COMMONWEALTH OF AUSTRALIA.

DEPARTMENT OF NATIONAL DEVELOPMENT.

BUREAU OF MINERAL RESOURCES GEOLOGY AND GEOPHYSICS.

RECORDS.
1952/73

P A C I F I C A R E A

DRILLING RESULTS

By T.H. Rodger

Bureau of Mineral Resources, Geology and Geophysics

OPEN CUT COAL INVESTIGATIONS IN NEW SOUTH WALES

NEWCASTLE REGION

P A C I F I C A R E A

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C O N T E N T S.

SUMMARY.

A total of thirteen rotary cored bores were sunk by Bureau approximately one mile south of the village of ılba in the Parishes of Teralba and Awaba, Northumberland County. The Great Northern Seam in places is sufficiently thick for open cut mining but the coal is generally of very poor quality and the overburden to coal ratio much too high to warrant further drilling. Continued prospecting of the Fassifern Seam in this area is not warranted, because of the very poor quality of the coal in this seam.

INTRODUCTION.

The area is situated approximately one mile south of the village of Teralba on the western shore of Lake Macquarie. BMR Map N14-108 shows the topographical features of these 360 acres, in Portion 33, Parish of Teralba and Portions 30, 35 and 37, Parish of Awaba, County of Northumberland.

The Pacific Colliery requested the Joint Coal Board to investigate the Great Northern and Fassifern Seams in the northern part of the area, that is, that part of the Parish of Teralba between Marmong Creek and the southern boundary of the Housing Commission Reserve at Booragul. Later the southern section, south of Marmong Creek, was included for prospecting. The only known workings in the area are tunnels "A" and "B" (shown on Plate 1). Tunnel "A" was commenced by the Pacific Colliery but was abandoned when cindered coal was encountered. Tunnel "B" extends approximately ten yards into the seam. The coal exposed is very weathered.

Thirteen bores were drilled, BMR 1 and BMR 12 were redrilled as BMR 2 and BMR 13 respectively. BMR 3 was commenced approximately 25 yards south east of the present position of BMR 4, but as the bore was caving badly it was abandoned in favour of the site BMR 4. Because BMR 3 was not plugged, it could not be located when the survey was made, and so does not appear on the accompanying map.

Plate 1 shows the structure contours of the base of the Great Northern and Fassifern Seams respectively.

Plate 2 shows the Main Heading, dykes, faults and eastern limits of the workings of the Pacific Colliery and the approximate relation of this Colliery to the bores drilled by the Bureau of Mineral Resources.

GEOLOGY.

The upper beds of the Newcastle Stage of the Permian Upper Coal Measures are exposed in the area and consist mainly of conglomerate.

GREAT NORTHERN SEAM.

The Great Northern Seam has been mined extensively by the Pacific Colliery on the western side of the Teralba-Toronto Road. The general plan of this Colliery is shown on Plate 2. In the Pacific Colliery the seam has an average thickness of 14 ft. with one prominent band approximately 1 ft. 3 in. thick and 3 ft. from the roof of the seam, known to the miners as "Kerosene Shale Band." This "Kerosene Shale Band" is constant in position and thickness throughout the mine. The coal removed by the Pacific Colliery is of good quality for steam raising.

In the area investigated the thickness of the seam ranges from 6 ft. 4 in. in BMR 9 to 20 ft. 1 in. in BMR 8; in general the Great Northern Seam tends to decrease in thickness from BMR 8 to BMR 5 in a south easterly direction.

In BMR 10 it was hoped that the Great Northern and Fassifern Seams would be found, but though the bore was drilled to 122 ft., the only coal encountered was from 61 ft. 2 in. to 61 ft. 8 in. It would appear then from the structure contours on Plate 1 that the bore was placed below the outcrop of the Great Northern Seam.

From bores, shafts and surface mapping, it is known that the Great Northern Seam was laid down in depositional basins which are visible in the general profile of the seam. The area drilled is on the edge of one of these basins. The sudden steepening of the dip in the vicinity of BMR 5 and BMR 6 (see Plate 1) may be part of the structural basin. As evidence in support of this assumption, it is known that the dip within the Pacific Colliery conforms to the structural pattern in the area drilled. It is also known that the dip, which is to the north, steepens suddenly at the southern end of the Main Heading (see Plate 2).

The quality of the Great Northern Seam as shown by the analyses of core samples varies somewhat, but is generally poor. In BMR 7, 10 ft. of coal is of sufficiently high quality to be used for steam raising. In BMR 4 one ply 5 ft. 6 in. thick is of good quality, but in the other bores no ply of reasonable quality is greater than 3 ft. thick. In BMR 8 one band resembles the "Kerosene Shale Band" as found in the Pacific Colliery, but in the other bores this and other possible distinguishable bands are absent.

FASSIFERN SEAM.

The Fassifern Seam has been prospected by the Pacific Colliery 60 to 80 ft. beneath the Colliery floor, and it is reported to be of reasonable thickness and quality. In BMR 8 the Fassifern Seam was penetrated 68 ft. 4 in. below the Great Northern Seam. The seams encountered in BMR 11, 13 and BMR 2 are assumed to be the Fassifern Seam because of the following evidence: The structure contours at the base of the Fassifern Seam form a logical pattern (see Plate 1). BMR 13 was drilled 94 ft. 3 in. below the only seam encountered without penetrating further coal; the analyses of the coal from BMR 2 and from the Fassifern Seam in BMR 8 are comparable.

The variable thickness and the very poor quality of the Fassifern Seam in this area make it quite unsuitable for mining.

Twelve dykes have been intersected by the Main Heading of the Pacific Colliery, and these have a north west trend. Tunnel "A" was discontinued when cindered coal was encountered; therefore the most southerly of the dykes found in the Colliery does occur in the area. On Plate 2 the dykes visible in the Colliery have been projected into the prospected area. Drilling did not reveal any cindered coal.

One 4 ft. fault exists in the Pacific Colliery area (see Plate 2) and this has been projected also.

PLATE 1

GEOLOGICAL MAP

PACIFIC AREA

PARISHES OF AWABA AND TERALBA
COUNTY OF NORTHUMBERLAND N.S.W.

SCALE

FEET 400 200 0 400 FEET

PARISH OF TERALBA

PARISH OF AWABA

TO BOORAGUL

CULVERT DATUM 51·23'

10° 30'

TRUE MAGNETIC

NORTHERN RLY.

BOUNDARY BOORAGUL HOUSING RESERVE

BMR 8 44.5'

BMR 10 22.7'

BMR 7 66.5'

BMR 9 71.3'

PORT 33

CULVERT

MARMONG CREEK

BMR 4 110.4'

PORT 35

PORT 37

BMR 11 59.1'

PORT 30

BMR 12,13 170.0'

BMR 6 147.5'

BMR 5 151.3'

QUARRY

TUNNEL

BMR 1,2 207.1'

FROM TORONTO

TO MARMONG PT.

FROM BOLTON PT.

REFERENCE

ELEVATIONS AND CONTOURS IN FEET ABOVE SEA LEVEL

- BMR ROTARY BOREHOLE
- DATUM ON RAILWAY LINE TAKEN TO L.W.O.S.T.
- STRUCTURE CONTOURS ON BASE OF GREAT NORTHERN SEAM
- STRUCTURE CONTOURS ON BASE OF FASSIFERN SEAM
- CONTOURS
- APPROX. PORTION BOUNDARIES
- PARISH BOUNDARY

LOCALITY MAP

BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS, MUSWELLBROOK, NOVEMBER 1953.

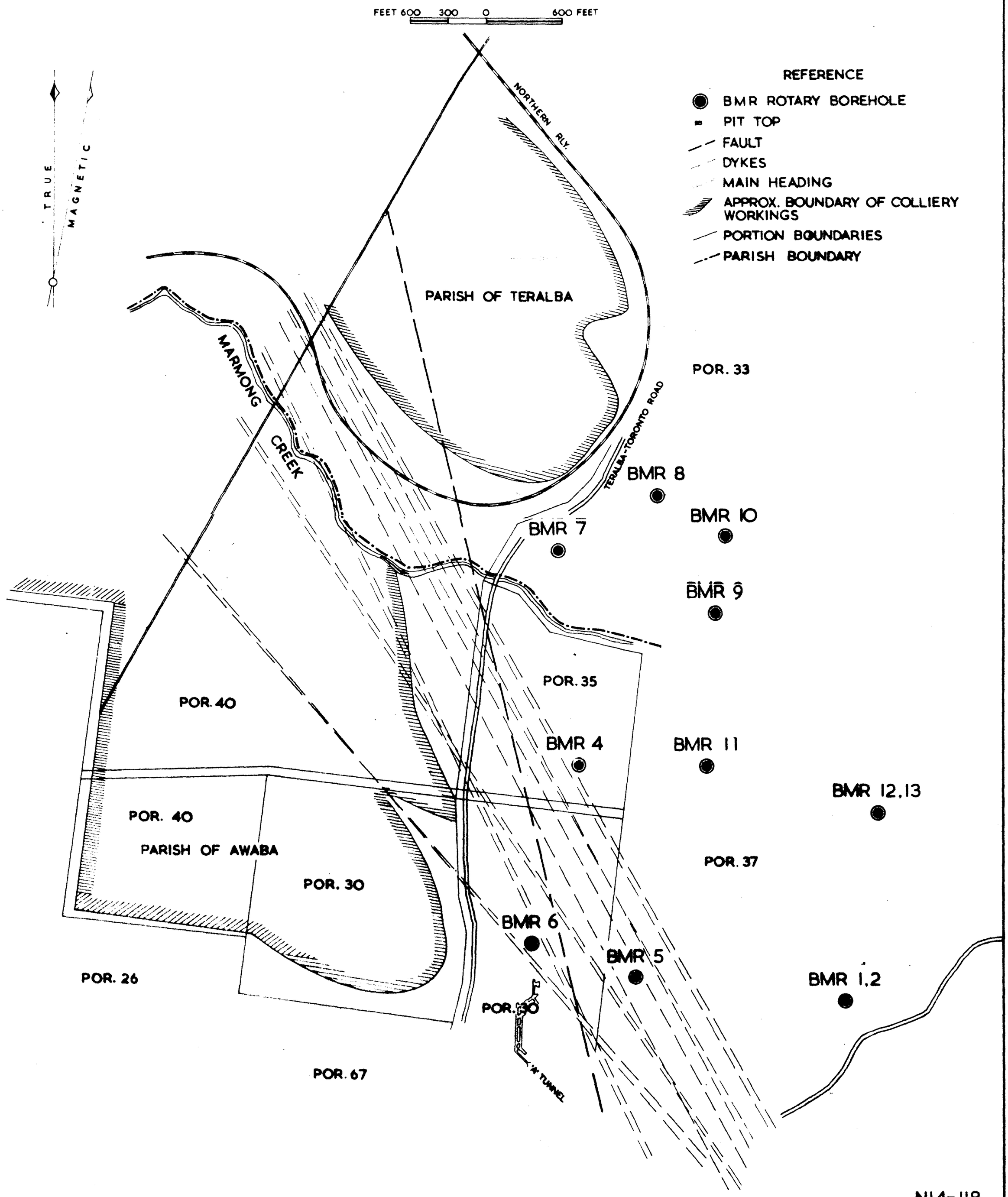
N14-108

L.M.

PLATE 2

SKETCH PLAN OF THE PACIFIC COLLIERY IN RELATION TO BORES DRILLED BY B.M.R.

PARISHES OF AWABA AND TERALBA, COUNTY OF NORTHUMBERLAND, N.S.W.



BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS, MUSWELLBROOK, NOVEMBER 1953

N14-118 L.M

PACIFIC AREA

List of Approximate Locations from Point of Origin, (Railway Datum).

True Bearings and Distances in Feet.

BMR 1	162°40'	5275'	BMR 7	204°30'	1410'
BMR 2	162°40'	5275'	BMR 8	173°30'	740'
BMR 3	Location unknown		BMR 9	160°00'	1615'
BMR 4	183°00'	2835'	BMR10	148°30'	1175'
BMR 5	179°00'	4555'	BMR11	164°00'	3280''
BMR 6	187°30'	4510'	BMR12	151°30'	4200'
		BMR 13	151°30'	4200'	

BUREAU OF MINERAL RESOURCES

Name and No. of Bore B.M.R.1. PACIFIC.

DISTRICT Newcastle COUNTY Northumberland PARISH Awaba PORTION 37 LOCATION 132°40'/5275'

Surveyed by M.C.Crittenden Survey Method Tel.Alidade Elevation 207.1 Ref. Map B.M.R. Map N/14/108

Logged by W.A.McKinnon Cased Datum L.W.O.S.T. Ref. Report B.M.R. Records 52/73

Sunk by B.M.R. Type of Drill Failing 750/290 Depth 51' Date Begun/Finished 28/7/52/30/7/52

Estimated Depth Ft.	Ins.	Estimated Thickness Ft.	Ins.	GEOLOGICAL DESCRIPTION OF STRATA	Core Measured Ft.	Ins.	Coal Sample No.	Min. Bands Included Ft.	Ins.	Min. Bands Excluded Ft.	Ins.	PROXIMATE ANALYSIS H.M.	V.	F.C.	ASH	B. TH. U/LB
24		24		Conglomerate light in colour fine-medium												
28		4		Greywacke l.yellow, fine-medium												
28	6		6	Clay white												
40	0	11	6	Clay orange and white (only return)												
40	6		6	COAL very weathered								GRT. NORTHERN SEAM (T.H.R.)				
41	6	1		COAL weathered & smutty												
43	0	1	6	COAL weathered & smutty		6										
44		1		COAL generally dull		11										
45		1		COAL dull & slightly weathered	1											
47		2		COAL dull weathered	1	5										
47	8		8	COAL dull		8										
49	1	1	5	COAL dull	1	3										
49	6		5	Claystone white		4										
51		1	6	Clayshale off white	1	6										

Hole completed.

8/6/53

BUREAU OF MINERAL RESOURCES

Name and No. of Bore: B.M.R. 2 PACIFIC.

DISTRICT: Newcastle | COUNTY: Northumberland | PARISH: Awaba | PORTION: 37 | LOCATION: 162° 40'/5275'

Surveyed by: M.C. Crittenden | Survey Method: Tl. Alidade | Elevation: 207.1' | Ref. Map: B.M.R. Map N14/108

Logged by: K.A. McKinnon | Cased: --- | Datum: L.W.O.S.T. | Ref. Report: BMR. Records 52/73

Sunk by: B.M.R. | Type of Drill: Failing 750/290 | Depth: 58'6" | Date Begun/Finished: 30/7/52-31/7/52

Estimated Depth Ft.	Ins.	Estimated Thickness Ft.	Ins.	GEOLOGICAL DESCRIPTION OF STRATA	Core Measured Ft.	Ins.	Coal Sample No.	Min. Bands Included Ft.	Ins.	Min. Bands Excluded Ft.	Ins.	PROXIMATE ANALYSIS H.M.	V.	F.C.	ASH	B. TH. U/LB
40	6	40	6	Conglomerate yellow, fine to medium												
41	9	1	3	COAL, mainly dull	1	2	1/BMR									
42	9	1		COAL, mainly dull, soft, weathered	1		2/BMR									
43			3	COAL, mainly dull, soft, weathered		3										
44		1		COAL, bright and dull		9										
44	3		3	COAL, dull, soft, weathered		3										
44	6		3	COAL, dull		3	3/BMR									
44	9		3	COAL, dull, soft, weathered		3										
45			3	Claystone, grey, very soft		3										
46		1		COAL, dull, soft, weathered		5										
46	4		4	COAL, dull, soft, weathered		4	4/BMR									
46	4½		½	Claystone, brown, very soft		½			½							
47	4½	1		COAL, dull	1		5/BMR:					3.1	25.6	45.2	26.1	10,490
48			7½	COAL, dull, very soft, weathered		7½	6/BMR					2.6	23.0	38.6	35.8	---
50		2		Claystone, white, soft	2											
58	6	8	6	Claystone, white, soft												

Hole completed.

8/6/53

BUREAU OF MINERAL RESOURCES

Name and No. of Bore: B.M.R,3. PACIFIC.

DISTRICT: Newcastle | COUNTY: Northumberland | PARISH: Awaba | PORTION: 37 | LOCATION:

Surveyed by: M. C. Crittenden | Survey Method: Tel. Alidade | Elevation: | Ref. Map: BMR. Map N14/108

Logged by: N. Hoyling | Cased: Nil | Datum: L.W.O.S.T. | Ref. Report: BMR. Records 52/73

Sunk by: B.M.R. | Type of Drill: Failing 750/262 | Depth: 21'7" | Date Begun/Finished: 4/8/52-4/8/52

Estimated Depth Ft.	Ins.	Estimated Thickness Ft.	Ins.	GEOLOGICAL DESCRIPTION OF STRATA	Core Measured Ft.	Ins.	Coal Sample No.	Min. Bands Included Ft.	Ins.	Min. Bands Excluded Ft.	Ins.	PROXIMATE ANALYSIS H.M.	V.	F.C.	ASH	B. TH. U/LB
21	7	21	7	Conglomerate, brown ~ fine to cobble, very incoherent.												
				Hole abandoned.												

8/6/53

BUREAU OF MINERAL RESOURCES

Name and No. of Bore B.M.R.4 PACIFIC. APPROX. From Pt. of Origin

DISTRICT Newcastle COUNTY Northumberland PARISH Awaba PORTION 35 LOCATION 103° 00'/2835'

Surveyed by M.C.Crittenden Survey Method Tel.Alidade Elevation 110.4 Ref. Map BMR. Map N14/108

Logged by N.Hoyling Cased Nil Datum L.W.O.S.T. Ref. Report B.M.R. Records 52/73

Sunk by B.M.R. Type of Drill Failing 750/262 Depth 143'11" Date Begun/Finished 8/8/52-15/8/52

Estimated Depth Ft.	Ins.	Estimated Thickness Ft.	Ins.	GEOLOGICAL DESCRIPTION OF STRATA	Core Measured Ft.	Ins.	Coal Sample No.	Min. Bands Included Ft.	Ins.	Min. Bands Excluded Ft.	Ins.	PROXIMATE ANALYSIS H.M.	V.	F.C.	ASH	B. TH. U/LB
95		95		Greywacke Conglomerate, brown pebble to fine, the fine bands being softer												
100		5		Greywacke, brown coarse to finely conglomeratic												
122	5	22	5	Greywacke, grey coarse to finely conglomeratic												
123	5	1		Shale, dark grey to black												
123	11		6	Shale, grey, soft		6										
124			1	Coal, dull, shaly		1										
126	5	2	5	Claystone, black, soft, probably representing weathered coal		7										
126	6½		1½	Coal, dull, soft		1½						GRT. NORTHERN SEAM (T.H.R.				
127	5		10½	Coal, dull with bright bands		8										
128	5	1		Coal, dull with some bright bands		10½	1/BMR		½			3.1	24.7	48.7	23.5	10,760
129	5½	1	½	Coal, dull, shaly in parts with some bright bands	1	½										
130	5		11	Coal, dull, with bright bands		10	2/BMR					3.0	28.4	50.5	18.1	11,690
132	5	2		Coal, dull, shaly in bands with many bright bands	2											
136	2	3	9	Coal, dull, shaly in parts with many bright bands	3	6½	3/BMR.					2.9	31.1	55.1	10.9	12,710
136	11		9	Coal, dull, with many bright bands		5	4/BMR.					2.5	26.2	44.8	26.5	10,470
139	3	2	4	Coal, dull, rather shaly, with some bright bands	1	9										
141	5	2	2	Shale, grey, hard	-											
143	11	2	6	Shale, grey, hard	1	11										

Hole completed.

8/6/53.

BUREAU OF MINERAL RESOURCES

Name and No. of Bore B.M.R.5 PACIFIC.

APPROX. From Pt. of Origin

DISTRICT Newcastle COUNTY Northumberland PARISH Awaba PORTION 37 LOCATION 179° 00'/4555'

Surveyed by M.C. Crittenden Survey Method Tel.Alidade Elevation 151.28 Ref. Map B.M.R. Map N14/108

Logged by N.Hoyling Cased Nil Datum L.W.O.S.T. Ref. Report BMR.Records 52/73

Sunk by B.M.R. Type of Drill Failing 750/290 Depth 116' Date Begun/Finished 7/8/52-11/8/52

Estimated Depth Ft.	Ins.	Estimated Thickness Ft.	Ins.	GEOLOGICAL DESCRIPTION OF STRATA	Core Measured Ft.	Ins.	Coal Sample No.	Min. Bands Included Ft.	Ins.	Min. Bands Excluded Ft.	Ins.	PROXIMATE ANALYSIS H.M.	V.	F.C.	ASH	B. TH. U/LB
15		15		Conglomerate, brown-pebble												
19		4		Shale-brown-soft												
24		5		Conglomerate-brown-pebble												
45		21		Claystone-grey-soft												
91		46		Conglomerate-brown-pebble												
102	2	11	2	Conglomerate-brown-grey-pebble, fine with some black shale & weathered coal at 91' and 96'												
102	6		4	COAL, dull mostly soft and weathered								GRT. NORTHERN SEAM (T.H.R.)				
103	6	1		COAL, dull with rare bright bands	1											
104	3		9	COAL, dull with bright bands, somewhat fissile in parts		9	1/BMR					3.5	26.5	71.8	18.2	11,350
104	4		1	Shale, grey, medium-hard		1					1"					
105	6	1	2	COAL, mostly dull, fissile in parts	1	2										
107	3	1	9	COAL, dull with frequent bright bands and rare shale partings. Dip about 5°	1	9										
107	3½		½	Shale, light grey, soft		½	2/BMR	½				3.2	22.9	44.8	29.1	9,730
107	11		7½	COAL, dull with bright bands		5										
108	7		8	COAL, dull with some small brown shale lenses.		8										
108	11½		4½	Claystone, greyish white, soft		4½										
109	0½		1	COAL, dull		1										
109	3		2½	COAL, dull soft, weathered		2½										
109	4½		1½	Claystone, greyish-white-soft with black bands		1½										
109	8		3½	COAL, dull with bright bands		3½										
109	8½		½	Claystone, white, soft		½										
109	10		1½	Shale, black, medium-hard		1½										
110	10	1		COAL, dull, with bright bands	1											
111	5		7	Shale, dark grey, hard		7										
111	6½		1½	Claystone, white, soft		1½										
111	8		1½	COAL, dull, shaly with some bright bands		1½										

Name and No. of Bore B. M. R. 5 PACIFIC.

Estimated Depth Ft.	Ins.	Estimated Thickness Ft.	Ins.	GEOLOGICAL DESCRIPTION OF STRATA	Core Measured Ft.	Ins.	Coal Sample No.	Min. Bands Included Ft.	Ins.	Min. Bands Excluded Ft.	Ins.	PROXIMATE ANALYSIS H.M.	V.	F.C.	ASH	B. TH. U/LB
112	2½		6½	Shale, light brownish grey, sandy, medium soft		6½										
113	8	1	5½	Sandstone, light brownish-grey, fine-grained shaly		11½										
116	0	2	4	Sandstone as immediately preceding												
				Hole completed.												
														8/6/1953.		

BUREAU OF MINERAL RESOURCES

Name and No. of Bore B.M.R. 6. PACIFIC.

APPROX. From E. of Crk. in

DISTRICT Newcastle COUNTY Northumberland PARISH Awaba PORTION 30 LOCATION 151°30'/45'10'

Surveyed by M.C. Crittenden Survey Method Tel. Alidade Elevation 147.5' Ref. Map B.M.R. Map N14/108

Logged by N. Hoyling Cased Nil Datum L.W.O.S.T. Ref. Report BMR. Records 52/73

Sunk by B.M.R. Type of Drill Failing 750/290 Depth 163'3" Date Begun/Finished 12/8/52-16/8/52

Estimated Depth Ft.	Ins.	Estimated Thickness Ft.	Ins.	GEOLOGICAL DESCRIPTION OF STRATA	Core Measured Ft.	Ins.	Coal Sample No.	Min. Bands Included Ft.	Ins.	Min. Bands Excluded Ft.	Ins.	PROXIMATE ANALYSIS H.M.	V.	F.C.	ASH	B. TH. U/LB
11		11		Shale buff m. soft												
17		6		Greywacke conglomerate ferruginous pebble												
19		2		Shale, buff, medium soft												
70		51		Greywacke as above												
135	9	65	9	Greywacke conglomerate, grey, fine, siliceous and hard in part												
135	11		2	COAL, dull								GRT. NORTHERN SEAM (T.H.R.)				
138	7	2	8	COAL, dull with bright bands, soft in part and then possibly weathered slightly	2	8	1/BMR					2.9	21.7	36.3	39.1	—
140	5	1	10	COAL, dull with many bright bands	1	10	2/BMR					2.8	30.1	50.7	16.4	11,970
146	11	6	6	COAL, as above	6	4	3/BMR					2.8	26.6	49.6	21.0	11,300
							4/BMR					2.9	26.7	43.3	27.1	10,310
147	10		11	COAL, dull very shaly		11	5/BMR					1.8	13.5	17.9	66.8	—
149	11	2	1	Shale, light, greyish brown very soft	2	1										
163	3	13	4	Shale, grey, very soft												

Hole completed.

8/6/53

BUREAU OF MINERAL RESOURCES

Name and No. of Bore B.M.R.7 PACIFIC.

DISTRICT Newcastle COUNTY Northumberland PARISH Teralba PORTION 33 LOCATION APPROX. Fr. o.t. of Origin 204 30'/141C'

Surveyed by M.C. Crittenden Survey Method Tel. Alidade Elevation 66.53' Ref. Map BMR. Map N14/108

Logged by N. Hoyling Cased -- Datum L.W.O.S.T. Ref. Report BMR. Records 52/73

Sunk by B.M.R. Type of Drill Failing 750/262 Depth 165' Date Begun/Finished 22/8/52-1/9/52

Estimated Depth Ft.	Ins.	Estimated Thickness Ft.	Ins.	GEOLOGICAL DESCRIPTION OF STRATA	Core Measured Ft.	Ins.	Coal Sample No.	Min. Bands Included Ft.	Ins.	Min. Bands Excluded Ft.	Ins.	PROXIMATE ANALYSIS H.M.	V.	F.C.	ASH	B. TH. U/LB
43		43		Fine brown conglomerate, greywacke or very coarse grained greywacke. Grey from 308												
65		22		Greywacke, grey, fine grained, cherty with fine conglomerate, bands hard												
70		5		Greywacke, light grey, fine grained, medium soft												
141		71		Greywacke, grey, medium grained of notably varying hardness												
141	7		7	COAL, dull, soft, weathered								GRT. NORTHERN SEAM (T.H.R.)				
143	7	2		COAL, dull with bright bands broken to fragmentary somewhat	1	8½	1/BMR					2.8	31.6	53.0	12.6	12,530
145	5½	1	10½	COAL, dull, shaly with some bright bands		3	2/BMR					2.9	25.0	44.5	27.6	10,050
145	7		1½	Sandstone, dark brown, fine grained hard		1½										
147	7	2		COAL, dull, shaly with some bright bands	1	4	3/BMR					2.8	28.7	51.8	16.7	11,710
147	10		3	COAL, dull with bright bands		3	4/BMR					2.8	28.8	53.9	14.5	12,190
147	10½		½	Shale, dark brownish grey		½		½								
149	6	1	7½	COAL, dull, with bright bands	1	7½										
150	10	1	4	COAL, dull with bright bands	1	4	5/BMR			1"		2.9	27.3	51.7	18.1	11,440
150	11		1	Siltstone, dark, grey, hard		1										
151	6		7	COAL, dull with bright bands		7										
153	6	2		COAL, dull with bright bands	2		6/BMR					3.3	28.9	51.2	16.6	11,580
155	6	2		COAL, dull with bright bands(dip under 5°)	1	11	7/BMR					2.9	30.4	50.2	16.5	11,940
[illegible]	[illegible]	[illegible]	[illegible]	with bright bands												
156	7	1	1	COAL, dull, very shaly scoring as biscuits	1	1	8/BMR					1.7	13.0	17.9	67.4	--
158	6	1	11	Shale, grey, medium hard somewhat sandy towards bottom		9										
160	9	1	9	Siltstone, grey, hard, heavy sideritic		5										
165		4	3	Sandstone, light grey, very fine grained medium hard	4	3										
				Hole completed. 8/6/53.												

BUREAU OF MINERAL RESOURCES

Name and No. of Bore: B.M.R. 8 PACIFIC

APPROX. From S. of Origin

DISTRICT: Newcastle | COUNTY: Northumberland | PARISH: Teralba | PORTION: 33 | LOCATION: 175°30'/740'

Surveyed by: M.C. Crittenden | Survey Method: Tel. Alidade | Elevation: 44.5' | Ref. Map: B.M.R. Map N14/108

Logged by: N. Hoyling/T.H. Rodger | Cased: --- | Datum: L.W.O.S.T. | Ref. Report: BMR. Records 52/73

Sunk by: B.M.R. | Type of Drill: Failing 750/290 | Depth: 180'5" | Date Begun/Finished: 25/8/52-5/9/52

Estimated Depth Ft.	Estimated Depth Ins.	Estimated Thickness Ft.	Estimated Thickness Ins.	GEOLOGICAL DESCRIPTION OF STRATA	Core Measured Ft.	Core Measured Ins.	Coal Sample No.	Min. Bands Included Ft.	Min. Bands Included Ins.	Min. Bands Excluded Ft.	Min. Bands Excluded Ins.	PROXIMATE ANALYSIS H.M.	V.	F.C.	ASH	B. TH. U/LB
10		10		Shale, reddish to dark brown					-							
37		27		Conglomerate and very coarse sandstone												
54	10	17	10	Conglomerate, fine-grained dark grey												
55	4		6	COAL dull shaly								— GRT. NORTHERN SEAM (T.H.R.)				
55	5		1	Shale brown soft		1										
59	4	3	11	COAL dull with bright bands	3	11	1/BMR.					3.0	25.8	56.8	14.4	11,770
60	2		10	COAL dull with bright bands		10	2/BMR.					3.2	24.3	46.5	26.0	10,440
61	0		10	Shale brown to grey to black		10										
61	2		2	COAL dull		2	3/BMR.					3.1	27.1	47.2	22.6	10,930
63	4	2	2	COAL dull with some bright bands, soft and shaly, coring as "biscuits"	2	2										
63	7		3	COAL, dull with bright bands		3	4/BMR.					3.0	27.5	51.3	18.2	11,610
64	11	1	4	COAL, dull with bright bands fragmentary in part	1	4										
65	1		2	COAL, dull, shaly		2										
65	7		6	COAL, dull with bright bands												
67	7	2		COAL, dull with bright bands	2		5/BMR.					3.3	28.1	54.6	14.0	12,190
67	8		1	Claystone, grey, very soft		1										
68	3		7	COAL, dull, fragmentary and shattered		7										
68	4½		1½	Sandstone, grey, fine grained, medium, soft		1½				1½						
69	1½		9	COAL, dull, broken and fragmentary		9	6/BMR.					3.2	26.1	48.2	22.5	10,750
69	2		½	Claystone, brown, very soft		½			½							
69	7		5	COAL, dull with bright bands		5										
70	7	1		COAL, dull, somewhat shaly, shattered		2½										
74	1	3	6	COAL, with hard shaly bands (drillers report)												
74	2½		1½	COAL, dull, shaly		1½										
74	3		½	Shale, brownish, very soft		½	7/BMR.		½			3.4	24.1	37.5	35.0	--
74	11		8	COAL, dull with bright bands		7½										
75	3		4	Shale, black, hard												
75	7		4	Shale, black, hard		4										
76	6		11	Shale, light greenish, khaki-grey, m. hard.		3										

Name and No. of Bore BMR 8 PACIFIC

Estimated Depth Ft.	Ins.	Estimated Thickness Ft.	Ins.	GEOLOGICAL DESCRIPTION OF STRATA	Core Measured Ft.	Ins.	Coal Sample No.	Min. Bands Included Ft.	Ins.	Min. Bands Excluded Ft.	Ins.	PROXIMATE ANALYSIS H.M.	V.	F.C.	ASH	B. TH. U/LB
~~78~~	~~1~~	~~1~~	~~7~~	~~Shale, light grey to black, medium hard~~												
78	5		4	Shale, black, hard		4										
78	11		6	COAL, dull, shaly, flaky		6										
79	5		6	Shale, light grey, hard		6										
80	5	1		Sandstone, light grey, fine grained, medium, hard	1											
87	0	6	7	Sandstone, light grey, fine grained, medium hard.												
110	6	23	6	Greywacke, light grey, fine grained, dense, generally shalybut in hard siliceous greenish and reddish bands												
143	3	32	9	Greywacke, light grey, tinged red in parts, fine grained siliceous, very hard in the top half.												
143	6		3	COAL, mostly dull								FASSIFERN SEAM (T.H.R.)				
144	8	1	2	Shale, black, pyritiferous, hard, nearly COAL	1	½		1	½							
144	9		1	Sandstone, grey, medium grained hard		1			1							
145	4		7	Shale, black hard nearly COAL		7	8/BMR.		7			1.9	16.0	31.6	50.5	0---
146	3		11	COAL, dull with bright bands		9										
146	3½		½	Shale, light grey, medium soft		½			½							
146	7		3½	COAL, dull, very shaly with calcite lenses		3½										
147	6		11	COAL, dull, with bright bands		5½										
148	2		8	COAL, dull very shaly		5½	9/BMR.					2.2	22.0	35.7	40.1	---
148	3½		1½	Siltstone, dark grey, hard		1½				1½						
149	10	1	6½	COAL, dull with some bright bands shaly and with calcite partings and cleat in the top half	1	2½										
151	9	1	11	COAL, mostly dull with brownish grey shale lenses, pyritiferous and copper staining.	1	11										
151	10½		1½	Siltstone, grey, carbonaceous		1½	10/BMR.		1½			2.3	22.9	35.1	39.7	---
152	1		2½	COAL, dull, very shaly		2½										
152	11		10	COAL, dull with abundant bright bands		10										
153	½		1½	Shale, dark grey, hard		1½										
155	2	2	1½	COAL, dull with bright bands	1	10										
157	2	2		COAL, dull with bright bands	2											
157	5		3	COAL, dull very shaly		3										

Name and No. of Bore BMR 8 PACIFIC

Estimated Depth Ft.	Estimated Depth Ins.	Estimated Thickness Ft.	Estimated Thickness Ins.	GEOLOGICAL DESCRIPTION OF STRATA	Core Measured Ft.	Core Measured Ins.	Coal Sample No.	Min. Bands Included Ft.	Min. Bands Included Ins.	Min. Bands Excluded Ft.	Min. Bands Excluded Ins.	PROXIMATE ANALYSIS H.M.	V.	F.C.	ASH	B. TH. U/LB
157	7		2	Shale, light grey, carb. soft		2	11/BMR			2		2.6	29.2	48.0	20.2	11,360
158	0		5	COAL, with bright bands		4½										
160	4	2	4	COAL, mostly dull rather shaly in bands	2	4										
160	6		2	Shale, greyish brown soft		2	12/BMR.8			2		2.6	27.9	44.7	24.8	10,670
160	11½		5½	COAL, dull rather shaly		5½										
161	3½		4	COAL, fragmentary, mostly bright pyritiferous		3½										
161	6		2½	Shale, brown silty medium soft		2½										
162			6	COAL, mostly dull and shaly		6										
162	4		4	COAL, mostly dull and shaly		3½										
162	4½		½	Shale, brown, micaceous, medium hard		½	13/BMR.8	½				2.2	20.7	31.8	45.3	---
162	6½		2	Shale, black, hard		1½		2								
163	½		6	Sandstone, grey, fine grained, shaly, soft		3				3						
163	11½		11	COAL, mostly dull and shaly		9										
164	1½		2	Shale, brown, medium soft		1										
164	3½		2	Claystone, brown, soft		1										
164	7		3½	Claystone, light grey soft		3½										
164	7½		½	Greywacke, greenish grey, coarse grained micaceous		½										
165			4½	Shale, black, hard		1	14/BMR.8					2.2	20.7	31.8	45.3	---
166		1		COAL, mostly bright, slightly pyritiferous	1											
167	5	1	5	Greywacke, grey, medium grained, medium hard	1	3½										
172	5	5		Conglomerate												
180	5	8		Shale, dark grey, hard.												

Hole completed.

9.6.1953.

BUREAU OF MINERAL RESOURCES

Name and No. of Bore: B.M.R.9 PACIFIC.

APPROX. Fro. Pt. of Origin

DISTRICT: Newcastle | COUNTY: Northumberland | PARISH: Teralba | PORTION: 33 | LOCATION: 130°00'/1315

Surveyed by: M.C.Crittenden | Survey Method: Tel Alidade | Elevation: 71.3' | Ref. Map: B.M.R.Map N14/108

Logged by: N.Hoyling | Cased: -- | Datum: L.W.O.S.T. | Ref. Report: BMR.Records 52/73

Sunk by: B.M.R. | Type of Drill: Failing 750/290 | Depth: 100'7" | Date Begun/Finished: 27/8/52-2/9/52

Estimated Depth		Estimated Thickness		GEOLOGICAL DESCRIPTION OF STRATA	Core Measured		Coal Sample No.	Min. Bands Included		Min. Bands Excluded		PROXIMATE ANALYSIS				
Ft.	Ins.	Ft.	Ins.		Ft.	Ins.		Ft.	Ins.	Ft.	Ins.	H.M.	V.	F.C.	ASH	B. TH. U/LB
78	7	78	7	Greywacke rough fine to cobble brown												
79	1		6	COAL dull								GRT. NORTHERN SEAM (T.H.R.)				
81	1	2		COAL dull with some bright bands	1	7	1/BMR					3.0	24.2	58.4	14.4	12,150
82	1	1		COAL dull with bright bands		10	2/BMR					2.9	30.0	51.1	16.0	11,930
82	6		5	COAL as above		5										
83	1		7	COAL dull soft partly weathered		4										
84	7	1	6	COAL dull soft badly weathered in bottom		9½	3/BMR					2.9	19.8	34.3	43.0	--
84	11		4	COAL, dull with thin bright bands		3½										
86	1	1	2	Shale grey soft carbonaceous		11½										
86	11		10	Shale dark grey to black, silty with coal laminae		9½										
87	5		6	Shale grey soft		5½										
88	1		8	Shale greyish-black, medium hard COAL laminae		4½										
88	4		3	Shale, light grey soft		2½										
90	1	1	9	Shale, dark grey, medium hard, sandy in part	1	5½										
90	8		7	Shale as above		7										
90	11		3	COAL in bright bands		3										
92	1	1	2	Shale as above		10½										
96	7	4	6	Sandstone, dark grey to black, fine grained, shaly, medium soft	2	6										
100	7	4		Sandstone as above		5										

Hole completed.

8/6/1953.

BUREAU OF MINERAL RESOURCES

Name and No. of Bore B.M.R. 10 PACIFIC.
APPROX. From Pt. of Origin

DISTRICT Newcastle COUNTY Northumberland PARISH Teralba PORTION 33 LOCATION 140°30'/1175'

Surveyed by M.C. Crittenden Survey Method Tel. Alidade Elevation 22.7' Ref. Map B.M.R. Map Ni4/108

Logged by N. Hoyling Cased -- Datum L.W.O.S.T. Ref. Report BMR. Records 52/73

Sunk by B.M.R. Type of Drill Failing 750/262 Depth 122'2" Date Begun/Finished 2/9/52-4/9/52

Estimated Depth Ft.	Estimated Depth Ins.	Estimated Thickness Ft.	Estimated Thickness Ins.	GEOLOGICAL DESCRIPTION OF STRATA	Core Measured Ft.	Core Measured Ins.	Coal Sample No.	Min. Bands Included Ft.	Min. Bands Included Ins.	Min. Bands Excluded Ft.	Min. Bands Excluded Ins.	PROXIMATE ANALYSIS H.M.	V.	F.C.	ASH	B. TH. U/LB
16		16		Sandy red and buff clay												
44	9	28	3	Greywacke, conglomerate, grey, fine to pebble												
45	2		5	COAL dull shaly												
47	5	2	3	Greywacke, light grey, fine-medium-hard	2	3										
48	5	1		Shale, black hard		7										
50	2	1	9	Greywacke as above	1	6										
61	2		11	Greywacke as above												
61	8		6	COAL dull shaly												
64	2	2	6	Siltstone, light grey, dense, medium-hard, with carb. bands	1	6										
70	0	5	10	Shale, grey, hard												
90		20		Sandstone, grey, very fine grained, dense, hard												
122	2	32	2	Shale, light grey, medium-hard, with softer bands.												

Hole completed.

9.6.53

BUREAU OF MINERAL RESOURCES

Name and No. of Bore B.M.R.11. PACIFIC

APPROX. Frm. Pt. of Origin

DISTRICT Newcastle COUNTY Northumberland PARISH Awaba PORTION 37 LOCATION 134°00'/3200'

Surveyed by M.C.Crittenden Survey Method Tel.Alidade Elevation 59.1' Ref. Map B.M.R. Map N14/168

Logged by T.H.Rodger Cased -- Datum L.W.O.S.T. Ref. Report BMR. Records 52/73

Sunk by B.M.R. Type of Drill Failing 750/262 Depth 92'3" Date Begun/Finished 25/9/52-29/9/52

Estimated Depth Ft.	Ins.	Estimated Thickness Ft.	Ins.	GEOLOGICAL DESCRIPTION OF STRATA	Core Measured Ft.	Ins.	Coal Sample No.	Min. Bands Included Ft.	Ins.	Min. Bands Excluded Ft.	Ins.	PROXIMATE ANALYSIS H.M.	V.	F.C.	ASH	B. TH. U/LB
7		7		Soil reddish brown												
22		15		Conglomerate yellow fine												
55	4	33	4	Conglomerate, medium-coarse, yellow-grey												
55	6		2	Conglomerate, medium-coarse												
55	7		1	Clay, dark grey with dark markings												
56	3		8	Shale, dark grey very soft in fine COAL bands top to $\frac{1}{4}$ inch		4										
57	3	1	0	Shale-clay, dark grey, fine COAL bands, possibly one to $\frac{1}{2}$ inch very weathered and soft		6										
57	7		4	Smut												
57	10		3	Shale, light grey soft with plant remains		2										
58	3		5	Shale, grey soft with thin COAL bands		2										
58	7		4	Clay, light grey with fragments dull COAL		2										
59	7		1	Clay, white, powdery when dry		1										
60	7	1		COAL, dull with bright bands		3							FASSIFERN SEAM (T.H.R.)			
61	7	1		COAL, dull with bright bands	1											
61	8		1	Shale, dark grey, containing one narrow band with pebbles to $\frac{1}{8}$" diameter		1½										
62	5		9	COAL, weathered, some bright bands and some very thin shale bands		7½										
62	7		2	COAL, dull with bright bands tending to be brittle		2										
63	10½	1	3½	COAL, dull with bright bands in part wholly bright, brittle	1	3½										
64	2½		4	COAL, dull some bright bands tending to shaly in part		4										
64	4		1½	Shale, carbonaceous, finely laminated, dark grey.		1½										
64	10		6	Shale, carbonaceous, black-grey in some fine bands, brittle bright COAL		3										
65	4		6	Shale, light-dark grey, finely laminated		4										

Name and No. of Bore B.M.R. 11 PACIFIC.

Estimated Depth Ft.	Ins.	Estimated Thickness Ft.	Ins.	GEOLOGICAL DESCRIPTION OF STRATA	Core Measured Ft.	Ins.	Coal Sample No.	Min. Bands Included Ft.	Ins.	Min. Bands Excluded Ft.	Ins.	PROXIMATE ANALYSIS H.M.	V.	F.C.	ASH	B. TH. U/LB
65	9		5	Shale light-dark grey finely laminated soft		4½										
66	5		8	Shale, dark grey with white clay between shale partings, weathered		7										
66	8		3	Shale, dark with little white clay		3										
67	0		4	Shale carb. black hard		2										
67	4		4	Shale, carb., with little white clay		4										
67	8		4	COAL, dull, shaly in part with some pyrite modules		4										
67	10		2	Shale, soft, finely laminated with clay		2										
68			2	Shale, hard, black		2										
73	2	5	2	Shale, hard, light-dark grey carb. with some disseminated pyrite between fine laminations of the shale	4	9										
73	6		4	Shale, black, carb., hard		5										
73	9		3	Shale, light grey		3										
73	11		2	Shale, black, carb.		2										
74	2		3	Shale, light grey, soft		3										
74	5		3	Shale, black, carb. hard		3										
74	7		2	Shale, soft, light grey		2										
74	8		1	COAL, bright, very brittle		1										
74	10		2	Shale, light grey, hard		2										
75	7		9	Shale, finely laminated with pyrite		9										
75	9		2	Siltstone very hard dark grey		2										
77	3	1	6	Shale finely laminated hard with pyrite some very thin COAL bands at base	1	6										
87	3	10		Shale as above												
92	3	5		Siltstone very hard light to dark grey, very fine grained	2	0										

Hole completed.

9.6.1953.

BUREAU OF MINERAL RESOURCES

Name and No. of Bore B.M.R. 12 PACIFIC.

DISTRICT Newcastle COUNTY Northumberland PARISH Awaba PORTION 37 LOCATION APPROX. Pic. No. of Origin 151°30'/1200'

Surveyed by M.C. Crittendan Survey Method Tel. Alidade Elevation 170.0 Ref. Map B.M.R. Map N14/108

Logged by T.H. Rodger Cased -- Datum E.V.D.S.T Ref. Report BMR. Records 52/73

Sunk by B.M.R. Type of Drill Failing 750/262 Depth 45'9" Date Begun/Finished 30/9/52-2/10/52

Estimated Depth Ft.	Ins.	Estimated Thickness Ft.	Ins.	GEOLOGICAL DESCRIPTION OF STRATA	Core Measured Ft.	Ins.	Coal Sample No.	Min. Bands Included Ft.	Ins.	Min. Bands Excluded Ft.	Ins.	PROXIMATE ANALYSIS H.M.	V.	F.C.	ASH	B. TH. U/LB
23	5	23	5	Conglomerate fine-medium, yellow, soft												
27	5	4		Conglomerate trace of smut at bottom												
28	5	1		Smut												
29	5	1		Smut												
30	5	1		Smut												
30	6		1	Clay		1										
31	4		10	COAL dull with bright bands, hard		8										
32	3		11	Smut fairly well consolidated		8										
34	5	2	2	Clay, has appearence of weathered tuffaceous material white in carb. markings		3										
35	8	1	3	Clay white as above, brown towards base	1	3										
35	11		3	Shale, black carb.		2½										
36	2		3	COAL, shaly, mixed with stiff grey clay		2										
36	4		2	Shale, black carb. with some thin COAL bands		2										
36	8		4	Shale, black, carb. soft												
37	8	1		Shale, black carb. with some thin COAL bands		6½										
38	8	1		Shale, black carb. with some thin bright COAL bands	1											
39	6		10	COAL dull with bright bands		10										
39	10		4	Shale black carb. with some clay		3										
40	4		6	Shale		6										
42	9	2	5	Shale light-dark grey, hard in part and weathered, soft and broken in part with some clay	1	10										
45	9	3	0	Shale light grey with clay bands and some carb. markings	1	2										
				Hole completed.										9.6.53		

BUREAU OF MINERAL RESOURCES

Name and No. of Bore B.M.R. 13 (PACIFIC (Redrill of BMR. 12?

DISTRICT Newcastle COUNTY Northumberland PARISH Awaba PORTION 37 LOCATION APPROX. From t. of origin 151° 30' / 1200'

Surveyed by M.C.Crittenden Survey Method Tel.Alidade Elevation 170.0' Ref. Map B.M.R. Map N14/108

Logged by T.H.Rodger Cased -- Datum L.W.O.S.T. Ref. Report BMR. Records 52/73

Sunk by B.M.R. Type of Drill Failing 750/262 Depth 138'3" Date Begun/Finished 2/10/52-6/10/52

Estimated Depth Ft.	Ins.	Estimated Thickness Ft.	Ins.	GEOLOGICAL DESCRIPTION OF STRATA	Core Measured Ft.	Ins.	Coal Sample No.	Min. Bands Included Ft.	Ins.	Min. Bands Excluded Ft.	Ins.	PROXIMATE ANALYSIS H.M.	V.	F.C.	ASH	B. TH. U/LB
29	2	29	2	Conglomerate yellow fine to medium grain												
30	1		11	Shale, carb. weathered												
31	1	1		Clay, brown at top, white at bottom		8½										
32	1	1		Clay (no recovery)												
32	7		6	Clay, brown-yellow very soft		3										
33			5	Shale, black carb. very weathered		4										
34		1		Shale, black carb. weathered		10										
35		1		Shale black to brown with some thin clay bands at bottom		9½										
35	8½		8½	Shale, brown		8½										
36			3½	Clay, brown, slightly silty		2										
38		2		Clay, (no recovery)												
39	11	1	11	Clay, yellow-brown, soft	1	9										
41		1	1	Shale, black, carb. with many bright COAL bands	1	1										
43		2		COAL in places rather shaly, mostly dull with some bright bands		10						GRT.	NORTHERN		SEAM	(T.H.R.)
44		1		COAL dull with bright bands		8										
45	2	1	2	Clay white with bands of black carb. shale	1	1										
46	1		11	Shale, dark grey hard with carb. markings		7										
47	7	1	6	Clay, white with many very thin bands black shale	1	6										
50	7	3		Siltstone, white to light grey, soft with many black shale bands	3											
68	2	17	7	Siltstone, light grey to white with bands black carb. shale.												
70	2	2		Greywacke, hard, fine grained yellowish green	2											
75	2	5		Sandstone, hard-fine grained, light-dark grey												
90	2	15		Sandstone, light grey fine grained												

Name and No. of Bore BMR 13 PACIFIC

Estimated Depth Ft.	Ins.	Estimated Thickness Ft.	Ins.	GEOLOGICAL DESCRIPTION OF STRATA	Core Measured Ft.	Ins.	Coal Sample No.	Min. Bands Included Ft.	Ins.	Min. Bands Excluded Ft.	Ins.	PROXIMATE ANALYSIS H.M.	V.	F.C.	ASH	B. TH. U/LB
95	2	5	0	Siltstone, l.gy.w.some bds.dk.gy.shale.												
100	2	5		Shale, dark grey, hard												
110	2	10		Conglomerate very hard medium-coarse dark grey												
115	2	5		Shale, dark grey, very hard												
138	3	23	1	Shale, dark grey, very hard with some bands black carb. shale												
				Hole completed.												
													9.6.1953.			