

~~CONFIDENTIAL~~

SUKUNKA COAL PROJECT

MIDDLE COALS AREA

VOLUME 3

APPENDIX C

DRILL HOLE DATA

See Over For: Explanatory Notes
Reference for Graphic Sections

Prepared By : CLIFFORD McELROY & ASSOCIATES Pty. LIMITED
Report No. : 1/4/23 June, 1975

EXPLANATORY NOTES TO ACCOMPANY APPENDIX C

This Appendix contains the records of the holes drilled between September and December, 1974 for the programme evaluating the Lower Gething sequence in the vicinity of Skeeter Creek. The Appendix is divided into three parts, as outlined below.

Diamond Drill Holes (Appendix C-1)

The six diamond drill holes are prefixed 'M' for "Middle Coals", to distinguish them from the holes previously drilled to assess the seams in the Upper Gething sequence on the property.

D.D.H.'s M-1A and M-2 were drilled by Canadian Longyear Ltd., using a conventional diamond coring rig and wire-line triple tube barrel. D.D.H. M-1A, drilled in June, 1973, is included for completeness. D.D.H.'s M-3 to M-6 were drilled by Sedco Drilling, using a mud circulation Mayhew 1500 rotary drilling rig with a 4½" diameter Christensen core barrel with plastic liner.

Rotary Drill Holes

Twenty-three holes were drilled using a Mayhew 1500 rotary drilling rig employing mud circulation. Sedco Drilling was the contractor. Owing to contamination of the coal seam samples by rock cuttings, only samples from five of the twelve drill holes to penetrate significant seam thicknesses were analyzed. Thus the records for the rotary holes are included as two sub-appendices.

(a) R.D.H.'s - Seams Analyzed (Appendix C-2)

The drill hole records for R.D.H.'s 'C', 'H', 'T', 'V', and 'W' are included in this section, with the analytical data, strip log and description, and radiation log, each as a separate record.

(b) R.D.H.'s - Seams Not Analyzed (Appendix C-3)

The remaining rotary drill hole records are included in this section as strip logs and descriptions, and radiation logs. The coal seam intersections, thicknesses, and other pertinent data are tabulated in Appendix A. Due to the absence of samples for the Water Well ('WW'), an inferred lithologic column is shown on the radiation log.

SUKUNKA COAL PROJECT

MIDDLE COALS AREA

APPENDIX C-1

DIAMOND DRILL HOLE DATA

D.D.H.'s M-1 to M-6

BORE NUMBER M-1A

Grid Reference 53195N 72155E

Date Commenced 19th June 1973

Completed 30th June 1973

Collar R.L. 2743 ft

Standard Datum

Total Depth 304.0 ft

Electrically Logged No

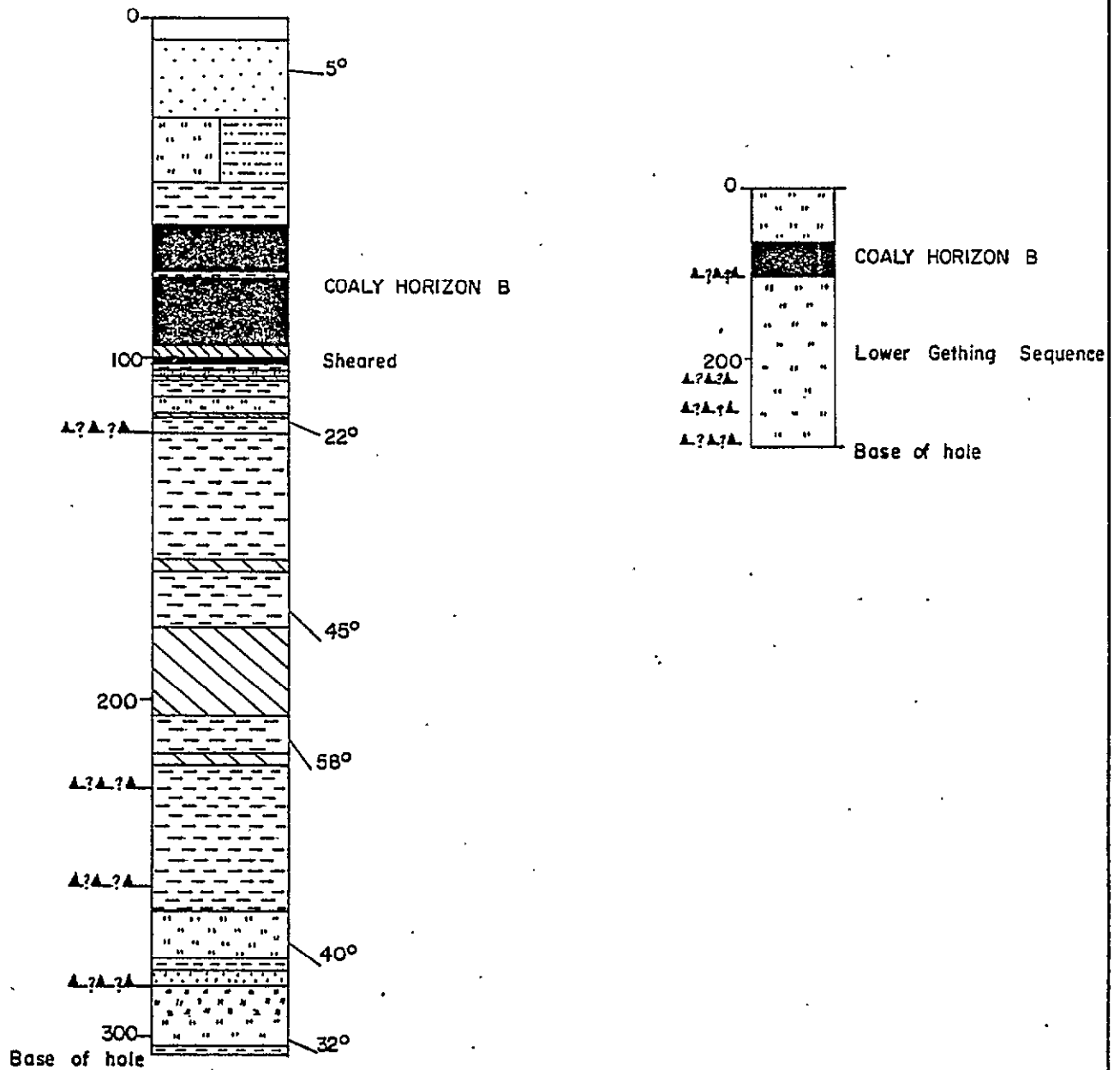
Drilled by Connor's Drilling Ltd

For Coalition Mining Limited

Logged by G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft)	Recovery	Comment
Coaly Horizon 'B'	2641.1	41.87	74%	Coal Seam sheared and tectonically thickened throughout.



DETAIL OF GETHING
FORMATION
SCALE: 1"=50'

SCALE: 1"=200'

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STRATIGRAPHIC LOG
DDH M-1A

DATE: September, 1973

PAGE 1 of 1

						ASH % CUMULATIVE FROM FLOOR				
						WT%	ASH%	C. S. N ^o	INCL. BANDS	EXCL. BANDS
60-05										
		1	0.70	2.2	1.3	1/2				
		2	1.25	3.8	3.6	1/2				
		3	1.17	2.7	9.6	1/2				
		4	0.83	1.9	2.0	1/2				
		5	1.43	4.5	3.3	0				
		6	0.99	3.6	2.6	0				
		Core loss 1.88								
		7	1.12	5.4	68.2	0				
70										
		8	2.43	6.1	3.9	1/2				
		9	2.15	5.2	4.2	1/2				
		Continued								

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SEAM SECTION
 DDH M-1A

DRAWN BY

DATE September, 1973

SCALE: 1" to 2'

PAGE 1 of 3

ASH %
CUMULATIVE
FROM FLOOR

			WT %	ASH %	C. S. N ^o	INCL. BANDS	EXCL. BANDS
	10	1.67	2.7	45.6	2		
	11	1.43	3.7	6.5	1		
	12	1.73	4.6	17.2	1		
	13	0.39	1.3	73.0	1		
	14	2.45	5.0	10.6	1		
	15	1.58	5.7	10.9	1		
	16	1.58	3.0	3.7	1 1/2		
	17	1.42	3.2	3.5	1		
	18	1.49	4.2	2.6	1		
Continued							

80

Continued

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DATE September, 1973

SEAM SECTION
DDH M-1A

SCALE: 1" to 2'

PAGE 2 of 3

						ASH % CUMULATIVE FROM FLOOR				
						WT%	ASH%	C. S. N ^o	INCL. BANDS	EXCL. BANDS
			19	1.79	6.8	13.3	1/2			
90			20	0.65	1.9	5.8	2			
			21	0.97	3.6	1.7	1			
			22	1.25	4.6	2.3	2			
			23	1.18	4.3	1.1	3			
			24	2.75	6.7	8.5	4			
			25	1.84	1.9	62.8	1/2			
100			26	3.75	1.3	53.2	0			
			Sheared							
101-92			BASE OF SEAM							

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 for
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SEAM SECTION
 DDH M-1A

DRAWN BY

DATE September, 1973

SCALE: 1" to 2'

PAGE 3 of 3



APPLICANT:

COALITION MINING LIMITED,
C/- AUSTEN & BUTTA LIMITED

ATTENTION: MR. F. GARDINER

SUBJECT:

WASHABILITY AND ANALYTICAL DATA ON TWENTY
SIX (26) ONLY COAL PLY SAMPLES DESIGNATED
D.D.H.-MIA - SUKUNKA CORE.

REPORT NO.

CS20904

DATE RECEIVED:

13. 7. 73

DATE REPORTED:

20. 7. 73

A handwritten signature in cursive script, appearing to read "J.A. Bralley".

CARGO SUPERINTENDENTS CO. (A/SIA) PTY. LIMITED.



INTRODUCTION:

Twenty six (26) only coal ply samples designated D.D.H.-MIA - Sukunka Cores were received in our Sydney laboratory on 13.7.73.

METHOD:

Each sample was air dried, weighed, hand crushed to a 1" top size and sized at 30# BSS.

The +30# BSS raw coal fractions were washed in organic liquids at 1.40 S.G. and 1.60 S.G.

The float and sink fractions were weighed, prepared and analysed in accordance with BS1016 for proximate analysis, total sulphur and crucible swelling no.

These results are given in Tables 1 - 26 inclusive.

The raw ash% of each ply is given in Table 27.



TABLE 1: WASHABILITY AND ANALYTICAL DATA FOR PLY 1 (after crushing to -1")

FRACTION	INDIVIDUAL ANALYSIS								CUMULATIVE ANALYSIS						
	WT.GM.	WT. %	ADM%	ASH%	V.M.%	F.C.%	T.S.%	C.S.NO.	WT. %	ADM%	ASH%	V.M.%	F.C.%	T.S.%	C.S.NO. (cal)
F1.40	345	100.0	2.5	1.3	17.1	79.1	0.69	4	100.0	2.5	1.3	17.1	79.1	0.69	4
E1.40-F1.60	--	Nil	--	--	--	--	--	--	W100.0	2.5	1.3	17.1	79.1	0.69	4
S1.60	--	Nil	--	--	--	--	--	--	R100.0	2.5	1.3	17.1	79.1	0.69	4
-30#	10	2.8	2.6	5.1	18.6	73.7	0.91	0							

TABLE 2: WASHABILITY AND ANALYTICAL DATA FOR PLY 2 (after crushing to -1")

F1.40	558	95.4	2.5	3.3	15.6	78.6	0.56	4	95.4	2.5	3.3	15.6	78.6	0.56	4
S1.40-F1.60	27	4.6	2.2	10.6	15.7	71.5	0.51	0	100.0	2.5	3.6	15.6	78.3	0.56	4
S1.60 -	--	Nil	--	--	--	--	--	--	100.0	2.5	3.6	15.6	78.3	0.56	4
-30#	20	3.3	2.3	5.1	16.2	76.4	0.66	0							

TABLE 3: WASHABILITY AND ANALYTICAL DATA FOR PLY 3 (after crushing to -1")

F1.40	250	66.0	2.7	3.6	15.1	78.6	0.43	4	66.0	2.7	3.6	15.1	78.6	0.43	4
S1.40-F1.60	101	26.7	2.1	15.6	15.0	67.3	0.47	0	92.7	2.5	7.1	15.1	75.3	0.44	4
S1.60	28	7.3	2.3	42.2	13.5	42.0	0.22	0	100.0	2.5	9.6	15.0	72.9	0.43	0
-30#	49	11.4	2.4	20.4	14.4	62.8	0.47	0							

TABLE 4: WASHABILITY AND ANALYTICAL DATA FOR PLY 4 (after brushing to -1")

F1.40	279	100.0	2.5	2.0	16.9	78.6	0.43	4	100.0	2.5	2.0	16.9	78.6	0.43	4
S1.40 - F1.60	--	Nil	--	--	--	--	--	--	100.0	2.5	2.0	16.9	78.6	0.43	4
S1.60	--	Nil	--	--	--	--	--	--	100.0	2.5	2.0	16.9	78.6	0.43	4
-30#	29	9.4	2.4	2.8	12.6	82.2	0.43	0							



TABLE 5: WASHABILITY AND ANALYTICAL DATA FOR PLY 5 (after crushing to -1")

FRACTION	INDIVIDUAL ANALYSIS									CUMULATIVE ANALYSIS					
	WT.GM.	WT. %	ADM%	ASH%	V.M.%	F.C.%	T.S.%	C.S.NO.	WT.%	ADM%	ASH%	V.M.%	F.C.%	T.S.%	C.S.NO. (calc)
F1.40	581	90.3	2.6	2.5	18.4	76.5	0.40	1/4	90.3	2.6	2.5	18.4	76.5	0.40	1/4
S1.40 - F1.60	60	9.4	1.8	10.4	21.3	66.5	0.34	0	99.7	2.5	3.2	18.7	75.6	0.39	1/4
S1.60	2	0.3	1.3	21.6	18.6	58.5	0.30	0	100.0	2.5	3.3	18.7	75.5	0.39	0
-30#	70	9.8	2.2	3.7	19.6	74.5	0.45	0							

TABLE 6: WASHABILITY AND ANALYTICAL DATA FOR PLY 6 (after crushing to -1")

F1.40	513	98.1	2.4	2.4	18.7	76.5	0.34	1/4	98.1	2.4	2.4	18.7	76.5	0.34	1/4
S1.40 - F1.60	10	1.9	2.0	10.6	18.5	68.9	0.26	0	100.0	2.4	2.6	18.7	76.3	0.34	1/4
S1.60	--	Nil	--	--	--	--	--	--	100.0	2.4	2.6	18.7	76.3	0.34	0
-30#	51	8.9	2.1	2.9	19.7	75.3	0.35	0							

TABLE 7: WASHABILITY AND ANALYTICAL DATA FOR PLY 7 (after crushing to -1")

F1.40	35	4.4	2.1	6.7	20.4	70.8	0.38	1 1/2	4.4	2.0	6.7	20.4	70.8	0.38	1 1/2
S1.40 - F1.60	73	9.1	1.9	22.9	16.0	59.2	0.32	0	13.5	2.0	17.6	17.4	63.0	0.34	1/4
S1.60	690	86.5	2.0	76.1	7.2	14.7	0.18	0	100.0	2.0	68.2	8.6	21.2	0.20	0
-30#	67	7.7	2.4	39.9	14.0	43.7	0.30	0							

TABLE 8: WASHABILITY AND ANALYTICAL DATA FOR PLY 8 (after crushing to -1")

F1.40	846	93.6	2.3	2.9	18.4	76.4	0.38	1	93.6	2.3	2.9	18.4	76.4	0.38	1
S1.40 - F1.60	53	5.9	1.4	14.6	21.0	63.0	1.19	1/4	99.5	2.2	3.6	18.6	75.6	0.43	1
S1.60	5	0.5	1.9	62.2	14.1	21.8	0.91	0	100.0	2.2	3.9	18.5	75.4	0.43	1/4
-30#	69	7.1	2.2	4.9	20.3	72.6	0.51	1 1/2							



TABLE 9: WASHABILITY AND ANALYTICAL DATA FOR PLY 9 (after crushing to -1")

FRACTION	INDIVIDUAL ANALYSIS									CUMULATIVE ANALYSIS					
	WT.GM.	WT. %	ADM%	ASH%	V.M.%	F.C.%	T.S.%	C.S.NO.	WT. %	ADM%	ASH%	V.M.%	F.C.%	T.S.%	C.S.NO. (cal)
Fl.40	622	90.5	1.5	2.2	18.9	77.4	0.46	1 $\frac{1}{2}$	90.5	1.5	2.2	18.9	77.4	0.46	1 $\frac{1}{2}$
Sl.40 - Fl.60	50	7.3	0.9	18.3	20.4	60.4	0.40	1 $\frac{1}{2}$	97.8	1.5	3.4	19.0	76.1	0.46	1 $\frac{1}{2}$
Sl.60	15	2.2	0.8	40.0	13.5	45.7	0.37	0	100.0	.4	4.2	18.9	75.5	0.45	1 $\frac{1}{2}$
-30#	143	17.2	1.5	4.0	19.3	75.2	0.50	4							

TABLE 10: WASHABILITY DATA AND ANALYTICAL DATA FOR PLY 10 (after crushing to -1")

Fl.40	70	16.7	1.3	9.4	20.2	69.1	0.38	7	16.7	1.3	9.4	20.2	69.1	0.38	7
Sl.40 - Fl.60	121	29.0	1.1	26.9	16.6	55.4	0.38	2	45.7	1.2	20.5	17.9	60.4	0.38	4
Sl.60	227	54.3	1.2	66.7	9.4	22.7	0.45	1 $\frac{1}{2}$	100.0	1.2	45.6	13.3	39.9	0.42	2
-30#	13	3.0	1.5	27.4	16.7	54.4	0.72	4							

TABLE 11: WASHABILITY AND ANALYTICAL DATA FOR PLY 11 (after crushing to -1")

Fl.40	414	77.0	1.5	3.2	17.4	77.9	0.29	1 $\frac{1}{2}$	77.0	1.5	3.2	17.4	77.9	0.29	1 $\frac{1}{2}$
Sl.40 - Fl.60	95	17.6	1.0	15.2	25.0	58.8	0.96	1 $\frac{1}{2}$	94.6	1.4	5.4	18.8	74.4	0.41	1 $\frac{1}{2}$
Sl.60	29	5.4	0.8	25.1	26.8	47.3	2.53	1 $\frac{1}{2}$	100.0	1.4	6.5	19.2	72.9	0.53	1
-30#	56	9.4	1.5	4.7	19.4	74.4	0.67	5 $\frac{1}{2}$							

TABLE 12: WASHABILITY AND ANALYTICAL DATA FOR PLY 12 (after crushing to -1")

Fl.40	424	61.5	1.2	3.5	18.1	77.2	0.40	2	61.5	1.2	3.5	18.1	77.2	0.40	2
Sl.40 - Fl.60	93	13.5	0.8	19.8	20.2	59.2	0.50	1 $\frac{1}{2}$	75.0	1.1	6.4	18.5	74.0	0.42	2
Sl.60	172	25.0	0.5	49.4	15.4	34.7	0.50	1 $\frac{1}{2}$	100.0	1.0	17.2	17.7	64.1	0.44	1 $\frac{1}{2}$
-30#	45	6.1	1.3	9.0	19.9	69.8	0.78	6 $\frac{1}{2}$							



TABLE 13: WASHABILITY AND ANALYTICAL DATA FOR PLY 13 (after crushing to -1")

FRACTION	INDIVIDUAL ANALYSIS									CUMULATIVE ANALYSIS					
	WT.GM.	WT. %	ADM%	ASH%	V.M.%	F.C.%	T.S.%	C.S.NO.	WT. %	ADM%	ASH%	V.M.%	F.C.%	T.S.%	C.S.NO. (ca)
Fl.40	Nil	Nil	--	--	--	--	--	--	Nil	--	--	--	--	--	--
Sl.40 - Fl.60	15	8.1	1.1	24.8	18.1	56.0	0.43	7	8.1	1.1	24.8	18.1	56.0	0.43	7
Sl.60	171	91.9	1.5	77.3	7.1	14.1	0.26	4	100.0	1.5	73.0	8.0	17.5	0.27	1
-30#	15	7.5	1.7	34.6	15.6	48.1	0.69	6							

TABLE 14: WASHABILITY AND ANALYTICAL DATA FOR PLY 14 (after crushing to -1")

Fl.40	550	76.8	1.4	3.5	15.3	79.8	0.45	14	76.8	1.4	3.5	15.3	79.8	0.45	14
Sl.40 - Fl.60	110	15.3	1.0	12.8	21.4	64.8	0.35	1	92.1	1.3	5.0	16.3	77.4	0.43	14
Sl.60	57	7.9	1.5	74.8	9.9	14.7	0.22	0	100.0	1.4	10.6	15.7	72.3	0.42	1
-30#	79	9.9	1.7	15.3	15.9	67.1	0.42	1							

TABLE 15: WASHABILITY AND ANALYTICAL DATA FOR PLY 15 (after crushing to -1")

Fl.40	408	48.1	1.1	2.4	18.9	77.6	0.37	2	48.1	1.1	2.4	18.9	77.6	0.37	2
Sl.40 - Fl.60	290	34.1	0.9	15.4	24.5	59.2	0.35	1	82.2	1.0	7.8	21.2	70.0	0.36	14
Sl.60	151	17.8	0.6	25.1	26.9	47.4	0.30	0	100.0	1.0	10.9	22.2	65.9	0.35	1
-30#	56	6.2	1.3	6.5	20.7	71.5	0.48	4							

TABLE 16: WASHABILITY AND ANALYTICAL DATA FOR PLY 16 (after crushing to -1")

Fl.40	411	90.0	1.2	2.8	18.6	77.4	0.35	14	90.0	1.2	2.8	18.6	77.4	0.35	14
Sl.40 - Fl.60	46	10.0	0.9	12.0	23.0	64.1	0.27	14	100.0	1.2	3.7	19.0	76.1	0.34	14
Sl.60	Nil	Nil	--	--	--	--	--	--	100.0	1.2	3.7	19.0	76.1	0.34	14
-30#	23	4.8	1.4	4.4	19.7	74.5	0.34	54							

TABLE 17: WASHABILITY AND ANALYTICAL DATA FOR PLY 17 (after crushing to -1")

FRACTION	INDIVIDUAL ANALYSIS									CUMULATIVE ANALYSIS					
	WT. Gt.	WT. %	ADM%	ASH%	V.M.%	F.C.%	T.S.%	C.S.NO.	WT. %	ADM%	ASH%	V.M.%	F.C.%	C.S.NO. (calc)	
Fl.40	475	96.2	1.2	3.1	18.4	77.3	0.34	1	96.2	1.2	3.1	18.4	77.3	0.34	1
Fl.40 - Fl.60	19	3.8	1.0	12.7	17.5	68.8	0.38	0	100.0	1.2	3.5	18.4	76.9	0.34	1
Sl.60	Nil	Nil	--	--	--	--	--	--	100.0	1.2	3.5	18.4	76.9	0.34	1
-30#	23	4.4	1.5	4.9	19.0	74.6	0.37	2 1/2							

TABLE 18: WASHABILITY AND ANALYTICAL DATA FOR PLY 18 (after crushing to -1")

Fl.40	619	98.1	1.3	2.4	17.7	78.6	0.35	1	98.1	1.3	2.4	17.7	78.6	0.35	1
Sl.40 - Fl.60	9	1.4	1.3	9.9	16.9	67.9	0.37	0	99.5	1.3	2.5	17.7	78.5	0.35	1
Sl.60	3	0.5	1.6	12.9	14.5	66.0	0.36	0	100.0	1.3	2.6	17.7	78.4	0.35	1
-30#	41	6.1	1.5	4.0	18.2	75.3	0.35	1							

TABLE 19: WASHABILITY AND ANALYTICAL DATA FOR PLY 19 (after crushing to -1")

Fl.40	387	37.3	1.1	3.8	19.1	75.0	0.43	1	37.3	1.1	3.8	19.1	76.0	0.43	1
Sl.40 - Fl.60	469	45.7	0.7	17.5	26.0	55.8	0.45	0	83.5	0.9	11.3	22.9	64.9	0.44	1
Sl.60	169	16.5	0.5	23.5	27.6	48.4	0.38	0	100.0	0.8	13.3	23.7	62.2	0.44	1
-30#	54	5.0	1.3	10.3	22.3	56.1	0.83	2 1/2							

TABLE 20: WASHABILITY AND ANALYTICAL DATA FOR PLY 20 (after crushing to -1")

Fl.40	228	80.3	0.9	4.3	20.3	74.5	0.38	3	80.3	0.9	4.3	20.3	74.5	0.38	3
Sl.40 - Fl.60	53	18.7	0.7	11.6	23.8	63.9	0.51	1 1/2	99.0	0.9	5.7	21.0	72.4	0.40	2 1/2
Sl.60	3	1.0	0.8	21.9	20.2	57.1	0.45	0	100.0	0.9	5.2	21.0	72.3	0.41	2
-30#	16	5.3	1.2	4.6	20.8	73.4	0.55	5 1/2							

CANADIAN SUPPLY COMPANY LTD.



TABLE 21: WASHABILITY AND ANALYTICAL DATA FOR PLY 21 (after crushing to -1")

FRACTION	INDIVIDUAL ANALYSIS									CUMULATIVE ANALYSIS					
	WT.GM.	WT. %	ADM%	ASH%	V.M.%	F.C.%	T.S.%	C.S.NO.	WT. %	ADM%	ASH%	V.M.%	F.C.%	T.S.%	C.S.NO. (ca)
Fl.40	531	99.6	1.2	1.6	18.6	78.6	0.34	1½	99.6	1.2	1.6	18.5	78.6	0.34	1½
Sl.40 - Fl.60	--	Nil	--	--	--	--	--	--	99.6	1.2	1.6	18.6	78.6	0.34	1½
Sl.60	2	0.4	1.0	14.5	19.6	64.9	0.42	0	100.0	1.2	1.7	18.6	78.5	0.34	1
-30#	34	6.0	1.3	2.4	19.1	77.2	0.51	3							

TABLE 22: WASHABILITY AND ANALYTICAL DATA FOR PLY 22 (after crushing to -1")

Fl.40	685	99.2	1.2	2.2	18.2	78.4	0.32	2	99.2	1.2	2.2	18.2	78.4	0.32	2
Sl.40 - Fl.60	3	0.4	1.0	7.8	18.7	72.5	0.36	1	99.6	1.2	2.2	18.2	78.4	0.32	2
Sl.60	3	0.4	1.0	17.9	17.9	63.2	0.38	½	100.0	1.2	2.3	18.2	78.3	0.32	2
-30#	41	5.6	1.4	2.7	19.7	76.2	0.34	6½							

TABLE 23: WASHABILITY AND ANALYTICAL DATA FOR PLY 23 (after crushing to -1")

Fl.40	582	91.2	1.1	4.9	19.0	75.0	0.27	3½	91.2	1.1	4.9	19.0	75.0	0.27	3½
Sl.40 - Fl.60	35	5.5	0.9	19.1	18.8	61.2	0.29	3	96.7	1.1	5.7	19.0	74.2	0.27	3½
Sl.60	21	3.3	1.0	66.2	11.7	21.1	0.27	½	100.0	1.1	7.7	18.8	72.4	0.27	3
-30#	52	7.5	1.3	5.2	19.1	74.4	0.40	5							

TABLE 24: WASHABILITY AND ANALYTICAL DATA FOR PLY 24 (after crushing to -1")

Fl.40	891	88.4	1.0	5.4	19.5	74.1	0.29	5	88.4	1.0	5.4	19.5	74.1	0.29	5
Sl.40 - Fl.60	92	9.1	0.2	21.1	20.0	58.4	0.32	3½	97.5	0.9	6.9	19.5	72.7	0.29	4½
Sl.60	25	2.5	1.7	73.1	11.3	13.9	0.27	0	100.0	0.9	8.5	19.3	71.3	0.29	4
-30#	59	5.5	1.3	8.2	18.4	72.1	0.37	6							



TABLE 25; WASHABILITY AND ANALYTICAL DATA FOR PLY 25 (after crushing to -1")

FRACTION	INDIVIDUAL ANALYSIS									CUMULATIVE ANALYSIS					
	WT.GM.	WT. %	ADM%	ASH%	V.M.%	F.C.%	T.S.%	C.S.NO.	WT. %	ADM%	ASH%	V.M.%	F.C.%	T.S.%	C.S.NO. (ca)
F1.40	13	4.4	0.9	7.0	21.3	70.8	0.35	9	4.4	0.9	7.0	21.3	70.8	0.35	9
S1.40 - F1.60	7	2.4	0.7	23.4	20.1	55.8	0.31	6½	6.8	0.8	12.8	20.9	65.5	0.34	8
S1.60	275	93.2	1.2	66.5	9.9	22.4	0.30	0	100.0	1.2	62.8	10.6	25.4	0.30	½
-30#	15	4.8	1.5	38.3	14.8	45.4	0.51	4½							

TABLE 26: WASHABILITY AND ANALYTICAL DATA FOR PLY 26 (after crushing to -1")

F1.40	Nil	Nil	--	--	--	--	--	--	Nil	--	--	--	--	--	--
S1.40 - F1.60	Nil	Nil	--	--	--	--	--	--	Nil	--	--	--	--	--	--
S1.60	145	100.0	1.1	53.2	12.2	33.5	0.27	0	100.0	1.1	53.2	12.2	33.5	0.27	0
-30#	67	31.6	1.6	45.9	12.7	39.8	0.40	0							

COMMENTS: The coal recovered from this core is obviously badly affected by heat and pressure effects.

NOTE: Further calculations and deductions may be made if the detailed logging data was made available.

TABLE 27: RAW ASH% OF EACH COAL PLY SAMPLE

<u>PLY NO.</u>	<u>RAW ASH% (1.0% A.D.M.BASIS)</u>	<u>C.S.NO. (calc)</u>
1	1.4	½
2	3.7	½
3	11.0	0
4	2.1	½
5	3.4	0
6	2.6	0
7	66.7	0
8	4.0	½
9	4.2	1½
10	45.1	2
11	6.3	2
12	16.7	2
13	76.5	1
14	11.2	1
15	10.6	1
16	3.7	1½
17	3.6	1
18	2.7	1
19	13.2	½
20	5.7	2
21	1.7	1
22	2.3	2
23	7.5	3
24	8.5	4
25	61.7	½
26	51.0	0



APPLICANT:

COALITION MINING LIMITED,
C/- MUSTER & BROWN LIMITED.

ATTENTION: MR. J. GARDNER

SUBJECT:

ADDITIONAL INFORMATION ON D.D.H.-MYA-SUKUNKA CORE.
CALORIFIC VALUE OF THE FLOATS 1.40 S.G. FRACTION
OF TWENTY ONE (21) ONLY PIX SAMPLES.

REPORT NO.

US/1000/A

DATE RECEIVED:

13. 7. 73

DATE REPORTED:

27. 7. 73

A. Bradley

CARGO SUPERINTENDENTS CO. (A/SIA) PTY. LIMITED.



RESULTS:

<u>PLY NO.</u>	<u>FRACTION</u>	<u>CALORIFIC VALUE (BTU/LB) A.D.B.</u>
1	Floats 1.40 SG	14,860
2	"	14,110
3	"	14,470
4	"	14,420
5	"	14,840
6	"	14,480
8	"	14,640
9	"	14,940
11	"	15,110
12	"	15,020
14	"	14,520
15	"	15,330
16	"	14,780
17	"	15,270
18	"	14,820
19	"	14,920
20	"	14,500
21	"	15,130
22	"	14,910
23	"	14,920
24	"	14,450

SUKUNKA D.D.H. M-1A

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
NO CORE, soil and unconsolidated material	6.50	6.50	-	
SANDSTONE, light grey, medium grained at top, finer at base, quartz-lithic, occasional calcite filled fractures along bedding or steeply dipping to bedding. Core axis to bedding angle = 85°.	22.36	28.86	22.60	
SILTSTONE AND MUDSTONE INTERBEDS, grey siltstone and dark grey mudstone forming graded units, some phases of fine sandstone throughout, some phases with small dark coloured worm burrows, core axis to bedding angle = 70°	18.72	47.58	18.92	
CLAYSTONE, dark grey, occasional silty bands, core broken along sub-conchoidal fractures, no shearing at breaks is apparent	12.47	60.05	12.60	
COAL, dull with numerous bright bands	0.22	60.27	0.21	
, dull and bright	0.48	60.75	0.45	
, dull with minor bright bands	1.25	62.00	1.18	
, dull and bright	1.17	63.17	0.69	
, dull with numerous shear flows	0.85	64.00	0.60	

SUKUNKA D.D.H. M-1A

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
<u>COAL</u> , dull and bright	0.26	64.26	0.28	
, dull with numerous bright bands	0.53	64.79	0.57	
, dull and bright	0.64	65.43	0.69	
, dull	0.53	65.96	0.57	
, dull with numerous bright bands	0.46	66.42	0.50	
CORE LOSS,	1.88	68.30	0.00	
<u>COAL</u> AND BANDS, grey claystone and bright <u>coal</u> bands	0.14	68.44	0.13	
<u>COAL</u> , bright, minor dull bands	0.17	68.61	0.16	
CLAYSTONE, grey, numerous bright coal bands throughout	0.81	69.42	0.78	
<u>COAL</u> , dull and bright	0.51	69.93	0.40	
, dull with numerous bright bands	0.87	70.80	0.67	
, bright with minor dull bands	0.41	71.21	0.32	
, dull and bright	0.64	71.85	0.50	
, bright with minor dull bands	0.64	72.49	0.50	
, dull with numerous bright bands	0.58	73.07	0.45	
, dull and bright	0.93	74.00	0.72	

SUKUNKA D.D.H. M-1A

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Footage Recovered (ft)</i>	<i>Rema</i>
<u>COAL</u> AND BANDS, core broken, bright <u>coal</u> with thin grey claystone interbeds	1.67	75.67	1.09	
<u>COAL</u> , dull and bright	0.19	75.86	0.18	
, dull	0.25	76.11	0.24	
, dull and bright	0.67	76.78	0.64	
, dull with numerous bright bands	0.32	77.10	0.30	
, dull and bright	0.54	77.64	0.47	
, dull with numerous bright bands	0.34	77.98	0.30	
, bright with minor dull bands	0.44	78.42	0.38	
, dull and bright	0.41	78.83	0.36	
CLAYSTONE, carbonaceous, bright <u>coal</u> bands	0.39	79.22	0.26	
<u>COAL</u> , dull and bright, sheared	0.64	79.86	0.43	
, dull with numerous bright bands	0.82	80.68	0.55	
, dull	0.99	81.67	0.66	
, dull with numerous bright bands	0.47	82.14	0.50	
, dull and bright	0.78	82.92	0.83	
, bright, minor dull bands	0.33	83.25	0.35	

SUKUNKA D.D.H. M-1A

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
<u>COAL</u> , dull and bright	0.38	83.63	0.27	
, bright with minor dull bands	0.54	84.17	0.39	
, dull with numerous bright bands	0.66	84.83	0.47	
, dull and bright	0.75	85.58	0.54	
, bright with minor dull bands	0.50	86.08	0.36	
, dull	0.17	86.25	0.12	
, dull	0.52	86.77	0.47	
, dull with numerous bright bands	0.97	87.74	0.87	
, dull and bright	0.47	88.21	0.42	
, dull with numerous bright bands	0.76	88.97	0.69	
, dull and bright	0.56	89.53	0.50	
, dull with numerous bright bands	0.37	89.90	0.33	
, dull and bright	0.28	90.18	0.25	
, dull with numerous bright bands	0.51	90.69	0.55	
, dull	0.46	91.15	0.50	
, bright	0.34	91.49	0.37	
, dull and bright	0.51	92.00	0.55	
, bright with minor dull bands	0.40	92.40	0.44	
, dull with numerous bright bands	0.62	93.02	0.67	
, dull and bright	0.18	93.20	0.20	
, bright	0.38	93.58	0.42	
, dull and bright	0.41	93.99	0.37	

SUKUNKA D.D.H. M-1A

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
<u>COAL</u> , dull with numerous bright bands	0.35	94.34	0.32	
, bright	0.48	94.82	0.43	
, dull and bright - core broken	0.41	95.23	0.37	
, bright	0.31	95.54	0.28	
, dull and bright	0.28	95.82	0.25	
, dull with numerous bright bands	0.12	95.94	0.11	
, dull and bright	0.39	96.33	0.35	
CARBONACEOUS CLAYSTONE, black, bright <u>coal</u> bands	1.84	98.17	0.62	
<u>COAL</u> AND BANDS, black, carbonaceous claystone	1.66	99.83	0.27	
SHEARED <u>COAL</u> , fragments with listic surfaces, core very soft, angular fragments of carbonaceous claystone included	2.09	101.92	0.34	
CLAYSTONE, dark grey, bright <u>coal</u> bands, core broken, listic surfaces on broken core	0.91	102.83	0.91	
SILTSTONE, light grey, coaly stringers and bright <u>coal</u> bands, bedding angle - 70°	0.21	103.04	0.21	

SUKUNKA D.D.H. M-1A

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SILTSTONE, dark grey, some coaly wisps and inclusions	1.52	104.56	1.52	
<u>COAL</u> AND BANDS, black carbonaceous claystone and bright <u>coal</u> bands interbedded	0.84	105.40	0.84	
SILTSTONE, light grey, coaly stringers and bright <u>coal</u> band	0.19	105.59	0.19	
CLAYSTONE, dark grey, some bright <u>coal</u> bands to 0.01', listric surfaces at core breaks and calcite veins, carbonaceous in top half, core broken	5.51	111.10	5.01	
SILTSTONE, grey, sandstone interbeds, one calcite vein (0.02') 0.55' from top at 52° to core axis, core axis to bedding = 72°	1.23	112.33	1.23	
CLAYSTONE, carbonaceous, black, bright <u>coal</u> band and some sandy interbeds, listric surfaces at core breaks	0.75	113.08	0.75	
SANDSTONE, light grey, medium grained, porous, lithic	0.16	113.24	0.16	

SUKUNKA D.D.H. M-1A

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SILTSTONE, dark grey, some coaly wisps and carbonaceous claystone phases	2.47	115.71	2.47	
<u>COAL</u> , bright and CLAYSTONE, dark grey and carbonaceous, interbedded	0.70	116.41	0.70	
CLAYSTONE, carbonaceous, core broken, bright <u>coal</u> fragments in box	0.32	116.73	0.32	
CLAYSTONE, dark grey, some sandstone interbeds, core axis to bedding = 68°	2.36	119.09	2.36	
SANDSTONE, fine grained, coaly wisps and inclusions	0.55	119.64	0.55	
CLAYSTONE, dark grey, slickensided surfaces and calcite veins in lower half	2.43	122.07	2.43	
CLAYSTONE and SILTSTONE BRECCIATED, possible fault, numerous calcite veins and slickensided surfaces	0.30	122.37	0.30	

SUKUNKA D.D.H. M-1A

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
CLAYSTONE, dark grey, some phases of fine sandstone interbeds, some calcite filled veins and fractures throughout listic surfaces and slickensides at most core breaks, phases of coaly bands and inclusions throughout, core axis to bedding = 50°	36.95	159.32	35.95	
CLAYSTONE, black, carbonaceous, 0.10' band <u>coal</u> 0.60' from top	2.10	161.42	2.10	
<u>COAL</u> , dull and bright, core broken in top half	0.97	162.39	0.47	
CLAYSTONE, dark grey, numerous bright <u>coal</u> bands throughout core axis to bedding angle - 45°	3.65	166.04	3.65	
CLAYSTONE, dark grey, some carbonaceous phases, numerous fine calcite veinlets throughout, massive	5.25	171.29	5.25	
CLAYSTONE, light grey, massive, some carbonaceous phases and bright <u>coal</u> bands, some phases of calcite veins near top	8.02	179.31	8.02	

SUKUNKA D.D.H, M-1A

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
CLAYSTONE, carbonaceous, black, some bright <u>coal</u> bands throughout, listric surfaces and slickensides on core breaks	8.77	188.08	6.57	
<u>COAL</u> AND BANDS, interbeds and phases of black carbonaceous claystone throughout, sheared <u>coal</u> section	2.88	190.96	2.08	
CLAYSTONE, carbonaceous, black, numerous bright <u>coal</u> bands throughout, some grey claystone phases, listric surfaces and slickensides on core breaks and fractures, phases of calcite veins towards base, core axis to bedding angle = 50°	13.52	204.48	13.52	
CLAYSTONE, carbonaceous, black, massive, porous	0.50	204.98	0.50	
CLAYSTONE, grey, phases of carbonaceous claystone and bright <u>coal</u> bands throughout, pyrite replaced worm burrow 1' from base, listric surfaces and slickensides on bedding at core breaks, core axis to bedding angle = 32°	11.09	216.07	11.09	

SUKUNKA D.D.H. M-1A

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
CLAYSTONE, carbonaceous, black, numerous bright <u>coal</u> bands, slickensides and listric surfaces on core breaks	3.18	219.25	2.28	
CLAYSTONE, grey, some carbonaceous claystone phases throughout and bright <u>coal</u> bands, phases of grey siltstone towards base, bedding disturbed in places and phases of calcite veins and slickensides throughout, listric surfaces on core breaks, possible fault at 227' and 255', core axis to bedding angle = 40°.	43.29	262.54	40.66	
SILTSTONE, grey, sandstone interbeds, phases of calcite veins, listric surfaces on core breaks, core axis to bedding = 50°	13.43	275.97	13.53	
CLAYSTONE, dark grey	1.95	277.92	1.95	
SILTSTONE, as above, core broken	0.82	278.74	0.82	
SANDSTONE, medium grained, light grey, quartz-lithic, some siltstone interbeds, numerous calcite veins throughout and zones of brecciation, possibly faulted at base	5.44	284.18	5.44	

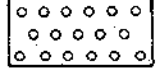

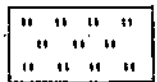
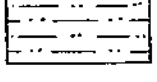



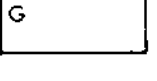
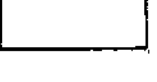
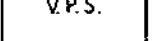
SUKUNKA D.D.H. M-1A

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SILTSTONE, grey, some sandstone phases, coaly wisps and claystone interbeds, core axis to bedding angle = 58 ⁰	17.11	301.29	17.11	
CLAYSTONE, grey, carbonaceous claystone phases, coaly wisps and bands throughout, calcite veins and slickensides towards centre	2.71	304.00	2.71	Base of Hole

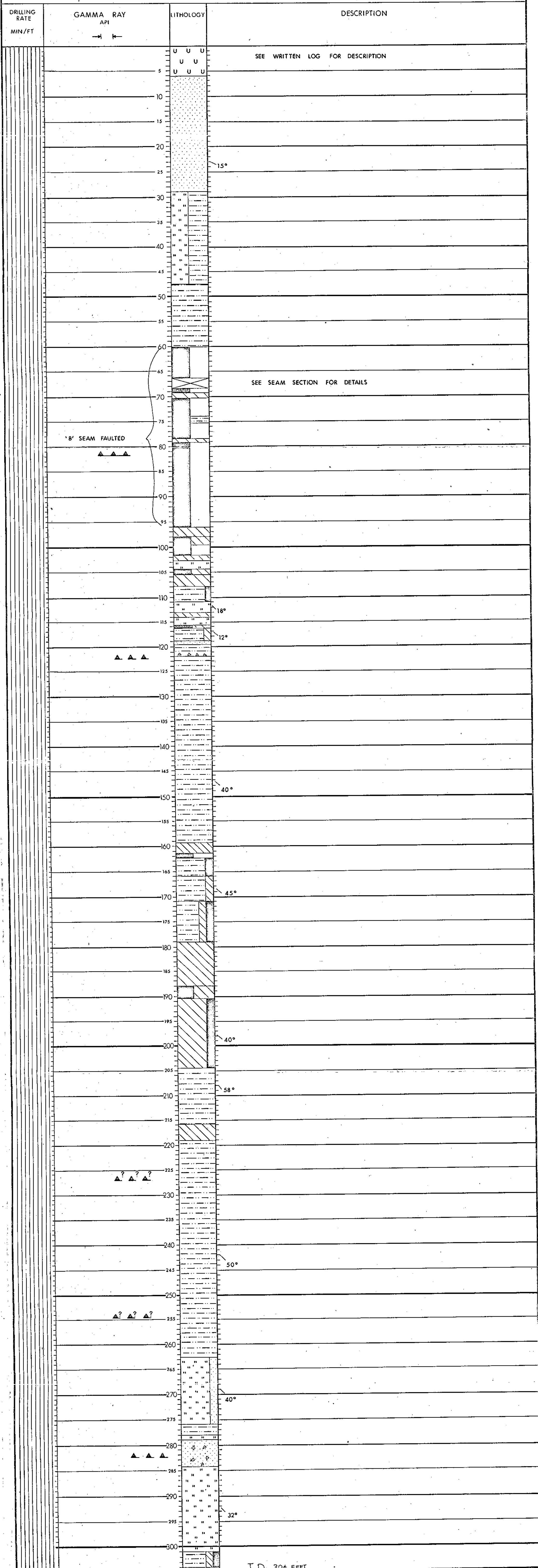
DRILL HOLE STRIP LOG

COMPANY: COALITION MINING LTD.
 PROPERTY: SUKUNKA COAL PROJECT
 HOLE NUMBER: DDH M-1A
 LOCATION: 53,195 N 72,155 E
 DATE COMMENCED: JUNE 19, 1973
 DATE COMPLETED: JUNE 30, 1973
 DEPTH: 304 FEET
 GROUND ELEVATION: 2743 FEET
 LOGGED BY: G.R. JORDAN
 REMARKS: Strata: Lower Gething Sequence including Seam 'B'; see written description for details of strata penetrated.
 Lithology included at this scale for comparison with other related drill holes.

LEGEND

- | | | |
|---|--|---|
| <p>  CONGLOMERATE
  SANDSTONE
  SILTSTONE </p> | <p>  MUDSTONE
  COAL
 BRIGHT (SOLID) - PERCENT INDICATED
 DULL PERCENT INDICATED
  STONE COALY OR CLAYSTONE CARBONACEOUS </p> | <p>  INTERBEDDED SILTSTONE, MUDSTONE ETC. (PERCENTAGE OF EACH ROCK COMPONENT INDICATED)
  GLAUCONITIC
  FAULT
 ESTABLISHED PROBABLE POSSIBLE
  V.P.S. VERY POOR SAMPLES (ABUNDANT CAVINGS) </p> |
|---|--|---|

SCALE: 1 in. = 10 ft.



DIAMOND DRILL HOLE M-2

Grid Reference 52,318.6N 74,925.0E

Date commenced 20th September, 1974

Completed 26th September, 1974

Collar R.L. 3331.6 ft

Standard Datum

Total Depth 923.00 ft

Drilled with

HQ.TT to 180.42 ft

NQ.TT to 823.30 ft

NQ.STD to 923.00 ft

Radiation Logs - Gamma Ray - Neutron and Density

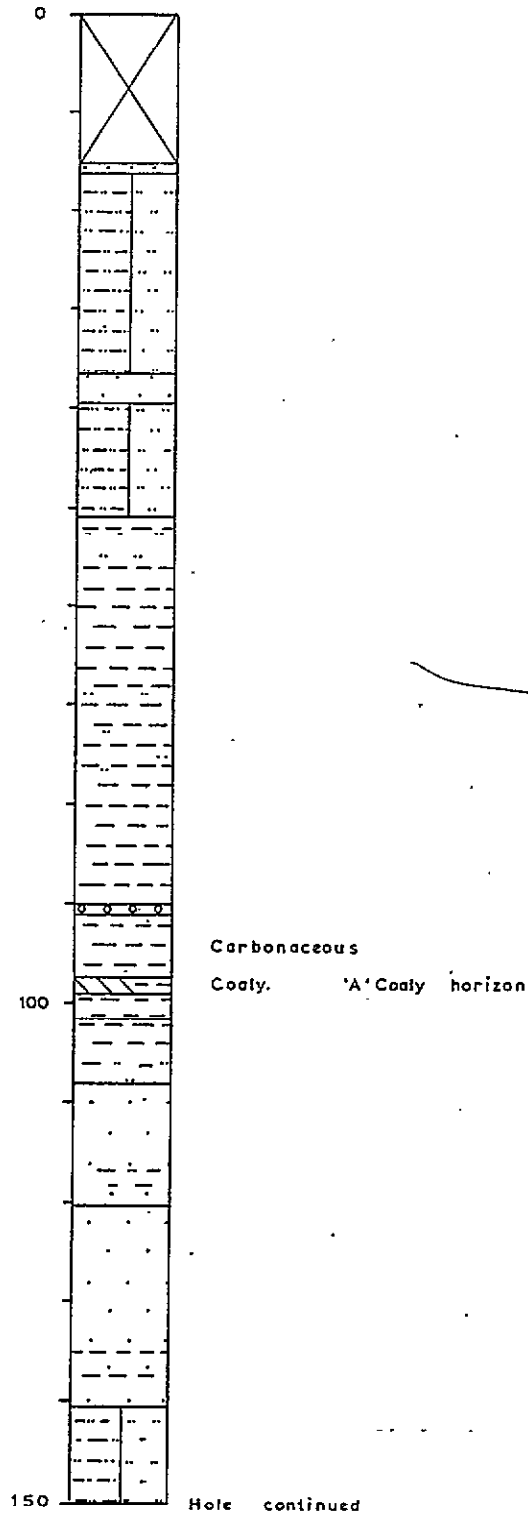
Drilled by Canadian Longyear Ltd.

For Coalition Mining Limited

Logged by G. R. Wallis

COAL SEAM INTERSECTIONS

Intersection	Floor R. L.	Thickness (feet)	Recovery	Comments
Coaly horizon 'A'	3232.9	1.29	N/A	Carbonaceous
'B' Seam	3154.3	11.67	56.6%	D.D.H. M-2
	3154.8	10.62	76.0%	D.D.H. M-2A (Redrill)
'B' Seam	3136.3	4.00	80.5%	Repetition
'C' Horizon (?)	3035.2	7.11	56.35%	
Unnamed	2992.6	5.23	100.0%	
'D' Horizon	2876.0	14.33	90.2%	



SCALE 1" to 20'0"

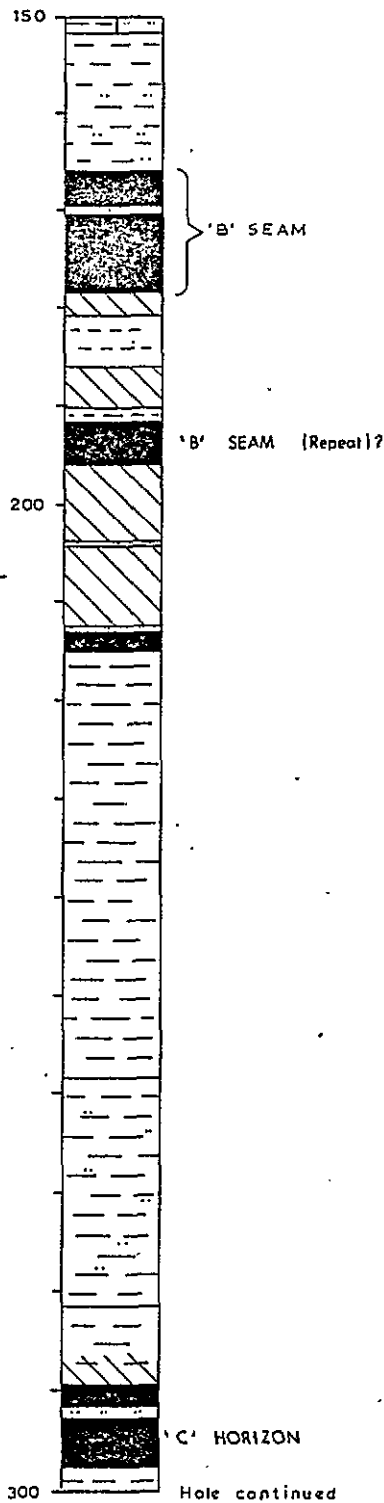
Prepared by
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH M-2

DRAWN BY

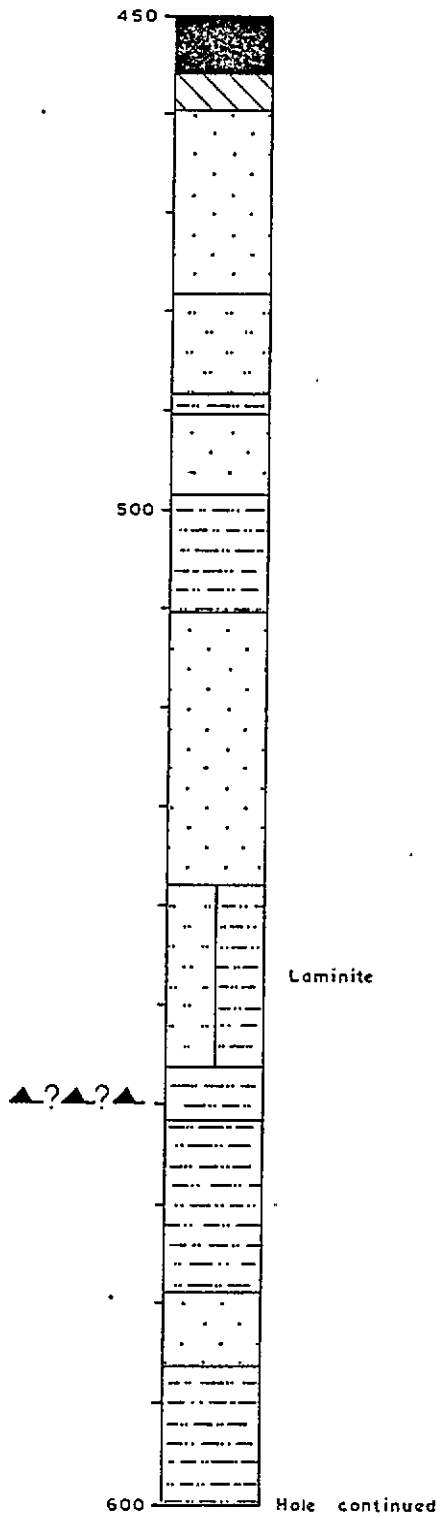
DATE: JANUARY 1975

PAGE 1 of 7



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STRATIGRAPHIC LOGS
 DDH M-2



SCALE 1" to 20'0"

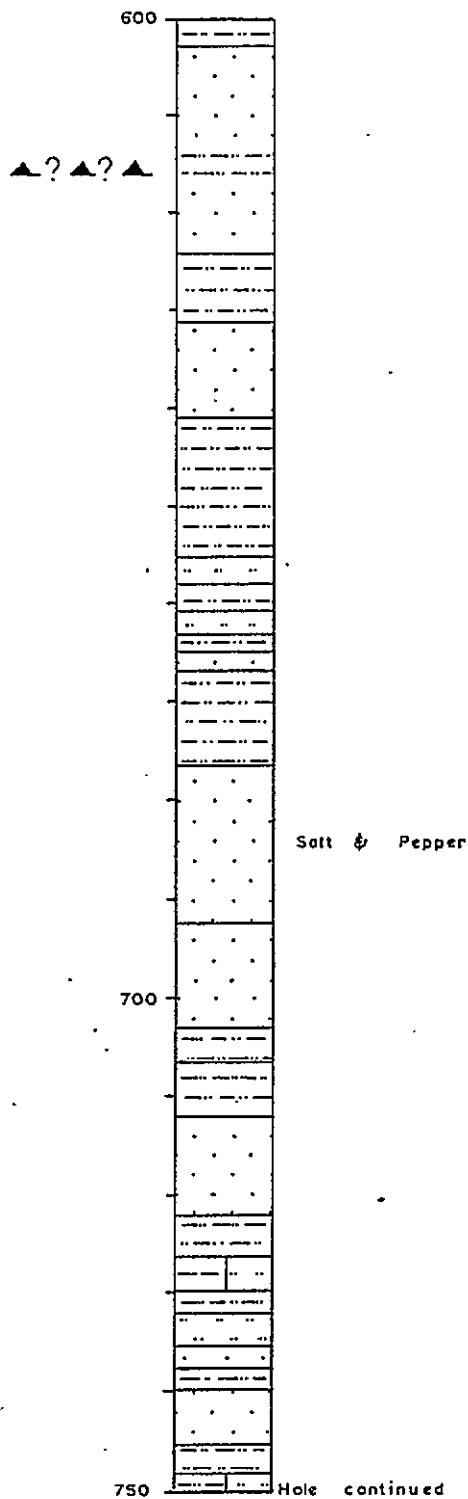
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for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH M-2

DRAWN BY

DATE: JANUARY 1975

PAGE 4 of 7



SCALE 1" to 20'0"

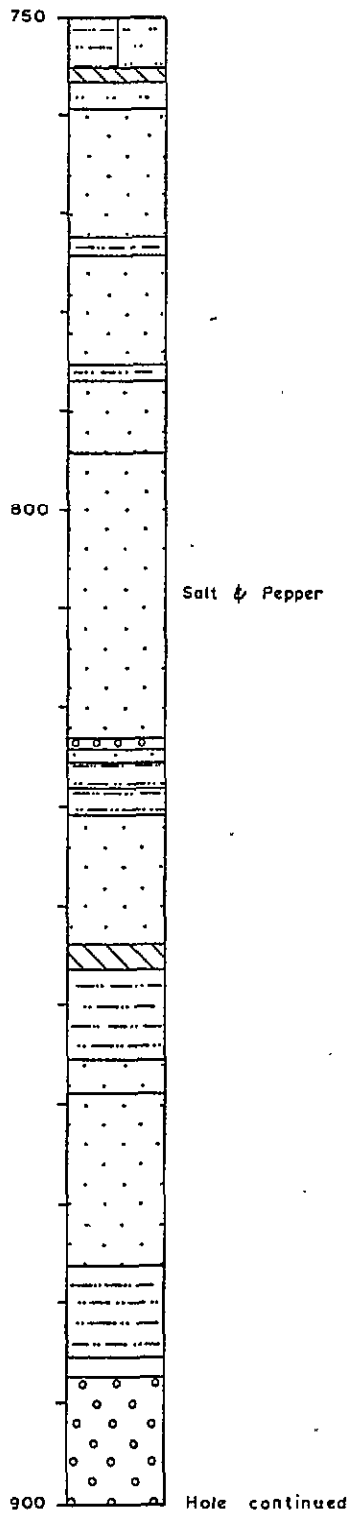
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STRATIGRAPHIC LOGS
 DDH M-2

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SCALE 1" to 20'0"

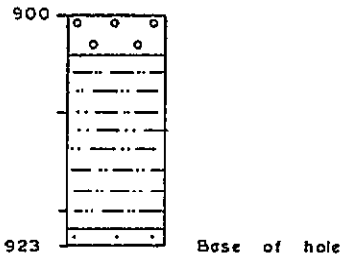
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SCALE 1" to 20'0"

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SEAM "B"

ASH %
CUMULATIVE
FROM FLOOR

SAMPLE THICKNESS
Nº (Feet
SKR

WT
gm

ASH %

C. S. Nº

INCL.
BANDS

EXCL.
BANDS

165.68



426 1.09
427 0.05

1062
91.8

8.8
79.0

1½
-

11.3
12.0

428 2.81

3080

4.5

3

10.2

436 0.12

235

84.9

-

84.9

NOT ANALYSED

sheared ←

sheared
177.35

SCALE 1" to 2' 0"

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SEAM SECTION
DDH M-2

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PAGE 1 of 1

SEAM "B" - "Middle Coals"

ASH %
CUMULATIVE
FROM FLOOR

SAMPLE THICKNESS
N^o SKR (FEET)

WT %
g/m

ASH %

C. S. N^o

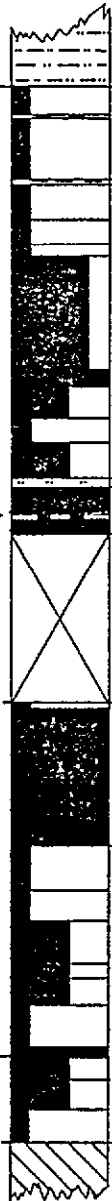
INCL.
BANDS

EXCL.
BANDS

166.21

sheared →

176.83



429 0.98
430 0.05

554 6.9 1½
62 69.5 -

431 2.91
432 0.10

1726 4.5 3
101 86.1 -

433 0.44

244 16.6 7½

1.73

- -

434 1.42

569 6.1 3½

7.2

435 2.99

1583 7.6 3

7.6

SCALE 1" to 2' 0"

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SEAM SECTION
DDH M-2A

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PAGE 1 of 1

'B' SEAM (REPETITION)?

ASH %
CUMULATIVE
FROM FLOOR

SAMPLE THICKNESS
Nº (FEET)
SKC

WT %
gm

ASH %

C. S. Nº

INCL.
BANDS

EXCL.
BANDS



437)

1884

36.8

1½

-

36.8

438) 0.06

NOT ANALYSED

) 3.94

)

437)

SCALE 1" to 2' 0"

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SEAM SECTION
DDH M-2

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PAGE 1 of 1

UNNAMED SEAM
(212.50' - 214.50')

ASH %
CUMULATIVE
FROM FLOOR

SAMPLE THICKNESS
N° (FEET)
SKR

WT
gm

ASH %

C. S. N°

INCL.
BANDS

EXCL.
BANDS

212.50



1.65

NOT ANALYSED

214.15

SCALE 1" to 2' 0"

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SEAM SECTION
DDH M-2

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PAGE 1 of 1

'C' HORIZON
(290.61' - 296.36')

ASH %
CUMULATIVE
FROM FLOOR

SAMPLE THICKNESS
Nº (FEET)
SKR

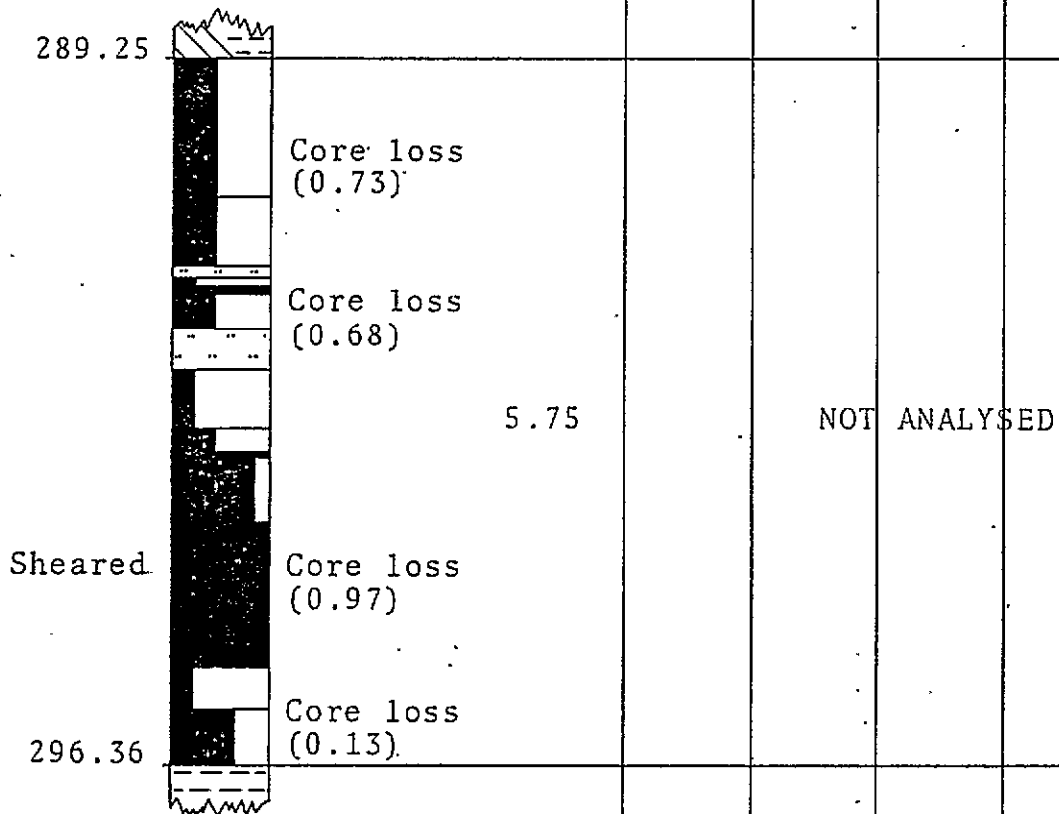
WT
gm

ASH %

C. S. Nº

INCL.
BANDS

EXCL.
BANDS



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for
COALITION MINING LIMITED

SEAM SECTION
DDH M-2

UNNAMED SEAM
(335.75' - 338.80')

ASH %
CUMULATIVE
FROM FLOOR

SAMPLE THICKNESS
Nº (FEET)
SKR

WT
gm

ASH %

C. S. Nº

INCL.
BANDS

EXCL.
BANDS

335.75



5.23

NOT ANALYSED

338.98

SCALE 1" to 2' 0"

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SEAM SECTION
DDH M-2

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PAGE 1 of 1

UNNAMED SEAM
(404.87' - 411.75')

ASH %
CUMULATIVE
FROM FLOOR

SAMPLE N° SKR THICKNESS (FEET)

WT gm

ASH %

C. S. N°

INCL. BANDS

EXCL. BANDS

404.87



6.88

NOT ANALYSED

Core loss
(1.32)

sheared

Core loss
(0.86)

411.75

SCALE 1" to 2' 0"

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SEAM SECTION
DDH M-2

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PAGE 1 of 1

'D' HORIZON

(444.29' - 455.63')

ASH %
CUMULATIVE
FROM FLOOR

	SAMPLE N ^o SKR	THICKNESS (FEET)	WT gm	ASH %	C. S. N ^o	ASH % CUMULATIVE FROM FLOOR	
						INCL. BANDS	EXCL. BANDS
444.29							
	422		10666	8.5	½	10.3	
	423		2023	3.6	½	14.4	
	424		1923	6.6	½	20.0	
	425		951	53.2	1	53.2	
455.63	Core loss (1.11)						

SCALE 1" to 2' 0"

Prepared by
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for
COALITION MINING LIMITED

SEAM SECTION
DDH M-2

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DATE. JANUARY 1975

PAGE 1 of 1

ANALYTICAL DATA

D.D.H. M-2/M-2A

<u>Sample No. (SKR-)</u>	<u>Interval (feet)</u>
426	165.68 - 166.77
427	166.77 - 166.82
428	166.82 - 169.63
436	169.63 - 169.75
429	166.21 - 167.19
430	167.19 - 167.24
431	167.24 - 170.15
432	170.15 - 170.25
433	170.25 - 170.69
434	170.69 - 173.84
435	173.84 - 176.83
437	191.28 - 195.28
422	444.29 - 446.74
423	446.74 - 450.05
424	450.05 - 453.30
425	453.30 - 455.63

- (i) Individual Ply Analyses
- (a) Samples SKR 426 - 428, 436 pp. 1- 2
 - (b) Samples SKR 429 - 435 pp. 3- 4
 - (c) Sample SKR 437 pp.12-13
 - (d) Samples SKR 422 - 425 pp.14-15
- (ii) Analyses of:
Head Raw Coal
Size
Sink-Float
Froth Flotation of
- (a) Samples SKR 429, 431, 433 pp. 5- 7
 - (b) Samples SKR 434, 435 pp. 8-10
- (iii) Analyses of Wash Products of
(ii) (a) and (ii) (b), above p.11

COALITION MINING

November 14, 1974

Group 5

<u>Client No.</u>	<u>Lab No.</u>	<u>Sample Wt. Grams Air Dried</u>
SKR 426	1318	1062.0G
SKR 427	1319	91.8
SKR 428	1320	3080.0
SKR 436	1328	235.0

COALITION MINING

Group 5

Birtley Engineering (Canada) Ltd.

October 23, 1974

<u>Client No.</u> <u>Lab No.</u>	<u>A.D.M.</u>	<u>Moist.</u>	<u>Ash</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>P.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>S.G.</u>	<u>Calc.</u> <u>Factors</u>
SKR 426		1.1	8.8	17.3	72.8	1.29	.19	13,250	1 1/2	1.39	As Rec'd
1518			8.9	17.5	73.6	1.30		13,400			Dry Basis
SKR 427			79.0						N.A.	2.39	As Rec'd
1519											
SKR 428		0.9	4.5	19.1	75.5	.61	.11	14,470	3	1.34	As Rec'd
1520			4.5	19.3	76.2	.62		14,600			Dry Basis
SKR 436			84.9						N.A.	2.54	As Rec'd
1328											

COALITION MINING

November 14, 1974

Group 6

<u>Client No.</u>	<u>Lab No.</u>	<u>Sample Wt. Grams Air Dried</u>
SKR 429	1321	554.0
SKR 430	1322	62.3
SKR 431	1323	1726.5
SKR 432	1324	101.6
SKR 433	1325	244.2
SKR 434	1326	569.0
SKR 435	1327	1582.8

Birtley Engineering

Subsidiary of Great West Steel Industries

COALITION MINING

February 21, 1975

GROUP 6

(A)

<u>Client No.</u> <u>Lab No.</u>	<u>A.D.L.</u>	<u>Moist.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>P₂O₅</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>S.G.</u>	<u>Calc.</u> <u>Factors</u>
<u>SKR 429</u> <u>1321</u>		0.9	6.8 6.9	17.7 17.9	74.6 75.2	1.38 1.39		14,370 14,500	1 1/2	1.36	As Rec'd Dry Basis
<u>SKR 430</u> <u>1322</u>			69.5	N O	W A S H				N.A.	2.18	As Rec'd
<u>SKR 431</u> <u>1323</u>	2.9	0.4 3.3	4.3 4.2 4.3	18.7 18.2 18.8	76.6 74.3 76.9	.55 .53 .55		14,865 14,435 14,925	3	1.31	Air Dried As Rec'd Dry Basis
<u>SKR 432</u> <u>1324</u>			86.1	N O	W A S H				N.A.	2.47	As Rec'd
<u>SKR 433</u> <u>1325</u>	1.5	0.5 2.0	16.6 16.4 16.7	16.2 16.0 16.3	66.7 65.6 67.0	.42 .41 .42		12,960 12,765 13,025	7 1/2	1.41	Air Dried As Rec'd Dry Basis
<u>SKR 434</u> <u>1326</u>	3.0	0.5 3.5	6.1 5.9 6.1	18.3 17.8 18.4	75.1 72.8 75.5	.38 .37 .38		14,555 14,120 14,630	3 1/2	1.32	Air Dried As Rec'd Dry Basis
<u>SKR 435</u> <u>1327</u>		1.0	7.5 7.6	17.5 17.7	74.0 74.7	.40 .40		14,280 14,425	3	1.33	As Rec'd Dry Basis

M-2/M-2A
-
4

COALITION MINING

February 21, 1975

Composite of SKR 429, 431 and 433

(A)

LAB NO. 1953

RAW ANALYSES

<u>A.D.L.</u>	<u>R.M.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>P₂O₅</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>S.G.</u>	<u>Calc. Factors</u>
Raw	0.8	5.5	19.0	74.7	.80		14,590	2 1/2	1.34	Air Dried
		5.5	19.1	75.4	.81		14,710			Dry Basis

SIZE ANALYSES

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 28 M	82.8	6.2	82.8	6.2	2 1/2 As Analyzed
- 28 M	17.2	5.5	100.0	6.1	3 1/2 " "

M-2/M-2A - 5

COALITIONING MINING

February 21, 1975

Composite of SKR 429, 431 and 433

(A)

LAB NO. 1953

SINK-FLOAT ANALYSES + 28 M

<u>S.G. Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
-1.30	68.2	2.8	68.2	2.3	3
1.30-1.40	22.9	7.0	91.1	3.9	1 1/2
1.40-1.60	5.7	17.2	<u>96.8</u>	<u>4.6</u>	1
+1.60	3.2	44.8	<u>100.0</u>	<u>5.9</u>	1/2

COALITION MINING

February 21, 1975

Compsite of SKR 429, 431 and 433

(A)

** LAB NO. 1953.

FROTH FLOTATION ANALYSES - 28 M

<u>F.F. Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
Stage I	66.0	3.9	66.0	3.9	4 As analyzed
Stage II	9.9	5.4	75.9	4.1	3 As analyzed
Tails	24.1	10.5	100.0	5.6	1 1/2 As analyzed

F.F. Parameters

Pulp Density	-	10%
Reagent Dosage	-	0.48 lbs/Ton Kerosene:MIBC (4:1)
Conditioning Time	-	60 seconds
Stage I	-	First minute froth
Stage II	-	Second minute froth

** No more sample available from SKR 430 and 432 for Comp. 1953

COALITIONING MINING

(Composite of SKR 434 & 435 Series)

(A)

February 21, 1975

LAB NO. 1952

RAW ANALYSES

<u>A.D.L.</u>	<u>Moist.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>P₂O₅</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>S.G.</u>	<u>Calc. Factors</u>
Raw	0.7	7.5	19.1	72.0	.46		14,150	3	1.34	Air Dried
		7.6	19.2*	72.5	.46		14,250			Dry Basis

SIZE ANALYSES

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 28 M	79.7	8.2	79.7	8.2	2 1/2 As Analyzed
- 28 M	20.3	6.0	100.0	7.8	3 1/2 As Analyzed

M-2/M-2A - 8

Composite of SKR 434 & 435 Series

(A)

LAB NO. 1952

SINK-FLOAT ANALYSES + 28 M

<u>S.G. Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
-1.30	50.3	2.1	50.3	2.1	3 1/2 As Analyzed
1.30-1.40	27.2	5.9	77.5	3.4	1 1/2 " "
1.40-1.60	16.7	19.5	94.2	6.3	1 1/2 " "
+1.60	6.8	31.5	100.0	7.7	1/2 " "

M-2/M-2A - 9

COALITIONING MINING

February 21, 1975

Composite of SKR 434 & 435 Series (A)

LAB NO. 1952

FROTH FLOTATION ANALYSES - 28 M

<u>F.F. Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
Stage I	71.6	3.6	71.6	3.6	4 As analyzed
Stage II	11.4	5.6	83.0	3.9	3 " "
Tails	17.0	11.6	100.0	5.2	2 " "

F.F. Parameters

Pulp Density	-	8%
Reagent Dosage	-	0.48 lbs/Ton Kerosene:MIBC (4:1)
Conditioning Time	-	60 seconds
Stage I	-	first minute froth
Stage II	-	second minute froth

Birtley Engineering

Subsidiary of Great West Steel Industries

COALITION MINING

February 21, 1975

(SKR 429 to 435 Series)

(A)

<u>Lab No.</u>	<u>Total Yield %</u>	<u>R.M.</u>	<u>Ash %</u>	<u>V.M.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
1954 Composite floats @ 1.60 S.G. off 1952 & 1953	Raw	0.7	5.3	19.4	74.6	.64	14,660	2 1/2	As analyzed
			5.3	19.5	75.2	.64	14,760		Dry Basis
1955 Composite I & II Stages off 1952 & 1953	Raw	0.9	3.9	20.3	74.9	.64	14,800	3 1/2	As analyzed
			3.9	20.5	75.6	.65	14,930		Dry basis
1956 Composite of 1954 & 1955	92.5	0.8	5.1	19.3	74.8	.63	14,680	2 1/2	As analyzed
			5.1	19.5	75.4	.64	14,800		Dry Basis

N.B. 1956 Analyses represent combined yield of floats @ 1.60 S.G. and Stages I and II froths of SKR 429 to 435

COALITION MINING

November 14, 1974

Group 7

<u>Client No.</u>	<u>Lab No.</u>	<u>Sample Wt. Grams Air Dried</u>
SKR 437	1329	1884.4G
SKR 438	1330	(this sample not received-Missing)

/ e

COALITION MINING

Group 7

Birtley Engineering (Canada) Ltd.

October 23, 1974

<u>Client No.</u>	<u>A.D.M.</u>	<u>Moist.</u>	<u>Ash</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>P.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>S.G.</u>	<u>Calc. Factors</u>
<u>SKR 437</u>		1.0	36.8	21.1	41.1	.40	.03	9,455	1 1/2	1.60	As Rec'd
1329			37.2	21.3	41.5	.40		9,550			Dry Basis
<u>SKR 438</u>	(This Sample not received - MISSING)										
1330											

COALITION MINING

November 14, 1974

Group 4

<u>Client No.</u>	<u>Lab No.</u>	<u>Sample Wt. Grams Air Dried</u>
SKR 422	1314	10666.0G
SKR 423	1315	2023.5
SKR 424	1316	1923.4
SKR 425	1317	950.8

COALITION MINING

Group 4

Birtley Engineering (Canada) Ltd.

October 23, 1974

<u>Client No.</u> <u>Lab No.</u>	<u>A.D.M.</u>	<u>Moist.</u>	<u>Ash</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>P.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>S.G.</u>	<u>Calc.</u> <u>Factors</u>
SKR 422 <hr/>		1.5	8.5	15.1	74.9	.37	.23	13,690	1/2	1.37	As Rec'd Dry Basis
1314			8.6	15.3	76.1	.38		13,900			
SKR 423 <hr/>		1.6	3.6	15.9	78.9	.27	.02	14,435	1/2	1.33	As Rec'd Dry Basis
1315			3.7	16.2	80.1	.27		14,670			
SKR 424 <hr/>		1.3	6.6	15.2	76.9	.36	.16	14,025	1/2	1.36	As Rec'd Dry Basis
1316			6.7	15.4	77.9	.36		14,210			
SKR 425 <hr/>		1.4	53.2	10.8	34.6	.20	.12	6,580	1	1.73	As Rec'd Dry Basis
1317			54.0	11.0	35.0	.20		6,675			

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Remarks</i>
Rock rolled - No core	15.00	15.00	
SANDSTONE, fine grained, light grey, quartz-lithic.	0.44	15.44	
MUDSTONE & SILTSTONE INTERBEDS: Siltstone:Claystone ratio 60:40 in upper part of unit decreasing to 50:50 in lower section. Siltstone, light grey both grading upwards into claystone, and having sharp boundary with claystone. Sedimentary structures present - penetration variety principally. Units varying between 0.05 and 0.10'. Sandstone lenses at 23.3' (0.50') and 28.4' (0.60').	20.66	36.10	
SANDSTONE, fine grained, light grey, quartz-lithic; containing claystone blebs in centre of unit (0.15' thick). Unit contains shear planes, calcite filled, listric surfaces.	3.18	39.28	
SILTSTONE & MUDSTONE INTERBEDS, as for 15.44' to 36.10' above; sandstone unit 0.5' thick at 39.8', 47.6'. <i>L-14.5</i>	11.52	50.80	
CLAYSTONE, mid to dark grey, contains minor siltstone partings to 0.1' in upper 5', and one fine sandstone unit (0.1'). Throughout unit silty partings present.	38.95	89.75	

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor(ft)	Remarks
No evidence of distortion, core sticks to 3.0 ft long, commonly 1 ft long. Curved ironstained joint sub parallel to core axis 80 and 82 ft. Two joints noted, at 30° and 45° to core axis. Bedding perpendicular to core axis. Pyrite/marcasite fossil (?) replacement 0.09' diameter at 81.7 ft.			BCA ~ 90°
CONGLOMERATE, medium grained sandy matrix; pebbles to 0.10'.	0.40	90.15 (27.5 n.)	
CLAYSTONE, dark grey, containing plant impressions; sandy phases to 0.06'. Ironstained joint sub parallel to core axis.	1.05	91.20	
CLAYSTONE, dark grey, containing plant remains and coaly flecks and partings throughout; often with calcite on bedding planes; minor pyrite. Evidence of slip movement at 93.6'. Ironstained joints (2) at 10° and 20° to core axis.	6.19	97.39	
STONE, coaly and COAL, dull and bright.	0.30	97.69) (29.8 n.)	
CLAYSTONE, dark grey to carbonaceous contains abundant plant remains; coaly flecks and partings common with lenses to 0.03'.	0.99	98.68) 'A' Seam Equivalent	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Remarks</i>
CLAYSTONE, light grey, containing sandy phases throughout, generally 0.01 ft thick except for gradational zone of silty material 0.30' thick 1 ft from top of unit. Carbonaceous flecks toward base.	2.78	101.46	
CLAYSTONE, carbonaceous and stone, coaly with COAL partings abundant.	0.51	101.97	
CLAYSTONE, light to mid grey, becoming lighter toward base of unit. Silty phase throughout average 0.01 ft thick, few lenses to 0.03 ft thick; becoming sandier toward base of unit with sedimentary structures (slumping, piercement and interrupted bedding).	5.88	107.85	
SANDSTONE, light, mid grey, fine grained, quartz-lithic, massive, containing claystone lenses commonly carbonaceous throughout, becoming more numerous toward base of unit; generally less than 0.01 ft maximum 0.02 ft.	12.36	120.21	
SANDSTONE, quartz-lithic, light grey, fine grained; cross bedded for most part; minor calcite filled joints sub parallel to bedding. Sporadic open joints (ironstained) 10 ⁰ to 30 ⁰ to core	20.26	140.47	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Remarks</i>
axis. Calcite covered joint with slip movement at 134.7 ft. Two mudstone phases 0.6 ft thick from 135.4 and 137.4 ft.			
MUDSTONE & SILTSTONE INTERBEDS: Mudstone, mid to dark grey, in units ranging from 0.10 to 0.80', average 0.20'. Siltstone light grey in units 0.20 to 0.60. Sporadic silty bed to 0.11'. Between 143.3' and 145.7' core ironstained due to joints parallel to core.	12.00	152.47	
CLAYSTONE, dark grey, containing silty partings and lenses throughout to 0.01'. Minor jointing sub parallel to core.	13.21	165.68 (50.5m)	
<u>COAL</u> , dull and bright.	0.70	166.38)	ROOF OF SE
<u>COAL</u> , bright with minor dull bands.	0.18	166.56)	
<u>COAL</u> , dull with minor bright bands.	0.21	166.77)	'B' SEAM
SILTSTONE, carbonaceous.	0.05	166.82)	) See Redrill this section) D.D.H. M-2A
<u>COAL</u> , dull with minor bright bands.	0.53	167.35)	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Remarks</i>
<u>COAL</u> , bright with minor dull bands.	0.16	167.51)	
)	
<u>COAL</u> , dull and bright.	0.61	168.12)	
)	
<u>COAL</u> , bright with minor dull bands.	0.32	168.44)	
)	
<u>COAL</u> , dull and bright, minor pyrites.	1.19	169.63)	
)	
SILTSTONE	0.12	169.75)	
)	
NO CORE RECOVERY	1.50	171.25)	'B' SEAM
)	
<u>COAL</u> , dull and bright.	0.10	171.35)	
)	
CLAYSTONE, mid grey.	0.20	171.55)	
)	
CORE LOSS - Assumed at point - Radiation log data	3.56	175.11)	
)	
<u>COAL</u> , bright with minor dull bands.	0.30	175.41)	
)	
<u>COAL</u> , sheared, indistinguishable.	0.15	175.56)	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Remarks</i>
<u>COAL</u> , bright with minor dull bands, minor shear planes present.	0.19	175.75)	
<u>COAL</u> , dull with minor bright bands.	0.11	175.86)	
<u>COAL</u> , dull and bright.	0.89	176.75)	'B' SEAM
<u>COAL</u> , sheared and weathered.	0.33	177.08)	) Minor joints at 45° to core axis.
<u>COAL</u> , stony, containing minor penny bands.	0.27	177.35)	54.0
CORE LOSS assumed at this depth. Claystone, carbonaceous.	0.80	178.15	FLOOR OF SEAM Radiation log data
CLAYSTONE, carbonaceous, contains minor penny bands in upper 2 feet.	2.14	180.29	
CLAYSTONE, dark grey.	0.13	180.42	
SILTSTONE, light grey, ironstained.	0.30	180.72	
CLAYSTONE, dark grey.	0.30	181.02	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Remarks</i>
CLAYSTONE, mid grey, containing siltstone units to 0.20' toward top of unit; becoming darker toward base.	4.55	185.57	
CLAYSTONE, carbonaceous, slip movement evident on bedding planes.	4.41	189.98	
CLAYSTONE, light to mid grey.	1.30	191.28	ROOF OF SEAM
<u>COAL</u> , dull with minor bright bands.	0.73	192.01)	
<u>COAL</u> , dull and bright.	0.17	192.18)	
<u>COAL</u> , bright.	0.35	192.53)	
<u>COAL</u> , dull and bright.	0.19	192.72)	'B' SEAM (Repeat)?
CLAYSTONE, mid grey.	0.06	192.78)	
<u>COAL</u> , bright with minor dull bands.	0.31	193.09)	
, dull with minor bright bands.	0.27	193.36)	
, weathered.	0.34	193.70)	

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor(ft)	Remarks
<u>COAL</u> , dull with minor bright bands.	0.88	194.58)	'B' SEAM
, bright with minor dull bands.	0.70	195.28)	(Repeat)? FLOOR OF SE
CLAYSTONE, carbonaceous, plant remains, coaly blebs, partings and lenses to 0.15'. Sporadic slickensided surface.	8.37	203.65	
SILTSTONE, carbonaceous flecks and blebs throughout. <i>lentite?</i>	0.20	203.85	
CLAYSTONE, predominantly carbonaceous, dark grey; contains minor units to 0.02' of dark grey, barely carbonaceous claystone. Contains coaly flecks and penny bands throughout with minor coaly units of bright coal varying from 0.02' to 0.07'. Slickensides and listric surfaces occur sporadically in unit - bedding plane slip only for most part except at 207' - ? fault.	8.35	212.20	
SILTSTONE, light grey, coaly partings. <i>band</i>	0.30	212.50	
<u>COAL</u> , bright and dull, sheared in part, calcite veins on joint faces.	0.70	213.20 (57.2)	
CLAYSTONE, carbonaceous.	0.15	213.35	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Remarks</i>
<u>COAL</u> & CLAYSTONE, carbonaceous interbedded; bright COAL lenses to 0.05'.	0.80	214.15	
CLAYSTONE, mid to dark grey, carbonaceous in part. Contains very minor coaly lenses (0.02!) throughout; sporadic joint sub parallel to core axis. Sporadic silty phases present and slickensided surface.	43.85	258.00	
SILTSTONE, light to mid grey, grading to very fine sandstone in basal 2', though interbedded with mudstone phases. Calcite veining on, and sub parallel to, bedding planes. Minor slickensiding developed but no fault breccia evident. Sporadic carbonaceous material present.	22.90	280.90	
CLAYSTONE, mid to dark grey, carbonaceous and containing coaly parting in upper 4 ft of unit,	8.35	289.25	ROOF
<u>COAL</u> , dull with minor bright bands.	1.36	290.61)	
, sooty.	0.02	290.63)	
, dull with minor bright bands.	0.70	291.33)	

Subd. 7.8m for faulted & seam.

(804)

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Remarks</i>
SILTSTONE, carbonaceous, and COAL interbedded.	0.09	291.42)	
)	
<u>COAL</u> , dull	0.07	291.49)	
)	
, bright.	0.05	291.54)	Core loss in this seam
)	
, dull with minor bright bands.	0.43	291.97)	section 0.68'
)	
SILTSTONE, carbonaceous.	0.38	292.35)	'C' Horizon (?)
)	
<u>COAL</u> , dull.	0.62	292.97)	
)	
, dull with minor bright bands,	0.24	293.21)	
)	
, bright with minor dull bands (contains sooty coal band (0.01') at 45° angle to bedding).	0.74	293.95)	
)	
)	
, bright.	0.22	294.17)	
)	
, sheared, unidentifiable.	1.17	295.34)	
)	
, dull.	0.49	295.83)	

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Remarks
<u>COAL</u> , dull and bright.	0.53	296.36) (826)	'C' HORIZON
CLAYSTONE, mid grey.	0.90	297.26	FLOOR
<u>COAL</u> , sheared, weathered.	0.30	297.56	
CLAYSTONE, mid grey, contains coaly lenses to 0.02'; becoming slightly darker toward base of unit.	10.79	308.35	
SILTSTONE, light grey, containing intercalations of claystone, mid grey. One slickensided joint at 40° to Core axis and one disturbed zone 0.3' thick.	15.40	323.75	
CLAYSTONE, carbonaceous, containing coal bands to 0.14'. Minor silty phases.	4.71	328.46	
STONE, coaly, containing bands of coal, bright and dull, to 0.03'. Minor shearing. Grading to claystone, carbonaceous at base.	5.29	333.75	1.07' Core Loss
<u>COAL</u> , dull and bright.	0.36	334.11	
CLAYSTONE, carbonaceous with coaly lenses to 0.01'.	0.77	334.88	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Remarks</i>
<u>COAL</u> , stony.	0.40	335.28	
, dull with minor bright bands.	0.15	335.43	
, bright with minor dull bands.	0.90	336.33	
, stony.	0.10	336.43	
<u>CLAYSTONE</u> , carbonaceous.	0.50	336.93	
<u>COAL</u> , stony.	0.06	336.99	
<u>COAL</u> , dull, possible gradations of coal, stony.	0.69	337.68	
, dull and bright.	0.46	338.14	
, dull.	0.07	338.21	
, bright with minor dull bands.	0.49	338.70	
, bright.	0.28	338.98	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Remarks</i>
CLAYSTONE, dark grey, partly carbonaceous.	1.37	340.35	
SANDSTONE, light grey, fine grained, tending toward siltstone in upper 1.5'. Sandstone, quartz-lithic, cross bedded in part; dark wisps of dark grey claystone throughout, sporadic zones 0.1 to 1.0' thick of closely alternating sandstone and claystone, though still wispy. Zones of coaly blebs and wisps at 349 ft (0.9'), 359 ft (2.0') and in lower 3.0 ft of unit; also contains blebs of claystone and siltstone to 0.04'. Sporadic claystone lenses to 0.1' and one zone of minor shearing at 358.6 ft.	31.90	372.25	
MUDSTONE, carbonaceous, lenses of bright COAL to 0.01'.	0.50	372.75	
SILTSTONE, mid grey, contains coaly partings, and fine grained sandstone lenses and wisps to 0.02'.	4.10	376.85	
MUDSTONE, dark grey to mid grey, carbonaceous in lower 2.0', containing coaly partings and lenses.	2.60	379.45	
SILTSTONE, grading toward a fine sandstone in basal part of unit; slightly carbonaceous in upper section of unit. Minor slip planes at 45° to core axis.	3.60	383.05	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Remarks</i>
SANDSTONE, fine grained, contain minor siltstone phases throughout and sporadic medium grained sandstone phase. Calcite filled joints, open in part, at 45° to core axis at 394'. Carbonaceous partings throughout lower 5 ft of unit; one coaly lens and carbonaceous mudstone 0.20'.	19.60	402.65	Probable Fault
MUDSTONE, mid grey, carbonaceous in part throughout, lower 0.40' carbonaceous and coaly.	2.22	404.87	
<u>COAL</u> , dull with minor bright bands.	0.36	405.23	
SILTSTONE, dark grey, coaly partings throughout.	2.40	407.63	
<u>COAL</u> , dull and bright, minor carbonaceous claystone bands 0.01'.	1.79	409.42	Core loss 1.3
<u>COAL</u> , dull and coal stony; slickensides on surfaces of pieces.	0.58	410.00	
, sheared, mixed with coal stony in lenses to 0.03'.	1.15	411.15	Core loss 0.8
COAL STONY, containing bright coal lenses to 0.02'.	0.60	411.75	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Remarks</i>
SILTSTONE, mid to dark grey with fine sandstone and claystone phases to 0.50' - carbonaceous zone at 414.5'. Slickensided zone (0.50') at 415 ft, minor slickensided surfaces above this level - probable fault.	8.10	419.85	
STONE, coaly.	0.08	419.93	
<u>COAL</u> , stony.	0.13	420.06	
, macerated.	0.21	420.27	
, dull with minor bright bands,	1.41	421.68	
STONE, coaly.	0.17	421.85	
MUDSTONE, carbonaceous in upper 0.5'.	1.30	423.15	
SANDSTONE, fine grained, light to med grey; becoming silty toward base of unit. Contains laminations of mudstone and minor carbonaceous bands. Bedding wavy in lower section of unit - alternating mudstone/sandstone units similar to laminite but not as uniform. One sub vertical joint - uneven joint face exhibiting	11.75	434.90	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Remarks</i>
carbonaceous material and pyrite deposition.			
SILTSTONE, mid grey, grading to mudstone in basal part of unit.	3.30	438.20	
<u>COAL</u> , stony and dull and stone, coaly (1') at 430.50'. Slickensided zones at 430' (0.5' and minor) and 432' (1.8').	3.10	441.30	
CORE LOSS	2.99	444.29	ROOF OF SE
<u>COAL</u> , weathered.	0.10	444.39)	
, dull with minor bright bands; cleat at 15° angle to core axis.	1.09	445.48)	
, dull.	0.13	445.61)	
, stony.	0.08	445.69)	'D' HORIZO
, dull.	1.05	446.74)	
, dull with minor bright bands; joints 20° to core axis.	0.90	447.64)	
, dull and bright.	0.30	447.94)	
, dull with minor bright bands.	2.11	450.05)	

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor(ft)	Remarks
<u>COAL</u> , stony.	0.02	450.07)	
, dull with minor bright bands.	0.16	450.23)	
, dull.	0.65	450.88)	
, dull with minor bright bands.	0.16	451.04)	
, dull.	0.48	451.52)	
, dull with minor bright bands.	0.37	451.89)	
, bright.	0.03	451.92)	'D' HORIZON
, dull.	0.24	452.16)	
, dull with minor bright bands.	0.51	452.67)	
, bright.	0.05	452.72)	
, dull with minor bright bands,	0.37	453.09)	
, dull and bright.	0.21	453.30)	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Remarks</i>
<u>COAL</u> , stony.	0.04	453.34)	
)	
MUDSTONE, carbonaceous.	0.19	453.53)	
)	
<u>COAL</u> , stony.	0.57	454.10)	'D' HORIZON
)	
, dull and bright; lineations on joint faces (not listric surfaces - ? deformation.	0.38	454.48)	
)	
)	
<u>COAL</u> , & CLAYSTONE	0.73	455.21)	
		)	Core loss 0.
STONE, coaly.	0.23	455.44)	
)	
<u>COAL</u> , dull and bright.	0.19	455.63)	
			SEAM FLOOR
CLAYSTONE, carbonaceous, with coaly flecks throughout, grading to mid grey claystone in centre of unit.	3.35	458.98	
SANDSTONE, fine grained, quartz-lithic, light to mid grey, containing silty phases in upper part of unit; sporadic mudstone units to 1.5'. Mudstone lenses and blebs with carbonaceous material throughout unit. Bedding horizon exhibiting sedimentary slump structures and	19.02	478.00	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Remarks</i>
swirls; graded in part. Calcite filled joints rare.			
SILTSTONE, mid grey, containing intercalations of mudstone and sporadic sandstone, fine, units toward base of section.	9.78	487.78	
MUDSTONE, mid to dark grey containing sporadic carbonaceous remains and flecks.	2.22	490.00	
SANDSTONE, fine grained, light grey; contains carbonaceous flecks and wisps throughout; bedding graded in units to 0.20' average up to siltstone; bedding wavy in part. 0.1' mudstone unit toward base.	8.35	498.35	
MUDSTONE, dark grey, carbonaceous for most part. Stone coaly and COAL units at 501.5' (0.80') and 505' (1.70').	11.65	510.00	
SANDSTONE, fine grained, as above and sporadic medium grained sandstone units.	27.50	537.50	
LAMINITE - Mudstone and Siltstone containing both mudstone and siltstone phases; light to mid grey; carbonaceous and coaly partings in basal part of unit. Slickensided joint planes at 546 and 551.5'.	18.35	555.85	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Remarks</i>
MUDSTONE, carbonaceous, containing sporadic coaly lenses and blebs. Slickensided planes present, but uncommon, with sporadic calcite filled joints 0.9' non carbonaceous 1.0 ft from base.	5.40	561.25	Fault possible
MUDSTONE, light to mid grey, containing one silty phase and unit to 3.0 ft. Carbonaceous/coaly zones present to 0.30'.	17.15	578.40	
SANDSTONE, fine grained, light grey, mudstone partings and intercalations throughout, sporadic slickenside surface.	7.50	585.90	
MUDSTONE, mid grey, carbonaceous in part, sporadic calcite filled joints, becoming silty in part and sporadic zones of laminite to 1.5 ft thick. Coaly units containing carbonaceous mudstone and coal at 588 ft (1.5'). 598.5' (0.5') and base of unit (0.5'). Basal 4 ft very carbonaceous with coaly parting, slickensided or at 45° to bedding plane.	16.15	602.05	
SANDSTONE, fine grained, light to mid grey with sporadic medium grained phases to 0.10'. Bedding graded, and containing both mudstone and carbonaceous partings with sporadic coaly parting to 0.01'; mud swirls and sedimentary slump structures present throughout most of unit. Silty mudstone unit 2 ft thick from 614.5'. 616.5', 0.90' heavily jointed, calcite filled - ? fault	21.55	623.60	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Remarks</i>
calcite filled bedding planes, slickensided present for 7 ft above and 1.5 ft below this zone. Pyrites present on some joint faces.			
MUDSTONE, with minor silty intercalations; carbonaceous phases throughout with sporadic coal lenses to 0.10', basal part of unit carbonaceous.	7.00	630.60	
SANDSTONE, fine grained, light to mid grey, carbonaceous zones and minor mudstone phases throughout; sporadic medium grained sandstone phases.	10.00	640.60	
MUDSTONE, dark grey; carbonaceous partings.	0.60	641.20	
SILTSTONE, light grey, mudstone partings and swirls.	1.12	642.32	
MUDSTONE, dark grey, carbonaceous.	0.75	643.07	
SILTSTONE, as in unit 1.12' above..	0.55	643.62	
MUDSTONE, dark grey, carbonaceous in part; coaly bands and stone, coaly in lower 1.0 ft.	7.63	651.25	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Remarks</i>
SILTSTONE, mid grey.	0.80	652.05	
MUDSTONE, mid grey, carbonaceous in lower 0.1 ft.	2.30	654.35	
SILTSTONE, mid to dark grey, sporadic fine sandy lenses to 0.05'.	2.65	657.00	
MUDSTONE, dark grey, minor carbonaceous phases.	2.70	659.70	
SILTSTONE, mid to dark grey carbonaceous in upper part.	2.00	661.70	
MUDSTONE, dark grey.	2.25	663.95	
SANDSTONE, fine grained, silty in upper 1 ft contains lenses of mudstone throughout.	3.80	667.75	
SANDSTONE, medium grained, quartz-lithic, white and black speckled. Rare carbonaceous parting.	3.80	671.55	
MUDSTONE, dark grey, becoming silty toward base of section.	4.30	675.85	
SANDSTONE, fine grained, light grey becoming darker toward base. Minor phases of siltstone and medium grained sandstone in lower	15.75	691.60	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Remarks</i>
8 ft. Cross bedded in part, minor. Sporadic phases of mudstone to 0.1 ft and thin partings throughout. Lower 0.7 ft carbonaceous and contains coaly lenses and partings. Carbonaceous faced sub vertical joint in lower 2.0 ft (Salt and Pepper sandstone).			
SANDSTONE, silty in part, dark grey sandstone, light to dark grey, with mudstone and wisps and partings throughout. Cross bedding and swirls common. Sporadic carbonaceous partings.	11.10	702.70	
SILTSTONE, mid to dark grey, carbonaceous, sheared, minor, in upper 0.8', and contains coaly blebs. Sandy phase at base.	3.52	706.22	
SILTSTONE, mid grey, sporadic carbonaceous mudstone zones to 0.2', and laminations.	5.13	711.35	
SANDSTONE, fine grained, minor cross bedding and flume structures in lower 2.5'. Mudstone laminations in upper 4.0 ft, and carbonaceous silty mudstone zone 1.0' at 715 ft.	10.05	721.40	
SILTSTONE, mid grey, two carbonaceous and coaly beds, sandy in lower 1.5'. 4.50	4.50	725.90	

SUKUNKA D.D.H. M-2

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor(ft)	Remarks
SILTSTONE & MUDSTONE INTERBEDS; siltstone 0.03', mudstone 0.02' average.	3.65	729.55	
MUDSTONE, silty toward base, carbonaceous, 0.60' coal, dull, sheared at 729.90'.	2.20	731.75	
SILTSTONE, light grey, speckled; carbonaceous toward base.	3.25	735.00	
SANDSTONE, fine grained, light grey, contains mudstone laminae.	2.05	737.05	
SILTSTONE, light grey; mudstone laminae, sporadic blebs present.	2.35	739.40	
SANDSTONE, fine grained, mid to dark grey; mudstone and carbonaceous partings throughout; 0.5' mudstone in centre of unit; minor slickensides.	5.90	745.30	
MUDSTONE, dark grey, carbonaceous, contain 0.10' coal, dull and bright; silty phases present.	2.95	748.25	
SILTSTONE & MUDSTONE INTERBEDS; siltstone, light grey, 0.01' to 0.15', and tending toward fine grained sandstone at base; mudstone varying from wisps to 0.10', with one unit to 0.40'; carbonaceous. Undulating bedding between units in part.	6.35	754.60	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Remarks</i>
MUDSTONE, carbonaceous, with coaly lenses.	1.30	755.90	
SILTSTONE, mid grey, containing mudstone intercalations throughout.	3.05	758.95	
SANDSTONE, fine grained, contains mudstone laminae and lenses throughout except for upper 3.0 ft; cross bedding present, with mudstone in bedding; carbonaceous (coaly wisp), medium grained sandstone phase 1.20' thick from 769.50'. Mud blebs, parallel to bedding in lower 1.0'.	13.22	772.17	
SILTSTONE, mid grey, containing mud blebs and partings, carbonaceous in lower 0.40'.	1.25	773.42	
SANDSTONE, fine grained, light to dark grey, variable; contains minor medium grained sandstone units and mudstone lenses and laminae, with one zone of mudstone blebs. Bedding exhibits cross bedding and swirls. Carbonaceous zones and coaly partings common.	11.48	784.90	
SILTSTONE, dark grey.	1.10	786.00	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Remarks</i>
SANDSTONE, fine grained, light grey with pale grey phases; cross bedded; mudstone laminae throughout; one phase medium grained coaly wisp sandstone. Carbonaceous in part and contains 0.30' mudstone coaly. Tending toward medium grained in basal section.	7.75	793.75	
SANDSTONE, medium grained, quartz-lithic, cross bedding present. Contains mudstone laminae and sporadic carbonaceous phases throughout; becomes coarser toward base of unit - (salt and pepper appearance). Minor slickensided surfaces.	29.25	823.00	
CONGLOMERATE, mudstone, minor chert pebbles to 0.08', average size 0.04', coaly parting at base.	0.30	823.30	
SANDSTONE, as in 29.25' unit above.	1.85	825.15	
SILTSTONE, mid grey.	2.50	827.65	
MUDSTONE, dark grey to carbonaceous, minor slickensided zone.	3.00	830.65	
SANDSTONE, fine grained with medium grained phases, light grey, quartz-lithic; mudstone phases to 0.10' but generally 0.01' or less, tending toward laminae. Wavy bedding planes and graded bedding in lower 4 feet. Sporadic carbonaceous parting with slickensides sometimes calcite coated.	12.85	843.50	

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor(ft)	Remarks
MUDSTONE, dark grey, silty toward base. Coaly unit 1.0' at top, carbonaceous in part in upper 3 ft. Joint angles 30° to 40° to core axis, sporadically slickensided.	12.05	855.55.	
SANDSTONE, medium grained, containing coarse grained phases in upper 1.0', carbonaceous and coaly lenses and swirls throughout.	3.10	858.65	
SANDSTONE, fine grained, tending to medium grained toward base, bedding planes sporadically contain muddy or carbonaceous material, slump structures in basal 3 ft. Mudstone zone 3 ft thick from 863.75 ft; carbonaceous in part.	17.45	876.10	
MUDSTONE, dark grey, becoming silty toward base of unit. Silty and fine sandy phases to 0.5' throughout.	8.85	884.95	
SANDSTONE, fine grained, medium grained toward base; muddy partings on bedding planes.	2.30	887.25.	
CONGLOMERATE, pebble size - maximum 0.13', average 0.05', pebbles predominate white chert and quartz mudstone pebbles common; ranging from rounded to elongate and are sub spherical to spherical, sporadic	16.20	903.45	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Remarks</i>
sub angular pebble. Groundmass varies from medium to coarse grained and quartzose. Two 0.2' thick phases of medium grained sandstone and one 0.60' thick zone of fine grained conglomerate; carbonaceous material present but not common.			
MUDSTONE, silty in part, dark grey, contains a 1 ft siltstone zone at 908 ft.	18.25	921.70	
SANDSTONE, medium grained, mid grey.	1.30	923.00	BASE OF HOLE

SUKUNKA D.D.H. M-2A

REDRILL D.D.H. M-2: 166.27 FT. - 191.83 FT.

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Remarks</i>
MUDSTONE, silty in part toward base of unit; mid to dark grey.	9.96	166.21	SEAM ROOF
<u>COAL</u> , dull with minor bright bands.	0.30	166.51)	
, stony.	0.03	166.54)	
, dull with minor bright bands, joint at 30 ⁰ to core axis.	0.65	167.19)	
)	
CLAYSTONE.	0.05	167.24)	
)	
<u>COAL</u> , dull with minor bright bands.	0.35	167.59)	
, dull.	0.25	167.84)	
, dull with minor bright bands.	0.12	167.96)	
, bright with minor dull bands.	1.10	169.06)	'B' SEAM
, bright.	0.16	169.22)	
, dull.	0.03	169.25)	
, dull and bright.	0.32	169.57)	
, dull with minor bright bands, joints at 30 ⁰ to core axis.	0.23	169.80)	
, dull and bright.	0.35	170.15)	
)	
SILTSTONE, mid grey, pyrite on joint face.	0.10	170.25)	
)	
<u>COAL</u> , bright.	0.25	170.50)	
, stony.	0.07	170.57)	

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor(ft)	Remarks
<u>COAL</u> , sheared.	0.12	170.69)	
)	
CORE LOSS assumed here.	1.73	172.42)	GRN Log da
)	
<u>COAL</u> , dull.	0.06	172.48)	Lower sect
, sheared, very minor stone partings.	1.36	173.84)	sheared to
, bright.	0.04	173.88)	some degre
, dull with minor bright bands.	0.43	174.31)	throughout
, sheared, possibly dull.	0.31	174.62)	0.82' cor
, dull and bright, minor shearing.	0.34	174.96)	loss betwe
, dull and bright, sheared.	0.22	175.18)	172.42' an
, dull and bright.	0.28	175.46)	176.83'.
, dull with minor bright bands.	0.42	175.88)	
, bright.	0.10	175.98)	
, dull and bright.	0.24	176.22)	
, sheared, probably dull and bright with minor stone partings.	0.28	176.50)	
, dull with minor bright bands.	0.33	176.83)	
)	
CLAYSTONE, carbonaceous, not sheared.	4.17	181.00)	Core loss
		)	assumed he
CLAYSTONE, dark grey.	0.95	181.95)	GRN data.
			Seam Floor

SUKUNKA D.D.H. M-2A

REDRILL D.D.H. M-2: 166.21 FT. - 191.83 FT.

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Remarks</i>
SILTSTONE, mid grey, grading to mudstone in part; sandstone, medium grained, lenses to 0.01' present but rare.	3.55	185.50	
MUDSTONE, carbonaceous, contains minor slip surfaces, some coated with calcite; fracture zone, calcite filled joints, 0.15' at top occasional medium grained sandstone lense containing coaly fragments.	4.83	190.33	? Fault
SANDSTONE, fine to medium grained at base. Coaly in basal 0.30', minor slip surfaces.	1.50	191.83	Base of Hole

ROKEL

GAMMA RAY NEUTRON LOG

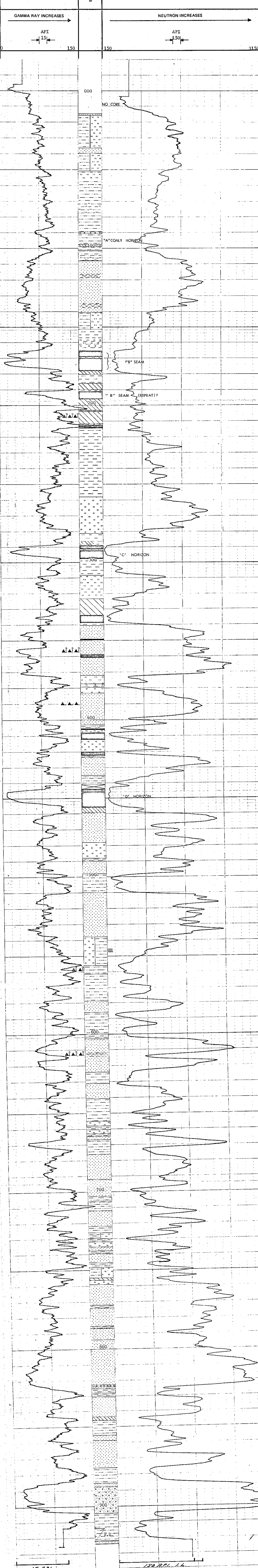
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD	WELL	DDH K-2
SEC	LOCATION	
TYPE	FIELD	SURKUKA
RGE	PROVINCE	BRITISH COLUMBIA
M	Other Symbols	DENS., GRN-DENS
	Log Measured from	RIG FLOOR 1.5 Ft. Above Perm. Datum
	Well Depth Measured from	RIG FLOOR
	Run No.	ONE
	Date	27 SEPTEMBER 1974
	First Reading	922
	Last Reading	000
	Footage Logged	923
	Depth Handled	923
	Depth Driller	
	Coring Date	
	Coring Driller	
	Fluid Type	WATER
	Liquid Level	
	Min. Diam.	NQ
	Rm @ 0'	
	Operating Time	3 HOURS
	Truck No.	35
Recorded By	Witnessed By	ESTERSON MAITIS

EQUIPMENT DATA			
GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	50
HOIST TRUCK NO.	35	SPACING	17 INCH
INSTRUMENT TRUCK NO.		TYPE	AmBe
TOOL SERIAL NO.	177	STRENGTH	3 CURIES

LOGGING DATA											
GENERAL			GAMMA RAY				NEUTRON				
RUN NO.	DEPTHS	SPEED	T.C.	SENS.	ZERO	API G. R. UNITS	T. C.	SENS.	ZERO	API N. UNITS	
	FROM	TO	FT/MIN	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.
1	000	922	12	3	500	OT.	15	3	1000	II.	150

REMARKS SCALE - 1 INCH PER 20 FEET



ROKEL

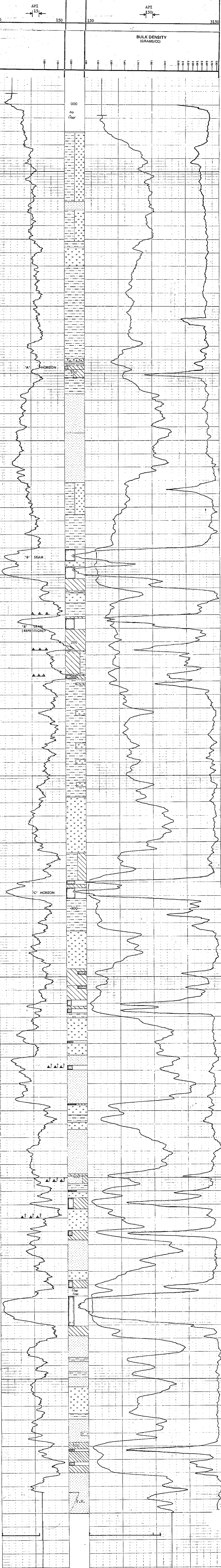
Oil Enterprises Ltd. CALGARY, ALBERTA.

FILE NO. _____ COMPANY _____ COALITION MINING LIMITED
 WELL _____ DHE M-2
 LOCATION _____
 FIELD _____ SASKONA
 PROVINCE _____ BRITISH COLUMBIA
 PERMIT NO. _____ GROUND LEVEL _____
 Log Measured from _____ RIG FLOOR _____ 1.5' Ft. Above Firm Datum
 Well Depth Measured from _____ RIG FLOOR _____
 Other Services: _____
 K.R. _____
 C.G. _____
 G.L. _____
 Run No. _____ ONE
 Date _____ 27 SEPTEMBER 1974
 Exit Reading _____ 525
 Last Reading _____ 000
 Footage Logged _____ 525
 Depth Reached _____ 526
 Depth Driller _____ 923
 Casing Rate _____
 Casing Driller _____
 Fluid Type _____ WATER
 Liquid Level _____ NO
 Min. Diam. _____ NO
 Run @ _____ 9F
 Operating Time _____ 2 HOURS
 Truck No. _____ 35
 Recorded By _____ EBERSON
 Witnessed By _____ WALZIS

EQUIPMENT DATA			
GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG. TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 1/2
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL	35	SERIAL NO.	50
HOIST TRUCK NO.		SPACING	17 INCH
INSTRUMENT TRUCK NO.		TYPE	AmBe
TOOL SERIAL NO.	177	STRENGTH	3 CURIES

LOGGING DATA											
GENERAL			GAMMA RAY				NEUTRON				
RUN NO.	DEPTHS	SPEED	T.C.	SENS	ZERO	API G. R. UNITS	T. C.	SENS	ZERO	API N. UNITS	
	FROM	TO	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.	
1	000	525	12	3	500	OL	15	3	1000	1L	150

REMARKS: SCALE - 1 INCH PER 10 FEET



ROKEL

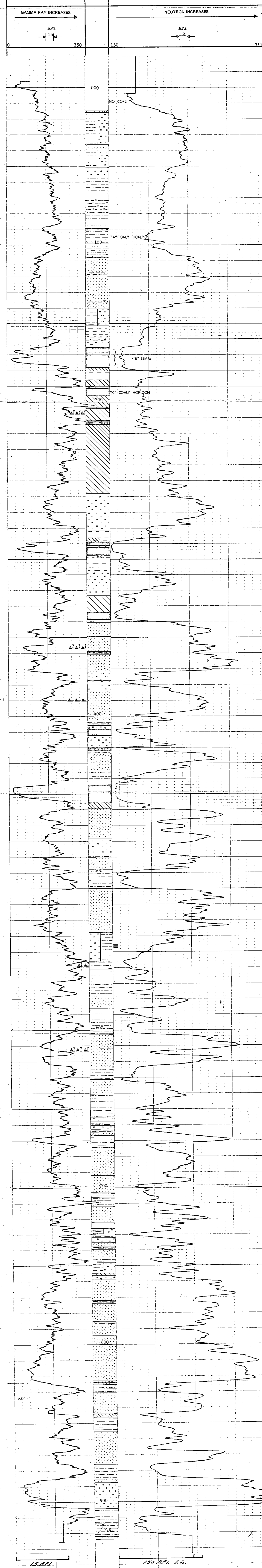
GAMMA RAY NEUTRON LOG
OIL ENTERPRISES LTD. CALGARY ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD SEC	WELL	DRI M-2
TYP	LOCATION	STURUKA
RGE	FIELD	STURUKA
W	PROVINCE	BRITISH COLUMBIA
	Other Services:	DENS, GR-DENS
	Permanent Datum	GROUND LEVEL
	Log Measured from	RIG FLOOR 1.5 Ft. Above Perm. Datum
	Well Depth Measured from	RIG FLOOR
	Run No.	ONE
	Date	27 SEPTEMBER 1974
	Exit Reading	000
	Last Reading	922
	Footage Logged	923
	Depth Reached	923
	Drum Driller	
	Coring Rods	
	Coring Other	
	Fluid Type	WATER
	Liquid Level	NO
	Min. Drum	
	Rm @ 9c	
	Operating Time	3 HOURS
	Track No.	35

EQUIPMENT DATA			
GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	50
HOIST TRUCK NO.	35	SPACING	17 INCH
INSTRUMENT TRUCK NO.		TYPE	AmBe
TOOL SERIAL NO.	177	STRENGTH	3 CURIES

LOGGING DATA											
GENERAL		GAMMA RAY				NEUTRON					
RUN NO.	DEPTHS	SPEED	T.C.	SENS	ZERO	API G. R. UNITS	T. C.	SENS	ZERO	API N. UNITS	
	FROM	TO	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.	
1	000	922	12	3	500	OT	15	3	1000	17	150

REMARKS SCALE - 1 INCH PER 20 FEET



DIAMOND DRILL HOLE M-3

Grid Reference: 52 682.7N 71 841.2E

Date Commenced: October 26, 1974 Completed: October 27, 1974

Collar R.L.: 2662 feet Standard Datum

Total Depth: 131.05 feet

Drilled using Christensen Core Barrel; 3½" diam. core

Radiation Logs: Gamma Ray - Neutron and Density

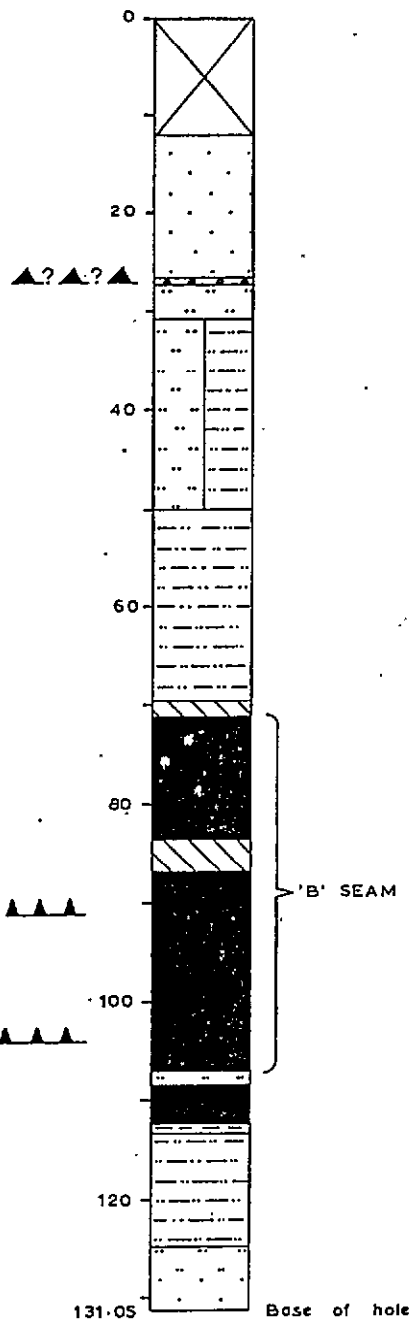
Drilled By: Sedcon Drilling Ltd

For: Coalition Mining Ltd

Logged By: G.R. Wallis

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft)	Recovery	Comments
"B" Seam (Middle Coals)	2550.1	38.70	(81.4% Seam (74.6% Coal	(67% of coal (in Seam. (Seam (structurally (thickened.



SCALE 1" to 20'0"

Prepared by
 CLIFFORD M^CELROY & ASSOCIATES PTY. LTD.
 for
 COALITION MINING LIMITED

STRATIGRAPHIC LOGS
 DDH M-3

DRAWN BY

DATE: JANUARY 1975

PAGE 1 of 1

SEAM 'B' - "Middle Coals"

ASH %
CUMULATIVE
FROM FLOOR

SAMPLE N° SKR THICKNESS (FEET)

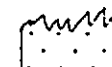
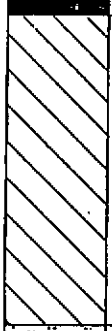
WT gm

ASH %

C. S. N°

INCL. BANDS

EXCL. BANDS

73.20								
sheared		447	1.05	2123	2.7	1 1/2	6.6 SKR 447 to 452	
		448	2.85	6325	2.9	1 1/2		
sheared		449	1.15	2515	7.3	1 1/2		
		450	0.20	655	50.5	↓		
		451	2.55	4220	4.4	1 1/2		
sheared		452	2.41	4910	11.7	7		
sheared → 83.41		453	3.15	767	60.6	1/2		
86.66								

SCALE 1" to 2' 0"

Prepared by
CLIFFORD Mc ELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

SEAM SECTION
DDH M-3

SEAM "B" Cont'd - "Middle Coals"

ASH %
CUMULATIVE
FROM FLOOR

		SAMPLE N° SKR	THICKNESS (FEET)	WT gm	ASH %	C. S. N°	INCL. BANDS	EXCL. BANDS
86.66	SHEARED.							
89.55								
	SHEARED	454	3.45	2185	19.0	5 1/2	27.8	
		Core loss (2.55)						
	SHEARED	455	0.65	1360	16.8	1		
		456	1.05	2253	3.2	7		
	SHEARED	457	0.85	1942	2.8	1 1/2		
		458	0.55	1295	2.8	1 1/2		
		459	0.15	528	78.6	1/2		
		460	1.61	2325	26.1	8		
98.66		461	0.80	2690	74.6	1/2		

SCALE 1" to 2' 0"

Prepared by
CLIFFORD Mc ELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

SEAM SECTION
DDH M-3

SEAM "B" Cont'd - "Middle Coals"

ASH %
CUMULATIVE
FROM FLOOR

	SAMPLE N° SKR	THICKNESS (FEET)	WT gm	ASH %	C. S. N°	INCL. BANDS	EXCL. BANDS
98.66							
sheared	462	2.34	4760	18.4	2 1/2		
	463	0.60	1952	84.5	1/2		
	464	1.20	3912	56.4	N.A.		
Sheared							
sheared							
sheared							
sheared							
sheared							
sheared							
111.90							

NOT ANALYSED

SCALE 1" to 2' 0"

Prepared by
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

SEAM SECTION
DDH M-3

ANALYTICAL DATA

D.D.H. M-3

Sample Nos. (SKR-)	Interval (feet)
447	73.20 - 74.25
448	74.25 - 77.10
449	77.10 - 78.25
450	78.25 - 78.45
451	78.45 - 81.00
452	81.00 - 83.24
453	83.24 - 86.56
454	86.56 - 93.00
455	93.00 - 93.65
456	93.65 - 94.70
457	94.70 - 95.55
458	95.55 - 96.10
459	96.10 - 96.25
460	96.25 - 97.86
→ 461	→ 97.86 - 98.66
462	98.66 - 101.00
463	101.00 - 101.60
464	101.60 - 102.80

(i) Individual Ply Analyses

(a) Samples SKR 447 - 453

p. 1

(b) Samples SKR 454 - 464

pp. 5- 6

(ii) Analyses of:

Head Raw Coal

Size

Sink-Float

Froth Flotation of

(a) Samples SKR 447 - 453

pp. 2- 4

(b) Samples SKR 454 - 464

pp. 7- 9

(iii) Analyses of

Composites of Sink-Float and

F.F. Washing of

(ii) (a) and (ii) (b), above

(See following page for explanation)

p.10

EXPLANATION OF ANALYTICAL DATA ON PAGE 10

(Samples SKR 447 to 464)

<u>Lab No.</u>	<u>Data Source</u>
1) <u>1957:</u> Comp. 1781 & 1782	1781: See 4) below 1782: See 5) below
2) <u>1958:</u> Comp. F.F. Stages I & II of 1644 & 1645	1644: Froth Flotation Analysis -28 M (SKR 447-452) - p.4 1645: Froth Flotation Analysis -28 M (SKR 454-464) - p.9
3) <u>1959:</u> Comp. of 1957 & 1958	1957: See 1) above 1958: See 2) above
4) <u>1781:</u> Comp. Floats @ 1.60 S.G. of 1644	1644: Sink/Float Analysis +28 M of SKR 447 to 452 - p. 3 -
5) <u>1782:</u> Comp. Floats @ 1.60 S.G. of 1645	1645: Sink/Float Analysis +28 M of SKR 454 to 464 - p. 8 -

COALITION MINING

February 21, 1975

Sample: Core Samples (SKR 447 - 453) (C)

<u>Client #</u> <u>Lab No.</u>	<u>A.D.L.</u>	<u>Moist.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>P₂O₅</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>S.G.</u>	<u>Gm Wt</u>	<u>Calc.</u> <u>Factors</u>
<u>SKR 447</u> <u>1577</u>		.5	2.7 2.7	18.4 18.5	78.4 78.8	.29 .29		15,170 15,245	1 1/2	1.23	2,123	As Rec'd Dry Basis
<u>SKR 448</u> <u>1578</u>		.6	2.9 2.9	18.3 18.4	78.2 78.7	.42 .42		15,130 15,220	1 1/2	1.31	6,325	As Rec'd Dry Basis
<u>SKR 449</u> <u>1579</u>		.7	7.2 7.3	17.4 17.5	74.7 75.2	.33 .33		14,440 14,540	1 1/2	1.36	2,515	As Rec'd Dry Basis
<u>SKR 450</u> <u>1580</u>			50.5						1	1.82	655	Dry Basis
<u>SKR 451</u> <u>1581</u>		.5	4.4 4.4	18.3 18.4	76.8 77.2	.28 .28		14,900 14,975	1 1/2	1.33	4,220	As Rec'd Dry Basis
<u>SKR 452</u> <u>1582</u>		.6	11.6 11.7	19.0 19.1	68.8 69.2	.26 .26		13,730 13,815	7	1.37	4,910	As Rec'd Dry Basis
<u>SKR 453</u> <u>1583</u>			60.6						1/2	1.95	767	As Rec'd

COALITION MINING

February 21, 1975

Sample: Composite SKR 447 to 452

(C)

LAB NO. 1644

HEAD RAW ANALYSES

<u>Moist.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>S.G.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
0.4	6.6	18.0	75.0	.33	1.34	14,520	1 1/2	Air Dried Basis
	6.6	18.1	75.3	.33		14,580	" " "	

SIZE ANALYSES (Dry)

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 28 M	72.9	6.3	72.9	6.3	1 1/2
- 28 M	27.1	7.1	100.0	6.5	2 1/2

COALITION MINING

February 21, 1975

Sample: Composite SKR 447 to 452

(C)

LAB NO. 1644

SINK-FLOAT ANALYSES + 28 M

<u>S.G. Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
-1.30	58.7	2.3	58.7	2.3	2 1/2
1.30-1.40	30.0	5.0	88.7	3.2	1 1/2
1.40-1.60	7.6	20.9	96.3	4.6	1 1/2
+1.60	3.7	52.7	100.0	6.4	1/2

COALITION MINING

February 21, 1975

Sample: Composite SKR 447 to 452

(c)

LAB NO. 1644

FROTH FLOTATION ANALYSES - 28 M

<u>F.F. Product</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
Stage I	58.0	3.9	58.0	3.9	2 1/2
Stage II	8.8	6.7	66.8	4.3	2 1/2
Tails	33.2	12.5	100.0	7.0	1 1/2

F.F. Parameters

Pulp Density	-	10%
Reagent Dosage	-	0.24 lbs/Ton Kerosene:MIBC (4:1)
Conditioning Time	-	1 minute
Stage I	-	First minute froth
Stage II	-	Second minute froth

Birtley Engineering

Subsidiary of Great West Steel Industries

COALITION MINING

November 26th, 1974

Sample: Chip Samples

Lab No.	A.D.L.	Oven Moist.	Ash	Vol.	F.C.	S.	P.	B.T.U.	S.G.	F.S.I.	Sample wt (gms)	Calc. Factors
SKR 454 1584	4.7	0.6 5.3	18.9 18.0 19.0	20.2 19.3 20.3	60.3 57.4 60.7	.19 .18 .19	.06 .06 .06	12,490 11,905 12,565	1.45	5 1/2	2,185	Air Dried As Rec'd Dry Basis
SKR 455 1585			16.8						1.47	1	1,360	As Rec'd
SKR 456 1586		0.6	3.2 3.2	20.2 20.3	76.0 76.5	.15 .15	.06 .06	15,080 15,170	1.31	7	2,253	As Rec'd Dry Basis
SKR 457 1587		0.4	2.8 2.8	19.0 19.1	77.8 78.1	.20 .20	.17 .17	15,150 15,210	1.31	1 1/2	1,942	As Rec'd Dry Basis
SKR 458 1588		0.4	7.3 7.3	20.5 20.6	71.8 72.1	.26 .26	.16 .16	14,410 14,470	1.36	8	1,295	As Rec'd Dry Basis
SKR 459 1589			78.6						2.30	1/2	528	As Rec'd
SKR 460 1590		0.8 0.8	25.9 26.1	18.2 18.3	55.1 55.6	.18 .18	.05 .05	11,320 11,410	1.47	8	2,325	As Rec'd Dry Basis
SKR 461 1591			74.6						2.10	1/2	2,690	As Rec'd

M-3 - 5

COALITION MINING

November 26th, 1974

Sample: Chip Samples

<u>Lab No.</u>	<u>A.D.L.</u>	<u>Oven Moist.</u>	<u>Ash</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>P.</u>	<u>B.T.U.</u>	<u>S.G.</u>	<u>F.S.I.</u>	<u>Sample wt (gms)</u>	<u>Calc. Factors</u>
SKR 462	2.2	.7	18.3	17.6	63.4	.26	.05	12,690	1.44	2 1/2	4,760	Air Dried
1592		2.9	17.9	17.2	62.0	.25	.05	12,410				As Rec'd
			18.4	17.7	63.9	.26	.05	12,780				Dry Basis
SKR 463			84.5						2.40	1/2	1,952	As Rec'd
1593												
SKR 464		.8	55.9	11.7	31.6	.12	.06	6,310	1.83	N.A.	3,912	As Rec'd
1594			56.4	11.8	31.8	.12	.06	6,360				Dry Basis

COALITION MINING

February 21, 1975

Sample: Composite SKR 454 to 464

(C)

LAB NO. 1645

HEAD RAW ANALYSES

<u>Moist.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>S.G.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
0.4	27.8	18.0	53.8	.31	1.51	11,000	3 1/2	Air Dried Basis
	27.9	18.1	54.0	.31		11,040		" " "

SIZE ANALYSES (Dry)

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 28 M	73.8	30.5	73.8	30.5	2
- 28 M	26.2	19.1	100.0	27.5	6 1/2

Sample: Composite SKR 454 to 464

(C)

LAB NO. 1645

SINK-FLOAT ANALYSES + 28 M

<u>S.G. Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
-1.30	30.5	2.1	30.5	2.1	7 1/2
1.30-1.40	18.3	6.2	48.8	3.6	3
1.40-1.60	15.7	21.6	64.5	8.0	2 1/2
+1.60	35.5	68.7	100.0	29.6	1/2

COALITION MINING

February 21, 1975

Sample: Composite SKR 454 to 464

(C)

LAB NO. 1645

FROTH FLOTATION ANALYSES - 28 M

<u>F.F. Product</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
Stage I	37.4	8.8	37.4	8.8	7 1/2
Stage II	7.0	12.5	44.4	9.4	7
Tails	55.6	26.7	100.0	19.0	4

F.F. Parameters

Pulp Density	-	10%
Reagent Dosage	-	0.24 lbs/Ton Kerosene:MIBC (4:1)
Conditioning Time	-	60 seconds
Stage I	-	first minute froth
Stage II	-	second minute froth

COALITION MINING

February 21, 1975

SKR 447 to 464 (excluding 453)

(c)

<u>Lab No.</u>	<u>Total Yield %</u>	<u>R.M.</u>	<u>Ash %</u>	<u>V.M.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
1957		0.7	6.6	19.7	73.0	.44	14,440	2	As Analyzed
Comp. 1781 and 1782			6.6	19.8	73.6	.44	14,540		Dry Basis
1958		0.7	6.8	19.4	73.1	.50	14,500	3 1/2	As Analyzed
Comp. I & II Stages off 1644 & 1645			6.8	19.5	73.7	.50	14,600		Dry Basis
1959	71.8	0.7	6.4	19.3	73.6	.44	14,540	2 1/2	As analyzed
Comp. of 1957 & 1958			6.4	19.4	74.2	.44	14,640		Dry Basis
1781		0.6	4.5	18.6	76.3	.42	14,780	1 1/2	As analyzed
Comp. Floats @ 1.60 S.G. of 1644			4.5	18.7	76.8	.42	14,870		Dry Basis
1782		0.5	8.1	20.8	70.6	.42	14,230	4	As analyzed
Comp. Floats @ 1.60 S.G. of 1645			8.1	20.9	71.0	.42	14,300		Dry Basis

N.B. 1959 represents c.c yield for the series SKR 447 to 464 (excluding SKR 453)

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Remarks</i>
CLAYSTONE, partly carbonaceous with coaly bands throughout.	0.80	98.66)	
)	
<u>COAL</u> , dull with minor bright bands, listric surfaces throughout and becoming intensely sheared toward base of unit.	2.34	101.00)	
)	
)	
SILTSTONE, light grey, with mid grey mudstone intercalations.	0.35	101.35)	
)	
CLAYSTONE, carbonaceous.	0.25	101.60)	
		)	"B" Seam
<u>COAL</u> , sheared and claystone intermixed.	0.65	102.25)	
, dull with minor bright bands.	0.25	102.50)	
)	
CLAYSTONE, mid grey.	0.05	102.55)	
)	
<u>COAL</u> , dull with minor bright bands.	0.10	102.65)	
)	
STONE, coaly.	0.05	102.70)	
)	
<u>COAL</u> , dull with minor bright bands.	0.10	102.80)	
)	
CLAYSTONE, carbonaceous.	0.02	103.00)	
)	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Remarks</i>
NO CORE - overburden.	12.00	12.00	
SANDSTONE, light grey, quartz-lithic, cross bedded, joints, weathered, subparallel to core axis; minor mudstone lenses toward base to 0.015'.	14.55	26.55	
SILTSTONE & MUDSTONE, Interbedded units graded up to 0.15'.	0.55	27.10	
SILTSTONE, MUDSTONE & QUARTZ, breccia (large scale) units inter-tongued and wedging.	0.15	27.25	Probable Fault
SILTSTONE, light grey, containing zones of interbedded mudstone and siltstone to 0.50'. Bedding to core axis 15°.	3.15	30.40	
SILTSTONE & MUDSTONE INTERBEDS, maximum units to 0.15' averaging 0.10' for most part. Slump structures present; bedding to core axis 15°-20°. At 36.10' 0.40' mudstone unit slickensided faces on blocks, core broken - fault (possible). Slip planes evident on some bedding planes. At 50' core broken, iron oxide on joint surface.	21.60	52.00	
MUDSTONE, dark grey.	18.95	70.95	
MUDSTONE, mid grey.	0.83	71.78	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Remarks</i>
CLAYSTONE, carbonaceous, dark grey; contains siltstone bands to 0.01' at base. Slickensided joint 40° to core axis.	1.35	73.13	
SANDSTONE, fine grained, carbonaceous.	0.07	73.20	Roof of Seam
<u>COAL</u> , dull with minor bright bands, sheared in part.	0.35	73.55)	H ₂ S odour
, stony, 70° to core axis.	0.05	73.60)	strong
, intensely sheared, slightly weathered.	0.65	74.25)	
, dull with minor bright bands (?), sheared to varying degrees throughout; shear planes 15° and 45° to core axis prominent.	2.85	77.10)	
, intensely sheared, ? weathered.	1.15	78.25)	
, weathered and clay, banded.	0.20	78.45)	'B' Seam
, moderately sheared.	3.00	81.45)	
, dull and bright, sheared, shear planes at 30° and 60° to core axis.	1.69	83.14)	
)	
MUDSTONE.	0.10	83.24)	
)	
<u>COAL</u> , sheared.	0.17	83.41)	
)	
CLAYSTONE, carbonaceous; 60° to core axis bedding plane with overlying coal, though bedding 75° to core axis. Slight shearing.	3.15	86.56)	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Remarks</i>
SILTSTONE.	0.10	86.66)	
)	
<u>COAL</u> , sheared.	1.24	88.00)	Core Loss
		)	1.19'
CLAYSTONE, mid grey, becoming carbonaceous toward base.	1.55	89.55)	
)	
<u>COAL</u> , sheared.	3.45	93.00)	Core Loss
		)	2.55'
CLAYSTONE, carbonaceous, shear planes 65° to core axis.	0.65	93.65)	
)	
<u>COAL</u> , sheared.	0.30	93.95)	'B' Seam
, dull and bright, listric surfaces throughout.	0.75	94.70)	
, sheared, throughout; weathered (?) shear planes 40° and 80° to core axis.	0.85	95.55)	
)	
, dull with minor bright bands.	0.20	95.75)	
, bright with minor dull bands.	0.10	95.85)	
, dull and bright.	0.25	96.10)	
)	
SILTSTONE, light grey and mudstone with coaly lenses..	0.15	96.25)	
		)	Density log
<u>COAL</u> , bright with minor dull bands, sheared.	0.80	97.05)	indicates
, dull with minor bright bands.	0.14	97.19)	weathered
, bright with minor dull bands.	0.30	97.49)	coal from

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor(ft)	Remarks
<u>COAL</u> , sheared.	0.30	103.30)	
, sheared and mudstone interbedded in 0.10' unit.	0.65	103.95)	
, sheared.	0.30	104.25)	
		)	'B' Seam
MUDSTONE, mid grey.	0.10	104.35)	
)	
<u>COAL</u> , sheared.	0.45	104.80)	
SILTSTONE, light grey with mudstone intercalations.	0.51	105.31	
<u>COAL</u> , dull with minor bright bands.	0.40	105.71	
CLAYSTONE, partly carbonaceous.	0.15	105.86	
<u>COAL</u> , dull and bright.	0.16	106.02	
CLAYSTONE, light grey.	0.10	106.12	
<u>COAL</u> , sheared.	0.20	106.22	
CLAYSTONE, carbonaceous.	0.08	106.30	
<u>COAL</u> , sheared.	0.70	107.00	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Remarks</i>
<u>COAL</u> , stony.	0.17	97.66)	93.0' to
, dull and bright.	0.20	97.86)	98.70'
)	
CLAYSTONE, partly carbonaceous with coaly bands throughout.	0.80	98.66)	
)	
<u>COAL</u> , dull with minor bright bands, listric surfaces throughout and becoming intensely sheared toward base of unit.	2.34	101.00)	
)	
SILTSTONE, light grey, with mid grey mudstone intercalations.	0.35	101.35)	
)	
CLAYSTONE, carbonaceous.	0.25	101.60)	'B' Seam.
)	
<u>COAL</u> , sheared and claystone intermixed.	0.65	102.25)	
, dull with minor bright bands.	0.25	102.50)	
)	
CLAYSTONE, mid grey.	0.05	102.55)	
)	
<u>COAL</u> , dull with minor bright bands.	0.10	102.65)	
)	
STONE, coaly.	0.05	102.70)	
)	
<u>COAL</u> , dull with minor bright bands.	0.10	102.80)	
)	
CLAYSTONE, carbonaceous.	0.20	103.00)	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Remarks</i>
SILTSTONE, with minor mudstone intercalations.	1.23	108.23	Corrected using radiation logs.
<u>COAL</u> , dull with minor bright bands.	1.53	109.76	
CLAYSTONE, carbonaceous, with coaly lenses.	1.13	110.89	
<u>COAL</u> , sheared.	1.01	111.90	
CLAYSTONE, dark grey.	0.82	112.72	
CLAYSTONE, dark grey to carbonaceous, containing coaly lenses to 0.005'.	0.25	112.97	
MUDSTONE, dark to mid grey; coaly partings throughout. Core broken in slickensided planes at 0.50' intervals throughout upper 5.0'. Becomes slightly silty in lower 2.00' and containing coaly blebs.	11.08	124.05	
SILTSTONE, mid grey in upper 2' grading to Sandstone, light grey, containing mudstone phases and coaly lenses. Mudstone occurring as both graded units, pellets and fragments. Cross bedding present in lower 5'.	7.45	131.05	Base of Hole

ROKKE

GAMMA RAY NEUTRON LOG

DENSITLOG

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD	WELL	DDH-N-3
SEC.	LOCATION	SUKUNKA
TWP	PROVINCE	BRITISH COLUMBIA
RGE	Other Services:	NIL
W	Permanent Datum	GROUND LEVEL
M	Log Measured from	GROUND LEVEL
	Well Depths Measured from	GROUND LEVEL
	Elev. Ft. Above Perm. Datum	
	K.B.	
	CSG	
	G.L.	
Run No.	ONE	
Date	27 OCTOBER 1974	
First Reading	130	
Last Reading	000	
Footage Logged	130	
Depth Reached	131.6	
Depth Driller	131.9	
Casing Rate		
Casing Driller		
Fluid Type	AIR/WATER	
Liquid Level	19	
Min. Diam.	6-1/4	
Rm @ of		
Operating Time	3 HOURS	
Truck No.	35	
Recorded By	PETERSSON	Witnessed By
		WALITS

EQUIPMENT DATA

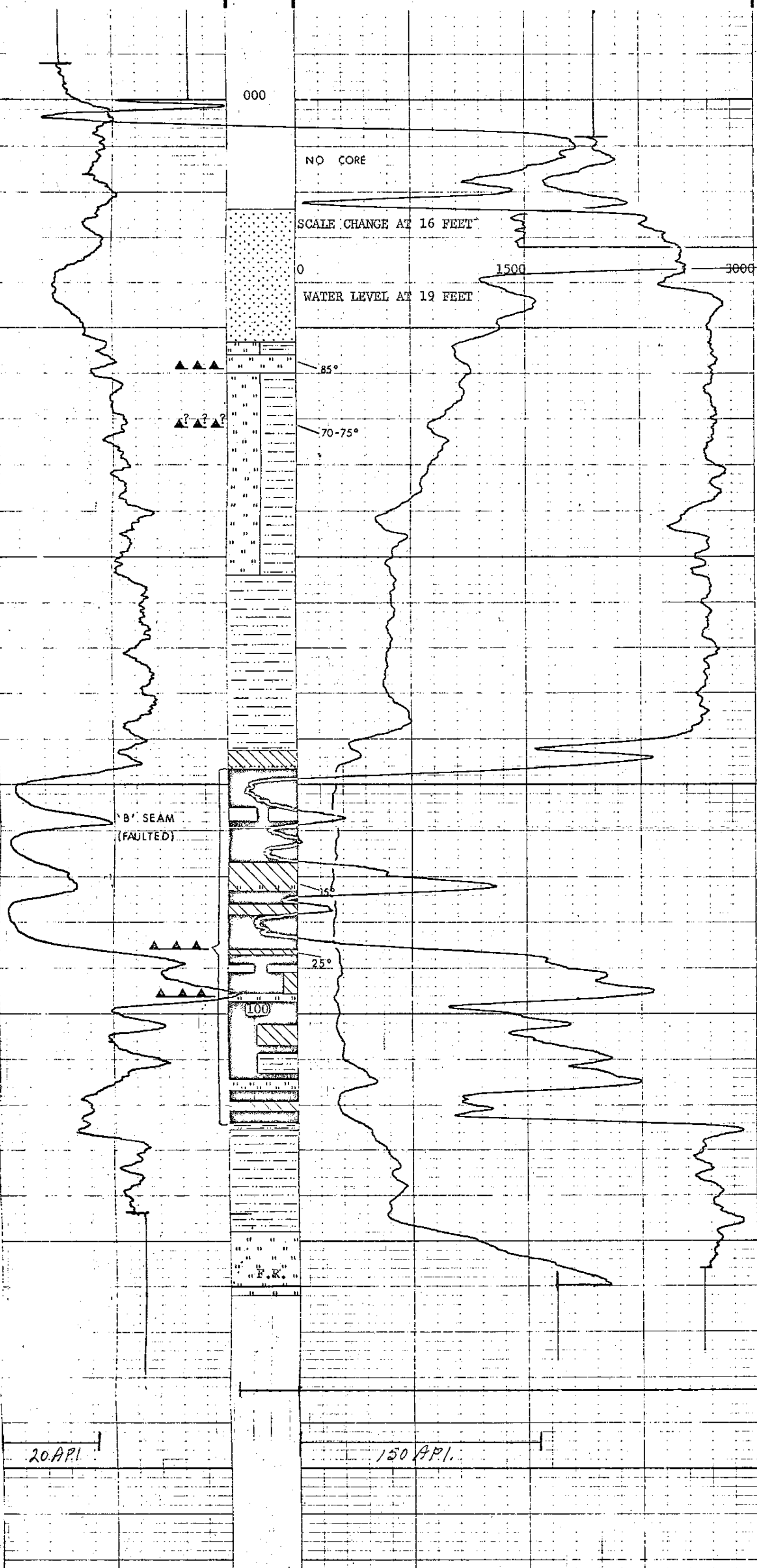
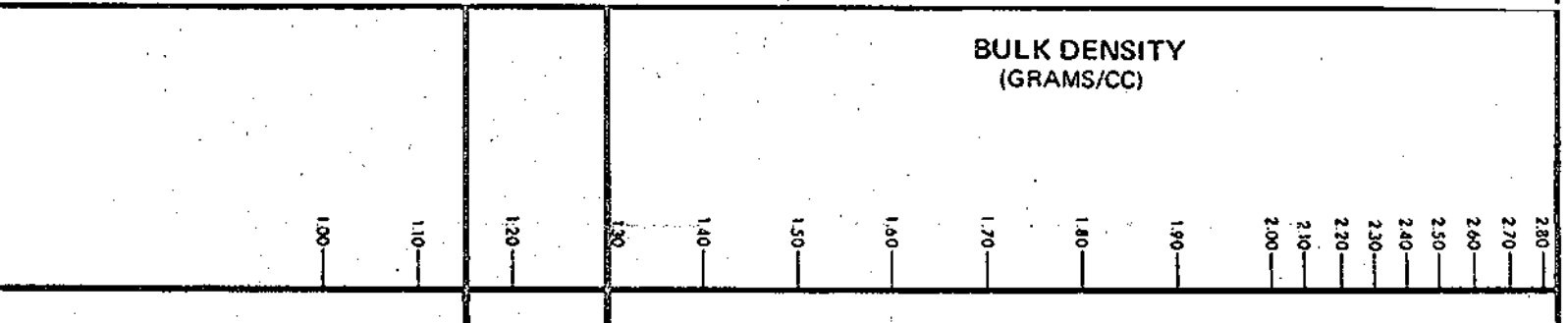
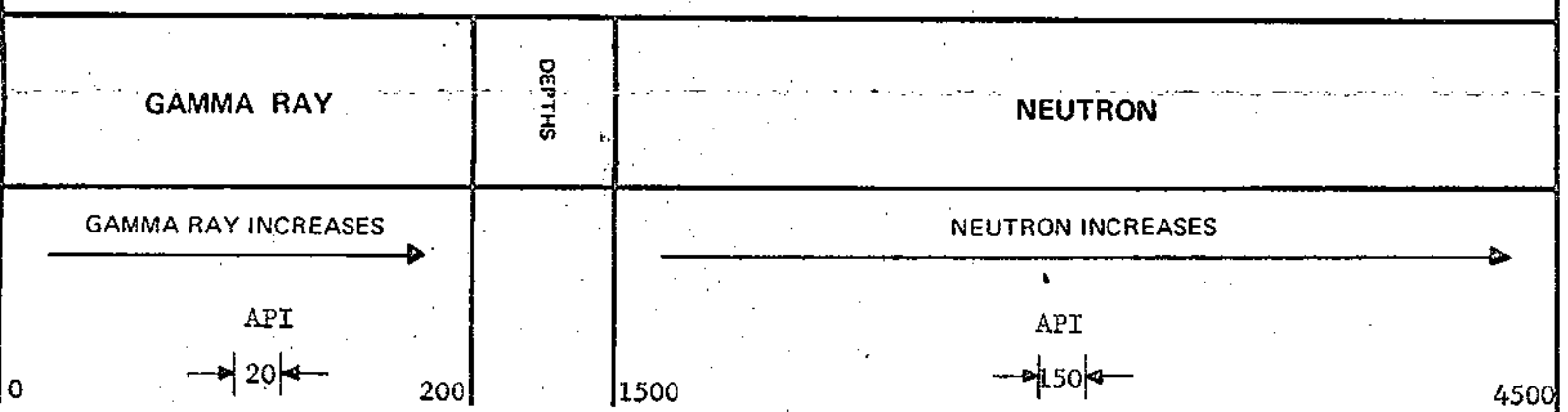
GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	
GENERAL		SPACING	17 INCH
HOIST TRUCK NO.		TYPE	AmBe
INSTRUMENT TRUCK NO.	35	STRENGTH	3 CURIES
TOOL SERIAL NO.	177		

LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				NEUTRON				
	FROM	TO	SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	000	130	12	3	500	OL	20	3	1000	2.6R	44.23
	000	16	12	3	1000	10L	150				
	16	130	12	3	1000	OL	150				

REMARKS

DENSITY TOOL SERIAL NO 128 SOURCE #50



DIAMOND DRILL HOLE M-4

Grid Reference: 52840.9N 71 535.2E

Date Commenced: October 27, 1974 Completed: October 27, 1974

Collar R.L.: 2561 ft Standard Datum

Total Depth: 103.0 ft

Drilled using: Christensen Core Barrel, 3½" diameter core

Radiation Logs: Gamma Ray, Neutron and Density

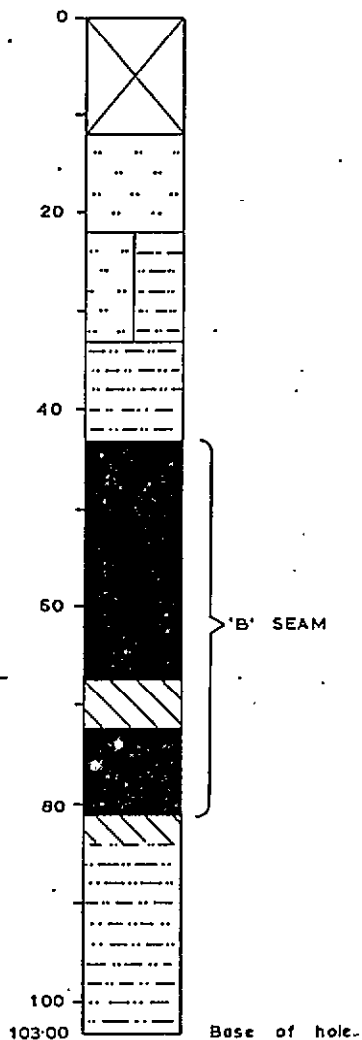
Drilled By: Sedco Drilling Ltd

For: Coalition Mining Ltd

Logged By : G.R. Wallis

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft)	Recovery	Comments
"B" Seam	2479.48	38.02	85.3%	Seam structurally thickened by faulting



SCALE 1" to 20'0"

Prepared by
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.
 for
 COALITION MINING LIMITED

STRATIGRAPHIC LOGS
 DDH M-4

SEAM "B" - "Middle Coals"

ASH %
CUMULATIVE
FROM FLOOR

	SAMPLE N ^o SKR	THICKNESS (FEET)	WT gm	ASH %	C. S. N ^o	INCL. BANDS	EXCL. BANDS
43.50							
sheared							
		Partial core loss (5.00)					
		10.50					
54.00							
sheared	480	3.33	7564	4.8	3 1/2	38.9	
	481	0.10	109.2	14.0	2 1/2		
57.68							

SCALE 1" to 2' 0"

Prepared by
CLIFFORD Mc ELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

SEAM SECTION
DDH M-4

DRAWN BY I.L.

DATE. JANUARY 1975

PAGE 1 of 3

SEAM "B" - Cont'd - "Middle Coals"

ASH %
CUMULATIVE
FROM FLOOR

	SAMPLE N ^o SKR	THICKNESS (FEET)	WT gm	ASH %	C. S. N ^o	INCL. BANDS	EXCL. BANDS
57.68							
sheared	482	2.53	6471	42.6	7		
	483	0.39	1093	75.0	NA.		
sheared	484	2.75	6563	5.7	2 1/2		
sheared	485	3.25	3660	9.7	7 1/2		
66.60							

SCALE 1" to 2' 0"

Prepared by
CLIFFORD MC ELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

SEAM SECTION
DDH M-4

SEAM "B" Cont'd - "Middle Coals"

ASH %
CUMULATIVE
FROM FLOOR

	SAMPLE N° SKR	THICKNESS (FEET)	WT gm	ASH %	C. S. N°	INCL. BANDS	EXCL. BANDS
66.60	486	1.10	3866	57.6	1		
core loss		1.10					
70.00	487	3.35	4858	79.5	N.A.		
sheared	488	1.58	4819	62.2	1		
sheared	489	1.40	3540	65.0	1		
	490	0.35	1598	80.0	N.A.		
	491	0.77	2883	41.9	4 1/2		
	492	1.35	3620	76.1	1/2		
sheared	493	0.85	1851	32.2	4		
	494	0.28	1063	70.6	1		
sheared	495	1.08	2935	37.6	5		
80.00	496	0.76	2101	82.7	N.A.		
sheared	497	0.95	1881	10.5	8		
81.52							

SCALE 1" to 2' 0"

Prepared by
CLIFFORD Mc ELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

SEAM SECTION
DDH M-4

ANALYTICAL DATA

D.D.H. M-4

<u>Sample Nos.</u> (SKR-)	<u>Interval</u> (feet)
480	54.00 - 57.58
481	57.58 - 57.68
482	57.68 - 60.21
483	60.21 - 60.60
484	60.60 - 63.35
485	63.35 - 66.60
486-	66.60 - 67.70
487	68.80 - 72.15
488	72.15 - 73.73
489	73.73 - 75.13
490	75.13 - 75.48
491	75.48 - 76.70
492	76.70 - 77.60
493	77.60 - 78.45
494	78.45 - 78.73
495	78.73 - 79.81
496	79.81 - 80.57
497	80.57 - 81.52

-
- (i) Raw Coal Analyses
Individual Plies pp. 1- 3
(Phosphorus on Samples
SKR 480, 482, 484, 485, 488
- page 3)
- (ii) Analyses of Composite of
SKR 480 to 497:
Head Raw Coal
Size
Sink/Float
Froth Flotation pp. 4- 6
- (iii) Analyses of Combined
Composites of Sink/Float
and Froth Flotation Tests p. 7

COALITION MINING

February 21, 1975

SKR 480 to 497 Series

(D)

<u>Client #</u> <u>Lab No.</u>	<u>A.D.L.</u>	<u>Moist.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>S.G.</u>	<u>Gm Wt</u>	<u>Calc.</u> <u>Factors</u>
<u>SKR 480</u> <u>1610</u>		0.4	4.8	19.3	75.5	.26	14,82-	3 1/2	1.31	7,564	Air Dried
		0.4	4.8	19.3	75.5	.26	14,820	3 1/2	1.31	7,564	As Rec'd
			4.8	19.4	75.8	.26	14,880				Dry Basis
<u>SKR 481</u> <u>1611</u>		0.6	14.0	19.9	65.5	.29	13,230	2 1/2	1.45	109.2	Air Dried
			14.1	20.0	65.9	.29	13,310				Dry Basis
<u>SKR 482</u> <u>1612</u>		0.7	42.6	15.7	41.0	.24	8,550	7	1.64	6,471	Air Dried
			42.9	15.8	41.3	.24	8,610				Dry Basis
<u>SKR 483</u> <u>1613</u>		1.3	75.0	7.5	16.2	.22		N.A.	2.15	1093.1	Air Dried
			76.0	7.6	16.4	.22					Dry Basis
<u>SKR 484</u> <u>1614</u>		0.4	5.7	19.4	74.5	.29	14,680	2 1/2	1.32	6,563	Air Dried
			5.7	19.5	74.8	.29	14,740				Dry Basis
<u>SKR 485</u> <u>1615</u>		0.4	9.7	21.2	68.7	.24	14,020	7 1/2	1.34	3,660	Air Dried
			9.7	21.3	69.0	.24	14,075				Dry Basis
<u>SKR 486</u> <u>1616</u>		0.9	57.6	13.1	28.4	.35	5,950	1	1.91	3,866	Air Dried
			58.1	13.2	28.7	.35	6,000				Dry Basis
<u>SKR 487</u> <u>1617</u>		0.8	79.5	16.9	2.8	.19		N.A.	2.41	4,858	Air Dried
			80.1	17.0	2.9	.19					Dry Basis
<u>SKR 488</u> <u>1618</u>			62.2					1	1.88	4,819	Air Dried

SKR 480 - 497 Series (Cont'd)

(D)

<u>Client #</u> <u>Lab No.</u>	<u>A.D.L.</u>	<u>Moist.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>S.G.</u>	<u>Gm Wt</u>	<u>Calc Factors</u>
SKR 489	4.9	0.9	65.0	10.5	23.6	.29	4,710	1	2.01	3,540	Air Dried
1619		5.8	61.8	10.0	22.4	.28	4,250				As Rec'd
			65.6	10.6	23.8	.29	4,750				Dry Basis
SKR 490		0.7	80.0	16.9	2.4	.14		N.A.	2.49	1,598	Air Dried
1620			80.6	17.0	2.4	.14					Dry Basis
SKR 491		0.8	41.9	14.8	42.5	.40	8,810	4 1/2	1.64	2,883	Air Dried
1621			42.2	14.9	42.9	.40	8,880				Dry Basis
SKR 492		1.0	76.1	7.9	15.0	.27		1/2	2.17	3,620	Air Dried
1622			76.9	8.0	15.1	.27					Dry Basis
SKR 493		0.7	32.2	16.2	50.9	.55	10,220	4	1.55	1,851	Air Dried
1623			32.4	16.3	51.3	.55	10,290				Dry Basis
SKR 494		1.0	70.6	8.7	19.7	.28	3,760	1	2.07	1,063	Air Dried
1624			71.3	8.8	19.9	.28					Dry Basis
SKR 495	3.8	0.8	37.6	15.2	46.4	.47	9,275	5	1.62	2,935	Air Dried
1625		4.6	36.2	14.6	44.6	.45	8,920				As Rec'd
			37.9	15.3	46.8	.47	9,350				Dry Basis
SKR 496		1.2	82.7	6.6	9.5	.22		N.A.	2.33	2,101	Air Dried
1626			83.7	6.7	9.6	.22					Dry Basis
SKR 497		0.5	10.5	20.7	68.3	.75	13,930	8	1.35	1,881	Air Dried
1627			10.6	28.8	60.6	.75	14,000				Dry Basis

N.B. In Lab Nos. where no A.D.L. figure appears, air dried basis = as Rec'd basis

COALITION MINING

November 26th, 1974

Sample: Core Samples

<u>Lab No.</u>	<u>A.D.L.</u>	<u>Oven Moist.</u>	<u>Ash</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>P.</u>	<u>B.T.U.</u>	<u>S.G.</u>	<u>F.S.I.</u>	<u>Sample wt (gms)</u>	<u>Calc. Factors</u>
SKR 480 1610		.4	4.8 4.8	19.3 19.4	75.5 75.8	.26 .26	.14 .14	14,820 14,880	1.31	3 1/2	7,564	As Rec'd Dry Basis
SKR 482 1612		.7	42.6 42.9	15.7 15.8	41.0 41.3	.24 .24	.08 .08	8,550 8,610	1.64	7	6,471	As Rec'd Dry Basis
SKR 484 1614		.4	5.7 5.7	19.4 19.5	74.5 74.8	.29 .29	.07 .07	14,680 14,470	1.32	2 1/2	6,563	As Rec'd Dry Basis
SKR 485 1615		.4	9.7 9.7	21.2 21.3	68.7 69.0	.24 .24	.08 .08	14,020 14,075	1.34	7 1/2	3,660	As Rec'd Dry Basis
SKR 488 1618			62.2						1.88	1	4,819	As Rec'd

COALITION MINING

(D)

February 21, 1975

Sample: SKR 480 to 497

LAB NO. 1646

HEAD RAW ANALYSES

<u>R.M.</u>	<u>Ash %</u>	<u>V.M.</u>	<u>F.C.</u>	<u>S.</u>	<u>S.G.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
0.7	38.9	16.0	44.4	.33	1.63	9,330	2 1/2	Air Dry Basis
	39.2	16.1	44.7	.33		9,400		Dry Basis

SIZE ANALYSES (Dry)

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 28 M	79.6	40.9	79.6	40.9	2
- 28 M	20.4	27.8	100.0	38.2	5 1/2

Birtley Engineering

Subsidiary of Great West Steel Industries

M-4
-
4

COALITION MINING

SKR 480 to 497

(D)

February 21, 1975

LAB NO. 1646

SINK-FLOAT ANALYSES + 28 M

<u>S.G. Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
-1.30	27.2	2.2	27.2	2.2	7 1/2
1.30-1.40	12.4	6.3	39.6	3.5	4 1/2
1.40-1.60	9.6	17.8	49.2	6.3	3 1/2
+1.60	50.8	75.1	100.0	41.2	N.A.

COALITION MINING

February 21, 1975

SKR 480 to 497

(D)

LAB NO. 1646

FROTH FLOTATION ANALYSES 28 M x 0

<u>F.F. Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
Stage I	41.7	9.7	41.7	9.7	7 1/2
Stage II	8.0	17.5	49.7	11.0	6 1/2
Tails	50.3	43.1	100.0	27.1	2 1/2

F.F. Parameters

Pulp Density	-	10%
Reagent Dosage	-	0.24 lbs/Ton Kerosene:MIBC (4:1)
Conditioning Time	-	60 seconds
Stage I	-	first minute froth
Stage II	-	second minute froth

SKR 480 - 497 Series

LAB NO. 1651 - Comp. Floats @ 1.60 S.G. off 1646 Raw

<u>Total Yield %</u>	<u>Moisture</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
	0.6	6.3	20.4	72.7	.52	14,580	5 1/2	As analyzed
		6.3	20.5	73.2	.52	14,670		Dry Basis

LAB NO. 1960 - Comp. I and II Stages off 1646

<u>R.M.</u>	<u>Ash %</u>	<u>V.M.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
0.6	10.8	20.2	68.4	.44	13,860	7	As analyzed
	10.9	20.3	68.8	.44	13,940		Dry Basis

LAB NO. 1961 - Comp. of 1651 and 1960

<u>Total Yield %</u>	<u>R.M.</u>	<u>Ash %</u>	<u>V.M.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
49.3	0.8	7.4	20.4	71.4	.44	14,430	6	As analyzed
		7.5	20.6	71.9	.44	14,550		Dry Basis

** 1961 represents total c.c. yield off SKR 480 - 497 @ 1.60 S.G. floats and Stages I and II

M-4
-
7

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Remarks</i>
NO CORE - Overburden.	12.00	12.00	
SILTSTONE, tending toward mudstone, contains both siltstone and mudstone lens to 0.15'.. Weathered on joint faces.	10.00	22.00	
MUDSTONE & SILTSTONE Interbeds, Units to 0.15'.	11.00	33.00	
MUDSTONE, mid grey, sporadic calcite filled joints.	10.50	43.50	Roof of Seam
<u>COAL</u> , sheared.	10.50	54.00)	5.00' Core
, dull with minor bright bands.	0.25	54.25)	Loss
, sheared.	3.33	57.58)	
)	
STONE, coaly.	0.10	57.68)	
)	
<u>COAL</u> , sheared, intensely.	2.10	59.78)	SEAM "B"
, sheared.	0.43	60.21)	
)	
<u>COAL</u> & MUDSTONE intermixed.	0.39	60.60)	
)	
<u>COAL</u> , sheared, shear planes 0° to 25° to core axis.	6.00	66.60)	
)	
<u>COAL</u> & STONE, intermixed.	0.60	67.20)	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Remarks</i>
CLAYSTONE, carbonaceous.	0.50	67.70)	Core loss
CORE LOSS.	1.10	68.80)	) corrected b radiation
CLAYSTONE, with intermixed sheared coal and stone.	3.35	72.15)	) log.
COAL, sheared.	0.40	72.55))
STONE & COAL, intermixed.	0.28	72.83))
CLAYSTONE, carbonaceous "bedding" angle 60° to core axis.	0.30	73.13)	) "B" Seam
COAL, sheared.	0.15	73.28))
CLAYSTONE.	0.05	73.33))
COAL, sheared.	0.15	73.48))
CLAYSTONE.	0.05	73.53))
COAL, sheared.	0.10	73.63))
CLAYSTONE.	0.10	73.73))

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Remarks</i>
<u>COAL</u> , sheared and macerated.	1.40	75.13)	
)	
SILTSTONE with MUDSTONE lenses to 0.03'.	0.35	75.48)	
)	
<u>COAL</u> , sheared, minor carbonaceous claystone lenses.	0.77	76.25)	
)	
MUDSTONE, mid grey to carbonaceous containing coal lenses to 0.08'.	0.45	76.70)	
)	
MUDSTONE, mid grey, containing siltstone lenses to 0.002'.	0.90	77.60)	
"Bedding" angle 60° to core axis.)	
)	
<u>COAL</u> , sheared.	0.85	78.45)	
		)	"B" Seam
MUDSTONE, dark grey to carbonaceous.	0.28	78.73)	
)	
<u>COAL</u> , sheared.	1.08	79.81)	
)	
MUDSTONE.	0.28	80.09)	
)	
<u>COAL</u> , sheared.	0.40	80.49)	
)	
MUDSTONE.	0.08	80.57)	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Remarks</i>
<u>COAL</u> , sheared.	0.95	81.52)	) "B" Seam
MUDSTONE, carbonaceous to dark grey; coaly partings in upper 0.40' Bedding angle 60° to core axis.	3.45	84.97	Floor of Sea
MUDSTONE, mid to dark grey. Minor silty phases present throughout. Sporadic coal lenses to 0.25' thick, associated with carbonaceous zones. Bedding angle 75° to core axis.	18.03	103.00	Base of Hole

ROKKE

GAMMA RAY NEUTRON LOG

DENSITY LOG

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO. COMPANY COALITION MINING LIMITED

WELL DDH-M-4

LOCATION

FIELD SUKUNKA

PROVINCE BRITISH COLUMBIA

Permanent Datum GROUND LEVEL

Log Measured from GROUND LEVEL

Well Depths Measured from GROUND LEVEL

Run No. ONE

Date 29 OCTOBER 1974

First Reading 103

Last Reading 000

Footage Logged 103

Depth Reached 104

Depth Driller 104

Casing Roke

Other Services: NIL

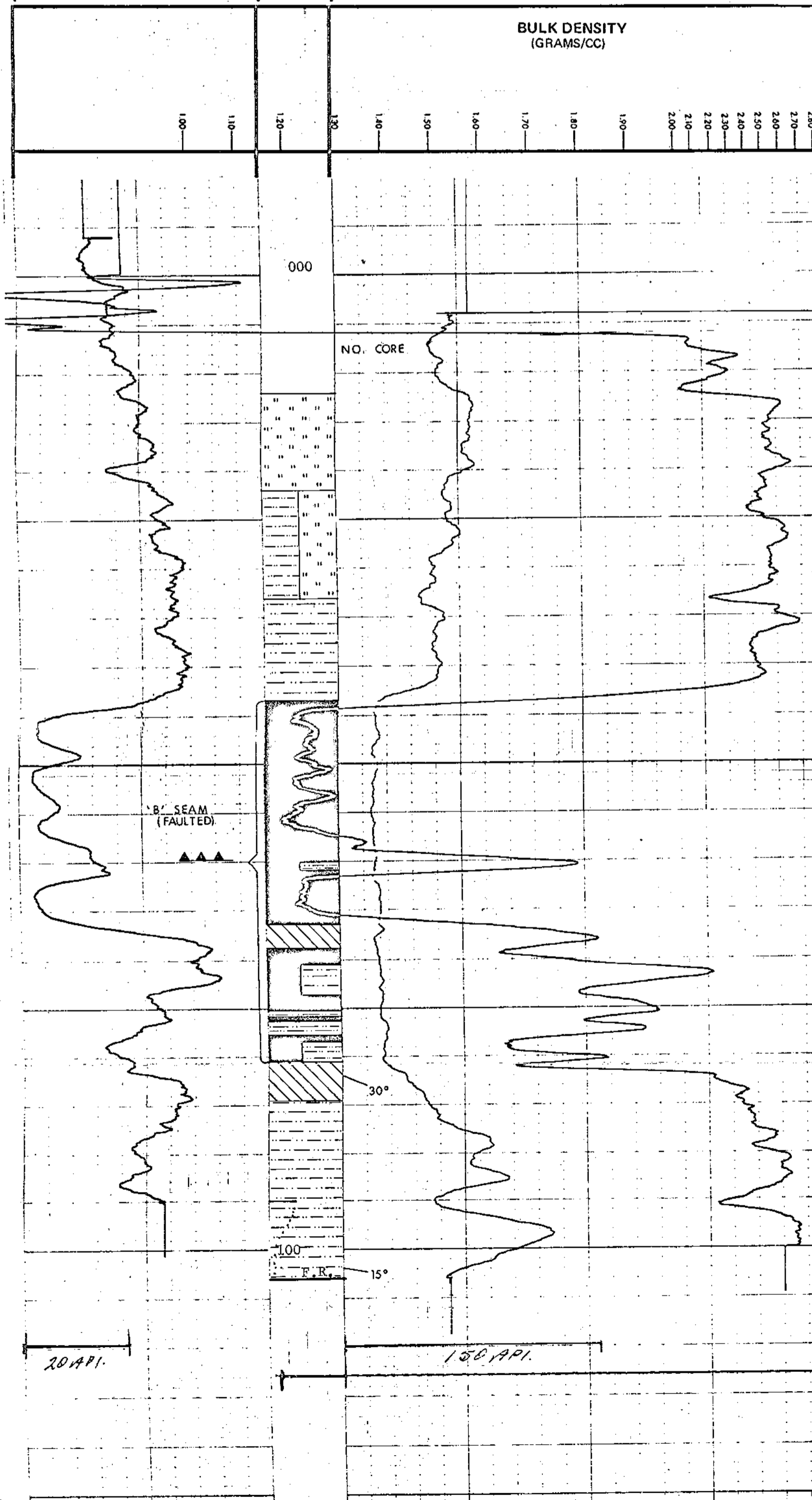
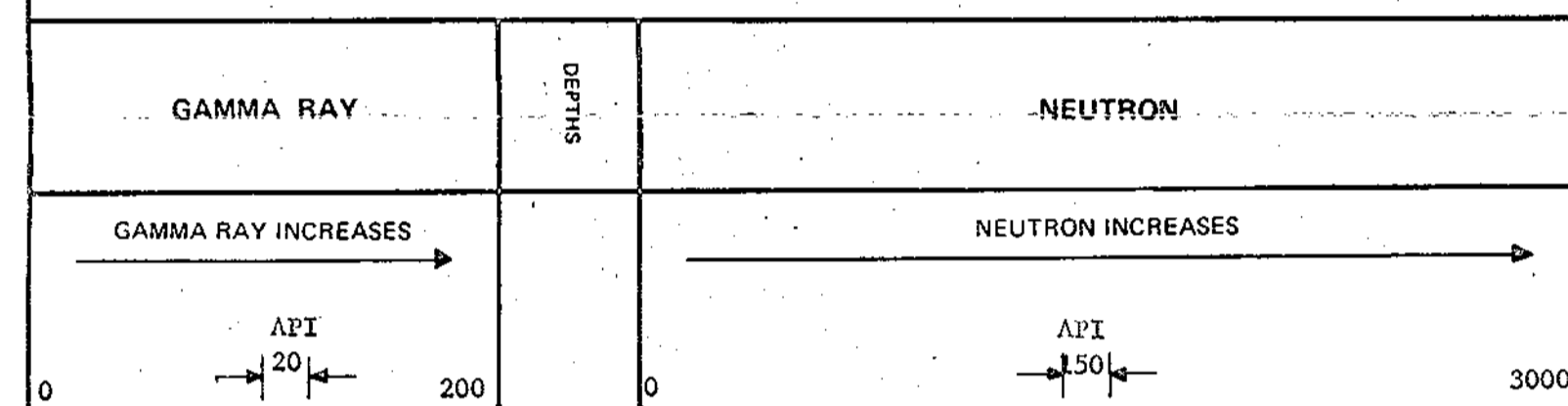
EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL		SERIAL NO.	
HOIST TRUCK NO.		SPACING	17 INCH
INSTRUMENT TRUCK NO.	35	TYPE	AmBe
TOOL SERIAL NO.	177	STRENGTH	3 CURIES

LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				NEUTRON				
	FROM	TO	SPEED FT/MIN	T.C. SEC	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	000	103	12	3	500	OL	20	3	1000	2.6R	44.23
	NEUTRON -			3	1000	OL	150				

REMARKS: DENSITY TOOL SERIAL NO 128 SOURCE #50



DIAMOND DRILL HOLE M-5

Grid Reference: 52 960N 72 462E

Date Commenced: October 29, 1974 Completed: October 31, 1974

Collar R.L.: 2861 ft Standard Datum

Total Depth: 161.00 ft

Drilled Using: Christensen Core Barrel, 3½" diameter core

Radiation Logs: Gamma Ray - Neutron and Density

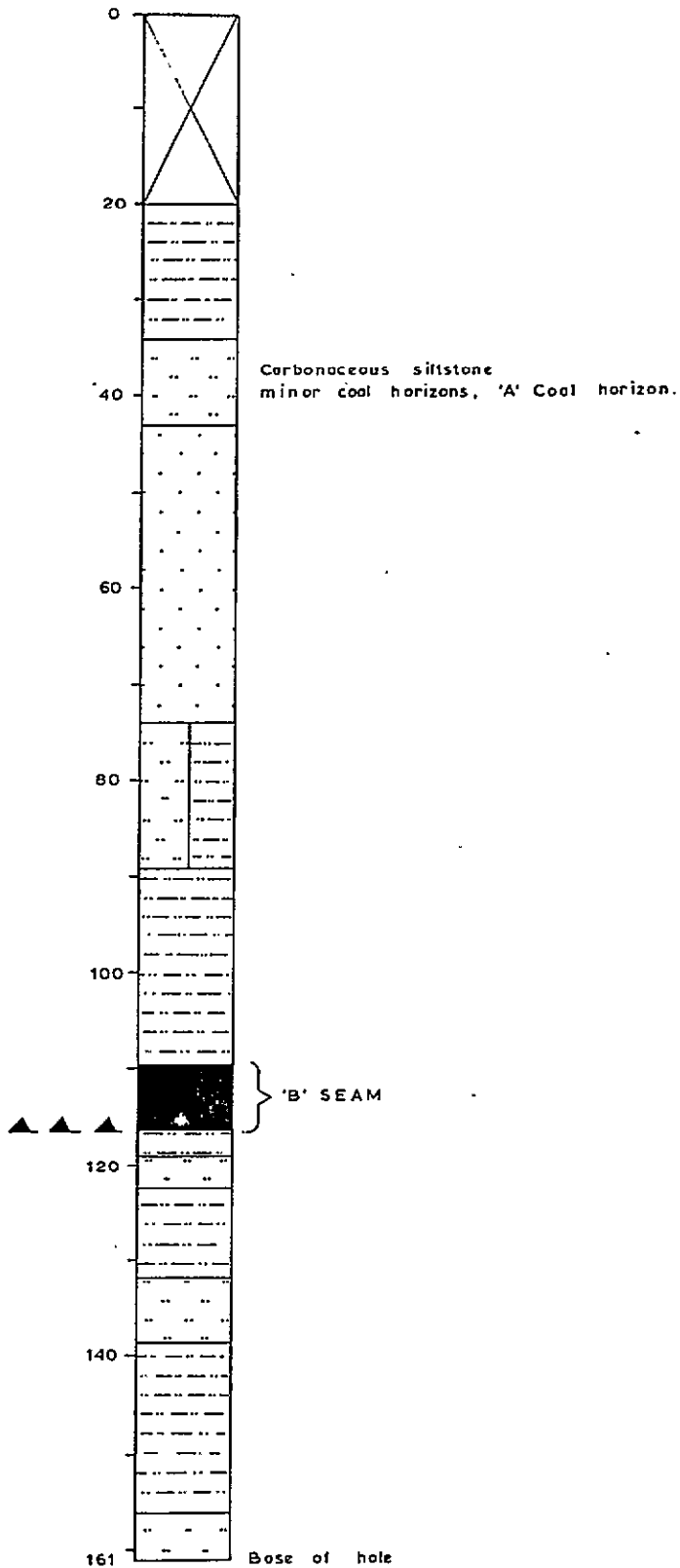
Drilled By: Sedco Drilling Ltd

For: Coalition Mining Ltd

Logged By: G.R. Wallis

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft)	Recovery	Comments
"A" Horizon	2825.8	1.00	100%	
"B" Seam (Middle Coals)	2747.0	4.50	100%	Seam faulted



SCALE 1" to 20'0"

Prepared by
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH M-5

DRAWN BY

DATE: JANUARY 1975

PAGE 1 of 1

SEAM "B" - "Middle Coals"

ASH %
CUMULATIVE
FROM FLOOR

SAMPLE THICKNESS
N^o SKR (FEET)

WT %

ASH %

C. S. N^o

INCL.
BANDS

EXCL.
BANDS

109.50

sheared

114.00

4.50

NOT ANALYSED

SCALE 1" to 2' 0"

Prepared by
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for
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SEAM SECTION
DDHM-5

DRAWN BY

DATE, JANUARY 1975

PAGE 1 of 1

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Remarks</i>
NO CORE, overburden and weathered rock - no core.	20.00	20.00	
MUDSTONE, mid grey, lower 0.50 ft sheared; pebble band at 32.5 ft.	14.00	34.00	
SILTSTONE, light to mid grey; weathered, carbonaceous partings common; 1.0 ft coal and stone, coaly at 35.2 ft, rock sheared throughout to some degree and intensely sheared in lower 3.0 ft.	5.00	39.00	'A' HORIZO Fault
SILTSTONE, mid grey, minor shearing present in unit; 0.75 ft coal, sheared at 39.00 ft.	4.00	43.00	
SANDSTONE, fine grained, light grey; cross bedded in upper 15 ft of unit, with associated mudstone partings and laminae to 0.01 ft thick maximum. Bedding angle 70° to core axis.	31.40	74.40	
MUDSTONE & SILTSTONE INTERBEDS, bedding graded unit varying between 0.10 ft and 0.20 ft thick. Sporadic siltstone lenses to 1.0 ft thick maximum. Joints weathered. Bedding angle 70° to core axis.	14.60	89.00	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Remarks</i>
MUDSTONE, mid to dark grey; joints sub vertical and generally weathered. Sporadic calcite filled joints associated with slickensided surfaces. Some siltstone phases to 0.40 ft. Bedding angle 60° to core axis.	20.50	109.50	Seam Roof
<u>COAL</u> , dull and bright.	1.07	110.57)	
, sheared.	3.43	114.00)	"B" SEAM
MUDSTONE, sheared.	2.15	116.15	Fault Seam Floor
MUDSTONE AND <u>COAL</u> , sheared.	0.70	116.85	Fault - Probable
MUDSTONE, 65° to core axis, becomes silty toward base and contains silty intercalations.	2.15	119.00	
SILTSTONE, with mudstone lenses and sporadic coaly wisps. 50° to 60° to core axis - variable. Calcite filled joint at 30° to core axis.	3.55	122.55	
MUDSTONE, contains silty lenses and partings. At 126.5 ft - joint, 15° to core axis coated with calcite (tension joint as in 3.55 ft unit above.)	9.35	131.90	

SUKUNKA D.D.H. M-5

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Remarks</i>
SILTSTONE, mid grey, joints sub parallel to core axis, sporadic slickensided bedding planes, calcite present. 75° to core axis.	6.65	138.55	
MUDSTONE, dark grey; slickensided bedding planes and joints common; open joint with quartz and pyrite crystals present. 1.5 ft siltstone at 151 ft, 1.30 ft slickensided zone in basal section of unit.	17.45	156.00	
SILTSTONE, light to mid grey. Quartz and calcite filled tension joints common.	5.00	161.00	Base of Hol

ROKKE

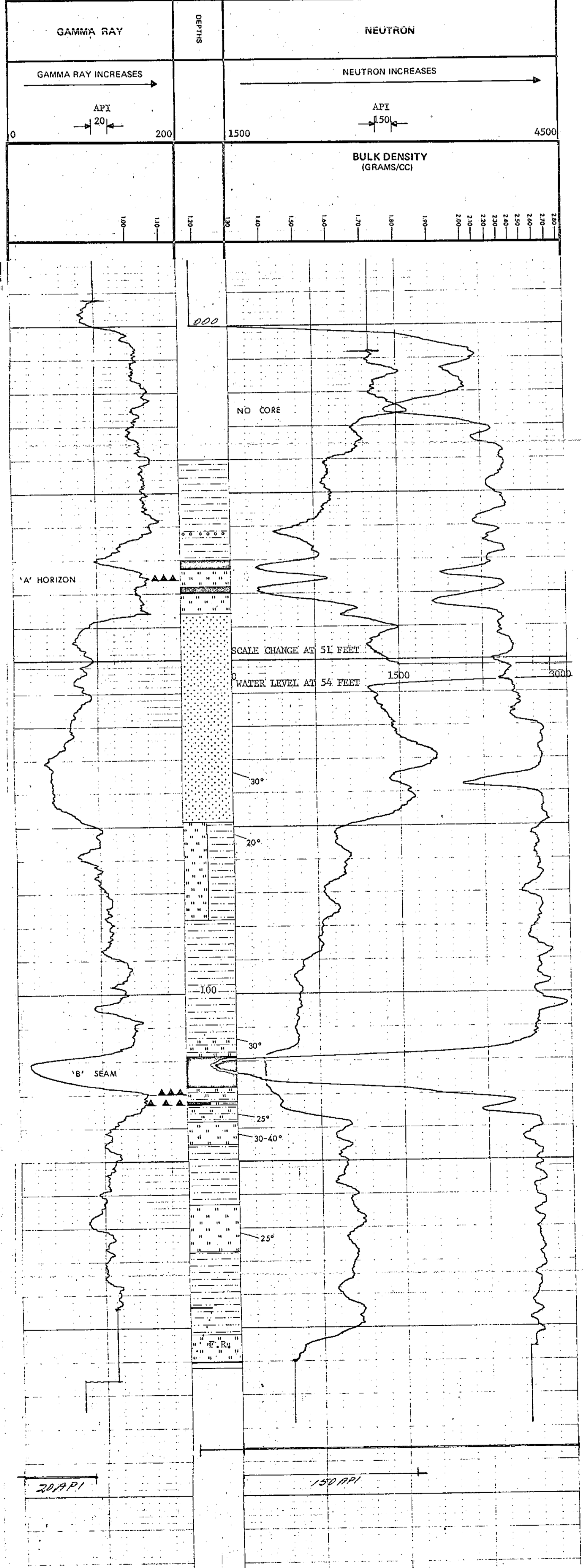
GAMMA RAY NEUTRON LOG
 OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD	WELL	DDH-M-5
SEC	TWP	
RGE	LOCATION	
W	FIELD	SUKUNKA
	PROVINCE	BRITISH COLUMBIA
	Permanent Datum	GROUND LEVEL
	Log Measured from	GROUND LEVEL
	Well Depths Measured from	GROUND LEVEL
	Elev.	
	F. Above Perm. Datum	
	K.B.	CG
	GL	
	Other Services:	NIL
Run No.	ONE	
Date	31 OCTOBER 1974	
First Reading	155	
Last Reading	000	
Footage Logged	155	
Depth Reached	156	
Depth Driller	156	
Casing Rake		
Casing Driller		
Fluid Type	AIR/WATER	
Liquid Level	54	
Min. Diam.	6-1/4	
Rm @ 9F		
Operating Time	3 HOURS	
Truck No.	35	

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	
		SPACING	17 INCH
		TYPE	AmBe
		STRENGTH	3 CURIES

GENERAL		GAMMA RAY		NEUTRON	
HOIST TRUCK NO.		T. C.	SENS	T. C.	SENS
INSTRUMENT TRUCK NO.	35	SEC.	SETTINGS	SEC.	SETTINGS
TOOL SERIAL NO.	177	DIV. L OR R		DIV. L OR R	

REMARKS: DENSITY TOOL SERIAL NO 128 SOURCE #50



Recorded By: PETERSON Witnessed By: SEITZ

DIAMOND DRILL HOLE M-6

Grid Reference: 52 378.0N 72 174.4E

Date Commenced: November 6, 1974 November 12, 1974

Deepened : November 22, 1974

Collar R.L.: 2730 ft Standard Datum

Total Depth: 361 ft

Drilled Using: Christensen Core Barrel, 3½" diameter core to 230 ft
Tricone bit 230 to 361 ft

Radiation Logs: Gamma Ray - Neutron and Density

Drilled By: Sedco Drilling Ltd

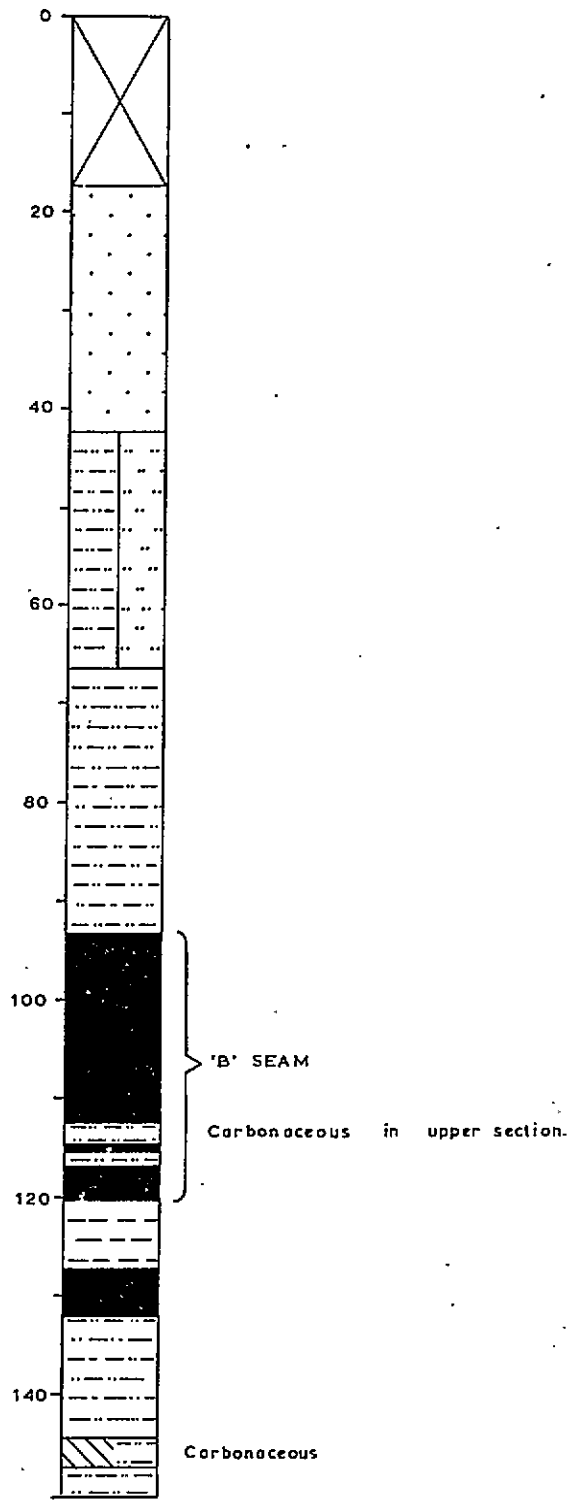
For: Coalition Mining Ltd

Logged By: G.R. Wallis and R.E. Shields

COAL SEAM INTERSECTIONS

	Floor R.L.	Thickness (ft)	Recovery	Comments
"B" Seam (Middle Coals)	2620.60	26.90	93.7%	Structurally thickened
'B' Seam	2598.50	4.55	78.0%	Repetition (?)
'C' Horizon	2469.0	4.00	N/A*)
	2408.0	2.50	N/A*)
	2389.0	3.00	N/A*	) - Coal and carbonaceous claystone

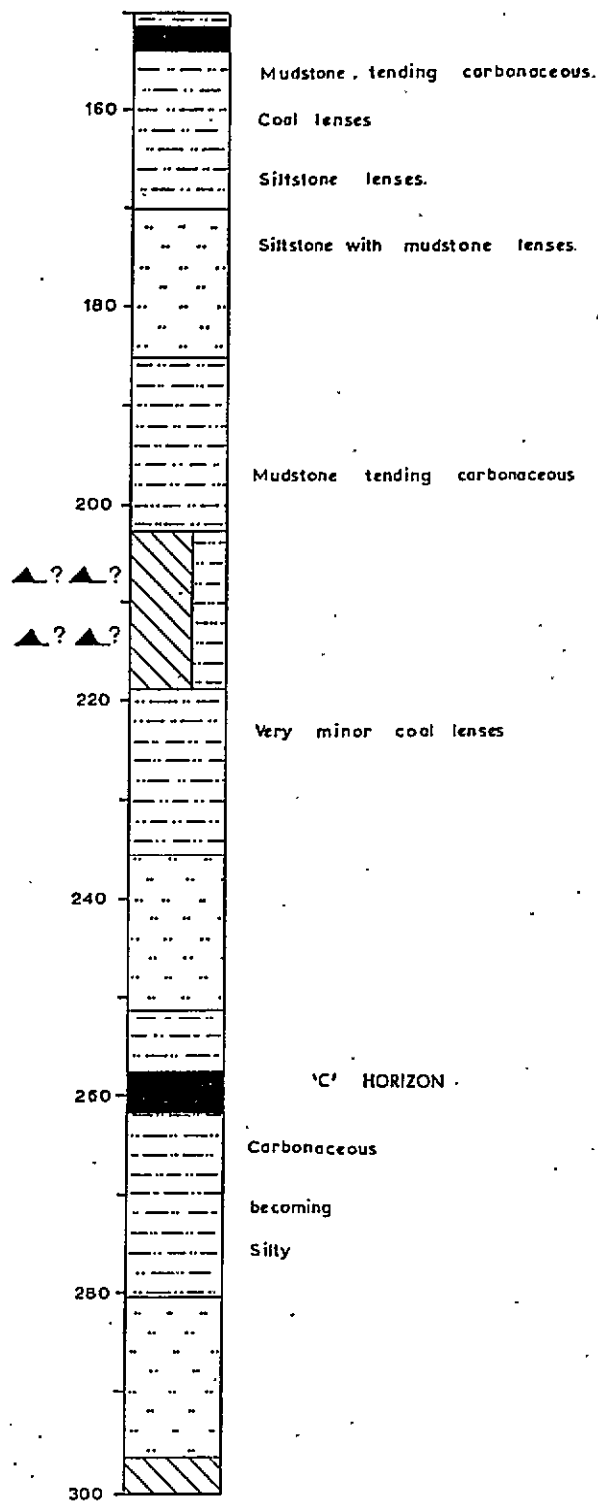
*Rotary drill cuttings



SCALE 1" to 20'0"

Prepared by
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.
 for
 COALITION MINING LIMITED

STRATIGRAPHIC LOGS
 DDH M-6



SCALE 1" to 20' 0"

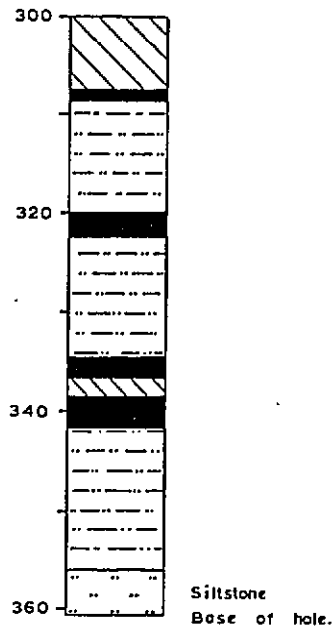
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PAGE 2 of 3



SCALE 1" to 20'0"

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DATE: JANUARY 1975

PAGE 3 of 3

"SEAM "B" - "Middle Coals"

ASH
CUMULATIVE
FROM FLOOR

	SAMPLE N ^o SKR	THICKNESS (FEET)	WT %	ASH %	C. S. N ^o	INCL. BANDS	EXCL. BANDS
93.00 sheared	498	2.90		5.1	1 1/2	20.3	
sheared	499	4.40		5.6	4 1/2		
100.00	500 ↓	0.17 ↓		83.4 ↓	N.A.		
sheared	501	0.95		8.7	9		
	502	1.75		36.5	6 1/2		
	503	0.85		53.8	1		
	504	2.45		3.7	3 1/2		
106.47							
SCALE 1" to 2' 0"							

Prepared by
CLIFFORD Mc ELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

SEAM SECTION
DDH M-6

DRAWN BY I.L.

DATE. JANUARY 1975

PAGE 1 of 3

SEAM "B" Cont'd

ASH %
CUMULATIVE
FROM FLOOR

SAMPLE THICKNESS
Nº (FEET)
SKR

WT %

ASH %

C. S. Nº

INCL.
BANDS

EXCL.
BANDS

106.47



1.20
505 0.10

58.1 1/2

sheared
109.40

506 1.63

6.8 5

sheared

10.50

NOT ANALYSED

sheared

119.90

SCALE 1" to 2' 0"

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SEAM SECTION
DDH M-6

SEAM 'B' cont'd

ASH %
CUMULATIVE
FROM FLOOR

SAMPLE N°
SKR THICKNESS
(FEET)

WT %

ASH %

C. S. N°

INCL.
BANDS

EXCL.
BANDS

119.90

7.05

NOT ANALYSED

126.95

sheared

4.55

NOT ANALYSED

sheared

131.50

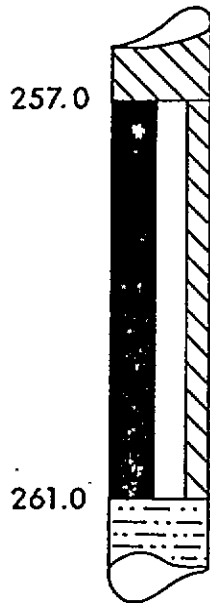
SCALE 1" to 2' 0"

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SEAM SECTION
DDH M-6

LOWER GETHING SEQUENCE
'C' HORIZON.

ASH %
CUMULATIVE
FROM FLOOR



4.00

NOT ANALYSED
ROTARY DRILL CUTTINGS.

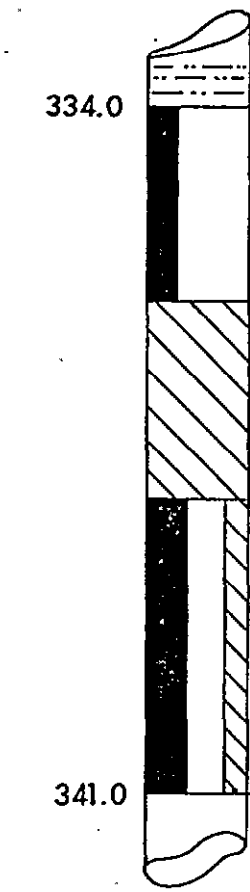
WT %	ASH %	C.S. NO	INCL. BANDS	EXCL. BANDS

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SEAM SECTIONS
RDH M-6

LOWER GETHING SEQUENCE

ASH %
CUMULATIVE
FROM FLOOR

LOWER GETHING SEQUENCE	WT %	ASH %	C.S. NO	INCL. BANDS	EXCL. BANDS
 <p>334.0</p> <p>7.00</p> <p>341.0</p>					

NOT ANALYSED
ROTARY DRILL CUTTINGS.

Prepared by:
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for
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SEAM SECTIONS
RDH M-6

ANALYTICAL DATA

D.D.H. M-6

<u>Sample Nos. (SKR-)</u>	<u>Interval (feet)</u>
498	93.00 - 95.90
499	95.90 - 100.30
500	100.30 - 100.47
501	100.47 - 101.42
502	101.42 - 103.17
503	103.17 - 104.02
504	104.02 - 106.47
505	107.67 - 107.77
506	107.77 - 109.40

- (i) Analyses of
Raw Coal
Size
Sink/Float (+100 M) of:
- (a) Composites of SKR 498 & 499 p. 1
 - (b) Composites of SKR 500 to 503 p. 2
 - (c) Sample SKR 504 p. 3
 - (d) Sample SKR 506 p. 5
- (ii) Raw Coal Analysis - SKR 505 p. 4
- (iii) Analyses of Comp. of
SKR 498 to 506 incl. (total seam) for:
Raw Coal
Size
Sink/Float (+28 M)
Froth Flotation
Floats @ 1.60 S.G. plus
F.F. Stages I & II p. 6

COALITION MINING

February 27, 1975

Sample: SKR Cores 498 - 506

Client #

<u>Lab No.</u>	<u>A.D.L.</u>	<u>R.M.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>S.G.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
SKR 498	5.4	0.3	5.1	17.9	76.7	1.19	14,790	1.32	1 1/2	Air Dry Basis
2106		5.7	4.8	16.9	72.6	1.13	13,990			As Rec'd
			5.1	18.0	76.9	1.19	14,830			Dry Basis
SKR 499	0.6	0.4	5.6	20.1	73.9	0.67	14,690	1.30	4 1/2	Air Dry Basis
2107		1.0	5.6	20.0	73.4	0.67	14,600			As Rec'd
			5.6	20.2	74.2	0.67	14,750			Dry Basis
2186										
Comp. of SKR 498 & 499	Raw	-	-	-	-	-	-	-	-	-

SIZE ANALYSES LAB NO. 2186

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 100 M	91.3	5.4	91.3	5.4	
- 100 M	8.7	9.2	100.0	5.7	2

SINK-FLOAT ANALYSES + 100 M

<u>S.G. Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
-1.30	40.4	1.6	40.4	1.6	2
1.30-1.40	43.9	4.7	84.3	3.2	4 1/2
1.40-1.60	11.8	13.9	96.1	4.5	1 1/2
+1.60	3.9	27.0	100.0	5.4	1 1/2

The above Size Analyses and Sink-Floats are on an Air Dry Basis

COALITION MINING

February 27, 1975

Sample: SKR Cores 498 - 506

Client #

<u>Lab No.</u>	<u>A.D.L.</u>	<u>R.M.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>S.G.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
SKR 500	2.3	0.5	83.4	12.0	4.1	0.32		2.33	N.A.	Air Dry Basis
2108		2.8	81.5	11.7	4.0	0.31				As Rec'd
			83.5	12.1	4.1	0.32				Dry Basis
SKR 501	4.8	0.5	8.7	22.3	68.5	0.44	14,250	1.32	9	Air Dry Basis
2109		5.3	8.3	21.2	65.2	0.42	13,560			As Rec'd
			8.7	22.4	68.9	0.44	14,320			Dry Basis
SKR 502	8.4	0.6	36.5	16.2	46.7	0.42	9,760	1.55	6 1/2	Air Dry Basis
2110		8.9	33.4	14.8	42.9	0.38	8,940			As Rec'd
			36.7	16.3	47.0	0.42	9,820			Dry Basis
SKR 503	2.7	0.9	53.8	11.2	34.1	0.53	6,940	1.79	1	Air Dry Basis
2111		3.6	52.3	10.9	33.2	0.52	6,750			As Rec'd
			54.3	11.3	34.4	0.53	7,000			Dry Basis
2187	Raw		32.8							Air Dry Basis
Comp. of SKR 501, 502, 503										

SIZE ANALYSES LAB NO. 2187

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 100 M	88.9	34.4	88.9	34.4	
- 100 M	11.1	20.1	100.0	32.8	7 1/2

SINK-FLOAT ANALYSES +100 M

<u>S.G. Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
-1.30	28.3	2.6	28.3	2.6	9
1.30-1.40	12.4	7.0	40.7	3.9	8
1.40-1.60	9.2	15.7	49.9	6.1	5
+1.60	50.1	62.5	100.0	34.4	1

COALITION MINING

SKR (498 - 506)

February 27, 1975

Client #

<u>Lab No.</u>	<u>A.D.L.</u>	<u>R.M.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>S.G.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
SKR 504	1.2	0.4	3.7	19.5	76.4	0.54	15,010	1.31	3 1/2	Air Dry Basis
2112	Raw	1.6	3.7	19.3	75.4	0.53	14,830			As Rec'd
			3.7	19.6	76.7	0.54	15,070			Dry Basis

SIZE ANALYSES

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 100 M	91.2	3.6	91.2	3.6	
- 100 M	8.8	7.7	100.0	4.0	3

SINK-FLOAT ANALYSES + 100 M

<u>S.G. Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
-1.30	52.6	1.6	52.6	1.6	5 1/2
1.30-1.40	39.6	3.5	92.2	2.4	1 1/2
1.40-1.60	5.9	13.5	98.1	3.1	1 1/2
+1.60	1.9	28.6	100.0	3.6	1/2

COALITION MINING
SKR (498 - 506)

February 27, 1975

<u>Client #</u> <u>Lab No.</u>	<u>A.D.L.</u>	<u>R.M.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>S.G.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
SKR 505		0.6	58.1	12.0	29.3	0.29	6,270	1.85	1/2	Air Dry Basis
2113		0.6	58.1	12.0	29.3	0.29	6,270			As Rec'd
			58.5	12.1	29.4	0.29	6,310			Dry Basis

COALITION MINING

February 27, 1975

SKR (498 - .506)

<u>Client #</u> <u>Lab No.</u>	<u>A.D.L.</u>	<u>R.M.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>S.G.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
SKR 506	2.5	0.4	6.8	20.7	72.1	0.59	14,500	1.34	5	Air Dry Basis
2114	Raw	2.0	6.6	20.2	70.3	0.58	14,140			As Rec'd
			6.8	20.8	72.4	0.59	14,560			Dry Basis

SIZE ANALYSES

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 100 M	91.1	6.4	91.1	6.4	
- 100 M	8.9	10.6	100.0	6.8	6

SINK-FLOAT ANALYSES +100 M

<u>S.G. Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
-1.30	49.3	1.9	49.3	1.9	8
1.30-1.40	27.9	5.0	77.2	3.0	4 1/2
1.40-1.60	15.7	13.8	92.9	4.8	1 1/2
+1.60	7.1	26.1	100.0	6.4	1/2

Client #

<u>Lab No.</u>	<u>A.D.L.</u>	<u>R.M.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>S.G.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
2182										
Comp. of SKR 498 to 506 Incl.	Raw		20.3						3	

SIZE ANALYSES

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 28 M	68.5	18.8	68.5	18.8	2 1/2
- 28 M	31.5	18.6	100.0	18.7	3

SINK-FLOAT ANALYSES + 28 M

	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
-1.30	44.8	2.1	44.8	2.1	5 1/2
1.30-1.40	25.4	5.3	70.2	3.3	1 1/2
1.40-1.60	10.8	14.7	81.0	4.8	1 1/2
+1.60	19.0	67.9	100.0	16.8	1/2

FROTH FLOTATION ANALYSES - 28 M

	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
Stage I	75.1	7.0	75.1	7.0	4
Stage II	6.0	20.1	81.1	8.0	2 1/2
Tails	18.9	68.7	100.0	19.4	N.A.

F.F. Parameters

Pulp Density	-	10%
Reagent Dosage	-	0.24 lbs/Ton Kerosene:MIBC (4:1)
Conditioning Time	-	60 seconds
Stage I	-	first minute froth
Stage II	-	second minute froth

FLOATS @ 1.60 S.G. Plus STAGES I & II

<u>Yield %</u>	<u>R.M.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>B.T.U./lb.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
81	0.4	5.8	20.3	73.5	14,700	3 1/2	Air Dry Basis
		5.8	20.4	73.8	14,760		Dry Basis

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Remarks</i>
NO CORE, overburden.	17.00	17.00	
SANDSTONE, fine grained, quartz-lithic, light grey, massive, bedding angle 70° to core axis. Sporadic cross bedded sequences. Calcite filled joints common throughout, widely spaced. Slickensided bedding planes present. Weathered zone 2.5' at 32'	25.00	42.00	
MUDSTONE & SILTSTONE Interbeds, units of each lithology varying from 0.05' to 0.20' thick. Siltstone, as above; mudstone, mid grey. Graded units common and swirl structures present in upper part of unit. Bedding angle variable 30° to 60° to core axis. Slickensided bedding faces present. Sporadic silty units to 1' in lower 15'.	24.00	66.00	
MUDSTONE, mid grey, slickensides on joint faces at varying angles to core axis, commonly 45° to sub parallel. Core badly broken between 70 and 72'.	27.00	93.00	Seam Roof
<u>COAL</u> , sheared and broken.	0.30	93.30)	
, dull and bright, minor shearing throughout.	1.70	95.00)	
, sheared.	0.90	95.90)	'B' Seam
, dull and bright, minor shearing.	0.35	96.25)	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Remarks</i>
<u>COAL</u> , dull and bright; very minor shearing throughout; slip plane movement evident.	4.05	100.30)	
)	
MUDSTONE, mid grey.	0.17	100.47)	
)	
<u>COAL</u> , sheared.	0.70	101.17)	
)	
<u>COAL</u> & MUDSTONE, interbedded.	0.25	101.42)	
)	
<u>COAL</u> , intensely sheared.	1.75	103.17)	
		)	'B' Seam
MUDSTONE, carbonaceous, coaly wisps.	0.34	103.51)	
)	
<u>COAL</u> , dull and bright, minor shearing.	0.13	103.64)	
)	
MUDSTONE, mid grey.	0.06	103.70)	
)	
<u>COAL</u> , bright.	0.04	103.74)	
)	
MUDSTONE, mid grey.	0.02	103.76)	
)	
<u>COAL</u> , dull and bright.	0.18	103.94)	

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor(ft)	Remarks
MUDSTONE, mid grey.	0.08	104.02)	
)	
<u>COAL</u> , dull and bright, sporadic bright bands, minor shearing. , undifferentiated.	2.45	106.47)	
	1.20	107.67)	Core loss
		)	1.20'
CLAYSTONE, carbonaceous.	0.10	107.77)	
)	
<u>COAL</u> , dull and bright, trace shearing. , intensely sheared.	1.23	109.00)	
	0.40	109.40)	
)	
CLAYSTONE, carbonaceous, sheared in upper 0.2'.	1.50	110.90)	
		)	'B' Seam
<u>COAL</u> , sheared.	0.68	111.58)	
)	
CLAYSTONE, carbonaceous.	0.33	111.91)	
)	
<u>COAL</u> , dull and bright.	0.10	112.01)	
)	
MUDSTONE, dark grey, carbonaceous in upper 0.30'.	2.20	114.21)	
)	
<u>COAL</u> , dull and bright.	0.36	114.57)	

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor (ft)	Remarks
CLAYSTONE, carbonaceous.	0.35	128.18	
<u>COAL</u> , sheared.	0.40	128.58	
CLAYSTONE, carbonaceous.	0.75	129.33	
<u>COAL</u> , sheared.	2.17	131.50	'B' SEAM Repetition(?)
MUDSTONE, dark grey, containing coal lenses and blebs throughout. Coal lens to 0.10'.	12.40	143.90	
MUDSTONE, carbonaceous.	3.40	147.30	
MUDSTONE, dark grey.	4.20	151.50	
<u>COAL</u> , stony, contains bright coal bands to 0.05' and claystone, dark dark grey.	2.20	153.70	
MUDSTONE, dark grey to carbonaceous containing coal, stony and minor bright coal lenses 0.05' to 0.40' thick. Silty toward base of unit with siltstone lenses to 0.05'.	16.50	170.20	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Remarks</i>
<u>COAL</u> & CLAYSTONE, interbedded. Units to 0.03'.	0.40	114.97)	
)	
MUDSTONE, mid grey, silty in lower 0.50'.	1.55	116.52)	
)	
<u>COAL</u> , bright with minor dull bands.	1.50	118.02)	
)	
CLAYSTONE, carbonaceous.	0.28	118.30)	
		)	'B' Seam
<u>COAL</u> , sheared.	0.20	118.50)	
)	
CLAYSTONE, dark grey to carbonaceous with coaly wisps.	0.60	119.10)	
)	
SILTSTONE.	0.40	119.50)	
)	
<u>COAL</u> , dull with minor bright bands.	0.40	119.90)	
)	
CLAYSTONE, dark grey containing coaly penny bands.	7.05	126.95	Floor of Se
<u>COAL</u> , dull with minor bright bands.	0.20	127.15	
, stony with sporadic bright bands.	0.58	127.73	
, bright.	0.10	127.83	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Remarks</i>
SILTSTONE, mid grey, contains mudstone lenses to 0.05', bedding angle 75° to core axis. Sporadic coaly and carbonaceous partings present.	8.80	179.00	
CLAYSTONE, carbonaceous, containing stone, coaly, units to 0.50' and bright coal lenses to 0.20'.	6.00	185.00	
MUDSTONE, silty in part, mid to dark grey; contains coaly partings and penny bands at 191', carbonaceous phases present in basal section of unit.	17.40	202.40	
MUDSTONE, dominantly carbonaceous but some phases dark grey. Coal present throughout - thickness ranging between partings on bedding planes to 0.45'. Possible faults at 208' and 214.50'. Bedding to core axis 75°.	16.10	218.50	? Faults
MUDSTONE, mid to dark grey, sporadic coaly partings and one coal lens 0.20' thick.	11.50	230.00	Total depth of cored zone; rotary drill
MUDSTONE, dark grey.	5.00	235.00	cuttings from 230.00' to T.
SILTSTONE, brown grey, calcareous, argillaceous, sporadic mudstone interbeds.	16.00	251.00	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Remarks</i>
CLAYSTONE, dark grey, carbonaceous, argillaceous.	6.00	257.00	
<u>COAL</u> , bright and dull (50:50); carbonaceous claystone interbedded.	4.00	261.00	'C' HORIZON
MUDSTONE, dark grey, carbonaceous becoming argillaceous and silty towards base.	19.00	280.00	
<u>SILTSTONE</u> , light brown to grey, calcareous, argillaceous, sporadic thin mudstone bands.	16.00	296.00	
MUDSTONE, dark grey, carbonaceous.	11.00	307.00	
<u>COAL</u> , dull with minor bright bands, (dull 80%) rare shearing.	1.00	308.00	
MUDSTONE, dark grey, silty towards base.	11.50	319.50	
<u>COAL</u> , dull with minor bright bands.	2.50	322.00	
MUDSTONE, dark grey, carbonaceous band, sporadic siltstone partings.	12.00	334.00	
<u>COAL</u> , dull and bright, (75:25); sporadic sheared fragments.	2.00	336.00	

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Remarks</i>
CLAYSTONE, carbonaceous.	2.00	338.00	
<u>COAL</u> , dull and bright, carbonaceous claystone bands.	3.00	341.00	
MUDSTONE, dark grey.	14.00	355.00	
SILTSTONE, light brown.	5.00	360.00	Base of Hole

ROKE

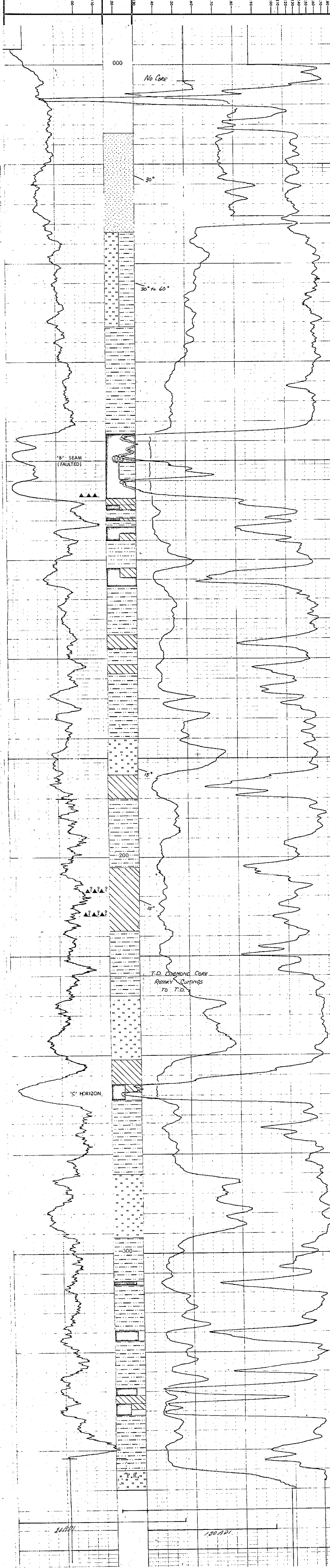
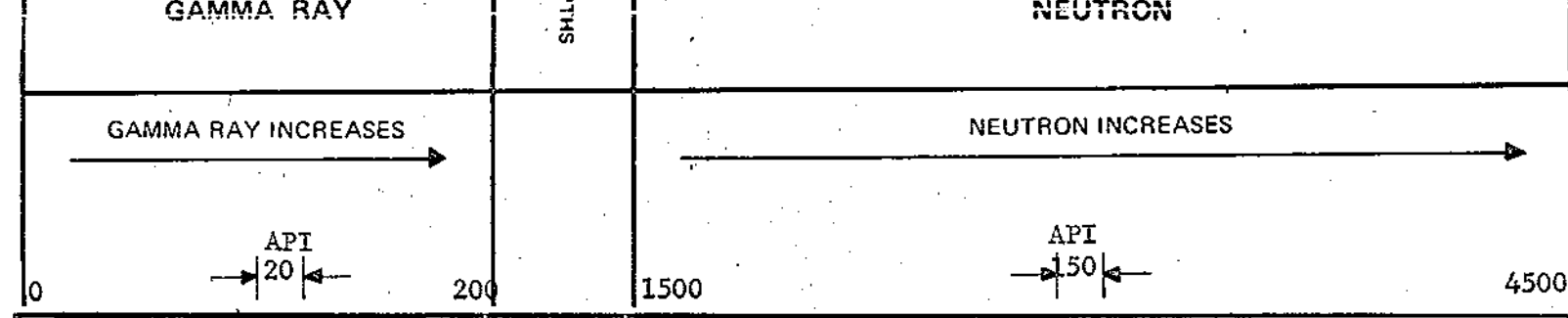
GAMMA RAY NEUTRON LOG
 OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
WELL	DIR-M6	
LOCATION	SUKINKA	
FIELD	SUKINKA	
PROVINCE	BRITISH COLUMBIA	
Permanent Datum	GROUND LEVEL	Elv. _____
Log Measured from	GROUND LEVEL	Ft. Above Perm. Datum _____
Well Depth Measured from	GROUND LEVEL	G.L. _____
Run No.	ONE	Two
Date	9 NOVEMBER 1974	23 Nov 1974
First Reading	190	340
Last Reading	000	190
Footage Logged	190	190
Depth Reached	191	361
Depth Driller	191	
Casing Driller		
Fluid Type	AIR/WATER	Water
Liquid Level	40	
Min. Diam.	6-1/4	4-3/4
Rim @ 9F		
Operating Time	3 HOURS	3 Hours
Truck No.	35	35
Recorded By	PETERSON	Witnessed By
		WALLIS / SHIELDS

EQUIPMENT DATA			
GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL			
		SERIAL NO.	
HIST TRUCK NO.		SPACING	17 INCH
INSTRUMENT TRUCK NO.	35	TYPE	AmBe
TOOL SERIAL NO.	177	STRENGTH	3 CURTES

LOGGING DATA											
GENERAL				GAMMA RAY				SIDEWALL DENSITY			
RUN NO.	DEPTH		SPEED	T.C.	SENS	ZERO	API G. R. UNITS	T. C.	SENS	ZERO	API N. UNITS
	FROM	TO	FT/MIN	SEC	SETTINGS	DIV. L OR R	PER LOG DIV.	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.
1	000	190	12	3	500	OL	20	3	1000		44.23
	000	38	12	3	1000	OL	150		NEUTRON		
	38	190	12	3	1000	OL	150				
2	190	360	12	3	1000	OL	20	3	1000	2.6 R	44.23
	190	360	12	3	1000	OL	150		NEUTRON		

REMARKS: DENSITY TOOL SERIAL NO 128 SOURCE #50
 Run 2: Gain Tool #65 SOURCE #598



SUKUNKA COAL PROJECT

MIDDLE COALS AREA

APPENDIX C-2

ROTARY DRILL HOLE DATA

COAL SEAM ANALYSED

R.D.H.'s 'C', 'H', 'T', 'V', 'W'

Grid Reference: 58916.38 N 77658.70 E

Date Commenced: October 10, 1974 Date Completed: October 10, 1974.

Collar R.L.: 3,893 feet Standard Datum.

Total Depth: 202 feet

Drilled by: Sedco Drilling

For: Coalition Mining Limited

Using: Mayhew 1500 Rotary Rig

Radiation Logs: Gamma Ray - Neutron - Density

By: Roke Oil Enterprises Limited

Logged by: R. E. Shields and G. R. Wallis

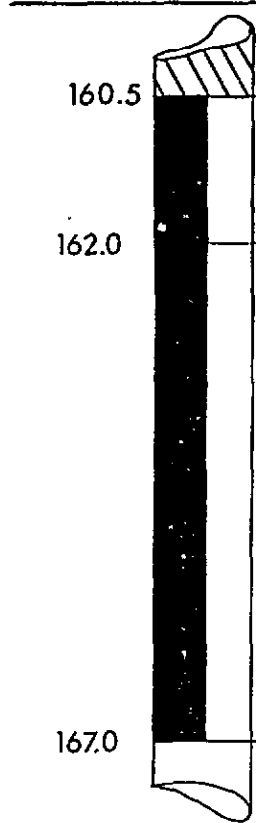

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Intervals (feet)	Thickness* (feet)	Total Seam (feet)	Remarks
Skeeter	3789.5	95.5 - 103.5	8.0		
Skeeter(?)	3726.0	160.5 - 167.0	6.5	6.5	
?	-	179.0 - 181.0	2.0		Seam repetitions
		186.0 - 189.7	3.7		
		192.0 - 196.2	4.2		

*) Thickness uncorrected for dip.

				ASH % CUMULATIVE FROM FLOOR		
UPPER GETHING SKEETER SEAM		WT %	ASH %	C.S.No	INCL. BANDS	EXCL. BANDS
(FEET)						
95.5				1		
98.0						
	515	5.0	16.9	7½		
	516	1.0	61.7	1		
104.0						



				ASH % CUMULATIVE FROM FLOOR		
UPPER GETHING SKEETER SEAM(?)		WT %	ASH %	C.S. No	INCL. BANDS	EXCL. BANDS
160.5						
162.0						
	517		39.7	2½		
167.0						

Prepared by:
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.
 for
 COALITION MINING LIMITED

SEAM SECTIONS
 RDH 'C'

ANALYTICAL DATA

R.D.H. "C"

<u>Sample No.</u> <u>(SKR-)</u>	<u>Interval</u> <u>(feet)</u>
515	98 - 103
516	103 - 104
517	162 - 167

- (i) Analysis of:
Individual Ply
Size
Sink-Float
Froth Flotation; of
(a) Composite of Samples SKR 515 & 517 p. 1
(b) Sample SKR 517 p. 3
- (ii) Analyses of:
Product Comp. Floats
@ 1.60 S.G. and F.F. Stages I & II; of
(i) (a), and p. 2
(i) (b), above p. 4

COALITION MINING

February 27, 1975

Samples SKR 515 to 517

Client #

<u>Lab No.</u>	<u>A.D.L.</u>	<u>R.M.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>S.G.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
SKR 515 2117	28.7 Raw		16.9						7 1/2	Air Dry Basis
SKR 516 2118	12.0 Raw		61.7						1	Air Dry Basis
2177 Comp. of SKR 515 and 516		0.3	24.9	19.8	55.0	2.48	11,610	1.51	5 1/2	Air Dry Basis
			25.0	19.9	55.1	2.49	11,645			Dry Basis

SIZE ANALYSES

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 28 M	70.7	26.3	70.7	26.3	4 1/2
- 28 M	29.3	20.4	100.0	24.5	6

SINK-FLOAT ANALYSES +28 M

Size Fraction	Wt %	Ash %	Cum Wt %	Cum Ash %	F.S.I.
-1.30	22.8	2.4	22.8	2.4	8 1/2
1.30-1.40	28.3	4.8	51.1	3.7	4 1/2
1.40-1.60	13.0	11.3	64.1	5.3	1 1/2
+1.60	35.9	63.9	100.0	26.3	1/2

FROTH FLOTATION ANALYSES -28 M

Stage	Wt %	Ash %	Cum Wt %	Cum Ash %	F.S.I.
Stage I	36.1	11.8	36.1	11.8	8
Stage II	8.4	17.6	44.5	12.9	5
Tails	55.5	26.5	100.0	20.4	5

F.F. Parameters

Pulp Density	-	10%
Reagent Dosage	-	0.24 lbs/Ton Kerosene:MIBC (4:1)
Conditioning Time	-	60 seconds
Stage I	-	first minute froth
Stage II	-	second minute froth

Birtley Engineering

Subsidiary of Great West Steel Industries

T-11

COALITION MINING

February 27, 1975

Samples: SKR 515 to 517 (cont'd)

	<u>R.M.</u>	<u>Ash %</u>	<u>V.M.</u>	<u>F.C.</u>	<u>F.S.I.</u>	<u>BTU/lb</u>	<u>Calc. Factors</u>
2233							
product comp. floats @ 1.60 S.G.	0.6	7.1	21.0	71.3	7	14,520	Air Dry Basis
Stages I & II		7.1	21.1	71.8		14,600	Dry Basis

"C"-2

COALITION MINING

February 27, 1975

Samples: SKR 515 to 517

Client #

<u>Lab No.</u>	<u>A.D.L.</u>	<u>R.M.</u>	<u>Ash %</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>S.G.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
SKR 517	14.1	0.4	39.7	15.9	44.0	.43	9,270	1.63	2 1/2	Air Dry Basis
2119	Raw	14.4	34.1	13.7	37.8	.37	7,960			As Rec'd
			39.9	16.0	44.2	.43	9,310			Dry Basis

SIZE ANALYSES

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 28 M	66.4	47.6	66.4	47.6	1 1/2
- 28 M	33.6	27.5	100.0	40.8	3

SINK-FLOAT ANALYSES +28 M

-1.30	12.5	2.5	12.2	2.5	9
1.30-1.40	24.0	5.2	36.5	4.3	6
1.40-1.50	7.4	12.2	43.9	5.6	2
+1.60	56.1	80.5	100.0	47.6	N.A.

FROTH FLOTATION ANALYSES - 28 M

Stage I	46.6	10.9	46.6	10.9	7 1/2
Stage II	13.6	18.7	60.2	12.7	5
Tails	39.8	50.0	100.0	27.5	1

F.F. Parameters

Pulp Density	-	10%
Reagent Dosage	-	0.24 lbs/Ton Kerosene:MIBC (4:1)
Conditioning Time	-	60 seconds
Stage I	-	first minute froth
Stage II	-	second minute froth

COALITION MINING

February 27, 1975

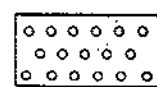
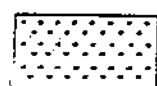
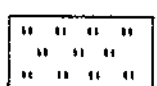
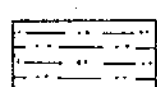

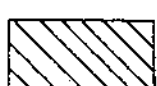
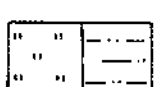
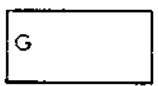
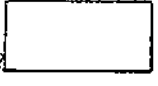
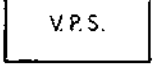
Samples: SKR 515 to 517

	<u>R.M.</u>	<u>Ash %</u>	<u>V.M.</u>	<u>F.C.</u>	<u>B.T.U./lb</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
2234							
Product Comp. of	0.6	8.0	21.1	70.3	14,280	7	Air Dry Basis
Floats @ 1.60							
Plus Stages I & II		8.0	21.2	70.8	14,370		Dry Basis

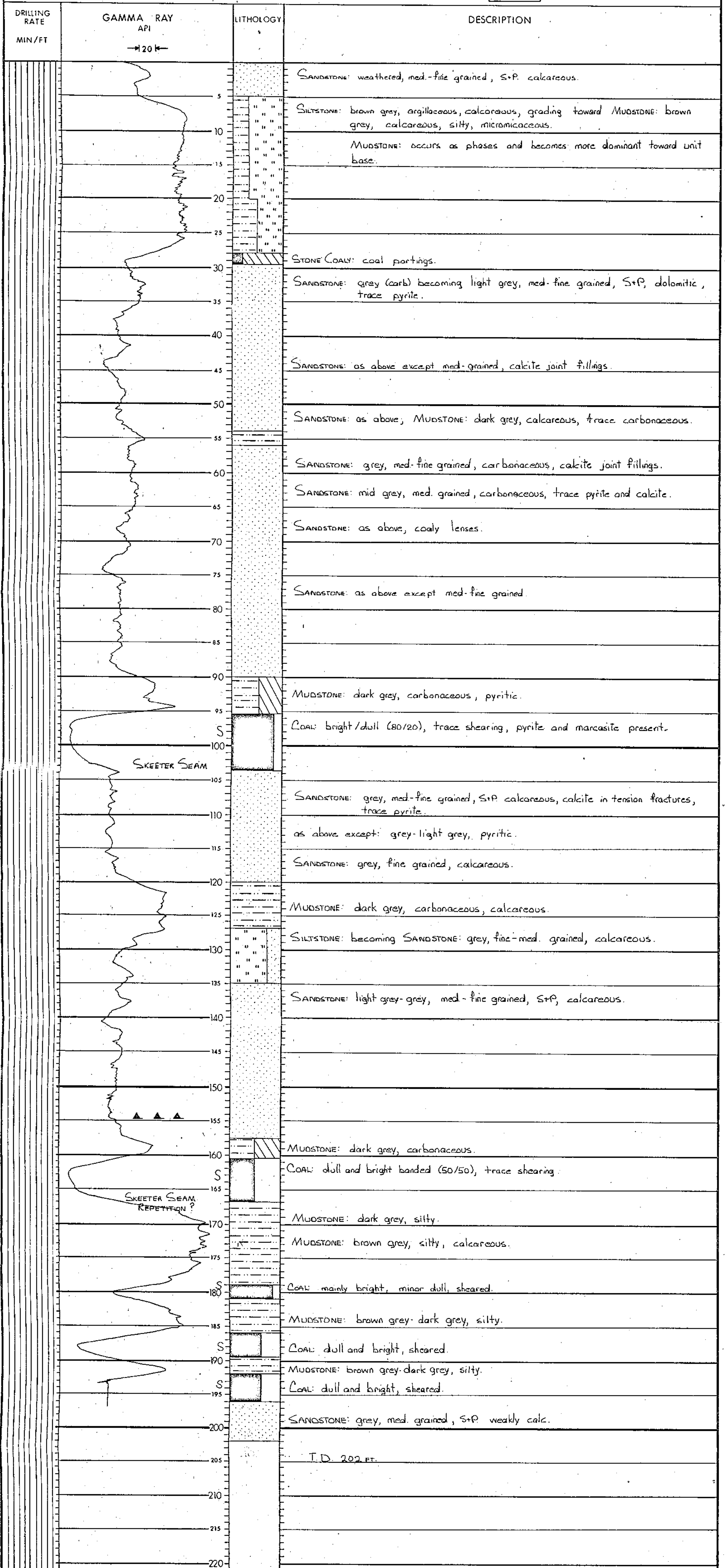
ROTARY DRILL HOLE STRIP LOG

COMPANY: COALITION MINING LTD.
PROPERTY: SUKUNKA COAL PROJECT
HOLE NUMBER: RDH-C
LOCATION: 58,916.38 N 77,658.70 E
DATE COMMENCED: OCTOBER 10, 1974
DATE COMPLETED: OCTOBER 11, 1974
DEPTH: 202 FEET
GROUND ELEVATION: 3893 FEET
LOGGED BY: R.E. SHIELDS & G.R. WALLIS
REMARKS: Strata: Upper Gething Sequence. Identification of Seams not definite. See also analytical details.

LEGEND

 CONGLOMERATE  SANDSTONE  SILTSTONE	 MUDSTONE  COAL BRIGHT (SOLID) - PERCENT INDICATED DULL PERCENT INDICATED  STONE COALY OR CLAYSTONE CARBONACEOUS	 INTERBEDDED SILTSTONE, MUDSTONE ETC. (PERCENTAGE OF EACH ROCK COMPONENT INDICATED)  GLAUCONITIC  FAULT ESTABLISHED PROBABLE POSSIBLE  V.P.S. VERY POOR SAMPLES (ABUNDANT CAVINGS)
--	--	---

SCALE: 1 in. = 10 ft



ROKEL

GAMMA RAY NEUTRON LOG

OIL ENTERPRISES LTD. CALGARY, ALBERTA

COMPANY COALITION MINING LIMITED

WELL RDH-C

LOCATION

FIELD SIKUMKA

PROVINCE BRITISH COLUMBIA

Other Services: NIL

Permanent Datum GROUND LEVEL
 Log Measured from GROUND LEVEL Ft. Above Perm. Datum
 Well Depth Measured from GROUND LEVEL

Run No. ONE
 Date 12 OCTOBER 1974

First Reading 000
 Last Reading 201

Footage Logged 201
 Depth Reached 202

Depth Driller 202

Casing Driller AIR/WATER

Fluid Type AIR/WATER

Liquid Level 28

Min. Diam. 4-3/4

Rm @ 9F

Operating Time 3 HOURS

Truck No. 35

Recorded By PETERSON Witnessed By MALLIS

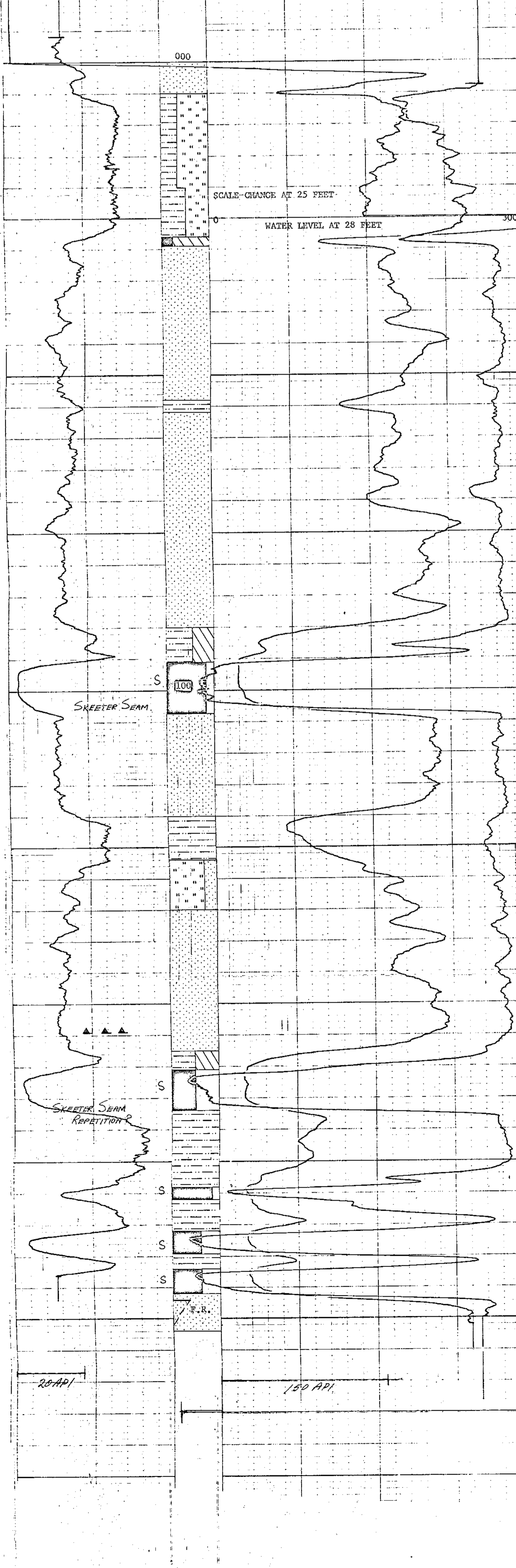
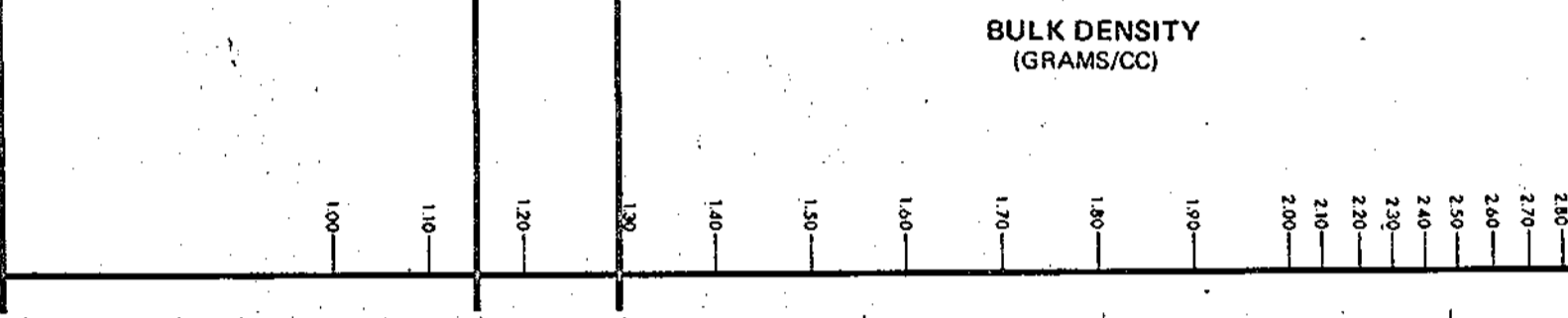
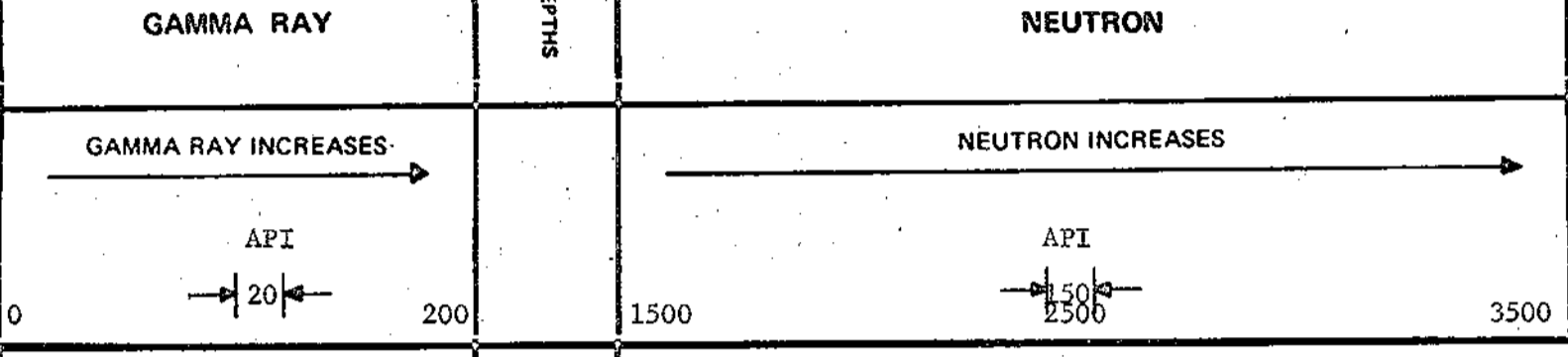
EQUIPMENT DATA

GAMMA RAY				NEUTRON			
RUN NO.	ONE			RUN NO.	ONE		
TOOL MODEL NO.				LOG TYPE	NEUTRON/NEUTRON		
DIAMETER	1 11/16			TOOL MODEL NO.			
DETECTOR MODEL NO.	GEIGER			DIAMETER	1 11/16		
TYPE	18 INCH			DETECTOR MODEL NO.	PROPORTIONAL		
LENGTH	8.55 FT.			TYPE	6 INCH		
DISTANCE TO N. SOURCE				LENGTH	MRC-N-SS-W		
GENERAL				SOURCE MODEL NO.	177		
HOIST TRUCK NO.	35			SERIAL NO.	177		
INSTRUMENT TRUCK NO.				SPACING	17 INCH		
TOOL SERIAL NO.	177			TYPE	AmBe		
				STRENGTH	3 CURIES		

LOGGING DATA

RUN NO.	GENERAL DEPTHS		SPEED FT/MIN	T.C. SEC.	GAMMA RAY			NEUTRON			
	FROM	TO			ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.	
I	000	201	12	3	500	OL	20	3	1000	2.6R	44.23
	000	25		3	1000	10L	150	NEUTRON			
	25	201		3	1000	OL	150				

REMARKS
 DENSITY TOOL SERIAL NO A-128
 GRN TOOL SERIAL NO #177 SOURCE #50



Grid Reference: 52,252.16 N 71,874.31 E

Date Commenced: Oct. 4, 1974 Date Completed: Oct. 5, 1974

Collar R.L.: 2633 feet Standard Datum.

Total Depth: 200.0 feet

Drilled by: Sedco Drilling

For: Coalition Mining Limited

Using: Mayhew 1500 Rotary Rig

Radiation Logs: Gamma Ray - Neutron - Density

By: Roke Oil Enterprises Limited

Logged by: R.S. Vogan and G.R. Wallis

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Intervals (feet)	Thickness* (feet)	Total Seam (feet)	Remarks
'B'	2536	59.0 - 70.1	11.1	38.0	Total coal = 29.3 ft.
		71.8 - 74.0	2.2		
		75.0 - 78.0	3.0		
		82.0 - 90.0	8.0		
		93.0 - 97.0	4.0		

*) Thickness uncorrected for dip.

Grid Reference: 52,252.16 N 71,874.31 E

Date Commenced: Oct. 4, 1974 Date Completed: Oct. 5, 1974

Collar R.L.: 2633 feet Standard Datum.

Total Depth: 200.0 feet

Drilled by: Sedco Drilling

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Using: Mayhew 1500 Rotary Rig

Radiation Logs: Gamma Ray - Neutron - Density

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COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Intervals (feet)	Thickness* (feet)	Total Seam (feet)	Remarks
'B'	2536	59.0 - 70.1	11.1	38.0	Total coal = 29.3 ft.
		71.8 - 74.0	2.2		
		75.0 - 78.0	3.0		
		82.0 - 90.0	8.0		
		93.0 - 97.0	4.0		
			<u>29.3</u>		

*) Thickness uncorrected for dip.

MIDDLE COALS
SEAM 'B'

ASH %
CUMULATIVE
FROM FLOOR

SAMPLE
Nº

THICKNESS
(feet)

WT %

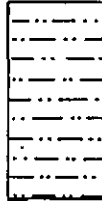
ASH %

C. S. Nº

INCL.
BANDS

EXCL.
BANDS

57.0



446

6.0

16.2

38.8

—

21.2

439

5.0

10.7

12.7

1½

18.3

68.0

SCALE 1" to 2' 0"

Prepared by
CLIFFORD MC ELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

SEAM SECTIONS
RDH 'H'


DRAWN BY

DATE. APRIL 1975

PAGE 1 of 4

MIDDLE COALS
SEAM 'B'

ASH
CUMULATIVE
FROM FLOOR

		SAMPLE Nº	THICKNESS (feet)	WT %	ASH %	C. S. Nº	INCL. BANDS	EXCL. BANDS
68.0		440	5.0	20.6	23.8	1½	19.2	
		441	5.0	9.2	10.8	3½	18.2	
78.0								

SCALE 1" to 2' 0"

Prepared by
CLIFFORD Mc ELROY & ASSOCIATES PTY. LTD.
for
-- COALITION MINING LIMITED

SEAM SECTIONS
RDH 'H'

MIDDLE COALS
SEAM 'B'

ASH %
CUMULATIVE
FROM FLOOR

	SAMPLE N°	THICKNESS (feet)	WT %	ASH %	C. S. N°	INCL. BANDS	EXCL. BANDS
78.0	442	5.0	10.5	24.8	6½	20.0	
88.0	443	5.0	13.7	8.6	2½	18.3	

SCALE 1" to 2' 0"

Prepared by
CLIFFORD Mc ELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

SEAM SECTIONS
RDH 'H'

MIDDLE COALS
SEAM 'B'

ASH %
CUMULATIVE
FROM FLOOR

	SAMPLE N°	THICKNESS (feet)	WT %	ASH %	C. S. N°	ASH % CUMULATIVE FROM FLOOR	
						INCL. BANDS	EXCL. BANDS
88.0	444	5.0	10.6	15.3	7	22.8	
98.0	445	5.0	8.4	29.6	6	29.6	

SCALE 1" to 2' 0"

Prepared by
CLIFFORD Mc ELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

SEAM SECTIONS
RDH 'H'

ANALYTICAL DATA

R.D.H. "H"

<u>Sample No.</u> (SKR-)	<u>Interval</u> (feet)
439	63 - 68
440	68 - 73
441	73 - 78
442	78 - 83
443	83 - 88
444	88 - 93
445	93 - 98
446	57 - 63

(i) Individual Ply Analyses
Samples SKR 439 - 446

pp. 1- 2

(ii) Analyses of:
Size and Raw Coal
Sink-Float
Froth Flotation; for
each ply, SKR 439 - 446

pp. 3-18

COALITION MINING

November 14, 1974

Group 8

<u>Client No.</u>	<u>Lab No.</u>	<u>Sample Wt. Grams Air Dried</u>
SKR 439	1331	4561.0G
SKR 440	1332	8760.0
SKR 441	1333	3921.0
SKR 442	1334	4460.9
SKR 443	1335	5804.1
SKR 444	1336	4525.0
SKR 445	1337	3559.0
SKR 446	1338	6897.0

COALITION MINING

Group 8

Birtley Engineering (Canada) Ltd.

October 23, 1974

<u>Client No.</u> <u>Lab No.</u>	<u>A.D.M.</u>	<u>Moist.</u>	<u>Ash</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>P.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>S.G.</u>	<u>Calc.</u> <u>Factors</u>
SKR 439	27.0	0.4	12.7	18.1	68.8	.32	.20	13,245	1 1/2	1.35	Air Dried
		27.3	9.3	13.2	50.2	.23		9,670			As Rec'd
1331			12.8	18.2	69.0	.32		13,300			Dry Basis
SKR 440	24.4	0.3	23.8	18.3	57.6	.46	.10	11,435	1 1/2	1.44	Air Dried
		24.6	18.0	13.8	43.6	.35		8,650			As Rec'd
1332			23.9	18.4	57.7	.46		11,470			Dry Basis
SKR 441	30.4	0.3	10.8	21.1	67.8	.46	.08	13,500	3 1/2	1.34	Air Dried
		30.6	7.5	14.7	47.2	.32		9,395			As Rec'd
1333			10.8	21.2	68.0	.46		13,540			Dry Basis
SKR 442	19.6	0.4	24.8	19.0	55.8	.34	.04	11,255	6 1/2	1.45	Air Dried
		19.9	19.9	15.3	44.9	.27		9,050			As Rec'd
1334			24.9	19.1	46.0	.34		11,300			Dry Basis
SKR 443	26.5	0.3	8.6	19.8	71.3	.36	.08	13,860	2 1/2	1.32	Air Dried
		26.7	6.3	14.6	52.4	.27		10,190			As Rec'd
1335			8.6	19.9	71.5	.36		13,900			Dry Basis
SKR 444	24.4	0.3	15.3	20.1	64.3	.48	.05	12,790	7	1.37	Air Dried
		24.6	11.6	15.2	48.6	.36		9,675			As Rec'd
1336			15.3	20.2	64.5	.48		12,830			Dry Basis
SKR 445	25.5	0.4	29.6	18.6	51.4	.43	.03	10,500	6	1.49	Air Dried
		25.8	22.1	13.9	38.2	.32		7,820			As Rec'd
1337			29.7	18.7	51.6	.43		10,540			Dry Basis
SKR 446	19.7	0.4	38.8	15.5	45.3	.33	.06	8,995	N.A.	1.63	Air Dried
		20.0	31.2	12.4	36.4	.26		7,225			As Rec'd
1338			39.0	15.6	45.4	.33		9,030			Dry Basis

COALITION COAL

Sample: SKR 439

FROTH FLOTATION ANALYSIS - 28 M

November 13, 1974

LAB NO. 1331

<u>Product</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
Stage I	45.2	9.6	45.2	9.6	1 1/2
Stage II	7.4	18.6	52.6	10.9	1/2
Tails	47.4	26.5	100.0	18.3	1/2

F.F. Parameters

Reagent Dosage	-	0.24 lbs/Ton Kerosene:MIBC (4:1)
Pulp Density	-	10 %
Stage I	-	First Minute froth
Stage II	-	Second Minute froth
Conditioning Time	-	1 minute

Birtley Engineering

Subsidiary of Great West Steel Industries

COALITION COAL

Sample: SKR 439

SIZE AND RAW ANALYSIS

November 13, 1974

LAB NO. 1331

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 28 M	89.3	12.0	89.3	12.0	1 1/2
- 28 M	10.7	18.7	100.0	12.7	1 1/2
<u>RAW</u>		12.7			1 1/2

SINK-FLOAT ANALYSIS + 28 M

<u>S.G. Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
-1.30	13.2	2.6	13.2	2.6	1 1/2
1.30-1.40	56.7	5.9	69.9	5.3	1 1/2
1.40-1.60	20.3	16.6	90.2	7.8	1
+1.60	9.8	45.9	100.0	11.6	1/2

COALITION COAL

Sample: SKR 440

SIZE AND RAW ANALYSIS

November 13, 1974

LAB NO. 1332

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 28 M	88.3	24.2	88.3	24.2	1 1/2
- 28 M	11.7	23.7	100.0	24.1	1 1/2
<u>RAW</u>		23.8			1 1/2

SINK-FLOAT ANALYSIS + 28 M

<u>S.G. Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
-1.30	23.3	2.1	23.3	2.1	3 1/2
1.30-1.40	30.4	5.3	53.8	3.9	1 1/2
1.40-1.60	13.6	12.9	67.4	5.7	1 1/2
+1.60	32.6	62.1	100.0	24.1	N.A.

COALITION COAL

Sample: SKR 440

November 13, 1974

LAB NO. 1332

FROTH FLOTATION ANALYSIS - 28 M

<u>Product</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
Stage I	43.3	7.7	43.3	7.7	2 1/2
Stage II	8.7	17.3	52.0	9.3	2
Tails	48.0	39.0	100.0	23.6	1/2

F.F. Parameters

Reagent Dosage	-	0.24 lbs/Ton Kerosene:MIBC (4:1)
Pulp Density	-	10 %
Stage I	-	First Minute froth
Stage II	-	Second Minute froth
Conditioning Time	-	1 minute

COALITION COAL

Sample: SKR 441

November 13, 1974

LAB NO. 1333

FROTH FLOTATION ANALYSIS - 28 M

<u>Product</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
Stage I	41.9	8.0	41.9	8.0	5 1/2
Stage II	9.2	11.5	51.1	8.6	4
Tails	48.9	20.7	100.0	14.5	1 1/2

F.F. Parameters

Reagent Dosage	-	0.24 lbs/Ton Kerosene:MIBC (4:1)
Pulp Density	-	10 %
Stage I	-	First Minute froth
Stage II	-	Second Minute froth
Conditioning Time	-	1 minute

COALITION COAL

Sample: SKR 441

SIZE AND RAW ANALYSIS

November 13, 1974

LAB NO. 1333

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 28 M	88.5	9.9	88.5	9.9	2 1/2
- 28 M	11.5	15.3	100.0	10.5	3 1/2
<u>RAW</u>		10.8			2 1/2

SINK-FLOAT ANALYSIS + 28 M

<u>S.G. Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
-1.30	35.8	2.7	35.8	2.7	7
1.30-1.40	40.2	5.0	76.0	3.9	2 1/2
1.40-1.60	15.2	16.3	91.2	6.0	1 1/2
+1.60	8.8	44.2	100.0	9.3	1/2

COALITION COAL

Sample: SKR 442

SIZE AND RAW ANALYSIS

November 13, 1974

LAB NO. 1334

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 28 M	89.9	23.7	89.9	23.7	4 1/2
- 28 M	10.1	24.9	100.0	23.8	5 1/2
<u>RAW</u>		24.8			5

SINK-FLOAT ANALYSIS +28 M

<u>S.G. Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
-1.30	36.5	3.2	36.5	3.2	8
1.30-1.40	21.4	8.0	57.9	5.0	6
1.40-1.60	15.3	21.2	73.2	8.4	2 1/2
+1.60	26.8	65.9	100.0	23.8	1/2

COALITION COAL

Sample: SKR 442

FROTH FLOTATION ANALYSIS - 28 M

November 13, 1974

LAB NO. 1334

<u>Product</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
Stage I	32.9	12.1	32.9	12.1	7
Stage II	7.2	14.4	40.1	12.5	6 1/2
Tails	59.9	31.9	100.0	24.1	4

F.F. Parameters

Reagent Dosage	-	0.24 lbs/Ton Kerosene:MIBC (4:1)
Pulp Density	-	10 %
Stage I	-	First Minute froth
Stage II	-	Second Minute froth
Conditioning Time	-	1 minute

Birtley Engineering

Subsidiary of Great West Steel Industries

OT-11H

COALITION COAL

Sample: SKR 443

SIZE AND RAW ANALYSIS

November 13, 1974

LAB NO. 1335

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 28 M	88.8	7.8	88.8	7.8	2 1/2
- 28 M	11.2	10.5	100.0	8.1	3
<u>RAW</u>		8.6			2 1/2

SINK-FLOAT ANALYSIS + 28 M

<u>S.G. Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
-1.30	70.7	3.3	70.7	3.3	3 1/2
1.30-1.40	19.2	5.5	89.9	3.8	1 1/2
1.40-1.60	4.2	14.7	94.1	4.3	1 1/2
+1.60	5.9	65.5	100.0	7.9	1/2

COALITION COAL

Sample: SKR 443

FROTH FLOTATION ANALYSIS - 28 M

November 13, 1974

LAB NO. 1335

<u>Product</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
Stage I	45.7	6.0	45.7	6.0	4
Stage II	13.5	7.7	59.2	6.4	3 1/2
Tails	40.8	17.6	100.0	11.0	1

F.F. Parameters

Reagent Dosage	-	0.24 lbs/Ton Kerosene:MIBC (4:1)
Pulp Density	-	10 %
Stage I	-	First Minute froth
Stage II	-	Second Minute froth
Conditioning Time	-	1 minute

COALITION COAL

Sample: SKR 444

SIZE AND RAW ANALYSIS

November 13, 1974

LAB NO. 1336

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 28 M	85.3	14.6	85.3	14.6	7
- 28 M	14.7	17.3	100.0	15.0	7
<u>RAW</u>		15.3			7

SINK-FLOAT ANALYSIS + 28 M

<u>S.G. Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
-1.30	27.6	3.3	27.6	3.3	8 1/2
1.30-1.40	42.6	6.5	70.2	5.2	7
1.40-1.60	16.6	16.8	86.8	7.5	3 1/2
+1.60	13.2	57.1	100.0	14.0	1

Birtley Engineering

Subsidiary of Great West Steel Industries

COALITION COAL

Sample: SKR 445

November 13, 1974

LAB NO. 1337

SIZE AND RAW ANALYSIS

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 28 M	89.2	29.8	89.2	29.8	5 1/2
- 28 M	10.8	25.5	100.0	29.3	6 1/2
<u>RAW</u>		29.6			5 1/2

SINK-FLOAT ANALYSIS + 28 M

<u>S.G. Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
-1.30	13.4	4.6	13.4	4.6	9
1.30-1.40	27.0	9.4	40.4	7.8	8 1/2
1.40-1.60	14.3	23.7	54.7	9.9	4
+1.60	45.3	49.7	100.0	29.1	1

Birtley Engineering

Subsidiary of Great West Steel Industries

"H" - 15

COALITION COAL

Sample: SKR 444

FROTH FLOTATION ANALYSIS - 28 M

November 13, 1974

LAB NO. 1336

<u>Product</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
Stage I	46.2	8.6	46.2	8.6	7 1/2
Stage II	10.7	13.8	56.9	9.6	7
Tails	43.1	25.8	100.0	16.6	4

F.F. Parameters

Reagent Dosage	-	0.24 lbs/Ton Kerosene:MIBC (4:1)
Pulp Density	-	10 %
Stage I	-	First Minute froth
Stage II	-	Second Minute froth
Conditioning Time	-	1 minute

Birtley Engineering

Subsidiary of Great West Steel Industries

COALITION COAL

Sample: SKR 445

FROTH FLOTATION ANALYSIS - 28 M

November 13, 1974

LAB NO. 1337

<u>Product</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
Stage I	34.1	13.9	34.1	13.9	8
Stage II	8.1	20.8	42.2	15.2	6
Tails	57.8	32.2	100.0	25.0	3

F.F. Parameters

Reagent Dosage	-	0.24 lbs/Ton Kerosene:MIBC (4:1)
Pulp Density	-	10 %
Stage I	-	First minute froth
Stage II	-	Second minute froth
Conditioning Time	-	1 minute

Birtley Engineering

Subsidiary of Great West Steel Industries

COALITION COAL

Sample: SKR 446

SIZE AND RAW ANALYSIS

November 13, 1974

LAB NO. 1338

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 28 M	94.4	37.6	94.4	37.6	1/2
- 28 M	5.6	32.7	100.0	37.3	1/2
<u>RAW</u>		38.8			1/2

SINK-FLOAT ANALYSIS + 28 M

<u>S.G. Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
-1.30	22.0	2.6	22.0	2.6	1 1/2
1.30-1.40	30.0	4.6	52.0	3.8	1/2
1.40-1.60	4.0	16.0	56.0	4.6	1/2
+1.60	44.0	77.2	100.0	36.6	N.A.

Birtley Engineering

Subsidiary of Great West Steel Industries

"H"-17

COALITION COAL

Sample: SKR 446

November 13, 1974

LAB NO. 1338

FROTH FLOTATION ANALYSIS - 28 M

<u>Product</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
Stage I	22.2	19.5	22.2	19.5	1/2
Stage II	7.9	24.1	30.1	20.7	N.A.
Tails	69.9	36.5	100.0	31.8	N.A.

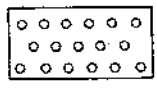
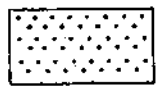
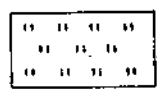
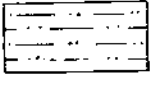

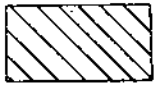
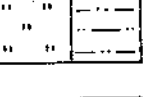
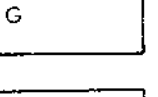
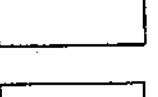
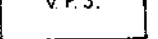
F.F. Parameters

Reagent Dosage	-	0.24 lbs/Ton Kerosene:MIBC (4:1)
Pulp Density	-	10 %
Stage I	-	First minute froth
Stage II	-	Second minute froth
Conditioning time	-	1 minute

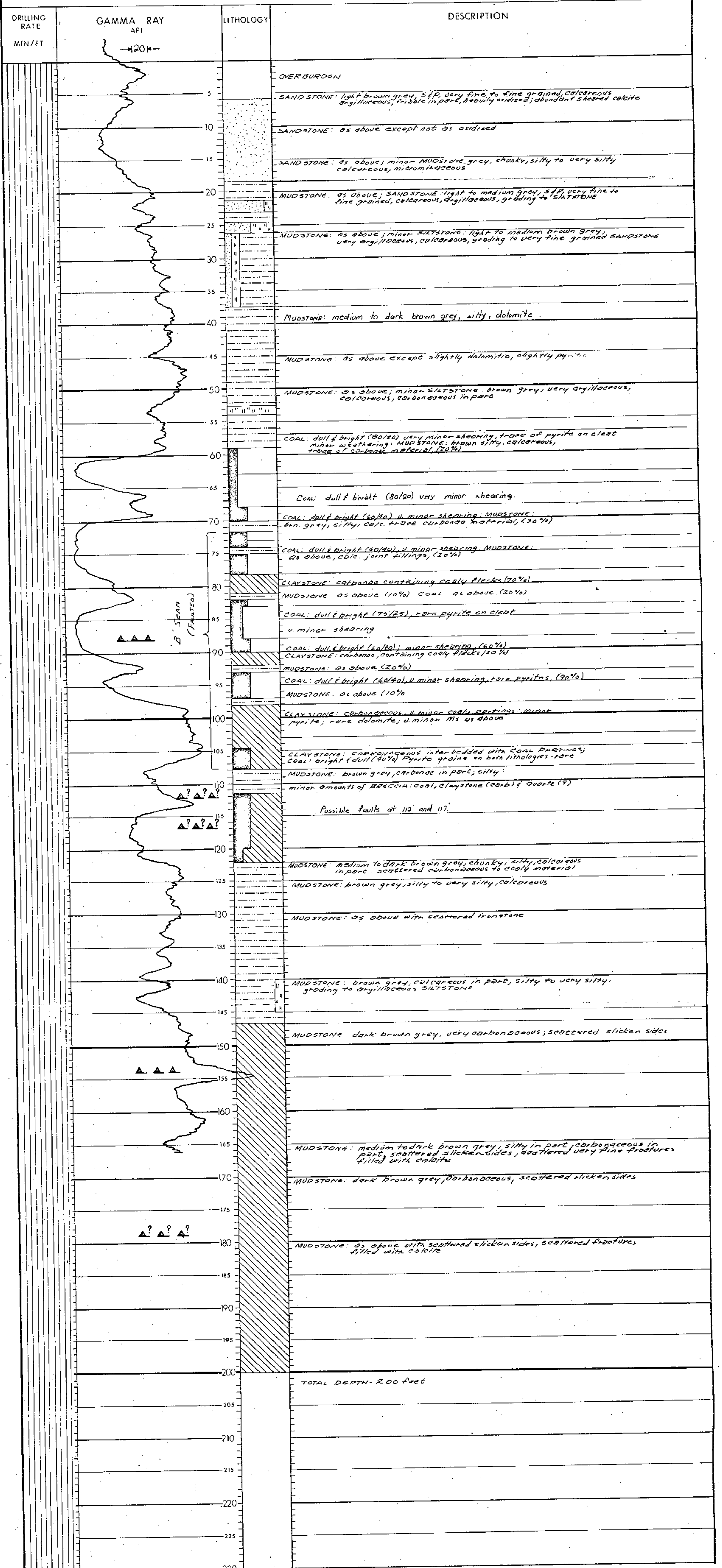
ROTARY DRILL HOLE STRIP LOG

COMPANY: COALITION MINING LTD.
PROPERTY: SUKUNKA
HOLE NUMBER: RDH-H
LOCATION: 52,252.16 N 71,874.31 E
DATE COMMENCED: OCT. 4, 1974
DATE COMPLETED: OCT. 5, 1974
DEPTH: 200 feet
GROUND ELEVATION: 2633 FEET
LOGGED BY: R.S. VOGAN, G.R. WALLIS
REMARKS: Strata: Lower Gething Sequence. Faulted 'B' Seam between 59ft. & 122 ft. Gamma Ray Log used for rock correlation. Density log used for coal seam correlation. See also analytical details.

LEGEND

<p>  CONGLOMERATE  SANDSTONE  SILTSTONE </p>	<p>  MUDSTONE  COAL  STONE COALY OR CLAYSTONE CARBONACEOUS </p>	<p>  INTERBEDDED SILTSTONE, MUDSTONE ETC. (PERCENTAGE OF EACH ROCK COMPONENT INDICATED)  GLAUCONITIC  FAULT ESTABLISHED PROBABLE POSSIBLE  V.P.S. VERY POOR SAMPLES (ABUNDANT CAVINGS) </p>
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SCALE: 1 in. = 10 ft.



ROKKE

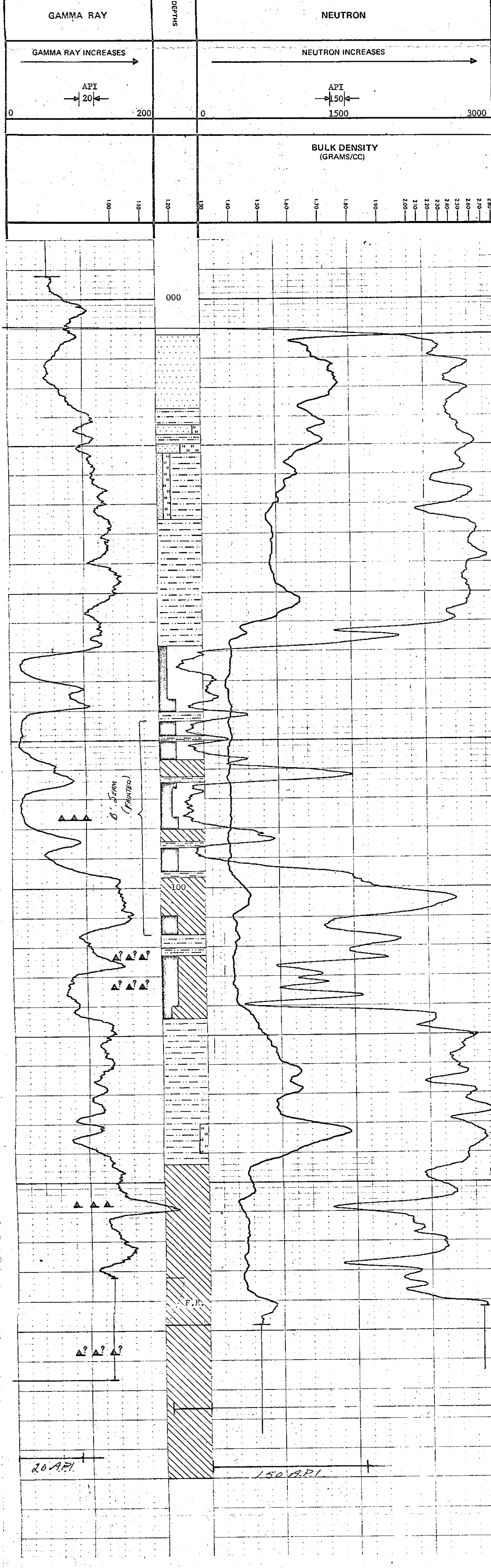
GAMMA RAY NEUTRON LOG
DENSITY
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD	WELL	RJH-H
SEC	LOCATION	
TWP	FIELD	SIKUNKA
RGE	PROVINCE	BRITISH COLUMBIA
M	Other Services:	NTL
Permanent Datum	GROUND LEVEL	Elev. _____
Log Measured from	GROUND LEVEL	Fl. Above Perm. Datum
Well Depths Measured from	GROUND LEVEL	G.L. _____
Run No.	ONE	
Date	5 OCTOBER 1974	
First Reading	174	
Last Reading	000	
Footage Logged	174	
Depth Reached	175	
Depth Driller	220	
Casing Hole		
Casing Driller	WALTER	
Fluid Type	6	
Liquid Level	4-3/4	
Min. Diam.		
Rm @ 0'		
Operating Time	3 HOURS	
Truck No.	35	
Recorded By	PETERSON	Witnessed By
		WALLIS

EQUIPMENT DATA			
GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	
HOIST TRUCK NO.	35	SPACING	17 INCH
INSTRUMENT TRUCK NO.		TYPE	AmBe
TOOL SERIAL NO.	177	STRENGTH	3 CURIES

LOGGING DATA										
GENERAL			GAMMA RAY				NEUTRON			
RUN NO.	DEPTHS	SPEED	T.C.	SENS	ZERO	API G. R. UNITS	T. C.	SENS	ZERO	API N. UNITS
	FROM TO	FT/MIN	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.
1	000 174	12	3	500	OL	20	3	1000	2.6R	44.23
	NEUTRON		3	1000	OL	150				

REMARKS: DENSITY TOOL SERIAL NO A-128 SOURCE #50



Grid Reference: 52,000.20 72,907.82

Date Commenced: October 31, 1974 Date Completed: November 1, 1974

Collar R.L.: 2856 feet Standard Datum.

Total Depth: 271 feet

Drilled by: Sedco Drilling

For: Coalition Mining Limited

Using: Mayhew 1500 Rotary Rig

Radiation Logs: Gamma Ray - Neutron - Density

By: Roke Oil Enterprises Limited

Logged by: R.S. Vogan and G.R. Wallis

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Intervals (feet)	Thickness* (feet)	Total Seam (feet)	Remarks
'A'	2741.0	107.8 - 115.0	7.2	7.2	Coal = 1.4 ft
'B'	2635.5	178.0 - 182.5	4.5	42.5	Total coal = 28.3 ft, excluding 196.0-213.0 split which contains 11.8 ft of coal.
		185.7 - 197.0	1.3		
		188.5 - 195.0	6.5		
		196.0 - 213.0	17.0		
		216.0 - 220.5	4.5		
'B'	2613.0	238.3 - 243.0	4.7	4.7	Repetition by faulting.

*) Thickness uncorrected for dip.

MIDDLE COALS
SEAM 'B'

ASH %
CUMULATIVE
FROM FLOOR

SAMPLE
Nº

THICKNESS
(feet)

WT %

ASH %

C. S. Nº

INCL.
BANDS

EXCL.
BANDS

187.0



197.0

467

5.0

13.1

40.2

1

22.0

468

5.0

9.1

16.2

4½

18.6

SCALE 1" to 2' 0"

Prepared by
CLIFFORD Mc ELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

SEAM SECTIONS
RDH 'T'


DRAWN BY

DATE APRIL 1975

PAGE 2 of 5

MIDDLE COALS
SEAM 'B'

ASH %
CUMULATIVE
FROM FLOOR

		SAMPLE N°	THICKNESS (feet)	WT %	ASH %	C. S. N°	INCL. BANDS	EXCL. BANDS
177.0		465	5.0	10.1	16.6	1½	23.9	
		466	5.0	13.3	42.3	1	24.8	
187.0								

SCALE 1" to 2' 0"

Prepared by
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED --

SEAM SECTIONS
RDH 'T'

MIDDLE COALS
SEAM 'B'

ASH %
CUMULATIVE
FROM FLOOR

	SAMPLE N°	THICKNESS (feet)	WT %	ASH %	C. S. N°	ASH % CUMULATIVE FROM FLOOR	
						INCL. BANDS	EXCL. BANDS
197.0	469	5.0	11.6	33.2	1½	19.0	
207.0	470	5.0	7.6	19.5	1	15.3	

SCALE 1" to 2' 0"

Prepared by
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

SEAM SECTIONS
RDH 'T'

MIDDLE COALS
SEAM 'B'

ASH %
CUMULATIVE
FROM FLOOR

SAMPLE
Nº

THICKNESS
(feet)

WT %

ASH %

C. S. Nº

INCL.
BANDS

EXCL.
BANDS

207.0



471

5.0

10.6

12.3

2

13.9

472

5.0

11.2

14.6

2

14.65

217.0

SCALE 1" to 2' 0"

Prepared by
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

SEAM SECTIONS
RDH 'T'

MIDDLE COALS
SEAM 'B'

(feet)

ASH %
CUMULATIVE
FROM FLOOR

WT %

ASH %

C.S.No

INCL.
BANDS

EXCL.
BANDS

217.0

222.0



473

5.0

13.4

14.7

1

14.7

Prepared by:
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

SEAM SECTIONS
RDH 'T.'

ANALYTICAL DATA

R.D.H. "T"

<u>Sample No.</u> (SKR-)	<u>Interval</u> (feet)
465	177 - 182
466	182 - 187
467	187 - 192
468	192 - 197
469	197 - 202
470	202 - 207
471	207 - 212
472	212 - 217
473	217 - 222

- (i) Individual Ply Analyses
Samples SKR 465 - 473 pp. 1-2
- (ii) Analyses of:
Head Raw Coal
Size
Sink-Float
Froth Flotation of:
Composite of Samples SKR 465 - 473 pp. 3-5
- (iii) Analyses of:
(a) Comp. Floats @ 1.60 S.G.
(b) Comp. F .F. Stages I & II
(c) Comp. of (iii) (a) and (iii) (b); of
Comp. of Samples SKR 465 - 473 p. 6

Sample: Chip Samples

Lab No.	A.D.L.	Oven Moist.	Ash	Vol.	F.C.	S.	P.	B.T.U.	S.G.	F.S.I.	Sample wt (gm)	Calc. Factors
SKR 465 1595	24.2	.8 24.8	16.6 12.6 16.7	18.1 13.7 18.2	64.5 48.9 65.1	.35 .27 .35	.10 .08 .10	12,870 9,755 12,975	1.42	1 1/2	4,528 3,432 4,565	Air Dried As Rec'd Dry Basis
SKR 466 1596	15.7	1.2 16.7	42.3 35.7 42.8	14.4 12.1 14.6	42.1 35.5 42.6	.21 .18 .21	.06 .05 .06	8,600 7,250 8,705	1.66	1	5,997	Air Dried As Rec'd Dry Basis
SKR 467 1597	15.6	1.3 16.7	40.2 33.9 40.7	14.4 12.2 14.6	44.1 37.2 44.7	.19 .16 .19	.06 .05 .06	8,950 7,555 9,070	1.63	1	5,898	Air Dried As Rec'd Dry Basis
SKR 468 1598	28.0	.6 28.4	16.2 11.7 16.3	18.7 13.5 18.8	64.5 46.4 64.9	.28 .20 .28	.07 .05 .07	12,910 9,295 12,990	1.42	4 1/2	4,119	Air Dried As Rec'd Dry Basis
SKR 469 1599	20.4	.8 21.0	33.2 26.4 33.5	17.2 13.7 17.3	48.8 38.9 49.2	.31 .25 .31	.06 .05 .06	10,100 8,040 10,180	1.53	1 1/2	5,223	Air Dried As Rec'd Dry Basis
SKR 470 1600	21.7	.6 22.2	19.5 15.3 19.6	17.6 13.8 17.7	62.3 48.7 62.7	.46 .36 .46	.21 .16 .21	12,395 9,705 12,470	1.44	1	3,415	Air Dried As Rec'd Dry Basis
SKR 471 1601	26.4	.5 26.8	12.3 9.1 12.4	19.8 14.6 19.9	67.4 49.5 67.7	.28 .21 .28	.09 .07 .09	13,600 10,010 13,670	1.37	2	4,760	Air Dried As Rec'd Dry Basis
SKR 472 1602	23.6	.4 23.9	14.6 11.2 14.7	18.7 14.3 18.8	66.3 50.6 66.5	.33 .25 .33	.06 .05 .06	13,200 10,085 13,255	1.40	2	5,060	Air Dried As Rec'd Dry Basis

I-ndu

COALITION MINING

February 21, 1975

Sample: Composite SKR 465 to 473 Incl.

(E)

LAB NO. 1641

HEAD RAW ANALYSES

<u>R.M.</u>	<u>Ash %</u>	<u>V.M.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>S.G.</u>	<u>Calc. Factors</u>
0.9	27.9	16.6	54.6	.40	10,990	1 1/2	1.53	Air Dry Basis
	28.2	16.7	55.1	.40	11,090			Dry Basis

SIZE ANALYSES (Wet)

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 28 M	65.4	28.8	65.4	28.8	1 1/2
28 M x 200 M	18.4	21.1	83.8	27.1	4
200 M x 0	16.2	(32.0) Calc.	100.0	27.9	

Sample: Chip Samples

<u>Lab No.</u>	<u>A.D.L.</u>	<u>Oven Moist.</u>	<u>Ash</u>	<u>Vol.</u>	<u>H.C.</u>	<u>S.</u>	<u>P.</u>	<u>B.T.U.</u>	<u>S.G.</u>	<u>F.S.I.</u>	<u>Sample wt (gm)</u>	<u>Calc. Factors</u>
SKR 473	22.9	.7	14.7	15.4	69.2	.21	.07	13,195	1.61	1	6,030	Air Dried
1603		23.4	11.3	11.9	53.4	.16	.05	10,175				As Rec'd
			14.8	15.5	69.7	.21	.07	13,290				Dry Basis

COALITION MINING

February 21, 1975

Sample: Composite SKR 465 to 473 Incl. (E)

LAB NO. 1641

SINK-FLOAT ANALYSES + 28 M

<u>S.G. Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
-1.30	31.2	2.0	31.2	2.0	5
1.30-1.40	21.7	6.1	52.9	3.7	2
1.40-1.60	12.4	22.0	65.3	7.2	1 1/2
+1.60	34.7	67.5	100.0	28.1	1/2

COALITION MINING

February 21, 1975

Sample: Composite SKR 465 to 473 incl.

(E)

LAB NO. 1641

FROTH FLOTATION ANALYSES 28 M x 200 M

<u>F.F. Product</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
Stage I	40.8	6.9	40.8	6.9	7
Stage II	12.0	10.7	52.8	7.8	5 1/2
Tails	47.2	35.2	100.0	20.7	1 1/2

F.F. Parameters

Pulp Density	-	10%
Reagent Dosage	-	0.24 lbs/Ton Kerosene:MIBC (4:1)
Conditioning Time	-	60 seconds
Stage I	-	first minute froth
Stage II	-	second minute froth

COALITION MINING

February 21, 1975

Sample: Composite SKR 465 to 473 incl. (E)

LAB NO. 1778

Comp. Floats
@ 1.60 S.G. of 1641

<u>R.M.</u>	<u>Ash %</u>	<u>V.M.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
.5	7.3	19.6	72.6	.48	14,445	2	As analyzed
	7.3	19.7	73.0	.48	14,520		Dry Basis

LAB NO. 1962 - Composite I and II Stages off 1641

<u>Total Yield %</u>	<u>R.M.</u>	<u>Ash %</u>	<u>V.M.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
	0.7	7.6	19.8	71.9	.53	14,400	5 1/2	As analyzed
		7.7	19.9	72.4	.53	14,500		Dry Basis

LAB NO. 1963 - Composite of 1962 and 1778

	0.7	7.3	20.8	71.2	.53	14,420	2 1/2	As analyzed
		7.4	20.9	71.7	.53	14,520		Dry Basis

ROKEL

GAMMA RAY NEUTRON LOG
DENSILOG

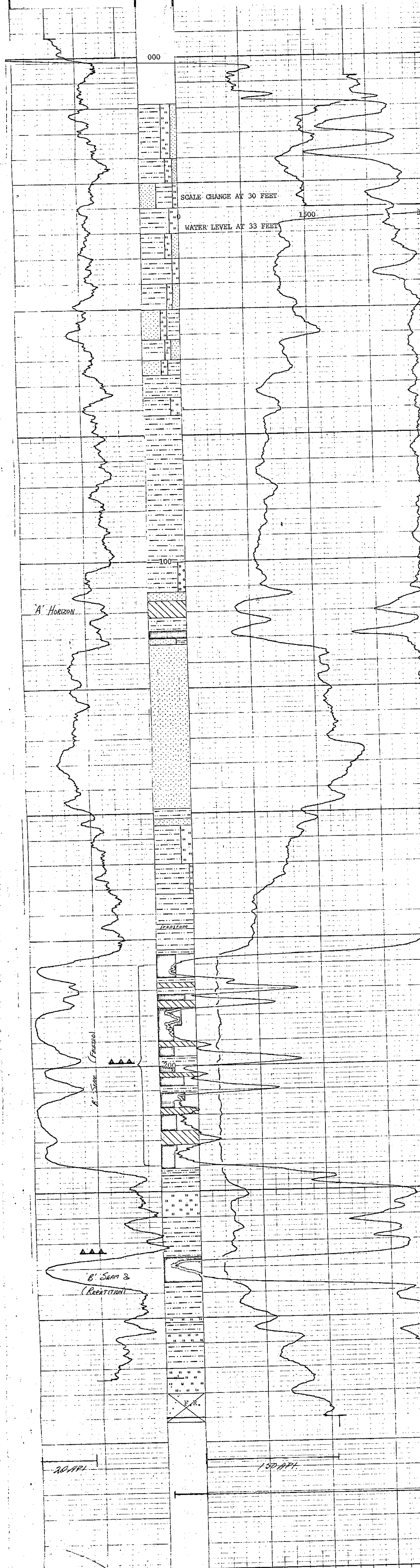
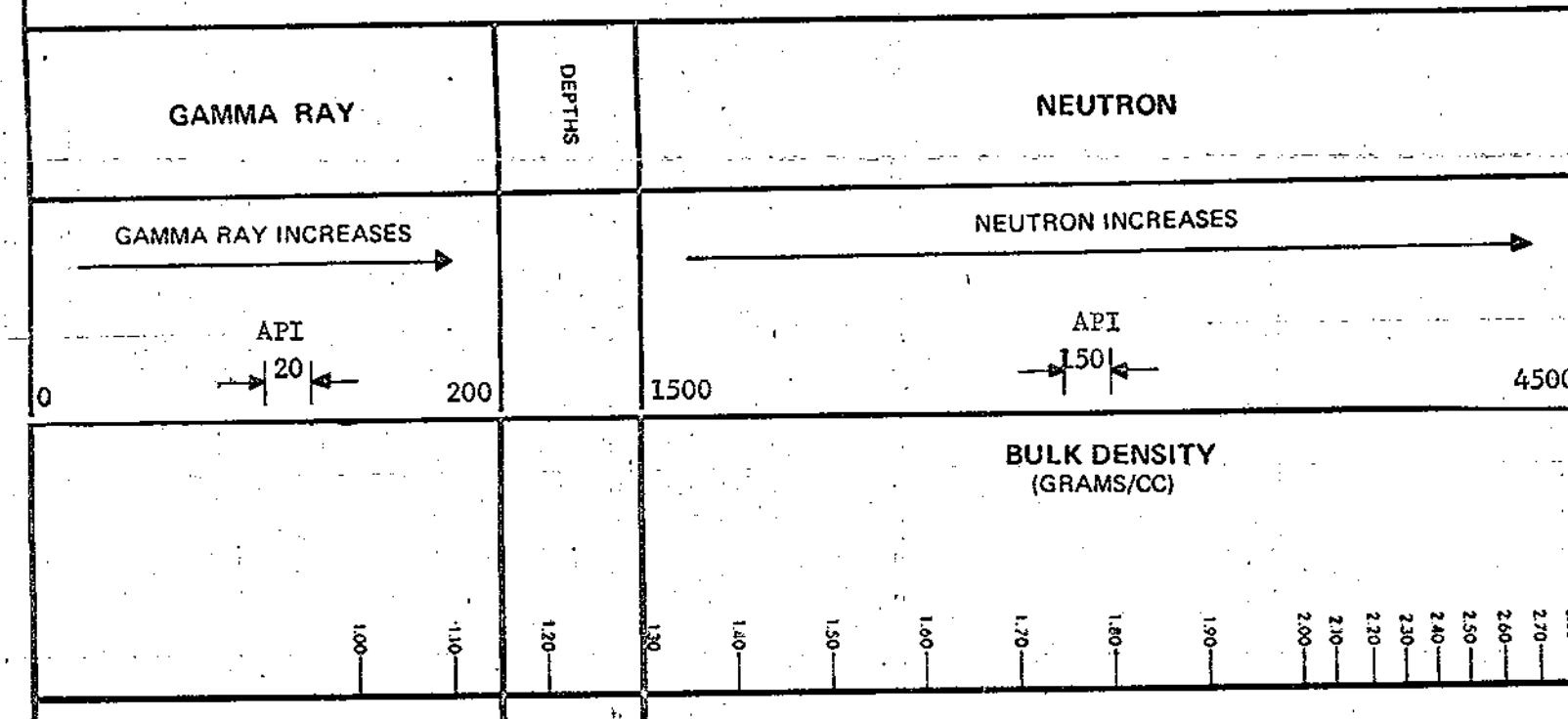
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	WELL	LOCATION	FIELD	PROVINCE
LSD	COALITION MINING LIMITED	RH-T		SIKONKA	BRITISH COLUMBIA
SEC					
TWP					
RGE					
M					
Permanent Datum			Other Services:		
GROUND LEVEL			NTI		
Log Measured from			K.B.		
GROUND LEVEL			CSG		
Well Depths Measured from			G.L.		
GROUND LEVEL					
Run No.	ONE				
Date	1 NOVEMBER 1974				
Fatal Reading	270				
Last Reading	000				
Footage Logged	270				
Depth Reached	271				
Depth Driller	271				
Casing Foke					
Casing Driller					
Fluid Type	AIR/WATER				
Liquid Level	33				
Mn. Diam.	4-3/4				
Run @ %					
Operating Time	3 HOURS				
Truck No.	35				

EQUIPMENT DATA			
GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL		SERIAL NO.	
HOIST TRUCK NO.		SPACING	17 INCH
INSTRUMENT TRUCK NO.	35	TYPE	AmBe
TOOL SERIAL NO.	177	STRENGTH	3 CURTES

LOGGING DATA											
RUN NO.	GENERAL			GAMMA RAY			NEUTRON				
	FROM	TO	SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	000	270	12	3	500	OL	20	3	1000	2.6	44.23
	000	30	12	3	1000	10L	150 - NEUTRON				
	30	270	12	3	1000	OL	150				

REMARKS: DENSITY TOOL SERIAL NO 127 SOURCE #50

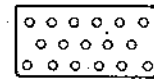
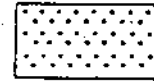
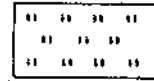
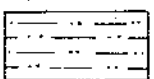

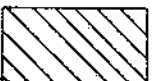
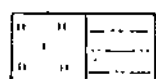

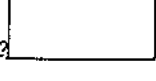
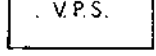


Recorded By: PETERSON Witnessed By: SHIELDS

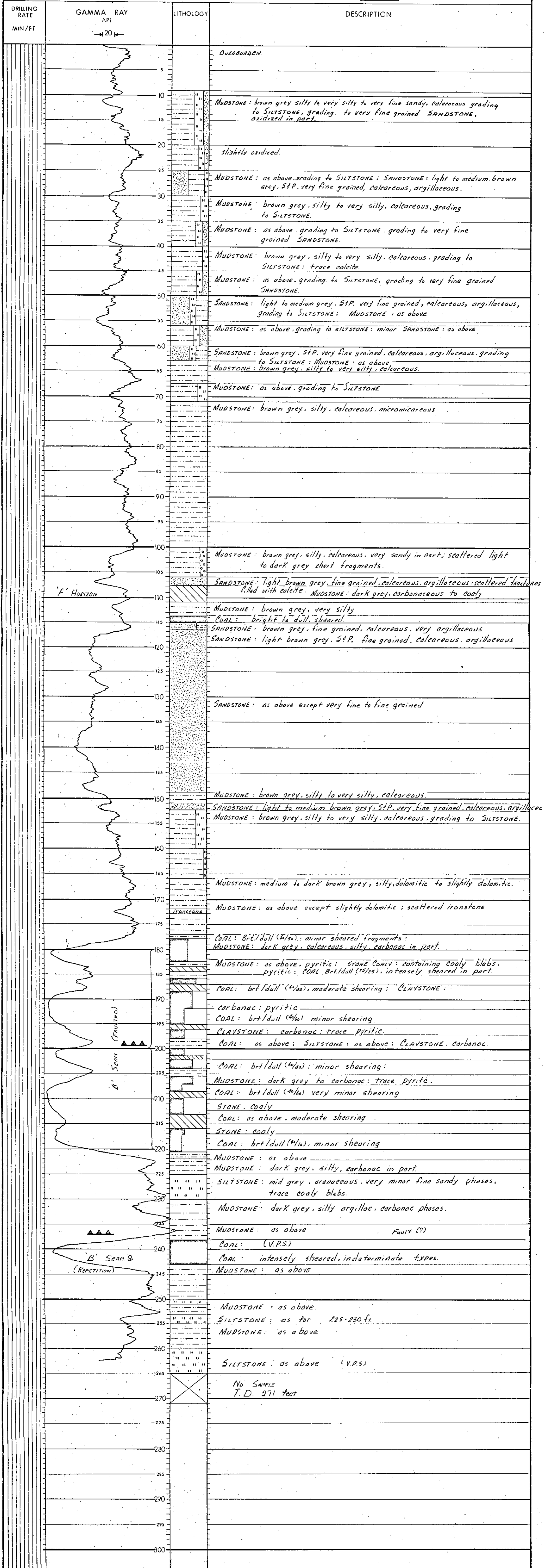
ROTARY DRILL HOLE STRIP LOG

COMPANY: COALITION MINING LTD.
 PROPERTY: SUKUNKA COAL PROJECT
 HOLE NUMBER: RDH - T
 LOCATION: 52,000.20 N 72,907.82 E
 DATE COMMENCED: OCTOBER 31, 1974
 DATE COMPLETED: NOVEMBER 1, 1974
 DEPTH: 271 FEET
 GROUND ELEVATION: 2856 FEET
 LOGGED BY: R.S. VOGAN & G.R. WALLIS
 REMARKS: Strata: Lower Gething Sequence. Faulted intersection of Seam 'B' from 178 ft. to 220.5 ft

LEGEND

 CONGLOMERATE  SANDSTONE  SILTSTONE	 MUDSTONE  COAL BRIGHT (SOLID) - PERCENT INDICATED DULL PERCENT INDICATED  STONE COALY OR CLAYSTONE CARBONACEOUS	 INTERBEDDED SILTSTONE, MUDSTONE ETC. (PERCENTAGE OF EACH ROCK COMPONENT INDICATED)  GLAUCONITIC  FAULT ESTABLISHED PROBABLE POSSIBLE  V.P.S. VERY POOR SAMPLES (ABUNDANT CAVINGS)
---	--	--

SCALE: 1 in. = 10 ft.



Grid Reference: 51935.95 N 72633.39 E

Date Commenced: November 4, 1974 Date Completed: November 4, 1974

Collar R.L.: 2,800 feet Standard Datum.

Total Depth: 160 feet

Drilled by: Sedco Drilling

For: Coalition Mining Limited

Using: Mayhew 1500 Rotary Rig

Radiation Logs: Gamma Ray - Neutron - Density

By: Roke Oil Enterprises Limited

Logged by: R. S. Vogan and G. R. Wallis

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Intervals (feet)	Thickness* (feet)	Total Seam (feet)	Remarks
'B'		53.5 - 56.0	2.5		Total coal in seam = 11.5 ft.
		57.4 - 60.7	3.3		
		61.8 - 62.5	0.7		
	2731.0	64.0 - 69.0	5.0	15.5	

*) Thickness uncorrected for dip.

MIDDLE COALS

SEAM 'B'

ASH %
CUMULATIVE
FROM FLOOR

			WT % (gms)	ASH %	C.S.Nº	INCL. BANDS	EXCL. BANDS
53.5							
55.0							
	478	5.0	10536	39.5	1	28.8	
	479	5.0	8058	16.2	1½		
65.0							

Prepared by:
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

SEAM SECTIONS
RDH 'V'

MIDDLE COALS
SEAM 'B'

ASH %
CUMULATIVE
FROM FLOOR

(FEET)	WT %	ASH %	C.S. NO	ASH % CUMULATIVE FROM FLOOR	
				INCL. BANDS	EXCL. BANDS
65.0	NOT ANALYSED				
69.0					



Prepared by:
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

SEAM SECTIONS
RDH 'V'

ANALYTICAL DATA

R.D.H. "V"

<u>Sample No.</u> <u>(SKR-)</u>	<u>Interval</u> <u>(feet)</u>
478	55 - 60
479	60 - 65

- (i) Individual Ply Analyses
Samples 478 & 479 p. 1
- (ii) Analyses of:
Head Raw Coal
Size
Sink-Float
Froth Flotation of
Composite of Samples SKR 478 & 479 pp. 2-4
- (iii) Analyses of:
(a) Comp. of Floats @ 1.60 S.G.
(b) Comp. of F.F. Stages I & II
(c) Comp. of (iii) (a) and (iii) (b); of
Comp. of Samples 478 and 479 p. 5

COALITION MINING

November 26th, 1974

Sample: Chip Samples

<u>Lab No.</u>	<u>A.D.L.</u>	<u>Oven Moist.</u>	<u>Ash</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>P.</u>	<u>B.T.U.</u>	<u>S.G.</u>	<u>F.S.I.</u>	<u>Sample wt (gms)</u>	<u>Calc. Factors</u>
SKR 478	21.4	.7	39.5	14.8	45.0	.24	.15	9,050	1.64	1	10,536	Air Dried
1608		22.0	31.0	11.6	35.4	.18	.12	7,115				As Rec'd
			39.8	14.9	45.3	.24	.15	9,115				Dry Basis
SKR 479	25.8	.5	16.2	19.0	64.3	.35	.08	12,930	1.41	1 1/2	8,058	Air Dried
1609		26.2	12.0	14.1	47.7	.26	.06	9,595				As Rec'd
			16.3	19.1	64.6	.35	.08	12,995				Dry Basis

T-11A11

COALITION MINING

February 21, 1975

Sample: Composite SKR 478 and 479

(E)

LAB NO. 1642

RAW ANALYSES

<u>R.M.</u>	<u>Ash %</u>	<u>V.M.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>S.G.</u>	<u>Calc. Factors</u>
0.8	28.8	17.0	53.4	.49	10,910	1	1.50	Air Dry Basis
	29.0	17.1	53.9	.49	11,000			Dry Basis

SIZE ANALYSES (Wet)

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 28 M	70.2	29.7	70.2	29.7	1
28 M x 200 M	12.4	18.6	82.6	28.0	3 1/2
200 M x 0	17.4	(32.4) Calc.	100.0	28.8	

COALITION MINING

February 21, 1975

Sample: Composite SKR 478 and 479

(E)

LAB NO. 1642

SINK-FLOAT ANALYSES + 28 M

<u>S.G. Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
-1.30	34.8	1.8	34.8	1.8	4
1.30-1.40	23.9	4.4	58.7	2.9	1 1/2
1.40-1.60	7.9	18.5	66.6	4.7	1 1/2
+1.60	33.4	77.9	100.0	29.2	N.A.

COALITION MINING

Composite SKR 478 and 479

(E)

February 21, 1975

LAB NO. 1642

FROTH FLOTATION ANALYSES 28 M x 200 M

<u>F.F. Product</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
Stage I	46.2	5.3	46.2	5.3	6
Stage II	8.3	11.1	54.5	6.2	4 1/2
Tails	45.5	32.0	100.0	17.9	1 1/2

F.F. Parameters

Pulp Density	-	10%
Reagent Dosage	-	0.24 lbs/Ton Kerosene:MIBC (4:1)
Conditioning Time	-	60 seconds
Stage I	-	first minute froth
Stage II	-	second minute froth

P-11-11

COALITION MINING

February 21, 1975

Composite SKR 478 and 479

(E)

LAB NO. 1779

Composite Floats @ 1.60 S.G. of 1642

<u>R.M.</u>	<u>Ash %</u>	<u>V.M.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
.6	5.2	19.7	74.8	.57	14,720	2 1/2	As analyzed
	5.2	19.8	75.0	.57	14,810		Dry basis

Total
Yield %

<u>R.M.</u>	<u>Ash %</u>	<u>V.M.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
<u>LAB NO. 1964</u> - Composite of I and II Stages 1642							
0.7	6.1	19.4	73.8	.53	14,650	4 1/2	As analyzed
	6.1	19.5	74.4	.53	14,750		Dry Basis
<u>LAB NO. 1965</u> - Composite of 1964 and 1779							
0.7	5.3	19.2	74.8	.53	14,730	2 1/2	As analyzed
	5.3	19.3	75.4	.53	14,830		Dry Basis

ROKEL

GAMMA RAY NEUTRON LOG
 OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD	WELL	RDH-V
SEC	LOCATION	SUKUNKA
TWP	FIELD	SUKUNKA
RGE	PROVINCE	BRITISH COLUMBIA
M	Other Services:	NTL
Permanent Datum	GROUND LEVEL	Elev. _____
Log Measured from	GROUND LEVEL	Ft. Above Perm. Datum _____
Well Depths Measured from	GROUND LEVEL	G.L. _____
Run No.	ONE	
Date	4 NOVEMBER 1974	
First Reading	160	
Last Reading	000	
Footage Logged	160	
Depth Reached	161	
Depth Driller		
Casing Roke		
Casing Driller		
Fluid Type	WATER	
Liquid Level	0	
Min. Diam.	4-3/4	
Rm @ 9F		
Operating Time	3 HOURS	
Truck No.	35	
Recorded By	PETERSON	Witnessed By SHELLS

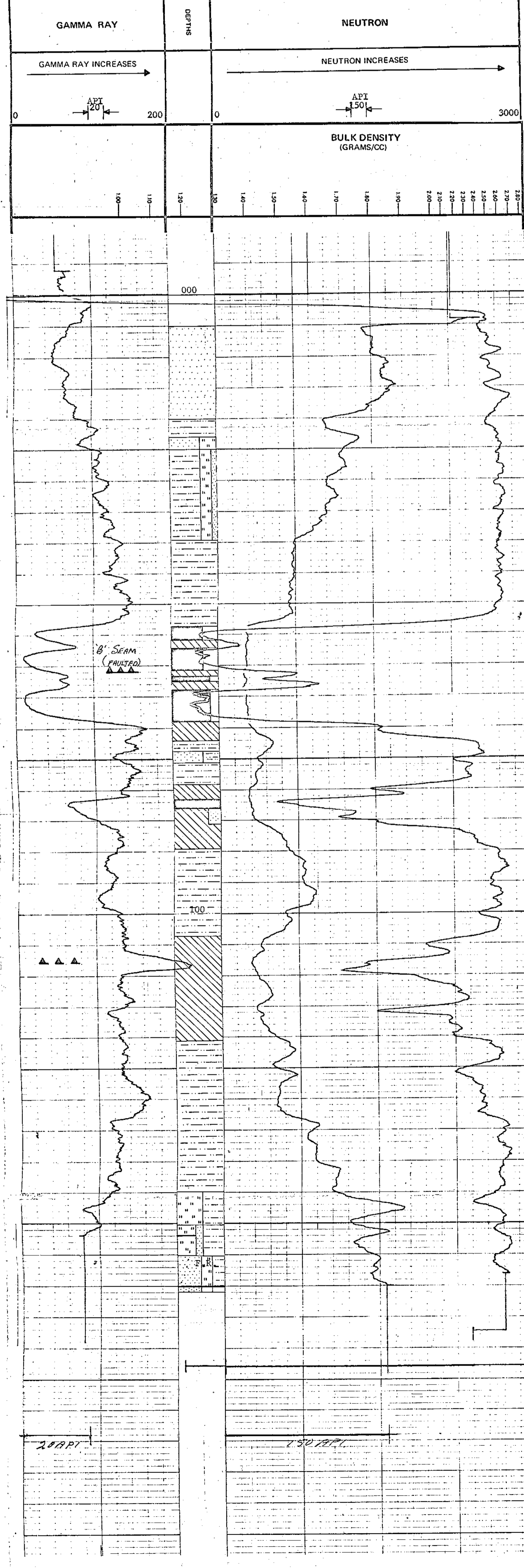
EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 1/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 1/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL		SERIAL NO.	
HOIST TRUCK NO.		SPACING	17 INCH
INSTRUMENT TRUCK NO.	35	TYPE	AmBe
TOOL SERIAL NO.	177	STRENGTH	3 CURIES

LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				NEUTRON				
	FROM	TO	SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	000	160	12	3	500	OL	20	3	1000	2.6	44.23
		NEUTRON	-	3	1000	OL	150				

REMARKS: DENSITY TOOL SERIAL NO 128 SOURCE #50



Grid Reference: 51,882.52 N 73,248.59 E

Date Commenced: Nov. 5, 1974 Date Completed: Nov. 6, 1974

Collar R.L.: 2937 feet Standard Datum.

Total Depth: 244 feet

Drilled by: Sedco Drilling
For: Coalition Mining Limited
Using: Mayhew 1500 Rotary Rig

Radiation Logs: Gamma Ray - Neutron - Density
By: Roke Oil Enterprises Limited

Logged by: R.S. Vogan and G.R. Wallis

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Intervals (feet)	Thickness* (feet)	Total Seam (feet)	Remarks
'B'	2715.6	200.5 - 205.0	4.5	20.9	Total coal = 13.9 ft.
		208.0 - 212.5	4.5		
		215.0 - 217.0	2.0		
		218.5 - 221.4	2.9		
'A'	2801.0	130.5 - 136.0	5.5	-	Carb. mud-stone

*) Thickness uncorrected for dip.

MIDDLE COALS
SEAM 'B'

ASH %
CUMULATIVE
FROM FLOOR

	SAMPLE N°	THICKNESS (feet)	WT (gms)	ASH %	C. S. N°	ASH % CUMULATIVE FROM FLOOR	
						INCL. BANDS	EXCL. BANDS
200.4							
	474	2.0	2960	14.3	1½		
			NOT	ANALYSED			
	475	3.0	5840	29.6	1		
211.0							



SCALE 1" to 2' 0"

Prepared by
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

SEAM SECTIONS
RDH 'W'

MIDDLE COALS
SEAM 'B'

ASH %
CUMULATIVE
FROM FLOOR

	SAMPLE N°	THICKNESS (feet)	WT (gms)	ASH %	C. S. N°	ASH % CUMULATIVE FROM FLOOR	
						INCL. BANDS	EXCL. BANDS
211.0							
	476	5.0	4405	55.0	1	36.5	
	477	5.3	2471	15.9	1	15.9	
221.3							
							

SCALE 1" to 2' 0"

Prepared by
CLIFFORD MC ELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

SEAM SECTIONS
RDH 'W'

COALITION MINING

November 26th, 1974

Sample: Chip Samples

<u>Lab No.</u>	<u>A.D.L.</u>	<u>Oven Moist.</u>	<u>Ash</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>P.</u>	<u>B.T.U.</u>	<u>S.G.</u>	<u>F.S.I.</u>	<u>Sample wt (gms)</u>	<u>Calc. Factors</u>
SKR 474 1604	23.0	.4 23.3	14.7 11.3 14.8	17.6 13.6 17.7	67.3 51.8 67.5	.57 .44 .57	.17	13,195 10,160 13,250	1.38	1 1/2	2,960	Air Dried As Rec'd Dry Basis
SKR 475 1605	26.1	.5 26.5	29.6 21.9 29.7	16.4 12.1 16.5	53.5 39.5 53.8	.46 .34 .46	.14	10,710 7,915 10,765	1.55	1	5,840	Air Dried As Rec'd Dry Basis
SKR 476 1606	23.3	.6 23.8	55.0 42.2 55.3	12.6 9.7 12.7	31.8 24.3 32.0	.18 .14 .18	.10	6,460 4,955 6,500	1.81	1	4,405	Air Dried As Rec'd Dry Basis
SKR 477 1607	38.4	.5 38.7	34.0 20.9 34.2	15.9 9.8 16.0	49.6 30.6 49.8	.24 .15 .24	.08	9,990 6,155 10,040	1.54	1	2,471	Air Dried As Rec'd Dry Basis

ANALYTICAL DATA

R.D.H. "W"

<u>Sample No.</u> (SKR-)	<u>Interval</u> (feet)
474	201 - 203
475	208 - 211
476	211 - 216
477	216 - 221

- (i) Individual Ply Analyses
Samples SKR 474 - 477 p. 1
- (ii) Analyses of:
Head Raw Coal
Size
Sink-Float
Froth Flotation of:
Composite Samples of SKR 474 - 477 pp. 2 - 4
- (iii) Analyses of:
(a) Comp. Floats @ 1.60 S.G.
(b) Comp. F.F. Stages I & II
(b) Comp. of (iii) (a) and (iii) (b); of
Comp. of Samples SKR 474 - 477 p. 5

COALITION MINING

February 21, 1975

Sample: Composite SKR 474 to 477

(E)

LAB NO. 1643

RAW ANALYSES (HEAD)

<u>R.M.</u>	<u>Ash %</u>	<u>V.M.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>S.G.</u>	<u>Calc. Factors</u>
0.7	33.6	18.7	47.0	.53	10,080	1	1.54	Air Dry Basis
	33.8	18.8	47.4	.53	10,150			Dry Basis

SIZE ANALYSES (Wet)

<u>Size Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
+ 28 M	66.5	33.5	66.5	33.5	1
28 M x 200 M	11.3	31.2	77.8	33.2	2
200 M x 0	22.2	(35.1) Calc.	100.0	33.6	

COALITION MINING

February 21, 1975

Sample: Composite SKR 474 to 477

(E)

LAB NO. 1643

SINK-FLOAT ANALYSES + 28 M

<u>S.G. Fraction</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
-1.30	34.6	1.9	34.6	1.9	4
1.30-1.40	20.6	5.1	55.2	3.1	1 1/2
1.40-1.60	6.4	18.4	61.6	4.7	1 1/2
+1.60	38.4	79.7	100.0	33.5	N.A.

3-11-75

COALITION MINING

February 21, 1975

Sample: Composite SKR 474 to 477

(E)

LAB NO. 1643

FROTH FLOTATION ANALYSES 28 M x 200 M

<u>F.F. Product</u>	<u>Wt %</u>	<u>Ash %</u>	<u>Cum Wt %</u>	<u>Cum Ash %</u>	<u>F.S.I.</u>
Stage I	43.4	9.7	43.4	9.7	4 1/2
Stage II	12.5	22.7	55.9	12.6	3 1/2
Tails	44.1	53.3	100.0	30.6	1

F.F. Parameters

Pulp Density	-	10%
Reagent Dosage	-	0.24 lbs/Ton Kerosene:MIBC (4:1)
Conditioning Time	-	60 seconds
Stage I	-	first minute froth
Stage II	-	second minute froth

COALITION MINING

February 21, 1975

Sample: Composite SKR 474 to 477

(E)

LAB NO. 1780

Composite Floats @ 1.60 S.G. of 1643

<u>R.M.</u>	<u>Ash %</u>	<u>V.M.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
0.6	4.8	19.7	74.9	.55	14,760	2 1/2	As analyzed
	4.8	19.8	75.4	.55	14,850		Dry Basis

LAB NO. 1966 - Composite I and II Stages of 1643

<u>Total Yield %</u>	<u>R.M.</u>	<u>Ash %</u>	<u>V.M.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
	0.7	12.4	18.1	68.8	.53	13,540	3 1/2	As analyzed
		12.5	18.2	69.3	.52	13,640		Dry Basis

LAB NO. 1967 - Composite 1966 and 1780

<u>R.M.</u>	<u>Ash %</u>	<u>V.M.</u>	<u>F.C.</u>	<u>S.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>Calc. Factors</u>
0.7	5.9	18.7	74.7	.64	14,600	2 1/2	As analyzed
	5.9	18.8	75.3	.64	14,700		Dry Basis

ROKEL

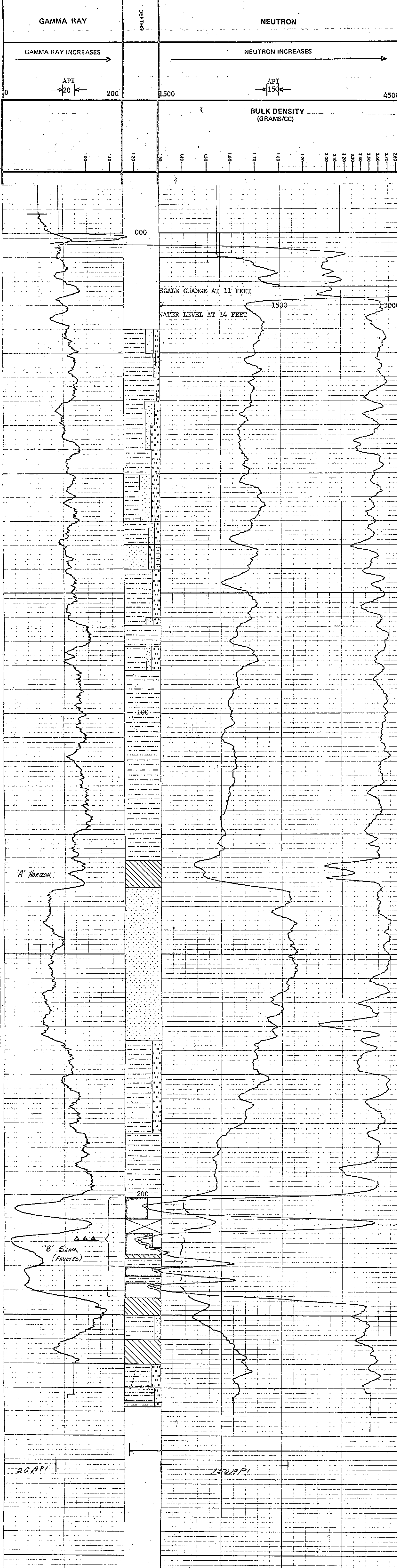
EXPLORATION DEPARTMENT
CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD	WELL	RHE-W
SEC	LOCATION	
RGE	FIELD	SUKKUKA
W	PROVINCE	BRITISH COLUMBIA
M	Other Services	
	Permanently from	GROUND LEVEL
	Log Measured from	GROUND LEVEL
	Well Depths Measured from	GROUND LEVEL
Run No.	ONE	
Date	6 NOVEMBER 1974	
First Reading	243	
Last Reading	000	
Footage Logged	243	
Depth Reached	244	
Depth Driller		
Casing Role		
Casing Driller		
Fluid Type	AIR/MATERIAL	
Liquid Level	1 1/2	
Min. Diam.	4-3/4	
Rm @ 9'		
Operating Time	3 HOURS	
Truck No.	35	
Recorded By	JEFFERSON	Witnessed By
		SIEGLIS

EQUIPMENT DATA			
GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 1/2	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 1/2
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL			
HOIST TRUCK NO.		SERIAL NO.	
INSTRUMENT TRUCK NO.	35	TYPE	17 INCH AmBe
TOOL SERIAL NO.	177	STRENGTH	3 CURIES

LOGGING DATA											
RUN NO.	GENERAL			GAMMA RAY				NEUTRON			
	FROM	TO	SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	000	243	12	3	500	OL	20	3	1000	2.6R	44.23
	000	11	12	3	1000	10L	150				
	11	243	12	3	1000	OL	150				

REMARKS: DENSITY TOOL SERIAL NO 128 SOURCE #50



PR-SUKUNKA
74(3) A-2
SUKUNKA

MIDDLE COALS
AREA

VOLUME 4

~~PR-SUKUNKA 74(3) A-2~~

SUKUNKA COAL PROJECT
MIDDLE COALS AREA
VOLUME 4

APPENDIX C-3

ROTARY DRILL HOLE DATA
COAL SEAMS NOT ANALYZED

R.D.H.'s 'A', 'B', 'D' TO 'G', 'I' TO 'S', 'U'

Prepared By: CLIFFORD McELROY & ASSOCIATES Pty. LIMITED

Report No. : 1/4/23

June, 1975

EXPLANATORY NOTES TO ACCOMPANY APPENDIX C

This Appendix contains the records of the holes drilled between September and December, 1974 for the programme evaluating the Lower Gething sequence in the vicinity of Skeeter Creek. The Appendix is divided into three parts, as outlined below.

Diamond Drill Holes (Appendix C-1)

The six diamond drill holes are prefixed 'M' for "Middle Coals", to distinguish them from the holes previously drilled to assess the seams in the Upper Gething sequence on the property.

D.D.H.'s M-1A and M-2 were drilled by Canadian Longyear Ltd., using a conventional diamond coring rig and wire-line triple tube barrel. D.D.H. M-1A, drilled in June, 1973, is included for completeness. D.D.H.'s M-3 to M-6 were drilled by Sedco Drilling, using a mud circulation Mayhew 1500 rotary drilling rig with a 4½" diameter Christensen core barrel with plastic liner.

Rotary Drill Holes

Twenty-three holes were drilled using a Mayhew 1500 rotary drilling rig employing mud circulation. Sedco Drilling was the contractor. Owing to contamination of the coal seam samples by rock cuttings, only samples from five of the twelve drill holes to penetrate significant seam thicknesses were analyzed. Thus the records for the rotary holes are included as two sub-appendices.

(a) R.D.H.'s - Seams Analyzed (Appendix C-2)

The drill hole records for R.D.H.'s 'C', 'H', 'T', 'V', and 'W' are included in this section, with the analytical data, strip log and description, and radiation log, each as a separate record.

(b) R.D.H.'s - Seams Not Analyzed (Appendix C-3)

The remaining rotary drill hole records are included in this section as strip logs and descriptions, and radiation logs. The coal seam intersections, thicknesses, and other pertinent data are tabulated in Appendix A.

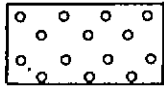
Due to the absence of samples for the Water Well ('WW'), an inferred lithologic column is shown on the radiation log.

DETAIL OF GETTING FORMATION
 STRIP LOGS Scale: 1" = 10'
 STRATIGRAPHIC LOGS Scale: 1" = 20'

COAL SEAMS
 Scale: 1" = 2'



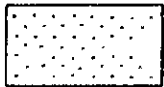
SOIL, WEATHERED and UNCONSOLIDATED MATERIAL



CONGLOMERATE pebble to granule



BRECCIA



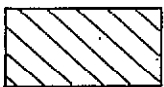
SANDSTONE



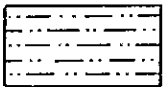
SILTSTONE



CLAYSTONE



STONE COALY or CLAYSTONE CARBONACEOUS



MUDSTONE



COAL



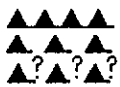
INTERBEDDED



LAMINITE



45° INCLINED STRATA

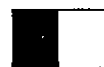


FAULT established probable possible



COAL BRIGHT or UNDIFFERENTIATED
 COAL MAINLY BRIGHT with MINOR DULL BANDS
 COAL DULL and BRIGHT
 COAL MAINLY DULL with MINOR BRIGHT BANDS
 COAL DULL
 COAL INTERLAYED with NON-COAL
 NON-COAL INTERLAYED with COAL
 COAL STONY
 STONE COALY
 COAL WEATHERED

DIAMOND DRILL HOLES



COAL BRIGHT (Solid)
 DULL (Blank)
 (Relative Percent Indicated)

ROTARY DRILL HOLES

REFERENCE FOR GRAPHIC SECTIONS
 of
 DRILL HOLE DATA

PREPARED BY CLIFFORD McELROY & ASSOCIATES PTY. LIMITED

COALITION MINING LTD.

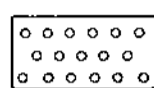
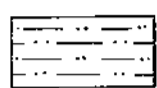
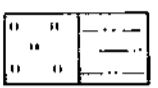


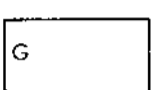
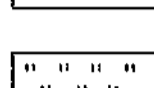

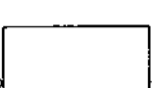
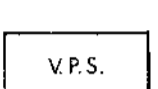
SUKUNKA COAL PROJECT
 MIDDLE COALS AREA

APRIL 1975

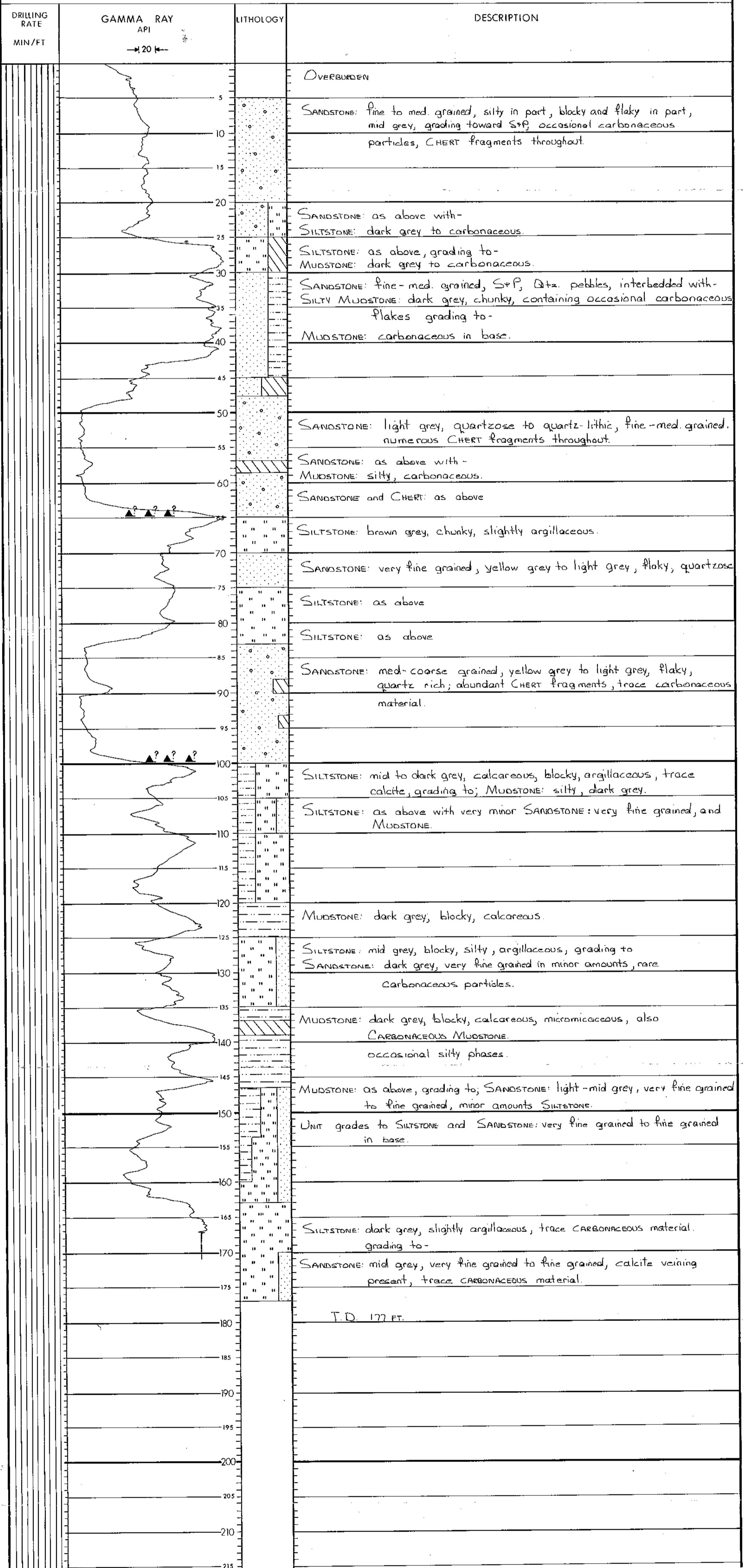
ROTARY DRILL HOLE STRIP LOG

COMPANY: COALITION MINING LTD.
 PROPERTY: SUKUNKA COAL PROJECT
 HOLE NUMBER: RDH - F
 LOCATION: 52,798.60 N 70,996.04 E
 DATE COMMENCED: OCTOBER 6, 1974
 DATE COMPLETED: OCTOBER 7, 1974
 DEPTH: 177 FEET
 GROUND ELEVATION: 2505 FEET
 LOGGED BY: G.R. WALLIS
 REMARKS: Strata: Lower Gething Sequence - no coal penetrated

LEGEND

 CONGLOMERATE	 MUDSTONE	 INTERBEDDED SILTSTONE, MUDSTONE ETC. (PERCENTAGE OF EACH ROCK COMPONENT INDICATED)
 SANDSTONE	 COAL BRIGHT (SOLID) - PERCENT INDICATED DULL PERCENT INDICATED	 GLAUCONITIC
 SILTSTONE	 STONE COALY OR CLAYSTONE CARBONACEOUS	 FAULT ESTABLISHED PROBABLE POSSIBLE
		 V.P.S. VERY POOR SAMPLES (ABUNDANT CAVINGS)

SCALE: 1 in. = 10 ft



652

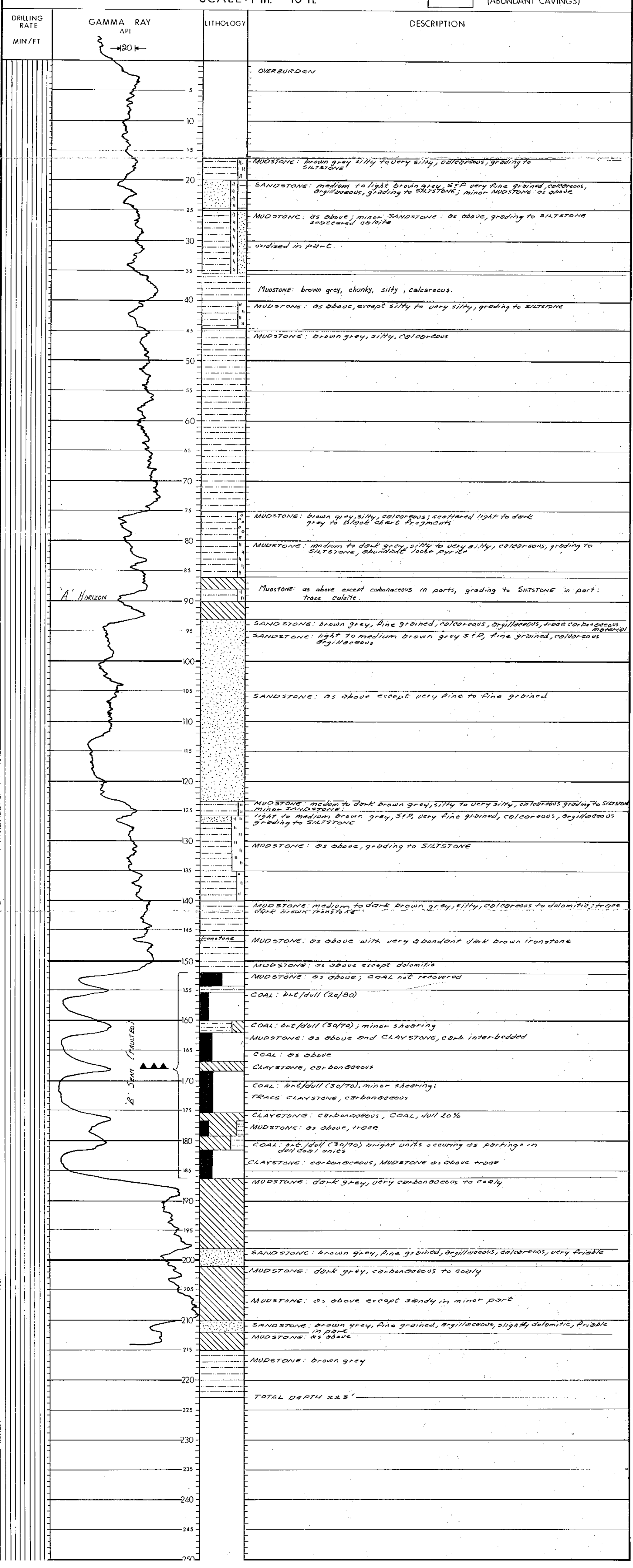
ROTARY DRILL HOLE STRIP LOG

COMPANY: COALITION MINING LTD.
 PROPERTY: SUKUNKA
 HOLE NUMBER: RDH-1
 LOCATION: 52,398.67 N 72,540.32 E
 DATE COMMENCED: OCT. 3, 1974
 DATE COMPLETED: OCT. 4, 1974
 DEPTH: 223 feet
 GROUND ELEVATION: 2814 FEET
 LOGGED BY: R.S. VOGAN, G.R. WALLIS
 REMARKS: Strata: Lower Gething Sequence. Faulted 'B' Seam 152 ft. to 186.5 ft.

LEGEND

- CONGLOMERATE
- SANDSTONE
- SILTSTONE
- MUDSTONE
- COAL BRIGHT (SOLID) - PERCENT INDICATED DULL PERCENT INDICATED
- STONE COALY OR CLAYSTONE CARBONACEOUS
- INTERBEDDED SILTSTONE, MUDSTONE ETC. (PERCENTAGE OF EACH ROCK COMPONENT INDICATED)
- GLAUCONITIC
- FAULT ESTABLISHED PROBABLE POSSIBLE
- V.P.S. VERY POOR SAMPLES (ABUNDANT CAVINGS)

SCALE: 1 in. = 10 ft.

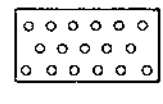


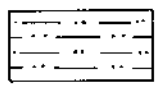


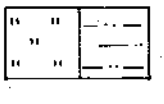
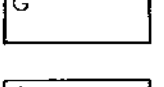
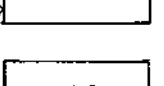
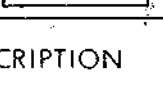


PR-SK 74(3)A-2

ROTARY DRILL HOLE STRIP LOG

COMPANY: COALITION MINING LTD
 PROPERTY: SUKUNKA COAL PROJECT
 HOLE NUMBER: RDH - K
 LOCATION: 51,995.92 N 75699.65 E
 DATE COMMENCED: SEPTEMBER 28, 1974
 DATE COMPLETED: SEPTEMBER 29, 1974
 DEPTH: 205 FEET
 GROUND ELEVATION: 3431 FEET
 LOGGED BY: R.S. VOGAN
 REMARKS: Hole depths measured from KELLY BUSHING
 4 feet above ground elevation.
 Strata: Lower Gething Sequence above 'B' Seam.

LEGEND

-  CONGLOMERATE
-  SANDSTONE
-  SILTSTONE
-  MUDSTONE
-  COAL BRIGHT (SOLID) - PERCENT INDICATED DULL PERCENT INDICATED
-  STONE COALY OR CLAYSTONE CARBONACEOUS
-  INTERBEDDED SILTSTONE, MUDSTONE ETC (PERCENTAGE OF EACH ROCK COMPONENT INDICATED)
-  GLAUCONITIC
-  FAULT ESTABLISHED PROBABLE POSSIBLE
-  V.P.S. VERY POOR SAMPLES (ABUNDANT CAVINGS)

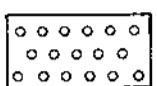
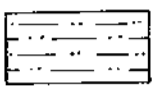

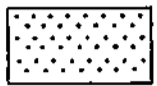

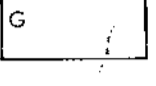
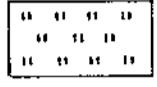
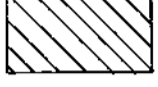
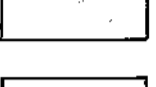
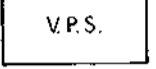
SCALE: 1 in. = 10 ft.

DRILLING RATE MIN/FT	GAMMA RAY API —HISK—	LITHOLOGY	DESCRIPTION
			OVERBURDEN Nil.
			Siltstone: light grey brown very argillaceous calcareous trace black carbonaceous material.
			Mudstone: brown grey, silty, micromicaceous, calcareous trace black carbonaceous material; minor Siltstone as above
			Mudstone: as above; trace Siltstone: as above.
			Mudstone: as above except very glauconitic in minor part
			Mudstone: as above except very glauconitic in trace amount; minor Sandstone: brown grey, very fine grained, argillaceous to very argillaceous, calcareous in part
			Mudstone: as above except pyrites in part, non glauconitic; very minor Sandstone: as above, grading to Siltstone.
			Sandstone: brown grey, very fine grained, argillaceous to very argillaceous; calcareous Mudstone: brown grey, silty, calcareous, micromicaceous; trace fractures, filled with calcite.
			Mudstone: as above; minor Sandstone: as above.
			Mudstone: brown grey, silty, calcareous micromicaceous; traces Sandstone: as above.
			Mudstone: as above; trace Siltstone: brown grey, very argillaceous, calcareous, grading to very fine grained Sandstone.
			Mudstone: brown grey, silty, calcareous, micromicaceous, pyritic in part trace Siltstone: as above, grading to very fine grained Sandstone
			Mudstone: brown grey, silty, calcareous, micromicaceous.
			Sandstone: brown grey, fine grained, very glauconitic, very argillaceous calcareous very minor Mudstone: as above; trace fractures filled with calcite.
			Sandstone: as above except argillaceous to very argillaceous, slightly friable; minor Mudstone: as above; scattered fractures filled with calcite.
			Sandstone: brown grey, very fine to fine grained, very argillaceous, calcareous, slightly pyritic, grading to Siltstone; minor Mudstone: brown grey silty, calcareous.
			Siltstone: brown grey, very argillaceous, calcareous, slightly pyritic, grading to very fine grained Sandstone.
			Siltstone: as above grading to very fine grained Sandstone; very minor Mudstone: as above.
			Siltstone: as above grading to very fine grained Sandstone; Mudstone: brown grey silty to very silty, calcareous.
			Sandstone: light to medium brown grey, very fine grained, argillaceous, calcareous, grading to Siltstone, Mudstone: as above.
			Siltstone: brown grey, calcareous, very argillaceous, grading to very fine grained Sandstone; Mudstone: brown grey, silty to very silty, calcareous.
			Mudstone: as above; minor Siltstone: as above.
			Mudstone: brown grey, silty
			T.D. 205 FEET

ROTARY DRILL HOLE STRIP LOG

COMPANY: COALITION MINING LTD.
 PROPERTY: SUKUNKA COAL PROJECT
 HOLE NUMBER: RDH-L
 LOCATION: 51,710.30 N 76,616.20 E
 DATE COMMENCED: SEPTEMBER 30, 1974
 DATE COMPLETED: OCTOBER 1, 1974
 DEPTH: 260 FEET
 GROUND ELEVATION: 3436 FEET
 LOGGED BY: R.E. SHIELDS & G.R. WALLIS
 REMARKS: Coal in samples from 220' to 260' due to caving. VPS throughout. Log of DDH M-1A records Coaly lenses in Mudstone of similar unit however. Strata: Lower Gething Sequence.

LEGEND

 CONGLOMERATE	 MUDSTONE	 INTERBEDDED SILTSTONE, MUDSTONE ETC. (PERCENTAGE OF EACH ROCK COMPONENT INDICATED)
 SANDSTONE	 COAL BRIGHT (SOLID) - PERCENT INDICATED DULL PERCENT INDICATED	 GLAUCONITIC
 SILTSTONE	 STONE COALY OR CLAYSTONE CARBONACEOUS	 FAULT ESTABLISHED PROBABLE POSSIBLE
		 V.P.S. VERY POOR SAMPLES (ABUNDANT CAVINGS)

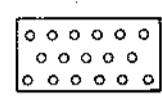
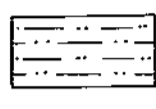
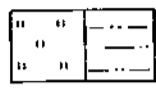
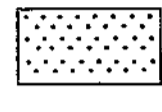

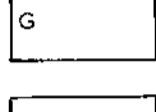
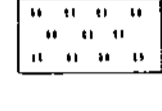
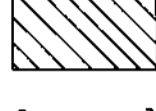
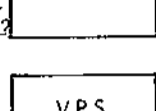
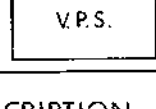
SCALE: 1 in. = 10 ft.

DRILLING RATE MIN/FT	GAMMA RAY API →15←	LITHOLOGY	DESCRIPTION
			OVERBURDEN TO 19 FEET.
		G SANDSTONE	SANDSTONE: light grey, S+P, fine to med. grained, dolomitic, glauconitic, ironstaining.
		SANDSTONE	SANDSTONE: as above, fine grained, no glauconitic, calcareous calcite on joint planes, argillaceous.
		SANDSTONE	SANDSTONE: as above; minor MUDSTONE
		MUDSTONE	MUDSTONE: brown grey, silty, very calcareous, argillaceous, trace pyrite.
		MUDSTONE	MUDSTONE: as above
		MUDSTONE	MUDSTONE: as above; minor SILTSTONE: light brown grey, very calcareous.
		MUDSTONE	MUDSTONE: as above; minor SILTSTONE: as above
			No SAMPLE, lost circulation
			No SAMPLE, lost circulation
		MUDSTONE	MUDSTONE: as above; very minor SILTSTONE: as above.
		MUDSTONE	MUDSTONE: as above; very minor SILTSTONE: as above, calcite in tension fractures.
		MUDSTONE	MUDSTONE: mid-brown grey, micromicaceous, pyritic, calcareous, trace carbonaceous material.
		MUDSTONE	MUDSTONE: as above, minor MUDSTONE: carbonaceous.
		MUDSTONE	MUDSTONE: as above, pyritic, trace carbonaceous MUDSTONE.
		MUDSTONE	MUDSTONE: as above, pyritic, no carbonaceous MUDSTONE.
		MUDSTONE	MUDSTONE: as above, pyritic.
		MUDSTONE	MUDSTONE: as above
		MUDSTONE	MUDSTONE: as above; minor SANDSTONE: see below
		SANDSTONE	SANDSTONE: light grey, S+P, calcareous, calcite on joint planes.
		SILTSTONE and MUDSTONE	SILTSTONE and MUDSTONE: interbedded V.P.S.
			V.P.S.
			V.P.S.
		MUDSTONE	MUDSTONE: brown grey, dolomitic, calcite joint fillings, trace pyrite, carbonaceous partings present.
		COAL	COAL: bright and dull sheared; CLAYSTONE: carbonaceous, trace pyrite (V.P.S.)
		MUDSTONE	MUDSTONE: brown grey, slightly calcareous.
			NO SAMPLE
		COAL	COAL: bright/dull (90/20), much shearing evident (V.P.S.)
		MUDSTONE	MUDSTONE: brown grey, calcareous, minor calcite.
		MUDSTONE	MUDSTONE: brown grey, calcareous. V.P.S.
		MUDSTONE	MUDSTONE: as above
		MUDSTONE	MUDSTONE: as above and; MUDSTONE: carbonaceous. V.P.S.
		MUDSTONE	MUDSTONE: brown grey, calcareous, argillaceous V.P.S.
			V.P.S. abundant cavings.
		SILTSTONE	SILTSTONE: brown grey, very calcareous, argillaceous, calcite; COAL: bright & sheared
			I.D. 260 FT.

ROTARY DRILL HOLE STRIP LOG

COMPANY: COALITION MINING LTD.
 PROPERTY: SUKUNKA COAL PROJECT
 HOLE NUMBER: RDH-N
 LOCATION: 56,090.58 N 70,874.98 E
 DATE COMMENCED: OCTOBER 9, 1974
 DATE COMPLETED: OCTOBER 9, 1974
 DEPTH: 200 FEET
 GROUND ELEVATION: 2542 FEET
 LOGGED BY: R.E. SHIELDS & G.R. WALLIS
 REMARKS: Strata: Lower Gething Sequence below 'B' Seam horizon.

LEGEND

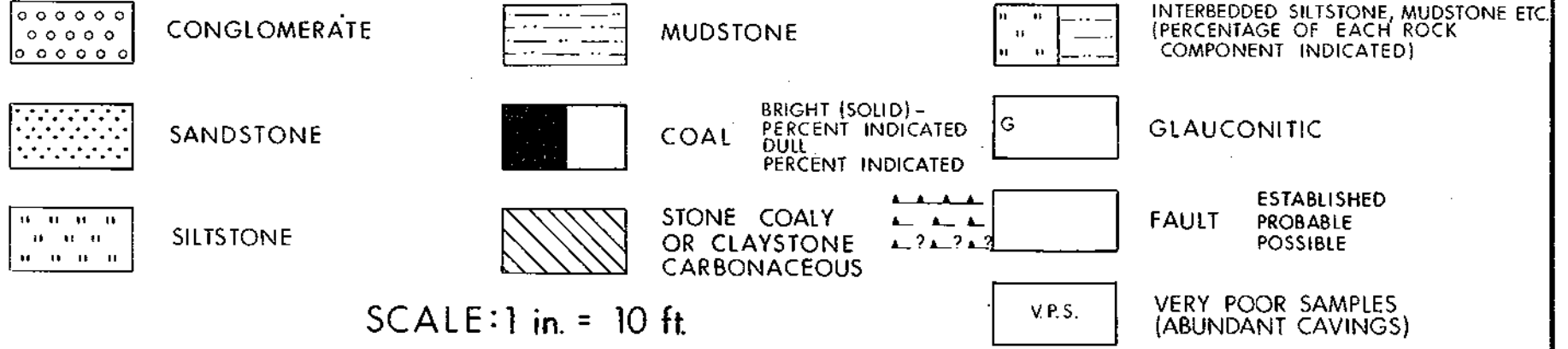
 CONGLOMERATE	 MUDSTONE	 INTERBEDDED SILTSTONE, MUDSTONE ETC. (PERCENTAGE OF EACH ROCK COMPONENT INDICATED)
 SANDSTONE	 COAL BRIGHT (SOLID) - PERCENT INDICATED DULL PERCENT INDICATED	 GLAUCONITIC
 SILTSTONE	 STONE COALY OR CLAYSTONE CARBONACEOUS	 FAULT ESTABLISHED PROBABLE POSSIBLE
SCALE: 1 in. = 10 ft		 V.P.S. VERY POOR SAMPLES (ABUNDANT CAVINGS)

DRILLING RATE MIN/FT	GAMMA RAY API ←20←	LITHOLOGY	DESCRIPTION
			OVERBURDEN to 16'
			V.P.S. to 20'
			MUDSTONE: brown grey, trace carbonaceous material
			MUDSTONE: as above, grading to SILTSTONE: brown grey, argillaceous, calcareous, trace iron staining.
			SILTSTONE: as above with trace carbonaceous flecks and calcite joint filling.
			MUDSTONE: brown grey, silty, calcareous, grading to - SILTSTONE: as above
			MUDSTONE: as above, very minor carbonaceous blebs, trace calcite.
			MUDSTONE and SILTSTONE: as for 35' to 40' above.
			MUDSTONE: dark brown grey, silty, calcareous; very minor carbonaceous traces, minor amounts pyrite and coal intermixed.
			MUDSTONE and SILTSTONE: as for 35' to 40' above.
			MUDSTONE: as above with pyrite contents.
			MUDSTONE grading to SILTSTONE: as for 35' to 40' above.
			MUDSTONE: dark grey to brown, silty, calcareous, minor carbonaceous flecks, trace pyrite. (Carbonaceous material indicated on density log at 81 ft. but not reported in sample.)
			MUDSTONE: as above, grading to SILTSTONE: mid grey; calcareous, grading to very minor SANDSTONE: fine grained, S+P, calcareous, trace carbonaceous material.
			MUDSTONE: as above - No pyrite.
			COAL: mostly dull and MUDSTONE: carbonaceous, trace calcite.
			MUDSTONE: as above - No pyrite.
			SILTSTONE: light brown grey, calcareous, argillaceous, very minor calcite, trace MUDSTONE and carbonaceous material.
			SILTSTONE: as above
			SILTSTONE: as above
			SILTSTONE: as above
			SILTSTONE: as above
			SILTSTONE: as above, minor SANDSTONE: light grey, very fine grained, calcareous, crystalline quartz present indicating tension joints, trace calcite.
			MUDSTONE: brown grey, calcareous, trace carbonaceous material.
			SILTSTONE: light brown grey, calcareous, very minor MUDSTONE, minor SANDSTONE: very fine grained, mid grey, trace carbonaceous material.
			MUDSTONE: brown grey, slightly calcareous, minor SILTSTONE, trace calcite.
			J.D. 200 FT.

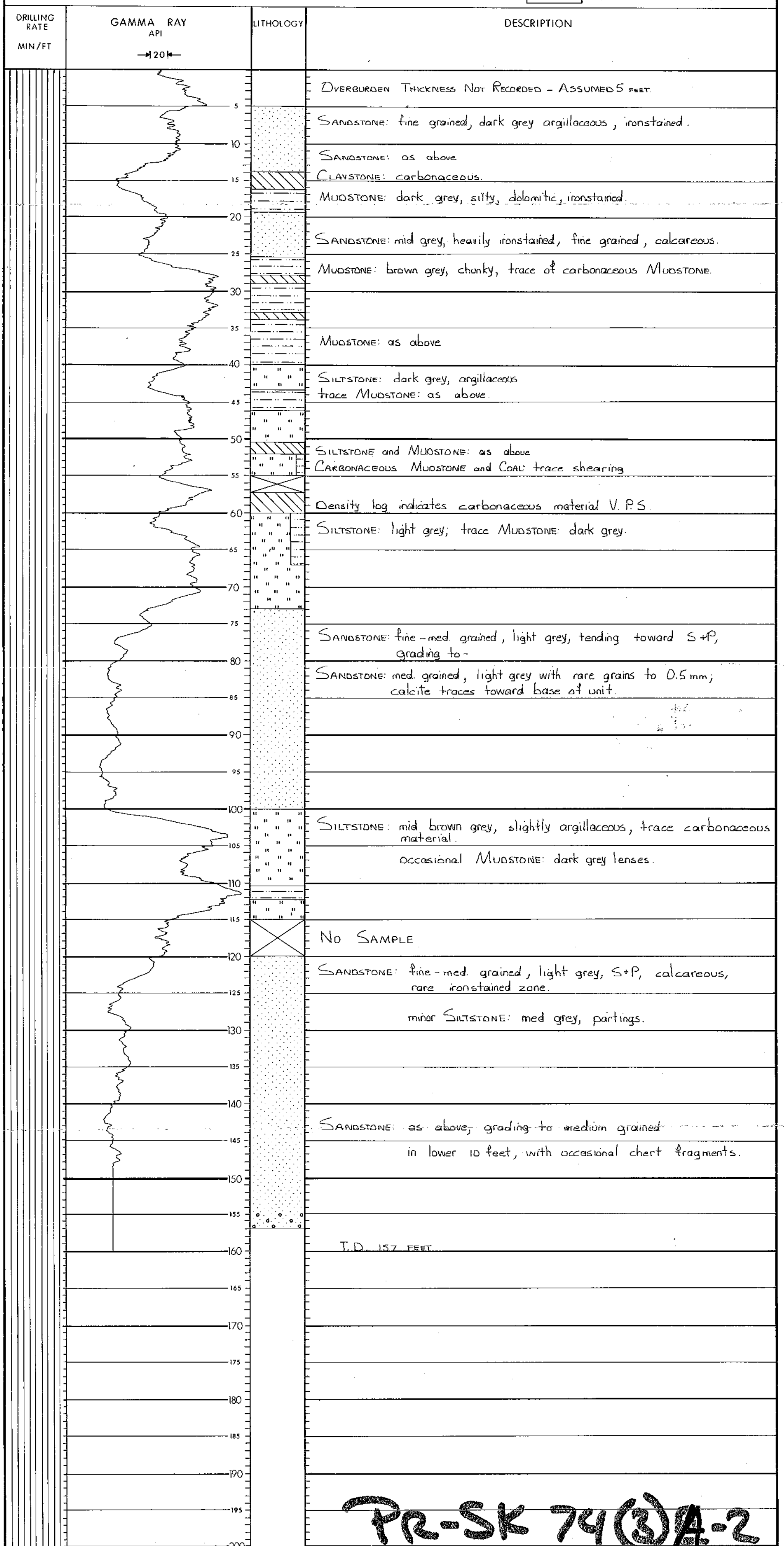
ROTARY DRILL HOLE STRIP LOG

COMPANY: COALITION MINING LTD.
 PROPERTY: SUKUNKA COAL PROJECT
 HOLE NUMBER: RDH-P
 LOCATION: 51,589.6 N 71,882.6 E
 DATE COMMENCED: NOVEMBER 22, 1974
 DATE COMPLETED: NOVEMBER 24, 1974
 DEPTH: 157 FEET
 GROUND ELEVATION: 2591 FEET
 LOGGED BY: G.R. WALLIS
 REMARKS: Strata: Lower Gething Sequence below 'B' Seam.

LEGEND



SCALE: 1 in. = 10 ft

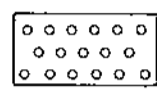
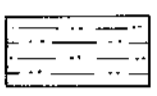

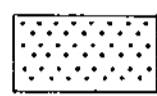

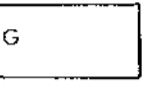
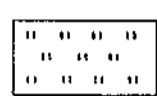

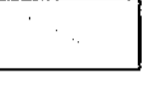
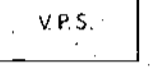


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ROTARY DRILL HOLE STRIP LOG

COMPANY: COALITION MINING LTD.
 PROPERTY: SUKUNKA COAL PROJECT
 HOLE NUMBER: RDH - S
 LOCATION: 51,241.18N 73,218.53E
 DATE COMMENCED: OCTOBER 24, 1974
 DATE COMPLETED: OCTOBER 24, 1974
 DEPTH: 200 FEET
 GROUND ELEVATION: 2950 FEET
 LOGGED BY: R.S. VOGAN & G.R. WALLIS
 REMARKS: Strata: Lower Gething Sequence. Seam 'B' between 77 ft. and 87 ft.

LEGEND

-  CONGLOMERATE
-  MUDSTONE
-  INTERBEDDED SILTSTONE, MUDSTONE ETC. (PERCENTAGE OF EACH ROCK COMPONENT INDICATED)
-  SANDSTONE
-  COAL BRIGHT (SOLID) - PERCENT INDICATED DULL (PERCENT INDICATED)
-  GLAUCONITIC
-  SILTSTONE
-  STONE COALY OR CLAYSTONE CARBONACEOUS
-  FAULT ESTABLISHED PROBABLE POSSIBLE
-  V.P.S. VERY POOR SAMPLES (ABUNDANT CAVINGS)

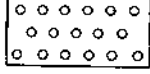
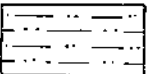
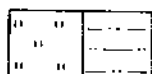
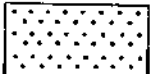





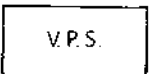
SCALE: 1 in. = 10 ft

DRILLING RATE MIN/FT	GAMMA RAY API →20←	LITHOLOGY	DESCRIPTION
			OVERBURDEN
	A SEAM		MUDSTONE: dark grey to black, chunky to sub-fossiliferous, carbonaceous to coaly.
			SANDSTONE: light grey, StP, fine to very fine grained, calcareous, argillaceous, trace carbonaceous material, oxidized in part (rust staining).
			SANDSTONE: as above except no oxidation, very fine to fine grained.
			SANDSTONE: as above with minor oxidation.
			SANDSTONE: as above with abundant oxidation.
			MUDSTONE: medium to dark grey, chunky, calcareous, micromicaceous, minor SANDSTONE. light grey, StP, very fine grained, calcareous, argillaceous, grading to SILTSTONE.
			SANDSTONE: as above, grading to SILTSTONE; minor MUDSTONE: as above.
			MUDSTONE: medium to dark grey, chunky, slightly dolomitic to dolomitic, silty to very silty, grading to SILTSTONE in very minor part.
			MUDSTONE: as above except calcareous, grading to SILTSTONE in minor part.
			MUDSTONE: medium to dark grey, chunky, silty, slightly dolomitic, slightly pyritic.
			COAL: bright & dull (60/40)
	B SEAM		MUDSTONE: as above
			COAL: bright & dull (50/50)
			MUDSTONE: dark grey, carbonaceous, micromicaceous, slightly pyritic.
			MUDSTONE: medium to dark brown grey, silty to sandy in part, chunky, scattered carbonaceous material; minor SANDSTONE: light brown grey, fine to medium grained, slightly dolomitic, argillaceous.
			MUDSTONE: as above. SANDSTONE: as above except dolomitic to slightly dolomitic, friable in parts, trace carbonaceous material, sand grains are generally subrounded and frosted; minor MUDSTONE: dark grey, carbonaceous to coaly.
			MUDSTONE: dark grey, chunky, carbonaceous.
	▲? ▲? ▲?		MUDSTONE: as above except carbonaceous to coaly, trace pyrite, scattered slickensides.
			MUDSTONE: brown grey, silty to very silty, calcareous, trace to scattered carbonaceous material.
			SANDSTONE: light to medium brown grey, very fine grained, argillaceous to very argillaceous, calcareous, grading to SILTSTONE.
			MUDSTONE: as above.
	▲ ▲ ▲		MUDSTONE: medium to dark brown grey, chunky, silty, calcareous in part, carbonaceous to coaly in part, pyritic in part, scattered slickensides.
			MUDSTONE: as above with abundant slickensides, very carbonaceous to coaly, very pyritic.
			MUDSTONE: brown grey, chunky, silty, scattered carbonaceous, to coaly material, trace slickensides and trace calcite filled fractures.
			MUDSTONE: light brown grey, hard, very arenaceous, very abundant fractures filled with dolomite and quartz.
			MUDSTONE: brown grey, silty to very silty, calcareous in part.
			SILTSTONE: brown grey, calcareous, argillaceous, grading to very silty MUDSTONE.
			SANDSTONE: brown grey, very fine to fine grained, argillaceous to very argillaceous, calcareous, trace fractures filled with dolomite.
			SANDSTONE: as above, grading to sandy MUDSTONE in part, trace carbonaceous material, abundant fractures filled with calcite.
			SANDSTONE: light brown grey, StP, fine to medium grained, calcareous, siliceous, slightly argillaceous, abundant fractures filled with calcite.
			SANDSTONE: as above. SANDSTONE: brown grey, very fine to fine grained, argillaceous, to very argillaceous, calcareous, grading to argillaceous, SILTSTONE, grading to silty MUDSTONE, scattered fractures filled with calcite.
			TOTAL DEPTH 200 Feet

ROTARY DRILL HOLE STRIP LOG

COMPANY: COALITION MINING LTD.
 PROPERTY: SUKUNKA COAL PROJECT
 HOLE NUMBER: RDH - U
 LOCATION: 51,935.95 N 72,221.39 E
 DATE COMMENCED: NOVEMBER 1, 1974
 DATE COMPLETED: NOVEMBER 2, 1974
 DEPTH: 210 FEET
 GROUND ELEVATION: 2700 FEET
 LOGGED BY: R.S. VOGAN & G.R. WALLIS
 REMARKS: Strata: Lower Gething Sequence. Faulted intersection of Seam 'B' between 74.0 ft. and 113.0 ft.

LEGEND

-  CONGLOMERATE
-  MUDSTONE
-  INTERBEDDED SILTSTONE, MUDSTONE ETC. (PERCENTAGE OF EACH ROCK COMPONENT INDICATED)
-  SANDSTONE
-  COAL BRIGHT (SOLID) - PERCENT INDICATED DULL PERCENT INDICATED
-  GLAUCONITIC
-  SILTSTONE
-  STONE COALY OR CLAYSTONE CARBONACEOUS
-  FAULT ESTABLISHED PROBABLE POSSIBLE
-  V.P.S. VERY POOR SAMPLES (ABUNDANT CAVINGS)

SCALE: 1 in. = 10 ft.

DRILLING RATE MIN/FT	GAMMA RAY API ←20←	LITHOLOGY	DESCRIPTION
			OVERBURDEN
			SANDSTONE: light grey. S+P. fine to very fine grained, calcareous, argillaceous, minor oxidation (rust staining)
			MUDSTONE: medium to dark grey, chunky, silty, calcareous, micromicaceous.
			SANDSTONE: as above
			SANDSTONE: as above except very fine to fine grained, grading to SILTSTONE.
			MUDSTONE: as above except silty to very silty; minor SANDSTONE: as above grading to SILTSTONE.
			MUDSTONE: medium to dark grey, chunky, calcareous in part, silty, micromicaceous, trace pyrite.
			MUDSTONE: as above except slightly dolomitic.
			COAL: bright/dull (30/70). dull coal mostly blocky fracture occas. conchoidal fractures.
			MUDSTONE: as above
			MUDSTONE: medium to dark grey, silty, micromicaceous.
			COAL: as above
			COAL: bright/dull (60/40)
			MUDSTONE: carbonaceous, trace dark grey mudstone, minor calcite.
			MUDSTONE: dark grey, silty, containing coaly flecks, grading in part to SILTSTONE, dark grey, coaly traces.
			MUDSTONE: as above
			MUDSTONE: carbonaceous with coaly blebs.
			COAL: dull and bright
			MUDSTONE: carbonaceous with coaly blebs.
			COAL: dull and bright
			MUDSTONE: dark grey, silty, calcareous, coaly blebs.
			SANDSTONE: fine grained, light grey, micaceous, silty, grading to SILTSTONE (V.P.S.)
			SILTSTONE: dark grey, micromicaceous, grading to MUDSTONE: dark grey containing coaly blebs. COAL: dull and bright, sheared.
			MUDSTONE: carbonaceous, pyritic traces, coaly blebs.
			COAL: dull and bright.
			MUDSTONE: brown grey, silty, calcareous, some carbonaceous material.
			MUDSTONE: as above except silty to very silty.
			MUDSTONE: as above except silty, minor slickensides and very fine fractures filled with calcite.
			MUDSTONE: medium to dark brown grey, very carbonaceous to coaly, pyritic in part, scattered to abundant slickensides.
			MUDSTONE: as above except not as carbonaceous to coaly, minor slickensides.
			NO SAMPLE
			MUDSTONE: brown grey, silty, calcareous, scattered carbonaceous material, scattered slickensides.
			MUDSTONE: dark brown grey, very carbonaceous to coaly, abundant slickensides.
			MUDSTONE: brown grey, slightly dolomitic, silty, minor carbonaceous to coaly material.
			MUDSTONE: as above except scattered carbonaceous to coaly material, minor slickensides.
			MUDSTONE: brown grey, silty to very silty, calcareous.
			SANDSTONE: light to medium brown grey, S+P, very fine to fine grained, slightly to very argillaceous, calcareous, slightly siliceous, trace carbonaceous material.
			MUDSTONE: brown grey, silty to very silty, calcareous; scattered fractures filled with calcite.
			MUDSTONE: as above containing coaly lensae (INTER. ONLY: NO SAMPLE)
			COAL: dull and bright, trace sheared, minor amount extremely friable (?weathered)
			MUDSTONE: carbonaceous.
			COAL: as above
			MUDSTONE: dark grey, silty, occasional calcite filled joints.
			MUDSTONE: mid to dark grey, calcareous, containing coaly partings, trace calcite joint filling. Grading to-
			SILTSTONE: mid brown grey, calcareous.
			T.D. 210 FEET

ROKE

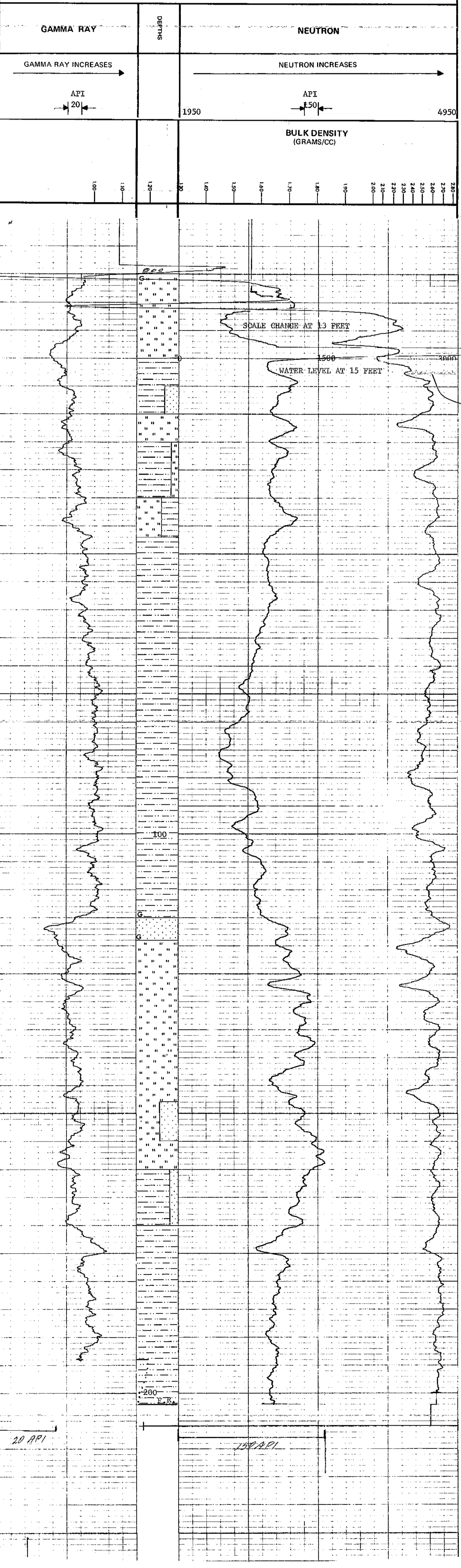
GAMMA RAY NEUTRON LOG
 OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO. _____ COMPANY COALITION MINING LIMITED
 LSD SEC _____ WELL RDH-A
 TWP _____ RGE _____ M
 LOCATION _____
 FIELD SUKUNKA
 PROVINCE BRITISH COLUMBIA
 Other Services: _____
 Permanent Datum _____ GROUND LEVEL Elev. _____
 Log Measured from _____ GROUND LEVEL Ft. Above Perm. Datum
 Well Depths Measured from _____ GROUND LEVEL G.L. _____
 Run No. ONE
 Date 17 OCTOBER 1974
 First Reading 202
 Last Reading 000
 Footage Logged 202
 Depth Reached 203
 Depth Driller 203
 Casing Roke _____
 Casing Driller _____
 Fluid Type AIR/WATER
 Liquid Level 15
 Min. Diam. 4-3/4
 Rm @ 9F _____
 Operating Time 3 HOURS
 Truck No. 35

EQUIPMENT DATA	
GAMMA RAY	NEUTRON
RUN NO. ONE	RUN NO. ONE
TOOL MODEL NO.	LOG TYPE NEUTRON/NEUTRON
DIAMETER 1 11/16	TOOL MODEL NO.
DETECTOR MODEL NO.	DIAMETER 1 11/16
TYPE GEIGER	DETECTOR MODEL NO.
LENGTH 18 INCH	TYPE PROPORTIONAL
DISTANCE TO N. SOURCE 8.55 FT.	LENGTH 6 INCH
	SOURCE MODEL NO. MRC-N-SS-W
GENERAL	SERIAL NO.
HOIST TRUCK NO.	SPACING 17 INCH
INSTRUMENT TRUCK NO. 35	TYPE AmBe
TOOL SERIAL NO. 177	STRENGTH 3 CURIES

LOGGING DATA											
RUN NO.	GENERAL DEPTHS		SPEED FT/MIN	T.C. SEC.	GAMMA RAY			T.C. SEC.	NEUTRON		
	FROM	TO			SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.		SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	000	202	12	3	500	OL	20	3	1000	2.6	44.23
	000	15	12	3	1000	13L	150 - NEUTRON				
	15	202	12	3	1000	OL	150				

REMARKS: DENSITY TOOL SERIAL NO 128 SOURCE #50



20 API
 150 API

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Recorded By PETERSON Witnessed By WALLIS

ROKE

GAMMA RAY NEUTRON LOG
DENSITOG
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD	WELL	RHM-3
SEC	LOCATION	
TWP	FIELD	SUKKINKA
RGE	PROVINCE	BRITISH COLUMBIA
M	Other Services:	NIL
Permanent Datum	GROUND LEVEL	Elev. _____
Log Measured from	GROUND LEVEL	Ft. Above Perm. Datum _____
Well Depths Measured from	GROUND LEVEL	G.L. _____
Run No.	ONE	
Date	16 OCTOBER 1974	
First Reading	199	
Last Reading	000	
Footage Logged	199	
Depth Reached	200	
Depth Driller	200	
Casing Rock		
Casing Driller		
Fluid Type	ATR/WATER	
Liquid Level	10	
Min. Diam.	4-3/4	
Rm @ 0'		
Operating Time	3 HOURS	
Truck No.	35	

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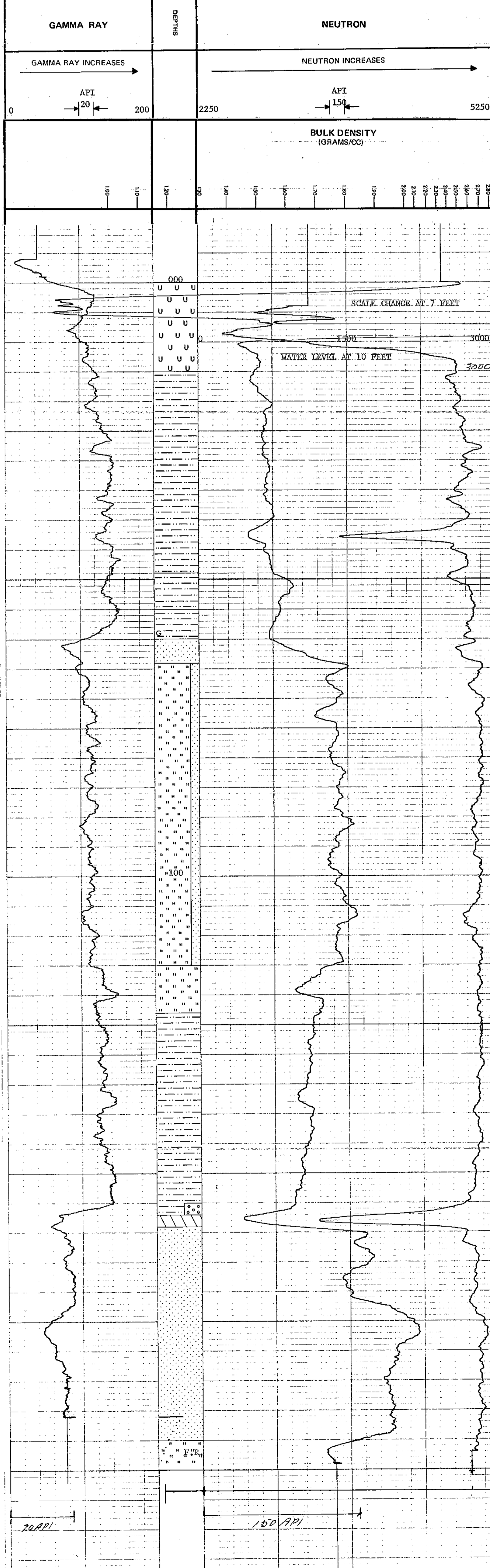
EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 1/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 1/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL		SERIAL NO.	
HOIST TRUCK NO.		SPACING	17 INCH
INSTRUMENT TRUCK NO.	35	TYPE	AmBe
TOOL SERIAL NO.	177	STRENGTH	3 CURIES

LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				NEUTRON				
	FROM	TO	SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	000	199	12	3	500	OL	20	3	1000	2.6R	44.23
	000	7		3	1000	15L	150 - NEUTRON				
	7	199		3	1000	OL	150				

REMARKS: DENSITY TOOL SERIAL NO 128 SOURCE #50



ROKE

GAMMA RAY NEUTRON LOG
DENSITY LOG

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO. COMPANY COALITION MINING LIMITED

WELL RHM-D

LOCATION

FIELD SEKONKA

PROVINCE BRITISH COLUMBIA

Permanent Datum GROUND LEVEL

Log Measured from GROUND LEVEL

Well Depths Measured from GROUND LEVEL

Run No. ONE

Date 15 OCTOBER 1974

First Reading 197

Last Reading 000

Footage Logged 197

Depth Reached 198

Casing Roke 201

Operating Time 3 HOURS

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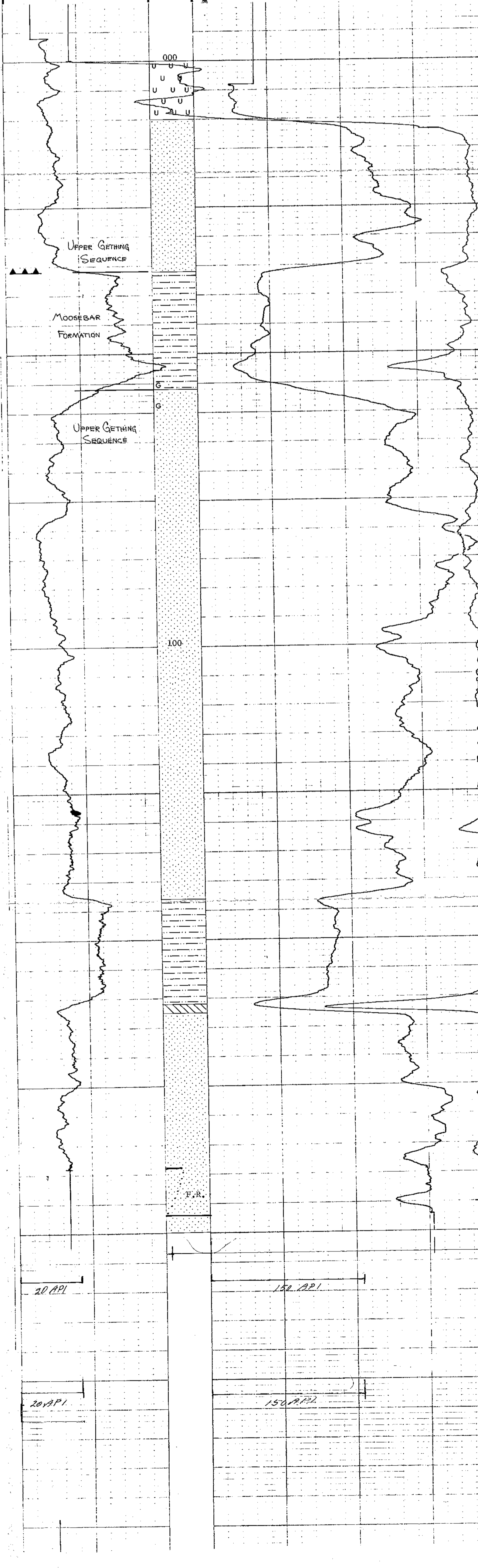
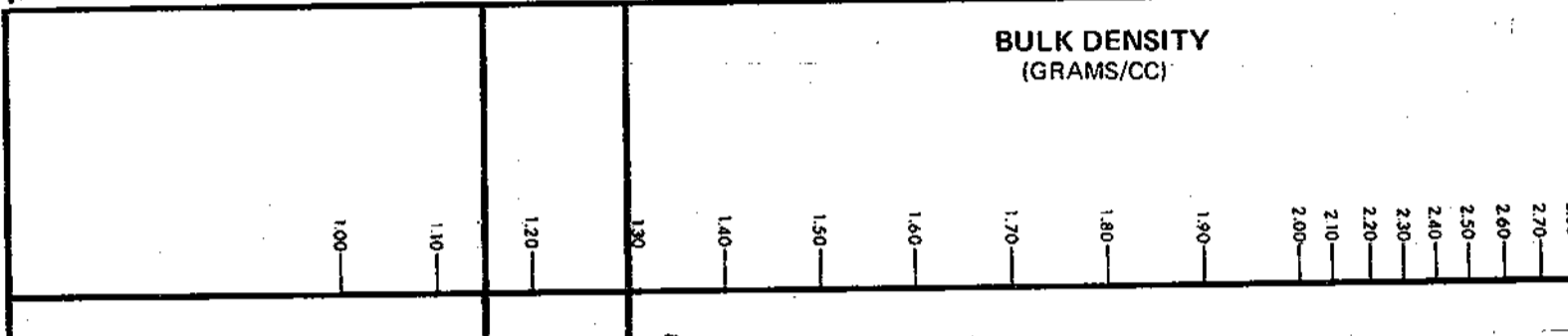
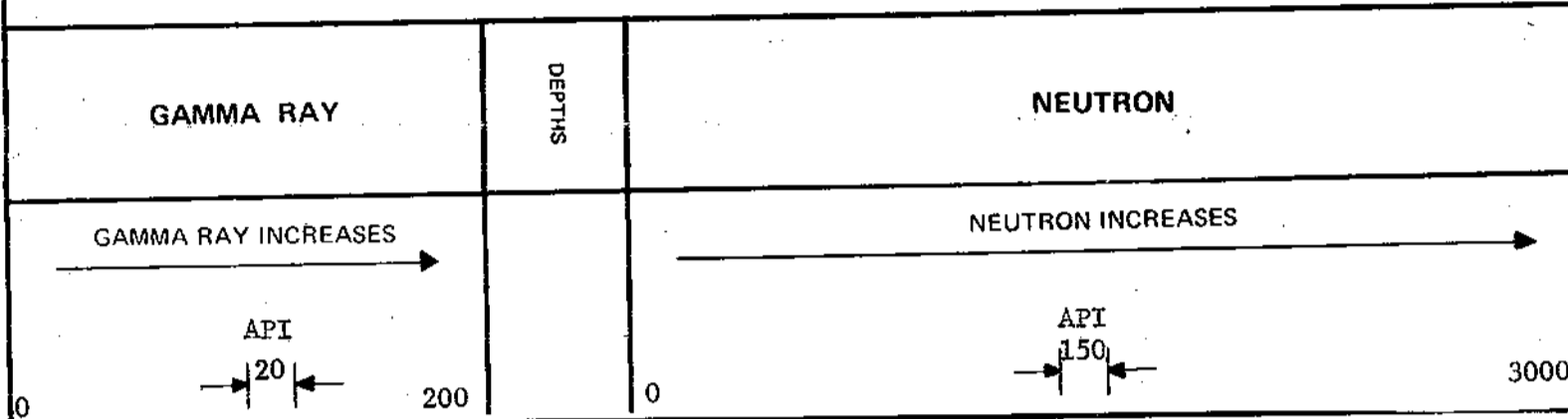
EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	
HOIST TRUCK NO.		SPACING	17 INCH
INSTRUMENT TRUCK NO.	35	TYPE	AmBe
TOOL SERIAL NO.	177	STRENGTH	3 CURIES

LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				NEUTRON				
	FROM	TO	SPEED FT/MIN	T.C. SEC	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	000	197	12	3	500	OL	20	3	1000	2.6R	44.23
		NEUTRON-		3	1000	OL	150				

REMARKS DENSITY TOOL SERIAL NO 128 SOURCE #50



Recorded By: PETERSON

Witnessed By: MATIAS

ROKE

GAMMA RAY NEUTRON LOG
DENSITLOG

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING COMPANY
LSD	WELL	RDE-F
SEC	LOCATION	SUKUNKA
TWP	FIELD	SUKUNKA
RGE	PROVINCE	BRITISH COLUMBIA
M	Other Services:	NTL
Permanent Datum	GROUND LEVEL	Elev.
Log Measured from	GROUND LEVEL	Ft. Above Perm. Datum
Well Depths Measured from	GROUND LEVEL	
Run No.	ONE	
Date	8 OCTOBER 1974	
First Reading	175	
Last Reading	000	
Footage Logged	175	
Depth Reached	176	
Depth Driller		
Casing Roke		
Casing Driller		
Fluid Type	AIR/WATER	
Liquid Level	67	
Min. Diam.	4-3/4	
Rm @ 0F		
Operating Time	3 HOURS	
Truck No.	35	

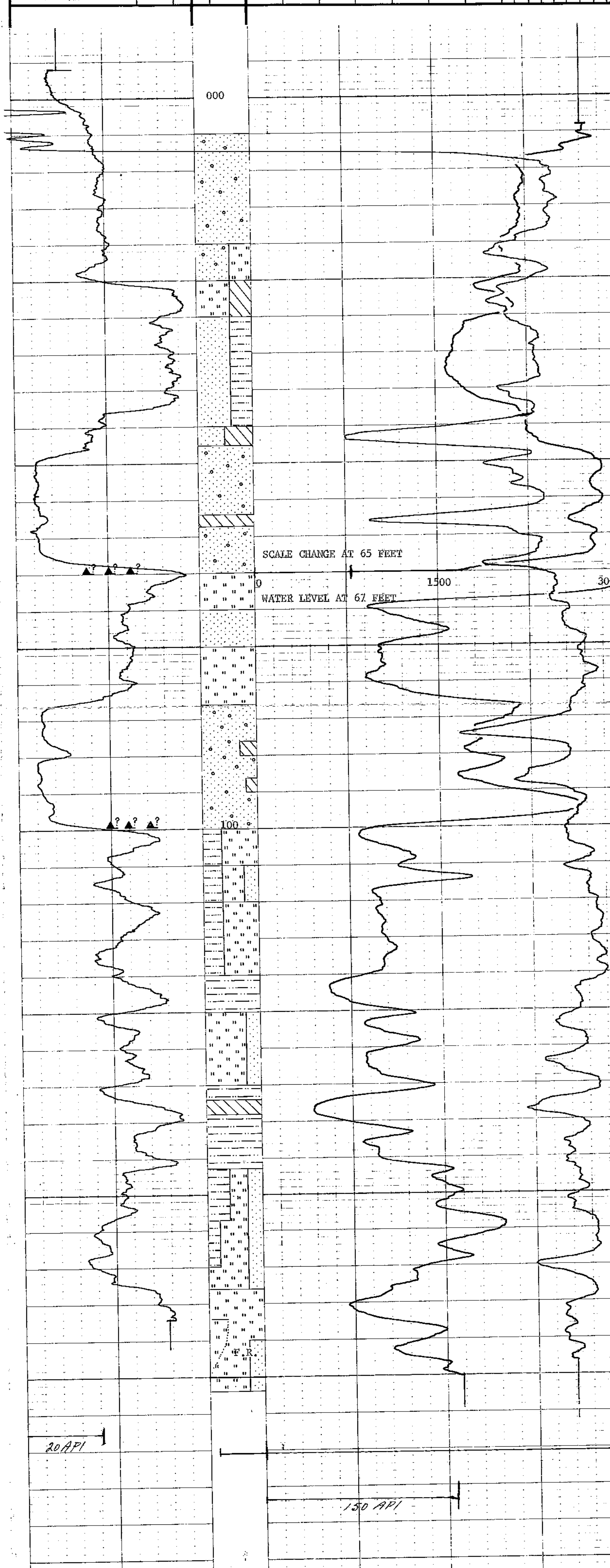
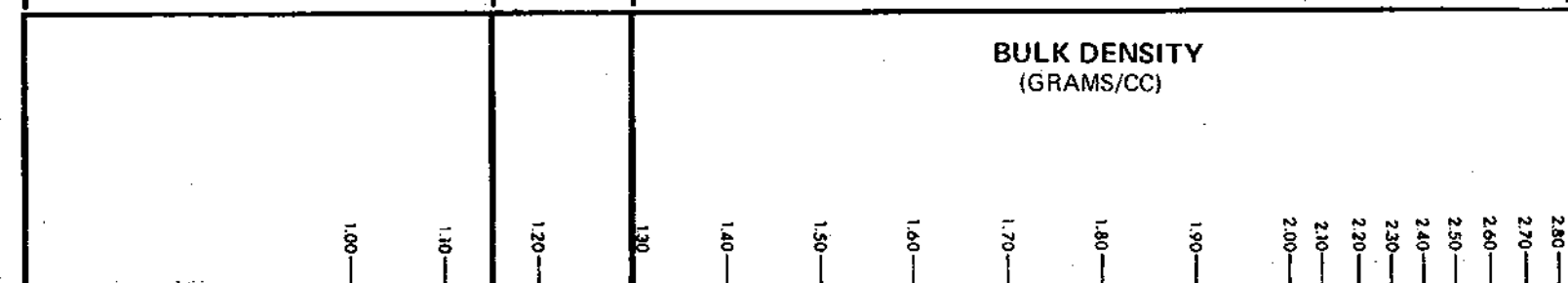
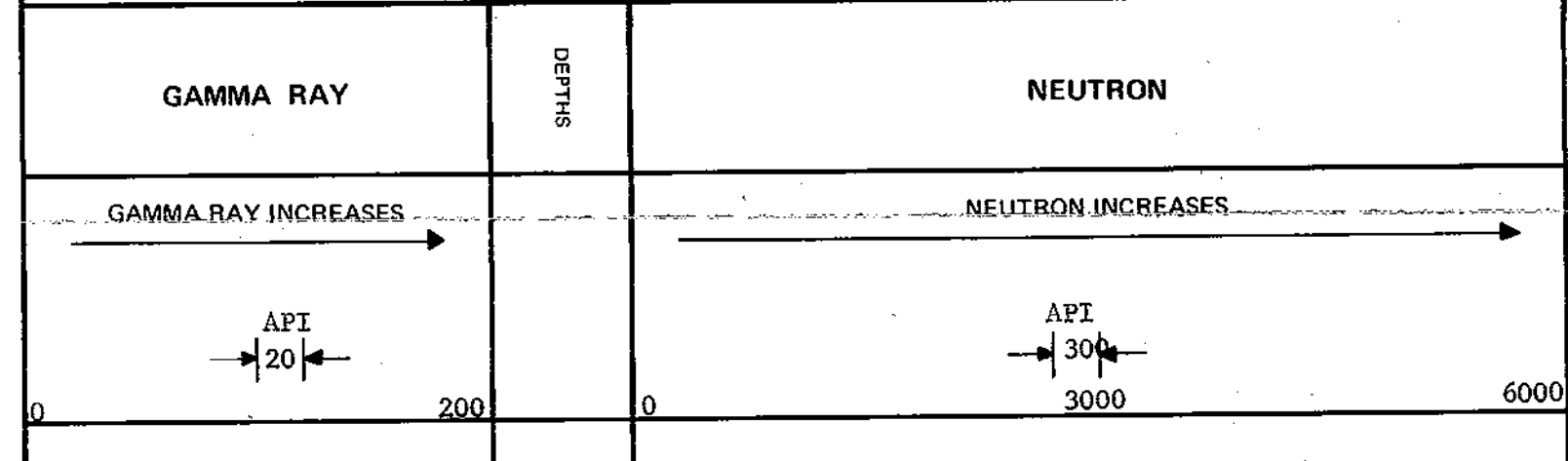
EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	
HOIST TRUCK NO.	35	SPACING	17 INCH
INSTRUMENT TRUCK NO.		TYPE	AmBe
TOOL SERIAL NO.	177	STRENGTH	3 CURIES

LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				NEUTRON				
	FROM	TO	SPEED	T.C.	SENS	ZERO	API G. R. UNITS	T. C.	SENS	ZERO	API N. UNITS
	DEPTHS		FT/MIN	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.
1	000	175	12	3	500	OL	20	3	1000	2.6R	44.23
	000	65		3	1000	OL	300	NEUTRON			
	65	175		3	1000	OL	150				

REMARKS: DENSITY TOOL SERIAL NO A-128
GRN TOOL SERIAL NO 177 SOURCE #50



Recorded By: PETERSON
Witnessed By: WALLIS

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ROKE

GAMMA RAY NEUTRON LOG
DENSISLOG

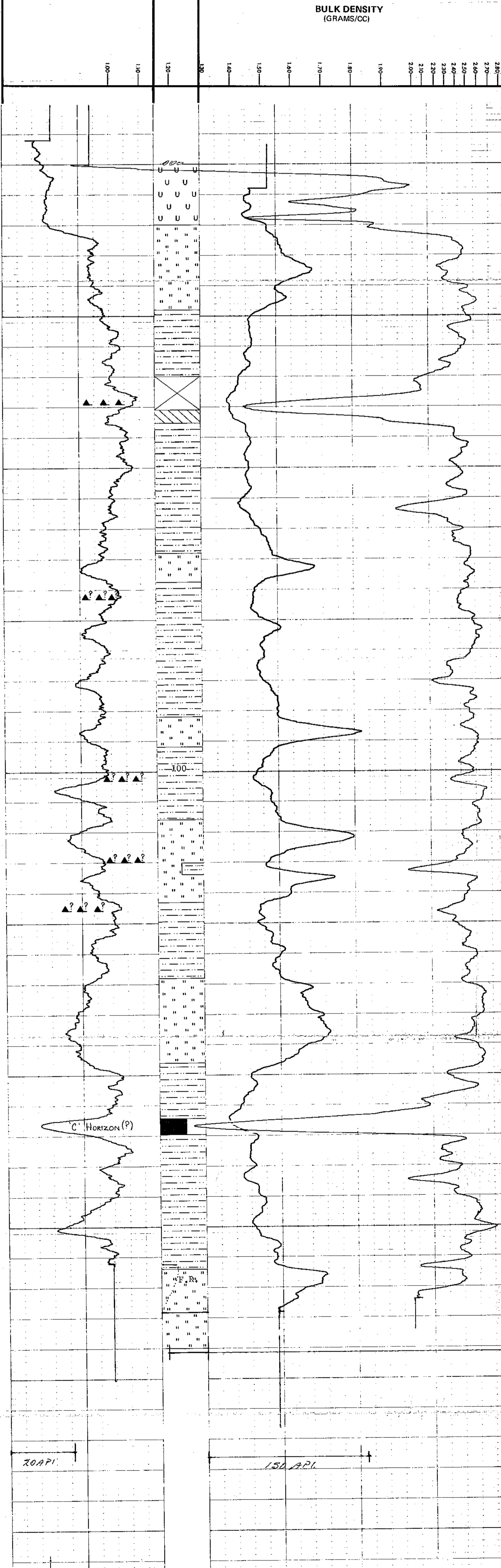
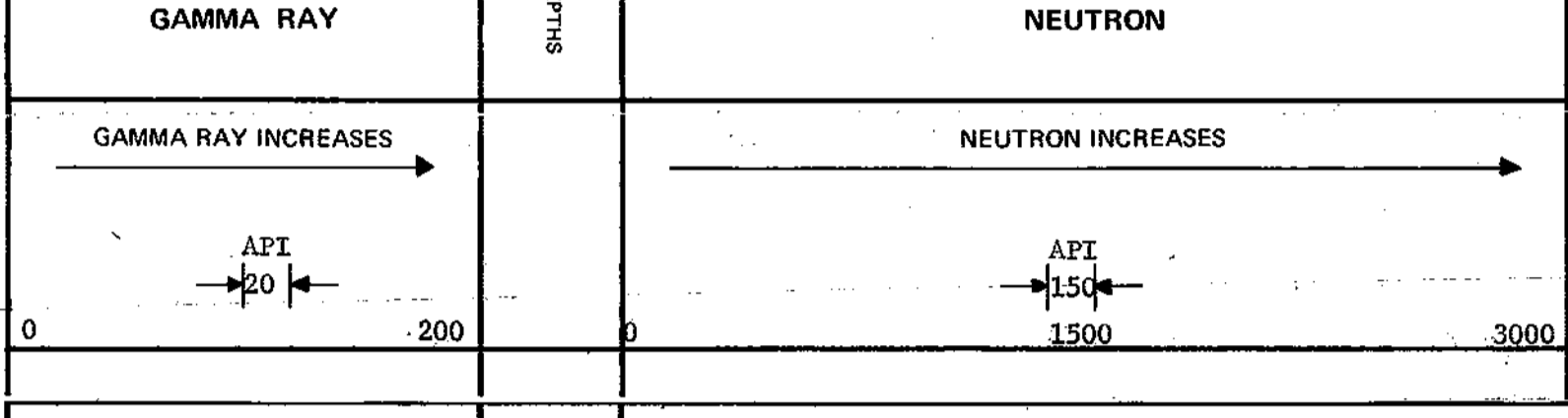
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD SEC TWP RGE	WELL	EDH-G
W	LOCATION	
M	FIELD	SUKUNKA
	PROVINCE	BRITISH COLUMBIA
	Other Services:	NIL
Permanent Datum	GROUND LEVEL	Elev. _____
Log Measured from	GROUND LEVEL	Ft. Above Perm. Datum _____
Well Depths Measured from	GROUND LEVEL	CSG _____
		G.L. _____
Run No.	ONE	
Date	8 OCTOBER 1974	
First Reading	189	
Last Reading	000	
Footage Logged	189	
Depth Reached	190	
Depth Driller	195	
Casing Hole		
Casing Driller		
Fluid Type	WATER	
Liquid Level	0	
Min. Diam.	4-3/4	
Rm @ OF		
Operating Time	3 HOURS	
Truck No.	35	
Recorded By	PETERSON	Witnessed By
		WALLIS

EQUIPMENT DATA			
GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	
HOIST TRUCK NO.	35	SPACING	17 INCH
INSTRUMENT TRUCK NO.		TYPE	AmBe
TOOL SERIAL NO.	177	STRENGTH	3 CURIES

LOGGING DATA											
GENERAL			GAMMA RAY				NEUTRON				
RUN NO.	DEPTHS FROM	TO	SPEED FT/MIN	T.C. SEC	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	000	189	12	3	500	OL	20	3	1000	2.6R	44.23
	NEUTRON			3	1000	OL	150				

REMARKS: DENSITY TOOL SERIAL NO A-128
GRN TOOL SERIAL NO #177 SOURCE #50



ROKE

RESISTANCE LOG

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO. COMPANY COALITION MINING LIMITED

LSD SEC TWP RGE M WELL WATER WELL

LOCATION

FIELD SUKUNKA

PROVINCE BRITISH COLUMBIA

Permanent Datum GROUND LEVEL Elev. _____

Log Measured from GROUND LEVEL Ft. Above Perm. Datum _____

Well Depths Measured from GROUND LEVEL _____

Other Services: NTL

K.B. _____
CSG _____
G.L. _____

Run No. ONE

Date 28 NOVEMBER 1974

First Reading 219

Last Reading 150

Footage Logged 61

Depth Reached 219

Depth Driller 220

Casing Roke 150

Casing Driller 150

Fluid Type WATER

Liquid Level 50

Min. Diam. 4-1/2

Rm. @ OF

Operating Time 1 HOUR

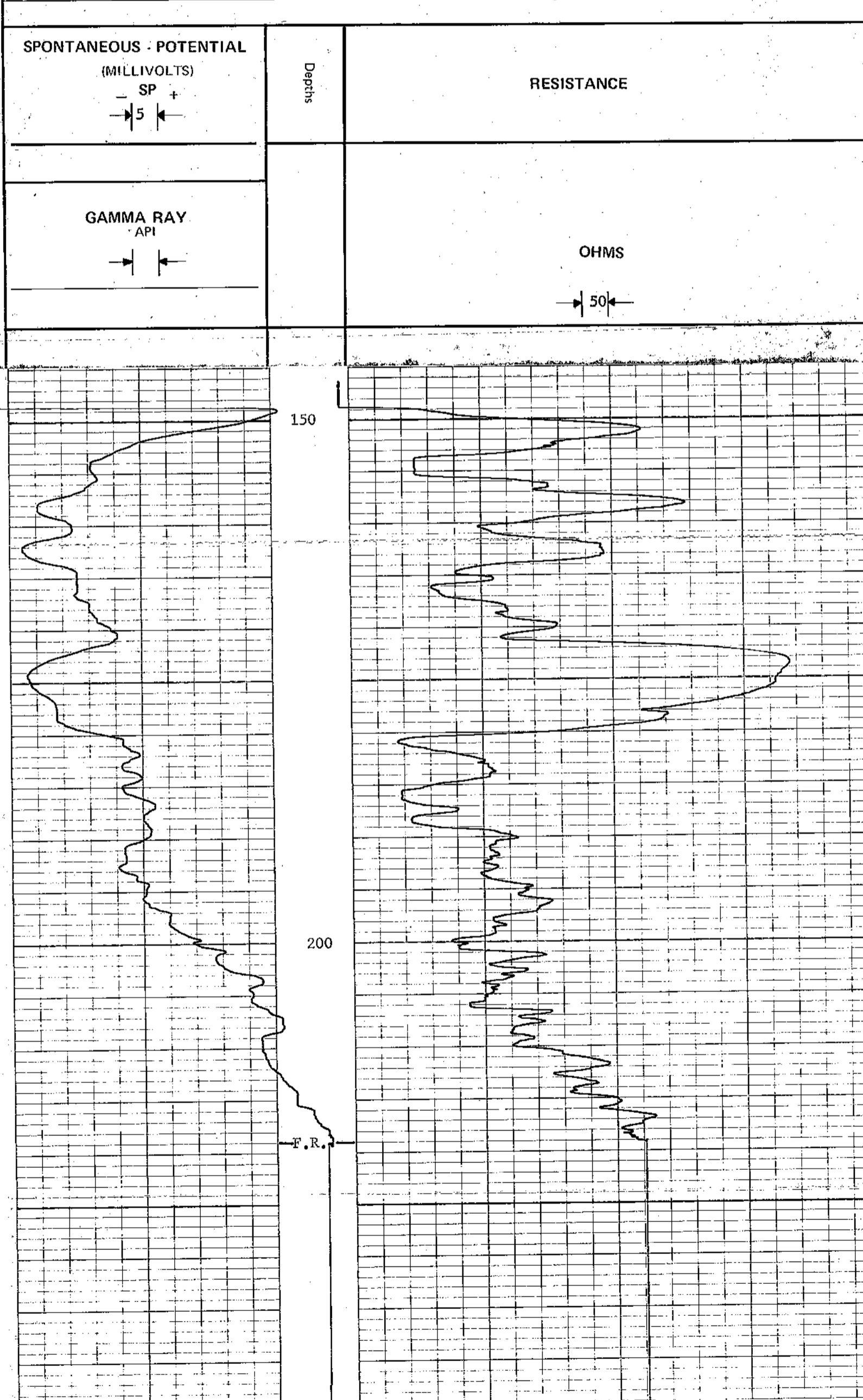
Truck No. 35

Recorded By PETERSON

Witnessed By SHELDON

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Remarks



ROKE

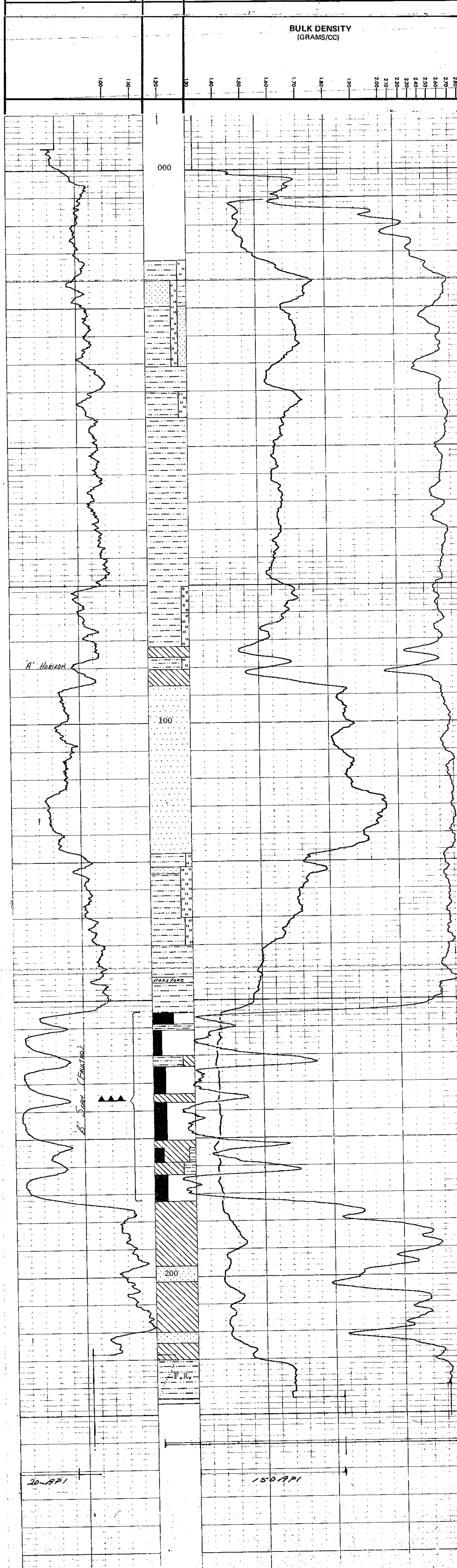
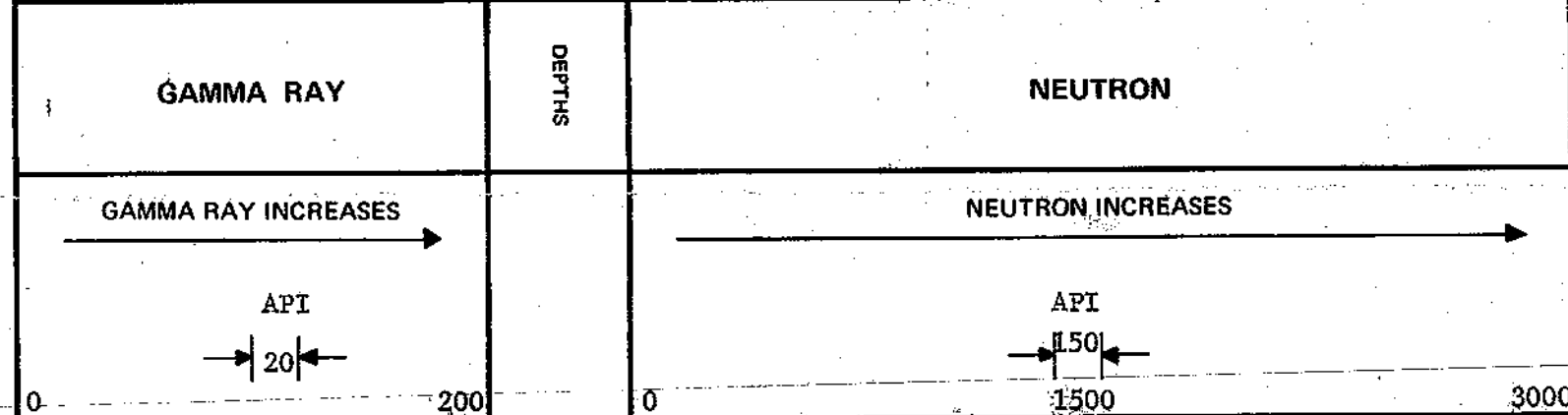
GAMMA RAY NEUTRON LOG
DENS/LOG
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD SEC TWP RGE	WELL	RDE-1
W	LOCATION	
M	FIELD	SISKIYOU
	PROVINCE	BRITISH COLUMBIA
Permanent Datum	GROUND LEVEL	Elv. _____
Log Measured from	GROUND LEVEL	Fl. Above Perm. Datum
Well Depth Measured from	GROUND LEVEL	G.L. _____
	K. B.	
	CSG	
	G.L.	
	Other Services:	NIL
Run No.	ONE	
Date	4 OCTOBER 1974	
First Reading	222	
Last Reading	000	
Footage Logged	222	
Depth Reached	223	
Depth Driller		
Casing Driller		
Fluid Type	AIR/WATER	
Liquid Level	5	
Min. Diam.	4-3/4	
Rm @ OF		
Operating Time	3 HOURS	
Truck No.	35	

EQUIPMENT DATA			
GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 1/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 1/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-NSS-W
		SERIAL NO.	
HOIST TRUCK NO.	35	SPACING	17 INCH
INSTRUMENT TRUCK NO.		TYPE	AmBe
TOOL SERIAL NO.	177	STRENGTH	3 CURIES

LOGGING DATA											
GENERAL			GAMMA RAY				NEUTRON				
RUN NO.	DEPTHS		SPEED	T.C.	SENS	ZERO	API G. R. UNITS	T. C.	SENS	ZERO	API N. UNITS
	FROM	TO	FT/MIN	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.
1	000	222	12	3	500	OL	20	3	1000	2.6R	46.23

REMARKS: DENSITY TOOL SERIAL NO A-128 SOURCE #50



Recorded By: PETERSON Witnessed By: KALLIS

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ROKE

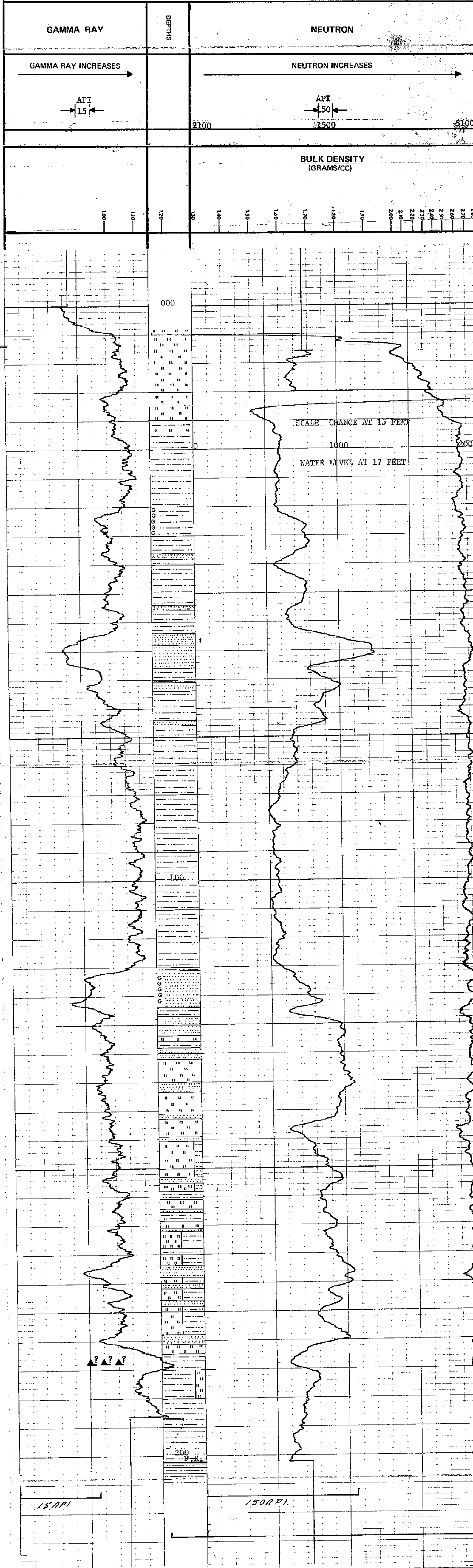
GAMMA RAY NEUTRON LOG
DENSILOG
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING-LIMITED
LSD SEC.	WELL	RDE-K
TMP	LOCATION	
RGE	FIELD	SURONKA
W	PROVINCE	BRITISH COLUMBIA
	Other Services:	NIL
Permanent Datum	GROUND LEVEL	Elev. _____
Log Measured from	KEITY BUSHING	A. Ft. Above Perm. Datum
Well Depths Measured from	KEITY BUSHING	G.L. _____
Run No.	ONE	
Date	30 SEPTEMBER 1972	
First Reading	201	
East Reading	000	
Footage Logged	201	
Depth Reached	202	
Depth Driller	204	
Casing Role		
Casing Driller		
Fluid Type	AIR/WATER	
Liquid Level	17	
Min. Diam.	4-3/4	
Rm @ 0'		
Operating Time	3 HOURS	
Truck No.	35	

EQUIPMENT DATA	
GAMMA RAY	NEUTRON
RUN NO. ONE	RUN NO. ONE
TOOL MODEL NO. 1 11/16	LOG TYPE NEUTRON/NEUTRON
DIAMETER 1 11/16	TOOL MODEL NO. 1 11/16
DETECTOR MODEL NO. GEIGER	DIAMETER 1 11/16
TYPE GEIGER	DETECTOR MODEL NO. PROPORTIONAL
LENGTH 18 INCH	TYPE PROPORTIONAL
DISTANCE TO N. SOURCE 8.55 FT.	LENGTH 6 INCH
	SOURCE MODEL NO. MRC-N-SS-W
GENERAL	SERIAL NO.
HOIST TRUCK NO. 35	SPACING 17 INCH
INSTRUMENT TRUCK NO.	TYPE AmBe
TOOL SERIAL NO. 177	STRENGTH 3 CURIES

LOGGING DATA										
GENERAL	GAMMA RAY	NEUTRON								
RUN NO.	DEPTHS	SPEED	T.C.	SENS	ZERO	API G. R. UNITS	T. C.	SENS	ZERO	API N. UNITS
1	FROM TO	FT/MIN	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.
1	000 15	12	3	500	OL	15	3	1000	2.6R	44.23
1	15 201	3	3	1000	OL	150				
	15 201	3	3	1000	OL	100 NEUTRON				

REMARKS: DENSITY TOOL SERIAL NO A-128 SOURCE #50



Recorded By: PETERSON
Witnessed By: WALLIS

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ROKE

GAMMA RAY NEUTRON LOG
DENSITY LOG

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO. _____ COMPANY COALITION MINING LIMITED

WELL EDR-1

LOCATION _____

FIELD SURINNA

PROVINCE BRITISH COLUMBIA

Permanent Datum _____ Elevation _____

Log Measured from _____ GROUND LEVEL

Well Depth Measured from _____ GROUND LEVEL

Run No. _____ ONE

Date 1 OCTOBER 1974

First Reading 254

Last Reading 000

Footage Logged 254

Depth Reached 255

Depth Driller 260

Casing Driller _____

Fluid Type ALK/NEUTR

Liquid Level 43

Min. Diam. 4-3/4

Rm @ 0F _____

Operating Time 3 HOURS

Truck No. _____

Recorded By PETERSON

Witnessed By WALTIS

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EQUIPMENT DATA

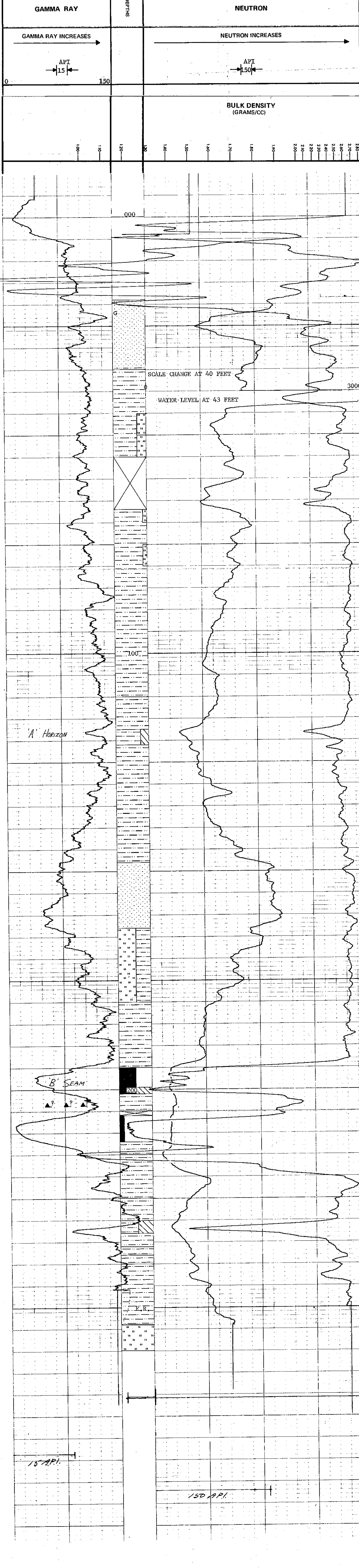
GAMMA RAY				NEUTRON			
RUN NO.	ONE			RUN NO.	ONE		
TOOL MODEL NO.				LOG TYPE	NEUTRON/NEUTRON		
DIAMETER	1 11/16			TOOL MODEL NO.			
DETECTOR MODEL NO.				DIAMETER	1 11/16		
TYPE	GEIGER			DETECTOR MODEL NO.			
LENGTH	18 INCH			TYPE	PROPORTIONAL		
DISTANCE TO N. SOURCE	8.55 FT.			LENGTH	6 INCH		
				SOURCE MODEL NO.	MRC-N-SS-W		
				SERIAL NO.			
HOIST TRUCK NO.	35			SPACING	17 INCH		
INSTRUMENT TRUCK NO.				TYPE	AmBe		
TOOL SERIAL NO.	177			STRENGTH	3 CURIES		

LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				NEUTRON				
	FROM	TO	SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	000	254	12	3	500	OT.	15	3	1000	2.6R	44.23

REMARKS NOTE: DRILLERS DEPTH MEASURED FROM GROUND LEVEL

DENSITY TOOL SERIAL NO A-128, GRN TOOL SERIAL NO #177 SOURCE #50



ROKE

GAMMA RAY NEUTRON LOG
DENSITY LOG

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO. COMPANY COALITION MINING LIMITED

LSD SEC TWP RDH-M

RGE M LOCATION

W. FIELD SUKUNKA

PROVINCE BRITISH COLUMBIA

Permanent Datum GROUND LEVEL Elev. _____

Log Measured from GROUND LEVEL Fl. Above Perm. Datum _____

Well Depth Measured from GROUND LEVEL G.L. _____

Run. No. ONE

Date 3 OCTOBER 1974

First Reading 194

Last Reading 000

Footage Logged 194

Depth Reached 195

Depth Driller 195

Casing Roke _____

Casing Driller _____

Fluid Type WATER

Liquid Level 0

Min. Diam. 4-3/4

Rm @ 9f _____

Operating Time 3 HOURS

Truck No. 35

Recorded By PETERSON Witnessed By WALLIS

652

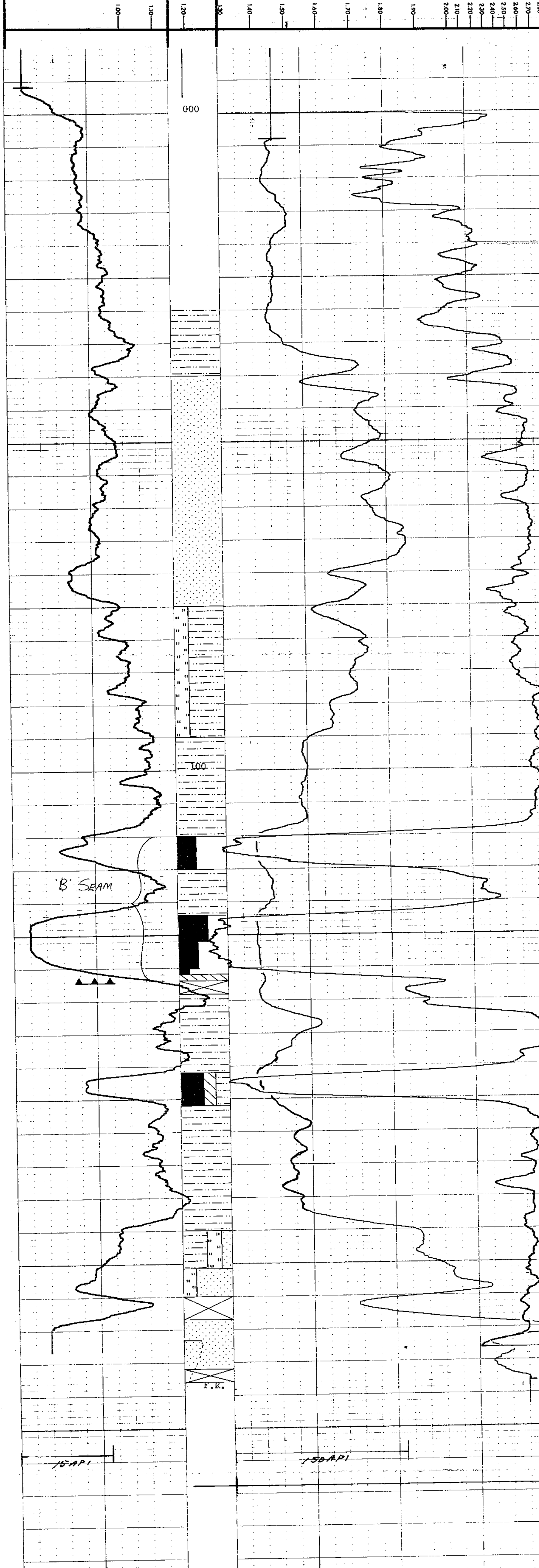
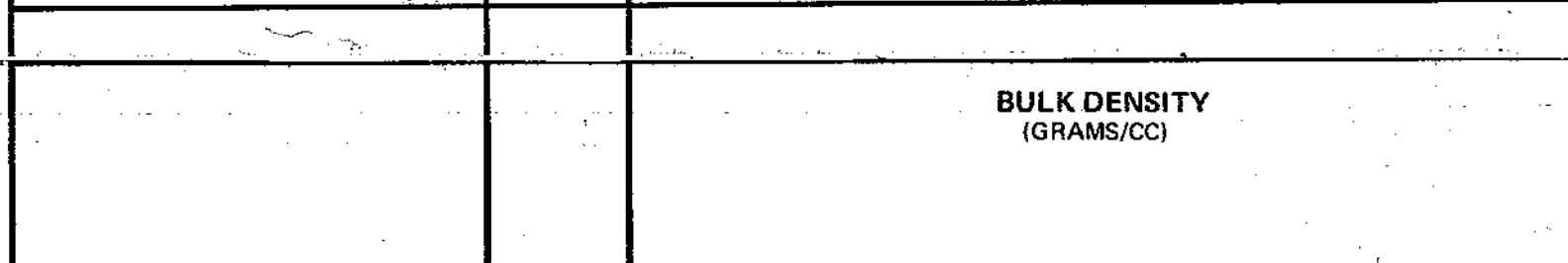
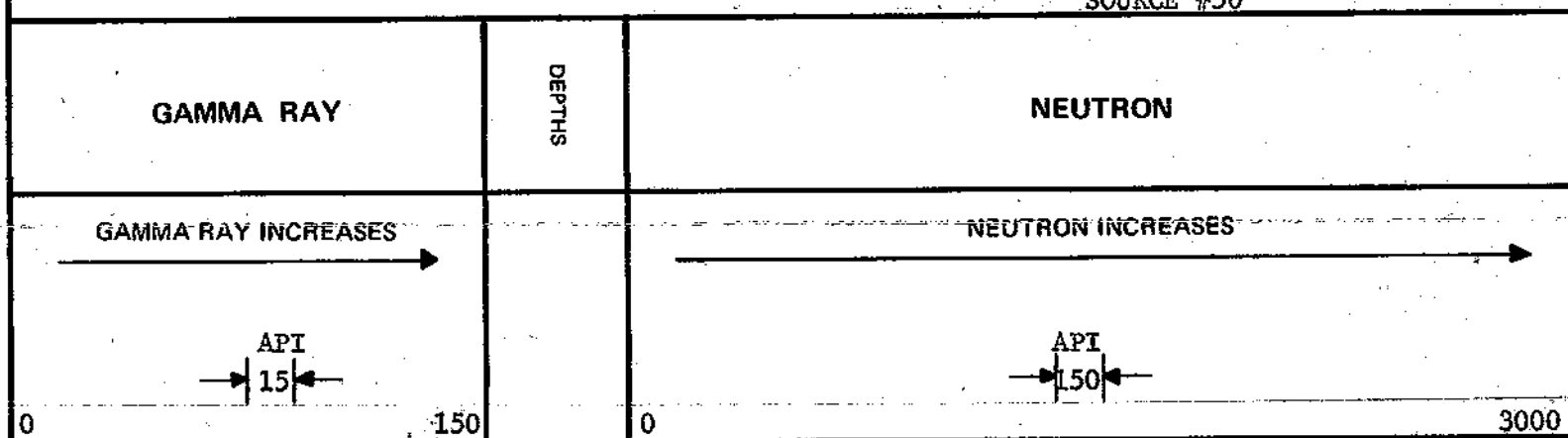
EQUIPMENT DATA

GAMMA RAY				NEUTRON			
RUN NO.	ONE			RUN NO.	ONE		
TOOL MODEL NO.				LOG TYPE	NEUTRON/NEUTRON		
DIAMETER	1 11/16			TOOL MODEL NO.			
DETECTOR MODEL NO.				DIAMETER	1 11/16		
TYPE	GEIGER			DETECTOR MODEL NO.			
LENGTH	18 INCH			TYPE	PROPORTIONAL		
DISTANCE TO N. SOURCE	8.55 FT.			LENGTH	6 INCH		
				SOURCE MODEL NO.	MRC-N-SS-W		
				SERIAL NO.			
HOIST TRUCK NO.	35			SPACING	17 INCH		
INSTRUMENT TRUCK NO.				TYPE	AmBe		
TOOL SERIAL NO.	177			STRENGTH	3 CURIES		

LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				NEUTRON				
	FROM	TO	SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	000	194	12	3	500	OL	15	3	1000	2.6R	44.23
		NEUTRON		3	1000	OL	150				

REMARKS DENSITY TOOL SERIAL NO A-128 SOURCE #50



150 API

150 API

ROKE

GAMMA RAY NEUTRON LOG
 OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO. COMPANY COALITION MINING LIMITED

WELL RDH-N

LOCATION

FIELD SUKONKA

PROVINCE BRITISH COLUMBIA

Permanent Datum GROUND LEVEL

Log Measured from GROUND LEVEL

Well Depths Measured from GROUND LEVEL

Run No. ONE

Date 9 OCTOBER 1974

First Reading 202

Last Reading 000

Footage Logged 202

Depth Reached 203

Depth Driller

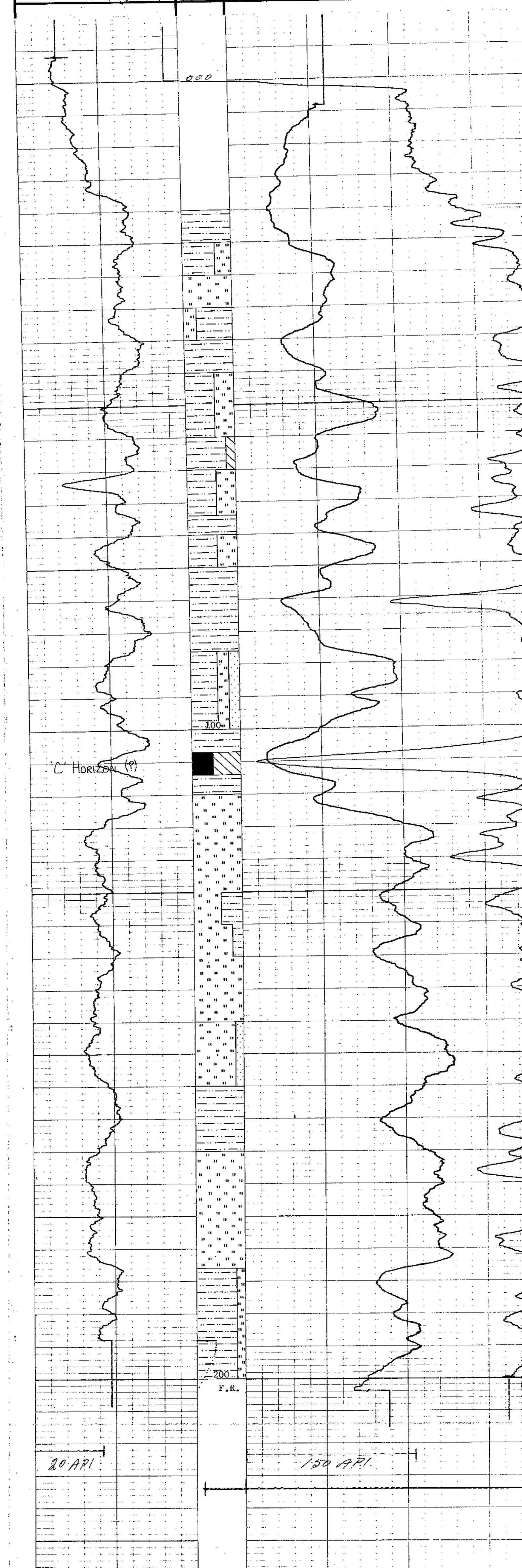
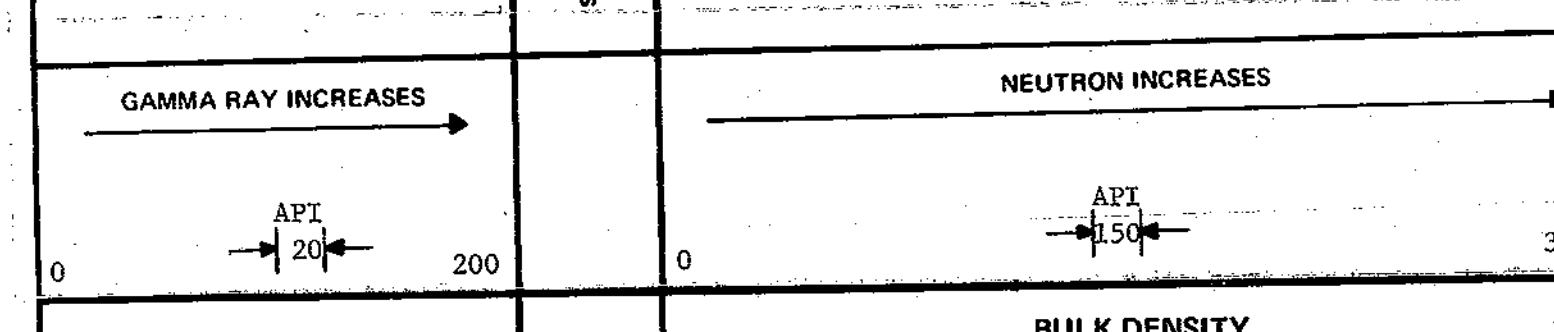
Casing Roke

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	177
		SPACING	17 INCH
		TYPE	AmBe
		STRENGTH	3 CURIES

GENERAL		GAMMA RAY		NEUTRON	
HOIST TRUCK NO.	35	ZERO	API G. R. UNITS	ZERO	API N. UNITS
INSTRUMENT TRUCK NO.		DIV. L OR R	PER LOG DIV.	DIV. L OR R	PER LOG DIV.
TOOL SERIAL NO.	177	OL	20	2.6	44.23
		OL	150		

GENERAL		GAMMA RAY		NEUTRON	
RUN NO.		ZERO	API G. R. UNITS	ZERO	API N. UNITS
DEPTHS		DIV. L OR R	PER LOG DIV.	DIV. L OR R	PER LOG DIV.
FROM	TO	OL	20	2.6	44.23
000	202	OL	150		
NEUTRON					

REMARKS: DENSITY TOOL SERIAL NO. A-128
 GRN TOOL SERIAL NO #177 SOURCE #50



Recorded By: PETERSON
 Witnessed By: WALLIS

652

ROKE

GAMMA RAY NEUTRON LOG

DENSILOG

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD	WELL	RDR-P
SEC	LOCATION	
TWP	FIELD	SUKUNKA
RGE	PROVINCE	BRITISH COLUMBIA
W	Other Services:	NIL
Permanent Datum	GROUND LEVEL	Elev.
Log Measured from	GROUND LEVEL	K.B.
Well Depths Measured from	GROUND LEVEL	CSG
		G.L.
Run No.	ONE	
Date	24 NOVEMBER 1974	
First Reading	156	
Last Reading	000	
Footage Logged	156	
Depth Reached	157	
Depth Driller	157	
Casing Role		
Casing Driller	AIR/MATER	
Fluid Type	I5	
Liquid Level	4-3/4	
Min Diam.		
Rm @ of		
Operating Time	3 HOURS	
Truck No.	35	
Recorded By	PETERSON	Witnessed By
		SHIELDS

652

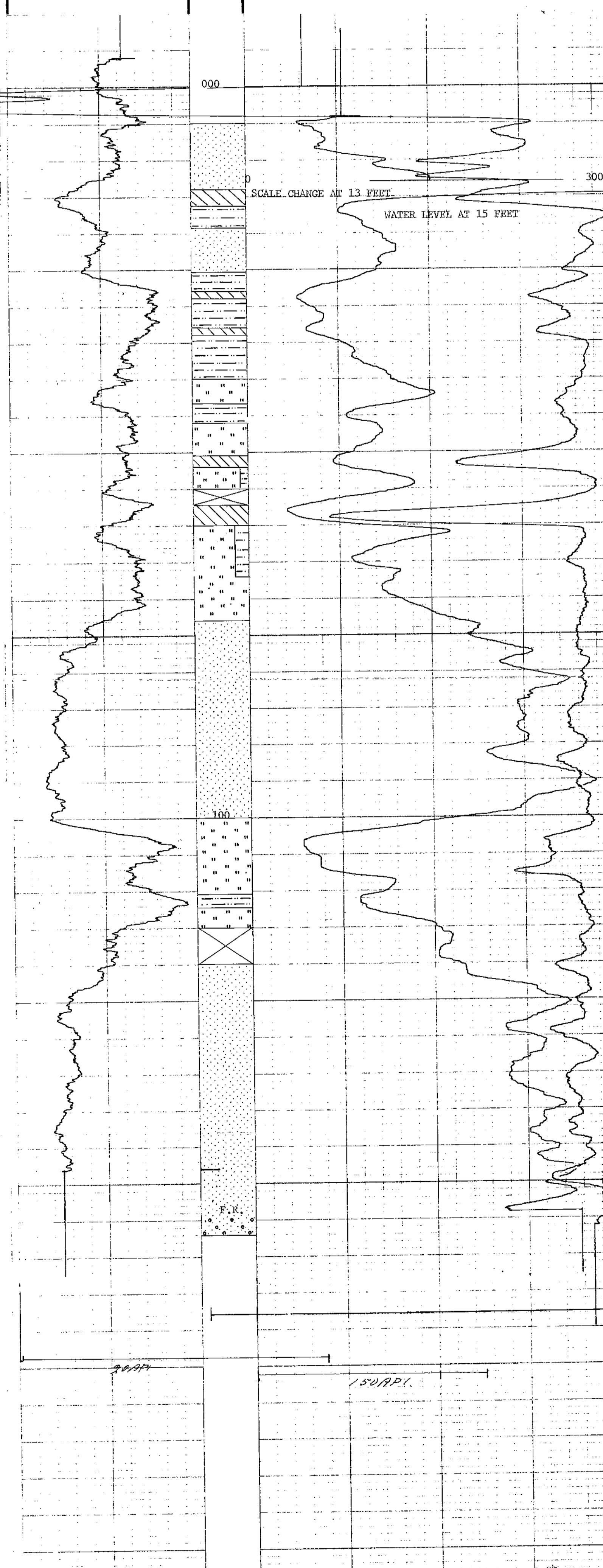
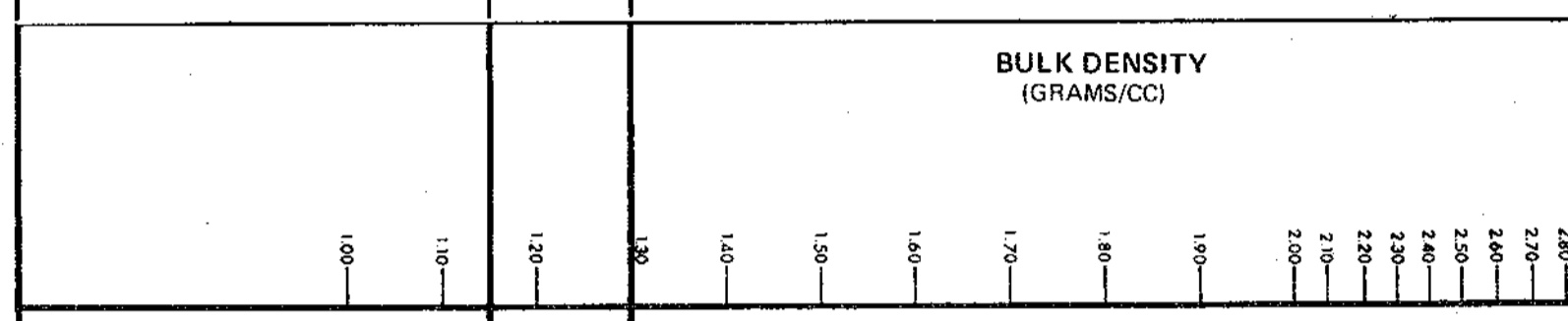
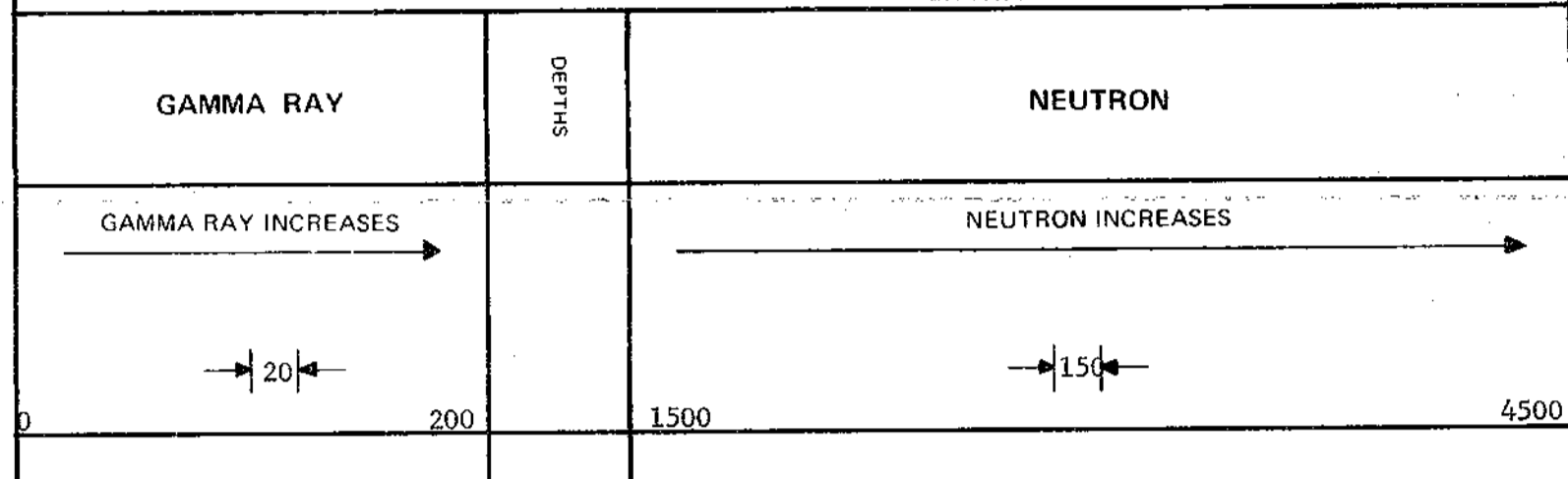
EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	598
GENERAL		SPACING	17 INCH
HOIST TRUCK NO.	35	TYPE	AmBe
INSTRUMENT TRUCK NO.		STRENGTH	3 CURIES
TOOL SERIAL NO.	65		

LOGGING DATA

RUN NO.	GENERAL DEPTHS		SPEED FT/MIN	GAMMA RAY			SIDEWALL DENSITY				
	FROM	TO		T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	000	156	12	5	100	OL	20	3	1000	2.6	44.23
	00	13		3	1000	10L	150	NEUTRON			
	13	156		3	1000	OL	150				

REMARKS: DENSITY TOOL SERIAL NO A-128



ROKE

GAMMA RAY NEUTRON LOG

DENSITOG

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD	WELL	RDH-Q
SEC	TWP	
RGE	LOCATION	
W. _____ M	FIELD	SEKONKA
	PROVINCE	BRITISH COLUMBIA
	Perm. Datum	GROUND LEVEL
	Log Measured from	GROUND LEVEL
	Well Depth Measured from	GROUND LEVEL
Run No.	DATE	24 NOVEMBER 1974
	First Reading	203
	Last Reading	000
	Footage Logged	203
	Depth Reached	204
	Depth Driller	204
	Casing Bore	
	Casing Driller	
	Fluid Type	WATER
	Liquid Level	0
	Mitt. Diam	4-3/4
	Rm @ of	
	Operating Time	3 HOURS
	Truck No.	35
Recorded By	Witnessed By	PIETERSON SHIELDS

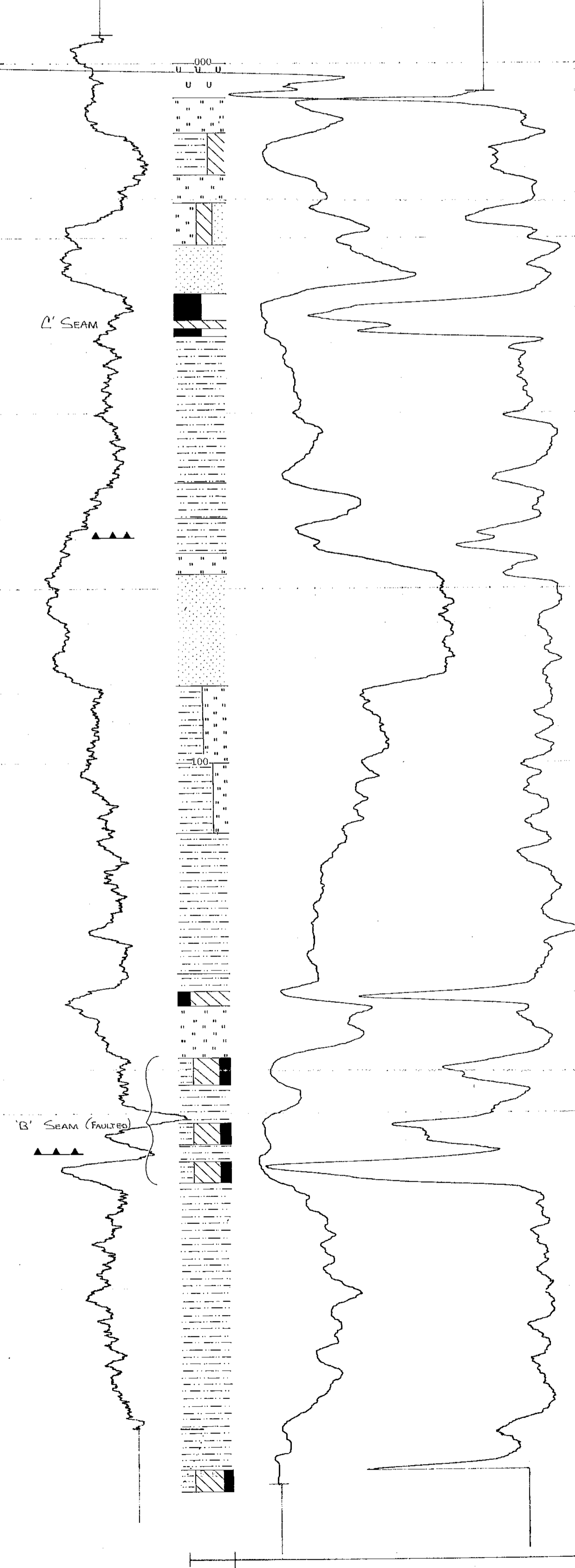
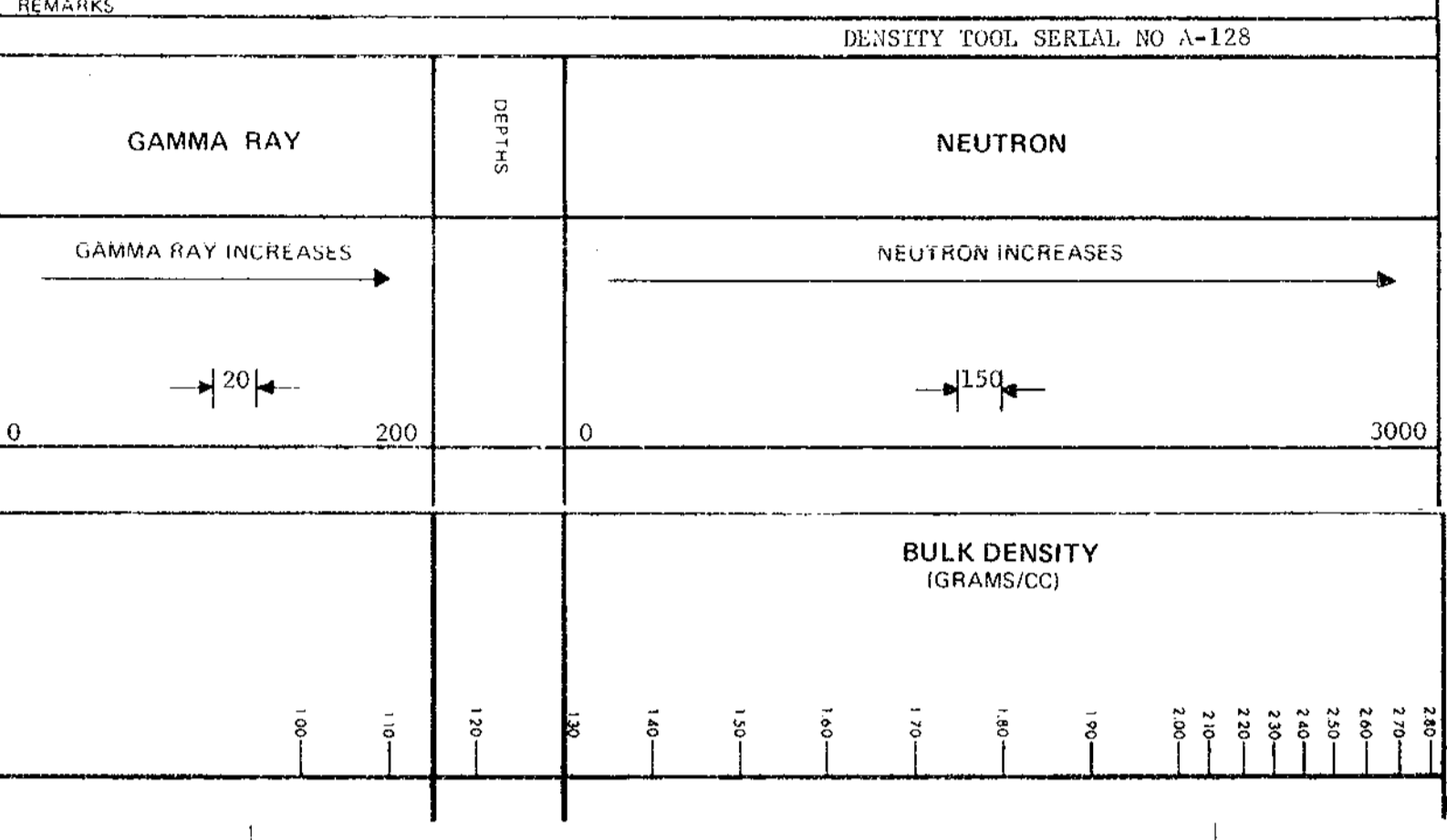
652

EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 1/8	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 1/8
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N ¹³⁷ SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	598
		SPACING	17 INCH
		TYPE	AmBe
		STRENGTH	3 CURIES
GENERAL			
HOIST TRUCK NO.	35		
INSTRUMENT TRUCK NO.			
TOOL SERIAL NO.	65		

LOGGING DATA

GENERAL			GAMMA RAY				SIDEWALL DENSITY				
RUN NO.	DEPTHS	SPEED	T.C.	SENS.	ZERO	API G R. UNITS	T.C.	SENS.	ZERO	API N. UNITS	
	FROM	TO	SEC	SETTINGS	DIV. L OR R	PER LOG DIV.	SEC	SETTINGS	DIV. L OR R	PER LOG DIV.	
1	000	203	12	5	100	OL	20	3	1000	2.6	44.23
	NEUTRON			3	1000	OL	150				



20 API

150 API

ROKE

GAMMA RAY NEUTRON LOG

DENSILOG

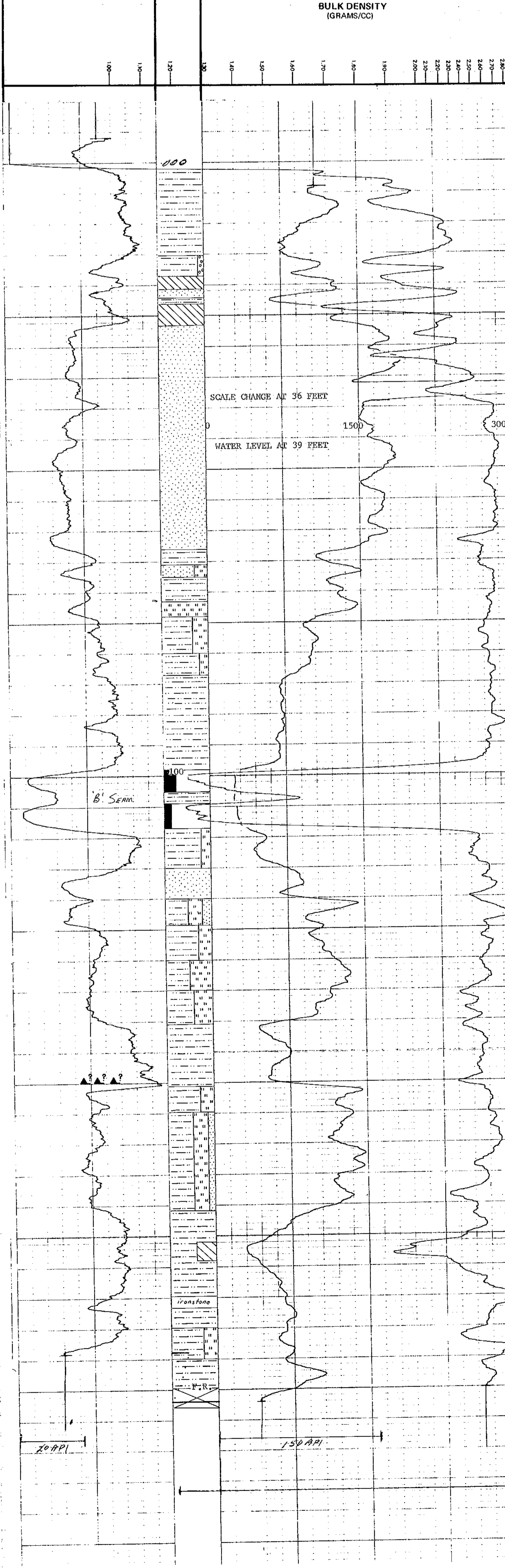
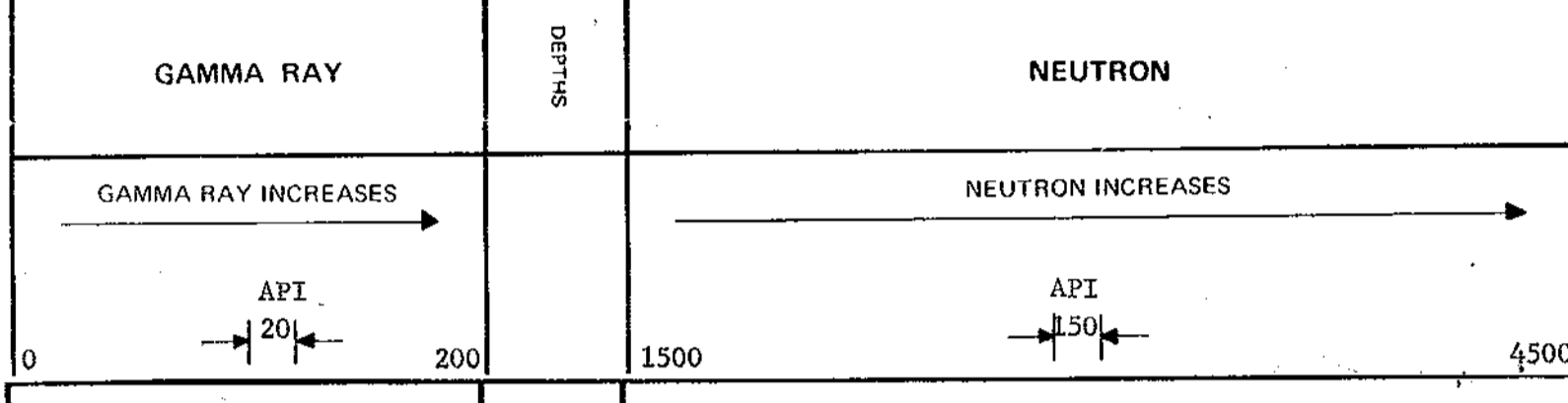
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD	WELL	RDH-R
SEC	LOCATION	SISKIYOU
TWP	FIELD	SISKIYOU
RGE	PROVINCE	BRITISH COLUMBIA
W	Elev	
M	Other Services:	NIL
Permanent Datum	GROUND LEVEL	
Log Measured from	GROUND LEVEL	
Well Depths Measured from	GROUND LEVEL	
Run No.	ONE	
Date	23 OCTOBER 1974	
First Reading	202	
Last Reading	202	
Footage Logged	203	
Depth Reached	203	
Depth Driller	203	
Casing Roke		
Casing Driller	ATR/WATER	
Fluid Type	39	
Liquid Level	4-3/4	
Min. Dam.		
Rm @ 9F		
Operating Time	3 HOURS	
Truck No.	35	
Recorded By	PETERSON	Witnessed By
		MALITS

EQUIPMENT DATA			
GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 11/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 11/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	
HOIST TRUCK NO.		SPACING	17 INCH
INSTRUMENT TRUCK NO.	35	TYPE	AmBe
TOOL SERIAL NO.	177	STRENGTH	3 CURIES

LOGGING DATA											
GENERAL			GAMMA RAY				NEUTRON				
RUN NO.	DEPTHS	SPEED	T.C.	SENS	ZERO	API G. R. UNITS	T. C.	SENS	ZERO	API N. UNITS	
	FROM	TO	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.	
1	000	202	12	3	500	OL	20	3	1000	2.6R	44.23
	000	26	12	3	1000	10L	150 - NEUTRON				
	36	202	12	3	1000	OL	150				

REMARKS: DENSITY TOOL SERIAL NO 128 SOURCE #50



ROKE

GAMMA RAY NEUTRON LOG

DENSITY LOG

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD SEC	WELL	RDM-S
TMP RGE	LOCATION	
W	FIELD	SUKONKA
	PROVINCE	BRITISH COLUMBIA
Permanent Datum	GROUND LEVEL	Elev. _____
Log Measured from	GROUND LEVEL	K.B. _____
Well Depths Measured from	GROUND LEVEL	CSG _____
		G.L. _____
Other Services:		NTL
Run. No.	ONE	
Date	24 OCTOBER 1974	
First Reading	198	
Last Reading	000	
Footage Logged	198	
Depth Reached	199	
Depth Driller	200	
Casing Roke		
Casing Driller	WALTER	
Fluid Type	0	
Liquid Level		
Min. Diam.	4-3/4	
Rm @ 0F		
Operating Time	3 HOURS	
Truck No.	35	

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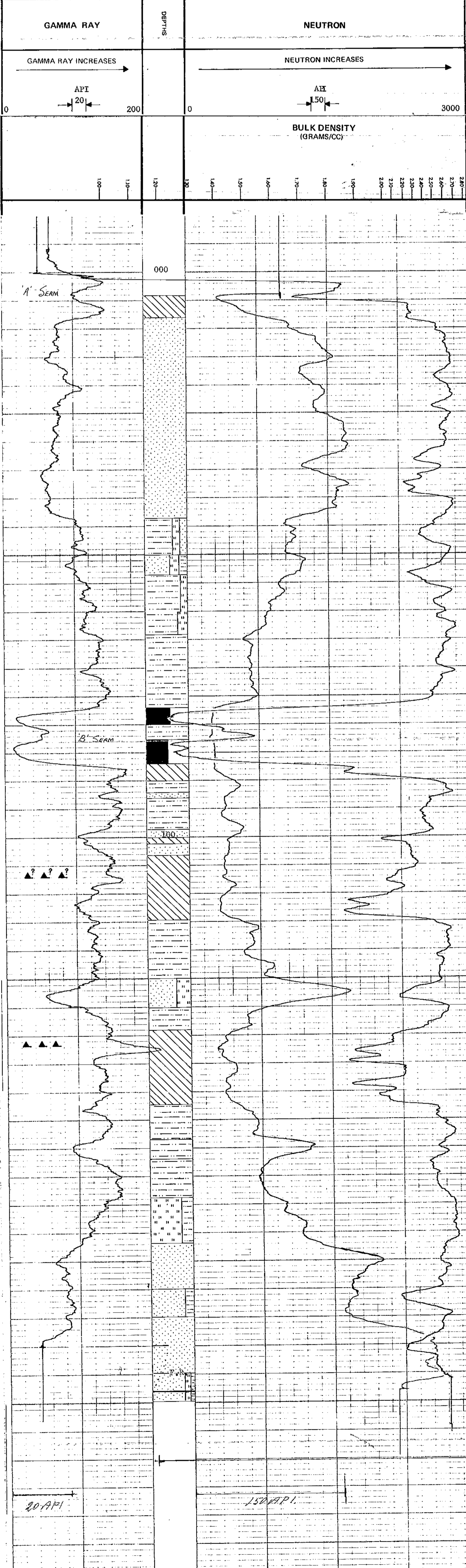
EQUIPMENT DATA

GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 1/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 1/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
GENERAL		SERIAL NO.	
HOIST TRUCK NO.		SPACING	17 INCH
INSTRUMENT TRUCK NO.	35	TYPE	AmBe
TOOL SERIAL NO.	177	STRENGTH	3 CURIES

LOGGING DATA

RUN NO.	GENERAL		GAMMA RAY				NEUTRON				
	FROM	TO	SPEED FT/MIN	T.C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	T. C. SEC.	SENS SETTINGS	ZERO DIV. L OR R	API N. UNITS PER LOG DIV.
1	000	198	12	3	500	OL	20	3	1000	2.6R	44.23
		NEUTRON	-	3	1000	OL	150				

REMARKS: DENSITY TOOL SERIAL NO 128 SOURCE #50



ROKE

GAMMA RAY NEUTRON LOG

LENSHOLG

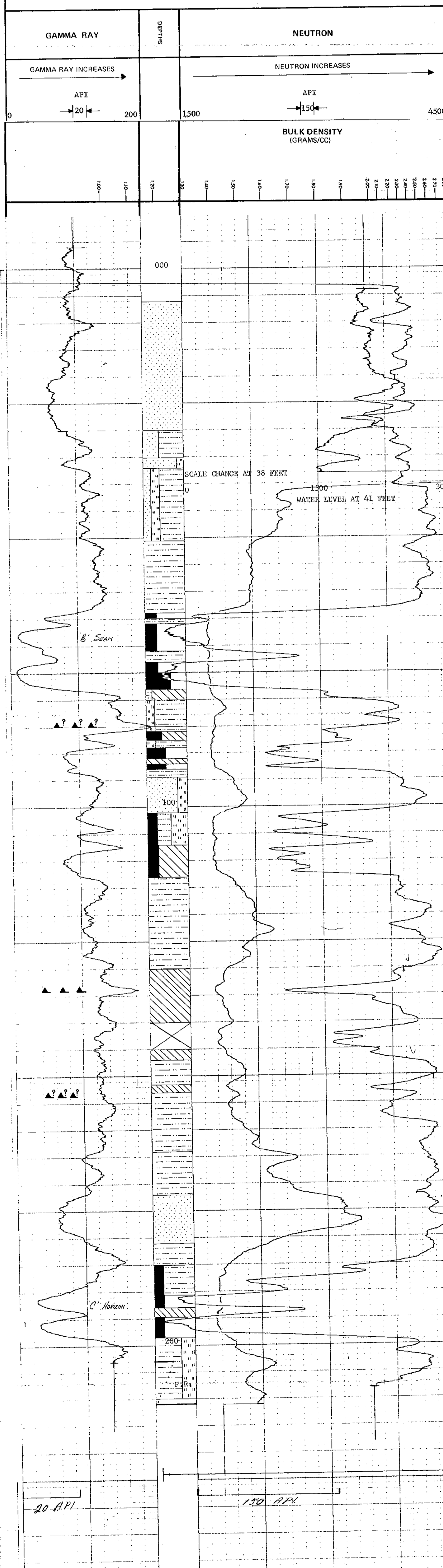
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
SEC	WELL	RDR-U
TWP	LOCATION	
RGE	FIELD	SURUNCA
W	PROVINCE	BRITISH COLUMBIA
	Other Services:	NTL
Permanent Datum	GROUND LEVEL	Feet
Log Measured from	GROUND LEVEL	Feet Above Perm. Datum
Well Depth Measured from	GROUND LEVEL	G.L.
Run No.	ONE	
Date	4 NOVEMBER 1974	
First Reading	211	
Last Reading	000	
Footage Logged	211	
Depth Reached	212	
Depth Driller		
Casing Driller		
Casing Fluid	AIR/WATER	
Fluid Type	41	
Liquid Level	4-3/4	
M/n. Diam.		
Rm @ 9'		
Operating Time	2 HOURS	
Truck No.	35	

EQUIPMENT DATA		GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE	LOG TYPE	NEUTRON/NEUTRON
TOOL MODEL NO.		TOOL MODEL NO.		DIAMETER	1 1/8
DIAMETER	1 1/8	DIAMETER		DETECTOR MODEL NO.	
DETECTOR MODEL NO.		DETECTOR MODEL NO.		TYPE	PROPORTIONAL
TYPE	GEIGER	TYPE		LENGTH	6 INCH
LENGTH	18 INCH	LENGTH		SOURCE MODEL NO.	MRC-N-SS-W
DISTANCE TO N. SOURCE	8.55 FT.	SOURCE MODEL NO.		SERIAL NO.	
GENERAL		GENERAL		SPACING	17 INCH
HOIST TRUCK NO.		SPACING		TYPE	AmBe
INSTRUMENT TRUCK NO.	35	TYPE		STRENGTH	3 CURTES
TOOL SERIAL NO.	177	STRENGTH			

LOGGING DATA										
GENERAL			GAMMA RAY				NEUTRON			
RUN NO.	DEPTHS	SPEED	T.C.	SENS	ZERO	API G. R. UNITS	T. C.	SENS	ZERO	API N. UNITS
	FROM	TO	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.
1	000	211	3	500	OL	20 API	3	1000	2,6R	44.23
	000	28	3	1000	10L	150 API - NEUTRON				
	38	211	3	1000	OL	150 API				

REMARKS: DENSITY TOOL SERIAL NO 128 SOURCE #50



Recorded By: PETERSON
 Witnessed By: SHELDON

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ROKE

GAMMA RAY NEUTRON LOG
DENSILOG

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD	WELL	ROKE
SEC	LOCATION	
TWP	FIELD	SUKANNA
RGE	PROVINCE	BRITISH COLUMBIA
W		
	Other Services:	NIL
Permanent Datum	GROUND LEVEL	Elev. _____
Log Measured from	GROUND LEVEL	Ft. Above Perm. Datum _____
Well Depth Measured from	GROUND LEVEL	G.L. _____
Run No.	ONE	
Date	12 OCTOBER 1974	
First Reading	200	
Last Reading	000	
Footage Logged	200	
Depth Reached	201	
Depth Driller	201	
Casing Roke		
Casing Driller		
Fluid Type	WATER	
Liquid Level	0	
Min. Diam.	4-3/4	
Rm @ 9f		
Operating Time	3 HOURS	
Truck No.	35	

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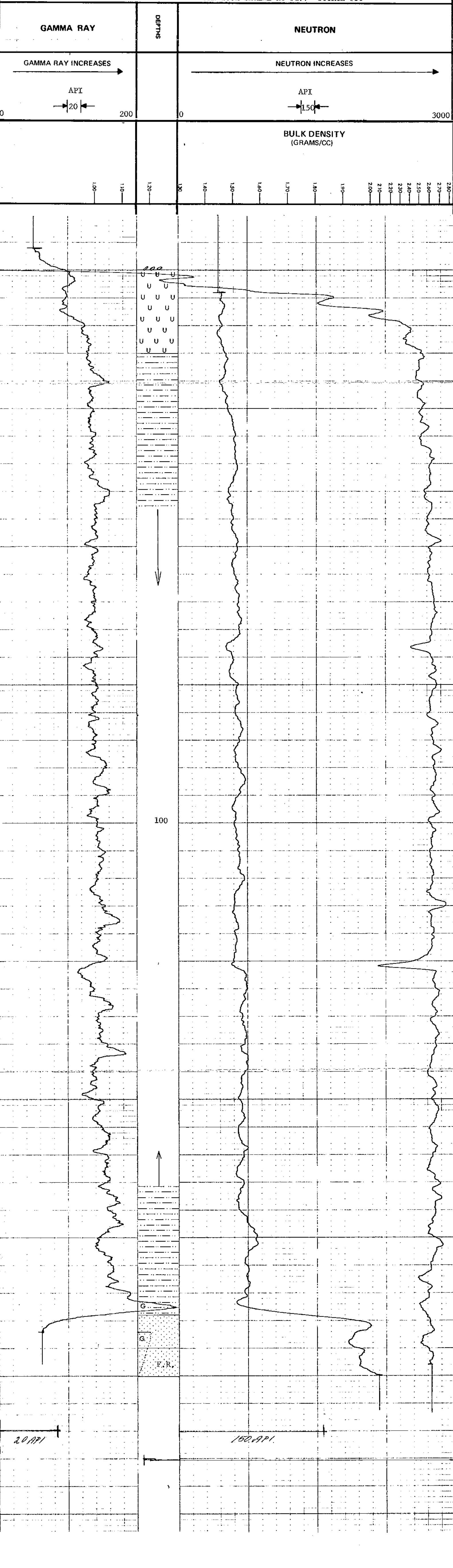
EQUIPMENT DATA

GAMMA RAY				NEUTRON			
RUN NO.	ONE			RUN NO.	ONE		
TOOL MODEL NO.				LOG TYPE	NEUTRON/NEUTRON		
DIAMETER	1 11/16			TOOL MODEL NO.			
DETECTOR MODEL NO.				DIAMETER	1 11/16		
TYPE	GEIGER			DETECTOR MODEL NO.			
LENGTH	18 INCH			TYPE	PROPORTIONAL		
DISTANCE TO N. SOURCE	8.55 FT.			LENGTH	6 INCH		
				SOURCE MODEL NO.	MRC-N-SS-W		
				SERIAL NO.	177		
HOIST TRUCK NO.	35			SPACING	17 INCH		
INSTRUMENT TRUCK NO.				TYPE	AmBe		
TOOL SERIAL NO.	177			STRENGTH	3 CURIES		

LOGGING DATA

RUN NO.	GENERAL DEPTHS		SPEED FT/MIN	T.C. SEC.	GAMMA RAY			T.C. SEC.	NEUTRON		
	FROM	TO			ZERO DIV. L OR R	API G. R. UNITS PER LOG DIV.	SENS SETTINGS		ZERO DIV. L OR R	API N. UNITS PER LOG DIV.	
1	000	200	12	3	500	OL	20	3	1000	2.6R	44.23
		NEUTRON	-	3	1000	OL	150				

REMARKS: DENSITY TOOL SERIAL NO A-128
GRN TOOL SERIAL NO #177 SOURCE #50



ROKE

GAMMA RAY NEUTRON LOG
DENSILOG

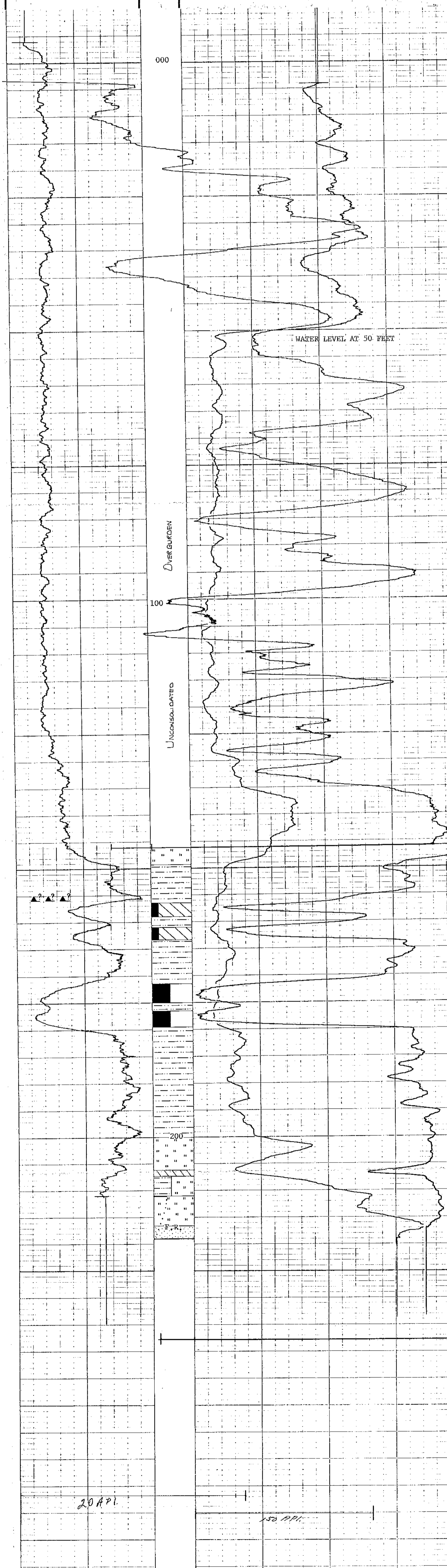
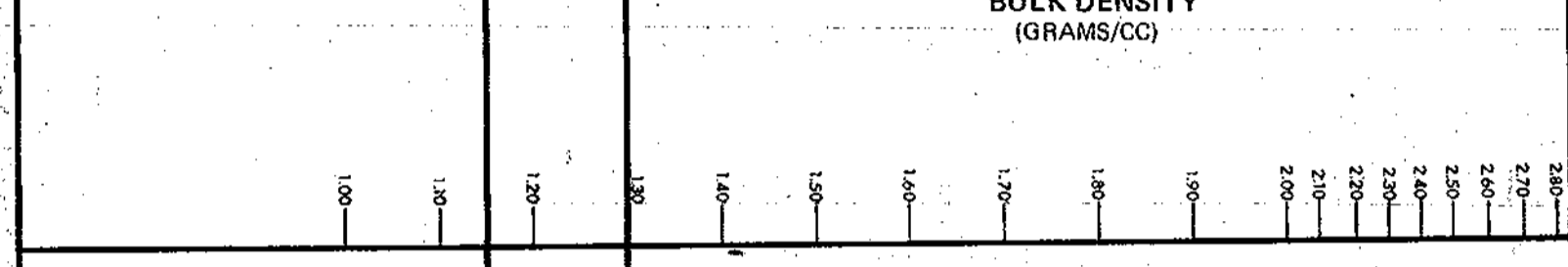
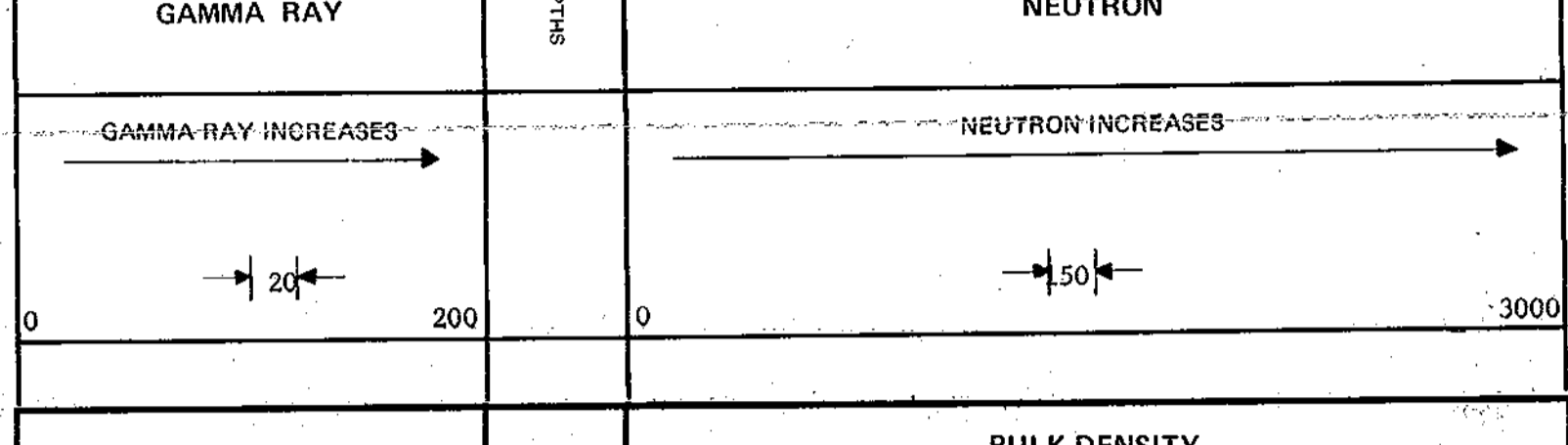
OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.	COMPANY	COALITION MINING LIMITED
LSD	WELL	WATER WELL
SEC	LOCATION	S-4 170N 70 470E R.L. 2-35 feet
TWP	FIELD	SUKINKA
RGE	PROVINCE	BRITISH COLUMBIA
W	Other Services:	
	Permanent Datum	GROUND LEVEL
	Log Measured from	GROUND LEVEL
	Well Depths Measured from	GROUND LEVEL
	Elev.	
	Permit No.	
	Other Services:	
	Run No.	ONE
	Date	28 NOVEMBER 1974
	First Reading	219
	Last Reading	000
	Footage Logged	219
	Depth Reached	220
	Depth Driller	150
	Casing Driller	150
	Fluid Type	WATER
	Liquid Level	50
	Min. Diam.	4-1/2
	Rm @ of	
	Operating Time	3 HOURS
	Track No.	35

EQUIPMENT DATA			
GAMMA RAY		NEUTRON	
RUN NO.	ONE	RUN NO.	ONE
TOOL MODEL NO.		LOG TYPE	NEUTRON/NEUTRON
DIAMETER	1 1/16	TOOL MODEL NO.	
DETECTOR MODEL NO.		DIAMETER	1 1/16
TYPE	GEIGER	DETECTOR MODEL NO.	
LENGTH	18 INCH	TYPE	PROPORTIONAL
DISTANCE TO N. SOURCE	8.55 FT.	LENGTH	6 INCH
		SOURCE MODEL NO.	MRC-N-SS-W
		SERIAL NO.	598
HOIST TRUCK NO.	35	SPACING	17 INCH
INSTRUMENT TRUCK NO.		TYPE	AmBe
TOOL SERIAL NO.	65	STRENGTH	3 CURIES

LOGGING DATA														
GENERAL					GAMMA RAY					SIDEWALL DENSITY				
RUN NO.	DEPTHS		SPEED	T.C.	SENS	ZERO	API G. R. UNITS	T. C.	SENS	ZERO	API N. UNITS			
	FROM	TO	FT/MIN	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.	SEC.	SETTINGS	DIV. L OR R	PER LOG DIV.			
1	000	142	12	5	100	OL	20	3	1000	3R	19.13			
	142	219	12	5	100	OL	20	3	1000	2.6R	44.23			
	NEUTRON					OL	150							

REMARKS NOTE - NO DENSITY SCALE FROM 000 FEET TO 148 FEET - LOGGED THROUGH CASING DENSITY TOOL SERIAL NO A-128



Recorded By: EETERSON Witnessed By: SEITZS

MEASURED SECTION

Trench No. 1

Lower Gething Sequence

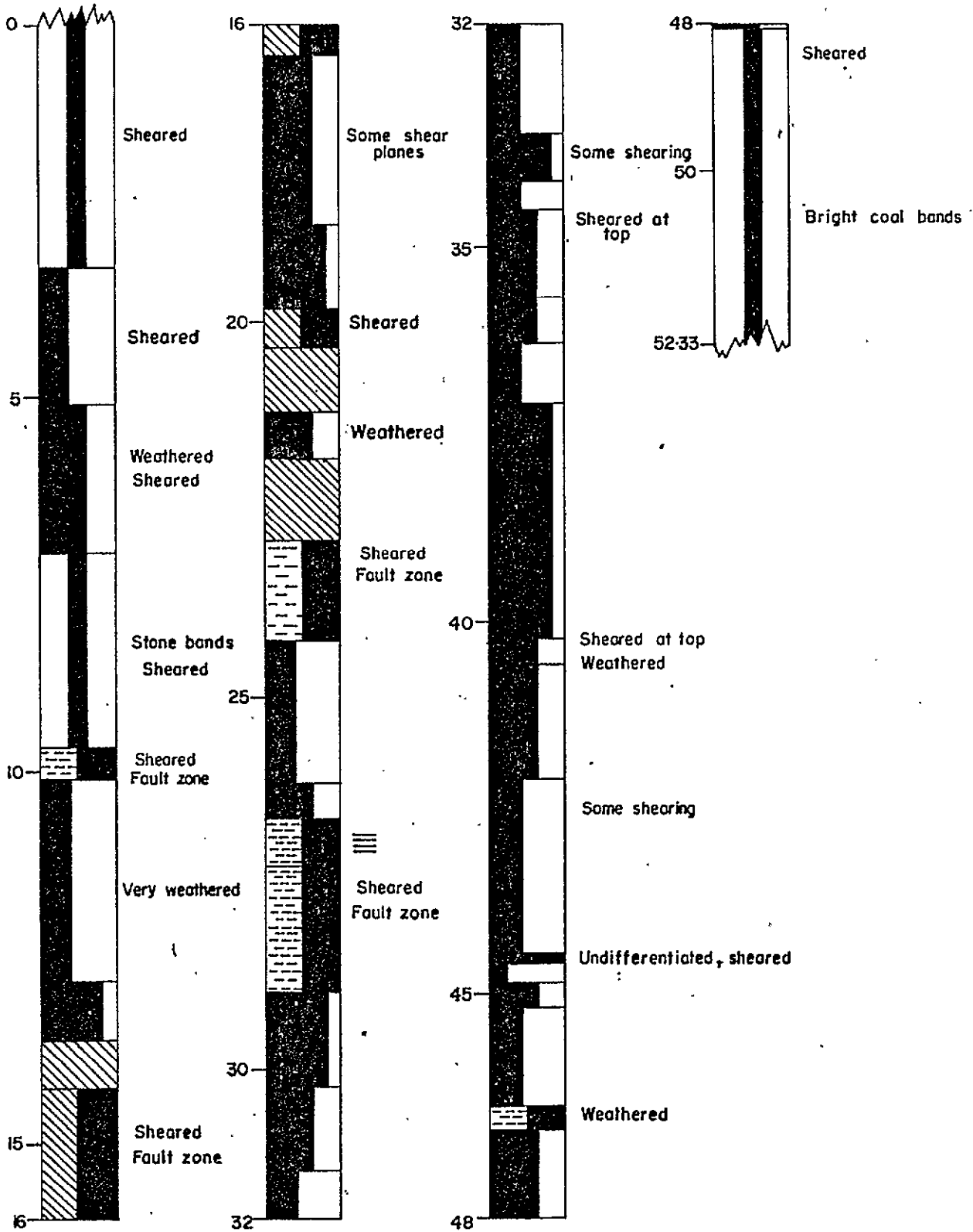
('B' Seam of Middle Coals Sequence)

Grid Reference : 53 145 N 71 790 E

R.L. Section Floor: 2624 feet

Section measured by G. R. Jordan

August, 1973



SCALE : 1"=2'

Prepared by :
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.
 for
 COALITION MINING LIMITED

TRENCH No. 1.
 SEAM SECTION
 "MIDDLE COALS"
 COALY HORIZON B

DATE: September, 1973

PAGE 1 of 1

SEAM SECTION - MIDDLE COALS, COALY HORIZON "B"

Glacial overburden obscures the upper part of the seam

Thickness (feet)	Cumulative Thickness	Rock Type	Description
3.30	3.30	coal	- weathered, sheared.
1.86	5.16	coal	- dull with minor bright bands, weathered, sheared.
1.95	7.11	coal	- dull and bright, weathered, sheared.
2.60	9.71	coal and bands	- very weathered; sheared.
0.39	10.10	coal and claystone	- sheared, <u>fault zone</u> , dip 0° to 5°.
2.70	12.80	coal	- dull with minor bright bands, very weathered.
0.80	13.60	coal	- bright with minor dull bands.
*0.65	14.23	claystone	- black, carbonaceous, bright coal bands.
2.20	16.43	coal and claystone	- sheared, <u>fault zone</u> .

Thickness (feet)	Cumulative Thickness	Rock Type	Description
2.30	18.73	coal	- dull with bright bands, some shear planes present.
1.10	19.83	coal	- bright, minor dull bands.
0.55	20.38	coal and claystone bands	- sheared black carbonaceous claystone and bright coal.
*0.83	21.21	claystone	- carbonaceous; bright coal bands at top.
0.63	21.84	coal	- dull and bright, weathered.
1.10	22.94	claystone	- carbonaceous, numerous bright coal bands.
1.30	24.24	coal and claystone	- sheared; <u>fault zone</u> , dip 40° W; seam tectonically thickened by at least 4'.
1.95	26.19	coal	- dull with minor bright bands.

Thickness (feet)	Cumulative Thickness	Rock Type	Description
0.44	26.63	coal	- dull and bright.
0.64	27.27	coal and claystone	- grey claystone and bright coal bands interbedded.
1.70	28.97	coal and claystone	- sheared; <u>fault zone</u> parallel to bedding, dip 31° W; angular fragments of coal and sheared claystone in the fault zone.
1.28	30.25	coal	- bright with minor dull bands.
1.14	31.39	coal	- dull and bright.
2.14	33.53	coal	- dull with minor bright bands.
0.65	34.18	coal	- bright with minor dull bands, occasional shear planes.
0.38	34.56	coal	- dull with minor bright bands.

Thickness (feet)	Cumulative Thickness	Rock Type	Description
1.15	35.71	coal	- dull and bright, sheared at top, dip 35° W.
0.63	36.34	coal	- dull and bright.
0.81	37.15	coal	- dull with minor bright bands.
3.10	40.25	coal	- bright with minor dull bands.
0.34	40.59	coal	- dull and bright, weathered, sheared at top.
1.57	42.16	coal	- dull and bright, occasional shear planes, dip of seam 45° W.
2.32	44.48	coal	- dull with minor bright bands, occasional shear planes.
0.10	44.58	coal	- sheared.
0.28	44.86	coal	- dull.
0.32	45.18	coal	- dull and bright.

Thickness (feet)	Cumulative Thickness	Rock Type	Description
1.32	46.50	coal	- dull with minor bright bands.
0.32	46.82	coal and claystone bands	- weathered.
1.24	48.06	coal	- dull and bright.
1.03	49.09	coal	- sheared, weathered, approximate dip 30° W.
1.46	50.55	coal	- weathered, bright coal bands at base.
1.78	52.33	coal	- weathered.

Base of seam obscured by glacial debris.

* Possible repetition due to faulting between the asterisks.

Remarks

The seam section is heavily weathered and sheared throughout. The shearing makes the estimation of the true thickness of the seam difficult because of the tectonic displacement of the various horizons in the seam.

MEASURED SECTION

Trench No. 1A

Lower Gething Sequence

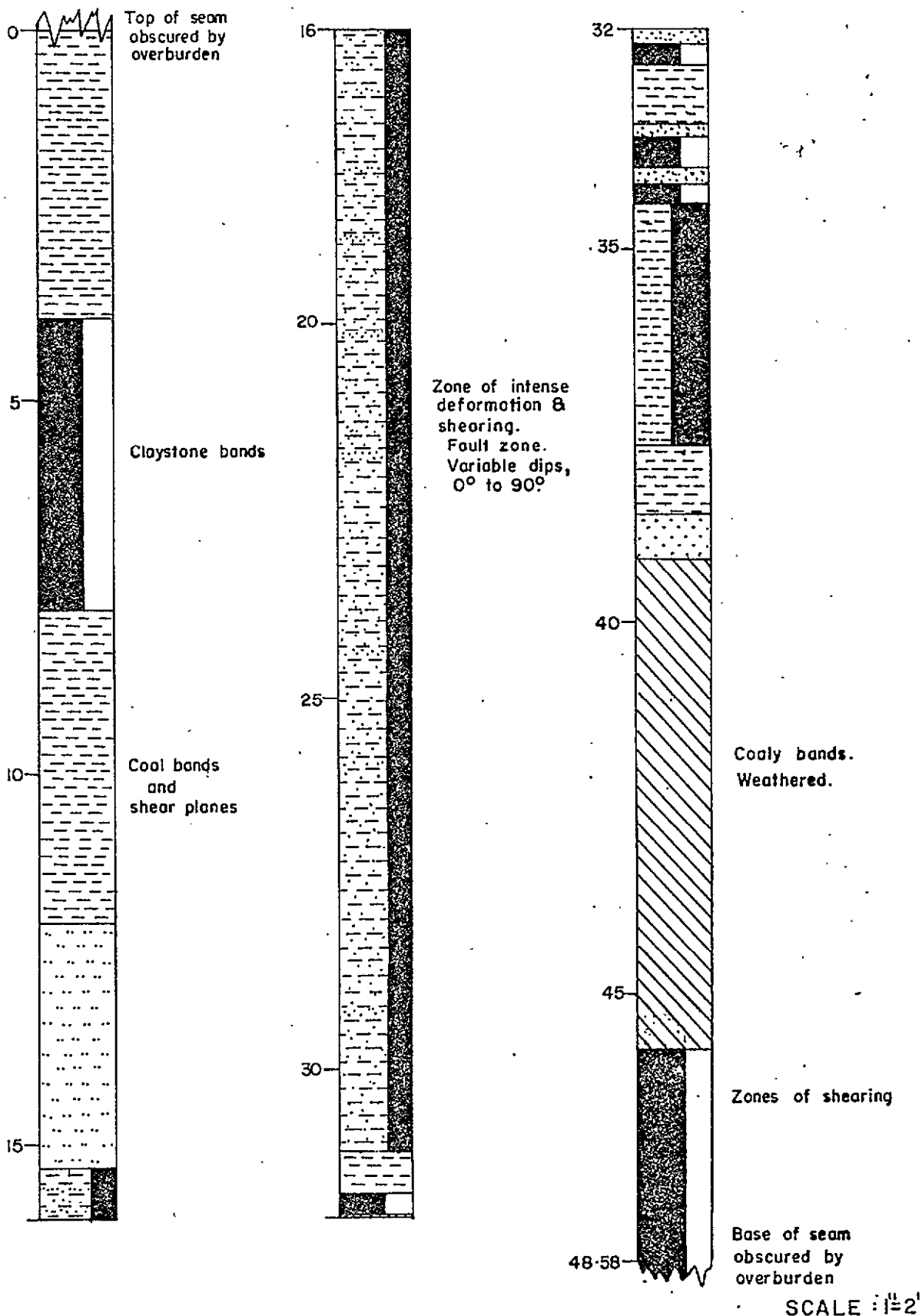
'C' Coaly Horizon

Grid Reference: 53 280 N 71 735 E

Section Measured by G. R. Jordan

August, 1973

*(Section measured in small trench below Trench
No. 1; strata interpreted as being the lower
part of the deformed zone of the 'B' Seam or the
'C' Horizon)*



Prepared by :
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.
 for
 COALITION MINING LIMITED

DATE: September, 1973

SEAM SECTION
 "MIDDLE COALS"
 COALY HORIZON C

PAGE 1 of 1

SEAM SECTION - MIDDLE COALS, LOWER EXPOSURE COALY HORIZON 'C'

Top of section obscured by overburden.

Thickness (feet)	Cumulative Thickness	Rock Type	Description
3.90	3.90	claystone	- grey, numerous bright coal bands, sheared, weathered.
3.90	7.80	coal	- dull and bright, numerous grey claystone bands.
4.20	12.00	claystone	- grey, numerous bright coal bands and shear planes throughout.
3.30	15.30	siltstone	- brown, massive.
15.80	31.10	fault and fold zone	- zone of intense deformation and shearing, dip variable from 0° to 90° in zone, coal, claystone and sandstone fragments.
0.54	31.64	claystone	- grey.

Trench No. 1A

Thickness (feet)	Cumulative Thickness	Rock Type	Description
0.34	31.98	coal	- dull and bright.
0.23	32.21	sandstone	- fine grained, brown, lithic.
0.27	32.48	coal	- dull and bright.
0.83	33.31	claystone	- grey.
0.17	33.48	sandstone	- brown, fine grained.
0.40	33.88	coal	- dull and bright.
0.23	34.11	sandstone	- brown, fine grained.
0.28	34.39	coal	- dull and bright.
3.23	37.62	coal & claystone inter- bedded	- coal and dark grey claystone interbedded, sheared, strike 322°, dip 36° W.

Thickness (feet)	Cumulative Thickness	Rock Type	Description
0.95	38.57	claystone	- grey, sheared.
0.57	39.14	sandstone	- brown, fine grained.
6.64	45.78	claystone	- black, carbonaceous, numerous bright coaly bands, sheared, weathered.
2.80	48.58	coal	- dull and bright, sheared zones, weathered.

Base of seam obscured by overburden.

MEASURED SECTION

Trench No. 3

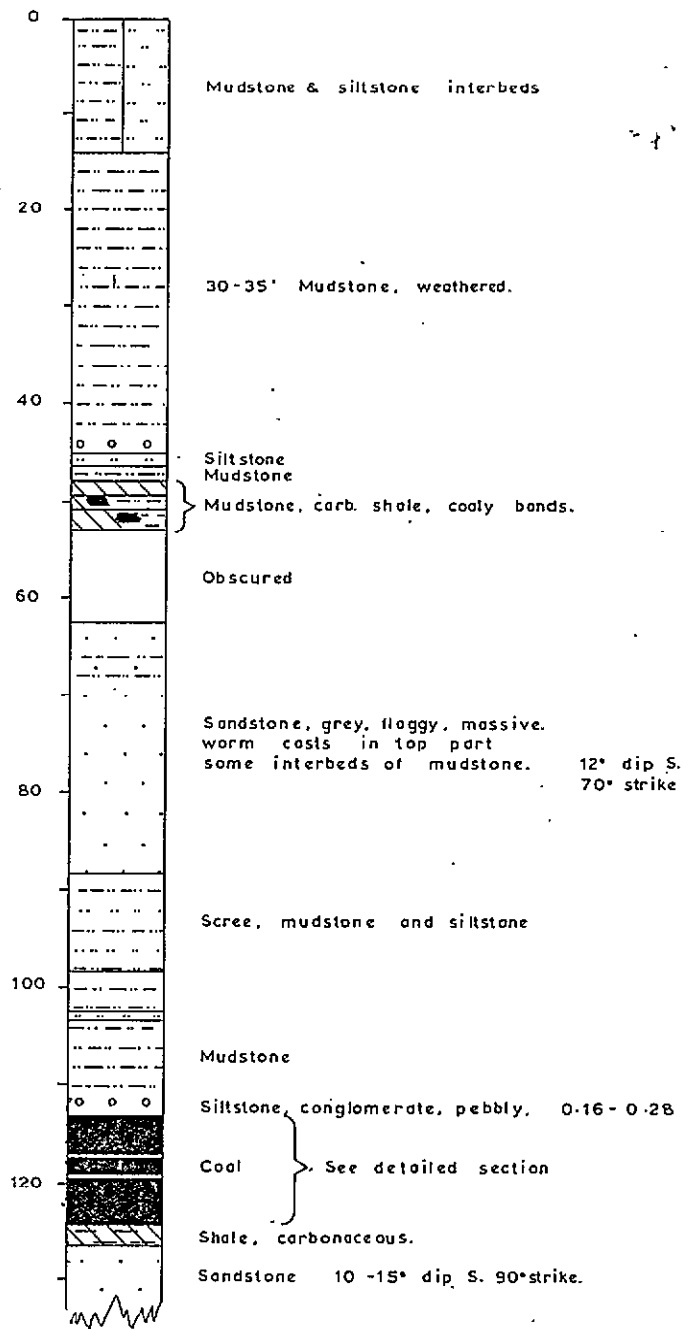
Lower Gething Sequence
(including 'B' Seam of Middle
Coals Sequence)

Grid Reference: 52 475 N 74 480 E

R.L. Section Floor: 3172 ft

Section Measured by G.R. Wallis

(Note: Thicknesses estimated except for
seam section)



SCALE 1" to 20'0"

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for
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STRATIGRAPHIC LOGS
MEASURED SECTION
TRENCH No. 3.

SEAM "B" - "Middle Coals"

ASH %
CUMULATIVE
FROM FLOOR

	SAMPLE N° SKR	THICKNESS (Feet)	WT gm	ASH %	C. S. N°	ASH % CUMULATIVE FROM FLOOR	
						INCL. BANDS	EXCL. BANDS
112.3							
	407	3.24	1864	3.9	½	22.7	
	406	0.13	246	76.2	-	29.9	
	405	0.60	446	6.4	2	27.43	
	404	0.74	924	40.0	2½	29.6	
	403	1.65	1270	43.1	½	26.7	
	402	2.50	998	11.2	½	16.6	
121.91 sheared	401	0.75	1054	21.8	4	21.8	

SCALE 1" to 2' 0"

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SEAM SECTION
MEASURED SECTION
TRENCH No. 3.

ANALYTICAL DATA

TRENCH No. 3

<u>Sample Nos.</u> <u>(SKR-)</u>	<u>Intervals</u> <u>(feet)</u>
401	112.30 - 115.54
402	115.54 - 115.67
403	115.67 - 116.27
404	116.27 - 117.01
405	117.01 - 118.66
406	118.66 - 121.16
407	121.16 - 121.91

Raw Coal Analyses of Individual Plies.

COALITION MINING

November 14, 1974

Group 1

<u>Client No.</u>	<u>Lab No.</u>	<u>Sample Wt. Grams Air Dried</u>
SKR 401	1293	1054.1G
SKR 402	1294	998.5
SKR 403	1295	1270.0
SKR 404	1296	924.5
SKR 405	1297	446.2
SKR 406	1298	245.6
SKR 407	1299	1864.3

COALITION MINING

Group 1

Birtley Engineering (Canada) Ltd.

October 23, 1974

<u>Client No.</u> <u>Lab No.</u>	<u>A.D.M.</u>	<u>Moist.</u>	<u>Ash</u>	<u>Vol.</u>	<u>F.C.</u>	<u>S.</u>	<u>P.</u>	<u>B.T.U.</u>	<u>F.S.I.</u>	<u>S.G.</u>	<u>Calc.</u> <u>Factors</u>
SKR 401	11.5	0.4	21.8	16.8	61.0	.64	.004	11,820	4	1.43	Air Dried
		11.9	19.3	14.9	53.9			10,460			As Rec'd
1293			21.9	16.9	61.2			12,030			Dry Basis
SKR 402	10.1	1.2	11.2	19.0	68.6	.50	.03	13,435	1/2	1.38	Air Dried
		11.2	10.1	17.1	61.6			12,080			As Rec'd
1294			11.3	19.2	69.5			13,600			Dry Basis
SKR 403	10.0	0.9	43.1	13.3	42.7	.35	.03	8,570	1/2	1.62	Air Dried
		10.8	38.8	12.0	38.4			7,715			As Rec'd
1295			43.5	13.4	43.1			8,650			Dry Basis
SKR 404	9.3	0.7	40.0	14.6	44.7	.42	.02	9,085	2 1/2	1.58	Air Dried
		9.9	36.3	13.2	40.6			8,240			As Rec'd
1296			40.3	14.7				9,150			Dry Basis
SKR 405	6.5	1.0	6.4	20.0	72.6	.48	.01	14,195	2	1.34	Air Dried
		7.4	6.0	18.7	67.9			13,270			As Rec'd
1297			6.5	20.2	73.3			14,340			Dry Basis
SKR 406	3.2		76.2						N.A.		Air Dried
			73.8								As Rec'd
1298											
SKR 407	8.6	1.6	3.9	20.1	74.4	.50	.09	14,465	1/2	1.33	Air Dried
		10.1	3.7	18.4	67.8			13,220			As Rec'd
1299			4.0	20.4	75.6			14,700			Dry Basis

SUKUNKA MEASURED SECTION

Trench No. 3

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Remarks</i>
MUDSTONE & SILTSTONE, interbedded; siltstone, cross-bedded, contains flute casts.	15.0	15.0	
MUDSTONE, weathered.	30.0	45.0	
SILTSTONE.	1.0	46.0	
MUDSTONE, weathered.	2.0	48.0	
MUDSTONE & SHALE, carbonaceous and coaly bands, weathered.	5.0	53.0	
OBSCURED.	10.0	63.0	
SANDSTONE, quartz-lithic, grey, massive with flaggy units, calcareous deposits on bedding planes. Dip 12° S, strike 070° T.	25.0	88.0	
SILTSTONE, partly obscured, possible mudstone also present.	10.0	98.0	
MUDSTONE, grey, weathered.	4.0	102.0	
SILTSTONE, ironstained.	0.5	102.5	

SUKUNKA MEASURED SECTION

Trench No. 3

Geological Description of Strata	Estimated Thickness (ft)	Estimated Depth to Stratum Floor(ft)	Remarks
SILTSTONE, well jointed.	9.5	112.0	
SANDSTONE, coarse grained, conglomeratic, pebbles to maximum 0.25', average 0.05' of quartzite, black: some mudstone pellets.	0.3	112.3	
			Seam Roof
<u>COAL</u> , dull and bright.	1.12	113.42)	
, bright with minor dull bands, cleat well developed.	0.18	113.60)	
)	
MUDSTONE.	0.04	113.64)	
)	
<u>COAL</u> , dull and bright, cleat well developed in upper 0.07' of unit.	1.90	115.54)	'B' Seam
)	
SILTSTONE.	0.13	115.67)	
)	
<u>COAL</u> , bright with minor dull bands.	0.60	116.27)	
, sheared, unidentifiable.	0.74	117.01)	
)	
MUDSTONE, contains coaly blebs.	0.01	117.02)	
)	
<u>COAL</u> , bright.	0.02	117.04)	

SUKUNKA MEASURED SECTION

Trench No. 3

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Remarks</i>
MUDSTONE,	0.06	117.10)	
<u>COAL</u> , bright.	0.01	117.11)	
MUDSTONE.	0.04	117.15)	
<u>COAL</u> , weathered.	0.05	117.2)	
MUDSTONE, contains penny bands.	0.18	117.38)	'B' Seam
<u>COAL</u> , dull with minor bright bands.	0.93	118.31)	
, dull and bright.	0.35	118.66)	
, dull with minor bright bands.	2.50	121.16)	
, sheared, varies up to 1.25' thick.	0.75	121.91)	
MUDSTONE, carbonaceous, contains penny bands and flecks of coal.	2.00	123.91)	Foor of 'B' Seam
SANDSTONE, fine grained, carbonaceous, closely jointed (0.25' spacing and trending 106°, 205°, 230° T. Dip 10-15°, 90° strike).	?	?	

SUKUNKA COAL PROJECT

MIDDLE COALS AREA

APPENDIX B

MEASURED SECTIONS

See over for Explanatory Notes.

Reference for Graphic Sections, Appendix C,
applies to Measured Sections.

Prepared by : CLIFFORD McELROY & ASSOCIATES PTY. LIMITED

Report No. 1/4/23

June, 1975

Explanatory Notes To Measured Sections

Four measured sections of coal seam exposures are included in this Appendix. The locations are plotted on the Geological Map, Map 1.

Trench No. 1	-	'B' Seam
Trench No. 1A	-	'C' Horizon (?)
Trench No. 3	-	'B' Seam
"Lower Coals"	-	Lower Gething Sequence

MEASURED SECTION

"LOWER COALS"

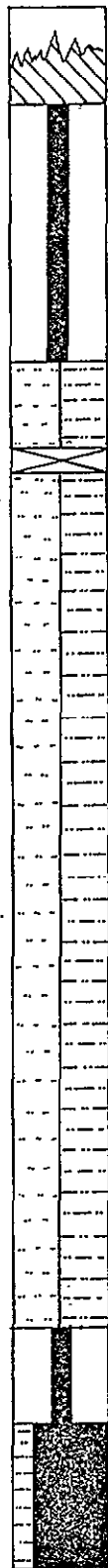
Lower Gething Sequence

Grid Reference 54 740 N 76 075 E

R.L. Section Floor 2,690 feet

Section measured by G. R. Jordan

August, 1973



obscured



occasional coaly bands

obscured

SCALE : 1" to 2'

Prepared by :
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.
 for
 COALITION MINING LIMITED

EXPOSED SECTION OF
 "LOWER COALS"
 LOWER GETHING SEQUENCE

DRAWN BY K.W.

DATE: OCTOBER, 1973

EXPOSED SECTION FROM

"LOWER COALS"

ROOF	coal, claystone
2.7'	<u>COAL</u> - very weathered
10.0'	interbedded sandstone and mudstone - partly obscured
1.0'	<u>COAL</u>
1.5'	carb. claystone and coal bands
0.25'	<u>COAL</u>
0.96'	grey claystone
7.0'	grey siltstone occasional coaly bands
2.0'	obscured
7.0'	<u>COAL</u> - weathered
FLOOR	siltstone.

NOTE at this locality a coaly sequence exposed in the bank is partly obscured.

~~CONFIDENTIAL~~
~~CONFIDENTIAL~~

GEOLOGICAL BRANCH
ASSESSMENT REPORT

00 652



LEGEND

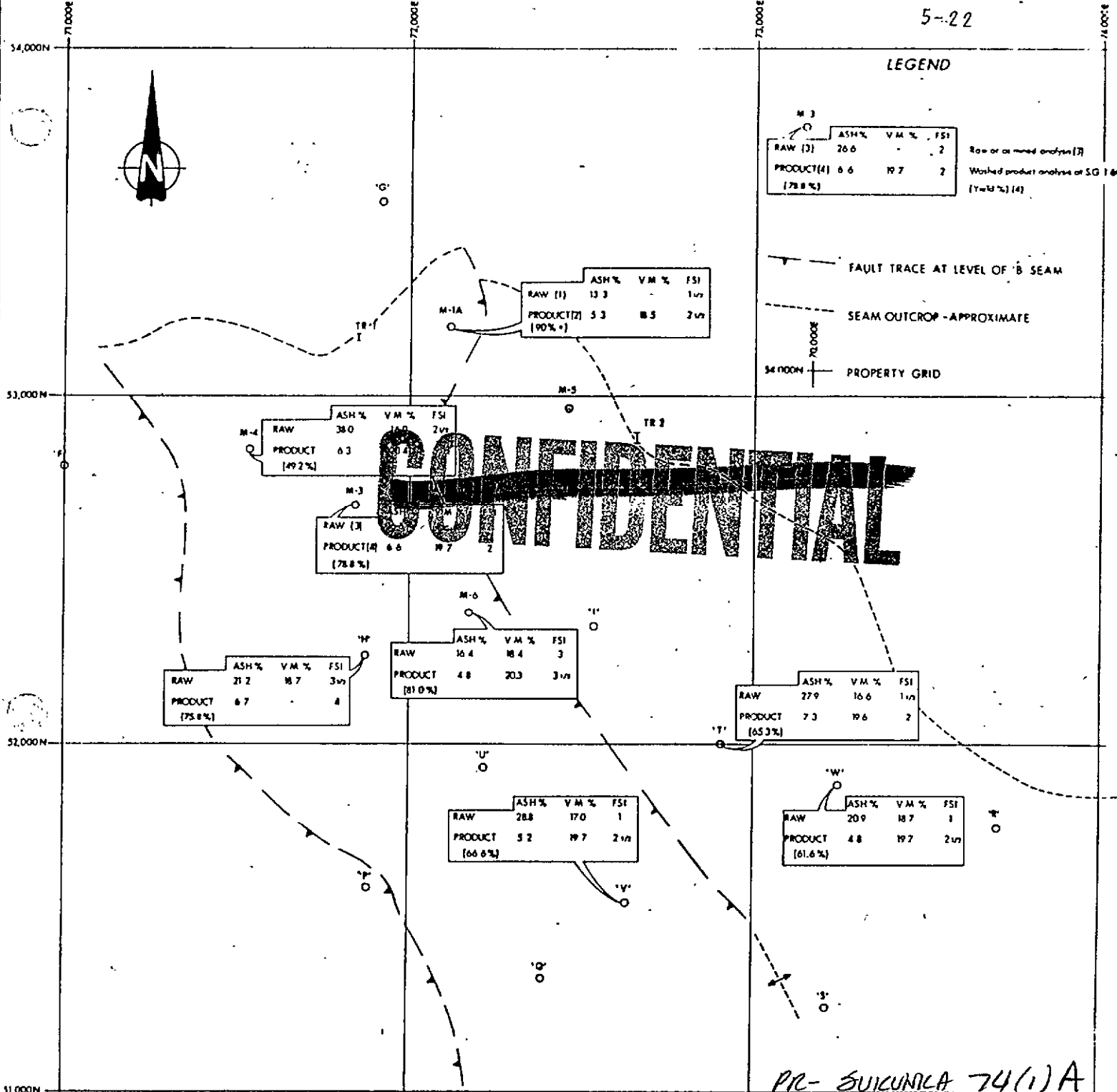
M 3	ASH%	VM %	FSI	
RAW (3)	26.6	-	2	Raw or assumed analysis (3)
PRODUCT (4)	6.6	19.7	2	Washed product analysis at SG 1.60 (Y=12%) (4)
	(78.8%)			

FAULT TRACE AT LEVEL OF B SEAM

SEAM OUTCROP - APPROXIMATE

PROPERTY GRID

CONFIDENTIAL



	ASH%	VM %	FSI
RAW	21.2	18.7	3 1/2
PRODUCT	6.7	-	4
	(75.8%)		

	ASH%	VM %	FSI
RAW	38.0	16.0	2 1/2
PRODUCT	6.3	14.4	2 1/2
	(49.2%)		

	ASH%	VM %	FSI
RAW (3)	6.6	19.7	2
PRODUCT (4)	6.6	19.7	2
	(78.8%)		

	ASH%	VM %	FSI
RAW	16.4	18.4	3
PRODUCT	4.8	20.3	3 1/2
	(81.0%)		

	ASH%	VM %	FSI
RAW	27.9	16.6	1 1/2
PRODUCT	7.3	19.6	2
	(65.3%)		

	ASH%	VM %	FSI
RAW	28.8	17.0	1
PRODUCT	5.2	19.7	2 1/2
	(66.6%)		

	ASH%	VM %	FSI
RAW	20.9	18.7	1
PRODUCT	4.8	19.7	2 1/2
	(61.6%)		

- NOTES
- (1) DDH M-1A - Raw coal values - weighted average of 26 pies
 - (2) DDH M-1A - Product values - arithmetic average of 26 pies
 - (3) Raw or "assumed" coal values calculated by weighted averages for total seam; assumed ash values used where no analytical data
 - (4) Product values based on analytical data; excludes non-analysed pies
 - (5) See Table A-31, Appendix A-3 for analysis of individual pies or increments of each seam

PR- SUCUNKA 74(1)A

See Map 9 for 1" = 200' scale map

SCALE FEET

0 100 200 400 600 800 1000

COALITION MINING LTD.	
SUCUNKA COAL PROJECT	
COAL QUALITY DATA	
FIGURE 55	
Drawn By: G.P. WALLIS Checked By: M.E.W. Date: May 27/73 Revised	Scale: 1" = 200' Contour Interval: Drawing No. SKR 233

As with the seam thickness, the degree of deformation influence the quality of the raw or as mined coal, by virtue of the amount of contaminating rock. The analytical results of the sampled increments indicate that a variation from 2.7% to 84.5% ash can occur in a deformed 'B' Seam, while the average is 33.9%. It is noteworthy that within this range, 50% of the analysed samples have an ash content of between 5% and 20%.

TABLE 5.3
AVERAGE VALUES OF ANALYTICAL DATA - 'B' SEAM

(Air Dried Basis)

	Average	Range	No. of Values
<u>Raw Coal</u>			
Ash %	33.9	2.7 - 84.5	56
V.M. %	16.8	6.6 - 21.2	68
S %	0.41	0.15 - 1.38	45
F.S.I.	3.5	½ - 8	46
C.V. (BTU/lb)	12,013	3,760 - 19,960	60
<u>Washed Product @ 1.60 S.G.</u>			
Yield %	73.7	49.5 - 95.5	9
Ash %	5.8	4.5 - 8.1	10
V.M. %	19.7	18.5 - 20.8	9
F.S.I.	3	1½ - 4	10
C.V. (BTU/lb)	14,614	14,230 - 14,898	12

See Table A-3.1, Appendix A, for Summary of Analytical Data, from which above values calculated.

The ash content and F.S.I. of the full 'coal plus rock' intersections have been calculated for the analysed seams, using the analytical data and assumed values for non-analysed plies in Table A-3.1, Appendix A. On the basis of these figures listed in Table 5.4, it is predicted that the ash content of the run-of-mine coal can range between 13.3% and 51.4% and average 26%.

With regard to the ash, volatile matter, sulphur, F.S.I. and calorific value of the various sampled increments of raw coal in each drilled intersection, Table 5.3 lists the averages of these factors.

The sulphur content of the coal is predicted to be normally less than 0.50%. While the maximum sulphur content shown in Table 5.3 is 1.38%, 80% of the analyses are less than 0.50%, and of three values exceeding 0.75%, two report from the top split of D.D.H. M-2A.

(ii) Washed Product

Laboratory washing of the coal at specific gravities of 1.30, 1.40 and 1.60 was conducted to determine if the low F.S.I. of the raw coal was due to its inherent characteristics or the presence of oxidation. Previous analyses indicated a low ash coal but with limited coking properties; see analyses of D.D.H. M-1A, Table A-3.1 and D.D.H.'s S-2 and S-8, Table A-3.2, Appendix A. The results from this programme have confirmed those previous results. Washing the raw coal at various specific gravities did not materially improve the free swelling index in the washed product.

Table 5.3, herein, indicates that a washed product at 1.60 S.G. would contain 5.8% ash but with a free swelling index of 3. A number of sampled increments contain plies which have a high F.S.I., ranging up to 9, though commonly less than $7\frac{1}{2}$. These plies appear to be distributed through the lower part of the seam, but with no apparent pattern.

TABLE A-3.1

SUMMARY OF ANALYTICAL DATA - 'B' SEAM

(See Notes To Accompany Table)

BORE No. b	SAMPLE No. (SKR)	ANAL. NESS PLY	THICK- (feet) CUM.	RAW COAL ANALYSIS. A-D BASIS						1.60 SG WASHED PRODUCT, A-D BASIS f					
				S.G.	Ash %	V.M. %	S %	FSI	C.V. Btu/lb	Yield %	Ash %	V.M. %	FSI	C.V. Btu/lb	
M-1A d	1- 6	6.37	6.37		4.0				½		99.0	3.4	17.0	½	14,530
	7	1.12	7.49		66.7				0		13.5	17.6	17.4	½	-
	8- 9	4.58	12.07		4.1				1		98.5	3.5	18.8	1	14,790
	10	1.67	13.74		45.1				2		47.5	20.5	17.9	4	-
	11-24	20.66	34.40		9.3				2		95 +	6.1	19.0	2½	14,898
	25-26	5.59	39.99		57.4				0		6.8	12.8	20.9	8	-
	1-26	39.99			13.3				1½		90 +	5.3	18.5	2½	14,739
M-2A	429	0.98	0.98	1.36	6.9	17.7	1.38	1½	14,370						
	430	0.05	1.03	2.18	69.5										
	431	2.91	3.91	1.31	4.3	18.7	0.55	3	14,865						
	432	0.10	4.04	2.47	86.1										
	433	0.44	4.48	1.41	16.6	16.2	0.42	7½	19,960						
	-	1.73	6.21	2.50 a	85.0 a	N o t A n a l y s e d									
	434	1.42	7.63	1.32	6.1	18.3	0.38	3½	14,555						
	435	2.99	10.62	1.33	7.5	17.5	0.40	3	14,280						
	429,431, 433 e	4.33		1.34	5.5	19.0	0.80	2½	14,590	}	95.5	5.3	19.4	2½	14,660
	434-435	4.41		1.34	7.5	19.1	0.46	3	14,150						

TABLE A-3.1

SUMMARY OF ANALYTICAL DATA - 'B' SEAM

(See Notes To Accompany Table)

BORE No. b	SAMPLE No. (SKR)	ANAL. THICK- NESS (feet) PLY CUM.	RAW COAL ANALYSIS. A-D BASIS							1.60 SG WASHED PRODUCT, A-D BASIS f				
			S.G.	Ash %	V.M. %	S %	FSI	C.V. Btu/lb	Yield %	Ash %	V.M. %	FSI	C.V. Btu/lb	
M-3	447	1.05	1.05	1.23	2.7	18.4	0.29	1½	15,170					
	448	2.85	3.90	1.31	2.9	18.3	0.42	1½	15,130					
	449	1.15	5.05	1.36	7.2	17.4	0.33	1½	14,440					
	450	0.20	5.25	1.82	50.5	-	-	1	-					
	451	2.55	7.80	1.33	4.4	18.3	0.28	1½	14,900					
	452	2.41	10.21	1.37	11.6	19.0	0.26	7	13,730					
	453	3.15	13.36	1.95	60.6	-	-	½	-					
	-	2.99	16.35	1.51	35.0a	Not	Analysed							
	454	3.45	19.80	1.45	18.9	20.2	0.19	5½	12,490					
	455	0.65	20.45	1.47	16.8	-	-	1	-					
	456	1.05	21.50	1.31	3.2	20.2	0.15	7	15,080					
	457	0.85	22.35	1.31	2.8	19.0	0.20	1½	15,150					
	458	0.55	22.90	1.36	7.3	20.5	0.26	8	14,410					
	459	0.15	23.05	2.30	78.6	-	-	½	-					
	460	1.61	24.66	1.47	25.9	18.2	0.18	8	11,320					
	461	0.80	25.46	2.10	74.6	-	-	½	-					
	462	2.34	27.80	1.44	18.3	17.6	0.26	2½	12,690					
	463	0.60	28.40	2.40	84.5	-	-	½	-					
	464	1.20	29.60	1.83	55.9	11.7	0.12	-	6,310					
		447-452	10.21		1.34	6.6	18.0	0.33	1½	14,550	96.3	4.5	18.6	1½	14,780
	454-464	13.25		1.51	27.8	18.0	0.31	3½	11,020	64.5	8.1	20.8	4	14,230
	447-452, 454-464	23.46			18.3c					78.8 c	6.6	19.7	2	14,440

TABLE A-3.1

SUMMARY OF ANALYTICAL DATA - 'B' SEAM

(See Notes To Accompany Table)

BORE No. b	SAMPLE No. (SKR)	ANAL. NESS PLY	THICKNESS (feet) CUM.	RAW COAL ANALYSIS. A-D BASIS						1.60 SG WASHED PRODUCT, A-D BASIS f				
				S.G.	Ash %	V.M. %	S %	FSI	C.V. Btu/lb	Yield %	Ash %	V.M. %	FSI	C.V. Btu/lb
M-6	498	2.90	2.90	1.32	5.1	17.9	1.19	1½	14,790	96.1	4.5		3 c	
	499	4.40	7.30	1.30	5.6	20.1	0.67	4½	14,690					
	500	0.17	7.47	2.33	83.4	12.0	0.32	-	-	49.9	6.1	8 c		
	501	0.95	8.42	1.32	8.7	22.3	0.44	9	14,250					
	502	1.75	10.17	1.55	36.5	16.2	0.42	6½	9,760					
	503	0.85	11.02	1.79	53.8	11.2	0.53	1	6,940	98.1	3.1	3½ c		
	504	2.45	13.47	1.31	3.7	19.5	0.54	3½	15,010					
	-	1.20	14.67	1.34a	6.5a	Not Analyzed								
	505	0.10	14.77	1.85	58.1	12.0	0.29	½	6,270	92.9	4.8		6 e	
	506	1.63	16.40	1.34	6.8	20.7	0.59	5	14,500					
g	498-506		15.20		20.3	18.44 c		3		81.0	4.8	20.3	3½ c	
'H'	446	6.0	6.0	1.63	38.8	15.5	0.33	-	8,995	56.0	4.6		1	
	439	5.0	11.0	1.35	12.7	18.1	0.32	1½	13,245	90.2	7.8		1½	
	440	5.0	16.0	1.44	23.8	18.3	0.46	1½	11,435	67.4	5.7		2	
	441	5.0	21.0	1.34	10.8	21.1	0.46	3½	13,500	91.2	6.0		4	
	442	5.0	26.0	1.45	24.8	19.0	0.34	6½	11,255	73.2	8.4		5	
	443	5.0	31.0	1.32	8.6	19.8	0.36	2½	13,860	94.1	4.3		3	
	444	5.0	36.0	1.37	15.3	20.1	0.48	7	12,790	86.8	7.5		7	
	445	5.0	41.0	1.49	29.6	18.6	0.43	6	10,500	54.7	9.9		7	
		439-446 c		41.0		21.2	18.7		3½		75.8	6.7		4

TABLE A-3.1

SUMMARY OF ANALYTICAL DATA - 'B' SEAM

(See Notes To Accompany Table)

BORE No. b	SAMPLE No. (SKR)	ANAL. THICK-NESS (feet) PLY CUM.	RAW COAL ANALYSIS. A-D BASIS							1.60 SG WASHED PRODUCT, A-D BASIS f				
			S.G.	Ash %	V.M. %	S %	FSI	C.V. Btu/lb	Yield %	Ash %	V.M. %	FSI	C.V. Btu/lb	
'T'	465	5.0	5.0	1.42	16.6	18.1	0.35	1½	12,870					
	466	5.0	10.0	1.66	42.3	14.4	0.21	1	8,600					
	467	5.0	15.0	1.63	40.2	14.4	0.19	1	8,950					
	468	5.0	20.0	1.42	16.2	18.7	0.28	4½	12,910					
	469	5.0	25.0	1.53	33.2	17.2	0.31	1½	10,100					
	470	5.0	30.0	1.44	19.5	17.6	0.46	1	12,395					
	471	5.0	35.0	1.37	12.3	19.8	0.28	2	13,600					
	472	5.0	40.0	1.40	14.6	18.7	0.33	2	13,200					
	473	5.0	45.0	1.61	14.7	15.4	0.21	1	13,195					
	465-473		45.0	1.53	27.9	16.6	0.40	1½	10,990	65.3	7.3	19.6	2	14,445
'V'	478	5.0	5.0	1.64	39.5	14.8	0.24	1	9,050					
	479	5.0	10.0	1.41	16.2	19.0	0.35	1½	12,930					
	478-479		10.0	1.50	28.8	17.0	0.49	1	10,910	66.6	5.2	19.7	2½	14,720
'W'	474	2.0	2.0	1.38	14.7	17.6	0.57	1½	13,195					
	-	5.0	7.0	2.50	80.0a	N o t A n a l y s e d								
	475	3.0	10.0	1.55	29.6	16.4	0.46	1	10,710					
	476	5.0	15.0	1.81	55.0	12.6	0.18	1	6,460					
	477	5.3	20.3	1.84	34.0	15.9	0.24	1	9,990					
474-477.		15.3	1.54	33.6	18.7	0.53	1	10,080	61.6	4.8	19.7	2½	14,760	

TABLE A-3.1

AVERAGE VALUES OF ANALYTICAL DATA - 'B' SEAM

(Air Dried Basis)

	Average	Range	No. of Values
<u>Raw Coal</u>			
Ash %	33.9	2.7 - 84.5	56
V.M. %	16.8	6.6 - 21.2	68
S%	0.41	0.15 - 1.38	45
F.S.I.	3.5	$\frac{1}{2}$ - 8	46
C.V. (BTU/lb).	12,013	3,760 - 19,960	60
<u>Washed Product</u> <u>@ 1.60 S.G.</u>			
Yield %	73.7	49.5 - 95.5	9
Ash %	5.8	4.5 - 8.1	10
V.M. %	19.7	18.5 - 20.8	9
F.S.I.	3	$1\frac{1}{2}$ - 4	10
C.V. (BTU/lb).	14,614	14,230 - 14,898	12