.48			SANDSTONE	MG.WEL.S-P.GY.MAS.BRKN ROUNDED CLYST CLASTS 1-2CM
79	29.29	29.38	0.09			SANDSTONE	MG.WEL.S-P.GY.MAS.BRKN
• 82	29.38	29.67	0.29			SANDSTONE	SLTY.FG.MOD.S-P.GY.VTHNB.BRKN CLYST STREAKS
78	29.67	30.93	1.26			SANDSTONE	MG.WEL.S-P.GY.MAS.SLD ROUNDED CLYST CLASTS
• 75	30.93	31.21	0.28			SANDSTONE	MG.WEL.S-P.GY.MAS.SLD CARB SLTST LAMS
76	31.21	31.41	0.20			SANDSTONE	MG.WEL.S-P.GY.MAS.SLD
78	31.41	32.64	1.23			SANDSTONE	MG.WEL.S-P.GY.MAS.SLD

• DENOTES MEASURED BCA



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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDHR2007

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
82	32.64	33.36	0.72			SANDSTONE	MG.WEL.S-P.GY.MAS.SLD
83	33.36	33.55	0.19			SANDSTONE	MG.WEL.S-P.GY.MAS.SLD
* 87	33.55	35.44	1.89			SANDSTONE	SLTY.FG.MOD.S-P.GY.THNB.SSD.SLD XBDG
88	35.44	35.54	0.10			SILTSTONE	CLYY.PR.M.GY.LAM.BIOTR.SLD
88	35.54	35.70	0.16			SILTSTONE	CLYY.MOD.DK.GY.VTHNB.WRMBU.SLD
* 89	35.70	37.66	1.96			SILTSTONE	CLYY.MOD.DK.GY.VTHNB.WRMBU.BRKN
90	37.66	38.73	1.07			SILTSTONE	CLYY.MOD.DK.GY.VTHNB.WRMBU.BRKN
* 90	38.73	39.80	1.07			SILTSTONE	CLYY.MOD.DK.GY.VTHNB.WRMBU.BRKN
* 90	39.80	41.73	1.93			SILTSTONE	CLYY.MOD.DK.GY.VTHNB.WRMBU.BRKN BRKN IN LAST 8 CM

* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	41.73	41.94	0.21			SILTSTONE	CLYY,MOD,DK,GY,VTHNB,WRMBU,BRKN
	41.94	43.21	1.27			SILTSTONE	CLYY,MOD,DK,GY,VTHNB,WRMBU,BRKN
	43.21	43.44	0.23			SILTSTONE	BLK,VTHNB,SLD BAND OF GASTROPODS
	43.44	43.88	0.44			SILTSTONE	SSY,BLK,VTHNB,SLD GRADING DOWNWARDS TO SS
	43.88	44.16	0.28			SANDSTONE	SLTY,FG,MOD,M,GY,BIOTR,SLD
	44.16	44.58	0.42			SANDSTONE	SLTY,FG,MOD,M,GY,BIOTR,SLD
•	44.58	44.82	0.24			SANDSTONE	SLTY,FG,MOD,M,GY,BIOTR,SLD BIOTRB IN PART
	44.82	46.18	1.36			SANDSTONE	SLTY,FG,MOD,M,GY,BIOTR,BRKN
	46.18	47.61	1.43			SANDSTONE	SLTY,FG,MOD,M,GY,BIOTR,BRKN

• DENOTES MEASURED BCA



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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
* 81	47.61	48.26	0.65			SANDSTONE	SLTY.FG.MOD.M.GY.BIOTR.BRKN
81	48.26	50.33	2.07			SANDSTONE	SLTY.FG.MOD.M.GY.BIOTR.BRKN
82	50.33	50.67	0.34			SANDSTONE	SLTY.FG.MOD.M.GY.BIOTR.BRKN
82	50.67	50.90	0.23			SANDSTONE	SLTY.FG.MOD.M.GY.BIOTR.BRKN
* 82	50.90	52.55	1.65			SANDSTONE	SLTY.FG-.MOD.M.GY.THNB.XBDG.BRKN LAM. COARSENING DOWN
85	52.55	53.70	1.15			SANDSTONE	SLTY.FG.MOD.DK.GY.LAM.XBDG.BRKN SSD
86	53.70	54.54	0.84			SANDSTONE	SLTY.FG.MOD.DK.GY.LAM.WRMBU.BRKN
* 89	54.54	56.53	1.99			SANDSTONE	SLTY.FG.MOD.M.GY.LAM.XBDG.BRKN WRMBUR IN PART
88	56.53	56.64	0.11			CLAYSTONE	CARB.BLK.LAM.SSD.SLD COALY BANDS. PYRITIC
88	56.54	56.76	0.12			CLAYSTONE	CARB.BLK.LAM.SSD.BRKN NON PYR

* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
87	56.76	56.90	0.14			CLAYSTONE	CARB.BLK.LAM.SSD.VBRKN C-1 BANDS
87	56.90	56.98	0.08			CLAYSTONE	CARB.BLK.LAM.SSD.BRKN C-1 BANDS
87	56.98	57.14	0.16			ROCK LOSS	RECOVERY DN FOLLOWING SEAM IS 48%
87	57.14	57.44	0.30	04742	C	COAL LOSS	
87	57.44	57.62	0.18	04742	C	ROCK LOSS	
86	57.62	57.84	0.22	04742	C	COAL LOSS	
86	57.84	57.89	0.05	04742	C	COAL	C-1.BLK.SLD C-2 BANDED
86	57.89	58.06	0.17	04742	C	COAL	C-1.BLK.SLD C-2 BANDED, MNR CLYST
86	58.06	58.09	0.03	04742	C	CLAYSTONE	CARB.BLK.SLD
86	58.09	58.33	0.24	04743	C	ROCK LOSS	
86	58.33	58.34	0.01	04743	C	COAL	C-1.BLK.SLD
86	58.34	58.35	0.01	04743	C	CLAYSTONE	CARB.BLK.SLD

• DENOTES MEASURED BCA



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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
86	58.35	58.37	0.02	04743	C	COAL	C-1.BLK.SLD
85	58.37	58.51	0.14	04743	C	CLAYSTONE	CARB.BLK.BRKN
85	58.51	58.52	0.01	04743	C	COAL	C-1.BLK.SLD
85	58.52	58.55	0.03	04743	C	CLAYSTONE	CARB.BLK.SLD
85	58.55	58.56	0.01	04743	C	COAL	C-1.BLK.SLD
85	58.56	58.62	0.06	04743	C	CLAYSTONE	CARB.BLK.BRKN C-1 BANDED
85	58.62	58.66	0.04	04744	C	COAL	C-1.BLK.SLD
85	58.66	58.74	0.08	04744	C	COAL	C-1.BLK.SLD BANDED CLYST
85	58.74	58.79	0.05	04744	C	COAL	C-1.BLK.SLD
85	58.79	58.98	0.19	04744	C	COAL LOSS	

* DENOTES MEASURED BCA

Gulf

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: S5 DATA SOURCE: DDHB2007

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
85	58.98	59.22	0.24	04744	C	COAL	C-2.BLK.BRKN FLAKY
85	59.22	59.27	0.05	04744	C	CLAYSTONE	CARB.BLK.BRKN
84	59.27	59.29	0.02	04744	C	COAL	C-2.BLK.SLD
84	59.29	59.31	0.02	04744	C	CLAYSTONE	CARB.BLK.SLD
84	59.31	59.34	0.03	04744	C	COAL	C-1.BLK.SLD
84	59.34	59.44	0.10	04744	C	COAL	C-2.BLK.PWRD
84	59.44	59.63	0.19	04744	C	COAL LOSS	
• 84	59.63	59.74	0.11	04744	C	COAL	C-1.BLK.SLD
84	59.74	59.84	0.10	04744	C	COAL	C-1.BLK.SLD MNR CLYST BANDS
84	59.84	59.85	0.01	04744	C	COAL	C-1.BLK.SLD

• DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
84	59.85	59.93	0.08			CLAYSTONE	CARB.BLK.SLD C-1 STREAKS
84	59.93	60.18	0.25			CLAYSTONE	PYR.BLK.SLD NO COALY STREAKS
84	60.18	60.76	0.58			CLAYSTONE	PYR.BLK.SLD QTZ VEINING AND COALY STREAKS
84	60.76	61.88	1.12			CLAYSTONE	PYR.BLK.SLD NO COALY STREAKS
83	61.88	61.91	0.03			CLAYSTONE	PYR.BLK.SLD C-1 BANDS
83	61.91	62.14	0.23			SANDSTONE	FG-.WEL.M.GY.MAS.SLD
83	62.14	62.20	0.06			SANDSTONE	FG-.WEL.M.GY.MAS.SLD QTZ VEINING, PYR STREAKS
83	62.20	62.94	0.74			SANDSTONE	FG-.WEL.M.GY.MAS.SLD FRACTURE AT 8 DEGREES TO BCA
* 83	62.94	64.32	1.38			SANDSTONE	FG-.WEL.M.GY.MAS.SLD QTZ FILLED FRACTURES AND PYR VEINS
83	64.32	65.05	0.73			SANDSTONE	FG-.WEL.M.GY.MAS.SLD

* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
84	65.05	65.55	0.50			SANDSTONE	FG-WEL.M.GY.MAS.BRKN
* 84	65.55	65.93	0.38			SANDSTONE	FG-WEL.M.GY.MAS.BRKN
84	65.93	66.47	0.54			SANDSTONE	FG.WEL.M.GY.MAS.SLD FINING DOWN TO THIS POINT
83	66.47	68.56	2.09			SANDSTONE	SLTY.FG.MOD.DK.GY.LAM.SLD
* 83	68.56	68.66	0.10			SANDSTONE	SLTY.FG.MOD.M.GY.LAM.SLD SHARP CONTACT
83	68.66	69.19	0.53			SANDSTONE	SLTY.FG.MOD.DK.GY.LAM.SLD FRESH SURFACE IS DK GY, WEATH IS LT GY
82	69.19	69.39	0.20			SANDSTONE	SLTY.FG.MOD.DK.GY.LAM.SLD
* 81	69.39	70.87	1.48			SILTSTONE	SSY.MOD.DK.GY.LAM.WRMBU.SLD
83	70.87	71.77	0.90			SILTSTONE	SSY.MOD.DK.GY.LAM.WRMBU.SLD

* DENOTES MEASURED BCA



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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
* 84	71.77	73.08	1.31			SANDSTONE	SLTY.FG.MOD.DK.GY.THNB.WRMBU.SLD
82	73.08	73.73	0.65			SILTSTONE	SSY.MOD.DK.GY.THNB.WRMBU.SLD
81	73.73	73.81	0.08			SILTSTONE	SSY.MOD.DK.GY.THNB.WRMBU.VBRKN
81	73.91	73.93	0.12			SILTSTONE	SSY.MOD.DK.GY.THNB.WRMBU.BRKN
81	73.93	74.50	0.57			SILTSTONE	SSY.MOD.DK.GY.THNB.WRMBU.SLD
80	74.50	74.94	0.44			SILTSTONE	SSY.MOD.DK.GY.THNB.WRMBU.SLD
* 79	74.94	75.19	0.25			SANDSTONE	SLTY.FG.MOD.DK.GY.THNB.WRMBU.BRKN
80	75.19	75.32	0.13			SANDSTONE	SLTY.FG.MOD.DK.GY.THNB.WRMBU.BRKN
83	75.32	77.40	2.08			SILTSTONE	SSY.MOD.DK.GY.VTHNB.WRMBU.SLD GRADING BACK TO SLTST, SOME CARB PARTIN GS

* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 20

PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
87	77.40	77.72	0.32			SILTSTONE	SSY.MOD.DK.GY.VTHNB.WRMBU.SLD
88	77.72	77.88	0.16			SILTSTONE	SSY.MOD.DK.GY.VTHNB.WRMBU.BRKN
88	77.88	78.09	0.21			SILTSTONE	SSY.MOD.DK.GY.VTHNB.WRMBU.SLD
• 90	78.09	78.81	0.72			SILTSTONE	SSY.MOD.DK.GY.VTHNB.WRMBU.SLD
88	78.81	79.53	0.72			SILTSTONE	SSY.MOD.DK.GY.VTHNB.WRMBU.SLD
87	79.53	80.48	0.95			SILTSTONE	PYR.MOD.DK.GY.VTHNB.WRMBU.BRKN COAL AND QTZ VEIN
• 85	80.48	80.92	0.44			SILTSTONE	PYR.MOD.DK.GY.VTHNB.WRMBU.SLD
85	80.92	81.19	0.27			SILTSTONE	PYR.MOD.DK.GY.VTHNB.WRMBU.VBRKN

• DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
85	81.19	81.26	0.07			SILTSTONE	PYR. MOD. DK. GY. VTHNB. WRMBU. VBRKN
85	81.26	81.71	0.45			ROCK LOSS	
84	81.71	81.93	0.22			SILTSTONE	PYR. MOD. DK. GY. VTHNB. WRMBU. VBRKN
84	81.93	82.38	0.45			ROCK LOSS	
84	82.38	82.69	0.31			CLAYSTONE	SLTY. MOD. DK. GY. LAM. VBRKN PYR BLEBS
84	82.69	83.07	0.38			CLAYSTONE	SLTY. MOD. DK. GY. LAM. SLD
84	83.07	83.34	0.27			CLAYSTONE	SLTY. MOD. DK. GY. LAM. VBRKN
83	83.34	83.68	0.34			CLAYSTONE	SLTY. MOD. DK. GY. LAM. SLD
83	83.68	83.81	0.13			CLAYSTONE	SLTY. LT. GY. LAM. WRMBU. SLD
* 83	83.81	84.52	0.71			CLAYSTONE	PYR. WEL. DK. GY. LAM. SLD

* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
84	84.52	84.78	0.26			CLAYSTONE	PYR.WEL.DK.GY.LAM.SLD
84	84.78	85.12	0.34			CLAYSTONE	PYR.WEL.DK.GY.LAM.SLD
84	85.12	85.16	0.04			CLAYSTONE	PYR.WEL.DK.GY.LAM.BRKN
84	85.16	85.46	0.30			CLAYSTONE	PYR.WEL.DK.GY.LAM.BRKN
85	85.46	85.83	0.37			CLAYSTONE	SSY.FG.MOD.M.GY.LAM.SLD GRADING DOWN INTO SSY UNIT, PELECYPOD L AYER AT THIS POINT
85	85.83	85.96	0.13			SILTSTONE	SSY.FG.MOD.M.GY.LAM.SLD
* 85	85.96	86.06	0.10			SILTSTONE	SSY.FG.MOD.M.GY.LAM.SLD VERY FOSSILIFEROUS
85	86.06	86.22	0.16			SILTSTONE	SSY.FG.MOD.M.GY.LAM.SLD COALY PARTINGS
85	86.22	86.32	0.10			SILTSTONE	PYR.FG.MOD.M.GY.LAM.SLD

* DENOTES MEASURED BCA



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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
84	86.32	86.37	0.05			SILTSTONE	PYR. FG. MOD. M. GY. LAM. SLD VERY FOSSILIFEROUS
84	86.37	86.64	0.27			SILTSTONE	PYR. FG. MOD. M. GY. LAM. SLD
84	86.64	86.99	0.35			SILTSTONE	PYR. FG. MOD. M. GY. LAM. SLD COALY BAND
83	86.99	87.36	0.37			SILTSTONE	PYR. FG. MOD. M. GY. LAM. SLD
83	87.36	87.39	0.03			SILTSTONE	FG. MOD. M. GY. LAM. SLD MNR FOSSIL LAYER
82	87.39	87.78	0.39			SILTSTONE	PYR. FG. MOD. M. GY. LAM. SLD
• 82	87.78	88.00	0.22			SILTSTONE	PYR. FG. MOD. M. GY. LAM. SLD
83	88.00	88.75	0.75			SILTSTONE	PYR. FG. MOD. M. GY. LAM. SLD SCATTERED FOSSILS
83	88.75	88.80	0.05			SILTSTONE	PYR. FG. MOD. M. GY. LAM. SLD

• DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
• 84	88.80	90.71	1.91			SILTSTONE	CLYY.MOD.M-DK.GY.LAM.WRMBU.SLD FEW FOSSIL BANDS
84	90.71	90.78	0.07			SILTSTONE	CLYY.MOD.M-DK.GY.LAM.WRMBU.SLD
84	90.78	90.90	0.12			SANDSTONE	SLTY.VFG-.MOD.LT-M.GY.LAM.WRMBU.SLD
83	90.90	91.51	0.61			SANDSTONE	SLTY.VFG-.MOD.LT-M.GY.LAM.WRMBU.SLD
83	91.51	91.74	0.23			SANDSTONE	SLTY.FG.MOD.M.GY.BIOTR.SLD PYRITIC
• 83	91.74	92.96	1.22			SANDSTONE	CLYY.FG.MOD.M.GY.THNB.WRMBU.SLD MNR FOSSIL BANDS
83	92.96	93.51	0.55			SANDSTONE	CLYY.FG.MOD.M.GY.THNB.WRMBU.SLD V PYR AT BASE
84	93.51	93.59	0.08			SANDSTONE	CLYY.FG.MOD.M.GY.THNB.WRMBU.BRKN V CARB, QTZ VEIN
84	93.59	93.73	0.14			SANDSTONE	CLYY.FG.MOD.M.GY.THNB.WRMBU.BRKN

• DENOTES MEASURED BCA



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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
84	93.73	93.83	0.10			SANDSTONE	CLYY.FG.MOD.M.GY.THNB.WRMBU.VBRKN
84	93.83	93.85	0.02			SANDSTONE	CLYY.FG.MOD.M.GY.THNB.WRMBU.BRKN OTZ VEIN
84	93.85	94.27	0.42			SANDSTONE	PYR.FG.MOD.M.GY.THNB.WRMBU.SLD DISSEMINATED PYR
84	94.27	94.37	0.10			CLAYSTONE	CARB.BLK.BRKN C-1 STREAKS, RECOVERY ON FOLLOWING SEAM IS 98%
84	94.37	94.42	0.05			CLAYSTONE	PYR.M.GY.LAM.SLD
84	94.42	94.51	0.09			CLAYSTONE	CARB.BLK.SLD C-1 STREAKS
84	94.51	94.55	0.04			CLAYSTONE	M.GY.SLD SOFT (WEATH)
84	94.55	94.85	0.30			CLAYSTONE	CARB.DK.GY.SLD C-1 BANDS, PYR BLEBS
84	94.85	94.87	0.02			COAL	C-1.BLK.SLD

* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LDG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
84	94.87	94.98	0.11			CLAYSTONE	CARB. DK. GY. SLD FEW C-1 STREAKS, PYR
84	94.98	95.09	0.11			CLAYSTONE	CARB. DK. GY. SLD NON PYR
84	95.09	95.11	0.02			COAL	C 2. BLK. SLD CLYY
84	95.11	95.30	0.19			CLAYSTONE	CARB. BLK. BRKN COALY
84	95.30	95.31	0.01			COAL	C-1. BLK. SLD
84	95.31	95.38	0.07			CLAYSTONE	CARB. BLK. SLD
84	95.38	95.40	0.02			COAL	C-3. BLK. SLD
84	95.40	95.47	0.07			CLAYSTONE	CARB. BLK. SLD COALY STREAKS
84	95.47	95.49	0.02			CLAYSTONE	M. GY. BRKN
84	95.49	95.62	0.13			CLAYSTONE	CARB. BLK. SLD COALY BANDS

* DENOTES MEASURED BCA

(Gulf)

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
85	95.62	96.22	0.60			CLAYSTONE	CARB.BLK.SLD
85	96.22	96.56	0.34			CLAYSTONE	CARB.BLK.SLD
85	96.56	96.71	0.15	04745	B	COAL	C-1.BLK.SLD C-2 BANDED, CLYST STREAKS
85	96.71	96.81	0.10	04745	B	CLAYSTONE	CARB.BLK.SLD COALY C-1 BANDS
85	96.81	96.96	0.15	04745	B	COAL	C-1.BLK.SLD HEAVILY OTZ VEINED, CLYST STREAKS
85	96.96	97.00	0.04	04745	B	COAL	C-1.BLK.SLD
85	97.00	97.02	0.02	04745	B	CLAYSTONE	CARB.DK.GY.SLD
85	97.02	97.13	0.11	04745	B	COAL	C-1.BLK.SLD MNR CLYST STREAKS
85	97.13	97.18	0.05	04745	B	CLAYSTONE	CARB.BLK.BRKN C-1 STREAKS AND BANDS
85	97.18	97.28	0.10	04745	B	COAL	C-1.BLK.SLD MNR CLYST

* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
85	97.28	97.31	0.03	04745	B	ROCK LOSS	
85	97.31	97.40	0.09	04745	B	CLAYSTONE	CARB. BLK. BRKN MNR C-1 BANDS
85	97.40	97.41	0.01	04745	B	COAL	C-1. BLK. SLD
85	97.41	97.44	0.03	04745	B	CLAYSTONE	CARB. BLK. SLD
85	97.44	97.46	0.02	04745	B	COAL	C-1. BLK. SLD
85	97.46	97.48	0.02	04745	B	CLAYSTONE	CARB. BLK. BRKN
85	97.48	97.49	0.01	04745	B	COAL	C-1. BLK. BRKN
85	97.49	97.51	0.02	04745	B	CLAYSTONE	CARB. BLK. SLD
85	97.51	97.66	0.15	04745	B	COAL	C-1. BLK. SLD CLYST STREAKS
85	97.66	97.69	0.03	04745	B	ROCK LOSS	

* DENOTES MEASURED BCA



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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

BOH	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
85	97.69	97.72	0.03	04745	B	CLAYSTONE	CARB.BLK.BRKN C-1 BAND
85	97.72	97.79	0.07	04745	B	CLAYSTONE	CARB.DK.GY.SLD
85	97.79	97.85	0.06	04745	B	COAL	C-1.BLK.SLD CLYST STREAKS
86	97.85	98.09	0.24			CLAYSTONE	CARB.BLK.SLD MNR C-1 STREAKS
86	98.09	98.11	0.02			COAL	C-1.BLK.SLD CLYY
86	98.11	98.12	0.01			CLAYSTONE	CARB.BLK.SLD
86	98.12	98.14	0.02			COAL	C-1.BLK.SLD V CLYY
86	98.14	98.17	0.03			CLAYSTONE	CARB.BLK.SLD
86	98.17	98.20	0.03			CLAYSTONE	CARB.BLK.SLD COALY
86	98.20	98.21	0.01			CLAYSTONE	CARB.BLK.SLD

* DENOTES MEASURED RCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
86	98.21	98.31	0.10			COAL	C-1.BLK.SLD MANY CLYST STREAKS
86	98.31	98.37	0.06			ROCK LOSS	
86	98.37	98.54	0.17			CLAYSTONE	CARB.BLK.SLD V COALY
86	98.54	98.55	0.01			COAL	C-1.BLK.SLD
86	98.55	98.57	0.02			CLAYSTONE	CARB.BLK.SLD
86	98.57	98.84	0.27			CLAYSTONE	CARB.BLK.SLD V MNR COAL STREAKS
86	98.84	98.85	0.01			COAL	C-1.BLK.SLD
* 86	98.85	98.99	0.14			CLAYSTONE	CARB.BLK.SLD COALY STREAKS
86	98.99	99.06	0.07			CLAYSTONE	CARB.DK.GY.SLD
86	99.06	99.07	0.01			COAL	C-1.BLK.SLD

* DENOTES MEASURED BCA



84/12/03

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 31

PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	86	99.07	99.08	0.01		CLAYSTONE	CARB.BLK.SLD
	86	99.08	99.13	0.05		CLAYSTONE	CARB.BLK.SLD C-1 STREAKS
	86	99.13	99.20	0.07		COAL	C-1.BLK.SLD ABUNDANT QTZ VEINS
	86	99.20	99.23	0.03		CLAYSTONE	CARB.BLK.SLD COALY
	86	99.23	99.33	0.10		COAL	C-1.BLK.SLD CLYY
	86	99.33	99.34	0.01		CLAYSTONE	CARB.BLK.SLD
	86	99.34	99.35	0.01		COAL	C-1.BLK.SLD
	86	99.35	99.47	0.12		CLAYSTONE	CARB.BLK.LAM.SLD PYR, NON-COALY
	86	99.47	99.76	0.29		CLAYSTONE	CARB.BLK.LAM.SLD
*	86	99.76	101.15	1.39		SANDSTONE	FG.WEL.M.GY.MAS.BRKN PYR AT TOP, COARSENING DOWNWARD

* DENOTES MEASURED BCA

84/12/03

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 32

PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
87	101.15	102.50	1.35			SANDSTONE	FG.WEL.M.GY.MAS.SSD.SLD LARGE WRMBUR (MNR)
87	102.50	103.27	0.77			SANDSTONE	FG.WEL.M.GY.MAS.SSD.SLD
87	103.27	103.75	0.48			SANDSTONE	FG.WEL.M.GY.MAS.SSD.SLD
88	103.75	104.37	0.62			SANDSTONE	FG.MOD.M.GY.LAM.XBDG.SLD INTBD DK GY CLYST
88	104.37	104.88	0.51			SANDSTONE	FG.WEL.M.GY.MAS.SLD
• 88	104.88	105.48	0.60			SILTSTONE	CLYY.MOD.DK.GY.LAM.WRMBU.SLD
87	105.48	105.57	0.09			SILTSTONE	CLYY.MOD.DK.GY.LAM.WRMBU.SLD
86	105.57	106.19	0.62			SILTSTONE	CLYY.MOD.DK.GY.LAM.WRMBU.SLD
84	106.19	107.51	1.32			SANDSTONE	MG.WEL.M.GY.MAS.SLD BRKN AT TOP
82	107.51	107.56	0.05			ROCK LOSS	

• DENOTES MEASURED BCA

(Gulf)

84/12/03

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 33

PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	81	107.56	108.57	1.01		SANDSTONE	MG.WEL.M.GY.MAS.SLD
*	78	108.57	109.61	1.04		SANDSTONE	MG.WEL.M.GY.MAS.BRKN FEW ROUNDED SLTST CLASTS
	80	109.61	109.65	0.04		ROCK LOSS	
	81	109.65	109.95	0.30		SANDSTONE	MG.WEL.M.GY.MAS.SLD CLYST BANDS BELOW THIS POINT
*	85	109.95	111.68	1.73		SANDSTONE	MG.WEL.M.GY.MAS.SLD
	85	111.68	111.83	0.15		SANDSTONE	MG.WEL.M.GY.MAS.SLD
	85	111.83	111.94	0.11		SANDSTONE	MG.WEL.M.GY.MAS.SLD QTZ VEIN, COALY PARTING
	85	111.94	112.02	0.08		SANDSTONE	MG.WEL.M.GY.MAS.SLD COALY PARTING
	85	112.02	113.94	1.92		SANDSTONE	MG.WEL.M.GY.MAS.SLD
	84	113.94	114.04	0.10		SANDSTONE	MG.WEL.M.GY.MAS.SLD

* DENOTES MEASURED BCA

84/12/03

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 34

PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
84	114.04	114.72	0.68			SANDSTONE	FG.WEL.M.GY.MAS.SLD
84	114.72	114.82	0.10			ROCK LOSS	//////////RODS PULLED AT THIS POINT TO R ETRIEVE CORE BARREL, 40CM OF RUBBLE FRO M UP HOLE INCLUDED IN BOX AT THIS POINT //////////
84	114.82	115.67	0.85			SANDSTONE	FG.WEL.M.GY.MAS.SLD
• 84	115.67	117.55	1.88			SANDSTONE	FG.WEL.M.GY.MAS.SLD
83	117.55	117.81	0.26			SANDSTONE	FG.WEL.M.GY.MAS.SLD
• 81	117.81	120.02	2.21			SANDSTONE	FG.WEL.M.GY.MAS.SLD MNR CLYST BANDS

• DENOTES MEASURED BCA



84/12/03

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 35

PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
* 79	120.02	120.76	0.74			SANDSTONE	FG.WEL.M.GY.MAS.SLD MNR WRMBUR
80	120.76	122.23	1.47			SANDSTONE	FG.WEL.M.GY.MAS.SLD
81	122.23	122.56	0.33			SANDSTONE	FG.WEL.M.GY.MAS.SLD
82	122.56	122.96	0.40			SANDSTONE	FG.WEL.M.GY.MAS.VBRKN
82	122.96	123.01	0.05			ROCK LOSS	
83	123.01	124.01	1.00			SANDSTONE	FG.WEL.M.GY.MAS
83	124.01	124.39	0.38			SANDSTONE	SLTY.FG.WEL.LT-M.GY.MAS.SLD
84	124.39	124.66	0.27			SANDSTONE	SLTY.FG.WEL.LT-M.GY.MAS.SLD
85	124.66	126.13	1.47			SANDSTONE	FG.WEL.DK.GY.MAS.SLD
86	126.13	126.50	0.37			SILTSTONE	CLYY.DK.GY.LAM.WRMBU.SLD

* DENOTES MEASURED BCA

84/12/03

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 36

PROJECT: KPN BLOCK: SS DATA SOURCE: DDH82007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 86	126.50	126.64	0.14			SANDSTONE	FG.WEL.DK.GY.MAS.SLD
86	126.64	127.07	0.43			CLAYSTONE	SLTY.DK.GY.LAM.WRMBU.SLD PYRITIC
86	127.07	127.35	0.28			CLAYSTONE	SLTY.DK.GY.LAM.WRMBU.SLD QTZ VEIN
86	127.35	128.82	1.47			CLAYSTONE	SLTY.DK.GY.LAM.WRMBU.SLD
86	128.82	129.18	0.36			CLAYSTONE	SLTY.DK.GY.LAM.WRMBU.SLD
86	129.18	129.23	0.05			CLAYSTONE	SLTY.DK.GY.LAM.WRMBU.SLD QTZ VEIN, PYR
86	129.23	130.15	0.92			CLAYSTONE	SLTY.DK.GY.LAM.WRMBU.SLD //////////END OF CORE, DRILLERS MARK ER 130.15M//////////



SAMPLE SUMMARY

GULF CANADA RESOURCES INC. - COAL DIVISION
 03/DEC/84 SIMPLE SAMPLE SUMMARY PAGE 1
 APPARENT THICKNESS
 KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	ROCK	MISSING COAL	ROCK	TOTAL COAL-ROCK
DDH82007	D	4740	19.19	19.55	100.00	0.14	0.22	0.00	0.00	0.14- 0.22
	D	4741	19.55	23.10	64.79	1.78	0.52	0.39	0.86	2.17- 1.38
	C	4742	57.14	58.09	26.32	0.22	0.03	0.52	0.18	0.74- 0.21
	C	4743	58.09	58.62	54.72	0.05	0.24	0.00	0.24	0.05- 0.48
	C	4744	58.62	59.85	69.11	0.78	0.07	0.38	0.00	1.16- 0.07
	B	4745	96.56	97.85	95.35	0.80	0.43	0.00	0.06	0.80- 0.49



**COAL SEAM DATA SHEETS
AND
COAL QUALITY**

LAB SAMPLE SUMMARY

DATA SOURCE	SEAM	GULF SAMPLE I.D.	CYCLONE SAMPLE I.D.	GROSS COAL	NET COAL	DRILLED INTERVAL
KFNSSDDH82007	D	47	s1-342-578	3.91	2.31	19.19 - 23.10
	C	48	s1-342-579	2.71	1.95	57.14 - 59.85
	B	49	s1-342-580	1.29	0.80	96.56 - 97.85

SEAM D

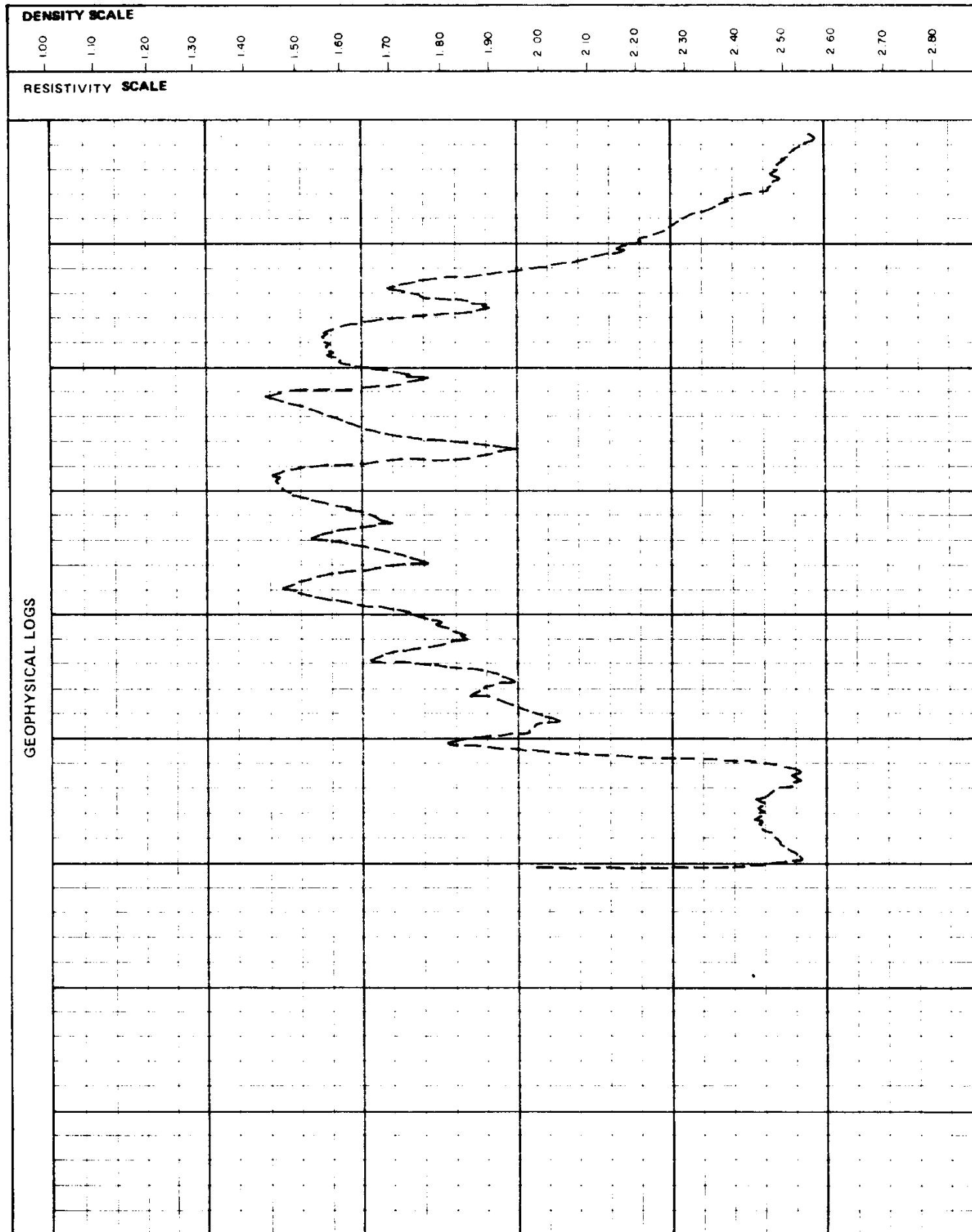
DENSITY

RESISTIVITY

DRILL NO DDH - 82 - 007
SCALE 1:40

SEAM D

SEAM INTERVAL



SEAM COMP.	DEPTH metres	COAL SEAM LOG	INTERVAL		REC	SAMPLE		PROXIMATE ANALYSIS									
			ROCK	COAL		NUMBER	COMPOS.	MOIST	ASH	VM	FC	S	CAL VAL MJ/kg	FSI			
1 2 3 4 5 6	19.06																
	19.19	c-c-c-c	0.11	0.02													
	19.55	c-c-c-c	0.04	0.05	100	04740											
		c-c-c-c	0.04	0.03													
		c-c-c-c	0.14	0.06													
			0.02	0.18													
				0.31													
			0.05	0.10													
			0.01	0.14													
			0.01	0.16													
			0.02	0.02													
			0.06	0.02													
			0.05	0.03													
			(0.02)														
				0.44													
			0.01	(0.16)	65.1	04741	4.7	1.54	32.04	7.84	58.58		21.72				
			(0.17)														
			0.03	0.19													
			0.05	0.13													
			(0.30)	0.02													
			(0.37)														
			(0.37)														
		c-c-c-c	0.15	0.02													
		c-c-c-c	0.06	(0.06)													
	23.10	c-c-c-c	0.19														
		c-c-c-c		0.03													
	23.49	c-c-c-c	0.15	0.02													
		c-c-c-c															

Seam Interval (m) : 19.19 - 23.10
Seam True Thickness (Coal/Rock) : 2.31 / 1.60
Total 3.91

GEOPHYSICAL LOGS

DEPTH	COAL SEAM LOG	INTERVAL		% REC.	SAMPLE		COMPOSITE COAL/ROCK TOTAL	MINING SECTION COAL/ROCK TOTAL
		ROCK	COAL		NUMBER	COMPOS.		
19.06			0.02					
19.19		0.11	0.02					
19.55		0.04	0.05	100	04740	↑	↑	↑
		0.14	0.06					
		0.02	0.18					
			0.31					
		0.01	0.10					
		0.01	0.14					
		0.07	0.16					
		0.06	0.02					
		0.02	0.03					
			0.44	65.1	04741	47	2.31/1.60 3.91	2.31 / 1.60 3.91
		0.01	(0.16)					
			(0.17)					
		0.03	0.19					
		0.06	0.13					
			0.02					
			(0.30)					
			(0.17)					
			(0.37)					
23.10		0.15	0.02					
		0.06	0.02					
		0.19	0.03					
23.49		0.15	0.02					

GULF CANADA RESOURCES INC.		
<small>Coal Division</small>		
<small>CALGARY</small>	<small>ALBERTA</small>	
MT. KLAPPAN COAL PROJECT SEAM DETAIL TRUE THICKNESS DDH-82-007 SEAM D		
<small>PREPARED BY: C. L.</small>		<small>SCALE 1:40</small>
<small>APPROVED BY: J. M. D.</small>		<small>DATE: NOV. '82 DRAWING No.</small>

SEAM C


COAL SEAM DATA SHEET

GULF CANADA RESOURCES INC.
COAL DIVISION

P-267 (12 80)

Apparent Thickness

DENSITY 

RESISTIVITY 

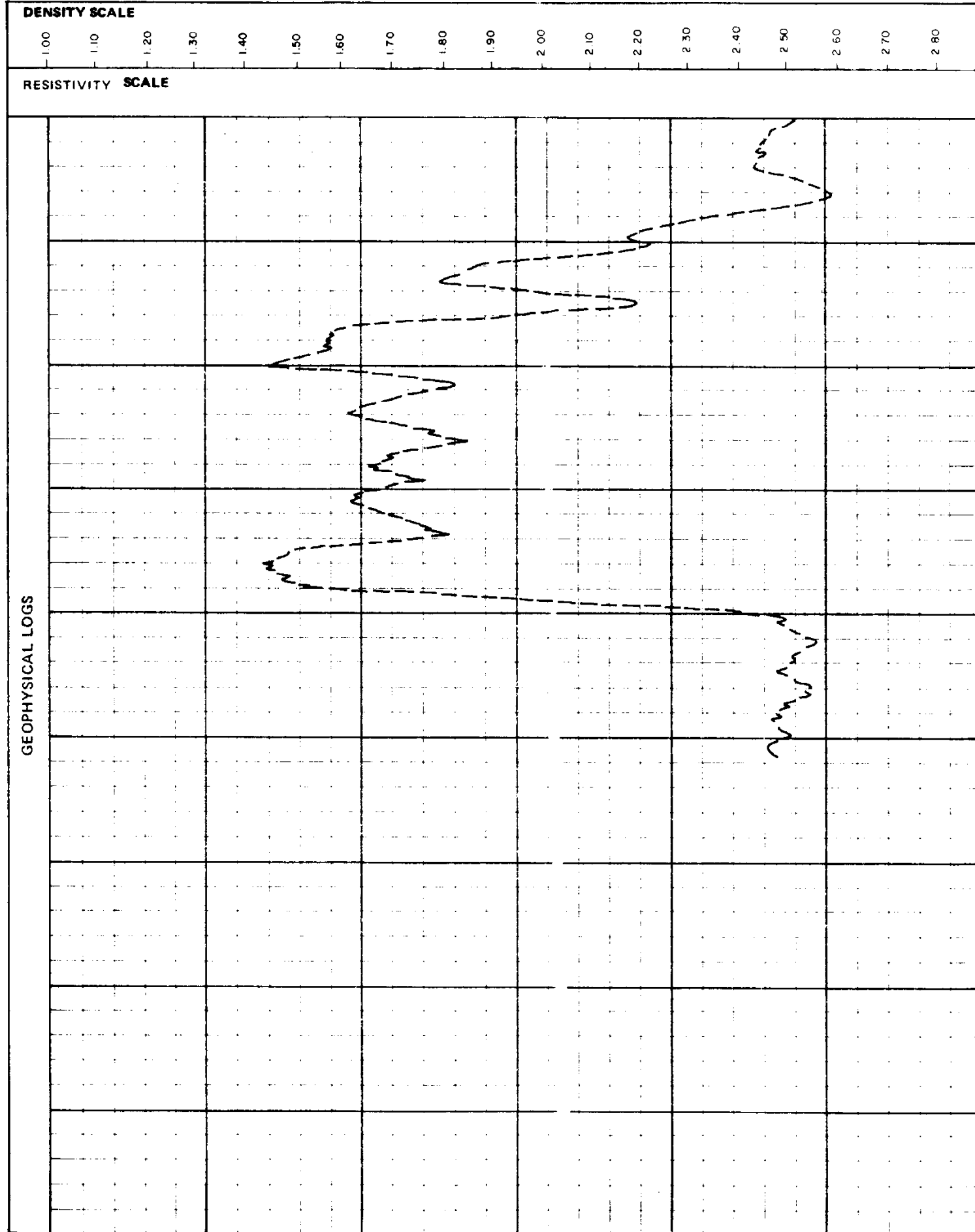
DRILL NO. DDH - 82 - 007

SEAM

C

SEAM INTERVAL

SCALE 1:40



SEAM COMP.	DEPTH metres	COAL SEAM LOG	INTERVAL		% REC	SAMPLE		PROXIMATE ANALYSIS								
			ROCK	COAL		NUMBER	COMPOS.	MOIST	ASH	VM	FC	S	CAL VAL MJ/kg	FSI		
	57.14		(0.16)													
			(0.30)													
			(0.18)													
	58.09			0.22												
			(0.24)													
	58.62		0.01	0.02	55	04743	48	1.28	37.67	5.96	55.09	20.36				
			0.14	0.02												
			0.03	0.01												
				0.17												
			(0.19)													
				0.24												
			0.05	0.02	69	04744										
			0.02	0.13												
				0.19												
	59.85			0.22												

Seam Interval (m): 57.14 - 59.85
 Seam True Thickness (Coal/Rock): 1.95/0.76
 Total: 2.71

DRILLING DEPTH	COAL SEAM LOG	INTERVAL		% REC.	SAMPLE		COMPOSITE	MINING SECTION
		ROCK	COAL		NUMBER	COMPOS.	COAL/ROCK TOTAL	COAL/ROCK TOTAL
57.14								
		(0.16)						
			(0.30)	23	04742	↑	↑	↑
		(0.18)						
58.09			(0.22)					
			0.22					
		0.03						
58.62		(0.24)		55	04743	48	1.95/0.76 2.71	1.95/0.76 2.71
		0.01	8.81					
		0.14	8.81					
		0.01	8.81					
59.85			0.17	69	04744	↓	↓	↓
			(0.19)					
		0.08	0.24					
		0.02	0.13					
			(0.19)					
			0.22					

GULF CANADA RESOURCES INC.		
<small>Coal Division</small>		
<small>CALGARY</small>	<small>ALBERTA</small>	
MT. KLAPPAN COAL PROJECT SEAM DETAIL TRUE THICKNESS DDH-82-007 SEAM C		
<small>PREPARED BY: C. L.</small>		<small>SCALE 1:40</small>
<small>APPROVED BY: J. M. D.</small>		<small>DATE: NOV. '82 DRAWING No.</small>

SEAM B

DENSITY ---

RESISTIVITY ---

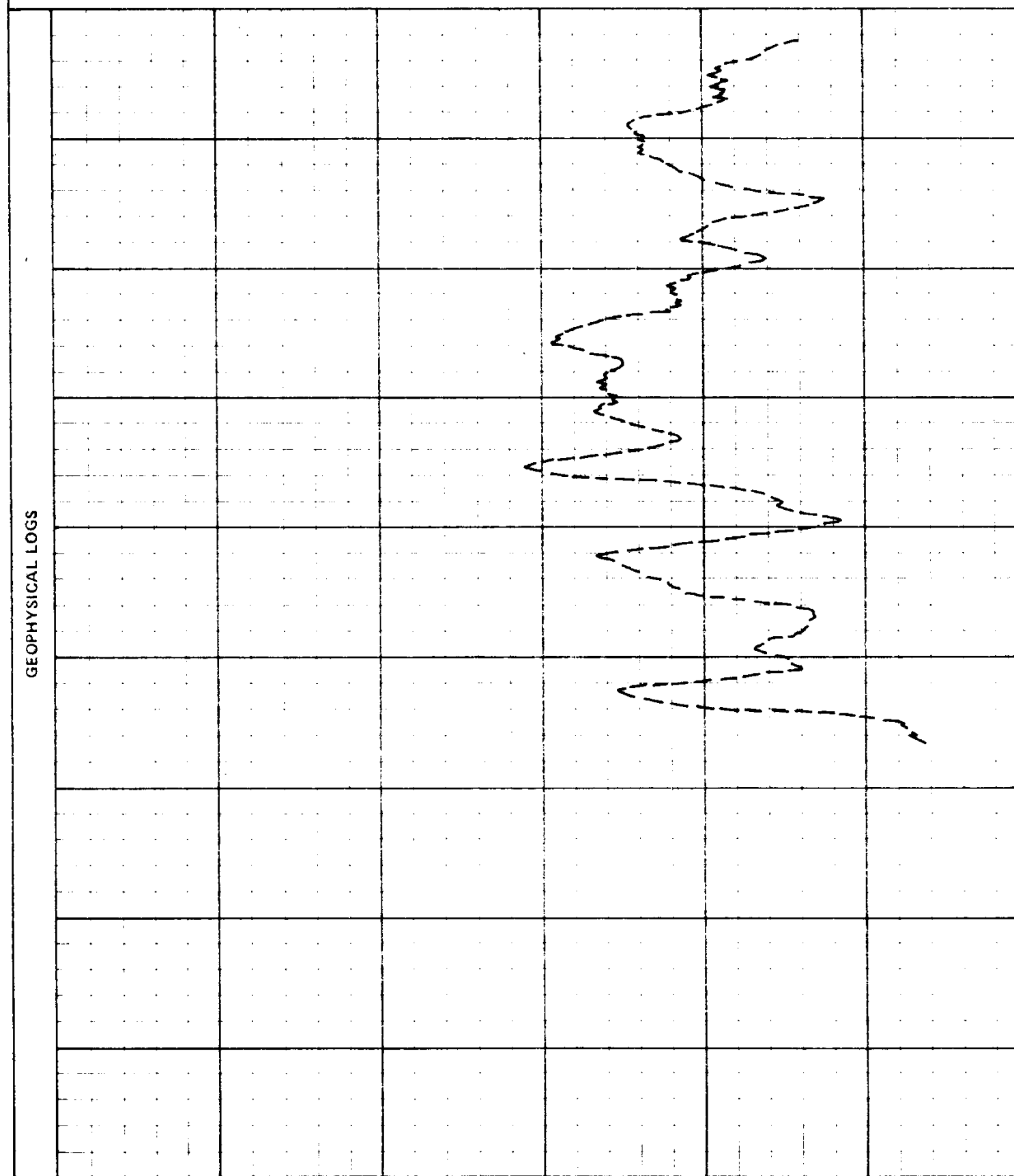
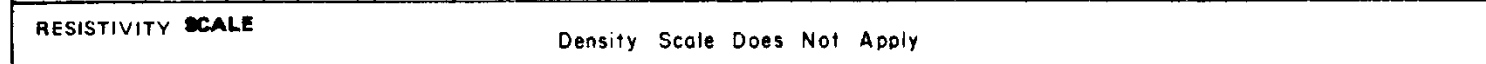
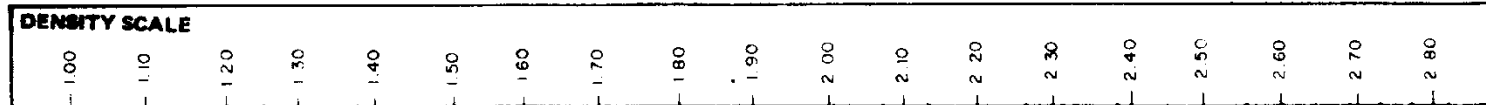
DRILL NO DDH - 82 - 007

SEAM

B

SEAM INTERVAL

Logged Through Drill Rods



SEAM COMP

DEPTH metres

COAL SEAM LOG

INTERVAL

ROCK COAL

REC.

SAMPLE

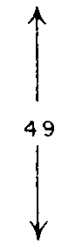
NUMBER COMPOS

PROXIMATE ANALYSIS

MOIST ASH VM FC S CAL VAL FSI

MJ/kg

23456																			
	94.85																		
					0.22	0.02													
					0.19														
					0.07	0.01													
						0.02													
					1.16														
	96.56																		
						0.15													
					0.10														
					0.02	0.19													
					0.05	0.11													
					(0.03)	0.10													
					0.02	0.02													
					0.02	0.15													
					(0.03)														
					0.10	0.08													
	97.85																		
					0.24														
					0.01	0.08													
					0.07	0.10													
					(0.06)														
					0.17														
						0.01													
					0.29														
						0.01													
					0.21														
					0.06	0.01													
					0.03	0.07													
	99.35																		
					0.01	0.10													
						0.01													



Seam Interval (m) : 96.56 - 97.85
 Seam True Thickness (Coal/Rock) : 0.80 / 0.49
 Total : 1.29

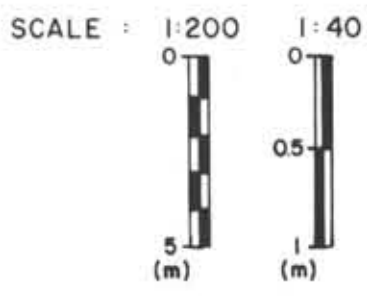
DRILLING DEPTH	COAL SEAM LOG	INTERVAL		% REC.	SAMPLE		COMPOSITE COAL/ROCK TOTAL	MINING SECTION COAL/ROCK TOTAL		
		ROCK	COAL		NUMBER	COMPOS.				
94.85										
			0.02							
		0.22								
		0.19								
		0.07								
96.56		1.16								
			0.15							
			0.10							
			0.02							
			0.19							
			0.08			95	04745	49	0.80/0.49	0.80/0.49
			0.03							
			0.09							
			0.03							
			0.02							
97.85			0.15							
			0.10							
			0.02							
			0.24							
			0.01							
99.35			0.10							
			0.06							
			0.10							
			0.17							
			0.01							
			0.29							
			0.01							
			0.21							
			0.02							
			0.03							
	0.01									

GULF CANADA RESOURCES INC.		
<small>Coal Division</small>		
<small>CALGARY</small>	<small>ALBERTA</small>	
MT. KLAPPAN COAL PROJECT SEAM DETAIL TRUE THICKNESS DDH-82-007 SEAM B		
<small>PREPARED BY: C. L.</small>		<small>SCALE 1:40</small>
<small>APPROVED BY: J. M. D.</small>		<small>DATE: NOV. 82 DRAWING No.</small>

**DRILL HOLE STRIP LOG
AND
GEOPHYSICAL LOGS**

**MOUNT KLAPPAN
DRILL HOLE LOG
DDH 82-007**

710 ~~815~~



NORTHING: 6347475 N
EASTING: 504420E

INCLINATION: 70°
BEARING: 005°

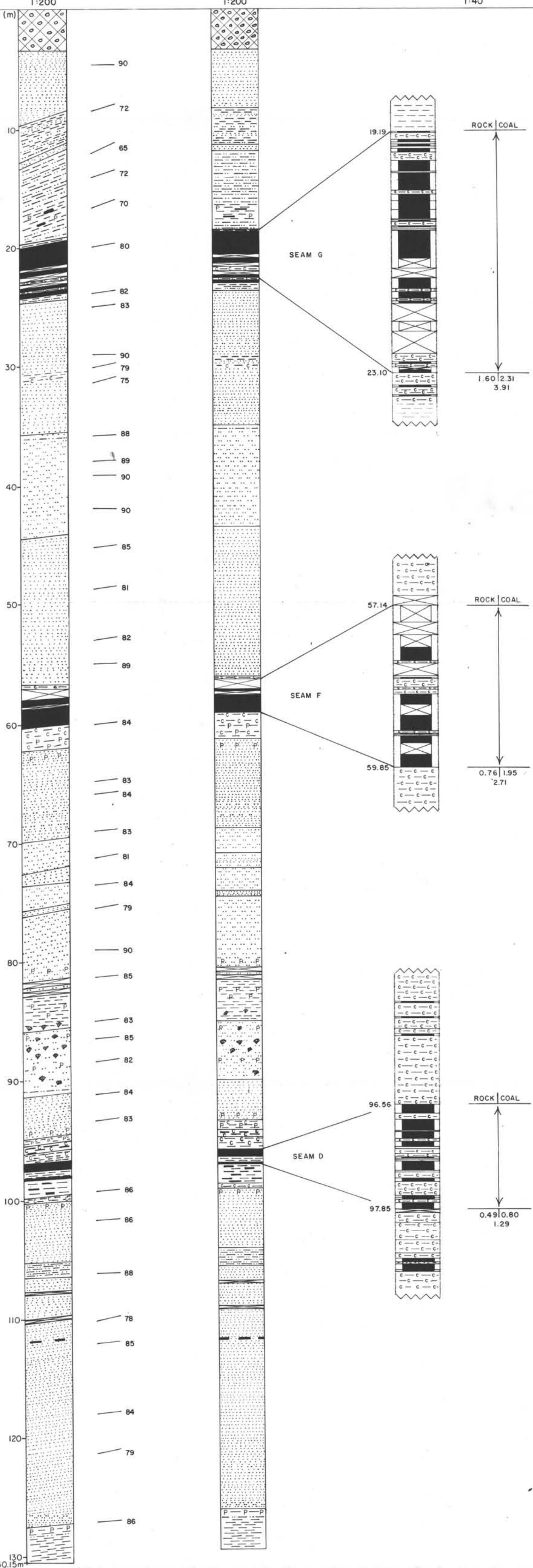
LITHOLOGIC SYMBOLS

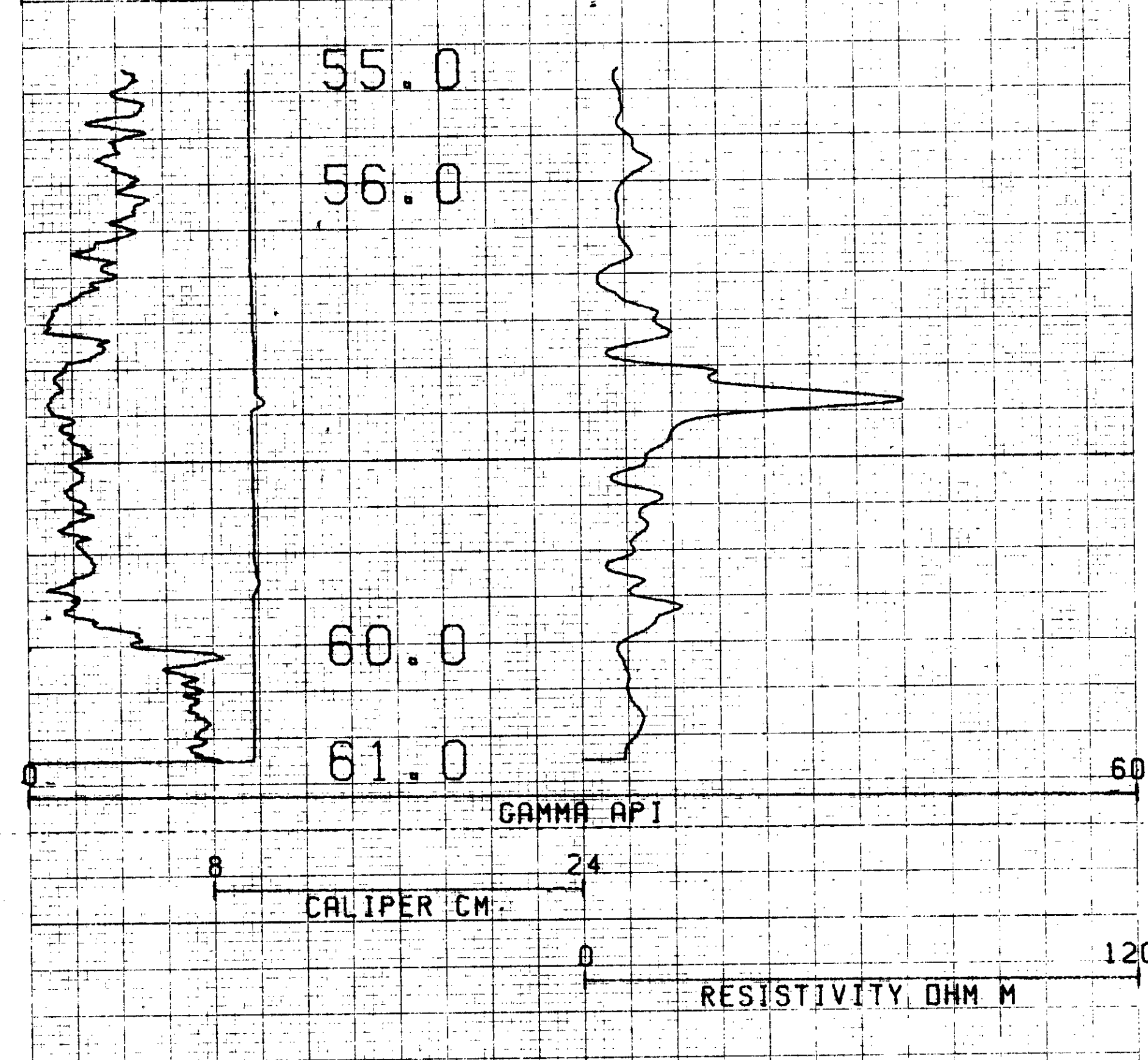
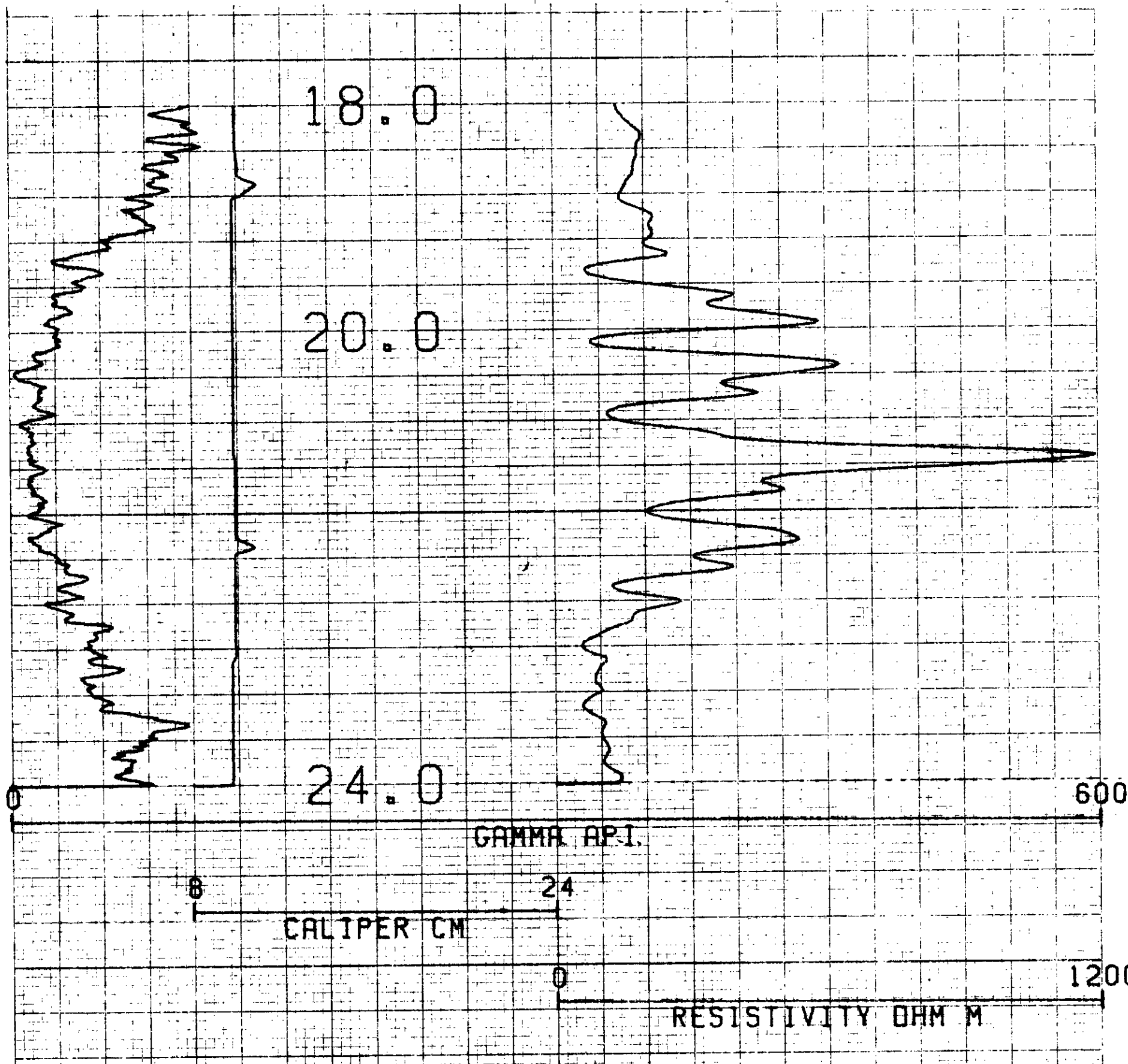
	CONGLOMERATE		PEBBLY SANDSTONE
	SANDSTONE		MUDSTONE, CLAYSTONE
	CARBONACEOUS		BENTONITE
	SILTSTONE		PYRITE
	COAL		CORE LOSS
	COAL - THIN BEDS		PLANT FOSSIL
	OVERBURDEN		SHELL FOSSIL
	QUARTZ		

APPARENT THICKNESS
1:200

TRUE THICKNESS
1:200

SEAM DETAIL
1:40



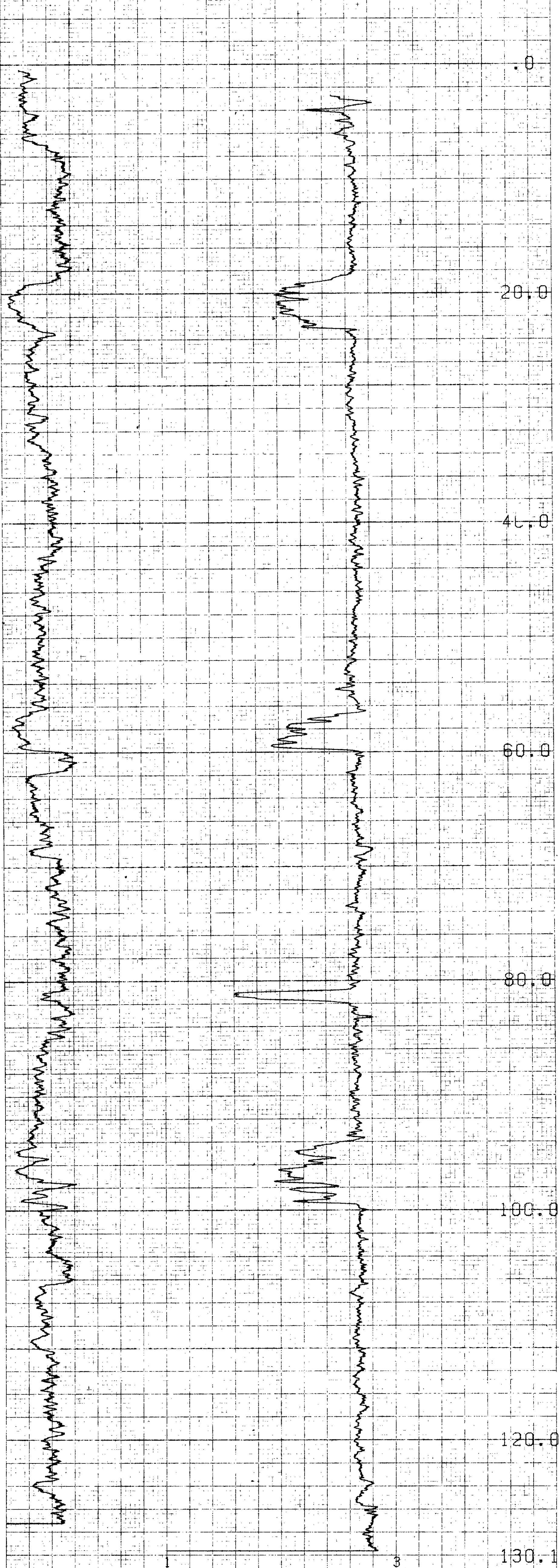


COMPU-LOG V8L2 PLOT 09-06-82

710

DDH-82-007
GULF CANADA RES. INC
KLAPPAN MTN.

HOLE DIAMETER = 09.8
 PROBE # 9030A - 406
 SENSOR #4 CAL STD CPS = 6588
 SENSOR #4 CAL RUN CPS = 4000
 SENSOR #4 CAL BIAS = 28
 DATA V8L2#A TRUCK # P823
 D. BOMBACK APPL. #152 LT



COMPU-LOG V8L2 PLOT 09-06-82

DDH-82-007
GULF CANADA RES. INC
KLAPPAN MTN.

HOLE DIAMETER : 09.6
 PROBE # 9030A - 406
 SENSOR #4 CAL STD CPS = 6588
 SENSOR #4 CAL RUN CPS = 4000
 SENSOR #4 CAL BIAS = 28
 DATA V8L2*# TRUCK # P829
 D. BOMBACK APPL.#2030L1

710
~~685~~

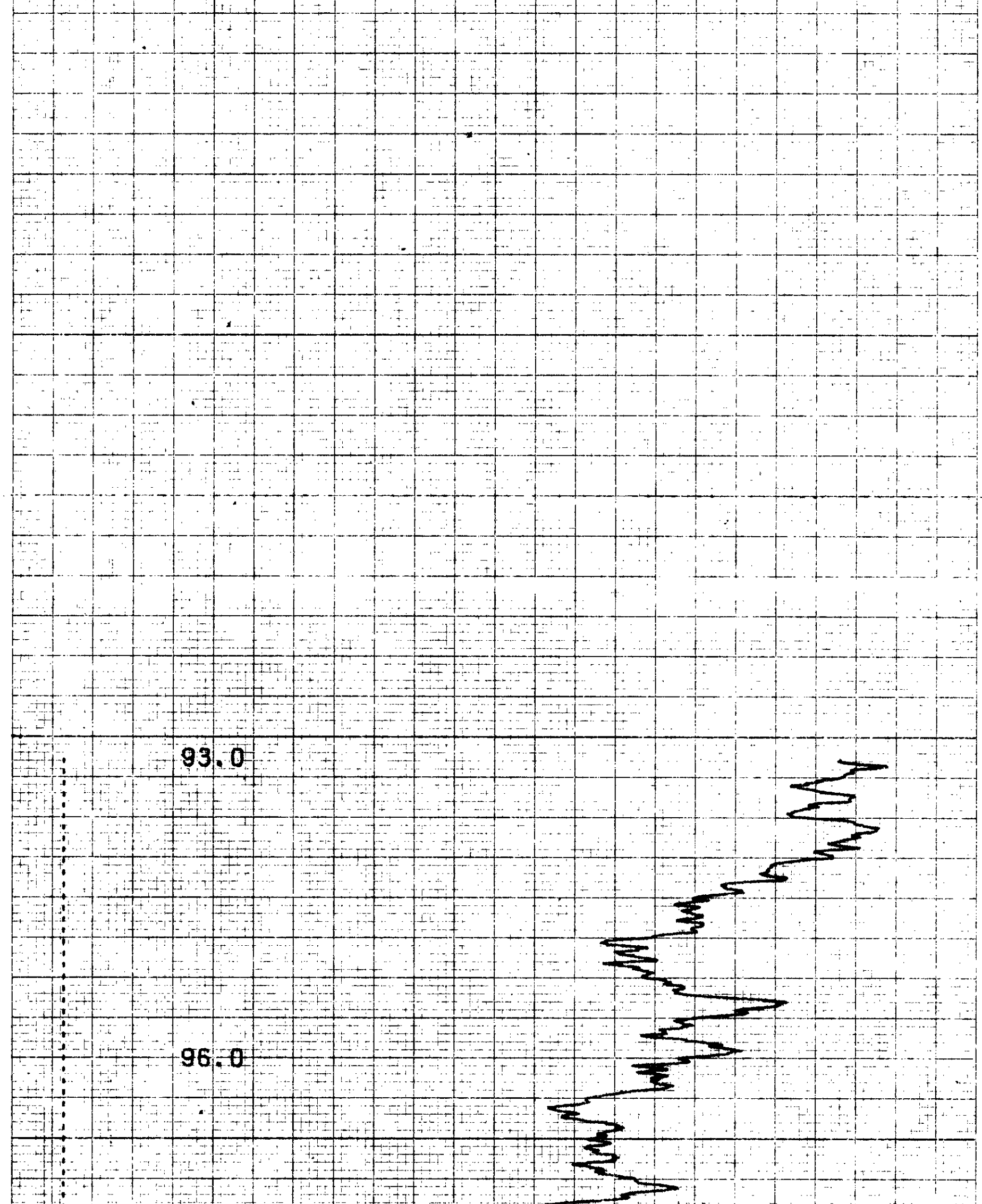
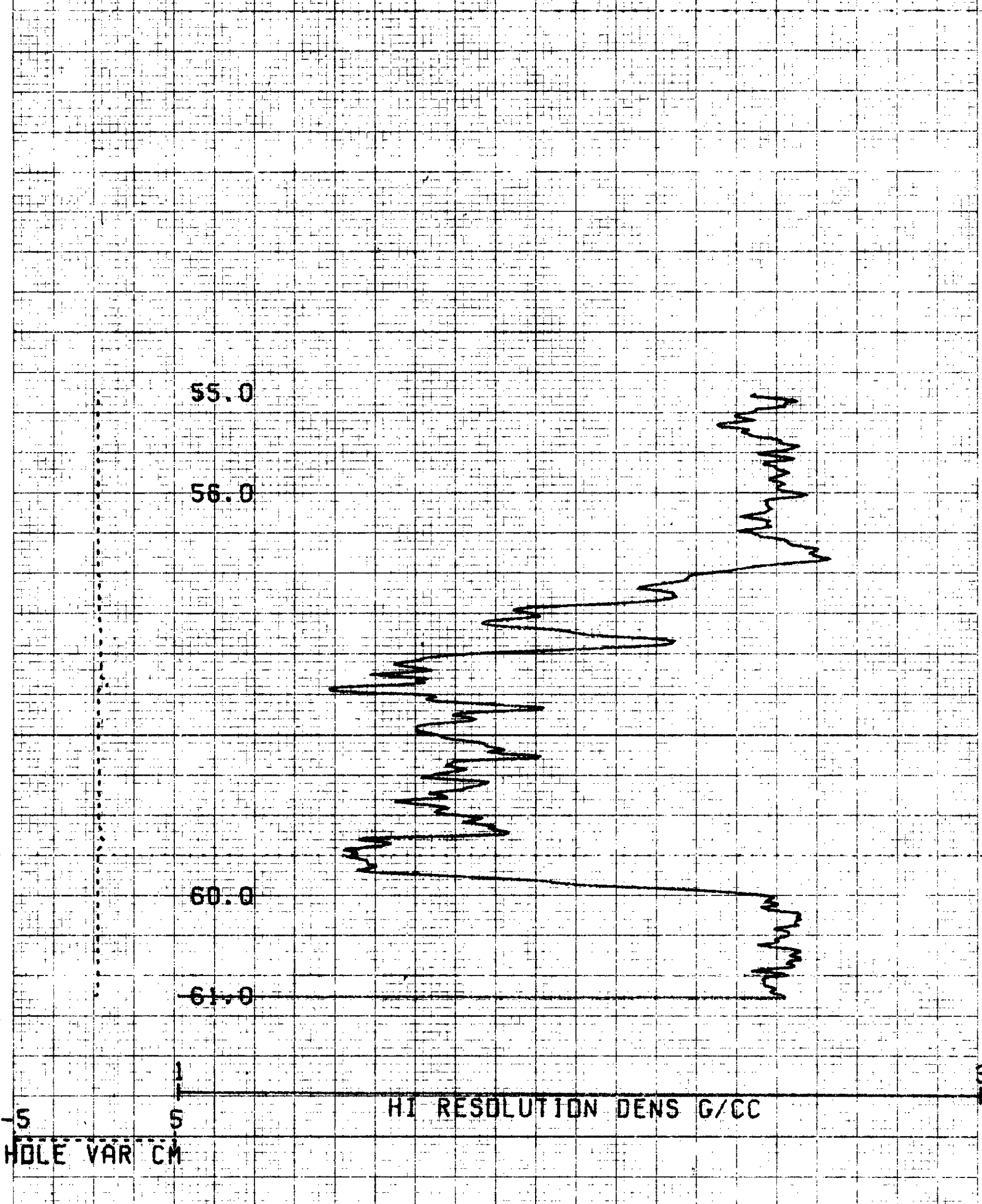
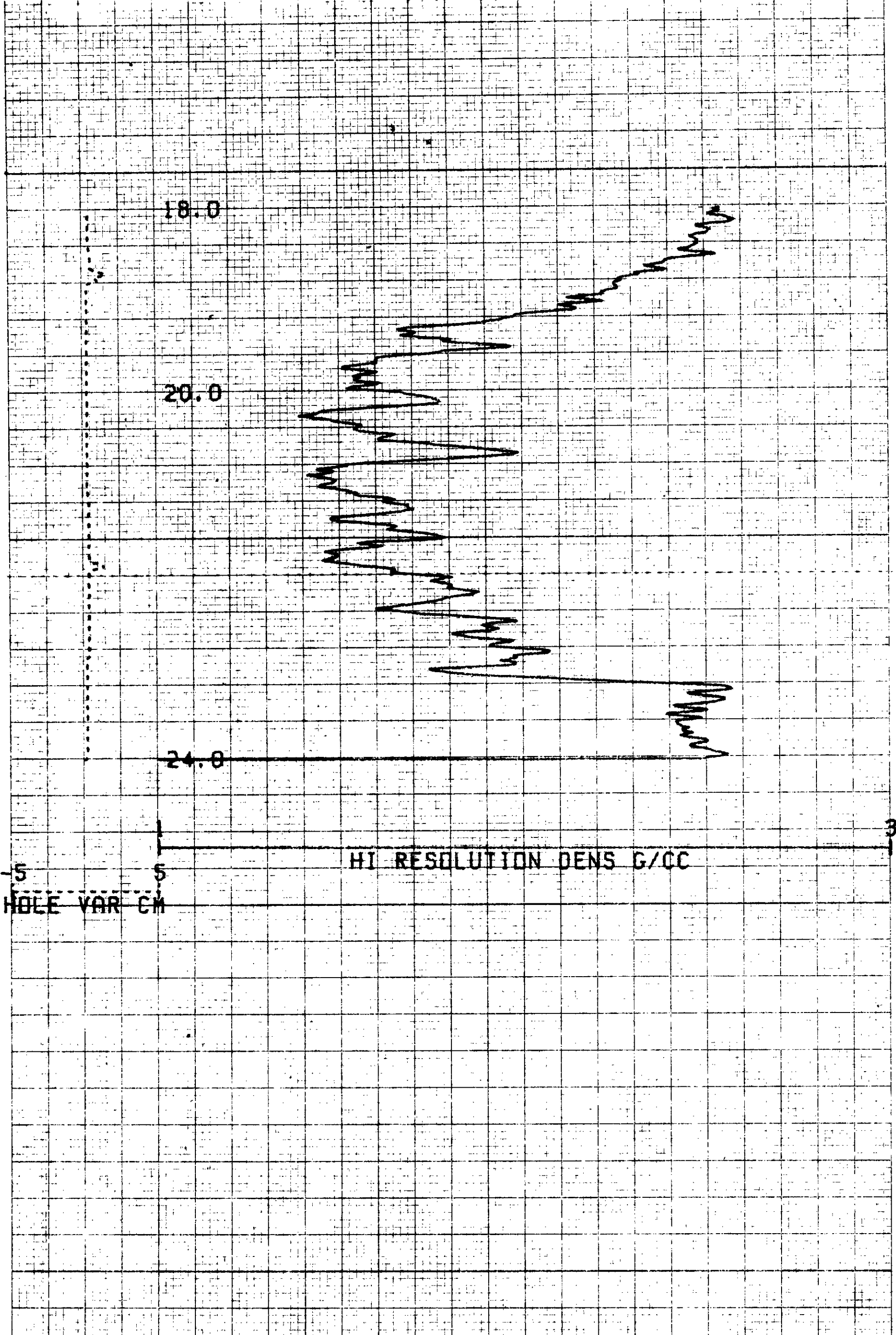
GR - Mt Klappan 84(3) B

143

147

146

145



COMPU-LING V8L3 PLOT 09-06-82

DDH-82-007

GULF CANADA RES. INC

KLAPPAN MTN.

HOLE DIAMETER : 09.6

PROBE # 8030A - 406

SENSOR #1 CAL STD CPS = 6588

SENSOR #1 CAL RUN CPS = 4000

SENSOR #1 CAL BIAS = 28

DATA V8L2#A TRUCK # P823

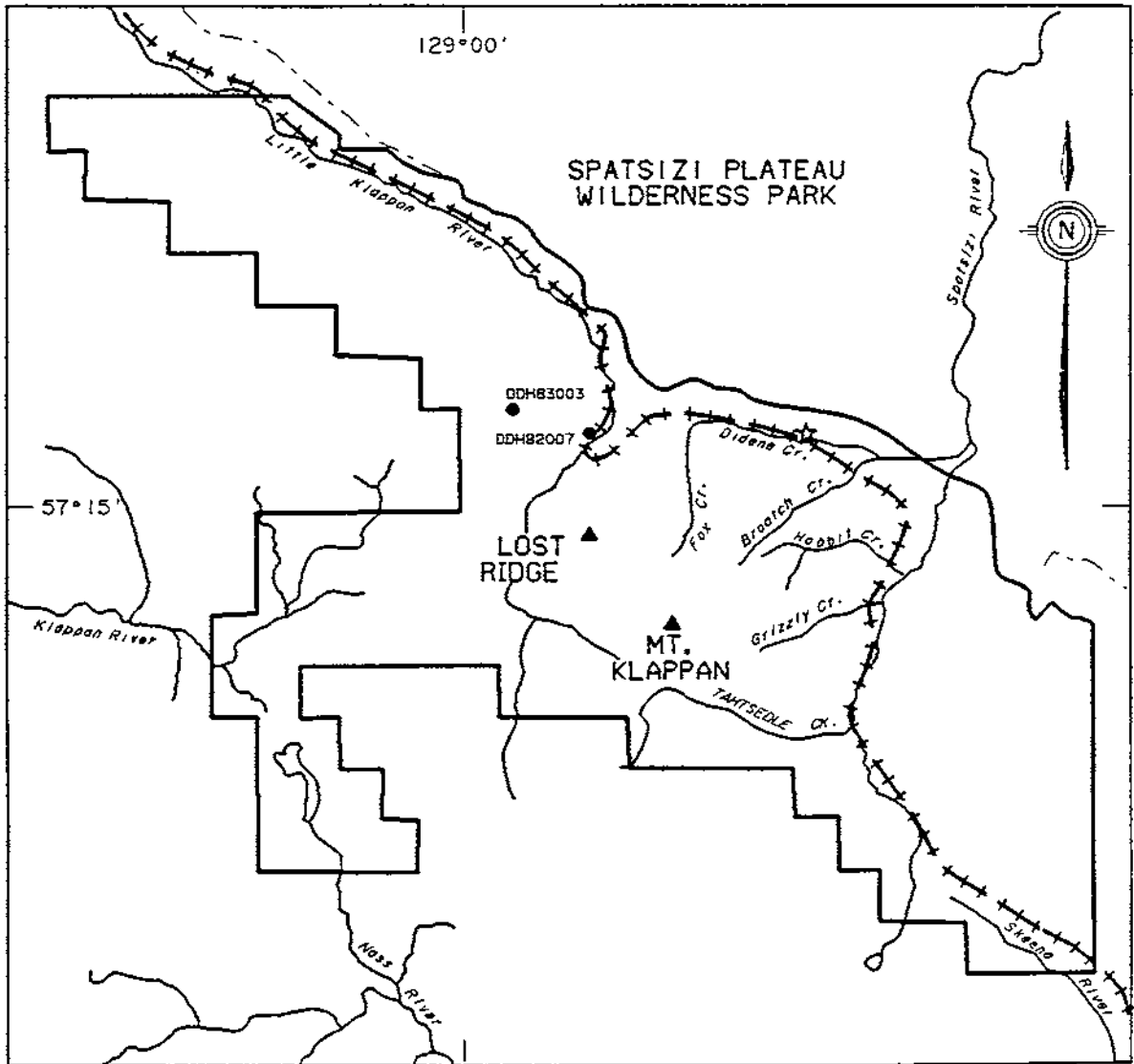
O. OMBACK APPL. #1 TN

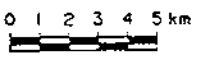

~~710~~
710

* Bottom Zone Logged Inside Drill Pipe

KPNSSDDH 83003

**MOUNT KLAPPAN COAL PROPERTY
DRILL HOLE LOCATIONS
SUMMIT - NASS - SKEENA AREAS**



<p>LEGEND</p> <ul style="list-style-type: none"> ---+---+---+---+---+ PREPARED RAIL BED - - - - - PROVINCIAL PARK BOUNDARY ● HQ DIAMOND DRILL HOLE - 1983, 1982 ———— LICENCE AREA ★ DIDENE CREEK CAMP 	<p>SCALE</p> <p style="text-align: center;">0 1 2 3 4 5 km</p>  <p style="text-align: right; font-size: small;">GULF CANADA RESOURCES INC. 06/12/84</p> 
---	---

- DATA SOURCE SUMMARY -

DATA SOURCE - KPSSDDH83003

DATE - 12/03/84

- HISTORY -

START DATE - 08/12/83

END DATE - 08/18/83

CONTRACTOR - J.T. THOMAS

GEOLOGIST - S. MCKENZIE

OPERATOR - G.C.R.I.

SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC

ELEVATION - 1825.00

LICENCE/LEASE NUMBER - 7426

ZONE - 9

NORTHING - 6349585.00

EASTING - 501657.00

LATITUDE - 571728

LONGITUDE - 1285821

- ORIENTATION -

LENGTH - 192.60

CORE SIZE - 0.0

CEMENT -

PLUG -

PIEZ -

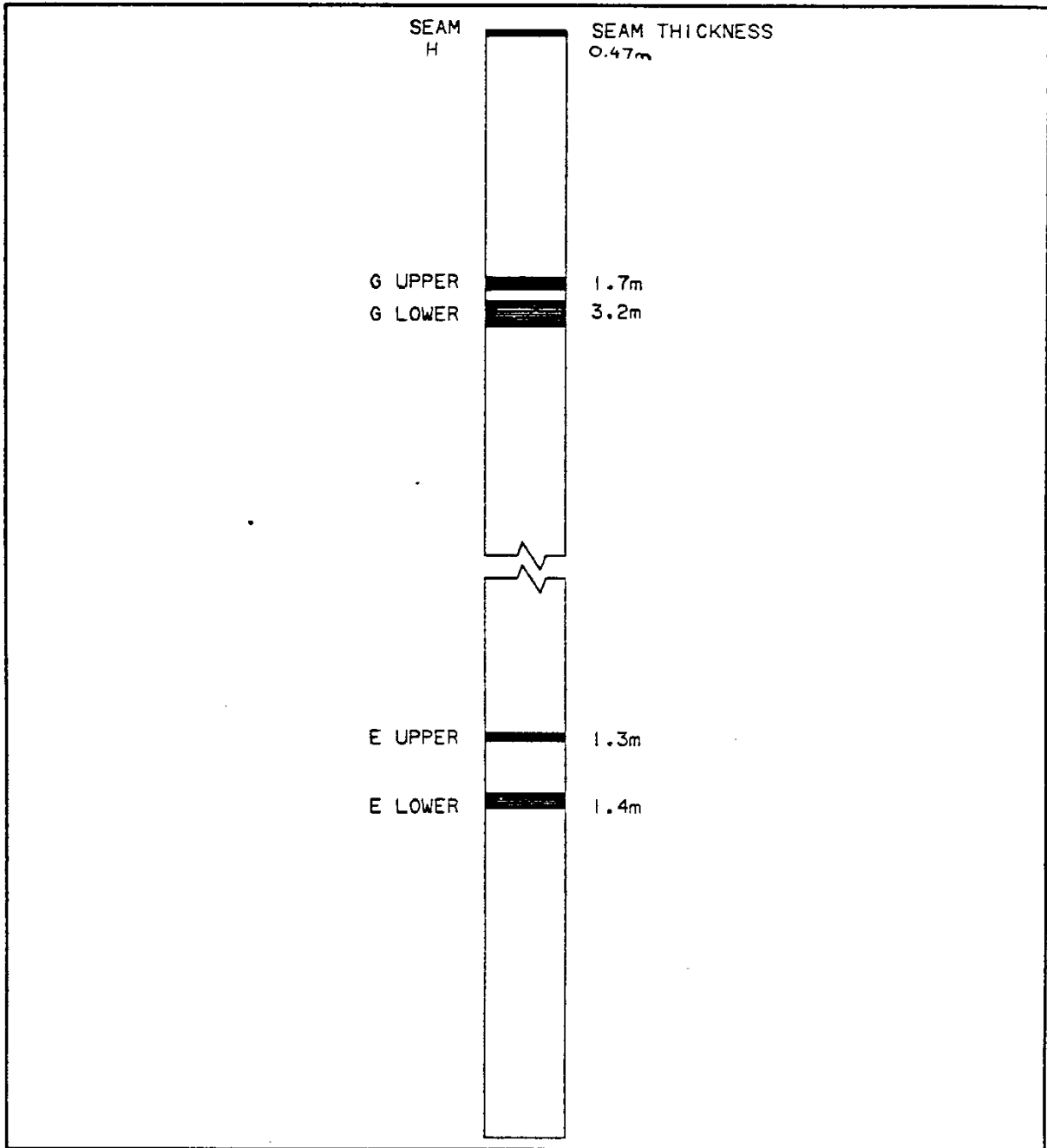
INCLINATION - 60.0

AZIMUTH - 230.0

CASING DEPTH (M) - 5.50
AQUIFER DEPTHS (M) - 0.00
0.00
LOST CIRC. DEPTHS (M) - 0.00
0.00

*** NOTE *** 0 INDICATES NO VALUE

MT. KLAPPAN COAL PROPERTY
1983 DIAMOND DRILL HOLE
DDH83003



SCALE: 1:1000

GULF CANADA RESOURCES INC.
09/03/84



DRILL HOLE
LITHOLOGIC DESCRIPTION

1

84/03/11

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: 55 DATA SOURCE: DOM83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	5.50	5.50			OVERBURDEN	YBRKN CASING TO 5.50 M
	5.50	5.67	0.17			MUDSTONE	CARB. WEATH. BLK. BRKN WEATHERED ROOF ROCK OR ROCK SPLIT WITHIN COAL SEAM, UPPER CONTACT OF THE COAL ZONE PROBABLY NOT REACHED
	5.67	7.21	1.54			ROCK LOSS	
	7.21	7.35	0.14			COAL	C-3. DK. BLK. BRKN
	7.35	7.39	0.04			COAL	C-4. M. BLK
	7.39	7.42	0.03			COAL	C-3. DK. BLK. BRKN

* DENOTES MEASURED BCA

84/03/11

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: 55 DATA SOURCE: DOM83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	7.42	7.48	0.06			COAL	C-2. DK. BLK. BRKN
	7.48	7.55	0.07			COAL	C-4. M. BLK. BRKN
	7.55	7.68	0.13			COAL	C-6. M. BLK. BRKN
	7.68	7.70	0.02			MUDSTONE	CARB. DK. BLK. V. THIN. SLD INCLUDES 1 CM. QUARTZ BAND PARALLEL TO THE BEDDING PLANE QUARTZ IS COARSELY CRYSTALLINE WITH CRYSTALS ELONGATE PERPENDICULAR TO THE BEDDING PLANE
	7.70	8.20	0.50			SANDSTONE	F.FG. MOD. LT-M. GY. HAS. SLD QUARTZ OVERGROWTHS: CLAST. MINERALOGY PR. DOMINANTLY CHERT AND QUARTZ
	8.20	8.83	0.63			SANDSTONE	FG. MOD. LT-M. GY. HAS. SLD

* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 3

PROJECT: KPN BLOCK: SS DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	80	8.83	9.91	1.08		ROCK LOSS	
	80	9.91	9.97	0.06		SANDSTONE	FG.MOD.LT-M.GY.MAS.SLD DISSEMINATED PYRITE AND QUARTZ INFILLING G SUB-PARALLEL DISCONTINUOUS FRACTURES WITH NO APPARENT DISPLACEMENT.
*	80	9.97	10.37	0.40		SANDSTONE	FG.MOD.LT-M.GY.MAS.SLD
*	72	10.37	11.76	1.39		SANDSTONE	FG.MOD.LT-M.GY.MAS.BRKN IRREGULAR FRACTURES RUNNING ROUGHLY PER PENDICULAR TO BEDDING INFILLED WITH (ANKERITE)
	70	11.76	11.94	0.18		SANDSTONE	FG.MOD.LT-M.GY.MAS.SLD TWO FRACTURE SYSTEMS TRENDING 50 DEGREE S TO EACHOTHER, RELATIONSHIP TO BEDDING NOT OBSERVED. BOTH INFILLED WITH (ANKERITE)
	69	11.94	12.33	0.39		SANDSTONE	FG.MOD.LT-M.GY.MAS.YBRKN

* DENOTES MEASURED BCA

84/03/11

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 4

PROJECT: KPN BLOCK: SS DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	68	12.33	12.46	0.13		SANDSTONE	FG.MOD.LT-M.GY.MAS.YBRKN POORLY DEVELOPED LISTRIC SURFACES
	68	12.46	12.69	0.23		SANDSTONE	FG.MOD.M.GY.BRKN VERTICAL FRACTURES INFILLED WITH MINOR (ANKERITE)
	67	12.69	13.32	0.63		SANDSTONE	FG.MOD.M.GY.BRKN MINOR FRACTURES, NO INFILLING OR CEMENTATION
	66	13.32	13.41	0.09		SANDSTONE	SLTY.VFG.MOD.M.BLK.YBRKN MINOR LISTRIC SURFACES
	65	13.41	13.60	0.19		MUDSTONE	HEL.M.BLK.VTHNB.SLD OCCASIONAL SILTY MUDSTONE INTERBEDS
*	65	13.60	13.64	0.04		SANDSTONE	VFG.MOD.M.GY.BIOTR.BRKN MINOR HORIZONTAL BIOTURBATION AT TOP OF SAND UNIT; RARE BURROWS OBSERVED AT THE BASE OF THE SEQUENCE
	66	13.64	13.79	0.15		MUDSTONE	SLTY.MOD.M-DK.GY.VTHNB.SLD MINOR LISTRIC SURFACES AT TOP OF THE UNIT IT BECOMES GRADUALLY SILTIER IN THE MID DLE

* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 5

PROJECT: KPN BLOCK: S5 DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 68	13.79	13.84	0.05			SANDSTONE	FG.MOD.M.GY.VTHNB.XBDG.BRKN
66	13.84	13.86	0.02			MUDSTONE	M.BLK.VTHNB.BIOTR.BRKN LISTRIC SURFACES AT THE TOP OF THE UNIT ; HORIZONTAL BURROWS ARE VISIBLE AT THE BASAL CONTACT
64	13.86	13.92	0.06			SANDSTONE	VFG.M.GY.VTHNB.SLD
* 57	13.92	14.13	0.21			MUDSTONE	SLTY.LT-M.BLK.VTHNB.BIOTR.SLD MUDSTONE WITH INTERBEDS OF SILTY MUDSTO NE; HORIZONTAL BURROWS ARE EVIDENT AT B EDDING CONTACTS
58	14.13	14.44	0.31			MUDSTONE	SLTY.LT-M.BLK.VTHNB.BIOTR.SLD MUDSTONE WITH INTERBEDS OF SILTY MUDSTO NE; HORIZONTAL BIOTURBATION EVIDENT AT BEDDING CONTACTS; MINOR BIOTURBATION TH ROUGHOUT UNIT.

* DENOTES MEASURED BCA

84/03/11

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 6

PROJECT: KPN BLOCK: S5 DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
59	14.44	14.61	0.17			MUDSTONE	DK.GY.VBRKN FRACTURED; IRREGULAR FRACTURES INFILLED WITH ANKERITE; PLANAR LISTRIC SURF ACES AT THE BASAL CONTACT
60	14.61	14.94	0.33			MUDSTONE	SLTY.DK.GY.BRKN
61	14.94	15.29	0.35			MUDSTONE	SLTY.M.GY.SSD.VBRKN IRREGULAR FRACTURES INFILLED WITH ANK ERITE
62	15.29	15.81	0.52			MUDSTONE	SLTY.M.GY.BRKN UNIT BECOMES SILTIER TOWARDS THE BASE
63	15.81	15.88	0.07			MUDSTONE	CLYY.M.GY.VBRKN "SOAPY" FEEL TO MUDSTONE
64	15.88	16.18	0.30			MUDSTONE	SLTY.M.GY.SLD MINOR FRACTURES WITH MINOR INFILLING WI TH ANKERITE
64	16.18	16.27	0.09			MUDSTONE	SLTY.DK.GY.VBRKN FRACTURED AND SHEARED; LISTRIC SURFACES DEVELOPED OBLIQUELY TO BEDDING PLANE

* DENOTES MEASURED BCA

PROJECT: KPH BLOCK: S5 DATA SOURCE: D0H83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	16.27	16.80	0.53			MUDSTONE	DK.GY.BRKN MINOR IRREGULAR FRACTURES INFILLED WITH (ANKERITE)
	16.80	16.91	0.11			MUDSTONE	LT.BLK.VBRKN (ANKERITE) LINING LISTRIC SURFACES
	16.91	17.59	0.68			MUDSTONE	SLTY.DK.GY.BRKN MINOR FRACTURES INFILLED WITH (ANKERIT E)
*	17.59	18.79	1.20			MUDSTONE	SLTY.DK.GY.VBRKN OCCASIONAL SILTY MUDSTONE BEDS WITH MIN OR BIOTUBATION CAUSED BY HORIZONTAL BU RRONING
	18.79	19.90	1.11			SANDSTONE	FG.MOD.LT-M.GY.THNB.BRKN MINOR SILTY MUDSTONE INTERBEDS
	19.90	19.92	0.02			MUDSTONE	DK.GY.THNB.BRKN MINOR HORIZONTAL BURROWS; SUB-PARALLEL CONTINUOUS MUDSTONE LAMINATIONS WITH IN TERBEDDED FINE GRAINED LIGHT GREY SANDS TONE BEDS
	19.92	20.17	0.25			SANDSTONE	FG.MOD.M.GY.BIOTR.SLD MINOR HORIZONTAL BURROWS APPARENT IN TH IN MUDSTONE INTERBEDS

* DENOTES MEASURED BCA

PROJECT: KPH BLOCK: S5 DATA SOURCE: D0H83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
*	20.17	20.32	0.15			SANDSTONE	YFG.MOD.M-DK.GY.BIOTR.SLD THIN SUB-PARALLEL MUDSTONE INTERBEDS DI SPLAYING HORIZONTAL BURROWS
	20.32	20.70	0.38			SANDSTONE	FG.MOD.LT.GY.MAS.SLD
	20.70	21.25	0.55			SANDSTONE	FG.MOD.LT.GY.MAS.SLD
	21.25	21.36	0.11			SANDSTONE	FG.MOD.LT-M.GY.MAS.SLD MASSIVE SANDSTONE WITH OCCASIONAL SILTY SANDSTONE INTERBEDS DISPLAYING CONTINU OUS SUB-PARALLEL BEDDING
	21.36	21.36	0.02			MUDSTONE	DK.GY.THNB.BIOTR.SLD BASAL AND UPPER CONTACT SHOW MINOR HORI ZONTAL BURROWS
	21.36	21.40	0.02			SANDSTONE	FG.MOD.M.GY.BIOTR.SLD BASAL AND UPPER CONTACT DISPLAY HORIZON TAL BURROWS
	21.40	21.41	0.01			MUDSTONE	DK.GY.BIOTR.SLD PROMINANT HORIZONTAL BURROWS INFILLED W ITH LT.GREY MEDIUM GRAIN SIZED SANDSTON E

* DENOTES MEASURED BCA

84/03/11

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	DEPTH INTERVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	21.41	22.22	0.81			SANDSTONE	FG. MOD. M. GY. MAS. SLD MINOR OCCASIONAL SILTY MUDSTONE INTERBEDDED (0.3CM) THICK; MINOR PARALLEL FRACTURES INFILLED WITH (ANKERITE)
	22.22	23.12	0.90			SANDSTONE	FG. MOD. M. GY. MAS. VBRKN FRACTURE ZONE; BRECCIATED AND INFILLED WITH (ANKERITE)
*	23.12	24.34	1.22			SANDSTONE	VFG- MOD. LT-M. GY. VTHNB. SLD INTERBEDDED MUDSTONE AND VFG TO FG LIGHT GREY SANDSTONE; MINOR FRACTURES INFILLED WITH (ANKERITE)
	24.34	24.40	0.06			SANDSTONE	FG. MOD. LT-DK. GY. VTHNB. BIOTR. SLD MINOR FRACTURES INFILLED WITH (ANKERITE)
*	24.40	24.47	0.07			MUDSTONE	SLTY. MOD. M. GY. VTHNB. SLD MINOR FRACTURES INFILLED WITH (ANKERITE); BCA MEASUREMENT INCLUDES DEPOSITIONAL DTP
*	24.47	24.56	0.09			MUDSTONE	SLTY. MOD. DK. GY. VTHNB. SLD INTERBEDDED LIGHT BLACK MUDSTONE BEDS AND DARK GREY SILTY MUDSTONE BEDS; BEDDING CONTACTS ARE CONTINUOUS AND SUB-PARALLEL; MINOR FRACTURES INFILLED WITH (ANKERITE)

* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	DEPTH INTERVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	24.56	24.61	0.05			SANDSTONE	SLTY. FG. MOD. LT-DK. GY. VTHNB. BIOTR. SLD MINOR HORIZONTAL BURROWS AND SOFT SEDIMENT DEFORMATION IN INTERBEDDED LT. GREY SANDSTONE AND MEDIUM GREY MUDSTONE
	24.61	25.42	0.81			MUDSTONE	SLTY. MOD. M. GY. VTHNB. BIOTR. VBRKN MINOR HORIZONTAL BURROWS IN INTERBEDDED MUDSTONE AND LIGHT GREY SANDSTONE
*	25.42	25.71	0.29			MUDSTONE	SLTY. MOD. M. GY. VTHNB. BIOTR. SLD MINOR HORIZONTAL BURROWS; MINOR SOFT SEDIMENT DEFORMATION
	25.71	26.23	0.52			MUDSTONE	SLTY. MOD. LT-M. GY. VTHNB. BIOTR. BRKN MINOR HORIZONTAL BURROWS WITH MINOR SOFT SEDIMENT DEFORMATION; MINOR SHEAR AT BASAL CONTACT
	26.23	28.14	1.91			MUDSTONE	SLTY. MOD. LT-M. GY. VTHNB. BIOTR. BRKN MINOR FRACTURE, APPROX. 80 DEGREES TO BEDDING PLANE; MINOR HORIZONTAL BURROWS AND SOFT SEDIMENT DEFORMATION
	28.14	29.35	1.21			MUDSTONE	MOD. DK. GY. SLD RARE HORIZONTAL BURROWS; MINOR SOFT SEDIMENT DEFORMATION CREATING ISOLATED SAND LENSES

* DENOTES MEASURED BCA

84/03/11

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	74	29.35	30.68	1.33		MUDSTONE	MOD. DK. GY. SLD OCCASIONAL ISOLATED SAND LENSES DISTURBED BY MINOR HORIZONTAL BURROWING AND MINOR SOFT SEDIMENT DEFORMATION.
	75	30.68	31.19	0.51		MUDSTONE	MOD. M-DK. GY. BRKN RARE HORIZONTAL BURROWS AND SOFT SEDIMENT DEFORMATION; OCCASIONAL SILTY MUDSTONE BEDS 0.5 TO 2.5 CM THICK
*	75	31.19	34.02	2.83		MUDSTONE	MOD. M. GY. SLD RARE HORIZONTAL BURROWS AND SOFT SEDIMENT DEFORMATION; OCCASIONAL SILTY MUDSTONE BEDS WITH DISTINCT CONTACTS; OCCASIONAL VFG SANDSTONE BEDS OCCURRING AS TRUNCATED ISOLATED OSCILLATION RIPPLE MARKS DISPLAYING RIPPLE CROSS LAMINATION INDICATING TOPS UP
	76	34.02	34.07	0.05		SANDSTONE	FG. M. GY. LAM. BYOTR. SLD SINGLE VERTICAL BURROW CAUSING CROSS LAMINATION INDICATING TOPS UP; PYRITIZATION OF RARE HORIZONTAL BURROW
	76	34.07	34.14	0.07		SANDSTONE	FG. M-DK. GY. LAM. SLD MINOR SILTY MUDSTONE BEDS
	76	34.14	34.60	0.46		MUDSTONE	M-DK. GY. LAM. SLD

* DENOTES MEASURED BCA

84/03/11

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	76	34.60	34.61	0.01		MUDSTONE	PYR. M-DK. GY. LAM. SLD PYRITE CONCRETIONS
	76	34.61	36.88	2.27		MUDSTONE	M-DK. GY. SLD OCCASIONAL SILTY MUDSTONE BEDS AND VFG SANDSTONE BEDS SOFT SEDIMENT DEFORMATION DISPLAYED AT CONTACTS
	77	36.88	38.49	1.61		MUDSTONE	M-DK. GY. SLD OCCASIONAL SILTY MUDSTONE BEDS DISCONTINUOUS DUE TO SOFT SEDIMENT DEFORMATION
	78	38.49	39.88	1.39		MUDSTONE	DK. GY. MAS. BRKN RARE SILTY MUDSTONE BEDS
	78	39.88	40.21	0.33		MUDSTONE	DK. GY. MAS. BRKN
	78	40.21	40.30	0.09		MUDSTONE	SLTY. DK. GY. MAS. BRKN SHEARED. MINOR LISTRIC SURFACES
	78	40.30	40.37	0.07	06373 G	COAL LOSS	UPPER
	79	40.37	40.64	0.27	06373 G	COAL	UPPER
	79	40.64	40.77	0.13	06373 G	MUDSTONE	UPPER
							CARB. M-DK. GY. SLD CARBONACEOUS STRINGERS

* DENOTES MEASURED BCA

84/03/11

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPM BLOCK: SS DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	79	40.77	40.79	0.02	06373 G	UPPER COAL	C-3.M.GY.BRKN
	79	40.79	40.83	0.04	06373 G	UPPER COAL	C-4.M.GY.YBRKN
	79	40.83	40.93	0.10	06373 G	UPPER MUDSTONE	CARB.M.GY.SLD CARBONACEOUS STRINGERS
	79	40.93	41.18	0.25	06373 G	UPPER ROCK LOSS	
	79	41.18	41.24	0.06	06373 G	UPPER COAL	C-4.M.GY.PWRD
	79	41.24	41.65	0.41	06373 G	UPPER COAL LOSS	
	79	41.65	41.85	0.20	06373 G	UPPER ROCK LOSS	
	79	41.85	42.05	0.20	06373 G	UPPER COAL LOSS	
	79	42.05	42.62	0.57		MUDSTONE	M.GY.SLD RARE CARBONACEOUS STRINGERS
	80	42.62	43.78	1.16		MUDSTONE	M.GY.SLD RARE CARBONACEOUS STRINGERS; MINOR PYRITE

* DENOTES MEASURED BCA

84/03/11

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPM BLOCK: SS DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	80	43.78	43.90	0.12		MUDSTONE	CLYY.LI-M.GY.SLD RARE CARBONACEOUS STRINGERS WITH CONTORTED BEDDING
	80	43.90	44.80	0.90		ROCK LOSS	
	81	44.80	45.00	0.20	06374 G	LOWER COAL LOSS	
	81	45.00	45.07	0.07	06374 G	LOWER COAL	C-3.M.GY.SLD
	81	45.07	45.09	0.02	06374 G	LOWER COAL	C-3.M.GY.SLD PLANAR, 0.5 CM THICK, ANKERITE; INFILTRATING FRACTURE SUBPARALLEL TO BEDDING
	81	45.09	45.11	0.02	06374 G	LOWER ROCK LOSS	
	81	45.11	45.13	0.02	06374 G	LOWER MUDSTONE	CARB.M.GY.SLD MINOR CARBONACEOUS STRINGERS
	81	45.13	45.23	0.10	06374 G	LOWER COAL	C-2.M.GY.SHRD
	81	45.23	45.25	0.02	06374 G	LOWER COAL	C-4.M.GY.BRKN

* DENOTES MEASURED BCA

84/03/11

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
81	45.25	45.30	0.05	06374	G LOWER	COAL	C-3.M.GY.BRKN
81	45.30	45.32	0.02	06374	G LOWER	COAL	C-4.M.GY.BRKN
81	45.32	45.39	0.07	06374	G LOWER	COAL	C-2.M.GY.BRKN
81	45.39	45.50	0.11	06374	G LOWER	ROCK LOSS	
81	45.50	45.74	0.24	06374	G LOWER	MUDSTONE	CARB.M.GY.SLD CARBONACEOUS STRINGERS
81	45.74	45.80	0.06	06374	G LOWER	COAL	C-3.M.GY.BRKN
81	45.80	45.98	0.18	06374	G LOWER	COAL	C-2.M.GY.BRKN
81	45.98	46.00	0.02	06374	G LOWER	COAL	C-3.M.GY.BRKN
81	46.00	46.05	0.05	06374	G LOWER	COAL LOSS	
81	46.05	46.10	0.05	06374	G LOWER	ROCK LOSS	
81	46.10	46.19	0.09	06374	G LOWER	MUDSTONE	LT-M.GY.BRKN

* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
81	46.19	46.38	0.19	06374	G LOWER	COAL	C-3.M.GY.SHRD
81	46.38	46.44	0.06	06374	G LOWER	MUDSTONE	CARB.M.GY.SLD
81	46.44	46.56	0.12	06374	G LOWER	ROCK LOSS	
81	46.56	46.67	0.11	06374	G LOWER	COAL	C-5.M.GY.BRKN
81	46.67	46.89	0.22	06374	G LOWER	COAL	C-2.M.GY.SHRD
81	46.89	46.92	0.03	06374	G LOWER	COAL	C-5.M.GY.BRKN
81	46.92	46.95	0.03	06374	G LOWER	COAL	C-3.M.GY.BRKN
81	46.95	47.00	0.05	06374	G LOWER	COAL	C-5.M.GY.BRKN
82	47.00	47.40	0.40	06374	G LOWER	ROCK LOSS	
82	47.40	47.45	0.05	06374	G LOWER	MUDSTONE	M.GY.BRKN
82	47.45	47.46	0.01	06374	G LOWER	COAL	C-2.M.GY.BRKN

* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	47.46	47.49	0.03	06374	G LOHER	MUDSTONE	M.GY.BRKN
	47.49	47.53	0.04	06374	G LOHER	COAL	C-2.M.GY.BRKN
	47.53	47.55	0.02	06374	G LOHER	COAL	C-5.M.GY.SHRD
	47.55	47.63	0.08	06374	G LOHER	COAL	C-3.M.GY.BRKN
	47.63	47.71	0.08	06374	G LOHER	MUDSTONE	M.GY.BRKN MINOR CARBONACEOUS STRINGERS
	47.71	47.84	0.13	06374	G LOHER	COAL	C-3.M.GY.BRKN
	47.84	48.00	0.16	06374	G LOHER	COAL LOSS	
*	48.00	48.42	0.42			MUDSTONE	SLTY.M.GY.BRKN OCCASIONAL SILTY MUDSTONE BEDS FINING UP WARDS INTO MUDSTONE CYCLES VARY FROM 1 .0 CM TO 4.0 CM IN THICKNESS
	48.42	48.78	0.36			SANDSTONE	VFG.LY-M.GY.MAS.BRKN ARGILLACEOUS

* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	48.78	49.42	0.64			SANDSTONE	FG.M.GY.MAS.SLD THIN INTERBEDDED MUDSTONE BEDS SUBPARA LLEL AND DISCONTINUOUS, DISPLAYING RARE VERTICAL AND HORIZONTAL BURROWS
	49.42	50.55	1.13			SANDSTONE	FG.M.GY.MAS.SLD
	50.55	52.03	1.48			SANDSTONE	FG.M.GY.MAS.SLD INTERBEDDED MEDIUM GREY FINE GRAINED SA NDSTONE AND A SLIGHTLY DARKER GREY FINE GRAINED SANDSTONE
	52.03	52.73	0.70			MUDSTONE	SLTY.M-DK.GY.TMNB.BIOTR.SLD INTERBEDDED MUDSTONE AND SANDSTONE SEQU ENCE WITH VERTICAL AND HORIZONTAL BURRO MS
	52.73	53.00	0.27			MUDSTONE	SLTY.M-DK.GY.TMNB.BIOTR.SLD INTERBEDDED MUDSTONE AND SANDSTONE SEQU ENCE WITH HORIZONTAL AND VERTICAL BURRO MS
	53.00	53.51	0.51			SANDSTONE	FG.M.GY.SLD

* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	77	53.51	53.56	0.05		MUDSTONE	M.GY.SLD INTERBEDDED SANDSTONE AND MUDSTONE
	77	53.56	53.80	0.24		MUDSTONE	SLTY.H.GY.TMNB,BIOTR.SLD DISCONTINUOUS (DUE TO BURROWING) SAND STONE BEDS IN DARK GREY MUDSTONE
	76	53.80	54.45	0.65		ROCK LOSS	
	76	54.45	54.58	0.13		SANDSTONE	VFG.M.GY.SLD MINOR DISSEMINATED PYRITE
	76	54.58	55.09	0.51		SANDSTONE	FG.M.GY.SLD VERTICAL SUBPARALLEL FRACTURES INFILLED WITH (ANKERITE)
	75	55.09	55.45	0.36		SANDSTONE	VFG.PR.H.GY.BRKN
*	74	55.45	57.32	1.87		SANDSTONE	FG.M-DK.GY.VTHMB.BRKN INTERBEDDED SANDSTONE AND MUDSTONE SEQU ENCE WITH MINOR FRACTURES INFILLED WITH (ANKERITE)
	77	57.32	57.81	0.49		ROCK LOSS	

* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	78	57.81	58.42	0.61		SANDSTONE	FG.M-DK.GY.BRKN MINOR FRACTURES INFILLED WITH (ANKERITE); MINOR DARK GREY MUDSTONE INTERBEDS
*	80	58.42	59.37	0.95		SANDSTONE	FG.M.GY.BRKN MINOR FRACTURES INFILLED WITH (ANKERITE); MINOR DARK GREY MUDSTONE INTERBEDS
	79	59.37	60.22	0.85		SANDSTONE	FG.M.GY.BRKN VERY MINOR FRACTURES WITH MINOR INFILLI NG WITH (ANKERITE); MINOR DARK GREY MUD STONE INTERBEDS
	78	60.22	62.31	2.09		SANDSTONE	FG.M.GY.BRKN THICK (ANKERITE) VEINS INFILLING VERTIC AL AND HORIZONTAL FRACTURES
	78	62.31	62.82	0.51		SANDSTONE	FG.M.GY.VBRKN MODERATELY FRACTURED AND INFILLED WITH (ANKERITE)
	77	62.82	63.99	1.17		ROCK LOSS	
	77	63.99	64.21	0.22		SANDSTONE	FG.M.GY.BRKN MINOR FRACTURES INFILLED WITH (ANKERIT E)

* DENOTES MEASURED BCA

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PROJECT: KPM BLOCK: SS DATA SOURCE: DDM83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	76	64.21	64.77	0.56		SANDSTONE	FG.M.GY.BRKN MINOR FRACTURES; NO INFILLING
	76	64.77	65.73	0.96		ROCK LOSS	
	75	65.73	66.05	0.32		SANDSTONE	FG.M.GY.VBRKN FRACTURED WITH VERY MINOR SHEARING
	75	66.05	66.49	0.44		SANDSTONE	FG.M.GY.VBRKN MODERATE FRACTURING WITH (ANKERITE) INF. ILLING; FRACTURES UP TO 0.7 CM THICK
	75	66.49	66.86	0.37		SANDSTONE	FG.M.GY.SHRD MINOR FRACTURES AND SHEARS INFILLED WITH (ANKERITE)
	75	66.86	67.04	0.18		SANDSTONE	FG.M.GY.VBRKN MINOR LISTRIC SURFACES
	75	67.04	67.66	0.62		SANDSTONE	FG.M.GY.BRKN
	74	67.66	68.46	0.80		SANDSTONE	FG.M.GY.BRKN MINOR LISTRIC SURFACES
	74	68.46	68.62	0.16		SANDSTONE	VFG.M-DK.GY.SLD
	74	68.62	69.21	0.59		ROCK LOSS	

* DENOTES MEASURED BCA

PROJECT: KPM BLOCK: SS DATA SOURCE: DDM83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
*	73	69.21	70.23	1.02		SANDSTONE	SLTY.VFG.MOD.M.GY.BRKN INTERBEDDED SILTY VERY FINE GRAINED AN ARGILLACEOUS SILTSTONES; MINOR SHEARS I NFILLED WITH (ANKERITE)
	74	70.23	70.33	0.10		SANDSTONE	SLTY.VFG.MOD.M-DK.GY.VBRKN MINOR SHEARS INFILLED WITH (ANKERITE)
*	75	70.33	72.06	1.73		SANDSTONE	SLTY.VFG.MOD.M-DK.GY.BRKN MINOR SHEARS INFILLED WITH (ANKERITE) UP TO 1.0 CM THICK
*	76	72.06	74.20	2.14		MUDSTONE	SLTY.MOD.M-DK.GY.BRKN
	76	74.20	74.36	0.16		ROCK LOSS	
	76	74.36	75.30	0.94		MUDSTONE	SLTY.MOD.M-DK.GY.BRKN MINOR FRACTURES INFILLED WITH (ANKERITE)
	76	75.30	77.02	1.72		MUDSTONE	SLTY.M.GY.BRKN RARE BELEMNITE INTACT LYING IN BEDDING PLANE
	76	77.02	77.26	0.24		ROCK LOSS	

* DENOTES MEASURED BCA

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PROJECT: KPN BLOCK: 55 DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
*	76	77.26	77.96	0.70		SANDSTONE	SLTY. M. GY. BRKN
	76	77.96	78.19	0.23		SANDSTONE	FG. PR. M. GY. BRKN
	75	78.19	78.76	0.57		MUDSTONE	SLTY. M. GY. BRKN BECOMES SLIGHTLY SILTIER TOWARDS THE BA SE
	75	78.76	78.87	0.11		MUDSTONE	SLTY. M. GY. BRKN DEATH ASSEMBLAGE OF THIN SHELLED (BIVAL VES); MINOR DISSEMINATED PYRITE
*	75	78.87	79.18	0.31		SANDSTONE	SLTY. VFG. PR. M. GY. BRKN FINING UPWARDS CYCLE CONTAINING BIOCLAS TIC MATERIAL (. FRAGMENTED BIVALVES .)
	75	79.18	79.60	0.42		SANDSTONE	MG. H. GY. BRKN
	75	79.60	80.02	0.42		SANDSTONE	MG. H. GY. BRKN CONTAINS FRAGMENTED BIOCLASTIC DEBRIS

* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: 55 DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	75	80.02	80.59	0.57		SANDSTONE	VFG. LT. GY. SHRD VERY BROKEN CORE WITH PROMINENT LISTRIC SURFACES AND INTERCRYSTALLINE PORE SPA CES INFILLED WITH LANKERITE .
	76	80.59	82.74	2.15		ROCK LOSS	
	76	82.74	82.78	0.04		MUDSTONE	CARB. DK. GY. SHRD
	76	82.78	82.99	0.21		MUDSTONE	SLTY. LT. GY. BRKN
	76	82.99	84.07	1.08		ROCK LOSS	
	77	84.07	85.26	1.19		SANDSTONE	FG. M. GY. BRKN MINOR FRACTURES INFILLED WITH LANKERITE

* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDM83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	77 85.26	86.94	1.68			SANDSTONE	FG.M.GY.BRKN MINOR INTERCALATED LAMINATED MUDSTONE A ND VERY FINE GRAINED LIGHT GREY SANDSTO NE SEQUENCE
	77 86.94	87.16	0.22			ROCK LOSS	
	78 87.16	88.73	1.57			SANDSTONE	FG.PR.M.GY.BRKN
*	78 88.73	88.98	0.25			SANDSTONE	FG.PR.M.GY.BRKN
	78 88.98	89.26	0.28			SANDSTONE	FG.PR.M.GY.BRKN MINOR FRACTURES
	78 89.26	89.35	0.09			MUDSTONE	SLTY.PR.M.GY.YBRKN GROUND CORE WITH FRACTURING INFILLED WI TH (ANKERITE)
	78 89.35	89.44	0.11			MUDSTONE	SLTY.PR.M.GY.SLO FRACTURES INFILLED WITH (ANKERITE)

* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDM83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	78 89.46	89.97	0.51			ROCK LOSS	
	78 89.97	90.34	0.37			MUDSTONE	SLTY.PR.M.GY.BRKN FRACTURES INFILLED WITH (ANKERITE)
	78 90.34	90.93	0.59			MUDSTONE	SLTY.PR.M.GY.SHRD FRACTURES INFILLED WITH (ANKERITE)
	79 90.93	93.44	2.51			SILTSTONE	CLYY.PR.M.GY.BRKN MINOR FRACTURES INFILLED WITH (ANKERITE 79 GRADES DOWNWARD INTO A SILTY VFG TO FG SANDSTONE; MINOR BEDS OF DARK GREY M UDSTONE
*	79 93.44	94.40	0.96			SANDSTONE	SLTY.VFG.PR.M.GY.BRKN FRACTURED AND INFILLED WITH (ANKERITE) AT BASE: MINOR BIOTURBATION
	79 94.40	94.99	0.59			ROCK LOSS	
*	80 94.99	96.67	1.68			SANDSTONE	SLTY.VFG.PR.M.GY.BRKN MINOR BEDS OF VERY MUDDY SILTSTONE
	79 96.67	97.31	0.64			ROCK LOSS	
	79 97.31	98.32	1.01			SANDSTONE	SLTY.PR.M.GY.SSD.BRKN PYRITE CONCRETIONS; MINOR FRACTURES INF ILLED WITH (ANKERITE)

* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	96.32	98.73	0.41			ROCK LOSS	
	96.73	100.81	2.08			SANDSTONE	SLTY VFG. PR. M. GY. BRKN MINOR FRACTURES AND SHEARS (VERY LITTLE APPARENT DISPLACEMENT)
	100.81	101.06	0.25			SANDSTONE	SLTY VFG. MOD. M. GY. BRKN COARSENING UPWARDS UNIT BECOMES CLEANER TOWARDS TOP; MINOR SHEAR INFILLED WITH (ANKERITE)
	101.06	101.35	0.29			SANDSTONE	FG. MOD. M. GY. SHRD SHEARED WITH ASSOCIATED FRACTURES INFILLED WITH (ANKERITE); PROMINANT LISTRIC SURFACES
	101.35	101.63	0.28			SANDSTONE	FG. MOD. M. GY. SHRD SIMPLE SHEAR WITH PLANAR LISTRIC SURFACES APPROXIMATELY 70 DEGREES TO BEDDING PLANE
	101.63	101.82	0.19			SANDSTONE	FG. MOD. M. GY. BRKN

* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SS DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
*	101.82	103.71	1.89			SANDSTONE	FG. MOD. M. GY. BRKN INTERBEDDED MEDIUM GREY SANDSTONE AND SILTY MUDSTONE; MUDSTONE BEDS SHOW CROSS LAMINATION INDICATING TOPS UP; ZONES OF DISSEMINATED PYRITE; RARE FLAME STRUCTURES
	103.71	104.42	0.71			SANDSTONE	SLTY. FG. M. GY. SLD MINOR FRACTURE INFILLED WITH (ANKERITE)
	104.42	104.46	0.04			MUDSTONE	SLTY. MOD. LT-M. GY. SLD INTERBEDDED VERY FINE GRAINED SANDSTONE AND SILTY MUDSTONE DISPLAYING RIPPLE CROSS LAMINATION SYMMETRICAL RIPPLES
	104.46	104.63	0.17			SANDSTONE	FG. MOD. LT-M. GY
#	104.63	104.88	0.25			SANDSTONE	SLTY. FG. MOD. M. GY. SLD INTERBEDDED SANDSTONE AND MUDSTONE DISPLAYING CROSS LAMINATION WITH LOW ANGLE (1 TO 5 DEGREES) TRUNCATIONS INDICATING TOPS UP

DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: S5 DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
*	81	104.88	107.98	3.10		SANDSTONE	SLTY. FG. MOD. M. GY. SLD INTERBEDDED MUDSTONE, SANDSTONE AND SILTY MUDSTONE; CROSS LAMINATED INDICATING TOPS UP; VARYING AMOUNTS OF HORIZONTAL AND VERTICAL BURROWING; VERTICAL BURROWS VARY FROM 1.0 TO 2.5 CM IN WIDTH; MINOR SSD; SYM RIPPLES FORMING CROSS LAMINATED STRUCTURES
	80	107.98	108.36	0.38		MUDSTONE	SLTY. DK. GY. SSD. SLD MINOR SSD AT BASE; DISSEMINATED PYRITE AT BASE
	80	108.36	108.43	0.07		SANDSTONE	FG. DK. GY. BIOTR. SLD VERTICAL BURROWS (APPROXIMATELY 45 DEG REES TO BEDDING PLANE)
	79	108.43	110.84	2.41		SANDSTONE	FG. PR. M. GY. MAS. SLD RARE SHEARS INFILLED WITH (ANKERITE)
*	78	110.84	110.95	0.11		SANDSTONE	FG. PR. M. GY. MAS. SLD
	78	110.95	112.39	1.44		MUDSTONE	SLTY. PR. M-DK. GY. VTHNB. BRKN INTERBEDDED MUDSTONE AND VERY FINE GRAINED MEDIUM GREY SANDSTONE DISPLAYING LOW ANGLE CROSS LAMINATION; OCCASIONAL VERTICAL BURROW

* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: S5 DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	79	112.39	114.17	1.78		ROCK LOSS	
	79	114.17	115.09	0.92		MUDSTONE	SLTY. PR. M-DK. GY. VTHNB. BRKN INTERBEDDED VERY FINE GRAINED CLAYEY SANDSTONE AND SILTY MUDSTONE; BEDDING DISPLAYED IS SUB PARALLEL AND DISCONTINUOUS
*	80	115.09	117.95	2.86		MUDSTONE	SLTY. PR. M-DK. GY. VTHNB. SLD SILTY MUDSTONE WITH MINOR CLAYEY VFG-FG MEDIUM GREY SANDSTONE INTERBEDS
	79	117.95	118.04	0.09		MUDSTONE	SLTY. PR. M-DK. GY. VTHNB. SSD. SLD MINOR PNECONTEMPORANEOUS WITH DEPOSITION; SLUMPING IN INTERBEDDED VERY FINE GRAINED SANDSTONE AND SILTY MUDSTONE UNIT
	79	118.04	118.34	0.30		MUDSTONE	SLTY. PR. DK. GY. VTHNB. SSD. SLD SOFT SEDIMENT DEFORMATION MAY BE BIOGENIC IN NATURE; CROSS LAMINATION LOW ANGLE TRUNCATIONS; INDICATE TOPS UP

* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPM BLOCK: 55 DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	118.34	118.43	0.09			SANDSTONE	FG.M.GY.SLD
	118.43	120.06	1.63			MUDSTONE	SLTY.PR.DK.GY.VTHNB.SLD MINOR HORIZONTAL BURROWS APPROXIMATELY 1 CM. IN DIAMETER; MINOR SANDSTONE INTE RBEDS
	120.06	120.80	0.74			MUDSTONE	SLTY.PR.DK.GY.VTHNB.SLD MINOR PYRITE CONCRETIONS; MINDR SANDSTO NE INTERBEDS
	120.80	124.40	3.60			MUDSTONE	SLTY.PR.DK.GY.SSD.BRKN MINOR PYRITE CONCRETIONS
	124.40	126.17	1.77			MUDSTONE	SLTY.PR.DK.GY.SLD MINOR PYRITE CONCRETIONS
	126.17	126.58	0.41			MUDSTONE	PR.DK.GY.SLD MINOR PYRITE CONCRETIONS
	126.58	126.61	0.03			SANDSTONE	SLTY.FG.PR.M.GY.BRKN MINOR FRACTURES INFILLED WITH (ANKERIT E)
	126.61	126.78	0.17			MUDSTONE	SLTY.PR.M.GY.SLD MINOR PYRITE CONCRETIONS

* DENOTES MEASURED BCA

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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPM BLOCK: 55 DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	126.78	126.95	0.17			ROCK LOSS	
	126.95	126.98	0.03	06375	E UPPER	COAL	C-4.DK.GY.PHRD
	126.98	127.13	0.15	06375	E UPPER	COAL	C-4.DK.GY.PHRD
	127.13	127.18	0.05	06375	E UPPER	COAL	C-4.DK.GY.SHRD
	127.18	127.22	0.04	06375	E UPPER	COAL	C-1.DK.GY.SLD
	127.22	127.50	0.28	06375	E UPPER	COAL LOSS	
	127.50	127.56	0.06	06375	E UPPER	MUDSTONE	CARB.DK.GY.SLD
	127.56	127.66	0.10	06375	E UPPER	MUDSTONE	CARB.DK.GY.BRKN
	127.66	128.03	0.37	06375	E UPPER	COAL	C-2.DK.GY.BRKN MEDIUM BANDED COAL
	128.03	128.13	0.10	06375	E UPPER	COAL	C-3.DK.GY.SHRD SHEARED AND POWDERED COAL

* DENOTES MEASURED BCA

PROJECT: KPM BLOCK: 55 DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	75 128.13	128.17	0.04	06375 E	UPPER	MUDSTONE	CARB. DK. GY. BRKN MINOR FRACTURES INFILLED WITH (ANKERITE)
	75 128.17	128.24	0.07	06375 E	UPPER	COAL	C-1. DK. GY. SHRD SHEARED; THICK BANDED COAL
	75 128.24	128.36	0.12			MUDSTONE	CARB. DK. GY. BRKN MINOR FRACTURES INFILLED WITH (ANKERITE)
	75 128.36	128.61	0.25			MUDSTONE	CARB. DK. GY. SHRD WELL DEVELOPED LISTRIC SURFACES
	75 128.61	128.99	0.38			MUDSTONE	SLTY. M. GY. BRKN MINOR FRACTURES AND MINOR SHEARS. INFILL ED WITH (ANKERITE)
	75 128.99	129.56	0.57			MUDSTONE	PR. DK. GY. VTHNB. VBRKN PLANT FOSSILS (INTACT) LYING IN THE B EDDING PLANE
	74 129.56	130.10	0.54			ROCK LOSS	
*	74 130.10	131.35	1.25			MUDSTONE	PR. DK. GY. VTHNB. VBRKN PLANT FRAGMENTS (FERN-LIKE), INTACT, LYING IN BEDDING PLANE

* DENOTES MEASURED BCA

PROJECT: KPM BLOCK: 55 DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	75 131.35	132.22	0.87			ROCK LOSS	
	75 132.22	133.69	1.47			MUDSTONE	PR. DK. GY. VTHNB. BRKN PLANT FRAGMENTS (FERN-LIKE), INTACT LY ING IN THE BEDDING PLANE
	76 133.69	135.41	1.72			MUDSTONE	PR. DK. GY. VTHNB. SLD MINOR SHEARS WITH LISTRIC SURFACES
	77 135.41	136.17	0.76			MUDSTONE	PR. DK. GY. VTHNB. SLD MINOR SHEARS WITH (CHLORITE) LINING L ITRIC SURFACES; (FERN-LIKE) PLANT FRA GMENTS LYING IN THE BEDDING PLANE
	77 136.17	136.68	0.51			MUDSTONE	CARB. PR. DK. GY. VTHNB. VBRKN LISTRIC SURFACES SHEARED AND LINED WITH (CHLORITE); PYRITE CONCRETIONS
	78 136.68	137.68	1.00			ROCK LOSS	
	78 137.68	137.76	0.08	06376 E	LOWER	COAL	C-4. M. GY. BRKN MEDIUM BANDED COAL; PYRITE CLUSTERS ELO NGATE PARALLEL TO BEDDING PLANE
	78 137.76	137.84	0.08	06376 E	LOWER	MUDSTONE	CARB. M. GY. VBRKN

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: 55 DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	137.84	137.92	0.08	06376	E LOWER	COAL	C-3.M-DK.GY.SLD THIN BANDED COAL
	137.92	138.13	0.21	06376	E LOWER	COAL	C-4.PHRD
	138.13	138.16	0.03	06376	E LOWER	COAL LOSS	
	138.16	138.18	0.02	06376	E LOWER	MUDSTONE	CARB.M.GY.SLD
	138.18	138.20	0.02	06376	E LOWER	COAL	C-4.M.GY.PHRD
	138.20	138.22	0.02	06376	E LOWER	MUDSTONE	CARB.M.GY.SLD
	138.22	138.24	0.02	06376	E LOWER	MUDSTONE	CARB.M.GY.PHRD COALY FRAGMENTS
	138.24	138.27	0.03	06376	E LOWER	MUDSTONE	CARB.M.GY.BRKN CARBONACEOUS STRINGERS
	138.27	138.31	0.04	06376	E LOWER	MUDSTONE	CARB.M.GY.PHRD COALY FRAGMENTS
	138.31	138.41	0.10	06376	E LOWER	ROCK LOSS	
	138.41	138.48	0.07	06376	E LOWER	COAL LOSS	

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: 55 DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	138.48	138.72	0.24	06377	E LOWER	COAL	C-2.M.GY.BRKN
	138.72	138.92	0.20	06377	E LOWER	COAL	C-3.M.GY.PHRD
	138.92	139.00	0.08	06377	E LOWER	COAL	C-3.M.GY.BRKN
	139.00	139.10	0.10	06377	E LOWER	COAL	C-2.M.GY.SLD MEDIUM BANDED COAL
	139.10	139.30	0.20			MUDSTONE	CARB.M.GY.VTHNB.SLD PLANT FRAGMENTS IN BEDDING PLANE
*	139.30	140.58	1.28			MUDSTONE	CARB.M.GY.LAM.SLD MINOR SILTY MUDSTONE BANDS; BEDDING IS SUB PARALLEL AND DISCONTINUOUS
	140.58	141.37	0.79			MUDSTONE	SILTY.M.GY.VTHNB.VBRKN MINOR PYRITE CONCRETIONS CONCENTRATED A LONG BEDDING PLANES; MINOR PLANT FRAGME NTS ALONG BEDDING PLANE
	141.37	142.47	1.10			SANDSTONE	YFG-LT.GY.VBRKN

* DENOTES MEASURED BCA

84/03/11

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 37

PROJECT: KPN BLOCK: SS DATA SOURCE: DDHB3003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	79 142.47	143.79	1.32			ROCK LOSS	
	79 143.79	143.89	0.10			SANDSTONE	FG. PR. LT-M. GY. VTHNB. BIOTR. BRKN HORIZONTAL BURROWS
	79 143.89	144.22	0.33			SANDSTONE	VFG. PR. LT-M. GY. VTHNB. BRKN
	79 144.22	145.09	0.87			SANDSTONE	SLTY. VFG. VPR. M. GY. BRKN
	79 145.09	145.21	0.12			SANDSTONE	SLTY. VFG. PR. M. GY. VTHNB. BIOTR. BRKN SMALL HORIZONTAL BURROWS LESS THAN 0. 5 CM. IN DIAMETER
	79 145.21	145.29	0.08			SANDSTONE	FG. PR. M. GY. SLD
*	79 145.29	145.65	0.36			SANDSTONE	FG. PR. M. GY. SLD
	79 145.65	146.10	0.45			SANDSTONE	FG. PR. M-DK. GY. BIOTR. SLD HORIZONTAL BURROWS APPROXIMATELY 1 CM. IN DIAMETER

* DENOTES MEASURED BCA

84/03/11

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 38

PROJECT: KPN BLOCK: SS DATA SOURCE: DDHB3003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	79 146.10	146.90	0.80			SANDSTONE	FG. PR. M. GY. LAM. BRKN
	79 146.90	147.00	0.10			SANDSTONE	FG. PR. M. GY. SLD
	79 147.00	147.14	0.14			MUDSTONE	SLTY. PR. M. GY. SLD MINOR VERTICAL AND HORIZONTAL BURROWS
	78 147.14	149.07	1.93			SANDSTONE	FG. PR. LT-M. GY. BRKN INTERBEDDED FINE GRAINED SANDSTONE, SILTY SANDSTONE AND SILTY MUDSTONE; CROSS LAMINATION SHOWS TOPS UP
*	78 149.07	150.69	1.62			MUDSTONE	SLTY. PR. M. GY. BRKN FRACTURES INFILLED WITH (ANKERITE) AND D. MINOR SHEARS LINED WITH CHLORITE
	78 150.69	152.91	2.22			MUDSTONE	SLTY. PR. M. GY. THNE. BRKN INTERBEDDED MUDSTONE AND FINE GRAINED SANDSTONE; MINOR BIOTURBATION; MINOR CARBONACEOUS PLANT FRAGMENTS ON BEDDING PLANE
	78 152.91	154.87	1.96			SANDSTONE	SLTY. VFG. PR. LT. GY. VBRKN SHEARED AND ROUGHLY FRACTURED PERPENDICULAR TO BEDDING PLANE

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: SS DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. IP	SEAM ID	LITHOLOGY	DESCRIPTION
	79	154.87	156.73	1.86		ROCK LOSS	
	79	156.73	157.92	1.19		SANDSTONE	FG. LT. GY. BRKN MINOR MUDSTONE INTERBEDS
*	79	157.92	160.04	2.12		SANDSTONE	SLTY. FG. PR. LT-M. GY. BRKN INTERBEDDED MUDSTONE AND FINE GRAINED SANDSTONE; MINOR BIOTURBATION; RIPPLE CROSS LAMINATION INDICATES TOPS UP; LOW AMPLITUDE OSCILLATION RIPPLE MARKS
	80	160.04	161.51	1.47		ROCK LOSS	
	81	161.51	161.69	0.18		SANDSTONE	SLTY. VFG. PR. LT-M. GY. BIOTR. SLD INTERBEDDED BIOTURBATED MUDSTONE AND SANDSTONE; MINOR HORIZONTAL BURROWS
	82	161.69	164.99	3.30		SANDSTONE	SLTY. VFG. PR. LT-M. GY. BIOTR. SLD INTERBEDDED BIOTURBATED MUDSTONE AND SANDSTONE; MINOR HORIZONTAL BURROWS; PENECONTEMPORANEOUS SLUMPING; RIPPLE CROSS LAMINATION

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: SS DATA SOURCE: DDH83003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. IP	SEAM ID	LITHOLOGY	DESCRIPTION
	83	164.99	165.89	0.90		SANDSTONE	SLTY. VFG. PR. M. GY. SLD
*	84	165.89	168.06	2.17		SANDSTONE	SLTY. VFG. PR. M-DK. GY. BIOTR. SLD INTERBEDDED BIOTURBATED MUDSTONE AND VERY FINE GRAINED SANDSTONE BEDS
	84	168.06	168.96	0.90		SANDSTONE	SLTY. VFG. PR. M-DK. GY. SLD OVERALL DECREASE IN THE AMOUNT OF BIOTURBATION AS DEPTH INCREASES
*	85	168.96	171.94	2.98		MUDSTONE	SLTY. DK. GY. SLD DRILLER'S MARKER IS IN ERROR; OCCASIONALLY VERY SILTY MUDSTONE BEDS, MINOR BIOTURBATION
	85	171.94	172.91	0.97		MUDSTONE	DK. GY. SLD
	85	172.91	172.98	0.07		BRECCIA	CLY. MH. SLD FAULT BRECCIA MAINLY COMPOSED OF SECONDARY (ANKERITE) WITH MINOR CALCITE

* DENOTES MEASURED BCA

84/03/11

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 41

PROJECT: KPH BLOCK: SS DATA SOURCE: DDHB3003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	172.98	173.69	0.71			MUDSTONE	DK.GY.SLD MINOR SILTY BEDS
	173.69	175.06	1.37			MUDSTONE	DK.GY.SLD MINOR SILTY BEDS
	175.06	177.65	2.59			MUDSTONE	SLTY.DK.GY.BRKN MINOR BIOTURBATION IS APPARENT IN SILTY ER BEDS
	177.65	179.88	2.23			MUDSTONE	SLTY.DK.GY.BRKN MINOR SHEARS AND FRACTURES; SHEARS ARE LINED WITH I. CHLORITE.)
	179.88	181.82	1.94			MUDSTONE	DK.GY.BRKN MINOR FRACTURE INFILLED WITH I. ANKERITE
	181.82	181.94	0.12			MUDSTONE	DK.GY.BRKN
	181.94	182.68	0.74			MUDSTONE	DK.GY.BRKN
	182.68	182.85	0.17			MUDSTONE	LT.GY.BRKN MUDSTONE IS POSSIBLY DERIVED FROM A VOL CANIC ASH

* DENOTES MEASURED BCA

84/03/11

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 42

PROJECT: KPH BLOCK: SS DATA SOURCE: DDHB3003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	182.85	185.09	2.24			MUDSTONE	DK.GY RARE BELEMNITE, APPROXIMATELY 1.0 CM. I N DIAMETER
	185.09	188.04	2.95			MUDSTONE	SLTY.DK.GY.BRKN RARE BELEMNITE LYING IN BEDDING PLANE; MUDSTONE BECOMES SILTIER TOWARDS BASAL CONTACT
	188.04	188.20	0.16			SANDSTONE	SLTY.FG.PR.LT-M.GY.BIOIR.BRKN MUDDIER TOWARDS UPPER CONTACT
	188.20	190.13	1.93			SANDSTONE	SLTY.FG.PR.LT-M.GY.LAM.BRKN ABUNDANT MUDSTONE INTERBEDS
	190.13	190.15	0.02			ROCK LOSS	
	190.15	191.24	1.09			MUDSTONE	SLTY.LT-M.GY.BRKN
	191.24	191.31	0.07			MUDSTONE	SLTY.M.GY.LAM.BRKN FINE GRAINED SILTY SANDSTONE INTERBEDS
	191.31	191.43	0.12			SANDSTONE	FG.LT.GY.BRKN

* DENOTES MEASURED BCA

84/03/11

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 43

PROJECT: KPN BLOCK: SS DATA SOURCE: DDM83003

DEPTH	DEPTH	INTRVAL	SAMP.	SEAM		LITHOLOGY	DESCRIPTION
BC#	FROM	ID	THICK.	ID	ID		
* 86	191.43	192.60	1.17			MUDSTONE	SLTY. M. GY. LAM. BRKN VERY FINE GRAINED SILTY SANDSTONE INTER BEDS: END OF MOLE: TOTAL DRILLER'S DEPT M 192.60 METERS

-85- NO IN CONTACT WITH SYSTEM 2000 -
-855- NO LONGER IN CONTACT WITH SYSTEM 2000 -

SAMPLE SUMMARY

15/MAR/84

GULF CANADA RESOURCES INC. - COAL DIVISION
 SIMPLE SAMPLE SUMMARY
 APPARENT THICKNESS
 KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	ROCK	MISSING COAL	ROCK	TOTAL COAL-ROCK
DDH83003	G UPPER	6373	40.30	42.05	35.42	0.39	0.23	0.68	0.45	1.07- 0.68
	G LOWER	6374	44.80	48.00	65.31	1.52	0.57	0.41	0.70	1.93- 1.27
	E UPPER	6375	126.95	128.24	78.29	0.81	0.20	0.28	0.00	1.09- 0.20
	E LOWER	6376	137.68	138.48	75.00	0.39	0.21	0.10	0.10	0.49- 0.31
	E LOWER	6377	138.48	139.10	100.00	0.62	0.00	0.00	0.00	0.62- 0.00



GULF CANADA RESOURCES INC. - COAL DIVISION
 15/MAR/84 COMPOSITE SAMPLE SUMMARY
 APPARENT THICKNESS
 KLAPPAN PROJECT

DATA SOURCE	SEAM	COMP ID	SAMPLE FROM	SAMPLE TO	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED		MISSING		TOTAL	
								COAL	ROCK	COAL	ROCK	COAL-ROCK	

DDH83003													
	g lower	10	6374	6374	44.80	48.00	65.31	1.52	0.57	0.41	0.70	1.93-	1.27
	e upper	11	6375	6375	126.95	128.24	78.29	0.81	0.20	0.28	0.00	1.09-	0.20
	e lower	12	6376	6377	137.68	139.10	85.91	1.01	0.21	0.10	0.10	1.11-	0.31



COAL SEAM DATA SHEETS
AND
COAL QUALITY

SEAM H

COAL SEAM DATA SHEET

APPARENT DENSITY GRAMS/cc -----

RESISTIVITY -----

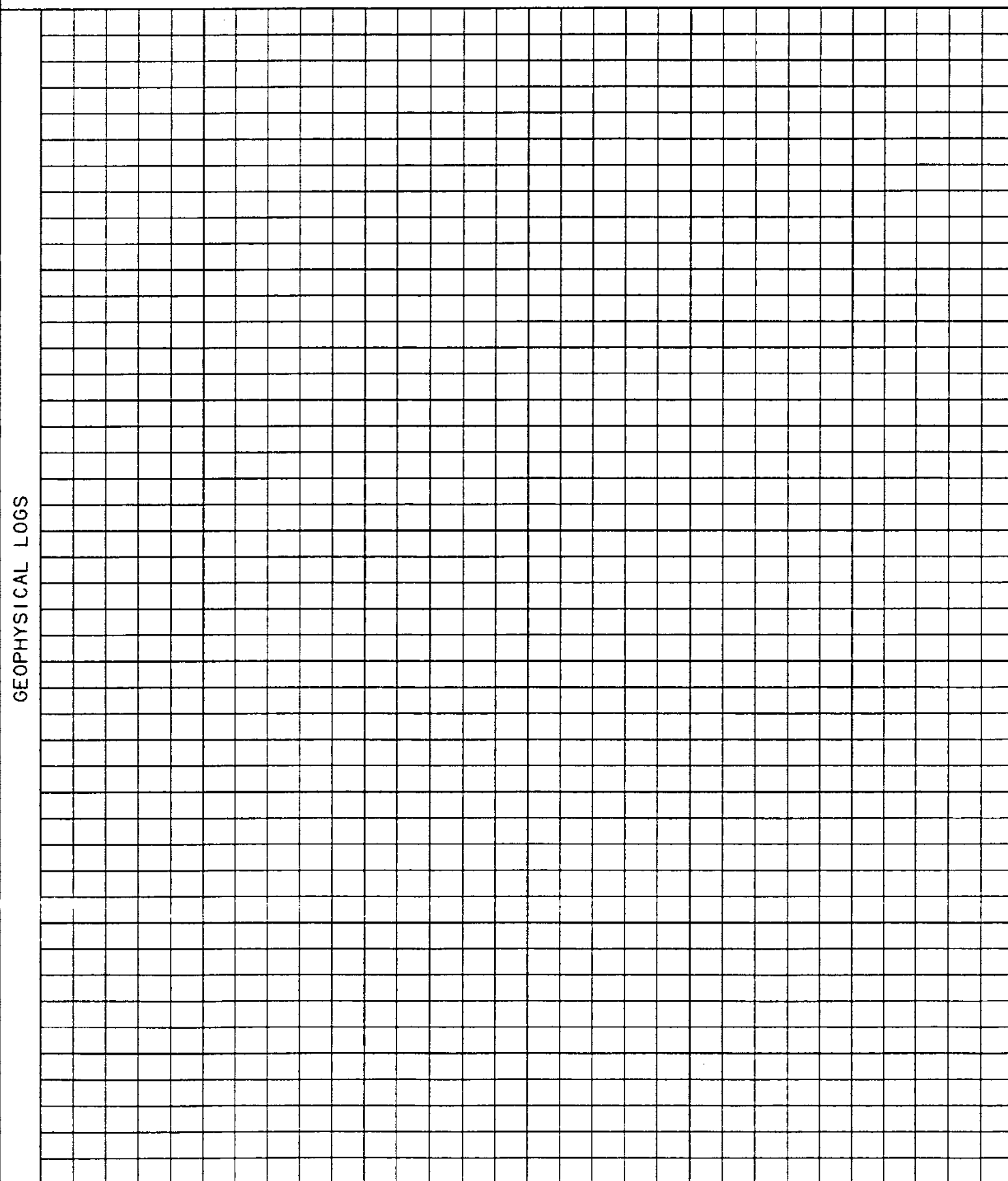
APPARENT THICKNESS
SEAM INTERVAL 7.21 m - 7.68 m

DRILL No. KPN-DDH83003
SCALE 1:40




SEAM H
FORMATION KLAPPAN SEQUENCE

DENSITY SCALE
2.00 1.50 2.00 2.50


RESISTIVITY SCALE KOHM m



SEAM COMP.	DEPTH (m)	COAL SEAM LOG	INTERVAL (m)		% REC.	SAMPLE		PROXIMATE ANALYSIS										
			ROCK	COAL		NUMBER	COMPOS.	MOIST	ASH	VM	FC	S'	CAL. VAL. MJ/KG	FSI				
1																		
2																		
3																		
4																		
5																		
6																		
	7.21																	
	7.68																	
							0.47											
								100										

DRILLING DEPTH (m)	COAL SEAM LOG	INTERVAL (m)		Z REC.	SAMPLE		COMPOSITE	MINING SECTION
		ROCK	COAL		NUMBER	COMPOS.	COAL/ROCK TOTAL	COAL/ROCK TOTAL
7.21								
7.68			0.47	100			0.47/0.00 0.47	
								

1205,571831024021.L00

GULF CANADA RESOURCES INC.		
MT. KLAPPAN COAL PROPERTY SEAM DETAIL TRUE THICKNESS DDH83003 SEAM H		
DRAWN BY: C. LOUIE	SCALE: 1:40	
APPROVED BY: C. WILLIAMS	DATE: FEB 1984	

SEAM G UPPER

COAL SEAM DATA SHEET

GULF CANADA RESOURCES INC.
COAL DIVISION

APPARENT DENSITY GRAMS/cc -----

RESISTIVITY -----

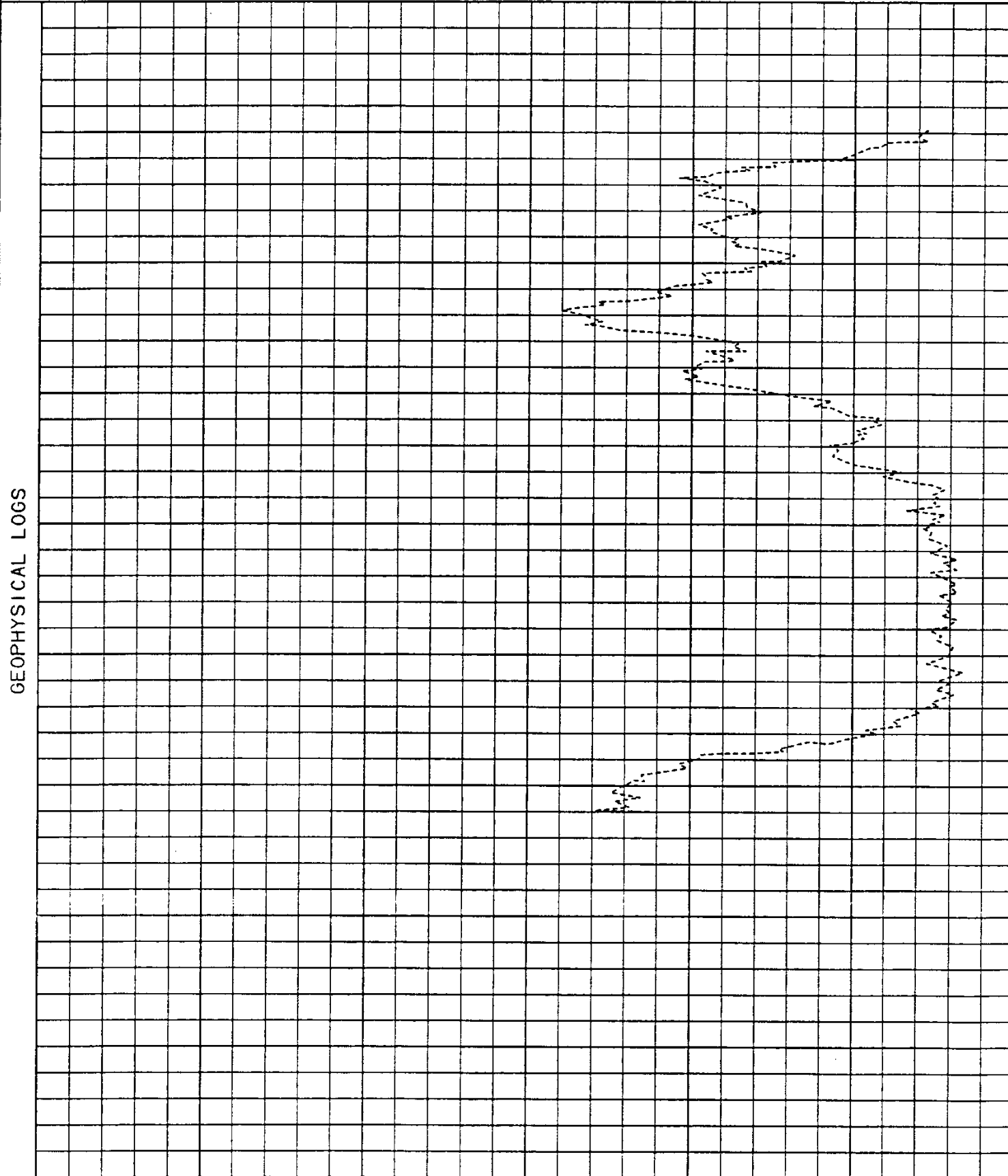
DRILL No. KPN-DDH83003

SEAM G UPPER

APPARENT THICKNESS
SEAM INTERVAL 40.30 m - 40.83 m

SCALE 1:40

FORMATION KLAPPAN SEQUENCE



SEAM COMP.	DEPTH (m)	COAL SEAM LOG	INTERVAL (m)		% REC.	SAMPLE		PROXIMATE ANALYSIS									
			ROCK	COAL		NUMBER	COMPOS.	MOIST	ASH	VM	FC	S'	CAL. VAL. MJ/KG	FSI			
1	40.30	[Symbol]		(0.07)													
2	40.83	[Symbol]	0.13	0.27	86.8	06373		55.24						20.69			
3		[Symbol]	0.10	0.06													
4		[Symbol]	(0.25)														
5		[Symbol]		0.06													
6		[Symbol]		(0.41)													
		[Symbol]	(0.20)														
	42.05	[Symbol]		(0.20)													
		[Symbol]															
		[Symbol]															
	44.80	[Symbol]															

DRILLING DEPTH (m)	COAL SEAM LOG	INTERVAL (m)		X REC.	SAMPLE		COMPOSITE COAL/ROCK TOTAL	MINING SECTION COAL/ROCK TOTAL
		ROCK	COAL		NUMBER	COMPOS.		
40.30			0.07 0.26	86.5	06373		1.05/0.67 1.72	
40.83		0.13	0.06					
		0.10 (0.24)						
42.05			0.06 (0.40)					
		(0.20)	(0.20)					
44.80								

(205,571831024021.L00

GULF CANADA RESOURCES INC.		
MT. KLAPPAN COAL PROPERTY SEAM DETAIL TRUE THICKNESS DDH83003 SEAM G UPPER		
DRAWN BY: C. LOUIE	SCALE: 1:40	
APPROVED BY: C. WILLIAMS	DATE: FEB 1984	

SEAM G LOWER

COAL SEAM DATA SHEET

GULF CANADA RESOURCES INC.
COAL DIVISION

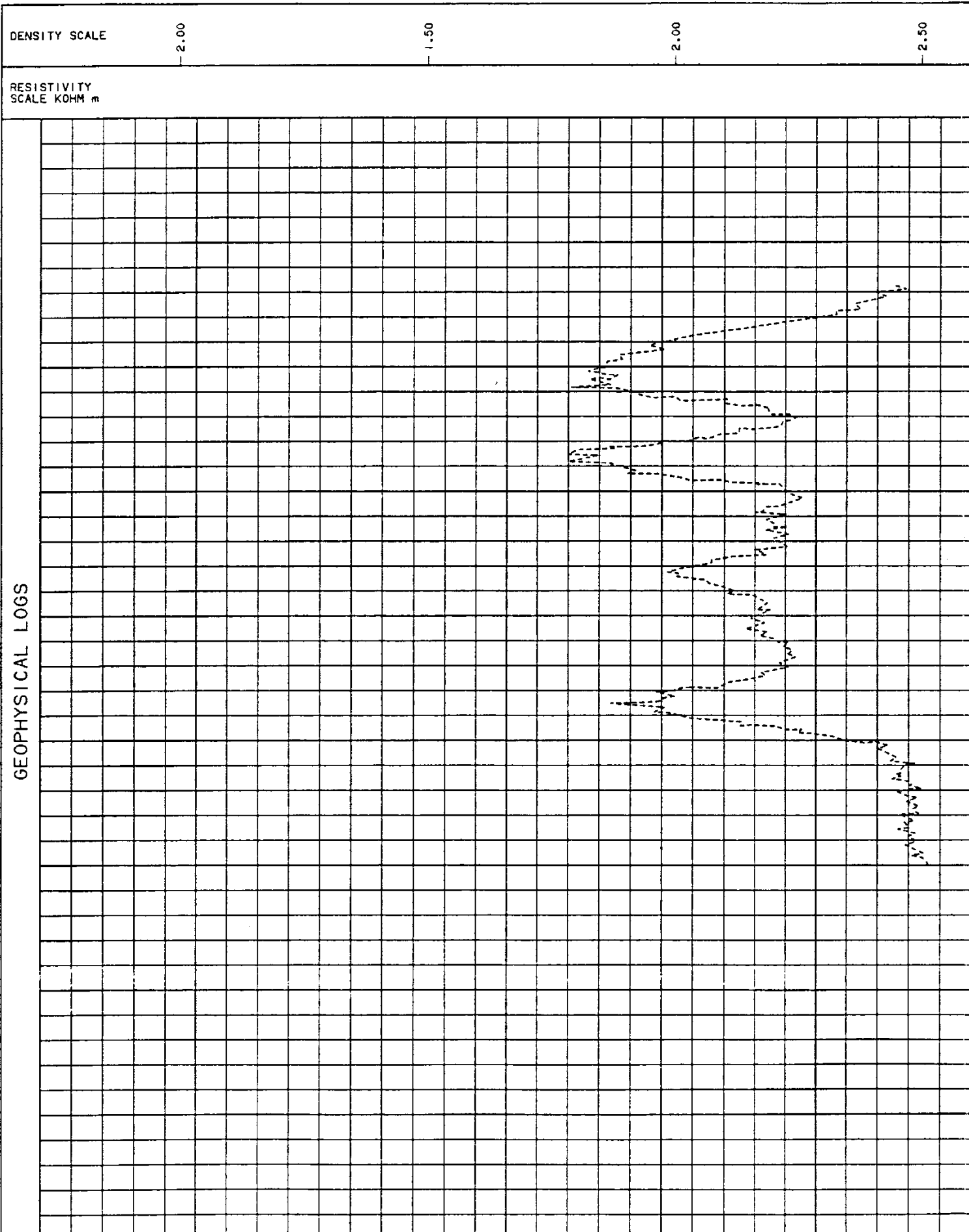
APPARENT DENSITY GRAMS/cc -----

RESISTIVITY -----

APPARENT THICKNESS
SEAM INTERVAL 44.80 m - 48.00 m

DRILL No. KPN-DDH83003
SCALE 1:40

SEAM G LOWER
FORMATION KLAPPAN SEQUENCE



GEOPHYSICAL LOGS

SEAM COMP.	DEPTH (m)	COAL SEAM LOG	INTERVAL (m)		% REC.	SAMPLE		PROXIMATE ANALYSIS									
			ROCK	COAL		NUMBER	COMPOS.	MOIST	ASH	VM	FC	S	CAL. VAL. MJ/KG	FSI			
1 2 3 4 5 6	44.80			(0.20)													
			(0.02)	0.09													
			0.02	0.26													
			(0.11)														
			0.24														
				0.26													
			(0.05)	(0.05)													
			0.09	0.19	65.3	06374	10	1.62	55.49	7.25	35.64	0.38	13.05				
			0.06														
			(0.12)														
				0.44													
			(0.40)														
			0.05	0.01													
			0.03	0.14													
			0.08														
				0.13													
	48.00			(0.16)													

DRILLING DEPTH (m)	COAL SEAM LOG	INTERVAL (m)		Z REC.	SAMPLE		COMPOSITE	MINING SECTION
		ROCK	COAL		NUMBER	COMPOS.	COAL/ROCK TOTAL	COAL/ROCK TOTAL
44.80			(0.20)			10	1.93/1.27 3.20	
		(0.02)	0.09					
		0.02	0.26					
		(0.11)						
		0.24						
			0.26					
		(0.05)	(0.05)					
		0.09	0.19	65.3	06374			
		0.06						
		(0.12)						
			0.44					
		(0.40)						
	0.05	0.01						
	0.03	0.14						
	0.08	0.13						
48.00			(0.16)					

(205,57183102402) .L00

GULF CANADA RESOURCES INC.		
MT. KLAPPAN COAL PROPERTY SEAM DETAIL TRUE THICKNESS DDH83003 SEAM G LOWER		
DRAWN BY: C. LOUIE	SCALE: 1:40	
APPROVED BY: C. WILLIAMS	DATE: FEB 1984	

SEAM E UPPER

COAL SEAM DATA SHEET

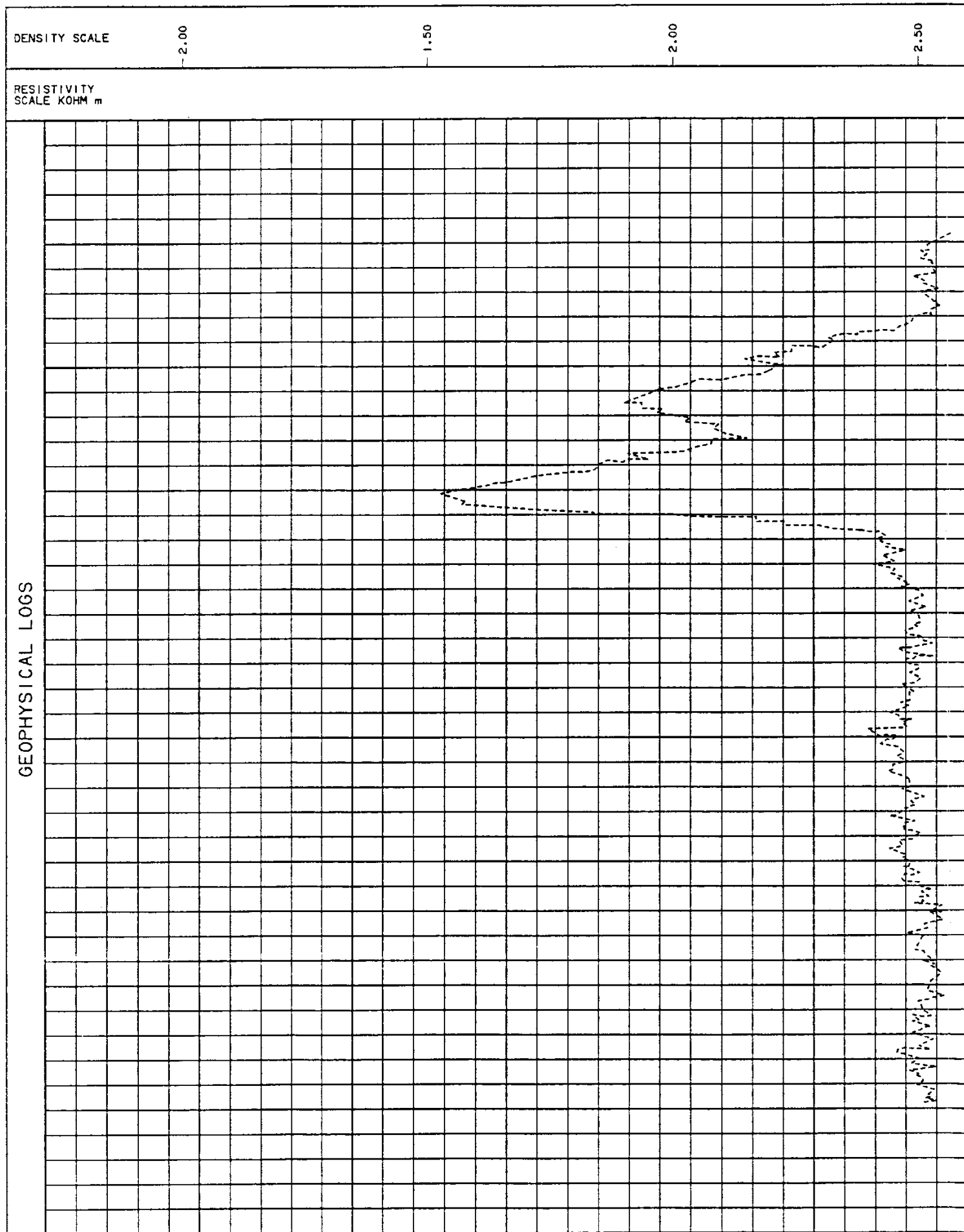
APPARENT DENSITY GRAMS/cc -----

RESISTIVITY -----

DRILL No. KPN-DDH83003
SCALE 1:40

SEAM E UPPER
FORMATION KLAPPAN SEQUENCE

APPARENT THICKNESS
SEAM INTERVAL 126.95 m - 128.24 m



SEAM COMP. 1 2 3 4 5 6	DEPTH (m)	COAL SEAM LOG	INTERVAL (m)		% REC.	SAMPLE		PROXIMATE ANALYSIS							
			ROCK	COAL		NUMBER	COMPOS.	MOIST	ASH	VM	FC	S'	CAL. VAL. MJ/KG	FSI	
	126.95			0.27	78.3	06375	11	1.38	61.14	5.55	31.93	0.62	10.44		
			(0.28)	0.16											
	128.24			0.47											0.04
	132.22														

DRILLING DEPTH (m)	COAL SEAM LOG	INTERVAL (m)		X REC.	SAMPLE		COMPOSITE	MINING SECTION
		ROCK	COAL		NUMBER	COMPOS.	COAL/ROCK TOTAL	COAL/ROCK TOTAL
126.95			0.26	78.3	06375	11	1.06/0.20 1.26	
			(0.27)					
		0.16						
			0.46					
128.24		0.04	0.07					
132.22								

(205,371831024021.L00

GULF CANADA RESOURCES INC.		
MT. KLAPPAN COAL PROPERTY SEAM DETAIL TRUE THICKNESS DDH83003 SEAM E UPPER		
DRAWN BY: C. LOUIE	SCALE: 1:40	
APPROVED BY: C. WILLIAMS	DATE: FEB 1984	

SEAM E LOWER

COAL SEAM DATA SHEET

GULF CANADA RESOURCES INC.
COAL DIVISION

APPARENT DENSITY GRAMS/cc -----

RESISTIVITY -----

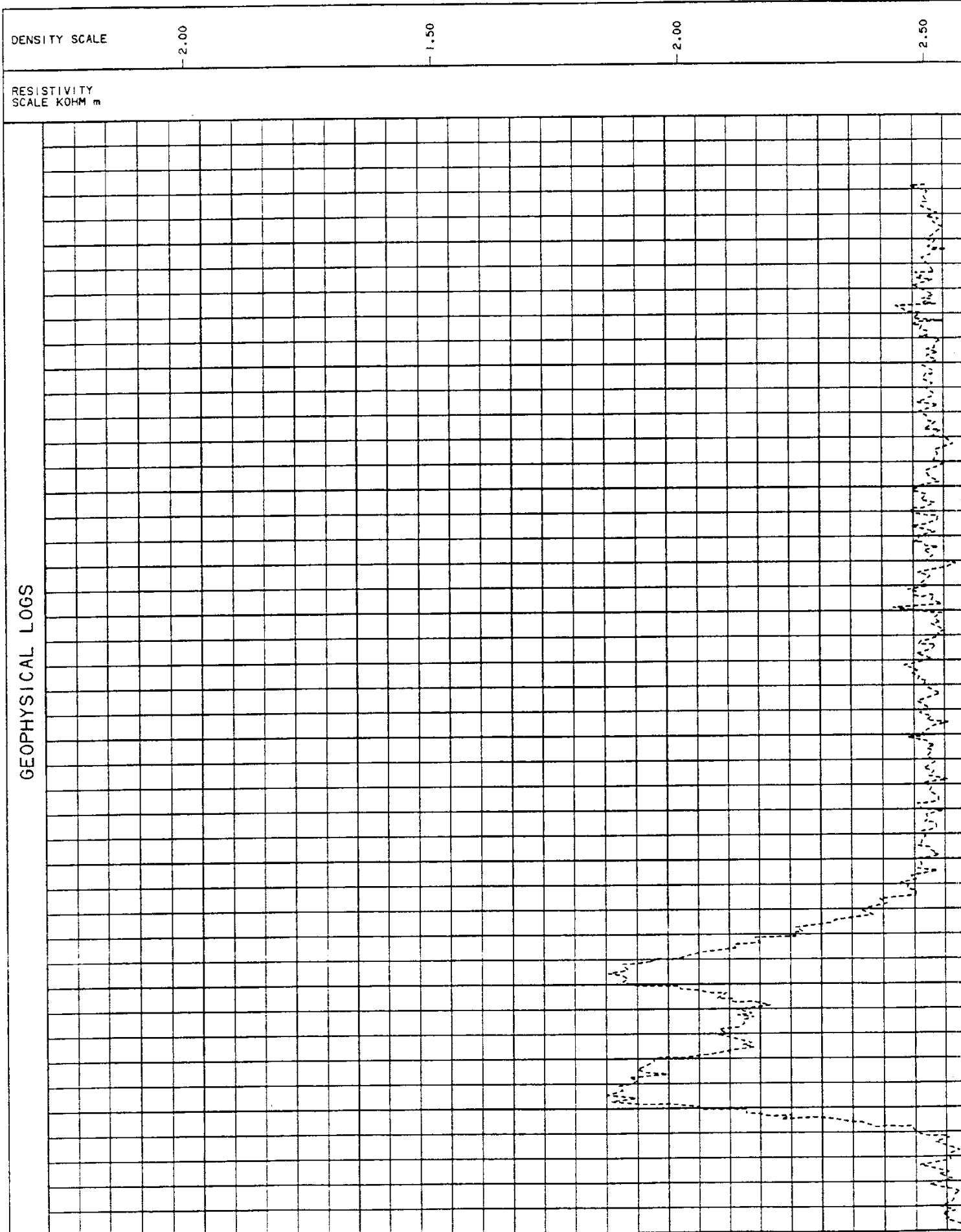
DRILL No. _____
SCALE _____

KPN-DDH83003
1:40

SEAM _____
FORMATION _____

E LOWER

APPARENT THICKNESS
SEAM INTERVAL 137.68 m - 139.10 m



SEAM COMP.	DEPTH (m)	COAL SEAM LOG	INTERVAL (m)		% REC.	SAMPLE		PROXIMATE ANALYSIS									
			ROCK	COAL		NUMBER	COMPOS.	MOIST	ASH	VM	FC	S'	CAL. VAL. MJ/KG	FSI			
1 2 3 4 5 6	132.22	[Patterned]															
	137.68	[Crossed out]															
		[Patterned]	0.02	0.21	80.0	06376											
		[Patterned]	0.11	0.02			12	1.49	52.42	6.71	39.38	1.24	13.98				
		[Patterned]	(0.10)	(0.07)													
	139.10	[Patterned]		0.62	90.0	03677											

DRILLING DEPTH (m)	COAL SEAM LOG	INTERVAL (m)		Σ REC.	SAMPLE		COMPOSITE	MINING SECTION	
		ROCK	COAL		NUMBER	COMPOS.	COAL/ROCK TOTAL	COAL/ROCK TOTAL	
132.22									
137.68									
		0.08	0.08						
		0.02	0.28	80.0	06376	12	1.09/0.31 1.40		
		(0.03)	0.02						
		0.11 (0.10)	(0.07)						
			0.61	90.0	03677				
139.10									

(206,571831024021.L00

GULF CANADA RESOURCES INC.		
MT. KLAPPAN COAL PROPERTY SEAM DETAIL TRUE THICKNESS DDH83003 SEAM E LOWER		
DRAWN BY: C. LOUIE	SCALE: 1:40	
APPROVED BY: C. WILLIAMS	DATE: FEB 1984	

**DRILL HOLE STRIP LOG -
AND
GEOPHYSICAL LOGS**

GULF CANADA RESOURCES INC.

Coal Division



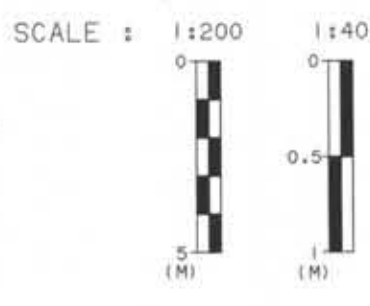
PREPARED BY: C. LOUIE
APPROVED BY: C. WILLIAMS

LOGGED BY: SCOTT MCKENZIE
DATE: FEB. 1984

SCALE: 1:200, 1:40
DRAWING No. KPN83S03

MOUNT KLAPPAN DRILL HOLE LOG DDH83003

LITHOLOGIC SYMBOLS



	CONGLOMERATE
	SANDSTONE
	CARBONACEOUS
	SILTSTONE
	COAL
	COAL-THIN BEDS
	OVERBURDEN
	QUARTZ
	PEBBLY SANDSTONE

	MUDSTONE, CLAYSTONE
	BENTONITE
	PYRITE
	CORE LOSS
	PLANT FOSSIL
	SHELL FOSSIL
	MARL
	ANKERITE

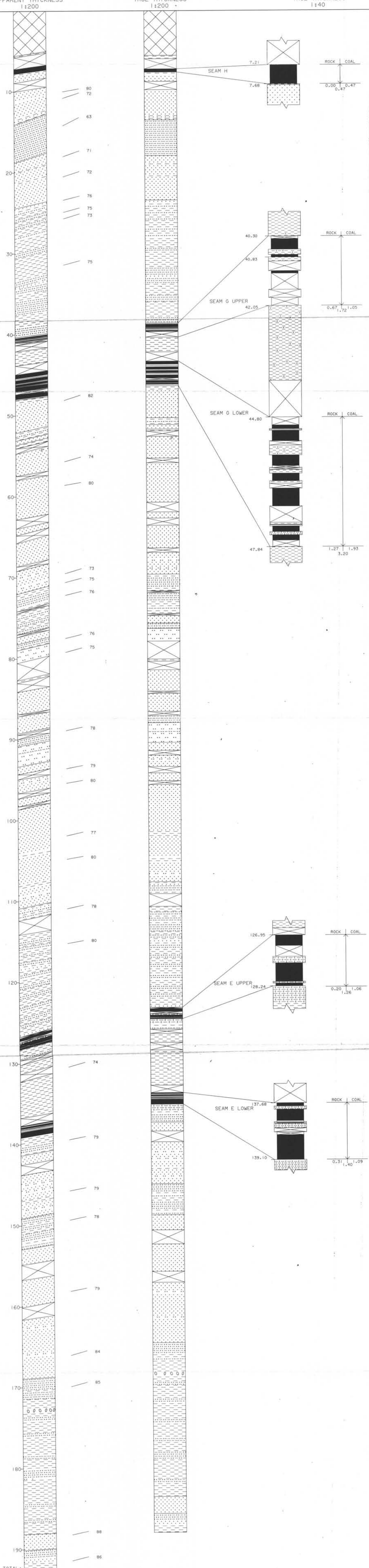
NORTHING: 6349585.0 N
EASTING: 501657.0 E
INCLINATION: 60.0°
BEARING: 230.0°

GR-Mt. Klappan 84(3)A
710

APPARENT THICKNESS
1:200

TRUE THICKNESS
1:200

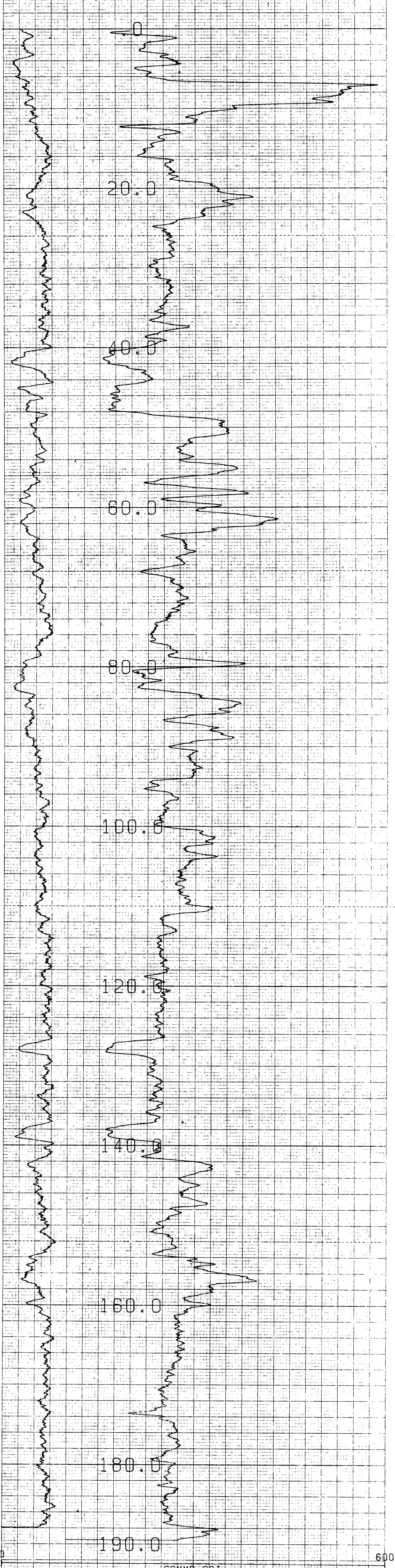
SEAM DETAIL
TRUE THICKNESS
1:40



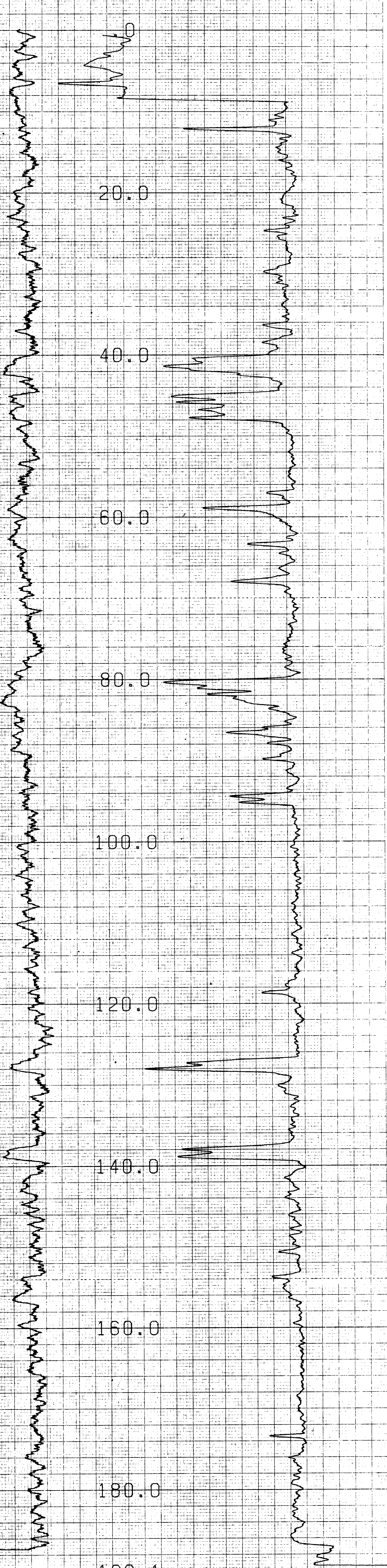
TOTAL: 192.54m

GR - Mt. Klappan 87(2) B

710 ~~85~~



COMPU-LOG VBL2 PLAT 08-17-83
 DDH-83-003
 GULF CANADA RES.
 MT. KLAPPAN
 HOLE DIAMETER = 08.3
 PROBE # 9055A - 008
 SENSOR #4 CAL STD CPS = 152
 SENSOR #4 CAL RUN CPS = 217
 SENSOR #4 CAL BIAS = 0
 DATA VBL2 TRUCK # P811
 K. SKARBO APPL #100711



COMPU-LOG V8L2 PLOT 08-17-83

DDH-83-003
GULF CANADA RES.
MT. KLAPPAN

HOLE DIAMETER :	08.3
PROBE #	8068 641
SENSOR #2 CAL STD CPS =	2283
SENSOR #2 CAL RUN CPS =	6878
SENSOR #2 CAL BIAS =	0
DATA V8L2	TRUCK # P811
K. SKARBB	APPL. #18 L1

710

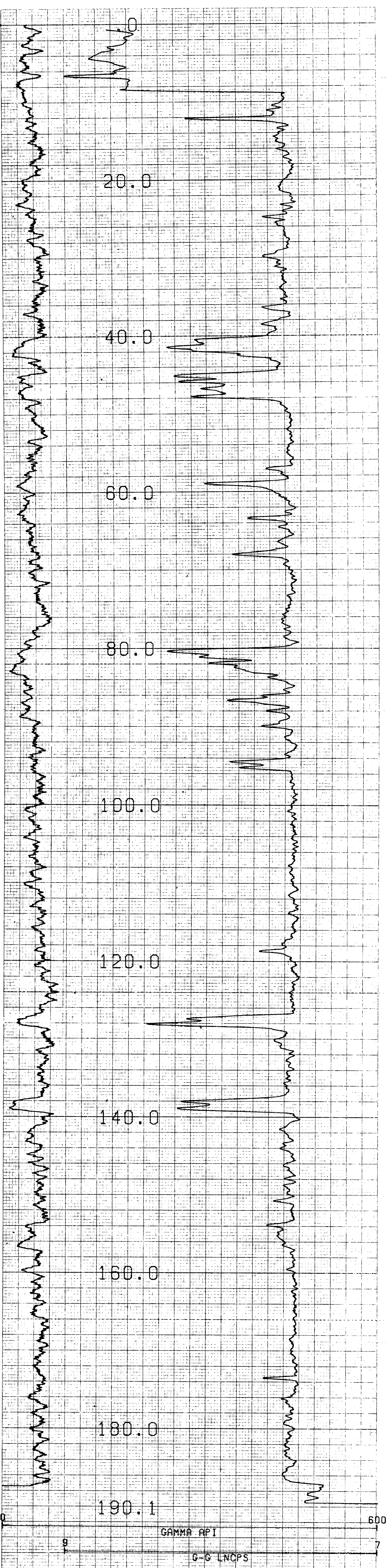
57

55

53

GR - Mr. Kleeman 84(3) A

71058



COMPU-LOG VBL 2 PLAT 08-17-83

DDH-83-003
GULF CANADA RES.
MT. KLAPPAN

HOLE DIAMETER : 08.3
 PROBE # 9068 - 641
 SENSOR #2 CAL STD CPS = 2283
 SENSOR #2 CAL RUN CPS = 6878
 SENSOR #2 CAL BIAS = 0
 DATA VBL 2 TRUCK # P811
 K. SKARBA APPL. #18 LJ

VERTICAL DEVIATION

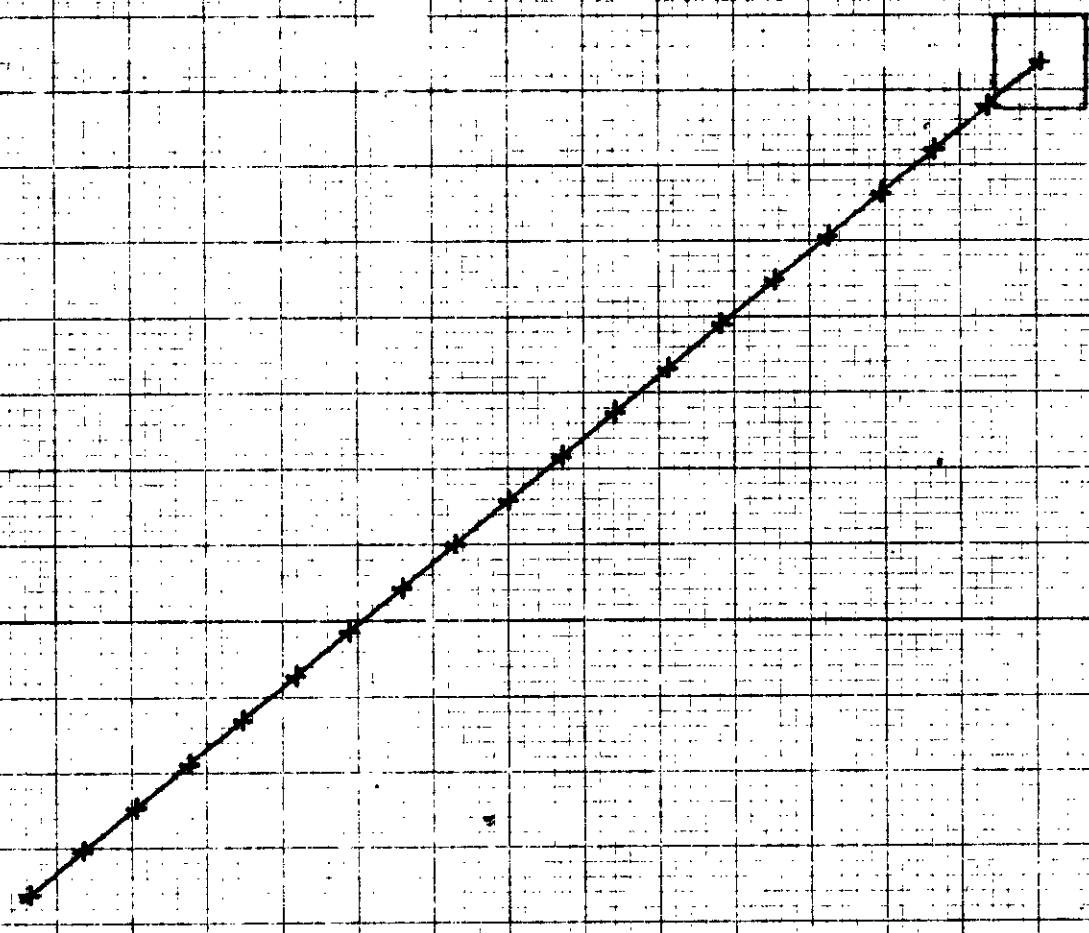
COMPU-LOG V8L1 DEVIATION
DATA FROM : V8L2

CLIENT : GULF CANADA RES.
LOCATION : MT. KLAPPAN
HOLE ID : DDH-88-003
DATE OF LOG : 08-17-83
PROBE : 9055A 0008

SCALE: 5.00 M/DIV
MAG DECL: 29.5
TRUE DEPTH: 170.6 M
AZIMUTH: 230.6
DISTANCE: 87.57 M

+ = 10.0 M INCR
Δ = TOP OF ZONE
◇ = BOTTOM OF ZONE
TRUE NORTH ↑

710



G.R. - Mt. Klappan 84(3) H

VERTICAL DEVIATION

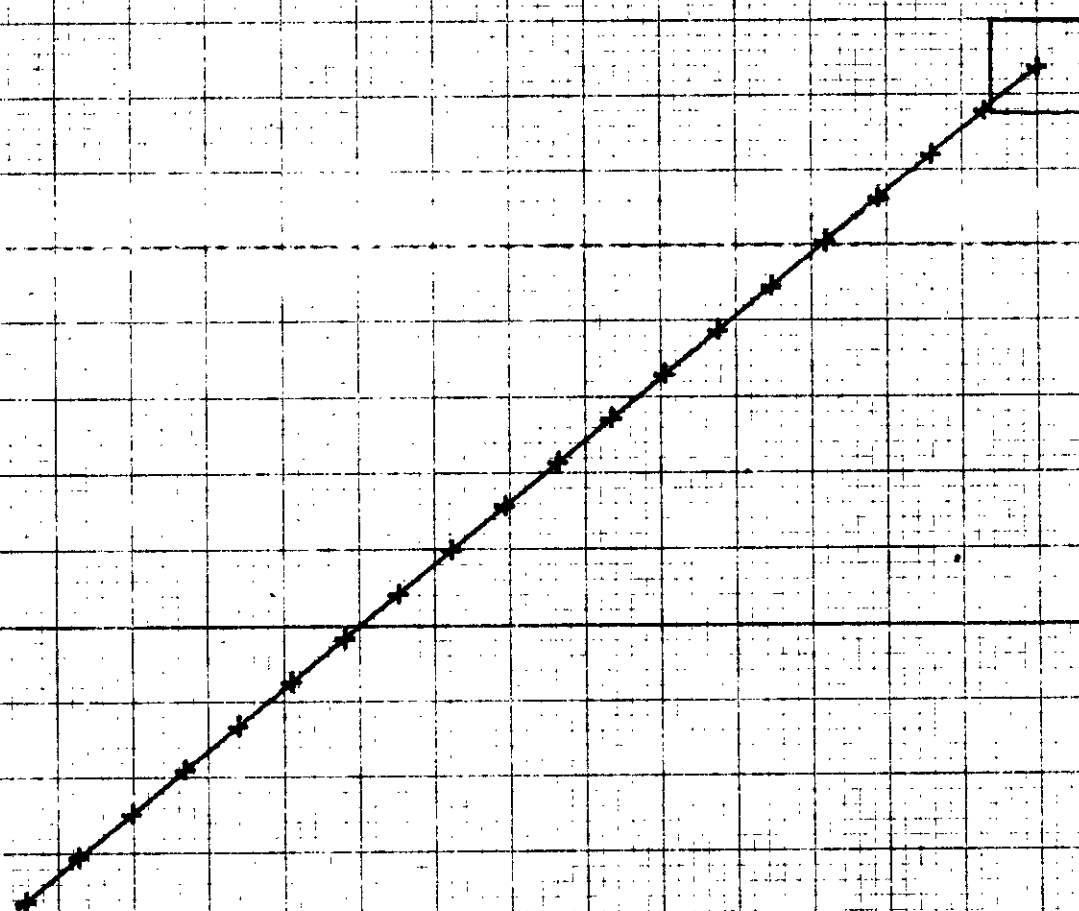
COMPU-LOG V8L1 DEVIATION
DATA FROM : V8L2

CLIENT : GULF CANADA RES.
LOCATION : MT. KLAPPAN
HOLE ID : DDH-83-003
DATE OF LOG : 08-17-83
PROBE : 9055A 0008

SCALE: 5.00 M/DIV
MAG DECL: 29.5
TRUE DEPTH: 170.6 M
AZIMUTH: 230.6
DISTANCE: 87.57 M

+ = 10.0 M INCR
Δ = TOP OF ZONE
◇ = BOTTOM OF ZONE

TRUE NORTH ↑



710

CENTURY GEOPHYSICAL CORPORATION

***** VERTICAL DEVIATION *****

COMPU-LOG V8L1 DEVIATION

~~045~~
710

CLIENT : GULF CANADA RES.

HOLE ID : DDH-83-003

LOCATION : MT. KLAPPAN

DATE OF LOG : 08-17-83

DATA FROM : V8L2*

PROBE : 9055A 0008

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

DEPTH	TRUE DEPTH	NORTH DEV	EAST DEV	DISTANCE	AZIMUTH	SA	SAB
.00	.00	.00	.00	.00	.0	.0	.0
5.00	4.33	-1.53	-1.95	2.48	231.8	29.8	231.8
10.00	8.67	-3.07	-3.91	4.97	231.8	29.8	231.8
15.00	13.01	-4.61	-5.87	7.46	231.8	29.8	231.8
20.00	17.34	-6.15	-7.82	9.95	231.8	29.8	231.8
25.00	21.68	-7.71	-9.75	12.43	231.7	29.8	230.9
30.00	26.03	-9.30	-11.65	14.90	231.4	29.5	230.1
35.00	30.38	-11.00	-13.37	17.31	230.6	29.0	225.3
40.00	34.74	-12.68	-15.10	19.72	230.0	28.9	225.7
45.00	39.10	-14.28	-16.94	22.16	229.9	29.2	229.0
50.00	43.46	-15.95	-18.75	24.61	229.6	29.3	227.3
55.00	47.82	-17.54	-20.60	27.06	229.6	29.2	229.2
60.00	52.16	-19.13	-22.51	29.54	229.6	29.7	230.3
65.00	56.52	-20.69	-24.38	31.98	229.7	29.2	230.0
70.00	60.89	-22.26	-26.22	34.40	229.7	28.9	229.5
75.00	65.27	-23.86	-28.05	36.83	229.6	29.0	228.9
80.00	69.64	-25.47	-29.84	39.23	229.5	28.8	227.8
TD 80.80	70.34	-25.76	-30.11	39.63	229.4	29.6	222.8

MOUNT KLAPPAN COAL PROJECT
GEOLOGICAL REPORT

1984

SUMMIT - NASS - SKEENA
AREA

APPENDIX III

VOLUME II

COAL TRENCH DATA
AND COAL QUALITY



GULF CANADA RESOURCES INC.
COAL DIVISION

710

APPENDIX III

VOLUME II

COAL TRENCH DATA

AND

COAL QUALITY

PAGES CONTAINING
CONFIDENTIAL COAL QUALITY
HAVE BEEN REMOVED

APPENDIX III

VOLUME II

COAL TRENCH DATA AND COAL QUALITY

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- Sample Summary

- Trench Logs

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Reflectance

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- Sample Summary

- Trench Logs

Trench Description

Head Analysis

1983 - Data Source Summary

- Sample Summary

- Trench Logs

Trench Description

Head Analysis

Reflectance

- 1984 - Data Source Summary
 - Sample Summary
 - Trench Logs
 - Trench Description
 - Head Analysis
 - Reflectance

NASS AREA

Location Map

- 1982 - Data Source Summary
 - Sample Summary
 - Trench Logs
 - Trench Description
 - Head Analysis
- 1983 - Data Source Summary
 - Sample Summary
 - Trench Logs
 - Trench Description
 - Head Analysis
 - Reflectance
- 1984 - Data Source Summary
 - Sample Summary
 - Trench Logs
 - Trench Description
 - Head Analysis
 - Reflectance

SKEENA AREA

Location Map

1981 - Data Source Summary

- Sample Summary

- Reflectance Analysis

1984 - Data Source Summary

- Sample Summary

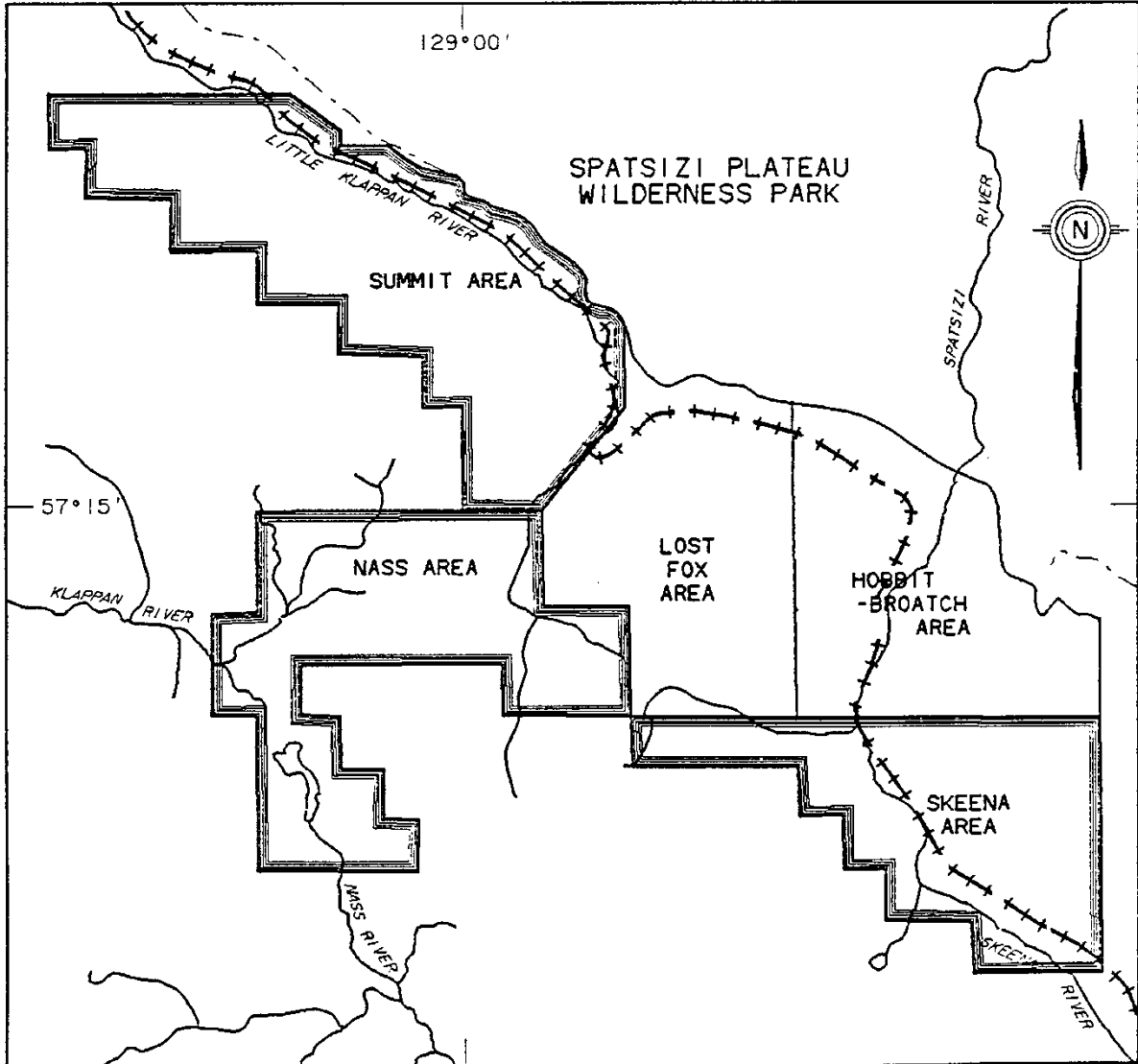
- Trench Logs

Trench Description

Head Analysis

SUMMIT AREA
TRENCH DATA

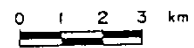
MOUNT KLAPPAN COAL PROPERTY
 SUMMIT - NASS - SKEENA
 1984 EXPLORATION AREAS



LEGEND

- +—+—+— PREPARED RAIL BED
- - - - - PROVINCIAL PARK BOUNDARY
- LICENCE AREA

SCALE



GULF CANADA RESOURCES INC.
 10/12/84



GULF CANADA RESOURCES INC. - COAL DIVISION
22/NOV/84 PROJECT DATA SOURCE SUMMARY PAGE 1

DATA SOURCE	LOCATION		ELEVATION	LENGTH	ANGLE	AZIMUTH	LOG TYPE
	NORTHING	EASTING					
KPNSSTRC81007	6347510.0	504430.0	1302.0	6.2			
KPNXXTRC81008	6351640.0	504665.0	1215.0	6.8			



SUMMIT-NASS-SKEENA
1981 SUMMIT AREA SAMPLE SUMMARY

Trench Number	Head Analysis Sample Number	Washability Sample Number	Reflectance Sample Number
KPNSSTRC 81007	01401	01401	03837
KPNXXTRC 81008	-	-	RSJ-81-03

===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSSTRC81007

DATE - 12/14/84

- HISTORY -

START DATE - / /
END DATE - / /

CONTRACTOR -
GEOLOGIST -

OPERATOR -
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 1302.00

ZONE - 9
NORTHING - 6347510.00
EASTING - 504430.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571621
LONGITUDE - 1285536

- ORIENTATION -

LENGTH - 6.15
SIZE WIDTH - 0.7
SIZE HEIGHT - 1.0

INCLINATION - 0.0
AZIMUTH - 0.0

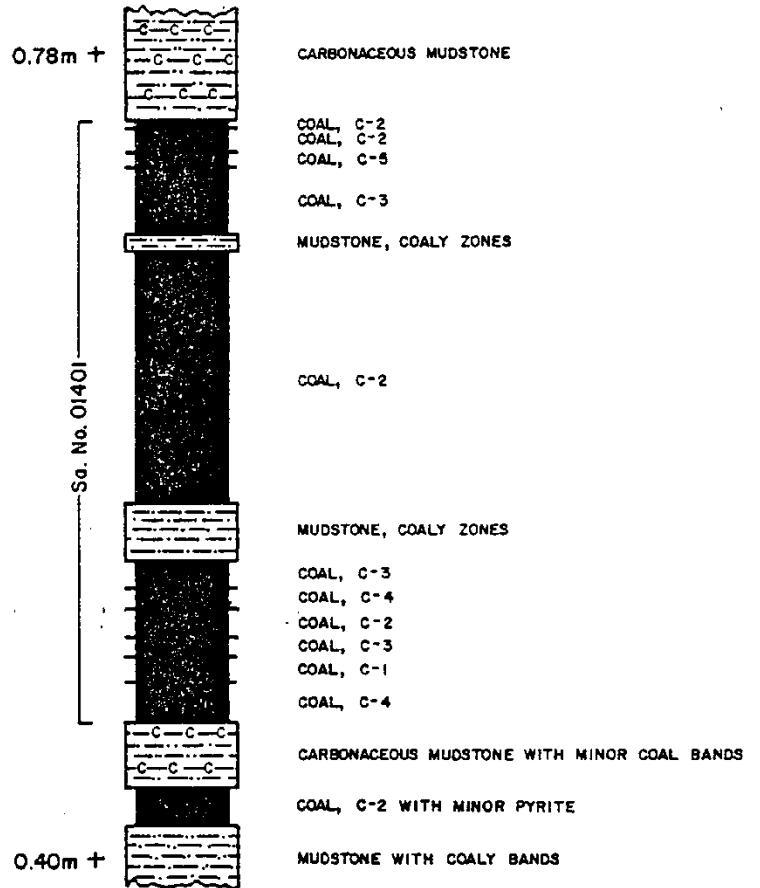
ROOF STRIKE - 95
ROOF DIP - 21
ROOF DIR - S

FLOOR STRIKE - 0
FLOOR DIP - 0
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

=====

ROCK	COAL
	0.05
	0.16
	0.10
	0.48
0.13	
	1.79
4.97	
0.40	
	0.19
	0.14
	0.20
	0.13
	0.17
	0.30
0.46	
	0.27
TOTAL	0.99
	3.98



ATTITUDE OF ROOF : 095/21°S
 ATTITUDE OF FLOOR : N/A

GULF CANADA RESOURCES INC.		
<small>Coal Division</small>		
<small>CALGARY</small>	<small>ALBERTA</small>	
MT. KLAPPAN COAL PROJECT		
TRENCH LOG		
KPN-TRC-81-007		
<small>DRAWN BY:</small>	<small>DATE: 16-11-81</small>	<small>SCALE: 1:50</small>
<small>LOGGED BY: J. INNIS</small>		<small>DRAWING No.</small>
<small>APPROVED BY:</small>	<small>DATE:</small>	

84/11/28

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SS DATA SOURCE: TRC81007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.78	0.78			MUDSTONE	CARB. ORNG
	0.78	0.83	0.05			COAL	C-2
	0.83	0.99	0.16			COAL	C-2
	0.99	1.09	0.10			COAL	C-5
	1.09	1.57	0.48			COAL	C-1 FE STAINING
	1.57	1.70	0.13			MUDSTONE	COALY
	1.70	3.49	1.79			COAL	C-2 MNR C-3 & C-1 BANDS
	3.49	3.89	0.40			MUDSTONE	COALY
	3.89	4.08	0.19			COAL	C-3
	4.08	4.22	0.14			COAL	C-4
	4.22	4.42	0.20			COAL	C-2

* DENOTES MEASURED BCA

84/11/28

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: SS DATA SOURCE: TRCB1007

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INIRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	4.42	4.55	0.13			COAL	C-3
	4.55	4.72	0.17			COAL	C-1
	4.72	5.02	0.30			COAL	C-4
	5.02	5.48	0.46			MUDSTONE	CARB COAL BANDS
	5.48	5.75	0.27			COAL	C-2
	5.75	6.15	0.40			MUDSTONE	GY MNR COAL

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNXXTRC81008

DATE - 12/14/84

- HISTORY -

START DATE - / /
END DATE - / /

CONTRACTOR - GULF CANADA RES
GEOLOGIST - R. JACKSON

OPERATOR - GULF CANADA RES
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 1215.00

ZONE - 9
NORTHING - 6351640.00
EASTING - 504665.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571835
LONGITUDE - 1285521

- ORIENTATION -

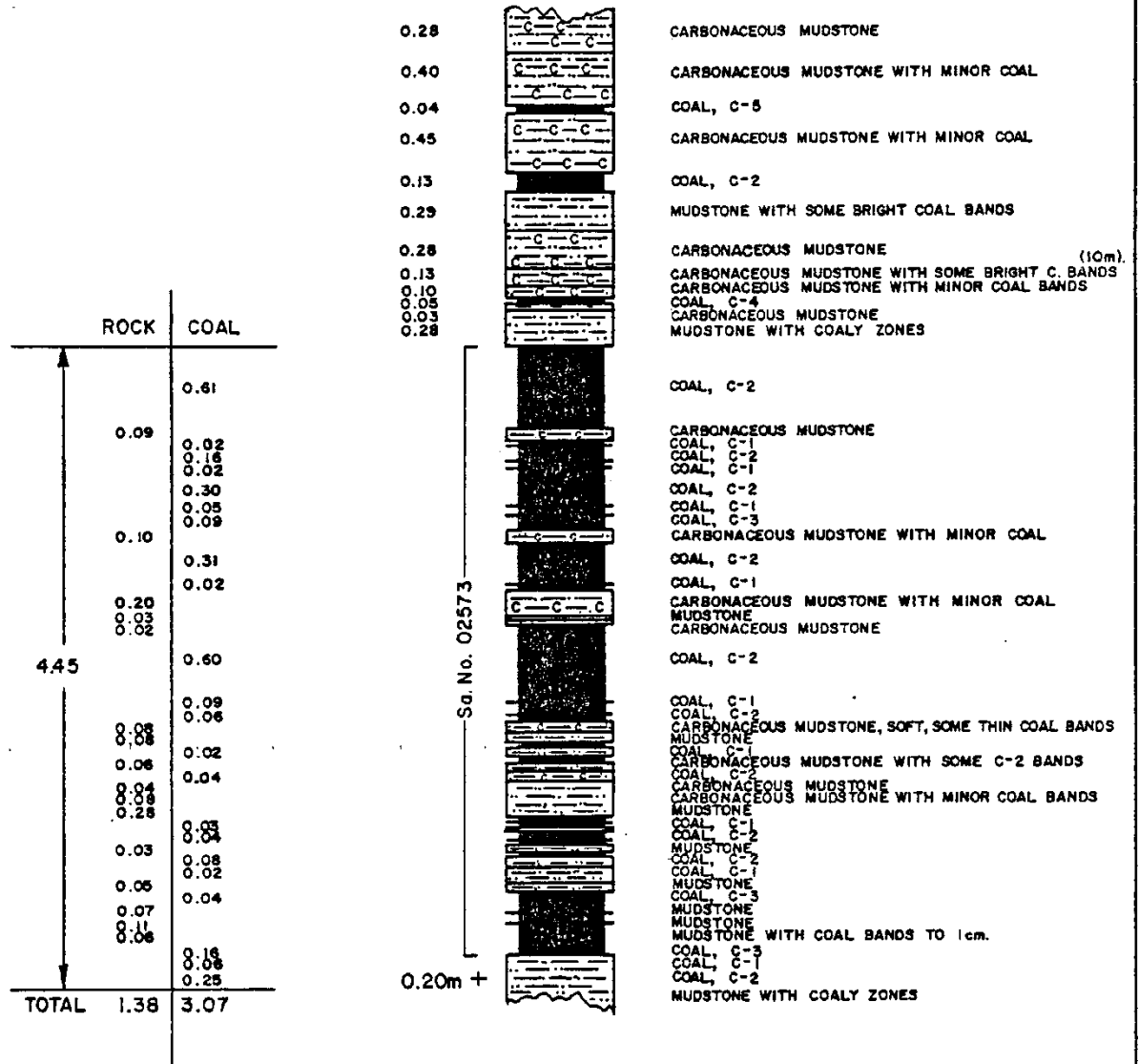
LENGTH - 6.75
SIZE WIDTH - 0.7
SIZE HEIGHT - 1.0

INCLINATION - 0.0
AZIMUTH - 0.0

ROOF STRIKE - 83
ROOF DIP - 44
ROOF DIR -

FLOOR STRIKE - 50
FLOOR DIP - 22
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE



ATTITUDE OF ROOF : 083/44°S
 ATTITUDE OF FLOOR : 050/22°S

GULF CANADA RESOURCES INC.		
CALGARY	Coal Division	
MT. KLAPPAN COAL PROJECT		
TRENCH LOG		
KPN-TRC-81-008		
DRAWN BY:	DATE: 16-11-81	SCALE: 1:50
LOGGED BY: J. INNIS		DRAWING No.
APPROVED BY:	DATE:	

84/11/28

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: XX DATA SOURCE: TRC81008

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
00	0.00	0.28	0.28			MUDSTONE	CARB
00	0.28	0.68	0.40			MUDSTONE	CARB LENSES OF C-4
00	0.68	0.72	0.04			COAL	C-5
00	0.72	1.17	0.45			MUDSTONE	CARB
00	1.17	1.30	0.13			COAL	C-2
00	1.30	1.59	0.29			MUDSTONE	
00	1.59	1.87	0.28			MUDSTONE	CARB
00	1.87	2.00	0.13			MUDSTONE	CARB
00	2.00	2.10	0.10			MUDSTONE	
00	2.10	2.15	0.05			COAL	C-4
00	2.15	2.18	0.03			MUDSTONE	CARB

* DENOTES MEASURED BCA

84/11/28

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: XX DATA SOURCE: TRC81008

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
00	2.18	2.46	0.28			MUDSTONE	
00	2.46	3.07	0.61			COAL	C-2
00	3.07	3.16	0.09			MUDSTONE	CARB
00	3.16	3.18	0.02			COAL	C-1
00	3.18	3.34	0.16			COAL	C-2
00	3.34	3.36	0.02			COAL	C-1
00	3.36	3.66	0.30			COAL	C-2
00	3.66	3.71	0.05			COAL	C-1
00	3.71	3.80	0.09			COAL	C-3
00	3.80	3.90	0.10			MUDSTONE	CARB

• DENOTES MEASURED BCA



84/11/28

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 3

PROJECT: KPN BLOCK: XX DATA SOURCE: TRC81008

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
00	3.90	4.21	0.31			COAL	C-2
00	4.21	4.23	0.02			COAL	C-1
00	4.23	4.43	0.20			MUDSTONE	CARB
00	4.43	4.46	0.03			MUDSTONE	
00	4.46	4.48	0.02			MUDSTONE	CARB
00	4.48	5.08	0.60			COAL	C-2
00	5.08	5.17	0.09			COAL	C-1
00	5.17	5.23	0.06			COAL	C-2
00	5.23	5.31	0.08			MUDSTONE	CARB
00	5.31	5.39	0.08			MUDSTONE	BN

* DENOTES MEASURED BCA

84/11/28

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 4

PROJECT: KPN BLOCK: XX DATA SOURCE: TRC81008

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
00	5.39	5.41	0.02			COAL	C-1
00	5.41	5.47	0.06			MUDSTONE	CARB C-2 BANDS
00	5.47	5.51	0.04			COAL	C-2
00	5.51	5.55	0.04			MUDSTONE	CARB.BN
00	5.55	5.63	0.08			MUDSTONE	CARB
00	5.63	5.91	0.28			MUDSTONE	CARB
00	5.91	5.94	0.03			COAL	C-1
00	5.94	5.98	0.04			COAL	C-2
00	5.98	6.01	0.03			MUDSTONE	CARB
00	6.01	6.09	0.08			COAL	C-2

• DENOTES MEASURED BCA



84/11/28

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 5

PROJECT: KPN BLOCK: XX DATA SOURCE: TRC81008

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
00	6.09	6.14	0.05			COAL	C-1
00	6.14	6.16	0.02			MUDSTONE	CARB
00	6.16	6.23	0.07			COAL	C-3
00	6.23	6.27	0.04			MUDSTONE	CARB
00	6.27	6.38	0.11			MUDSTONE	CARB
00	6.38	6.44	0.06			MUDSTONE	COAL BANDS
00	6.44	6.60	0.16			COAL	C-3
00	6.60	6.66	0.06			COAL	C-1
00	6.66	6.91	0.25			COAL	C-2
00	6.91	7.11	0.20			MUDSTONE	COALY

* DENOTES MEASURED BCA
NEWPAGE

GULF CANADA RESOURCES INC. - COAL DIVISION
09/NOV/84 PROJECT DATA SOURCE SUMMARY * PAGE 1

DATA SOURCE	LOCATION NORTHING EASTING		ELEVATION	LENGTH	ANGLE	AZIMUTH	LOG TYPE
KPNFCTRC82035	6347505.0	504495.0	1310.0	16.8	85.0	235.0	



GULF CANADA RESOURCES INC. - COAL DIVISION
08/NOV/84 PROJECT DATA SOURCE SUMMARY PAGE 1

DATA SOURCE	LOCATION		ELEVATION	LENGTH	ANGLE	AZIMUTH	LOG TYPE
	NORTHING	EASTING					
KPNSSTRC82039	6351580.0	504640.0	1255.0	8.6	15.0	125.0	



GULF CANADA RESOURCES INC. - COAL DIVISION
 09/NOV/84 SIMPLE SAMPLE SUMMARY PAGE 1
 TRUE THICKNESS
 KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED		MISSING		TOTAL
						COAL	ROCK	COAL	ROCK	COAL-ROCK
TRC82035		3505	0.57	4.05	100.00	3.290	0.190			3.29- 0.19



08/NOV/84 GULF CANADA RESOURCES INC. - COAL DIVISION PAGE 1
 SIMPLE SAMPLE SUMMARY
 TRUE THICKNESS
 KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	ROCK	MISSING COAL	ROCK	TOTAL COAL-ROCK
TRC82039		3480	0.69	2.09	100.00					0.00- 0.00
		3481	2.09	3.38	100.00					0.00- 0.00
		3482	3.38	5.59	100.00					0.00- 0.00
		3484	5.59	8.31	100.00					0.00- 0.00



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNFCTRC82035

DATE - 12/14/84

- HISTORY -

START DATE - 08/17/82

END DATE - 08/17/82

CONTRACTOR -

GEOLOGIST - LOUIE

OPERATOR - GCRI

SURVEYOR -

REMARKS - NO FLOOR OBTAINED

- LOCATION -

PROVINCE - BC

ELEVATION - 1310.00

ZONE - 9

NORTHING - 6347505.00

EASTING - 504495.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571621

LONGITUDE - 1285532

- ORIENTATION -

LENGTH - 16.80

INCLINATION - 85.0

AZIMUTH - 235.0

SIZE WIDTH - 1.2

SIZE HEIGHT - 0.7

ROOF STRIKE - 260

ROOF DIP - 34

ROOF DIR - E

FLOOR STRIKE - 0

FLOOR DIP - 0

FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

ROCK	COAL
	0.13
	0.19
	0.22
	0.48
	0.09
	1.74
	0.08
	0.11
	0.16
0.07	
0.12	
	0.09+
TOTAL	0.19
	3.29

3.48

0.57+ m

Sa No 03505



CLAYSTONE: CARBONACEOUS, BRITTLE, LIGHT GRAY,
FRESH DARK GRAY COAL BANDS &
STRINGER, ROOF

COAL, C-4

COAL, C-2, HARD, DULL, WEATHERED

COAL, C-3, HARD, DULL, WEATHERED, SOME CLAY

COAL, C-2, HARD, IRON STAIN, WEATHERED DULL
MINOR FOLDING, MINOR CLAY

COAL, C-4, CLAY, NOT AS HARD

COAL, C-2, HARD, IRON STAIN, CLEAVES WELL

C-2, NOT AS HARD AS ABOVE, BUT STILL BRITTLE

C-2, HARD & BRITTLE
WEATHERED GRAY

COAL, C-1, HARD, WTHRD GY

COAL, C-4, CLAY

COAL, C-2

CLAY: COAL STRINGERS

SILTSTONE: WITH COAL STRINGERS

COAL, C-3

ATTITUDE OF ROOF : 080/34° E
 ATTITUDE OF FLOOR : N/A
 FORMATION :
 UTM COORDINATES : 6347505N, 504495 E
 MAP CARD NUMBER :
 AIR PHOTO NUMBER :
 TRENCH DEPTH : 0.7 m
 TRENCH WIDTH : 1.2 m
 TRENCH LENGTH : 16.80m
 TRENCH BEARING : 235°
 TRENCH SLOPE : 85°

GULF CANADA RESOURCES INC.

CALGARY

Coal Division

ALBERTA



MT. KLAPPAN COAL PROJECT

TRENCH LOG

TRC-82-035

DRAWN BY: A. MURRAY

SCALE 1:50

LOGGED BY: C. LOUIE

DATE Aug. 17/82

APPROVED BY:

R4/11/09

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: FC DATA SOURCE: TRC82035

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.00	0.57	0.57			CLAYSTONE	CARB ROOF, WTHRD LT GY, FRESH DK GY, BRITTLE, COAL BANDS & STRINGERS
	0.57	0.70	0.13	03505		COAL	C-4
	0.70	0.89	0.19	03505		COAL	C-2 HARD, DULL
	0.89	1.11	0.22	03505		COAL	C-3 HARD, WTHRD DULL, MNR CLAY
	1.11	1.59	0.48	03505		COAL	C-2 HARD, WTHRD DULL, FE-STAINS, MNR CLAY, MNR FOLDING
	1.59	1.68	0.09	03505		COAL	C-4 MNR CLAY
	1.68	3.42	1.74	03505		COAL	C-2 HARD, FE-STAINS, CLEAVES WELL
	3.42	3.50	0.08	03505		COAL	C-1 HARD, WTHRD GY
	3.50	3.61	0.11	03505		COAL	C-4 CLAY

* DENOTES MEASURED BCA



84/11/09

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: FC DATA SOURCE: TRC82035

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	3.61	3.77	0.16	03505		COAL	C-2
	3.77	3.84	0.07	03505		CLAY	COAL STRINGERS
	3.84	3.96	0.12	03505		SILTSTONE	COAL STRINGERS
	3.96	4.05	0.09	03505		COAL	C-3

* DENOTES MEASURED BCA
NEWPAGE



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSSTRC82039

DATE - 12/14/84

- HISTORY -

START DATE - 07/30/82
END DATE - 07/30/82

CONTRACTOR -
GEOLOGIST - SWANBERGSON

OPERATOR - GCRI
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 1255.00

ZONE - 9
NORTHING - 6351580.00
EASTING - 504640.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571833
LONGITUDE - 1285523

- ORIENTATION -

LENGTH - 8.60
SIZE WIDTH - 0.6
SIZE HEIGHT - 1.0

INCLINATION - 15.0
AZIMUTH - 125.0

ROOF STRIKE - 265
ROOF DIP - 29
ROOF DIR - S

FLOOR STRIKE - 233
FLOOR DIP - 39
FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE

ROCK	COAL
	0.60
0.08	0.82
0.05	0.17
0.17	0.05
0.08	0.27
0.07	0.08
0.10	0.11
0.05	0.04
0.05	
7.72	1.39
0.13	
	0.69
0.10	0.09
0.06	0.33
0.06	0.09
0.05	
	0.70
0.08	0.11
0.05	0.39
0.05	0.08
0.13	
	0.35
TOTAL	1.36
	6.36

0.35m
0.16m
0.10m
0.08m

Sa No 03480

Sa No 03481

Sa No 03482 - 83

Sa No 03484



SHALE: DARK GRAY, SOFT; WEATHERS GRAY TO RUST THINLY BEDDED, MINOR MUDST. INTERBEDS

CLAYSTONE: CARBONACEOUS

COAL: HARD, DULL BANDED

MUDSTONE: BROWN AND SOFT

COAL: FINELY BANDED AND DULL BANDED, HARD

MUDSTONE: SOFT, GRAY

COAL: SLIGHTLY CARBONACEOUS, C-3

COAL: DULL BANDED, HARD

MUDSTONE: SOFT, DARK GRAY

COAL: DULL BANDED

SHALE: LIGHT GRAY, HIGHLY FRACTURED, SLIGHTLY CARBONACEOUS

COAL: DULL

MUDSTONE: SOFT, GRAY

COAL: DULL BANDED, MINOR CLAYSTONE (CARB.)

MUDSTONE: CARBONACEOUS IN PART

COAL / MUDSTONE INTERBEDS

COAL: DULL BANDED TO DULL AND BRIGHT

MUDSTONE: DARK GRAY, CONSOLIDATED

COAL: DULL

COAL: DULL BANDED

COAL: BRIGHT BANDED

COAL: DULL AND BRIGHT

COAL: DULL AND BRIGHT, LOW DENSITY

MUDSTONE: BROWN

COAL: DULL AND BRIGHT (HARD, LOW DENSITY) TO BRIGHT

MUDSTONE: DARK GRAY

COAL: DULL AND BRIGHT

MUDSTONE: SOFT, GRAY

COAL: DULL BANDED

MUDSTONE: MINOR COAL STRINGERS

COAL: DULL AND BRIGHT

MUDSTONE: SOFT

COAL: C-3, HARD, DULL & BRIGHT TO DULL BANDED

MUDSTONE: SOFT

COAL: DULL BANDED TO DULL AND BRIGHT

MUDSTONE: SOFT, GRAY

COAL: DULL BANDED, WEATHERED, IRON STAINING AT BASE

CLAYSTONE: CARBONACEOUS

COAL: DULL AND BRIGHT

SHALE: HARD

COAL: DULL BANDED TO DULL AND BRIGHT

SANDSTONE: GRAY, FINE GRAIN HARD IN PART, RUST WEATHER IN PART

SHALE

SILTSTONE

ATTITUDE OF ROOF : 085/29° S

ATTITUDE OF FLOOR : 053/39° S

FORMATION :

UTM COORDINATES : 6351580 N, 504640 E

MAP CARD NUMBER :

AIR PHOTO NUMBER :


TRENCH DEPTH : 1.0 m

TRENCH WIDTH : 0.60 m

TRENCH LENGTH : 8.6 + m

TRENCH BEARING : 125°

TRENCH SLOPE : 015°

GULF CANADA RESOURCES INC.		
CALGARY	Coal Division	
MT. KLAPPAN COAL PROJECT		
TRENCH LOG		
TRC-82-039		
DRAWN BY:	SCALE	
LOGGED BY: E. SWANBERGSON	DATE July 30/82	
APPROVED BY:		

84/11/09

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SS DATA SOURCE: TRC82039

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.00	0.35	0.35			SHALE	DK. GY. THNR SOFT
	0.35	0.51	0.16			CLAYSTONE	CARB. BLK SOFT
	0.51	0.61	0.10			COAL	C-3 HARD
	0.61	0.69	0.08			MUDSTONE	BN SOFT
	0.69	1.29	0.60	03480		COAL	C-3. BLK HARD
	1.29	1.37	0.08	03480		MUDSTONE	GY SOFT
	1.37	1.49	0.12	03480		COAL	C-3. BLK HARD
	1.49	2.09	0.60	03480		COAL	C-3. BLK HARD
	2.09	2.14	0.05	03481		MUDSTONE	DK. GY SOFT
	2.14	2.31	0.17	03481		COAL	C-3

* DENOTES MEASURED BCA

84/11/09

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: SS DATA SOURCE: TRC82039

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	2.31	2.48	0.17	03481		SHALE	LT.GY HIGHLY FRAC, SLIGHTLY CARB
	2.48	2.53	0.05	03481		COAL	C-2.BLK
	2.53	2.61	0.08	03481		MUDSTONE	BN SOFT
	2.61	2.88	0.27	03481		COAL	C-3.BLK MNR CARB CLYST SPLITS
	2.88	2.95	0.07	03481		MUDSTONE	DK.GY CARB IN PART
	2.95	3.03	0.08	03481		COAL	C-3.BLK
	3.03	3.13	0.10	03481		MUDSTONE	DK.GY SOFT
	3.13	3.24	0.11	03481		COAL	C-3.BLK
	3.24	3.29	0.05	03481		MUDSTONE	DK.GY.THNB CONSOLIDATED
	3.29	3.33	0.04	03481		COAL	C-4.BLK

* DENOTES MEASURED BCA



84/11/09

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 3

PROJECT: KPN BLOCK: SS DATA SOURCE: TRCB2039

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	3.33	3.38	0.05	03481		MUDSTONE	
	3.38	4.77	1.39	03482		COAL	C-4.BLK SAMPLE ID ALSO CONTAINS 03483;3 BAGS NEEDED TO SAMPLE
	4.77	4.90	0.13	03482		MUDSTONE	BN SOFT, SAMPLE ID ALSO CONTAINS 03483;3 BAGS NEEDED TO SAMPLE
	4.90	5.59	0.69	03482		COAL	C-4.BLK HARD, BLOCKY, SAMPLE ID ALSO CONTAINS 03483;3 BAGS NEEDED TO SAMPLE
	5.59	5.69	0.10	03484		MUDSTONE	DK.GY
	5.69	5.78	0.09	03484		COAL	C-4.BLK
	5.78	5.84	0.06	03484		MUDSTONE	GY SOFT
	5.84	6.17	0.33	03484		COAL	C-3.BLK

* DENOTES MEASURED BCA



PROJECT: KPN BLOCK: SS DATA SOURCE: TRC82039

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	6.17	6.23	0.06	03484		MUDSTONE	DK.GY MNR COAL STRGS
	6.23	6.32	0.09	03484		COAL	C-4.BLK
	6.32	6.37	0.05	03484		MUDSTONE	GY SOFT
	6.37	7.07	0.70	03484		COAL	C-3.BLK C-4 IN PART
	7.07	7.15	0.08	03484		MUDSTONE	GY SOFT
	7.15	7.26	0.11	03484		COAL	C-3.BLK C-4 IN PART
	7.26	7.31	0.05	03484		MUDSTONE	GY SOFT
	7.31	7.70	0.39	03484		COAL	C-3.BLK WEATHERED, FERRUGINOUS AT BASE
	7.70	7.75	0.05	03484		CLAYSTONE	CARB.BLK SOFT
	7.75	7.83	0.08	03484		COAL	C-4.BLK

* DENOTES MEASURED BCA



84/11/09

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 5

PROJECT: KPN BLOCK: SS DATA SOURCE: TRC82039

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	7.83	7.96	0.13	03484		SHALE	M.GY HARD
	7.96	8.31	0.35	03484		COAL	C-3.BLK C-4 IN PART
	8.31	8.71	0.40			SANDSTONE	M.GY MNR FERRUGINOUS STAINING
	8.71	8.91	0.20			SHALE	GY POORLY EXPOSED
	8.91	9.21	0.30			SILTSTONE	LT.GY POORLY EXPOSED

GULF CANADA RESOURCES INC. - COAL DIVISION S-N.
 14/MAR/84 PROJECT DATA SOURCE SUMMARY PAGE 1

DATA SOURCE	LOCATION		ELEVATION	LENGTH	ANGLE	AZIMUTH	LOG TYPE
	NORTHING	EASTING					
KPNSNTRC83048	6349990.0	498290.0	2011.0	6.9	30.0	175.0	
KPNSNTRC83049	6350170.0	498310.0	2042.0	8.8	2.0	340.0	
KPNSNTRC83051	6350265.0	498225.0	2026.0	8.2	13.0	164.0	
KPNSNTRC83055	6350250.0	498285.0	2026.0	5.9	16.0	143.0	
KPNSNTRC83056	6350210.0	498490.0	2042.0	7.7	2.0	171.0	
KPNSNTRC83057	6350335.0	498150.0	2028.0	7.1	17.0	164.0	
KPNSNTRC83058	6350116.0	501355.0	1783.0	6.2	7.0	21.0	
KPNSNTRC83059	6349920.0	501250.0	1900.0	11.0	34.0	36.0	
KPNSNTRC83061	6350175.0	501406.0	1763.0	6.0	7.0	35.0	
KPNSNTRC83062	6349780.0	501525.0	1845.0	7.7	25.0	60.0	
KPNSNTRC83064	6350870.0	500420.0	1700.0	3.5	45.0	90.0	
KPNSNTRC83065	6351327.0	500458.0	1680.0	4.0	20.0	160.0	
KPNSNTRC83066	6349995.0	501600.0	1738.0	9.4	0.0	40.0	
KPNSNTRC83074	6351420.0	499670.0	1649.0	9.0	20.5	138.0	
KPNSNTRC83075	6351730.0	499610.0	1622.0	6.0	12.0	20.0	
KPNSNTRC83078	6356810.0	490220.0	2011.0	3.2	10.0	5.0	



GULF CANADA RESOURCES INC. - COAL DIVISION SN.
14/MAR/84 PROJECT DATA SOURCE SUMMARY PAGE 2

DATA SOURCE	LOCATION		ELEVATION	LENGTH	ANGLE	AZIMUTH	LOG TYPE
	NORTHING	EASTING					
KPNSNTRC83079	6357820.0	490240.0	1981.0	2.2	15.0	165.0	
KPNSNTRC83080	6357800.0	490240.0	1981.0	2.0	9.0	175.0	
KPNSNTRC83081	6357790.0	490230.0	2011.0	2.2	10.0	0.0	
KPNSNTRC83089	6356590.0	490200.0	2073.0	4.5	26.0	165.0	
KPNSNTRC83090	6358300.0	490050.0	1943.0	13.0	4.0	10.0	



GULF CANADA RESOURCES INC. - COAL DIVISION 3-5.
14/MAR/84 PROJECT DATA SOURCE SUMMARY PAGE 1

DATA SOURCE	LOCATION		ELEVATION	LENGTH	ANGLE	AZIMUTH	LOG TYPE
	NORTHING	EASTING					
KPNSSTRC83052	6349810.0	501960.0	1738.0	15.7	5.0	193.0	
KPNSSTRC83054	6349845.0	505560.0	1747.0	7.8	30.0	50.0	
KPNSSTRC83060	6349116.0	500911.0	1733.0	21.0	5.0	358.0	
KPNSSTRC83063	6349555.0	502560.0	1649.0	4.7	15.0	50.0	
KPNSSTRC83067	6351075.0	501372.0	1607.0	5.0	0.0	125.0	



12/NOV/84

GULF CANADA RESOURCES INC. - COAL DIVISION
 SIMPLE SAMPLE SUMMARY
 TRUE THICKNESS
 KLAPPAN PROJECT

PAGE 1

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED		MISSING		TOTAL
						COAL	ROCK	COAL	ROCK	COAL-ROCK
TRC83051		6761	2.00	3.22	100.00	1.220				1.22- 0.00
TRC83052		6762	0.30	3.80	100.00	3.500				3.50- 0.00
		6763	3.80	7.40	100.00		3.600			0.00- 3.60
		6764	7.40	12.60	100.00	4.830	0.370			4.83- 0.37
TRC83054		3572	2.34	3.90	100.00	1.360	0.200			1.36- 0.20
TRC83055		6757	0.53	2.63	100.00	2.100				2.10- 0.00
		6758	2.63	3.27	100.00	0.220	0.420			0.22- 0.42
TRC83056		6754	0.51	1.00	100.00	0.490				0.49- 0.00
		6755	1.00	1.20	100.00		0.200			0.00- 0.20
		6756	1.20	2.83	100.00	1.430	0.200			1.43- 0.20
TRC83057		6759	0.49	3.03	100.00	1.930	0.610			1.93- 0.61
TRC83058		6768	0.58	6.26	100.00	4.940	0.740			4.94- 0.74
TRC83059		6765	1.19	1.94	100.00	0.700	0.050			0.70- 0.05
		6766	1.94	2.63	100.00		0.690			0.00- 0.69
		6767	2.63	4.57	100.00	1.770	0.170			1.77- 0.17
TRC83060		3573	1.94	5.24	100.00	2.900	0.400			2.90- 0.40
		3574	5.24	8.77	100.00	2.930	0.600			2.93- 0.60
		3575	8.77	11.18	100.00	1.850	0.560			1.85- 0.56
		3576	12.98	13.88	100.00	0.900				0.90- 0.00
TRC83061										



12/NOV/84 GULF CANADA RESOURCES INC. - COAL DIVISION
 SIMPLE SAMPLE SUMMARY PAGE 2
 TRUE THICKNESS
 KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	ROCK	MISSING COAL	ROCK	TOTAL COAL-ROCK
TRC83066		3577	0.90	2.80	100.00	1.400	0.500			1.40- 0.50
		3578	0.00	5.90	100.00	5.030	0.870			5.03- 0.87
		3579	5.90	7.65	100.00	1.650	0.100			1.65- 0.10



15/MAR/84

GULF CANADA RESOURCES INC. - COAL DIVISION **S-N**
 SIMPLE SAMPLE SUMMARY PAGE 1
 APPARENT THICKNESS
 KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	ROCK	MISSING COAL	ROCK	TOTAL COAL-ROCK
TRC83051		6760	0.30	2.00	100.00	0.42	1.26	0.00	0.00	0.42- 1.28
		6761	2.00	3.22	100.00	1.22	0.00	0.00	0.00	1.22- 0.00
TRC83055		6757	0.53	2.63	100.00	2.10	0.00	0.00	0.00	2.10- 0.00
		6758	2.63	3.27	100.00	0.22	0.42	0.00	0.00	0.22- 0.42
TRC83056		6754	0.51	1.00	100.00	0.49	0.00	0.00	0.00	0.49- 0.00
		6755	1.00	1.20	100.00	0.00	0.20	0.00	0.00	0.00- 0.20
		6756	1.20	2.83	100.00	1.43	0.20	0.00	0.00	1.43- 0.20
TRC83057		6759	0.49	3.03	100.00	1.93	0.61	0.00	0.00	1.93- 0.61
TRC83058		6768	0.58	6.26	100.00	5.33	0.35	0.00	0.00	5.33- 0.35
TRC83059		6765	1.19	1.94	100.00	0.70	0.05	0.00	0.00	0.70- 0.05
		6766	1.94	2.63	100.00	0.00	0.69	0.00	0.00	0.00- 0.69
		6767	2.63	4.57	100.00	1.77	0.17	0.00	0.00	1.77- 0.17
TRC83061		3577	0.90	2.80	100.00	1.40	0.50	0.00	0.00	1.40- 0.50
TRC83066		3578	0.00	5.90	100.00	5.03	0.87	0.00	0.00	5.03- 0.87
		3579	5.90	7.65	100.00	1.65	0.10	0.00	0.00	1.65- 0.10



15/MAR/84

GULF CANADA RESOURCES INC. - COAL DIVISION S.S.
 SIMPLE SAMPLE SUMMARY PAGE 1
 APPARENT THICKNESS
 KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	RECOVERED ROCK	MISSING COAL	MISSING ROCK	TOTAL COAL-ROCK
TRC83052		6762	0.30	3.80	100.00	3.50	0.00	0.00	0.00	3.50- 0.00
		6763	3.80	7.40	100.00	0.00	3.60	0.00	0.00	0.00- 3.60
		6764	7.40	12.60	100.00	4.83	0.37	0.00	0.00	4.83- 0.37
TRC83054		3572	2.34	3.90	100.00	1.36	0.20	0.00	0.00	1.36- 0.20
TRC83060		3573	1.94	5.24	100.00	2.90	0.40	0.00	0.00	2.90- 0.40
		3574	5.24	8.77	100.00	2.93	0.60	0.00	0.00	2.93- 0.60
		3575	8.77	11.18	100.00	1.85	0.56	0.00	0.00	1.85- 0.56
		3576	12.98	13.88	100.00	0.90	0.00	0.00	0.00	0.90- 0.00



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC83048

DATE - 12/14/84

- HISTORY -

START DATE - 07/31/83

END DATE - 07/31/83

CONTRACTOR -

GEOLOGIST - R MAYLOR

OPERATOR - GCRI

SURVEYOR -

REMARKS - TRENCH MAINLY FROZEN WITHIN ONE FOOT OF SURFACE. D
ETAILED LOG UNATTAINABLE

- LOCATION -

PROVINCE - BC

ELEVATION - 2011.00

LICENCE/LEASE NUMBER -

0

ZONE - 9

NORTHING - 6349990.00

EASTING - 498290.00

LATITUDE - 571741

LONGITUDE - 1290142

- ORIENTATION -

LENGTH - 6.90

SIZE WIDTH - 0.6

SIZE HEIGHT - 0.5

ROOF STRIKE - 0

ROOF DIP - 0

ROOF DIR -

INCLINATION - 30.0

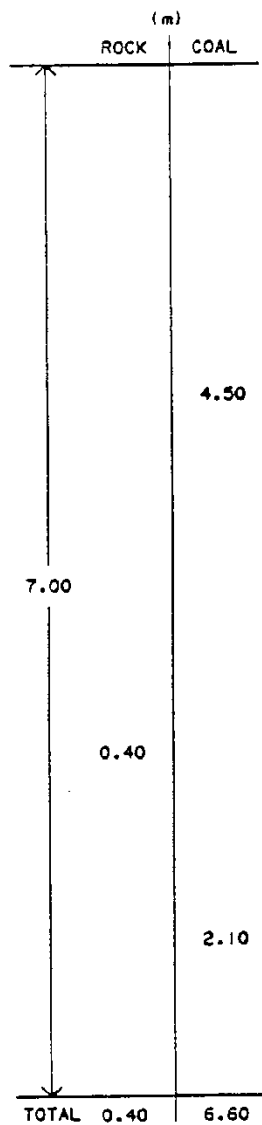
AZIMUTH - 175.0

FLOOR STRIKE - 0

FLOOR DIP - 0

FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE



COAL SPOIL: WITH CLAYSTONE

MUDSTONE

COAL SPOIL: AND CLYST

CLAYSTONE, LT BRN, FOSSILEROUS

* DETAILED LOG UNATTAINABLE - GROUND FROZEN

ATTITUDE OF ROOF : NOT OBTAINED
 ATTITUDE OF FLOOR : NOT OBTAINED
 UTM COORDINATES : 6349990mN, 498290mE
 ELEVATION : 2011m
 MAP CARD NUMBER : 104 H/7 D; 104 H/6 A,G,H
 TRENCH DEPTH : 0.50m
 TRENCH WIDTH : 0.60m
 TRENCH LENGTH : 6.90m
 TRENCH BEARING : 175°
 TRENCH SLOPE : 30°
 TRENCH BLOCK : S.N.

GULF CANADA RESOURCES INC. Coal Division		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG KPN-TRC-83048		
DRAWN BY: C. LOUIE	SCALE: 1:50	
LOGGED BY: R. MAYLOR	DATE: 02/08/83	
APPROVED BY: C.W.		

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPH BLOCK: SN DATA SOURCE: TRC83048

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	4.50	4.50			COAL	COAL SPOIL
	4.50	9.00	4.50			COAL	WEATHERED; INTERBEDDED WITH CLAYSTONE; FROZEN. NO APPARENT ORIENTATION.
	9.00	11.10	2.10			COAL	WEATHERED; INTERBEDDED WITH CLAYSTONE.
	11.10	15.60	4.50			COAL	

* DENOTES MEASURED BCA
NEWPAGE

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC83049

DATE - 12/14/84

- HISTORY -

START DATE - 07/31/83
END DATE - 07/31/83

CONTRACTOR - OPERATOR - GCRI
GEOLOGIST - R. MAYLOR SURVEYOR -

REMARKS - ATTITUDE OF ROOF NOT OBTAINED

- LOCATION -

PROVINCE - BC ZONE - 9
ELEVATION - 2042.00 NORTHING - 6350170.00
LICENCE/LEASE NUMBER - 0 EASTING - 498310.00
LATITUDE - 571747
LONGITUDE - 1290141

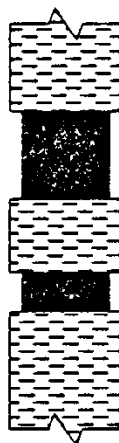
- ORIENTATION -

LENGTH - 8.80 INCLINATION - 2.0
AZIMUTH - 340.0
SIZE WIDTH - 0.5
SIZE HEIGHT - 0.8
ROOF STRIKE - 0 FLOOR STRIKE - 230
ROOF DIP - 0 FLOOR DIP - 35
ROOF DIR - FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE

(m)	
ROCK	COAL
	0.60
1.37	0.50
	0.27
TOTAL	0.87

0.60+m



CLAYSTONE, LIGHT BROWN

COAL: UNCONSOLIDATED


MUD

COAL: UNCONSOLIDATED, MINOR CLAYSTONE

MUD, MEDIUM BROWN

0.80+m

ATTITUDE OF ROOF : NOT OBTAINED
 ATTITUDE OF FLOOR : 050/35S
 UTM COORDINATES : 6350170mN, 498310mE
 ELEVATION : 2042m
 MAP CARD NUMBER : 104 H/7 D; 104 H/6 A,G,H
 TRENCH DEPTH : 0.80
 TRENCH WIDTH : 0.54
 TRENCH LENGTH : 8.8
 TRENCH BEARING : 340°
 TRENCH SLOPE : 02°
 TRENCH BLOCK : S.N.

GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG		
KPN-TRC-83049		
DRAWN BY: C. LOUIE	SCALE: 1:50	
LOGGED BY: ROSS MAYLOR	DATE: 31/07/83	
APPROVED BY: C.M.		

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC83049

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.60	0.60			CLAYSTONE	LT. BN. ROOF
	0.60	1.20	0.60			COAL	UNCONSOLIDATED
	1.20	1.70	0.50			MUDSTONE	
	1.70	1.97	0.27			COAL	UNCONSOLIDATED, MINOR CLAYSTONE.
	1.97	2.77	0.80			MUDSTONE	M. BN. FLOOR

* DENOTES MEASURED BCA
NEWPAGE

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC83051

DATE - 12/14/84

- HISTORY -

START DATE - 08/02/83
END DATE - 08/02/83

CONTRACTOR -
GEOLOGIST - S FAWCETT

OPERATOR - GCRI
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 2026.00
LICENCE/LEASE NUMBER - 0

ZONE - 9
NORTHING - 6350265.00
EASTING - 498225.00
LATITUDE - 571750
LONGITUDE - 1290146

- ORIENTATION -

LENGTH - 8.20
SIZE WIDTH - 0.7
SIZE HEIGHT - 1.1

INCLINATION - 13.0
AZIMUTH - 164.0

ROOF STRIKE - 249
ROOF DIP - 34
ROOF DIR - S

FLOOR STRIKE - 241
FLOOR DIP - 31
FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE

(m)	
ROCK	COAL
0.10	0.14
1.46	1.22
TOTAL 0.10	1.36

0.30+m
0.13
0.42
0.15
0.76

SA. NO.
06761

1.00+m



CLAYSTONE, WTHRD
COAL: LIGHTLY WTHRD
CLAYSTONE, CARB, COAL LAMINATIONS
COAL: C-2
CLAYSTONE, CARB, MNR COAL
COAL: C-3, MNR CLYST
CLAYSTONE, MEDIUM BRN
COAL: C-2, MNR C-3, V MNR CLYST
SANDSTONE, VFGR, FOSSIL IMPRINTS

ATTITUDE OF ROOF : 069/34S
ATTITUDE OF FLOOR: 061/31S
UTM COORDINATES : 6350265mN, 498225mE
ELEVATION : 2026m
MAP CARD NUMBER : 104 H/7 D; 104 H/A,G,H
TRENCH DEPTH : 1.10m
TRENCH WIDTH : 0.71m
TRENCH LENGTH : 8.20m
TRENCH BEARING : 164°
TRENCH SLOPE : 13°
TRENCH BLOCK : S.N.

GULF CANADA RESOURCES INC. <small>Coal Division</small>		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG KPN-TRC-83051		
DRAWN BY: C. LOUIE	SCALE: 1:50	
LOGGED BY: SCOTT FAWCETT	DATE: 02/08/83	
APPROVED BY: C.W.		

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC83051

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.30	0.30			CLYST	WEATHERED ROOF
	0.30	0.43	0.13			COAL	HIGHLY WEATHERED
	0.43	0.85	0.42			CLYST	CARB COAL LAMINATIONS
	0.85	1.00	0.15			COAL	C-2
	1.00	1.76	0.76			CLYST	CARB MINOR COAL
	1.76	1.90	0.14			COAL	C-3 MINOR CLYST
	1.90	2.00	0.10			CLYST	
	2.00	3.22	1.22	06761		COAL	C-2 MINOR C-3, VERY MINOR CLYST
	3.22	4.22	1.00			SST	FG FOSSIL IMPRINTS - FLOOR

* DENOTES MEASURED BCA
NEWPAGE

15/MAR/84 GULF CANADA RESOURCES INC. - COAL DIVISION
HEAD ANALYSIS SUMMARY

PROJ - KPN		ANALYSIS BASIS TYPE - AD				NAME OF STANDARD - ASTM					
DATA SOURCE	SSID	SEAM	SAMPLE ID	RESIDUAL MOISTURE%	ASH%	FIXED CARBON%	VOLATILE MATTER%	TOTAL SULPHUR%	GROSS CALORIFIC VALUE (MJ-KG)	SPG	FSI
TRC83051											
	HD1		6760	5.85	53.28	25.72	15.15	0.40	11.00		
	HD1		6761	5.98	28.77	55.29	9.96	0.43	20.65		



===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSSTRC83052

DATE - 12/14/84

- HISTORY -

START DATE - 08/03/83
END DATE - 08/03/83

CONTRACTOR -
GEOLOGIST - FAWCETT

OPERATOR - GCRI
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 1738.00

ZONE - 9
NORTHING - 6349810.00
EASTING - 501960.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571735
LONGITUDE - 1285803

- ORIENTATION -

LENGTH - 15.70
SIZE WIDTH - 0.6
SIZE HEIGHT - 1.0

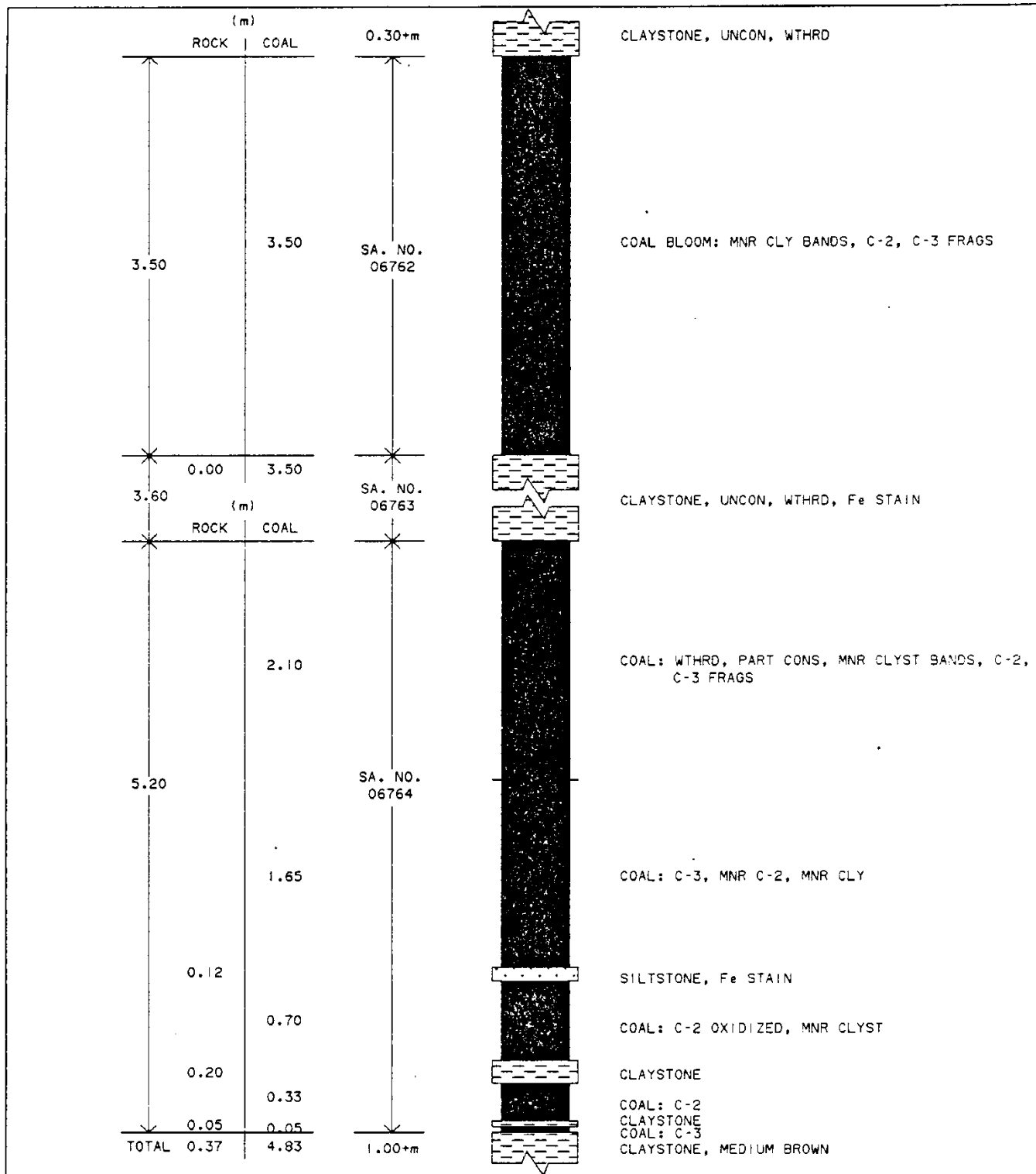
INCLINATION - 5.0
AZIMUTH - 193.0

ROOF STRIKE - 311
ROOF DIP - 64
ROOF DIR - S

FLOOR STRIKE - 311
FLOOR DIP - 64
FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE

=====



ATTITUDE OF ROOF : 131/64S
 ATTITUDE OF FLOOR: 131/64S
 UTM COORDINATES : 6349810mN, 501960mE
 ELEVATION : 1738m
 MAP CARD NUMBER : K 11
 TRENCH DEPTH : 1.04
 TRENCH WIDTH : 0.60
 TRENCH LENGTH : 15.70
 TRENCH BEARING : 193°
 TRENCH SLOPE : 05°
 TRENCH BLOCK : S.S.

GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG		
KPN-TRC-83052		
DRAWN BY: C. LOUIE	SCALE: 1:50	
LOGGED BY: SCOTT FAWCETT	DATE: 02/08/83	
APPROVED BY: C.W.		

PROJECT: KPN BLOCK: 55 DATA SOURCE: TRC83052

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.30	0.30			CLYST	WEATHERED ROOF - BEDDING INDISTINCT; UNCONSOLIDATED
	0.30	3.80	3.50	06762		COAL	BLOOM ONLY - MINOR CLYST BANDS - C-2, C-3 FRAGS
	3.80	7.40	3.60	06763		CLYST	WEATHERED - FE STAIN - BEDDING INDISTINCT; UNCONSOLIDATED
	7.40	9.50	2.10	06764		COAL	WEATHERED - PARTIALLY CONSOLIDATED - MINOR CLYST BANDS
	9.50	11.15	1.65	06764		COAL	C-3 MINOR C-2, C-3, MINOR CLAYSTONE
	11.15	11.27	0.12	06764		SILST	FE STAIN
	11.27	11.97	0.70	06764		COAL	C-2 OXIDIZED - MINOR CLYST
	11.97	12.17	0.20	06764		CLYST	
	12.17	12.50	0.33	06764		COAL	C-2
	12.50	12.55	0.05	06764		CLYST	
	12.55	12.60	0.05	06764		COAL	C-3

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: 55 DATA SOURCE: TRC83052

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	12.60	13.60	1.00			CLYST	M. BN FLOOR

* DENOTES MEASURED BCA
NEWPAGE

GULF CANADA RESOURCES INC. - COAL DIVISION

15/MAR/84

HEAD ANALYSIS SUMMARY

PROJ - KPN		ANALYSIS BASIS TYPE - AD				NAME OF STANDARD - ASTM					
DATA SOURCE	SSID	SEAM	SAMPLE ID	RESIDUAL MOISTURE%	ASH%	FIXED CARBON%	VOLATILE MATTER%	TOTAL SULPHUR%	GROSS CALORIFIC VALUE (MJ-KG)	SPG	FSI
TRC83052											
	HD1		6762	12.01	36.87	30.49	20.63	0.19	12.11		
	HD1		6763	3.19	88.81	0.67	7.33	0.03	0.00		
	HD1		6764	6.39	42.45	38.19	12.97	0.46	14.18		



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSSTRC83054

DATE - 12/14/84

- HISTORY -

START DATE - 08/04/83

END DATE - 08/04/83

CONTRACTOR -

GEOLOGIST - MAYLOR

OPERATOR - GCRI

SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC

ELEVATION - 1747.00

ZONE - 9

NORTHING - 6349845.00

EASTING - 501855.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571737

LONGITUDE - 1285809

- ORIENTATION -

LENGTH - 7.80

INCLINATION - 30.0

AZIMUTH - 50.0

SIZE WIDTH - 0.6

SIZE HEIGHT - 1.8

ROOF STRIKE - 320

ROOF DIP - 20

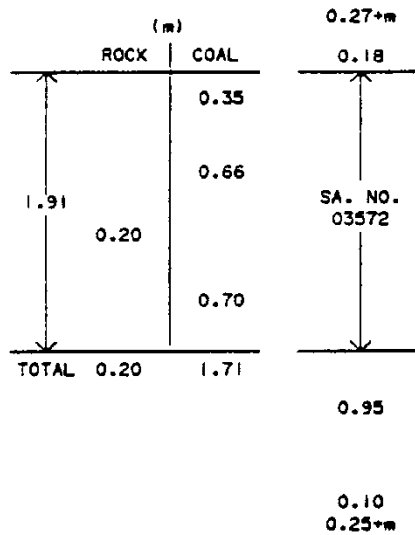
ROOF DIR - S

FLOOR STRIKE - 330

FLOOR DIP - 80

FLOOR DIR - N

*** NOTE *** 0 INDICATES NO VALUE



MUDSTONE, LT BRN, F_e STAINED, UNCON
 CLAYSTONE, CARB, MNR COAL STRGS, F_e STAINED
 COAL: C-3, MOSTLY UNCON, MNR MUDSTONE

COAL: UNCON, CLYST INTB, ABNT QUARTZ FRAGS
 CLAYSTONE, CARB, F_e STAINED, QUARTZ FRAGS

COAL: C-2, OXIDIZED, MNR CLYST

CLAYSTONE, SILTY, BROWN

COAL: C-2, CLAYSTONE, INTB, F_e STAINED
 SANDSTONE, MASSIVE, GREY, FRESH, BRN WTHRD

ATTITUDE OF ROOF : 140/20S * ROOF SLUMPED
 ATTITUDE OF FLOOR: 150/80N
 UTM COORDINATES : 6349845mN, 505560mE
 ELEVATION : 1747m
 MAP CARD NUMBER : K 11
 TRENCH DEPTH : 1.80m
 TRENCH WIDTH : 0.60m
 TRENCH LENGTH : 7.80m
 TRENCH BEARING : 050°
 TRENCH SLOPE : 030°
 TRENCH BLOCK : S.S.

GULF CANADA RESOURCES INC. Coal Division		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG KPN-TRC-83054		
DRAWN BY: G. MAY	SCALE: 1:50	
LOGGED BY: R. MAYLOR	DATE: 04/08/83	
APPROVED BY: C.W.		

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SS DATA SOURCE: TRC83054

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	1.00	1.00			CLAYSTONE	LT.BN IRON STAIN
	1.00	1.54	0.54			CLAYSTONE	CARB MINOR COAL STRINGERS, IRON STAIN
	1.54	1.81	0.27			MUDSTONE	LT.BN UNCONSOLIDATED;
	1.81	1.99	0.18			CLAYSTONE	CARB MINOR COAL STRINGER, IRON STAIN ROOF
	1.99	2.34	0.35			COAL	C-3 UNCONSOLIDATED; MINOR MUD.
	2.34	3.00	0.66	03572		COAL	UNCONSOLIDATED; SLAYSTONE BEDS, ABUNDANT QUARTZ FRAGS
	3.00	3.20	0.20	03572		CLAYSTONE	CARB IRON STAIN QUARTZ FRAGS
	3.20	3.90	0.70	03572		COAL	C-2 OXIDIZED MINOR CLAYSTONE
	3.90	4.85	0.95			CLAYSTONE	SLTY.BN
	4.85	4.95	0.10			COAL	C-2 CLAYSTONE BEDS, IRON STAINED

* DENOTES MEASURED BCA

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: SS DATA SOURCE: TRC83054

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	4.95	5.95	1.00			SANDSTONE	GY.MAS BROWN ON HEATHERED SURFACE FLOOR

* DENOTES MEASURED BCA
NEWPAGE

GULF CANADA RESOURCES INC. - COAL DIVISION
 15/MAR/84 HEAD ANALYSIS SUMMARY

PROJ - KPN		ANALYSIS BASIS TYPE - AD				NAME OF STANDARD - ASTM					
DATA SOURCE	SSID	SEAM	SAMPLE ID	RESIDUAL MOISTURE%	ASH%	FIXED CARBON%	VOLATILE MATTER%	TOTAL SULPHUR%	GROSS CALORIFIC VALUE (MJ-KG)	SPG	FSI
TRC83054											
	HD1		3572	8.83	38.75	33.87	18.55	0.27	13.02		



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC83055

DATE - 12/14/84

- HISTORY -

START DATE - 08/01/83
END DATE - 08/01/83

CONTRACTOR -
GEOLOGIST - JENNER

OPERATOR - GCRI
SURVEYOR -

REMARKS - FLOOR ATTITUDE NA - GEOLOGIST ATTITUDE - ?

- LOCATION -

PROVINCE - BC
ELEVATION - 2026.00

ZONE - 9
NORTHING - 6350250.00
EASTING - 498285.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571750
LONGITUDE - 1290142

- ORIENTATION -

LENGTH - 5.92
SIZE WIDTH - 0.6
SIZE HEIGHT - 0.7

INCLINATION - 16.0
AZIMUTH - 143.0

ROOF STRIKE - 229
ROOF DIP - 54
ROOF DIR - S

FLOOR STRIKE - 0
FLOOR DIP - 0
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

(m)	
ROCK	COAL
	0.58
	1.08
	0.44
0.28	0.10
0.14	0.12
TOTAL	2.32

0.53±m

SA. NO.
06757

SA. NO.
06758

0.28±m



CLAYSTONE, LT BRN, BARELY CONS, WTHRD

COAL: C-2, MINOR CLAYSTONE

COAL: C-2, BLOCKY

COAL: C-2, MNR C-3, BLOCKY, MNR CLAYSTONE

SILTSTONE, M BRN, UNCON, IRON STAINING

COAL: C-4

CLAYSTONE, M GY CONSOLIDATED

COAL: C-2, IRON STAINING

CLAYSTONE

ATTITUDE OF ROOF : 049/54S
 ATTITUDE OF FLOOR: NOT OBTAINED
 UTM COORDINATES : 6350250mN, 498285mE
 ELEVATION : 2026m
 MAP CARD NUMBER : 104 H/7 D; 104 H/6 A,G,H
 TRENCH DEPTH : 0.66m
 TRENCH WIDTH : 0.62m
 TRENCH LENGTH : 5.92m
 TRENCH BEARING : 143°
 TRENCH SLOPE : 16°
 TRENCH BLOCK : S.N.

GULF CANADA RESOURCES INC.

Coal Division

CALGARY

ALBERTA



MT. KLAPPAN COAL PROPERTY

TRENCH LOG
KPN-TRC-83055

DRAWN BY: C. LOUIE

SCALE: 1:50

LOGGED BY: K. JENNER

DATE: 01/08/83

APPROVED BY: C.W.

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC83055

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.53	0.53			CLYST	LT. BN. BARELY CONSOLIDATED - HEATH. ROOF
	0.53	1.11	0.58	06757		COAL	C-2 MINOR CLYST
	1.11	2.19	1.08	06757		COAL	C-2 BLOCKY
	2.19	2.63	0.44	06757		COAL	C-2 MINOR C-3, BLOCKY, MINOR CLYST
	2.63	2.91	0.28	06758		SLTST	M. BN. FE STAINED; UNCONSOLIDATED
	2.91	3.01	0.10	06758		COAL	C-4
	3.01	3.15	0.14	06758		CLYST	M. GY CONSOL.
	3.15	3.27	0.12	06758		COAL	C-2 FE STAIN
	3.27	3.55	0.28			CLYST	FLOOR

* DENOTES MEASURED BCA
NEWPAGE

GULF CANADA RESOURCES INC. - COAL DIVISION
 15/MAR/84 HEAD ANALYSIS SUMMARY

PRDJ - KPN			ANALYSIS BASIS TYPE - AD				NAME OF STANDARD - ASTM				
DATA SOURCE	SSID	SEAM	SAMPLE ID	RESIDUAL MOISTURE%	ASH%	FIXED CARBON%	VOLATILE MATTER%	TOTAL SULPHUR%	GROSS CALORIFIC VALUE (MJ-KG)	SPG	FSI
TRC83055											
	HD1		6757	5.89	25.56	54.40	14.15	0.34	20.05		
	HD1		6758	3.44	75.23	9.29	12.04	0.08	4.31		



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC83056

DATE - 12/14/84

- HISTORY -

START DATE - 08/01/83
END DATE - 08/01/83

CONTRACTOR -
GEOLOGIST - JENNER

OPERATOR - GCRI
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 2042.00

ZONE - 9
NORTHING - 6350210.00
EASTING - 498490.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571748
LONGITUDE - 1290130

- ORIENTATION -

LENGTH - 7.65
SIZE WIDTH - 0.6
SIZE HEIGHT - 0.8

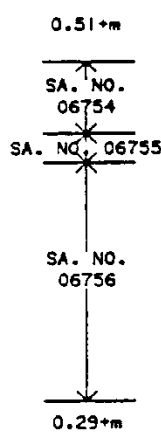
INCLINATION - 2.0
AZIMUTH - 171.0

ROOF STRIKE - 267
ROOF DIP - 13
ROOF DIR - S

FLOOR STRIKE - 266
FLOOR DIP - 23
FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE

(m)	
ROCK	COAL
0.09 0.11	0.49
2.32	0.85
0.12	0.58
0.08	
TOTAL	0.40 1.92



CLAYSTONE, UNCONSOLIDATED, CHUNKY

COAL: C-2, C-3

CLAYSTONE, CARBONACEOUS
CLAYSTONE, LT BRN, SMALL CONS. PEBBLES WITHIN

COAL: C-2, BLOCKY

CLAYSTONE, CARBONACEOUS, MINOR COAL STRGS

COAL: C-2, BLOCKY

CLAYSTONE, CARB, MNR COAL STRGS, LISTRIC SURF
CLAYSTONE, GREY

ATTITUDE OF ROOF : 087/13S
 ATTITUDE OF FLOOR: 086/23S
 UTM COORDINATES : 6350210mN, 498490mE
 ELEVATION : 2042m
 MAP CARD NUMBER : 104 H/7 D; 104 H/6 A,G,H
 TRENCH DEPTH : 0.83m
 TRENCH WIDTH : 0.55m
 TRENCH LENGTH : 7.65m
 TRENCH BEARING : 171°
 TRENCH SLOPE : 002°
 TRENCH BLOCK : S.N.

GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG		
KPN-TRC-83056		
DRAWN BY: O. MAY	SCALE: 1:50	
LOGGED BY: K. JENNER	DATE: 01/08/83	
APPROVED BY: C.W.		

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC83056

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.00	0.51	0.51			CLAYSTONE	UNCONSOLIDATED; BLOCKY. ROOF
	0.51	1.00	0.49	06754		COAL	C-2 MINOR C-3
	1.00	1.09	0.09	06755		CLAYSTONE	CARB
	1.09	1.20	0.11	06755		CLAYSTONE	LT. BN SMALL. CONSOLIDATED. PEBBLES
	1.20	2.05	0.85	06756		COAL	C-2 BLOCKY
	2.05	2.17	0.12	06756		CLAYSTONE	CARB. GY MINOR. COAL. STRINGERS.
	2.17	2.75	0.58	06756		COAL	C-2 BLOCKY
	2.75	2.83	0.08	06756		CLAYSTONE	CARB MINOR. COAL. STRINGERS.
	2.83	3.12	0.29			CLAYSTONE	GY LITRIC. SURFACE FLOOR

* DENOTES MEASURED BCA
NEWPAGE

GULF CANADA RESOURCES INC. - COAL DIVISION
 15/MAR/84 HEAD ANALYSIS SUMMARY

PROJ - KPN		ANALYSIS BASIS TYPE - AD				NAME OF STANDARD - ASTM					
DATA SOURCE	SSID	SEAM	SAMPLE ID	RESIDUAL MOISTURE%	ASH%	FIXED CARBON%	VOLATILE MATTER%	TOTAL SULPHUR%	GROSS CALORIFIC VALUE (MJ-KG)	SPG	FSI
TRC83056											
	HD1		6754	7.30	29.53	45.03	18.14	0.31	17.58		
	HD1		6755	4.41	78.23	6.50	10.86	0.07	3.09		
	HD1		6756	5.19	38.60	43.56	12.65	0.21	15.51		



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC83057

DATE - 12/14/84

- HISTORY -

START DATE - 08/01/83
END DATE - 08/01/83

CONTRACTOR - OPERATOR - GCRI
GEOLOGIST - JENNER SURVEYOR -

REMARKS - FLOOR ATTITUDE NOT OBTAINED

- LOCATION -

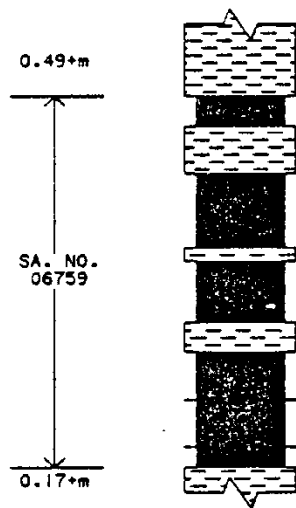
PROVINCE - BC ZONE - 9
ELEVATION - 2028.00 NORTHING - 6350335.00
EASTING - 498150.00
LICENCE/LEASE NUMBER - 0
LATITUDE - 571752
LONGITUDE - 1290151

- ORIENTATION -

LENGTH - 7.10 INCLINATION - 17.0
AZIMUTH - 164.0
SIZE WIDTH - 0.6
SIZE HEIGHT - 0.9
ROOF STRIKE - 268 FLOOR STRIKE - 0
ROOF DIP - 14 FLOOR DIP - 0
ROOF DIR - S FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

(m)	
ROCK	COAL
	0.21
0.32	
	0.51
0.09	
	0.42
0.20	
	0.33
	0.32
	0.14
TOTAL	0.61
	1.93



CLAYSTONE, WEATHERED, LIGHT BROWN
 COAL: C-2, MINOR CLAYSTONE
 CLAYSTONE
 COAL: C-2, MINOR CLAYSTONE
 CLAYSTONE
 COAL: C-2, MINOR CLAYSTONE
 CLAY, MEDIUM GREY
 COAL: C-3
 COAL: C-2
 COAL: C-2, WEATHERED, IRON STAINING
 CLAYSTONE, WEATHERED, MEDIUM BROWN

ATTITUDE OF ROOF : 088/14S
 ATTITUDE OF FLOOR: N/O *DUE TO POOR BEDDING
 UTM COORDINATES : 6350335mN, 498150mE
 ELEVATION : 2028m
 MAP CARD NUMBER : 104 H/7 D; 104 H/6 A,G,H
 TRENCH DEPTH : 0.87m
 TRENCH WIDTH : 0.58m
 TRENCH LENGTH : 7.10m
 TRENCH BEARING : 164°
 TRENCH SLOPE : 017°
 TRENCH BLOCK : S.N.

GULF CANADA RESOURCES INC. Coal Division		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG KPN-TRC-83057		
DRAWN BY: D. MAY	SCALE: 1:50	
LOGGED BY: K. JENNER	DATE: 01/08/83	
APPROVED BY: C.W.		

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC83057

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.49	0.49			CLAYSTONE	LT. BN WEATHERED ROOF
	0.49	0.70	0.21	06759		COAL	C-2 MINOR CLAYSTONE
	0.70	1.02	0.32	06759		CLAYSTONE	
	1.02	1.53	0.51	06759		COAL	C-2 MINOR CLAYSTONE
	1.53	1.62	0.09	06759		CLAYSTONE	
	1.62	2.04	0.42	06759		COAL	C-2 MINOR CLAYSTONE
	2.04	2.24	0.20	06759		CLAY	M. GY
	2.24	2.57	0.33	06759		COAL	C-3
	2.57	2.89	0.32	06759		COAL	C-2
	2.89	3.03	0.14	06759		COAL	C-2 WEATHERED; IRON STAIN

* DENOTES MEASURED BCA

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC83057

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	3.03	3.20	0.17			CLAYSTONE	M. BN WEATHERED FLOOR

* DENOTES MEASURED BCA
NEWPAGE

GULF CANADA RESOURCES INC. - COAL DIVISION
15/MAR/84 HEAD ANALYSIS SUMMARY

PROJ - KPN		ANALYSIS BASIS TYPE - AD				NAME OF STANDARD - ASTM					
DATA SOURCE	SSID	SEAM	SAMPLE ID	RESIDUAL MOISTURE%	ASH%	FIXED CARBON%	VOLATILE MATTER%	TOTAL SULPHUR%	GROSS CALORIFIC VALUE (MJ-KG)	SPG	FSI
TRC83057											
	HD1		6759	6.03	45.70	35.36	12.91	0.26	13.73		



===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC83058

DATE - 12/14/84

- HISTORY -

START DATE - 08/05/83

END DATE - 08/05/83

CONTRACTOR -

GEOLOGIST - JENNER

OPERATOR - GCRI

SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 1783.00

ZONE - 9
NORTHING - 6350116.00
EASTING - 501355.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571745
LONGITUDE - 1285839

- ORIENTATION -

LENGTH - 6.22
SIZE WIDTH - 0.6
SIZE HEIGHT - 1.0

INCLINATION - 7.0
AZIMUTH - 21.0

ROOF STRIKE - 296
ROOF DIP - 90
ROOF DIR -

FLOOR STRIKE - 296
FLOOR DIP - 90
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

=====

(m)	
ROCK	COAL
	0.25
	0.07
	0.49
0.06	
	0.36
0.08	
	0.41
	0.78
0.05	
	0.52
0.10	
	1.23
0.06	
	0.39
	0.83
TOTAL	5.33

0.58+m

SA. NO.
06768

0.26+m



CLAYSTONE, LIGHT GREY

COAL: UNCON, WEATHERED, NO BEDDING APPARENT
COAL: C-2

COAL: UNCONSOLIDATED

CLAY, BROWN

COAL

CLAY, UNCONSOLIDATED

COAL: UNCONSOLIDATED

COAL: C-2, BEDDING, MNR CLYST, MEDIUM BROWN

CLAYSTONE, DARK GREY

COAL: C-2, BEDDING

CLAY, MEDIUM BROWN

COAL: C-2, MINOR CLAYSTONE, CARBONACEOUS

CLAYSTONE, BLK

COAL: C-2, MINOR CLAYSTONE

COAL: UNCONSOLIDATED

CLYST, MEDIUM BROWN

ATTITUDE OF ROOF : 116/90
 ATTITUDE OF FLOOR: 116/90
 UTM COORDINATES : 6350116mN, 501355mE
 ELEVATION : 1783m
 MAP CARD NUMBER : K 11
 TRENCH DEPTH : 1.01m
 TRENCH WIDTH : 0.58m
 TRENCH LENGTH : 6.22m
 TRENCH BEARING : 021°
 TRENCH SLOPE : 07°
 TRENCH BLOCK : S.N.

GULF CANADA RESOURCES INC. Coal Division		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG KPN-TRC-83058		
DRAWN BY: C. MOGAS	SCALE: 1:50	
LOGGED BY: K. JENNER	DATE: 05/08/93	
APPROVED BY: C.M.		

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC83058

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.58	0.58			CLAYSTONE	LT. GY ROOF
	0.58	0.83	0.25	06768		COAL	UNCONSOLIDATED; HEATHERED
	0.83	0.90	0.07	06768		COAL	C-2
	0.90	1.39	0.49	06768		COAL	UNCONSOLIDATED;
	1.39	1.45	0.06	06768		CLAY	M. BN
	1.45	1.81	0.36	06768		COAL	UNCONSOLIDATED;
	1.81	1.89	0.08	06768		CLAYSTONE	UNCONSOLIDATED;
	1.89	2.30	0.41	06768		COAL	UNCONSOLIDATED;
	2.30	3.08	0.78	06768		COAL	C-2 BDG; MINOR. CLAYSTONE. MED. BROWN
	3.08	3.13	0.05	06768		CLAYSTONE	DK. GY
	3.13	3.65	0.52	06768		COAL	C-2 GOOD;

• DENOTES MEASURED BCA

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC83058

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	3.65	3.75	0.10	06768		CLAY	M. BN
	3.75	4.98	1.23	06768		COAL	C-2 MINOR. CLAYSTONE IRON STAIN BROWN
	4.98	5.04	0.06	06768		CLAYSTONE	BLK. YHNB
	5.04	5.43	0.39	06768		COALC-2	MINOR CLAYSTONE. BLACK IRON STAIN
	5.43	6.26	0.83	06768		COAL	UNCONSOLIDATED;
	6.26	6.52	0.26			CLAYSTONE	M. BN FLOOR

* DENOTES MEASURED BCA
NEWPAGE

GULF CANADA RESOURCES INC. - COAL DIVISION
 15/MAR/84 HEAD ANALYSIS SUMMARY

PROJ - KPN		ANALYSIS BASIS TYPE - AD				NAME OF STANDARD - ASTM					
DATA SOURCE	SSID	SEAM	SAMPLE ID	RESIDUAL MOISTURE%	ASH%	FIXED CARBON%	VOLATILE MATTER%	TOTAL SULPHUR%	GROSS CALORIFIC VALUE (MJ-KG)	SPG	FSI
TRC83058											
	HD1		6768	11.47	29.57	38.67	20.29	0.28	15.26		



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC83059

DATE - 12/14/84

- HISTORY -

START DATE - 08/05/83
END DATE - 08/05/83

CONTRACTOR -
GEOLOGIST - JENNER

OPERATOR - GCRI
SURVEYOR -

REMARKS - FLOOR ATTITUDE NOT AVAILABLE

- LOCATION -

PROVINCE - BC
ELEVATION - 1900.00

ZONE - 9
NORTHING - 6349920.00
EASTING - 501250.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571739
LONGITUDE - 1285845

- ORIENTATION -

LENGTH - 11.04
SIZE WIDTH - 0.7
SIZE HEIGHT - 0.9

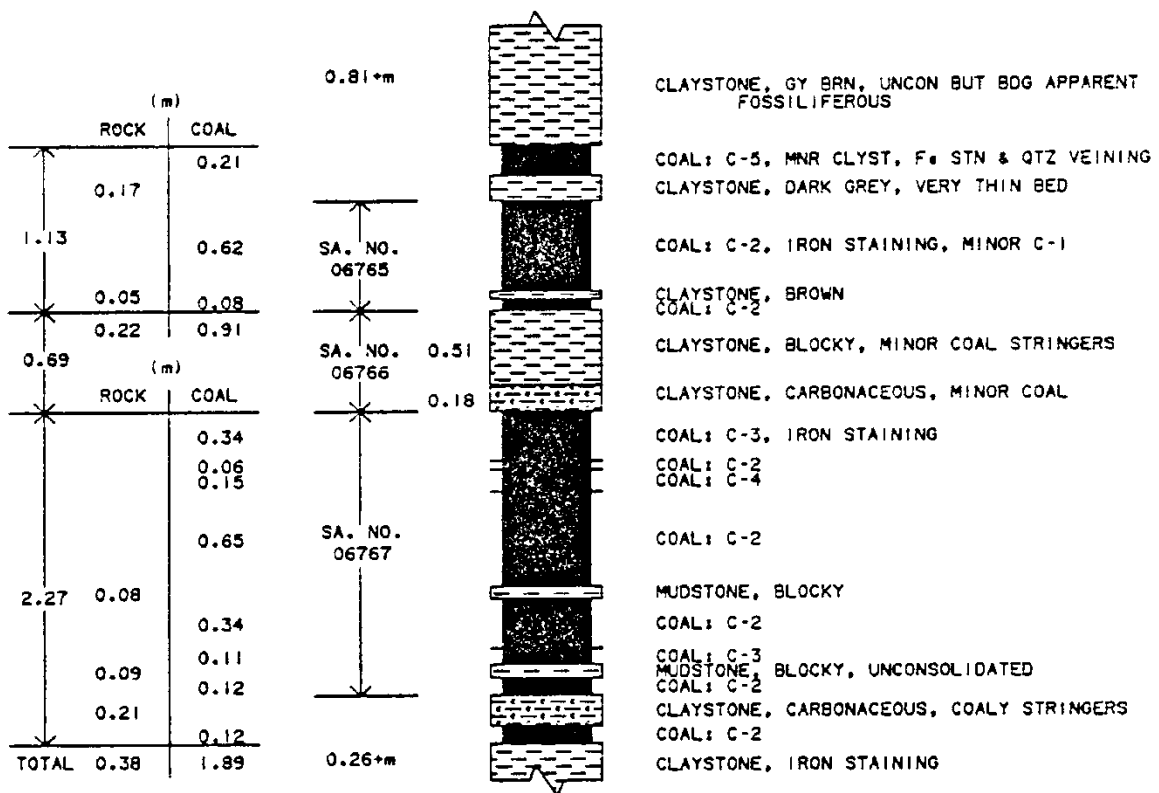
INCLINATION - 34.0
AZIMUTH - 36.0

ROOF STRIKE - 283
ROOF DIP - 9
ROOF DIR - N

FLOOR STRIKE - 0
FLOOR DIP - 0
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

=====



ATTITUDE OF ROOF : 103/09N
 ATTITUDE OF FLOOR: NOT OBTAINED
 UTM COORDINATES : 6349920mN, 501250mE
 ELEVATION : 1900m
 MAP CARD NUMBER : K 11
 TRENCH DEPTH : 0.92m
 TRENCH WIDTH : 0.73m
 TRENCH LENGTH : 11.04m
 TRENCH BEARING : 036°
 TRENCH SLOPE : 34°
 TRENCH BLOCK : S.N.

GULF CANADA RESOURCES INC. Coal Division		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG KPN-TRC-83059		
DRAWN BY: C. NOGAS	SCALE: 1:50	
LOGGED BY: K. JENNER	DATE: 05/08/83	
APPROVED BY: C.W.		

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC83059

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.81	0.81			CLAYSTONE	GY BEDDING APPARENT; UNCONSOLIDATED.
	0.81	1.02	0.21			COAL	C-5 MINOR CLAYSTONE, IRON STAIN AND QUARTZ VIENS; FOSSILIFEROUS; ROOF
	1.02	1.19	0.17			CLAYSTONE	GY.VTHNB
	1.19	1.81	0.62	06765		COAL	C-2 MINOR C-1, IRON STAIN
	1.81	1.86	0.05	06765		CLAYSTONE	BN
	1.86	1.94	0.08	06765		COAL	C-2
	1.94	2.45	0.51	06766		CLAYSTONE	BLK MINOR COAL STRINGERS
	2.45	2.63	0.18	06766		CLAYSTONE	CARB MINOR COAL
	2.63	2.97	0.34	06767		COAL	C-3 IRON STAIN

* DENOTES MEASURED BCA

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC83059

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	2.97	3.03	0.06	06767		COAL	C-2
	3.03	3.18	0.15	06767		COAL	C-4
	3.18	3.83	0.65	06767		COAL	C-2
	3.83	3.91	0.08	06767		MUDSTONE	BLK
	3.91	4.25	0.34	06767		COAL	C-2
	4.25	4.36	0.11	06767		COAL	C-3
	4.36	4.45	0.09	06767		MUDSTONE	BLK UNCONSOLIDATED
	4.45	4.57	0.12	06767		COAL	C-2
	4.57	4.78	0.21			CLAYSTONE	CARB COAL STRINGERS FLOOR
	4.78	4.90	0.12			COAL	C-2

* DENOTES MEASURED BCA

GULF CANADA RESOURCES INC. - COAL DIVISION
 15/MAR/84 HEAD ANALYSIS SUMMARY

-----		PRD - KPN	ANALYSIS BASIS TYPE - AD				NAME OF STANDARD - ASTM				-----	
DATA	SSID	SEAM	SAMPLE	RESIDUAL	ASH%	FIXED	VOLATILE	TOTAL	GROSS CALORIFIC	SPG	FSI	-----
SOURCE			ID	MOISTURE%		CARBON%	MATTER%	SULPHUR%	VALUE (MJ-KG)			-----
TRC83059												
	HD1		6765	6.49	37.93	42.84	12.74	0.27	16.09			
	HD1		6766	4.73	68.97	14.60	11.70	0.30	5.61			
	HD1		6767	5.53	46.00	36.88	11.59	0.32	12.42			



===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSSTRC83060

DATE - 12/14/84

- HISTORY -

START DATE - 08/06/83
END DATE - 08/06/83

CONTRACTOR -
GEOLOGIST - MAYLOR

OPERATOR - GCRI
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 1733.00

ZONE - 9
NORTHING - 6349116.00
EASTING - 500911.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571713
LONGITUDE - 1285906

- ORIENTATION -

LENGTH - 21.00

INCLINATION - 5.0
AZIMUTH - 358.0

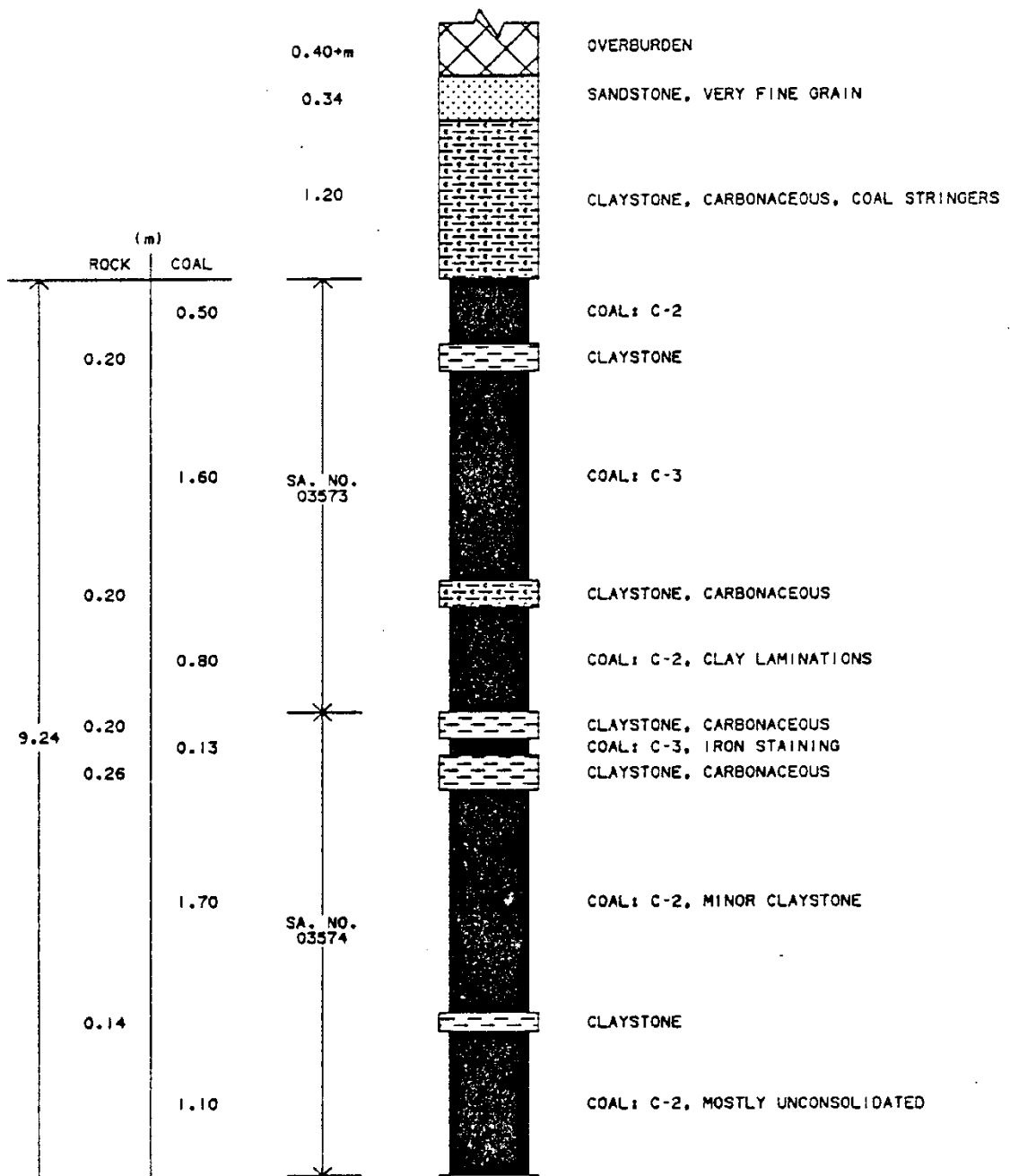
SIZE WIDTH - 0.7
SIZE HEIGHT - 0.8

ROOF STRIKE - 300
ROOF DIP - 25
ROOF DIR - N

FLOOR STRIKE - 300
FLOOR DIP - 65
FLOOR DIR - N

*** NOTE *** 0 INDICATES NO VALUE

=====



TO BE CONTINUED ON PAGE 2

* THIS IS THE GQ SEAM

ATTITUDE OF ROOF : 120/25N
 ATTITUDE OF FLOOR: 120/55N
 UTM COORDINATES : 6349116mN, 500911mE
 ELEVATION : 1733m
 MAP CARD NUMBER : K 11
 TRENCH DEPTH : 0.80m
 TRENCH WIDTH : 0.65m
 TRENCH LENGTH : 21.00m
 TRENCH BEARING : 358°
 TRENCH SLOPE : 05°
 TRENCH BLOCK : S.S.

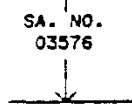
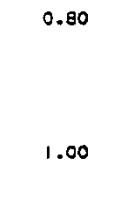
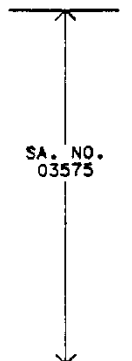
GULF CANADA RESOURCES INC.		
CALGARY		
ALBERTA		
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG		
KPN-TRC-83060a		
DRAWN BY:	SCOTT FANCETT	SCALE: 1:50
LOGGED BY:	ROSS MAYLOR	DATE: 06/08/83
APPROVED BY:	C.W.	PAGE 1 OF 2

CONTINUED FROM PAGE 1

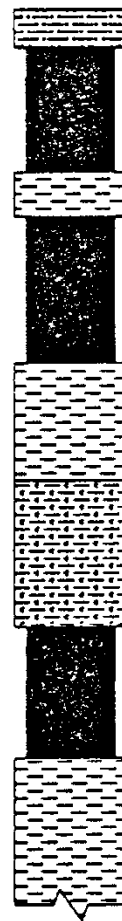
	0.26	
		0.85
	0.30	
		1.00
TOTAL	1.56	7.68

(m)

	ROCK	COAL
	0.90	0.90
TOTAL	0.00	0.90



1.00+m



MUDSTONE, LIGHT GREY

COAL: C-2, MINOR CLAYSTONE

CLYST, SILTY, MINOR COAL, QUARTZ VEINING

COAL: CLAYSTONE, UNCONSOLIDATED -

CLAYSTONE, UNCONSOLIDATED

CLAYSTONE, CARBONACEOUS, COAL STRINGERS

COAL: C-3, MINOR CLAYSTONE

CLAYSTONE

* THIS IS THE GQ SEAM

ATTITUDE OF ROOF : 120/25N
 ATTITUDE OF FLOOR: 120/55N
 UTM COORDINATES : 6349116mN, 500911mE
 ELEVATION : 1733m
 MAP CARD NUMBER : K 11
 TRENCH DEPTH : 0.80m
 TRENCH WIDTH : 0.65m
 TRENCH LENGTH : 21.00m
 TRENCH BEARING : 358°
 TRENCH SLOPE : 05°
 TRENCH BLOCK : S.S.

GULF CANADA RESOURCES INC. Coal Division		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG KPN-TRC-83060b		
DRAWN BY: SCOTT FAWCETT	SCALE: 1:50	
LOGGED BY: ROSS MAYLOR	DATE: 06/08/83	
APPROVED BY: C.M.	PAGE 2 OF 2	

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SS DATA SOURCE: TRC83060

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.40	0.40			QYRBDN	
	0.40	0.74	0.34			SANDSTONE	VFG
	0.74	1.94	1.20			CLAYSTONE	CARB (ROOF) COAL STRINGERS
	1.94	2.44	0.50	03573		COAL	C-2
	2.44	2.64	0.20	03573		CLAYSTONE	
	2.64	4.24	1.60	03573		COAL	C-3
	4.24	4.44	0.20	03573		CLAYSTONE	CARB
	4.44	5.24	0.80	03573		COAL	C-2 CLAY LAMINATIONS
	5.24	5.44	0.20	03574		CLAYSTONE	CARB
	5.44	5.57	0.13	03574		COAL	C-3 IRON STAIN

* DENOTES MEASURED BCA

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: SS DATA SOURCE: TRC83060

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	5.57	5.83	0.26	03574		CLAYSTONE	CARB
	5.83	7.53	1.70	03574		COAL	C-2 MINOR CLAYSTONE
	7.53	7.67	0.14	03574		CLAYSTONE	
	7.67	8.77	1.10	03574		COAL	C-2 MOSTLY UNCONSOLIDATED
	8.77	9.03	0.26	03575		MUDSTONE	LT. GY
	9.03	9.88	0.85	03575		COAL	C-2 MINOR CLAYSTONE
	9.88	10.18	0.30	03575		CLAYSTONE	SLTY MINOR COAL QUARTZ VEINING
	10.18	11.18	1.00	03575		COAL	MINOR CLAYSTONE, UNCONSOLIDATED
	11.18	11.98	0.80			CLAYSTONE	UNCONSOLIDATED;
	11.98	12.98	1.00			CLAYSTONE	CARB COAL STRINGERS
	12.98	13.88	0.90	03576		COAL	C-3 MINOR CLAYSTONE

* DENOTES MEASURED BCA

GULF CANADA RESOURCES INC. - COAL DIVISION
 15/MAR/84 HEAD ANALYSIS SUMMARY

PROJ - KPN		ANALYSIS BASIS TYPE - AD				NAME OF STANDARD - ASTM					
DATA SOURCE	SSID	SEAM	SAMPLE ID	RESIDUAL MOISTURE%	ASH%	FIXED CARBON%	VOLATILE MATTER%	TOTAL SULPHUR%	GROSS CALORIFIC VALUE (MJ-KG)	SPG	FSI
TRC83060											
	HD1		3573	2.36	35.25	56.56	5.83	1.78	20.04		
	HD1		3574	4.89	42.27	41.57	11.27	0.28	16.11		
	HD1		3575	5.75	39.37	41.69	13.19	0.31	15.97		
	HD1		3576	3.22	34.63	55.34	6.81	0.36	20.19		



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC83061

DATE - 12/14/84

- HISTORY -

START DATE - 08/06/83
END DATE - 08/06/83

CONTRACTOR -
GEOLOGIST - MAYLOR

OPERATOR - GCR I
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 1763.00

ZONE - 9
NORTHING - 6350175.00
EASTING - 501406.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571747
LONGITUDE - 1285836

- ORIENTATION -

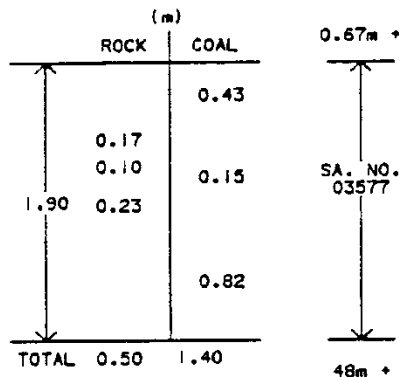
LENGTH - 6.00
SIZE WIDTH - 0.5
SIZE HEIGHT - 0.9

INCLINATION - 7.0
AZIMUTH - 35.0

ROOF STRIKE - 285
ROOF DIP - 25
ROOF DIR - S

FLOOR STRIKE - 290
FLOOR DIP - 45
FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE



CLAYSTONE, SILTY, MEDIUM BROWN

CLYST, CARB, UNCONS, MNR C, MNR MUD, LT TAN


COAL AND CLYST, UNCONS, MNR MUD, LT TAN

CLYST, MNR C, UNCONS, MNR MUD
CLYST, CARB, MNR C STRINGERS
COAL: CLAYSTONE, UNCONSOLIDATED
CLYST, MNR CARB, IRON STAINING

COAL AND CLYST, UNCONS, PETRIFIED WD REMAINS

CLYST, CARB NEAR TOP, M GY NEAR BOTTOM

ATTITUDE OF ROOF : 105/25S
 ATTITUDE OF FLOOR : 110/45S
 UTM COORDINATES : 6350175mN, 501406mE
 ELEVATION : 1763m
 MAP CARD NUMBER : K 11
 TRENCH DEPTH : 0.89m
 TRENCH WIDTH : 0.50m
 TRENCH LENGTH : 6.00m
 TRENCH BEARING : 035°
 TRENCH SLOPE : 07°
 TRENCH BLOCK : S.N.

GULF CANADA RESOURCES INC. Coal Division		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG KPN-TRC-83061		
DRAWN BY: D. MAY	SCALE: 1:50	
LOGGED BY: S. MAYLOR	DATE: 06/08/83	
APPROVED BY: C.W.		

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC83061

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.67	0.67			CLAYSTONE	SLTY. M. BH.
	0.67	0.90	0.23			CLAYSTONE	CARB UNCONSOLIDATED; MINOR MUD TAN ROOF
	0.90	1.33	0.43	03577		COAL	UNCONSOLIDATED; MINOR CLAYSTONE AND MUD TAN
	1.33	1.50	0.17	03577		CLAYSTONE	UNCONSOLIDATED; MINOR COAL AND MUD
	1.50	1.60	0.10	03577		CLAYSTONE	CARB MINOR COAL STRINGERS
	1.60	1.75	0.15	03577		COAL	UNCONSOLIDATED; MINOR CLAYSTONE
	1.75	1.98	0.23	03577		CLAYSTONE	CARB IRON STAIN
	1.98	2.80	0.82	03577		COAL	UNCONSOLIDATED; MINOR CLAYSTONE, PETRIFIED WOOD
	2.80	3.28	0.48			CLAYSTONE	CARBONACEOUS NEAR TOP, MED GREY AT BOTTOM, FLOOR

* DENOTES MEASURED BCA
NEWPAGE

GULF CANADA RESOURCES INC. - COAL DIVISION
 15/MAR/84 HEAD ANALYSIS SUMMARY

PROJ - KPN		ANALYSIS BASIS TYPE - AD				NAME OF STANDARD - ASTM					
DATA SOURCE	SSID	SEAM	SAMPLE ID	RESIDUAL MOISTURE%	ASH%	FIXED CARBON%	VOLATILE MATTER%	TOTAL SULPHUR%	GROSS CALDRIFIC VALUE (MJ-KG)	SPG	FSI
TRC83061											
	HD1		3577	7.69	53.07	17.12	22.12	0.16	7.86		



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC83062

DATE - 12/14/84

- HISTORY -

START DATE - 08/11/83
END DATE - 08/11/83

CONTRACTOR -
GEOLOGIST - NOGAS
OPERATOR - GCRI
SURVEYOR -

REMARKS - ROOF ATTITUDE NOT REACHED

- LOCATION -

PROVINCE - BC
ELEVATION - 1845.00
LICENCE/LEASE NUMBER - 0
ZONE - 9
NORTHING - 6349780.00
EASTING - 501525.00
LATITUDE - 571734
LONGITUDE - 1285829

- ORIENTATION -

LENGTH - 7.70
INCLINATION - 25.0
AZIMUTH - 60.0
SIZE WIDTH - 0.5
SIZE HEIGHT - 1.0
ROOF STRIKE - 0
ROOF DIP - 0
ROOF DIR -
FLOOR STRIKE - 358
FLOOR DIP - 32
FLOOR DIR - E

*** NOTE *** 0 INDICATES NO VALUE

		(m)	
		ROCK	COAL
1.89			0.35
	0.50		0.10
	0.50		0.15
			0.15
			0.17
			0.78
			0.09
TOTAL	0.10	1.79	

0.30+m



OVERBURDEN


COAL: UNCONS, ABUNDANT CLYST, CARB
 CLYST, MOSTLY UNCONS, YELLOW STAIN
 COAL: UNCONSOLIDATED
 COAL: C-1
 CLAYSTONE CARBONACEOUS WEATHERED
 COAL: C-2, MNR CARB, CLAYSTONE
 COAL: C-1, MNR CLYST, CARB, UNCONS

COAL C-2, MNR CARB, CLYST & YELLOW STAIN

COAL: C-1, WTHRD, YELLOW & FE STAIN
 CLYST, TAN, FE & YELLOW STAIN QTZ VEIN

0.20+m

ATTITUDE OF ROOF : NOT OBTAINED
 ATTITUDE OF FLOOR: 178/32E
 UTM COORDINATES : 6349780mN, 501525mE
 ELEVATION : 1845m
 MAP CARD NUMBER : K 11
 TRENCH DEPTH : 1.00m
 TRENCH WIDTH : 0.50m
 TRENCH LENGTH : 7.7m
 TRENCH BEARING : 060°
 TRENCH SLOPE : 25°N
 TRENCH BLOCK : S.N.

GULF CANADA RESOURCES INC. Coal Division		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG KPN-TRC-83062		
DRAWN BY: C. MOGAS	SCALE: 1:50	
LOGGED BY: C. MOGAS	DATE: 11/08/83	
APPROVED BY: C.W.		

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC83062

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.30	0.30			QYRBH	
	0.30	0.65	0.35			COAL	UNCONSOLIDATED, ABUNDANT, CLAYSTONE, CARB.
	0.65	0.70	0.05			CLAYSTONE	MOSTLY UNCONSOLIDATED, YELLOW STAIN
	0.70	0.80	0.10			COAL	UNCONSOLIDATED,
	0.80	0.95	0.15			COAL	C-1
	0.95	1.00	0.05			CLAYSTONEQ	CARB WEATHERED:
	1.00	1.15	0.15			COAL	C-2 MINOR CARB CLAYSTONE
	1.15	1.32	0.17			COAL	C-1 MINOR CARBONACEOUS CLAYSTONE UNCONSOLIDATED
	1.32	2.10	0.78			COAL	C-2 MINOR CLAYSTONE CARBONACEOUS AND YELLOW STAIN
	2.10	2.19	0.09			COAL	C-1 WEATHERED YELLOW AND IRON STAIN

* DENOTES MEASURED BCA

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC83062

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	2.19	2.39	0.20			CLAYSTONE	TAN IRON AND YELLOW STAIN QUARTZ. V. F. LOOR

* DENOTES MEASURED BCA
NEHPAGE

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSSTRC83063

DATE - 12/14/84

- HISTORY -

START DATE - 08/11/83
END DATE - 08/11/83

CONTRACTOR -
GEOLOGIST - NOGAS

OPERATOR - GCRI
SURVEYOR -

REMARKS - FLOOR ATTITUDE NOT REACHED

- LOCATION -

PROVINCE - BC
ELEVATION - 1649.00

ZONE - 9
NORTHING - 6349555.00
EASTING - 502560.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571727
LONGITUDE - 1285727

- ORIENTATION -

LENGTH - 4.70
SIZE WIDTH - 0.7
SIZE HEIGHT - 1.0

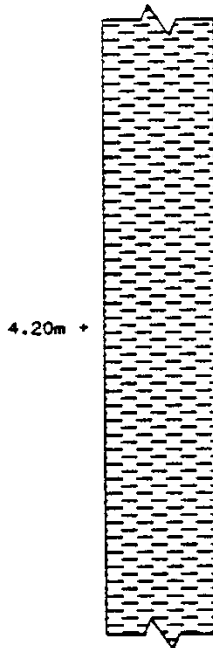
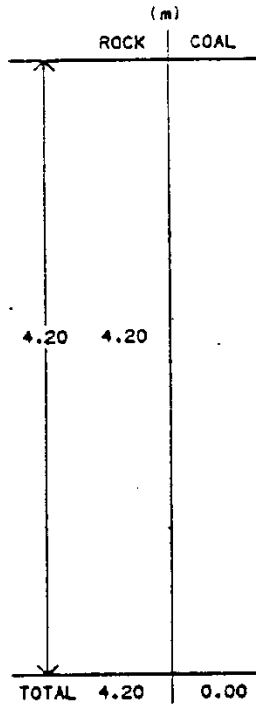
INCLINATION - 15.0
AZIMUTH - 50.0

ROOF STRIKE - 310
ROOF DIP - 80
ROOF DIR - N

FLOOR STRIKE - 0
FLOOR DIP - 0
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

=====



CLYST, CARB, MNR COAL CLYST & CLAY

ATTITUDE OF ROOF : 130/80N
 ATTITUDE OF FLOOR: NOT OBTAINED
 UTM COORDINATES : 6349555mN, 502560mE
 ELEVATION : 1649m
 MAP CARD NUMBER : K 11
 TRENCH DEPTH : 1.00m
 TRENCH WIDTH : 0.70m
 TRENCH LENGTH : 4.7m
 TRENCH BEARING : 050°
 TRENCH SLOPE : 15°N
 TRENCH BLOCK : S.S.

GULF CANADA RESOURCES INC. <small>Coal Division</small>		
<small>CALGARY</small>	<small>ALBERTA</small>	
MT. KLAPPAN COAL PROPERTY TRENCH LOG KPN-TRC-83063		
DRAWN BY: C. NOGAS	SCALE: 1:50	
LOADED BY: C. NOGAS	DATE: 11/08/83	
APPROVED BY: C.W.		

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SS DATA SOURCE: TRC83063

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	4.20	4.20			CLAYSTONE	MINOR COAL CLAYSTONE AND CLAY

* DENOTES MEASURED BCA
NEWPAGE

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC83064

DATE - 12/14/84

- HISTORY -

START DATE - 08/14/83
END DATE - 08/14/83

CONTRACTOR - OPERATOR - GCRI
GEOLOGIST - NOGAS SURVEYOR -

REMARKS - ROOF AND FLOOR ATTITUDES NOT OBTAINED

- LOCATION -

PROVINCE - BC ZONE - 9
ELEVATION - 1700.00 NORTHING - 6350870.00
EASTING - 500420.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571810
LONGITUDE - 1285935

- ORIENTATION -

LENGTH - 3.50 INCLINATION - 45.0
AZIMUTH - 90.0
SIZE WIDTH - 0.6
SIZE HEIGHT - 0.9
ROOF STRIKE - 0 FLOOR STRIKE - 0
ROOF DIP - 0 FLOOR DIP - 0
ROOF DIR - FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

(m)	
ROCK	COAL
0.20	0.40
0.70	
TOTAL 0.20	0.50

0.30m +

0.40

0.20m +



CLAY, TAN

CLAYST, VERY UNCONS

COAL: C-2, MOSTLY UNCONS

CLAY, UNCONS. GY DK

COAL: UNCONS

CLAY, UNCONS. GY DK

ATTITUDE OF ROOF : NOT OBTAINED
 ATTITUDE OF FLOOR: NOT OBTAINED
 UTM COORDINATES : 6350870mN, 500420mE
 ELEVATION : 1700m
 MAP CARD NUMBER : K 11
 TRENCH DEPTH : 0.90m
 TRENCH WIDTH : 0.60m
 TRENCH LENGTH : 3.5m
 TRENCH BEARING : 090°
 TRENCH SLOPE : 45°
 TRENCH BLOCK : S.N.

GULF CANADA RESOURCES INC.

Coal Division

CALGARY

ALBERTA



MT. KLAPPAN COAL PROPERTY

TRENCH LOG

KPN-TRC-83064

DRAWN BY: C. MOGAS

SCALE: 1:50

LOGGED BY: C. MOGAS

DATE: 14/08/83

APPROVED BY: C.W.

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC83064

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.30	0.30			CLAY	TAN
	0.30	0.70	0.40			CLAYSTONE	Y. UNCONSOLIDATED ROOF
	0.70	1.10	0.40			COAL	C-2 MOSTLY UNCONSOLIDATED
	1.10	1.30	0.20			CLAY	DK. GY UNCONSOLIDATED
	1.30	1.40	0.10			COAL	UNCONSOLIDATED
	1.40	1.60	0.20			CLAY	DK. GY UNCONSOLIDATED FLOOR

* DENOTES MEASURED BCA
NEWPAGE

===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC83065

DATE - 12/14/84

- HISTORY -

START DATE - 08/14/83

END DATE - 08/14/83

CONTRACTOR -

GEOLOGIST - NOGAS

OPERATOR - GCRI

SURVEYOR -

REMARKS - ROOF ATTITUDE NOT OBTAINED

- LOCATION -

PROVINCE - BC

ELEVATION - 1680.00

ZONE - 9

NORTHING - 6351327.00

EASTING - 500458.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571824

LONGITUDE - 1285933

- ORIENTATION -

LENGTH - 4.00

INCLINATION - 20.0

AZIMUTH - 160.0

SIZE WIDTH - 0.5

SIZE HEIGHT - 1.0

ROOF STRIKE - 0

ROOF DIP - 0

ROOF DIR -

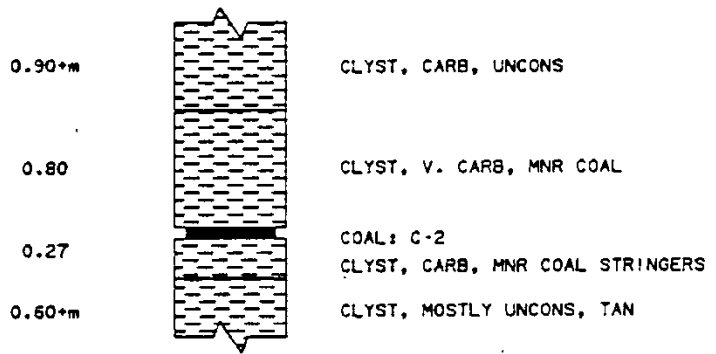
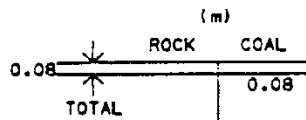
FLOOR STRIKE - 230

FLOOR DIP - 73


FLOOR DIR - W

*** NOTE *** 0 INDICATES NO VALUE

=====



ATTITUDE OF ROOF : NOT OBTAINED
 ATTITUDE OF FLOOR : 050/73W
 UTM COORDINATES : 6351327mN, 500458mE
 ELEVATION : 1680m
 MAP CARD NUMBER : K 11
 TRENCH DEPTH : 1.00m
 TRENCH WIDTH : 0.50m
 TRENCH LENGTH : 4.00m
 TRENCH BEARING : 160°
 TRENCH SLOPE : 20°
 TRENCH BLOCK : S.N.

GULF CANADA RESOURCES INC. <small>Coal Division</small>		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG KPN-TRC-83065		
<small>DRAWN BY:</small> C. NOGAS	<small>SCALE:</small> 1:50	
<small>LOGGED BY:</small> C. NOGAS	<small>DATE:</small> 14/08/83	
<small>APPROVED BY:</small> C.M.		

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC83065

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.90	0.90			CLAYSTONE	CARB UNCONSOLIDATED
	0.90	1.70	0.80			CLAYSTONE	CARB MINOR COAL
	1.70	1.78	0.08			COAL	C-2
	1.78	2.05	0.27			CLAYSTONE	CARB MINOR COAL STRINGERS
	2.05	2.65	0.60			CLAYSTONE	MOSTLY UNCONSOLIDATED TAN

* DENOTES MEASURED BCA
NEWPAGE

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC83066

DATE - 12/14/84

- HISTORY -

START DATE - 08/07/83
END DATE - 08/07/83

CONTRACTOR -
GEOLOGIST - MAYLOR

OPERATOR - GCRI
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 1738.00

ZONE - 9
NORTHING - 6349995.00
EASTING - 501600.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571741
LONGITUDE - 1285824

- ORIENTATION -

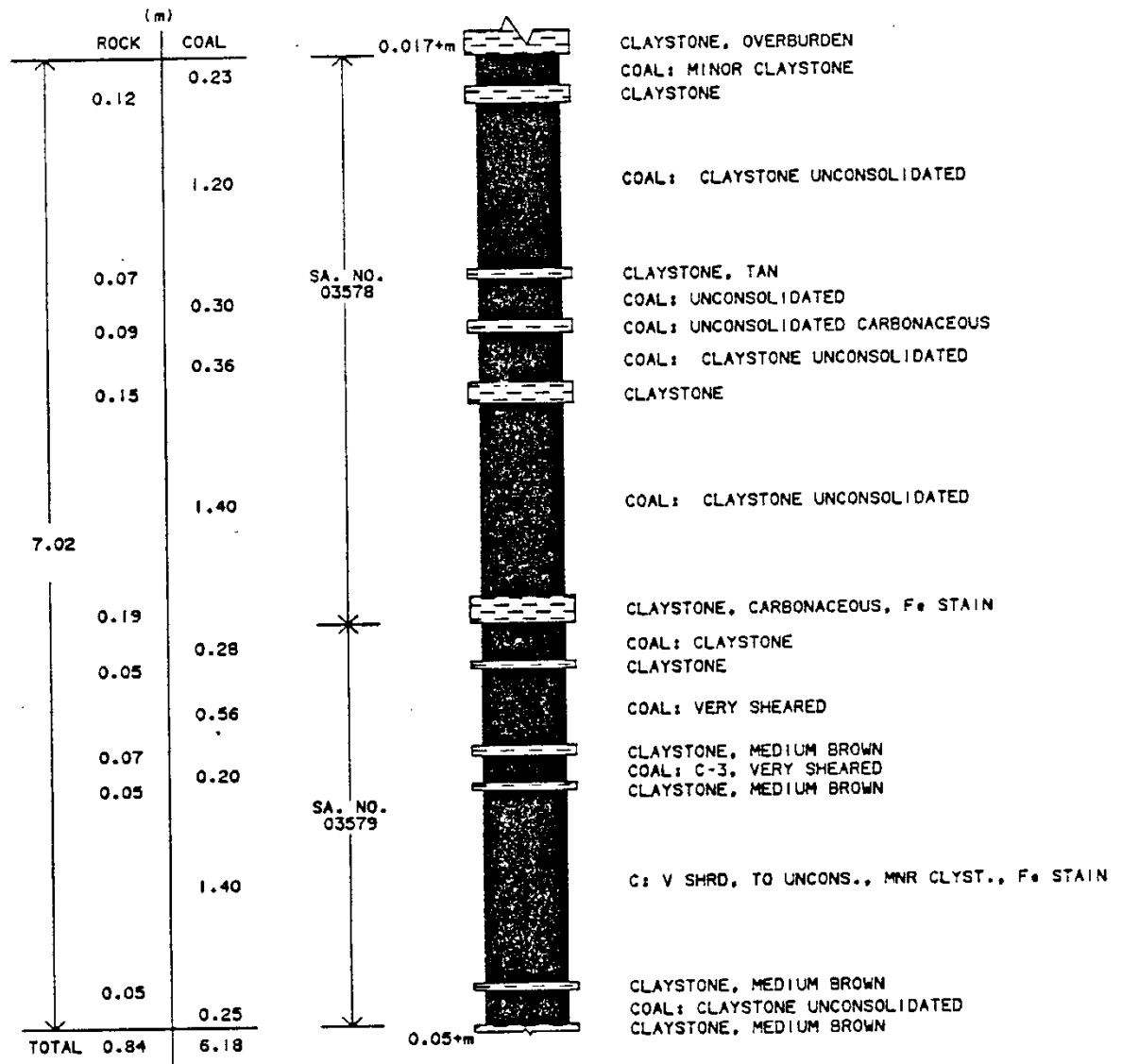
LENGTH - 9.40
SIZE WIDTH - 50.0
SIZE HEIGHT - 1.0

INCLINATION - 0.0
AZIMUTH - 40.0

ROOF STRIKE - 325
ROOF DIP - 50
ROOF DIR - N

FLOOR STRIKE - 0
FLOOR DIP - 0
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE



ATTITUDE OF ROOF : NOT OBTAINED
 ATTITUDE OF FLOOR : 145/50N
 UTM COORDINATES : 6349995mN, 501600mE
 ELEVATION : 1738m
 MAP CARD NUMBER : K 11
 TRENCH DEPTH : 1.00m
 TRENCH WIDTH : 0.50m
 TRENCH LENGTH : 9.4m
 TRENCH BEARING : 040°
 TRENCH SLOPE : 0°
 TRENCH BLOCK : S.N.

GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG		
KPN-TRC-83066		
DRAWN BY: S. FAWCETT	SCALE: 1:50	
LOGGED BY: R. MATLOR	DATE: 07/08/83	
APPROVED BY: C.W.		

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC83066

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.18	0.18	03578		CLAYSTONE	SLTY. BN PLUS OVERBURDEN ROOF
	0.18	0.41	0.23	03578		COAL	MINOR CLAYSTONE, UNCONSOLIDATED
	0.41	0.53	0.12	03578		CLAYSTONE	M. GY
	0.53	1.73	1.20	03578		COAL	PLUS CLAYSTONE UNCONSOLIDATED
	1.73	1.80	0.07	03578		CLAYSTONE	TAN
	1.80	2.10	0.30	03578		COAL	UNCONSOLIDATED
	2.10	2.19	0.09	03578		CLAYSTONE	CARB UNCONSOLIDATED
	2.19	2.55	0.36	03578		COAL	PLUS CLAYSTONE, UNCONSOLIDATED
	2.55	2.70	0.15	03578		CLAYSTONE	
	2.70	4.10	1.40	03578		COAL	PLUS CLAYSTONE, UNCONSOLIDATED
	4.10	4.29	0.19	03578		CLAYSTONE	CARB, M. BN IRON STAIN, MINOR SILT
	4.29	4.57	0.28	03578		COAL	PLUS CLAYSTONE

* DENOTES MEASURED BCA

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC83066

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	4.57	5.13	0.56	03578		COAL	VERY SHEARED, MINOR CLAYSTONE
	5.13	5.20	0.07	03578		CLAYSTONE	M. BN
	5.20	5.90	0.70	03578		COAL	C-3 VERY SHEARED
	5.90	5.95	0.05	03579		CLAYSTONE	M. BN
	5.95	7.35	1.40	03579		COAL	VERY SHEARED TO UNCONSOLIDATED MINOR CLAYSTONE, IRON STAIN
	7.35	7.40	0.05	03579		CLAYSTONE	M. BN
	7.40	7.65	0.25	03579		COAL	PLUS CLAYSTONE, UNCONSOLIDATED
	7.65	7.70	0.05			CLAYSTONE	M. BN FLOOR

* DENOTES MEASURED BCA

NEWPAGE

GULF CANADA RESOURCES INC. - COAL DIVISION
 15/MAR/84 HEAD ANALYSIS SUMMARY

PROJ - KPN		ANALYSIS BASIS TYPE - AD				NAME OF STANDARD - ASTM					
DATA SOURCE	SSID	SEAM	SAMPLE ID	RESIDUAL MOISTURE%	ASH%	FIXED CARBON%	VOLATILE MATTER%	TOTAL SULPHUR%	GROSS CALORIFIC VALUE (MJ-KG)	SPG	FSI
TRC83066											
	HD1		3578	13.43	22.70	37.38	26.49	0.24	15.28		
	HD1		3579	15.91	20.47	39.54	24.08	0.25	16.23		



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSSTRC83067

DATE - 12/14/84

- HISTORY -

START DATE - 08/18/83
END DATE - 08/18/83

CONTRACTOR -
GEOLOGIST - NOGAS

OPERATOR - GCRI
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 1607.00

ZONE - 9
NORTHING - 6351075.00
EASTING - 501372.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571816
LONGITUDE - 1285838

- ORIENTATION -

LENGTH - 5.00
SIZE WIDTH - 0.5
SIZE HEIGHT - 1.0

INCLINATION - 0.0
AZIMUTH - 125.0

ROOF STRIKE - 240
ROOF DIP - 68
ROOF DIR - E

FLOOR STRIKE - 220
FLOOR DIP - 45
FLOOR DIR - E

*** NOTE *** 0 INDICATES NO VALUE

(m)	
ROCK	COAL
0.06	0.20
0.15	0.30
0.15	0.10
0.15	0.20
0.35	0.15
0.15	0.15
TOTAL 0.71	1.10



0.37+m

CLAYSTONE, MOSTLY UNCONSOLIDATED, DARK GREY

CLAYSTONE, ABUNDANT COAL STRINGERS

COAL: C-2, ABUNDANT CLAYSTONE, CLAYSTONE CARB

CLAYSTONE, CARBONACEOUS, MINOR COAL STRINGERS

COAL: C-2, CLAYSTONE, INTERBEDS UP TO 1cm

CLAYSTONE, WITH ABUNDANT COAL STRINGERS

COAL: C-1

COAL: UNCONSOLIDATED

CLAYSTONE 60%, 40% COAL INTERBEDS

COAL: MOSTLY UNCONSOLIDATED


CLAYSTONE, ABUNDANT COAL, UNCONSOLIDATED

COAL: C-2, MINOR C-1

CLAYSTONE, MINOR COAL, MOSTLY UNCONSOLIDATED

1.30+m

ATTITUDE OF ROOF : 60/68E
 ATTITUDE OF FLOOR: 40/45E
 UTM COORDINATES : 6351075mN, 501372mE
 ELEVATION : 1607m
 MAP CARD NUMBER : K 11
 TRENCH DEPTH : 1.00m
 TRENCH WIDTH : 0.50m
 TRENCH LENGTH : 5.00m
 TRENCH BEARING : 125°
 TRENCH SLOPE : 00°
 TRENCH BLOCK : S.S.

GULF CANADA RESOURCES INC.		
<small>Coal Division</small>		
<small>CALGARY</small>	<small>ALBERTA</small>	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG		
KPN-TRC-83067		
<small>DRAWN BY:</small> C. NOGAS	<small>SCALE:</small> 1:50	
<small>LOGGED BY:</small> C. NOGAS	<small>DATE:</small> 18/08/83	
<small>APPROVED BY:</small> C.W.		

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPM BLOCK: SS DATA SOURCE: TRC83067

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.12	0.12			CLAYSTONE	DK. GY MOSTLY UNCONSOLIDATED
	0.12	0.37	0.25			CLAYSTONE	ABUNDANT COAL STRINGERS ROOF
	0.37	0.57	0.20			COAL	C-2 ABUNDANT CLAYSTONE CARBUNDANT AND CLAYS TONE
	0.57	0.63	0.06			CLAYSTONE	CARB MINOR COAL STRINGERS
	0.63	0.93	0.30			COAL	C-2 CLAYSTONE INTERBEDS UP TO 1CM.
	0.93	1.08	0.15			CLAYSTONE	ABUNDANT COAL STRINGERS
	1.08	1.18	0.10			COAL	C-1
	1.18	1.38	0.20			COAL	UNCONSOLIDATED
	1.38	1.53	0.15			CLAYSTONE	40% COAL INTERBED
	1.53	1.68	0.15			COAL	MOSTLY UNCONSOLIDATED
	1.68	2.03	0.35			CLAYSTONE	ABUNDANT COAL, UNCONSOLIDATED.

* DENOTES MEASURED BCA

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPM BLOCK: SS DATA SOURCE: TRC83067

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	2.03	2.18	0.15			COAL	C-2 MINOR C-1
	2.18	2.98	0.80			CLAYSTONE	MINOR COAL, MOSTLY UNCONSOLIDATED FLOOR
	2.98	3.48	0.50			CLAYSTONE	

* DENOTES MEASURED BCA
NEWPAGE

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC83074

DATE - 12/14/84

- HISTORY -

START DATE - 08/20/83
END DATE - 08/20/83

CONTRACTOR -
GEOLOGIST - C. NOGAS

OPERATOR - GCRI
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 1649.00
LICENCE/LEASE NUMBER -

0

ZONE - 9
NORTHING - 6351420.00
EASTING - 499670.00
LATITUDE - 571828
LONGITUDE - 1290020

- ORIENTATION -

LENGTH - 9.00
SIZE WIDTH - 0.7
SIZE HEIGHT - 1.2

INCLINATION - 20.5
AZIMUTH - 138.0

ROOF STRIKE - 250
ROOF DIP - 45
ROOF DIR - S

FLOOR STRIKE - 0
FLOOR DIP - 0
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

=====

(m)	
ROCK	COAL
0.07	0.80
	0.30
0.50	
	0.30
2.95	0.20
	0.20
	0.35
0.15	0.05
	0.15
0.20	
0.30	
	0.10
TOTAL	1.42
	1.53

0.30+m



CLAYSTONE
COAL: C-2
CLAYSTONE
COAL: C-2, ABUNDANT CLYST, CARB, UNCON, WTHRD

CLYST., CARB, MNR COAL STRINGERS


COAL: MOSTLY UNCONSOLIDATED
CLAYSTONE, CARBONACEOUS
COAL: C-1

COAL: C-2, MINOR CLAYSTONE, CARBONACEOUS

CLAYSTONE
COAL: C-2
COAL: UNCONSOLIDATED
CLAYSTONE

CLAY
COAL: UNCONSOLIDATED

ATTITUDE OF ROOF : 070/45S
 ATTITUDE OF FLOOR: NOT OBTAINED
 UTM COORDINATES : 6351420mN, 499670mE
 ELEVATION : 1649m
 MAP CARD NUMBER : 104 H/7 D; 104 H/6 A,G,H
 TRENCH DEPTH : 1.20m
 TRENCH WIDTH : 0.70m
 TRENCH LENGTH : 9.00m
 TRENCH BEARING : 138°
 TRENCH SLOPE : 20°S
 TRENCH BLOCK : S.N.

GULF CANADA RESOURCES INC. <small>Coal Division</small>		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG KPN-TRC-83074		
<small>DRAWN BY:</small> C. NOGAS	<small>SCALE:</small> 1:50	
<small>LOGGED BY:</small> C. NOGAS	<small>DATE:</small> 20/08/93	
<small>APPROVED BY:</small> C.W.		

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC83074

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.30	0.30			CLAYSTONE	ROOF
	0.30	0.38	0.08			COAL	C-2
	0.38	0.45	0.07			CLAYSTONE	
	0.45	0.75	0.30			COAL	C-2 ABUNDANT CLAYSTONE, CARBONACEOUS, UNCON SOLIDATED... WEATHERED
	0.75	1.25	0.50			CLAYSTONE	CARB MINOR COAL STRINGERS
	1.25	1.55	0.30			COAL	MOSTLY UNCONSOLIDATED.
	1.55	1.75	0.20			CLAYSTONE	CARB
	1.75	1.95	0.20			COAL	C-1
	1.95	2.30	0.35			COAL	C-2 MINOR CLAYSTONE, CARBONACEOUS.
	2.30	2.45	0.15			CLAYSTONE	
	2.45	2.50	0.05			COAL	C-2

* DENOTES MEASURED BCA

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC83074

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	2.50	2.65	0.15			COAL	UNCONSOLIDATED
	2.65	2.85	0.20			CLAYSTONE	
	2.85	3.15	0.30			CLAY	
	3.15	3.25	0.10			COAL	UNCONSOLIDATED

* DENOTES MEASURED BCA
NEWPAGE

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC83075

DATE - 12/14/84

- HISTORY -

START DATE - 08/20/83
END DATE - 08/20/83

CONTRACTOR -
GEOLOGIST - C.NOGAS

OPERATOR - GCRI
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 1622.00

ZONE - 9
NORTHING - 6351730.00
EASTING - 499610.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571838
LONGITUDE - 1290023

- ORIENTATION -

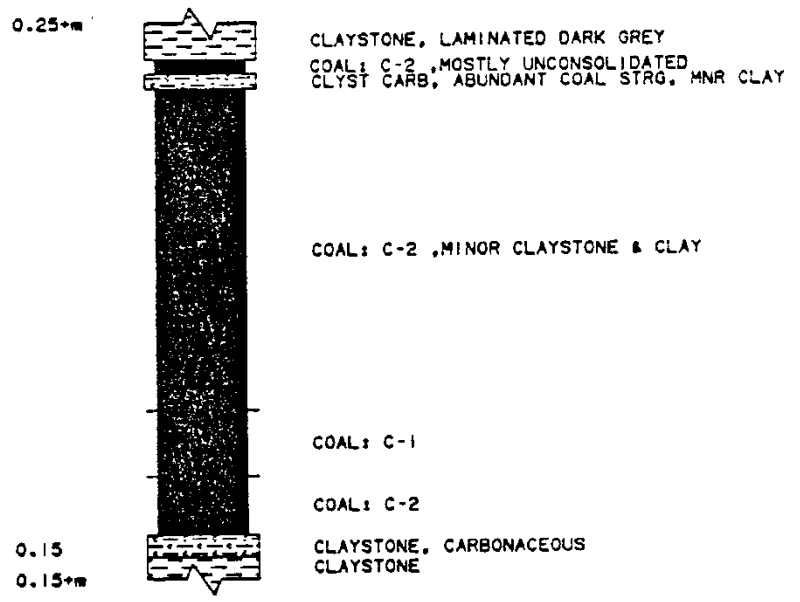
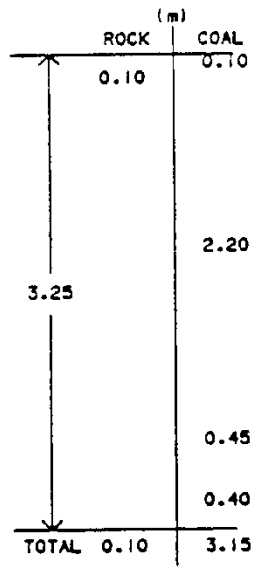
LENGTH - 6.00
SIZE WIDTH - 0.5
SIZE HEIGHT - 0.7

INCLINATION - 12.0
AZIMUTH - 20.0


ROOF STRIKE - 260
ROOF DIP - 32
ROOF DIR - S

FLOOR STRIKE - 265
FLOOR DIP - 42
FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE



ATTITUDE OF ROOF : 080/32S
 ATTITUDE OF FLOOR: 080/42S
 UTM COORDINATES : 6351730mN, 499610mE
 ELEVATION : 1622m
 MAP CARD NUMBER : 104 H/7 D; 104 H/6 A,G,H
 TRENCH DEPTH : 0.70m
 TRENCH WIDTH : 0.50m
 TRENCH LENGTH : 6.00m
 TRENCH BEARING : 020°
 TRENCH SLOPE : 12°
 TRENCH BLOCK : S.N.

GULF CANADA RESOURCES INC. Coal Division		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG KPN-TRC-83075		
DRAWN BY: C. NOGAS	LOGGED BY: C. NOGAS	SCALE: 1:50
APPROVED BY: C.W.	DATE: 20/08/83	

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC83075

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.25	0.25			CLAYSTONE	DK.GY LAM. ROOF
	0.25	0.35	0.10			COAL	C-2 MOSTLY UNCONSOLIDATED
	0.35	0.45	0.10			CLAYSTONE	CARB ABUNDANT COAL STRINGERS MINOR CLAY.
	0.45	2.65	2.20			COAL	C-2 MINOR CLAYSTONE AND CLAY
	2.65	3.10	0.45			COAL	C-1
	3.10	3.50	0.40			COAL	C-2
	3.50	3.65	0.15			CLAYSTONE	CARB FLOOR
	3.65	3.80	0.15			CLAYSTONE	

* DENOTES MEASURED BCA
NEWPAGE

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC83078

DATE - 12/14/84

- HISTORY -

START DATE - 08/21/83
END DATE - 08/21/83

CONTRACTOR - OPERATOR - GCRI
GEOLOGIST - NOGAS SURVEYOR -

REMARKS - FLOOR FROZEN NEAREST ATTITUDE 005/15W, NO ROOF ATTITUDE

- LOCATION -

PROVINCE - BC ZONE - 9
ELEVATION - 2011.00 NORTHING - 6356810.00
EASTING - 490220.00
LICENCE/LEASE NUMBER - 0 LATITUDE - 572121
LONGITUDE - 1290945

- ORIENTATION -

LENGTH - 3.20 INCLINATION - 10.0
AZIMUTH - 5.0
SIZE WIDTH - 0.7
SIZE HEIGHT - 0.9
ROOF STRIKE - 0 FLOOR STRIKE - 0
ROOF DIP - 0 FLOOR DIP - 0
ROOF DIR - FLOOR DIR -


*** NOTE *** 0 INDICATES NO VALUE

(m)	
ROCK	COAL
0.60	0.60
TOTAL	0.00



COAL: BLOOM, COAL, CLYST CARB, CLAY, UNCON

ATTITUDE OF ROOF : FLOOR IS FROZEN, NEAREST
 ATTITUDE OF FLOOR: ATTITUDE 005/15W (200m)
 UTM COORDINATES : 6356810mN, 490220mE
 ELEVATION : 2011m
 MAP CARD NUMBER : 104 H/6 B,G
 TRENCH DEPTH : 0.90m
 TRENCH WIDTH : 0.70m
 TRENCH LENGTH : 3.20m
 TRENCH BEARING : 005°
 TRENCH SLOPE : 10°S
 TRENCH BLOCK : S.N.

GULF CANADA RESOURCES INC. <small>Coal Division</small>		
<small>CALGARY</small>	<small>ALBERTA</small>	
MT. KLAPPAN COAL PROPERTY TRENCH LOG KPN-TRC-83078		
<small>DRAWN BY: C. NOGAS</small>	<small>SCALE: 1:50</small>	
<small>LOGGED BY: C. NOGAS</small>	<small>DATE: 21/08/83</small>	
<small>APPROVED BY: C.M.</small>		

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC83078

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.60	0.60			COAL BLOOM	COAL, CLAYSTONE, CARBONACEOUS, CLAY UNCONSOLIDATED.


* DENOTES MEASURED BCA
NEWPAGE

(m)	
ROCK	COAL
0.70+m	0.70
TOTAL 0.00	0.70



COAL: BLOOM, CLYST, CARB, CLAY, COAL C-2
MOSTLY UNCON

ATTITUDE OF ROOF : NEAREST ATTITUDE 005/15W
 ATTITUDE OF FLOOR: FLOOR IS FROZEN
 UTM COORDINATES : 6356820mN, 490240mE
 ELEVATION : 1981m
 MAP CARD NUMBER : 104 H/6 B,G
 TRENCH DEPTH : 1.20m
 TRENCH WIDTH : 1.10m
 TRENCH LENGTH : 2.20m
 TRENCH BEARING : 165°
 TRENCH SLOPE : 15°S
 TRENCH BLOCK : S.N.

GULF CANADA RESOURCES INC. <small>Coal Division</small>		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY TRENCH LOG KPN-TRC-83079		
DRAWN BY: C. NOGAS	SCALE: 1:50	
LOGGED BY: C. NOGAS	DATE: 21/09/83	
APPROVED BY: C.W.		

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPM BLOCK: SN DATA SOURCE: TRC83079

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.70	0.70			COAL, BLOOM	CLAYSTONE CARBONACEOUS ... CLAY COAL C-2 UNCONSOLIDATED.

* DENOTES MEASURED BCA
NEWPAGE

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC83080

DATE - 12/14/84

- HISTORY -

START DATE - 08/21/83
END DATE - 08/21/83

CONTRACTOR -
GEOLOGIST - NOGAS

OPERATOR - GCR1
SURVEYOR -

REMARKS - FLOOR FROZEN NEAREST ATTITUDE 005/15W

- LOCATION -

PROVINCE - BC
ELEVATION - 1981.00

ZONE - 9
NORTHING - 6357800.00
EASTING - 490240.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 572153
LONGITUDE - 1290944

- ORIENTATION -

LENGTH - 2.00

INCLINATION - 9.0
AZIMUTH - 175.0

SIZE WIDTH - 0.9
SIZE HEIGHT - 1.0

ROOF STRIKE - 0
ROOF DIP - 0
ROOF DIR -

FLOOR STRIKE - 0
FLOOR DIP - 0
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

(m)	
ROCK	COAL
0.50+m	0.50
TOTAL 0.00	0.50



COAL: BLOOM. CLYST. CARB COAL C-2
UNCON

ATTITUDE OF ROOF : NEAREST ATTITUDE 005/15W
 ATTITUDE OF FLOOR: FLOOR FROZEN
 UTM COORDINATES : 6356800mN, 490240mE
 ELEVATION : 1981m
 MAP CARD NUMBER : 104 H/6 B,G
 TRENCH DEPTH : 1.00m
 TRENCH WIDTH : 0.90m
 TRENCH LENGTH : 2.00m
 TRENCH BEARING : 175°
 TRENCH SLOPE : 09°S
 TRENCH BLOCK : S.N.

GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG		
KPN-TRC-83080		
DRAWN BY: C. NOGAS	SCALE: 1:50	
LOGGED BY: C. NOGAS	DATE: 21/08/83	
APPROVED BY: C.W.		

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC83080

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.50	0.50			COAL BLOOM	CLAYSTONE, CARBONACEOUS, COAL C-2, UNCONSOLIDATED.

* DENOTES MEASURED BCA
NEWPAGE

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC83081

DATE - 12/14/84

- HISTORY -

START DATE - 08/21/83
END DATE - 08/21/83

CONTRACTOR - OPERATOR - GCRI
GEOLOGIST - NOGAS SURVEYOR -

REMARKS - FLOOR FROZEN NEAREST ATTITUDE 005/15W

- LOCATION -

PROVINCE - BC ZONE - 9
ELEVATION - 2011.00 NORTHING - 6357790.00
EASTING - 490230.00

LICENCE/LEASE NUMBER - 0

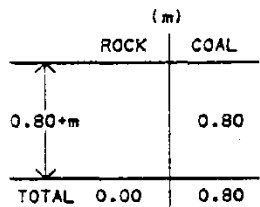
LATITUDE - 572153
LONGITUDE - 1290945

- ORIENTATION -

LENGTH - 2.20 INCLINATION - 10.0
AZIMUTH - 0.0
SIZE WIDTH - 0.6
SIZE HEIGHT - 1.4

ROOF STRIKE - 0 FLOOR STRIKE - 0
ROOF DIP - 0 FLOOR DIP - 0
ROOF DIR - FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE



COAL: BLOOM, CLYST, CARB, UNCON

ATTITUDE OF ROOF : NEAREST ATTITUDE 005/15W
 ATTITUDE OF FLOOR: FLOOR FROZEN
 UTM COORDINATES : 6356780mN, 490230mE
 ELEVATION : 2011m
 MAP CARD NUMBER : 104 H/6 B,G
 TRENCH DEPTH : 1.36m
 TRENCH WIDTH : 0.60m
 TRENCH LENGTH : 2.20m
 TRENCH BEARING : 000°
 TRENCH SLOPE : 10°S
 TRENCH BLOCK : S.N.

GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY TRENCH LOG KPN-TRC-83081		
DRAWN BY: C. NOGAS	SCALE: 1:50	
LOGGED BY: C. NOGAS	DATE: 21/08/83	
APPROVED BY: C.W.		

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC83081

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.80	0.80			COAL BLOOM	CLAYSTONE. CARBONACEOUS. CLAY. UNCONSOLIDATED

* DENOTES MEASURED BCA
NEWPAGE

===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC83089

DATE - 12/14/84

- HISTORY -

START DATE - 08/23/83
END DATE - 08/23/83

CONTRACTOR -
GEOLOGIST - C.NO GAS

OPERATOR - GCRI
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 2073.00

ZONE - 9
NORTHING - 6356590.00
EASTING - 490200.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 572114
LONGITUDE - 1290946

- ORIENTATION -

LENGTH - 4.50

INCLINATION - 26.0
AZIMUTH - 165.0

SIZE WIDTH - 0.5
SIZE HEIGHT - 1.5

ROOF STRIKE - 185
ROOF DIP - 28
ROOF DIR - E

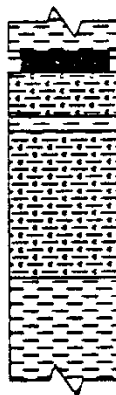
FLOOR STRIKE - 350
FLOOR DIP - 20
FLOOR DIR - E

*** NOTE *** 0 INDICATES NO VALUE

=====

(m)	
ROCK	COAL
0.15	0.05
TOTAL 0.00	0.15

0.20+m
0.30
0.10
1.00
0.70+m




CLAYSTONE, UNCONSOLIDATED
COAL; UNCON. ABNT CLST, CARB
COAL; UNCONSOLIDATED
CLAYSTONE, CARB. COAL C-2 40%
CLAYSTONE

CLYST, CARB. ABNT C STRGS UP TO 1 CM, UNCON

CLAYSTONE

ATTITUDE OF ROOF : 005/28E
ATTITUDE OF FLOOR : 170/20E
UTM COORDINATES : 6356590mN, 490200mE
ELEVATION : 2073m
MAP CARD NUMBER : 104 H/6 B,G
TRENCH DEPTH : 1.50m
TRENCH WIDTH : 0.50m
TRENCH LENGTH : 4.50m
TRENCH BEARING : 165°
TRENCH SLOPE : 26°N
TRENCH BLOCK : S.N.

GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG		
KPN-TRC-83089		
DRAWN BY: C. NOGAS	SCALE: 1:50	
LOGGED BY: C. NOGAS	DATE: 23/08/93	
APPROVED BY: C.J.		

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC83089

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.20	0.20			CLAYSTONE	UNCONSOLIDATED ROOF.
	0.20	0.25	0.05			COAL	UNCONSOLIDATED, ABUNDANT CLAYSTONE. CARBONACEOUS.
	0.25	0.35	0.10			COAL	UNCONSOLIDATED
	0.35	0.65	0.30			CLAYSTONE	CARB 40% COAL C-2 FLOOR
	0.65	0.75	0.10			CLAYSTONE	
	0.75	1.75	1.00			CLAYSTONE	CARB ABUNDANT COAL STRINGERS UP TO ONE CM, UNCONSOLIDATED MOSTLY.
	1.75	2.45	0.70			CLAYSTONE	

• DENOTES MEASURED BCA
NEWPAGE

===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC83090

DATE - 12/14/84

- HISTORY -

START DATE - 08/23/83
END DATE - 08/23/83

CONTRACTOR -
GEOLOGIST - C.NOGAS

OPERATOR - GCRI
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 1943.00

ZONE - 9
NORTHING - 6358300.00
EASTING - 490050.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 572210
LONGITUDE - 1290956

- ORIENTATION -

LENGTH - 13.00
SIZE WIDTH - 1.3
SIZE HEIGHT - 1.0

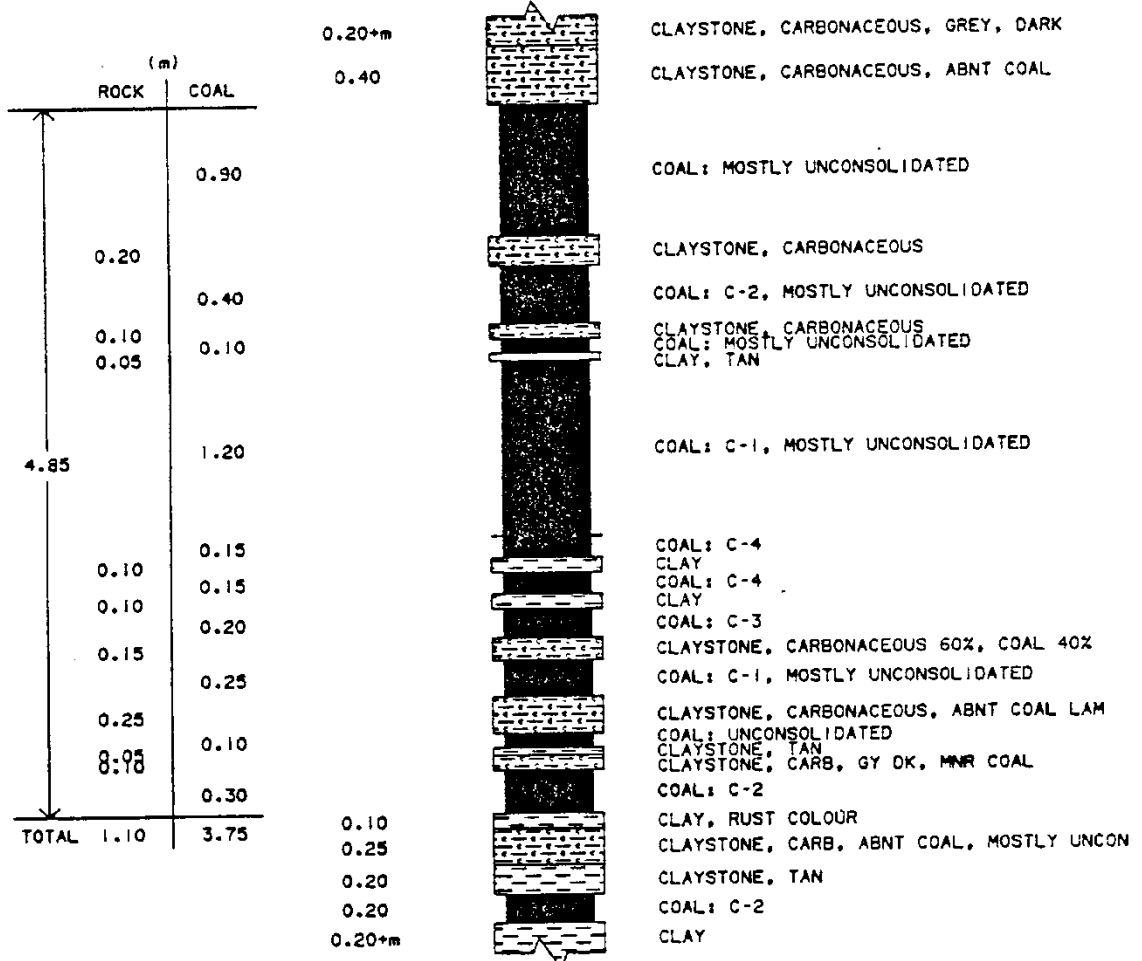
INCLINATION - 4.0
AZIMUTH - 10.0

ROOF STRIKE - 300
ROOF DIP - 20
ROOF DIR - S

FLOOR STRIKE - 290
FLOOR DIP - 35
FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE

=====



ATTITUDE OF ROOF : 110/35S
 ATTITUDE OF FLOOR: 120/20S
 UTM COORDINATES : 6358300mN, 490050mE
 ELEVATION : 1943m
 MAP CARD NUMBER : 104 H/6 B,G
 TRENCH DEPTH : 1.00m
 TRENCH WIDTH : 1.30m
 TRENCH LENGTH : 13.00m
 TRENCH BEARING : 010°
 TRENCH SLOPE : 04°N
 TRENCH BLOCK : S.N.

GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG		
KPN-TRC-83090		
DRAWN BY: C. NOGAS	SCALE: 1:50	
LOGGED BY: C. NOGAS	DATE: 23/08/83	
APPROVED BY: C.W.		

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC83090

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.20	0.20			CLAYSTONE	CARB. DK. GY
	0.20	0.60	0.40			CLAYSTONE	CARB ABUNDANT COAL ROOF
	0.60	1.50	0.90			COAL	MOSTLY UNCONSOLIDATED
	1.50	1.70	0.20			CLAYSTONE	CARB
	1.70	2.10	0.40			COAL	C-2 MOSTLY UNCONSOLIDATED.
	2.10	2.20	0.10			CLAYSTONE	CARB
	2.20	2.30	0.10			COAL	MOSTLY UNCONSOLIDATED.
	2.30	2.35	0.05			CLAY	TAN
	2.35	3.55	1.20			COAL	C-1 MOSTLY UNCONSOLIDATED.
	3.55	3.70	0.15			COAL	C-4

* DENOTES MEASURED BCA

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC83090

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	3.70	3.80	0.10			CLAY	
	3.80	3.95	0.15			COAL	C-4
	3.95	4.05	0.10			CLAY	
	4.05	4.25	0.20			COAL	C-3
	4.25	4.40	0.15			CLAYSTONE	CARB 40% COAL LAM
	4.40	4.65	0.25			COAL	C-1 MOSTLY UNCONSOLIDATED
	4.65	4.90	0.25			CLAYSTONE	CARB ABUNDANT COAL LAM
	4.90	5.00	0.10			COAL	UNCONSOLIDATED
	5.00	5.05	0.05			CLAYSTONE	LT. BN
	5.05	5.15	0.10			CLAYSTONE	CARB. DK. GY MINOR COAL
	5.15	5.45	0.30			COAL	C-2

* DENOTES MEASURED BCA

GULF CANADA RESOURCES INC. - COAL DIVISION
 22/NOV/84 PROJECT DATA SOURCE SUMMARY PAGE 1

DATA SOURCE	LOCATION NORTHING	EASTING	ELEVATION	LENGTH	ANGLE	AZIMUTH	LOG TYPE
KPNSNTRC84001	6352150.0	496200.0	1950.7	1.5	10.0	330.0	
KPNSNTRC84002	6353800.0	495700.0	1969.7	2.4	5.0		
KPNSNTRC84008	6356350.0	486700.0	2045.5	4.7	5.0	140.0	
KPNSNTRC84009	6356400.0	486600.0	2045.5	1.8	5.0	130.0	
KPNSNTRC84013	6356500.0	492700.0	2103.0	3.5	10.0	170.0	
KPNSNTRC84016	6356750.0	490250.0	1996.0	9.5	5.0	38.0	
KPNSSTRC84017	6353100.0	499200.0	1920.0	2.0	35.0	300.0	
KPNSSTRC84020	6352050.0	502550.0	1550.0	5.3	0.0	238.0	
KPNSNTRC84021	6350490.0	498920.0	1844.0	2.5	10.0	190.0	
KPNSNTRC84022	6351386.0	499140.0	2027.0	5.5	10.0	165.0	
KPNSNTRC84023	6350700.0	499770.0	1965.0	6.0	5.0	125.0	
KPNSNTRC84024	6350594.0	499450.0	1950.0	2.0		125.0	
KPNSNTRC84025	6356800.0	486100.0	2030.3	6.6	5.0	120.0	
KPNSNTRC84026	6349800.0	498800.0	1859.0	4.1	60.0	164.0	
KPNSNTRC84027	6349750.0	499450.0	1859.0	11.9	40.0	60.0	

GULF CANADA RESOURCES INC. - COAL DIVISION
22/NOV/84 PROJECT DATA SOURCE SUMMARY PAGE 2

DATA SOURCE	LOCATION		ELEVATION	LENGTH	ANGLE	AZIMUTH	LOG TYPE
	NORTHING	EASTING					
KPNSNTRC84028	6349400.0	499300.0	1767.0	4.0	35.0	200.0	
KPNSSTRC84029	6351000.0	502500.0	1550.0	6.4	12.0	25.0	
KPNSNTRC84030	6349910.0	501305.0	1895.0	5.0		59.0	



10/DEC/84 GULF CANADA RESOURCES INC. - COAL DIVISION PAGE 1
 SIMPLE SAMPLE SUMMARY
 TRUE THICKNESS
 KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	ROCK	MISSING COAL	ROCK	TOTAL COAL-ROCK
TRC84001		1551	2.00	2.80	100.00	0.800				0.80- 0.00
TRC84008		1554	0.10	0.90	100.00	0.540	0.260			0.54- 0.26
TRC84013		1805	0.32	1.87	100.00	0.720	0.830			0.72- 0.83
TRC84016		1806	1.01	3.14	100.00	0.590	1.540			0.59- 1.54
TRC84017		6384	0.42	1.28	100.00	0.850	0.010			0.85- 0.01
TRC84020		6389	3.00	5.91	100.00	1.530	1.380			1.53- 1.38
TRC84021		6385	0.07	1.04	100.00	0.820	0.150			0.82- 0.15
TRC84022		6386	1.50	4.15	100.00	2.550	0.100			2.55- 0.10
TRC84023		6387	0.70	2.14	100.00	1.200	0.240			1.20- 0.24
TRC84026		1807	0.84	2.67	100.00	1.630	0.200			1.63- 0.20
TRC84027		1808	3.75	4.78	100.00	1.010	0.020			1.01- 0.02
TRC84028		1810	1.30	3.75	100.00	1.680	0.610			1.68- 0.61
TRC84029		6388	1.11	2.69	100.00	0.750	0.530			0.75- 0.53
		1809	0.06	2.94	100.00	2.520	0.350			2.53- 0.35



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC84001

DATE - 01/07/85

- HISTORY -

START DATE - 08/11/84
END DATE - 08/11/84

CONTRACTOR - OPERATOR - GCRI
GEOLOGIST - G.R. DIX SURVEYOR -

REMARKS - ROOF ATTITUDE NOT KNOWN; COAL/COAL+ROCK 0.80/0.80

- LOCATION -

PROVINCE - BC ZONE - 9
ELEVATION - 1950.72 NORTHING - 6352150.00
EASTING - 496200.00

LICENCE/LEASE NUMBER - 7729

LATITUDE - 571851
LONGITUDE - 1290347

- ORIENTATION -

LENGTH - 1.50 INCLINATION - 10.0
AZMUTH - 330.0
SIZE WIDTH - 0.3
SIZE HEIGHT - 0.3

ROOF STRIKE - 0 FLOOR STRIKE - 224
ROOF DIP - 0 FLOOR DIP - 44
ROOF DIR - FLOOR DIR - S

*** NOTE *** O INDICATES NO VALUE

GULF CANADA RESOURCES INC.

COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL

TRUE THICKNESS

DATA SOURCE: KPN SN TRC84001 SEAM : INTERVAL(M) : 2.00 - 2.80 ELEVATION(M) : 1950.7
 GEOLOGIST : G.R. DIX SCALE: 1:47 DATE : DEC 18/84 DRAWING NO. :

SEAM COMP.	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES		% REC.	SAMPLE ID		COAL/ROCK TOTAL		COAL QUALITY A.D.B.							
			ROCK	COAL		SIMP	COMP	COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CALY AL MJ/KG	R ₀	
1 2 3 4 5 6		↑															
	2.00			0.80	100.0	1551	1551	0.80/0.00 0.80		7.09	41.85	12.09	38.97	0.24	14.59	—	
	2.80	↓															

PLOT 1 12.04.32 TUES 18 DEC, 1984 JOB-TSTCE60 GULF CANADA DISPLA 9.0

84/12/05

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SN DATA SOURCE: TRCB4001

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
00	0.00	2.00	2.00			SILTSTONE	WEL.BN DEBRIS ONLY.
00	2.00	2.80	0.80	01551		COAL	C-1.M.BLK FRAGMENTS ONLY: WEATHERED.
00	2.80	5.80	3.00			SANDSTONE	MG.DK.GY.THKB COARSENING UPWARDS.

* DENOTES MEASURED BCA
NEWPAGE



GCRI COAL DIVISION	HEAD	PROJ	KPN	BLK	SN	DS	TRC84001	
=====		=====		=====		=====		
SAMPLE ID	01551	DATA TYPE (REAL,BORO,AVER,CALC)						REAL
SPLIT SAMPLE ID	HD1	DATE ANALYSED 16/10/84						
		ANALYSIS BASIS TYPE (AD,DB,AR,EM)						AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO)				ASTM				
TOP SIZE (MM)		---	---					
SURFACE MOISTURE %		---	---		TOTAL SULPHUR %			0.24
TOTAL MOISTURE %		15.59			PHOSPHOROUS %			---
EQUILIBRIUM MOISTURE %		---			CHLORINE (PPM)			---
					SPECIFIC GRAVITY			---
RESIDUAL MOISTURE %		7.09			FSI			---
ASH %		41.85			HGI			---
VOLATILE MATTER %		12.09			CO2 %			---
FIXED CARBON %		38.97						
GROSS CALORIFIC VALUE (MJ/KG)		14.59						
NET CALORIFIC VALUE (MJ/KG)		---						

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC84002

DATE - 01/07/85

- HISTORY -

START DATE - 07/13/84
END DATE - 07/13/84

CONTRACTOR - OPERATOR - GCRI
GEOLOGIST - G.R. DIX SURVEYOR -

REMARKS - TRENCH NOT SAMPLED; COAL/COAL+ROCK 0.75/0.75

- LOCATION -

PROVINCE - BC ZONE - 9
ELEVATION - 1969.70 NORTHING - 6353800.00
EASTING - 495700.00
LICENCE/LEASE NUMBER - 7732
LATITUDE - 571944
LONGITUDE - 1290417

- ORIENTATION -

LENGTH - 2.40 INCLINATION - 5.0
AZIMUTH - 0.0
SIZE WIDTH - 0.3
SIZE HEIGHT - 0.7
ROOF STRIKE - 294 FLOOR STRIKE - 294
ROOF DIP - 20 FLOOR DIP - 20
ROOF DIR - S FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE

GULF CANADA RESOURCES INC.

COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL

TRUE THICKNESS

DATA SOURCE: KPN SN TRC84002 SEAM : INTERVAL(M) : 0.00 - 0.00 ELEVATION(M) : 1959.7
 GEOLOGIST : G.R. DIX SCALE: 1.47 DATE : DEC 04/84 DRAWING NO. :

SEAM COMP.	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES		% REC.	SAMPLE ID		COAL/ROCK TOTAL		COAL QUALITY A.D.B.								
			ROCK	COAL		S:MP	COMP	COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL. VAL MJ/KG	RO		
		↑																
	1.04	[Pattern]							0.75/0.00 0.75									
	1.79	[Pattern]																
		↓																

PLOT 1 10.03.42 TUES 4 DEC, 1984 JOB-TSTOEGO GULF CANADA DISSPLA 9.0

84/12/05

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: 5N DATA SOURCE: TRC84002

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
00	0.00	0.50	0.50			SANDSTONE	FG.WEL.GY.THNB BROWN WEATHERING
00	0.50	1.00	0.50			SILTSTONE	FG.WEL.BLK.THNB INTERBEDS (<0.002m) OF SILTSTONE AND COAL
00	1.00	1.04	0.04			BENTONITE	GY.MAS
00	1.04	1.79	0.75			COAL	C-4.BLK NOT SAMPLED
00	1.79	2.04	0.25			SANDSTONE	MG.WEL.GY.MB BROWN WEATHERING

* DENOTES MEASURED BCA
NEWPAGE



===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC84008

DATE - 01/07/85

- HISTORY -

START DATE - 08/16/84
END DATE - 08/16/84

CONTRACTOR -
GEOLOGIST - G. DIX

OPERATOR - GCR1
SURVEYOR -

REMARKS - SAMPLE 01554; ROOF STRIKE NOT KNOWN; COAL/COAL+ROC
K 0.54/0.80

- LOCATION -

PROVINCE - BC
ELEVATION - 2045.45

ZONE - 9
NORTHING - 6356350.00
EASTING - 486700.00

LICENCE/LEASE NUMBER - 7740

LATITUDE - 572106
LONGITUDE - 1291316

- ORIENTATION -

LENGTH - 4.70
SIZE WIDTH - 0.5
SIZE HEIGHT - 0.3

INCLINATION - 5.0
AZIMUTH - 140.0

ROOF STRIKE - 0
ROOF DIP - 10
ROOF DIR - S

FLOOR STRIKE - 230
FLOOR DIP - 10
FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE

=====

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC84008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.10	0.10			MUDSTONE	BN UNCONSOLIDATED
	0.10	0.25	0.15	01554		COAL	C-2.BLK WELL CLEATED
	0.25	0.27	0.02	01554		MUDSTONE	BN UNCONSOLIDATED
	0.27	0.39	0.12	01554		COAL	C-2.BLK WELL CLEATED
	0.39	0.40	0.01	01554		SHALE	CARB.BLK
	0.40	0.53	0.13	01554		COAL	C-2.BLK WELL CLEATED
	0.53	0.55	0.02	01554		SHALE	CARB.BLK
	0.55	0.61	0.06	01554		COAL	C-2.BLK
	0.61	0.63	0.02	01554		SHALE	CARB.BLK
	0.63	0.65	0.02	01554		COAL	C-2.BLK

* DENOTES MEASURED BCA



84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: SN DATA SOURCE: 1RCR4008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.65	0.67	0.02	01554		SHALE	CARB.BLK
	0.67	0.73	0.06	01554		COAL	C-2.BLK
	0.73	0.90	0.17	01554		SHALE	CARB.BLK LAMINATED AND DISSEMINATED VITRINITE
	0.90	0.92	0.02			MUDSTONE	BN
	0.92	1.02	0.10			MUDSTONE	BLK SOME VITRINITE FLECKS
	1.02	1.07	0.05			MUDSTONE	GY POSSIBLY A BENTONITE
	1.07	1.35	0.28			COAL	C-4.BLK
	1.35	1.52	0.17			SHALE	CARB.BLK MINOR VITRINITE FLECKS
	1.52	1.72	0.20			SHALE	CARB MINOR VITRINITE FLECKS
	1.72	1.73	0.01			SHALE	CARB LIMONITE HORIZON

* DENOTES MEASURED BCA

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 3

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC84008

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	1.73	1.93	0.20			MUDSTONE	

* DENOTES MEASURED BCA
NEWPAGE

GCRI COAL DIVISION HEAD PROJ KPN BLK SN DS TRC84008
 =====
 SAMPLE ID 01554 DATA TYPE (REAL,BORO,AVER,CALC) REAL
 SPLIT SAMPLE ID HD1 DATE ANALYSED 25/09/84
 ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD
 NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

TOP SIZE (MM)	-----		
SURFACE MOISTURE %	-----	TOTAL SULPHUR %	0.2
TOTAL MOISTURE %	10.23	PHOSPHOROUS %	-----
EQUILIBRIUM MOISTURE %	-----	CHLORINE (PPM)	-----
		SPECIFIC GRAVITY	-----
RESIDUAL MOISTURE %	3.64	FSI	-----
ASH %	25.88	HGI	-----
VOLATILE MATTER %	9.93	CO2 %	-----
FIXED CARBON %	60.55		
GROSS CALORIFIC VALUE (MJ/KG)	22.45		
NET CALORIFIC VALUE (MJ/KG)	-----		

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC84009

DATE - 01/07/85

- HISTORY -

START DATE - 08/16/84

END DATE - 08/16/84

CONTRACTOR -

OPERATOR - GCRI

GEOLOGIST - G. DIX

SURVEYOR -

REMARKS - NOT SAMPLED; COAL/COAL+ROCK 0.48/0.48

- LOCATION -

PROVINCE - BC

ZONE - 9

ELEVATION - 2045.45

NORTHING - 6356400.00

EASTING - 486600.00

LICENCE/LEASE NUMBER - 7740

LATITUDE - 572108

LONGITUDE - 1291322

- ORIENTATION -

LENGTH - 1.80

INCLINATION - 5.0

AZIMUTH - 130.0

SIZE WIDTH - 0.5

SIZE HEIGHT - 0.3

ROOF STRIKE - 210

FLOOR STRIKE - 230

ROOF DIP - 30

FLOOR DIP - 30

ROOF DIR - S

FLOOR DIR - S

*** NOTE *** O INDICATES NO VALUE

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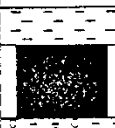
GULF CANADA RESOURCES INC.

COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL

TRUE THICKNESS

DATA SOURCE: KPN SN TRC84009 SEAM : INTERVAL(M) : 0.00 - 0.00 ELEVATION(M) : 2045.4
 GEOLOGIST : G. DIX SCALE: 1:47 DATE : DEC 04/84 DRAWING NO. :

SEAM COMP.	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES		% REC.	SAMPLE ID		COAL/ROCK TOTAL		COAL QUALITY A.D.B.							
			ROCK	COAL		SIMP	COMP	COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL. VAL MJ/KG	RO	
	0.25	↑  ↓						0.48/6.00 0.48									

PLOT 1 10.03.47 TUES 4 DEC, 1984 JOB-TSTCE80 GULF CANADA DISSPLA 9.0

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC84009

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SFAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.00	0.25	0.25			MUDSTONE	GY UNCONSOLIDATED
	0.25	0.32	0.07			COAL	C-4.BLK
	0.32	0.47	0.15			COAL	C-3.BLK
	0.47	0.57	0.10			COAL	C-4.BLK
	0.57	0.63	0.06			COAL	C-3.BLK
	0.63	0.73	0.10			COAL	C-1.BLK
	0.73	0.83	0.10			SHALE	CARB.BLK

* DENOTES MEASURED BCA
NEWPAGE



84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC84013

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.00	0.32	0.32			MUDSTONE	DK.GY MINOR HEMATITE STAINED BANDS; ROOF: THICKNESS GREATER THAN 0.32M
	0.32	0.42	0.10	01805		COAL	C-3.DK.GY WEATHERED; MEDIUM TO DARK GREY
	0.42	0.53	0.11	01805		MUDSTONE	CARB.M.GY WEATHERED
	0.53	0.55	0.02	01805		MUDSTONE	M.GY
	0.55	0.61	0.06	01805		COAL	C-4.DK.GY WEATHERED
	0.61	0.63	0.02	01805		MUDSTONE	M.GY
	0.63	0.66	0.03	01805		COAL	C-3.DK.GY WEATHERED
	0.66	0.67	0.01	01805		MUDSTONE	CARB.M.GY MINOR LIMONITE STAINING
	0.67	0.71	0.04	01805		COAL	C-4.DK.GY SHEARED

* DENOTES MEASURED BCA



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC84013

DATE - 01/07/85

- HISTORY -

START DATE - 08/12/84
END DATE - 08/12/84

CONTRACTOR -
GEOLOGIST - MCKENZIE

OPERATOR - GCRI
SURVEYOR -

REMARKS - COAL/COAL+ROCK 0.72/1.55

- LOCATION -

PROVINCE - BC
ELEVATION - 2103.00

ZONE - 9
NORTHING - 6356500.00
EASTING - 492700.00

LICENCE/LEASE NUMBER - 7753

LATITUDE - 572112
LONGITUDE - 1290717

- ORIENTATION -

LENGTH - 3.50

INCLINATION - 10.0
AZIMUTH - 170.0

SIZE WIDTH - 0.9
SIZE HEIGHT - 0.8

ROOF STRIKE - 232
ROOF DIP - 23
ROOF DIR - S

FLOOR STRIKE - 238
FLOOR DIP - 44
FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC84013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.71	0.94	0.23	01805		MUDSTONE	CARB.DK.GY WEATHERED
	0.94	0.96	0.02	01805		MUDSTONE	SLTY.M.GY MINOR LIMONITE STAINING
	0.96	0.99	0.03	01805		COAL	C-3.DK.GY
	0.99	1.02	0.03	01805		COAL	C-4.DK.GY
	1.02	1.05	0.03	01805		MUDSTONE	CARB.M.GY
	1.05	1.09	0.04	01805		COAL	C-5.DK.GY
	1.09	1.17	0.08	01805		MUDSTONE	CARB.M.GY
	1.17	1.22	0.05	01805		COAL	C-5.DK.GY
	1.22	1.30	0.08	01805		MUDSTONE	CARB.M.GY
	1.30	1.44	0.14	01805		COAL	C-4.DK.GY

* DENOTES MEASURED BCA

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 3

PROJECT: KPN BLOCK: 5N DATA SOURCE: TRC84013

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	1.44	1.49	0.05	01805		COAL	C-3.DK.GY
	1.49	1.54	0.05	01805		MUDSTONE	CARB.M.GY MINOR SHEARING
	1.54	1.67	0.13	01805		MUDSTONE	CARB.M.GY MINOR COALY STRINGERS
	1.67	1.72	0.05	01805		MUDSTONE	SLTY.M.GY
	1.72	1.78	0.06	01805		COAL	C-3.DK.GY
	1.78	1.87	0.09	01805		COAL	C-2.DK.GY LIMONITE STAINING
	1.87	2.14	0.27			MUDSTONE	SLTY.M.GY FLOOR: THICKNESS GREATER THAN 0.27M

* DENOTES MEASURED BCA
NEWPAGE

GCRI COAL DIVISION HEAD PROJ KPN BLK SN DS TRC84013
=====

SAMPLE ID 01805 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID HD1 DATE ANALYSED 25/09/84
ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

TOP SIZE (MM)	----.---	TOTAL SULPHUR %	0.28
SURFACE MOISTURE %	---.---	PHOSPHOROUS %	---.---
TOTAL MOISTURE %	11.65	CHLORINE (PPM)	---.---
EQUILIBRIUM MOISTURE %	---.---	SPECIFIC GRAVITY	---.---
RESIDUAL MOISTURE %	3.36	FSI	---.---
ASH %	35.18	HGI	---.---
VOLATILE MATTER %	9.80	CO2 %	---.---
FIXED CARBON %	51.66		

GROSS CALORIFIC VALUE (MJ/KG) 18.73
NET CALORIFIC VALUE (MJ/KG) ---.---

===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC84016

DATE - 01/07/85

- HISTORY -

START DATE - 08/13/84

END DATE - 08/13/84

CONTRACTOR -

GEOLOGIST - MCKENZIE

OPERATOR - GCRI

SURVEYOR -

REMARKS - ROOF ATTITUDE NOT KNOWN; COAL/COAL+ROCK 0.59/2.13

- LOCATION -

PROVINCE - BC

ELEVATION - 1996.00

ZONE - 9

NORTHING - 6356750.00

EASTING - 490250.00

LICENCE/LEASE NUMBER - 7738

LATITUDE - 572119

LONGITUDE - 1290943

- ORIENTATION -

LENGTH - 9.50

INCLINATION - 5.0

AZIMUTH - 38.0

SIZE WIDTH - 0.7

SIZE HEIGHT - 0.9

ROOF STRIKE - 0

ROOF DIP - 0

ROOF DIR -

FLOOR STRIKE - 288

FLOOR DIP - 72

FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE

=====

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: 5N DATA SOURCE: TRC84016

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.93	0.93			MUDSTONE	CARB. M. GY WEATHERED; VERY MINOR COALY STRINGERS
	0.93	1.00	0.07			MUDSTONE	CARB. M. GY WEATHERED
	1.00	1.01	0.01			QUARTZ	VEIN; HEMATITE STAINED
	1.01	1.07	0.06	01806		COAL	C-5. DK. GY WEATHERED
	1.07	1.14	0.07	01806		MUDSTONE	M. GY WEATHERED
	1.14	1.18	0.04	01806		COAL	C-5. DK. GY WEATHERED
	1.18	1.26	0.08	01806		MUDSTONE	CARB. M. GY WEATHERED; SHEARED
	1.26	1.29	0.03	01806		MUDSTONE	SLTY. M. GY FRACTURED
	1.29	1.37	0.08	01806		MUDSTONE	CARB. M. GY WEATHERED; SHEARED
	1.37	1.39	0.02	01806		MUDSTONE	SLTY. M. GY HEMATITE STAINED

* DENOTES MEASURED BCA

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: SN DATA SOURCE: TRCB4016

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	1.39	1.40	0.01	01806		QUARTZ	QUARTZ VEIN
	1.40	1.46	0.06	01806		MUDSTONE	CARB. M. GY WEATHERED; SHEARED
	1.46	1.49	0.03	01806		COAL	C-4. DK. GY WEATHERED; SHEARED; HEMATITE STAINED
	1.49	1.50	0.01	01806		QUARTZ	VEIN
	1.50	1.53	0.03	01806		MUDSTONE	SLTY. M. GY
	1.53	1.60	0.07	01806		MUDSTONE	CARB. M. GY WEATHERED; SHEARED
	1.60	1.61	0.01	01806		QUARTZ	VEIN
	1.61	1.65	0.04	01806		COAL	C-5. DK. GY WEATHERED; SHEARED AND POWDERED
	1.65	1.78	0.13	01806		MUDSTONE	M. GY SHEARED; WEATHERED
	1.78	1.80	0.02	01806		COAL	C-3. DK. GY WEATHERED; SHEARED
	1.80	1.86	0.06	01806		MUDSTONE	CARB. M. GY WEATHERED

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC84016

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	1.86	1.92	0.06	01806		MUDSTONE	SLTY. M. GY COALY STRINGERS
	1.92	2.07	0.15	01806		MUDSTONE	CARB. M. GY WEATHERED
	2.07	2.08	0.01	01806		COAL	C-5. DK. GY SHEARED; WEATHERED
	2.08	2.21	0.13	01806		MUDSTONE	CARB. M. GY SHEARED; LISTRIC SURFACES
	2.21	2.32	0.11	01806		COAL	C-5. DK. GY WEATHERED; HEMATITE STAINED
	2.32	2.38	0.06	01806		MUDSTONE	CARB. M. GY SHEARED; WEATHERED
	2.38	2.42	0.04	01806		MUDSTONE	SLTY. M. GY
	2.42	2.47	0.05	01806		COAL	C-4. DK. GY WEATHERED; POWDERED
	2.47	2.53	0.06	01806		MUDSTONE	M. GY SHEARED
	2.53	2.63	0.10	01806		MUDSTONE	M. GY

* DENOTES MEASURED BCA

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 4

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC84016

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	2.63	2.66	0.03	01806		COAL	C-5.DK.GY WEATHERED; MINOR HEMATITE STAINING
	2.66	2.67	0.01	01806		COAL	C-4.DK.GY WEATHERED
	2.67	2.69	0.02	01806		COAL	C-5.DK.GY WEATHERED
	2.69	2.70	0.01	01806		COAL	C-3.DK.GY WEATHERED
	2.70	2.72	0.02	01806		COAL	C-4.DK.GY WEATHERED
	2.72	2.74	0.02	01806		COAL	C-3.DK.GY WEATHERED
	2.74	2.78	0.04	01806		COAL	C-4.DK.GY SHEARED
	2.78	2.83	0.05	01806		MUDSTONE	CARB.DK.GY OXIDIZED; MINOR HEMATITE STAINING
	2.83	2.98	0.15	01806		MUDSTONE	SLTY.M.GY SHEARED
	2.98	3.01	0.03	01806		MUDSTONE	SLTY.M.GY

* DENOTES MEASURED BCA



84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 5

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC84016

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	3.01	3.05	0.04	01806		COAL	C-3.DK.GY WEATHERED
	3.05	3.11	0.06	01806		MUDSTONE	LT-M.GY WEATHERED
	3.11	3.14	0.03	01806		COAL	C-4.DK.GY WEATHERED; HEMATITE STAINED
	3.14	3.47	0.33			MUDSTONE	M.GY WEATHERED; FLOOR

* DENOTES MEASURED BCA
NEWPAGE



GCRI COAL DIVISION HEAD PROJ KPN BLK SN DS TRC84016

SAMPLE ID 01806 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID HD1 DATE ANALYSED 25/09/84
ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

TOP SIZE (MM)	---	TOTAL SULPHUR %	0.31
SURFACE MOISTURE %	---	PHOSPHOROUS %	---
TOTAL MOISTURE %	14.14	CHLORINE (PPM)	---
EQUILIBRIUM MOISTURE %	---	SPECIFIC GRAVITY	---
RESIDUAL MOISTURE %	3.57	FSI	---
ASH %	49.29	HGI	---
VOLATILE MATTER %	10.47	CO2 %	---
FIXED CARBON %	36.67		

GROSS CALORIFIC VALUE (MJ/KG) 13.26
NET CALORIFIC VALUE (MJ/KG) ---

PROJECT: KPN BLOCK: SS DATA SOURCE: TRC84017

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.42	0.42			MUDSTONE	CARB.BLK PLANT FRAGMENTS
	0.42	0.45	0.03	06384		COAL	C-5.BLK
	0.45	0.46	0.01	06384		MUDSTONE	CARB.BLK HEMATITE STAINED; WEATHERED
	0.46	0.47	0.01	06384		COAL	C-4.BLK WEATHERED
	0.47	0.68	0.21	06384		COAL	C-3.BLK WEATHERED
	0.68	0.70	0.02	06384		COAL	C-4.BLK SHEARED; LISTRIC SURFACES; MINOR HEMATITE STAINING
	0.70	1.22	0.52	06384		COAL	C-2.BLK WEATHERED
	1.22	1.23	0.01	06493		COAL	C-3.BLK SHEARED
	1.23	1.28	0.05	06384		COAL	C-3.BLK WEATHERED; HEMATITE STAINED

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: SS DATA SOURCE: TR08J017

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	1.28	1.29	0.01			MUDSTONE	CARB. BLK COALY STRINGERS
	1.29	3.79	2.50			SANDSTONE	VFG. LT. GY. MAS IMMATURE; FLOOR; THICKNESS GREATER THAN 2.5M

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSSTRC84020

DATE - 01/07/85

- HISTORY -

START DATE - 08/26/84
END DATE - 08/26/84

CONTRACTOR -
GEOLOGIST - KONG/DAKIN

OPERATOR - GCRI
SURVEYOR -

REMARKS - COAL/COAL+ROCK 1.53/2.91

- LOCATION -

PROVINCE - BC
ELEVATION - 1550.00

ZONE - 9
NORTHING - 6352050.00
EASTING - 502550.00

LICENCE/LEASE NUMBER - 7387

LATITUDE - 571848
LONGITUDE - 1285728

- ORIENTATION -

LENGTH - 5.30
SIZE WIDTH - 0.6
SIZE HEIGHT - 1.0

INCLINATION - 0.0
AZIMUTH - 238.0

ROOF STRIKE - 300
ROOF DIP - 34
ROOF DIR - S

FLOOR STRIKE - 300
FLOOR DIP - 34
FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE

GULF CANADA RESOURCES INC.

SEAM DETAIL

COAL DIVISION
MOUNT KLAPPAN PROJECT

TRUE THICKNESS

DATA SOURCE: KPN SS TRC84020 SEAM : INTERVAL(M) : 3.00 - 5.91 ELEVATION(M) : 1550.0
 GEOLOGIST : KONG/DAKIN SCALE: 1:47 DATE : DEC 11/84 DRAWING NO. :

SEAM COMP.	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES		% REC.	SAMPLE ID		COAL/ROCK TOTAL		COAL QUALITY A.D.B.							
			ROCK	COAL		SIMP	COMP	COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL. VAL MJ/KG	RO	
		↑															
	3.00	C	0.10	0.10													
		C		0.83													
		C	0.29														
		C	0.28		100.0	6389	6389	1.53 / 1.38		4.32	22.39	5.93	67.36	1.03	24.67		
		C	0.31					2.91									
		C	0.46														
		C		0.19													
		C	0.22														
	5.91	C		0.17													
		↓															

PLOT 1 09.36.21 TUES 11 DEC, 1984 JOB-TST0680 GULF CANADA DISSPLR 9.0

R4/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SS DATA SOURCE: TRC84020

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.00	3.00	3.00			MUDSTONE	BN CLAY RICH; BROWN WEATHERING; POORLY CONSOLIDATED; SOFT; ROOF; THICKNESS GREATER THAN 3.0M
	3.00	3.10	0.10	06359		COAL	C-5.BLK WEATHERED; POORLY CONSOLIDATED
	3.10	3.20	0.10	06359		SHALE	CARB SOME VITRAIN BANDS
	3.20	3.32	0.12	06359		COAL	C-4 HIGHLY WEATHERED; MINOR IRON STAINING; POORLY CONSOLIDATED
	3.32	4.03	0.71	06359		COAL	C-3.BLK SHEARED; HIGHLY WEATHERED; IRON STAINING
	4.03	4.32	0.29	06359		SHALE	CARB SOME VITRAIN BANDS
	4.32	4.60	0.28	06359		COAL	C-2.BLK SULPHIDE RICH; HEMATITE STAINED; WELL CONSOLIDATED AND CLEFTED
	4.60	4.86	0.26	06359		MUDSTONE	DK.GY WELL CONSOLIDATED; BROWN WEATHERING; IRREGULAR FRACTURE

* DENOTES MEASURED BCA

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: SS DATA SOURCE: TRC84020

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	4.86	4.91	0.05	0635Y		QUARTZ	IRON STAINED
	4.91	5.37	0.46	0635Y		SHALE	CARB SHEARED; WEATHERED
	5.37	5.56	0.19	0635Y		COAL	C-2.BLK IRON STAINED WEATHERED; WELL CLEATED
	5.56	5.78	0.22	0635Y		MUDSTONE	DK.BN WEATHERED; MODERATELY CONSOLIDATED
	5.78	5.91	0.13	0635Y		COAL	C-3.BLK WELL CLEATED; SHEARED; CONCHOIDAL FRACTURE; WELL CONSOLIDATED
	5.91	6.07	0.16			MUDSTONE	GY WELL CONSOLIDATED; CLAY RICH
	6.07	6.37	0.30			SHALE	HIGHLY WEATHERED; ABUNDANT VITRAIN LAMINAE
	6.37	7.37	1.00			SHALE	M.GY SHEARED; WELL CONSOLIDATED; FLOOR

* DENOTES MEASURED BCA
NEWPAGE

GCRI COAL DIVISION HEAD PROJ KPN BLK SS DS TRC84020

=====

SAMPLE ID	06389	DATA TYPE (REAL,BORG,AVER,CALC)	REAL
SPLIT SAMPLE ID	HD1	DATE ANALYSED 16/10/84	
		ANALYSIS BASIS TYPE (AD,DB,AR,EM)	AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO)	ASTM		

TOP SIZE (MM)	----*--		
SURFACE MOISTURE %	---*--	TOTAL SULPHUR %	1.03
TOTAL MOISTURE %	14.50	PHOSPHOROUS %	---*--
EQUILIBRIUM MOISTURE %	---*--	CHLORINE (PPM)	-----
		SPECIFIC GRAVITY	---*--
RESIDUAL MOISTURE %	4.32	FSI	---*--
ASH %	22.39	HGI	---*--
VOLATILE MATTER %	5.93	CO2 %	---*--
FIXED CARBON %	67.36		

GROSS CALORIFIC VALUE (MJ/KG)	24.67	
NET CALORIFIC VALUE (MJ/KG)	---*--	

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC84021

DATE - 01/07/85

- HISTORY -

START DATE - 08/16/84
END DATE - 08/16/84

CONTRACTOR -
GEOLOGIST - FAWCETT

OPERATOR - GCRI
SURVEYOR -

REMARKS - COAL/COAL+ROCK 0.82/1.63

- LOCATION -

PROVINCE - BC
ELEVATION - 1844.00

ZONE - 9
NORTHING - 6350490.00
EASTING - 498920.00

LICENCE/LEASE NUMBER - 7726

LATITUDE - 571757
LONGITUDE - 1290105

- ORIENTATION -

LENGTH - 2.50
SIZE WIDTH - 0.3
SIZE HEIGHT - 0.3

INCLINATION - 10.0
AZIMUTH - 190.0

ROOF STRIKE - 275
ROOF DIP - 55
ROOF DIR - S

FLOOR STRIKE - 275
FLOOR DIP - 55
FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: 5N DATA SOURCE: TRC94021

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.00	0.02	0.02			MUDSTONE	BN ORANGE TINGE; POORLY CONSOLIDATED
	0.02	0.07	0.05			CLAYSTONE	SLTY.LT.GY
	0.07	0.42	0.35	06385		COAL	C-5.BLK POORLY CONSOLIDATED; MINOR IRON STAINING
	0.42	0.57	0.15	06385		CLAYSTONE	M.BN POORLY CONSOLIDATED; MINOR IRON STAINING; MINOR COAL LAMINAE
	0.57	0.67	0.10	06385		COAL	C-4.BLK CONSOLIDATED; POORLY CLEATED; MINOR CALCITE
	0.67	1.04	0.37	06385		COAL	C-3.BLK CLAYSTONE LAMINATIONS; MINOR IRON STAINING
	1.04	1.49	0.45			CLAYSTONE	CARB.BLK ABUNDANT COAL LAMINATIONS; PARTLY CONSOLIDATED
	1.49	1.79	0.30			CLAYSTONE	M.BN

* DENOTES MEASURED BCA
NEWPAGE

Gulf

GCRI COAL DIVISION HEAD		PROJ	KPN	BLK	SN	DS	TRC84021		
=====		=====							
SAMPLE ID	06385	DATA TYPE (REAL,BORO,AVER,CALC)						REAL	
SPLIT SAMPLE ID	HD1	DATE ANALYSED 25/09/84							
		ANALYSIS BASIS TYPE (AD,DB,AR,EM)						AD	
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO)		ASTM							
TOP SIZE (MM)		----^---							
SURFACE MOISTURE %		--^---							
TOTAL MOISTURE %	21.11	TOTAL SULPHUR %					0.27		
EQUILIBRIUM MOISTURE %		PHOSPHOROUS %					^-----		
		CHLORINE (PPM)					-----		
		SPECIFIC GRAVITY					^---		
RESIDUAL MOISTURE %	6.28	FSI					^---		
ASH %	29.63	HGI					^---		
VOLATILE MATTER %	18.65	CO2 %					^---		
FIXED CARBON %	45.44								
GROSS CALORIFIC VALUE (MJ/KG)		17.29							
NET CALORIFIC VALUE (MJ/KG)		^---							

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC84022

DATE - 01/07/85

- HISTORY -

START DATE - 08/16/84
END DATE - 08/16/84

CONTRACTOR -
GEOLOGIST - FAWCETT

OPERATOR - GCRI
SURVEYOR -

REMARKS - COAL/COAL+ROCK 2.55/2.65

- LOCATION -

PROVINCE - BC
ELEVATION - 2027.00

ZONE - 9
NORTHING - 6351386.00
EASTING - 499140.00

LICENCE/LEASE NUMBER - 7727

LATITUDE - 571826
LONGITUDE - 1290051

- ORIENTATION -

LENGTH - 5.50

INCLINATION - 10.0
AZIMUTH - 165.0

SIZE WIDTH - 0.5
SIZE HEIGHT - 0.5

ROOF STRIKE - 265
ROOF DIP - 50
ROOF DIR - S

FLOOR STRIKE - 265
FLOOR DIP - 50
FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC84022

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.00	1.50	1.50			CLAYSTONE	CARB. BLK COAL LAMINATIONS AND MINOR COAL PARTINGS; MODERATELY TO POORLY CONSOLIDATED
	1.50	1.80	0.30	06386		COAL	C-3. BLK CLAYSTONE LAMINATIONS; UNCONSOLIDATED
	1.80	1.90	0.10	06386		CLAYSTONE	PN ORANGE TINGE; PARTLY CONSOLIDATED
	1.90	2.35	0.45	06386		COAL	BLK UNCONSOLIDATED; C-2 - C-3 FLECKS; MINOR CLAYSTONE AND C-1 PARTINGS
	2.35	2.65	0.30	06386		COAL	C-2. BLK WELL CLEATED; MINOR 1 cm CLAYSTONE PARTINGS WITH COAL LAMINAE
	2.65	2.95	0.30	06386		COAL	BLK UNCONSOLIDATED; C-3 FLECKS; SILTSTONE LAMINATIONS
	2.95	4.15	1.20	06386		COAL	C-2. BLK MODERATELY CONSOLIDATED; WELL CLEATED; MINOR CLAYSTONE LAMINATIONS
	4.15	5.65	1.50			SANDSTONE	FG-.M.GY BLOCKY FRACTURE; LIMONITE STAINING

+ DENOTES MEASURED BCA
NEWPAGE



GCRI COAL DIVISION HEAD PROJ KPN BLK SN DS TRC84022
=====

SAMPLE ID 06386 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID HD1 DATE ANALYSED 25/09/84
ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GDST,ISO) ASTM

TOP SIZE (MM)	-----		
SURFACE MOISTURE %	-----	TOTAL SULPHUR %	0.37
TOTAL MOISTURE %	17.15	PHOSPHOROUS %	-----
EQUILIBRIUM MOISTURE %	-----	CHLORINE (PPM)	-----
		SPECIFIC GRAVITY	-----
RESIDUAL MOISTURE %	4.63	FSI	-----
ASH %	23.31	HGI	-----
VOLATILE MATTER %	13.74	CO2 %	-----
FIXED CARBON %	58.32		

GROSS CALORIFIC VALUE (MJ/KG) 21.94
NET CALORIFIC VALUE (MJ/KG) -----

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: 5N DATA SOURCE: TRC84023

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.00	0.70	0.70			CLAYSTONE	CARB.BLK ABUNDANT COAL LAMINATIONS; HARD
	0.70	1.40	0.70	06387		COAL	C-3.BLK ABUNDANT CLAYSTONE LAMINATIONS; UNCONSOLIDATED
	1.40	1.60	0.20	06387		COAL	C-3.BLK WELL CLIFATED; CLAYSTONE LAMINATIONS
	1.60	1.76	0.16	06387		CLAYSTONE	CARB.BLK ABUNDANT COAL LAMINATIONS; WELL CONSOLIDATED; HARD
	1.76	1.84	0.08	06387		CLAYSTONE	LT.GY UNCONSOLIDATED
	1.84	2.14	0.30	06387		COAL	C-2.BLK MINOR CLAYSTONE LAMINATIONS
	2.14	2.24	0.10			CLAYSTONE	LT.GY UNCONSOLIDATED; MINOR IRON STAINING
	2.24	2.54	0.30			CLAYSTONE	CARB.BLK MODERATELY CONSOLIDATED

* DENOTES MEASURED BCA
NEWPAGE

GCRI COAL DIVISION HEAD		PROJ	KPN	BLK	SN	DS	TRC84023
=====		=====					
SAMPLE ID	06387	DATA TYPE (REAL,BORO,AVER,CALC)					REAL
SPLIT SAMPLE ID	HD1	DATE ANALYSED 25/09/84					
ANALYSIS BASIS TYPE (AD,DB,AR,EM)							AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO)							ASTM
TOP SIZE (MM)		---	---				
SURFACE MOISTURE %		---	---		TOTAL SULPHUR %		0.32
TOTAL MOISTURE %		16.60			PHOSPHOROUS %		---
EQUILIBRIUM MOISTURE %		---			CHLORINE (PPM)		---
RESIDUAL MOISTURE %		5.27			SPECIFIC GRAVITY		---
ASH %		30.22			FSI		---
VOLATILE MATTER %		14.58			HGI		---
FIXED CARBON %		49.93			CO2 %		---
GROSS CALORIFIC VALUE (MJ/KG)		18.93					
NET CALORIFIC VALUE (MJ/KG)		---					

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC84024

DATE - 01/07/85

- HISTORY -

START DATE - 08/16/84
END DATE - 08/16/84

CONTRACTOR - OPERATOR - GCRI
GEOLOGIST - FAWCETT SURVEYOR -

REMARKS - FLOOR NOT OBTAINED; COAL/COAL+ROCK 0.75/0.75

- LOCATION -

PROVINCE - BC ZONE - 9
ELEVATION - 1950.00 NORTHING - 6350594.00
EASTING - 499450.00

LICENCE/LEASE NUMBER - 7727

LATITUDE - 571801
LONGITUDE - 1290033

- ORIENTATION -

LENGTH - 2.00 INCLINATION - 0.0
AZIMUTH - 125.0
SIZE WIDTH - 0.4
SIZE HEIGHT - 0.6

ROOF STRIKE - 240 FLOOR STRIKE - 0
ROOF DIP - 40 FLOOR DIP - 0
ROOF DIR - S FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE


GULF CANADA RESOURCES INC.

COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL

TRUE THICKNESS

DATA SOURCE: KPN SN TRC84024 SEAM : INTERVAL(M) : 0.00 - 0.00 ELEVATION(M) : 1950.0
 GEOLOGIST : FAWCETT SCALE: 1:47 DATE : DEC 04/84 DRAWING NO. :

SEAM COMP.	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES		% REC.	SAMPLE ID			COAL/ROCK TOTAL		COAL QUALITY A.D.B.							
			ROCK	COAL		SIMP	COMP	COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL. VAL MJ/KG	RO		
1 2 3 4 5 6		↑  ↓																
	0.50								0.75/0.00									
	1.25								0.75									

PLOT 1 (8.14.2) TUES 4 DEC, 1984 JOB-TS1200 GULF CANADA DISPLAY 9.0

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC84024

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.00	0.50	0.50			CLAYSTONE	M.GY WELL CONSOLIDATED
	0.50	1.25	0.75			COAL	C-2.BLK MINOR CLAYSTONE AND C-1 LAMINAE; PARTLY CONSOLIDATED
	1.25	1.75	0.50			CLAYSTONE	M.GY WELL CONSOLIDATED

* DENOTES MEASURED BCA
NEWPAGE

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC84025

DATE - 01/07/85

- HISTORY -

START DATE - 08/16/84
END DATE - 08/16/84

CONTRACTOR -
GEOLOGIST - G. DIX

OPERATOR - GCRI
SURVEYOR -

REMARKS - NOT SAMPLED; COAL/COAL+ROCK 0.89/1.72

- LOCATION -

PROVINCE - BC
ELEVATION - 2030.30

ZONE - 9
NORTHING - 6356800.00
EASTING - 486100.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 572121
LONGITUDE - 1291352

- ORIENTATION -

LENGTH - 6.60

INCLINATION - 5.0
AZIMUTH - 120.0

SIZE WIDTH - 0.4
SIZE HEIGHT - 0.2

ROOF STRIKE - 200
ROOF DIP - 30
ROOF DIR - S

FLOOR STRIKE - 200
FLOOR DIP - 12
FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE

=====

GULF CANADA RESOURCES INC.

COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL

TRUE THICKNESS

DATA SOURCE: KPN SN TRO84025 SEAM : INTERVAL(M) : 0.00 - 0.00 ELEVATION(M) : 2030.3
 GEOLOGIST : G. DIX SCALE: 1:47 DATE : DEC 04/84 DRAWING NO. :

SEAM COMP.	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES		% REC.	SAMPLE ID			COAL/ROCK TOTAL		COAL QUALITY A.D.B.							
			ROCK	COAL		SIMP	COMP	COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL VAL MJ/KG	RO		
		A ↓																
	1.25	[Coal Log Pattern]																
	1.89	[Coal Log Pattern]							0.89/0.83									
	2.27	[Coal Log Pattern]							1.72									
	2.97	[Coal Log Pattern]																
		↑																

PLOT I 18.14.33 TUES 4 DEC, 1984 JOB-TSTUEGO GULF CANADA DISSPLA 9.0

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: 5N DATA SOURCE: IROB4025

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.00	0.50	0.50			MUDSTONE	CARB.BLK ROOF
	0.50	0.92	0.42			MUDSTONE	GY MIXED WITH BENTONITE
	0.92	1.25	0.33			MUDSTONE	GY OCCASIONAL VITRINITE LAMINATIONS
	1.25	1.73	0.48			COAL	C-3.BLK DENSE VITRINITE LAMINATIONS
	1.73	1.84	0.11			SHALE	CARB.BLK
	1.84	1.89	0.05			COAL	C-3.BLK DENSE VITRINITE LAMINATIONS
	1.89	2.11	0.22			SHALE	CARB.BLK
	2.11	2.18	0.07			MUDSTONE	BN
	2.18	2.27	0.09			SHALE	CARB.BLK MINOR VITRINITE LAMINATIONS
	2.27	2.32	0.05			COAL	C-3.BLK DENSE VITRINITE LAMINATIONS

+ DENOTES MEASURED BCA

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC84025

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	2.32	2.39	0.07			SHALE	CARB.BLK
	2.39	2.51	0.12			COAL	C-3.BLK DENSE VITRINITE LAMINATIONS
	2.51	2.66	0.15			SHALE	CARB.BLK
	2.66	2.79	0.13			COAL	C-3.BLK DENSE VITRINITE LAMINATIONS
	2.79	2.91	0.12			SHALE	CARB.BLK MINOR VITRINITE FLECKS
	2.91	2.97	0.06			COAL	C-3.BLK DENSE VITRINITE LAMINATIONS
	2.97	3.17	0.20			MUDSTONE	BN FLOOR

+ DENOTES MEASURED BCA
NEWPAGE

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC84026

DATE - 01/07/85

- HISTORY -

START DATE - 08/17/84
END DATE - 08/17/84

CONTRACTOR -
GEOLOGIST - MCKENZIE

OPERATOR - GCRI
SURVEYOR -

REMARKS - FLOOR NOT REACHED DUE TO EXCESSIVE DEPTHS; SEAM MEASURED WITHIN THE NOSE OF A SMALL ANTICLINE; COAL/COAL+ROCK 1.63/1.83

- LOCATION -

PROVINCE - BC
ELEVATION - 1798.00

ZONE - 9
NORTHING - 6349740.00
EASTING - 499550.00

LICENCE/LEASE NUMBER - 7726

LATITUDE - 571733
LONGITUDE - 1290027

- ORIENTATION -

LENGTH - 4.10

INCLINATION - 60.0
AZIMUTH - 164.0

SIZE WIDTH - 0.6
SIZE HEIGHT - 1.4

ROOF STRIKE - 247
ROOF DIP - 58
ROOF DIR - S

FLOOR STRIKE - 0
FLOOR DIP - 0
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC84026

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.00	0.52	0.52			MUDSTONE	CARB. M. GY MINOR LIMONITE STAINING (ROOF ROCK)
	0.52	0.59	0.07			MUDSTONE	CARB. M. GY WEATHERED; MINOR COALY LAMINATIONS
	0.59	0.70	0.11			MUDSTONE	CARB. M. GY
	0.70	0.79	0.09			MUDSTONE	CARB. M. GY COALY LAMINATIONS
	0.79	0.84	0.05			MUDSTONE	CARB. M. GY PLANT FRAGMENTS
	0.84	0.88	0.04	01807		COAL	C-5. DK. GY
	0.88	0.96	0.08	01807		COAL	C-2. DK. GY
	0.96	1.00	0.04	01807		MUDSTONE	CARB. M. GY
	1.00	1.06	0.06	01807		COAL	C-2. DK. GY OXIDIZED
	1.06	1.09	0.03	01807		MUDSTONE	CARB. M. GY COALY STRINGERS

• DENOTES MEASURED BCA



84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: SN DATA SOURCE: TRCB4026

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	1.09	1.30	0.21	01807		COAL	C-2.DK.GY
	1.30	1.34	0.04	01807		COAL	C-5.DK.GY WEATHERED
	1.34	1.40	0.06	01807		COAL	C-3.DK.GY
	1.40	1.42	0.02	01807		MUDSTONE	CARB.M.GY SILTY
	1.42	1.46	0.04	01807		COAL	C-3.DK.GY
	1.46	1.51	0.05	01807		COAL	C-2.DK.GY OXIDIZED
	1.51	1.59	0.08	01807		COAL	C-1.DK.GY CONCHOIDAL FRACTURE
	1.59	1.62	0.03	01807		MUDSTONE	CARB.M.GY
	1.62	1.71	0.09	01807		COAL	C-1.DK.GY
	1.71	1.79	0.08	01807		MUDSTONE	CARB.M.GY

* DENOTES MEASURED BCA

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 3

PROJECT: KPN BLOCK: SN DATA SOURCE: TRGM026

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	1.79	1.82	0.03	01807		COAL	C-3.DK.GY WEATHERED: OXIDIZED
	1.82	2.25	0.43	01807		COAL	C-1.DK.GY
	2.25	2.27	0.02	01807		COAL	C-2.DK.GY HEMATITE STAINED
	2.27	2.34	0.07	01807		COAL	C-1.DK.GY
	2.34	2.38	0.04	01807		COAL	C-2.DK.GY
	2.38	2.42	0.04	01807		COAL	C-1.DK.GY
	2.42	2.50	0.08	01807		COAL	C-2.DK.GY
	2.50	2.52	0.02	01807		COAL	C-1.DK.GY
	2.52	2.58	0.06	01807		COAL	C-3.DK.GY
	2.58	2.67	0.09	01807		COAL	C-2.DK.GY

* DENOTES MEASURED BCA
NEWPAGE



GCRI COAL DIVISION HEAD PROJ KPN BLK SN DS TRC84026
=====

SAMPLE ID 01807 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID HD1 DATE ANALYSED 25/09/84
ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

TOP SIZE (MM)	-----		
SURFACE MOISTURE %	-----	TOTAL SULPHUR %	0.35
TOTAL MOISTURE %	13.42	PHOSPHOROUS %	-----
EQUILIBRIUM MOISTURE %	-----	CHLORINE (PPM)	-----
		SPECIFIC GRAVITY	-----
RESIDUAL MOISTURE %	6.83	FSI	-----
ASH %	19.00	HGI	-----
VOLATILE MATTER %	19.70	CO2 %	-----
FIXED CARBON %	54.47		

GROSS CALORIFIC VALUE (MJ/KG) 21.00
NET CALORIFIC VALUE (MJ/KG) -----

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC84027

DATE - 01/07/85

- HISTORY -

START DATE - 08/17/84
END DATE - 08/28/84

CONTRACTOR -
GEOLOGIST - MCKENZIE

OPERATOR - GCRI
SURVEYOR -

REMARKS - TRENCH CONTINUED AFTER INITIAL LOGGING; COAL/COAL+
ROCK 2.69/3.32

- LOCATION -

PROVINCE - BC
ELEVATION - 1765.00

ZONE - 9
NORTHING - 6349500.00
EASTING - 500530.00

LICENCE/LEASE NUMBER - 7756

LATITUDE - 571725
LONGITUDE - 1285928

- ORIENTATION -

LENGTH - 11.90

INCLINATION - 40.0
AZIMUTH - 60.0

SIZE WIDTH - 0.9
SIZE HEIGHT - 1.2

ROOF STRIKE - 287
ROOF DIP - 10
ROOF DIR - N

FLOOR STRIKE - 0
FLOOR DIP - 0
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC84027

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.00	1.30	1.30			MUDSTONE	M.GY WEATHERED; POORLY CONSOLIDATED
	1.30	1.32	0.02	01810		COAL	C-5 HEMATITE STAINED; WEATHERED
	1.32	1.37	0.05	01810		COAL	C-4 WEATHERED
	1.37	1.39	0.02	01810		COAL	C-5 WEATHERED
	1.39	1.41	0.02	01810		COAL	C-1 WEATHERED
	1.41	1.46	0.05	01810		MUDSTONE	M.BN HEMATITE STAINED; TOP CONTACT UNDULATOR Y; BASAL CONTACT PLANAR; MINOR COAL PARTINGS
	1.46	1.49	0.03	01810		COAL	C-3
	1.49	1.55	0.06	01810		COAL	C-4

* DENOTES MEASURED BCA

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC84027

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	1.55	1.65	0.10	01810		MUDSTONE	CARB.LT.GY MINOR COAL PARTINGS
	1.65	1.68	0.03	01810		MUDSTONE	CLAYEY; AGGLOMERATING
	1.68	1.73	0.05	01810		MUDSTONE	CARB.DK.GY
	1.73	1.74	0.01	01810		COAL	C-4 WEATHERED
	1.74	1.78	0.04	01810		COAL	C-5 WEATHERED
	1.78	1.89	0.11	01810		COAL	C-3 WEATHERED
	1.89	1.99	0.10	01810		COAL	C-3 NOT WEATHERED
	1.99	2.06	0.07	01810		MUDSTONE	CARB.DK.GY MINOR HEMATITE STAINING; MINOR COAL PARTINGS; MINOR SHEARING
	2.06	2.11	0.05	01810		COAL	C-3 WEATHERED
	2.11	2.21	0.10	01810		MUDSTONE	CARB.DK.GY

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: 5N DATA SOURCE: TRCR1027

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	2.21	2.24	0.03	01810		COAL	C-2
	2.24	2.26	0.02	01810		MUDSTONE	CARB. DK. GY WEATHERED
	2.26	2.28	0.02	01810		COAL	C-3 WEATHERED
	2.28	2.33	0.05	01810		COAL	C-4
	2.33	2.34	0.01	01810		COAL	C-5
	2.34	2.45	0.11	01810		COAL	C-2
	2.45	2.51	0.06	01810		COAL	C-3
	2.51	2.54	0.03	01810		MUDSTONE	DK. GY AGGLOMERATING; CLAYEY
	2.54	2.56	0.02	01810		MUDSTONE	CARB. DK. GY
	2.56	2.57	0.01	01810		COAL	C-3 WEATHERED

* DENOTES MEASURED BCA

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SN DATA SOURCE: TRC84027

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	2.57	2.63	0.06	01810		COAL	C-2 POWDERED
	2.63	2.66	0.03	01810		COAL	C-2
	2.66	2.68	0.02	01810		COAL	C-3
	2.68	2.70	0.02	01810		MUDSTONE	CARB. DK. GY
	2.70	2.74	0.04	01810		COAL	C-2
	2.74	2.75	0.01	01810		COAL	C-2 POWDERED
	2.75	2.78	0.03	01810		MUDSTONE	CARB. DK. GY
	2.78	2.79	0.01	01810		COAL	C-3
	2.79	2.81	0.02	01810		MUDSTONE	CARB. DK. GY
	2.81	2.82	0.01	01810		COAL	C-2

+ DENOTES MEASURED BCA

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 5

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC84027

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	2.82	2.83	0.01	01810		MUDSTONE	SLTY.GY HEMATITE STAINED
	2.83	2.88	0.05	01810		COAL	C-3
	2.88	2.89	0.01	01810		MUDSTONE	GY HEMATITE STAINED
	2.89	2.95	0.06	01810		COAL	C-2
	2.95	3.02	0.07	01810		COAL	C-5
	3.02	3.07	0.05	01810		COAL	C-3
	3.07	3.08	0.01	01810		MUDSTONE	GY HEMATITE STAINED
	3.08	3.15	0.07	01810		COAL	C-3 WEATHERED; OXIDIZED
	3.15	3.26	0.11	01810		COAL	C-2
	3.26	3.42	0.16	01810		COAL	C-3 OXIDIZED

* DENOTES MEASURED BCA

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SN DATA SOURCE: TRCB4027

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SFAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	3.42	3.44	0.02	01810		COAL	C-4
	3.44	3.46	0.02	01810		MUDSTONE	CARB. DK. GY
	3.46	3.47	0.01	01810		COAL	C-4
	3.47	3.49	0.02	01810		COAL	C-3
	3.49	3.50	0.01	01810		COAL	C-2
	3.50	3.53	0.03	01810		COAL	C-5
	3.53	3.54	0.01	01810		COAL	C-4 HEMATITE STAINED
	3.54	3.56	0.02	01810		COAL	C-2
	3.56	3.57	0.01	01810		COAL	C-3
	3.57	3.59	0.02	01810		MUDSTONE	SLTY. GY

* DENOTES MEASURED BCA

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: SN DATA SOURCE: TRC84027

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	3.59	3.61	0.02	01810		COAL	C-2
	3.61	3.64	0.03	01810		COAL	C-2
	3.64	3.67	0.03	01810		COAL	C-3
	3.67	3.69	0.02	01810		COAL	C-2
	3.69	3.75	0.06	01810		COAL	C-3
	3.75	3.78	0.03	01808		COAL	C-1.DK.GY ROOF OF INITIAL TRENCH; WEATHERED
	3.78	3.82	0.04	01808		COAL	C-3.DK.GY
	3.82	3.84	0.02	01808		MUDSTONE	SLTY.DK.GY
	3.84	3.90	0.06	01808		COAL	C-2.DK.GY
	3.90	3.93	0.03	01808		COAL	C-1.DK.GY

* DENOTES MEASURED BCA

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLDCK: SN DATA SOURCE: TRC84027

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	3.93	3.94	0.01	01808		COAL	C-3.DK.GY WEATHERED
	3.94	4.01	0.07	01808		COAL	C-1.DK.GY
	4.01	4.02	0.01	01808		COAL	C-3.DK.GY
	4.02	4.08	0.06	01808		COAL	C-1.DK.GY
	4.08	4.13	0.05	01808		COAL	C-2.DK.GY
	4.13	4.17	0.04	01808		COAL	C-3.DK.GY
	4.17	4.22	0.05	01808		COAL	C-2.DK.GY
	4.22	4.25	0.03	01808		COAL	C-4.DK.GY OXIDIZED; VERY WEATHERED
	4.25	4.39	0.14	01808		COAL	C-1.DK.GY OXIDIZED
	4.39	4.47	0.08	01808		COAL	C-2.DK.GY

* DENOTES MEASURED BCA

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: 5N DATA SOURCE: TRC84027

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	4.47	4.51	0.04	01808		COAL	C-3.DK.GY WEATHERED
	4.51	4.52	0.01	01808		COAL	C-4.DK.GY
	4.52	4.55	0.03	01808		COAL	C-2.DK.GY
	4.55	4.56	0.01	01808		COAL	C-4.DK.GY
	4.56	4.61	0.05	01808		COAL	C-3.DK.GY
	4.61	4.69	0.08	01808		COAL	C-1.DK.GY OXIDIZED; FROZEN
	4.69	4.70	0.01	01808		COAL	C-4.DK.GY
	4.70	4.78	0.08	01808		COAL	C-1.DK.GY OXIDIZED; FROZEN AND UNDER WATER

* DENOTES MEASURED BCA
NEWPAGE



GORI COAL DIVISION	HEAD	PROJ KPN	BLK SN	DS	TRC84027	
=====						
SAMPLE ID	01810	DATA TYPE (REAL,BORO,AVER,CALC)			REAL	
SPLIT SAMPLE ID	HD1	DATE ANALYSED 16/10/84				
		ANALYSIS BASIS TYPE (AD,DB,AR,EM)			AD	
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO)					ASTM	
TOP SIZE (MM)		----				
SURFACE MOISTURE %		----		TOTAL SULPHUR %		0.31
TOTAL MOISTURE %		26.26		PHOSPHOROUS %		----
EQUILIBRIUM MOISTURE %		0.00		CHLORINE (PPM)		----
				SPECIFIC GRAVITY		----
RESIDUAL MOISTURE %		11.41		FSI		----
ASH %		23.41		HGI		----
VOLATILE MATTER %		20.89		CO2 %		----
FIXED CARBON %		44.29				
GROSS CALORIFIC VALUE (MJ/KG)		17.27				
NET CALORIFIC VALUE (MJ/KG)		----				

GORI COAL DIVISION	HEAD	PROJ	KFN	BLK	SN	DS	TRC84027	
=====		=====		=====				
SAMPLE ID	01808	DATA TYPE (REAL,BORO,AVER,CALC)					REAL	
SPLIT SAMPLE ID	HD1	DATE ANALYSED 25/09/84						
		ANALYSIS BASIS TYPE (AD,DB,AR,EM)					AD	
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO)		ASTM						
TOP SIZE (MM)		----						
SURFACE MOISTURE %		----			TOTAL SULPHUR %		0.40	
TOTAL MOISTURE %		19.22			PHOSPHOROUS %		----	
EQUILIBRIUM MOISTURE %		----			CHLORINE (PFM)		----	
RESIDUAL MOISTURE %		4.71			SPECIFIC GRAVITY		----	
ASH %		19.16			FSI		----	
VOLATILE MATTER %		13.72			HGI		----	
FIXED CARBON %		62.41			CO2 %		----	
GROSS CALORIFIC VALUE (MJ/KG)		23.70						
NET CALORIFIC VALUE (MJ/KG)		----						

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: 5N DATA SOURCE: TRC84028

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	1.00	1.00			MUDSTONE	CARB.BLK MINOR COAL LAMINATIONS (ROOF)
	1.00	1.10	0.10			MUDSTONE	LT.GY
	1.10	1.11	0.01			MUDSTONE	CARB.BLK
	1.11	1.16	0.05	06388		COAL	C-4.DK.GY IRON STAINED; WELL CLEATED
	1.16	1.38	0.22	06388		MUDSTONE	CARB.M.GY HIGHLY WEATHERED; COAL LAMINATIONS
	1.38	1.48	0.10	06388		COAL	C-2.M.GY HIGHLY WEATHERED
	1.48	1.60	0.12	06388		MUDSTONE	CARB.BLK ABUNDANT COAL LAMINATIONS
	1.60	1.62	0.02			COAL	C-3.DK.GY WELL CLEATED; IRON STAINED
	1.62	1.68	0.06	06388		MUDSTONE	LT.GY
	1.68	1.72	0.04	06388		MUDSTONE	CARB.BLK

+ DENOTES MEASURED BCA

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC84028

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	1.72	1.80	0.08	06388		MUDSTONE	LT.GY
	1.80	1.81	0.01	06388		COAL	C-3.DK.GY WELL CLEATED; IRON STAINED
	1.81	1.85	0.04	06388		MUDSTONE	CARB.DK.GY WEATHERED; ABUNDANT COAL LAMINATIONS
	1.85	1.93	0.08	06388		COAL	C-4.DK.GY MODERATELY CLEATED; IRON STAINED; WEATHERED
	1.93	2.00	0.07	06388		MUDSTONE	CARB.BLK SOFT; HIGHLY WEATHERED; ABUNDANT COAL LAMINATIONS
	2.00	2.06	0.06	06388		COAL	C-2.DK.GY WELL CLEATED; IRON STAINED
	2.06	2.26	0.20	06388		MUDSTONE	CARB.DK.GY HIGHLY WEATHERED; MINOR COAL LAMINATIONS
	2.26	2.69	0.43	06388		COAL	C-1.DK.GY WELL CLEATED; MINOR IRON STAINING; MODERATELY WEATHERED

• DENOTES MEASURED BCA

84/12/05

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 3

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC84028

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	2.69	3.19	0.50			MUDSTONE	CARB. DK. GY ABUNDANT C-1 COAL LAMINATIONS; MINOR IR ON STAINING
	3.19	3.69	0.50			MUDSTONE	CARB. M. GY WEATHERED; UNCONSOLIDATED (FLOOR)

* DENOTES MEASURED BCA
NEWPAGE



GCRI COAL DIVISION HEAD PROJ KPN BLK SN IS TRC84028

=====

SAMPLE ID	06388	DATA TYPE (REAL,BORO,AVER,CALC)	REAL
SPLIT SAMPLE ID	HD1	DATE ANALYSED	25/09/84
		ANALYSIS BASIS TYPE (AD,DB,AR,EM)	AD

NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

TOP SIZE (MM)	----		
SURFACE MOISTURE %	---	TOTAL SULPHUR %	0.29
TOTAL MOISTURE %	17.86	PHOSPHOROUS %	---
EQUILIBRIUM MOISTURE %	---	CHLORINE (PPM)	---
		SPECIFIC GRAVITY	---
RESIDUAL MOISTURE %	4.51	FSI	---
ASH %	30.96	HGI	---
VOLATILE MATTER %	13.90	CO2 %	---
FIXED CARBON %	50.63		
GROSS CALORIFIC VALUE (MJ/KG)	18.96		
NET CALORIFIC VALUE (MJ/KG)	---		

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSSSTRC84029

DATE - 01/07/85

- HISTORY -

START DATE - 08/24/84
END DATE - 08/24/84

CONTRACTOR -
GEOLOGIST - MCKENZIE

OPERATOR - GCRI
SURVEYOR -

REMARKS - COAL/COAL+ROCK 2.53/2.88

- LOCATION -

PROVINCE - BC
ELEVATION - 1550.00

ZONE - 9
NORTHING - 6351000.00
EASTING - 502500.00

LICENCE/LEASE NUMBER - 7387

LATITUDE - 571814
LONGITUDE - 1285731

- ORIENTATION -

LENGTH - 6.40

INCLINATION - 12.0
AZIMUTH - 25.0

SIZE WIDTH - 0.4
SIZE HEIGHT - 0.9

ROOF STRIKE - 299
ROOF DIP - 17
ROOF DIR - S

FLOOR STRIKE - 0
FLOOR DIP - 0
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

=====

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SS DATA SOURCE: TRC84029

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.01	0.01			MUDSTONE	L.T.BN ROOF; NO CEMENTATION; MASSIVE; RARE VERY FINE GRAINED SANDSTONE LENSES; WAVY CONTACT; MINOR IRON STAIN
	0.01	0.02	0.01			MUDSTONE	CARB
	0.02	0.06	0.04			MUDSTONE	CARB WEATHERED; HEMATITE STAINING
	0.06	0.28	0.22	01809		COAL	C-5.BLK WEATHERED
	0.28	0.30	0.02	01809		MUDSTONE	CARB.BLK HEMATITE STAINING; WEATHERED
	0.30	0.41	0.11	01809		COAL	C-4.BLK WEATHERED
	0.41	0.57	0.16	01809		COAL	C-4
	0.57	0.58	0.01	01809		QUARTZ	VEIN
	0.58	0.62	0.04	01809		COAL	C-5

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: 55 DATA SOURCE: TRC84029

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.62	0.74	0.12	01809		COAL	C-3 WEATHERED; GLEATING 70 DEGREES TO BEDDING PLANE
	0.74	0.97	0.23	01809		COAL	C-5 WEATHERED
	0.97	1.02	0.05	01809		MUDSTONE	CARB WEATHERED; HEMATITE STAINING
	1.02	1.23	0.21	01809		COAL	C-3 WEATHERED
	1.23	1.31	0.08	01809		COAL	C-2 MINOR SHEARING
	1.31	1.41	0.10	01809		MUDSTONE	CARB
	1.41	1.44	0.03	01809		COAL	C-4 WEATHERED
	1.44	1.46	0.02	01809		MUDSTONE	LT.BN WEATHERED; HEMATITE STAINING
	1.46	1.47	0.01			MUDSTONE	CARB

* DENOTES MEASURED BCA

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 3

PROJECT: KPN BLOCK: 55 DATA SOURCE: TRCR4029

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	1.47	1.64	0.17	01809		COAL	C-3 WEATHERED
	1.64	1.67	0.03	01809		COAL	C-1 WEATHERED
	1.67	1.75	0.08	01809		COAL	C-2 WEATHERED
	1.75	1.76	0.01	01809		COAL	C-3
	1.76	1.94	0.18	01809		COAL	C-2 MINOR SHEARING
	1.94	1.98	0.04	01809		COAL	C-4 WEATHERED
	1.98	2.23	0.25	01809		COAL	C-3
	2.23	2.27	0.04	01809		MUDSTONE	CARB
	2.27	2.30	0.03	01809		COAL	C-4 WEATHERED; HEMATITE STAINED
	2.30	2.41	0.11	01809		COAL	C-5 SHEARED

* DENOTES MEASURED BCA

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 4

PROJECT: KPN BLOCK: SS DATA SOURCE: TRC84029

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	2.41	2.63	0.22	01809		COAL	C-2
	2.63	2.71	0.08	01809		COAL	C-4 WEATHERED
	2.71	2.76	0.05	01809		COAL	C-3 WEATHERED; OXIDIZED; HEMATITE STAINED
	2.76	2.87	0.11	01809		MUDSTONE	CARB
	2.87	2.94	0.07	01809		COAL	C-5 WEATHERED
	2.94	3.06	0.12			MUDSTONE	CARB WEATHERED
	3.06	3.71	0.65			MUDSTONE	LT.BN FLOOR; NO CEMENTATION; MINOR HEMATITE STAINING; WEATHERED; POORLY CONSOLIDATED ; NO ORIENTATION

* DENOTES MEASURED BCA
NEWPAGE



GORI COAL DIVISION HEAD PROJ KPN BLK SS DS TRC84029
=====

SAMPLE ID 01809 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE TO HD1 DATE ANALYSED 25/09/84
ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

TOP SIZE (MM)	-----	TOTAL SULPHUR %	0.32
SURFACE MOISTURE %	-----	PHOSPHOROUS %	-----
TOTAL MOISTURE %	27.16	CHLORINE (PPM)	-----
EQUILIBRIUM MOISTURE %	0.00	SPECIFIC GRAVITY	-----
RESIDUAL MOISTURE %	7.40	FSI	-----
ASH %	24.63	HGI	-----
VOLATILE MATTER %	22.30	CO2 %	-----
FIXED CARBON %	45.67		

GROSS CALORIFIC VALUE (MJ/KG) 17.63
NET CALORIFIC VALUE (MJ/KG) -----

===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSNTRC84030

DATE - 01/07/85

- HISTORY -

START DATE - 08/23/84
END DATE - 08/23/84

CONTRACTOR -
GEOLOGIST - SAVOIE

OPERATOR - GCRI
SURVEYOR -

REMARKS - ROOF NOT OBTAINED; ON A RIDGE SIDE WITH ABUNDANT O
VERBURDEN; COAL/COAL+ROCK 0.32/0.43

- LOCATION -

PROVINCE - BC
ELEVATION - 1895.00

ZONE - 9
NORTHING - 6349910.00
EASTING - 501305.00

LICENCE/LEASE NUMBER - 7756

LATITUDE - 571739
LONGITUDE - 1285842

- ORIENTATION -

LENGTH - 5.00
SIZE WIDTH - 0.6
SIZE HEIGHT - 1.4

INCLINATION - 0.0
AZIMUTH - 59.0

ROOF STRIKE - 0
ROOF DIP - 0
ROOF DIR -

FLOOR STRIKE - 235
FLOOR DIP - 15
FLOOR DIR - S

*** NOTE *** O INDICATES NO VALUE

=====

GULF CANADA RESOURCES INC.

COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL

TRUE THICKNESS

DATA SOURCE: KPN SN TRC84030 SEAM : INTERVAL(M) : 0.00 - 0.00 ELEVATION(M) : 1895.0
 GEOLOGIST : SAVOIE SCALE: 1:47 DATE : DEC 05/84 DRAWING NO. :

SEAM CMP.	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES		% REC.	SAMPLE ID		COAL/ROCK TOTAL		COAL QUALITY A.D.B.									
			ROCK	COAL		SIMP	COMP	COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CALVAL MJ/KG	RO			
	0.06	↑																	
	0.48	↓						0.32/0.11 0.43											

PLOT 1 12.18.16 WED 5 DEC, 1984 JOB-ESTILOGO GULF CANADAR DISSPLR 9.0

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: 5N DATA SOURCE: TRC84030

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.00	0.06	0.06			MUDSTONE	CARB.M.GY MINOR COAL STRINGERS; MINOR LIMONITE STAINING
	0.06	0.07	0.01			COAL	C-4.DK.GY HIGHLY WEATHERED
	0.07	0.08	0.01			MUDSTONE	LT.BN HIGHLY WEATHERED
	0.08	0.10	0.02			COAL	C-5.DK.GY MINOR LIMONITE STAINING
	0.10	0.12	0.02			MUDSTONE	CARB.M.GY WEATHERED
	0.12	0.15	0.03			COAL	C-2.DK.GY WELL CLEATED; MINOR IRON STAINING
	0.15	0.22	0.07			COAL	C-2.DK.GY MINOR IRON STAINING; WELL CONSOLIDATED
	0.22	0.24	0.02			MUDSTONE	CARB.M.GY HIGHLY WEATHERED; MINOR COAL FRAGMENTS
	0.24	0.29	0.05			COAL	C-2.DK.GY MODERATELY WELL CLEATED; CONSOLIDATED

* DENOTES MEASURED BCA

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: SN DATA SOURCE: TRC84030

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.29	0.32	0.03			MUDSTONE	M.GY MINOR COAL LAMINATIONS
	0.32	0.34	0.02			COAL	C-2.DK.GY WEATHERED; POORLY CONSOLIDATED
	0.34	0.35	0.01			MUDSTONE	LT.BN HIGHLY WEATHERED; UNCONSOLIDATED
	0.35	0.38	0.03			COAL	C-2.BLK WELL CLEATED; MINOR IRON STAINING
	0.38	0.39	0.01			MUDSTONE	CARB.M.GY HIGHLY WEATHERED
	0.39	0.44	0.05			COAL	C-4.DK.GY HIGHLY WEATHERED; MINOR LIMONITE STAINING
	0.44	0.47	0.03			COAL	C-3.DK.GY WEATHERED
	0.47	0.48	0.01			MUDSTONE	BN RED TINGE; HIGHLY WEATHERED
	0.48	0.49	0.01			COAL	C-2.DK.GY IRON STAINED; WELL CONSOLIDATED

* DENOTES MEASURED BCA

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 3

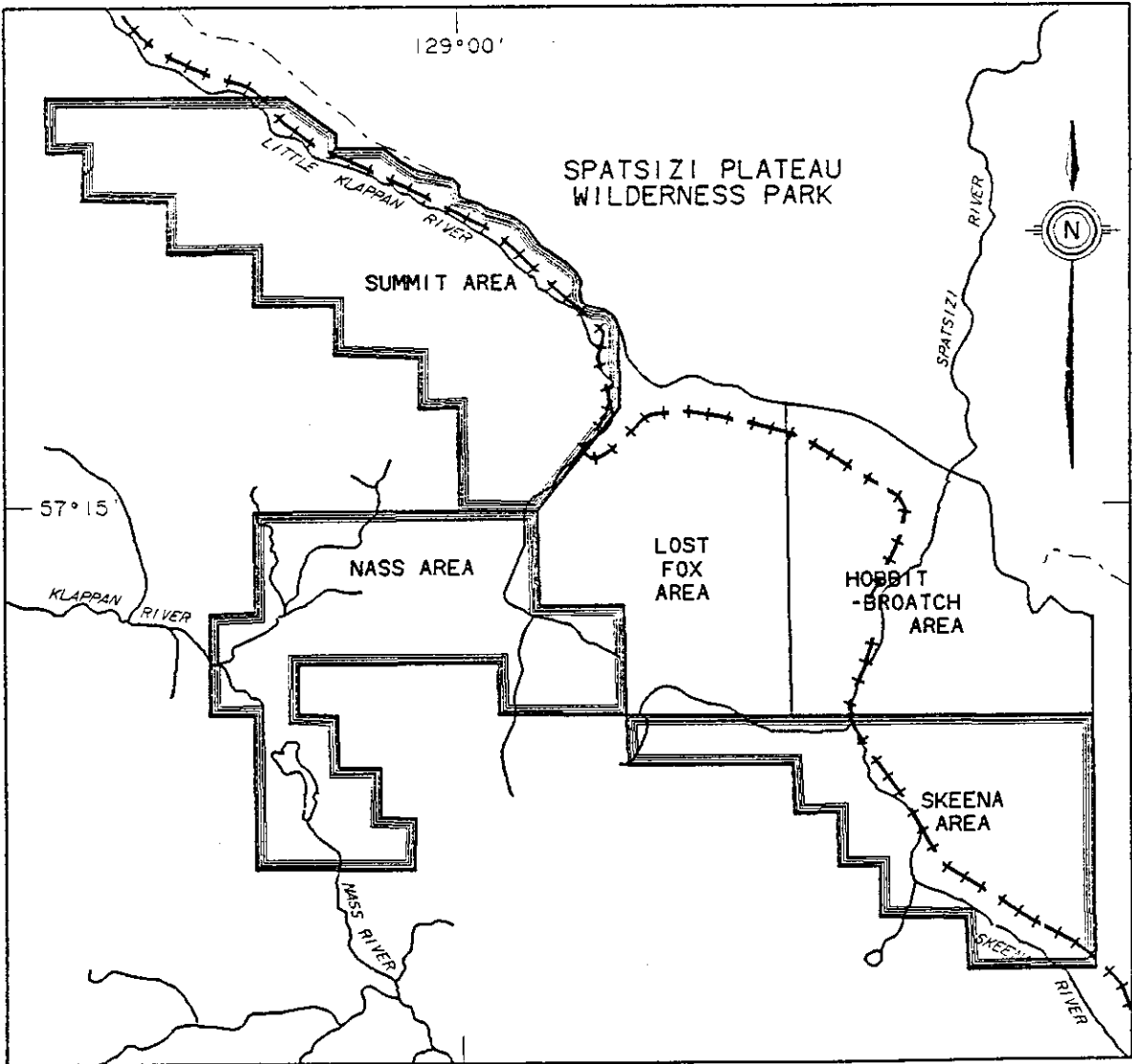
PROJECT: KPN BLOCK: 5N DATA SOURCE: TRC84030

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.49	0.52	0.03			MUDSTONE	M.GY SEMI-CONSOLIDATED
	0.52	0.54	0.02			MUDSTONE	M.GY LIMONITE STAINED; UNCONSOLIDATED
	0.54	0.56	0.02			MUDSTONE	M.GY HIGHLY WEATHERED; UNCONSOLIDATED
	0.56	0.65	0.09			MUDSTONE	CARB.GY LIMONITE STAINED; WELL CONSOLIDATED
*	0.65	2.65	2.00			SANDSTONE	MG.MOD.M.GY.MAS POLYMIC TIC; IRON STAINING; PLANAR CROSS -BEDDED; CLIFF-FORMING

* DENOTES MEASURED BCA
NEWPAGE

**NASS AREA
TRENCH DATA**

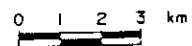
MOUNT KLAPPAN COAL PROPERTY
 SUMMIT - NASS - SKEENA
 1984 EXPLORATION AREAS



LEGEND

- +---+--- PREPARED RAIL BED
- - - - - PROVINCIAL PARK BOUNDARY
- LICENCE AREA

SCALE



GULF CANADA RESOURCES INC.
 10/12/84



GULF CANADA RESOURCES INC. - COAL DIVISION
09/NOV/84 PROJECT DATA SOURCE SUMMARY PAGE 1

DATA SOURCE	LOCATION		ELEVATION	LENGTH	ANGLE	AZIMUTH	LOG TYPE
	NORTHING	EASTING					
KPNLKTRC82021	6343130.0	502620.0	1420.0	4.7	15.0	8.0	
KPNLKTRC82022	6342140.0	501710.0	1430.0	3.8	5.0	188.0	



09/NOV/84 GULF CANADA RESOURCES INC. - COAL DIVISION PAGE 1
 SIMPLE SAMPLE SUMMARY
 TRUE THICKNESS
 KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	ROCK	MISSING COAL	ROCK	TOTAL COAL-ROCK
TRC82021		3568	0.56	0.94	100.00	0.180	0.200			0.18- 0.20
		3569	0.94	3.57	100.00	2.630				2.63- 0.00
		3571	3.57	4.13	100.00	0.450	0.110			0.45- 0.11
TRC82021		3601	0.56	4.13	100.00	3.080	0.490			3.08- 0.49
TRC82022		3603	1.18	2.90	100.00	0.320	1.400			0.32- 1.40
		3604	0.30	1.18	100.00	0.810	0.070			0.81- 0.07



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLKTRC82021

DATE - 12/14/84

- HISTORY -

START DATE - 08/09/82
END DATE - 08/09/82

CONTRACTOR -
GEOLOGIST -

OPERATOR -
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 1420.00

ZONE - 9
NORTHING - 6343130.00
EASTING - 502620.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571359
LONGITUDE - 1285724

- ORIENTATION -

LENGTH - 5.04
SIZE WIDTH - 0.4
SIZE HEIGHT - 0.9

INCLINATION - 15.0
AZIMUTH - 8.0

ROOF STRIKE - 310
ROOF DIP - 90
ROOF DIR -

FLOOR STRIKE - 205
FLOOR DIP - 83
FLOOR DIR - N

*** NOTE *** 0 INDICATES NO VALUE

=====

ROCK	COAL
0.20	0.18
	0.34
	0.33
	1.96
0.11	0.09
	0.12
	0.14
	0.10
TOTAL 0.31	3.26

0.47+m
0.09 m

Sa No 03601

0.79+m



CLAYSTONE, CARBONACEOUS, FOSSILIFEROUS,
THIN COAL BANDS

CLAYSTONE, CARBONACEOUS, WITH COAL FRAGMENTS
COAL, C-2

CLAYSTONE, CARBONACEOUS, WITH COAL BAND

COAL, C-2, WITH CARBONACEOUS CLAYSTONE
BAND


COAL, HIGHLY CONTORTED

COAL, C-2, WITH CARBONACEOUS CLAYSTONE
INTERBEDS

CLAYSTONE, CARBONACEOUS, WITH COAL BANDS
COAL, C-2
COAL AND CLAYSTONE INTERBEDS
COAL, C-2, IRON STAINING
COAL, C-1

CLAYSTONE, CARBONACEOUS

ATTITUDE OF ROOF : 130/90
ATTITUDE OF FLOOR : 115/83°N
FORMATION :
UTM COORDINATES : 6343130N, 502620 E
MAP CARD NUMBER :
AIR PHOTO NUMBER :
TRENCH DEPTH : 0.89 m
TRENCH WIDTH : 0.4 m
TRENCH LENGTH : 4.7 m
TRENCH BEARING : 008°
TRENCH SLOPE : 15°

GULF CANADA RESOURCES INC.		
CALGARY	Coal Division	
MT. KLAPPAN COAL PROJECT		
TRENCH LOG		
TRC-82-021		
DRAWN BY: P. WATSON		SCALE: 1:50
LOGGED BY: J. ELDER		DATE: Aug. 9/82
APPROVED BY:		

84/11/09

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LK DATA SOURCE: TRC82021

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.00	0.47	0.47			CLAYSTONE	CARB
	0.47	0.56	0.09			CLAYSTONE	CARB COAL FRAGMENTS
	0.56	0.74	0.18	03601		COAL	C-2
	0.74	0.81	0.07	03601		CLAYSTONE	CARB
	0.81	0.85	0.04	03601		COAL	C-2
	0.85	0.94	0.09	03601		CLAYSTONE	CARB
	0.94	1.00	0.06	03601		COAL	C-2
	1.00	1.01	0.01	03601		CLAYSTONE	CARB
	1.01	1.28	0.27	03601		COAL	C-2
	1.28	1.61	0.33	03601		COAL	HIGHLY CONTORTED

* DENOTES MEASURED BCA

84/11/09

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LK DATA SOURCE: TRC82021

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	1.61	1.85	0.24	03601		COAL	C-2
	1.85	1.91	0.06	03601		CLAYSTONE	CARB
	1.91	2.18	0.27	03601		COAL	C-2
	2.18	2.20	0.02	03601		CLAYSTONE	
	2.20	3.30	1.10	03601		COAL	C-2
	3.30	3.32	0.02	03601		CLAYSTONE	CARB
	3.32	3.57	0.25	03601		COAL	C-2
	3.57	3.59	0.02	03601		CLAYSTONE	CARB
	3.59	3.61	0.02	03601		COAL	C-1
	3.61	3.65	0.04	03601		CLAYSTONE	CARB

• DENOTES MEASURED BCA



84/11/09

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 3

PROJECT: KPN BLOCK: LK DATA SOURCE: TRC82021

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	3.65	3.66	0.01	03601		COAL	C-1
	3.66	3.68	0.02	03601		CLAYSTONE	CARB
	3.68	3.77	0.09	03601		COAL	C-2
	3.77	3.89	0.12	03601		CLAYSTONE	
	3.89	4.01	0.12	03601		COAL	C-2 IRON STAINS
	4.01	4.03	0.02	03601		CLAYSTONE	
	4.03	4.13	0.10	03601		COAL	C-1
	4.13	4.92	0.79			CLAYSTONE	CARB

* DENOTES MEASURED BCA
NEWPAGE



===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNLKTRC82022

DATE - 12/14/84

- HISTORY -

START DATE - 08/12/82
END DATE - 08/12/82

CONTRACTOR -
GEOLOGIST -

OPERATOR - GCRI
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 1430.00

ZONE - 9
NORTHING - 6342140.00
EASTING - 501710.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571327
LONGITUDE - 1285818

- ORIENTATION -

LENGTH - 3.82
SIZE WIDTH - 0.4
SIZE HEIGHT - 0.7

INCLINATION - 5.0
AZIMUTH - 188.0

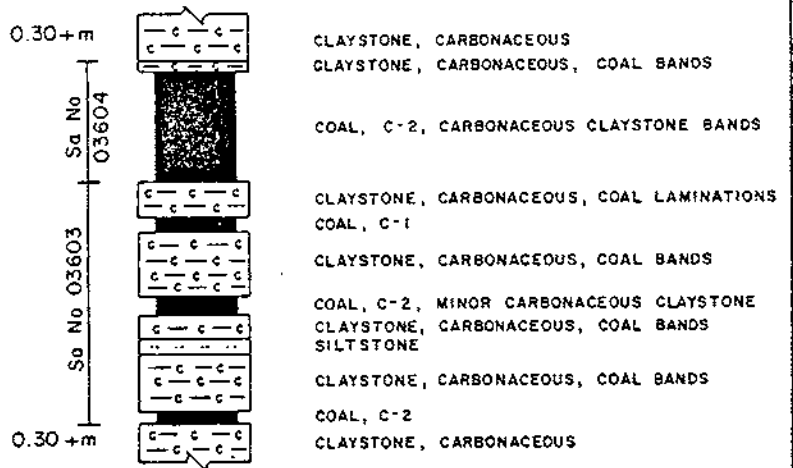
ROOF STRIKE - 314
ROOF DIP - 76
ROOF DIR - E

FLOOR STRIKE - 322
FLOOR DIP - 67
FLOOR DIR - E

*** NOTE *** 0 INDICATES NO VALUE

=====

	ROCK	COAL
	0.07	
		0.81
	0.25	0.10
2.60	0.46	0.14
	0.17	
	0.11	
	0.41	
TOTAL	1.47	1.13



ATTITUDE OF ROOF : 134/76°N
 ATTITUDE OF FLOOR : 142/67°N
 FORMATION :
 UTM COORDINATES : 6342140 N, 501710 E
 MAP CARD NUMBER :
 AIR PHOTO NUMBER :
 TRENCH DEPTH : 0.7 m
 TRENCH WIDTH : 0.4 m
 TRENCH LENGTH : 3.82 m
 TRENCH BEARING : 188°
 TRENCH SLOPE : 0.5°

GULF CANADA RESOURCES INC.		
CALGARY	Coal Division	
MT. KLAPPAN COAL PROJECT		
TRENCH LOG		
TRC-82-022		
DRAWN BY:	SCALE 1:50	
LOGGED BY:	DATE Aug. 12/82	
APPROVED BY:		

84/11/09

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: LK DATA SOURCE: TRC82022

BCA	DEPTH FROM	DEPTH INTRVAL TO THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.30	0.30		CLAYSTONE	CARB
	0.30	0.37	0.07	03604	CLAYSTONE	CARB COAL BAND
	0.37	1.18	0.81	03604	COAL	C-2 CARB CLYST BANDS
	1.18	1.43	0.25	03603	CLAYSTONE	CARB COAL LAMINATIONS
	1.43	1.53	0.10	03603	COAL	C-1
	1.53	1.99	0.46	03603	CLAYSTONE	CARB COAL BANDS
	1.99	2.13	0.14	03603	COAL	C-2 MNR CARB CLYST
	2.13	2.30	0.17	03603	CLAYSTONE	CARB COAL BANDS
	2.30	2.41	0.11	03603	SILTSTONE	
	2.41	2.82	0.41	03603	CLAYSTONE	CARB COAL BANDS

* DENOTES MEASURED BCA

84/11/09

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: LK DATA SOURCE: TRCB2022

<u>8CA</u>	<u>DEPTH</u> <u>FROM</u>	<u>DEPTH</u> <u>TO</u>	<u>INTRVAL</u> <u>THICK.</u>	<u>SAMP.</u> <u>ID</u>	<u>SEAM</u> <u>ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	2.82	2.90	0.08	03603		COAL	C-2
	2.90	3.20	0.30			CLAYSTONE	CARB



GULF CANADA RESOURCES INC. - COAL DIVISION K.W.
 14/MAR/84 PROJECT DATA SOURCE SUMMARY PAGE 1

DATA SOURCE	LOCATION		ELEVATION	LENGTH	ANGLE	AZIMUTH	LOG TYPE
	NORTHING	EASTING					
KPNKWTRC83068	6342280.0	493230.0	1215.0	1.4	65.0	45.0	
KPNKWTRC83069	6342210.0	493180.0	1205.0	2.9	5.0	40.0	
KPNKWTRC83070	6342095.0	493180.0	1190.0	2.5	25.0	60.0	
KPNKWTRC83071	6341765.0	493150.0	1200.0	5.3	8.0	150.0	
KPNKWTRC83072	6341750.0	493160.0	1200.0	6.0	30.0	175.0	
KPNKWTRC83073	6340465.0	492455.0	1110.0	4.2	0.0	15.0	
KPNKWTRC83076	6339880.0	494830.0	1590.0	3.3	0.0	55.0	
KPNKWTRC83087	6344480.0	492595.0	1370.0	5.0	15.0	150.0	
KPNKWTRC83088	6344335.0	492700.0	1340.0	4.5	0.0	140.0	



GULF CANADA RESOURCES INC. - COAL DIVISION K. N.
16/MAR/84 PROJECT DATA SOURCE SUMMARY PAGE 1

DATA SOURCE	LOCATION		ELEVATION	LENGTH	ANGLE	AZIMUTH	LOG TYPE
	NORTHING	EASTING					
KPNKNTRC83082	6341535.0	497625.0	1435.0	2.2	30.0	175.0	
KPNKNTRC83083	6341455.0	497145.0	1417.0	3.0	30.0	65.0	
KPNKNTRC83084	6341510.0	496800.0	1395.0	3.0	30.0	65.0	
KPNKNTRC83085	6341590.0	496415.0	1340.0	2.0	65.0	60.0	
KPNKNTRC83086	6341860.0	496330.0	1325.0	3.1	45.0	45.0	
KPNKNTRC83091	6343110.0	502611.0	1415.0	4.7	15.0	8.0	



GULF CANADA RESOURCES INC. - COAL DIVISION K.S.
14/MAR/84 PROJECT DATA SOURCE SUMMARY PAGE 1

DATA SOURCE	LOCATION		ELEVATION	LENGTH	ANGLE	AZIMUTH	LOG TYPE
	NORTHING	EASTING					
KPNKSTRC83077	6339935.0	496400.0	1575.0	3.0	0.0	15.0	



15/MAR/84 GULF CANADA RESOURCES INC. - COAL DIVISION K.W
 SIMPLE SAMPLE SUMMARY PAGE 1
 APPARENT THICKNESS
 KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	ROCK	MISSING COAL	ROCK	TOTAL COAL-ROCK
TRC83071		6301	1.00	5.99	100.00	3.76	1.23	0.00	0.00	3.76- 1.23
TRC83072		6302	0.50	2.30	100.00	1.42	0.38	0.00	0.00	1.42- 0.38
		6303	2.30	4.01	100.00	1.71	0.00	0.00	0.00	1.71- 0.00
TRC83073		6304	1.08	4.44	100.00	3.01	0.35	0.00	0.00	3.01- 0.35
TRC83076		6305	0.33	1.87	100.00	1.20	0.34	0.00	0.00	1.20- 0.34
TRC83087		6307	1.85	2.65	100.00	0.70	0.10	0.00	0.00	0.70- 0.10
TRC83088		6308	2.45	3.95	100.00	1.15	0.35	0.00	0.00	1.15- 0.35

16/MAR/84

GULF CANADA RESOURCES INC. - COAL DIVISION K.N.
 SIMPLE SAMPLE SUMMARY PAGE 1
 APPARENT THICKNESS
 KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	ROCK	MISSING COAL	ROCK	TOTAL COAL-ROCK
TRC83082		6309	0.19	1.46	100.00	1.00	0.27	0.00	0.00	1.00- 0.27
TRC83083		6310	0.40	1.90	100.00	1.13	0.37	0.00	0.00	1.13- 0.37
TRC83084		6311	0.45	2.04	100.00	0.90	0.69	0.00	0.00	0.90- 0.69
TRC83085		6312	0.20	1.22	100.00	0.80	0.22	0.00	0.00	0.80- 0.22
TRC83086		6313	0.45	2.41	100.00	1.51	0.45	0.00	0.00	1.51- 0.45
TRC83091		3568	0.56	0.94	100.00	0.18	0.20	0.00	0.00	0.18- 0.20
		3569	0.94	1.28	100.00	0.34	0.00	0.00	0.00	0.34- 0.00
		3570	1.28	3.57	100.00	2.29	0.00	0.00	0.00	2.29- 0.00
		3571	3.57	4.13	100.00	0.45	0.11	0.00	0.00	0.45- 0.11



15/MAR/84

GULF CANADA RESOURCES INC. - COAL DIVISION K.S
SIMPLE SAMPLE SUMMARY PAGE 1
APPARENT THICKNESS
KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	ROCK	MISSING COAL	ROCK	TOTAL COAL-ROCK
TRC83077		6306	0.86	2.34	100.00	1.32	0.16	0.00	0.00	1.32- 0.16



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNKWTRC83068

DATE - 12/14/84

- HISTORY -

START DATE - 08/20/83
END DATE - 08/20/83

CONTRACTOR -
GEOLOGIST - FAWCETT

OPERATOR - GCRI
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 1215.00

ZONE - 9
NORTHING - 6342280.00
EASTING - 493230.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571332
LONGITUDE - 1290644

- ORIENTATION -

LENGTH - 1.35
SIZE WIDTH - 0.6
SIZE HEIGHT - 0.9

INCLINATION - 65.0
AZIMUTH - 45.0

ROOF STRIKE - 280
ROOF DIP - 30
ROOF DIR - S

FLOOR STRIKE - 315
FLOOR DIP - 50
FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE

		(m)	
		ROCK	COAL
0.36		0.06	0.07
			0.08
		0.17	
			0.42
TOTAL		0.23	0.63

1.00+m
0.17

0.40+m



SANDSTONE
CLAYSTONE, CARBONACEOUS, CONSOLIDATED
COAL: C-1, C-2, INTERBEDDED CLAYSTONE
CLAYSTONE
COAL: C-2, CONSOLIDATED
CLAYSTONE, INTERBEDDED COAL (MINOR)
COAL: C-5, PARTLY CONSOLIDATED
CLAYSTONE, MINOR SILT, CONSOLIDATED

ATTITUDE OF ROOF : 100/30S
ATTITUDE OF FLOOR: 135/50S
UTM COORDINATES : 6342280mN, 493230mE
ELEVATION : 1215m
MAP CARD NUMBER : 1 14
TRENCH DEPTH : 0.85m
TRENCH WIDTH : 0.57m
TRENCH LENGTH : 1.35m
TRENCH BEARING : 045°
TRENCH SLOPE : 65°
TRENCH BLOCK : K.W.

GULF CANADA RESOURCES INC. <small>Coal Division</small>		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG		
KPN-TRC-83068		
DRAWN BY: S. FAWCETT	SCALE: 1:50	
LOGGED BY: S. FAWCETT	DATE: 20/08/83	
APPROVED BY: C.W.		

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: KH DATA SOURCE: TRC83068

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	1.00	1.00			SANDSTONE	FG CONSOLIDATED
	1.00	1.17	0.17			CLAYSTONE	CARB CONSOLIDATED; MINOR IRON STAIN ROOF
	1.17	1.24	0.07			COAL	C-1 C-2, INTERBEDDED CLAYSTONE, MINOR CALCITE
	1.24	1.30	0.06			CLAYSTONE	INT. COAL, CONSOLIDATED
	1.30	1.36	0.06			COAL	C-2 CONSOLIDATED
	1.36	1.44	0.08			COAL	C-3 INT. CLAYSTONE, UNCONSOLIDATED
	1.44	1.61	0.17			CLAYSTONE	INT. MINOR COAL
	1.61	2.03	0.42			COAL	C-5 PARTLY CONSOLIDATED. SCRATCHES BLACK, MINOR CLAYSTONE
	2.03	2.43	0.40			CLAYSTONE	SILT CONSOLIDATED FLOOR

* DENOTES MEASURED BCA
NEWPAGE

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNKWTRC83069

DATE - 12/14/84

- HISTORY -

START DATE - 08/20/83
END DATE - 08/20/83

CONTRACTOR -
GEOLOGIST - FAWCETT

OPERATOR - GCRI
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 1205.00

ZONE - 9
NORTHING - 6342210.00
EASTING - 493180.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571329
LONGITUDE - 1290647

- ORIENTATION -

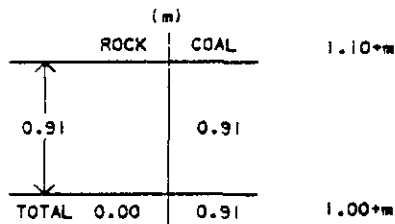
LENGTH - 2.88
SIZE WIDTH - 0.5
SIZE HEIGHT - 0.7

INCLINATION - 5.0
AZIMUTH - 40.0

ROOF STRIKE - 310
ROOF DIP - 60
ROOF DIR - S

FLOOR STRIKE - 310
FLOOR DIP - 55
FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE



SILTSTONE, CONSOLIDATED

COAL: BLOOM

CLAYSTONE, CARBONACEOUS, CONSOLIDATED

ATTITUDE OF ROOF : 130/60S
 ATTITUDE OF FLOOR: 130/55S
 UTM COORDINATES : 6342210mN, 493180mE
 ELEVATION : 1205m
 MAP CARD NUMBER : 1 14
 TRENCH DEPTH : 0.65m
 TRENCH WIDTH : 0.54m
 TRENCH LENGTH : 2.88m
 TRENCH BEARING : 040°
 TRENCH SLOPE : 05°
 TRENCH BLOCK : K.W.

GULF CANADA RESOURCES INC.

Coal Division

CALGARY

ALBERTA



MT. KLAPPAN COAL PROPERTY

TRENCH LOG
KPN-TRC-83069

DRAWN BY: S. FAWCETT

SCALE: 1:50

LOGGED BY: S. FAWCETT

DATE: 20/08/83

APPROVED BY: C.W.

PROJECT: KPN BLOCK: KH DATA SOURCE: TRC83069

DEPTH BCA	DEPTH FROM	INTRVAL TO	SAMP. THICK.	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	1.00	1.00		CLAYSTONE	CARB CONSOLIDATED, MINOR IRON STAIN
	1.00	1.08	0.08		CLAYSTONE	CARB COAL LAM, UNCONSOLIDATED
	1.08	1.11	0.03		CLAYSTONE	BN UNCONSOLIDATED
	1.11	2.02	0.91		COAL	C-5 BLOOM. CLAYSTONE, MINOR CALCITE UNCONSO LIDATED SOME C-3
	2.02	3.02	1.00		SILTSTONE	M.GY CONSOLIDATED

* DENOTES MEASURED BCA
NEWPAGE

===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNKWTRC83070

DATE - 12/14/84

- HISTORY -

START DATE - 08/20/83
END DATE - 08/20/83

CONTRACTOR -
GEOLOGIST - FAWCETT

OPERATOR - GCRI
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 1190.00

ZONE - 9
NORTHING - 6342095.00
EASTING - 493180.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571326
LONGITUDE - 1290647

- ORIENTATION -

LENGTH - 2.50

INCLINATION - 25.0
AZIMUTH - 60.0

SIZE WIDTH - 0.5
SIZE HEIGHT - 0.6

ROOF STRIKE - 320
ROOF DIP - 35
ROOF DIR - S

FLOOR STRIKE - 305
FLOOR DIP - 55
FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE

=====

		(m)		
		ROCK	COAL	
0.95			0.62	1.00+m
	0.28		0.05	
TOTAL		0.28	0.67	0.31+m



SILTSTONE, CONSOLIDATED, MASSIVE


COAL: C-5, C-6

CLAYSTONE, CARBONACEOUS

COAL: C-3, C-5

CLAYSTONE, VERY CARBONACEOUS, COAL LAMINAE

ATTITUDE OF ROOF : 140/35S
 ATTITUDE OF FLOOR: 125/55S
 UTM COORDINATES : 6342095mN, 493180mE
 ELEVATION : 1190m
 MAP CARD NUMBER : 114
 TRENCH DEPTH : 0.56m
 TRENCH WIDTH : 0.49m
 TRENCH LENGTH : 2.50m
 TRENCH BEARING : 060°
 TRENCH SLOPE : 25°
 TRENCH BLOCK : K.W.

GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY TRENCH LOG KPN-TRC-83070		
DRAWN BY: S. FANCETT	SCALE: 1:50	
LOGGED BY: S. FANCETT	DATE: 20/08/83	
APPROVED BY: C.W.		

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: KW DATA SOURCE: TRC83070

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	1.00	1.00			SILTSTONE	LAM. CONSOLIDATED, MASSIVE, IRON STAINED AT BASE ROOF
	1.00	1.62	0.62			COAL	C-5 C-6, MINOR C-2, C-1 BANDS, PARTLY CONSOLIDATED. INTERBEDDED CLAYSTONE, MINOR QUARTZ.
	1.62	1.90	0.28			CLAYSTONE	CARB MINOR C-6, IRON STAIN
	1.90	1.95	0.05			COAL	C-3 C-5, UNCONSOLIDATED
	1.95	2.26	0.31			CLAYSTONE	CARB MINOR IRON STAIN, CONSOLIDATED COAL LAM., MINOR QUARTZ FLOOR
	2.26	2.66	0.40			MUDSTONE	

* DENOTES MEASURED BCA
NEWPAGE

===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNKWTRC83071

DATE - 12/14/84

- HISTORY -

START DATE - 08/20/83
END DATE - 08/20/83

CONTRACTOR -
GEOLOGIST - FAWCETT

OPERATOR - GCR1
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 1200.00

ZONE - 9
NORTHING - 6341765.00
EASTING - 493150.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571315
LONGITUDE - 1290648

- ORIENTATION -

LENGTH - 5.30
SIZE WIDTH - 0.4
SIZE HEIGHT - 0.7

INCLINATION - 8.0
AZIMUTH - 150.0

ROOF STRIKE - 265
ROOF DIP - 65
ROOF DIR - S

FLOOR STRIKE - 245
FLOOR DIP - 55
FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE

=====

(m)	
ROCK	COAL
0.18	0.39
0.09	
0.07	0.16
	0.47
	2.60
TOTAL	3.62



SANDSTONE, FINE GRAIN, MNR FE STN, CONS

COAL: BLOOM, CLAY & C-6 CONS, C-2 UNCON

CLAYSTONE, CABONACEOUS, CONSOLIDATED
SILTSTONE

COAL: C-5, MINOR CLAYSTONE
SILTSTONE, MEDIUM GREY

COAL: C-4, C-3, MINOR C-1, UNCONSOLIDATED

* COAL: C-6, INTERBEDDED CLAYSTONE

SANDSTONE, MINOR SILT, UNCONSOLIDATED

CLAYSTONE, CARBONACEOUS, MEDIUM CONSOLIDATED

COAL: C-6
SILTSTONE, CONSOLIDATED

* ALMOST ALL COAL IS LOW C GRADE (C-6)

ATTITUDE OF ROOF : 85/65S
 ATTITUDE OF FLOOR: 65/55S
 UTM COORDINATES : 6341765mN, 493150mE
 ELEVATION : 1200m
 MAP CARD NUMBER : 114
 TRENCH DEPTH : 0.67m
 TRENCH WIDTH : 0.40m
 TRENCH LENGTH : 5.30m
 TRENCH BEARING : 150°
 TRENCH SLOPE : 08°
 TRENCH BLOCK : K.W.

GULF CANADA RESOURCES INC. <small>Coal Division</small>		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG KPN-TRC-83071		
DRAWN BY: S. FAWCETT	SCALE: 1:50	
LOGGED BY: S. FAWCETT	DATE: 20/08/83	
APPROVED BY: C.W.		

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: KW DATA SOURCE: TRC83071

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	1.00	1.00			SANDSTONE	FG MINOR IRON STAIN, CONSOLIDATED ROOF
	1.00	1.39	0.39	06301		COAL	C-6 BLOOM, CLAY AND C-6 AND C-2 UNCONSOLIDATED
	1.39	1.57	0.18	06301		CLAYSTONE	CARB CONSOLIDATED
	1.57	1.66	0.09	06301		SANDSTONE	FG UNCONSOLIDATED
	1.66	1.82	0.16	06301		COAL	C-5 LAM C-1, MINOR
	1.82	1.89	0.07	06301		SHST	M.GY CLAYSTONE UNCONSOLIDATED
	1.89	2.36	0.47	06301		COAL	C-4 C-3, MINOR C-1, UNCONSOLIDATED, MINOR C LAYSTONE LAM.
	2.36	4.96	2.60	06301		COAL	C-6 MINOR CLAYSTONE, MINOR QUARTZ, CONSOLIDATED, MINOR C-2 LAM.
	4.96	5.00	0.04	06301		SILTSTONE	M.GY CONSOLIDATED

* DENOTES MEASURED BCA

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: KW DATA SOURCE: TRC83071

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	5.00	5.24	0.24	06301		SANDSTONE	FG UNSONSOLIDATED
	5.24	5.85	0.61	06301		CLAYSTONE	CARB MINOR QUARTZ VEIN 2-CM, CONSOLIDATED
	5.85	5.99	0.14	06301		COAL	C-6 POORLY CONSOLIDATED, MINOR CLAYSTONE
	5.99	6.43	0.44			SILTSTONE	GY CONSOLIDATED FLOOR

* DENOTES MEASURED BCA
NEWPAGE

GULF CANADA RESOURCES INC. - COAL DIVISION

15/MAR/84

HEAD ANALYSIS SUMMARY

PROJ - KPN			ANALYSIS BASIS TYPE - AD				NAME OF STANDARD - ASTM				
DATA SOURCE	SSID	SEAM	SAMPLE ID	RESIDUAL MOISTURE%	ASH%	FIXED CARBON%	VOLATILE MATTER%	TOTAL SULPHUR%	GROSS CALORIFIC VALUE (MJ-KG)	SPG	FSI
TRC83071											
	HD1		6301	3.82	38.79	47.67	9.72	0.26	17.69		



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNKWTRC83072

DATE - 12/14/84

- HISTORY -

START DATE - 08/20/83
END DATE - 08/20/83

CONTRACTOR -
GEOLOGIST - FAWCETT

OPERATOR - GCR1
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 1200.00
LICENCE/LEASE NUMBER - 0

ZONE - 9
NORTHING - 6341750.00
EASTING - 493160.00

LATITUDE - 571315
LONGITUDE - 1290648

- ORIENTATION -

LENGTH - 6.00
SIZE WIDTH - 0.4
SIZE HEIGHT - 0.6

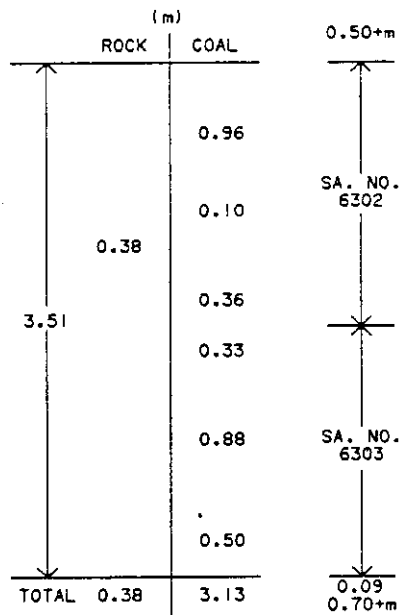
INCLINATION - 30.0
AZIMUTH - 175.0

ROOF STRIKE - 285
ROOF DIP - 80
ROOF DIR - N

FLOOR STRIKE - 275
FLOOR DIP - 30
FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE

=====



SILTSTONE

COAL: C-5, C-6, INTERBEDDED CLAYSTONE

COAL: C-1, C-2, CONSOLIDATED
CLAYSTONE, VERY CARBONACEOUS

COAL: C-5, C-6

COAL: C-2, C-3, UNCONSOLIDATED, MNR CLAYSTONE

C: C-1, C-2, CONS, MNR CLYST, SLTST, FE STN

SILTSTONE, FIXED CARBON SEDIMENT
SANDSTONE, GREY, FRAGMENT, LAMINAE

ATTITUDE OF ROOF : 105/80N
 ATTITUDE OF FLOOR : 95/30S
 UTM COORDINATES : 6341750mN, 493160mE
 ELEVATION : 1200m
 MAP CARD NUMBER : 1 14
 TRENCH DEPTH : 0.63m
 TRENCH WIDTH : 0.40m
 TRENCH LENGTH : 6.00m
 TRENCH BEARING : 175°
 TRENCH SLOPE : 30°
 TRENCH BLOCK : K.W.

GULF CANADA RESOURCES INC.
Coal Division

CALGARY

ALBERTA



MT. KLAPPAN COAL PROPERTY

TRENCH LOG
KPN-TRC-83072

DRAWN BY: S. FAWCETT

SCALE: 1:50

LOGGED BY: S. FAWCETT

DATE: 20/08/83

APPROVED BY: C.W.

PROJECT: KPN BLOCK: KW DATA SOURCE: TRC83072

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.50	0.50			SILTSTONE	ROOF
	0.50	1.46	0.96	06302		COAL	C-5 C-6 INTERBEDDED CLAYSTONE, UNCONSOLIDATED
	1.46	1.56	0.10	06302		COAL	C-1 C-2 CONSOLIDATED
	1.56	1.94	0.38	06302		CLAYSTONE	CARB INTERBEDDED C-1 2 CM, UNCONSOLIDATED
	1.94	2.30	0.36	06302		COAL	C-5 C-6 INTERBEDDED C-1, C-2 CONSOLIDATED
	2.30	2.63	0.33	06303		COAL	C-2 C-3, MINOR CLAYSTONE UNCONSOLIDATED
	2.63	3.51	0.88	06303		COAL	C-2 C-3, C-1 LAM. MINOR CLAYSTONE.
	3.51	4.01	0.50	06303		COAL	C-1 C-2, CONSOLIDATED, MINOR CLAYSTONE
	4.01	4.10	0.09			SILTSTONE	IRON STAIN, FLOOR
	4.10	4.80	0.70			SANDSTONE	FG.GY LAM

* DENOTES MEASURED BCA
NEWPAGE

GULF CANADA RESOURCES INC. - COAL DIVISION
 15/MAR/84 HEAD ANALYSIS SUMMARY

PROJ - KPN

ANALYSIS BASIS TYPE - AD

NAME OF STANDARD - ASTM

DATA SOURCE	SSID	SEAM	SAMPLE ID	RESIDUAL MOISTURE%	ASH%	FIXED CARBON%	VOLATILE MATTER%	TOTAL SULPHUR%	GROSS CALORIFIC VALUE (MJ-KG)	SPG	FSI
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TRC83072

	HD1		6302	3.63	10.01	80.31	6.05	0.61	29.76		
	HD1		6303	5.08	14.55	74.47	5.90	0.53	27.77		



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNKWTRC83073

DATE - 12/14/84

- HISTORY -

START DATE - 08/20/83

END DATE - 08/20/83

CONTRACTOR -

GEOLOGIST - FAWCETT

OPERATOR - GCRI

SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC

ELEVATION - 1110.00

LICENCE/LEASE NUMBER -

0

ZONE - 9

NORTHING - 6340465.00

EASTING - 492455.00

LATITUDE - 571233

LONGITUDE - 1290730

- ORIENTATION -

LENGTH - 4.20

SIZE WIDTH - 1.0

SIZE HEIGHT - 1.0

ROOF STRIKE - 284

ROOF DIP - 68

ROOF DIR - S

INCLINATION - 0.0

AZIMUTH - 15.0

FLOOR STRIKE - 284

FLOOR DIP - 68

FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: KH DATA SOURCE: TRC83073

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	1.00	1.00			CLYST	CARB MINOR CLAY, FE STAINING
	1.00	1.08	0.08			CLYST	CARB UNCONSOL., MINOR COAL, ROOF
	1.08	1.50	0.42	06304		COAL	C-2 C-4, CONSOL., MINOR CLAY, C-3 MINOR QTZ , UNCONSOL.
	1.50	1.85	0.35	06304		CLYST	MINOR COAL C-2 LAMS. PARTLY CONSOL.
	1.85	1.91	0.06	06304		COAL	C-2 CONSOLIDATED
	1.91	2.21	0.30	06304		COAL	C-2 CLYST. LAMS.
	2.21	2.46	0.25	06304		COAL	C-1 CONSOL.
	2.46	2.70	0.24	06304		COAL	C-1 MINOR C-2 AND CLYST
	2.70	2.89	0.19	06304		COAL	C-1 UNCONSOL. MINOR C-2
	2.89	3.10	0.21	06304		COAL	C-1 C-2, CLYST LAMS.

* DENOTES MEASURED BCA

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: KH DATA SOURCE: TRC83073

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	3.10	3.90	0.80	06304		COAL	C-1 C-2 CONSOL.
	3.90	4.01	0.11	06304		COAL	CLYST LAMS. MINOR QUARTZ
	4.01	4.44	0.43	06304		COAL	C-1
	4.44	4.54	0.10			CLYST	COAL LAMS., C-1 AND C-2
	4.54	5.54	1.00			SLTST	CARB CLYST CONSOL. - THINLY BEDDED

* DENOTES MEASURED BCA

NEMPAGE

GULF CANADA RESOURCES INC. - COAL DIVISION
 15/MAR/84 HEAD ANALYSIS SUMMARY

PROJ - KPN		ANALYSIS BASIS TYPE - AD				NAME OF STANDARD - ASTM					
DATA SOURCE	SSID	SEAM	SAMPLE RESIDUAL ID	RESIDUAL MOISTURE%	ASH%	FIXED CARBON%	VOLATILE MATTER%	TOTAL SULPHUR%	GROSS CALORIFIC VALUE (MJ-KG)	SPG	FSI
TRC83073											
	HD1		6304	4.48	16.96	73.33	5.23	0.51	26.67		



===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNKWTRC83076

DATE - 12/14/84

- HISTORY -

START DATE - 08/21/83
END DATE - 08/21/83

CONTRACTOR -
GEOLOGIST - FAWCETT

OPERATOR - GCRI
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 1590.00

ZONE - 9
NORTHING - 6339880.00
EASTING - 494830.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571214
LONGITUDE - 1290508

- ORIENTATION -

LENGTH - 3.30

INCLINATION - 0.0
AZIMUTH - 55.0

SIZE WIDTH - 0.6
SIZE HEIGHT - 1.1

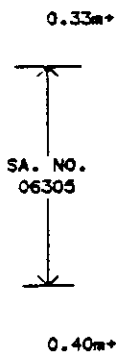
ROOF STRIKE - 317
ROOF DIP - 74
ROOF DIR - N

FLOOR STRIKE - 315
FLOOR DIP - 70
FLOOR DIR - N

*** NOTE *** 0 INDICATES NO VALUE

=====

(m)	
ROCK	COAL
0.10	0.14
	0.04
0.24	0.12
	0.17
TOTAL	0.47
	0.26
0.34	1.20



CLAYSTONE, IRON STAINING, CALCITE (FLOOR)
 COAL: C-2, C-3
 COAL: IRON STAINING
 COAL: BLOOM
 CLAYSTONE, CONSOLIDATED
 COAL: C-2, C-3, CONSOLIDATED
 COAL: C-2, C-3, CONSOLIDATED
 CLAYSTONE, ABUNDANT COAL
 COAL: C-2, C-3
 CLAYSTONE, CARBONACEOUS (ROOF)

ATTITUDE OF ROOF : 137/74NE
 ATTITUDE OF FLOOR: 135/70NE
 UTM COORDINATES : 6339880mN, 494830mE
 ELEVATION : 1590m
 MAP CARD NUMBER : H 13
 TRENCH DEPTH : 1.10m
 TRENCH WIDTH : 0.60m
 TRENCH LENGTH : 3.30m
 TRENCH BEARING : 055°
 TRENCH SLOPE : 0°
 TRENCH BLOCK : K.W.

GULF CANADA RESOURCES INC. Coal Division		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG KPN-TRC-83076		
DRAWN BY: S.FANCETT	SCALE: 1:50	
LOGGED BY: S.FANCETT	DATE: 21/08/83	
APPROVED BY: C.W.		

PROJECT: KPN BLOCK: KW DATA SOURCE: TRC83076

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.33	0.33			CLAYSTONE	CARB. DK. BN CONSOLIDATED, IRON-STAIN, CALC. LAM ROOF
	0.33	0.47	0.14	06305		COAL	C-2 C-3, CLAYSTONE LAM
	0.47	0.51	0.04	06305		COAL	C-2 IRON STAIN
	0.51	0.63	0.12	06305		COAL	BLOOM
	0.63	0.73	0.10	06305		CLAYSTONE	CONSOLIDATED, MINOR IRON-STAIN
	0.73	0.90	0.17	06305		COAL	C-2 C-3, CLAYSTONE LAM CONSOLIDATED.
	0.90	1.37	0.47	06305		COAL	C-2 C-3, CONSOLIDATED, CLAYSTONE LAM.
	1.37	1.61	0.24	06305		CLAYSTONE	ABUNDANT COAL LAM
	1.61	1.87	0.26	06305		COAL	C-2 C-3 CLAYSTONE LAM
	1.87	2.27	0.40			CLAYSTONE	CARB MINOR COAL LAM CALC LAM FLOOR

* DENOTES MEASURED BCA
NEWPAGE

GULF CANADA RESOURCES INC. - COAL DIVISION
15/MAR/84 HEAD ANALYSIS SUMMARY

PROJ - KPN		ANALYSIS BASIS TYPE - AD				NAME OF STANDARD - ASTM					
DATA SOURCE	SSID	SEAM	SAMPLE ID	RESIDUAL MOISTURE%	ASH%	FIXED CARBON%	VOLATILE MATTER%	TOTAL SULPHUR%	GROSS CALORIFIC VALUE (MJ-KG)	SPG	FSI
TRC83076											
	HD1		6305	8.48	17.48	55.11	18.93	0.40	21.30		



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNKSTRC83077

DATE - 12/14/84

- HISTORY -

START DATE - 08/21/83
END DATE - 08/21/83

CONTRACTOR -
GEOLOGIST - FAWCETT

OPERATOR - GCR I
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 1575.00

ZONE - 9
NORTHING - 6339935.00
EASTING - 496400.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571216
LONGITUDE - 1290335

- ORIENTATION -

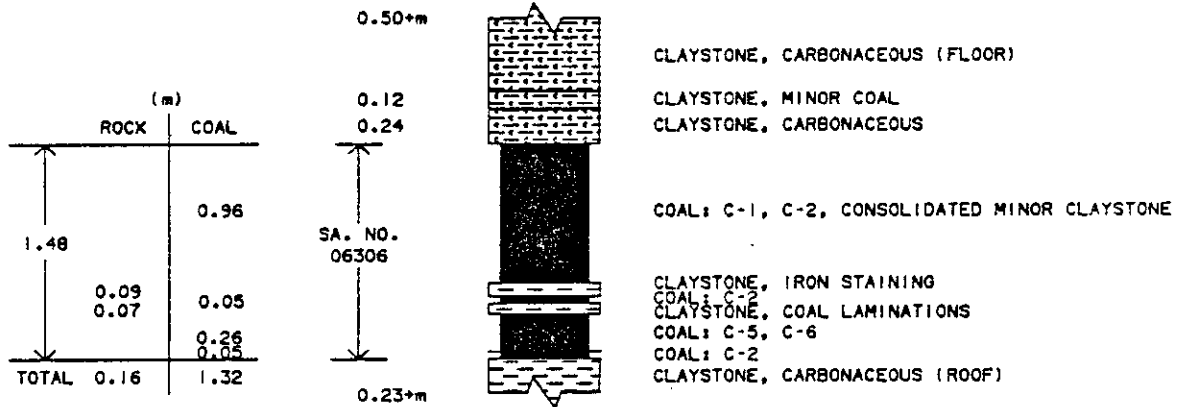
LENGTH - 3.00
SIZE WIDTH - 0.7
SIZE HEIGHT - 0.5

INCLINATION - 0.0
AZIMUTH - 15.0

ROOF STRIKE - 290
ROOF DIP - 65
ROOF DIR - S

FLOOR STRIKE - 275
FLOOR DIP - 65
FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE



ATTITUDE OF ROOF : 110/65S
 ATTITUDE OF FLOOR: 95/65S
 UTM COORDINATES : 6339935mN, 496400mE
 ELEVATION : 1575m
 MAP CARD NUMBER : H 13
 TRENCH DEPTH : 0.50m
 TRENCH WIDTH : 0.70m
 TRENCH LENGTH : 3.00m
 TRENCH BEARING : 015°
 TRENCH SLOPE : 0°
 TRENCH BLOCK : K.S.

GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY TRENCH LOG KPN-TRC-83077		
DRAWN BY: S. FANCETT	SCALE: 1:50	
LOGGED BY: S. FANCETT	DATE: 21/08/83	
APPROVED BY: C.W.		

PROJECT: KPN BLOCK: KS DATA SOURCE: TRC83077

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.50	0.50			CLAYSTONE	M.GY CONSOLIDATED
	0.50	0.62	0.12			CLAYSTONE	LAM. MINOR COAL CONSOLIDATED
	0.62	0.86	0.24			CLAYSTONE	CARB CONSOLIDATED. IRON STAIN
	0.86	1.82	0.96	06306		COAL	C-1 COAL LAM FLOOR C-2 CONSOLIDATED. MINOR CLAYSTONE LAM, MINOR IRON STAIN
	1.82	1.91	0.09	06306		CLAYSTONE	IRON-STAIN COAL LAM
	1.91	1.96	0.05	06306		COAL	C-2 CONSOLIDATED
	1.96	2.03	0.07	06306		CLAYSTONE	COAL LAM
	2.03	2.29	0.26	06306		COAL	C-5 C-6, C-2, LAM, POORLY CONSOLIDATED
	2.29	2.34	0.05	06306		COAL	C-2 CONSOLIDATED
	2.34	2.57	0.23			CLAYSTONE	CARB IRON STAIN, CONSOLIDATED, MINOR COAL LA M. ROOF

* DENOTES MEASURED BCA
NEWPAGE

GULF CANADA RESOURCES INC. - COAL DIVISION
15/MAR/84 HEAD ANALYSIS SUMMARY

PROJ - KPN		ANALYSIS BASIS TYPE - AD				NAME OF STANDARD - ASTM					
DATA SOURCE	SSID	SEAM	SAMPLE ID	RESIDUAL MOISTURE%	ASH%	FIXED CARBON%	VOLATILE MATTER%	TOTAL SULPHUR%	GROSS CALORIFIC VALUE (MJ-KG)	SPG	FSI
TRC83077											
	HD1		6306	2.79	31.29	56.90	9.02	0.44	21.72		



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNKNTRC83082

DATE - 12/14/84

- HISTORY -

START DATE - 08/22/83
END DATE - 08/22/83

CONTRACTOR -
GEOLOGIST - FAWCETT

OPERATOR - GCRI
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 1435.00

ZONE - 9
NORTHING - 6341535.00
EASTING - 497625.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571308
LONGITUDE - 1290222

- ORIENTATION -

LENGTH - 2.20
SIZE WIDTH - 0.7
SIZE HEIGHT - 0.7

INCLINATION - 30.0
AZIMUTH - 175.0

ROOF STRIKE - 257
ROOF DIP - 25
ROOF DIR - S

FLOOR STRIKE - 265
FLOOR DIP - 30
FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE


(m)	
ROCK	COAL
0.05	0.07
0.05	0.11
0.05	0.18
	0.39
0.03	0.11
0.09	0.14
TOTAL	1.00

0.19+m
SA. NO.
06309
0.27+m



CARB CLAYSTONE, ABNT PLANT FOSSILS
COAL: BLOOM
CLAY: LT GREY
COAL: C-3, CLYST, LAM
CLYST, UNCON
COAL: C-2, C-3, CLYST, LAM
CLYST, FE STAIN
COAL: C-2, CLYST LAM
CLAYSTONE, HIGHLY FE STAINED
COAL: C-2, C-3
CLYST, MOD CONSOLIDATED
COAL: BLOOM
CLAYSTONE, CARB, COAL LAM

ATTITUDE OF ROOF : 077/25S
ATTITUDE OF FLOOR: 085/30S
UTM COORDINATES : 6341535mN, 497625mE
ELEVATION : 1435m
MAP CARD NUMBER : 1 12
TRENCH DEPTH : 0.70m
TRENCH WIDTH : 0.70m
TRENCH LENGTH : 2.20m
TRENCH BEARING : 175°
TRENCH SLOPE : 30°
TRENCH BLOCK : K.N.

GULF CANADA RESOURCES INC. <small>Coal Division</small>		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG		
KPN-TRC-83082		
DRAWN BY: S. FANCETT	SCALE: 1:50	
LOGGED BY: S. FANCETT	DATE: 22/08/83	
APPROVED BY: C.W.		

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: KN DATA SOURCE: TRC83082

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.19	0.19			CLAYSTONE	CARB ABUNDANT PLANT FOSSILS ROOF
	0.19	0.26	0.07	06309		COAL BLOOM	
	0.26	0.31	0.05	06309		CLAY	LT.GY
	0.31	0.42	0.11	06309		COAL	C-3 CLAYSTONE LAM
	0.42	0.47	0.05	06309		CLAYSTONE	UNCONSOLIDATED
	0.47	0.65	0.18	06309		COAL	C-2 C-3 CLAYSTONE LAM
	0.65	0.70	0.05	06309		CLAYSTONE	IRON STAIN
	0.70	1.09	0.39	06309		COAL	C-2 CLAYSTONE LAM
	1.09	1.12	0.03	06309		CLAYSTONE	HIGHLY IRON STAIN
	1.12	1.23	0.11	06309		COAL	C-2 C-3
	1.23	1.32	0.09	06309		CLAYSTONE	MOSTLY CONSOLIDATED
	1.32	1.46	0.14	06309		COAL BLOOM	

* DENOTES MEASURED BCA

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: KN DATA SOURCE: TRC83082

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	1.46	1.73	0.27			CLAYSTONE	CARB COAL LAM , FLOOR

* DENOTES MEASURED BCA
NEMPAGE

GULF CANADA RESOURCES INC. - COAL DIVISION
15/MAR/84 HEAD ANALYSIS SUMMARY

PROJ - KPN		ANALYSIS BASIS TYPE - AD				NAME OF STANDARD - ASTM					
DATA SOURCE	SSID	SEAM	SAMPLE ID	RESIDUAL MOISTURE%	ASH%	FIXED CARBON%	VOLATILE MATTER%	TOTAL SULPHUR%	GROSS CALORIFIC VALUE (MJ-KG)	SPG	FSI
TRC83082											
	HD1		6309	6.30	37.83	41.39	14.48	0.32	16.12		



===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNKNTRC83083

DATE - 12/14/84

- HISTORY -

START DATE - 08/22/82
END DATE - 08/22/83

CONTRACTOR -
GEOLOGIST - FAWCETT

OPERATOR - GCRI
SURVEYOR -

REMARKS - ROOF STRIKE NA

- LOCATION -

PROVINCE - BC
ELEVATION - 1417.00

ZONE - 9
NORTHING - 6341455.00
EASTING - 497145.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571305
LONGITUDE - 1290250

- ORIENTATION -

LENGTH - 3.00
SIZE WIDTH - 1.0
SIZE HEIGHT - 0.3

INCLINATION - 30.0
AZIMUTH - 65.0

ROOF STRIKE - 0
ROOF DIP - 0
ROOF DIR -

FLOOR STRIKE - 335
FLOOR DIP - 75
FLOOR DIR - N

*** NOTE *** 0 INDICATES NO VALUE

=====

(m)		
ROCK	COAL	
	0.30	0.40±m
	0.08	
	0.30	
1.50	0.17	SA. NO. 06310
	0.30	
	0.07 0.13	
	0.15	0.27±m
TOTAL	0.37	
	1.13	



CLAYSTONE, CARB. COAL LAM

COAL: C-2, C-3

COAL: C-1, C-2, UNCON

COAL: C-1, C-2, CONS, CLY LAM

CLAYSTONE, CONS, COAL LAM

COAL: C-2, C-3, MNR CLYST

CLYST, CARB, COAL LAM

CLYST

COAL: C-2, C-3, LAM CLYST

CLYST

ATTITUDE OF ROOF : NOT OBTAINED
 ATTITUDE OF FLOOR: 155/75N
 UTM COORDINATES : 6341455mN, 497145mE
 ELEVATION : 1417m
 MAP CARD NUMBER : 1 12
 TRENCH DEPTH : 0.30m
 TRENCH WIDTH : 1.00m
 TRENCH LENGTH : 3.00m
 TRENCH BEARING : 065°
 TRENCH SLOPE : 30°
 TRENCH BLOCK : K.N.

GULF CANADA RESOURCES INC.
Coal Division

CALGARY

ALBERTA



MT. KLAPPAN COAL PROPERTY

TRENCH LOG
KPN-TRC-83083

DRAWN BY: S. FAWCETT

SCALE: 1:50

LOGGED BY: S. FAWCETT

DATE: 22/08/83

APPROVED BY: C.W.

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: KN DATA SOURCE: TRC83083

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.40	0.40			CLAYSTONE	CARB ROOF COAL LAM
	0.40	0.70	0.30	06310		COAL	C-2 MINOR C-3
	0.70	0.78	0.08	06310		COAL	C-1 MINOR C-2, UNCONSOLIDATED
	0.78	1.08	0.30	06310		COAL	C-1 MINOR C-2, CONSOLIDATED CLAY LAM
	1.08	1.25	0.17	06310		CLAYSTONE	CONSOLIDATED, MINOR COAL
	1.25	1.55	0.30	06310		COAL	C-2 MINOR C-3, MINOR CLAYSTONE
	1.55	1.62	0.07	06310		CLAYSTONE	CARB MINOR COAL LAM
	1.62	1.75	0.13	06310		CLAYSTONE	
	1.75	1.90	0.15	06310		COAL	C-2 MINOR C-3, CLAYSTONE LAM
	1.90	2.17	0.27			CLAYSTONE	FLOOR

* DENOTES MEASURED BCA
NENPAGE

GULF CANADA RESOURCES INC. - COAL DIVISION
15/MAR/84 HEAD ANALYSIS SUMMARY

PROJ - KPN		ANALYSIS BASIS TYPE - AD				NAME OF STANDARD - ASTM				
DATA SOURCE	SSID	SEAM	SAMPLE ID	RESIDUAL MOISTURE%	ASH% FIXED CARBON%	VOLATILE MATTER%	TOTAL SULPHUR%	GROSS CALORIFIC VALUE (MJ-KG)	SPG	FSI
TRC83083										
	HD1		6310	3.55	33.89	47.84	14.72	0.36	20.24	



===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNKNTRC83084

DATE - 12/14/84

- HISTORY -

START DATE - 08/22/82
END DATE - 08/22/83

CONTRACTOR -
GEOLOGIST - FAWCETT

OPERATOR - GCRI
SURVEYOR -

REMARKS - POSSIBLE FLOOR NOT REACHED

- LOCATION -

PROVINCE - BC
ELEVATION - 1395.00

ZONE - 9
NORTHING - 6341510.00
EASTING - 496800.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571307
LONGITUDE - 1290311

- ORIENTATION -

LENGTH - 3.00
SIZE WIDTH - 1.0
SIZE HEIGHT - 0.3

INCLINATION - 30.0
AZIMUTH - 65.0

ROOF STRIKE - 335
ROOF DIP - 75
ROOF DIR - N

FLOOR STRIKE - 0
FLOOR DIP - 0
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

=====

(m)	
ROCK	COAL
	0.38
0.20	0.05
0.24	0.10
0.25	
	0.37
TOTAL	0.69
	0.90

0.45+m

SA. NO.
06311

0.15+m



CLAYSTONE, CARB, MNR COAL LAM


COAL: C-2, C-3, CONSOLIDATED

CLAYSTONE, COAL LAM
COAL: C-2, MNR C-3, CLYST LAM
CLYST, COAL LAM, CONSOLIDATED
COAL: C-2, C-3, CLYST LAM, CONS
CLAYSTONE, COAL LAM

COAL: C-2, C-3, MNR QTZ & CLYST LAM, CONS

CLYST, MNR COAL LAM (POSSIBLY NOT FLOOR)

ATTITUDE OF ROOF : 155/75N
 ATTITUDE OF FLOOR: NOT OBTAINED
 UTM COORDINATES : 6341510mN, 496800mE
 ELEVATION : 1395m
 MAP CARD NUMBER : 1 13
 TRENCH DEPTH : 0.30m
 TRENCH WIDTH : 1.00m
 TRENCH LENGTH : 3.00m
 TRENCH BEARING : 065°
 TRENCH SLOPE : 30°E
 TRENCH BLOCK : K.N.

GULF CANADA RESOURCES INC. <small>Coal Division</small>		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG KPN-TRC-83084		
DRAWN BY: C. NOGAS	LOGGED BY: S. FAWCETT	SCALE: 1:50
APPROVED BY: C.M.		DATE: 22/08/83

PROJECT: KPN BLOCK: KN DATA SOURCE: TRC83084

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.45	0.45			CLAYSTONE	CARB ROOF, MINOR COAL LAM
	0.45	0.83	0.38	06311		COAL	C-2 MINOR C-3 CONSOLIDATED
	0.83	1.03	0.20	06311		CLAYSTONE	COAL LAM
	1.03	1.08	0.05	06311		COAL	C-2 MINOR C-3 AND CLAYSTONE LAM
	1.08	1.32	0.24	06311		CLAYSTONE	COAL LAM CONSOLIDATED
	1.32	1.42	0.10	06311		COAL	C-2 MINOR C-3, CLAYSTONE LAM CONSOLIDATED
	1.42	1.67	0.25	06311		CLAYSTONE	MINOR COAL LAM
	1.67	2.04	0.37	06311		COAL	C-2 C-3, MINOR QUARTZ AND CLAYSTONE LAM CONSOLIDATED
	2.04	2.19	0.15			CLAYSTONE	MINOR COAL LAM, POSSIBLE NOT FLOOR

* DENOTES MEASURED BCA
NEWPAGE

GULF CANADA RESOURCES INC. - COAL DIVISION
 15/MAR/84 HEAD ANALYSIS SUMMARY

DATA SOURCE		SSID	SEAM	SAMPLE ID	RESIDUAL MOISTURE%	ASH%	FIXED CARBON%	VOLATILE MATTER%	TOTAL SULPHUR%	GROSS CALORIFIC VALUE (MJ-KG)	SPG	FSI
TRCB3084												
		HD1		6311	3.54	39.18	49.75	7.53	0.34	17.39		



===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNKNTRC83085

DATE - 12/14/84

- HISTORY -

START DATE - 08/22/83
END DATE - 08/22/83

CONTRACTOR -
GEOLOGIST - FAWCETT

OPERATOR - GCRI
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 1340.00

ZONE - 9
NORTHING - 6341590.00
EASTING - 496415.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571310
LONGITUDE - 1290334

- ORIENTATION -

LENGTH - 2.00

INCLINATION - 65.0
AZIMUTH - 60.0

SIZE WIDTH - 0.7
SIZE HEIGHT - 0.3

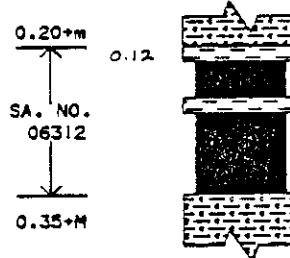
ROOF STRIKE - 285
ROOF DIP - 30
ROOF DIR - S

FLOOR STRIKE - 285
FLOOR DIP - 30
FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE

=====

(m)	
ROCK	COAL
0.10	0.25
	0.55
TOTAL 0.10	0.80



CLAYSTONE, CARBONACEOUS
 CLYST, COAL LAM, MNR QTZ & CALCITE
 COAL: C-2 C-3, CLYST LAM
 CLAYSTONE, CON. DARK GREY
 COAL: C-3, ABNT CLYST LAM
 CLYST, CARB, COAL LAM, MOSTLY CON

ATTITUDE OF ROOF : 105/30S
 ATTITUDE OF FLOOR: 105/30S
 UTM COORDINATES : 6341590mN, 496415mE
 ELEVATION : 1340m
 MAP CARD NUMBER : 1 13
 TRENCH DEPTH : 0.30m
 TRENCH WIDTH : 0.70m
 TRENCH LENGTH : 2.00m
 TRENCH BEARING : 060°
 TRENCH SLOPE : 65°S
 TRENCH BLOCK : K.N.

GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG		
KPN-TRC-83085		
DRAWN BY: C. MOGAS	SCALE: 1:50	
LOGGED BY: S. FANCETT	DATE: 22/08/83	
APPROVED BY: C.W.		

PROJECT: KPN BLOCK: KN DATA SOURCE: TRC83085

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.20	0.20			CLAYSTONE	CARB ROOF COAL LAM, MINOR QUARTZ AND CALCITE
	0.20	0.32	0.12	06312		CLAYSTONE	
	0.32	0.57	0.25	06312		COAL	C-2 C-3, CLAYSTONE LAM.
	0.57	0.67	0.10	06312		CLAYSTONE	DK.GY CONSOLIDATED
	0.67	1.22	0.55	06312		COAL	C-3 ABUNDANT CLAYSTONE LAM.
	1.22	1.57	0.35			CLAYSTONE	CARB COAL LAM, MOSTLY CONSOLIDATED FLOOR

* DENOTES MEASURED BCA
NEWPAGE

GULF CANADA RESOURCES INC. - COAL DIVISION
 15/MAR/84 HEAD ANALYSIS SUMMARY

PROJ - KPN		ANALYSIS BASIS TYPE - AD				NAME OF STANDARD - ASTM					
DATA SOURCE	SSID	SEAM	SAMPLE ID	RESIDUAL MOISTURE%	ASH%	FIXED CARBON%	VOLATILE MATTER%	TOTAL SULPHUR%	GROSS CALORIFIC VALUE (MJ-KG)	SPG	FSI
TRC83085											
	HD1		6312	2.06	38.28	53.03	6.63	0.37	19.31		



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNKNTRC83086

DATE - 12/14/84

- HISTORY -

START DATE - 08/22/82

END DATE - 08/22/83

CONTRACTOR -

GEOLOGIST - FAWCETT

OPERATOR - GCRI

SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC

ELEVATION - 1325.00

ZONE - 9

NORTHING - 6341860.00

EASTING - 496330.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571318

LONGITUDE - 1290339

- ORIENTATION -

LENGTH - 3.10

INCLINATION - 45.0

AZIMUTH - 45.0

SIZE WIDTH - 0.7

SIZE HEIGHT - 0.3

ROOF STRIKE - 352

ROOF DIP - 22

ROOF DIR - W

FLOOR STRIKE - 352

FLOOR DIP - 22

FLOOR DIR - W

*** NOTE *** 0 INDICATES NO VALUE

=====

(m)	
ROCK	COAL
	0.30
	0.35
0.05	0.30
0.10	0.10
0.05	0.05
0.15	0.10
0.10	0.12
	0.19
TOTAL	1.51

0.45+m
SA. NO.
06313
.30+m



CLYST, CARB, MNR C LAM, FE STN, MOSTLY CON
COAL: C-3 C-4, MNR CLYST, LAM, FE STN
COAL: C-2 C-3, MNR CLYST, LAM, FE STN, CON
CLAYSTONE, CARBONACEOUS
COAL: C-2 C-3, FE STN, MNR CLYST, LAM, CON
CLAYSTONE, CARB, COAL LAM
COAL: C-2, FE STAIN, MNR CLYST
CLYST, MNR COAL, LAM
COAL: C-2, MNR C-5
CLYST, FE STAIN, COAL LAM
COAL: MNR CLAY STONE, UN CON
CLAYSTONE
COAL: C-3 C-4, MNR CLAYSTONE LAM
COAL: CLAYSTONE LAM, UN CONSOLIDATED
CLYST, MNR COAL LAM, FE STN, MOSTLY CON

ATTITUDE OF ROOF : 172/22W
ATTITUDE OF FLOOR: 172/22W
UTM COORDINATES : 6341860mN, 496330mE
ELEVATION : 1325m
MAP CARD NUMBER : 1 13
TRENCH DEPTH : 0.30m
TRENCH WIDTH : 0.70m
TRENCH LENGTH : 3.10m
TRENCH BEARING : 045°
TRENCH SLOPE : 45°S
TRENCH BLOCK : K.N.

GULF CANADA RESOURCES INC. Coal Division		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG KPN-TRC-83086		
DRAWN BY: C. NOGAS	SCALE: 1:50	
LOGGED BY: S. FAWCETT	DATE: 22/08/83	
APPROVED BY: C.W.		

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: KN DATA SOURCE: TRC83086

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.45	0.45			CLAYSTONE	CARB MINOR COAL LAM, IRON STAIN MOSTLY CONSOLIDATED ROOF
	0.45	0.75	0.30	06313		COAL	C-3 C-4, MINOR CLAYSTONE LAM, IRON STAIN
	0.75	1.10	0.35	06313		COAL	C-2 C-3, MINOR CLAYSTONE LAM, IRON STAIN
	1.10	1.15	0.05	06313		CLAYSTONE	CARB
	1.15	1.45	0.30	06313		COAL	C-2 C-3, IRON STAIN MINOR CLAYSTONE LAM.
	1.45	1.55	0.10	06313		CLAYSTONE	CARB COAL LAM
	1.55	1.65	0.10	06313		COAL	C-2 IRON STAIN, MINOR CLAYSTONE
	1.65	1.70	0.05	06313		CLAYSTONE	MINOR COAL LAM
	1.70	1.75	0.05	06313		COAL	C-2 MINOR C-5
	1.75	1.90	0.15	06313		CLAYSTONE	IRON STAIN, COAL LAM

* DENOTES MEASURED BCA

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: KN DATA SOURCE: TRC83086

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	1.90	2.00	0.10	06313		COAL	MINOR CLAYSTONE UNCONSOLIDATED
	2.00	2.10	0.10	06313		CLAYSTONE	
	2.10	2.22	0.12	06313		COAL	C-3 C-4 MINOR CLAYSTONE LAM
	2.22	2.41	0.19	06313		COAL	CLAYSTONE LAM, UNCONSOLIDATED
	2.41	2.71	0.30			CLAYSTONE	MINOR COAL LAM, IRON STAIN, MOSTLY CONSOLIDATED FLOOR

* DENOTES MEASURED BCA
NEWPAGE

GULF CANADA RESOURCES INC. - COAL DIVISION
15/MAR/84 HEAD ANALYSIS SUMMARY

PROJ - KPN		ANALYSIS BASIS TYPE - AD				NAME OF STANDARD - ASTM					
DATA SOURCE	SSID	SEAM	SAMPLE ID	RESIDUAL MOISTURE%	ASH% CARBON%	FIXED MATTER%	VOLATILE SULPHUR%	TOTAL VALUE (MJ-KG)	GROSS CALORIFIC	SPG	FSI
TRCB3086											
	HD1		6313	4.96	34.11	47.74	13.19	0.39	18.92		



===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNKWTRC83087

DATE - 12/14/84

- HISTORY -

START DATE - 08/22/83
END DATE - 08/22/83

CONTRACTOR -
GEOLOGIST - J ELDER

OPERATOR - GCRI
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 1370.00

ZONE - 9
NORTHING - 6344480.00
EASTING - 492595.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571443
LONGITUDE - 1290722

- ORIENTATION -

LENGTH - 5.00
SIZE WIDTH - 1.0
SIZE HEIGHT - 0.7

INCLINATION - 15.0
AZIMUTH - 150.0

ROOF STRIKE - 240
ROOF DIP - 45
ROOF DIR - S

FLOOR STRIKE - 245
FLOOR DIP - 45
FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE

=====

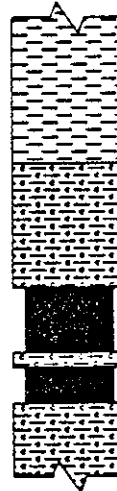
(m)	
ROCK	COAL
0.80	0.45
0.10	0.25
TOTAL 0.10	0.70

1.00+m

0.85

SA. NO.
06307

0.50+m



CLAYSTONE

CLAYSTONE, CARB, ABNT COAL

COAL: C-3, FE STAIN

CLAYSTONE, CARBONACEOUS

COAL: C-4, FE STAIN

CLAYSTONE, CARBONACEOUS

ATTITUDE OF ROOF : 060/45S
 ATTITUDE OF FLOOR: 065/45S
 UTM COORDINATES : 6344480mN, 492595mE
 ELEVATION : 1370m
 MAP CARD NUMBER : 1 14
 TRENCH DEPTH : 0.70m
 TRENCH WIDTH : 1.00m
 TRENCH LENGTH : 5.00m
 TRENCH BEARING : 150°
 TRENCH SLOPE : 15°W
 TRENCH BLOCK : K.W.

GULF CANADA RESOURCES INC.

Coal Division

CALGARY

ALBERTA



MT. KLAPPAN COAL PROPERTY

TRENCH LOG

KPN-TRC-83087

DRAWN BY: C. NOGAS

SCALE: 1:50

LOGGED BY: J. ELDER

DATE: 22/08/83

APPROVED BY: C.W.

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPH BLOCK: KH DATA SOURCE: TRC83087

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	1.00	1.00			CLAYSTONE	
	1.00	1.85	0.85			CLAYSTONE	CARB ABUNDANT COAL ROOF
	1.85	2.30	0.45	06307		COAL	C-3 IRON STAIN
	2.30	2.40	0.10	06307		CLAYSTONE	CARB
	2.40	2.65	0.25	06307		COAL	C-4 IRON STAIN
	2.65	3.15	0.50			CLAYSTONE	CARB FLOOR

* DENOTES MEASURED BCA
NEWPAGE

GULF CANADA RESOURCES INC. - COAL DIVISION
 15/MAR/84 HEAD ANALYSIS SUMMARY

PROJ - KPN			ANALYSIS BASIS TYPE - AD				NAME OF STANDARD - ASTM			
DATA SOURCE	SSID	SEAM	SAMPLE ID	RESIDUAL MOISTURE%	ASH% FIXED CARBON%	VOLATILE MATTER%	TOTAL SULPHUR%	GROSS CALORIFIC VALUE (MJ-KG)	SPG	FSI
TRC83087										
	HD1		6307	3.89	19.46	72.33	4.32	0.50	25.58	



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNKWTRC83088

DATE - 12/14/84

- HISTORY -

START DATE - 08/22/83
END DATE - 08/22/83

CONTRACTOR -
GEOLOGIST - J.ELDER

OPERATOR - GCRI
SURVEYOR -

REMARKS -

- LOCATION -

PROVINCE - BC
ELEVATION - 1340.00

ZONE - 9
NORTHING - 6344335.00
EASTING - 492700.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571438
LONGITUDE - 1290715

- ORIENTATION -

LENGTH - 4.50
SIZE WIDTH - 2.0
SIZE HEIGHT - 0.5

INCLINATION - 0.0
AZIMUTH - 140.0

ROOF STRIKE - 230
ROOF DIP - 60
ROOF DIR - S

FLOOR STRIKE - 230
FLOOR DIP - 60
FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE

=====

(m)	
ROCK	COAL
1.50	0.80
0.35	0.35
TOTAL 0.35	1.15

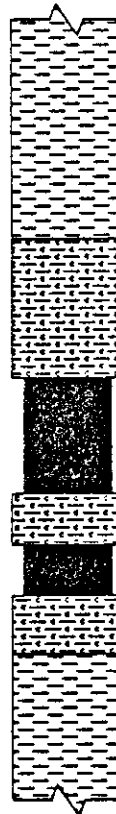
1.50+m

0.95

SA. NO.
06308

0.40

1.00+m



CLAYSTONE

CLAYSTONE, CARBONACEOUS, COAL STRINGERS

COAL: C-4 C-5, MNR CLYST, CARBONACEOUS

CLAYSTONE, CARBONACEOUS, MNR COAL

COAL: C-4, MNR CLAYSTONE

CLAYSTONE, CARBONACEOUS, MNR COAL

CLAYSTONE

ATTITUDE OF ROOF : 050/60S
 ATTITUDE OF FLOOR: 050/60S
 UTM COORDINATES : 6344335mN, 492700mE
 ELEVATION : 1340m
 MAP CARD NUMBER : 1 14
 TRENCH DEPTH : 0.50m
 TRENCH WIDTH : 2.00m
 TRENCH LENGTH : 4.50m
 TRENCH BEARING : 140°
 TRENCH SLOPE : 00°S
 TRENCH BLOCK : K.W.

GULF CANADA RESOURCES INC.		
Coal Division		
CALGARY	ALBERTA	
MT. KLAPPAN COAL PROPERTY		
TRENCH LOG		
KPN-TRC-83088		
DRAWN BY: C. NOOAS	SCALE: 1:30	
LOGGED BY: J. ELDER	DATE: 22/08/83	
APPROVED BY: C.W.		

84/03/14

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: KW DATA SOURCE: TRC83088

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	1.50	1.50			CLAYSTONE	
	1.50	2.45	0.95			CLAYSTONE	CARB COAL STRINGERS ROOF
	2.45	3.25	0.80	06308		COAL	C-4 C-5 MINOR CLAYSTONE CARBONACEOUS
	3.25	3.60	0.35	06308		CLAYSTONE	CARB MINOR COAL
	3.60	3.95	0.35	06308		COAL	C-4 MINOR CLAYSTONE
	3.95	4.35	0.40			CLAYSTONE	CARB MINOR COAL FLOOR
	4.35	5.35	1.00			CLAYSTONE	

* DENOTES MEASURED BCA
NEWPAGE

GULF CANADA RESOURCES INC. - COAL DIVISION
15/MAR/84 HEAD ANALYSIS SUMMARY

PROJ - KPN ANALYSIS BASIS TYPE - AD NAME OF STANDARD - ASTM

DATA SSID SEAM SAMPLE RESIDUAL ASH% FIXED VOLATILE TOTAL GROSS CALORIFIC SPG FSI
SOURCE ID MOISTURE% CARBON% MATTER% SULPHUR% VALUE (MJ-KG)

TRC83088

HD1 6308 3.65 38.63 52.07 5.65 0.29 17.83



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNKTRC83091

DATE - 12/14/84

- HISTORY -

START DATE - 08/09/83
END DATE - 08/09/83

CONTRACTOR -
GEOLOGIST - ELDER

OPERATOR - GCRI
SURVEYOR -

REMARKS - TRENCH RESAMPLED IN 1983 DUPLICATE SAMPLE 03569=03
570 RE-TRENCHED LAST YEARS TRC82021

- LOCATION -

PROVINCE - BC
ELEVATION - 1415.00

ZONE - 9
NORTHING - 6343110.00
EASTING - 502611.00

LICENCE/LEASE NUMBER - 0

LATITUDE - 571359
LONGITUDE - 1285724

- ORIENTATION -

LENGTH - 4.70

INCLINATION - 15.0
AZIMUTH - 8.0

SIZE WIDTH - 0.4
SIZE HEIGHT - 0.9

ROOF STRIKE - 310
ROOF DIP - 90
ROOF DIR -

FLOOR STRIKE - 295
FLOOR DIP - 83
FLOOR DIR - N

*** NOTE *** 0 INDICATES NO VALUE

=====

(m)	
ROCK	COAL
0.20	0.18
	0.34
	0.33
3.57	1.96
0.11	0.09
	0.12
	0.14
	0.10
TOTAL 0.31	3.26

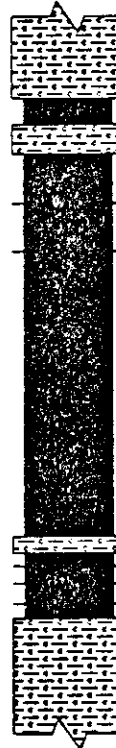
0.56+m

SA. NO.
03568

SA. NO.
03569
03570

SA. NO.
03571

0.79+m



CLYST, FOSSILIFEROUS, THIN C BANDS, CARB, ROOF

COAL: C-2

CLYST, CARB, COAL BAND

COAL: C-2, WITH CLYST CARB BANDS

COAL: HIGHLY CONTORTED

COAL: C-2, WITH CARB CLYST INTERBEDS

CLAYSTONE, CARB WITH COAL BANDS

COAL: C-2

COAL: C-2

COAL: C-2, FE STAIN

COAL: C-1

CLAYSTONE, CARB, FLOOR

ATTITUDE OF ROOF : 130/90
 ATTITUDE OF FLOOR: 115/83N
 UTM COORDINATES : 6343110mN, 502611mE
 ELEVATION : 1415m
 MAP CARD NUMBER : 111
 TRENCH DEPTH : 0.89m
 TRENCH WIDTH : 0.40m
 TRENCH LENGTH : 4.70m
 TRENCH BEARING : 008°
 TRENCH SLOPE : 15°
 TRENCH BLOCK : K.W

GULF CANADA RESOURCES INC.

Coal Division

CALGARY

ALBERTA



MT. KLAPPAN COAL PROPERTY

TRENCH LOG
KPN-TRC-83091

DRAWN BY: C. LOUIE

SCALE: 1:50

LOGGED BY: J. ELDER

DATE:

APPROVED BY: C.W.

84/03/16

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: KN DATA SOURCE: TRC83091

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.56	0.56			CLAYSTONE	CARB COAL FRAGS. FOSSILIFEROUS, THIN COAL BAN DS ROOF
	0.56	0.74	0.18	03568		COAL	C-2
	0.74	0.94	0.20	03568		CLAYSTONE	CARB COAL BAND
	0.94	1.28	0.34	03569		COAL	C-2 WITH CLAYSTONE CARBONACEOUS BANDS
	1.28	1.61	0.33	03570		COAL	HIGHLY CONTORTED
	1.61	3.57	1.96	03570		COAL	C-2 WITH CARBONACEOUS CLAYSTONE INTERBEDS
	3.57	3.68	0.11	03571		CLAYSTONE	CARB WITH COAL BANDS
	3.68	3.77	0.09	03571		COAL	C-2
	3.77	3.89	0.12	03571		COAL	
	3.89	4.03	0.14	03571		COAL	C-2 IRON STAINING

* DENOTES MEASURED BCA

84/03/16

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: KN DATA SOURCE: TRC83091

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	4.03	4.13	0.10	03571		COAL	C-1
	4.13	4.92	0.79			CLAYSTONE	CARB FLOOR

GULF CANADA RESOURCES INC. - COAL DIVISION
 22/NOV/84 PROJECT DATA SOURCE SUMMARY PAGE 1

DATA SOURCE	LOCATION		ELEVATION	LENGTH	ANGLE	AZIMUTH	LOG TYPE
	NORTHING	EASTING					
KPNNRTRC84003	6340000.0	494800.0	1515.2	2.0	20.0	204.0	
KPNNRTRC84005	6340465.0	492455.0	1100.0	4.2	0.0	45.0	
KPNNRTRC84006	6338775.0	504600.0	1775.0	2.0	43.0	155.0	
KPNNRTRC84007	6339000.0	504600.0	1645.0	2.0	65.0	294.0	
KPNNRTRC84010	6334650.0	497329.0	1360.0	2.0	32.0	34.0	
KPNNRTRC84011	6342075.0	493900.0	1185.0	4.5	57.0	180.0	
KPNNRTRC84012	6341693.0	494080.0	1190.0	2.0	30.0	145.0	
KPNNRTRC84014	6342845.0	491785.0	1420.0	4.0	45.0	30.0	
KPNNRTRC84015	6342175.0	490450.0	1341.0	2.5	28.0	115.0	
KPNNRTRC84018	6337600.0	503600.0	1950.0	2.0	35.0	180.0	
KPNNRTRC84031	6341765.0	493150.0	1200.0	5.3	8.0	150.0	
KPNNRTRC84032	6341750.0	493160.0	1200.0	6.0	26.0	11.0	
KPNNRTRC84004	6345800.0	495750.0	1859.2	7.0	5.0	306.0	



10/DEC/84

GULF CANADA RESOURCES INC. - COAL DIVISION
 SIMPLE SAMPLE SUMMARY
 TRUE THICKNESS
 KLAPPAN PROJECT

PAGE 1

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	ROCK	MISSING COAL	ROCK	TOTAL COAL-ROCK
TRC84003		1552	0.50	2.00	100.00	1.500				1.50- 0.00
TRC84004		1803	1.62	3.01	100.00	0.740	0.650			0.74- 0.65
		1804	0.05	1.62	100.00	0.120	1.450			0.12- 1.45
TRC84006		6381	2.80	4.26	100.00	1.310	0.150			1.31- 0.15
TRC84007		6382	0.20	1.10	100.00	0.900				0.90- 0.00
TRC84010		4901	0.50	1.55	100.00	1.050				1.05- 0.00
TRC84011		4902	0.58	1.03	100.00	0.450				0.45- 0.00
		4903	1.03	1.22	100.00		0.190			0.00- 0.19
		4904	1.22	4.32	100.00	2.910	0.190			2.91- 0.19
TRC84012		4905	0.50	1.50	100.00	1.000				1.00- 0.00
TRC84014		4906	0.00	2.16	100.00	1.950	0.210			1.95- 0.21
TRC84015		4907	1.00	2.70	100.00	1.550	0.150			1.55- 0.15
TRC84018		4908	0.40	1.8	100.00	1.100	0.80			1.10- 0.8
TRC84032		6302	0.10	1.32	100.00	1.220				1.22- 0.00
		6303	1.32	1.92	100.00	0.330	0.270			0.33- 0.27

} 3.36 - 0.38
 { samples taken in 1983



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNNRTRC84003

DATE - 01/07/85

- HISTORY -

START DATE - 07/18/84
END DATE - 07/18/84

CONTRACTOR -
GEOLOGIST - G.R. DIX

OPERATOR - GCRI
SURVEYOR -

REMARKS - COAL/COAL+ROCK 1.50/1.50

- LOCATION -

PROVINCE - BC
ELEVATION - 1515.15

ZONE - 9
NORTHING - 6340000.00
EASTING - 494800.00

LICENCE/LEASE NUMBER - 7518

LATITUDE - 571218
LONGITUDE - 1290510

- ORIENTATION -

LENGTH - 2.00

INCLINATION - 20.0
AZIMUTH - 204.0

SIZE WIDTH - 0.2
SIZE HEIGHT - 0.8

ROOF STRIKE - 244
ROOF DIP - 55
ROOF DIR - S

FLOOR STRIKE - 244
FLOOR DIP - 55
FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE

=====

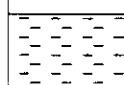
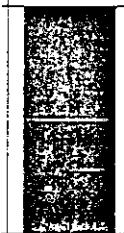
GULF CANADA RESOURCES INC.

SEAM DETAIL

COAL DIVISION
MOUNT KLAPPAN PROJECT

TRUE THICKNESS

DATA SOURCE: KPN NR TRC84003 SEAM : INTERVAL(M) : 0.50 - 2.00 ELEVATION(M) : 1515.1
 GEOLOGIST : G.R. DIX SCALE: 1: 47 DATE : DEC 03/84 DRAWING NO. :

SEAM COMP. 1 2 3 4 5 6	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES		% REC.	SAMPLE ID		COAL/ROCK TOTAL		COAL QUALITY A.D.B.							
			ROCK	COAL		SIMP	COMP	COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CALY AL MJ/KG	R ₀	
	0.50	↑  ↑															
	2.00	↓  ↓		1.50	100.0	1552	1552	1.50 / 0.00 1.50		7.92	9.04	15.58	87.46	0.45	26.40	—	

PLOT 1 20.14.07 MON 3 DEC, 1984 JOB-TSTCEGO GULF CANADA DISSPLA 9.0

84/12/05

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: NR DATA SOURCE: TRC84003

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.00	0.50	0.50			MUDSTONE	WEL.THNB
	0.50	2.00	1.50	01552		COAL	C-5.BLK THINLY BEDDED C-5 COAL WITH LAMINATIONS OF C-3; INTERBEDDED WITH CARBONACEOUS SHALE
	2.00	2.30	0.30			SILTSTONE	WEL.GY.MB

* DENOTES MEASURED BCA
NEWPAGE



GCRI COAL DIVISION HEAD	PROJ	KPN	BLK	NR	DS	TRC84003	
=====	=====	=====	=====	=====	=====	=====	
SAMPLE ID	01552	DATA TYPE (REAL,BORO,AVER,CALC)					REAL
SPLIT SAMPLE ID	HD1	DATE ANALYSED 16/10/84					
		ANALYSIS BASIS TYPE (AD,DB,AR,EM)					AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO)							ASTM
TOP SIZE (MM)		----					
SURFACE MOISTURE %		----			TOTAL SULPHUR %		0.45
TOTAL MOISTURE %		21.43			PHOSPHOROUS %		----
EQUILIBRIUM MOISTURE %		----			CHLORINE (PPM)		----
					SPECIFIC GRAVITY		----
RESIDUAL MOISTURE %		7.92			FSI		----
ASH %		9.04			HGI		----
VOLATILE MATTER %		15.58			CO2 %		----
FIXED CARBON %		67.46					
GROSS CALORIFIC VALUE (MJ/KG)							26.40
NET CALORIFIC VALUE (MJ/KG)							----

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: N2 DATA SOURCE: TRC84004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SFAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.05	0.05			MUDSTONE	BN UNCONSOLIDATED; LIMONITE WEATHERING; 50 FT; ROOF BEARING UNOBTAINABLE
	0.05	0.10	0.05	01804		COAL	C-5.BLK
	0.10	0.20	0.10	01804		MUDSTONE	CARB.BLK
	0.20	0.21	0.01	01804		MUDSTONE	CARB.BLK HEMATITE STAINED
	0.21	0.24	0.03	01804		MUDSTONE	CARB.M.GY
	0.24	0.28	0.04	01804		MUDSTONE	LT.GY
	0.28	0.41	0.13	01804		MUDSTONE	CARB.BLK HEMATITE STAINED
	0.41	0.57	0.16	01804		MUDSTONE	CARB.LT.GY
	0.57	0.61	0.04	01804		MUDSTONE	CARB.LT.GY

* DENOTES MEASURED BCA

8/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: NZ DATA SOURCE: TRC84004

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.61	0.63	0.02	01804		COAL	C-5
	0.63	0.74	0.11	01804		MUDSTONE	CARB HEMATITE STAINED; MINOR COALY STRINGERS
	0.74	1.03	0.29	01804		MUDSTONE	CARB. LT. GY SOFT; AGGLUTINATED; WEATHERED
	1.03	1.33	0.30	01804		MUDSTONE	M. GY AGGLUTINATED; MINOR CARBONACEOUS MUDSTONE BANDS
	1.33	1.38	0.05	01804		COAL	C-5. BLK
	1.38	1.62	0.24	01804		MUDSTONE	M. GY AGGLUTINATING; SLIGHTLY CARBONACEOUS
	1.62	1.64	0.02	01803		COAL	C-5
	1.64	1.70	0.06	01803		COAL	C-4
	1.70	1.79	0.09	01803		MUDSTONE	CARB. M. GY SOFT

* DENOTES MEASURED BCA



84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 3

PROJECT: KPN BLOCK: NR DATA SOURCE: TRCR4004

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	1.79	1.81	0.02	01803		COAL	C-4
	1.81	1.83	0.02	01803		MUDSTONE	CARB
	1.83	1.92	0.09	01803		COAL	C-5
	1.92	2.00	0.08	01803		MUDSTONE	CARB. M. GY
	2.00	2.11	0.11	01803		COAL	C-5
	2.11	2.15	0.04	01803		COAL	C-4. M. GY
	2.15	2.32	0.17	01803		MUDSTONE	CARB. M. GY MINOR COALY PARTINGS
	2.32	2.36	0.04	01803		MUDSTONE	M. GY UNCONSOLIDATED
	2.36	2.42	0.06	01803		MUDSTONE	CARB. M. GY
	2.42	2.58	0.16	01803		COAL	C-5. DK. GY WEATHERED

* DENOTES MEASURED BCA

R4/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 4

PROJECT: KPN BLOCK: NR DATA SOURCE: TRCR4004

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	2.58	2.64	0.06	01803		MUDSTONE	DK.GY SOFT; SLIGHTLY CARBONACEOUS; AGGLUTINATING
	2.64	2.75	0.11	01803		COAL	C-5.M.GY SOFT
	2.75	2.79	0.04	01803		COAL	C-4
	2.79	2.86	0.07	01803		MUDSTONE	CARB.M.GY
	2.86	2.89	0.03	01803		COAL	C-3.M.GY
	2.89	2.92	0.03	01803		COAL	C-5.BLK HEMATITE STAINED
	2.92	2.96	0.04	01803		MUDSTONE	CARB.M.GY MINOR SHEARING
	2.96	2.98	0.02	01803		COAL	C-5.M.GY HEMATITE STAINED
	2.98	3.00	0.02	01803		MUDSTONE	CARB.M.GY

* DENOTES MEASURED BCA

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 5

PROJECT: KFN BLOCK: NR DATA SOURCE: TRCR4004

BCA	DEPTH FROM	DEPTH INTRVAL TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	3.00	3.01	0.01	01803		COAL	C-5 DK.GY HEMATITE STAINED
	3.01	3.05	0.04			MUDSTONE	CARB.M.GY
	3.05	3.09	0.04			MUDSTONE	M.GY HEMATITE STAINED
	3.09	3.11	0.02			MUDSTONE	WEATHERED; SOFT; WEATHERS TO A LIGHT GREEN GREY
	3.11	3.61	0.50			SANDSTONE	MG.WCL.LT.GY POLYMETIC; SUBANGULAR; 40% HEMATITE AND LIMONITE STAINED; WEATHERS GREY TO LIGHT BROWN

* DENOTES MEASURED BCA
NEWPAGE



GCRI COAL DIVISION HEAD PROJ KPN BLK NR DS TRC84004

=====

SAMPLE ID	01803	DATA TYPE (REAL,BORO,AVER,CALC)	REAL
SPLIT SAMPLE ID	HD1	DATE ANALYSED 16/10/84	
		ANALYSIS BASIS TYPE (AD,DB,AR,EM)	AD

NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

TOP SIZE (MM)	-----		
SURFACE MOISTURE %	-----	TOTAL SULPHUR %	0.2
TOTAL MOISTURE %	19.72	PHOSPHOROUS %	-----
EQUILIBRIUM MOISTURE %	-----	CHLORINE (PPM)	-----
		SPECIFIC GRAVITY	-----
RESIDUAL MOISTURE %	11.17	FSI	-----
ASH %	34.62	HGI	-----
VOLATILE MATTER %	19.96	CO2 %	-----
FIXED CARBON %	34.25		
GROSS CALORIFIC VALUE (MJ/KG)	13.64		
NET CALORIFIC VALUE (MJ/KG)	-----		

GCRI COAL DIVISION HEAD	PROJ	KPN	BLK	NR	DS	TRC24004
=====	=====	=====	=====	=====	=====	=====
SAMPLE ID	01204	DATA TYPE (REAL,BORO,AVER,CALC)				REAL
SPLIT SAMPLE ID	HD1	DATE ANALYSED 25/09/84				
		ANALYSIS BASIS TYPE (AD,DB,AR,EM)				AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO)						ASTM
TOP SIZE (MM)	-----					
SURFACE MOISTURE %	-----			TOTAL SULPHUR %		0.2
TOTAL MOISTURE %	23.13			PHOSPHOROUS %	-----	
EQUILIBRIUM MOISTURE %	-----			CHLORINE (PPM)	-----	
				SPECIFIC GRAVITY	-----	
RESIDUAL MOISTURE %	5.12			FSI	-----	
ASH %	47.15			HGI	-----	
VOLATILE MATTER %	17.68			CO2 %	-----	
FIXED CARBON %	30.05					
GROSS CALDRIFIC VALUE (MJ/KG)	10.95					
NET CALORIFIC VALUE (MJ/KG)	-----					

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNNRTRC84005

DATE - 01/07/85

- HISTORY -

START DATE - 07/24/84
END DATE - 07/24/84

CONTRACTOR -
GEOLOGIST - SWANBERGSON

OPERATOR - GCRI
SURVEYOR -

REMARKS - FORMERLY TRC83073; COAL/COAL+ROCK 2.58/2.95

- LOCATION -

PROVINCE - BC
ELEVATION - 1100.00

ZONE - 9
NORTHING - 6340465.00
EASTING - 492455.00

LICENCE/LEASE NUMBER - 7519

LATITUDE - 571233
LONGITUDE - 1290730

- ORIENTATION -

LENGTH - 4.20
SIZE WIDTH - 0.3
SIZE HEIGHT - 1.0

INCLINATION - 0.0
AZIMUTH - 45.0

ROOF STRIKE - 300
ROOF DIP - 70
ROOF DIR - S

FLOOR STRIKE - 285
FLOOR DIP - 59
FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE

=====

GULF CANADA RESOURCES INC.

SEAM DETAIL

COAL DIVISION
MOUNT KLAPPAN PROJECT

TRUE THICKNESS

DATA SOURCE: KPN NR TRCS4005 SEAM : INTERVAL(M) : 0.00 - 0.00 ELEVATION(M) : 1100.0
 GEOLOGIST : SWANBERGSON SCALE: 1:47 DATE : DEC 04/84 DRAWING NO. :

SEAM CCMP.	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES		% REC.	SAMPLE ID		COAL/ROCK TOTAL		COAL QUALITY A.D.B.								
			ROCK	COAL		SIMP	COMP	COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL VAL MJ/KG	RO		
	1 2 3 4 5 6																	
	0.90	↑																
	1.44																	
	1.66																	
	3.85							2.38/0.67 2.95										
		1 7																

NOTE: relogged version of KPNRTRC83073

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KDN BLOCK: NP DATA SOURCE: TROB4005

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.00	0.90	0.90			SHALE	BLK. THNB FISSILE BLACK SHALE; RESISTANT
	0.90	1.04	0.14			COAL	C-2 WELL CLEATED; BRIGHT BANDED; RECESSIVE
	1.04	1.44	0.40			COAL	C-5.BLK WEATHERED; SOFT
	1.44	1.66	0.22			SHALE	BLK CARBONACEOUS; RECESSIVE
	1.66	1.84	0.18			COAL	C-3.BLK RESISTANT
	1.84	1.88	0.04			MUDSTONE	BLK CARBONACEOUS; RESISTANT
	1.88	2.03	0.15			COAL	C-3 VERY RECESSIVE
	2.03	2.23	0.20			COAL	BLK WEATHERED; SOFT; RECESSIVE
	2.23	2.60	0.37			COAL	C-4 VERY RESISTANT
	2.60	2.66	0.06			COAL	C-3 VERY RESISTANT

* DENOTES MEASURED BCA

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: NR DATA SOURCE: TRC84005

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	2.66	2.94	0.28			COAL	C-2 WELL CLEATED; VERY RESISTANT
	2.94	3.05	0.11			SHALE	CARBONACEOUS; WEATHERS PALE ORANGE
	3.05	3.85	0.80			COAL	C-3. BLK VERY RESISTANT
	3.85	4.00	0.15			SHALE	CARBONACEOUS; SOFT; RECESSIVE
	4.00	6.50	2.50			SHALE	CONCRETIONARY; WEATHERS RED BROWN

* DENOTES MEASURED BCA
NEWPAGE

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNNRTRC84006

DATE - 01/07/85

- HISTORY -

START DATE - 08/14/84
 END DATE - 08/14/84

CONTRACTOR -
 GEOLOGIST - G. DIX

OPERATOR - GCRI
 SURVEYOR -

REMARKS - COAL/COAL+ROCK 1.31/1.46

- LOCATION -

PROVINCE - BC
 ELEVATION - 1775.00

ZONE - 9
 NORTHING - 6338775.00
 EASTING - 504600.00

LICENCE/LEASE NUMBER - 7530

LATITUDE - 571139
 LONGITUDE - 1285526

- ORIENTATION -

LENGTH - 2.00
 SIZE WIDTH - 0.5
 SIZE HEIGHT - 0.2

INCLINATION - 43.0
 AZIMUTH - 155.0

ROOF STRIKE - 254
 ROOF DIP - 55
 ROOF DIR - S

FLOOR STRIKE - 254
 FLOOR DIP - 55
 FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: ^{NA}SK DATA SOURCE: TRC84006

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.00	2.30	2.30			MUDSTONE	GY UNCONSOLIDATED
	2.30	2.80	0.50			SHALE	CARB. BLK UNCONSOLIDATED
	2.80	2.92	0.12	06381		COAL	BLK SOFT; WEATHERED
	2.92	3.00	0.08	06381		SHALE	CARB. BLK
	3.00	3.03	0.03	06381		COAL	C-4. BLK
	3.03	3.05	0.02	06381		SHALE	CARB. BLK
	3.05	3.08	0.03	06381		COAL	C-4. BLK
	3.08	3.13	0.05	06381		SHALE	CARB. BLK
	3.13	3.34	0.21	06381		COAL	C-4. BLK RARE THIN LAMINAE OF CARBONACEOUS SHALE
	3.34	4.26	0.92	06381		COAL	C-3. BLK THIN LAMINAE OF CARBONACEOUS SHALE

* DENOTES MEASURED BCA

84/11/01

GULF CANADA RESOURCES INC. COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: ^{SK}SK DATA SOURCE: 1RC84006

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTERVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	4.26	4.46	0.20			MUDSTONE	GY

* DENOTES MEASURED BCA
NEWPAGE

GCRI COAL DIVISION HEAD PROJ KFN BLK NR DS TRC84006
 =====
 SAMPLE ID 06381 DATA TYPE (REAL,BORO,AVER,CALC) REAL
 SPLIT SAMPLE ID HD1 DATE ANALYSED 25/09/84
 ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD
 NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

TOP SIZE (MM)	----*--		
SURFACE MOISTURE %	---*---	TOTAL SULPHUR %	0.43
TOTAL MOISTURE %	20.79	PHOSPHOROUS %	---*---
EQUILIBRIUM MOISTURE %	---*---	CHLORINE (PPM)	-----
		SPECIFIC GRAVITY	---*---
RESIDUAL MOISTURE %	5.66	FSI	---*---
ASH %	12.51	HGI	---*---
VOLATILE MATTER %	16.99	CO2 %	---*---
FIXED CARBON %	64.84		
GROSS CALORIFIC VALUE (MJ/KG)	25.35		
NET CALORIFIC VALUE (MJ/KG)	---*---		

===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNRTRC84007

DATE - 01/07/85

- HISTORY -

START DATE - 08/14/84
END DATE - 08/14/84

CONTRACTOR - OPERATOR - GCRI
GEOLOGIST - G. DIX SURVEYOR -

REMARKS - ROOF NOT OBTAINED; COAL REPRESENTS MINIMAL THICKNE
SS; ABUNDANT PETRIFIED TREES IN COAL; COAL/COAL+RO
CK 0.90/0.90

- LOCATION -

PROVINCE - BC
ELEVATION - 1645.00

ZONE - 9
NORTHING - 6339000.00
EASTING - 504600.00

LICENCE/LEASE NUMBER - 7530

LATITUDE - 571146
LONGITUDE - 1285526

- ORIENTATION -

LENGTH - 2.00

INCLINATION - 65.0
AZIMUTH - 294.0

SIZE WIDTH - 0.5
SIZE HEIGHT - 0.5

ROOF STRIKE - 200
ROOF DIP - 70
ROOF DIR - S

FLOOR STRIKE - 200
FLOOR DIP - 70
FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE

=====

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: 2K^{NR} DATA SOURCE: TRCR4007

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.00	0.20	0.20			MUDSTONE	BN TREE DEBRIS; FLOOR
	0.20	1.10	0.90	00382		COAL	C-2
	1.10	1.30	0.20			MUDSTONE	BN MAY NOT BE TRUE ROOF; CLIFF MAKES FURTHER SAMPLING PRECARIOUS

* DENOTES MEASURED BCA
NEWPAGE



GCR1 COAL DIVISION	HEAD	PROJ	KPN	BLK	NR	DS	TRC84007	
=====		=====		=====		=====		
SAMPLE ID	06382	DATA TYPE (REAL,BORO,AVER,CALC)						REAL
SPLIT SAMPLE ID	HD1	DATE ANALYSED 25/09/84						
		ANALYSIS BASIS TYPE (AD,DB,AR,EM)						AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO)		ASTM						
TOP SIZE (MM)		---						
SURFACE MOISTURE %		---			TOTAL SULPHUR %			0.50
TOTAL MOISTURE %		9.16			PHOSPHOROUS %			---
EQUILIBRIUM MOISTURE %		---			CHLORINE (PPM)			---
					SPECIFIC GRAVITY			---
RESIDUAL MOISTURE %		2.61			FSI			---
ASH %		16.43			HGI			---
VOLATILE MATTER %		12.64			CO2 %			---
FIXED CARBON %		68.32						
GROSS CALORIFIC VALUE (MJ/KG)		26.31						
NET CALORIFIC VALUE (MJ/KG)		---						

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNRTRC84010

DATE - 01/07/85

- HISTORY -

START DATE - 07/10/84
END DATE - 07/10/84

CONTRACTOR - OPERATOR - GCR1
GEOLOGIST - SWANBERGSON SURVEYOR -

REMARKS - SEAM BELIEVED TO BE IN THE LOWER MALLOCH OR THE UP
PER KLAPPAN FORMATION; COAL/COAL+ROCK 1.05/1.05

- LOCATION -

PROVINCE - BC ZONE - 9
ELEVATION - 1360.00 NORTHING - 6334650.00
EASTING - 497329.00
LICENCE/LEASE NUMBER - 0 LATITUDE - 570925
LONGITUDE - 1290239

- ORIENTATION -

LENGTH - 2.00 INCLINATION - 32.0
AZIMUTH - 34.0
SIZE WIDTH - 0.3
SIZE HEIGHT - 0.3
ROOF STRIKE - 242 FLOOR STRIKE - 248
ROOF DIP - 25 FLOOR DIP - 27
ROOF DIR - E FLOOR DIR - E

*** NOTE *** 0 INDICATES NO VALUE

84/12/05

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: NR DATA SOURCE: TRC84010

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.00	0.50	0.50			SILTSTONE	M.GY.LAM INTERBEDDED; WEATHERED ORANGE; PLANT DE BRIS IN BASAL 0.2 m; RARE COALY LAMINAT IONS; BED IS 2.5 m THICK IN TOTAL; NODU LAR
	0.50	1.00	0.50	04901		COAL	C-2.BLK WELL CLEATED; HARD; BRIGHT
	1.00	1.55	0.55	04901		COAL	C-4.BLK POORLY CLEATED; RELATIVELY SOFT
	1.55	1.65	0.10			MUDSTONE	M.GY SOFT; CARBONACEOUS; IRON-STAINED
	1.65	2.15	0.50			SHALE	DK.GY.LAM FLOOR IS AT LEAST 10m THICK IN TOTAL; I NTERBEDDED WITH ORANGE WEATHERING SILTS TONE

* DENOTES MEASURED BCA
NEWPAGE



GIANT COAL DIVISION	HEAD	PROJ	KPN	BLK	NR	DS	TRC84010	
=====								
SAMPLE ID	04901	DATA TYPE (REAL,BORO,AVER,CALC)					REAL	
SPLIT SAMPLE (D	HD1	DATE ANALYSED 25/09/84						
ANALYSIS BASIS TYPE (AD,DB,AR,EM)							AD	
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO)							ASTM	
TOP SIZE (MM)		-----						
SURFACE MOISTURE %		-----			TOTAL SULPHUR %		0.56	
TOTAL MOISTURE %		11.10			PHOSPHOROUS %		-----	
EQUILIBRIUM MOISTURE %		-----			CHLORINE (PPM)		-----	
					SPECIFIC GRAVITY		-----	
RESIDUAL MOISTURE %		1.98			FSI		-----	
ASH %		2.94			HGI		-----	
VOLATILE MATTER %		9.31			CO2 %		-----	
FIXED CARBON %		85.77						
GROSS CALORIFIC VALUE (MJ/KG)		32.92						
NET CALORIFIC VALUE (MJ/KG)		-----						

84/12/05

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: NR DATA SOURCE: TRC84011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.50	0.50			MUDSTONE	DK.GY SOFT; PENCIL CLEAVAGE; ABRUPT CONTACT W ITH COAL; NO FOSSILS
	0.50	0.58	0.08			MUDSTONE	CARB.BLK COAL STRINGERS
	0.58	1.03	0.45	04902		COAL	C-3.BLK WELL CLEATED; HARD
	1.03	1.12	0.09	04903		MUDSTONE	DK.GY HARD; IRREGULAR FRACTURE; YELLOW WEATHE RED
	1.12	1.22	0.10	04903		MUDSTONE	LT.GY SOFT; SLIGHTLY CARBONACEOUS NEAR BASE
	1.22	1.30	0.08	04904		COAL	C-2.BLK IRON-STAINED; VERY HARD; NO CLEATING
	1.30	2.17	0.87	04904		COAL	C-2.BLK HARD; WELL CLEATED
	2.17	2.22	0.05	04904		MUDSTONE	DK.GY SOFT
	2.22	3.28	1.06	04904		COAL	C-2.BLK HARD; WELL CLEATED

+ DENOTES MEASURED BCA



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GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: NR DATA SOURCE: TRC84011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	3.28	3.35	0.07	04904		MUDSTONE	CARB. DK. GY SOFT; VERY CARBONACEOUS
	3.35	4.10	0.75	04904		COAL	C-3. BLK WELL CLEATED
	4.10	4.17	0.07	04904		MUDSTONE	M. GY SOFT
	4.17	4.32	0.15	04904		COAL	C-3. BLK WELL CLEATED
	4.32	4.62	0.30			MUDSTONE	CARB DIRTY COALY STRINGERS; HIGHLY FRACTURED

* DENOTES MEASURED BCA
NEWPAGE



GORI COAL DIVISION	HEAD	PROJ	KPN	BLK	NR	DS	TRC84011	
=====		=====		=====		=====		
SAMPLE ID	04902	DATA TYPE (REAL,BORO,AVER,CALC)						REAL
SPLIT SAMPLE ID	HD1	DATE ANALYSED 25/09/84						
		ANALYSIS BASIS TYPE (AD,DB,AR,EM)						AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO)		ASTM						
TOP SIZE (MM)		----						
SURFACE MOISTURE %		---			TOTAL SULPHUR %			0.58
TOTAL MOISTURE %		7.20			PHOSPHOROUS %			-----
EQUILIBRIUM MOISTURE %		---			CHLORINE (PPM)			-----
RESIDUAL MOISTURE %		2.00			SPECIFIC GRAVITY			-----
ASH %		32.37			FSI			-----
VOLATILE MATTER %		5.42			HGI			-----
FIXED CARBON %		60.21			CO2 %			-----
GROSS CALORIFIC VALUE (MJ/KG)		21.35						
NET CALORIFIC VALUE (MJ/KG)		---						

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNRTRC84012

DATE - 01/07/85

- HISTORY -

START DATE - 07/16/84

END DATE - 07/16/84

CONTRACTOR -

OPERATOR - GCRI

GEOLOGIST - SWANBERGSON

SURVEYOR -

REMARKS - PART OF MEASURED SECTION ES-06-01; FLOOR STRIKE UN
OBTAINABLE; COAL/COAL+ROCK 1.00/1.00

- LOCATION -

PROVINCE - BC

ZONE - 9

ELEVATION - 1190.00

NORTHING - 6341693.00

EASTING - 494080.00

LICENCE/LEASE NUMBER - 7520

LATITUDE - 571313

LONGITUDE - 1290553

- ORIENTATION -

LENGTH - 2.00

INCLINATION - 30.0

AZIMUTH - 145.0

SIZE WIDTH - 0.3

SIZE HEIGHT - 0.3

ROOF STRIKE - 273

FLOOR STRIKE - 0

ROOF DIP - 70

FLOOR DIP - 0

ROOF DIR - S

FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

=====

84/12/05

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: NR DATA SOURCE: TRC84012

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.00	0.50	0.50			MUDSTONE	DK.GY MINOR SILTY INTERBEDS; FRACTURED ACROSS BEDDING; LARGE GRASS BLADES AND FERNS PRESENT
	0.50	1.50	1.00	04905		COAL	C-3.BIK WEATHERED; FRIABLE; FLOOR REGION CUT BY TRIBUTARY SO NO FLOOR OBTAINABLE

* DENOTES MEASURED BCA
NEWPAGE



GCRI COAL DIVISION HEAD	FRQJ KFN	BLK NR	DS	TRC84012
=====	=====	=====	=====	=====
SAMPLE ID	04905	DATA TYPE (REAL,BORO,AVER,CALC)		REAL
SPLIT SAMPLE ID	HD1	DATE ANALYSED 25/09/84		
		ANALYSIS BASIS TYPE (AD,DB,AR,EM)		AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO)				ASTM
TOP SIZE (MM)	-----			
SURFACE MOISTURE %	-----		TOTAL SULPHUR %	0.35
TOTAL MOISTURE %	9.74		PHOSPHOROUS %	-----
EQUILIBRIUM MOISTURE %	-----		CHLORINE (PPM)	-----
			SPECIFIC GRAVITY	-----
RESIDUAL MOISTURE %	1.62		FSI	-----
ASH %	25.21		HGI	-----
VOLATILE MATTER %	6.20		CO2 %	-----
FIXED CARBON %	66.97			
GROSS CALORIFIC VALUE (MJ/KG)	24.75			
NET CALORIFIC VALUE (MJ/KG)	-----			

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNNRTRC84014

DATE - 01/07/85

- HISTORY -

START DATE - 08/10/84
END DATE - 08/10/84

CONTRACTOR - OPERATOR - GCR
GEOLOGIST - SWANBERGSON SURVEYOR -

REMARKS - OFF PROPERTY; WEST OF NASS AND NORTH OF THE KLAPPA
N RIVER; NEAR FOLD AXIS; COAL CONTORTED AT TOP; RO
OF ATTITUDE TAKEN 2 METRES ABOVE TRENCH; FLOOR ATT
ITUDE NOT KNOWN; COAL/COAL+ROCK 1.95/2.16

- LOCATION -

PROVINCE - BC ZONE - 9
ELEVATION - 1420.00 NORTHING - 6342845.00
LICENCE/LEASE NUMBER - 0 EASTING - 491785.00
LATITUDE - 571350
LONGITUDE - 1290810

- ORIENTATION -

LENGTH - 4.00 INCLINATION - 45.0
AZIMUTH - 30.0
SIZE WIDTH - 0.5
SIZE HEIGHT - 1.0
ROOF STRIKE - 305 FLOOR STRIKE - 0
ROOF DIP - 62 FLOOR DIP - 0
ROOF DIR - S FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: NR DATA SOURCE: TRC84014

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.00	0.25	0.25	04906		COAL	C-3 FOLDED
	0.25	0.40	0.15	04906		MUDSTONE	M.GY UNCONSOLIDATED
	0.40	1.40	1.00	04906		COAL	C-3 WEATHERED
	1.40	1.46	0.06	04906		SHALE	CARBONACEOUS
	1.46	2.16	0.70	04906		COAL	C-2 WELL CLEAVED
	2.16	2.24	0.08			MUDSTONE	M.GY SEMI-CONSOLIDATED; BROWN STAIN
	2.24	2.34	0.10			SILTSTONE	M.GY MINOR COALY STRINGERS; WATER TABLE AT FLOOR

* DENOTES MEASURED BCA
NEWPAGE

GORI COAL DIVISION	HEAD	PROJ	KFN	BLK	NR	DS	TRC84014	
=====		=====		=====		=====		
SAMPLE ID	04906	DATA TYPE (REAL,BORO,AVER,CALC)						REAL
SPLIT SAMPLE ID	HD1	DATE ANALYSED 25/09/84						
		ANALYSIS BASIS TYPE (AD,DB,AR,EM)						AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO)		ASTM						
TOP SIZE (MM)		---	---					
SURFACE MOISTURE %		---	---		TOTAL SULPHUR %			0.36
TOTAL MOISTURE %		19.98			PHOSPHOROUS %			---
EQUILIBRIUM MOISTURE %		---			CHLORINE (PPM)			---
RESIDUAL MOISTURE %		5.41			SPECIFIC GRAVITY			---
ASH %		21.31			FSI			---
VOLATILE MATTER %		17.14			HGI			---
FIXED CARBON %		56.14			CO2 %			---
GROSS CALORIFIC VALUE (MJ/KG)		21.36						
NET CALORIFIC VALUE (MJ/KG)		---						

===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNNRTRC84015

DATE - 01/07/85

- HISTORY -

START DATE - 08/10/84
END DATE - 08/10/84

CONTRACTOR -
GEOLOGIST - SWANBERGSON

OPERATOR - GCR1
SURVEYOR -

REMARKS - OFF PROPERTY; CAPPING A COARSENING UPWARD SEQUENCE
; COAL/COAL+ROCK 1.55/1.70

- LOCATION -

PROVINCE - BC
ELEVATION - 1341.00
LICENCE/LEASE NUMBER -

0

ZONE - 9
NORTHING - 6342175.00
EASTING - 490450.00

LATITUDE - 571328
LONGITUDE - 1290929

- ORIENTATION -

LENGTH - 2.50
SIZE WIDTH - 0.5
SIZE HEIGHT - 0.5

INCLINATION - 28.0
AZIMUTH - 115.0

ROOF STRIKE - 215
ROOF DIP - 50
ROOF DIR - E

FLOOR STRIKE - 230
FLOOR DIP - 20
FLOOR DIR - E

*** NOTE *** 0 INDICATES NO VALUE

=====

84/12/05

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: NR DATA SOURCE: TRC84015

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.00	1.00	1.00			MUDSTONE	SLTY. M. GY. LAM
	1.00	1.40	0.40	04907		COAL	C-4
	1.40	1.90	0.50	04907		COAL	C-3 WELL CLEATED
	1.90	2.05	0.15	04907		MUDSTONE	DK. GY CARBONACEOUS AT BASE; UNCONSOLIDATED
	2.05	2.70	0.65	04907		COAL	C-3 WELL CLEATED
	2.70	3.70	1.00			SILTSTONE	M. GY. THNB SANDY INTERBEDS

* DENOTES MEASURED BCA
NEWPAGE



GCRI COAL DIVISION	HEAD	PROJ	KFN	ELK	NR	DS	TRC84015	
=====		=====		=====		=====		
SAMPLE ID	04907	DATA TYPE (REAL,BORO,AVER,CALC)				REAL		
SPLIT SAMPLE ID	HD1	DATE ANALYSED 25/09/84						
		ANALYSIS BASIS TYPE (AD,DB,AR,EM)				AD		
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO)		ASTM						
TOP SIZE (MM)		----						
SURFACE MOISTURE %		----			TOTAL SULPHUR %			0.25
TOTAL MOISTURE %		19.35			PHOSPHOROUS %		----	
EQUILIBRIUM MOISTURE %		----			CHLORINE (PPM)		----	
					SPECIFIC GRAVITY		----	
RESIDUAL MOISTURE %		5.93			FSI		----	
ASH %		32.31			HGI		----	
VOLATILE MATTER %		18.23			CO2 %		----	
FIXED CARBON %		43.53						
GROSS CALORIFIC VALUE (MJ/KG)		16.76						
NET CALORIFIC VALUE (MJ/KG)		----						

===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNNRTRC84018

DATE - 01/07/85

- HISTORY -

START DATE - 08/12/84

END DATE - 08/12/84

CONTRACTOR -

GEOLOGIST - SWANBERGSON

OPERATOR - GCRI

SURVEYOR -

REMARKS - LOWER MIDDLE MALLOCH SEAM; ROOF NOT OBTAINED; COAL
/COAL+ROCK 1.10/1.78

- LOCATION -

PROVINCE - BC

ELEVATION - 1950.00

ZONE - 9

NORTHING - 6337600.00

EASTING - 503600.00

LICENCE/LEASE NUMBER - 7531

LATITUDE - 571101

LONGITUDE - 1285626

- ORIENTATION -

LENGTH - 2.00

INCLINATION - 35.0

AZIMUTH - 180.0

SIZE WIDTH - 0.2

SIZE HEIGHT - 0.5

ROOF STRIKE - 0

ROOF DIP - 0

ROOF DIR -

FLOOR STRIKE - 235

FLOOR DIP - 15

FLOOR DIR - S

*** NOTE *** 0 INDICATES NO VALUE

=====

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: NR DATA SOURCE: TRC84018

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.00	0.40	0.40			SILTSTONE	M. GY. LAM
	0.40	0.55	0.15	04908		COAL	BLK WEATHERED
	0.55	0.58	0.03	04908		MUDSTONE	DK. GY IRON STAINED
	0.58	0.68	0.10	04908		COAL	BLK
	0.68	0.73	0.05	04908		MUDSTONE	DK. GY IRON STAINED
	0.73	0.88	0.15	04908		COAL	BLK
	0.88	0.98	0.10	04908		MUDSTONE	DK. GY
	0.98	1.68	0.70	04908		COAL	BLK
	1.68	2.18	0.50			MUDSTONE	SLTY. LT. GY. MAS

* DENOTES MEASURED BCA
NEWPAGE

GCRI COAL DIVISION	HEAD	PROJ	KPN	BLK	NR	DS	TRC84018	
=====								
SAMPLE ID	04908	DATA TYPE (REAL,BORO,AVEN,CALC)					REAL	
SPLIT SAMPLE ID	HD1	DATE ANALYSED 25/09/84						
ANALYSIS BASIS TYPE (AD,DB,AR,EM)							AD	
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM								
TOP SIZE (MM)	-----							
SURFACE MOISTURE %	-----	TOTAL SULPHUR %					0.3	
TOTAL MOISTURE %	17.68	PHOSPHOROUS %					-----	
EQUILIBRIUM MOISTURE %	-----	CHLORINE (PPM)					-----	
RESIDUAL MOISTURE %	3.09	SPECIFIC GRAVITY					---	
ASH %	40.90	FSI					-----	
VOLATILE MATTER %	12.71	HGI					-----	
FIXED CARBON %	43.30	CO2 %					-----	
GROSS CALORIFIC VALUE (MJ/KG)	17.31							
NET CALORIFIC VALUE (MJ/KG)	-----							

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNNRTRC84031

DATE - 01/07/85

- HISTORY -

START DATE - 07/26/84
END DATE - 07/26/84

CONTRACTOR -
GEOLOGIST - MCKENZIE

OPERATOR - GCRI
SURVEYOR -

REMARKS - COAL IS LOCATED ON A STEEP SLOPE THEREFORE MAY BE
SLUMPED; FORMERLY TRC83071; FLOOR ATTITUDE NOT KNO
WN; SAMPLE 06301 TAKEN IN 1983; COAL/COAL+ROCK 0.9
5/1.09; 0.97/1.00

- LOCATION -

PROVINCE - BC
ELEVATION - 1200.00

ZONE - 9
NORTHING - 6341765.00
EASTING - 493150.00

LICENCE/LEASE NUMBER - 7521

LATITUDE - 571315
LONGITUDE - 1290648

- ORIENTATION -

LENGTH - 5.30
SIZE WIDTH - 0.4
SIZE HEIGHT - 0.7

INCLINATION - 8.0
AZIMUTH - 150.0

ROOF STRIKE - 265
ROOF DIP - 65
ROOF DIR - S

FLOOR STRIKE - 0
FLOOR DIP - 0
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

=====

GULF CANADA RESOURCES INC.

COAL DIVISION
MOUNT KLAPPAN PROJECT

SEAM DETAIL

TRUE THICKNESS

DATA SOURCE: KPN NR TRC84031 SEAM : INTERVAL(M) : 0.00 - 0.00 ELEVATION(M) : 1200.0
 GEOLOGIST : MCKENZIE SCALE: 1:47 DATE : DEC 10/84 DRAWING NO. :

SEAM COMP.	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES		% REC.	SAMPLE ID		COAL/ROCK TOTAL		COAL QUALITY A.D.B.								
			ROCK	COAL		SIMP	COMP	COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL VAL MJ/KG	RD		
	0.09	↑																
	1.18	045/c.m 1.09																
	2.11	097/c.03 1.00																
	3.11	↓																

NOTE relogged version of KPNRTRC83072

84/12/06

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: NR DATA SOURCE: TRCB4031

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.00	0.04	0.04			MUDSTONE	BLK CARBONACEOUS; HIGHLY WEATHERED
	0.04	0.09	0.05			MUDSTONE	DK.GY CARBONACEOUS
	0.09	0.10	0.01			COAL	C-3.BLK
	0.10	0.23	0.13			COAL	C-4.BLK SHEARED; WEATHERED
	0.23	0.36	0.13			COAL	C-3.BLK
	0.36	0.43	0.07			MUDSTONE	BLK CARBONACEOUS
	0.43	0.45	0.02			MUDSTONE	BLK SILTY; SHEARED; IRREGULAR FRACTURE
	0.45	0.58	0.13			COAL	C-2.BLK SHEARED
	0.58	0.63	0.05			MUDSTONE	BLK SILTY
	0.63	0.76	0.13			COAL	C-3.BLK WEATHERED; SOFT

* DENOTES MEASURED BCA



84/12/06

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: NR DATA SOURCE: TRC84031

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.76	1.03	0.27			COAL	C-2.BLK WELL CLEATED
	1.03	1.18	0.15			COAL	C-3.BLK WEATHERED; SOFT
	1.18	2.11	0.93			MUDSTONE	BLK CARBONACEOUS; VERY SHEARED; MINOR SILTY BANDS; INTERBEDDED WITH MINOR COAL
	2.11	2.68	0.57			COAL	C-4.BLK WEATHERED; SOFT
	2.68	2.71	0.03			MUDSTONE	BLK SILTY; SHEARED
	2.71	3.11	0.40			COAL	C-3.BLK SHEARED
	3.11	3.21	0.10			MUDSTONE	GY BOUDINAGED (EVIDENCE OF FLEXURAL SLIPPA GE)



GULF CANADA RESOURCES INC.

SEAM DETAIL

COAL DIVISION
MOUNT KLAPPAN PROJECT

TRUE THICKNESS

DATA SOURCE: KPN NR TRC84032 SEAM : INTERVAL(M) : 0.10 - 1.92 ELEVATION(M) : 1200.0
 GEOLOGIST : MCKENZIE SCALE: 1:47 DATE : DEC 05/84 DRAWING NO. :

SEAM CMP.	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES		% REC.	SAMPLE ID		COAL/ROCK TOTAL			COAL QUALITY A.D.B.						
			ROCK	COAL		SIMP	COMP	COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CALV AL: MJ/KG	RO	
23456																	
	0.10			1.22	100.0	8302	8302	1.22 / 100.0									
	1.32			0.53	100.0	8303	8303	0.53 / 100.0									
	1.92																

NOTE: relogged version of KPNRTRC83072
 Sample taken in 1983

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNNRTRC84032

DATE - 01/08/85

- HISTORY -

START DATE - 07/26/84
END DATE - 07/26/84

CONTRACTOR -
GEOLOGIST - MCKENZIE

OPERATOR - GCRI
SURVEYOR -

REMARKS - SAMPLE 6303 (1983 SAMPLE); MAY CONTAIN ALLUVIUM AS WELL AS COAL FLOAT; IT PROBABLY DOES NOT REPRESENT IN PLACE COAL; COAL LOCATED ON A STEEP SLOPE THE REFORME MAY BE SLUMPED; FORMERLY TRC83072; FLOOR AT TITUDE NOT KNOWN; COAL/COAL+ROCK 1.55/1.60

- LOCATION -

PROVINCE - BC
ELEVATION - 1200.00

ZONE - 9
NORTHING - 6341750.00
EASTING - 493160.00

LICENCE/LEASE NUMBER - 7521

LATITUDE - 571315
LONGITUDE - 1290648

- ORIENTATION -

LENGTH - 6.00
SIZE WIDTH - 0.5
SIZE HEIGHT - 0.5

INCLINATION - 26.0
AZIMUTH - 11.0

ROOF STRIKE - 290
ROOF DIP - 40
ROOF DIR - S

FLOOR STRIKE - 0
FLOOR DIP - 0
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

PROJECT: KPN BLOCK: NR DATA SOURCE: TRC84032

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.00	0.10	0.10			MUDSTONE	BLK CARBONACEOUS; WEATHERED; SHEARED
	0.10	0.14	0.04	06302		COAL	C-3.BLK SHEARED; WEATHERED
	0.14	0.19	0.05	06302		COAL	C-5.BLK
	0.19	0.29	0.10	06302		COAL	C-3.BLK SHEARED; OXIDIZED
	0.29	0.37	0.08	06302		COAL	C-4.BLK OXIDIZED; SHEARED
	0.37	0.41	0.04	06302		COAL	C-2.BLK OXIDIZED; WELL CLEATED
	0.41	0.44	0.03	06302		COAL	C-3.BLK OXIDIZED; SOFT
	0.44	0.54	0.10	06302		COAL	C-4.BLK
	0.54	0.87	0.33	06302		COAL	C-4.BLK SHEARED
	0.87	1.32	0.45	06302		COAL	C-4.BLK SHEARED

* DENOTES MEASURED BCA

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

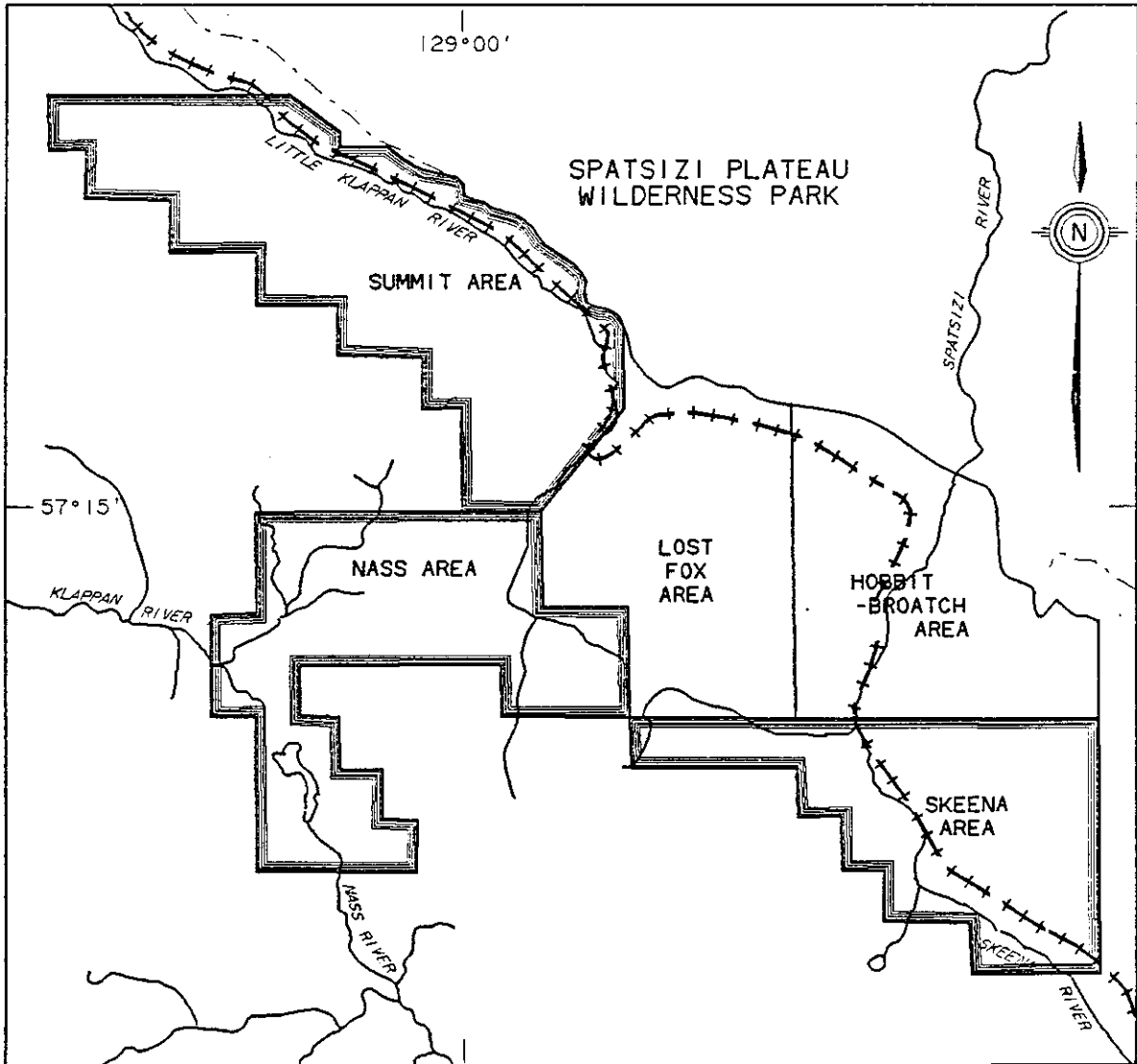
PAGE 2

PROJECT: KPN BLOCK: NR DATA SOURCE: TRCB4032

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	1.32	1.37	0.05	06303		MUDSTONE	BLK CARBONACEOUS
	1.37	1.70	0.33	06303		COAL	C-4.BLK WEATHERED; UNCONSOLIDATED
	1.70	1.92	0.22	06303		MUDSTONE	BLK UNCONSOLIDATED; SHEARED; CARBONACEOUS
	1.92	2.02	0.10			ALLUVIUM	UNCONSOLIDATED AND COAL FLOAT

**SKEENA AREA
TRENCH DATA**

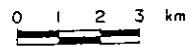
MOUNT KLAPPAN COAL PROPERTY
 SUMMIT - NASS - SKEENA
 1984 EXPLORATION AREAS



LEGEND

- ++++ PREPARED RAIL BED
- PROVINCIAL PARK BOUNDARY
- LICENCE AREA

SCALE



GULF CANADA RESOURCES INC.
 10/12/84



GULF CANADA RESOURCES INC. - COAL DIVISION
27/NOV/84 PROJECT DATA SOURCE SUMMARY PAGE 1

DATA SOURCE	LOCATION		ELEVATION	LENGTH	ANGLE	AZIMUTH	LOG TYPE
	NORTHING	EASTING					
KPNMSOTC81026	6337545.0	508530.0					
KPNMSOTC81027	6337335.0	508645.0					
KPNMSOTC81029	6337340.0	514445.0					
KPNMSOTC81030	6336800.0	514545.0					



GULF CANADA RESOURCES INC. - COAL DIVISION
27/NOV/84 PROJECT DATA SOURCE SUMMARY PAGE 1

DATA SOURCE	LOCATION		ELEVATION	LENGTH	ANGLE	AZIMUTH	LOG TYPE
	NORTHING	EASTING					
KPNELOT81063	6336386.1	518392.7	0.0				
KPNELOT81064	6337210.0	517630.0					



SUMMIT-NASS-SKEENA
1981 SKEENA AREA SAMPLE SUMMARY

Date Source	Data Source Sample Number	Field Sample Number
KPNMSOTC81026	02339	RSJ - 38
KPNMSOTC81027	02340	RSJ - 39
KPNMSOTC81029	02342	RSJ - 41
KPNMSOTC81030	02343	RSJ - 42
KPNEL0TC81063	03810	03810
KPNEL0TC81064	03811	03811

GULF CANADA RESOURCES INC. - COAL DIVISION
22/NOV/84 PROJECT DATA SOURCE SUMMARY PAGE 1

DATA SOURCE	LOCATION		ELEVATION	LENGTH	ANGLE	AZIMUTH	LOG TYPE
	NORTHING	EASTING					
KPNSKTRC84019	6336800.0	514000.0	1280.0	4.0	0.0	210.0	



22/NOV/84 GULF CANADA RESOURCES INC. - COAL DIVISION
 SIMPLE SAMPLE SUMMARY PAGE 1
 TRUE THICKNESS
 KLAPPAN PROJECT

DATA SOURCE	SEAM	SAMPLE ID	DEPTH FROM	DEPTH TO	PERCENT REC	RECOVERED COAL	ROCK	MISSING COAL	ROCK	TOTAL COAL-ROCK
TRC84019		1612	0.22	2.16	100.00	0.770	1.170			0.77- 1.17
		1613	2.16	3.89	100.00	1.040	0.690			1.04- 0.69
										} 181 - 367



===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNSKTRC84019

DATE - 01/07/85

- HISTORY -

START DATE - 07/29/84
END DATE - 07/29/84

CONTRACTOR - OPERATOR - GCRI
GEOLOGIST - DAKIN SURVEYOR -

REMARKS - CREEK BANK TRENCH; TAHTSEDLER CREEK; COAL/COAL+ROCK
1.87/3.67

- LOCATION -

PROVINCE - BC ZONE - 9
ELEVATION - 1280.00 NORTHING - 6336800.00
EASTING - 514000.00
LICENCE/LEASE NUMBER - 7503
LATITUDE - 571034
LONGITUDE - 1284606

- ORIENTATION -

LENGTH - 4.00 INCLINATION - 0.0
AZIMUTH - 210.0
SIZE WIDTH - 0.0
SIZE HEIGHT - 0.0
ROOF STRIKE - 310 FLOOR STRIKE - 310
ROOF DIP - 90 FLOOR DIP - 90
ROOF DIR - FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

=====

GULF CANADA RESOURCES INC.

SEAM DETAIL

COAL DIVISION
MOUNT KLAPPAN PROJECT

TRUE THICKNESS

DATA SOURCE: KPN SK TRC84019 SEAM : INTERVAL(M) : 0.22 - 3.89 ELEVATION(M) : 1280.0
 GEOLOGIST : DAKIN SCALE: 1:47 DATE : DEC 04/84 DRAWING NO. :

SEAM COMP.	DRILL DEPTH METRES	COAL SEAM LOG	INTERVAL METRES		% REC.	SAMPLE ID		COAL/ROCK TOTAL		COAL QUALITY A.D.B.							
			ROCK	COAL		SIMP	COMP	COMPOS	MINING SECTION	RES MOIST	ASH	VM	FC	TS	CAL. VAL. MJ/KG	RO	
	0.22	↑															
				0.13													
				0.18													
				0.15													
				0.32													
				0.37													
				0.34	100.0	1812	1812	0.77 / 1.17		3.32	55.51	8.82	34.55	0.36	11.12		
				0.03				1.94									
				0.12													
				0.47													
	2.16			0.18													
				0.25													
				0.15													
				0.20													
				0.22	100.0	1813	1813	1.04 / 0.69		4.84	46.98	7.58	40.50	0.44	14.36		
				0.12				1.73									
				0.26													
				0.12													
				0.23													
	3.89	↓															

15.27.82 TUES 4 DEC, 1984 JOB-15TCE60 GULF CANADA DISPLAY 9.0

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 1

PROJECT: KPN BLOCK: SK DATA SOURCE: 1RCR4019

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	0.00	0.22	0.22			MUDSTONE	CARB. DK. GR WEATHERS GREY RED; IRON STAINED; COAL LAMINATIONS; ABUNDANT COALIFIED PLANT FRAGMENTS
	0.22	0.29	0.07	01612		COAL	C-2. BLK IRON STAINED; WELL CLEATED; FAIRLY RESISTANT
	0.29	0.42	0.13	01612		SHALE	CARB. BLK REDDISH; IRON STAINED; ABUNDANT VITRAIN BANDS UP TO 0.5CM THICK
	0.42	0.44	0.02	01612		COAL	C-2. BLK IRON STAINED; WELL CLEATED; LOCAL PINCH OUTS
	0.44	0.62	0.18	01612		SHALE	CARB. BLK WEATHERS REDDISH; IRON STAINED; VERY FISSILE; ABUNDANT VITRAIN BANDS WHICH PINCH AND SWELL
	0.62	0.77	0.15	01612		COAL	C-2. BLK C-1 TO C-2; IRON STAINED; WELL CLEATED; VERY RESISTANT

* DENOTES MEASURED BCA

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: SK DATA SOURCE: TRC84019

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	0.77	1.09	0.32	01612		MUDSTONE	CARB. DK. GY SOFT; VERY THIN COAL LAMINAE UP TO 0.50 M THICK BUT MOSTLY HAIRLINE BANDS; RECE SSIVE
	1.09	1.16	0.07	01612		COAL	C-2.BLK STRONG IRON STAIN; WELL CLEATED; RESIST ANT
	1.16	1.20	0.04	01612		MUDSTONE	BN IRON STAINED; RESISTANT
	1.20	1.26	0.06	01612		COAL	C-2.BLK C-1 TO C-2; IRON STAINED; WELL CLEATED
	1.26	1.40	0.14	01612		COAL	C-4.BLK C-2 TO C-4; ORANGE WEATHERING; WELL CLE ATED; COAL QUALITY VARIES OVER INTERVAL AS DOES STRIKE; MINOR ROCK SPLITS VISI BLE
	1.40	1.51	0.11	01612		COAL	C-5.BLK IRON STAINED; FAIRLY RESISTANT; HIGHLY WEATHERED
	1.51	1.54	0.03	01612		COAL	C-2.BLK WELL CLEATED; IRON STAINED; MODERATELY RESISTANT

+ DENOTES MEASURED BCA

84/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 3

PROJECT: KPN BLOCK: SK DATA SOURCE: IRC84019

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
	1.54	1.57	0.03	01612		MUDSTONE	CARB. DK. GY SOFT; HIGHLY WEATHERED; POORLY CONSOLIDATED; MINOR THIN COAL LAMINAE
	1.57	1.60	0.03	01612		COAL	C-3. BLK WELL CLEATED; IRON STAINED
	1.60	1.65	0.05	01612		COAL	C-5. BLK IRON STAINED
	1.65	1.68	0.03	01612		COAL	C-2. BLK IRON STAINED
	1.68	1.69	0.01	01612		COAL	C-3. BLK C-2 TO C-3; WELL CLEATED; IRON STAINED
	1.69	1.72	0.03	01612		MUDSTONE	CARB. BLK SOFT; THIN COAL LAMINAE
	1.72	2.16	0.44	01612		MUDSTONE	CARB. BLK SOFT; HIGHLY RECESSIVE; COAL LAMINAE UP TO 0.5 CM
	2.16	2.34	0.18	01613		COAL	C-3. BLK IRON STAINED; WELL CLEATED
	2.34	2.59	0.25	01613		MUDSTONE	CARB SOFT; ABUNDANT COAL LAMINAE

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: SK DATA SOURCE: TRC84019

<u>BCA</u>	<u>DEPTH FROM</u>	<u>DEPTH TO</u>	<u>INTRVAL THICK.</u>	<u>SAMP. ID</u>	<u>SEAM ID</u>	<u>LITHOLOGY</u>	<u>DESCRIPTION</u>
	2.59	2.74	0.15	01613		COAL	C-3.BLK IRON STAINED; WELL CLEATED
	2.74	2.94	0.20	01613		SHALE	CARB.DK.GY THINLY LAMINATED; SOFT; ABUNDANT COAL L. AMINAE UP TO 0.5CM
	2.94	3.14	0.20	01613		COAL	C-2.BLK WELL CLEATED
	3.14	3.16	0.02	01613		COAL	C-4.BLK
	3.16	3.28	0.12	01613		MUDSTONE	CARB.BLK
	3.28	3.54	0.26	01613		COAL	C-3.BLK WELL CLEATED
	3.54	3.66	0.12	01613		MUDSTONE	CARB.BLK COAL LAMINAE
	3.66	3.89	0.23	01613		COAL	C-3.BLK C-2 TO C-3; WELL CLEATED; MODERATELY RE SISTANT; IRON STAINED
	3.89	4.39	0.50			MUDSTONE	M.GY GREATER THAN 0.50M; WELL CLEATED; FLOOR

* DENOTES MEASURED BCA
NEWPAGE

GCRI COAL DIVISION HEAD PROJ KPN BLK SK DS TRC84019
=====

SAMPLE ID 01612 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID HD1 DATE ANALYSED 16/10/84
ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

TOP SIZE (MM)	---.---		
SURFACE MOISTURE %	---.---	TOTAL SULPHUR %	0.36
TOTAL MOISTURE %	6.84	PHOSPHOROUS %	---.---
EQUILIBRIUM MOISTURE %	---.---	CHLORINE (PPM)	---.---
		SPECIFIC GRAVITY	---.---
RESIDUAL MOISTURE %	3.32	FSI	---.---
ASH %	55.51	HGI	---.---
VOLATILE MATTER %	6.62	CO2 %	---.---
FIXED CARBON %	34.55		
GROSS CALORIFIC VALUE (MJ/KG)	11.12		
NET CALORIFIC VALUE (MJ/KG)	---.---		