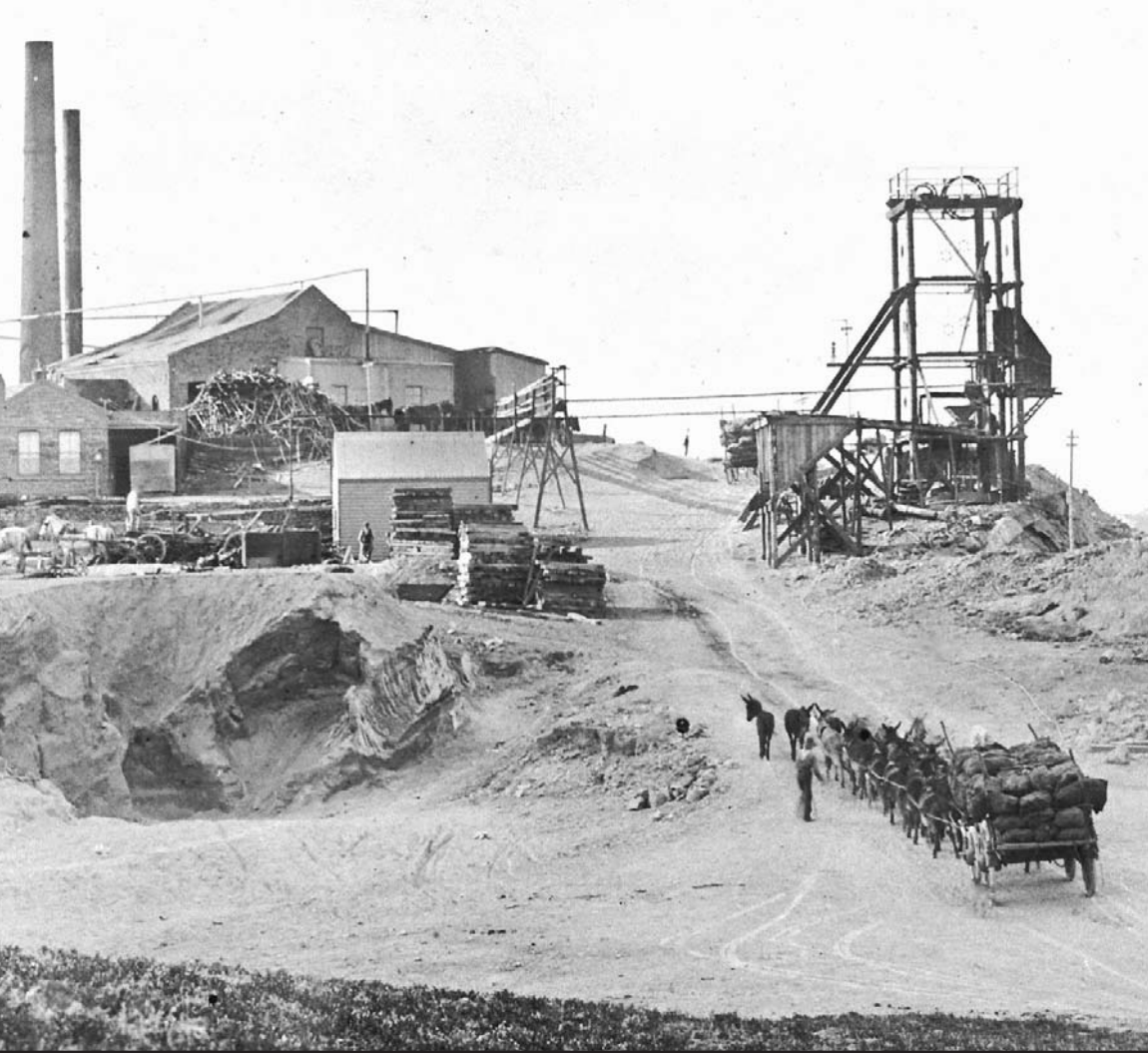


BLINMAN MINE

A guide to the historic site



MINES and ENERGY
SOUTH AUSTRALIA



INTRODUCTION

The Blinman Mine was the largest producer and longest operating mine in the Flinders Ranges. There were four main periods of mining activity between 1862 and 1907, which resulted in a total production of 10 000 tonnes of copper metal from 200 000 tonnes of ore.

Today the site is on an historic reserve managed by Mines and Energy South Australia, which has established an interpretive trail.

HISTORY

The mine was named after a shepherd, Robert Blinman, who discovered an outcrop of copper ore at the site in 1859. The Yudnamutana Mining Company purchased the mining leases for £70 000 and commenced mining in September 1862 under the management of Captain Thomas Anthony.

Initial mining operations consisted of quarrying the outcropping orebody and sinking shafts along its length. To reduce the high cost of cartage to Port Augusta, a smelting works was erected in 1863 in a small valley just below the manager's residence. This eventually contained four reverberatory furnaces producing high-grade copper ingots.

By 1870, the workings had reached the 91 metre level where water and sulphide ore were encountered. A second-hand steam engine from the Nuccaleena Mine was erected at a new main shaft in 1871 to pump water and haul ore from the lower levels. Financial difficulties caused the company to be reformed as the Blinman Consolidated Copper Co. in 1872. This was unsuccessful and the mine closed in 1874.

With the arrival of the railway at Parachilna in 1882, a new company, the Corporation of South Australian Copper Mines Ltd, reworked the mine until 1885. In 1882, the company erected a steam engine and crushing and concentrating machinery from the Prince Alfred Mine to treat a stockpile of low-grade ore. Up to 200 men were employed on company leases, and underground mining concentrated on stoping between the 91 and 128 metre levels. Falling copper prices caused closure in 1885; the company was liquidated and its assets transferred to the South Australian Mining and Smelting Co. Ltd.

The mine reopened in 1888 and the pumping, winding and concentrating machinery were restarted. Up to 80 men were employed until 1889 when once again the mine closed. Between 1890 and 1899, it was worked on tribute above water level by small syndicates. In 1897, all machinery was removed to the Clara St Dora Mine.

In 1902, the Blinman Mine was purchased by the Tasmanian Copper Co., whose general manager C.N. Henrie had an ambitious plan for the working of copper mines throughout the Flinders Ranges. Operations recommenced in 1903 and, in 1904, a water-jacketed blast furnace was fired. The furnace produced 5-10 tonnes of 50% copper matte per day but required 600 tonnes of coke per month. Over 250 were employed during this period and teams of mules, horses, donkeys, bullocks and camels were used in transporting supplies, copper and coke to and from Parachilna. Operations continued until 1907 when the mine closed due to falling copper prices and exhaustion of payable ore.

GEOLOGY

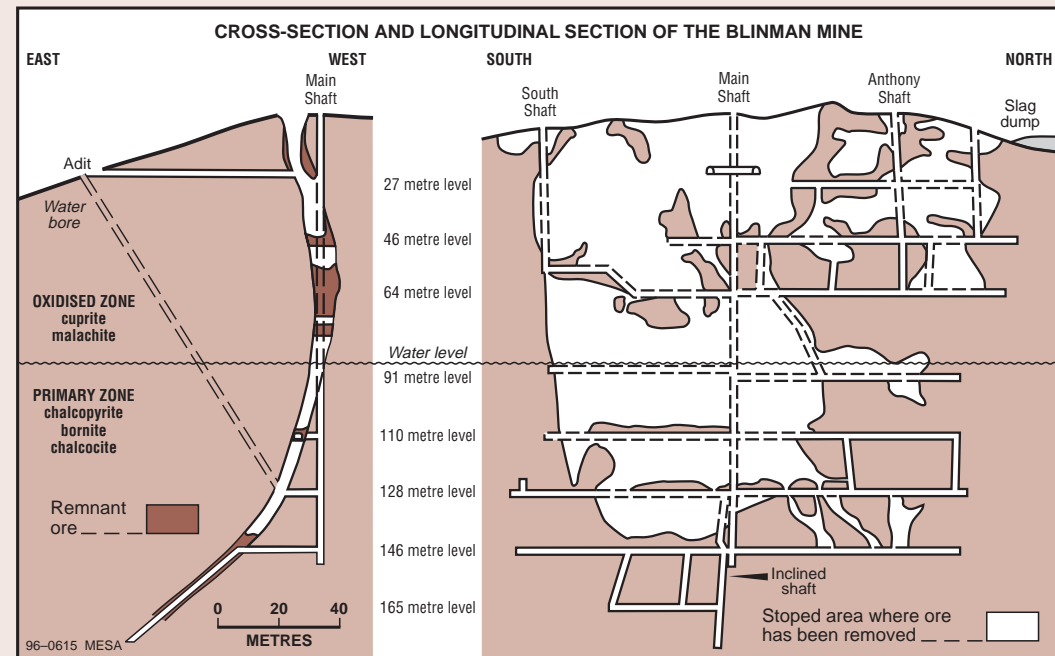
The orebody originally outcropped as a large, irregular mass over a length of about 60 metres, but at depth was about 150 metres long. It was vertical near the surface but flattened to the east at depth.

The orebody, consisting of dolomite impregnated with copper minerals, was located in a large sedimentary block (mainly dolomite) in breccia of the Blinman Diapir. Above water level (about 90 metres) in the oxidised zone, the main copper minerals were cuprite (copper oxide) and malachite (copper carbonate). Below this level, the ore consisted of the primary copper sulphides chalcopyrite, bornite and chalcocite.

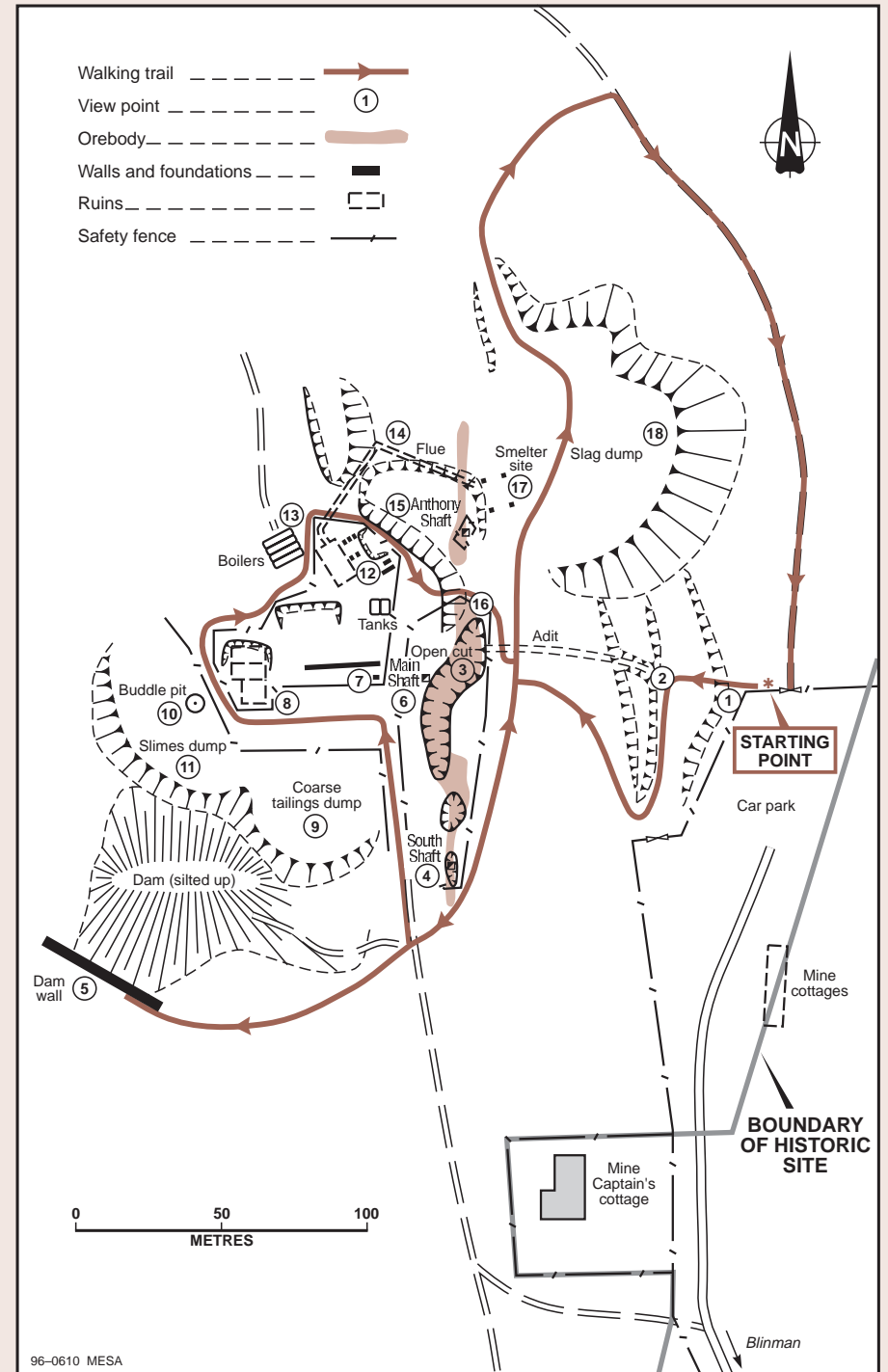
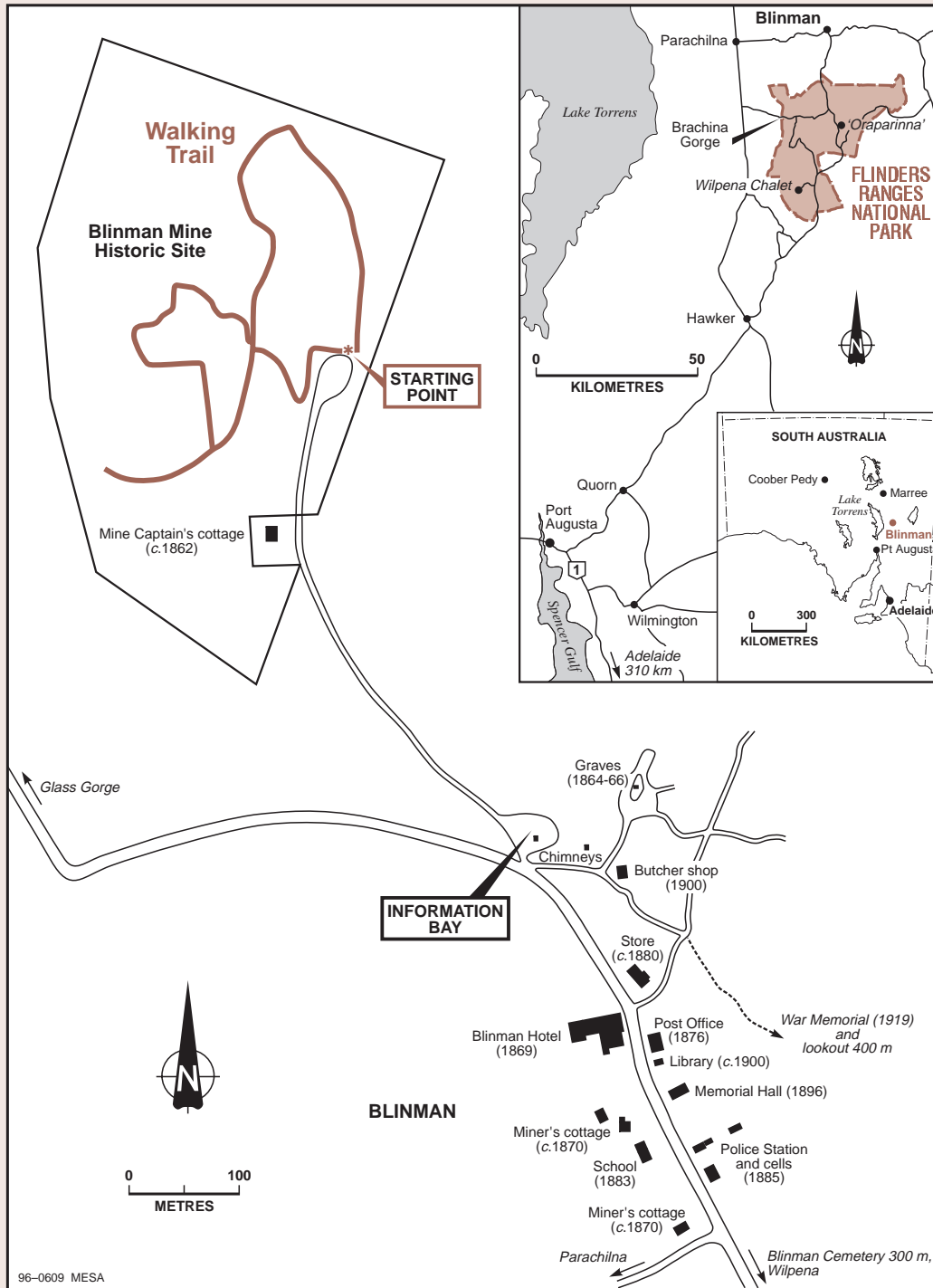
The ore mined averaged 4-5% copper and was concentrated at the surface to 20-30% prior to smelting or sent direct to the blast furnace in the 1903-07 period.

The mine was worked from a vertical main shaft sunk to the 146 metre level, and an inclined shaft which followed the dip of the orebody a further 37 metres. The deepest level was 165 metres but all ore extraction took place above the 146 metre level.

A notable feature of the mine was the immense cavities or stopes up to 60 metres high and 15 metres wide where large sections of the orebody were completely removed.



FRONT COVER: Blinman Mine, c.1907. At right is the headframe over Main Shaft, connected by an overhead tramway to ore bins. The small building at centre housed a steam winding engine and in the background is the powerhouse. The mule team is hauling a load of coke fuel to the blast furnace. (Photo 32763)



THE WALKING TRAIL

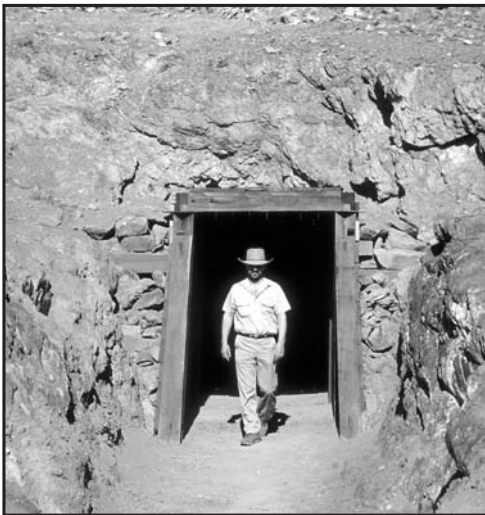
The trail is one kilometre long and takes about one hour to complete. Interpretive signs illustrate the geology of the orebody and how the ore was mined and treated.

1. Brick kiln: a circular brick kiln was erected in the 1860s to produce fire bricks for smelting furnaces and flues. The base of the kiln with firing holes remains.



Base of the brick kiln. (Photo 43617)

2. The Adit: this 65 metre long adit or tunnel was excavated in 1899 to enable ore to be trucked to the surface from workings in the upper part of the mine.



Adit leading into the open cut. (Photo 43619)

3. Open cut: the orebody originally outcropped as a large irregular mass over a length of about 60 metres on the hillside. This has been completely excavated near the surface leaving large caverns.



Open cut. (Photo 43620)

4. South Shaft: the position of this shaft is marked by the framework of native pine.

5. Dam wall: this stone wall was constructed in the 1880s. The dam provided water for the concentration plant.

6. Main Shaft: the mine was worked from a vertical main shaft sunk to the 146 metre level. This shaft was used for all pumping and hauling.

7. Windinghouse site: foundations mark the site of a 20 horsepower winding engine erected in 1903.

8. Crusherhouse site: the pile of rubble marks the site of a two-storey crusherhouse erected in 1882 to treat lower grade ore.

9. Coarse tailings dump: this contains sand-size waste material from the concentration process.

10. Buddle pits: these circular structures were used to concentrate finely crushed copper in the slurry from the first concentration process.



The remains of a buddle pit. (Photo 43614)

11. Slimes dump: this contains the fine waste or slimes from the buddle pits.

12. Powerhouse site: this site contains the remains of the first windinghouse (1871) which was modified to form the powerhouse in 1904.

13. Boilers: these four boilers were placed here in 1903 to provide water storage.



Concrete foundations marking the site of the powerhouse. (Photo 43615)

14. Smelter flue: this stone-lined flue connected the blast furnace to a stone chimney at the top of the hill.

15. Smelter charge yard: the blast furnace charge consisting of ore, ironstone flux and coke fuel was prepared in this area for loading into the top of the furnace.

16. Open cut lookout: this provides the best view point into the open cut.

17. Blast furnace site: a water-jacketed blast furnace was erected in 1904 and produced about 4 000 tonnes of copper up to 1907.



Blast furnace site. (Photo 43618)

18. Slag heap: the molten slag residue was tapped from near the base of the blast furnace into cast iron slag trolleys and dumped over the edge of the heap.



Slag heap. (Photo 43616)

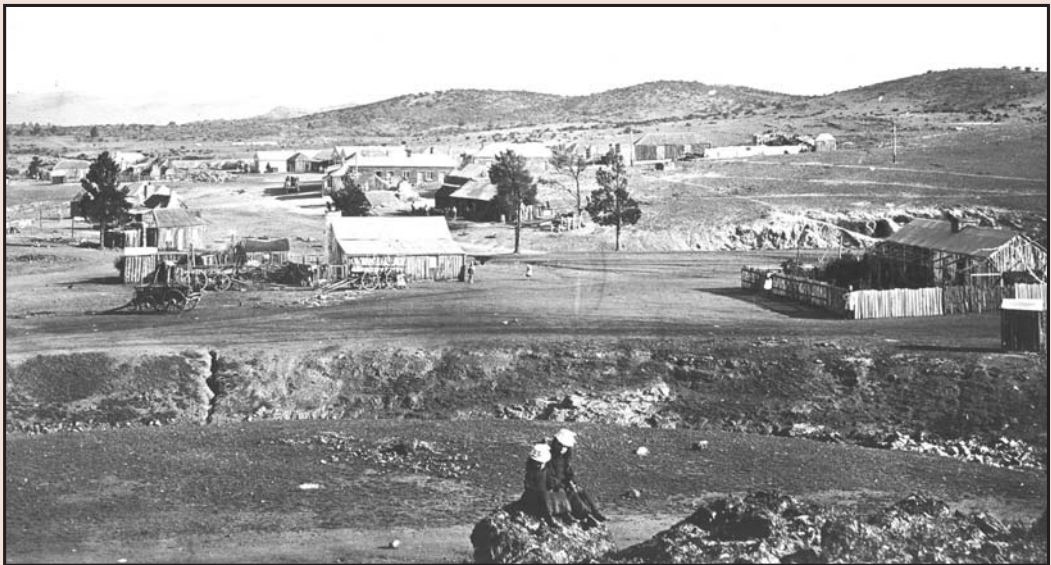
BLINMAN TOWNSHIP

Blinman is the only survivor of numerous mining townships surveyed throughout the Flinders Ranges in the 19th century. In 1864, the township of Blinman was surveyed three kilometres south of the mine because mineral leases covered land around the original discovery. However, most settlement took place on mineral leases closer to the workings and, in 1867, the township of North Blinman was laid out near the mine. The names were changed to Blinman South and Blinman, respectively, in 1886.

Blinman's population has reflected the prosperity of the mine. At the peak of mining activity in 1869 the town had 1 500 inhabitants. A drought and low

copper prices closed the mine between 1874 and 1882, and the number of residents fell below 200 but, by 1888, renewed mining saw the population rise to 500. During the 1880s, a police station and school were erected, and remained in use until the 1970s. The last period of mining between 1903 and 1907 again caused a dramatic rise in population, with up to 200 employed at the mine.

Most of the prominent buildings are constructed of buff-coloured sandstone from a quarry north of the town. These include the Post Office (1876), school (1883), police station and cells (1885) and Memorial Hall (1896). Also of interest are several original pine and pug miners' cottages.



Blinman township c.1870. In the centre is the North Blinman Hotel surrounded by pine and pug miners' cottages. (Photo 43631)

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191 GREENHILL ROAD, PARKSIDE 5063**

NEWSTYLE PRINTING

NOVEMBER 1996