

Re-Surveyed 7/15/78



NEUTRON-NEUTRON LOG

COMPANY: BP Coal
 BOREHOLE: BP #42 - Sukunka 1978
 STATE: B.C. COUNTRY: Canada
 Log measured from: Ground Level
 Permanent Datum: m. above P.D.
 Drilling measured from: R.L. 71007
 Elev.: m.
 "m. above P.D.

Run No. [] Date: 1 June 1978
 Log No. []
 Log Date: 1 June 1978
 Log Time: 0
 Log Meter: 385m
 Log Meter: 385m

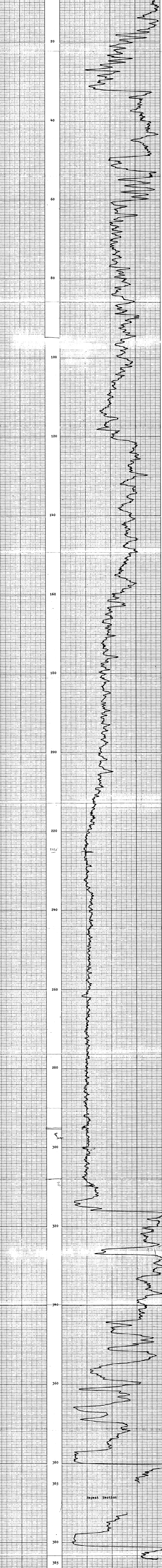
Log No. [] Date: 1 June 1978
 Log No. []
 Log Date: 1 June 1978
 Log Time: 0
 Log Meter: 385m
 Log Meter: 385m

Remarks: []

Changes in Mud Type or Additional Samples		Scale Changes	
Date	Sample No	Scale Up Hole	Scale Down

Equipment Data		Logging Data	
Run No	Tool Position	Log	Source No

Logging Data		Source No	
Log	Speed	Norm	Source No
N-N	385	0.80	81



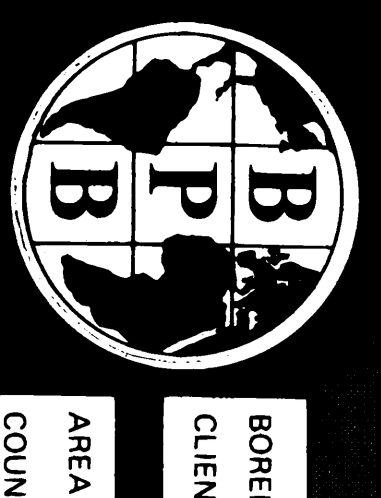
NEUTRON-NEUTRON	
DEPTHS	0
DEPTHS	1000

COMPANY: BP Coal
 BOREHOLE: BP #42 - Sukunka 1978
 STATE: B.C.
 COUNTRY: Canada

665

7-4

12- SUKUNKA 7181A



BOREHOLE: BP #42 - SUKUNKA 1978
 CLIENT: BP COAL

AREA: B.C.
 COUNTRY: Canada
 DATE LOGGED: 25 June '78

DEPTH SCALE: 1:200
 1" = 4' 000"

BOREHOLE DATA
 REMARKS: Ground level
 ELEVATION OF TD: 8192
 MASS ATTENUATION COEFFICIENT: 0.141
 DEPTH RECORDED: 386.28m
 CALIBER SIZES: 1 3" to 386.28m, 2 2" to 386.28m, 3 1.5" to 386.28m, 4 1.25" to 386.28m
 CASING SIZES: 1 4" to 31m, 2 2.5" to 31m

SONDE TYPE: QUADRANT
 COAL COMBINATION: 665
 SONDE: 110
 LOG SUITE: GAMMA RAY, L.S. DENSITY, CALIPER
 LOG SITE: GAMMA RAY, L.S. DENSITY, CALIPER
 ENGINEER: R. BISHOP
 WITNESS: C. BLOKFOORD

OPERATION DATA
 FIRST CALLING: 365m
 LAST READING: 385m
 INTERVAL LOGGED: 120/21
 UNIT - BLOCK NO.: U23/21
 ENGINEER: R. BISHOP
 WITNESS: C. BLOKFOORD

EQUIPMENT AND RECORDING DATA												
COAL COMBINATION SONDE												
LOG	EQUIPMENT	TAPING	RECORD	DIRECT	PANEL	CAL	DEPTHS		SEAM LOG RUN			
SONDE	SOURCE	TAPE	SPEED	REPLAY	SPEED	CORRECTION	FROM	TO	INITIAL			
GAMMA RAY	110	3	Y	1-9	R	5-9	2	1.2	384	0	384	Y
DENSITY	110	42	Y	1-9	R	5-9	2	1.2	385	1	384	Y
CALIPER	110		Y	1-9	R	5-9	2	-	385	306	79	Y

COAL QUALITY/SEAM THICKNESS LOG INTERVALS (Refer to relevant log)				INTERVAL TOTAL
FROM	382	371	318	
TO	375	364	312	
INTERVAL	7	7	6	20m

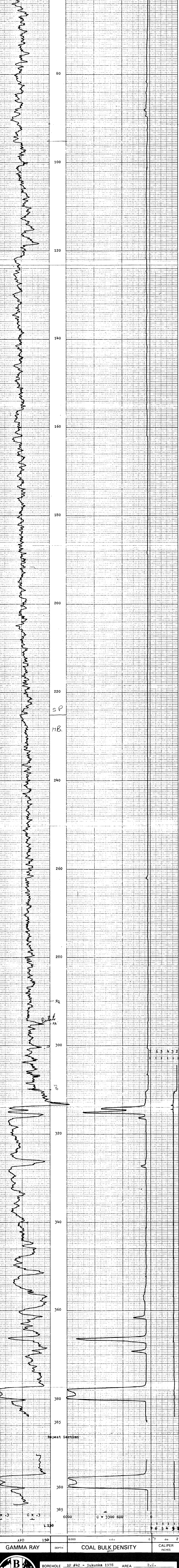
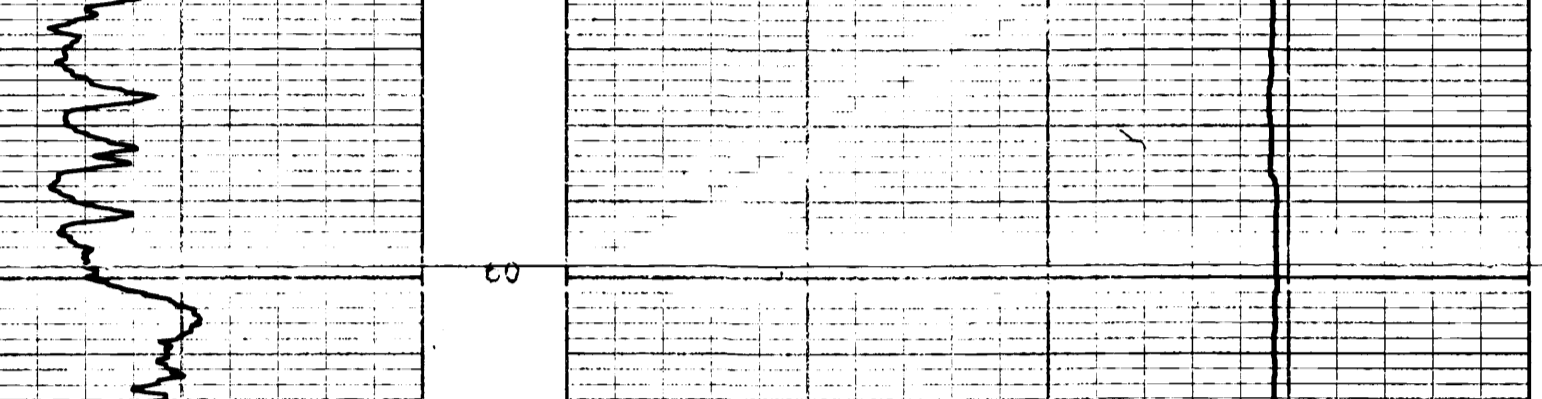
ADDITIONAL SONDES RUN				REMARKS	
SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG	REFER TO	ADDITIONAL HEADINGS
N-N		1:200			Hole logged through NQ rods above 310m.

B PB COAL LITHOLOGY LOG

CALIBRATION DATA

JIG No 3	VALU 3000	2" DIAM	JIG CAL DATA 6/78	JIG VALU 3000	SDU @ 6	g/cm ³	7	ms	945	cps
JIG MARK SHOWN AT ABOVE VALUE	3.33		JIG No 42	SPAN 6000	NORM 2.8	7.30	2	ms	485	cps

GAMMA RAY	DEPTH	COAL BULK DENSITY	CALIPER
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GAMMA RAY	DEPTH	COAL BULK DENSITY	CALIPER
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BOREHOLE: BP #42 - Sukunka 1978 AREA: B.C.
 CLIENT: BP Coal COUNTRY: Canada
COAL LITHOLOGY LOG



12 - SUCUNKA 21 (3) H

BOREHOLE BP #42 - Sukunka 1978
CLIENT BP Coal

AREA B.C.
COUNTRY Canada
DEPTH SCALE 1:20

DATE LOGGED 25 June '78
2 of 4 LOGS

BOREHOLE DATA REFER TO LITHOLOGY LOG
OPERATION DATA REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA
COAL COMBINATION SONDE
SIDEWALL POSITION
LOG STAINING PANEL COAL
LOG RECORDING SPEED 1 SEC NORM
GAMMA RAY Y 1 R 24 2 1.2
L.S. DENSITY Y 1 R 24 1 7.3

SONDE TYPE:
COAL COMBINATION SONDE
LOG SUITE:
GAMMA RAY
L.S. DENSITY

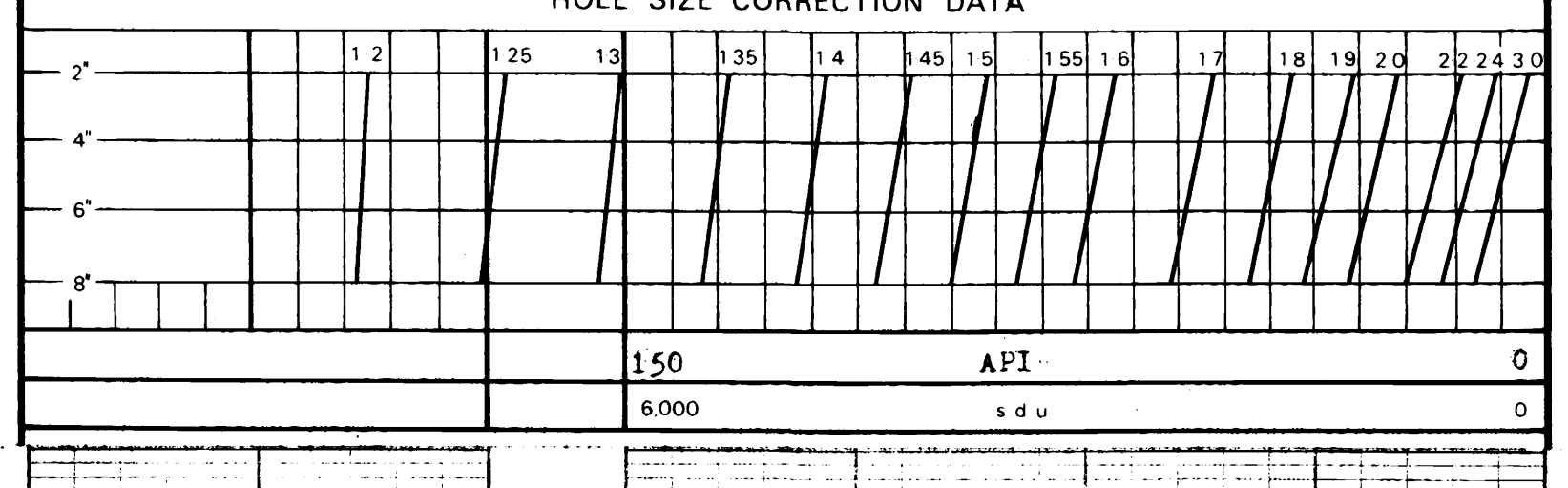
COAL QUALITY LOG INTERVALS
FROM 382 371 3.1
TO 375 364 3.2
INTERVAL 7 0
FROM 0
TO
INTERVAL
TOTAL 4.0
REMARKS

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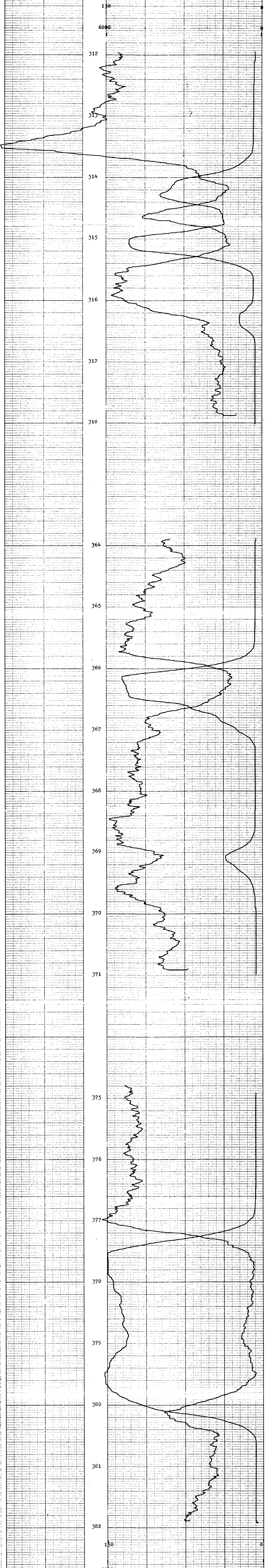
B P B COAL QUALITY LOG

DEPTH GAMMA RAY
COAL BULK DENSITY
g/cm³

HOLE SIZE CORRECTION DATA



150 API 0
6000 s d u 0



6000 s d u 0
150 API 0

COAL BULK DENSITY
GAMMA RAY

DEPTH



BOREHOLE BP #42 - Sukunka 1978
CLIENT BP Coal

AREA B.C.
COUNTRY Canada

COAL QUALITY LOG



12 - Sukunika 1978

BOREHOLE BP #42 - Sukunika 1978
CLIENT BF Coal

AREA B.C.
COUNTRY Canada
DATE LOGGED 25 June 1978

DEPTH SCALE
1120
30' 1' LOGS

BOREHOLE DATA REFER TO LITHOLOGY LOG
OPERATION DATA REFER TO LITHOLOGY LOG
EQUIPMENT AND RECORDING DATA

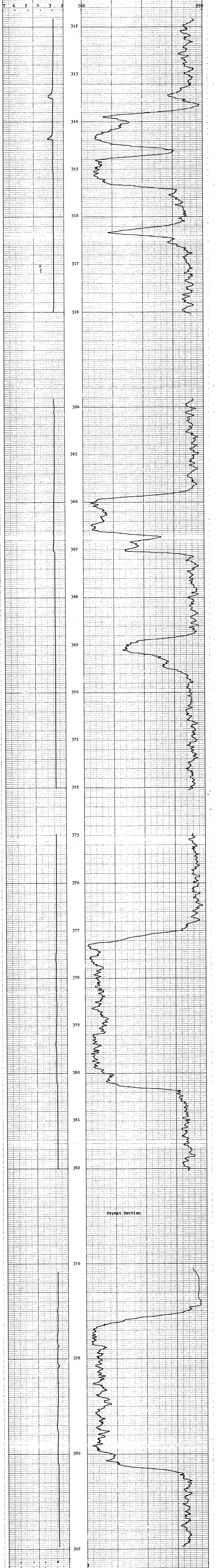
COAL COMBINATION SONDE
LOG TAPPING POINT SIDEWALL POSITION
LOG SPEED (FEET) PANEL COEFF
CALIPER Y 1 R 2 1 1
BR DENSITY Y 1 R 2 1 1 79.5

SEAM THICKNESS LOG INTERVALS
FROM 382 371 318
TO 375 364 312

LOG SUITE
CALIPER
BR DENSITY

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B P B SEAM THICKNESS LOG



CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY
7" 6" 5" dia 4" 3" 2"	560	SBRDU 270

BOREHOLE BP #42 - Sukunika 1978
CLIENT BF Coal
AREA B.C.
COUNTRY Canada

SEAM THICKNESS LOG





BP - SUKUNKA 78 (3)A

COAL LITHOLOGY LOG

SONDE TYPE:
COAL COMBINATION SONDE

LOG SUITE:
GAMMA RAY
L.S. DENSITY
CALIPER

BOREHOLE BP #43 - Sukunka 1978
CLIENT BP Coal
AREA B.C.
COUNTRY Canada
DATE LOGGED 17 June 78
DEPTH SCALE 1:200
1 OF 5 LOGS

BOREHOLE DATA
PERMANENT DATUM: Ground Level
ELEVATION OF P.D.: B.P.B.
MEASUREMENTS FROM: G.L.
DEPTH REACHED: 73.3m
CASING SHOE: 10.7m
BIT SIZES: 1 5" TO 1 1/2", 2 TO 3, 3 TO 4, 4 TO 5 1/2"
CASING SIZES: 1 5 1/2" TO 10.7m, 2 TO

FLUID DATA
NATURE: Water
SG:
LEVEL:
VISCOSITY:
Rm at meas temp:
B.H.T:
665
OPERATION DATA
FIRST READING: 72m
LAST READING: 0
INTERVAL LOGGED: 22m
UNIT - TRUCK NO: V23/
ENGINEER: R. Bishop
WITNESS: W. Nyland

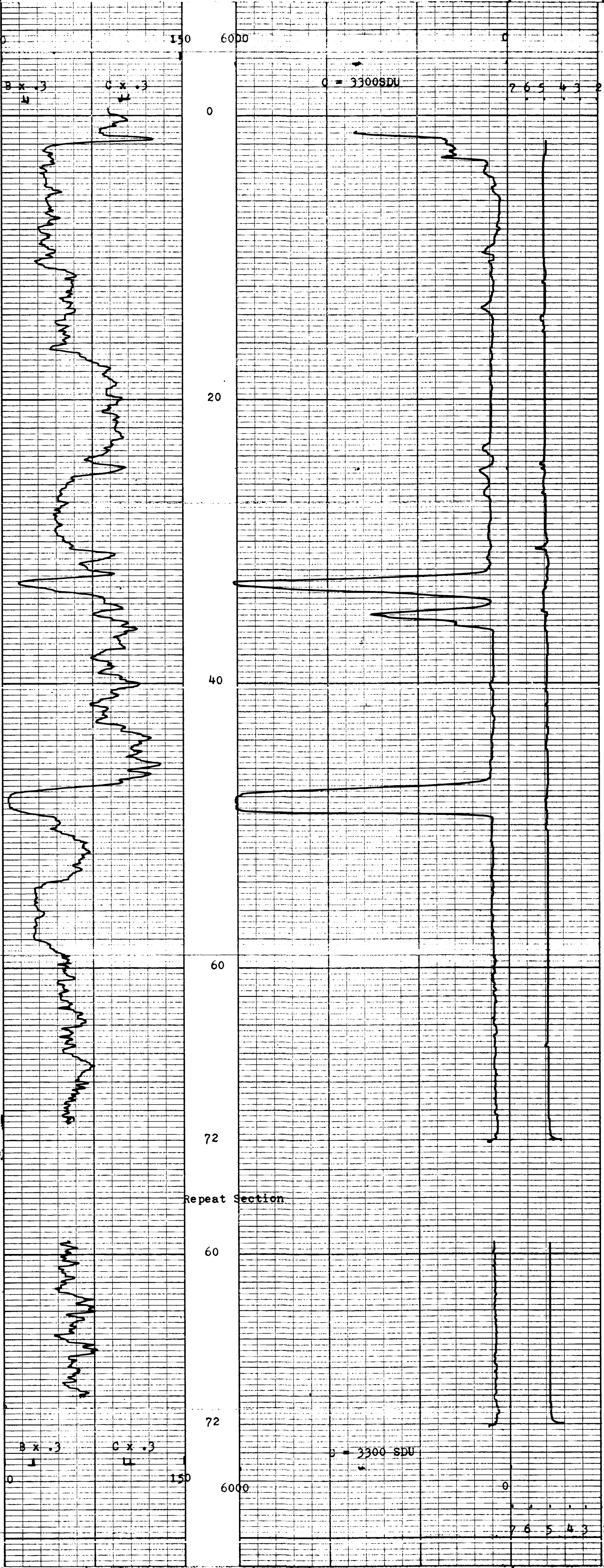
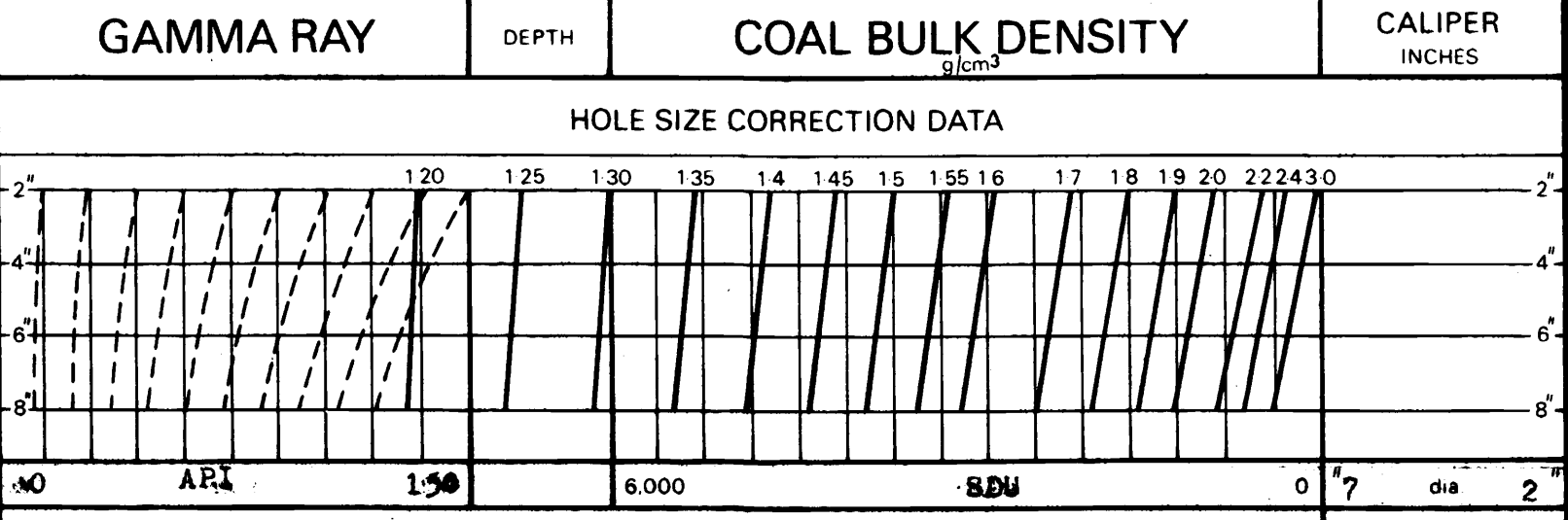
EQUIPMENT AND RECORDING DATA														
COAL COMBINATION SONDE														
LOG	EQUIPMENT			TAPING			PANEL			CAL COEFF	DEPTHS			SEAM LOG RUN
	SONDE	SOURCE	CALIBRATOR	LOG TAPED	RECORD SPEED	DIRECT OF REPLAY	SPEED	T.C SECS	NORM		FROM	TO	INTERVAL	
GAMMA RAY	110		3	Y	1-9	R	9	1	1.2	71	0	71	Y	
L.S. DENSITY		M5852	42	Y	1-9	R	9	0.3	6.7	72	1	71	Y	
CALIPER		SIDEWALL POSITION		Y	1-9	R	9	0.3	-	72	1	71	Y	

COAL QUALITY/SEAM THICKNESS LOG INTERVALS (Refer to relevant log)			
FROM	51	38	INTERVAL TOTAL = 12m
TO	46	31	
INTERVAL	5	7	

ADDITIONAL SONDES RUN				REFER TO ADDITIONAL HEADINGS	REMARKS
SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG		
81	N-N	1:200			
5	Sonic	1:200			

B P B COAL LITHOLOGY LOG CALIBRATION DATA

JIG No. 3 VALU@ 2" DIAM JIG CAL DATE 9 Jun. 78 G VALUE 3300 SDU @ g/cm³ 2 ins 475 cps
 JIG MARK SHOWN AT ABOVE VALUE -3.3 JIG No. 42 SPAN 6000 NORM SDU CPS = 6.70 7 ins 945 cps



GAMMA RAY	DEPTH	COAL BULK DENSITY	CALIPER
		g/cm ³	INCHES



BOREHOLE BP #43 - Sukunka 1978 **AREA** B.C.
CLIENT BP Coal **COUNTRY** Canada

COAL LITHOLOGY LOG



BP - SUKUNKA 78 (S)A

SONDE TYPE:
COAL COMBINATION SONDE
LOG SUITE:
GAMMA RAY
L.S. DENSITY

COAL QUALITY LOG

BOREHOLE BP #43 - Sukunka 1978
CLIENT BP Coal
AREA B.C.
COUNTRY Canada
DATE LOGGED 17 June 78

DEPTH SCALE
1:20

2 of 5 LOGS

BOREHOLE DATA REFER TO LITHOLOGY LOG
OPERATION DATA REFER TO LITHOLOGY LOG
EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE
LOG TAPING SIDEWALL POSITION
LOG RECORDING SPEED PANEL COEF
GAMMA RAY Y 1 R 2 2 1 6.7
L.S. DENSITY 1 1
SOURCE: SONDE AND CALIBRATION
REFER TO LITHOLOGY LOG

COAL QUALITY LOG INTERVALS
FROM 51 38
TO 46 31
INTERVAL 5 7

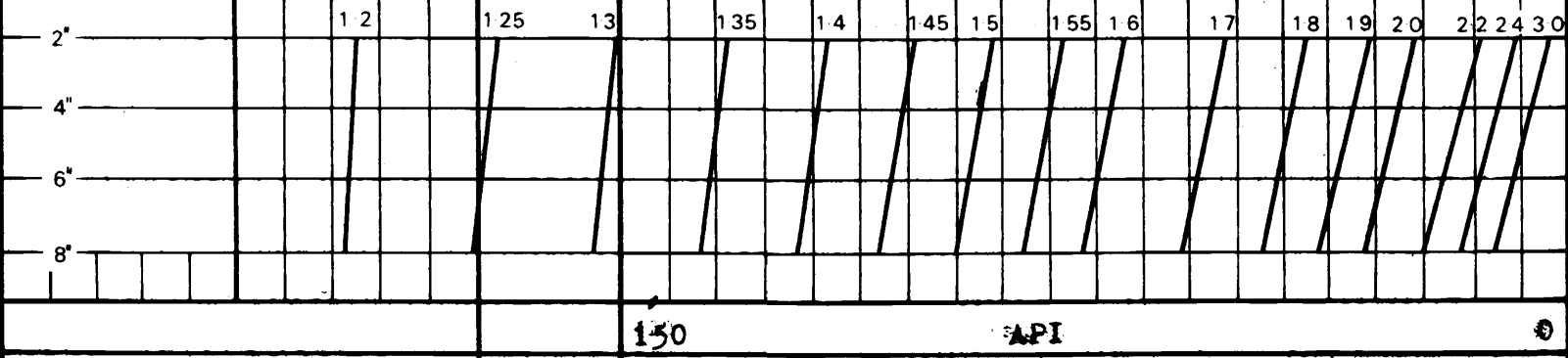
INTERVAL TOTAL
12
REMARKS

665

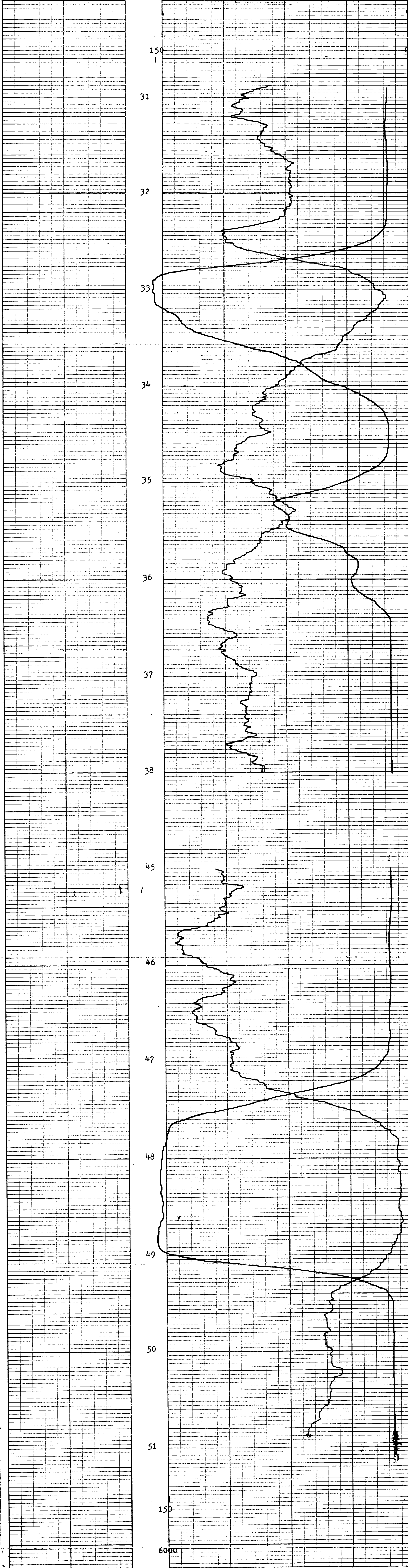
B P B COAL QUALITY LOG

DEPTH GAMMA RAY
COAL BULK DENSITY
g/cm³

HOLE SIZE CORRECTION DATA



150 API 0
6000 s.d.u. 0



6000 s.d.u. 0
150 API 0
COAL BULK DENSITY
g/cm³
DEPTH GAMMA RAY



BOREHOLE BP #43 - Sukunka 1978
CLIENT BP Coal
AREA B.C.
COUNTRY Canada
COAL QUALITY LOG



12 - SIKKANA 78 (S/A)

BOREHOLE 3F #43 - Sukunka 1978
 CLIENT 3F Coal

AREA B.C.
 COUNTRY Canada

DATE LOGGED 17 June '78
 DEPTH SCALE 1:20
3 of 5 LOGS

BOREHOLE DATA REFER TO LITHOLOGY LOG
 OPERATION DATA REFER TO LITHOLOGY LOG

SEAM THICKNESS LOG
 EQUIPMENT AND RECORDING DATA
 COAL COMBINATION SONDE

SONDE TYPE:
 COAL COMBINATION SONDE

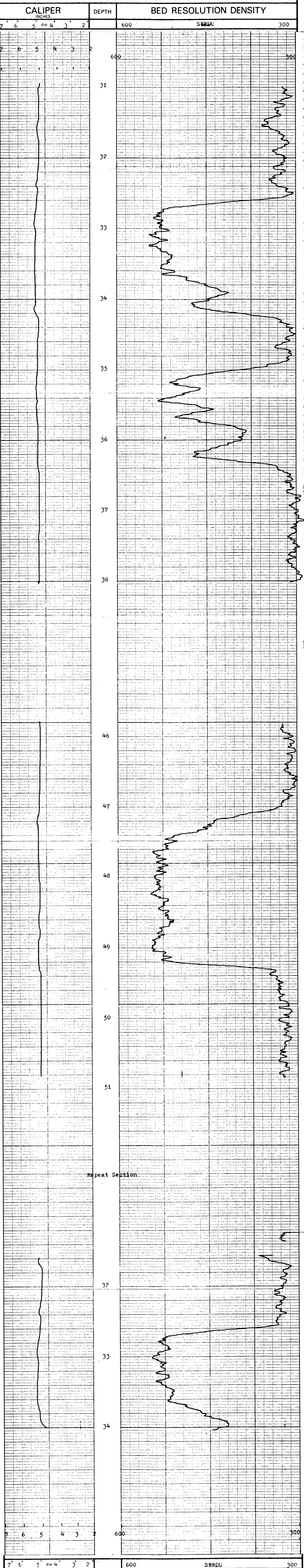
LOG SUITE:
 CALIPER
 BR DENSITY

LOG TAPPING SIDEWALL POSITION
 LOG SPEED RECORDED PANEL COEFF.
 CALIPER 1 1 R 2 1
 BR DENSITY Y 1 R 2 1 1.785

SEAM THICKNESS LOG INTERVALS
 FROM 51 38
 TO 46 31
 INTERVAL 5 7
 FROM
 TO
 INTERVAL TOTAL ± 12

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B P B SEAM THICKNESS LOG



Repeat Section

CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY
7 6 5 4 3 2	600	SBRDU 300



BOREHOLE BP #43 - Sukunka 1978
 CLIENT BP Coal

AREA B.C.
 COUNTRY Canada

SEAM THICKNESS LOG

22-51313NKA 78(3)4.



SONIC LOG

COMPANY BP Coal

BOREHOLE BP #43 - Sukunka 1978

STATE B.C. COUNTRY Canada

Permanent Datum _____ Elev. _____ m.

Log measured from _____ Ground Level _____ m. above P.D.

Drilling measured from _____ Ground Level _____ m. above P.D.

GRID REF E _____ N _____ R.L. _____

Run No _____ Depth Scale 1 1:200

Date 17 June 1978

First Reading 73m

Last Reading 0

Interval Measured 73m

Casing BPB _____

Casing Driller 10.7m

Depth Reached 73.3m

Bottom Driller 75.0m

Mud Nature Water

SG _____ Viscosity _____

Bit Size 1 5" to TD

2 _____ to _____

3 _____ to _____

Casing Size 1 5 1/2" to 10.7

2 _____ to _____

Operating Time 23 1/2 hrs.

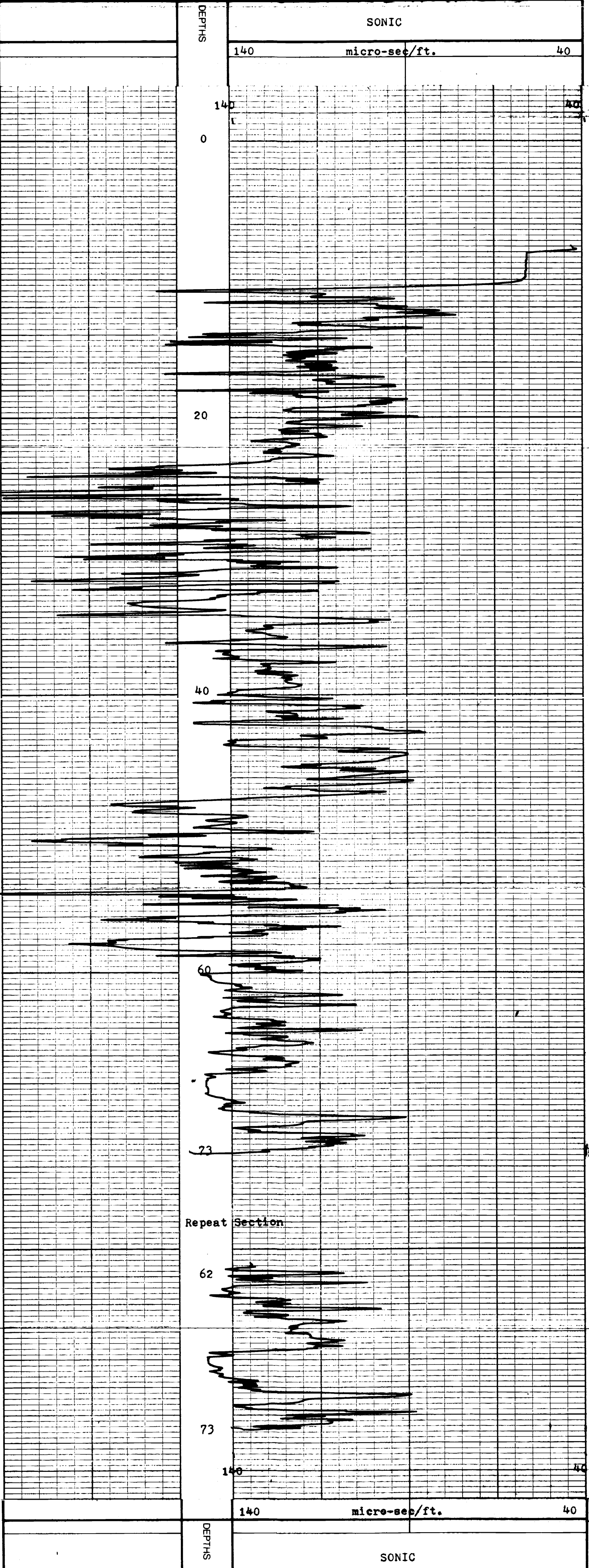
Recorded By R. Bishop

Witness W. Nyland

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REMARKS

Changes in Mud Type or Additional Samples				Scale Changes			
Date	Sample No.	Type Log	Depth	Scale Up Hole	Scale	Down	
Type Fluid in Hole							
Dens.	Visc.						
ph	Fluid Loss						
Source of Sample				Equipment Data			
Rm @ Meas. Temp.	@	°F	@	°F	Run No.	Tool Type	Tool Position
Rmf @ Meas. Temp.	@	°F	@	°F			Other
Rmc @ Meas. Temp.	@	°F	@	°F			
Source: Rmf		Rmc					
Rm @ BHT	@	°F	@	°F			
Rmf @ BHT	@	°F	@	°F			
Rmc @ BHT	@	°F	@	°F			
				Logging Data			
Log		Depths		Speed	T.C.	Norm.	Sonde No.
		From	To				
Sonic		73	0	5	1	-	5



COMPANY BP Coal
 BOREHOLE BP #43 - Sukunka 1978
 STATE B.C.
 COUNTRY Canada

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NEUTRON-NEUTRON LOG

COMPANY BP Coal

BOREHOLE BP #43 - Sukunka 1978

STATE B.C. COUNTRY Canada

Permanent Datum _____ Elev. _____ m.

Log measured from _____ Ground Level _____ m. above P.D.

Drilling measured from _____ Ground Level _____ m. above P.D.

GRID REF E _____ N _____ RL _____

Run No _____ Depth Scale 1 1:200

Date 17 June 1978

First Reading 72m

Last Reading 0

Interval Measured 72m

Casing BPB 10.7m

Casing Driller _____

Depth Reached 73.3m

Bottom Driller 75.0m

Mud Nature Water

SG _____ Viscosity _____

B.T. Size 1 5" to 10" to 10

2 5" to 10" to 10

3 5" to 10" to 10

Casing Size 1 5 1/2" to 10.7m

2 _____ to _____ to _____

Rm @ Meas Temp @ @ @

Rmf @ Meas Temp @ @ @

Rmc @ Meas Temp @ @ @

BHT _____

Operating Time 2 1/2 hrs.

Truck No V237

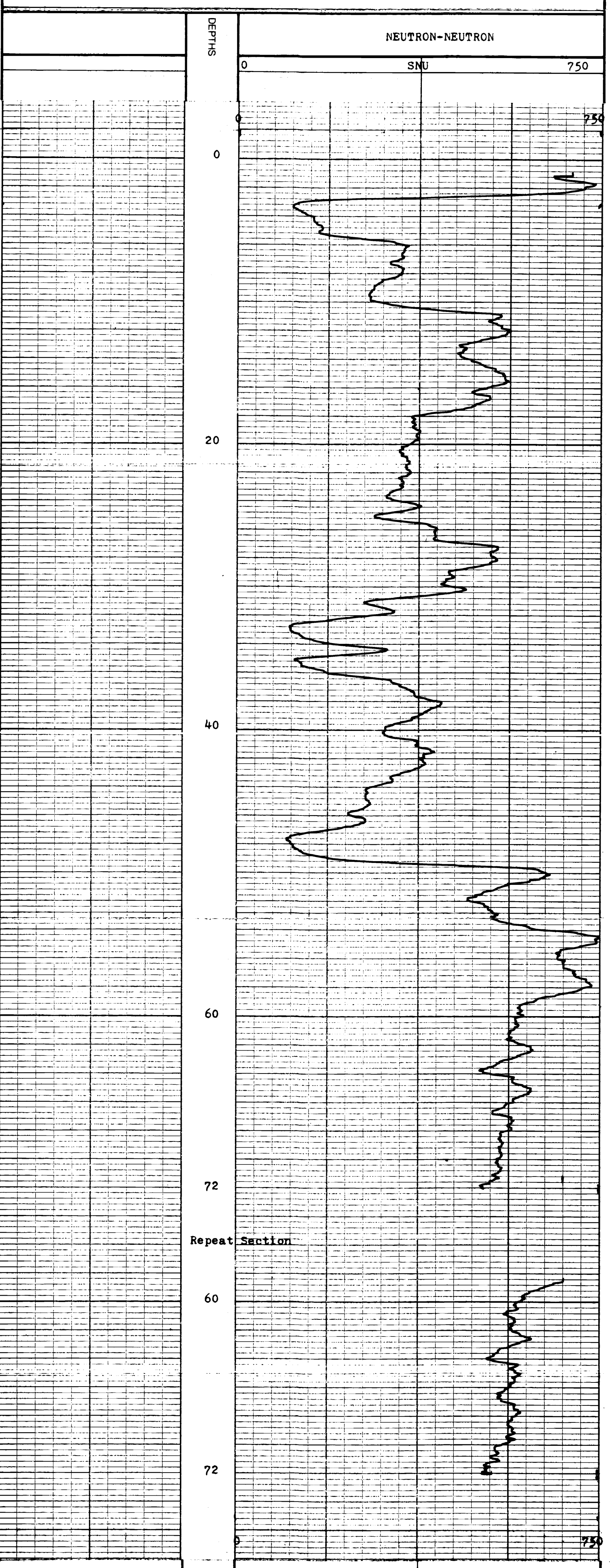
Recorded By R. Blahod

Witness W. Nyland

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Changes in Mud Type or Additional Samples				Scale Changes			
Date	Sample No.	Type Log	Depth	Scale Up Hole	Scale Down		
Type Fluid in Hole							
Dens.	Visc						
ph.	Fluid Loss						
Source of Sample				Equipment Data			
Rm @ Meas Temp	@	°F	@	°F	Run No.	Tool Type	Tool Position
Rmf @ Meas Temp	@	°F	@	°F			Other
Rmc @ Meas Temp	@	°F	@	°F			
Source: Rmf			Rmc				
Rm @ BHT	@	°F	@	°F			
Rmf @ BHT	@	°F	@	°F			
Rmc @ BHT	@	°F	@	°F			
				Logging Data			
				Log	Depths	Speed	T.C.
					From	To	Norm.
							Sonde No.
							Source No.
				N-N	72	0	9
							2
							0.8
							81
							N2479



COMPANY BP Coal
 BOREHOLE BP #43 - Sukunka 1978
 STATE B.C.
 COUNTRY Canada



12-500000-71(5)A

LOG SUITE:
GAMMA RAY
L.S. DENSITY
CALIPER

SONDE TYPE:
COAL
COMBINATION
SONDE

COAL
LITHOLOGY
LOG

BOREHOLE BP #44 - Sukunka 1978
CLIENT BP Coal
AREA B.C.
COUNTRY Canada
DATE LOGGED 19 June '78
DEPTH SCALE 1:200
1 OF 5 LOGS

BOREHOLE DATA
PERMANENT DATUM Ground Level
ELEVATION OF P.D.
WEAS/FREANIS FROM B.P.B. G.L.
DEPTH REACHED G.L. 91.2m
CASING SHOE 10.5m 11.0m
BIT SIZES 1 5" TO 1 1/2" 2 TO
3 TO 4 TO
CASING SIZES 1 5 1/2" TO 11m 2 TO

FLUID DATA
NATURE Water
SG
LEVEL 33m
VISCOSITY
Rm at meas temp
B.H.T.

OPERATION DATA
FIRST READING 90m
LAST READING 0
INTERVAL LOGGED 90m
UNIT - TRUCK No V23/21
ENGINEER R. Bishop
WITNESS W. Nyland

EQUIPMENT AND RECORDING DATA

LOG	EQUIPMENT			TAPING			PANEL			CAL COEFF	DEPTHS			SEAM LOG RUN
	SONDE	SOURCE	CALIBRATOR	LOG TAPED	RECORD SPEED	DIRECT OF REPLAY	SPEED	T.C SECS	NORM		FROM	TO	INTERVAL	
GAMMA RAY	110		3	Y	1-9	R	6-9	1	1.2		89	0	89	Y
L.S. DENSITY		M5852	42	Y	1-9	R	6-9	0.3	6.6		90	1	89	Y
CALIPER				Y	1-9	R	6-9	0.3			90	1	89	Y

COAL QUALITY/SEAM THICKNESS LOG INTERVALS (Refer to relevant log)

FROM	TO	INTERVAL	TOTAL
85	77	8	
80	72	8	
5	5		10m

ADDITIONAL SONDES RUN				REFER TO ADDITIONAL HEADINGS	REMARKS
SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG		
81	N-N	1:200			
5	Sonic	1:200			

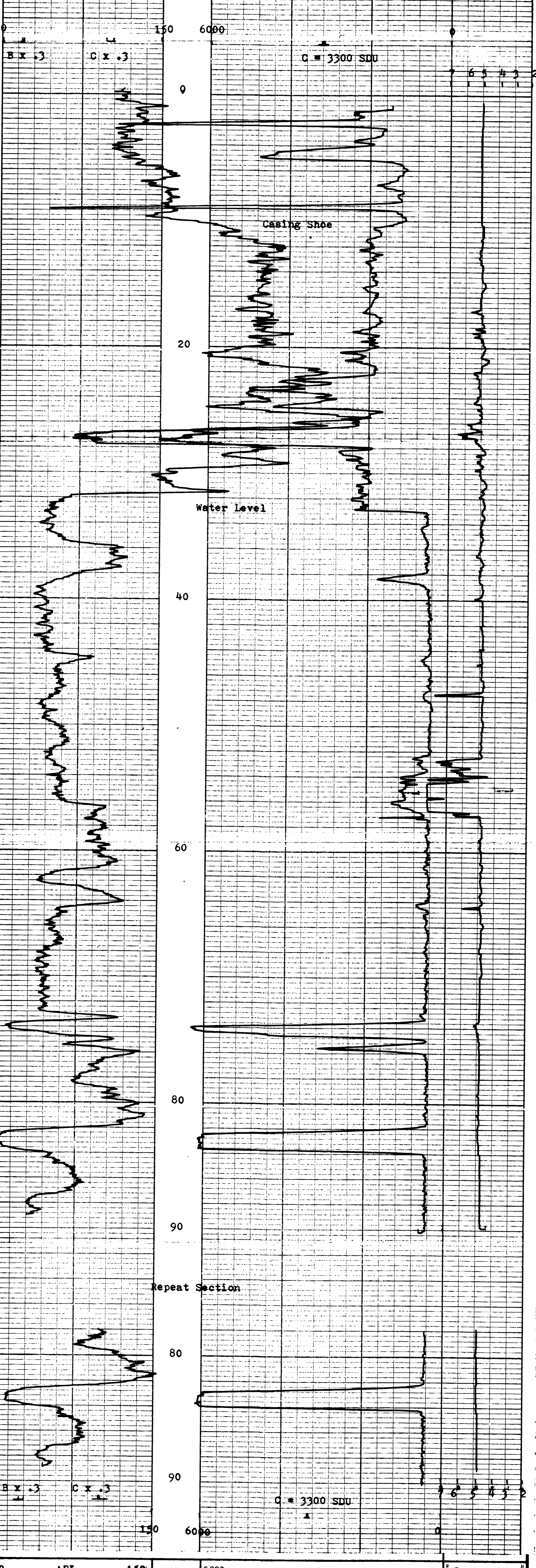
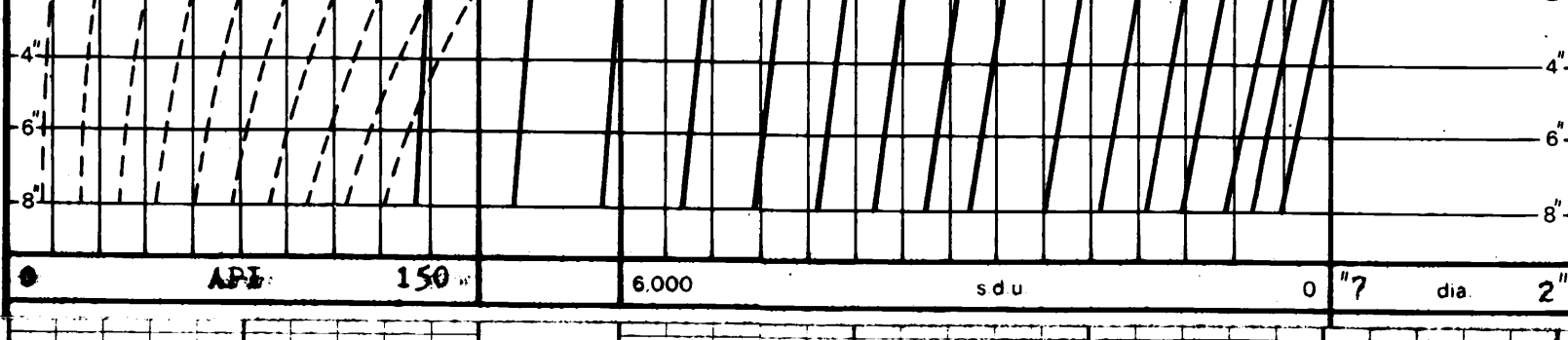
B PB COAL LITHOLOGY LOG

CALIBRATION DATA

JIG No 3	VALUE 300 @ 2" DIAM	JIG CAL DATE 9/6/78	JIG VALUE 3300	SDU @ g/cm ³	7 ins 950 cps
JIG MARK SHOWN AT ABOVE VALUE -3.3		JIG No 42	SPAN 6000	NORM SDU CPS = 6.60	2 ins 485 cps

GAMMA RAY	DEPTH	COAL BULK DENSITY	CALIPER
		g/cm ³	INCHES

HOLE SIZE CORRECTION DATA



API 150	6000	2	2
GAMMA RAY	DEPTH	COAL BULK DENSITY	CALIPER
		g/cm ³	INCHES

BOREHOLE BP #44 - Sukunka 1978 AREA B.C.
CLIENT BP Coal COUNTRY Canada

COAL LITHOLOGY LOG

M. SUKUNKA 71 (3)A.



COAL QUALITY LOG

BOREHOLE BP #44 - Sukunka 1978
 CLIENT BP Coal
 AREA B.C. DEPTH SCALE 1:20
 COUNTRY Canada
 DATE LOGGED 19 June '78 2 of 5 LOGS

BOREHOLE DATA REFER TO LITHOLOGY LOG
 OPERATION DATA REFER TO LITHOLOGY LOG
 EQUIPMENT AND RECORDING DATA

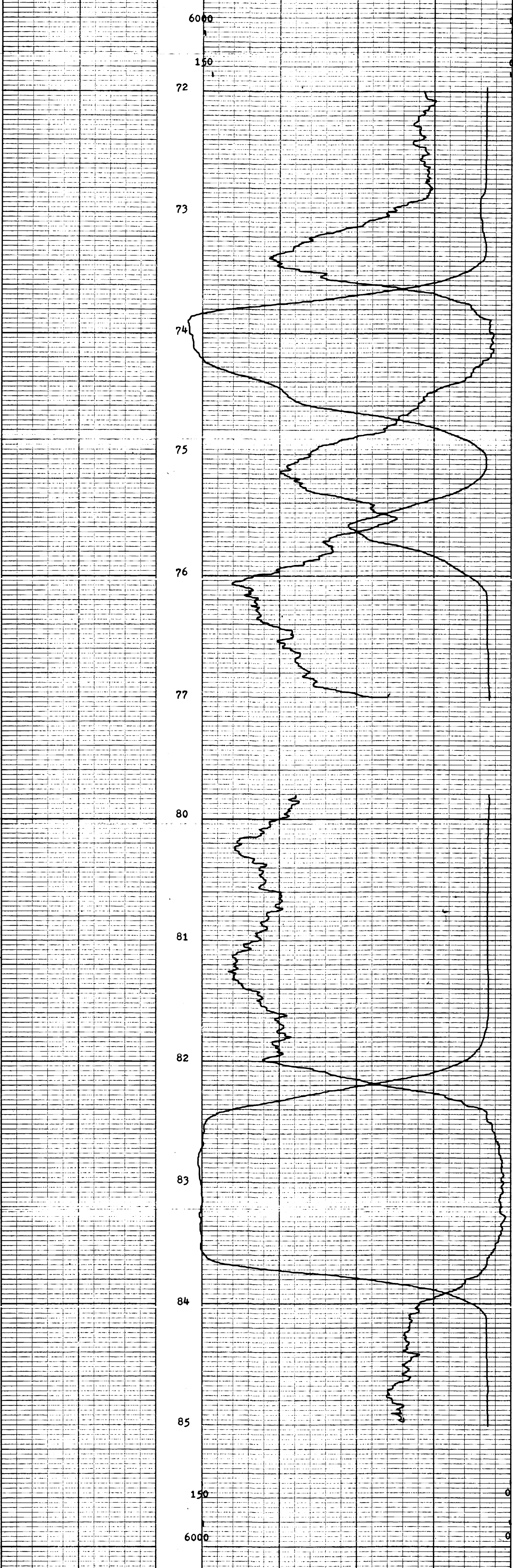
COAL COMBINATION SONDE
 LOG TAPPING SIDEWALL POSITION
 LOG RECORD DIRECTION SPEED S.C.S. NORM CAL COEFF.
 GAMMA TAPED SPEED REPEAT S.C.S. 1 2 1 2
 RAY Y 1 1 R 2 2 1 2
 L.S. DENSITY Y 1 1 R 2 2 1 2

SONDE TYPE:
 COAL COMBINATION SONDE
 LOG SUITE:
 GAMMA RAY
 L.S. DENSITY

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B P B COAL QUALITY LOG

DEPTH	GAMMA RAY	
	COAL BULK DENSITY	
	g/cm ³	
HOLE SIZE CORRECTION DATA		
2'	125	13
4'	135	14
6'	145	15
8'	155	16
	165	17
	175	18
	185	19
	195	20
	205	22
	215	24
	225	30
	150	API
	6.000	s d u



DEPTH	GAMMA RAY	
	COAL BULK DENSITY	
	g/cm ³	
	150	API
	6.000	s d u

COAL QUALITY LOG

BOREHOLE BP #44 - Sukunka 1978 AREA B.C.
 CLIENT BP Coal COUNTRY Canada



12 - SUKUNKA # (S) A.



SEAM THICKNESS LOG

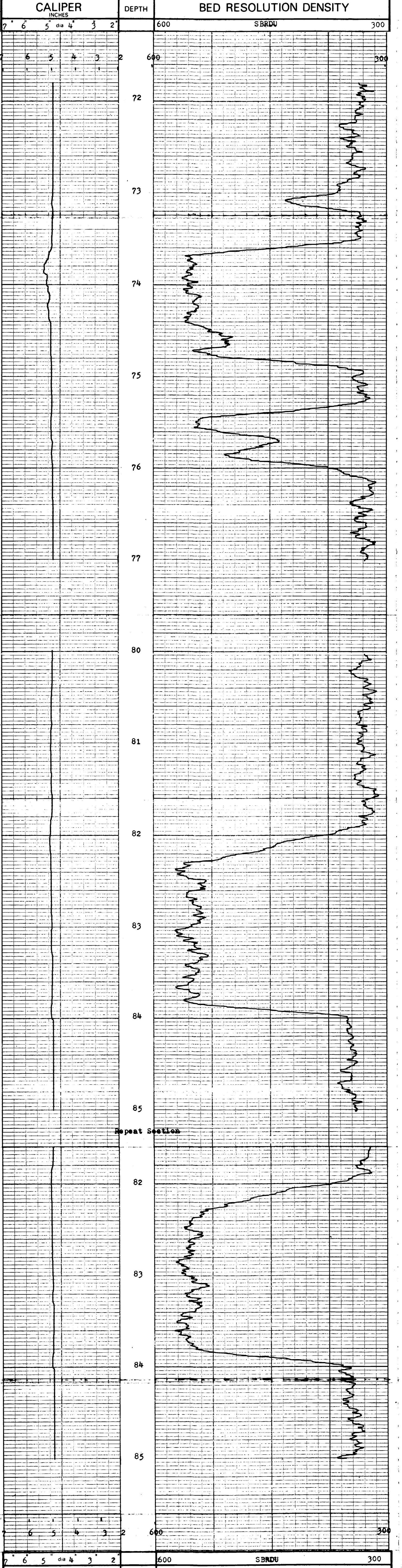
BOREHOLE BP #44 - Sukunka 1978
 CLIENT BP Coal
 AREA B.C.
 COUNTRY Canada
 DATE LOGGED 19 June '78
 DEPTH SCALE 1:20
 3 OF 5 LOGS

BOREHOLE DATA REFER TO LITHOLOGY LOG
 OPERATION DATA REFER TO LITHOLOGY LOG
 EQUIPMENT AND RECORDING DATA
 COAL COMBINATION SONDE
 LOG TAPPING SIDEWALL POSITION
 LOG RECORDING SPEED SET COEFF
 TAPED REFLECTOR Y
 CALIPER Y 1 R 2 0.3
 BR DENSITY Y 1 R 2 1 .785
 SOURCE, SONDE AND CALIBRATION
 REFER TO LITHOLOGY LOG

SEAM THICKNESS LOG INTERVALS

FROM	85	77
TO	80	72
INTERVAL	5	5
FROM		
TO		
INTERVAL		
TOTAL		
INTERNAL		
REMARKS		

B P B SEAM THICKNESS LOG



CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY
2 6 5 dia 4 3 2	600	SBRDU 300

BOREHOLE BP #44 - Sukunka 1978 AREA B.C.
 CLIENT BP Coal COUNTRY Canada

SEAM THICKNESS LOG

PA - SUKUNKA 7K(3)A.



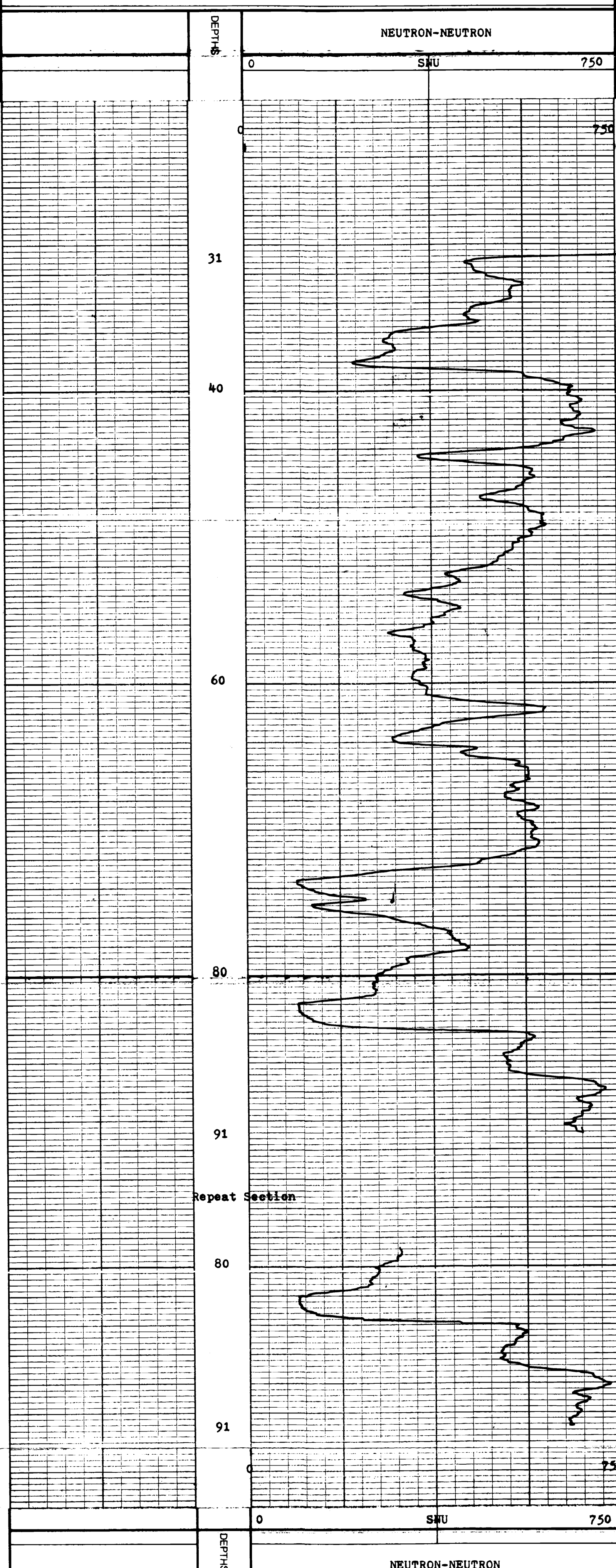
NEUTRON-NEUTRON LOG

COMPANY BP Coal
 BOREHOLE BP #44 - Sukunka 1978
 STATE B.C. COUNTRY Canada

Permanent Datum Ground Level Elev. m.
 Log measured from Ground Level m. above P.D.
 Drilling measured from Ground Level m. above P.D.

GRID REF E	N	RL
Run No.	1	1:200
Date	19 June 1978	
First Reading	91m	
Last Reading	31m	
Interval Measured	60m	
Casing BPD	10.5m	
Casing Driller	11.0m	
Depth Reached	91.2m	
Bottom Driller	91.0m	
Mud Nature	Water	
SG Viscosity	5" to TD	10
Bit Size	2	10
	3	10
Casing Size	5 1/2" to 11m	10
	2	10
Rm @ Meas Temp.	@	@
Rmf @ Meas Temp.	@	@
Rmc @ Meas Temp.	@	@
BHT	3 1/2 hrs.	
Operating Time	V23/21	
Truck No	R. Bishop	
Recorded By	W. Nyland	
Witness	665	

REMARKS			
Changes in Mud Type or Additional Samples		Scale Changes	
Date	Sample No.	Type Log	Scale Up Hole
Depth - Driller		Depth	Scale Down
Type Fluid in Hole			
Dens.	Visc.		
ph.	Fluid Loss		
Source of Sample			
Rm @ Meas. Temp.	@	°F	@
Rmf @ Meas. Temp.	@	°F	@
Rmc @ Meas. Temp.	@	°F	@
Source: Rmf	Rmc		
Rm @ BHT	@	°F	@
Rmf @ BHT	@	°F	@
Rmc @ BHT	@	°F	@
Equipment Data			
Run No.	Tool Type	Tool Position	Other
Logging Data			
Log	Depths	Speed	T.C.
	From To		
N-N	91 31	9	2
			0.80
			81
			N2479



COMPANY BP Coal
 BOREHOLE BP #44 - Sukunka 1978
 STATE B.C.
 COUNTRY Canada



SONIC LOG

BP - SUKUNKA 78 (3)A.

COMPANY BP Coal
 BOREHOLE BP #44 - Sukunka 1978
 STATE B.C. COUNTRY Canada

Permanent Datum _____ Ground Level _____ Elev. _____ m.
 Log measured from _____ Ground Level _____ m. above P.D.
 Drilling measured from _____ Ground Level _____ m. above P.D.

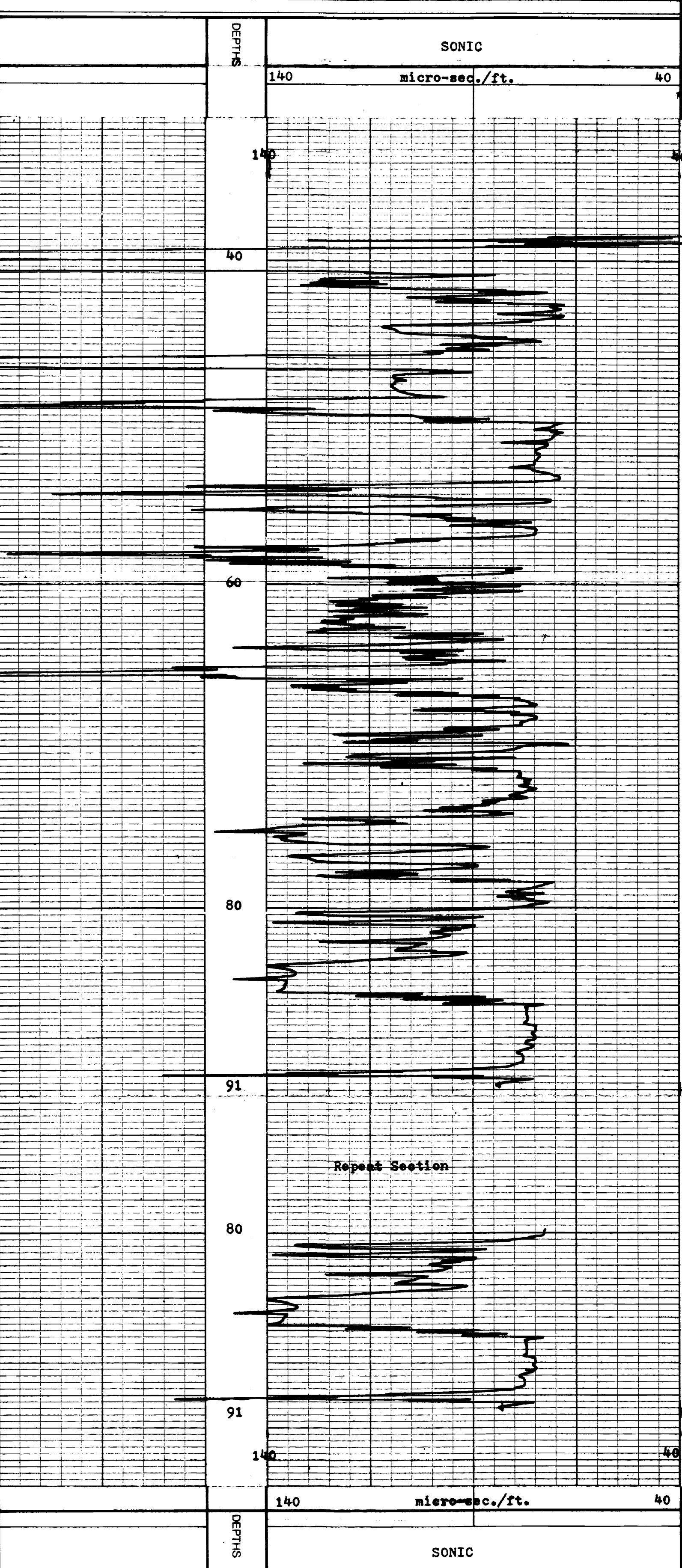
GRID REF E _____ N _____ RL _____

Run No 1 DepthScale 1:200
 Date 19 June 1978
 First Reading 91m
 Last Reading 39m
 Interval Measured 52m
 Casing BPP 10.5m
 Casing Driller 11.0m
 Depth Reached 91.2m
 Bottom Driller 91.0m
 Mud Nature Water

SG _____ Viscosity _____
 Bit Size 5" to 7 1/2"
 Casing Size 5 1/2" to 11m
 Rm @ Meas Temp _____ @ _____
 Rmf @ Meas Temp _____ @ _____
 Rmc @ Meas Temp _____ @ _____
 BHT _____
 Operating Time 3 3/4 hrs.
 Truck No V23/21
 Recorded By R. Bishop
 Witness W. Nyland

REMARKS

Changes in Mud Type or Additional Samples		Scale Changes			
Date	Sample No.	Type Log	Depth	Scale Up Hole	Scale Down
Depth-Driller					
Type Fluid in Hole					
Dens.	Visc.				
ph	Fluid Loss	ml			
Source of Sample		Equipment Data			
Rm @ Meas. Temp.	@ °F	Run No.	Tool Type	Tool Position	Other
Rmf @ Meas. Temp.	@ °F				
Rmc @ Meas. Temp.	@ °F				
Source: Rmf	Rmc				
Rm @ BHT	@ °F				
Rmf @ BHT	@ °F				
Rmc @ BHT	@ °F				
Logging Data					
Log	Depths	Speed	T.C.	Norm.	Sonde No.
	From To				
Sonic	91 39	5	1	-	5



COMPANY BP Coal
 BOREHOLE BP #44 - Sukunka 1978
 STATE B.C.
 COUNTRY Canada

665



BP
GENERAL LOG

BP Co. Ltd.
Sukunka 1978
B.C.
Canada

COMPANY: BP Co. Ltd.
BOREHOLE: BP #45 - Sukunka 1978
STATE: B.C.
COUNTRY: Canada

Permanent Datum: Ground Level
Elev: m
Log measured from: Ground Level
m above P.D.
Drilling measured from: Ground Level
m above P.D.

Run No: 1
Date: 24 June 1978
First Reading: 0
Last Reading: 0
Interval Measured: 346m
Casing Depth: 346m

Depth Brackets: 346.3m
Bottom Gauge: 351.0m
Mud Name: Water

Bit Size: 5" to T.D.
Casing Size: 1 7/8" to 3 1/2"
Mud Weight: 10
Mud Viscosity: 10

Operating Time: 9 1/2 hrs
Log No: 123/21
Recorded By: P.M. Caline

Checked By: P.M. Caline

Witness: P.M. Caline

665

REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No.	Type	Log	Depth	Scale Up Hole	Scale Down

Dens Visc
Sp. Gravity

Source of Sample

Run No.	Tool Type	Tool Position	Other

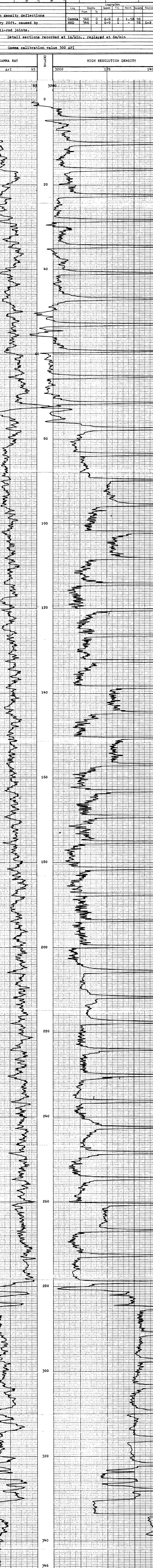
Equipment Data

Log	From	To	Speed	T.C.	Norm.	Sonde No.	Source No.
Gamma	346	0	6-9	2	1.58	28	
HRD	346	0	6-9	1	-	28	D-2

High density deflections every 20ft. caused by drill-rod joints.

Detail sections recorded at 1m/min.. replayed at 6m/min

Gamma calibration value 300 API



DEPTH	GAMMA RAY	API	DEPTH	HIGH RESOLUTION DENSITY	CPS
0		95	3200		1400
340			340		
346			346		

COMPANY: BP Co. Ltd.
BOREHOLE: BP #45 - Sukunka 1978
STATE: B.C.
COUNTRY: Canada



GAMMA RAY
DETAIL LOG

W-5240000 2151A

COMPANY BP Coal
BOREHOLE BP #45-Sukunka 1978
STATE B.C. COUNTRY Canada

Permanent Datum _____ Elev. _____ m.
Log measured from Ground Level _____ m. above P.D.
Drilling measured from Ground Level _____ m. above P.D.

GRID REF. E _____ N _____ R.L. _____

Run No. 1 Date 24 June 1978
First Reading 335m
Last Reading 279m
Interval Measured 2 details

Casing Depth 346m
Depth Recorded 346.3m
Bottom Drive 351.0m
Mud Nature Water

SU 5" Viscosity _____
Bit Size 1 to T.D.
2 _____
3 _____

Casing Size 1 5/8" to 346m
2 _____
3 _____

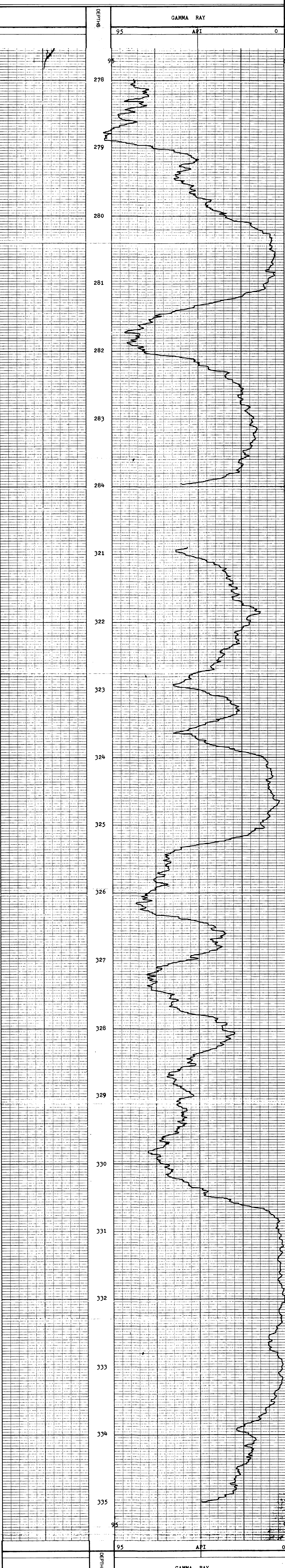
Rm @ Meas Temp _____
Rmc @ Meas Temp _____
Rm @ BHT _____
Rmf @ BHT _____
Rmc @ BHT _____

Operating Time 9 1/2 hrs.
BHT _____
Track No. VZ3/21
Recorded By R. Bishop
Witness P.M. Caine

665

fold here

REMARKS				Scale Changes			
Changes in Mud Type or Additional Samples				Type Log	Depth	Scale Up Hole	Scale Down
Date	Sample No						
Depth-Driller							
Type Fluid in Hole							
Dens.	Visc						
ph.	Fluid Loss		mi				
Source of Sample				Equipment Data			
Rm @ Meas Temp	@	°F	@	°F	Run No.	Tool Type	Tool Position
Rmf @ Meas Temp	@	°F	@	°F			
Rmc @ Meas Temp	@	°F	@	°F			
Source: Rmf							
Rm @ BHT	@	°F	@	°F			
Rmf @ BHT	@	°F	@	°F			
Rmc @ BHT	@	°F	@	°F			
				Logging Data			
				Log	Depths	Speed	T.C.
					From	To	Norm.
							Sonde No.
							Source No.
				Gamma	2 deta.	2	2
							1.58
							78



COMPANY BP Coal
BOREHOLE BP #45-Sukunka 1978
STATE B.C.
COUNTRY Canada



NEUTRON-NEUTRON LOG

COMPANY BP Coal
 BOREHOLE BP #45 - Sukunka 1978
 STATE B.C. COUNTRY Canada
 Permanent Datum Ground Level Elev m.
 Log measured from Ground Level m. above P.D.
 Drilling measured from Ground Level m. above P.D.
 GRI. REF. E. N R. L.

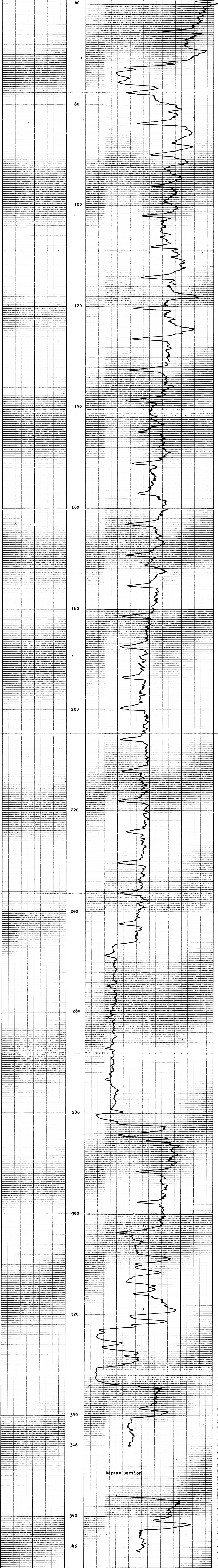
Run No.	24	Date	June 1978
Tool Reading	34.0m		
Log Reading	34.0m		
Interval Measured	27.0m		
Category	BPS		
Category Drive	34.6m		
Depth Measured	34.6.3m		
Depth Drive	351.0m		
Mud Nature	Water		
St. No.	Variable		
St. No.	1	to	T.D.
St. No.	2	to	
St. No.	3	to	
Casing Size 1	1 7/8	to	34.6m
Casing Size 2		to	
Ann. Mass Temp		to	
Ann. Mass Temp		to	
Ann. Mass Temp		to	
BHT		to	
Ordering Time	9 1/2 hrs.		
Log No.	V23/21		
Recorded By	R. Blaisd		
Witness	E. R. Oltine		

Scale Changes			
Date	Sample No.	Type Log	Scale Up Hole

Equipment Data			
Run No.	Tool Type	Tool Position	Other

Logging Data						
Log	From	To	Speed	T.C.	Norm.	Source No.
N-N	346	70	9	2	0.88	81 N2479

Repeat Section 1.59m too low and run with normaliser value 1.00



DEPTHS 0 to 650
 SNU 0 to 650

COMPANY BP Coal
 BOREHOLE BP #45 - Sukunka 1978
 STATE B.C.
 COUNTRY Canada



HIGH RESOLUTION DENSITY
DETAIL LOG

72- SUKUNKA 72(3)A

COMPANY BP Coal
BOREHOLE BP #45 - Sukunka 1978
STATE B.C. COUNTRY Canada

Permanent Datum Ground Level Elev. m.
Log measured from Ground Level m above P.D.
Drilling measured from Ground Level m above P.D.

GRD REF E N RL
Run No Depth Scale 1 1,20
Date 24 June 1978
First Reading 335m
Last Reading 279m
Interval Measured 2 details

Casing Driver 34.6m
Bottom Bearing 346.3m
Bottom Driver 351.0m
Mud Nature Water

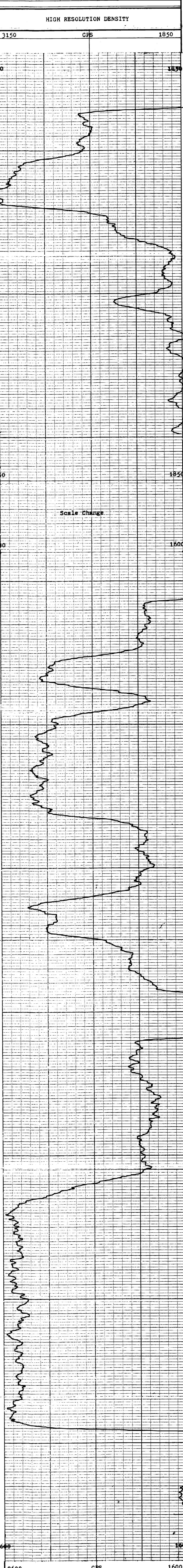
Sig Viscosity
Bit Size 5" to T.D.
Casing Size 1 7/8" to 34.6m
Rm @ Meas Temp °F
Rmf @ Meas Temp °F
Rmc @ Meas Temp °F
Rm @ BHT °F
Rmf @ BHT °F
Rmc @ BHT °F
Operating Time 9 1/2 hrs.
Truck No V23/21
Recorded By R. Bishop
Witness P. M. Caine

665

Changes in Mud Type or Additional Samples		Scale Changes			
Date	Sample No.	Type Log	Depth	Scale Up Hole	Scale Down
		H.R.D.	320m	3150-1850 CPS	2600-1600

Source of Sample		Equipment Data			
Rm @ Meas Temp	Rmf @ Meas Temp	Rmc @ Meas Temp	Run No	Tool Type	Tool Position
@	@	@			

Logging Data						
Log	From	To	Speed	T.C.	Norm	Source No
HRD	2	dets.	2 1/2	1	-	78 D-2



COMPANY BP Coal
BOREHOLE BP #45 - Sukunka 1978
STATE B.C.
COUNTRY Canada

AM (M) 58340



11-31-2004 78 (B) 1/4

BOREHOLE BP #46 Sukunka
CLIENT BP Coal

AREA B.C.
COUNTRY Canada

DATE LOGGED 29 June 78

DEPTH SCALE
1:20

1-5 LOSS

SEAM

THICKNESS

LOG

BOREHOLE DATA REFER TO LITHOLOGY LOG
OPERATION DATA REFER TO LITHOLOGY LOG
EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE
LOG TAPPING PANEL CORNER
LOGS RECORDED (SPEED) T.S. INCHES
TAPER SPEED REPAVED S.S. INCHES
CALIPER Y 1 R 2 1
BR DENSITY Y 1 R 2 1 784

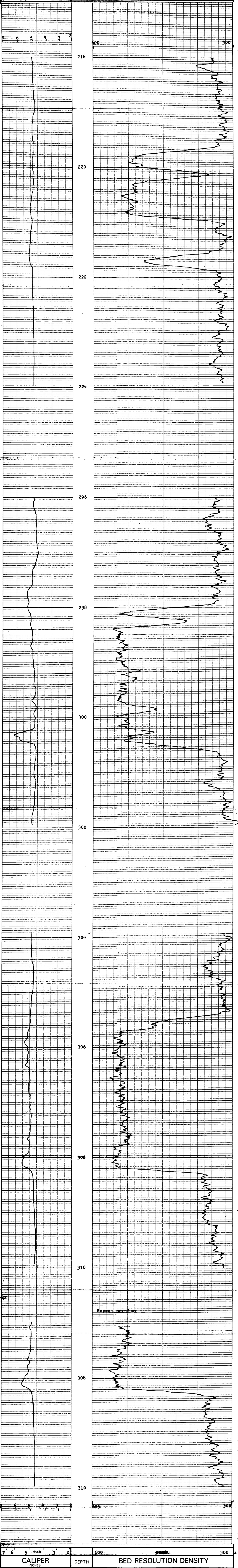
SONDE TYPE:
COAL COMBINATION SONDE

SEAM THICKNESS LOG INTERVALS
FROM 310 302 224
TO 304 296 218
INTERVAL 6 6 6

LOG SUITE:
CALIPER
BR DENSITY

665

B P B SEAM THICKNESS LOG



CALIPER INCHES **DEPTH** **BED RESOLUTION DENSITY**

7 6 5 4 3 2 600 300

SEAM THICKNESS LOG

BOREHOLE BP #46 Sukunka AREA B.C.
CLIENT BP Coal COUNTRY Canada





12-211111A-7 (3/8)

BOREHOLE BP # 46 Sukunka
CLIENT BP Coal

AREA B.C.
COUNTRY Canada

DATE LOGGED 29 June 79

DEPTH SCALE
1120

COAL QUALITY LOG
BOREHOLE DATA REFER TO LITHOLOGY LOG
OPERATION DATA REFER TO LITHOLOGY LOG
EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE
LOG TAPPING SIDEWALL POSITION
LOG SPEED 1.5 NORM
GAMMA RAY X 1 R 24 2 1.3
L.S. DENSITY Y 1 R 24 1 7.8

SONDE TYPE:
COAL COMBINATION SONDE

LOG SUITE:
GAMMA RAY
L.S. DENSITY

COAL QUALITY LOG INTERVALS

FROM 310 TO 302 224
TO 304 296 218
INTERVAL 6 6 6

INTERVAL VAL. 10

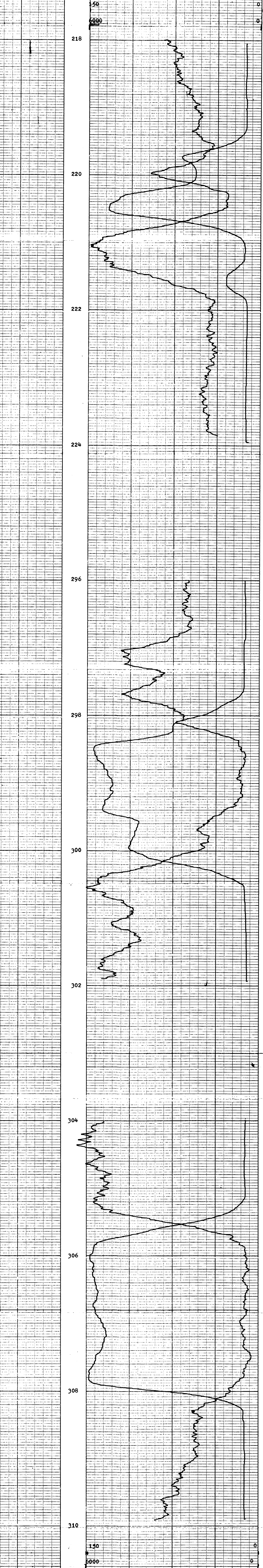
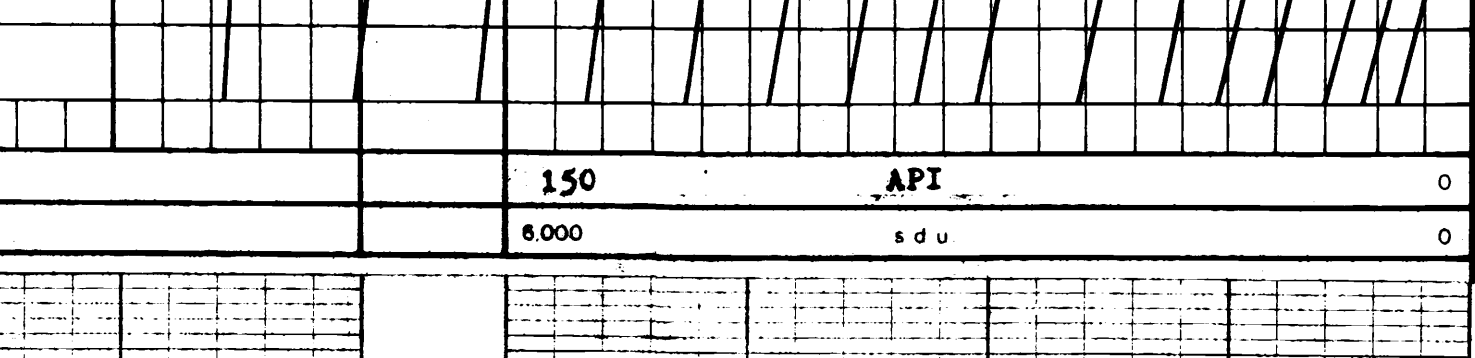
REMARKS

665

BPB COAL QUALITY LOG

GAMMA RAY
COAL BULK DENSITY
g/cm³

HOLE SIZE CORRECTION DATA



COAL BULK DENSITY
g/cm³

GAMMA RAY

DEPTH



BOREHOLE BP # 46 Sukunka AREA B.C.

CLIENT BP Coal COUNTRY Canada

COAL QUALITY LOG



72-51644-8-71(51)

BOREHOLE BP #46 - Sukunka 1978
CLIENT BP Coal

AREA B.C.
COUNTRY Canada
DATE LOGGED 29 June 78

DEPTH SCALE 1:200
1 OF 5 LOGS

COAL LITHOLOGY LOG

SONDE TYPE: COAL COMBINATION
LOG SUITE: GAMMA RAY
L.S. DENSITY
CALIPER

OPERATION DATA
FIRST READING 322m
LAST READING 0m
INTERVAL LOGGED 322m
UNIT - TRUCK NO. V23/21
ENGINEER R. Bishop - D. Fisher
WITNESS C. Blakford

BOREHOLE DATA

PARAMETER DATA
ELEVATION OF TD 87.8
MATERIALS FROM 62.1
DEPTH REACHED 324.5 m
CASING SIZE 1 5" TO 320' 2"
CASING SIZES 3 TO 310' 2" TO

FLUID DATA
NATURE WATER
LEVEL 89 m
VISCOSITY
FILM MASS TEMP
BLH T

Table with columns: LOG, EQUIPMENT, TAPING, PANEL, CAL COEFF, DEPTHS, SEAM LOG RUN. Includes data for Gamma Ray and LS Density logs.

Table with columns: FROM, TO, INTERVAL, COAL QUALITY/SEAM THICKNESS LOG INTERVALS. Shows intervals of 6m and 18m.

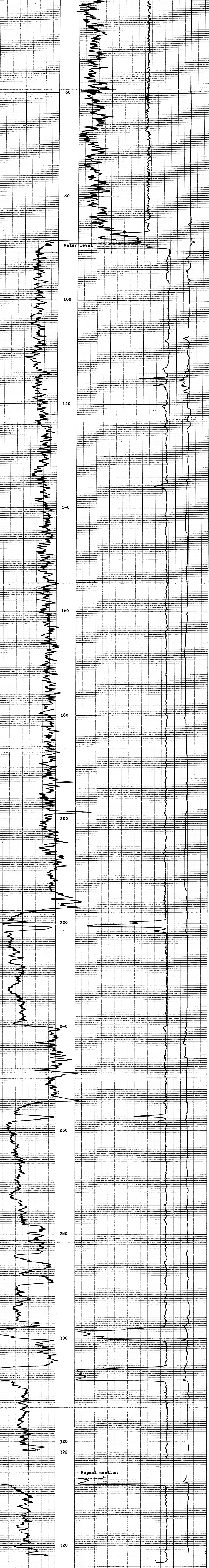
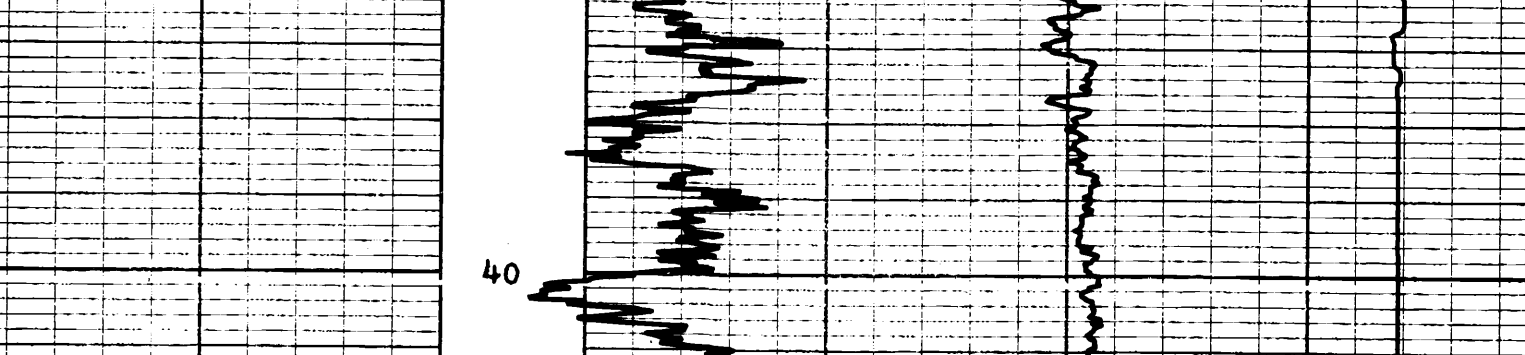
Table with columns: SONDE, LOG, GENERAL SCALE, DETAIL SCALE. Lists N-N, Sonic, and Deviation survey logs.

B.P.B. COAL LITHOLOGY LOG

CALIBRATION DATA

JIG No. 3 VALUE 300 @ 2" DIAM
JIG MARK SHOWN AT ABOVE VALUE - 3.33
JIG CAL DATE 9.6.78 JIG VALUE 330 @ 2" @ 1.57 g/cm³
JIG No. 42 SPAN 6000 NORM 3500 S.D.U. = 7.60

Table with columns: GAMMA RAY, DEPTH, COAL BULK DENSITY, CALIPER INCHES.



Summary table with columns: GAMMA RAY, DEPTH, COAL BULK DENSITY, CALIPER INCHES.

BOREHOLE BP # 46 Sukunka AREA B.C.
CLIENT BP Coal COUNTRY Canada

COAL LITHOLOGY LOG

AL-517444-21517



NEUTRON-NEUTRON LOG

COMPANY BP Coal
 BOREHOLE BP #46 Sukunka
 STATE B.C. COUNTRY Canada

Permanent Datum Ground Level Elev. m.
 Log measured from Ground Level m. above P.D.
 Drilling measured from Ground Level m. above P.D.

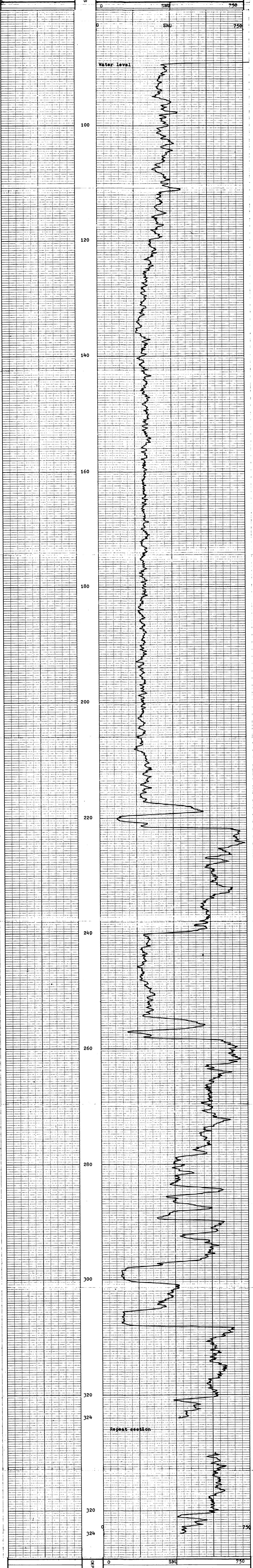
Run No. 1 Date 29 June 78
 First Reading 324 m
 Last Reading 80 m
 Interval Meters 244 m
 Logging Scale 3 m
 Depth Reached 324.5
 Bottom Driller 320.0
 Mud Nature Water

SG 1 to 1
 Bit Size 5" to 4.4"
 Casing Size 3 to 3 m.
 Fm @ Meas Temp @ °F
 Rmf @ Meas Temp @ °F
 Rmc @ Meas Temp @ °F
 Fm @ Meas Temp @ °F
 Rmf @ Meas Temp @ °F
 Rmc @ Meas Temp @ °F
 Operating Time 7.2 hrs
 Log No. Y 23/21
 Recorded By R. Bishop
 Witness C. Blakford

665

REMARKS

Changes in Mud Type or Additional Samples		Scale Changes			
Date	Sample No.	Type Log	Depth	Scale Up Hole	Scale Down
Type Fluid in Hole					
Dens					
Visc					
ph					
Fluid Loss					
ml					
Source of Sample					
Run No.					
Tool Type					
Tool Position					
Other					
Equipment Data					
Fm @ Meas Temp					
Rmf @ Meas Temp					
Rmc @ Meas Temp					
Source Rmf					
Rmf @ BHT					
Rmc @ BHT					
Logging Data					
Log	Depths	Speed	T.C	Norm.	Sonde
	From	To			Source No
N-N	324	80	9	1	0.80 18 N2479



COMPANY BP Coal
 BOREHOLE BP #46 Sukunka 78
 STATE B.C.
 COUNTRY Canada



SONIC LOG

12-5061416A 78(3)H

COMPANY BP Coal
 BOREHOLE BP # 46 Sukunka 78
 STATE B.C. COUNTRY Canada

Permanent Datum Ground Level Elev. m.
 Log measured from Ground Level m. above P.D.
 Drilling measured from Ground Level m. above P.D.

GRID REF. E N RL

Run No. 1 Date 29 June 78
 First Read. 324
 Last Read. 90
 Interval Measured 234
 Corrig. BPE 3
 Depth From 324.5
 Bottom Driller 320.0
 Mud Nature Water

SG Visc. (cP)
 Bit Size 1 5" to 2 t.d. to 3
 4 to 5
 Corrig. Size 1 5" to 2 3M
 4 to 5
 Run (3) Meas. Temp @ @
 Run (3) Meas. Temp @ @
 Rmc (3) Meas. Temp @ @
 BHT
 Operating Time 74 hrs
 Track No. V23/21
 Recorded By D. Pieter
 Witness C. Bickford

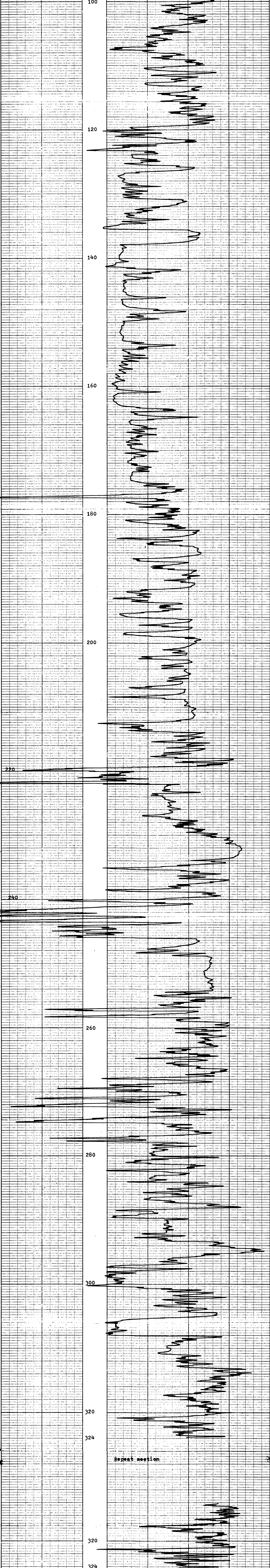
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REMARKS

Changes in Mud Type or Additional Samples		Scale Changes			
Date	Sample No.	Type Log	Depth	Scale Up Hole	Scale Down

Source of Sample				Equipment Data			
Rm	@	Meas Temp		Run No.	Tool Type	Tool Position	Other
Rmf	@	Meas Temp					
Rmc	@	Meas Temp					

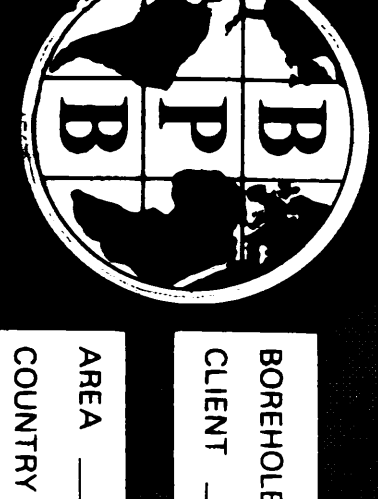
Logging Data							
Log	Depths From	To	Speed	T.C.	Norm.	Senders	Source No.
Sonic	324	90	9	1	-	110	



DEPTHS 140 micro.sec/ft. 40
SONIC

COMPANY BP Coal
 BOREHOLE BP # 46 Sukunka 78
 STATE B.C.
 COUNTRY Canada

665



BP-514/119-9 72 (3/14)

BOREHOLE BP #47 - Sukunke 1928
CLIENT BP Coal

AREA B.C.
COUNTRY Canada

DEPTH SCALE 1:200
DATE LOGGED 6 JULY 78

COAL LITHOLOGY LOG

SONDE TYPE 140m
COAL COMBINATION
SONDE

LOG SUITE
GAMMA RAY
S DENSITY
CALIPER

BOREHOLE DATA

ELEMENT OF P.D.	CROWD	LEVER 1
WAS RECORDED	Q.L.	SHUTTER
WAS RECORDED	Q.L.	R.K. LIGHT
CASING SIZE	1	TO 7M
CASING SIZE	2	TO 14M
CASING SIZE	3	TO 21M
CASING SIZE	4	TO 28M
CASING SIZE	5	TO 35M
CASING SIZE	6	TO 42M

EQUIPMENT AND RECORDING DATA

LOG	EQUIPMENT	TAPING		PANEL	CAL COEFF	DEPTH		SEAM LOG RUN		
		LOG TAPED	RECORD SPEED			FROM	TO			
GAMMA RAY	110	3	9	D 9	1.3	402	0	402	Y	
DENSITY	42	4	9	D 9	1/3	7.52	402	0	402	Y
CALIPER	SIDEWALL POSITION	Y	9	R 9	1/3	-	402	0	402	Y

COAL QUALITY/SEAM THICKNESS LOG INTERVALS (Refer to relevant log)

FROM	TO	INTERVAL
346	335	297
338	327	291
8	8	6

ADDITIONAL SONDES RUN

SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG
N-n		1:200	
Sonic		1:200	
Verticality			

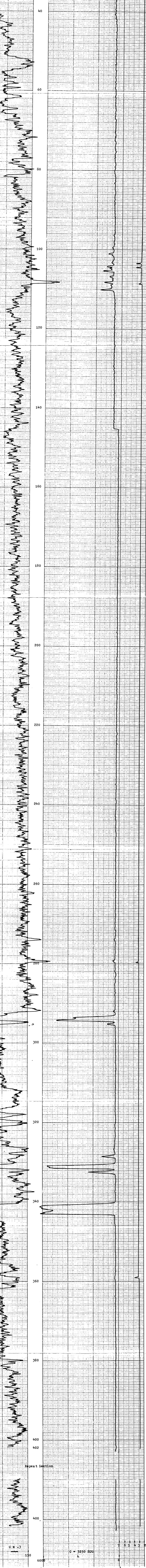
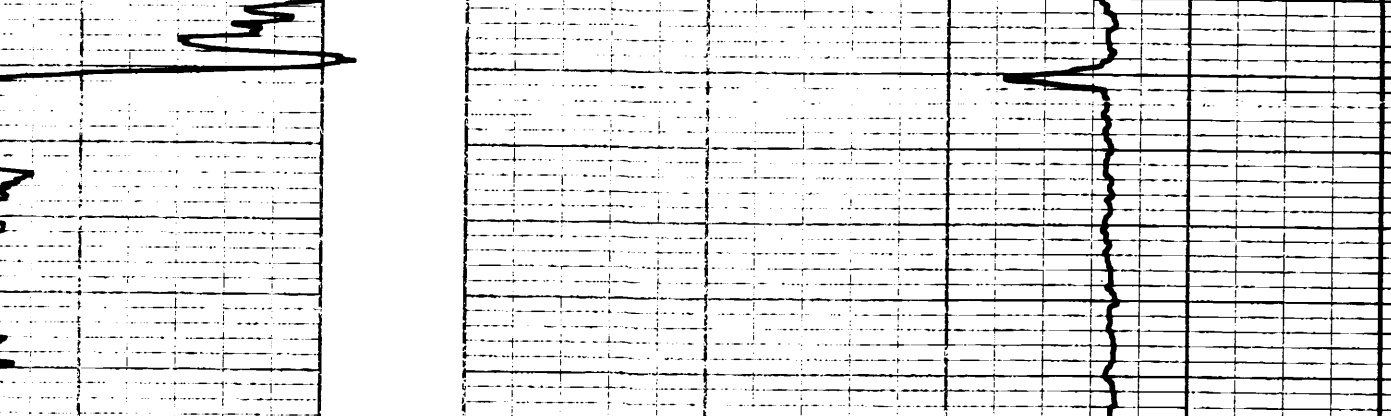
B PB COAL LITHOLOGY LOG

CALIBRATION DATA

JIG No	3	VALUE	300	2" DIAM
JIG No	42	SPAN	6000	NORM
JIG CAL DATE	1/7/78	JIG VALUE	3250	SDU @ 1.58 g/cm ³
JIG MARK SHOWN AT ABOVE VALUE	3.33			7 ins 950 cps
				2 ins 490 cps

COAL BULK DENSITY

GAMMA RAY	DEPTH	COAL BULK DENSITY (g/cm ³)	CALIPER (INCHES)
-----------	-------	--	------------------



COAL BULK DENSITY

GAMMA RAY	DEPTH	COAL BULK DENSITY (g/cm ³)	CALIPER (INCHES)
-----------	-------	--	------------------

BOREHOLE BP #47 - Sukunke 1928 AREA B.C.
CLIENT BP Coal COUNTRY Canada

COAL LITHOLOGY LOG



BP-514/119-9 72 (3/14)

BP-514/119-9 72 (3/14)

12- Sukunka 78 (5) A



BOREHOLE BP #47 - Sukunka 1978
 CLIENT BP Coal

AREA B.C.
 COUNTRY Canada

DEPTH SCALE
 1.20

DATE LOGGED 6 July '78

2 of 5 LOGS

BOREHOLE DATA REFER TO LITHOLOGY LOG

OPERATION DATA REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

LOG

LOG	TAPPING	SIDEWALL POSITION	DATE
GAMMA	X	R	24
RAI	X	R	2
SD	X	R	1.3
SD	X	R	24
SD	X	R	1
SD	X	R	7.34

SONDE TYPE:
 COAL COMBINATION SONDE

LOG SUITE:
 GAMMA RAY
 L. S. DENSITY

COAL QUALITY	LOG INTERVALS
FROM 346	335
TO 338	297
INTERVAL	8
FROM	8
TO	6
INTERVAL	22
TOTAL	222

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BPB COAL QUALITY LOG

GAMMA RAY COAL BULK DENSITY

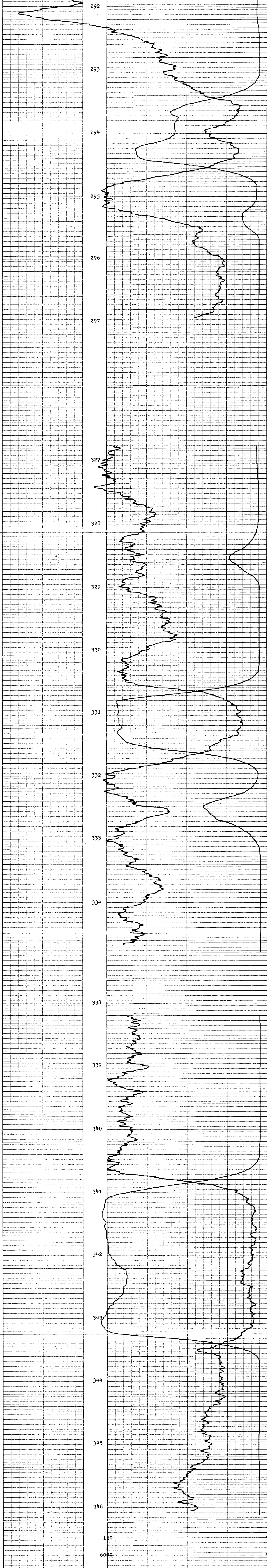
DEPTH

HOLE SIZE CORRECTION DATA

2"	1.25	1.3	1.35	1.4	1.45	1.5	1.55	1.6	1.7	1.8	1.9	2.0	2.2	2.4	3.0
4"															
6"															
8"															

150 API

6.000 s.d.u.



150 API

6.000 s.d.u.

COAL BULK DENSITY

GAMMA RAY

DEPTH

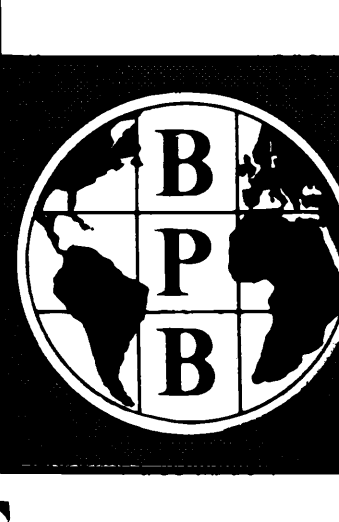
BOREHOLE BP #47 - Sukunka 1978

AREA B.C.

CLIENT BP Coal

COUNTRY Canada

COAL QUALITY LOG





1E-SUKUNKA 71314

BOREHOLE BP #47 - Sukunka 1978
CLIENT BP Coal

AREA B.C.
COUNTRY Canada

DATE LOGGED 6 JULY '78
3 or 5 LOGS

DEPTH SCALE
1120

BOREHOLE DATA
REFER TO LITHOLOGY LOG

OPERATION DATA
REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE

LOG

SEAM THICKNESS LOG

SONDE TYPE:

COAL COMBINATION SONDE

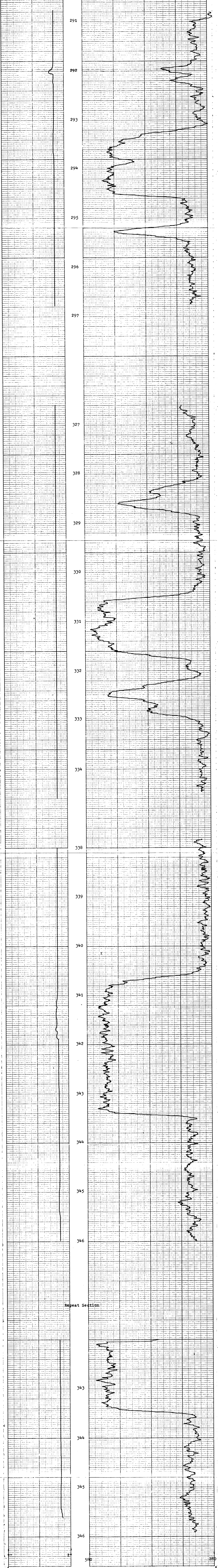
LOG SUITE:
CALIPER
BR. DENSITY

LOG	TAPING	SIDEWALL POSITION				
ALSO	LOG SPEED	PANEL				
Y	1	R	2	1	-	
CALIPER	Y	1	R	2	1	.785

SEAM THICKNESS LOG INTERVALS		
FROM 346	335	297
TO 338	327	291
INTERVAL FROM 8	8	6
INTERVAL TO		
REMARKS		

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B P B SEAM THICKNESS LOG



CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY
7 6 5 4 3 2	580	SBRDU 280



BOREHOLE BP #47 - Sukunka 1978
CLIENT BP Coal

AREA B.C.
COUNTRY Canada

SEAM THICKNESS LOG

16-Sukunka 21 (31)



NEUTRON-NEUTRON LOG

COMPANY BP Coal
 BOREHOLE BP #47 - Sukunka 1978
 STATE B.C. COUNTRY Canada

Permanent Datum Ground Level Elev. m.
 Log measured from m. above P.D.
 Drilling measured from Rift Floor 0 cm. above P.D.

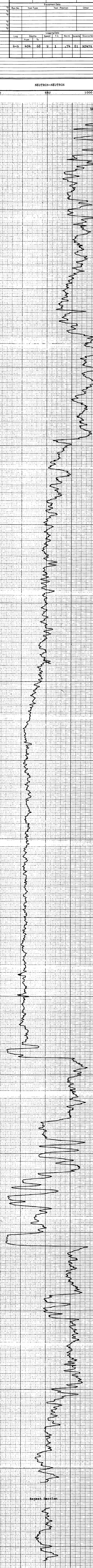
Run No. 1 Date/Time 1 July 1978
 Core Reading 404
 Tool Reading 68
 Depth at Measurement 339m
 Depth at Datum 7m

Special Fluid Used 40% 5m
 Borehole Drilling 40% 5m
 Mud Nature Water

Bit Size 1 3" to T.D.
 2 to
 3 to
 Change Size 1 3 1/2" to 7m
 2 to
 Bit to
 From to
 From to
 BHT
 Operating Time 7 1778
 Log No. 16722
 Recorder By D.J. SIBERT
 Witness

REMARKS

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Changes in Mud Type or Additional Samples		Type Log	Scale Changes	
Date	Sample No		Scale Up Hole	Scale Down
Depth - Driller				
Type Fluid in Hole				
Dens	Fluid Loss			
ph	Visc			
Equipment Data				
Source of Sample		Run No	Tool Type	Tool Position
Rm @ Meas Temp	@	°F	@	°F
Rm @ Meas Temp	@	°F	@	°F
Rmc @ Meas Temp	@	°F	@	°F
Source Rm1	Rmc			
Rm @ BHT	@	°F	@	°F
Rm @ BHT	@	°F	@	°F
Rmc @ BHT	@	°F	@	°F
Logging Data				
Log	Depths	Speed	T.C.	Norm.
	From	To		
N-N	404	68	9	1
			.74	81
				N2479

COMPANY BP Coal
 BOREHOLE BP #47 - Sukunka 1978
 STATE B.C.
 COUNTRY Canada

12-21101168 78 (B)A



SONIC LOG

COMPANY BP Coal
 BOREHOLE BP #47 - Sukunka 1978
 STATE B.C. COUNTRY Canada

Permanent Datum _____ Elev. _____ m
 Log measured from _____ Ground Level _____ m above P.D.
 Drilling measured from _____ RIG FLOOR _____ 0.6m above P.D.

GRD REF E _____ N _____ RI _____

Run No. 1 Date 6 JULY 1978
 First Reading 404
 Last Reading 146
 Interval Measured 258m
 Core/BPB _____
 Core/BPB _____

Depth Reached 404.5m
 Bottom Driller Water
 Mud Name _____
 SG _____
 Viscosity _____

Bit Size 3" to T.D.
 Core Size 3" to 7m
 Core Size 2 to _____
 Core Size 1 to _____
 Core Size 2 to _____

Run @ Meas Temp _____
 Run @ Meas Temp _____
 Run @ Meas Temp _____
 Run @ Meas Temp _____
 Run @ Meas Temp _____
 Run @ Meas Temp _____
 Run @ Meas Temp _____
 Run @ Meas Temp _____

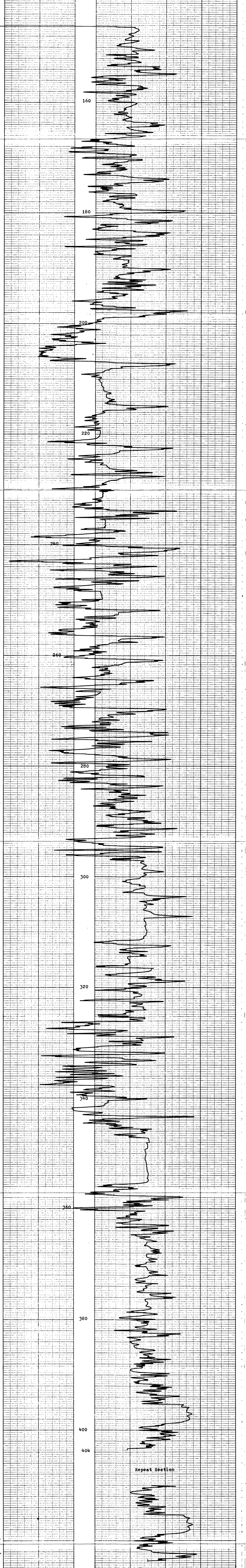
Operating Time 7 hrs.
 Truck No. V27/21
 Recorder By D. Fisher
 Wires _____

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REMARKS

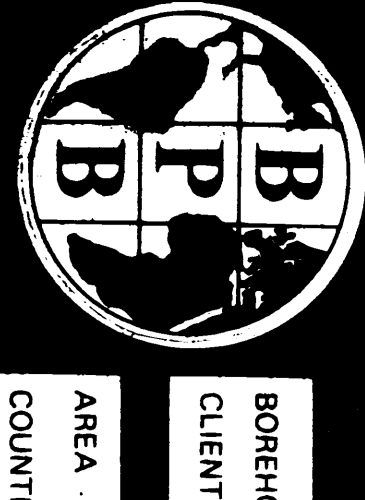
Changes in Mud Type or Additional Samples		Scale Changes			
Date	Sample No	Type Log	Depth	Scale Up Hole	Scale Down
Type Fluid in Hole					
Dens.	Visc				
ph	Fluid Loss	ml			
Source of Sample		Equipment Data			
Rm @ Meas Temp	@	%	@	%	Run No.
Rml @ Meas Temp	@	%	@	%	Tool Type
Rmc @ Meas Temp	@	%	@	%	Tool Position
					Other
Source: Rml	Rmc				
Rm @ BHT	@	%	@	%	
Rml @ BHT	@	%	@	%	
Rmc @ BHT	@	%	@	%	

Logging Data						
Log	Depths	Speed	T.C.	Norm.	Sound	Source No.
	From	To				
Sonic	404	146	9	1	-	



COMPANY BP Coal
 BOREHOLE BP #47 - Sukunka 1978
 STATE B.C.
 COUNTRY Canada

BP 48 Sukunka 1978



COAL LITHOLOGY LOG

SONDE TYPE: COAL COMBINATION SONDE

LOG SUIITE: GAMMA RAY
L.S. DENSITY
CALIPER

OPERATION DATA:
FIRST READING: 286m
LAST READING: 0m
INTERVAL LOGGED: 286m
UNIT TRUCK NO: V. 27/21
ENGINEER: D. Fisher
WITNESS: P. J. O'Leary

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BOREHOLE DATA:
BOROHOLE: BP # 48 Sukunka 1978
CLIENT: BP Coal
AREA: B.C.
COUNTRY: Canada
DATE LOGGED: 2 July 1978
DEPTH SCALE: 200.1
1 of 5 LOGS

BOREHOLE DATA:
PERMANENT DATUM: Ground Level
ELEVATION OF TD: 818
G.L.L.: 285.5 m
MAGNETIC NORTH: 287.7 m
DEPTH REACHED: 285.5 m
CASING SIZES: 5" TO 285.5 m TO 3.0 m
3" TO 285.5 m TO 4" TO 285.5 m TO 5" TO 3.0 m TO

FLUID DATA:
NATURE: WATER
LEVEL: 189.5 m

EQUIPMENT AND RECORDING DATA

COAL COMBINATION SONDE		EQUIPMENT		TAPING		PANEL		CAL COEFF		DEPTHS		SEAM LOG RUN	
LOG	SONDE	SOURCE	CALIBRATOR	LOG TAPED	RECORD SPEED	DIRECT REPLAY	SPEED	T.C SECS	NORM	FROM	TO	INTERVAL	
GAMMA RAY	110	5852	3	Y	9	D	9	1	1.3	286	0	286	Y
S DENSITY	110	5852	42	Y	9	D	9	1/3	1.74	287	190	97	Y
CALIPER	110	5852		Y	9	R	9	1/3	-	286	0	286	Y

COAL QUALITY/SEAM THICKNESS LOG INTERVALS (Refer to relevant log)

FROM	TO	INTERVAL	TOTAL
282	230		
262	224		
20	6		26

ADDITIONAL SONDES RUN

SONDE	LOG	GENERAL SCALE LOG	DETAIL SCALE LOG
N-N		1:200	
Sonic		1:200	

REMARKS: LSD not recorded above water level

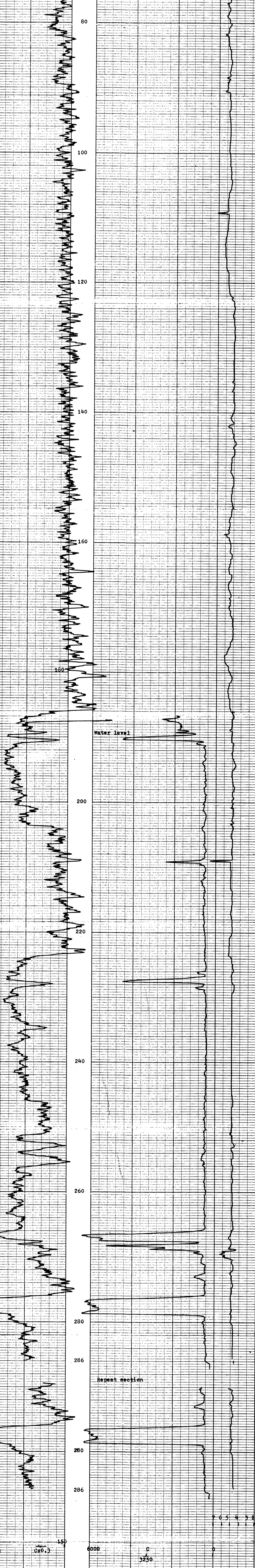
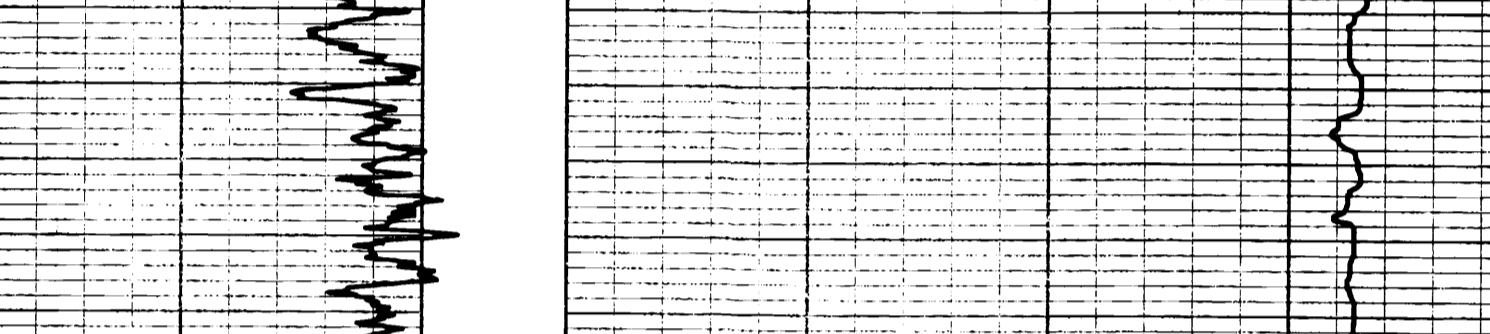
B PB COAL LITHOLOGY LOG

CALIBRATION DATA

JIG No 3	VALUE 3000 2" DIAM	JIG CAL DATE 1.7.78	JIG VALUE 3250	SDU @ 1.58 cm ³	7 ins	950 CPS
JIG MARK SHOWN AT ABOVE VALUE 3.3		JIG No 42	SPAN 6000	NORM SDU CPS = 7.40	2 ins	490 CPS

GAMMA RAY	DEPTH	COAL BULK DENSITY	CALIPER
		g/cm ³	INCHES

HOLE SIZE CORRECTION DATA



GAMMA RAY	DEPTH	COAL BULK DENSITY	CALIPER
		g/cm ³	INCHES

BOREHOLE: BP # 48 Sukunka 1978 **AREA:** B.C.
CLIENT: BP Coal **COUNTRY:** Canada

COAL LITHOLOGY LOG

MY 880028



22-52928-21 (5)A

LOG SUITE:
GAMMA RAY
L.S. DENSITY

SONDE TYPE:
COAL
COMBINATION
SONDE

COAL QUALITY LOG

COAL QUALITY LOG

BOREHOLE BP # 48 Sukunka 1978
CLIENT BP Coal
AREA B.C.
COUNTRY Canada
DATE LOGGED 2 July 1978
2 OF 5 LOGS

BOREHOLE DATA REFER TO LITHOLOGY LOG
OPERATION DATA REFER TO LITHOLOGY LOG
EQUIPMENT AND RECORDING DATA
COAL COMBINATION SONDE
SERIAL POSITION
LOG TANG. MAG. RECORD. ENERGY SERIAL POS. COAL
GAMMA RAY Y 1 R 2 2 2 1.3
L.S. DENSITY Y 1 R 2 2 2 1.3
SOURCE SONDE AND CALIBRATION
REFER TO LITHOLOGY LOG

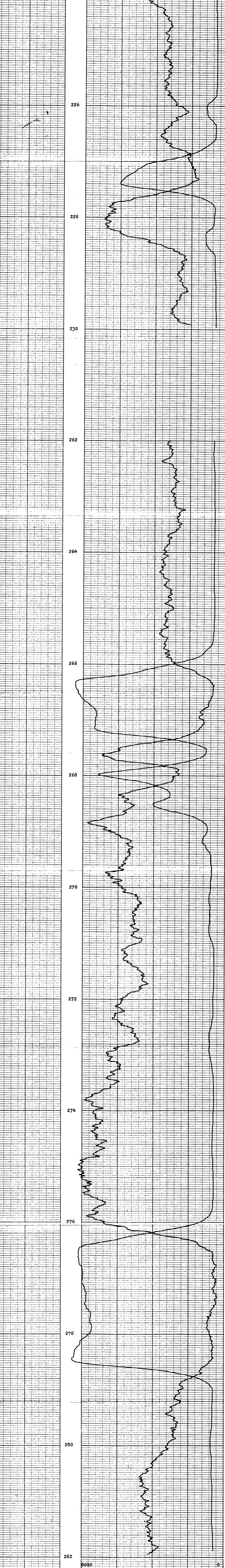
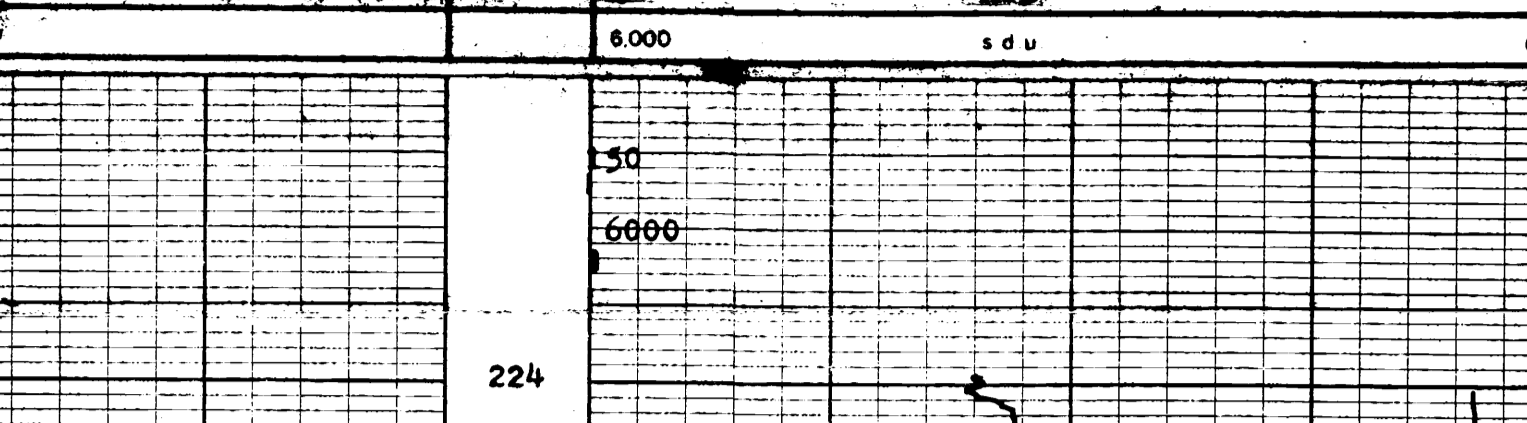
COAL QUALITY LOG INTERVALS
FROM 282 230
TO 282 224
INTERVAL 6
FROM 282 224
TO 282 218
INTERVAL 6
FROM 282 218
TO 282 212
INTERVAL 6
FROM 282 212
TO 282 206
INTERVAL 6
FROM 282 206
TO 282 200
INTERVAL 6
FROM 282 200
TO 282 194
INTERVAL 6
FROM 282 194
TO 282 188
INTERVAL 6
FROM 282 188
TO 282 182
INTERVAL 6
FROM 282 182
TO 282 176
INTERVAL 6
FROM 282 176
TO 282 170
INTERVAL 6
FROM 282 170
TO 282 164
INTERVAL 6
FROM 282 164
TO 282 158
INTERVAL 6
FROM 282 158
TO 282 152
INTERVAL 6
FROM 282 152
TO 282 146
INTERVAL 6
FROM 282 146
TO 282 140
INTERVAL 6
FROM 282 140
TO 282 134
INTERVAL 6
FROM 282 134
TO 282 128
INTERVAL 6
FROM 282 128
TO 282 122
INTERVAL 6
FROM 282 122
TO 282 116
INTERVAL 6
FROM 282 116
TO 282 110
INTERVAL 6
FROM 282 110
TO 282 104
INTERVAL 6
FROM 282 104
TO 282 98
INTERVAL 6
FROM 282 98
TO 282 92
INTERVAL 6
FROM 282 92
TO 282 86
INTERVAL 6
FROM 282 86
TO 282 80
INTERVAL 6
FROM 282 80
TO 282 74
INTERVAL 6
FROM 282 74
TO 282 68
INTERVAL 6
FROM 282 68
TO 282 62
INTERVAL 6
FROM 282 62
TO 282 56
INTERVAL 6
FROM 282 56
TO 282 50
INTERVAL 6
FROM 282 50
TO 282 44
INTERVAL 6
FROM 282 44
TO 282 38
INTERVAL 6
FROM 282 38
TO 282 32
INTERVAL 6
FROM 282 32
TO 282 26
INTERVAL 6
FROM 282 26
TO 282 20
INTERVAL 6
FROM 282 20
TO 282 14
INTERVAL 6
FROM 282 14
TO 282 8
INTERVAL 6
FROM 282 8
TO 282 2
INTERVAL 6

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B P B COAL QUALITY LOG

DEPTH GAMMA RAY
COAL BULK DENSITY
g/cm³

HOLE SIZE CORRECTION DATA

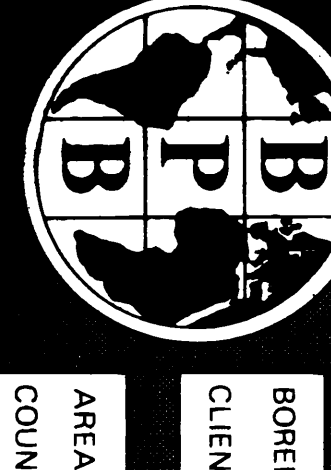


COAL BULK DENSITY
GAMMA RAY



BOREHOLE BP # 48 Sukunka 1978
CLIENT BP Coal
AREA B.C.
COUNTRY Canada
COAL QUALITY LOG

DE - SWENNER 710312



BOREHOLE BP # 48 Sukunka 1978
 CLIENT BP Coal

AREA B.C.
 DEPTH SCALE 1:120
 COUNTRY Canada

DATE LOGGED 2 JULY 1978
 3 OF 5 PAGES

BOREHOLE DATA REFER TO LITHOLOGY LOG
 OPERATION DATA REFER TO LITHOLOGY LOG

EQUIPMENT AND RECORDING DATA
 COAL COMBINATION SONDE SIDEWALL POSITION

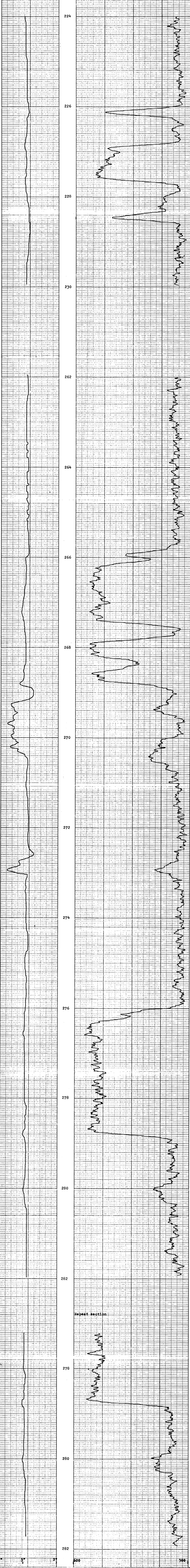
LOG TAPPING RECORD SPEED LOG NORM
 CALIPER X 1 R 2 1 -
 BRIDGMAN Y 1 R 2 1 1/284

SONDE TYPE: COAL
 COMBINATION SONDE
 LOG SUITE: CALIPER BR DENSITY

SEAM THICKNESS LOG INTERVALS
 FROM 282 230
 TO 262 224
 INTERVAL 20 6
 FROM 262 262
 TO 264 264
 INTERVAL 2 2
 FROM 264 264
 TO 266 266
 INTERVAL 2 2
 FROM 266 266
 TO 268 268
 INTERVAL 2 2
 FROM 268 268
 TO 270 270
 INTERVAL 2 2
 FROM 270 270
 TO 272 272
 INTERVAL 2 2
 FROM 272 272
 TO 274 274
 INTERVAL 2 2
 FROM 274 274
 TO 276 276
 INTERVAL 2 2
 FROM 276 276
 TO 278 278
 INTERVAL 2 2
 FROM 278 278
 TO 280 280
 INTERVAL 2 2
 FROM 280 280
 TO 282 282
 INTERVAL 2 2
 FROM 282 282
 TO 284 284
 INTERVAL 2 2
 FROM 284 284
 TO 286 286
 INTERVAL 2 2
 FROM 286 286
 TO 288 288
 INTERVAL 2 2
 FROM 288 288
 TO 290 290
 INTERVAL 2 2
 FROM 290 290
 TO 292 292
 INTERVAL 2 2
 FROM 292 292
 TO 294 294
 INTERVAL 2 2
 FROM 294 294
 TO 296 296
 INTERVAL 2 2
 FROM 296 296
 TO 298 298
 INTERVAL 2 2
 FROM 298 298
 TO 300 300
 INTERVAL 2 2

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B P B SEAM THICKNESS LOG



CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY
7 6 5 4 3 2	600	SBRDU
3 2	300	300



BOREHOLE BP # 48 Sukunka 1978
 CLIENT BP Coal

AREA B.C.
 COUNTRY Canada

SEAM THICKNESS LOG



NEUTRON-NEUTRON LOG

12 - SUKUNKA X (S) A

COMPANY BP Coal

BOREHOLE BP #48 Sukunka 1978

STATE B.C. COUNTRY Canada

Permanent Datum Ground Level Elev. m.

Log measured from Ground Level zero m. above P.D.

Drilling measured from Ground Level m. above P.D.

GRID REF E N RL

Run No 1 Depth Scale 200 1 of 5

Date 2 July 1978

First Reading 286m

Last Reading 190m

Interval Measured 96m

Casing BPG

Casing Driller 3m

Depth Required 287.7m

Bottom Driller 285.5m

Mud Nature Water

S.S. Viscosity

B.H. Size 1 5* to 1".D.

B.H. Size 2 to

B.H. Size 3 to

Casing Size 1 5* to 3m

Rm @ Meas Temp @ °F

Rmf @ Meas Temp @ °F

Rmc @ Meas Temp @ °F

Operating Time 5 3/4 hrs

Truck No V23/21

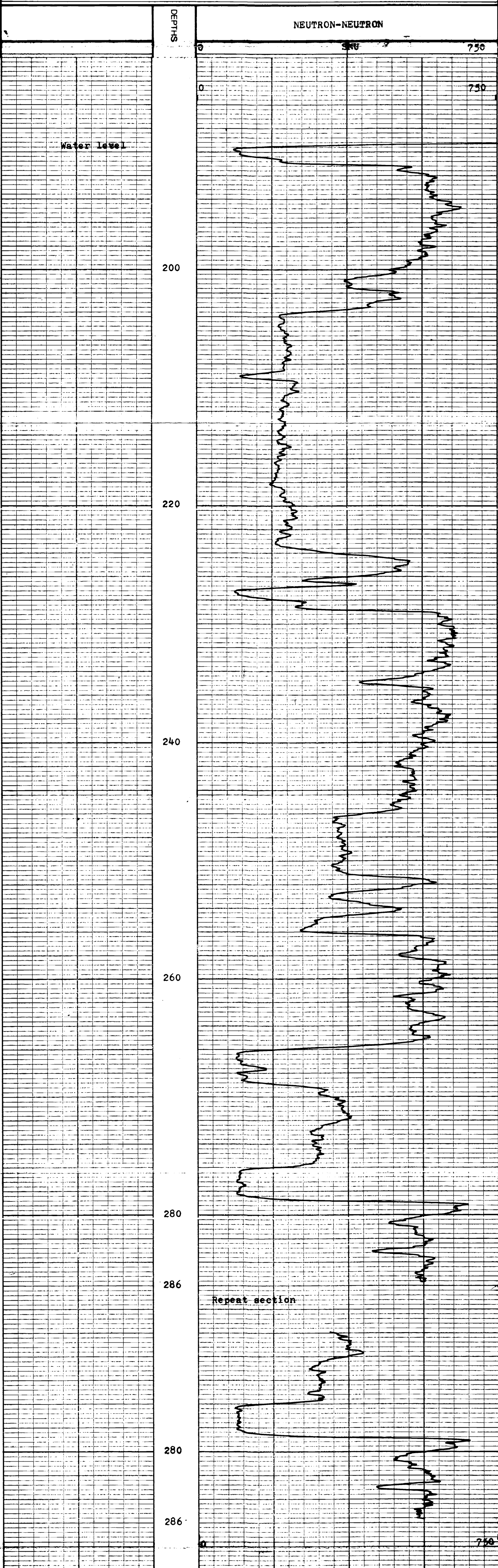
Recorded By D.Fisher

Witness P.M.Caine D.Mitchell

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REMARKS		Scale Changes			
Date	Sample No.	Type Log	Depth	Scale Up Hole	Scale Down
Changes in Mud Type or Additional Samples					
Depth-Driller					
Type Fluid in Hole					
Dens.	Visc				
ph	Fluid Loss				
Source of Sample		Equipment Data			
Rm @ Meas Temp	@ °F	Run No.	Tool Type	Tool Position	Other
Rmf @ Meas Temp	@ °F				
Rmc @ Meas Temp	@ °F				
Source: Rmf	Rmc				
Rm @ BHT	@ °F				
Rmf @ BHT	@ °F				
Rmc @ BHT	@ °F				
Logging Data					
Log	Depths m	Speed	T.C.	Norm.	Sonde No.
	From To	m/min	sec		
N-N	286 190	9	1	0.75	18
Source No. <u>N2479</u>					

Water level at 190m, no log above this point.



DEPTHS	0	750
NEUTRON-NEUTRON		
DEPTHS	0	750
NEUTRON-NEUTRON		
COMPANY	<u>BP Coal</u>	
BOREHOLE	<u>BP # 48</u>	
STATE	<u>B.C.</u>	
COUNTRY	<u>Canada</u>	



SONIC LOG

SR - SUKUNKA 7P(S)A

COMPANY BP Coal BOREHOLE BP # 48 Sukunka 1978 STATE B.C. COUNTRY Canada

Permanent Datum Ground Level Elev. m. Log measured from Ground Level m. above P.D. Drilling measured from Ground Level m. above P.D.

GRID REF. E N RL

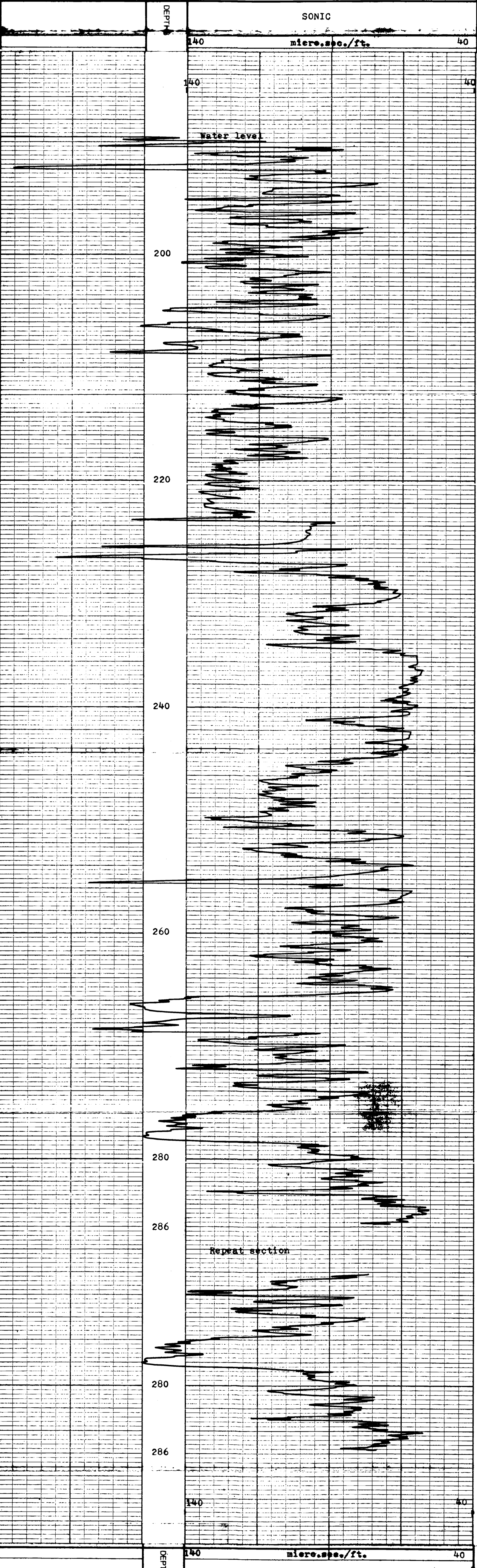
Run No 1 DepthScale 200 1 of 5 Date 2 July 1978

First Reading 286 m Last Reading 189 m Interval Measured 97 m Casing BPP Casing Driller Depth Reached 287.7 m Bottom Driller 285.5 m Mud Nature Water SG Viscosity Bit Size 5" to T.D. Casing Size 5" to 3 m Rm @ Meas Temp @ °F Rm @ Meas Temp @ °F Rmc @ Meas Temp @ °F Rm @ Meas Temp @ °F Rmc @ Meas Temp @ °F BHT Operating Time 5 3/4 hrs Truck No V 23/24 Recorded By D. Fisher Witness P.M. Calne

fold here

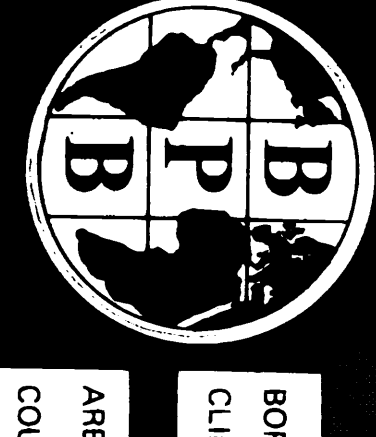
REMARKS		Scale Changes	
Date	Sample No	Type Log	Scale Down
Changes in Mud Type or Additional Samples		Depth	Scale Up Hole
Depth - Driller			
Type Fluid in Hole			
Dens.	Visc		
ph	Fluid Loss	mi	
Source of Sample		Equipment Data	
Rm @ Meas Temp	@ °F	Run No	Tool Type
Rmf @ Meas Temp	@ °F	Tool Position	
Rmc @ Meas Temp	@ °F	Other	
Source Rmf	Rmc		
Rm @ BHT	@ °F		
Rmf @ BHT	@ °F		
Rmc @ BHT	@ °F		
Logging Data			
Log	Depths m	Speed	T.C.
	From To	m/min sec	Norm.
Sonic	286 189	9 1	- 110

Water level at 190m., no log above this point.



COMPANY BP Coal BOREHOLE BP # 48 Sukunka STATE B.C. COUNTRY Canada

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12-5-2011-271312

BOREHOLE BF # 49 Sukkuka 1328

CLIENT BF Coal

AREA B.V.

COUNTRY Canada

DATE LOGGED 5 July 1978

DEPTH SCALE 200.1

1 of 5 LOGS

BOREHOLE DATA

PERMANENT DATUM Ground level

ELEVATION OF P.D. 3250

MASS/BANKS FROM 7.1.78

DEPTH REACHED 281.75

CASING SIZE 1 5" TO 27.5"

CASING SIZE 2 4" TO 27.5"

CASING SIZE 3 3" TO 27.5"

CASING SIZE 4 2" TO 27.5"

CASING SIZE 5 2" TO 27.5"

FLUID DATA

NATURE Water & Sand

LEVEL 120-140 m. falling

COAL COMBINATION SONDE

LOG SUITE: GAMMA RAY, LS DENSITY, CALIPER

OPERATION DATA

FIRST READING 28.0m

LAST READING 28.0m

UNIT - TRUCK NO. 23/21

ENGINEER D.F. Fisher

WITNESS L. Rindero

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EQUIPMENT AND RECORDING DATA

Table with columns: LOG, EQUIPMENT, TAPING, PANEL, CAL COEFF, DEPTHS, SEAM LOG RUN. Includes data for Gamma Ray, LS Density, and Caliper logs.

COAL QUALITY/SEAM THICKNESS LOG INTERVALS (Refer to relevant log). Includes FROM, TO, INTERVAL, TOTAL columns.

ADDITIONAL SONDES RUN. Includes SONDE, LOG, GENERAL SCALE LOG, DETAIL SCALE LOG, and REMARKS.

B P B COAL LITHOLOGY LOG

CALIBRATION DATA

Table with columns: JIG No, VALUE, JIG CAL DATE, JIG VALUE, JIG VALUE, INS, CPS. Includes calibration data for Gamma Ray and Caliper.

Table with columns: GAMMA RAY, DEPTH, COAL BULK DENSITY, CALIPER. Includes calibration data for Gamma Ray and Caliper.

HOLE SIZE CORRECTION DATA

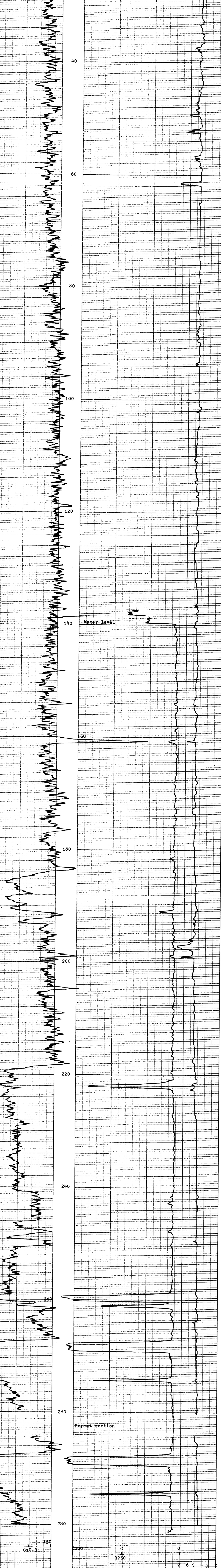
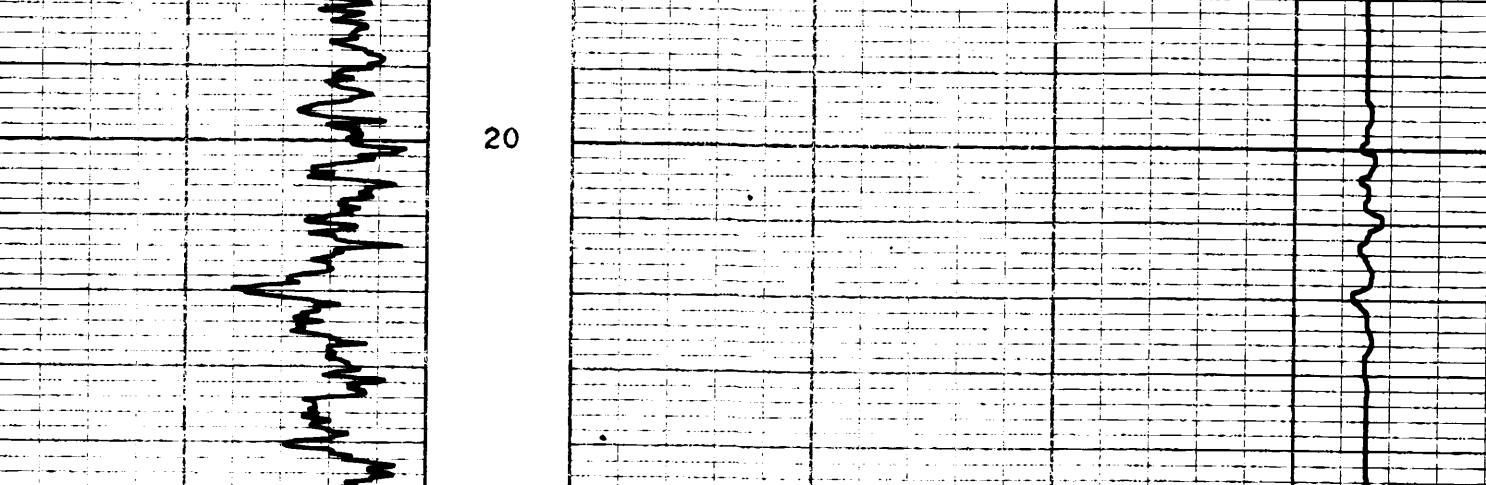


Table with columns: GAMMA RAY, DEPTH, COAL BULK DENSITY, CALIPER. Includes calibration data for Gamma Ray and Caliper.

COAL LITHOLOGY LOG

Form with fields for BOREHOLE #, AREA, CLIENT, and COUNTRY.

COAL LITHOLOGY LOG



18-51141414 28614

BOREHOLE BP # 49 Sukunna 1978
CLIENT BP Coal

AREA B.C.
COUNTRY Canada
DATE LOGGED 5 JULY 1978

DEPTH SCALE
20 ± 1
2 of 5 LOGS

BOREHOLE DATA REFER TO LITHOLOGY LOG
OPERATION DATA REFER TO LITHOLOGY LOG
EQUIPMENT AND RECORDING DATA

COAL QUALITY LOG
COAL COMBINATION SONDE

LOG TAPPING SIDEWALL POSITION
LOG RECORDING SPEED PANEL CODE
GAMMA RAY X 1 N 2 2 1.2
S.DENSITY X 1 R 2 1 7.5E

SONDE TYPE:
COAL
COMBINATION
SONDE

LOG SUITE:
GAMMA RAY
L.S. DENSITY

FROM 276 224
TO 256 220
INTERVAL 20 4
INTERVAL TOTAL 24
REMARKS

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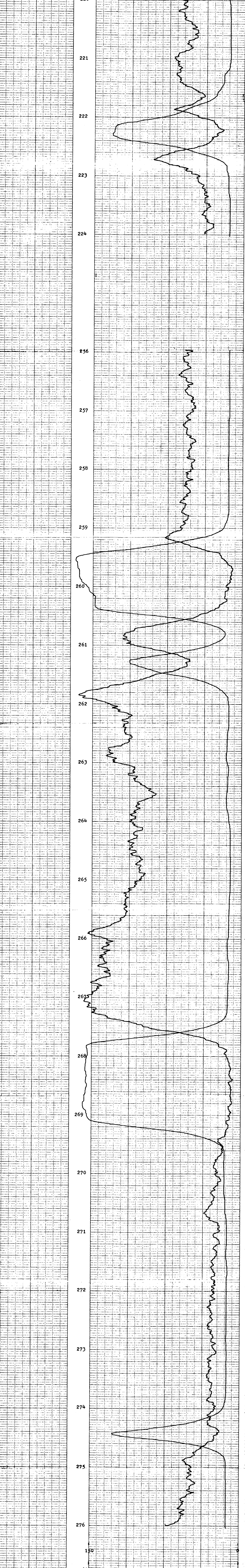
BPB COAL QUALITY LOG

DEPTH GAMMA RAY
COAL BULK DENSITY
g/cm³

HOLE SIZE CORRECTION DATA

2"		125	13	135	14	145	15	155	16	17	18	19	20	22	24	30
4"																
6"																
8"																

150 API 0
6000 sdu 0



6000 sdu 0
150 API 0

DEPTH GAMMA RAY
COAL BULK DENSITY
g/cm³



BOREHOLE BP # 49 Sukunna 1978
CLIENT BP Coal
AREA B.C.
COUNTRY Canada

COAL QUALITY LOG

1K - SUKUNKA 78(13)B



BOREHOLE BP # 49 Sukunka 1978
 CLIENT BP Coal

AREA B.C.
 DEPTH SCALE 20.11
 COUNTRY Canada

DATE LOGGED 5 JULY 1978
 30'-5' LOGS

SEAM THICKNESS LOG

LOG

SONDE TYPE: COAL
 COMBINATION SONDE

LOG SUITE: CALIPER
 BR DENSITY

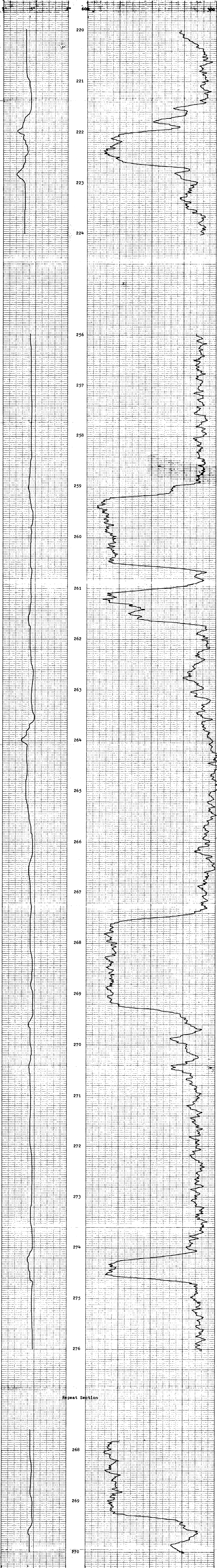
SEAM THICKNESS LOG INTERVALS

FROM 226 TO 224
 INTERVAL 20
 FROM 256 TO 220
 INTERVAL 4
 FROM 268 TO 270
 INTERVAL 4

REMARKS

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B P B SEAM THICKNESS LOG



CALIPER INCHES	DEPTH	BED RESOLUTION DENSITY
7 6 5 dia 4 3 2	600	SBRDU 300



BOREHOLE BP # 49 Sukunka 1978 AREA B.C.
 CLIENT BP Coal COUNTRY Canada

SEAM THICKNESS LOG



SONIC LOG

12-506966A-71(3)A

COMPANY BP Coal
 BOREHOLE BP # 49 Sukunka 1978
 STATE B.C. COUNTRY Canada

Permanent Datum _____ Elev. _____ m.
 Log measured from Ground Level zero m. above P.D.
 Drilling measured from Ground Level _____ m. above P.D.

Log Date 5 July 1978 1 200.1 5 of 5
 D.T. _____
 Frig. Reading _____ 280 m
 Lith. Reading _____ 140 m
 Interval Measured _____
 Casing Log _____
 Casing Diameter _____

Depth Reading _____ 281.5
 Bottom Unit _____ 279.0
 Mud Nature Water & sand
 SG _____

Bit Size 1 5" to T.D. _____
 2 _____
 3 _____
 Casing Size 1 _____
 2 _____
 3 _____

Rm @ Meas. Temp _____
 Rmf @ Meas. Temp _____
 Rmc @ Meas. Temp _____
 Source: Rmf _____ Rmc _____
 Rm @ BHT _____
 Rmf @ BHT _____
 Rmc @ BHT _____

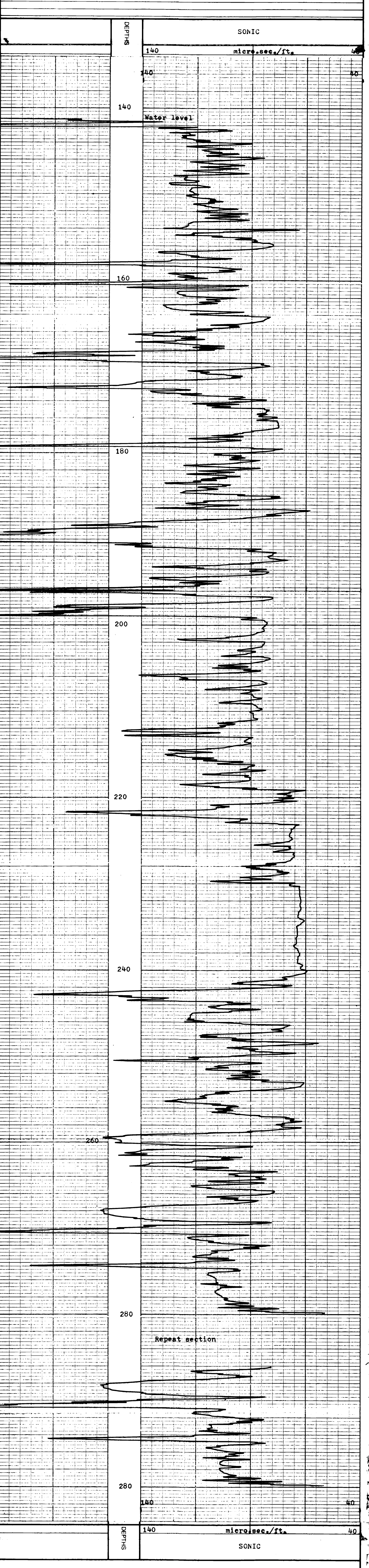
BHT _____
 Operating Time 5 3/4 hrs
 Truck No. _____
 Recorded By D. Fisher
 Witness L. Rindero

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REMARKS				Scale Changes			
Date	Sample No.	Type Log	Depth	Scale Up Hole	Scale Down		
Changes in Mud Type or Additional Samples							
Type Fluid in Hole							
Dens. _____ Visc. _____							
ph _____ Fluid Loss _____ ml							
Source of Sample							
Equipment Data							
Run No.	Tool Type	Tool Position	Other				
Logging Data							
Log	Depths	Speed	T.C.	Norm.	Sonde No.	Source No.	
	From To	m	m/min	sec			
Sonic	280 140	9	1		110		

Water level at 140 m., no log above this point.



COMPANY BP Coal
 BOREHOLE BP # 49 Sukunka 1978
 STATE B.C.
 COUNTRY Canada



NEUTRON - NEUTRON LOG

COMPANY BP Coal
 BOREHOLE BP # 49 Sukunka 1978
 STATE B.C. COUNTRY Canada
 Permanent Datum Ground Level Elev. m.
 Log measured from Ground Level zero m. above P.D.
 Drilling measured from Ground Level m. above P.D.

Run No. 1 of 4
 Date 5 JULY 1978
 First Reading 280m
 Last Reading 160m
 Interval Measured 160m
 Casing Bore
 Casing Depth
 Depth Headed 281.5
 Bottom Drilled 279.0
 Mud Name Water & Soap
 SG Viscosity
 Bit Size 5" to T.D.
 Casing Size
 Rm @ Meas Temp
 Rmc @ Meas Temp
 BHT @ Meas Temp
 Operating Time 5 3/4 hrs
 Tuck No. 23/21
 Recorded By D. Fisher
 Witness L. Rindero

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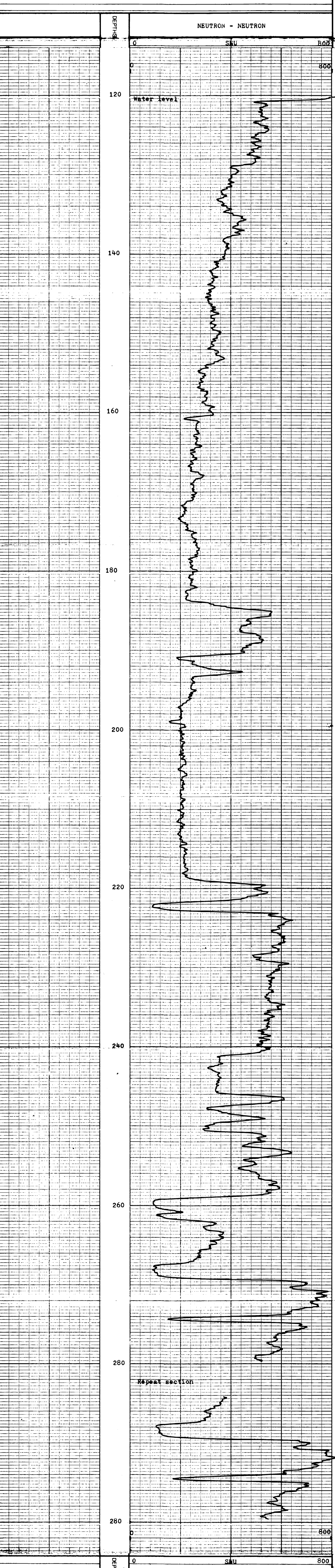
REMARKS

Changes in Mud Type or Additional Samples			Scale Changes			
Date	Sample No.		Type Log	Depth	Scale Up Hole	Scale Down
Depth - Driller						
Type Fluid in Hole						
Dens.	Visc.					
ph.	Fluid Loss	ml				
Source of Sample			Equipment Data			
Rm @ Meas. Temp		°F	Run No.	Tool Type	Tool Position	Other
Rmc @ Meas. Temp		°F				
Source: Rm1	Rmc					
Rm @ BHT		°F				
Rmc @ BHT		°F				
Rm @ BHT		°F				

Logging Data

Log	Depths m	Speed m/min	T.C. sec	Norm.	Sonde No.	Source No.
N-N	280 to 120	9	1	.74	18	N 2479

Water level at 120m.. no log above this point.



COMPANY BP Coal
 BOREHOLE BP # 49 Sukunka 1978
 STATE B.C.
 COUNTRY Canada

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