

ADDENDUM TO REPORT ON COAL FOUND IN THE NEIGHBOURHOOD OF SPRING BAY.

*Geological Surveyor's Office, 29th September, 1890.*

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SIR,

IN my Report to you of August 2nd, 1890, on the coal fields in the Spring Bay Municipality, I was unable to give any definite information as to the work that had been done to prove the seams of coal known to crop out in the Back River at Prosser's Plains. Since writing it Mr. R. Robinson, of Triabunna, has shown me a record kept by him of the strata passed through in a shaft and drive which he executed there more than sixteen years ago. This record was in the form of a section, and is of such importance that I have made a copy of it, to a smaller scale, which is attached hereto. The description of the strata is Mr. Robinson's, with one or two unimportant verbal alterations. I have added to the section on the right hand side a dotted line to show the probable occurrence of the greenstone below the surface. The following note on the face of Mr. Robinson's section is of consequence:—"Note.—Basalt hill the cause of the

upheaval; height of hill, 200 feet; angle of slope, 45 degrees. All the seams of coal gone through have thickened at lower end of dip, and quality of coal improved considerably. If the seams of coal had been struck in the shaft instead of the drive they would have been a deal thicker and harder, as the great difference in the thickness of the seams at the lowest point of dip proves beyond doubt, and likewise the superior quality of coal, as it seems to lose its friableness at the lower end of dip. (Signed) R. ROBINSON, May 30th, 1874."

From the section it will be seen that seven seams of coal were passed through, two of them being of workable thickness. The improvement in the thickness and quality of the seams noted by Mr. Robinson augurs well for their value when struck at a greater depth. From the information given to me, I gather that the abandonment of these prospecting works was due to the difficulty of keeping down the water, and the indisposition of the owners to go to further expense, rather than to any want of faith in the value of the coal. It is quite likely that still more seams will be found lying beneath those already discovered, and prospecting the strata further by means of the diamond drill is strongly recommended.

So far as the section goes the strata do not appear to be getting any flatter in their dip as we get away from the greenstone. In view of this, I would advise that the first bore executed should be not more than five chains from the outcrop in the river, in place of ten or fifteen chains as formerly recommended. Nevertheless, I still expect that the seams will be found to dip at a much lower angle as they are followed further to the westward. The depths at which the drill strikes the various seams will show if any such flattening is taking place.

The most serious difficulty to be apprehended in testing and working this coal field is that, owing to the proximity of the greenstone intrusions, it is very likely to be broken by faults. It will probably be found that at least three bores will have to be put down before evidence as to this point will be forthcoming. But, should payable seams be proved to exist in a disturbed condition near to the greenstone, there is still every reason to hope that, in the large stretch of sandstone country to the south-west of the outcrop, unbroken areas of considerable extent will be found. There is no doubt in my mind that this locality is well worth the expense of prospecting with the diamond drill.

I have, &c.

A. MONTGOMERY, *Geological Surveyor.*

*The Secretary of Mines, Hobart.*

#### DIAMOND DRILL No. 1.

#### *REPORT of Strata passed through in boring for Coal in the neighbourhood of Spring Bay.*

#### No. 1 BORE.

Strata.	Thickness.		Total Depth.	
	ft.	in.	ft.	in.
Surface soil .....	1	0	1	0
Dark sandy clay .....	9	0	10	0
White running sand .....	1	0	11	0
Sandy clay merging into sandstone.....	3	0	14	0
Soft sandstone .....	2	0	16	0
Very firm grey post.....	3	0	19	0
Sandstone, some of it mottled .....	15	0	34	0
Firm grey post .....	1	0	35	0
White, sharp, quartzose sandstone .....	11	0	46	0
Sandstone, getting firmer.....	25	8	71	8
Coarse-grained, sharp, quartzose sandstone, varying in colour, hard and soft bars.....	23	4	95	0
Dark brown sandstone, brittle and firm .....	5	0	100	0
Light grey sandstone .....	5	0	105	0
Soft coarse-grained decomposed felspathic sandstone, charged with iron pyrites .....	8	9	113	9
Yellowish green to greyish greasy soapstone, changing in going downwards to dark greenish rather hard soapstone, and finally into diabase greenstone, of which the soapstone is a decomposition product. Joints at 117' full of concretionary spherules of carbonate of iron .....	3	6	117	3
Diabase greenstone, fine-grained and decomposed towards the top, but rapidly getting firmer and also of coarser grain. Zeolites in joints and cavity at 162' 6" .....	57	6	174	9
TOTAL .....	174	9	174	9

Bore commenced 25th February, 1891; finished 20th March, 1891.

Strata.	Thickness.		Total Depth.	
	ft.	in.	ft.	in.
Surface shaft, clay and drift .....	13	0	13	0
Soft brown sandstone .....	1	0	14	0
Hard brown sandstone with vertical iron veins.....	13	0	27	0
Very hard dark shale .....	1	0	28	0
White shale .....	0	6	28	6
White brittle sandstone .....	2	6	31	0
Very hard white shale .....	1	5	32	5
Hard white sandstone .....	1	0	33	5
Green sandstone .....	6	6	39	11
White sandstone .....	0	4	40	3
Very brittle grey quartzose sandstone with vertical fracture .....	1	2	41	5
Hard quartzose white sandstone .....	4	7½	46	0½
Hard bluish-grey compact flinty sandstone or quartzite, with conchoidal fracture .....	0	8	46	8½
Compact grey sandstone or quartzite with almost vertical joints.....	1	8½	48	5
Hard greenish sandstone with vertical joints much like diabase greenstone in appearance. Altered felspathic sandstone.....	27	8½	76	1½
<b>TOTAL .....</b>	<b>76</b>	<b>1½</b>	<b>76</b>	<b>1½</b>

Bore commenced 1st April, 1891 ; finished 15th April, 1891.

No. 3 BORE.

Strata.	Thickness		Total Depth.	
	ft.	in.	ft.	in.
Surface shaft, heavy boulder wash .....	23	6	23	6
Sandstone, with coal stains and fern prints .....	1	6	25	0
Dark greasy shales .....	7	6	32	6
Dark and light shales .....	2	8	35	2
Coarse grained friable quartzose sandstone, somewhat micaceous, much stained with carbonaceous matter.....	10	11½	46	1½
Soft grey post .....	8	4	54	5½
Black carbonaceous mudstone or clod .....	0	8½	55	2
Hard white flinty quartzose sandstone, approaching to quartzite.....	0	5	55	7
Coarse grained very friable dark coloured quartzose sandstone .....	0	2½	55	9½
Black shale or clod .....	0	6	56	3½
Soft sandstone with minute fossils .....	1	1	57	4½
Dark sandstone with calcite.....	1	3	58	7½
Light and dark sandstones .....	3	6	62	1½
Black carbonaceous mudstone or clod, with a little coal .....	0	4	62	5½
Light grey soft shale or claystone .....	3	1½	65	7
Sandstone with coal stains .....	4	10	70	5
Light blue shale .....	1	1	71	6
Light grey argillaceous fine grained sandstone and grey shale.....	5	0	76	6
Pink shale, iron stained .....	7	0	83	6
Light sandy shale.....	5	3½	88	9½
Sandstone .....	1	3	90	0½
Light blue shale .....	5	1	95	1½
Light grey shale or fine grained felspathic sandstone, with calcite inter-laminations .....	6	0	101	1½
Dark firm shale, with calcite veins.....	4	11	106	0½
Dark blue shale .....	1	6	107	6½
Very dark shale .....	0	9	108	3½
Light blue shale .....	11	0	119	3½
Blue shale or fine grained felspathic sandstone, with fern impressions .....	2	0	121	3½
Shale varying in character, partly coal-stained grey post or hard fireclay .....	1	6	122	9½
Pink shale .....	6	11	129	8½
Firm sandstone .....	1	6	131	2½
Pink shale.....	2	0	133	2½
Sandstone .....	6	2½	139	5

Strata.	Thickness.		Total Depth.	
	ft.	in.	ft.	in.
Brownish felspathic sandstone and shale .....	3	0	142	5
Conglomerate of sandstone and pink shale.....	0	10	143	3
Brown shale and grey grit .....	4	1	147	4
Light bluish grey and pinkish and dark bluish grey arenaceous shale. Impression of <i>Phyllothea sp.</i> at 154 feet .....	16	8	164	0
Soft sandstone .....	2	6	166	6
Shales, pink, blue, and sandy .....	5	0	171	6
Micaceous light grey felspathic sandstone, with coal stains ; a few inches of conglomerate in last foot .....	33	9	205	3
Hard white flinty quartzose sandstone .....	4	0	209	3
Fine grained quartzose sandstone, light grey and pinkish, passing into silicious mudstone, with carbonaceous matter .....	11	4	220	7
Slightly micaceous fine grained sandstone and arenaceous shale. Fine print of <i>Thinnfeldia sp.</i> at 230 feet, fragmentary prints of <i>Thinnfeldia</i> and <i>Phyllothea</i> at 227 feet and 225 feet .....	14	0	234	7
Arenaceous shales and quartzose sandstones with prints of <i>Phyllothea</i> and <i>Zeugophyllites</i> .....	13	0	247	7
Pink and light blue fine-grained quartzose sandstone and arenaceous shale ...	34	4	281	11
Pink shales.....	5	1	287	0
Green quartzose sandstone, light coloured in places.....	51	10	338	10
Red sandstone, quartzose, and sharp to touch.....	1	9	340	7
Green sharp quartzose sandstone, with included lumps of mudstone, forming a conglomerate for a few inches at 394' 6", getting hard at 419 feet.....	82	1	422	8
Solid, very dense, aphanite diabase greenstone, with conchoidal fracture.....	1	4	424	0
<b>TOTAL .....</b>	<b>424</b>	<b>0</b>	<b>424</b>	<b>0</b>

Bore commenced 25th April, 1891 ; finished June 12th, 1891.

No. 4 BORE.

Strata.	Thickness.		Total Depth.	
	ft.	in.	ft.	in.
Surface shaft.....	8	0	8	0
Yellow sandstone, with coal markings.....	22	0	30	0
Blue sandstone, with coal markings.....	38	0	68	0
Dark shale.....	1	8½	69	8½
Coarse-grained sandstone .....	1	4	71	0½
Coal and shale .....	0	2	71	2½
Brown shale.....	1	5	72	7½
Dark shale .....	1	0	73	7½
Blue shale.....	3	0	76	7½
Sandy shale .....	7	7½	84	3
Coal.....	0	1	84	4
Black clod and coaly matter.....	1	0	85	4
White shale, with thin coal pipes.....	0	10½	86	2½
Coal (did not form solid cores).....	2	3¼	88	5½
Brown band .....	1	0	89	5½
Black clod.....	0	10	90	3½
Coal.....	0	7	90	10½
Clod .....	0	3	91	1½
Coal.....	0	3	91	4½
Black shale.....	0	3	91	7½
Sandy shale.....	1	7½	93	3¼
Soft sandstone.....	6	3	99	6¼
Dark shale.....	2	9½	102	3¾
Clod and coal.....	0	2¼	102	6
Sandy shales, with patches of clod.....	27	6	130	0
Hard white coarse-grained quartzose sandstone, approaching to quartzite .....	27	0	157	0

No. 4 BORE—*continued.*

Strata.	Thickness.	Total Depth.
	ft. in.	ft. in.
Greasy black clod, with thin seam of <i>coal</i> .....	1 0	158 0
Sandy shale.....	3 0	161 0
Hard white quartzose micaceous sandstone, with coal stains and thin pipes...	3 6	164 6
Sandy shale and sandstones, with patches of clod, full of coal stains.....	6 6	171 0
Sandstone (quartzose) and shale, variable.....	7 4	178 4
Dark shale.....	2 0	180 4
Light band .....	0 8	181 0
Dark shale .....	1 0	182 0
Light band .....	0 3	182 3
Dark shale, with a trace of coal.....	1 3	183 6
Black clod.....	4 1	187 7
White shale.....	3 3	190 10
<i>Coal</i> .....	0 1½	190 11½
Sandstone, light and dark.....	5 9½	196 9
Very impure <i>coal</i> and black clod.....	0 4	197 1
Dark shale.....	3 8	200 9
Sandstone .....	2 11	203 8
Sandstone and shales, the latter getting lighter in colour.....	20 4	224 0
Sandstone and shales, two very thin seams of <i>coal</i> .....	15 0	239 0
Light grey fine-grained argillaceous sandstones, with pinkish tinge.....	22 10	261 10
TOTAL.....	261 10	261 10

Bore abandoned at 261' 10" as having passed into strata already tested by No. 3 bore.

## ANALYSIS OF COAL FROM 88 FEET:—

Fixed carbon .....	52·2 per cent.
Matter volatile at red heat.....	12·8 "
Mineral matter (ash) .....	29·4 "
Sulphur.....	0·9 "
Moisture .....	4·7 "

TOTAL..... 100·0 per cent.

Analysis by Mr. W. F. Ward, Government Analyst.

Bore commenced 23rd June, 1891 ; finished July 18th, 1891.