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SURVEYOR CREEK, NEWCASTLE DISTRICT.

Results of Drilling in Northern Portion of Area Tested.

by

H. B. OWEN.

Records 1952/3.

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SURVEYOR CREEK, NEWCASTLE DISTRICT.

Results of Drilling in Northern Portion of Area Tested.

RECORDS 1952/3.

by

H. B. Owen.

Summary.

In Portion 11, Ph. of Stockrington Diamond Drilling near an unnamed creek tributary to Surveyor Creek has disclosed coal continuously for a distance of 7,600 feet south from the northern boundary of the Portion. The seam is split and banded and the coal is inherently high in ash.

From the information so far available it is possible to estimate indicated reserves of approximately 530,000 tons of coal lying within the physical limits of open cut exploration within an area of 39 acres at the northern end of the area tested.

Introduction.

Surveyor Creek area adjoins the Buchanan Borehole colliery and is bounded on the north by the Pelaw Main private railway and road from West Wallsend to Buchanan. Drilling was confined to Portion 11, Ph. of Stockrington.

With the exception of one bore all holes were sunk on the eastern side of the northerly flowing creek which joins Surveyor Creek outside the area under discussion.

The Borehole seam is exposed at several points in this creek and it appears to dip easterly at angles ranging between 5 and 12 degrees. The attached plan shows the drilling layout. In general bores were spaced at intervals of 900 feet parallel to the strike and at 600 feet in the direction of the dip.

Proximate analyses of the coal were carried out by the New South Wales Mines Department laboratory in Sydney. All coal cores were forwarded from the field and shale etc. bands of greater thickness than half an inch were discarded by the analysts. Stony coal or carbonaceous shale with S.G. greater than 1.6 was also rejected from the assay samples. Consequently the analyses quoted indicate a composition roughly equivalent to that which might be expected for cleaned or hand-picked coal from this area.

Coal suitable for open cut mining is defined as that which has a calorific value not below 10,000 B.Th.U's per pound, occurs in seams 5 feet or more in thickness and is overlain by less than 15 times its own thickness of overburden. The maximum depth for open cut operation is 170 feet below natural surface.

Drilling Results.

Six bores in the northern part of the area intersected coal which conforms to these conditions, and occupies an irregularly triangular area of 39 acres. The bores and the

co-ordinates of their positions are:

S2 1800' N : 600'W
 S4 1800' N : 00
 S21 1800' N : 600'E
 S5 900' N : 00
 S1 00 : 600' W

Reference should be made to the plan (No. N14-62) and the sections (No. N.14-63) herewith.

Salient details of the five bores mentioned above are set briefly below:

Bore No.	Approx. * Elevation of surface above sea level. Feet.	Depth and Thickness of Coal Seam <u>In</u> cluding bands.						Core Recovery <u>In</u> cluding bands		
		From		To		Thick- ness		Ft. Ins.		Percent.
		Ft.	Ins.	Ft.	Ins.	Ft.	Ins.	Ft.	Ins.	
S1	114	97	5	106	8	9	3	4	11	53.2
S2	107	43	0	52	0	9	0	3	0	33.3
S4	97	57	0	69	7	12	7	5	9	45.8
S5	121	111	7	120	4	8	9	6	5½	81.6
S21	110	82	11	90	0	7	1	6	3	64.8

* Not related to standard datum.

These figures should be compared with Table 1 which shows coal thicknesses with bands excluded.

Indicated Coal Reserves.

The tonnage of coal and its average composition with bands excluded from both figures are shown in summarized form:

Long Tons	Average Thick- ness Feet	Composition*				
		Moist.	Volatiles	Fixed	Ash	B.Th.U's.
		%	Matter	Carbon	%	per lb.
530,000	8.5	3.2	31.0	44.9	20.9	11,120

* Average of 4 bores no analyses for Bore S21 having been received.

Overburden.

Thickness of overburden ranges from 40 to 112 feet and averages approximately 75 feet. The overburden consists largely of conglomerate and conglomeratic sandstone which reaches the maximum thickness of 75 feet in Bore S5. Details of the overburden are shown in the graphic logs attached.

Recommendation.

Assumptions, necessitated by poor core recovery, have been incorporated in the quantity calculation used in this report, and thereby an appreciable element of uncertainty has been introduced. The tonnage figure must be accepted with reserve.

Before any commitments are made further sampling, preferably by shaft sinking near the following points should be carried out:

2100' N / 00

1400' N / 00

1000' N. / 400' W

500' N / 700' W

If open cut mining on the western side of the creek is contemplated the result of Bore S2 should be verified by a sampling shaft.

SURVEYOR CREEK AREA.

Parish of Stockrington, Co. Northumberland.

TABLE 1, DETAILS OF INDICATED COAL RESERVES.

Thickness of Coal <u>Excluding</u> Bands More than $\frac{1}{2}$ inch Thick.						Overburden Thickness. (b) Feet.	Composition of Coal (Bands <u>Excluded</u>)					Approximate B.Th.U's per with bands <u>Included</u> (c)
Bore	Assumed from	Recovered	Coal Re-				Moisture	Volatile	Fixed	Ash	B.Th.U's	
	Log	and	covered &					Matter	Carbon		per lb.	
Ft.	In.	Ft.	In.	%			%	%	%	%		
S1	9	8	4	10	50.0	97.5	3.6	29.2	42.2	25.0	10,450	10,100
S2	9	0	1	8	18.5	43	3.0	34.3	51.6	11.1	12,580	11,300
S4	10	7	5	2	49.0	57	3.2	28.9	42.2	25.7	10,470	10,100
S5	8	0	5	2	64.5	111.5	2.9	31.5	43.7	21.9	10,970	8,300
S21	6	0	-		-	83	No analyses		-	-	-	-
Average	8	6				75	3.2	31.0	44.9	20.9	11,120	10,000

Tonnage. Average Thickness : 8.5 feet over 39 acres = $8.5 \times 39 \times 1600 = 530,000$ tons.

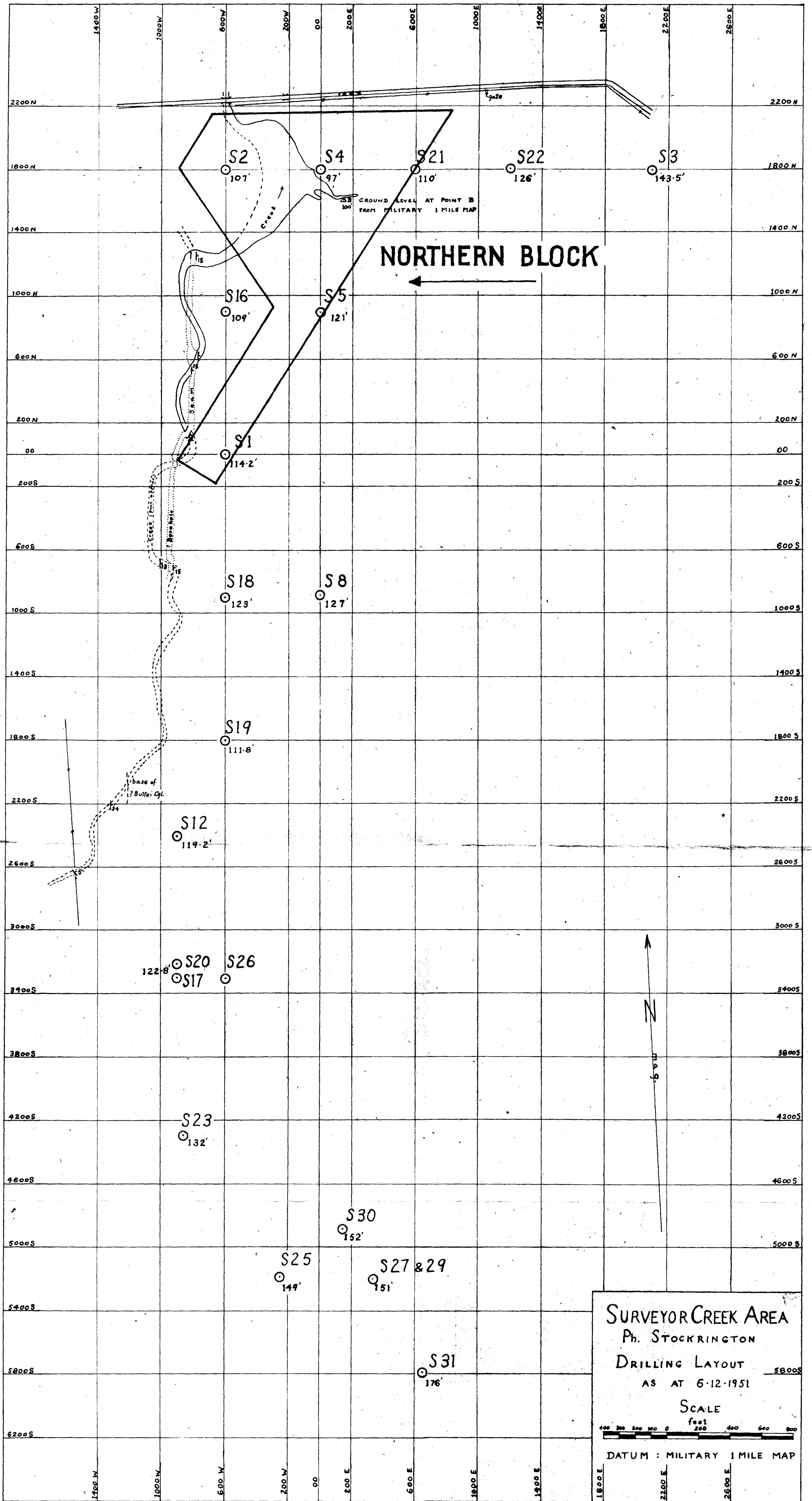
Overburden Thickness: Range 40 to 112. Average approximate 75 feet.

Ratio: Overburden to Coal: Range 4/1 to 14/1. Average approximately 9/1.

Notes. (a) Lost core for which there is no information is regarded as coal of same composition as that recovered and analysed.

(b) Overburden contains conglomerate or conglomeratic sandstone ranging in thickness from 40 feet to 75 feet.

(c) Calculated on assumption that bands have no calorific value.

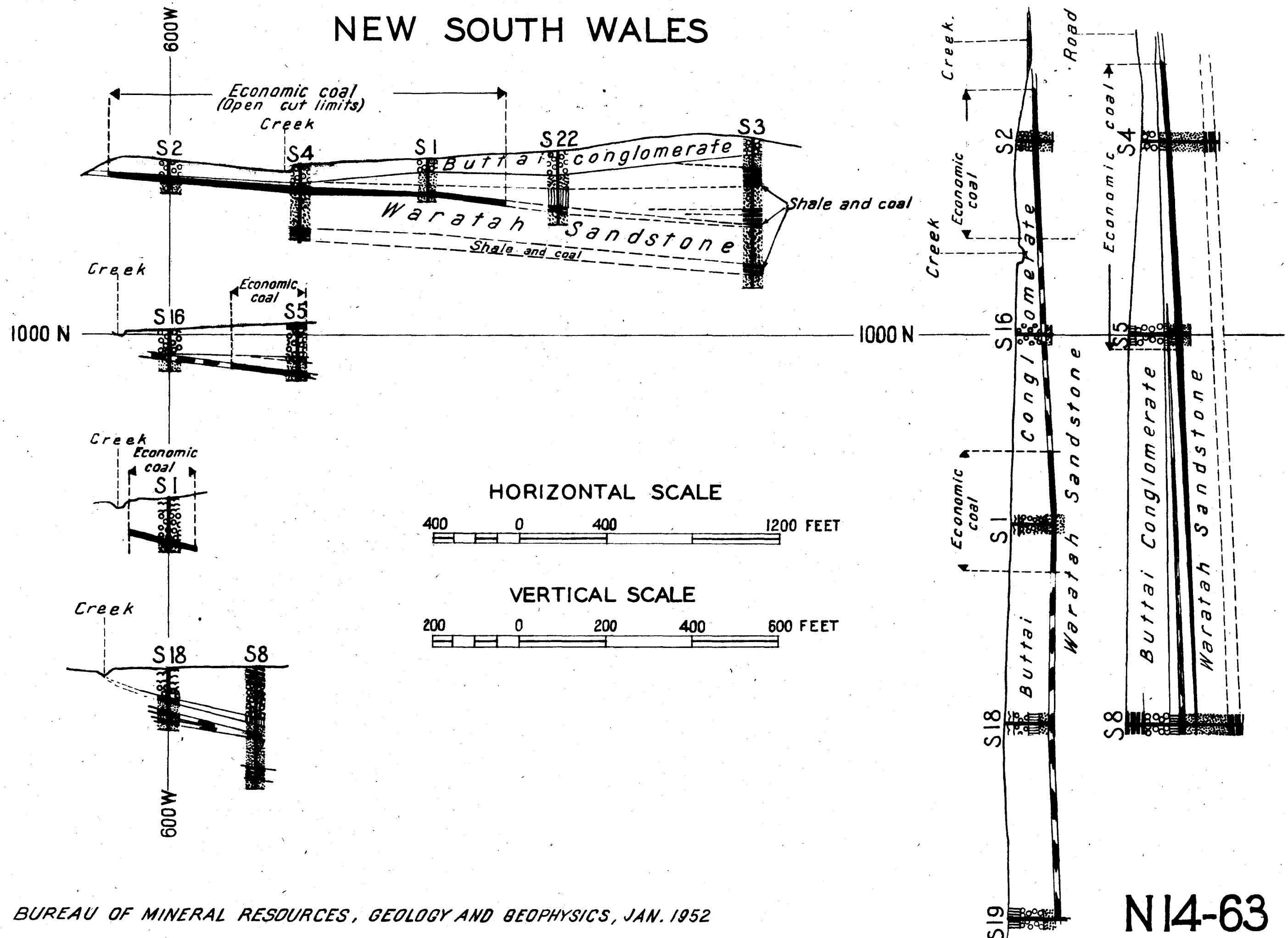


NI4-62

SECTIONS OF NORTHERN BLOCK SURVEYOR CREEK AREA

PSH. OF STOCKRINGTON, CTY. OF NORTHUMBERLAND

NEW SOUTH WALES



Commonwealth of Australia
Bureau of Mineral Resources
Geology & Geophysics

Area: SURVEYOR CREEK

Hole No: S1

Map Ref: N 14-62

R.L. 114'

Datum: Military One Mile Map

Driller: A. Pye

Logger: N. HOVLING

Started: 01/8/51

Completed: 15/8/51

Drill Type: Sullivan D.D. Total Depth of hole: 130'

Inclination of hole: Vertical

Depth	Section	Description	Cone Recovered		
			%		
	Coarse				
10			0	130'	
	Sand				
20					
30			7		
40			30		
			9		
50			10		
60			19		
			50		
			54		
			10		
70			36		
			40		
80			7		
			85		
90					

90

95'10"

97'5"

99'8"

108'6"

108'9"

110

120

130'

7

30

9

10

19

50

54

10

36

40

7

85

21.9% Ash 10,940 BTU/lb

45.6% Ash

19.3% Ash 11,350 BTU/lb

(1" band excluded from analysis)

37

50

18

85

51

23

92

70

100

97

N14-64 A

Commonwealth of Australia
Bureau of Mineral Resources
Geology & Geophysics

Area: SURVEYOR CREEK

Hole No: S 2

Map Ref: N 14-62

R.L. 107'

Datum: Military One Mile Map

Driller: A. Pye

Logger: N. HOLLING

Started: 11/8/51

Completed: 11/8/51

Drill Type: Sullivan DD

Total Depth of hole: 59'1"

Inclination of hole:

Vertical

Depth	Section	Description	Core Recovered
			%
10	Conglomerate		
20			0
30			
38'7"	Shale		
42'			23
44'			29
45'			58
			12
50'			
51'3"		11.1% Ash 12,580 Btu/lb	67
			82
60			

N14-64B

Inclination of hole: VERTICAL

N14-64 C

Area: SURVEYOR CREEK.
Hole No. S3.
Map Ref: N 14-62

R.L. 143.5' Datum: One Mile Map
 Driller: B.M.R. Logger: N. Hoyling
 Started: 8/8/51 Completed: 16/8/51
 Drill type: FAILING "2500" Total depth of hole: 3502
 Inclination of hole: Vertical.

Depth	Section	Description	% Core Recovered		
				330'	Sandstone Shale
210'					Sandstone Shale
					Sandstone
220'				340'	Some Coal
					Sandstone Shale
					Sandstone Shale
230'				350'	Some coal.
240'	Carbonaceous laminar				
	Sandstone				
	Siltstone				
	Sandstone				
260'	Siltstone				
260'					
	Sandstone				
270'	Shale				
280'	Carbonaceous laminar				
	Sandstone Cgr. Shale				
	Sandstone Shale				
290'	30% Coal				
280's		23.8% Ash 10,750 B.T.U. 4 1/2. / 16.	121		
291's			104		
			116		
300'					

N 14-64 C

R.L. 97' Datum: military
 Driller: A. Pys Logger: N. Hoyling
 Started: 10/8/51 Completed: 7/9/51
 Drill type: Sullivan P.D. Total Depth of hole: 170
 Inclination of hole: Vertical

N14-64D

Commonwealth of Australia
Bureau of Mineral Resources
Geology & Geophysics

Area: SURVEYOR CREEK

Hole No: S 5

Map Ref: N 14-62

RL: 121' Datum: Military One Mile Map
Driller: N. Hoyling
Started: 13/8/51 Completed: 17/8/51
Drill Type: Sullivan D.D. Total Depth of hole: 124'
Inclination of hole: Vertical

Depth	Section	Description	Cone Recovered %		
			9		
10					
20			21		
30			6		
40			75		
			74		
50		Sandstone	29		
		Conglomerate	14		
			111		
60			97		
			68		
			96		
			86		
70			155		
			75		
80			81		
		Grades into Siltstone			
89'		30% Ash	9,750 B.T.U./lb		

N14-64E

N14-64F

Commonwealth of Australia
Bureau of Mineral Resources
Geology & Geophysics

Area: SURVEYOR CREEK

Hole No S 8

Map Ref: N 14-62

R.L. 127'

Datum: Military One Mile Map

Driller: A. Pys

Logger: N. Hoyling

Started: 15/9/51

Completed: 22/9/51

Drill type: SULLIVAN D.P. Total Depth of hole: 271'

inclination of hole:

VERTICAL

Depth	Section	Description	Core Recovered
210			
			99
220			
			100
230		Marl	
			99
239 1/2 240 1/2		23.6% Ash 10,800 BTU/lb	
			98
246 1/2 251 1/2		27.7% Ash 10,230 BTU/lb	
			105
			88
260			
			90
270			
280			

N 14-64 F

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Bureau of Mineral Resources
Geology & Geophysics

Area: SURVEYOR CREEK.

Hole No S 16.

Map Ref: N 14-62

R.L. 109' Datum: Military One Mile Map.
Driller: B. M. R. Logger: N. HOYLING.
Started: 19/10/51. Completed: 22/10/51.
Drill Type: Falling "750" Total Depth of hole: 100'8"
Inclination of hole: Vertical.

Depth	Section	Description	Core Recovered
	Soil		
	Conglomerate and Sandstone		
10			
20			
30			
40	Cgt. and clay.		
50			
60	Cgt. and coal		
70			
	Ss. and coal		
80			
	Sandstone		
90			

N14-64H

Commonwealth of Australia
Bureau of Mineral Resources
Geology & Geophysics

Area: SURVEYOR'S CREEK

Hole No: S 19

Map Ref: N14-62

R.L. 111.8'

Datum: Military One Mile Map

Driller: B.M.R.

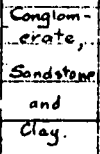
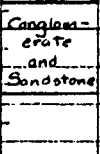
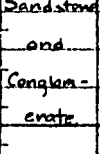
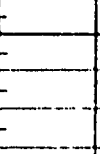
Logger: N. HOYLING

Started: 23/10/51

Completed: 25/10/51

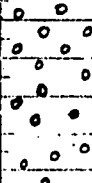
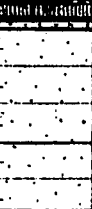
Drill Type: 750 "FALLING" Total Depth of hole: 122'

Inclination of hole: Vertical

Depth	Section	Description	Percent Core Recovered
0			
	Sandy Clay		
10			
	Conglom- erate and Sandstone		
30			
	Conglom- erate and Sandstone		
40			
	Conglom- erate and Sandstone		
50			
	Conglom- erate and Sandstone		
60			
	Conglom- erate and Sandstone		
70			
	Conglom- erate and Sandstone		
80			
	Conglom- erate and Sandstone		
90			
	Conglom- erate and Sandstone		
100			
	Conglom- erate and Sandstone		
110			
	Conglom- erate and Sandstone		
120			
	Conglom- erate and Sandstone		
130			
	Conglom- erate and Sandstone		
140			
	Conglom- erate and Sandstone		
150			
	Conglom- erate and Sandstone		
160			
	Conglom- erate and Sandstone		
170			
	Conglom- erate and Sandstone		
180			
	Conglom- erate and Sandstone		
190			
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200			
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210			
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220			
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990			
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1000			
	Conglom- erate and Sandstone		

N14-64 J

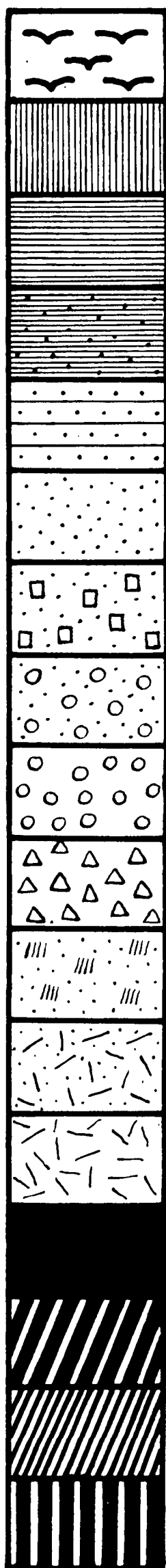
Area: SURVEYOR'S CREEK
Hole No 5 22
Map Ref: N 14-62

Depth	Section	Description	Percent Core Recovered
0			
10			
20			
30	Conglomerate with Sandstone.		
40	Conglomerate with Sandstone and Shale		
50	Conglomerate with Sandstone and Clay.		
	As above with Siltstone		
60	Sandstone and Conglomerate		
70	Sandstone with Shale and Coal		75 (60)
80			
	Sandstone and Coal.		
90		Thin bedded clay and coal	50 (40)

90	Sandstone with Shale and Coal.	
	Sandstone and Shale with Coal	
100	Sandstone with Shale	
110	Sandstone with Clay	
120	Sandstone with Clay	
	Sandstone with Clay and Coal	
130	Sandstone and Shale	
		100 76
140	Shale with Coal and Sandstone	
	Sandstone with Shaly Coal	
150		
160		
170		

N14-64 M

REFERENCE



Alluvium

Clay

Shale

Sandy Shale

Siltstone

Sandstone

Greywacke

Sandy Conglomerate

Conglomerate

Breccia

Chert

Tuff

Igneous Rock

Coal (Under 20% Ash)

Shaly Coal (20-30% Ash)

Carb. Shale (Over 30% Ash)

Carb. Shale or Coal
composition unknown