The Mittagong Collieries

Black Bob's and Southern Colliery

Black Bob's Colliery was an early source of local coal for the Fitzroy Iron Works in the 1870s. Although the name implies that the mine was located on Black Bob's Creek, its adits were located in a gully, on a tributary to the Emu Creek. This very small colliery and closed in 1889.

The colliery was reopened in 1937 by Mr C. O. Clyne and operated intermittently, only to be abandoned in 1941. An electricity transmission line had been built to this site, as shown on the location plan below. The NSW Mines Department had the colliery site surveyed in 1942. A brick chimney and furnace was found to have been used to for ventilation, and the coal seam thickness was found to be 1.98 ms in thickness including two bands of shale, each 25 mm in thickness.

A new colliery was opened with its entrance near Black Bob's Creek in 1947 by Southern Coal Mining Pty Ltd and the colliery's name was changed to Southern Colliery in 1948. This colliery was unusual for the Southern Highlands in that it mined the American Creek coal seam, the fourth seam, in the Illawarra Coal Measures.[532] The vast majority of Collieries in the Southern Highlands mined the Wongawilli coal seam which is the third seam in the Illawarra Coal Measures. The Southern Colliery operated successfully until it closed[533] in 1968, when its accessible lease reserves were exhausted.

To mine its neighbouring coal reserves, the Company opened Southern Extended Colliery in March 1969, and mined the Wongawilli seam.[534] In January 1971 the Company changed the name of the colliery to Murrimba Colliery. The mine was discontinued in July 1971.

Colo Gap Colliery

In 1877, a preliminary meeting of interested parties proposed the formation of the Nattai River Coal and Coke Company, to open a colliery close to the Fitzroy Iron Works. The colliery was referred to as the Colo Gap coal mine on a site approximately 8 km by road, from Mittagong.

A Syndicate proceeded to form a Company to work a colliery on the Nattai River, near the location called Colo Gap, and the Nattai Coal Mining Company Limited was incorporated in October 1878. Work on forming the road and opening adits commenced, however, this work ceased in 1879, due to a lack of capital.

NSW Mines Department records indicate that the Nattai Coal Mining Company opened the colliery circa 1882.[535] The Company failed to raise sufficient capital, to bring the mine into full operation, and connect the colliery to the Joadja railway. The Company was wound up in June 1886.

Mittagong Colliery

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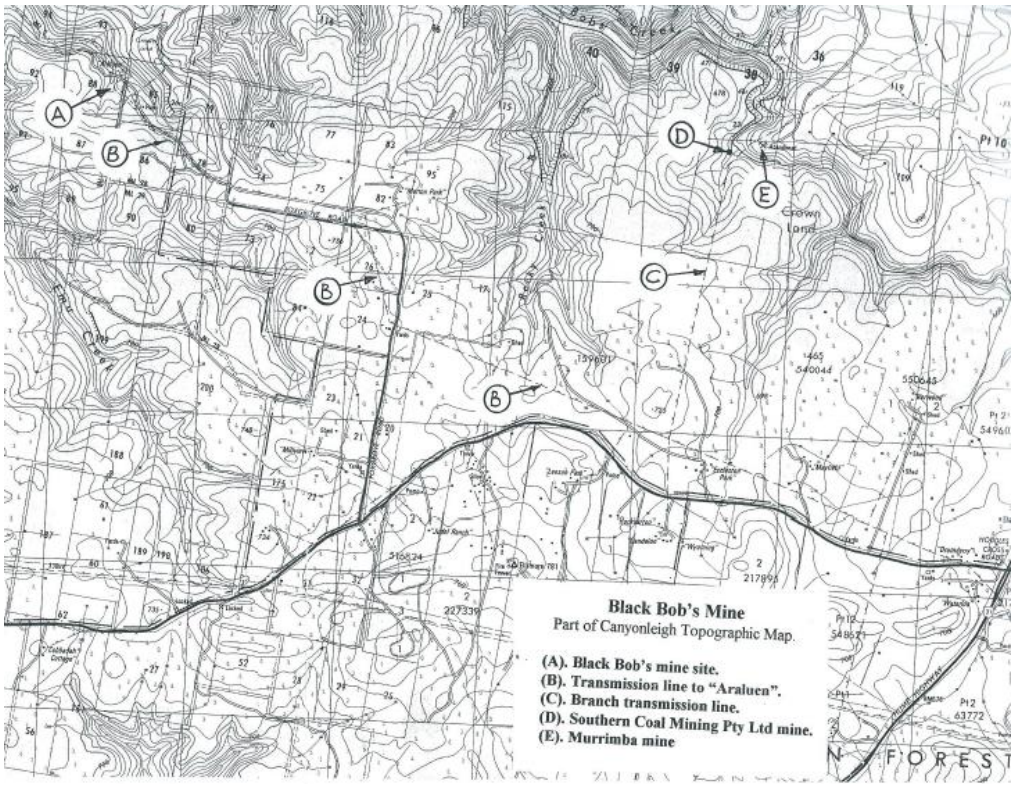
[532] B. J. Andrews "Coal Mines of NSW" 2011, p. 415.
[533] NSW Mines Department Annual Report 1968, p. 261.
[534] B. J. Andrews "Coal Mines of NSW" 2011, p. 299.
[535] B. J. Andrews "Coal Mines of NSW" 2011, p. 306.

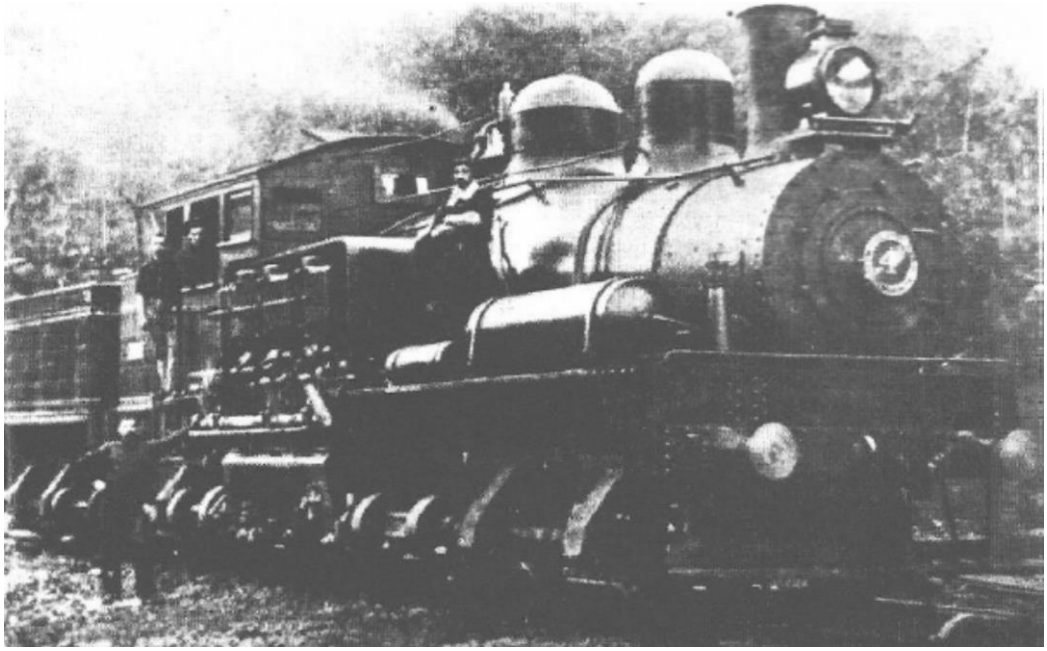
The Mittagong Colliery at Mittagong opened in 1883, and was operated by the Mittagong Coal Mining Company Ltd, registered as having £50,000 pounds capital. The registered office of the Company was in Melbourne and most of the shares in the Company were held by Victorian shareholders.[536] In 1884 the NSW parliament passed the Mittagong Coal Mining Act which permitted the construction of a railway to connect to the Main Southern Railway Line. There was a delay initially, in obtaining the £16,000 pounds of capital to construct the railway, and this was achieved in 1887. The delay required an amendment to the enabling Legislation, and the NSW parliament passed the Mittagong Coal Mining Act (Amended) in June 1887.

The railway was constructed to the standard NSW Railway gauge of 4 ft, 8 ½ inches (1.435 m). This would enable the Company to use its own locomotives to haul empty government railway waggons to the mine site to be loaded, and be hauled to the junction ready for despatch by the NSW Government Railway. This arrangement was seen as saveing the Company the cost of purchasing its own rolling stock, and reloading at the railhead. The 8 km long railway line was completed in 1888.[537] The junction of this railway with the Main Southern Railway Line was close to the Joadja Creek railway siding.

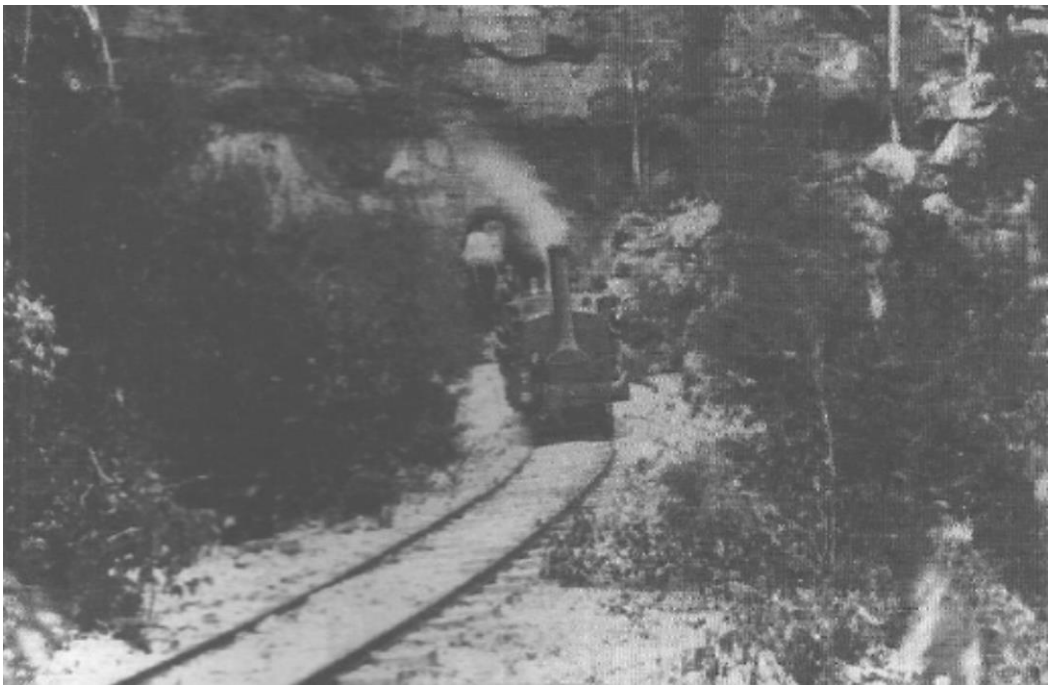


Topographic map showing Black Bob's Southern and Murrimba Collieries[538]

[536] Victorian Government Gazette, 21st September 1883, p. 2241.
[537] NSW Mines Department Annual Report 1888, p. 83.
[538] Source: D. K. Reynolds and G. R. Mould, unpublished notes.



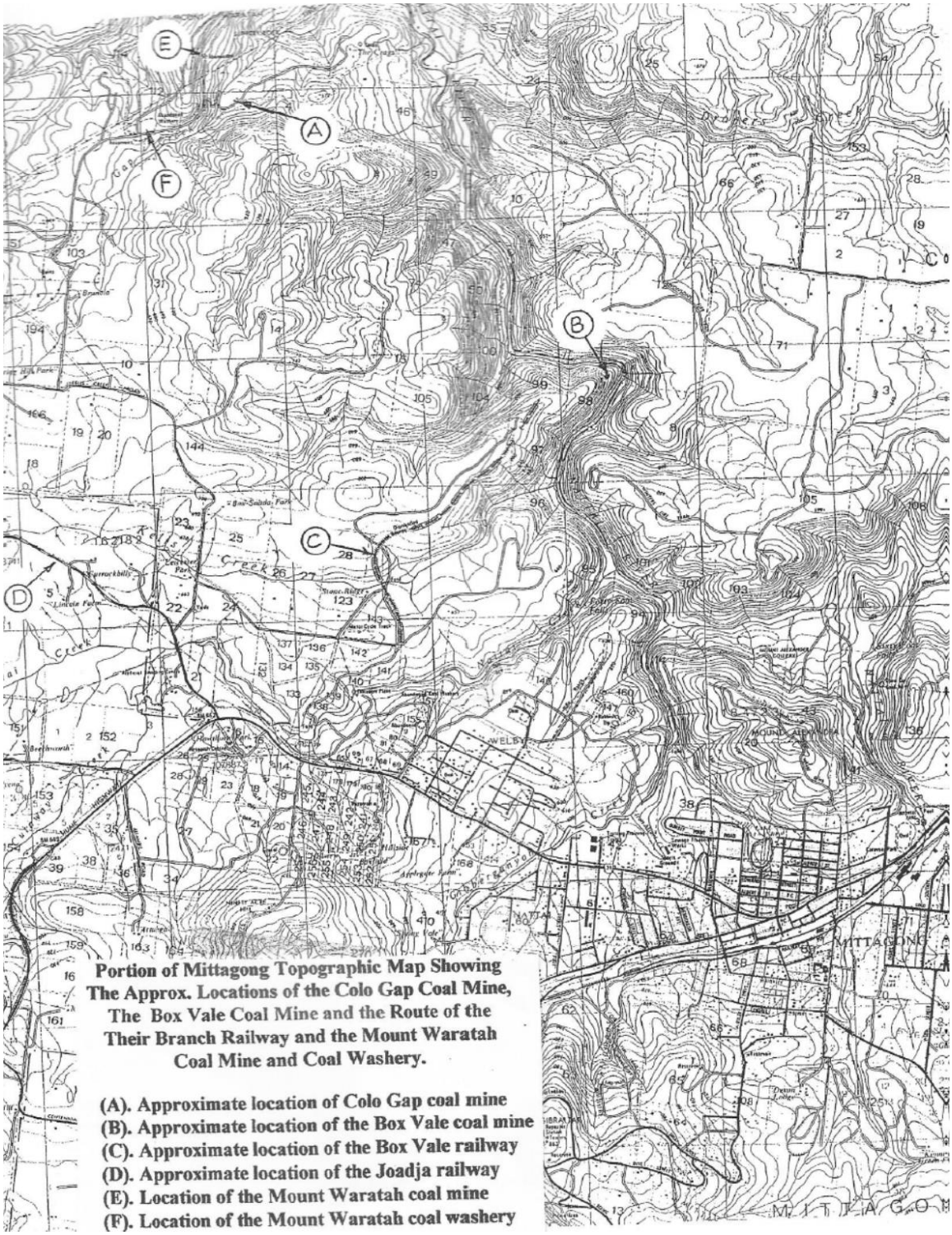
Mittagong Colliery utilised a Shay Locomotive with side driven gears[539]



Locomotive on the Mittagong side of the tunnel on the Box Vale railway line[540]

In 1888, Mittagong Colliery was employing 30 people including 21 miners, and produceing 100 tonnes of coal per day from hand mining, and maintained production during the coal strike of 1888.

[539] J. McColgan "Southern Highlands Story," 1995, p. 155.
[540] J. McColgan "Southern Highlands Story," 1995, p. 155.



Topographic map with locations of Colo Gap, Box Vale and Mount Waratah Collieries[541]

The thickness of the Wongawilli coal seam was found to be 3 m in that area and provided a good quality steaming coal. However, the seam contained a 100 mm band of stone, and unfortunately,

[541] Map source: D. K. Reynolds and G. R. Mould, unpublished notes.

the Company made no attempt to remove the stone, from the end product. This proved to be the Company's downfall, as it lost its railways contract because of too much stone in the coal, and Mittagong Colliery ceased operations in 1889.

For a purchase price of only £5,000 pounds, the colliery was reopened by Owen, Draper and Company in October 1890 and renamed the Box Vale Colliery. This period was the onset of the bitter depression of the 1890s. Box Vale Colliery operated with two or three miners, producing approximately 1,000 tonnes per year for the local market from 1890, until it was closed in June 1896, after a small railway contract was lost.

NSW Mines Department records show that the colliery name was changed from Mittagong Colliery to Mount Alexander Colliery in 1956. [542]

South Main Colliery

South Main Colliery at Mittagong opened in 1951 and closed in 1955. Its leases were later absorbed into the Mount Alexander Colliery lease holding. [543]

Mount Alexander Colliery

Mount Alexander Colliery at Mittagong was established in 1956 and was operated briefly by the Mittagong Anthracite Coal Company, until it was discontinued in 1958. McDonald Bros Pty Ltd reopened the colliery, and operated it on a mechanised basis from 1968, until it was discontinued in 1972. This area provided the only known minable source of anthracitic coal in Australia. The bituminous coal in the Wongawilli coal seam, had been converted to anthracite by the heat of a localised igneous intrusion, overlying the coal seam, described by Geologists as a syenite sill.[544]

Mount Waratah Colliery

Mount Waratah Colliery at Mittagong opened in 1957, had several owners, and ceased mining in 1971.[545] Similarly to the nearby Mount Alexander Colliery, Mount Waratah Colliery produced anthracitic coal. The bituminous coal in the Wongawilli coal seam in this area had been converted to anthracite by the heat of a localised igneous intrusion, overlying the coal seam.

Wingello Colliery

Wingello Coal Company Ltd was formed, in January 1888 with capital of £185,000, and with the intention of opening Wingello Colliery at Wingello, near Mittagong. Numerous blocks of land were transferred from George Somerville to the Company for that purpose. [546] It was proposed that a railway line would be built from the colliery, to the main Southern rail line. In the same year, it is reported that three of the Directors were dissatisfied with the manner in which the

[542] B. J. Andrews "Coal Mines of NSW" 2011, p. 280.
[543] B. J. Andrews "Coal Mines of NSW" 2011, p. 410.
[544] C. L. Adamson "The Geology of the Nattai Dome near Mittagong", NSW Mines Department Annual Report 1956, pp. 80-81.
[545] Mines Department Annual Report 1972, p. 66.
[546] Parish Maps of Belanglo, Fourth edition, dated 1899.

Company was being conducted and sought to have the Company wound up.[547] When the majority of shareholders voted against liquidation at a general meeting ordered by the court, these three Directors resigned.

NSW Mines Department records indicate that the colliery opened circa 1922, however, no other information is known about this colliery. [548] In 1933, the Wingecarribbee Shire Council advertised the sale of the Company's blocks of land to recover the money owed from overdue rates.[549]

Geology of the Southern Highlands

The geology of the Southern Highlands area generally made mining difficult.

In 1884, a report on NSW collieries stated that "Taking Moss Vale… as the centre, coal may be found within a radius of 20 miles (33 km) in any of the numerous ravines with which the district is intersected; but probably in no two instances will their section, nature, or qualities be the same, as the strata are so much cut up by [geological] upheavals and [igneous] intrusions of basaltic and granite dykes; "rolls" are very prevalent, a seam of 6 ft (1.8 m) dwindling down to 1.5 ft (46 cm) within 100 yards (91 m). Nevertheless, there are large tracts of country undisturbed from the position in which they were deposited, as at Berrima Colliery." [550]

This report was written by Mr J. G. Swinney who was the original manager of the Berrima Coal Mining and Railway Company Ltd, that opened a colliery on the Medway Rivulet in 1881. Whist the vast majority of the collieries in the Southern Highlands mined the Wongawilli Seam, An exception to this practice was the Joadja Creek Oil Shale Mine, where the American Creek Seam was mined because of the localised presence of a thick layer of torbanite, that was able to be heated in retorts, to distil kerosene, and other products.

The Origin of Oil Shale

Oil shale is formed in swamp conditions, similar to the way that coal is formed. The difference is that oil shale is formed from algal residue, whereas coal is formed from Plant matter. Geologists use the term "torbanite" for oil shale.

In 1896, Geologist Mr T. W. Edgeworth David, reported that he had used a microscope to examine very thin sections of torbanite from Joadja Creek, and had seen structures resembling algae.

In the 1970s and 1980s scientists used a technique of shining ultraviolet and blue light onto a polished surface of the mineral being examined, a technique known as "fluorescence microscopy". The use of this technique clarified that algae forms, the dominant part of torbanite. Torbanite is a rock of blackish colour that breaks with a conchoidal fracture, which is similar to the curved fracture pattern when glass is chipped, and when freshly broken, torbanite has a dull satin lustre. A distinctive feature for identification in the field is that pieces of torbanite can be

[547] Sydney Morning Herald, 25th June 1888.
[548] B. J. Andrews "Coal Mines of NSW," 2011, p. 496.
[549] Sydney Morning Herald, 24th March 1933.
[550] J.G. Swinney "The Collieries, Coalfields and Minerals of New South Wales, Australia," 1884, p. 21 (Mitchell Library shelf no. 338.2/S).

ignited with a match, and will burn with a yellow-orange flame, producing a tarry smell and a dense black smoke.

Torbanite burns readily, as the organic matter (kerogen) contained in it, decomposes at very low temperatures to produce volatiles, that will ignite. The organic matter is readily converted to gas, oil and water when heated in a retort. Higher grades of torbanite can have 60% to 85% volatile matter.

In NSW, deposits of torbanite occur as lenticular deposits, the largest of which is less than five kilometres in diameter. These deposits are found mainly on the western edge of the Sydney Basin, as is the case at Joadja Creek in the Southern Highlands, and Glen Davis in the Capertee Valley. The American Creek Seam mined at Joadja Creek, contained a thick band of torbanite, layers of coal and thin layers of claystone. The maximum seam thickness of the torbanite is 1.3 m.

Mr J. E. Carne, Assistant NSW Government Geologist, prepared a comprehensive report on the Kerosene Shale Deposits of New South Wales, in 1903. [551]

Large dots show the Distribution of Torbanite in NSW in addition to Joadja Creek[552]

[551] J. E. Carne "The Kerosene Shale Deposits of New South Wales," Government Printer, Sydney, 1903.
[552] Source: Dr A. Hutton of the University of Wollongong, quoted in "Joadja Creek, the shale oil town & its people 1870-1911," 1988, L. Knapman p.138.