

FOLDER 6

Bureau of Mineral Resources, Geology and Geophysics.

OPEN CUT COAL INVESTIGATIONS IN NEW SOUTH WALES

CESSNOCK MUSWELLBROOK REGION

HOWICK AREA REPORT

Records 1953/47

Felder 6.

Bore logs of Test Boreholes No's. 19-76
in the Central & Southern Prospects of
the Parnell's Creek Subarea.

LIST OF ABBREVIATIONS USED IN BORE LOGS.

abundant - A	dolomite - dol.	marl - ml.
agglomerate - aggl.	ferruginous - ferr.	material - mat.
aggregate - aggr.	fibrous - fib.	matrix - mtx.
angular - ang.	fine - f.	medium - m.
arenaceous - aren.	fi ssile - fss.	micaceous - mic.
argillaceous - argill.	flint - flt.	mineral - min.
arkose (ic) - ark.	formation - fm.	mottled - mot.
anhydrite - anhyd.	friable - fri.	oolith - ool
band (s) - bd (s)	foraminifera - forams.	pebble (s) - pbl.
banded - bdd	fossil (iferous) - foss.	pyrite - pyr.
bentonite - bent	fracture - fract.	pyritiferous - pyrfr.
biotite - bio.	frosted - fstd.	purple - ppl.
bituminous - bit.	glaucinite (ic) - glauc.	quartz - q.
black - blk.	grain - gr.	quartzite - qite.
blue - bl.	granite - grt.	rare - R.
bottom - bot.	granular - grnl.	regular - reg.
boulder - bldr.	grey - gy.	residue - res.
brown - br.	greyish - grish.	round (ed) - rd.
breccia - brcc.	green - gn.	salt & pepper - s & p.
brecciated - brectd.	greenish - gnish.	sand - sd.
calcareous - calc.	greywacke - gw.	sandstone - sst.
carbonaceous - carb.	gypsum - gyp.	shale - sh
cement - cmt.	hard - hd.	shaly - shy.
chert - cht.	heavy - hvy.	siltstone - slst.
clay - cl.	heterogeneous - hetg.	siderite - sid.
clayey - cly.	igneous - ign.	slightly - sl.
claystone - clst.	indurated - ind.	siliceous - sil.
clayshale - clsh.	inferior - inf.	soft - s.
coarse - c.	interbedded - intb.	streak - strk.
cobble - cbl.	intraformational - infml.	tabular - tab.
colour - col.	jointed - jted.	thin-bedded - t.bdd.
common - C.	jointing - jtng.	tuffaceous - tuff.
compact - cpt.	kaolin - kaol.	very - v.
composition - comp.	laminated)	variable - var.
concretion - conc.	laminae) - lam.	weathered - wd.
conglomerate - cgl.	lamination)	white - wh.
contaminant (ated) - contm.	light - l.	with - w.
contorted - conttd.	limestone - lst.	yellow - y.
crystal - xsl.	massive - mass	yellowish - yish.
crystalline - xln.		
dark - dk.		
dense - d.		
distributed - dist.		
distribution - distn.		

The following interpretation is placed on the respective terms when applied to descriptions of cores recovered in coal:-

"broken" - fragments which can be put together to form cylinders, either approximate or actual, but which are not recognisably continuous with an unbroken portion of the same core.

PARNELL'S CREEK SUBAREA

(Central Prospect)

List of Approximate Locations of Test Boreholes
from Point of Origin No.3 (SE Cnr. Portion 11,
NE Cnr. Portion 5, Parish of Howick.) By True
Bearings and Distances in Feet.

19T	133°00'	6010	47T	91°50'	3840
20T	109°00'	3870	48T	65°45'	5370
21T	161°10'	3020	49T	76°20'	4500
22T	125°30'	6440	50T	65°00'	6440
23T	121°00'	6190	51T	91°20'	6270
24T	111°00'	7670	52T	197°10'	1850
25T	168°50'	4190	53T	95°10'	2630
26T	123°20'	3250	54T	124°45'	1550
27T	150°45'	3960	55T	103°30'	1740
28T	136°20'	3270	56T	77°00'	7010
29T	148°15'	4930	57T	151°00'	1920
30T	99°10'	4190	58T	See 41T.	
31T	130°40'	4680	59T	See 57T.	
32T	98°30'	4630	60T	123°40'	7830
33T	127°40'	4020	61T	113°30'	7930
34T	170°40'	4780	62T	104°20'	7970
35T	117°15'	4140	63T	129°45'	7880
36T	121°50'	7190	64T	108°00'	8200
37T	106°00'	4690	65T	107°50'	8800
38T	119°15'	8050	66T	119°20'	8940
39T	91°40'	4630	67T	115°00'	8600
40T	133°30'	7190	68T	113°00'	8210
41T	143°20'	3620	69T	111°50'	8860
42T	52°20'	4800	70T	96°15'	8960
43T	60°30'	5680	71T	101°15'	8060
44T	137°10'	2420	72T	120°15'	8650
45T	83°00'	3910	73T	123°10'	8900
46T	71°30'	5100	74T	126°10'	7460
		76T 69°15'			1850

(Southern Prospect)

Approximate Location from Point of Origin No.4.
(Howick Trig. Station.)

75T 61°00' 6050

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 19 T PARNELL'S CREEK

DISTRICT Cessnock COUNTY Muswellbrook PARISH Durham PORTION Howick LOCATION 12
 Surveyed by J.Svoronos/G.Stuart Survey Method Tel.Alidade Elevation 533.3' ASL. Ref. Map BMD Map N14-110
 Logged by M.C.Konecki Cased Not Datum Standard Ref. Report BMR Records 47/1953.
 Sunk by Pacific Boring Type of Drill Fail. 750 Depth 130ft. Date Begun/Finished 31.8.52/2.9.52

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
11	0	11	0	Sandstone, brown, clayey, wd., with limonitic pebbles, c.gr.												
21	1	10	1	Greywacke, c. to m.gr. l.br.gy. friable, limonitic stains, wd. clayey in parts	10	1										
21	4 $\frac{1}{2}$		3 $\frac{1}{2}$	Clay, mottled, white, brown & orange		3 $\frac{1}{2}$										
21	8		3 $\frac{1}{2}$	COAL - smut, clayey, mottled black, br. & pink		3 $\frac{1}{2}$										
22	0		4	Clay, mottled brown, red & pink		3										
22	9		9	COAL - smut, clayey, black		9										
23	1 $\frac{1}{2}$		4 $\frac{1}{2}$	Clayshale, dk.gy. br. & red		4 $\frac{1}{2}$										
24	1 $\frac{1}{2}$	1	0	Claystone, gy. with limonitic stain & veg. detritus	1	0										
26	7 $\frac{1}{2}$	2	6	Greywacke, l.br.gy. m. gr. with leaf impressions & plant detritus	2	6										
31	0	4	4 $\frac{1}{2}$	Siltstone, clayey, br.-gy. with numerous bands of carb. mat. clayey in lower part	4	2										
34	1	3	1	Claystone, gy & br.gy. with plant detritus & leaf impressions	3	1										
35	5 $\frac{1}{2}$	1	4 $\frac{1}{2}$	Siltstone, gy. with plant detritus, clayey	1	4 $\frac{1}{2}$										
35	10		4 $\frac{1}{2}$	Greywacke, gy. f.gr.		4 $\frac{1}{2}$										
38	4	2	6	Siltstone, dk.gy. & gy. with plant detritus & leaf impressions still wd.	2	6										
38	9		5	Greywacke, clayey, f.gr.		5										
40	5	1	8	Claystone, gy. with plant remains	1	6										
45	5	5	0	Greywacke, clayey, f.gr. gy. with plant detritus, interbedded with siltstone & thin bands of carb. mat. $\frac{1}{8}$ " coal-smut at 1' from top. wd.	5	0										
46	1 $\frac{1}{2}$		8 $\frac{1}{2}$	Greywacke, f.gr. gy. fairly hd. dip 30°		8 $\frac{1}{2}$										
47	1 $\frac{1}{2}$	1	0	Greywacke, f.gr. to v.f.gr. with plant det.	1	0										
49	8 $\frac{1}{2}$	2	7	Siltstone, gy. w. plant remains and leafImp.	2	7										

-Seam Q.

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
49	11 $\frac{1}{2}$		3	Clay-ironstone, gy. fractd. with limonitic stain & calcite veining		3										
50	10 $\frac{1}{2}$		8	Claystone, silty, gy., w. plant remains & leaf impressions		8										
52	0	1	11 $\frac{1}{2}$	Greywacke, l.gy. f.gr. w. plant detritus		8										
69	0	17	0	Greywacke, m. to c.gr.gy. with plant det.	17	0										
69	3 $\frac{1}{2}$		3 $\frac{1}{2}$	Greywacke, conglomerate, fine		3 $\frac{1}{2}$										
70	2 $\frac{1}{2}$		11	Greywacke, gy. c.gr. w. limonitic spots		11										
70	6		3 $\frac{1}{2}$	Shale, carb. silty, full of carb. detritus		1 $\frac{1}{2}$										
71	0 $\frac{1}{2}$		6 $\frac{1}{2}$	Greywacke, f. & v.f.gr. l. yellowish-grey. finely banded w. carb. matter		6 $\frac{1}{2}$										
72	3 $\frac{1}{2}$	1	3	Shale, carb. silty with numerous thin bands of plant remains	1	3										
72	4 $\frac{1}{2}$		1	COAL, dull silty		1										
72	5		$\frac{1}{2}$	COAL, bright		$\frac{1}{2}$										
73	10	1	5	COAL, bright, with cleat, partly wd.	1	5										
73	11		1	Shale, black, carb. silty		1										
74	3		4	COAL, mainly bright, with cleat		4										
75	7	1	4	Claystone, silty, gy. with plant detritus	1	4										
75	11		4	Shale, carb. w. plant remains		4										
79	8	3	9	Claystone, gy. silty with plant remains fractd. & slickensided in places	3	9										
81	4 $\frac{1}{2}$	1	8 $\frac{1}{2}$	Siltstone, gy. w. plant remains & leaf impressions, fractd. with limonite stain in the middle 4"	1	8 $\frac{1}{2}$										
82	2 $\frac{1}{2}$		10	Greywacke, l.gy. f.gr		10										
82	11 $\frac{1}{2}$		9	Siltstone, gy. w. plant remains		9										
84	0	1	0 $\frac{1}{2}$	Greywacke, l.gy. f. to m.gr.	1	0 $\frac{1}{2}$										
89	11	5	11	Greywacke, l.gy. m. to c.gr.	5	11										
90	6 $\frac{1}{2}$		7 $\frac{1}{2}$	Greywacke, f.gr. l.gy. with thin bds. of plant detritus		7 $\frac{1}{2}$										
90	10 $\frac{1}{2}$		4	Ironstone, fractd. limonitised with yellow stain and plant remains		4										
92	0	1	1 $\frac{1}{2}$	Greywacke, v.f.gr. l.br.gy. highly indurated	1	1 $\frac{1}{2}$										
93	0	1	0	Greywacke, l.gy. v.f.gr. with leaf impressions & plant detritus	1	0										
96	1	3	1	Greywacke, f.gr. l.gy. w. plant remains	3	1										

Seam V. ---

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
96	5 $\frac{1}{2}$		4 $\frac{1}{2}$	Claystone, gy. slickensided w. plant rem.		4 $\frac{1}{2}$										
96	6 $\frac{1}{2}$		1	Siltstone, coaly, black		1										
96	11 $\frac{1}{2}$		5	COAL, bright with cleat		5										
97	6		6 $\frac{1}{2}$	Claystone, gy. slickensided with plant rem.		6 $\frac{1}{2}$										
102	4	4	10	Greywacke, f.gr. l.gy. w. fine bands of carb. plant remains. 6" in the middle are fractd. & limonite stained	4	10										
102	6		2	Claystone silty, gy. full of plant detritus		2										
105	0	2	6	Claystone, sideritic dk.gy. w. veins of cal.	2	6										
107	7	2	7	Claystone, l.gy. soft. w. numerous plant remains	2	7										
108	8	1	1	Greywacke, gy. m.gr.	1	1										
110	11	2	3	Siltstone, gy. w. plant remains	2	3										
112	0	1	1	Siltstone, v.l.gy.	1	1										
115	3	3	3	Claystone, dk.gy. hd. with numerous plant remains	3	2										
115	4		1	COAL, bright		1										
115	7		3	Claystone, buff. hard. w. plant remains		3										
115	8		1	COAL, shaly		1										
116	5		9	Shale, carb. black, with some thin bands of bright coal		9										
118	11 $\frac{1}{2}$	2	6 $\frac{1}{2}$	COAL, dull & bright banded with a few bands (fine) of carb. shale	2	6 $\frac{1}{2}$										
119	5 $\frac{1}{2}$		6	Greywacke, l.gy. c. to f.gr. current bedded		6										
119	6		1 $\frac{1}{2}$	COAL, bright		1 $\frac{1}{2}$										
120	0		6	Greywacke, m. gr. gy.		3										
130	0	10	0	Greywacke, f.gr.gy. grading into a siltst. & claystone in places with numerous well preserved & coalified plant remains.	9	10										

Hole completed.

Section C.

typed 27.10.52

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 20T PARMENTER'S CREEK

DISTRICT Cessnock COUNTY Durham PARISH Howick PORTION Apprex. SECnr.Por.11
Muswellbrook LOCATION NECnr.Por.6/107°3950'
 Surveyed by J.Svoronos/G.Stuart Survey Method Tel.Alidade Elevation 456.4' ASL. Ref. Map BMR Map N14/110
 Logged by M.C.Konecki Cased 30'8" Datum Standard Ref. Report BMR Records 47/1953.
 Sunk by Drilling Corp. Type of Drill Mindrill E1000 Depth 130' Date Begun/Finished 1.9.52/9.9.52

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
5	0	5	0	Soil, sandy, dk.brown												
20	0	15	0	Sandstone, c.gr. br.-gy. wd. with bds. & lenses of limonite												
27	4	7	4	Greywacke, f. to m.gr. l.br. gy. clayey weathered												
38	0	10	8	Greywacke, m. & c.gr. l.br.gy. clayey. wd	10	8										
41	0	3	0	Greywacke, l.br.gy. m.gr. with fine bands of plant detritus	3	0										
50	0	9	0	Greywacke, l.gy. f. to m.gr. with inclusions of gy. clayshale	6	8										
59	3	9	3	Greywacke, gy. f. to m.gr. clayey, friable	5	10										
62	8	3	5	Greywacke, c.gr. l.gy. friable, clayey	3	3										
70	10	8	2	Claystone, gy. soft with plant remains		10										
70	11		1	Siltstone, dk.br. carb.		1										
72	0	1	1	COAL, bright with dull bands, pyritif.	10	1	1/BMR					4.8	33.6	54.1	7.5	12,980
72	11½		11½	COAL, dull with bright bands	11½											
73	1		1½	COAL, dull & fusinitic bands, shaly	1½		2/BMR					4.8	35.6	53.4	6.2	13,300
74	0	11		COAL, mainly bright, cleaved	6											
75	0	1	0	COAL, dull & bright banded	9											
76	1½	1	1½	COAL, bright with dull bands	1	1½	3/BMR					4.4	35.2	51.1	9.3	12,890
76	3½		2	COAL, fusinitic with thin bright bds.shaly	2											
76	7½		4	COAL, dull with thin bright bands	4											
77	0		4½	COAL, mainly bright	2½											
77	8½		8½	COAL, bright w. dull bands, fractd.	8½		4/BMR					4.5	36.3	50.2	9.0	12,970
78	1½		5	COAL, mainly bright	5											
78	7½		6½	COAL, bright w. dull bands, broken	6½											
78	8½		¾	Shale, carb. dk.br. -gy.	¾											
79	6		9½	Clayshale, dk.-gy. soft	¾											

---Upper Liddell Seam---

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
80	6	1	0	Greywacke, l.gy. clayey f.gr.w. current bedding of carb. mat.	1	0										
81	6	1	0	Clayshale; dk.gy. carb.		9										
83	4	1	10	Clayshale, carb. w. bands of coal		11 $\frac{1}{2}$										
83	6		2	Siltstone l.gy. clayey		2										
84	10	1	4	Claystone, l. gy. v. soft		9										
85	6		8	Greywacke, f.gr. clayey, current bedded (finely) with carb. mat.		7										
88	6	3	0	Siltstone, l.gy. to v.f.gr. greywacke friable w. thin bands of carb mat.	2	7										
93	6	5	0	Greywacke, l.gy. f. to m.gr. with some thin stringers of carb mat.	3	9										
95	1 $\frac{1}{2}$	1	7 $\frac{1}{2}$	Greywacke, l.gy. f. m. & c.gr. with crossbedding of carb. mat.	1	7 $\frac{1}{2}$										
98	6	3	4 $\frac{1}{2}$	Claystone, gy.w. plant detritus & leaf impressions.	1	0 $\frac{1}{2}$										
98	11		5	Clayshale, l.gy. soft w. plant remains		5										
99	5		6	COAL, dull		6										
104	10	5	5	Greywacke, l.gy. f. gr. w. silst. bds.	5	5										
109	3	4	5	Claystone, gy. w. plant remains	2	3										
110	0		9	Claystone, brown, sideritic		9										
112	7	2	7	Greywacke, f. gr. & silst. l.gy. interbdd.	2	7										
119	1	6	6	Greywacke, l.gy. m. gr.	6	6										
130	0	10	11	Greywacke, l.gy. m.gr. w. fine silst. bds. in places.	8	3										

? Middle Liddell Seam.

Hole Completed.

Typed: 31.10.52.

BUREAU OF MINERAL RESOURCES

BMR. 21 T. PARNELL'S CREEK.

Cessnock
 DISTRICT Muswellbrook COUNTY Durham PARISH Howick
 J.Svoronos/G. Stuart. Tel. Alidade 494.3 ABL LOCATION BMR Map N14-110
 Surveyed by M.C. Knoecki Survey Method 29 (Recovered) Elevation Standard Ref. Map BMR Records 47/1953.
 Logged by Drilling Corp. Cased Mindrill E.1000 Datum 135.9" Ref. Report 2.9.52/9.9.52.
 Sunk by Type of Drill Depth Date Begun/Finished

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
4	8	4	8	Soil, Sandy to 1'6" then weathered sandstone, br. w. limonitic pebbles	4	8						Artie's Seam.				
5	10	1	2	Greywacke, bd. indurated l. br. f. gr.	1	2										
10	5	4	11	Greywacke, f. & m. gr. wd. br.	5	5										
10	8		3	Ironstone, (limonitic) reddish-br.		3										
21	0	10	4	Claystone, buff, wd. fractd. on bottom	1	4										
26	0	5	0	Greywacke, l. br. gy. f. gr. clayey wd. with a 1 1/2" limonite on bottom	1	3										
29	0	3	0	Clayshale gy. wd. with plant remains carb. in lower half	1	9										
29	2		2	Claystone gy. wd. soft		2										
32	11 1/2	3	9 1/2	COAL, wd. brittle, shaly		6										
33	1		1 1/2	Siltstone, pink wd.		1 1/2										
39	10	6	9	COAL, wd. brittle, shaly		1										
40	6		8	Siltstone, pink & brown, wd. w. plant detritus		8										
41	0		6	Shale, carb. dk. br. gy. w. plant detritus		6										
48	0	7	0	Claystone, gy. wd. with plant remains	4	6										
56	0	8	0	Greywacke, gy. f. gr. w. some siltstone bands & plant detritus	5	8										
63	0	7	0	Greywacke, br. wd. m. gr. friable w. stringers of carb. mat.	6	7										
65	11 1/2	2	11 1/2	Greywacke, br. m. to c. gr.	2	1 1/2										
65	7 1/2		6	Siltstone, gy. interbdd. w. greywacke f. to m. gr.		6										
65	11		3 1/2	Greywacke, br. wd. m. gr.		3 1/2										
66	3 1/2		4 1/2	Siltstone, gy.		4 1/2										
66	7 1/2		4	Greywacke, br. m. gr.		4										
67	5 1/2	10		Siltstone, gy. & greywacke, br. m. gr. interbdd.		10										
82	10 1/2	15	5	Greywacke, br. gy. m. gr. to c. gr.	13	2 1/2										
86	0	3	1 1/2	Siltstone, l. gy. soft	3	1 1/2										

Name and No. of Bore

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
87	1 1/2	1	1 1/2	Greywacke, l. gy. f. gr.	1	1 1/2										
89	8	2	6 1/2	Clayshale, l. gy. w. plant remains & some thin carb. bands at base	2	6 1/2										
93	0	3	4	COAL, mainly dull	3	2	1/BMR	2/BMR				3.4	32.9	53.0	10.7	12,630
							3/BMR					3.6	37.0	53.5	5.9	13,570
												3.3	37.5	53.1	6.1	13,590
95	4	2	4	COAL, dull with fine, bright bands	2	4										
95	5		1	Clayshale, l. gy.		1										
95	10		5	COAL, dull & bright banded		5	4/BMR					3.5	35.4	50.1	11.0	12,770
95	11		1	COAL, mainly bright		1										
96	0		1	Shale, carb. w. bright coal bands		1										
96	6		6	COAL, dull & bright banded		6										
97	0		6	Sgale, brown pyritif.		6										
97	4		4	Claystone, l. gy.		3										
102	3	4	11	Siltstone, interbdd. w. greywacke, l. gy. f. gr.	4	11										
106	3	4	0	Greywacke, l. gy. f. gr. w. fine siltst. bds.	4	0										
113	0	6	9	Greywacke, l. gy. m. to c. gr.	5	5										
113	3		3	Greywacke, l. gy. f. gr.		3										
114	11	1	8	Greywacke, l. gy. c. gr. w. darker bands	1	8										
115	7		8	Claystone, l. gy. w. plant remains and coal bands		8										
117	1	1	6	COAL, dull		10										
119	9	2	8	Siltstone, & f. gr. greywacke interbdd.	1	8										
125	1	5	4	Greywacke, gy. f. gr. w. darker bands	5	4										
127	9	2	8	Greywacke, gy. c. gr.	2	8										
135	9	8	0	Greywacke, gy. m. to c. gr.	8	0										
Hole completed.																
												3/11/52.				

Upper Liddell Seam-

Middle Liddell Seam.

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 22T PARNELL'S CREEK

DISTRICT Cessnock Muswellbrook COUNTY Durham PARISH Howick PORTION 121 LOCATION /
 Surveyed by J.Svoronos/G.Stuart Survey Method Tel. Alidade Elevation 535.9' ASL. Ref. Map BMR map N14/110
 Logged by M.C.Konecki Cased Not Datum Standard Ref. Report BMR Records 47/1953.
 Sunk by Pacific Boring Type of Drill Failing 750/291 Depth 130ft. Date Begun/Finished 3.9.52/6.9.52

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
12	0	12	0	Clay, mottled, br. orange gy. & l.gy												
12	10		10	Claystone, soft, dirty -gy. with some plant detritus, wd.		10										
13	11	1	1	Ironstone (limonite) br.-red, fractd.	1	1										
14	0		1	Claystone, soft. gy. wd.		1										
14	2 1/2		2 1/2	Ironstone, br.red. fractd.		2 1/2										
14	6		3 1/2	Greywacke, br.-gy. f.gr. w. some plant det. wd.		3 1/2										
14	8 1/2		2 1/2	Ironstone, br.red. fractd.		2 1/2										
15	5		8 1/2	Siltstone, clayey, gy. wd. w. some plant detritus		8 1/2										
17	5	2	0	Greywacke, l.br.gy. f. & m.gr. with current banding of carb. mat. wd.	2	0										
17	10 1/2		5 1/2	Claystone, soft, gy. wd. w. plant detritus		5 1/2										
19	5	1	6 1/2	Greywacke, l.br.gy. m. to f.gr. with fine bands of carb. mat. in lower half	1	6 1/2										
21	0	1	7	Siltstone, br.gy. w. fine carb. bands fractd. in lower 1 1/2" wd.	1	1										
30	0	9	0	Greywacke, l.br.gy. f. & m.gr. with occasional bands of carb. mat. wd.	8	6										
41	4	11	4	Greywacke, c.gr. l.br.gy. to v.c.gr. in lower half, clayey, in the middle 6"	11	4										
41	7 1/2		3 1/2	COAL, smut, soft, clayey, wd.		3 1/2										
41	7 3/4		1/4	Siltst. carb. dk.br.gy. wd.		1/4										
41	9 1/4		1 1/2	COAL, dull, shaly with bright bds.		1 1/2	1/BMR					4.5	32.8	53.4	9.3	12,440
43	8 3/4	1	11 1/2	COAL, mainly bright w. cleat, some dull bands	1	11 1/2										
43	9 1/2		3/4	Clayshale, dk.gy. carb. soft.		3/4										
44	3		5 1/2	COAL, mainly bright w. cleat		5 1/2										
44	4		1	Clayshale, carb. black		1										

--Seam N--

[illegible]

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
83	9	1	9	Greywacke, gy. m. to f.gr. with thin irregular bands of carb. mat.	1	9										
85	0 $\frac{1}{2}$	1	3 $\frac{1}{2}$	Greywacke, gy. & dk.gy. v.f.gr. w. carb. mat.	1	3 $\frac{1}{2}$										
85	8 $\frac{1}{2}$		8	Siltstone, dk.gy. carb.		8										
86	0		3 $\frac{1}{2}$	Shale, carb. dk.gy. w. plant detritus.		3 $\frac{1}{2}$										
86	9		9	Claystone, buff, with fine carb. bds.		9										
86	10 $\frac{1}{2}$		1 $\frac{1}{2}$	COAL, bright with cleat		1 $\frac{1}{2}$										
86	11 $\frac{1}{2}$		1	Siltstone, l.br.gy.		1										
87	3		3 $\frac{3}{4}$	COAL, bright, with cleat		3 $\frac{3}{4}$										
87	10		7	Siltstone, coaly, black		7										
88	0 $\frac{1}{2}$		2 $\frac{1}{2}$	COAL, dull rather shaly		2 $\frac{1}{2}$	2/BMR					2.9	53.3	46.1	15.7	12,030
88	5		4 $\frac{1}{2}$	COAL, bright, with cleat		4 $\frac{1}{2}$										
88	6 $\frac{3}{4}$		1 $\frac{3}{4}$	Shale, carb. black, sandy in the middle		1 $\frac{3}{4}$				1 $\frac{3}{4}$						
89	11 $\frac{1}{2}$	1	4 $\frac{3}{4}$	COAL, mainly bright, with cleat	1	4 $\frac{3}{4}$										
91	0	1	1 $\frac{1}{2}$	Greywacke, gy. f.gr. w. thin bds. of carb. mat. & some siltst. gy.		11										
92	11	1	11	Siltstone, gy. w. plant remains & leaf impressions	1	11										
93	6		7	Clay-ironstone, l.br.gy. with calcite veins		7										
98	2 $\frac{1}{2}$	4	8 $\frac{1}{2}$	Siltstone, gy. w. plant remains	4	8 $\frac{1}{2}$										
99	0		9 $\frac{1}{2}$	Greywacke, m. & f.gr. l.gy.		9 $\frac{1}{2}$										
99	11		11	Siltstone gy. w. plant remains		11										
103	9	3	10	Greywacke, gy. f. & m.gr.	3	10										
104	3		6	Siltstone, dk.gy. w. carb. plant detritus		6										
105	0		9	Greywacke, m.gr. gy.		9										
105	6		6	Siltstone, sideritic, l.br.gy.		6										
106	2 $\frac{1}{2}$		8 $\frac{1}{2}$	Clayshale, br. with carb. bands		8 $\frac{1}{2}$										
107	0 $\frac{1}{2}$	10		COAL, bright with thin dull bands	10		3/BMR					2.9	31.9	47.3	17.9	11.620
107	2		1 $\frac{1}{2}$	Siltstone, dk.gy.		1 $\frac{1}{2}$				1 $\frac{1}{2}$						
107	3 $\frac{1}{2}$		1 $\frac{1}{2}$	COAL, bright with cleat		1 $\frac{1}{2}$										
107	6 $\frac{1}{2}$		3	Shale, gy. to carb. in lower 1"		3										
109	0	1	5 $\frac{1}{2}$	COAL, dull shaly with bright bds.	1	5 $\frac{1}{2}$	4/BMR					2.8	31.1	45.8	20.3	11,300

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
109	6 $\frac{1}{4}$		6 $\frac{1}{4}$	Claystone, carb. dk. gy. q. plant detritus		6 $\frac{1}{4}$	5/BMR	G				3.4	34.4	50.7	11.5	12,590
109	8 $\frac{3}{4}$		2 $\frac{1}{2}$	COAL, bright, with cleat		2 $\frac{1}{2}$										
109	10 $\frac{1}{4}$		1 $\frac{3}{4}$	Shale, carb. with plant remains		1 $\frac{3}{4}$				1 $\frac{1}{2}$						
110	2 $\frac{1}{2}$		4 $\frac{1}{2}$	COAL, mainly bright, w. dull thin bds.		4 $\frac{1}{2}$				1 $\frac{1}{2}$						
110	4		1 $\frac{3}{4}$	Shale, carb. silty. pyritiferous		1 $\frac{3}{4}$										
111	0		8	COAL, bright, w. cleat		8										
111	1		1	Shale, carb. w. plant remains		1				1						
111	2		1	COAL, bright w. cleat		1										
113	10	2	8	Siltstone, dk.gy. w. plant remains	2	8	6/BMR	H				2.9	34.0	51.2	11.9	12,700
116	3	2	5	Greywacke, gy. m.gr.	2	5										
116	4 $\frac{1}{2}$		1 $\frac{1}{4}$	Clayshale, carb. gy.		1 $\frac{1}{4}$										
116	6 $\frac{3}{4}$		2 $\frac{1}{4}$	COAL, bright		2 $\frac{1}{4}$										
117	0		5 $\frac{1}{4}$	Claystone, gy. w. plant remains		5 $\frac{1}{4}$										
124	0	7	0	Siltstone gy. w. plant remains & thin intercalations of greywacke, f.gr.	6	0										
125	1	1	1	Claystone, gy. w. plant remains	1	1										
125	2		1	Shale, carb. w. stringers of coal		1										
128	2	3	0	COAL, dull & bright banded	3	0	6/BMR					2.9	34.0	51.2	11.9	12,700
128	3		1	Shale, carb. w. thin stringers of coal		1										
128	7		4	Siltstone, gy. w. plant detritus		4										
129	5	10		Siltstone, dk.br-gy. sideritic w. calc. veining fractd.		10										
130	0		7	Claystone, silty, gy. w. plant remains		7										
Hole completed																
													3.11.52			

Cessnock

Name and No. of Bore

DISTRICT	COUNTY	PARISH	PORTION	LOCATION
Muswellbrook	Darwin	Newick		
Surveyed by J. Svernos/G.Stuart	Tel. Alidade	577.7'	ASL.	BMR Map N14/110
Logged by M.C. Konecki	Survey Method Nil	Elevation Standard		Ref. Map BMR Records 47/1953.
Sunk by Pacific Boring Company.	Cased	Datum	66'6"	Ref. Report 6/9/52 - 9/9/52
	Type of Drill Failing 750/SN.291	Depth		Date Begun/Finished

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.
11	0	11	0	Clay, sandy, yellowish-brown											
15	1½	4	1½	Greywacke, light grey, fine grained w. clay bands in places.	4	1½									
17	2¼	2	1	Clay-mottled, light gy. & brown weathered	2	1									
19	3½	2	1	Siltstone, grey & light brown w. plant detritus	2	1									
20	6	1	2½	Clay, mottled grey & brown weathered.		11									
20	8		2	Clay mottled, red, brown & grey.		2									
21	11	1	3	Ironstone, red-brown (limonite)	1	3									
22	0		1	Clay grey		1									
23	2½	2	2½	Siltstone, light brown grey w. plant remains, weathered	1	2½									
31	0	7	9½	Greywacke, light brown grey fine and medium grained w. carb. thin bds. wd.	7	9½									
40	0	9	0	Greywacke, light gy. yellowish medium to coarse grained	9	0									
49	0	9	0	Greywacke, light grey-yellowish, m. to coarse grained.	9	0									
52	11	3	11	Greywacke, light brown grey, coarse grd. weathered	3	11									
55	10	2	11	Greywacke, conglomerate, fine weathered	2	11									
57	4½	1	6½	Greywacke, light brown grey, coarse grained weathered.	1	6½									
58	0		7¼	COAL, weathered, almost smut.		1½									
60	8½	2	8¾	COAL, weathered, bright & smut	1	6			Seam 2						
61	8		11½	Claystone, grey w. plant remains		11½									
62	3		7	Sandstone, reddish (pink) fine grained w. plant remains		7									
63	9	1	6	Claystone, grey, w. plant remains, shaly in top half	1	6									
65	0	1	3	Claystone, grey w. plant remains, shaly in places	1	0									

~~Cassbrook~~

BMR 24T PARNELL'S CREEK

DISTRICT	Muswellbrook	COUNTY	Durham	PARISH	Howick	PORTION	5	LOCATION
Surveyed by	J.Svoronos/G.Stuart	Survey Method	Tel.Alidade	Elevation	569.3'	ASL.	Ref. Map	BMR Map N14-110
Logged by	M.C. Konecki	Cased	Not	Datum	Standard		Ref. Report	BMR Records 47/1953.
Sunk by	Pacific Boring	Type of Drill	Failing 750/291	Depth	118'		Date Begun/Finished	9.9.52/13.9.52

[illegible]

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
93	1	3	1	Siltstone; dk. gy. & black carb.	3	1										
93	7 $\frac{1}{2}$	5	6 $\frac{1}{2}$	Greywacke, l. gy. f. & m. gr. w. bds. of carb. materials.	5	6 $\frac{1}{2}$										
99	6		10 $\frac{1}{2}$	COAL; dull	1	10 $\frac{1}{2}$	1/BMR					3.9	30.9	55.8	9.4	12,380
100	10 $\frac{1}{2}$	1	4 $\frac{1}{2}$	COAL; dull with few thin bright bands.	1	4 $\frac{1}{2}$										
100	11		8 $\frac{1}{2}$	Siltstone dk. br.	3	7 $\frac{1}{2}$	2/BMR					4.3	31.6	54.6	9.5	12,300
104	6	3	7	COAL; dull w. vertical cleavage and occasional bright bands.	3	7	3/BMR					4.4	27.9	52.5	15.2	11,520
104	9		3	Siltstone, black, carb. (splint?)		3										
105	4		7	COAL; bright and dull banded		7	4/BMR					4.5	25.2	51.6	18.7	10,890
107	9	2	5	COAL; splint	2	5										
107	10		1	COAL; shaly, brittle		1	5/BMR					4.4	27.4	57.2	11.0	12,140
108	0 $\frac{1}{2}$		2 $\frac{1}{2}$	COAL; bright w. cleat.		2 $\frac{1}{2}$										
109	8	1	7 $\frac{1}{2}$	Greywacke, carb. in top 1" then l. br. gy. medium grained.	1	7 $\frac{1}{2}$										
112	10	3	2	Greywacke; l. gy. c. gr.	3	2										
118	0	5	2	Greywacke, conglomerate fine to medium	5	2										

Hole completed.

Typed: 31.10.52.

BUREAU OF MINERAL RESOURCES

Cessnock

Name and No. of Bore

BMR 25T PARNELL'S CREEK

DISTRICT Muswellbrook COUNTY Durham PARISH Howick PORTION 5 LOCATION 5
 Surveyed by J. Svoronos/G. Stuart Tel. Alidade 504.5' ASL. Ref. Map BMR Map N14/110
 Logged by M.C. Konecki Survey Method 18' Elevation Standard Ref. Report BMR Records 47/1953.
 Sunk by Drilling Corp. Cased Mindrill E1000 Datum 130' Ref. Report 10.9.52/15.9.52
 Type of Drill Depth Date Begun/Finished

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
10	0	10	0	Clay, yellow brown & l.gy	3	10										
14	0	4	0	Claystone, wd. gy. w. limonitic stain	1	4										
19	1	5	1	Greywacke, yellowish-gy. wd. f.gr.	1	8										
19	3		2	Ironstone (limonite) red-br.		2										
28	6	9	3	Greywacke, yellowish l.-gy. f. & m.gr.wd.	4	8										
32	5	3	11	Greywacke, l.gy. & gy. m. to f.gr. wd.	3	11										
36	6	4	1	Siltstone, clayey, l.br.gy. w. plant det.	1	2										
38	4	1	10	Shale, carb. wd. black & brown		7										
38	6		2	Shale, carb. dk.br.-gy. wd.		2										
38	8		2	Siltstone, clayey, br. wd.		2										
42	8	4	0	COAL, smut, shaly, black	1	3 $\frac{1}{2}$										
43	0		4	Siltstone, pink-brown wd. w. some bds. of coal smut		4										
44	6	1	6	COAL, weathered, crumbly,		4										
44	6 $\frac{3}{4}$		3 $\frac{3}{4}$	Siltstone, pink- brown		3 $\frac{3}{4}$										
44	8		1 $\frac{1}{4}$	COAL, smut, black, clayey		1 $\frac{1}{4}$										
45	4 $\frac{1}{2}$		8 $\frac{1}{2}$	Siltstone, pink-brown w. stringers of wd. coal		8 $\frac{1}{2}$										
48	6 $\frac{1}{2}$	3	2	COAL, soft, powdery, wd.		8										
48	9		2 $\frac{1}{2}$	Siltstone, pink-brown. wd.		2 $\frac{1}{2}$										
49	4		7	Greywacke, gy. f.gr.		7										
49	9		5	Siltstone, carb. dk.gy. w. thin bands of coal in lower 2"		5										
50	0 $\frac{1}{4}$		3 $\frac{1}{3}$	COAL, bright & dull banded		3 $\frac{1}{3}$										
50	1 $\frac{1}{4}$		3 $\frac{3}{4}$	Siltstone, brown		3 $\frac{3}{4}$										
50	2 $\frac{1}{4}$	1		COAL, shaly		1										
50	5 $\frac{1}{4}$	3		Siltstone, black, carb.		3										
50	8 $\frac{1}{4}$	3		COAL, bright with cleat		3										
52	11 $\frac{1}{2}$	2	3 $\frac{1}{4}$	Claystone, gy. w. carb. plant remains		10										
53	7		7 $\frac{1}{2}$	Greywacke, l.gy. m.gr.		7 $\frac{1}{2}$										
56	1	2	6	Siltstone, gy. w. plant remains	2	6										
56	5 $\frac{1}{2}$		4 $\frac{1}{2}$	Greywacke, l.gy. f.gr. w. bands of gy Sltst.		4 $\frac{1}{2}$										

Artie's Seam

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
59	1½	2	8	Siltstone, gy. w. plant remains and occasional intercalations of greywacke f.gr. w. stringers of carb. mat.	2	8										
59	6½		5	Greywacke, l.gy. m.gr.		5										
60	1½		7	Siltstone, gy. w. plant remains		7										
61	6	1	4½	Greywacke, l.gy. f. to m.gr.		11										
67	4	5	10	Siltstone, l.gy. w. few intercalations of f.gr. greywacke, gy.	5	10										
78	2	10	10	Greywacke, l.gy. c. & m.gr.	10	10										
83	3	5	1	Siltstone, l.gy. w. carb. banding & intercalations of greywacke, f.gr.	5	1										
98	6	15	3	Greywacke, m. & c.gr. w. some carb. bds. Dip about 25°	15	3										
101	2	2	8	Greywacke, l.gy. c.gr. with irreg. bands of carb. mat. in lower half	2	8										
104	3	3	1	Siltstone gy. w. irregular stringers of carb. mat. & thin coal	3	1										
104	7		4	COAL, bright		4										
104	7½		10½	Shale, carb. br.-gy.		½										
106	6	1	10½	COAL ?												
108	6	2	0	COAL, bright & dull banded	.1	10½	1/BMR25T					3.0	34.4	54.9	7.7	12,970
111	2	2	8	COAL, bright w. some dull bands	2	6½	2/BMR25T					3.1	36.7	50.5	9.7	12,710
112	0		10	COAL, bright w. cleat, broken		10	3/BMR25T					2.8	36.0	49.2	12.0	12,420
112	2½		2½	Clayshale, br. gy.		2½										
113	11	1	8½	Greywacke, l.gy. clayey, friable with bands of br.-gy. shale	1	6										
116	9	2	10	Siltstone, gy. w. carb. mat. & bands of f.gr. greywacke	2	10										
120	0	3	3	Greywacke, l.gy. m.gr.	3	3										
120	6		6	Greywacke, l.gy. f.gr.		6										
130	0	9	6	Greywacke, c.gr. w. some carb. bands in top 2'	9	6										
Hole completed																
													typed	31.10.52		

Upper Liddell

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 26 T. PARNELL'S CREEK

Cessnock
DISTRICT Muswellbrook COUNTY Durham PARISH Howick PORTION 5 LOCATION 5
Surveyed by J/Svoronos/G. Stuart. Survey Method Tel. Alidade Elevation 522.0' ASL. Ref. Map BMR Map N14/110
Logged by M.C. Konecki Cased 28 ft. Datum Standard Ref. Report BMR Records 1953/47
Sunk by Drilling Corp. Type of Drill Mindrill E.1000 Depth 138 ft Date Begun/Finished 10/9/52 - 18/9/52.

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
1	5	1	5	Soil, Clayey, yellow - brown	1	5										
7	0	5	7	Greywacke, l. yellowish gy. f. gr. wd.	5	6										
15	0	8	0	Claystone, soft, mottled l. gy. brown & yellow w. gw. l. br. gy.f.gr. in bds	6	2										
15	6		6	Claystone, gy. w. black stain of Mg. oxides		6										
15	11		5	Ironstone (Limonite) dk. br. red.		5										
28	3	12	4	Greywacke, l. br. gy. m. gr. wd.	12	3										
30	3	2	0	Greywacke f. gr. l. br. gy. indurated	2	0										
35	9	5	6	Greywacke f. m. gr. l. br. wd.	5	6										
43	1	7	4	Greywacke l. br. gy. f. gr. fractured vertically in places & fractures limonite stained	5	10										
49	4	6	3	Claystone, br. gy. wd. w. plant remains	4	10										
50	3		11	Ironstone (Limonite), yellowish br.		11										
55	3	5	0	Claystone, silty dk. gy. w. plant remains	4	5										
55	6		3	Limonite. l. br.		3										
55	8		2	Siltstone, dk. gy. carb.		2										
56	3		7	COAL, broken bright		1										
56	9		6	Siltstone carb. dk. gy.		1										
57	0	1	3	Claystone, dk. gy. carb.		3										
57	4		4	COAL, broken, bright		2										
57	9		4	Claystone, dk. gy. carb.		3										
61	9	4	0	Claystone. gy. w. plant remains	2	11										
62	2		5	Siderite, gy. fractd.		5										
63	5	1	3	Siltstone, gy. w. plant remains		5										
63	10		5	COAL, bright, broken		5										
63	11		1	Shale, carb. w. coal bands.		1										
64	4		4	COAL, bright, w. dull bands		4										
64	6		2	Shale, carb. w. coal bands		2										
64	8		2	Siltstone, grey		2										
65	3		7	COAL, bright, broken		3	1/BMR					3.2	31.7	47.8	17.3	11,520

Upper
Liddell
Sean

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
66	7	1	4	COAL, dull w. bright bands	1	4 1/2	2/BMR			-Upper Liddell Seam-		3.5	32.7	53.0	10.8	12,440
66	7 1/2			Siltstone, carb. black		7 3/4										
67	3		7 1/2	COAL, bright & dull banded		6 1/2										
67	9 1/2		6 1/2	COAL, bright with cleat												
68	3		5 1/2	Claystone, gy. w. stringers of carb. mat.		5 1/2	3/BMR					3.1	34.8	50.8	11.3	12,490
69	3	1	0	COAL, dull & bright banded		9 1/2										
69	11 1/2		8 1/2	COAL, as before but with cleat		8 1/2										
70	1 1/2		2	Siltstone, carb. clack		2										
71	5	1	3 1/2	COAL dull & bright banded, shaly in the middle 5"	1	2	4/BMR					3.2	33.8	49.6	13.4	12,260
71	6 3/4		1 3/4	COAL, bright		1 3/4										
72	2		6	COAL, bright, w. cleat.		6										
72	6		4	Shale, carb. w. thin coal bands		2										
72	7		1	Clayshale, gy.		1	10 1/4									
72	8 1/2		1 1/2	Greywacke, l. gy. f. gr.		1 1/2										
74	6 1/2	1	10 1/4	Siltstone, gy. w. plant remains	1	10 1/4										
76	4 1/2	1	6	Claystone, gy. w. plant remains	1	6										
76	11		10 1/4	Greywacke gy. w. carb. stringers & siltstone lenses.		6	8 1/2									
81	8 1/2	6	7 1/2	Claystone, gy. w. carb. plant remains	4	2										
83	1		4	Greywacke, gy. v. f. gr.	1	4										
85	9	2	8 1/2	Greywacke, l. gy. f. & m. gr.	2	8 1/2										
90	3	4	6	Greywacke, l. gy. m. gr.	3	7	6									
96	9	6	6	Greywacke, l. gy. m. & c. gr.	6	6										
97	9	1	0	Siltstone, l. gy.	1	0										
100	3	2	6	Greywacke, l. gy. m. gr.	2	6										
107	3	7	0	Greywacke, l. gy. f. & m. gr.	7	0	10									
117	3	10	0	Greywacke, l. gy. m. & c. gr. in lower 2" vertically fractd. & calcite coating on fractures in top 7"	10	0										
119	11	2	8	Greywacke, l. gy. c. & m. gr.	2	8										
121	2 1/2	1	3 1/2	Greywacke, l. gy. m. gr.	1	3 1/2										
125	8 1/2	4	6	Siltstone, l. gy. w. plant remains, pyritiferous in places	2	2	6									
126	2 1/2		6	Greywacke, l. gy. f. gr.		6										
127	0		9 1/2	Shale, dk. gy. carb. pyritif.		9 1/2										

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
129	3	2	3	COAL, bright w. thin dull bands	1	11	5/BMR					3.0	33.6	53.8	4.6	13,570
130	4	1	1	COAL, dull with bright bands		11 $\frac{1}{2}$	6/BMR					3.0	31.7	55.0	10.3	12,630
130	5		1	Siltstone, carb. dk. gy. pyritif		1										
131	1		8	COAL, bright w. thin dull bands.		8										
131	1 $\frac{3}{4}$		3 $\frac{3}{4}$	Siltstone, carb. dk. gy. pyritif.		3 $\frac{3}{4}$	7/BMR					2.9	34.4	47.3	15.4	12,000
131	10 $\frac{3}{4}$		9	COAL, bright w. cleat.		9										
132	5		6 $\frac{1}{4}$	Shale, carb. black		3										
133	3		10	Greywacke, f. gr. l. gy. w. thin irregular carb. bands.		10										
134	10	1	7	Claystone; silty. gy. w. plant remains.	1	7										
137	1	2	3	Greywacke, gy. f. gr. w. carb. plant detr. in fine irregular bands	2	3										
138	0		11	Claystone, silty, gy. w. thin bands (irregular) of carb. plant detritus pyritiferous in places		11										

Hole completed.

typed 31/10/52.

Lower
Fiddell
Seam

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 27 T. PARNELL'S CREEK

DISTRICT Gessbrook Muswellbrook COUNTY Durham PARISH Howick PORTION 5 LOCATION BMR N14/110
Surveyed by J. Svoronos/G. Stuart Survey Method Tel. Alidade Elevation 480.2' ASL. Ref. Map BMR Records 47/1953.
Logged by H.C. Konecki Cased 10 ft. Datum Standard Ref. Report 15/9/52-3/10/52.
Sunk by Drilling Corp. Type of Drill Mindrill E.1000 Depth 125 ft. Date Begun/Finished

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
	9		9	Soil, sandy, brown												
18	9	18	0	Greywacke l. br. gy. wd. m. to l. gr.	17	7										
21	9	3	0	Claystone, off white w. yellow stain. wd.	1	5										
27	10	6	1	Greywacke, buff f. to v. f. gr. wd. & some claystone bands off white	6	1										
28	5		7	Ironstone, reddish brown (limonite		7										
37	1	8	8	Greywacke f. & v. f. gr. w. numerous fine carb. bands at about 40°	8	8										
42	5	5	4	Greywacke l. br. gy. m. gr.	4	11										
58	7	16	2	Greywacke c. to v.c. gr. buff	16	2										
62	10	4	3	Greywacke m. & f. gr. buff	4	3										
66	7	3	9	Siltstone l. gy. w. plant remains	1	5										
70	5 1/2	3	10 1/2	Claystone, silty gy. with plant remains.	3	10 1/2										
71	3		9 1/2	Siltstone gy. w. plant remains		9 1/2										
73	7	2	4	Greywacke l. gy. v. f. gr. fairly hard	1	9										
78	6 1/2	4	11 1/2	Siltstone, gy. w. plant remains	3	9 1/2										
90	11	12	4 1/2	Greywacke, gy. & l. gy. f. gr. w. irregular thin carb. bands.	9	4										
92	3	1	4	Siltstone, gy. w. plant remains	1	4										
96	2 1/2	3	11 1/2	Claystone, gy. & l. gy. silty pyritiferous & with plant remains	1	3 1/2										
97	3 1/2	1	1	Splint, carb. pyritif. black w. thin coal bands	1	1										
97	5		11 1/2	Siltstone, carb. dk. gy. pyritif.		11 1/2										
101	2 1/2	3	9 1/2	COAL dull & bright banded	3	9 1/2	1/BMR 2/BMR					2.5 2.7	37.5 33.9	48.4 56.2	11.6 7.2	12,950 13,420
101	4 1/2		2	Siltstone, l. br. gy. w. thin carb. bds.		2										
101	6 3/4		2 1/2	Splint carb. black		2 1/2										
101	7 1/4		1 1/2	Shale, l. br. gy. w. carb. shale bands.		1 1/2										
102	5 3/4	10		COAL dull & bright banded	10		3/BMR					2.7	33.1	47.4	16.8	11,990
102	11 3/4	6		COAL bright, broken, w. 1/4" siltstone bands.	4											

--Article's Seam--

BUREAU OF MINERAL RESOURCES

BMR 28T PARNELL'S CREEK

Name and No. of Bore

DISTRICT Cessnock Muswellbrook COUNTY Durham PARISH Howick PORTION 5 LOCATION BMR Map N14/110
Surveyed by J.Svoronos/G.Stuart Survey Method Tel.Alidade Elevation 450.9' ASL. Ref. Map BMR Records 47/1953.
Logged by M.C.Konecki Cased 29' Datum Standard Ref. Report 19.9.52/25.9.52
Sunk by Drilling Corp. Type of Drill Mindrill EL000 Depth 147' Date Begun/Finished

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
1	2	1	2	Soil, clayey, brown, red & grey	1	2										
5	4	4	2	Clay, brown & reddish - brown												
6	0		8	Smut, clayey, black and dark brown		8										
6	10		10	Clay, off-white		10										
7	9 1/2		11 1/2	Greywacke, yellowish - brown m.gr.wd.		11 1/2										
8	7		9 1/2	Claystone, yellowish- grey. wd.		9 1/2										
8	10		3	Greywacke, m.gr. yellowish-brown wd.		3										
10	1	1	5	Claystone, l.gy. w. limonitic stain.wd.	1	5										
10	10		9	Siltstone, gy. wd.		9										
23	2	12	4	Greywacke, l.br.gy. m. & c.gr. wd.	4	8										
23	7		5	Claystone, w. plant remains. gy. wd.		5										
24	7	1	0	Ironstone (limonite) reddish-brown	1	0										
25	0 1/2		5 1/2	Greywacke, br.-gy. f.gr. clayey, wd.		5 1/2										
25	10 1/2		10	Siltstone, br.-gy. w. plant remains wd.		10										
45	1	19	2 1/2	Greywacke f. & m.gr.l.br-gy. wd.	11	9 1/2										
45	2 1/2		1 1/2	Ironstone(limonite) br.-red.		1 1/2										
54	9	9	6 1/2	Greywacke, f. & m.gr. passing into c.gr. l.br.-gy.	8	4										
55	0		3	Ironstone (limonite) red-orange, fractd.		3										
58	0	3	0	Siltstone, l.gy. clayey	3	0										
61	2	3	2	Claystone. l.gy. to brown, soft. w. plant remains	3	2										
62	4	1	2	COAL, dull w. bright bands	1	2	1/BMR			Upper Liddell Seam		2.7	32.5	54.8	10.0	12,930
65	1	2	9	COAL, bright w. dull bands, pyritif. cleated	2	9	2/BMR					2.7	37.5	54.3	5.5	13,680
65	10 1/2		9 1/2	COAL, mainly bright w. cleat and few thin dull bands		9 1/2	3/BMR					2.8	36.4	52.7	8.1	13,340
66	4 1/2		6	COAL, dull shaly w. bright bands & pyritif.		6										

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
66	5		$\frac{1}{2}$	Shale, carb.		$\frac{1}{2}$	4/BMR	Upper Liddell Seam				2.8	37.2	49.7	10.3	12,950
67	1		8	COAL, mainly bright w. dull bands, pyritif.		8										
68	$4\frac{1}{2}$	1	$3\frac{1}{2}$	COAL, dull & bright, banded, broken	1	$1\frac{1}{2}$										
68	6		$1\frac{1}{2}$	COAL, dull pyritiferous		$1\frac{1}{2}$										
69	11	1	5	Siltstone, carb.	1	3										
71	1	1	2	Claystone, gy. w. disseminated carb.mat.		$6\frac{1}{2}$										
75	1	4	0	Siltstone, gy. w. plant remains	3	6										
79	$1\frac{1}{2}$	4	$0\frac{1}{2}$	Greywacke, l.gy. f.gr. & $2\frac{1}{2}$ " siltstone on bottom	4	$0\frac{1}{2}$										
79	9		$7\frac{1}{2}$	Finely folded (intraform) claystone, siderite & calcite, fractd. in lower half		$7\frac{1}{2}$										
80	1		4	Claystone, gy. w. plant remains		4										
80	$4\frac{1}{2}$		$3\frac{1}{2}$	Siltstone, gy. w. plant remains		$3\frac{1}{2}$										
81	0		$7\frac{1}{2}$	Greywacke, l.gy. f.gr. w. fine carb. bands		$7\frac{1}{2}$										
99	1	18	1	Siltstone & claystone, interbedded, gy. w. plant remains; intraformational fine folding in lower 1"	16	10										
104	1	5	0	Greywacke, l.gy. f. & m.gr. w. thin carb. bds.	4	$5\frac{1}{2}$										
123	5	19	4	Greywacke, m. & c.gr. fractd; fractures covered w. fine pyrites	19	$3\frac{1}{2}$										
124	$10\frac{1}{2}$	1	$5\frac{1}{2}$	Claystone, gy. w. some plant remains		$11\frac{1}{2}$										
125	$9\frac{1}{2}$	11		Siderite, br.-gy. w. calcite veins		11										
129	6	3	$2\frac{1}{2}$	Claystone, dk.gy. carb.	2	4										
129	11		5	COAL, dull some bright bds. in lower half		5										
130	$1\frac{1}{2}$		$2\frac{1}{2}$	COAL, dull		$1\frac{1}{2}$										
131	5	1	$3\frac{1}{2}$	Shale, carb. black, silty w. some thin coal bands in lower half	1	$2\frac{1}{2}$										
131	7		2	COAL, dull & bright, broken		2										
131	9		2	Claystone, l.br. gy. fairly hard		2										
133	0	1	3	COAL, dull & bright banded		5	5/BMR	Lower Liddell Seam		2.8		35.6		51.1	10.5	12,950
135	2	2	2	COAL, bright w. dull bands, broken in top half	1	$7\frac{1}{2}$										
135	$2\frac{1}{2}$		$\frac{1}{2}$	Siltstone, carb. black		$\frac{1}{2}$										

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
137	1 1/2	1	11	Claystone, gy. w. irregular carb. bands.	1	5 1/2										
144	0	6	10 1/2	Siltstone, l.gy. w. fine carb. banding	6	2										
147	0	3	0	Greywacke, l gy. f. gr. banded finely w. darker material (carb.)	2	3										
Hole Completed.																
													Typed 29.10.52.			

BUREAU OF MINERAL RESOURCES

Name and No. of Bore

BMR 29T PARNELL'S CREEK

DISTRICT	Muswellbrook	COUNTY	Durham	PARISH	Howick	PORTION	5	LOCATION	
Surveyed by	J.Svoronos/G.Stuart	Survey Method	Tel. Alidade	Elevation	468.3'	ASL.		Ref. Map	BMR Map NI4/110
Logged by	N. Hoyling	Cased	Not	Datum	Standard			Ref. Report	BMR Records 47/1953.
Sunk by	Price & Anderson	Type of Drill	Goldfields 20	Depth	150'5"			Date Begun/Finished	23.9.52/30.9.52

[illegible]

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
86	11 1/2		1 1/2	Shale, light brown, soft		1 1/2										
88	9	1	9 1/2	COAL, bright	1	9 1/2	3/BMR	Seam B.				3.1	37.9	53.5	5.5	13,480
89	0		3	Shale, light grey silty		3										
105	3	16	3	Greywacke, light grey, very fine to medium grained in bands, generally soft	16	3										
109	1	3	10	Shale, light grey	3	10										
112	7	3	6	Siltstone, light grey	3	6										
116	7	4	0	COAL, light	3	8		Seam A.								
118	0	1	5	Greywacke, grey medium grained	1	5		Seam A.								
119	9	1	9	Greywacke, grey, fine grained, soft, fri.	1	7										
122	2	2	5	Greywacke, fine, grained, grey	2	5										
131	8	9	6	Greywacke, grey, medium grained	9	2										
133	5	1	9	Light grey shale & fine grained greywacke	1	9										
149	4	15	11	Shale, light grey, with diffuse, contorted carbonaceous laminae	14	0										
150	5	1	1	Claystone, grey, dense, sideritic	1	0										
Hole abandoned																
													Typed 30.10.52			

BUREAU OF MINERAL RESOURCES

BMR 30 T. PARNELL'S CREEK.

Name and No. of Bore

DISTRICT CESSNOCK COUNTY DURHAM PARISH HOWICK PORTION 5 LOCATION BMR Map. N14.110
MUSWELLBROOK
Surveyed by J.Svoronos/G.Stuart Survey Method Tel. Alidade Elevation 456.4' ASL. Ref. Map BMR Records 47/1953.
Logged by M.C. Konecki Cased 25'7" Datum STANDARD Ref. Report 27.9.52/1.10.52.
Sunk by DRILLING CORP. Type of Drill Mindrill E.1000 Depth 78'6" Date Begun/Finished

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
	6		6	Soil, Sandy br. gy.		6										
6	0	5	6	Sandstone. l. gy. brown, wd.	3	4 $\frac{1}{2}$										
12	0	6	0	Claystone off-white w. brownstain, wd.	3	4										
16	6	4	6	Claystone, pink, l. br. gy. wd.	2	6										
18	2	1	8	Sandstone, brown f. & m. gr. wd. fractd.	1	8										
20	0	1	10	Limonite, br.-red, fractd.		11										
28	7	8	7	Sandstone, brown, fractd, c. gr.	7	8										
38	4	9	9	Sandstone, brown, f. gr. to v. f. gr. fractd. in places w. solution cavities wd.	9	4										
40	4	2	0	Greywacke l. br. f. gr. fractd. in lower half	1	8 $\frac{1}{2}$										
57	8 $\frac{1}{2}$	17	4 $\frac{1}{2}$	Greywacke l. br. c. gr. w. occasional v.c. pebbles, wd.	16	$\frac{1}{2}$										
57	11 $\frac{1}{2}$		3	Claystone, l. br. limonitic, wd.		3										
58	11 $\frac{1}{2}$	1	0	Claystone gy. w. plant remains, wd.	1	0										
61	2 $\frac{1}{2}$	2	3	Claystone, br. gy. limonitic wd.	1	9 $\frac{1}{2}$										
61	8 $\frac{1}{2}$		6	Siltstone, gy. clayey, w. plant rem. wd.		6										
63	7	1	10 $\frac{1}{2}$	Greywacke, br. f. gr. wd.	1	4										
64	0 $\frac{1}{2}$		5 $\frac{1}{2}$	Siltstone to v. f. gr. greywacke, grey yellowish- gy. w. some carb. stringers		5 $\frac{1}{2}$										
65	6 $\frac{1}{2}$	1	6	COAL, wd. with limonitic stain, crumbly	1	5										
65	7 $\frac{1}{2}$		1	Siltstone, reddish - brown		1										
67	0	1	4 $\frac{1}{2}$	COAL, wd. crumbly, dull bright bdd.	1	3 $\frac{1}{2}$										
67	4		4	COAL, wd. crumbly bright		4										
67	5 $\frac{1}{2}$		1 $\frac{1}{2}$	Siltstone, br. gy. carb. wd.		1 $\frac{1}{2}$										
67	10 $\frac{1}{2}$		5	Claystone, gy. soft, wd.		5										
67	11 $\frac{1}{2}$		1	Siltstone, br. gy.		1										
68	6		6 $\frac{1}{2}$	COAL, wd. crumbly		6										
68	11		5	Shale, carb., silty dk. gy.		5										
69	9		10	Greywacke, gy. f. gr. w. numerous thin bands of carb. mat		10										

Lower Liddell
Seam.

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 31 T. PARNELL'S CREEK.

DISTRICT CESSNOCK COUNTY DURHAM PARISH HOWICK PORTION 5 LOCATION
Surveyed by C. Stuart Survey Method Tel. Alidade Elevation 458.7' ASL. Ref. Map BMR Map N14/110
Logged by N. Hoyling Cased 25' Datum STANDARD Ref. Report BMR Records 47/1953.
Sunk by PRICE & ANDERSON Type of Drill Goldfields 20 Depth 117' 7" Date Begun/Finished 1.10.52/8.10.52

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
2	0	2	0	Grey surface clay	2	0										
16	9	14	9	Sandstone ferruginous, medium-grained, very friable, with waterworn pebbles	2	6										
19	9	3	0	Shale, buff to white, soft	3	0			Seam C							
20	0		3	COAL, soft weathered		3										
25	8	5	8	Claystone, white yellow, brown mottled soft	5	1										
25	11		3	Siltstone, light brown, dense, ?sideritic		3										
26	9		10	Shale brown		6										
28	9	2	0	Siltstone, brown to very fine-grained greywacke	1	5										
37	0	8	3	Greywacke, brown, fine-grained with shale bands	6	9										
37	6		6	Claystone, sideritic reddish brown		6										
42	5	4	11	Greywacke, grey, fine to medium grained, with carbonaceous laminae	4	8										
46	10	4	5	Shale, dark grey, carbonaceous	4	5										
72	6	25	8	Greywacke, brown, fine-grained, soft, with ironstone & grey shale bands	20	10										
74	6	2	0	Shale, grey, soft, carbonaceous		8										
75	6	1	0	Claystone, dark brownish-grey dense, sideritic	1	0										
76	8	1	2	Shale, grey, silty, very soft in the last 3"		8 1/2										
78	8	2	0	Siltstone, grey medium soft	2	0										
83	8	5	0	Greywacke, grey, very fine-grained	5	0										
86	10	3	2	Shale, grey pyritiferous	3	2										
87	0		2	COAL, bright shattered		2										
87	10		10	Shale, grey		10										
87	11 1/2		1 1/2	COAL, bright, fragmentary		1 1/2										
88	4 1/2		5	Shale, dark grey to grey, silty, hard		5										
89	4 1/2	1	0	COAL, bright with 2" band of carbonaceous siltstone	1	0	1/BMR		Artie's Seam.	-	2	3.0	37.6	51.2	8.2	13,230

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
90	10	1	5½	COAL, mostly bright, broken to shattered	1	5½	2/BMR					3.3	37.8	51.6	7.3	13,220
90	10½		½	Shale, black, pyritiderous		½										
92	10	1	11½	Shale grey to greyish-black	1	11½										
93	11	1	1	COAL, generally dull	1	1	3/BMR					2.6	37.6	45.7	14.1	12,300
93	11		½	Shale, brown		½	4/BMR					2.9	33.0	54.6	9.5	12,890
97	10	3	10½	COAL, mostly dull with very thin bright bands	3	10½	5/BMR					2.8	38.4	51.8	7.0	13,400
98	0½		2½	Shale, brownish-grey		2½										
98	2		1½	COAL, dull		1½										
98	2½		½	Shale, brownish-grey		½										
99	6¼	1	3¼	COAL, mostly dull with some thick bright bands	1	3¼	6/BMR					3.4	31.3	48.8	16.5	11,700
99	6½		¼	Shale, greyish-brown		¼										
100	7	1	0½	COAL, generally dull	1	0½	7/BMR					3.3	33.7	50.1	12.9	12,230
101	0½		5½	Shale, grey		5½										
101	10½		10	COAL, generally dull		10	8/BMR					3.2	33.6	53.0	10.2	12,650
102	4		5½	Shale, grey		5½										
102	9½		5½	Greywacke, grey, medium-grained		5½										
103	1		3¼	COAL, dull		3¼										
103	1½		½	Shale, brownish-grey		½										
105	0	1	10½	COAL, rather dull	1	10½	9/BMR					3.1	31.7	43.8	21.4	11,000
105	1		1	Shale, dark brown		1										
106	4	1	3	COAL, mostly bright	1	3	10/BMR		½			3.4	34.1	52.5	10.0	12,760
106	5		1	Shale, dark grey		1										
106	8½		3½	COAL, mostly dull, shaly at bottom		3½										
109	3	2	6½	Shale, grey	2	6½										
110	1		10	Greywacke, grey, coarse-grained		10										
112	5	2	4	Shale, grey with patches of greywacke	2	4										
117	7	5	2	Greywacke, grey, coarse-grained	5	2										

Hole completed

Typed 29/10/52.

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 32T PARNELL'S CREEK.

Cessnock		DISTRICT		Muswellbrook	COUNTY	DURHAM	PARISH	HOWICK	PORTION	5	LOCATION	
Surveyed by	G. Stuart	Survey Method	Tel. Alidade	Elevation	528.4 ASL.	Ref. Map	BMR Map N14/110					
Logged by	M. Konecki	Cased	24'8"	Datum	Standard	Ref. Report	BMR Records 47/1953.					
Sunk by	Drilling Corp. Aust.	Type of Drill	Windrill E.1000 D.D.4	Depth	147'8"	Date Begun/Finished	2.10.52/11.10.52					

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Page

Name and No. of Bore

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
35	6	6		Siltstone, carbonaceous, dk. grey, plant remains		6										
37	5	1	11	COAL, weathered broken w. limonitic stains	1	5	1/BMR					11.9	31.2	41.1	15.8	7,640
37	9		4	COAL weathered broken w. lim. stains, s.		1										
38	6½		8½	COAL weathered broken w. limonitic stains		8½	2/BMR					12.8	29.7	47.6	9.9	8,480
39	0		5½	COAL dull weathered		5½										
41	0	2	0	COAL bright w. dull bands weathered, cleated broken w. limonitic stains	2	0	3/BMR		¼"			13.5	32.1	46.7	7.7	8,290
41	8		8	COAL bright & dull banded w. limonitic stains		6½										
41	9		1	Siltstone brown weathered		1										
41	9½		0½	Siltstone pink weathered		0½										
41	10¼		0¼	Shale carbonaceous weathered		0¼										
42	0¼		2	COAL dull & bright weathered		2										
42	1½		1½	Siltstone dk. gy. & bk. weathered		1½										
42	8		6½	COAL weathered bright & dull broken		6½										
42	8½		0½	Shale carbonaceous w. pyrites		0½				½"						
43	1½		5	COAL weathered broken & powdery		5	4/BMR			1½"		12.3	29.8	43.3	14.6	7,840
43	3		1½	Shale carbonaceous & coal interbedded wd.		1½										
43	9		6	COAL weathered w. decomposed pyrites coating		6										
44	3		6	Siltstone light grey & pink weathered		6										
45	0		9	COAL, weathered bright & dull w. lim. staining		9	5/BMR					10.3	29.1	46.1	14.5	8,370
45	3		3	Siltstone light grey-pink w. coal stringers		3				3"						
45	9		6	COAL weathered, shaly at bottom, coating of decomposed pyrites		6										
45	11		2	Siltstone carbonaceous black		2										
46	2		3	COAL weathered w. iron staining		3										
46	2½		0½	Siltstone, cream-pink		0½			½"							
47	1½		11	COAL, weathered		11	6/BMR					8.1	28.5	50.1	13.3	10,110
47	4		2½	Siltstone cream		1¼				1½"						
47	9		5	COAL bright cleated, broken, wd.		4										
47	11		2	COAL, bright, cleated, broken wd.		2										
48	11½	1	0½	Shale carbonaceous, finely laminated, dk. grey		6										
50	0	1	0½	Claystone grey		7½										

-----Artie's Seam-----

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
132	7		6	Siderite brown-grey, fractured & calcite filled		6										
134	0	1	5	Siltstone l. gy. & v.f.g. greywacke plant remains & leaf impressions	1	5										
136	0	2	0	Siltstone mainly, light grey, carb. detritus	2	0										
138	1	2	1	Siltstone as before	2	1										
138	7		6	Siderite brown-grey fractured		6										
140	0	1	5	Siltstone as before, clayey in part	1	5										
142	8	2	8	Greywacke med. to coarse grd., grey, clayey in part, carb. bands	2	8										
143	0		4	Siderite brown- grey, fractured, calcite veining		2 $\frac{1}{2}$										
143	2		2	Greywacke as before		2										
144	0	10		COAL mostly bright broken		10										
144	9		9	COAL dull & bright banded, broken		6										
145	8	11		Shale some thin bright coal bands		9 $\frac{1}{2}$										
146	0 $\frac{1}{2}$	4 $\frac{1}{2}$		Siltstone sideritic dark grey		1 $\frac{1}{2}$										
146	10 $\frac{1}{2}$	10		Greywacke v.f.g. light grey		10										
147	8	9 $\frac{1}{2}$		Carbonaceous shale dark grey, few bright coal bands		3 $\frac{1}{2}$										

Hole completed

typed 17/2/53.

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 33T PARNELL'S CREEK.

Gessnock		Durham		Howick		5	
DISTRICT	Muswellbrook	COUNTY	DURHAM	PARISH	HOWICK	PORTION	LOCATION
Surveyed by	G. Stuart	Survey Method	Tel. Alidade	Elevation	520.0' ASL.	Ref. Map	BMR Map N14/110
Logged by	N. Hoyling	Cased	40'	Datum	Standard	Ref. Report	BMR Records 47/1953.
Sunk by	Price Anderson	Type of Drill	Goldfields 20	Depth	123'0"	Date Begun/Finished	9/10/52-16/10/52.

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Page

Name and No. of Bore

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
87	7		11	Greywacke v.f. grd to slst. l. gy. wd.		10										
89	7	2	0	Sideritic slst. to red brown limonitic ironstone w. carb. mat.	2	0										
92	9 3/4	3	2 3/4	Grey slst. red brown limonite stained in part at top	1	9 1/2										
93	7 3/4		10	Shale gy. s.		10										
95	1 1/4	1	4 1/2	Claystone dk. gy. w. pyr. carb. mat	1	4 1/2										
95	1 3/4		1 1/2	Shale dk. gy. carb. w. t. bds coal		1 1/2										
95	8 1/4		6 1/2	COAL dull and bright bdd cleated		6 1/2										
95	9 1/2		1 1/4	Shale bk. carb.		1 1/4	1/BMR					3.4	37.9	49.6	9.1	12,930
97	4 1/2	1	7	COAL as above broken	1	7										
97	9		4 1/2	Shale dk. gy. carb. gy. w. finely dissemd. carb. mat		4 1/2										
98	10 1/2	1	1 1/2	Siltstone gy.	1	1 1/2										
99	11	1	0 1/2	Claystone to dk. gy. carb. pyr. sh. irregularly bdd.	1	0 1/2										
100	2		3	Shale bk. carb. pyr. w. br. sdy. clst. lenses		3										
102	6 1/2	2	4 1/2	COAL mostly dull w. fine bright lam. for top 1'3" then dull and bright bdd.	2	4 1/2	2/BMR					3.2	32.8	53.3	10.7	12,770
102	7		0 1/2	Shale gy. pyr. w. bright coal lam		0 1/2										
104	4 1/2	1	9 1/2	COAL dull and bright bdd.	1	9 1/2	3/BMR					3.5	37.5	50.6	8.4	13,020
104	6 1/2		2	Claystone l. br. gy. sdy.		2										
104	7 1/4			COAL dull and bright bdd. cleated		1 3/4										
104	8 3/4		1 1/2	Claystone br. sdy.		1 1/2	4/BMR					3.4	30.5	46.5	19.6	11,320
104	9 1/2		0 3/4	COAL bdd as above w. small clst. lens		0 3/4		3/4"		1"						
105	11	1	1 1/2	COAL dull & bright bdd, dull shaly fusinitic in part	1	1 1/2										
105	11 1/4		0 1/4	Shale bk. carb. v. sdy.		0 1/4										
106	0 3/4		1 1/2	COAL bdd as above		1 1/2										
106	1 1/2		0 3/4	Shale dk. br. v. sdy. pyr.		0 3/4										
107	3	1	1 1/2	COAL dull and bright bdd	1	1 1/2	5/BMR					3.6	33.1	49.7	13.6	12.170
107	7 1/2		4 1/2	Claystone mottled gy. & br. v. sdy. pyr.		4 1/2										
108	6		10 1/2	COAL dull & bright bdd w.t.v. fusinitic bd near bottom.		10 1/2										
108	6 3/4		0 3/4	Claystone br. pyr. sdy.		0 3/4	6/BMR			3/4"		3.3	31.8	49.7	15.2	11.900
108	9		2 1/4	COAL bdd cleated w. t. dk. br. sh. bds. at bottom		2 1/4										

Artie's Seam

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
109	6 $\frac{1}{2}$		9 $\frac{1}{2}$	Siltstone to v.f. grd. greywacke s. w. finely dissemd. pyr.		9 $\frac{1}{2}$				----- Artie's Seam -----						
109	7 $\frac{1}{4}$		0 $\frac{3}{4}$	COAL dull & bright bdd		0 $\frac{3}{4}$										
109	8		0 $\frac{3}{4}$	Claystone br. sdy.		0 $\frac{3}{4}$										
109	11		3	COAL dull and bright bdd. cleated		3										
110	2		3	Siltstone bk. carb. w. bright coal lam.		3										
111	5	1	3	COAL dull & bright bdd w. r.t. sdy sh. bd.	1	3	7/BMR		$\frac{1}{4}$ "			3.9	33.6	48.8	13.7	12,140
111	6		1	Claystone dk. br. carb. pyr. w.t. irregular coal bds.		1					1"					
112	4	10		COAL bdd. cleated w.r. v.t. bk. sh. bd.		9										
112	9 $\frac{1}{2}$		5 $\frac{1}{2}$	Shale bk. carb. w. numerous t. bds. bright coal		5 $\frac{1}{2}$										
113	0 $\frac{1}{2}$		3	COAL bright w. numerous bds. bk. carb. sh.		3										
113	3 $\frac{1}{2}$		3	Shale dk. gy. carb. to claystone slickensided		3										
113	4 $\frac{1}{2}$		1	COAL mostly bright powdery		1										
113	7 $\frac{1}{2}$		3	Greywacke l. gy. f. grd. w.t. coal bds. at top		3										
113	8 $\frac{1}{2}$		1	Shale dk. gy. carb.		1										
113	9 $\frac{1}{2}$		1	Greywacke l. gy. f. grd.		1										
114	7		9 $\frac{1}{2}$	Claystone gy. becoming shaly & sdy. over bot. 1 $\frac{1}{2}$ " w.t. bds. coal		9 $\frac{1}{2}$										
114	10		3	Siltstone gy. sdy.		3										
115	8 $\frac{1}{2}$	10 $\frac{1}{2}$		Greywacke l. gy. f. grd.		10 $\frac{1}{2}$										
123	0	7	3 $\frac{1}{2}$	Siltstone gy. w. occasional t.f. grd. greywacke bd.	6	9										

Hole completed

Typed 12/2/53.

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 34T PARNELL'S CREEK.

Cessnock		MUSWELLBROOK		COUNTY	DURHAM	PARISH	HOWICK	PORTION	5	LOCATION	
Surveyed by	G. Stuart	Survey Method	Tel. Alidade	Elevation	521.1' ASL.	Ref. Map	BMR Map N14/110				
Logged by	P. Duff	Cased	33'	Datum	Standard	Ref. Report	BMR Records 47/1953.				
Sunk by	Drilling Corp.	Type of Drill	Mindrill E 1000	Depth	127'0"	Date Begun/Finished	8.10.52/16.10.52				

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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
25	8	3	0	Greywacke med. & f. grd. light brown wd. many iron stained plant impressions	2	11										
26	1		5	Siltstone, sideritic brown hard		3										
28	3	2	2	Greywacke med. & fine grd., light brown wd.	1	2										
28	11		8	Siltstone, sideritic, brown hard, calcite veins		2										
29	8		9	Siltstone brown weathered, iron stained		6										
29	11		3	Greywacke f.g. light brown weathered		2½										
30	7		8	Siltstone light brown weathered		5										
31	10	1	3	Greywacke f.g. l. brown. Leaf impressions iron stained	1	3										
33	0	1	2	Greywacke med. to coarse grd., iron stained	1	0										
33	4		4	Siltstone sideritic brown		2½										
33	8		4	Siltstone light grey, iron stained		4										
34	1		5	Greywacke fine grained, light brown		2½										
34	6		5	Shale to siltstone, light brown, iron stained plant impressions		2½										
35	6	1	0	Siltstone sideritic brown broken		11½										
36	2½		8½	Siltstone sideritic brown broken		8½										
37	2½	1	0	Shale light brown, silty in part, wd.	1	0										
38	11½	1	9	Siltstone l. brown wd., iron stained plant impressions	1	9										
39	4½		5	Greywacke v.f.g. light brown weathered		2										
39	11		6½	Shale, grey & l. brown, plant impressions iron stained		6½										
40	5		6	Claystone brown wd., plant impressions		3										
40	11		6	Greywacke v.f.g. light brown		4										
41	6		7	Siltstone grey, small bands of carb. mat. & bright coal in last inch		7										
45	6	4	0	Shale grey to dark grey, many bands of carb. mat. Rare bds. of bright coal		10										
45	11½		5½	COAL mostly dull some dull & bright bdd.		5½										
46	6		6½	Greywacke f. grd. l. gy.		6½										
51	6	5	0	Greywacke fine & med. grd. w. claystone & siltstone beds interbedded. Grey to light grey. Numerous bands carb. mat.	4	3										

Seam C

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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
102	7½		1½	COAL bright & dull banded		1½										
103	5½		10	Shale carb. w. few bright coal bds. some pyrites		10										
104	10	1	4½	COAL mostly bright, cleated, some pyrites coal broken	1	4½	1/BMR					3.3	35.3	48.1	13.1	12,420
105	1½		3½	Claystone, carb., ground & broken		3½										
106	0		10½	COAL dull & bright banded		10½	2/BMR					3.1	37.2	48.4	11.3	12,840
108	2½	2	2½	COAL dull, well cleated, some pyrites rare bright bds. of coal	7	7	3/BMR					3.3	30.7	55.8	10.2	12,970
109	10	1	7½	COAL dull & bright bdd, cleated, broken	1	7½	4/BMR					3.5	37.8	53.9	4.8	13,690
113	1	3	3	COAL dull & bright bdd., broken, cleated	2	8	5/BMR					3.5	34.9	49.9	12.2	12,560
113	2		1	Siltstone, sandy grey		1										
113	4		2	Shale carbonaceous, partly silty		2										
113	6		2	COAL dull & bright banded		2										
113	7		1	Shale carbonaceous		1										
114	0		5	COAL dull & bright banded		5										
114	3		3	Greywacke v.f.g. l. gy., small coal bds. in bottom portion		3										
115	3	1	0	Shale black carbonaceous some thin coal bands		2										
116	9	1	6	COAL broken dull & bright banded		4½	6/BMR					3.2	35.2	49.0	12.6	12,630
117	1		4	Siltstone grey carbonaceous one small bright coal band		4										
119	1½	2	0½	COAL dull & bright banded mostly broken		9										
119	3½		2	Shale carbonaceous black some bright coal bands		2										
121	0	1	8½	Siltstone w. some fine grd. greywacke all light grey, vertical fracturing	1	8½										
127	0	6	0	Siltstone & greywacke as above	5	2										

Hole completed.

typed 18/2/53.

Artie's Seam

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 35T PARNELL'S CREEK.

Cessnock		Muswellbrook		COUNTY	DURHAM	PARISH	HOWICK	PORTION	5	LOCATION	
Surveyed by	G. Stuart	Survey Method	Tell. Alidade	Elevation	487.3'	ASL.	Ref. Map	BMR Map	N14/110		
Logged by	P. Duff	Cased	29'6"	Datum	Standard	Ref. Report	BMR Records	47/1953.			
Sunk by	Drilling Corp.	Type of Drill	Mindrill E.1600	Depth	141'4"	Date Begun/Finished	13.10.52/20.10.52				

[illegible]

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
27	0	1	9	Limonite & Haemetite, broken, orange & deep red		4										
31	2	1	8	Greywacke f.g. & siltstone, grey carb. detritus	1	8										
34	10	3	8	Greywacke f.g. & med. grd. some grey some light brown, iron stained, carbonaceous mat.	3	8										
36	5	1	7	Greywacke f.g. light brown, vertical fractures some almost quartzitic ? fractures filled with calcite		7										
41	1	4	8	Greywacke med, & fine grd. light brown some fractured vertically, fracture surfaces coated with iron staining. Plant impressions	4	8										
44	9 1/2	3	8 1/2	Siltstone light grey carb. detritus	1	0 1/2										
45	5		7 1/2	Siltstone sideritic brown hard heavy broken		7 1/2										
49	5	4	0	Siltstone light grey, some thin carb. bands, leaf impressions	3	8										
51	2	1	9	Siltstone as above	1	9										
51	11		9	COAL mostly dull some dull & bright banded cleated broken, pyrites		8										
53	8	1	9	COAL dull & bright banded, pyrites evident band (1/2") carb. shale near bottom	1	7 1/2	1/BMR			1/2	3.2	34.7	46.5	15.6	11,830	
54	0 1/2	4 1/2		COAL dull & bright banded		4 1/2										
54	3	2 1/2		Claystone grey fractured at varying angles		2 1/2										
55	8 1/2	1	5 1/2	Claystone, grey interlacing thin white clay veins in fractures. Small bright coal lenses												
55	11	2 1/2		Claystone as above	1	1 2 1/2										
56	2	3		Shale sandy black, carbonaceous		3										
56	10	8		COAL broken dull & bright banded, pyrites		8										
57	0	2		Siltstone brown, small band bright coal, pyrites		1 1/2										
57	1	1		COAL dull & bright banded		1										
57	5	4		Shale black carbonaceous		3 1/2	2/BMR					3.2	32.4	54.5	9.9	12,760

-----Artie's Seam-----

Page

Name and No. of Bore

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
62	10	5	5	COAL dull & bright banded but mostly dull	4	11	5/BMR					3.4	34.0	49.3	13.0	12,200
63	2		4	Shale carbonaceous w. few coal bands & a brown siltstone band		4										
64	5	1	3	COAL dull & bright banded rather bright in last 6"	1	3	4/BMR					3.6	34.2	52.5	9.7	12,580
64	9		4	Siltstone brown grey partly carb. partly sand		4 1/2										
64	10		1	COAL fractured, filled w. clayey mat. & pyrites. Coal dull & bright bdd.		1 1/2										
65	6		8	COAL cleated mostly dull		8 1/2										
65	7 1/2		1 1/2	Shale carbonaceous brown grey		1 1/2	5/BMR			1 1/2	1"	3.2	33.3	51.3	12.2	12,360
65	8 1/2		1	Shale carbonaceous black		1										
66	2 1/2		6	COAL bright & dull banded		6 1/2										
66	8		5 1/2	Shale carbonaceous black		5 1/2										
66	10		2	COAL bright & dull banded		2										
67	4		6	COAL mostly dull small carbonaceous shale bands		6	6/BMR					3.3	32.0	46.3	18.4	11,310
68	2		10	COAL very broken, dull & bright w. pieces of carbonaceous shale		8 1/2										
68	10		8	Shale carbonaceous, black, silty		8										
69	1 1/2		3 1/2	Siltstone grey with small bright coal bands		3 1/2										
69	5 1/2		4	COAL broken, dull & bright, pyrites		4										
70	10	1	4 1/2	Siltstone with rare greywacke bands grey	1	4 1/2										
73	10	3	0	Siltstone grey, some f.g. greywacke bds. carbonaceous detritus	2	11										
76	5 1/2	2	7 1/2	Claystone & siltstone grey, carb. detritus	2	7 1/2										
79	10	3	4 1/2	Fine grained greywacke rare thin carb. bands	3	4 1/2										
82	0	2	2	Greywacke v.f.g. grey carb. detritus	2	2										
82	7		7	Greywacke med. grd. grey		7										
85	10	3	3	Greywacke f.g. grey plant remains	3	3										
86	10	1	0	Greywacke med. grd. grey	1	0										
96	10	10	0	Greywacke med. & fine grd. grey rare thin carb. bands	9	8 1/2										

-----Artie's Seam-----

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
99	5	2	7	Greywacke coarse grained grey	2	0										
100	2		9	Siltstone grey		9										
106	10	6	8	Greywacke fine grained grey	6	8										
107	9		11	Greywacke med. grd. grey. carb. lam.		11										
108	10	1	1	Siltstone sideritic in part, brown vert. fractures calcite & pyrites filled	1	1										
114	10	6	0	Greywacke med. grd. carb. lam. rare	5	8										
121	3	6	5	Greywacke light grey med. grained rare carb. material	5	7										
123	7	2	4	Greywacke as above	2	4										
123	11		4	Shale grey carb. detritus		4										
124	5		6	COAL dull & bright banded cleated		2										
126	2	1	9	COAL mostly dull but plenty bright bds fractures with pyrites & hard white clay	1	7	7/BMR					2.9	33.5	53.0	10.6	12,800
128	2	2	0	COAL dull & bright banded cleated	2	0	8/BMR					2.9	38.1	53.4	5.6	13,720
129	10	1	8	COAL dull & bright banded cleated not broken few small grey shale bds.	1	8	9/BMR			1 1/2	2.7	34.7	50.5	12.1		12,780
131	4	1	6	COAL dull & bright banded with pyrites & one 1" black carb. shale bd. 4" from top	1	6	10/BMR					3.1	36.0	49.3	11.6	12,700
131	10		6	Black carbonaceous shale		5										
132	2		4	Greywacke v.f.g. grey, carb. lam.		4										
133	4	1	2	Greywacke f.g. light grey	1	2										
135	4	2	0	Shale silty grey, plenty carb. detritus	1	11										
141	4	6	0	Greywacke v.f.g. some siltstone bds. rare carb. laminations & pyrites	3	3										

Upper Liddell Seam

typed 19/2/53.

BUREAU OF MINERAL RESOURCES

BMR 36T PARNELL'S CREEK.

Name and No. of Bore

DISTRICT Cessnock Muswellbrook COUNTY DURHAM PARISH HOWICK PORTION 121 LOCATION 645.2' ASL.
 Surveyed by J. Svoronos Survey Method Tel. Alidade Elevation Standard Ref. Map BMR Map N14/110
 Logged by P. Duff Cased 23' Datum Standard Ref. Report BMR Records 47/1953.
 Sunk by Drilling Corp Type of Drill Mindrill 1/4.1000 Depth 180' Date Begun/Finished 17.10.52/25.10.52

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
3	0	3	0	Soil sandy light brown and yellow	1	8										
5	0	2	0	Claystone cream & white	1	5										
8	0	3	0	Siltstone light grey wd. fractured vert.	1	9										
9	2	1	2	Siltstone as before w. some f.g. grey-wacke	1	2										
10	8	1	6	Siltstone limonitic orange coloured hard dense, vugs. & fractures.	1	6										
10	0	5	4	Greywacke cream		1										
23	0	7	0	Greywacke f.g. & v.f.g. partly sideritic light brown weathered	3	11										
24	0	1	0	Greywacke med. grd. l. gy., wd.	1	0										
25	2	1	2	Siltstone light grey, f.g. greywacke bands	1	2										
27	4	2	2	Siltstone sideritic & limonitic, red brown	1	2										
29	6	2	2	Siltstone light grey		7										
31	0	1	6	Shale & siltstone interbedded grey, carb. material	1	6										
32	0	1	0	Greywacke fine grd. wd. iron stained	1	0										
37	0	5	0	Greywacke f.g. & siltstone interbedded common thin carb. laminations	4	0										
38	7	1	7	Shale, carb. black, grey siltstone bands, broken, partially wd.	1	7										
40	4	1	9	Greywacke f.g. l. gy. many carb. lam.	1	9										
41	0		8	Shale, grey very carbonaceous		8										
41	10	10		Shale carbonaceous black	10											
42	11	1	1	COAL broken, dull	7											
43	0		1	Shale carb. w. greywacke lenses	1											
44	0	1	0	COAL bright & dull banded broken	10		1/BMR					1"	3.6	31.5	49.9	15.0 11,580
44	2		2	Shale carb. dark. grey	2											

-Seam X

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
44	6		4	Shale, grey, some carb. detritus		4										
45	0		6	Greywacke light grey		4										
48	6	3	6	Greywacke light grey, rare thin carb. laminations	3	6										
52	6	4	0	Shale, grey, common plant detritus & some small coal lenses	3	0										
55	6	3	0	Siltstone mainly some shale bands, carbonaceous laminations and coal lenses	3	0										
57	10	2	4	Greywacke fine grained carb. lam.	2	4										
59	6	1	8	Siltstone grey, calcite veining, pyrites and small coal bands	1	8										
63	6	4	0	Greywacke v.f.g. to siltstone band carb. laminations common	3	10										
65	6	2	0	Shale grey many carb. laminations	2	0										
70	5	4	11	Limestone cream (calcilutite) much broken, silty		8										
73	5	3	0	Siltstone grey w. large vertical fractures filled with earthy and vitreous lustre calcite at top	3	0										
74	1		8	Greywacke v.f. grd.		8										
74	8		7	Siltstone gy. w.t. carb. lam. & some f. grd. greywacke bds.		7										
75	10	1	2	Siltstone sideritic br. gy.	1	2										
76	10	1	0	Siltstone gy.	1	0										
79	0	2	2	Greywacke v.f. grd. w. carb. lam.	2	2										
80	11	1	11	Shale gy. silty in part w. numerous t. carb. lam.	1	11										
81	1½		2½	Shale bk. carb.		2½										
82	0		10½	Shale dk. gy. & bk.		10½										
82	4½		4½	Shale bk. carb. to dull coal		4½										
83	0		7½	COAL dull & bright bdd.		2										
83	6		6	COAL dull & bright bdd. v. broken		6										
84	5½		11½	Shale bk. carb. w.r. bright coal bds.		11½										
84	9½		4	COAL mostly bright		4										
85	2		4½	Siltstone gy. w. carb. detritus		4½										
85	11		9	Shale bk. carb. w. small bds. coal		9										
87	3½	1	4½	COAL dull & bright bdd. broken in part		11½										
88	6	1	2½	Siltstone l. gy.		7										

Seam W.

Page

Name and No. of Bore

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
91	10	3	4	Siltstone & v. f. grd. greywacke intbdd. l. gy. w. carb. lam. & coal lenses	3	4										
94	1	2	3	Greywacke l. gy. medium grained	1	11										
95	6	1	5	Shale dk. gy. silty at bottom		5										
98	0	2	6	Shale dark grey fractured carb. detritus & one small bright coal band	2	6										
100	6	2	6	Siltstone, grey, many carb. laminations	2	6										
103	6	3	0	Greywacke very f.g. numerous carb. lam.	2	1										
106	2	2	8	Greywacke medium grained grey carb. detritus	2	8										
107	0		10	Shale, grey, carbonaceous laminations		10										
108	9	1	9	Siltstone & v.f.g. greywacke inter- bedded shaly towards bottom many carb. laminations	1	9										
110	5	1	8	Siltstone & v.f.g. greywacke inter- bedded many carb. laminations	1	8										
113	1	2	8	Greywacke light grey, fine grained	2	8										
116	3	3	2	Greywacke brown, iron stained, med. & fine grained fractured vertically	3	2										
117	6	1	3	Greywacke coarse grained brown iron stained one small coal band at top. Coarse pebble band fractured vert.	1	2										
126	6	9	0	Greywacke, coarse & very coarse grained, iron stained, mostly brown, some bands light grey pebbles common	4	11										
130	1	3	7	Greywacke as above	1	7										
131	5	1	4	Greywacke v.f.g. carbonaceous detritus		8										
141	6	10	1	Greywacke med. grd. light grey	7	1										
141	9½		3½	Greywacke light grey, f.g. one coal band		3½										
143	6	1	8½	Shale black carbonaceous	1	6½										
150	0	6	6	COAL some splint, some broken black shale, mostly broken, pyrites	6	3	2/BMR			1"	4.1	22.2	52.6	21.1	10,550	
							3/BMR				4.1	23.2	55.8	16.9	11,170	
154	3	4	3	COAL mostly dull some dull & bright banded very broken at top	4	2	4/BMR				3.8	27.3	57.8	11.1	12,080	
							5/BMR				3.7	29.9	55.8	10.6	12,340	
							6/BMR				3.9	32.1	56.7	7.3	12,840	

Farrell's-
Creek Seam

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
159	3	5	0	COAL dull & bright banded cleated	5	0	7/BMR	Farrell's	2"	3.2	28.5	51.8	16.5	11,610		
159	9		6	Greywacke fine grained light grey carb. laminations		6	8/BMR	Ck. Seam.		3.3	28.6	52.0	16.1	11,650		
162	0	2	3	Greywacke light grey medium grained	1	10										
168	0	6	0	Greywacke, coarse & very coarse grained, grading into conglomerate at bot.												
				One small carbonaceous band near top	5	2										
180	0	12	0	Greywacke v.f.grd. w. some bands of coarse material near top. Rare thin laminations & bands	10	4										
				Hole completed	Typed 19/2/53											

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 37T PARNELL'S CREEK.

DISTRICT ~~Cessnock~~ Muswellbrook COUNTY DURHAM PARISH HOWICK PORTION 5 LOCATION
Surveyed by J. Svoronos Survey Method Tel. Alidade Elevation 400.6' ASL. Ref. Map BMR Map. N14/110
Logged by M.A. Reynolds Cased 22'4" Datum Standard Ref. Report BMR Records 47/1953.
Sunk by Price Anderson Type of Drill Goldfield 20 Depth 84'10" Date Begun/Finished 21.10.52/24.10.52

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
4	0	4	0	Clay br. to l. gy. wd.	2	5										
5	7	1	7	Greywacke l. br. gy. f. grd. wd.	1	7										
6	2		7	Greywacke br. limonite stained tough		7										
8	8	2	6	Siltstone l. br. gy. wd.		3										
11	6	2	10	Clay l. gy. wd.	1	2										
12	1		7	Siltstone br. tough		7										
14	1	2	0	Siltstone l. br. gy. wd.	2	0										
14	7		6	Clayshale l. gy. wd.		6										
15	6		11	Siltstone gy. wd. in part		11										
16	4		10	Siltstone br. tough w. limonitic stains		10										
18	0	1	8	Siltstone gy. br. wd.		3½										
22	0	4	0	Shale gy. & dk. gy. carb. in part wd. br. in part	2	11										
31	5	9	5	Greywacke l. br. gy. wd. v.f. to f. grd.	4	6										
32	1½		8½	Greywacke v.f. grd. to slst. br. gy.		8½										
32	9		7½	Claystone br. gy. wd.		6										
34	1	1	4	Siltstone br. limonitic tough	1	4										
38	11	4	10	Greywacke l. br. gy. wd. v.f. to f. grd.	4	10										
42	4½	3	5½	Siltstone gy.	3	5										
43	9	1	4½	Greywacke l. gy. f. grd.	1	4½										
44	1½		4½	Siltstone gy.		4½										
44	3		1½	COAL bright		1½										
46	3	2	0	Claystone gy-dk.gy.silty in part	2	0										
46	6		3	Shale dk.br.gy.carb.w.t.bds. bright coal		3										
47	8½	1	2½	Claystone to shale over bot. 1½" dk. gy	1	2½										
48	1		4½	Shale dk. gy. to bk. carb. w.t. bds. bright coal		4										
48	1¾		0¾	COAL dull		0¾										
48	8		6¾	COAL dull & bright bdd.		6¾										
48	9½		1½	Claystone dk. br. carb. silty		1½										
50	1¾	1	4¾	COAL dull & bright bdd. broken at bot w.sh.	1	4¾	1/BMR			1½"	4.5	34.6	50.8	10.1	12,450	

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
50	3½	13¼		Shale bk. carb.		13¼										
51	2½	11		Claystone br. gy. to bk. carb. v.sdy. distorted & w. some limonite stain at bot.		11										
53	7	2	4½	COAL dull & bright bdd. to laminated w. irregular fractures & br. limonite stains	2	4½	2/BMR					4.5	35.4	48.6	11.5	12,070
53	8		1	Claystone dk. br.-bk. silty carb.		1										
56	7	2	11	COAL mostly dull to dull & bright bdd. over bot 10" Irregular, fractured slickensided	2	11	3/BMR		½"			4.5	31.7	55.0	8.8	12,600
57	1		6	Intermixed broken dull & bright coal & br. sdy. claystone		6										
58	1½	1	0½	COAL mostly dull w. some bright bds. finely pyr. irregular, fractured	1	0½	4/BMR					3.8	28.5	46.9	20.8	11,020
58	3		1½	Irregular bd. dk. br. sdy carb. claystone slickensided		1½										
59	2		11	COAL dull & bright bdd. broken irregularly		11	5/BMR					3.8	33.2	49.6	13.4	12,150
59	6½		4½	Claystone br. gy. sdy. w. irregular fractures & slickensided		4½										
61	4	1	9½	COAL mostly bright w. distorted cleat, & showing some dip. Rare v.t. dk br. claystone lens	1	9½	6/BMR					4.0	32.9	53.2	9.9	12,750
61	6		2	Shale bk. carb. to dull coal w.t. ? marcasite bds. irregular, fractured & slickensided		2										
61	9		3	Splint bk. carb. silty		3										
63	0½	1	3½	COAL dull & bright bdd. w. ½" slst. lens 3" from top mostly bright	1	3½										
63	2		1½	Claystone dk. br. silty as above 4½"		1½	7/BMR					3.8	33.6	53.6	9.0	12,910
63	7½		5½	COAL mostly bright w. dip as above		5½										
64	0		4½	Shale bk. carb. w. numerous t. bds. bright coal		4½										
64	3½		3½	Shale gy.		3½										
64	6		2½	COAL bright		2½										
66	6	2	0	Claystone gy. slickensided silty at bot	1	5½										
72	7	6	1	Siltstone gy. slickensided	5	6										
84	0	11	5	Greywacke l. gy. m. to c. grdfriable at bot.	9	5										
												Hole completed				
												typed 10/2/53.				

Artie's Seam

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 38T PARNELL'S CREEK.

DISTRICT	Cessnock Muswellbrook	COUNTY	DURHAM	PARISH	HOWICK	PORTION	121	LOCATION	
Surveyed by	G. Stuart	Survey Method	Tel. Alidade	Elevation	556.8'	ASL.		Ref. Map	BMR Map N14/110
Logged by	P. Duff	Cased	32'6"	Datum	Standard			Ref. Report	BMR Records 47/1953.
Sunk by	Drilling Corp	Type of Drill	Mindrill E.1000	Depth	118'4"			Date Begun/Finished	21.10.52/27.10.52

[illegible]

Name and No. of Bore

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
56	1	2	6	Greywacke med. & coarse grd., iron stained light brown	2	6										
60	6	4	5	Greywacke as above w. many vertical fractures	4	3										
66	1	5	7	Greywacke coarse & med. grd. mostly iron stained light brown some light grey, many pebble bands fractured as before	5	7										
66	8		7	Greywacke brown fine grained		7										
69	9	3	1	Siltstone, grey & dk. gy., some iron stained	3	1										
70	8		11	Shale grey		8										
71	1		5	Shale grey		5										
74	1	3	0	Siltstone grey	3	0										
76	1	2	0	Greywacke f.g. & v.f.grd. l. gy. many carb. laminations	2	0										
81	1	5	0	Greywacke f.g. interbedded w. numerous bk. carb. bds. & siltstone bds. all showing current bedding	4	10										
82	5	1	4	Greywacke f.g. current bedding carb. lenses common	1	4										
83	0		7	Shale grey carb. detritus		7										
83	10		10	Shale bk. carb. very sandy		10										
84	5		7	Shale as above		7										
89	7	5	2	Greywacke med. grd. l. gy. grading to coarse grd. & pebbly at bottom. Some t. carb. laminations	5	2										
95	4	5	9	COAL mostly dull, top broken	4	10	1/BMR									
100	10	5	6	COAL dull & bright banded one thin black shale band	5	6	2/BMR									
							3/BMR									
							4/BMR									
							5/BMR									
103	1	2	3	COAL mostly dull, some cleated	2	0										
103	10		9	Shale gy. carbonaceous		9										
105	4	1	6	Shale as above	1	6										
109	4	4	0	Greywacke med. grd. pebbly	3	0										
118	4	9	0	Greywacke med. & coarse grd. pebbly in part	8	6										
Hole completed					typed 20/2/53.											

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 39T PARNELL'S CREEK

Cessnock

DISTRICT Muswellbrook COUNTY DURHAM PARISH HOWICK PORTION 5 LOCATION

Surveyed by J. Svoronos Survey Method Tel. Alidade Elevation 497.2' ASL. Ref. Map BMR Map N14/110

Logged by M.A. Reynolds Cased 20' 10" Datum Standard Ref. Report BMR Records 47/1953.

Sunk by Price/Anderson Type of Drill Goldfields 20 Depth 137.11" Date Begun/Finished 28.10.52/1.11.52

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
3	0	3	0	Clay dk. br. gy. sdy. (? carb.)		6										
9	0	6	0	Clay gy.-red mottled		4										
10	8	1	8	Siltstone l. br. wd.	1	8										
11	4		8	Clay l. gy		8										
12	7	1	3	Siltstone gy. wd. br. in part	1	3										
12	11		4	Ironstone red br.		4										
13	3		4	Siltstone as above		4										
14	0		9	Greywacke br. tough v.f.g.		9										
17	5	3	5	Siltstone as above	1	8										
17	9		4	Ironstone as above		4										
36	3	18	6	Siltstone gy. w. occasional f. grd.												
39	0			sd. & rare t. ironstone bds.	17	5 1/2	1/BMR									
41	9	5	6	COAL dull & bright laminated & bdd. w. rare v.t. br. sdy. clst. lens	5	6						4.0	33.3	52.9	9.8	12,430
42	0 1/2		3 1/2	Shale bk. carb. w. numerous bds. bright coal & t. lenses of ? marcasite		3 1/2	2/BMR 39T					3.9	36.5	54.5	5.1	13,470
42	2 1/2		2	COAL dull & bright bdd.		2										
42	7 1/2		5	Shale bk. carb. irregularly overlying l. gy. v.s. sdy siltstone												
42	11		3 1/2	COAL dull & bright bdd.		5										
42	11 3/4		0 3/4	Siltstone l. gy.		3 1/2										
43	3 1/4		3 3/4	COAL bdd. as above		0 3/4										
43	8 1/2		5 1/4	Siltstone sdy. as above		3 1/2										
43	11		2 3/4	COAL bdd. as above w.v.t. br. clst. lens		5 1/4										
43	11 3/4		0 3/4	Interdigitating l. gy. slst. & coal		2 3/4										
44	5		5 1/4	COAL dull & bright bdd. broken		0 3/4										
44	10		5	Shale gy. w. m. grd. greywacke lenses as below		5 1/4										
45	4 1/2		6 1/2	Greywacke l. gy. med. c. grd.		5										
45	10		5 1/2	COAL dull & bright bdd. broken pyr.		6 1/2										

-----Upper Liddell Seam.

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
46	8	10		Siltstone gy. sdy.		6										
47	7	11		Greywacke l. gy. f. to med. grd.		11										
51	7	4	0	Greywacke gy. med. to coarse grd.	4	0										
51	9½		2½	Shale dk. br. sideritic sdy. w.t. bds. coal		2½										
52	10½	1	1	Shale gy. br. to dk. br. gy. carb. w.t. bds. bright coal	1	1										
53	0½		2	COAL mostly bright		2										
53	8½		8	Shale as above		8										
54	1½		5	Siltstone gy. rich in carb. mat.		5										
54	6		4½	Shale as above		4½										
56	9	2	3	Greywacke l. gy. v.f. grd. s.	2	3										
57	11	1	2	Siltstone, gy.	1	2										
63	2	5	3	Greywacke l. gy. f. grd.	4	3										
65	8	2	6	Siltstone gy.	2	6										
67	0	1	4	Clay-ironstone br. gy.	1	4										
67	9½		9½	Claystone l. gy. w.t. bd. dk.gy. carb. shale at bot.		5										
68	3½		6	COAL dull & bright bdd. mostly bright		5										
68	10½		7	Shale dk. gy. conglomeratic w. clst. pellets		7										
71	0	2	1½	Claystone to siltstone sdy. to v. sdy.	2	1½										
71	5		5	Greywacke l. gy. m. grd.		5										
73	3½	1	10½	Siltstone gy. as above 2'1½"	1	10½										
73	9½		6	Clay ironstone br. gy. sdy.		6										
80	2½	6	5	Greywacke l. gy. v.f.grd. s. w. some slst. bds.	5	10										
84	11	4	8½	Greywacke l. gy. med. coarse grd.	4	8½										
86	6	1	7	Siltstone gy. rich in carb. woody mat.	1	7										
90	9	4	3	Greywacke l. gy. med. coarse grd.	4	3										
110	11	20	2	Greywacke l. gy. v.c. to c. grd. fri.	20	2										
118	8	7	9	Claystone gy. to dk. gy. rich in carb. mat.	7	8										
118	11		3	COAL, bright		3										
119	9		10	COAL bright		10										
120	11½	1	2½	Shale, black	1	2½										
121	2½		3	COAL, generally dull w. bright bands		3										
122	0		9½	Shale, black, w. a bright coal band		9½										
122	4		4	COAL, rather dull		4										

Middle Liddell Seam.

 Lower
Liddell
Seam.

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 40T PARNELL'S CREEK

Cessbrook		Name and No. of Boat	
DISTRICT	Muswellbrook	COUNTY	DURHAM
		PARISH	HOWICK
		PORTION	121
		LOCATION	
Surveyed by	G. Stuart	Survey Method	Tel. Alidade
			Elevation
			575.3' ASL.
Logged by	P. Duff	Cased	25'
			Datum
			Standard
Sunk by	Drilling Corp.	Type of Drill	Mindrill E.1000
			Depth
			114'0"
			Date Begun/Finished
			24.10.52/29.10.52
			Ref. Map
			BMR Map N14/110
			Ref. Report
			BMR Records 47/1953.

[illegible]

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
58	6	8	0	Siltstone & f.g. greywacke interbedded w. one band of coarse greywacke in centre	6	8										
63	9	5	3	Siltstone l. gy. changing to l. brown at bottom	5	3										
66	6	2	9	Greywacke v.f.g. l. brown, sideritic in part, large vertical fractures	2	9										
70	6	4	0	Greywacke light brown, very coarse broken pebbly in part	3	0										
82	1	11	7	Conglomerate unconsolidated		7										
82	6		5	Greywacke l. br. very coarse & pebbly		5										
85	0	2	6	Greywacke as above	1	6										
89	6	4	6	Greywacke as above	4	4										
90	6	1	0	Siltstone light brown & grey hard	1	0										
92	6	2	0	Shale, silty & sandy in part, gy. & l. br., fractured	2	0										
92	10		4	Shale, carbonaceous, black, hard		4										
96	6	3	8	Greywacke v.f.g. iron stained, broken		10										
96	9		3	Greywacke f.g. light grey		3										
102	0	5	3	Dant very broken finally divided	1	6	2/BMR					12.0	26.1	49.3	12.6	8,250
106	6	4	6	{ Dant as above	3	4	3/BMR					12.7	27.0	44.0	16.3	7,550
				{ Dant as above		4										
114	0	7	6	Greywacke top carbonaceous, rest brown coarse & very coarse grd.	5	10										

Hole completed

Typed 20/2/53.

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 41T PARNELL'S CREEK.

Cessnock		DISTRICT		Muswellbrook	COUNTY	DURHAM	PARISH	HOWICK	PORTION	5	LOCATION
Surveyed by	G. Stuart	Survey Method	Tel. Alidade	Elevation	439.2'	ASL.	Ref. Map	BMR Map N14/110			
Logged by	P. Duff	Cased	29'6"	Datum	Standard	Ref. Report	BMR Records 47/1953.				
Sunk by	Drilling Corp. Aust.	Type of Drill	Mindrill E.1000	Depth	61'2"	Date Begun/Finished	28.10.52/29.10.52				

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.				H.M.	V.	F.C.	ASH	B. TH. U/LB
26	0	26	0	Soil sandy unconsolidated brown iron stained weathered	4	8								
31	2	5	2	Claystone sandy broken some boulders of limonite. Claystone white but iron stained	2	8								
33	6	2	4	Claystone as above		10								
36	2	2	8	Greywacke med. grd., light brown, iron stained	2	8								
41	2	5	0	Greywacke as above	4	3								
51	2	10	0	Greywacke as above	7	9								
56	2	5	0	Greywacke as above	3	5								
61	2	5	0	Greywacke med. & fine grained, light brown	4	3								
				Hole completed	Typed 21/2/53.									

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 42T PARNELL'S CREEK.

Cessnock		Durham		Howick		Portion 5		Location	
DISTRICT	Muswellbrook	COUNTY	DURHAM	PARISH	HOWICK	PORTION	5	LOCATION	
Surveyed by	G. Stuart	Survey Method	Tel. Alidade	Elevation	439.1' ASL.	Ref. Map	BMR Map N14/110		
Logged by	P. Duff	Cased	15' 0"	Datum	Standard	Ref. Report	BMR Records 47/1953.		
Sunk by	Drilling Corp. Aust.	Type of Drill	Mindrill E.1000	Depth	110' 0"	Date Begun/Finished	30.10.52/4.11.52		

[illegible]

Hole Abandoned

Typed 21/2/53.

BUREAU OF MINERAL RESOURCES

Name and No. of Bore **BMR 43T PARNELL'S CREEK.**

Cessnock

DISTRICT	COUNTY	PARISH	HOWICK	PORTION	LOCATION
Muswellbrook.	DURHAM			5	
Surveyed by G. Stuart	Survey Method	Tel. Alidade	Elevation	507.3' ASL.	Ref. Map BMR Map N14-110
Logged by P. Duff	Cased	24'6"	Datum	Standard	Ref. Report BMR Records 47/1953.
Sunk by Drilling Corp. Aust.	Type of Drill	Mindrill E.1000	Depth	100'2"	Date Begun/Finished 30.10.52/4.11.52.

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.				H.M.	V.	F.C.	ASH	B. TH. U/LB
3	0	3	0	Soil red-brown		11								
9	0	6	0	Greywacke v.f.g., light brown broken	2	3								
14	0	5	0	Claystone light brown, soft weathered broken	2	0								
15	6	1	6	Greywacke light brown, iron stained v.f.grd.	1	6								
17	0	1	6	Greywacke as above with ironstone pebbles	1	3								
24	6	7	6	Claystone light brown, very broken with many limonite-haematite pieces	5	4								
27	1	2	7	Greywacke f.g. light brown with iron stone pebbles		7								
28	5	1	4	Claystone, light grey iron stained		2								
33	5	5	0	Shale light grey & brown, much iron stained	2	10								
35	2	1	9	Shale as above but mostly light grey	1	8								
35	8		6	Siltstone limonitic hard dense some calcite		6								
41	2	5	6	Shale light grey, some iron stains & carb. detritus	5	6								
51	5	10	3	Siltstone light grey with v.f.g. greywacke & shale bands. This carb. laminations	10	3								
54	0	2	7	Greywacke v.f.g. fractured vertically fracs iron stained. some calcite. Hard dense	2	4								
55	0	1	0	Siltstone light grey fractured, shaly at bottom		11								
81	8	26	8	Siltstone, light grey fractured vert. & horizontally, grading to v.f.g. greywacke, numerous t. carb. lam. & shale bands	23	11								

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
84	5	2	9	COAL, generally bright	2	7	1/BMR					3.3	36.3	51.3	3.6	12,960
84	8 $\frac{1}{2}$		3 $\frac{1}{2}$	Shale, grey		3 $\frac{1}{2}$										
85	2 $\frac{1}{2}$		6	COAL, mostly dull, fragmentary		5										
85	4		1 $\frac{1}{2}$	Siltstone, brownish-grey		1 $\frac{1}{2}$	2/BMR			1 $\frac{1}{2}$ "		3.3	31.0	53.5	6.7	12,180
85	7		3	COAL, mostly dull		3										
85	8		1	Shale, brownish-grey		1				1"						
85	11 $\frac{1}{2}$		3 $\frac{1}{2}$	COAL, fragmentary, generally dull		2 $\frac{1}{2}$										
86	1		1 $\frac{1}{2}$	Shale, grey		1 $\frac{1}{2}$										
86	11 $\frac{1}{2}$		10 $\frac{1}{2}$	COAL dull with thin bright bands		8										
87	1		1 $\frac{1}{2}$	Claystone, black		1 $\frac{1}{2}$	3/BMR			1 $\frac{1}{2}$ "		3.9	33.8	50.7	11.6	12,630
87	4		3	Siltstone, light grey		3				3"						
88	4	1	0	COAL, bright		10										
88	8		4	Shale, light grey		3										
89	6		10	COAL, bright, fragmentary		5										
89	7 $\frac{1}{2}$		1 $\frac{1}{2}$	Shale, dark grey to grey		1 $\frac{1}{2}$										
89	9 $\frac{1}{2}$		2	COAL, bright, fragmentary		1 $\frac{1}{2}$	4/BMR					4.1	28.9	40.6	26.4	10,130
89	10		0 $\frac{1}{2}$	Shale, grey		0 $\frac{1}{2}$			1 $\frac{1}{2}$ "							
90	2		4	COAL, generally bright		3 $\frac{1}{2}$										
91	10	1	8	Siltstone, grey	1	8										
100	2	8	4	Greywacke, light grey, fine grained	7	6										

Hole completed

Typed 22/2/53.

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 44T PARNELL'S CREEK.

DISTRICT	COUNTY	PARISH	PORTION 5	LOCATION
Cessnock Muswellbrook	DURHAM	HOWICK		
Surveyed by G. Stuart	Survey Method	Tel. Alidade	Elevation 432.4' ASL	Ref. Map BMR Map N14/110
Logged by N. Hoyling	Cased	Not	Datum Standard	Ref. Report BMR Records 47/1953.
Sunk by W.L. Sides & Son	Type of Drill	Goldfields 33	Depth 125' 0"	Date Begun/Finished 31.10.52/7.11.52

[illegible]

Hole completed

Typed 21/2/53.

BUREAU OF MINERAL RESOURCES

BMR 45T PARNELL'S CREEK.

Name and No. of Bore

Cessnock		DURHAM		HOWICK		5	
DISTRICT	Muswellbrook	COUNTY		PARISH		PORTION	LOCATION
Surveyed by	G. Stuart	Survey Method	Tel. Alidade	Elevation	423.2' ASL.	Ref. Map	BMR Map N14/110
Logged by	N. Hoyling	Cased	20'0"	Datum	Standard	Ref. Report	BMR Records 47/1953.
Sunk by	Price Anderson	Type of Drill	Goldfields 20	Depth	85'0"	Date Begun/Finished	2.11.52/4.11.52.

[illegible]

Hole completed

Typed 21/2/53.

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 46T PARNELL'S CREEK. :

DISTRICT	Cessnock Muswellbrook	COUNTY	DURHAM	PARISH	HOWICK	PORTION	5	LOCATION	
Surveyed by	G. Stuart	Survey Method	Tel. Alidade	Elevation	419.1' ASL.	Ref. Map		BMR Map N14/110	
Logged by	N. Hoyling	Cased	Nil	Datum	Standard	Ref. Report		BMR Records 47/1953.	
Sunk by	Drilling Corp. Aust.	Type of Drill	Mindrill E.1000	Depth	105'3"	Date Begun/Finished		5.11.52/7.11.52	

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
25	3	25	3	Surface clays, sandy, brown, with ferruginous cobbles												
33	4	8	1	Claystone, white, ? kaolin, stained brown in parts	4	6										
105	3	71	11	Greywacke, grey, medium-grained	69	6										
				Hole Abandoned					Typed 21/2/53.							

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 47T PARNELL'S CREEK

Cessnock

DISTRICT Muswellbrook COUNTY DURHAM PARISH HOWICK PORTION 5 LOCATION _____

Surveyed by G. Stuart Survey Method Tel. Alidade Elevation 455.2' ASL. Ref. Map BMR Map N14/110

Logged by N. Hoyling Cased 20' Datum Standard Ref. Report BMR Records 47/1953.

Sunk by Price Anderson Type of Drill Goldfields 20 Depth 121'7" Date Begun/Finished 4.11.52/11.11.52

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
6	0	6	0	Surface clay, buff & brown, sandy	5	0										
37	0	31	0	Greywacke, brownish-buff, medium to coarse grained	28	0										
45	10	8	10	Shale, grey	8	10										
46	3		5	COAL, bright		5										
46	5		2	COAL, dull, shaly		2										
46	8½		3½	COAL, generally bright		3½										
46	11		2½	Shale, black, soft, ferruginous in part		2½										
48	0	1	1	Shale, greyish-black, with thin coal bands	1	1										
48	2½		2½	COAL, dull		2½										
49	0½	10		Shale, greyish-black		10										
49	5		4½	COAL, generally dull		4½										
49	6½		1½	Shale, brownish-grey		1½										
49	9		2½	COAL, bright		2½										
49	10		1	Shale, brownish-grey		1										
51	9	1	11	COAL, bright with thin shale bands	1	11	1/BMR		¾			3.3	32.8	46.5	17.4	11,560
52	11	1	2	Shale, black to dark grey	1	2										
57	11	5	0	Shale, grey	5	0										
85	0	27	1	Greywacke, light grey, fine to med. grained with sh. bds. & sideritic bands	23	2										
98	6	13	6	Siltstone, greyish white, with sdy. bands	10	0										
103	4	4	10	Shale, grey	4	10										
105	8	2	4	COAL, generally bright	2	4	2/BMR					3.1	37.7	52.1	7.1	13,380
105	10½		2½	Shale, grey		2½										
106	4		5½	COAL, bright		5½										
106	5	1		Shale, brownish-grey with coal streaks	1		3/BMR					3.2	31.0	46.3	19.5	11,360
107	0½		7½	COAL, generally bright		7½										
107	2½		2	Shale, grey		2										

---Lower Liddell Seam---

Barr-ett's Seam

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
108	0 $\frac{1}{2}$	10		COAL, Bright	10		4/BMR					3.2	36.7	53.3	6.0	13,390
108	2 $\frac{1}{2}$	2		Shale, brownish-grey	2											
108	3	0 $\frac{1}{2}$		COAL, bright	0 $\frac{1}{2}$											
108	4	1		Shale, grey	1											
109	5	1		COAL, generally bright	1		5/BMR					3.3	31.9	47.3	17.5	11,880
109	6 $\frac{1}{2}$	1 $\frac{1}{2}$		Shale, blackish to dark grey	1 $\frac{1}{2}$											
110	4	9 $\frac{1}{2}$		COAL, bright	9 $\frac{1}{2}$											
110	4 $\frac{1}{2}$	0 $\frac{1}{2}$		Siltstone, grey	0 $\frac{1}{2}$											
110	7	2 $\frac{1}{2}$		COAL, bright	2 $\frac{1}{2}$		6/BMR					3.1	31.9	46.2	18.8	11,500
110	9	2		Shale, grey	2											
111	3 $\frac{1}{2}$	6 $\frac{1}{2}$		COAL, bright	6 $\frac{1}{2}$											
112	1	9 $\frac{1}{2}$		Shale, grey	9 $\frac{1}{2}$											
121	7	9	6	Greywacke, light grey, fine-grained	9	6										

Hole completed

Typed 21/2/53.

---Barrett's Seam---

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 48T PARNELL'S CREEK.

DISTRICT	Cessnock Muswellbrook	COUNTY	Durham	PARISH	Howick	PORTION	5	LOCATION	
Surveyed by	G. Stuart	Survey Method	Tel. Alidade	Elevation	435.4'	ASL		Ref. Map	BMR Map N14/110
Logged by	H. Hoyling	Cased	15'	Datum	Standard			Ref. Report	BMR Records 47/1953.
Sunk by	Drilling Corp. Aust.	Type of Drill	Mindrill E.1000	Depth	60'			Date Begun/Finished	5.11.52/5.11.52.

[illegible]

Hole completed

Typed 20/2/53.

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR. 49T PARNELL'S CREEK.

DISTRICT Cessnock-M'sbrk COUNTY Durham PARISH Howick PORTION LOCATION
Surveyed by N. Gorbunow Survey Method Theodolite Traverse Elevation 437.9' Ref. Map BMR. N14-110
Logged by N. Hoyling Cased 11' Datum Standard Ref. Report BMR. Records 1953/47
Sunk by Drilling Corp. of Aust. Type of Drill Mindrill EL000 #5 Depth 56'8" Date Begun/Finished 6.11.52/7.11.52

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
3	0	3	0	Brown surface clay		9										
35	4	32	4	Greywacke brown to buff, mostly m. grained	21	8										
37	10	2	6	Shale, light grey, dark grey at bottom	2	6										
38	9 1/2	11 1/2		COAL, mostly bright.		10 1/2	1/BMR.					4.9	35.3	52.6	7.2	12,470
38	10	1		Shale, grey.		1										
40	7	1	9	COAL, generally bright.	1	9										
40	8 1/2	11 1/2		Siltstone, greyish white.		1 1/2	2/BMR.					4.7	33.0	49.6	12.7	11,400
41	3	6		COAL, generally dull.		4 1/2										
41	4 1/2	1		Siltstone, greyish white.		1 1/2										
42	10	1	5 1/2	COAL, mostly bright.	1	3 1/2										
43	0	2		Shale, greyish white.		2	3/BMR.					4.8	32.9	50.9	11.4	11,940
43	6	6		COAL, bright with dull bands.		6										
43	4 1/2	3 1/2		Claystone greyish white, sandy.		3 1/2										
44	4 1/2	7		COAL, bright with some shale lenses.		7										
44	5 1/2	1		Shale, light to dark grey.		1	4/BMR.					3.8	33.2	49.9	13.1	11,800
44	10	4 1/2		COAL, mostly bright.		4 1/2										
44	11 1/2	1 1/2		Shale, grey.		1 1/2										
46	2	1	2 1/2	COAL, rather dull.	1	1	5/BMR.					4.2	32.3	48.3	15.2	11,610
48	0	1	10	Siltstone, light grey, tending to shale.	1	10										
56	0	8	0	Greywacke light grey, f. to m. grained.	6	6										

Barrett's Seam

typed 20.5.53

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 50T PARNELL'S CREEK.

DISTRICT	Cessnock Muswellbrook	COUNTY	DURHAM	PARISH	HOWICK	PORTION	5	LOCATION
Surveyed by	G. Stuart	Survey Method	Tel Alidade	Elevation	443.3'	ASL.		Ref. Map BMR Map N14/110
Logged by	N. Hoyling	Cased	15'	Datum	Standard			Ref. Report BMR Records 47/1953.
Sunk by	Drilling Corp. Aust.	Type of Drill	Mindrill E.1000	Depth	101'6"			Date Begun/Finished 10.11.52/13.11.52

[illegible]

Hole completed

Typed 20/2/53.

Cessnock

Name and No. of Bore

BMR 51T PARNELL'S CREEK.

DISTRICT	Muswellbrook	COUNTY	DURHAM	PARISH	HOWICK	PORTRION 5	LOCATION
Surveyed by	J/ Svoronos	Survey Method	Tel. Alidade	Elevation	460.2'	ASL.	BMR Map N14/110
Logged by	N. Hoyling	Cased	24'8"	Datum	Standard		BMR Records 47/1953.
Sunk by	Drilling Corp. Aust.	Type of Drill	Mindrill E.1000	Depth	65'0"		Date Begun/Finished 8.11.52/10.11.52

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
20	0	20	0	Reddish brown sandy clay	1	0										
38	4	18	4	Claystone, white, with ferruginous p ebbles & cobbles	5	0										
38	10		6	Shale, grey		6										
39	1		3	Shale, black		3										
39	2½		11½	Shale, greyish, white		1½										
41	0	1	9½	COAL, rather dull, with some brown shale partings & bright bands	1	9½	1/BMR		¼"			8.3	30.2	52.7	8.8 10,730	
43	4	2	4	COAL, generally bright, broken to frag-mentary & with ferruginous cleat	2	4	2/BMR					4.5	35.6	52.7	7.2 11,820	
43	6		2	Shale, grey		2										
43	8½		2½	COAL, bright		2½										
43	9		0½	Shale, grey, lenticular		0½										
45	6	1	9	COAL, mostly dull	1	9	3/BMR			1"		3.2	31.3	50.5	15.0 11,330	
46	6	1	0	COAL, mostly bright	1	0	4/BMR					3.3	33.8	54.0	9.0 12,160	
46	11		5	Shale, grey		5										
48	8	1	9	COAL, generally dull, fragmentary & shattered	1	9	5/BMR					3.0	30.8	45.2	21.0 10,480	
49	3½		7½	COAL, dull, very shaly		7½										
50	3		11½	COAL, generally bright, mostly shattered		10	6/BMR					3.1	32.3	47.0	17.6 11,250	
50	4½		1½	Shale, dark grey		1½										
50	6		1½	COAL, dull		1½										
50	9½		3½	Shale, black		3½										
50	11		1½	Shale, light grey		1½										
51	2		3	COAL, bright		3										
51	9		7	Shale, grey		6										
65	0	13	3	Greywacke, grey, fine to medium-grained, very soft.	12	4										
				Hole completed												
					Typed 21/2/53.											

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 52T PARNELL'S CREEK

Cessnock

DISTRICT Muswellbrook COUNTY DURHAM PARISH HOWICK PORTION 6 LOCATION

Surveyed by N. Gorbunov Survey Method Tel. Alidade Elevation 431.4' AST Ref. Map BMR N14/110

Logged by N. Hoyling Cased Not Datum Standard Ref. Report BMR Records 47/1953

Sunk by W.L. Sides & Son Type of Drill Goldfields 33 Depth 120' Date Begun/Finished 9.11.52/11.11.52

[illegible]

~~Cosensole~~

Name and No. of Bore

DISTRICT	Muswellbrook	COUNTY	DURHAM	PARISH	HOWICK	-	PORTION	5	LOCATION
Surveyed by	K. Schofield	Survey Method	Tel. Alidade	Elevation	460.0'	ASL.			Ref. Map BMR Map N14/110
Logged by	N. Hoyling	Cased	14'8"	Datum	Standard				Ref. Report BMR Records 47/1953
Sunk by	Drilling Corp. Aust.	Type of Drill	Mindrill E.1000	Depth	138'6"				Date Begun/Finished 11.11.52/16.11.52

[illegible]

Hole abandoned

Typed 23/2/53.

BUREAU OF MINERAL RESOURCES

BMR 54T PARNELL'S CREEK

Name and No. of Bore

DISTRICT	Muswellbrook	COUNTY	DURHAM	PARISH	HOWICK	PORTION	5	LOCATION	
Surveyed by	K. Schofield	Survey Method	Tel. Alidade	Elevation	429.0' ASL.	Ref. Map	BMRN14/110		
Logged by	N. Hoyling	Cased	20'	Datum	Standard	Ref. Report	BMR Records 47/1953		
Sunk by	Price/Anderson	Type of Drill	Goldfields 20	Depth	146'10"	Date Begun/Finished	12.11.52/18.11.52		

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
17	0	17	0	Greywacke, buff, fine to medium-grained with shale & ironstone bands	11	3										
63	1	46	1	Greywacke, buff, grey from 34'4", mostly fine-grained & shaly	46	1										
146	10	83	9	Claystone, grey, with shaly & sandy bds. & a marl band at 139'	83	1										
				Hole Abandoned	Typed 19/2/53.											

BUREAU OF
Census

Name and No. of Bore

DISTRICT	Muswellbrook	COUNTY	DURHAM	PARISH	HOWICK	PORTION	5	LOCATION	
Surveyed by	K. Schofield	Survey Method	Tel. Alidade	Elevation	452.6'	ASL.		Ref. Map	BMR Map N14/110
Logged by	N. Hoyling	Cased	26'	Datum	Standard			Ref. Report	BMR Records 47/1953.
Sunk by	Drilling Corp. of Aust.	Type of Drill	Mindrill E1000	Depth	97'6"			Date Begun/Finished	14.11.52/19.11.52

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
12	9	12	9	Claystone, white to light grey, w. ferruginous mottling	6	5										
20	6	7	9	Smut, soft	1	1			Barrett's Seam.							
22	0	1	6	Claystone, light grey, soft with smut bands	1	3										
78	9	56	9	Greywacke, light grey, fine to medium-grained	53	3										
97	6	18	9	Claystone, grey, silty in part, with bands containing fairly abundant macerated plant remains	17	9										
				Hole Abandoned	Typed 19/2/53											

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 56T PARNELL'S CREEK.

Cessnock		DURHAM		HOWICK		5		LOCATION	
DISTRICT	Muswellbrook	COUNTY	DURHAM	PARISH	HOWICK	PORTION	5	LOCATION	
Surveyed by	G. Stuart	Survey Method	Tel. Alidade	Elevation	494.6'	ASL.	Ref. Map	BMR Map N14/110	
Logged by	N. Hoyling	Cased	19'6"	Datum	Standard		Ref. Report	BMR Records 47/1953.	
Sunk by	Drilling Corp. Aust.	Type of Drill	Mindrill E.1000	Depth	113'10"		Date Begun/Finished	18.11.52/25.11.52	

[illegible]

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR. 57T PARNELL'S CREEK.

DISTRICT Gessbrook Muswellbrook COUNTY Durham PARISH Howick PORTION 5 LOCATION _____
Surveyed by N. Gorbunow Survey Method Theodolite Traverse Elevation 429.8' ASL. Ref. Map BMR.N14-110
Logged by N. Hoyling Cased 25' Datum Standard Ref. Report BMR.Records 1953/47.
Sunk by Price & Anderson Type of Drill Goldfields 20 Depth 83'10" Date Begun/Finished 18.11.52/22.11.52

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
14	0	14	0	Graywacke, buff, medium grained.	4	9										
20	2	6	2	Claystone, light gy. w. ferruginous mottling and an ironstone band.	1	8										
23	0	2	10	Claystone as above, l. br. no ironstone.		4										
23	7		7	Claystone grey & brown soft.		7										
24	11	1	4	Smut, soft, plastic.	1	4										
25	9		10	Shale gy. black & br. carb. in part, very soft.		10										
28	0	2	3	Claystone, cream & l. br. iron stained.	2	3										
31	8	3	8	Claystone, gy. with rare thin smut bands.	3	8										
32	1		5	Graywacke light brown & grey F.G.		5										
				Siltstone, light grey, shaly at bottom.	3	2										
				Siltstone, sideritic, brown gy. fractured.		4										
69	11	37	10	Graywacke l. gy. F.G. & M.G. some thin carbonaceous laminations.	31	2										
70	4		5	Clay ironstone, dark grey.		5										
72	9	2	5	Shale, grey.	1	6										
75	8	2	11	COAL, generally bright, fragmentary.	2	2 1/2										
75	11		3	Siltstone, light grey		1 1/2										
76	5 1/2		6 1/2	COAL, generally light, fragmentary.		2										
76	7		1 1/2	Siltstone, light grey.		1 1/2										
77	4		9	COAL, dull.		9										
77	6		2	Siltstone, light grey.		2										
78	5	11		COAL, dull & bright.	-	-										
78	7		2	Claystone, grey, pyritiferous.	-	-										
81	4	2	9	COAL, mostly dull with a thin shale band.	-	-										
83	10	2	6	Siltstone, grey, grading into greywacke.	2	8										

Lower Liddell Seam

Barrett's Seam

For detail of Analysis see 59T.

Typed 21.5.53

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 58T · PARNELL'S CREEK.

~~Cessnock~~

DISTRICT	Muswellbrook	COUNTY	DURHAM	PARISH	HOWICK	PORTION	5	LOCATION
Surveyed by	G. Stuart	Survey Method	Tel. Alidade	Elevation	439.2	ASL.	Ref. Map	BMR Map M14/110
Logged by	N. Hoyling	Cased	28'	Datum	Standard		Ref. Report	BMR Records 47/1953.
Sunk by	Drilling Corp.	Type of Drill	Minidrill E.1000	Depth	92'		Date Begun/Finished	19.11.52/23.11.52

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
33	6	33	6	Claystone, reddish-brown sandy & pebbly	8	0										
68	4	34	10	Greywacke, brownish-buff, medium grd.	29	0										
69	7	1	3	Ironstone, blackish-red	1	3										
74	1	4	6	Shale, grey silty	4	6										
81	0	6	11	COAL, mostly dull, fragmentary to shattered	6	10	1/BMR	Upper	3.5	33.6	55.4	7.5	12,840			
81	1		1	Shale grey, medium hard fragmentary		1	2/BMR	Liddell	3.1	34.8	51.5	10.6	12,610			
81	7		6	COAL, mostly dull shattered		6	3/BMR	Seam.	3.0	33.5	47.9	15.6	11,700			
81	10		3	Shale, dark grey, shattered		3										
92	0	11	2	Greywacke, light grey, friable, fine grained to shattered siltstone	7	6										

Hole completed

typed 18/2/53.

BUREAU OF MINERAL RESOURCES

BMR. 59T PARNELL'S CREEK.

Cessnock
DISTRICT Muswellbrook COUNTY Durham PARISH Howick
N. Gorbunow Theodolite PORTION 42.8' ASL. LOCATION BMR. N14-110
Surveyed by N. Foyling Survey Method 25' Elevation Standard Ref. Map BMR. Records 1953/47
Logged by Drilling Corp. of Aust. Cased Goldfields 20 Datum 90' 6" Ref. Report 25.11.52/27.11.52
Sunk by Type of Drill Depth Date Begun/Finished

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
14	0	14	0	Greywacke, buff, medium grained.	4	9										
20	2	6	2	Claystone, light grey with ferruginous mottling and an ironstone band.	1	8										
23	0	2	10	Claystone as above, light br. no ironstone.		4										
23	7		7	Claystone grey & brown, soft.		7										
24	11	1	4	Claystone, smutty, black, plastic.	1	4						Lower Liddell Seam				
25	9		10	Shale, grey, black and brown, carbonaceous in part, very soft.		10										
28	0	2	3	Claystone, cream & light br. iron stained.	2	3										
31	8	3	8	Claystone, grey, with rare thin smut bands.	3	8										
32	1		5	Greywacke, light brown & grey F.G.		5										
36	0	3	11	Siltstone, light grey, shaly at botton.	3	2										
37	4	1	4	Siltstone, sideritic, brown grey fractured.		4										
69	3	31	11	Greywacke, light grey, F.G. & M.G. some thin carbonaceous laminations.	31	2										
69	8		5	Clay, ironstone, dark grey.		5										
70	8	1	0	Shale, grey, silty in part rare thin bright coal bands.	1	0										
72	9	2	1	Shale, dark grey & black carbonaceous, one thin bright coal band.	2	1										
75	2	2	5	COAL, dull & bright cleated some broken.	2	5	1 BMR.					4.8	34.7	49.5	11.0	12,540
75	8		6	COAL, as above		6										
75	11		3	Siltstone, light grey.		3										
75	5 1/2	1	6 1/2	COAL, broken mostly dull.		6 1/2	2/BMR.					1 1/2"				
75	7		1 1/2	Siltstone, as above.		1 1/2										
77	4		9	COAL, cleated dull & bright.		9							4.8	34.7	50.2	12,650
77	6		2	Siltstone as above.		2										
78	5	11		COAL, dull & bright.	11											
78	7		2	Claystone, grey, pyrites.		2										
80	4	1	9	COAL, dull & bright banded some broken one thin soft shale band.	1	7	3 BMR.									
81	4	1	0	COAL, mostly dull, broken.		8						1/8"				

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
81	7		3	Siltstone; grey.		3						5.1	33.2	49.9	11.8	12,290
85	5	3	10	Siltstone, grading into fine grd. greywacke	3	10										
90	6	5	1	Siltstone as above	5	1										
Typed: 21/5/53.																

BUREAU OF MINERAL RESOURCES

BMR 60T PARNELL'S CREEK.

Name and No. of Bore

DISTRICT Cessnock Muswellbrook COUNTY DURHAM PARISH HOWICK PORTION 121 LOCATION BMR Map N14-110
 Surveyed by J. Svoronos Survey Method Tel. Alidade Elevation 632.3' ASL. Ref. Map BMR Records 47/1953.
 Logged by P. Duff. Cased 19'6" Datum Standard Ref. Report 28.11.52/8.12.52
 Sunk by Drilling Corp. Aust. Type of Drill Mindrill E.1000 Depth 174'1" Date Begun/Finished

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
4	0	4	0	Soil soft, dark brown		6										
8	0	4	0	Greywacke, light brown med. grd. fract.	1	8										
10	0	2	0	Greywacke light brown med. grd. iron stained	1	2										
29	3	19	3	Greywacke light grey f.grd. hard. dense with shaly bands	13	5										
30	7	1	4	Shale, brown-grey silty	1	4										
31	8	1	1	Greywacke brown-grey thin carb. lam.	1	1										
34	5	2	9	Shale, grey	2	9										
36	3	1	10	Claystone sideritic iron stained fract.		8										
37	9	1	6	Shale grey & light grey silty	1	3										
39	3	1	6	COAL, dull broken & very broken	1	4	1/BMR					4.2	28.7	46.6	20.5	10,790
39	4		1	Shale grey		1										
39	5		1	COAL dull		1										
40	5	1	0	Shale grey	1	0										
40	7 $\frac{1}{2}$		2 $\frac{1}{2}$	Shale, black carbonaceous		2 $\frac{1}{2}$										
40	11 $\frac{1}{2}$		4	Shale, grey		4										
41	3		3 $\frac{1}{2}$	Shale, black carb. with thin coal bds.		3 $\frac{1}{2}$										
44	7	3	4	COAL dull & bright, cleated	3	3	2/BMR 3/BMR			1"		4.6 4.5	33.3 30.7	54.7 49.7	7.4 15.1	12,770 11,530
45	3		8	Shale grey & black with thin coal bds.		8										
45	11		8	Shale, grey & black part carbonaceous		7										
47	6	1	7	Greywacke light grey fine grained	1	7										
48	10	1	4	Shale grey, carb. detritus	1	4										
51	2	2	4	Shale grey silty	1	10										
52	1		11	Shale grey carb. detritus		11										
52	3		2	Claystone sideritic brown grey pyrites		2										
56	3	4	0	Siltstone grading into f.grd. greywacke	4	0										
61	3	5	0	Greywacke light grey v.f.g. silty at top	4	10										
62	0		9	Claystone grey		3										
62	7 $\frac{1}{2}$		7 $\frac{1}{2}$	Claystone white hard		1 $\frac{1}{2}$										
64	3	1	7 $\frac{1}{2}$	Siltstone sideritic brown grey broken		6 $\frac{1}{2}$										

-----Seam X-----

Page

Name and No. of Bore

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
65	3	2	0	Siltstone, light grey thin carb. laminae	2	0										
66	8		5	Shale, grey carb. detritus		5										
67	10	1	2	Greywacke, light grey, v.f. grd.	1	2										
71	0	3	2	Greywacke light brown thin coal lenses & vugs.	3	2										
72	4	1	4	Greywacke light brown f. grd.	1	4										
73	5	1	1	Greywacke light grey f. grd.	1	1										
75	1	1	8	Greywacke light brown med. grd.	1	8										
76	3	1	2	Siltstone brown, some limonite at base		6										
77	2		11	Silt-ironstone, brown-yellow vugular		8										
81	3	4	1	Siltstone light grey numerous thin carb. laminae	4	1										
88	1	6	10	Shale, grey & dark grey	6	10										
88	5		4	Shale, black		3½										
88	11		6	COAL, dull & bright banded		4½										
89	5		6	Shale grey		6										
89	10		5	COAL, dull		3										
90	3		5	Siltstone light grey		5										
90	9		6	Shale grey numerous thin coal bands		6										
91	8		11	COAL dull & bright banded fragmentary		10½										
91	9		1	Shale, grey silty		0½										
92	10	1	1	COAL dull & bright cleated	1	1										
93	6		8	Siltstone light grey		8										
100	3	6	9	Siltstone & v.f. grd. greywacke light grey sideritic at bottom	6	0										
101	5	1	2	Siltstone, sideritic brown grey calcite	1	2										
109	3	7	10	Greywacke light grey f. grd. & med. grd.	7	7										
110	4	1	1	Shale, grey		10										
120	4	10	0	Greywacke light grey v.f. grd.	8	11										
123	2	2	10	Greywacke light grey f. grd.	2	6										
126	4	3	2	Greywacke light grey coarse grd. thin coal band	2	3										
130	4	4	0	Conglomerate, thin coal lenses	2	0										
138	10	8	6	Conglomerate mostly broken	3	10										
145	10	7	0	Greywacke light grey fine grained	6	0										
150	2	4	4	Siltstone grey	3	4										
152	2	2	0	Greywacke light grey med. grd. some carb. laminations	1	6										
153	2	1	0	COAL dull broken	1	0	5/BMR	Farrell's	sock. S.	4.8	20.4	47.5	27.3	9,720		

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
153	4 1/2		2 1/2	Greywacke brown grey		2 1/2										
158	4	4	11 1/2	COAL, dull cleated, one thin shale band	4	11 1/2	6/BMR 7/BMR	Farrell's Creek Sean.								
159	4	1	0	Shale, carbonaceous sandy.		8										
161	10	2	6	COAL dull & bright banded	2	5	8/BMR									
163	4	1	6	COAL, dull broken	1	6										
164	1		9	COAL dull & bright		9	9/BMR									
166	1	2	0	COAL dull & bright some broken	2	0	10/BMR									
166	4		3	COAL dull		3										
174	1	7	9	Greywacke thin carb. laminae, light grey thin conglomerate bands	6	9										
				Hole completed	Typed 23/2/53.											

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 61T PARNELL'S CREEK.

DISTRICT	COUNTY	PARISH	HOWICK	PORTION	5 LOCATION
Geesebrook Muswellbrook	DURHAM				
Surveyed by J. Svoronos	Survey Method	Tel. Alidade	Elevation	511.1' ASL.	Ref. Map BMR Map N14-110
Logged by P. Duff.	Cased	20' 0"	Datum	Standard	Ref. Report BMR Records 47/1953.
Sunk by Price/Anderson	Type of Drill	Goldfields 20	Depth	51' 8"	Date Begun/Finished 2.12.52/3.12.52

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
2	9	2	9	Soil sandy, brown	1	6										
4	6	1	9	Greywacke light brown f. grd. some broken	1	9										
6	6	2	0	Claystone white & grey brown	1	10										
10	0	3	6	Claystone as above		10										
12	1	2	1	Soil brown-red		10										
14	8	2	7	Claystone brown-yellow & white soft	1	4										
16	5	1	9	Greywacke brown red med. grained		10										
18	5	2	0	Siltstone, limonitic reddish		11										
20	0	1	7	Greywacke brown coarse grained		10										
22	0	2	0	Greywacke light brown fractured	1	2										
24	8	2	8	Siltstone light brown clayey in part	2	5										
27	3	2	7	Greywacke as above	2	7										
28	8	1	5	Shale brown silty	1	5										
30	6	1	10	Shale grey & dark grey carb. detritus	1	10										
32	3	1	9	Shale dark grey & black iron stained carb.	1	6										
32	11 1/2		8 1/2	Shale black sandy		8 1/2										
33	5 1/2		6	COAL, mostly shaly fragmentary		6										
33	10 1/2		5	COAL shaly		5										
34	3		4 1/2	Shale grey very broken		2 1/2										
35	0 1/2		9 1/2	Greywacke yellow-brown fractured		7 1/2										
36	7	1	6 1/2	COAL dull	1	6 1/2	1/BMR				5.5	26.3	57.9	10.3	11,860	
37	0 1/2		5 1/2	COAL dull		5 1/2										
37	4		3 1/2	Siltstone light grey sandy		3 1/2										
41	3	3	11	COAL dull cleated	3	11	2/BMR				4.1	31.5	56.3	8.1	12,540	
45	7	4	4	COAL dull broken & fragmentary	4	4	3/BMR				3.9	29.7	55.1	11.3	12,200	
51	8	6	1	Greywacke brown-grey partly conglomerate	6	1	4/BMR				3.6	28.5	48.6	19.3	10,990	
							5/BMR				3.6	27.8	54.7	13.9	11,800	

Farrell's Cr.
Seam.

Hole: complete.

Typed 23/2/53.

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 62T PARNELL'S CREEK

Cessnock
DISTRICT Muswellbrook COUNTY DURHAM PARISH HOWICK PORTION 5 LOCATION
Surveyed by G. Stuart Survey Method Tel. Alidade Elevation 575.8' ASL. Ref. Map BMR Map N14-110
Logged by P. Duff Cased 2010" Datum Standard Ref. Report BMR Records 47/1953.
Sunk by Price/Anderson Type of Drill Goldfields 20 Depth 67'11" Date Begun/Finished 4.12.52/9.12.52

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
1	6	1	6	Soil yellow brown sandy	1	2										
4	0	2	6	Greywacke light brown med. grained vugular	2	0										
7	6	3	6	Greywacke light brown fractured conglomerate bands	2	10										
8	6	1	0	Conglomerate light brown	10											
14	6	6	0	Greywacke light brown fractured some red brown haem tite pebbles	4	0										
16	3	1	9	Greywacke light brown med. grained	1	8										
18	6	2	3	Shale, grey iron stained		9										
19	7	1	1	Siltstone light grey	1	1										
20	9	1	2	Siltstone grey	1	2										
21	4		7	Clay-ironstone red-brown vugular		7										
25	4	4	0	Greywacke light grey fine grained	4	0										
26	4	1	0	Clay-ironstone brown grey calcite	1	0										
32	10	6	6	Greywacke light grey & shale grey interbedded numerous carb. laminae	6	5										
41	10	9	0	Greywacke & siltstone interbedded	8	4										
47	2	5	4	Greywacke light grey coarse grained	5	4	1/BMR					3.8	28.7	57.4	10.1	12,400
57	11	10	9	COAL dull broken in part	10	9	2/BMR					3.7	29.8	55.4	11.1	12,260
							3/BMR					3.6	29.2	54.2	13.0	11,930
58	3		4	Shale dark grey & brown carbonaceous		2	4/BMR					3.4	24.6	57.5	14.5	11,760
59	8	1	5	Shale grey silty		5										
62	8	3	0	Greywacke light grey carb. detritus	2	8										
63	3		7	Shale black		7										
67	11	4	8	Greywacke coarse grained light grey	1	8										
Hole completed												Typed 23/2/53.				

BUREAU OF MINERAL RESOURCES

B?R 63T PARNELL'S CREEK.

Name and No. of Bore

DISTRICT Cessnock COUNTY DURHAM PARISH HOWICK PORTION 121 LOCATION BMR Map N14-110
 Surveyed by G. Stuart Survey Method Tel. Alidade Elevation 606.0' ASL. Ref. Map BMR Records 47/1953.
 Logged by P. Duff. Cased 19'6" Datum Standard Ref. Report 9.12.52/22.12.52
 Sunk by Drilling Corp. Aust. Type of Drill Mindrill E.1000 Depth 170'2" Date Begun/Finished

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
7	0	7	0	Claystone, brown grey iron stained	1	0										
12	0	5	0	Greywacke, light brown-grey coarse grained	1	6										
15	8	3	8	Claystone brown-grey	1	7										
16	9	1	1	Greywacke, light grey fine grained	1	1										
19	6	2	9	Greywacke brown-grey grading into silt-stone	2	9										
21	3	1	9	Claystone light brown & light grey	1	1										
26	3	5	0	Claystone light-grey some f.g. grey-wacke	2	4										
31	3	5	0	Claystone light brown with many red-brown iron stone pebbles	1	0										
33	5	2	2	Siltstone brown grey shaly at base	1	8										
34	5	1	0	COAL weathered friable	1	0										
34	6		1	Shale, grey, weathered		1										
35	4		10	Shale, grey		7										
35	9		5	Shale, black carbonaceous		5										
36	6		9	Shale, grey, dark grey & black		9										
36	8		2	Shale light grey broken		2										
38	4	1	8	COAL dull & bright banded fragmentary	1	8										
38	6		2	Shale black & dark grey		2										
40	0	1	6	COAL dull & bright fragmentary	1	6										
40	6		6	Shale, grey with thin coal bands		6										
41	8	1	2	Siltstone, grey	1	2										
42	6		10	Greywacke, light grey		10										
45	2	2	8	Siltstone, grey some sideritic broken	2	8										
51	6	6	4	Siltstone, light grey	2	10										
53	8	2	2	Siltstone light grey fractured calcite	1	7										
56	6	2	10	Siltstone light grey	2	10										
58	6	2	0	Siltstone as above	1	11										
59	3		9	Limonite red-brown broken		3										
59	10		7	Shale, grey		4										

1/BMR

Seam X

2"

5.1

31.0

54.0

9.9

11,990

[illegible]

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
117	10	3	10	Greywacke, l. gy. med. & c. grd. rare carb. lam.	3	10										
128	10	10	2	Greywacke light brown coarse grained & conglomerate, some coal lenses	5	5										
130	0	2	0	Conglomerate & coarse grained greywacke		11										
140	0	10	0	Shale, greywacke f.g. & siltstone grey & light grey some thin coal lenses	8	8										
153	2	13	2	Interbedded f. grd. greywacke & gy. slst.	12	2										
156	0	2	10	Greywacke, med. grd. w. numerous t. bds. carb. mat.	2	10										
159	2	3	2	COAL, mostly dull for top 1'9" to dull & bright bdd. broken	3	1	3/BMR					4.2	30.2	56.6	9.0 12,440	
159	4		2	COAL, dull & bright bdd		2										
159	5		1	Siltstone bk. carb.		1										
161	2	1	9	COAL dull & bright laminated to bdd w. 1/2" band bk. sdy. clst.	1	6	4/BMR					4.6	30.7	50.8	13.9 11,520	
162	6 1/2	1	4 1/2	COAL, mostly dull w. some bright lam & bands	1	4 1/2										
162	11		4 1/2	COAL dull & bright bdd. w. coarse grd. sdy. bds.		4 1/2	5/BMR					4.2	28.0	53.9	13.9 11,790	
164	2	1	3	COAL as above 1'4 1/2"	1	0										
165	2	1	0	Greywacke c. grd. rich in carb. mat. friable		11										
170	2	5	0	Greywacke med. to coarse grd.	4	0										
Hole completed							Typed	22/2/53.								
-Farrell's Ck. Seam																

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 64T PARNELL'S CREEK.

DISTRICT	COUNTY	PARISH	PORTION	LOCATION
Surveyed by G. Stuart	Survey Method Tel Alidade	Elevation 585.3	ASL	Ref. Map BMR Map N14-110
Logged by P. Duff	Cased 25'	Datum Standard		Ref. Report BMR Records 47/1953.
Sunk by Price Anderson	Type of Drill Goldfields 20	Depth 130'0"		Date Begun/Finished 9.12.52/16.12.52

[illegible]

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
64	10	2	10	Greywacke light brown med. grd.	2	4										
65	11	1	1	Greywacke as above	1	1										
67	4	1	5	Shale grey & brown w. thin coal bands and lenses	1	5										
70	5	3	1	Greywacke light grey some grey siltstone beds thin carb. laminae	3	1										
71	6	1	1	Shale dark grey with friable coal bds.	1	1										
71	10		4	Shale, dark grey & black		4										
72	7		9	Siltstone dark grey		9										
75	5	2	10	Greywacke light grey f. grd. thin carb. laminae & coal lenses	2	10										
82	0	6	7	Greywacke light grey mostly fine grd. rare shale bands	6	7										
90	9	8	9	Siltstone & greywacke light grey & grey interbedded some bright coal lenses	8	1										
93	3	2	6	Greywacke light grey thin carb. laminae	2	6										
93	9		6	Siltstone brown-grey sideritic		6										
97	10	4	1	Greywacke light grey thin coal laminae	4	1										
103	10	6	0	Greywacke light grey fine grained	6	0										
107	1	3	3	Greywacke light grey coarse grained, coal lenses	3	3										
110	11	3	10	Greywacke light grey very coarse grained	3	0	1/BMR.					4.6	30.1	55.4	9.9	12,340
121	11	11	0	COAL mostly dull some dull & bright banded some broken	11	0	2/BMR.					4.9	30.2	54.2	10.7	12,140
122	2		3	Shale grey sandy		3	3/BMR.					4.3	27.2	52.4	16.1	11,340
122	10		8 $\frac{1}{2}$	Shale grey sandy		8 $\frac{1}{2}$	4/BMR.					4.2	28.7	56.6	10.5	12,350
123	5		6 $\frac{1}{2}$	Greywacke light grey med. grained		6 $\frac{1}{2}$										
130	0	6	7	Conglomerate	5	3										

Farrell's
Ck. Sean.

Hole completed

Typed 23/2/53.

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR 65T PARNELL'S CREEK.

Cessnock
DISTRICT Muswellbrook COUNTY DURHAM PARISH HOWICK PORTION 5 LOCATION
Surveyed by G. Stuart Survey Method Tel. Alidade Elevation 510.6' ASL. Ref. Map BMR Map N14-110
Logged by P. Duff Cased 35' Datum Standard Ref. Report BMR Records 47/1953.
Sunk by Price/Anderson Type of Drill Goldfields 20 Depth 70' 0" Date Begun/Finished 16.12.52/19.12.52

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
2	6	2	6	Claystone, orange		9										
5	0	2	6	Greywacke light brown coarse grd.		10										
7	0	2	0	Greywacke red-brown coarse, iron impregnated	1	6										
9	4	2	4	Greywacke as above & fractured	2	3										
10	0		8	Greywacke as above		4										
15	10	5	10	Greywacke as above	1	6										
20	7	4	9	Greywacke as above unconsolidated	1	8										
20	10		3	Claystone cream & grey		3										
25	1	4	3	Claystone yellow-red		2										
25	3		2	Shale black carbonaceous		2										
27	10	2	7	Greywacke yellow-red coarse grd. broken	1	7										
32	10	5	0	Conglomerate pebbles & greywacke coarse		11										
33	7		9	Greywacke light brown med. grained		9										
37	6	3	11	Greywacke as above	3	8										
42	10	5	4	Greywacke light brown & red med. grained	4	7										
45	0	2	2	Greywacke red-brown & yellow	1	7										
49	4	4	4	Greywacke light brown very broken, many ironstone conglomerate pebbles	2	2										
50	5	1	1	Greywacke light brown fine grained	1	1										
52	10	2	5	Siltstone & shale light brown & grey	1	10										
56	0	3	2	Shale, grey, carb. mat. some l. gy. siltstone	3	0										
56	0 1/2		0 1/2	Shale, grey		0 1/2										
56	3 1/2		3	COAL dull		3 1/2										
56	5		1 1/2	Shale dark grey		1 1/2										
56	10		5	COAL friable, dull & bright	5		1/BMR			5 1/2"		3.5	29.2	37.3	30.0	9,530
57	5		7	COAL dull & bright		7										
57	9		4	Shale, black carbonaceous iron stained		4										
58	2		5	COAL, dull & bright shattered		5										
58	6 1/2		4 1/2	Claystone light brown		4 1/2										

Parnell's Ck. -
Seam.

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
58	9		2½	Shale; black.		2½										
59	0		3	Shale, black		3										
60	9	1	9	COAL, dull some bright bands & several thin siltstone bands	1	9	2/BMR.	Farrell's	1	9	3.9	29.1	43.2	23.8	10,470	
61	6		9	COAL dull & bright		9		Ck. Seam.								
61	9½		3½	COAL dull & bright		3½										
62	11	1	1½	Siltstone & claystone, light grey & white	1	1½										
63	3		4	COAL, friable mostly bright		4										
63	6		3	COAL dull & bright fragmentary		3										
65	8	2	2	Siltstone part shaly carb. laminae	2	2										
70	0	4	4	Shale & greywacke v.f. grd. interbedded	4	4										
				Hole completed					Owing to poor core recovery in the thirty feet of strata overlying this seam, it is possible that the seam thickness herein recorded is unreliable.							
									Typed 23/2/53.							

BUREAU OF MINERAL RESOURCES

Name and No. of Bore **BMR. 66T PARNELL'S CREEK.**

Cessnock
DISTRICT **Muswelbrook** COUNTY **Durham** PARISH **Howick** PORTION **121** LOCATION
Surveyed by **N. Gorbunow** Survey Method **Theodolite Traverse** Elevation **512.1 ASL.** Ref. Map **BMR. N14-110**
Logged by **M.A. Reynolds** Cased **No** Datum **Standard** Ref. Report **BMR. Records 1953/47**
Sunk by **Drilling Corp. of Aust.** Type of Drill **Mindrill El000# 4** Depth **150'** Date Begun/Finished **2.1.53/16.1.53**

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
5 6	5 6	Clay, sandy	-	-								
6 0	6 6	Ironstone, red brown.		6								
8 9	2 9	Clay light grey with thin silty shale bd.	1	9								
14 6	5 9	Greywacke br. weathered wt. siltstone bds.	1	11								
15 11	1 5	Siltstone brown with fine grd. gw. band.		11								
16 4	5 5	Clay light grey, soft.		5								
23 5	7 1	Greywacke l. br. v.f.-f. grd. wt. slst. bd.	5	10								
25 7	2 2	Siltstone, brown shaly.	2	2								
37 9	12 2	Greywacke l. br. wd. f. grd. w. t. slst. bds.	6	4								
53 1	15 4	Interbedded f. grd. l. gy. gw. & gy. slst.	13	4								
56 10	3 9	Greywacke m. grd. rich in carb. material.	3	9								
60 3	3 5	COAL, mostly dull.	3	5	1/BMR.			4.9	22.4	57.6	15.1	11,380
60 5	2 2	COAL, mostly dull		2								
60 9	4 4	COAL, coarsely granular w. l. br. grains.		4								
61 2	5 5	COAL, dull & bright lamd. to bdd. cleated.		5								
63 2	2 0	COAL, mostly dull w. some bright lam. & bands & rare thin granular bd. as above.	1	11½	2/BMR.			4 5	30.2	49.7	15.1	11,450
65 6	2 4	COAL, dull & bright bdd. granular over bot.	11"	2 4	3/BMR.			4.3	31.6	52.2	11.9	12,100
70 0	4 6	COAL, mostly dull.	4	6	5/BMR.			4.4	29.1	52.2	14.3	11,750
71 1	1 1	Shale by. to siltstone carb. w. l. brown granules.		1				4.4	25.2	53.4	17.0	11,160
72 9	1 8	Greywacke light grey, medium grained.	1	7								
75 6	2 9	Greywacke v. c. grd. to fine grd. congl. with occasional t. dk. gy. carb. slst. bds.	2	5½								
77 5	1 11	Greywacke fine grd. w. occasional pebbly bands.	1	11								
81 2½	3 9½	Greywacke coarse-v. coarse grained.	3	7½								
90 2	8 11½	Greywacke fine - medium grained.	8	6								
94 1	3 11	Greywacke medium grained.	3	6½								
94 3	2 2	Siltstone coaly streaks.		2								

Farrell's Ck. Seam

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
140	0		6	Greywacke, medium grd. carbonaceous streaks.		3										
140	6		6	Shale.		6										
146	6	6	0	Siltstone, light grey, sandy.	6	0										
150	0	3	6	Greywacke, fine grained, to medium grained.	3	6										

typed: 22.5.53.

BUREAU OF MINERAL RESOURCES

BMR. 67T PARNELL'S CREEK.

DISTRICT Muswellbrook COUNTY Durham PARISH Howick PORTION 121 LOCATION BMR. N14-110
 Surveyed by N. Gorbunow Survey Method Theodolite Traverse Elevation 500.9 ASL. Ref. Map BMR. Records 1953/47
 Logged by S.D. Henderson Cased No Datum Standard Ref. Report BMR. Records 1953/47
 Sunk by Drilling Corp. of Aust. Type of Drill Mindrill E1000# 4 Depth 129'0" Date Begun/Finished 17.1.53/23.1.53

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
5	6	5	0	Clay with greywacke boulders, coarse grd.		7										
10	6	5	6	Greywacke, medium grained, broken.	3	4										
14	9	4	3	Greywacke, medium grained.	1	3 $\frac{1}{2}$										
15	0		3	Ironstone, red.		2 $\frac{1}{2}$										
18	5	3	4	Claystone, light grey.	1	1										
19	4		11	Siltstone, grey.		11										
21	0	1	8	Greywacke, fine grained.	1	2										
25	3	4	3	Siltstone, light grey with plants.	1	3										
28	7	3	4	Greywacke, fine to medium grained.	3	1										
29	6		11	Siltstone, grey, with plants.		6										
30	6	1	0	Greywacke, fine grained, ferruginous.		8										
31	0		6	Ironstone, red.		5										
33	1	2	1	Claystone, brown grey plants.	1	10										
36	0	2	11	Greywacke, medium to coarse grd. carbonaceous streaks.		2 11										
38	8	2	8	Greywacke, medium grd. carbonaceous streaks.	2	22 $\frac{1}{2}$										
38	10		2	Greywacke, medium grained.		2										
39	2		4	COAL, & shale.		3						9.7	21.4	51.0	17.9	8930
42	8	3	6	COAL, dull, broken, weathered.	3	4						10.3	22.8	54.2	12.7	9540
43	2		6	COAL, dull & shaley, with yellow granules.		6										
44	0		10	COAL, dull.		10						6.0	26.8	56.1	11.1	11,360
45	2	1	2	COAL, dull, thin bright bands.	1	2										
46	5	1	3	COAL, dull with bright bands.	1	3						5.0	29.4	57.1	8.5	12,370
46	6		1	Red-brown granules in coaly matrix.		1										
47	5		11	COAL, dull, weathered, partly broken.		10 $\frac{1}{2}$										
47	8		3	COAL, bright, broken.		3						5.4	29.2	52.0	13.4	11,450
48	6		10	COAL, dull, weathered.		10										
50	2	1	8	COAL, dull, thin bright plies.	1	8						5.1	28.5	53.7	12.7	11,620
53	0	2	10	COAL, dull, thin bright plies, weathered.	2	9						5.2	26.1	52.8	15.9	11,180
53	3		3	Greywacke, medium grd. carbonaceous		3										
54	9	1	6	Greywacke, fine grained.	1	6										
58	9	4	0	Greywacke, medium grained.	3	9										

Farrell's Creek Seam.

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
61	9	3	0	Greywacke, coarse grained.	2	8										
64	6	2	9	Greywacke, coarse grained.	2	7										
67	10	3	4	Greywacke, medium grained.	3	4										
69	3	1	5	Greywacke, coarse grained.	1	4										
71	9	2	6	Greywacke, medium grained.	2	6										
81	9	10	0	Greywacke, medium to coarse grained.	10	0										
84	0	2	3	Greywacke, medium to coarse grd. w. t. sh	2	3										
84	0 1/2		1/2	Shale, coaly.		1/2										
84	7 1/2		7	COAL, dull to bright w. shale bands.		7			Seam R							
85	0		4 1/2	Greywacke, f-m grained.		4 1/2										
88	0	3	0	Greywacke, fine grd. slst. bands.	2	10										
91	0	3	0	Greywacke, m. grd. t. siltstone bands.	2	6										
91	7		7	Greywacke, very fine thin siltstone bands.		5										
91	10		3	Claystone, grey.		3										
92	10	1	0	Clay-Ironstone.	1	0										
93	0		2	Claystone, grey.		1										
96	0	3	0	Siltstone, dark grey.	2	11										
96	3		3	Siltstone, brown grey, carbonaceous.		2										
96	6		3	COAL, dull with bright band.		3				1"						
96	7		1	Shale, carbonaceous.		1										
96	8		1	COAL, dull to bright.		1										
97	0		4	COAL, dull.		4	8/BMR.				3.9	28.8	41.3	26.0	10,170	
97	0 1/2		1/2	Shale, carbonaceous.		1/2				1/2"						
97	11 1/2	11		COAL, dull & bright banded.		10										
98	1 1/2		2	Siltstone, grey with coal bands.		1 1/2										
98	2 1/2		1	Claystone, light grey.		1										
98	9 1/2		7	COAL, dull with bright bands.		7										
98	11		1 1/2	Claystone, light brown.		1 1/2	9/BMR.				4.3	25.3	34.8	35.6	- - -	
99	4		5	COAL, dull with siltstone bands.		5										
99	8 1/2		4 1/2	Siltstone, dark, with coal bands.		3 1/2										
99	11		2 1/2	Claystone, light grey.		2 1/2										
100	3 1/2		4 1/2	Siltstone, grey, carbonaceous.		4 1/2										
101	2		10 1/2	COAL, dull.		10 1/2										
102	1		11	Greywacke, fine grd. coaly, streaks.		11										
102	6		5	Claystone, light grey, soft.		5										
102	9		3	COAL, dull.		3										
103	9	1	0	Greywacke, very fine grained.	1	0										
104	10	1	1	Siltstone, dark grey.	1	1										
106	0	1	2	Greywacke, fine grained.	1	2										

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
107	8	1	0	Siltstone; dark grey.	1	0										
108	2		6	Siltstone, dark grey/		3 $\frac{1}{2}$										
112	8	4	6	Greywacke, fint to medium grd. slst. bds.	4	1 $\frac{1}{2}$										
113	10	1	2	Siltstone dark grey with plants.	1	0										
114	3		5	Clay-ironstone.		10										
117	2	2	1	Greywacke, medium grained.	2	1										
118	4		2	Siltstone, grey.		2										
117	11		7	Greywacke, medium to fine grained.		7										
119	1	1	2	Siltstone, grey.	1	1										
119	3		2	Shale, carbonaceous.		2										
119	5 $\frac{1}{2}$		2 $\frac{1}{2}$	Clay-ironstone.		2 $\frac{1}{2}$										
119	10		4 $\frac{1}{2}$	Siltstone, grey.		4 $\frac{1}{2}$										
122	8	2	10	Greywacke, very fine to medium grained.	2	10										
125	5	2	9	Greywacke, medium grained, coaly streaks.	2	9										
125	9		4	Clay-ironstone.		4										
129	0	3	3	Greywacke, m. to v. f. grd. w. slst. bands.	2	11										

typed 29.5.53

BUREAU OF MINERAL RESOURCES

BMR. 68T PARNELL'S CREEK.

DISTRICT Cessnock Muswellbrook COUNTY Durham PARISH Howick PORTION 121
 Surveyed by N. Gorbunow Survey Method Theodolite traverse Elevation 490.5 Ref. Map BMR. N14-110
 Logged by Price & Anderson Cased No Datum Standard Ref. Report BMR. Records 1953/47
 Sunk by Goldfields 20 Type of Drill 92+0" Date Begun/Finished 21.1.53/23.1.53

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
3	0	3	0	Soil & Sand.	1	-										
8	0	5	0	Clay, br. stiff with pebbles.	2	7										
11	3	3	3	Claystone, yellowish, soft, w. t. slst. bds.	3	1										
12	3	1	0	Siltstone, light br. soft, claystone bds.	1	0										
13	0		9	Greywacke, fine grained.		9										
15	6	2	6	Claystone, brown, soft.	2	6										
18	0	2	6	Siltstone, gy, carbonaceous, & clay bds.	2	6										
20	4	2	4	Siltstone, gy, -brown, soft.	2	2										
23	0	2	8	Greywacke, medium grained.	2	8										
24	0	1	0	Greywacke, medium-coarse grained.		7										
24	1 1/2		1 1/2	COAL, with shale bands.		1 1/2										
24	4		2 1/2	Siltstone, gy. soft.		2 1/2										
25	7 1/2	1	3 1/2	COAL, dull soft & weathered.	1	3 1/2	1/BMR.					14.7	27.2	45.5	12.6	8,550
26	10	1	2 1/2	COAL, dull, soft, & weathered.	1	2 1/2										
26	11 1/2		1 1/2	Yellow grains in coal matrix.		1 1/2										
27	3 1/2		4	COAL, dull with bright bands.		4	2/BMR.					9.1	27.9	56.2	6.8	10,940
28	2	10 1/2		COAL, dull with thin bright bands, broken.	10 1/2											
28	4 1/2		2 1/2	Siltstone, dark grey, soft.		2 1/2										
29	3 1/2	11		COAL, dull, broken.	11		3/BMR.					7.1	27.0	50.5	15.9	10,410
31	6 1/2	2	3	COAL, dull thin bright bands.	2	3										
31	7 1/2		1	Siltstone, dark grey.		1										
32	2 1/2		7	COAL, dull bands.		7	4/BMR.					4.4	28.8	54.7	12.1	12,040
33	7	1	4 1/2	COAL, dull with bright bands.	1	4 1/2										
40	3	6	8	Greywacke, medium to very coarse grained.	6	8										
47	4	7	1	Greywacke, very coarse to medium grained.	7	1										
54	4	7	0	Greywacke medium to coarse grained.	6	11										
61	4	7	0	Greywacke, medium grained.	7	0										
63	4	2	0	Greywacke, medium to coarse grained.	2	0										
63	9		5	Greywacke fine grd. with siltstone bands.		5										
64	5		8	COAL, dull with bright bands.		8										
64	8		3	Claystone, dark grey.		3										
65	1 1/2		5 1/2	COAL, dull.		5 1/2										

Farrell's Creek Seam-

Seam R-

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
66	5½	1	4	Siltstone, grey.	1	4										
69	4	2	10½	Greywacke, fine to medium grained.	2	10½										
70	1		9	Greywacke, medium grained.		9										
70	4		3	Siltstone, grey.		3										
71	7	1	3	Mudstone, grey, soft.	1	3										
71	10		3	Greywacke, fine grained.		3										
72	10	1	0	Clay-ironstone, calcite veins.	1	0										
73	3		5	Clay-ironstone.		5										
73	5		2	Greywacke, fine grained.		2										
74	9	1	4	Siltstone, grey, coaly bands.	1	4										
74	10		1	COAL, dull & bright.		1										
74	11		1	COAL, dull.		1										
75	0		1	Siltstone, brown grey.		1										
75	3		3	COAL, dull.		3										
75	4		1	COAL, and siltstone, banded.		1										
75	11½		7½	COAL, dull to bright.		7½										
76	1½		2	COAL, & siltstone banded.		2										
76	2		½	Siltstone, grey.		½										
76	6		4	COAL, dull & bright.		4										
76	10		4	Carbonaceous, siltstone.		4										
77	1½		3½	Claystone, light grey, soft.		3½										
77	4		2½	COAL, and shale, banded.		2½										
78	6	1	2	COAL, bright with dull bands.	1	2										
78	7½		1½	Claystone, soft grey brown.		1½										
79	4		8½	COAL, dull with bright bands, with 2 thin claystone bands.		8½										
79	8½		4½	COAL, bright with dull bands.		4½										
79	9½		1	Shale and coal bedded.		1										
80	1½		4	COAL, dull & bright.		4										
80	7½		6	Greywacke, medium to coarse grained coal bds.		6										
81	2½		7	Claystone, light grey, soft.		7										
82	0		9½	COAL, dull & bright.		5½										
82	0½		1½	COAL, dull.		1½										
82	7		6½	Siltstone, light grey.		6½										
83	8½	1	1½	Greywacke, very fine grd. with coaly streaks	1	1½										
87	4	3	7½	Greywacke fine to medium coarse grained.	3	7½										
92	0	4	8	Greywacke medium to v. f. grd. slst. bds.	4	5										

Seam Q

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR. 69T PARNELL'S CREEK.

DISTRICT Muswellbrook COUNTY Durham PARISH Howick PORTION 121 LOCATION
 Surveyed by N. Gorbouow Survey Method Theodolite Traverse Elevation 490.6 ASL. Ref. Map BMR. N14-110
 Logged by S.D. Henderson Cased No Datum Standard Ref. Report BMR. Records 1953/47
 Sunk by Price & Anderson Type of Drill Goldfields 20 Depth 114'0" Date Begun/Finished 24.1.53/30.1.53

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
2	6	2	6	Clay.		8										
3	0		5	Greywacke decomposed, weathered.		4										
6	0	3	0	Greywacke decomposed, weathered.		4										
8	0	2	0	Claystone, soft, yellowish.		6										
13	0	5	0	Greywacke medium grd. decomposed w. slst. and clay-ironstone.	1	3										
17	5	4	5	Greywacke medium grd. w. claystone bands.	3	9										
20	0	2	7	Greywacke medium grained.	2	6										
27	4	7	4	Greywacke medium grained.	6	7										
34	4	7	0	Greywacke medium grained.	6	10										
39	9	5	5	Greywacke medium to coarse grained.	5	7										
42	3	2	6	COAL, dull w. shale bands, weathered.	1	10	1/BMR.					11.0	22.9	49.7	16.4	9,170
45	0	2	9	COAL, & smut, weathered decomposed.	3	21 1/8	2/BMR.					10.8	25.5	52.7	11.0	9,940
48	4	2	8	COAL, & smut, weathered decomposed.	3	7	3/BMR.					7.6	26.2	53.4	12.8	10,630
51	7	3	3	COAL, dull with bright bands.	3	4	4/BMR.					5.8	26.3	54.9	13.0	11,440
52	0		5	COAL, dull & bright broken.		5	5/BMR.					5.1	26.9	53.4	14.6	11,370
52	3		3	Greywacke medium grained.		3										
56	7	4	4	Greywacke medium grained.	4	4										
60	11	4	4	Greywacke medium to coarse grained.	4	4										
61	5 1/2		6 1/2	Greywacke fine grained.		6 1/2										
62	3		9 1/2	Greywacke very coarse grained.		9 1/2										
69	4	7	1	Greywacke fine to medium grained.	7	1										
72	4	3	0	Greywacke medium grained.	3	0										
79	4	7	0	Greywacke medium to coarse grained.	6	8										
81	11	2	7	Greywacke medium grained.	2	7										
82	3 1/2		4 1/2	Siltstone grey.		4 1/2										
82	5		1 1/2	Siltstone dark with coal bands.		1 1/2										
83	7	1	2	Siltstone grey with coaly streaks.	1	2										
85	3	1	8	COAL, dull with bright bands.	1	8										
88	6	3	3	Greywacke fine to medium grained.	3	3										
93	4	4	10	Greywacke medium to fine grained.	4	8										
97	4	4	0	Siltstone grey.	4	0										

Farrell's
Ck. Seam.

Seam R

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
98	0 $\frac{1}{2}$		8 $\frac{1}{2}$	Siltstone, grey to dark grey.		8 $\frac{1}{2}$	6/BMR.			Seam 9						
98	2		1 $\frac{1}{2}$	COAL, dull with siltstone bands.		1 $\frac{1}{2}$					3.4	30.5	39.5	26.6	10,040	
99	10	1	8	COAL, dull with bright bds. t. slst. bds.	1	8										
100	3 $\frac{1}{2}$		5 $\frac{1}{2}$	Claystone light grey, soft.		5 $\frac{1}{2}$										
100	5		1 $\frac{1}{2}$	Siltstone grey.		1 $\frac{1}{2}$	7/BMR.				1 $\frac{1}{2}$					
100	6		1	COAL, dull.		1					4.0	29.1	43.3	23.6	10,280	
100	7 $\frac{1}{2}$		1 $\frac{1}{2}$	Claystone soft, gy. with coal fragments.		1 $\frac{1}{2}$										
100	11		3 $\frac{1}{2}$	COAL, dull.		3 $\frac{1}{2}$										
101	3		4	COAL, dull.		4					1 $\frac{1}{2}$					
101	4 $\frac{1}{2}$		1 $\frac{1}{2}$	Claystone brown grey, soft.		1 $\frac{1}{2}$										
101	11 $\frac{1}{2}$		7	COAL, dull with bright bands.		7										
102	0 $\frac{1}{2}$		1	Claystone grey, soft.		1										
102	2 $\frac{1}{2}$		2	Siltstone, carbonaceous.		2	8/BMR.			1	3.9	28.9	45.4	21.8	10,720	
103	2 $\frac{1}{2}$	1	0	COAL, dull to bright with t. siltstone bd.	1	0										
103	3 $\frac{1}{2}$		1	Siltstone, carbonaceous.		1										
103	7 $\frac{1}{2}$		4	COAL, dull to bright.		4										
103	9		1 $\frac{1}{2}$	Siltstone, carbonaceous.		1 $\frac{1}{2}$										
104	4		7	Greywacke very fine to fine grained.		7										
104	8		4	Greywacke very fine to fine grained.		4										
105	7	11		Claystone light grey, soft.		11										
105	9		2	COAL, bright.		2										
109	0	3	3	Siltstone, grey.	3	3										
110	4	1	4	Greywacke fine to very fine grained siltstone bands.	1	4										
114	0	3	8	Greywacke fine to very fine grained siltstone bands.	2	4										
												typed 28.5.53				

Seam Q

BUREAU OF MINERAL RESOURCES

Name and No. of Bore

BMR. 70T PARNELL'S CREEK.

~~Cessnock~~

DISTRICT Muswellbrook

COUNTY

Durham

PARISH

Howick

PORTION 121

LOCATION

Surveyed by N. Gorbunow

Survey Method

Theodolite Traverse

Elevation

573.0' ASL.

Ref. Map

BMR. N14-110

Logged by S.D. Henderson

Cased

No

Datum

Standard

Ref. Report

BMR. Records 1953/47

Sunk by Drilling Corp. of Aust.

Type of Drill

Mindrill E1000# 4

Depth

101'0"

Date Begun/Finished

[illegible]

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.	H.M.	V.	F.C.
69	3 1/2		0 1/2	COAL, bright with siltstone bands.		0 1/2	4/BMR	Lower Seam R.	2 1/2"	3.7	30.6	40.5	25.2	10,350
69	6		2 1/2	Claystone, soft, coaly.		2 1/2								
70	0		6	COAL, dull with bright bands.		4								
70	5 1/2		5 1/2	Greywacke, v.f.grd.with siltstone bands.		5 1/2								
75	6	5	0 1/2	Greywacke, very fine to medium grained.	4	10								
76	0		6	Greywacke, fine grained.		6								
77	3	1	3	Claystone, grey, soft.	1	3								
78	3	1	0	Clay, Ironstone.	1	0								
79	4	1	1	Siltstone, grey.	1	1								
79	9		5	COAL, dull with bright bands		5	5/BMR		2"	3.5	31.3	41.8	23.4	10,440
79	11		2	Siltstone, dark with coaly bands.		2								
80	6		7	COAL, bright with dull bands.		7								
81	2 1/2		0 1/2	COAL, dull, broken.		0 1/2								
81	5		2 1/2	Siltstone, dark.		2 1/2								
81	10		5	Claystone, grey, soft.		5								
82	1		3	Siltstone, grey.		3								
82	8		7	COAL, dull with bright bands, siltstone bds.		7	6/BMR		2"	3.8	28.1	37.0	31.1	9,060
82	0 1/2		1 1/2	Siltstone, grey, brown.		1 1/2								
83	3 1/2		7	COAL, dull with bright bands.		7								
83	5		1 1/2	Claystone, grey.		1 1/2								
83	7		2	COAL, dull to bright.		2								
83	8 1/2		1 1/2	Siltstone, dark grey.		1 1/2								
84	11	1	2	Greywacke, fine grained to very fine grd.	1	2	7/BMR		4.3	32.1	46.4	17.2	11,440	
85	2 1/2		3 1/2	COAL, dull with thin siltstone band.		3 1/2								
85	6		3 1/2	COAL, bright.		3 1/2								
85	10		4	COAL, bright.		4								
85	11 1/2		1 1/2	Siltstone, carbonaceous.		1 1/2								
86	3 1/2		4	COAL, bright with dull bands.		4	8/BMR		7 1/2"					
86	5		1 1/2	Siltstone, grey.		1 1/2								
86	11		6	Claystone, grey brown, soft.		6								
87	5 1/2		6 1/2	COAL, bright with thin slst. band.		6 1/2								
88	0		6 1/2	Greywacke, very fine grained.		4								
91	0	3	0	Greywacke, fine grained.	2	11								
91	7		7	Siltstone, grey.		7								
101	0	9	5	Greywacke, fine to coarse grained.	3	2								
				Hole completed.	typed: 29.5.53.									

BUREAU OF MINERAL RESOURCES

BMR. 71T PARNELL'S CREEK.

DISTRICT Cessnock Muswellbrook COUNTY Durham PARISH Howick PORTION 121 LOCATION 548.2' ASL.
 Surveyed by N. Gorbunow Survey Method Theodolite Traverse Elevation Standard Ref. Map BMR. N14-110
 Logged by Price & Anderson Cased No Datum 79+10" Ref. Report BMR. Records 1953/47
 Sunk by Goldfields 20 Type of Drill 20 Depth 79+10" Date Begun/Finished 1.2.53/6.2.53

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
2	0	2	0	Sandy, clay.	1	8										
6	0	4	0	Greywacke, coarse grained, weathered.	2	0										
7	6	1	6	Greywacke, coarse grained, weathered.		6										
8	0		6	Smut.		3										
11	0	3	0	Greywacke, coarse grained, weathered.		8										
15	0	4	0	Greywacke, coarse grained.	1	10										
21	10	6	10	Greywacke, coarse grained to v. c. grd.	1	6										
25	10	4	0	Greywacke, medium grained.	3	0										
27	6	1	8	Greywacke, medium grained.	1	8										
32	10	5	4	Greywacke, medium grained.	5	4										
39	10	7	0	Greywacke, medium grained.	7	0										
40	7		9	COAL, dull with thin slst. band, broken.		9										
41	1 1/2		6 1/2	COAL, dull with bright bands, broken.		6 1/2										
42	3	1	1 1/2	Siltstone, grey.	1	1 1/2										
43	3 1/2	1	0 1/2	Siltstone, gy. w. coal bands & pyrites.	1	0 1/2										
44	0		8 1/2	Limestone, with thin siltstone bands.		8 1/2										
44	10	10		Siltstone, grey.		10										
47	7 1/2	2	9 1/2	Siltstone, grey to dark grey.	2	9 1/2										
47	9		1 1/2	COAL, dull, weathered, ironstained.		1 1/2										
48	2		5	COAL, dull, weathered, broken parts.		5										
48	3		1	Siltstone, grey brown, sideritic.		1										
48	8		5	COAL, dull with bright bands.		5										
48	10 1/2		2 1/2	Siltstone, carbonaceous.		2 1/2										
49	3		4 1/2	COAL, dull with bright bands.		4 1/2										
49	4 1/2		1 1/2	Siltstone, carbonaceous.		1 1/2										
50	8	1	3 1/2	Siltstone, grey.	1	3 1/2										
54	3	3	7	Siltstone, dark grey.	3	7										
54	4		1	COAL, dull.		1										
54	6 1/2		2 1/2	COAL, dull, broken.		2 1/2										
54	8 1/2		2	Siltstone, light grey.		2										
55	0 1/2		4	COAL, dull with bright bands, broken.		4										
55	2		1 1/2	Siltstone, brown grey.		1 1/2										
Farrell's Ck. Seam Upper R. Seam. Lower R. Seam. Seam Q --- 2" 1 1/2" 1/BMR.																
												4.8	31.6	46.9	16.7	11,450

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					
55	10		8	COAL, dull with bright bands.		8	1/BMR.	Seam Q	1/2"	3 1/8"											
56	1 1/2		3 1/2	Siltstone, dark brown.		3 1/2															
56	5		3 1/2	COAL, dull & shaly with bright bands.		3 1/2															
56	6 1/2		1 1/2	Siltstone, carbonaceous.		1 1/2															
56	9 1/2		3	Claystone, soft, yellow, coal fragments.		3	2/BMR.			3 3/4"							5.1	29.9	45.4	19.6	10,950
57	4		6 1/2	COAL, dull with bright bands.		6 1/2															
57	8 1/4		4 1/4	COAL, dull.		4 1/4															
57	9		3 3/4	Claystone, brown.		3 3/4															
58	3 1/2		6 1/2	COAL, bright with dull bands.		6 1/2	3/BMR.			1 1/2"		4.9	29.3	47.1	18.7	11,240					
58	5 1/2		2	Siltstone, brown with carbonaceous bands.		2															
60	0 1/2	1	7	COAL, dull with thin siltstone bands.	1	7															
60	9		8 1/2	Claystone, soft, gy to yellow grey coaly.		8 1/2															
60	10 1/2		1 1/2	Claystone, yellowish grey, soft.		1 1/2															
61	3		4 1/2	COAL, dull with bright bands.		4 1/2															
61	3 1/2		1 1/2	Siltstone, irony.		1 1/2															
61	4 1/2		1	COAL, bright.		1															
62	3 1/2	11		Siltstone, dark grey with coal bands.		11															
65	7	3	3 1/2	Greywacke, fine grained with slst. bands.	3	3 1/2															
66	2		7	Siltstone, grey, slickensided.		7															
66	4		2	Clay, ironstone.		2															
66	9		5	Clay, ironstone.		5															
72	10	5	1	Greywacke, medium to v. f. grd. w. slst. bds.	5	1															
79	10	5	0	Siltstone, gy. with coaly bands & very fine grained greywacke bands.	7	0															
															typed 29.5.53						

~~Cessnock~~

Name and No. of Bore

DISTRICT Muswellbrook

Surveyed by N. Gorbunow Survey Method Theodolite Traverse Elevation 529.8' ASL. Ref. Map BMR. N14-110

Logged by S.D. Henderson Cased No Datum Standard Ref. Report BMR. Records 1953/47

Sunk by Drilling Corp. of Aust. Type of Drill Mindrill E/1000# 4 Depth 139'0" Date Begun/Finished 5.2.53/12.2.53

[illegible]

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
73	0	1	4	COAL, dull, broken.	1	3	1/BMR 2/BMR. 3/BMR. 4/BMR.	1 1/2"	Farrell's Creek Seam.	4.8	20.9	57.7	16.6	11,160		
76	0	3	0	COAL, dull, broken parts, disseminated grain.	3	0				4.5	28.9	56.5	10.1	12,390		
80	0	4	0	COAL, dull w. bright bds. broken parts.	4	0				4.1	31.0	55.3	9.6	12,630		
83	3	3	3	COAL, dull, bright bds, v. t. slst. bands.	3	3	4.2			27.8	53.7	14.3	11,870			
85	0	1	9	COAL, dull, broken parts.	1	9										
85	9		9	Greywacke, medium grained.		9										
91	1	5	4	Greywacke, fine to medium grained.	5	4										
91	6		5	Greywacke, very coarse grained.		5										
92	5		11	Conglomerate, fine.		11										
93	9	1	4	Greywacke, coarse grained.	1	4										
94	1		4	Conglomerate, fine.		4										
94	6		5	Greywacke, soft, fine grained.		5										
102	0	7	6	Greywacke, m. to c. grd. w. t. conglomerates.	7	2										
112	0	10	0	Greywacke, medium grained.	9	10										
113	5	1	5	Greywacke, medium grd. with slst. band.	1	5										
117	0	3	7	Conglomerate, pebbly.		9 1/2										
122	3	5	3	Greywacke, medium grained.	5	2	5/BMR.	1"	Seam Q							
124	3	2	0	Greywacke, fine to very fine grained.	2	0										
124	6		3	Siltstone, dark grey.		2										
126	7	2	1	Siltstone, gy. w. very thin gw. f. grd.bds.	2	1										
126	9 1/4		2 1/4	COAL, dull & bright w. wh. mineral veining.		2 1/4						3 1/4"				
126	10		3 3/4	Siltstone, grey brown.		3 3/4						3 1/2"				
127	6		8	COAL, dull w. bright bds. & t. slst. bands.	8	1 1/2										
128	0 1/2		6 1/2	COAL, dull & bright banded.		6 1/2										
128	4		3 1/2	Siltstone, dark grey.		3 1/2										
128	7 1/2		3 1/2	Claystone, light grey.		3 1/2										
128	9 1/2		2	COAL, shaly.		2										
129	3 1/2		6	COAL, dull & bright banded.		6										
129	5 1/2		2	Claystone, light grey.		2						2"				
129	11		5 1/2	COAL, dull & bright banded.		5 1/2										
130	3		4	Siltstone, light grey with coaly bands.		4	6/BMR.	1"								
130	6		3	COAL, dull & bright banded.		3										
131	11 1/2	1	5 1/2	COAL, bright w. dull bds. f. t. slst. band.	1	5 1/2						4.3	30.7	47.8	17.2	11,540
132	1 1/2		2	Siltstone, grey.		2										
132	7 1/2		6	Claystone, light grey, soft.		6										
132	11		3 1/2	COAL, dull with shaly bands.		3 1/2										
133	2		3	Siltstone, grey.		3										

[illegible]

BUREAU OF MINERAL RESOURCES

Name and No. of Bore BMR. 73T PARNELL'S CREEK.

Cessnock

DISTRICT Muswellbrook COUNTY Durham PARISH Howick PORTION 121 LOCATION

Surveyed by N. Gorbunov Survey Method Theodolite Traverse Elevation 5' ASL Ref. Map BMR. N14-110

Logged by S.D. Henderson Cased No Datum Standard Ref. Report BMR. Records 1953/47

Sunk by	Price & Anderson	Type of Drill	Goldfields 20	Depth	126'0"	Date Begun/Finished	7.2.53/12.2.53
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[illegible]

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
97	4	2	0	Greywacke, v.f.grd. & siltstone, banded	2	0										
98	4	1	0	Greywacke, medium grained.	1	0										
99	10	1	6	Siltstone, dk. gy. w. gw. v. f. g. bds.	1	6										
99	10 $\frac{1}{4}$		$\frac{1}{4}$	COAL, bright.		$\frac{1}{4}$										
100	0		$\frac{1}{4}$	Siltstone, dark grey.		$\frac{1}{4}$										
101	1	1	1	Greywacke, v. f. g. w. slst. dk. gy. bds.	1	1										
103	7	2	6	Greywacke, medium grained.	2	6										
104	9	1	2	Greywacke, medium to coarse grained.	1	2										
105	4		7	COAL, dull, broken.		7						4.2	30.3	55.9	9.6	12,480
109	2	3	10	COAL, dull, broken.	3	10						4.6	31.1	52.5	11.8	12,030
112	11	3	9	COAL, dull w. bright bds. broken parts.	3	9						4.5	27.3	41.0	17.2	11,290
114	6	1	7	COAL, dull w. bright bds. broken parts.	1	7										
116	3	1	9	Greywacke, medium grd. w. coaly bands.	1	9										
120	0	3	9	Greywacke, medium grained.	3	9										
121	10	3	10	Greywacke, medium grained.	3	10										
126	0	2	2	Conglomerate, fine.		10										

1/BMR.
2/BMR.
3/BMR.

Farrell's
Ck. Seam.

typed 1.6.53

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
64	9	7	0	Greywacke, v.f. grd. to medium grd.	6	10										
69	4	4	7	Greywacke, m.tov.c.grd. jted.& brokem	1	4										
75	9	6	5	Conglomerate, fine.	6	2										
77	2	1	5	Conglomerate, fine.	1	5										
78	2	1	0	Greywacke, medium grained.	1	0										
82	9	4	7	Conglomerate, pebbly.	4	7										
85	8	2	11	Conglomerate, pebbly.	2	11										
86	7		11	Siltstone, grey.		11										
87	2 $\frac{1}{2}$		7 $\frac{1}{2}$	Clay, ironstone.		7 $\frac{1}{2}$										
88	0		9 $\frac{1}{2}$	Siltstone, grey.		9 $\frac{1}{2}$										
89	7	1	7	Siltstone, grey.	1	7										
90	9	1	2	Shale, grey with plants.	1	2										
94	9	4	0	Greywacke very fine grained.	4	0										
97	0	2	3	Greywacke, medium grained.	2	3										
100	2	3	2	COAL, dull, broken.	3	2	1/BMR. 2/BMR. 3/BMR. 4/BMR.	Farrell's Ck. Seam.				4.7	23.7	59.0	12.6	11,810
103	10	3	8	COAL, dull, broken parts.	3	10						4.1	30.8	54.9	10.2	12,270
												4.0	30.6	50.5	14.9	11,550
												4.4	28.8	50.7	16.1	11,340
107	8	3	10	COAL, dull, broken parts.	4	0										
109	2	1	6	COAL, dull, broken parts.	1	6										
111	4	2	2	Greywacke, fine grd. sideritic.	2	2										
114	9	3	5	Greywacke, medium to coarse grained.	3	2 $\frac{1}{2}$										
120	0	5	3	Greywacke, medium grained.	4	1										

Hole Completed.

typed: 1.6.53.

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
97	2		8	Greywacke, medium grained.		1										
97	8		6	Clay, ironstone.		4										
98	1		5	Greywacke, medium grained.		3										
102	9	4	8	Greywacke, medium to very fine grained.	3	6										
103	5 $\frac{1}{2}$		8 $\frac{1}{2}$	Siltstone, dark grey.		8 $\frac{1}{2}$										
103	9 $\frac{1}{2}$		4	COAL, dull, broken parts.		4										
103	10 $\frac{1}{2}$		1	Siltstone, greyish brown.		1	1/BMR.			1"		3.8	36.0	48.4	11.8	12,420
106	0	2	1 $\frac{1}{2}$	COAL, dull & bright banded broken parts.	2	1 $\frac{1}{2}$										
108	0	2	0	COAL, dull with bright bands, hard.	2	0	2/BMR.					3.4	36.2	47.2	13.2	12,330
110	11	2	11	COAL, dull & bright, jointed, brittle.	2	11	3/BMR.					3.7	37.8	51.9	6.6	13,310
111	1		2	Siltstone, dark grey.		2										
111	3 $\frac{1}{2}$		2 $\frac{1}{2}$	Greywacke, medium grained.		2 $\frac{1}{2}$										
111	6		2 $\frac{1}{2}$	COAL, dull to bright brittle, white veins.		2 $\frac{1}{2}$										
111	8 $\frac{1}{2}$		2 $\frac{1}{2}$	Claystone, white, slickensided.		2 $\frac{1}{2}$										
111	10		1 $\frac{1}{2}$	COAL, dull & bright banded.		1 $\frac{1}{2}$										
111	11 $\frac{1}{2}$		1 $\frac{1}{2}$	Claystone, grey.		1 $\frac{1}{2}$										
112	7		7 $\frac{1}{2}$	COAL, dull to bright, thin slst. bds. & white veining.		7 $\frac{1}{2}$	4/BMR.			$\frac{1}{8}"$		4.2	35.3	50.4	10.1	12,660
114	6	1	11	COAL, dull & bright banded.	1	11										
115	1		7	Claystone, grey, silty.		7										
115	6		5	COAL, bright.		5										
116	0 $\frac{1}{2}$		6 $\frac{1}{2}$	Claystone, grey, silty.		6 $\frac{1}{2}$										
116	2 $\frac{1}{2}$		2	COAL, dull to bright,		2										
116	6		3 $\frac{1}{2}$	Claystone, gy. silty and coal streaks.		3 $\frac{1}{2}$										
116	8		2	Greywacke, fine grained.		2										
117	1		5	Greywacke, medium grained.		5										
117	4		3	COAL, bright, fused to greywacke.		3										
117	5		1	Siltstone, grey, carbonaceous.		1										
118	4	11		COAL, dull & bright banded, broken parts.		11										
120	2	1	10	Greywacke, very fine grained, sideritic.	1	4										
120	5		3	COAL, dull & bright, broken.		2 $\frac{1}{2}$										
120	6		1	Claystone, dark grey soft.		1										
120	7		1	Claystone, grey.		1										
124	9	4	2	Greywacke, very fine to medium grained.	3	9										
125	2		5	Claystone, dark grey, very soft, coaly.		4										
128	2	3	0	Siltstone, grey with greywacke v. f. grd. bands.		0										
130	2	2	0	Claystone, light grey, silty.	1	8										
135	2	5	0	Greywacke, fine to medium grained.	4	4										
Hole completed.										typed 1.6.53						

Artie's Seam

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.
126	6	3	0	Shale, grey, silty.	2	8										
127	7	1	1	Shale, grey, silty.	1	1										
129	9	2	2	Shale, dark grey.	2	2										
130	5		8	Siltstone, light grey, sideritic.		8										
131	0		7	Shale, dark grey.		7										
133	1	2	1	Shale, dark grey.	1	11										
133	7		6	Claystone, l. gy. silty, indurated.		4½										
133	10		3	Shale, grey, sideritic.		2										
137	0	3	2	Shale, grey.	2	6										
139	9	2	9	Shale, grey.	2	9										
140	4		7	Clay-Ironstone.		7										
141	0		8	Shale, grey, silty.		8										
143	8	2	8	Shale, dk. gy. indurated, jointed.	2	8										
143	10		2	Limestone.		2										
145	1	1	3	Siltstone, grey.	1	3										
146	6	1	5	Shale, grey, silty.	1	5										
152	10	6	4	Shale, grey.	6	4										
153	1		3	Siltstone, light grey.		3										
155	11	2	10	Shale, grey.	2	10										
156	3		4	Siltstone, light grey, indurated.		4										
158	3	2	0	Shale, grey, silty.	2	0										
165	6	7	3	Siltstone dk. gy. w. very t. shale bds.	7	3										
169	2	3	8	Siltstone, dk. gy. w. very t. shaly bds.	3	8										
169	4		2	Claystone light grey, soft.		2										
172	9	3	5	Siltstone, drk. gy. w. very t. shale bds.	3	5										
173	11	1	2	Siltstone, drk. gy. w. thin shale bands.	1	2										
174	2		3	Claystone, light grey, soft.		3										
178	7	4	5	Siltstone & shale dk. gy. w. v. t. bds. of v. f. grd. greywacke.	4	5										
186	6	7	11	Siltstone & shale dk. gy. w. v. t. bds. of very fine grained greywacke.	7	11										
186	9		3	Claystone, l. gy. soft, w. t. shale bds.		3										
187	2		5	Limestone.		4½										
187	8		6	Claystone light grey to brown.		5¾										
188	7¾		11¾	Shale, gy, silty, vertical cleavage.		11¾										
188	8		¼	Claystone, light grey.		¼										
193	8	5	0	Siltstone, dark grey.	4	11										
193	9½		1½	Claystone, grayish brown, silty.		1½										
199	3½	5	6	Siltstone, gy. w. v. t. v. f. grd. gw. bds.	5	6										

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
239	0	9	3	Greywacke, fine grained, mottled.	9	3										
305	9	7	3	Greywacke, fine grained, mottled.	7	2										
				Hole completed.	Typed: 29.5.53.											