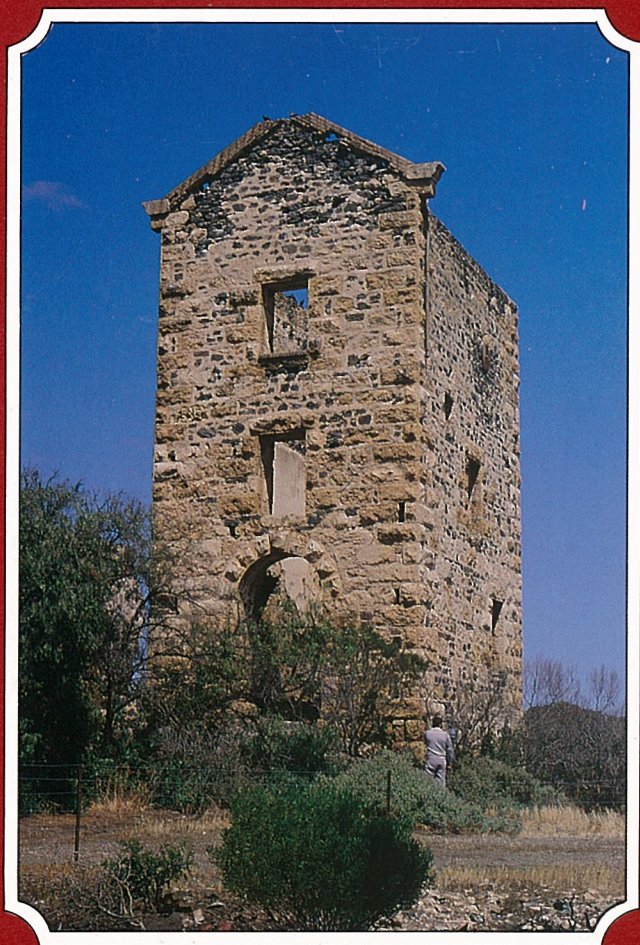


# DISCOVERING HISTORIC KADINA

South Australia



INCLUDES THE KADINA HERITAGE TRAIL

DEPARTMENT OF MINES AND ENERGY  
DISTRICT COUNCIL OF NORTHERN YORKE PENINSULA

# DISCOVERING HISTORIC KADINA

South Australia

*Compiled by  
Greg Drew*

*Published by the Department of Mines and Energy  
and the District Council of Northern Yorke Peninsula*

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# DISCOVERING HISTORIC KADINA

## INTRODUCTION

The discovery of rich copper deposits, at Kapunda in 1842 and Burra in 1845, added financial stability to an almost bankrupt colony and, by 1850, South Australia was one of the world's leading copper producers.

That position was maintained with the discovery of copper deposits at Wallaroo in 1859 and Moonta in 1861. These mines were worked by separate companies until 1890, when they amalgamated to form the Wallaroo and Moonta Mining and Smelting Co. Ltd. These mines were on large, rich deposits which were worked continuously for more than 60 years.

The township of Kadina, which abuts the former Wallaroo Mine, and the nearby towns of Moonta and Wallaroo, were established as a direct result of copper mining in the early 1860s. Wallaroo became a port and smelting town and served both Moonta and Wallaroo mines. The three towns form a triangle, now commonly called *The Copper Triangle*. By 1875, the district had a population of about 20 000—predominantly Cornish immigrants and their descendants.

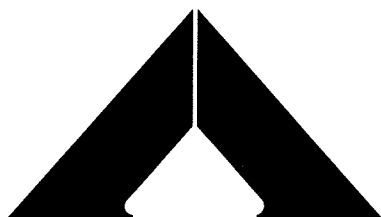
In the 1860s, the area was covered with dense mallee which was quickly denuded for firewood and mine timbers. This was aggravated by clearance for agriculture in the 1870s and 1880s and, within 30 years, the district was a treeless plain. The closure of the mines in 1923 led to a rapid decline in the mining population but Kadina has survived as an agricultural, commercial and administrative centre.

## THE KADINA LOGO

The Corporation of the Town of Kadina was proclaimed in 1872 and the District Council of Kadina (an area around the town containing mining settlements and extending to include Moonta Mine) in 1888.

In 1977, the district and town councils amalgamated as the District Council of Kadina and a new coat of arms was adopted. This was shortlived as, in 1984, the new council merged with the Corporation of the Town of Moonta to form the District Council of Northern Yorke Peninsula.

The new logo incorporates a copper-coloured triangle topped by a representation of a mine shaft, in keeping with the district's copper mining heritage.



**THE COPPER TRIANGLE**  
NORTHERN YORKE PENINSULA · SOUTH AUSTRALIA



# WALLAROO MINE

## HISTORY

### *Discovery*

Copper ore was discovered on 17 December 1859 by a shepherd, James Boor, on the pastoral lease of Walter Watson Hughes and John Duncan. Hughes secured mineral leases over the discovery, which was named the Wallaroo Mine after Hughes' sheep station near present-day Wallaroo Bay. The name was derived from the aboriginal *wadla-waru* meaning 'wallaby's urine'. Four Burra miners, Walter Phillips, William Pascoe, Richard Walter and Samuel Truran, were engaged and started operation at Home Shaft in February 1860.

Hughes, in conjunction with Elder, Stirling and Co. (later Elder, Smith and Co.), formed the Wallaroo Mining Company, a private company of 200 shareholders, and the first board of management met in August 1860 with Edward Stirling as chairman.

The Wallaroo discovery caused a rush for leases in the vicinity and numerous companies were formed including Matta, Bingo, New Cornwall, Wandilta, Kurilla, Devon and Duryea. None of these mines was successful, but several were later acquired by the Wallaroo Mining Company.

### *1860-1900*

Captain Eneder Warmington, from Burra, was appointed Captain in 1860 to superintend the development of the mine and, by mid 1860, 150 miners were employed.

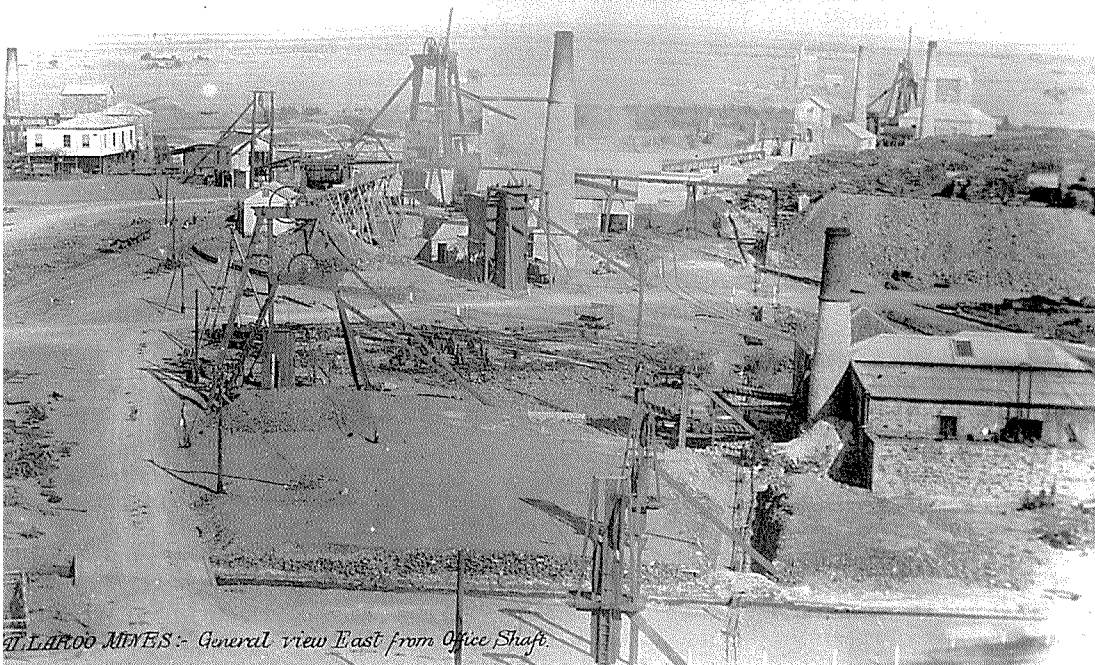
Water level was soon reached and a horse engine was erected for pumping. In 1861, a 12-inch horizontal steam engine (the *Home*) was erected for stamping and hauling. During 1862, a 24-inch horizontal engine (the *Wombat*) was erected and pumped from Hughes Shaft, which became the principal shaft. Water continued to cause problems, necessitating the erection of the first Cornish beam pumping engine in the district, at Taylors Shaft in 1863. Captain Warmington resigned in 1864 and Captain Dunstan was brought from Cornwall to manage the mine.

The first decade was very profitable, with the price of copper at a high of £115 per ton. As a result, the mine developed rapidly after 1865, reaching an annual production of 26 000 tons of ore dressed by 1869. In 1867, a 22-inch Cornish beam winding engine (Taylors) was installed at the eastern end of the mine and a 48-inch pumping engine, from the North Rhine Mine, was installed at Hughes Shaft at the western end.

In 1869, Captain Dunstan was replaced by Captain Higgs, who remained in charge until 1877, when H.R. Hancock took over superintendence of both the Moonta and Wallaroo mines. The mine was at its peak between 1870 and 1875, when up to 1000 men and boys were employed. In 1876, two Cornish engines (Youngs winding engine and Harveys 60-inch pumping engine) were at the western end of the mine. This gave the mine five operating Cornish engines, the largest number to operate at any one time on a mine in Australia.

Increased costs and low copper prices closed the mine from 1878 until 1880. Restricted operations continued during the 1880s and, in 1888, an 80-inch beam pumping engine from the New Cornwall Mine, was re-erected at Elders Shaft.

The Moonta and Wallaroo companies amalgamated in 1890 to become the largest industrial operation in South Australia under Captain H.R. Hancock and, after 1898, his son H. Lipson Hancock. The new company employed an average of 1900 people during its 33 years existence, with peak employment of 2700 in 1906.



*WALLAROO MINES:- General view East from Office Shaft.*

Wallaroo Mine looking east from Office Shaft c. 1890.  
The scene is dominated by tall stone enginehouses and chimneys. From left to right are Taylors Winderhouse, Taylors Enginehouse and Elders Enginehouse with the Home Enginehouse in the foreground.

## 1900-Closure

Up to 1900, all major pumping, winding and dressing plants were powered by Cornish beam engines. After 1900, the Wallaroo Mine was modernised and there was a considerable transfer of labour and materials from the Moonta Mine, where underground production declined.

After a disastrous fire in Taylors Shaft in 1904, which destroyed the upper part of the shaft, Taylors and Harveys engines were replaced by electric pumps, which raised the water to the 125 fathom level. From there, Elders Engine raised it to the surface. At about the same time, the old and out-dated Cornish winding engines (Youngs and Taylors), which had each served for about 30 years, were replaced by two modern horizontal steam engines (a similar engine had been installed at Office Shaft in 1900). New head-frames were erected and old Cornish boilers (about 50), carrying only about 40 psi, were replaced by Babcock and Wilcox 120 psi boilers. Other engines installed were worked by electricity or compressed air. Modernisation of the mine also included a central power plant supplying electricity and compressed air throughout the mine.

In 1901, a large central crushing and sorting plant was erected near Office Shaft and an attle crushing plant was erected to reduce the size of waste rock for filling worked-out areas of the mine. Because of high temperature encountered at depth, ventilation was also introduced with large exhaust fans installed at Boors (1906), Hughes (1912) and Office (1915) shafts, drawing air upwards through an arrangement of doors at the various levels, with fresh air being drawn down Youngs and Taylor shafts.

After modernisation, which took about two years, mining operations were conducted through two vertical main shafts, Taylors and Youngs, where new winding engines and head-frames were erected, and virtually all mining took place below the 300 fathom level. A boom period continued up to and including the First World War, which increased the demand for copper, but after the war there was a sharp drop in copper prices, from which the mine never recovered. The company struggled to reduce production costs and continued as a marginal operation, but closure was inevitable. Further problems were caused by severe shortages of coal because of strikes in the eastern states.

The two thousand workers at Moonta and Wallaroo refused to accept a drastic cut in wages and, in November 1923, the company went into voluntary liquidation after 63 years. The Wallaroo Mine was large even by today's standards and only the Olympic Dam Mine will surpass it in size and longevity of operations.

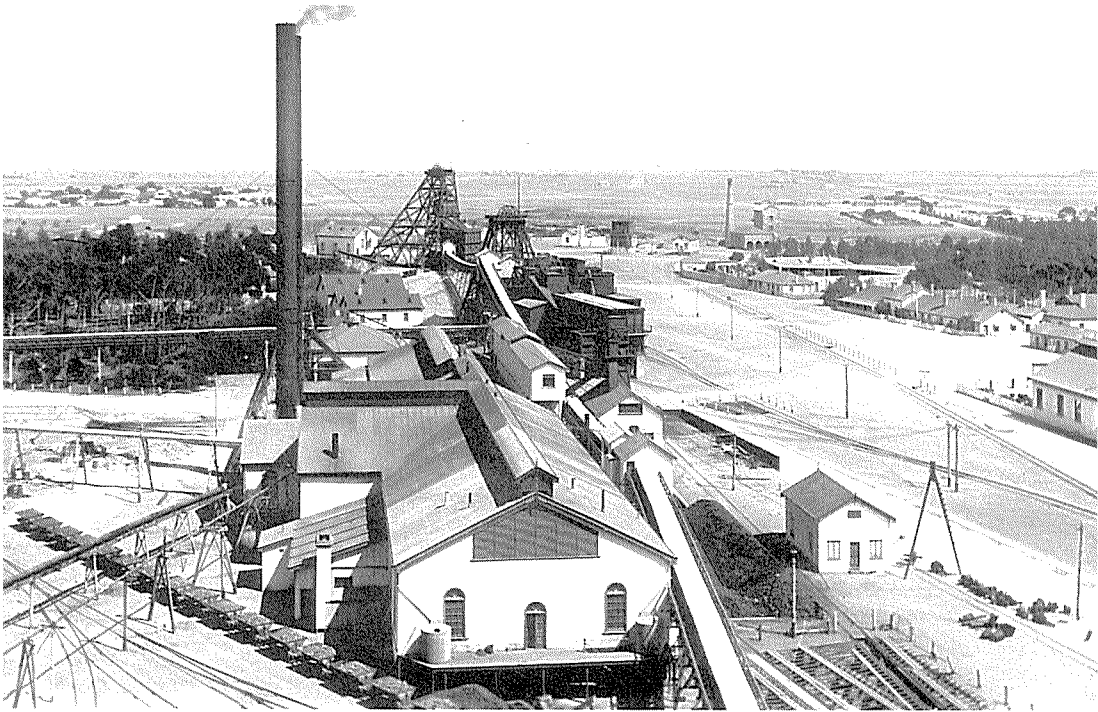
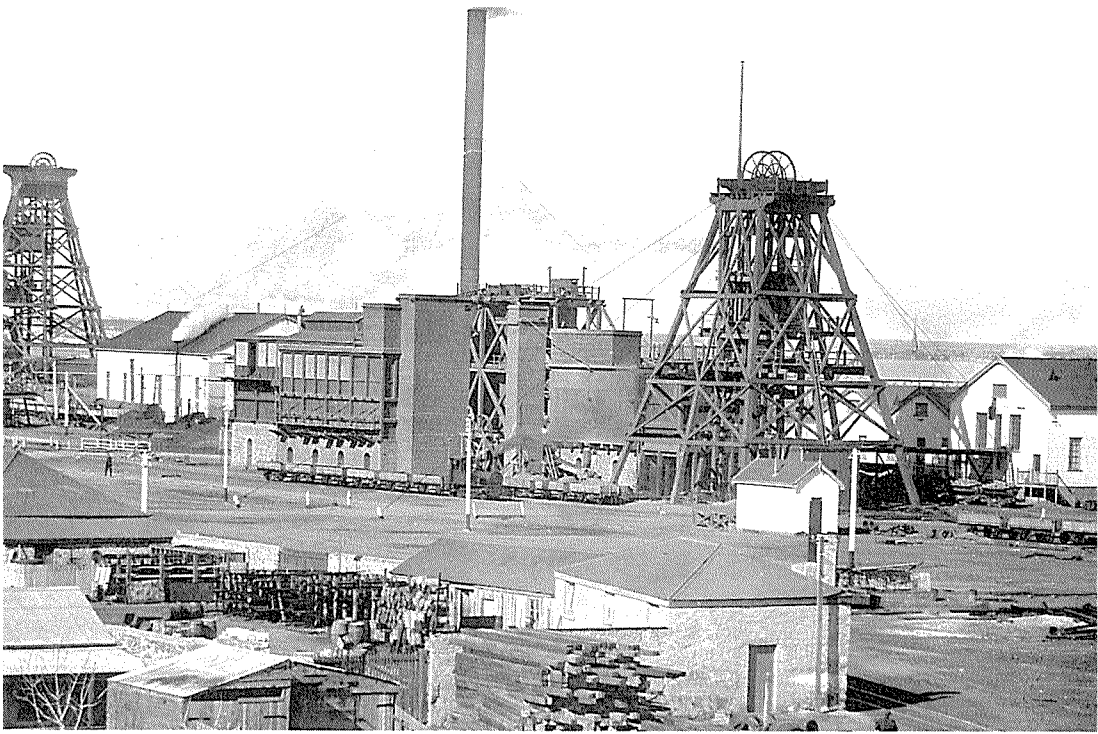
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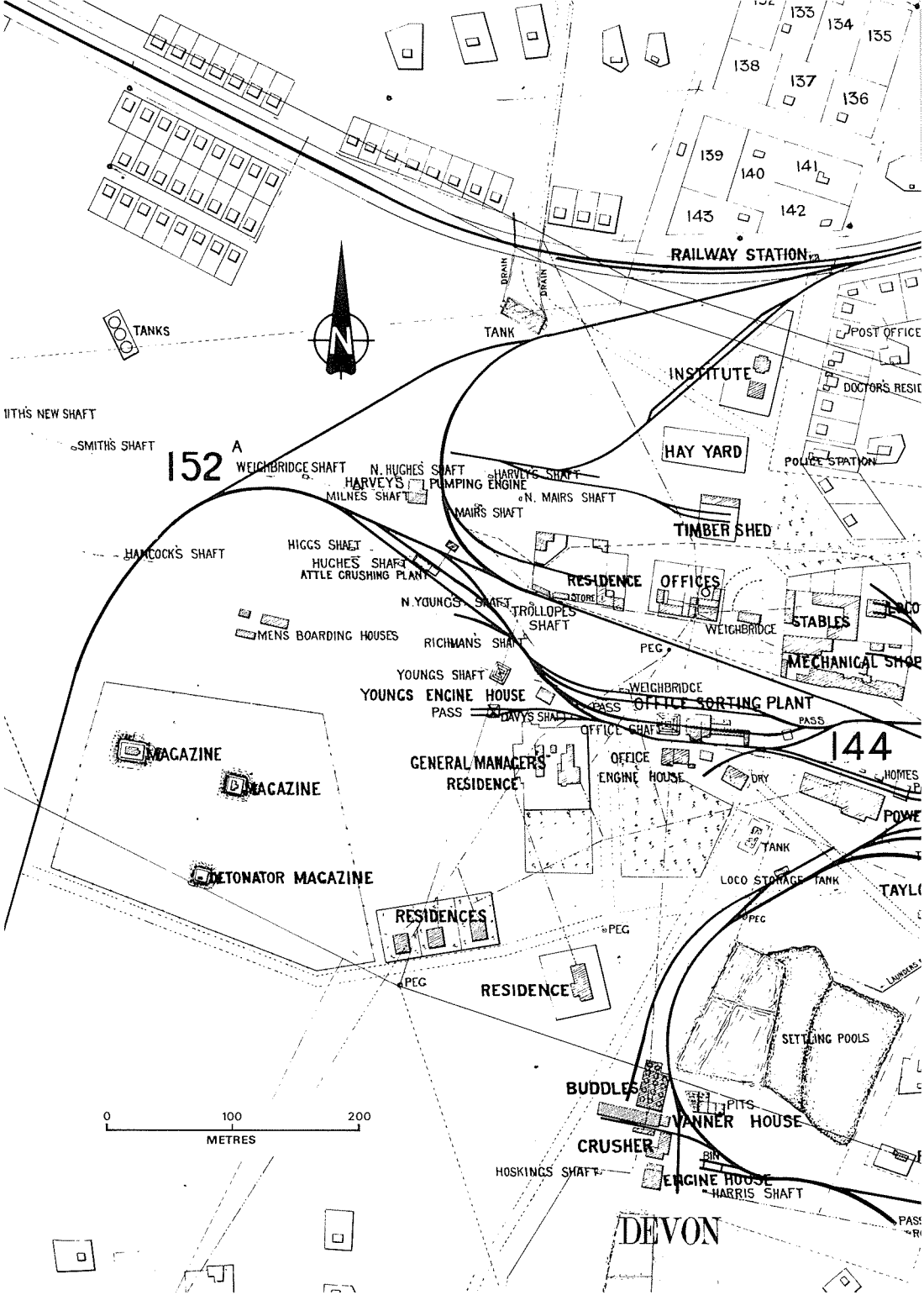
*Upper: Wallaroo Mine looking east from Harveys Enginehouse c. 1907.*

*This view shows the dramatic change in appearance of the mine after the fire in 1904. The two headframes are located at Taylors (left) and Office (right) shafts and between them are the powerhouse and office sorting plant. At right is Office Winderhouse.*

*Lower: Wallaroo Mine looking west from Taylors Shaft c. 1915.*

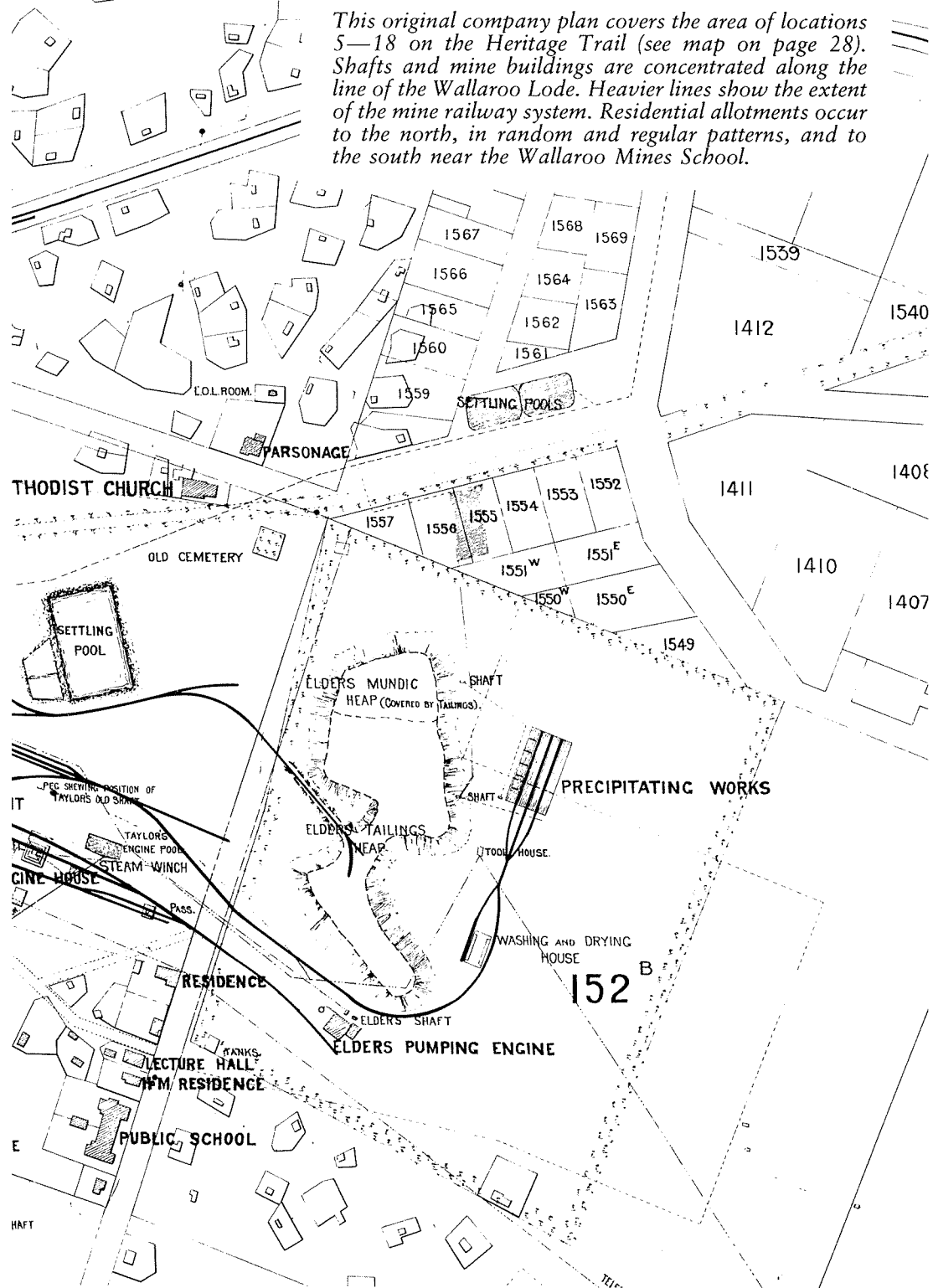
*In the foreground is the powerhouse with Office sorting plant behind. At right are the offices and stores with Harveys Enginehouse behind.*







*This original company plan covers the area of locations 5—18 on the Heritage Trail (see map on page 28). Shafts and mine buildings are concentrated along the line of the Wallaroo Lode. Heavier lines show the extent of the mine railway system. Residential allotments occur to the north, in random and regular patterns, and to the south near the Wallaroo Mines School.*

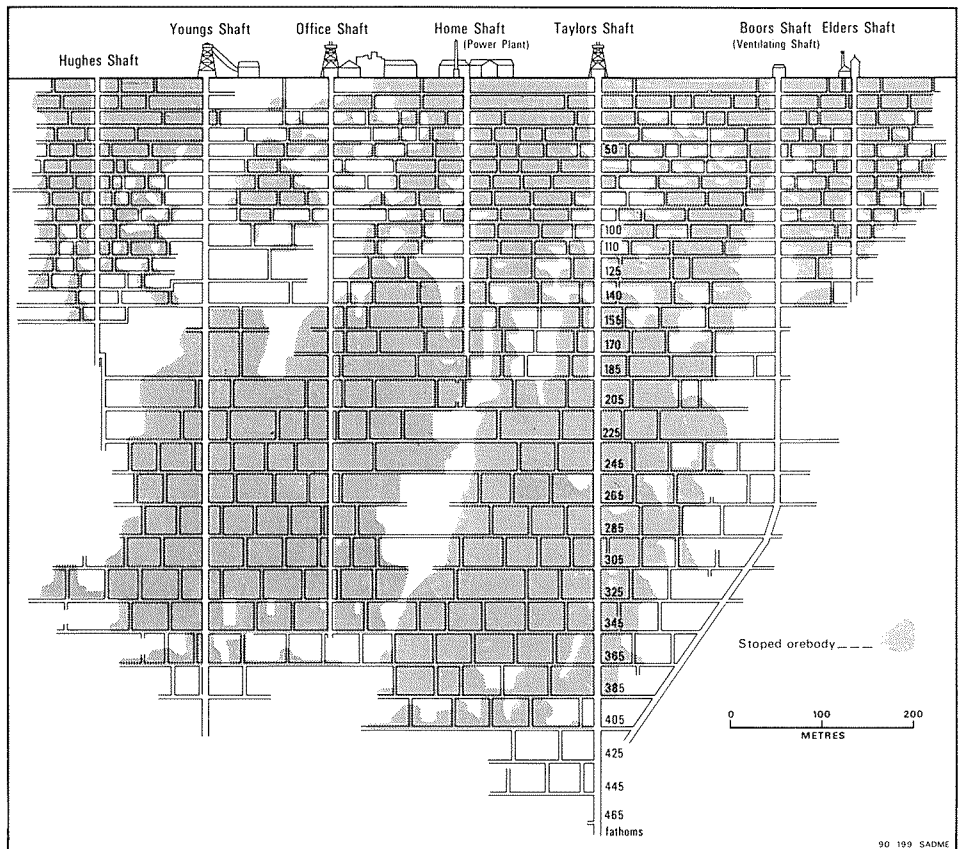


# PRODUCTION

Total production of the Wallaroo Mine from 1860 to 1923 was about 165 000 tonnes of copper metal valued at about £9.7 million. Nearly two thirds of this was produced after 1890. The combined production of both mines was about 334 000 tonnes of copper from about 6.5 million tonnes of ore valued at £20.5 million.

# GEOLOGY

The main Wallaroo Lode ran east-west and was mined over a distance of about 1000 metres and to a depth of 850 metres. The main lode dipped steeply and varied in width from less than a metre to more than 20 metres, with an average of about three metres. It contained two productive shoots, Taylors and Youngs (see Wallaroo Mine cross section). The primary mineral assemblage of the orebody consisted mainly of chalcopyrite (copper sulphide) with pyrite and pyrrhotite and minor galena and sphalerite in a matrix of quartz and carbonate. The host rocks were Precambrian mica schists.



An oxidised zone containing green copper carbonates extended to a depth of about 20 metres. Below this, an enriched zone containing mainly cuprite and chalcocite overlay the primary ore zone at depths of about 40 metres. The oxidised and enriched copper minerals were formed by weathering of the underlying primary ore zone.

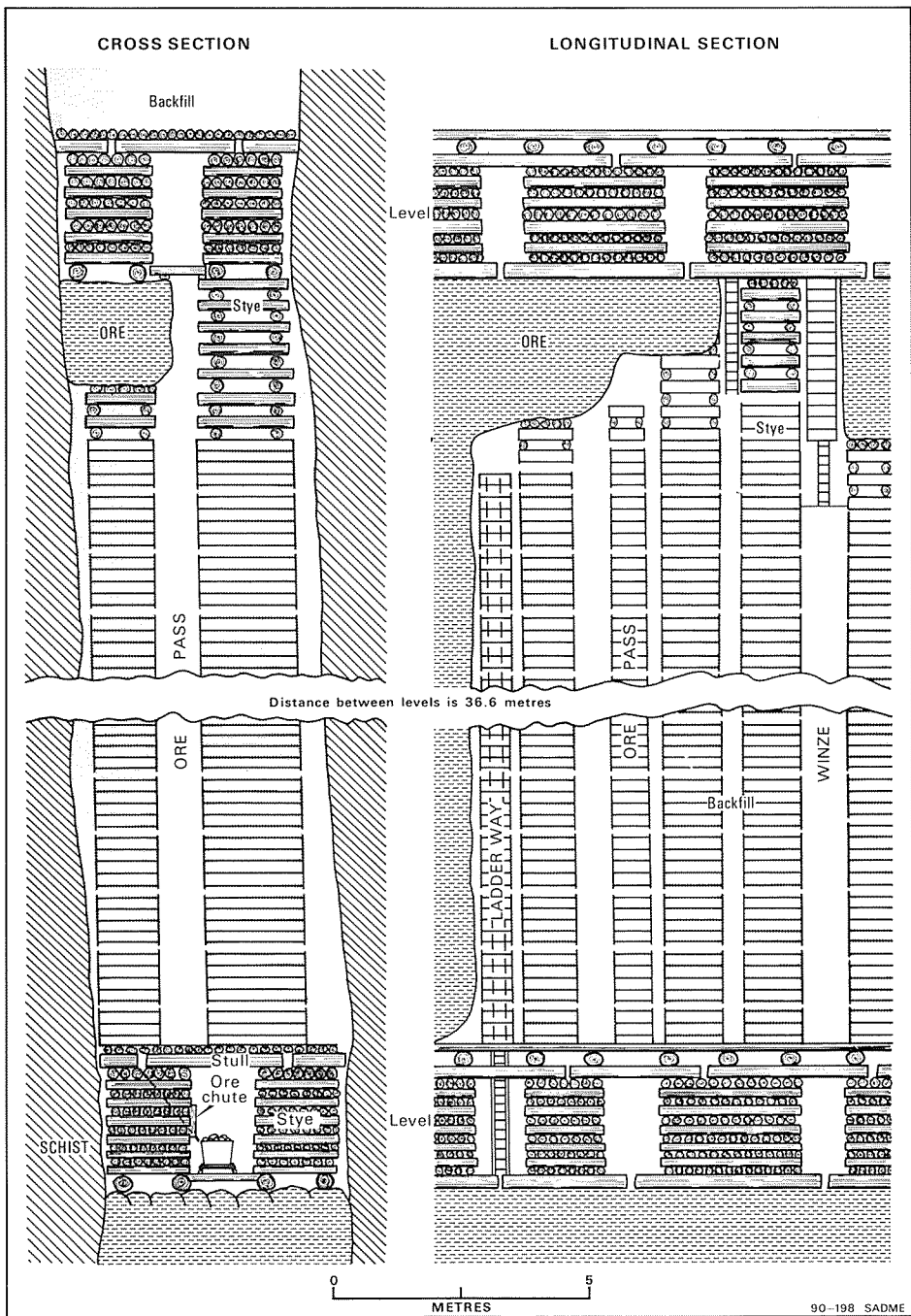
## MINING METHODS

About thirty shafts were sunk on the incline following the lode, the deepest being Taylors Shaft at more than 900 metres. Below the 140 fathom level there were only seven main working shafts and, after 1915, only Taylors and Youngs shafts were used. The Cornish system was used to drive horizontal tunnels or *levels* at regular intervals connecting shafts. These levels were initially at intervals of 10 fathoms (1 fathom = 1.83 metres) but were increased by Hancock to 15 fathoms after 1870 and later to intervals of 20 fathoms (36.6 metres) below the 185 fathom level. Hence the lode was explored and ore reserves proven by development of levels and connecting shafts or *winzes*.

In removing ore, miners worked upward from the upper part or *back* of one level towards the *bottom* of another. The resulting excavation or *stope* was therefore arranged so that broken ore fell to the level below and was trammed to a hauling shaft. This method of mining was known as *overhand stoping*. As stoping progressed, timbers were hitched into the sides of the stope, forming a platform or *stull* which gave a protective cover to the level and a platform for landing ore, which was passed through chutes to the level below. Basic hand-picking of ore was carried out in the stopes.

A stope was worked by taking about one metre off the roof of the stope at one end, continuing to work towards the opposite end. Where the lode was wide and the ground weak, timber pillars known as *styes*, were erected to support the roof. As the roof was removed, the styes were increased in height and filled with crushed rock or *attle* which was conveyed by attle passes to the worked-out sections of the mine.

Gunpowder was used to break the rock and was placed in shot-holes drilled by hand, using a technique known as *hammer and tap* in which one man held a steel borer while two others alternatively hit it with sledge hammers. After 1880, gunpowder was replaced by dynamite and, later, small rock drills worked by compressed air supplied from the central power plant were introduced. When the mine closed, the underground workings extended for more than 70 kilometres.

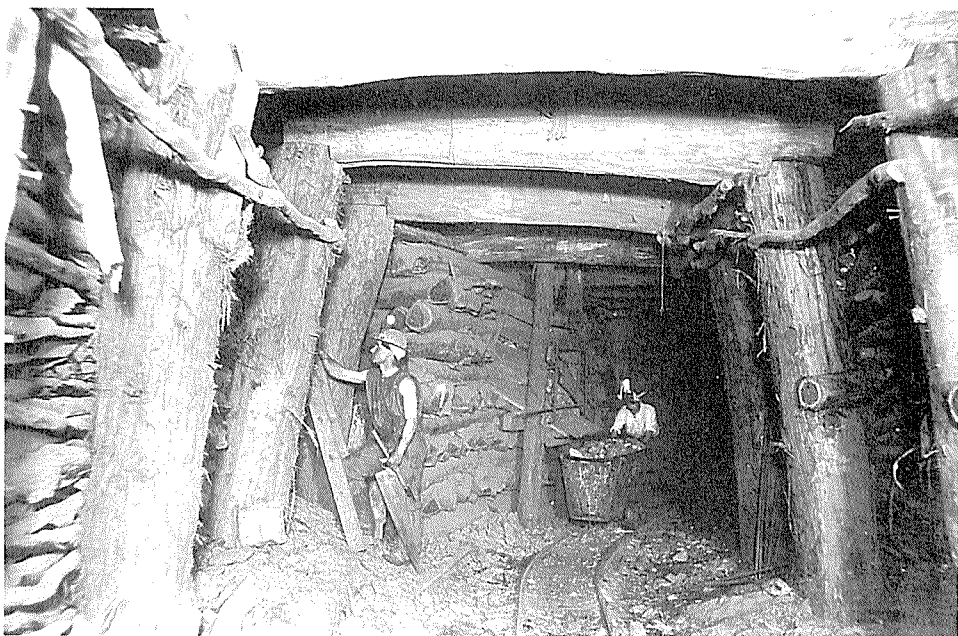


Diagrammatic cross sections showing the method of working a wide stope.



*Working a wide stope c. 1915.*

*Note men at left erecting a timber stye. Other styes can be seen in the background. These were filled with crushed rock from the surface.*



*Loading from an ore shoot in a well timbered level c. 1915.*

*Note the miner about to climb to the working stope.*



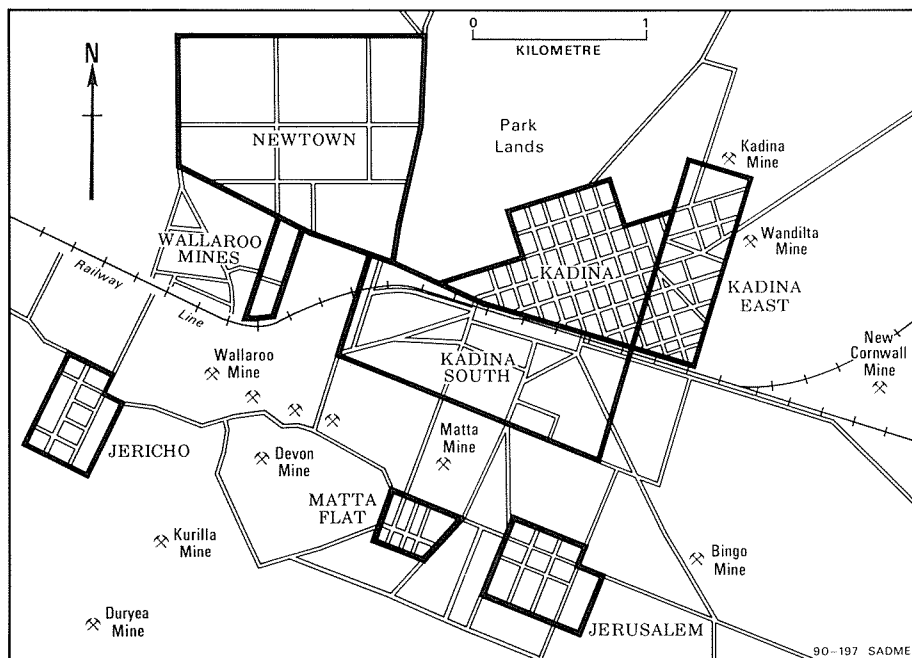
## KADINA TOWNSHIP

Copper ore was discovered in 1859 on land held under pastoral lease by W.W. Hughes and, to obtain the mineral rights, Hughes secured mineral leases along the line of the discoveries. Mining started in 1860 and early settlement was generally confined to the mine leases. Miners initially lived in pine huts and calico tents and the first mine buildings were constructed with shingle roofs.

The township of Kadina was laid out by the Government in late 1860 on a site dictated by the location of mines and mining leases. It was named Kadina, a derivation of the aboriginal *kaddy-yeena* meaning 'lizard plain', by Governor Sir Richard MacDonnell. Allotments were auctioned in March 1861 and, by 1862, significant building activity had begun. Miners' cottages, built of wattle and daub with shingle roofs, white-washed walls and dirt floors, and churches and businesses were soon erected. By early 1863, the government had built a courthouse, police station, post office and telegraph station.

In 1860, it took three to four days to reach Kadina by road from Adelaide, but a direct road link was established by 1865 and coaches completed the trip in 12 hours. Kadina was connected with the port of Wallaroo by horse-drawn tram in 1862 and to Adelaide by railway in 1878.

Land to the south, east and west of the original township was subdivided as mineral leases were relinquished. Kadina East was subdivided in 1907 and Kadina South about 1900 and incorporated into the town council in 1917. West of Kadina was the subdivision of Newtown.



## MINING SETTLEMENTS

Before Kadina was officially gazetted in 1861, miners and their families had already established themselves on mining leases in simple cottages on random blocks of land. Most remained in these cottages as they could not afford blocks in the surveyed township two kilometres away. As a result, traders and professionals tended to live in Kadina, while poorer working class and miners lived on Wallaroo Mines and Occupation Blocks.

### *Wallaroo Mines*

The settlement of **Wallaroo Mines**, established near the mine in 1860, was a collection of miners' cottages, sheds, mine shafts, enginehouses and other stone mine buildings. Gradually a few permanent public buildings were erected, notably a school, Methodist churches, police station, institute and post office. Many have since disappeared but a significant number of early miners' cottages survive in various stages of modification.

### *Occupation Blocks*

Because of the demand for housing close to the mines, blocks of Crown land were made available for lease on annual licence. These areas, known as **Occupation Blocks**, were surveyed in 1871 and were the first examples of their kind in South Australia. Four areas containing generally rectilinear subdivisions were surveyed in the vicinity of the Wallaroo Mine. These were:

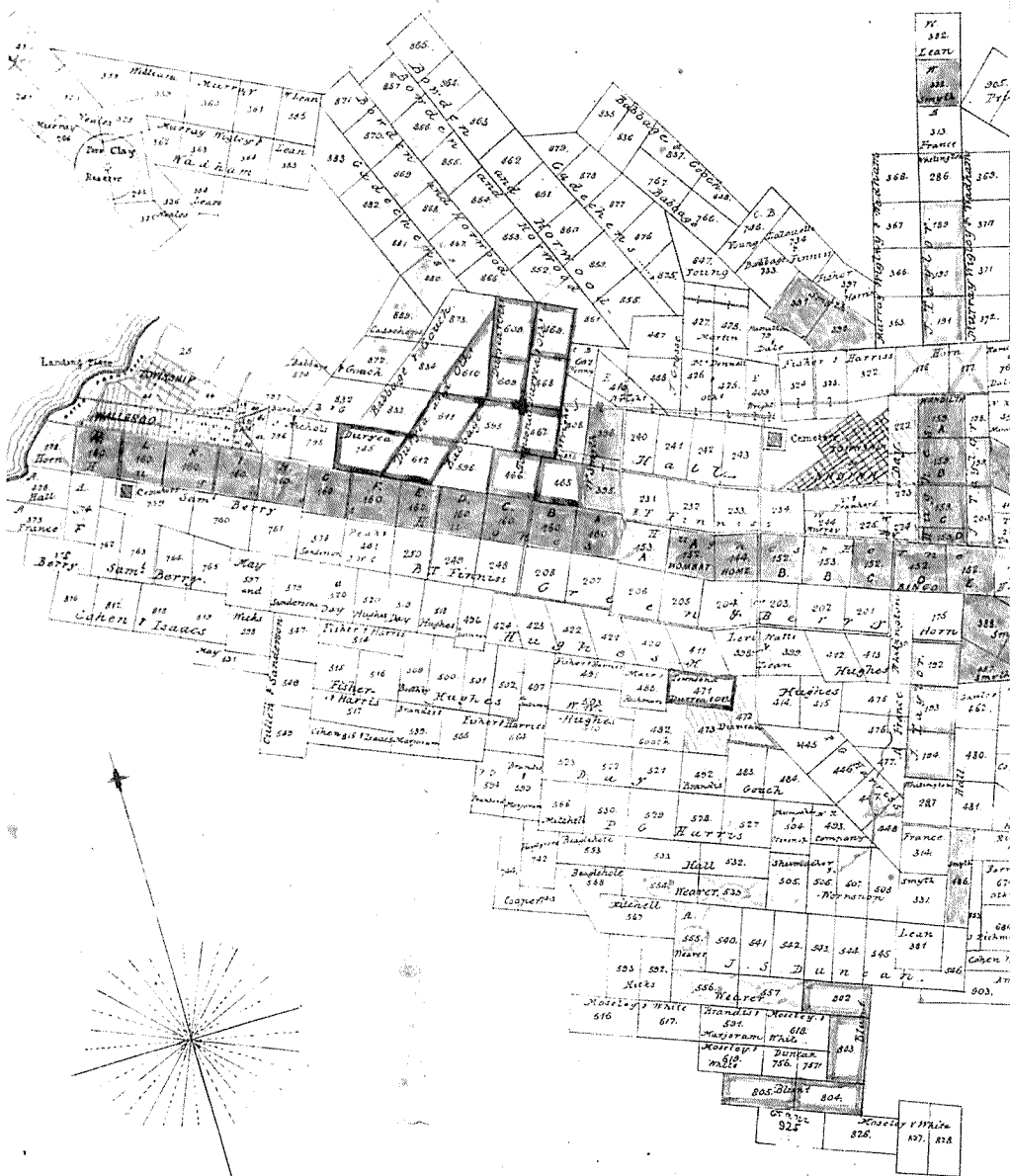
- **Matta Flat**
- **Jerusalem**
- **Jericho**
- **Wallaroo Mines**

These Occupation Blocks were generally ignored in favour of the village style of settlement on the mine leases.

Lack of fresh water was a problem in the early years. Water was carted from shallow wells near the coast and rainwater was collected in pools and shallow tanks. Distillation plants were also erected by the mining company and water sold to miners. These unsatisfactory conditions fostered typhoid epidemics, particularly among the children.

Miners built their cottages after shifts were finished, using stone and clay from the mine leases for the walls and any other available materials. Original two-roomed cottages were gradually extended over the life of the mine. After 1880, the company attempted to give some order to the mines settlements with rows of cottages erected along Musgrave Terrace and Stirling Terrace, which became the focal point of Wallaroo Mines. More substantial residences for mine officers were also erected on the leases.

The present landscape of Wallaroo Mines is very different from that of the mining period. It is difficult to realise now just how densely populated it was with clusters and rows of cottages mingled with public buildings, churches and schools surrounding mining plants and headframes. The most striking feature of the area, like Moonta Mines, were haphazard arrangement of cottages, roads etc in contrast to the rectilinear layout of Kadina.



*This plan shows the extent of Mineral Claims in the vicinity of the Wallaroo Mine in 1861. Claims 152A, 152B and 144 cover the Wallaroo Mine. Note the townships of Wallaroo and Kadina.*

# MINERAL CLAIMS

at

## WALLAROO

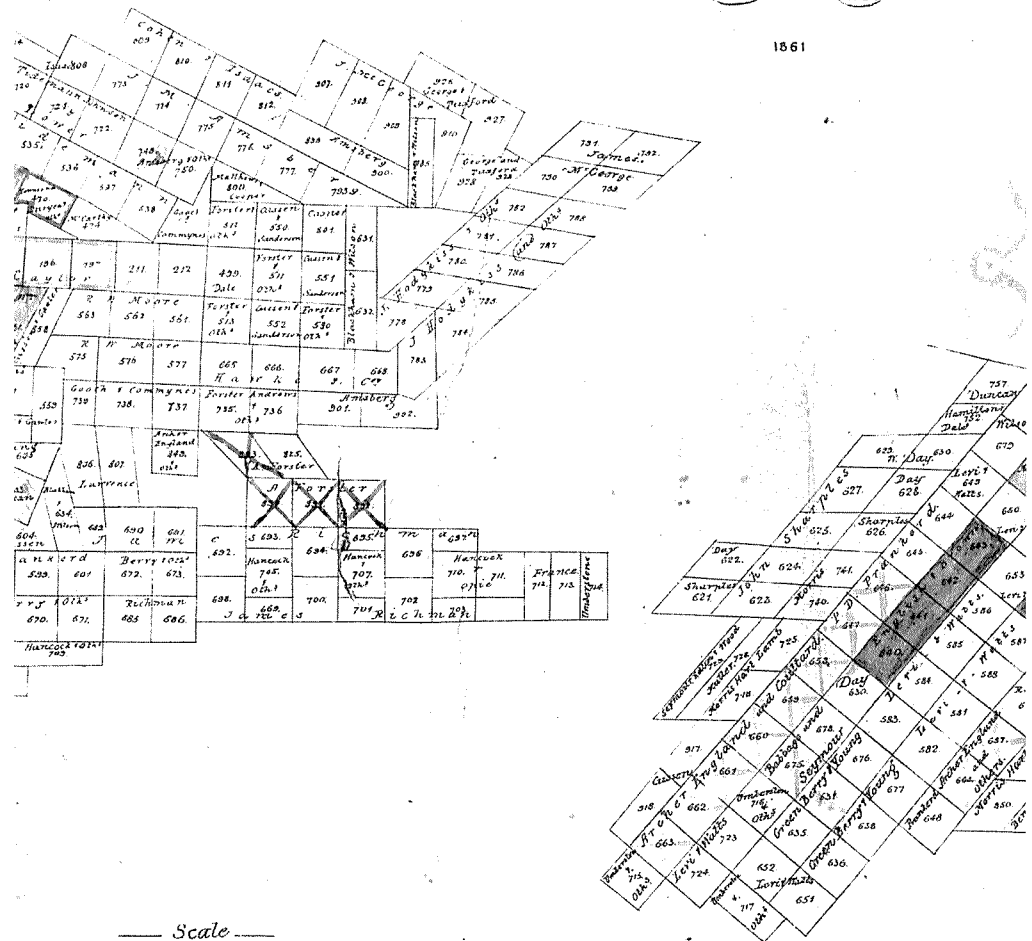
Compiled from Official Plans

IN THE OFFICE OF THE SURVEYOR GENERAL.

and Lithographed

T.W. and C. LYONS.

1861



# KADINA HERITAGE TRAIL

## *Introduction*

The Trail starts at the old Railway Station and is a leisurely drive of about 12 kilometres which can be completed in 1 to 2 hours. The Trail gives visitors a balanced impression of the history and development of Kadina and surrounding settlements. Simply follow the distinctive Trail signs (Tour Drive No. 40).

*Note that many of the buildings featured in this book are privately owned. Please respect the privacy of owners.*

### 1. RAILWAY STATION—1878

- This was opened on 9 October 1878 by the Governor, Sir William Jervois.
- A horse-drawn tramway was constructed between Kadina and Wallaroo in 1862 and was purchased by the Kadina Railway and Pier Company. Branches ran to the Wallaroo Mine and smelting works.
- By 1865, 25 horses were used on the tramway and 30 men employed by the company. Ore trucks ran by gravity over the last few kilometres to Wallaroo.
- The system was acquired by the Government in 1877 and the 1.07 metre gauge locomotive line reached Kadina in 1878.

*After leaving the Railway Station proceed west along the main road. On your right is:*

### 2. MONEY MUSEUM—1874

- This was erected in 1874 for the Bank of South Australia at a cost of £1249.
- It replaced a small structure alongside which had been erected in 1861.
- In 1891, the bank was purchased by the Union Bank of Australia, which amalgamated with the Bank of Australasia in 1951 to become the ANZ Bank.
- It closed as a bank in 1987 and re-opened in 1988 as Australia's first privately-owned banking and currency museum.

*On the right across the vacant block is:*

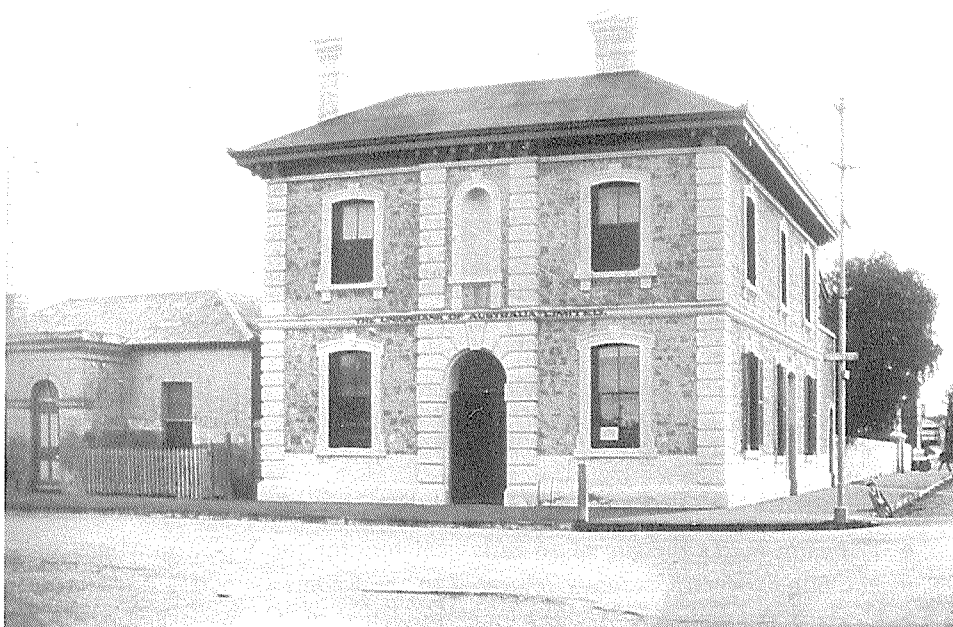
### 3. CHURCH OF CHRIST—1920

- The first Church of Christ services were held in the Rechabite Hall (now the Senior Citizens Hall—see walking trail) in 1900.
- The present church was erected in 1920.
- The hall at the rear was built with stone from an old flour mill chimney opposite the church.





*Kadina Railway Station c. 1900.*



*Union Bank (now Money Museum) c. 1940.  
At left is the original structure erected as the Bank of South Australia  
in 1861.*

Turn left into **RUSSELL STREET** and then second right into **LIPSON AVENUE**, named after H. Lipson Hancock, manager of the Wallaroo Mine from 1898 until 1922. Note on your left:

#### 4. **LIPSON AVENUE RESIDENCES—c.1900**

- This row of fine residences was erected early this century when the area was subdivided. The fifth house along has a noteworthy castellation.
- Note the original letter box on the corner near the first house.



*Lipson Avenue residences.*

Continue down **LIPSON AVENUE** until you reach **DUNCAN ROAD**, named after John Duncan, a director of the Wallaroo Mining Company. On your left is:

#### 5. **PIONEER CEMETERY—c.1860**

- The cairn marks the site of an early cemetery for the Wallaroo Mines area.
- The burials were apparently relocated to the Kadina Cemetery (locality 37).
- Next to the cemetery is the former residence of Thomas Tamblyn, mine captain until his retirement in 1921, after 50 years service. The house was erected in 1916.

*Opposite the cemetery is:*

## 6. Site of WALLAROO MINES METHODIST CHURCH—1867

- The first church services at Wallaroo Mines were conducted by the Primitive Methodists in February 1861.
- The first Primitive Methodist chapel was erected near the mine in 1861.
- The Wesleyan branch started in 1861 and erected a church on this site in 1867, which became the Wallaroo Mines Methodist church in 1900.
- The church was demolished about 1980.
- Behind the site is the original parsonage.

*Continue until you reach STIRLING TERRACE, named after Hon. Edward Stirling, first chairman of the Wallaroo Mining Company. To your left is:*

## 7. WALLAROO MINE HISTORIC SITE—1860

- Copper ore was discovered at Wallaroo in 1859 by a shepherd, James Boor.
- The Wallaroo Mine was worked from 1860 until 1923 as an underground mine to a depth of 900 metres.
- At its peak in the 1870s, the mine employed up to 1000 men and boys and, by 1876, five large Cornish beam pumping engines had been erected.
- The Wallaroo and Moonta companies amalgamated in 1890 and the Wallaroo Mine underwent a modernisation program after a fire in Taylors Shaft in 1904.
- Between 1860 and 1923 ore to the value of £9.7 million was produced.
- A self-guided walking trail with interpretive signs has been established for public inspection.
- The most significant remaining building is Harveys Enginehouse, erected in 1876, which housed a 60-inch diameter beam engine.

*The house on the corner of STIRLING TERRACE and NEWLAND ROAD is:*

## 8. Former POLICE RESIDENCE—c.1900

- This was erected as the residence for the Wallaroo Mine policeman about 1900.
- A lock-up was erected at the rear to house prisoners awaiting transport to Kadina and can still be seen.
- A police station and courthouse were erected in Victoria Square, Kadina in 1863.

*Turn right into STIRLING TERRACE which was the hub of the WALLAROO MINES settlement:*

## 9. WALLAROO MINES INSTITUTE—1902

- This stone-fronted building was erected in 1902 and was used by the Wallaroo Mines community as an Institute for many years.
- It became the St Pirans Methodist Church after demolition of the Wallaroo Mines Methodist Church in 1980.
- A Mechanics Institute was established in 1862 and land was donated by the mining company in 1863 for a library.



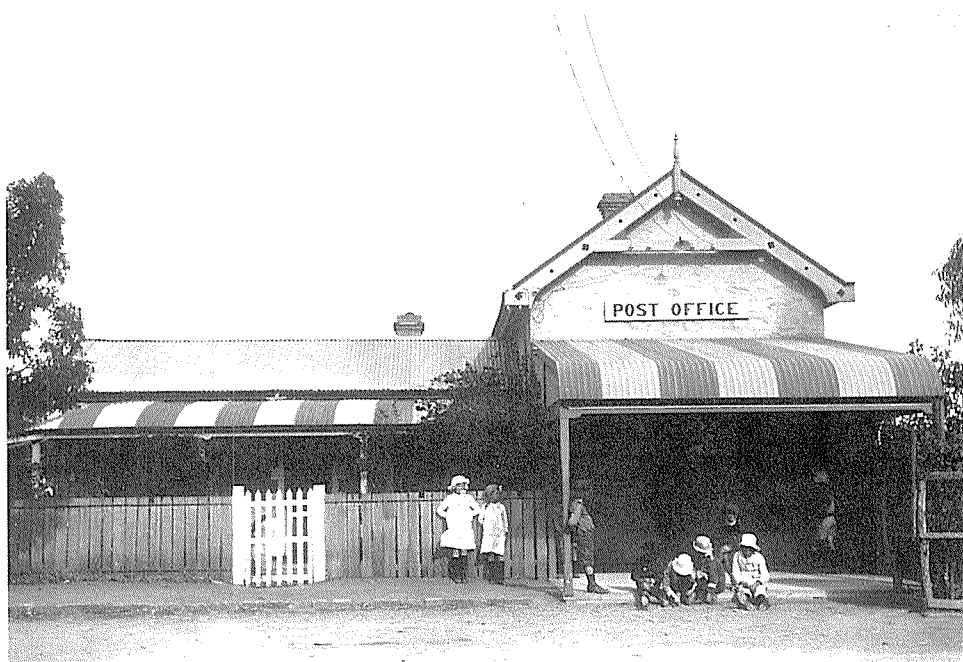
*Wallaroo Mines Institute.*

## 10. STIRLING TERRACE RESIDENCES—c.1900

- The two largest residences were originally a doctor's home and a post office and served the Wallaroo Mines community.
- The Wallaroo Mines Post Office was opened in 1902.



*View north from the Wallaroo Mine offices down Stirling Terrace c. 1910.*



*Wallaroo Mines post office in Stirling Terrace c. 1910.*



*At the end of STIRLING TERRACE, turn left and proceed along part of the original mines railway until you rejoin NEWLAND ROAD, noting three residences on the left:*

#### 11. MINE RESIDENCES—c.1900

- These fine stone residences were erected about 1900 to house salaried staff.
- The most distant of these was a doctor's home. Note the decorated surround to the front window.

*Further on, opposite the railway crossing and on the left hand side in the distance is Harveys Enginehouse. Immediately adjacent to the road is:*

#### 12. WATER TANK—c.1870

- Before reticulation in 1890, this underground concrete-lined tank with internal buttresses provided water for Wallaroo Mines residents.
- Initially, water supplies relied on rain water and distillation plants at the mine enginehouses.
- Six larger tanks were erected within the mine area by the government in the 1870s and the water sold at one penny per bucket.



*Harveys Enginehouse, Wallaroo Mine c. 1890.*

*Turn right and proceed into ANTHONY TERRACE, noting on the opposite side of the railway line:*

### 13. MUSGRAVE TERRACE COTTAGES—c.1880

- The rows of miners' cottages along the railway line were part of the Wallaroo Mines settlement.
- Several hundred cottages were built by the Wallaroo Mining Company on their lease for miners brought from Cornwall up to the early 1880s.
- They were built in rows in an attempt by the company to gain some order in the settlement on their lease. Cottages built by miners were scattered over the lease. Good examples can be seen north of Musgrave Terrace.
- Most of the miner's cottages are constructed of rubble with brick quoins and chimneys and gabled galvanised roofs. Most have modern additions.



*Typical miners cottage, Musgrave Terrace.*

*Turn left into MORPHETT TERRACE and continue until you reach the next intersection. On your right is the early mining settlement of **JERICHO**. Turn left into DAVIDSON ROAD, named after a secretary of the mining company, and on your left in the open paddock is:*

#### 14. EXPLOSIVES MAGAZINE—c.1865

- The concrete reinforced structure with domed roof and buttresses was an explosives magazine.
- Two explosives magazines and detonator magazine were erected in the vicinity. The ruins of the other two can be seen nearby in the paddock.
- Explosives were brought to the mine in padded rail trucks on a spur line from the main railway.
- Blasting powder was initially used in hand-drilled holes. By 1890, these were replaced by dynamite and rock drills.
- The remaining magazine was used as a residence for some years after the closure of the mine.



*Powder magazine.  
At right is Harveys Enginehouse.*

*Continue along DAVIDSON ROAD until you reach a group of three residences, which were:*

#### 15. MINE CAPTAINS' RESIDENCES—c.1900

- These residences were erected by the mining company for various surface and underground mining captains.
- They are clearly more substantial and decorative than cottages built by the company for miners.

*Just past the residence in the paddock on the left is:*

## 16. Ruins of MANAGER'S RESIDENCE AND OFFICE—c.1865

- This was probably built about 1865 to house the chief captain of the Wallaroo Mine.
- The early captains were Ender Warmington (1860-1864) Edward Dunstan (1865-1869) and Samuel Higgs (1870-1877). Warmington was brought from the Burra Mine, while Dunstan and Higgs came direct from Cornwall.
- Captain H.R. Hancock was appointed Superintendent of the Wallaroo Mine as well as Moonta in 1877, but continued to reside in the manager's house at Moonta.

*On the right, marked by the hill of black tailings (skimps), is:*

## 17. DEVON MINE SITE—1870

- This area was worked between 1870 and 1878 as the Devon Consols Mine, employing up to 80 men under Captain Robert Northey.
- The mine was acquired by the Wallaroo Mining Company in the 1880s and low grade ore continued to be produced until the early 1900s.
- The treatment plant was redeveloped in 1904 as the Devon Treatment Plant to process second-grade ore from the sorting plant at the Wallaroo Mine. A conveyor belt transferred ore to the plant, which closed in 1923.
- Tailings from the concentration process were retreated in the 1970s.



*Devon Plant looking north across Davidson Road to Youngs Shaft c. 1915. The house at left still stands (locality 15).*

## KADINA HERITAGE TRAIL

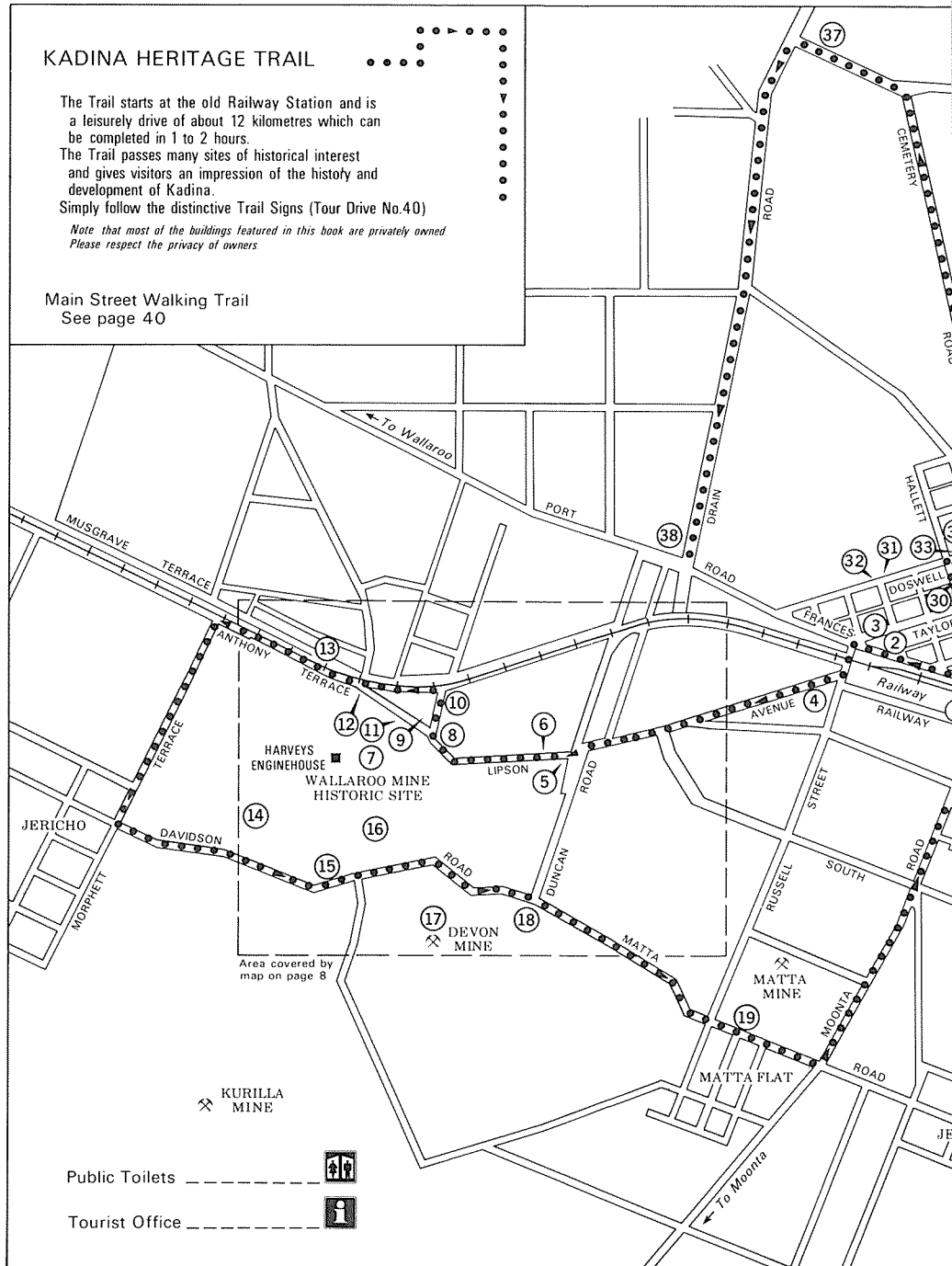
The Trail starts at the old Railway Station and is a leisurely drive of about 12 kilometres which can be completed in 1 to 2 hours.

The Trail passes many sites of historical interest and gives visitors an impression of the history and development of Kadina.

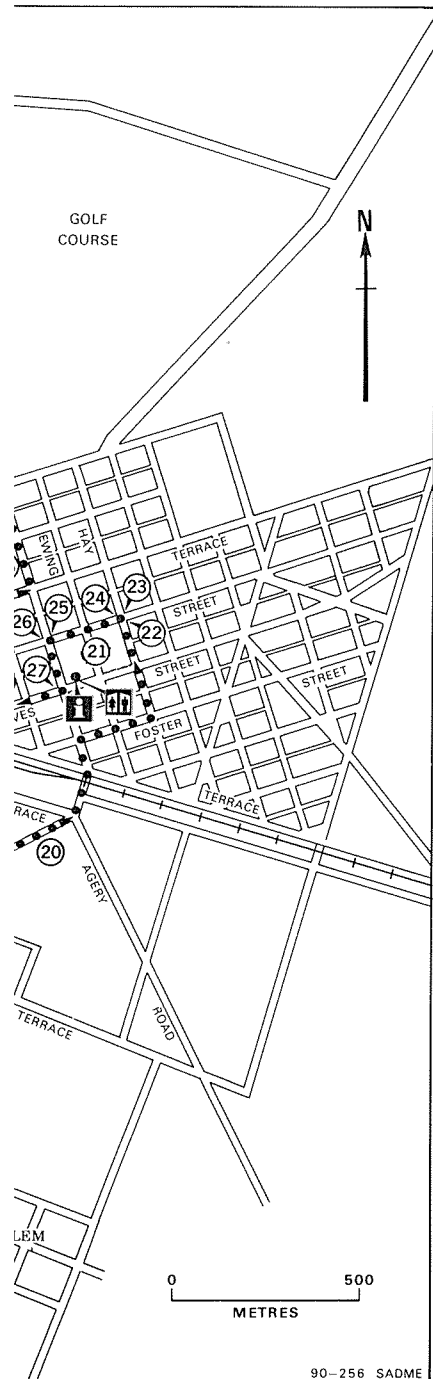
Simply follow the distinctive Trail Signs (Tour Drive No.40)

*Note that most of the buildings featured in this book are privately owned  
Please respect the privacy of owners*

Main Street Walking Trail  
See page 40



# KADINA HERITAGE TRAIL

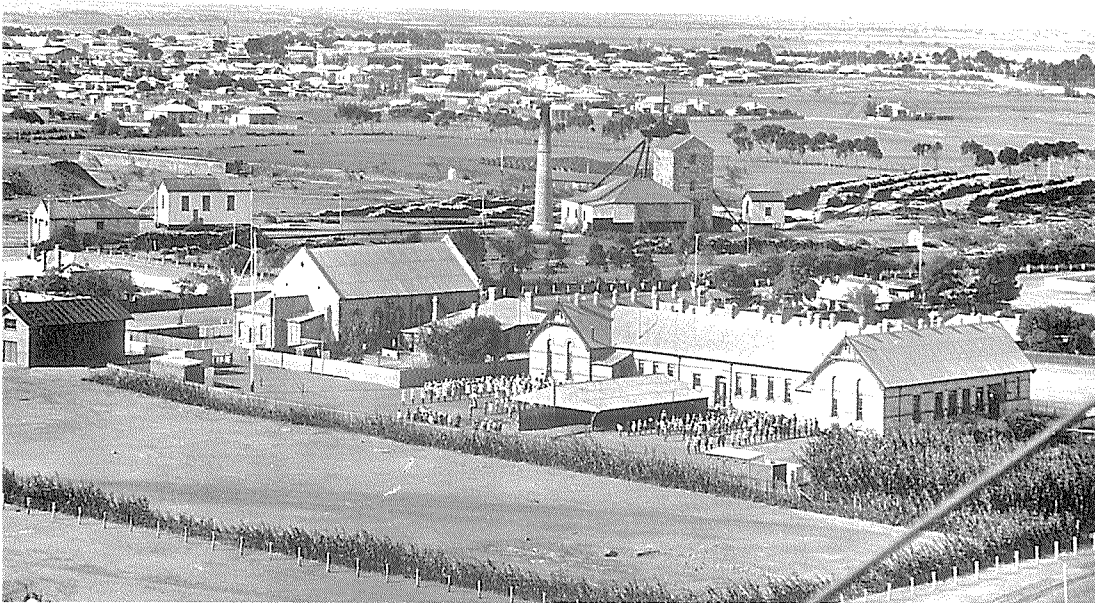


1. Railway Station—1878
2. Money Museum—1874
3. Church of Christ—1920
4. Lipson Avenue Residences—c.1900
5. Pioneer Cemetery—c.1860
6. Site of Wallaroo Mines  
Methodist Church—1867
7. Wallaroo Mine Historic Site—1860
8. Former Police Residence—c.1900
9. Wallaroo Mines Institute—1902
10. Stirling Terrace Residences—c.1900
11. Mine Residences—c.1900
12. Water Tank—c.1870
13. Musgrave Terrace Cottages—c.1880
14. Explosives Magazine—c.1865
15. Mine Captains' Residences—c.1900
16. Ruins of Manager's Residence—c.1865
17. Devon Mine Site—1870
18. Site of Wallaroo Mine School—1878
19. Matta House—1863
20. Kadina Showground—1882
21. Victoria Square—1861
22. Anglican Church—1911
23. Masonic Hall—1883
24. Uniting Church—1962
25. Town Hall—1880
26. State Bank—1908
27. Royal Exchange Hotel—1874
28. Truscott House—1922
29. Kadina Hotel—1904
30. Sacred Heart Church—1866
31. Kadina Primary School—1879
32. Kadina Memorial High School—1923
33. Sacred Heart School—1890
34. Former Druids Hall—c.1890
35. Kadina Catholic Church—1936
36. Miner's Cottage—c.1865
37. Kadina Cemetery—c.1865
38. Salvation Army Hall—1912

*Proceed to the intersection with DUNCAN ROAD and on the right is:*

#### 18. Site of WALLAROO MINES SCHOOL—1878

- A school was erected on this site in 1878 to serve the Wallaroo Mines settlement. It closed about 1967 and was demolished in 1977. A plaque now marks the site.
- Next to the school was the Wallaroo Mines Primitive Methodist Church, erected in 1863 and demolished in 1927.
- A concentration plant was established on the site in 1988 by Moonta Mining NL to treat ore from the Poona Mine, 5 kilometres north of Moonta.
- The plant consists of a crusher and flotation cells and produces a copper-gold concentrate.



*Looking northeast from Devon tailings heap c. 1915.  
In the foreground is the Wallaroo Mines School with the Primitive  
Methodist Church adjacent. Behind them across Matta Road is Elders  
Enginehouse with Kadina township in the distance.*

*Continue into MATTA ROAD until you reach:*

## 19. MATTA HOUSE—1863

- Matta House was built in 1863 for the manager of the Matta Mine, E.A. Horn.
- The house is constructed of rubble. The shingle roof was later covered by galvanised iron, but was replaced by red cedar shingles in 1975.
- The mine is located to the north of the house and was worked from 1860 until 1870.
- A 60-inch Cornish beam pumping engine was erected in 1864 at the main shaft, the foundations of which can still be seen.
- The site is now a museum of the Kadina National Trust with displays of early agricultural machinery, printing equipment, Matta House and the Wallaroo Mine.



*Matta House, now a museum of the Kadina National Trust.*

*Leaving the museum, proceed towards the main road noting the mining settlement of **MATTA FLAT** on your right. Turn left into the main **MOONTA ROAD**. On your right is the mining settlement of **JERUSALEM**. Continue towards Kadina, passing on your right:*



## 20. KADINA SHOWGROUND—1882

- The Kadina Agricultural, Horticultural and Floral Society was formed in 1871 with Captain Samuel Higgs as president.
- The first showground was somewhere between Kadina and Wallaroo.
- The present showground was secured in 1882 and the exhibition building was erected in 1886.



*Exhibition building, Kadina Showgrounds.*

*Continue across the railway line and the main intersection into DIGBY STREET. Turn right into FORSTER STREET and left into HAY STREET and proceed until you reach:*

## 21. VICTORIA SQUARE—1861

This park was named after Queen Victoria and includes

- Rotunda—1897
- Bews Fountain—1892
- War Memorial—1922

*On the corner of TAYLOR and HAY STREETS are:*

## 22. ANGLICAN CHURCH—1911

- The first Anglican services were held in the first Wesleyan Chapel in 1861.
- The first Anglican Church was erected on this site in 1862 and was demolished in 1910.
- The present church, rectory and parish hall were completed in 1911, at a cost of £2000.

### 23. MASONIC HALL—1883

- The Masonic Lodge was formed in Kadina in 1862 and held meetings at the White Lion Hotel.
- This hall was erected in 1883.



*Masonic Hall.*

### 24. UNITING CHURCH—1962

- A Wesleyan Methodist Church was erected in Kadina in 1861 (site now occupied by Telecom in Taylor Street) and a Primitive Methodist Church in 1866 (site now occupied by Dalgety Bennett Farmers in Victoria Square).
- In 1900, the various branches of Methodism united to form one Methodist Church but Kadina continued to have two congregations until 1962.
- The two congregations united in 1962 and a new church opened on this site.

*Turn left into TAYLOR STREET and on your right are:*

### 25. TOWN HALL—1880

- The Kadina Institute was established in rented premises in 1862.
- A new institute was erected on this site in 1880 and hall and second storey council chambers were added in 1883.
- In 1889, the building was transferred to the Corporation of Kadina.
- The clock and tower were added in 1903 as a gift from a former resident, D.R. Squibb.

## 26. STATE BANK—1908

Turn left into DIGBY STREET, keeping Victoria Square on your left, and then right into GRAVES STREET, which is *one way*. On the corner is:



*State Bank.*

## 27. ROYAL EXCHANGE HOTEL—1874

- This was established as the Exchange Hotel in 1860, but on the opposite corner.
- The present two-storey building was erected in 1874.
- The prefix *Royal* was added after the Duke of Clarence stayed there in 1880.

*Continue down GRAVES STREET through the main commercial area of Kadina and turn right into HALLETT STREET. The prominent buildings on the next corner are:*

## 28. TRUSCOTT HOUSE—1922

- This building was erected in 1922 as offices for the AMP Society.
- The site was formerly occupied by Truscott's grocery store.



*Royal Exchange Hotel.*



*Truscott House.*

## 29. KADINA HOTEL—1904

- When erected in 1904, this was known as the Central Hotel.
- It replaced the single storey Miners Arms, erected in 1862.
- It became the Kadina Hotel in the 1960s.

*Continue across the intersection, passing on your right:*



*Kadina Hotel.*



*Miners Arms (now Kadina Hotel) c. 1890.*

### 30. SACRED HEART CHURCH—1866

- Jesuit Fathers at Sevenhill were responsible for Catholic services in a small weatherboard church and school at Kadina until 1865.
- This stone church was erected in 1866 and was used until the erection of a new church in 1936.
- It now serves as a hall at the rear of the present church.



*Sacred Heart Church.*

*Continue to the intersection with DOSWELL TERRACE and a short distance to the left are:*

### 31. KADINA PRIMARY SCHOOL—1879

- This was erected in 1879 and consisted of four classrooms and an office.
- More rooms were added about 1910.
- Secondary education began at this site in 1907 but transferred to the larger Wallaroo Mines School in 1908.

### 32. KADINA MEMORIAL HIGH SCHOOL—1923

- Secondary education was conducted at the Wallaroo Mines School from 1908 until 1924.
- The present school was erected in 1923 as a memorial to those who served in World War I.

*Turn right into DOSWELL TERRACE and proceed past:*

### 33. SACRED HEART SCHOOL—1890

- The first Catholic school in Kadina was probably built on this site about 1865.
- The present building was erected in 1890. An adjacent convent was demolished in 1967.

### 34. Former DRUIDS HALL—c.1890

- This was originally erected about 1890 as the Seventh Day Adventist Church.
- It was later purchased by the Druids Lodge and is now occupied by the Left Hand Club.

### 35. KADINA CATHOLIC CHURCH—1936

- This church was erected in 1936 using stone from Elders Enginehouse at the Wallaroo Mine.



*Kadina Catholic Church.*

### 36. MINERS' COTTAGE—c.1865

- One of few remaining miners' cottages from the early years of the settlement of Kadina.

*Turn left into DIGBY STREET and proceed north for 1.5 kilometres, through the parklands containing the golf course on the right, until you reach the walled boundary of:*



### 37. KADINA CEMETERY—c.1865

- Records of burials start in 1867 but the cemetery was probably used as early as 1862.
- The Mortuary Building inside the gates was erected in 1876.



*Mortuary Building, Kadina Cemetery.*

*After leaving the cemetery, turn left into DRAIN ROAD named after the mines drain which runs underground along the eastern side of the road. This drain was excavated in 1865 to remove mine water from the low-lying area to the east of the Wallaroo Mine. This became necessary because of the epidemics caused by stagnant water. Continue to the end of DRAIN ROAD and on your right is:*

### 38. SALVATION ARMY HALL—1912

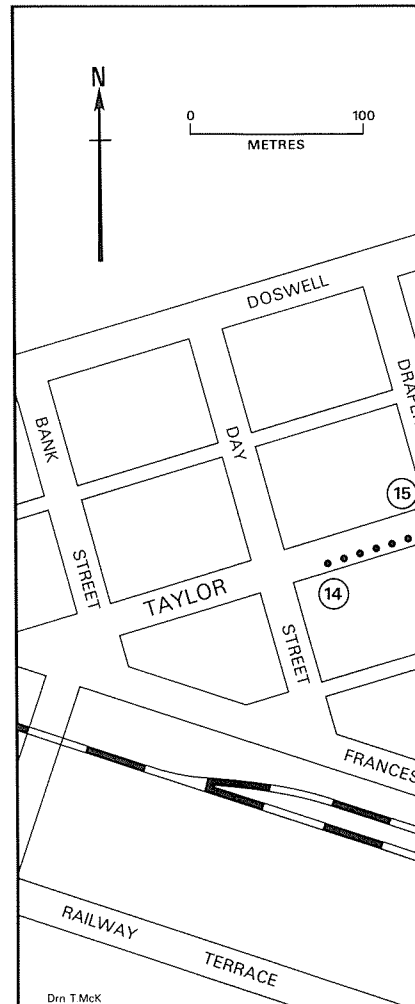
- The Salvation Army commenced in 1883 in the Kadina Hotel hall.
- The first Salvation Army barracks were erected on this site in that year and were demolished in 1928.
- The present hall was erected in 1912.

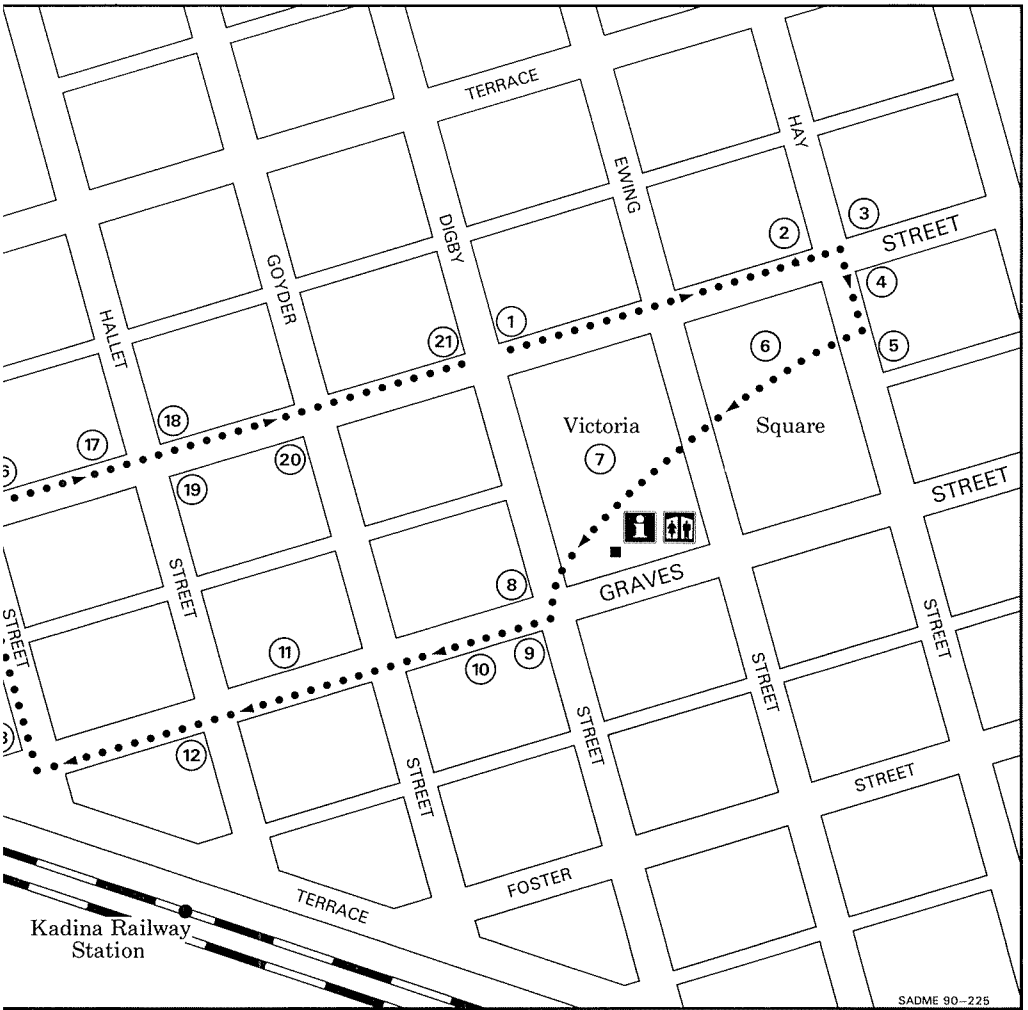
*This brings you to the end of the Trail. The road to the left returns you to the TOURIST OFFICE or, to the right, takes you to Wallaroo.*



# KADINA WALKING TRAIL

1. Town Hall—1880
2. Uniting Church—1962
3. Masonic Hall—1883
4. Anglican Church—1911
5. Former Private Hospital—c.1880
6. Bews Fountain—1892
7. Rotunda—1897
8. Royal Exchange Hotel—1874
9. Dunstone's Grain Store—1912
10. Ascot Building—1921
11. Mitchell's Building—1872
12. Russack's Building—c.1890
13. Money Museum—1874
14. Senior Citizens Hall—1892
15. Butcher Shop—c.1870
16. Wombat Hotel—1860
17. Y.P. Country Times—1888
18. Kadina Hotel—1904
19. Truscott Building—1922
20. Former Hairdressing Saloon—1906
21. State Bank—1908





# KADINA WALKING TRAIL

This walk covers the main commercial area of Kadina and starts and finishes at the Town Hall in Victoria Square.

1. TOWN HALL—1880
2. UNITING CHURCH—1962
3. MASONIC HALL—1883
4. ANGLICAN CHURCH—1911

} See Heritage Trail

5. Former PRIVATE HOSPITAL—c.1880

- This was erected about 1880 as a private hospital run by Sister Berry.
- It operated until the opening of the community hospital in the 1930s.

*Proceed across Victoria Square passing:*

6. BEWS FOUNTAIN—1892

- This was erected in 1892 in memory of David Bews M.P.
- Bews was responsible for the introduction of reticulated water to Kadina from the Beetaloo Reservoir in 1890.

7. ROTUNDA—1897

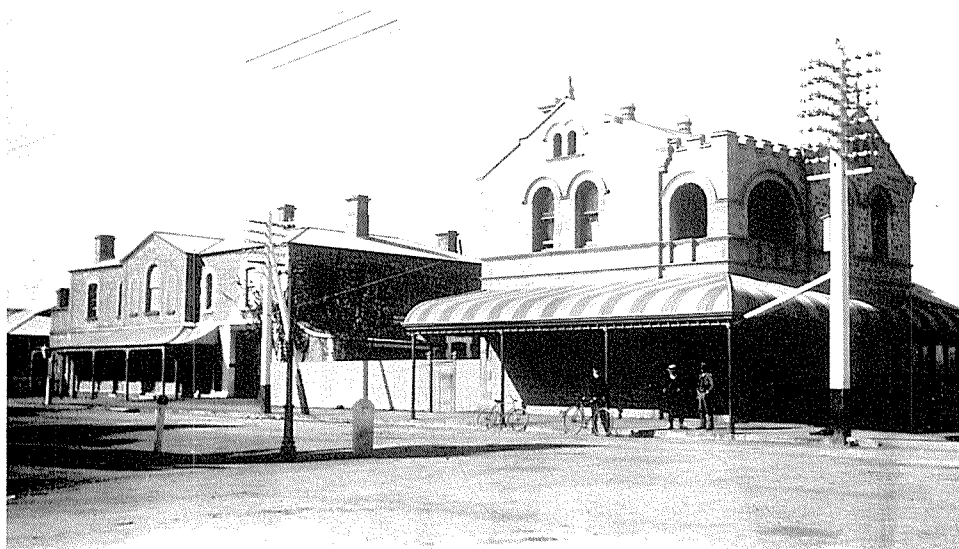
- This was erected to commemorate Queen Victoria's Jubilee in 1897 at a cost of £250.
- It was unveiled by Captain H.R. Hancock.



*Bews Fountain,  
Victoria Square.*



*View south down Digby Street from Town Hall c. 1910.  
At centre are the Royal Exchange Hotel and Primitive Methodist Church  
(now demolished).*



*Old post office c. 1910.  
This was erected in 1906 replacing an 1893 structure. At left is the  
1863 police station and courthouse which was demolished about 1960.*

*Continue across VICTORIA SQUARE and proceed westwards along GRAVES STREET passing:*

8. **ROYAL EXCHANGE HOTEL**—1874 [See Heritage Trail]
9. **DUNSTONE'S GRAIN STORE**—1912 (now Robertson's Store)
  - This was erected in 1912 as Dunstone's Grain Store and was used for some years by the Military Club.
10. **ASCOT BUILDING**—1921
  - Built in 1921 as the Ideal Theatre, it was remodelled and reopened in 1967 as the Ascot Theatre.
  - It was purchased by council in 1983 and converted into a public library and theatre.
11. **MITCHELL'S BUILDING**—1872 (now Kadina Fruit Mart)
  - The prominent two-storey building was built in 1872 as a drapery store.



*Russacks Building.*

**12. RUSSACK'S BUILDING—c.1890**

- Formerly occupied by Dobbie Bros drapery store.

**13. MONEY MUSEUM—1874 [See Heritage Trail]**

*Turn right into DRAPER STREET and proceed to TAYLOR STREET. A short distance to your left is:*

**14. SENIOR CITIZENS HALL—1892**

- This was formerly the Rechabite Hall erected in 1892.
- It was used by the Church of Christ from 1906 until 1920 and by the Methodist Church until 1968, when purchased by the Senior Citizens.

*Retrace your steps back along TAYLOR STREET and head towards the Town Hall, passing:*

**15. BUTCHER SHOP—c.1870**

- This was probably erected in Kadina's early years and has always been a butcher shop.

**16. WOMBAT HOTEL—1860**

- This was erected in 1860 as a boarding house.
- It was licensed as the Wombat Hotel in 1862, when it was reportedly Kadina's largest and finest building.

**17. Y.P. COUNTRY TIMES OFFICE—1888**

- This was erected in 1888 as the office of the *Kadina and Wallaroo Times*. This paper replaced the *Wallaroo Times and Mining Journal* which was published in Wallaroo from 1865 until 1888.
- Another paper in Kadina was the *Plains Dealer* which published from 1894 until 1926.
- The present name was adopted in 1968, after amalgamation with several other newspapers.

**18. KADINA HOTEL—1904**

**19. TRUSCOTT BUILDING—1922**

} See Heritage Trail

20. Former **HAIRDRESSING AND BILLIARD SALOON**—1906

- This was erected as a single-storey shaving saloon in 1906 by F. Hancock.
- The second storey was added in 1913 and used as a billiard room.



*Former hairdressing and billiard saloon.*

21. **STATE BANK**—1908

- Opened on 13 March 1908 by Mayor J.A. Southwood.



*View southwest along Taylor Street from Town Hall  
towards the Wallaroo Mine c. 1910.*



*Taylor Street, 1990.*



## A TRIP TO WALLAROO, 1865

From the *Adelaide Observer*, 19 August 1865

*Intending to visit the mines and Yorke's Peninsula, I took an early breakfast, obtaining a copy of the Register and a ticket at the railway station for Salisbury en route to Kadina. The first and best part of the journey was soon and pleasantly performed, and I left what I now call the luxurious second-class carriage to step into an American wagon which was to convey me and other passengers with "The Royal Mail" to our destination. The spirited proprietor of that and nearly every other country conveyance has in the building of his vehicles exhibited a great regard for economical and efficient construction. It is surprising that structures so light and apparently so frail can bear the straining and jolting they have to encounter. Of their safety there can be no doubt; they plough through mud, they dash over stones, they accommodate themselves to all sorts of angles on the surface, and although they sometimes crack and groan they seldom or ever break down.*

*There are pleasing evidences of progress at Two Wells, first noticed a few months ago, and understood to have arisen from the use of that line as the mail route to Kadina. A good store has been built, and there are a mill and several other edifices in course of erection. There is a great deal of new land being broken up—a work of great labour, as it requires 12 bullocks to cut through the roots of the tussac grass which is very prevalent in that part of the country. All the way on, to the crossing of the River Light, there are, at intervals, men busily employed in enclosing or cultivating new ground or land that had long lain fallow. The wheat-crop looks well in some places, but in others it appears to be suffering from an insufficient supply of moisture, and that unfavourable symptom increases as the traveller journeys northward. The mail cart started from Salisbury with two horses; at Virginia there was a change, four fresh horses being there attached to it, and they had plenty to do to drag the conveyance over the dangerous crossing of the Light. . . . . Beyond the crossing of the Light, Mr. Rounsevell has a station or stables, and there again the horses were changed. That team of four horses had a frightful stage before them. They had to go quite through the scrub, no matter how close, sultry, or dusty the weather—full 35 miles—to Port Wakefield.*



## Kadina

The oldest of the sister townships on Yorke's Peninsula is in many respects, to the eye of a visitor, a counterpart of Adelaide as it was some years ago. There is a street or two where creditably-built business premises stand in rank and file; but the private habitations are scattered far and wide over an area absurd in its extent. The Corporation, or District Council that is to be, will find it difficult to expend any amount of rates they may be able to raise with satisfaction to the ratepayers, who have such "long-drawn-out" lines of communication to be made passable in wet weather. The finest building in the township is the Local Court, Post-Office, Telegraph and Police Stations, distinct public departments, located in one large and handsome structure. There are also several houses of worship differing in style and finish according to the numbers, zeal, and wealth of their several congregations. The Church of England is a picturesque edifice, not finished, but apparently already "nodding to its fall". The material of which it is principally composed does not appear to be a durable stone, and the mortar used, if it was mortar, is rapidly decomposing and passing away. The Wesleyan Chapel is a large, handsome, and well-built structure. The Independent Chapel is not so large or so ambitious in design. The Bible Christian Chapel is a creditable structure; but the Roman Catholic Chapel is a small weatherboarded building. There are throughout the township a large number of well-supplied stores, and some of the shop-fronts are tastefully designed and "dressed", as the drapers have it, with an attractive display of all that is needful for masculine wants or feminine fancies. There are a few private residences which would be admired in any town; but the great bulk of the inhabitants are housed in weather-boarded cottages, or huts of the more primitive wattle and daub. The branch of the National Bank is a weather-boarded cottage; but the branch of the South Australian Banking Company has a more imposing place of business. There is a deep cutting running one side of the township, intended to drain the water from the mines, which being unfenced is extremely dangerous. I did not hear that any serious accident has happened there; but one luckless miner, who had inbibed more beer than was good for his brain, fell into the drain one night, and had to remain there until the next morning. The great, the crying want of Kadina is, however, the insufficiency and the uncertainty of the fresh water supply . . . .

Kadina township c. 1865.



## THE WALLAROO MINE

From the *Adelaide Observer*, 12 September 1868

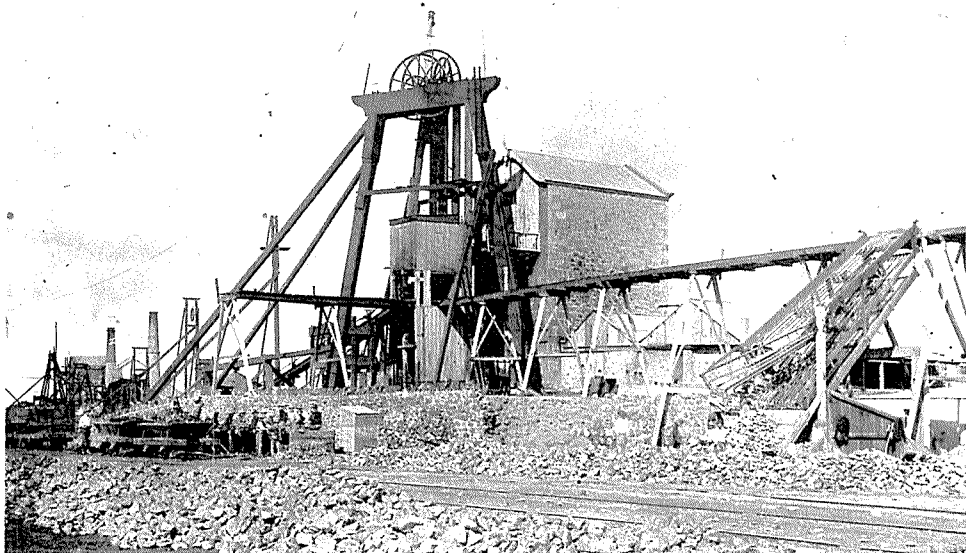
*On the whole a pleasant-looking, well-deserving township is Kadina—that is when it is visible at all. It is only incidental attraction here, however. The deus loci has to be sought for in that long line of smoking chimney-stacks to the southward. The nearest of them is about a mile from the township, and thence to the farthest must be about another mile. There are five principal stacks, and each has a splendid assortment of machinery collected round its base, including engines that can pump up hundreds of gallons of water per minute, or wind up a ton of ore at a time from a depth of seventy or eighty fathoms. The line of smoke indicates roughly the direction of the main lode, which runs east and west, with an inclination to the northward. The original claim extended, we believe, from the east side of Kadina, due westward to Wallaroo Bay, a distance of over six miles. A line of sections, coloured green, corresponding with this description, appears on the first survey map of the Peninsula. The main lode has been cut by eight different shafts, not including whip-shafts. The oldest of these—the Home, and the Wombat—are about the centre of the present workings. The Home, though one of the first sunk, is far from being the deepest. It is only down 40 fathoms, and the operations in it are confined to driving westward. On the east side, after a long interval of poor ground, which has not invited very close attention, comes Taylor's Shaft. This is down now to the 50-fathom level, sinking on the course of the lode. A very notable feature in the working of the Wallaroo Mine is the regularity of the drives, which are invariably at 10-fathom intervals. Thus, in Taylor's Shaft there are drives in both directions of the lode at the 10-fathom level, another set at the 20-fathom, a third at the 40-fathom, and a fourth at the 50-fathom. They are divided longitudinally by winzes or shafts from level to level. This renders the internal arrangement of the mine very simple, and facilitates a systematic administration. The tributes, for instance, are always well defined, extending generally from winze to winze. It also enables the progress of the workings to be accurately recorded. By means of his charts Captain Dunstan can tell what ore has been removed and what remains as easily as the Surveyor-General could report how much land has been sold in a given hundred.*

*To return to Taylor's Shaft. Ore was found here at 10-fathoms, and it has continued good all the way down to the 50-fathom. The eastward drives will by-and-by be met by a corresponding set coming westward from Elder's Shaft. This has been sunk to the same level as Taylor's and the ground exhibits a similar character. Their neighbour on the east is Stirling's which has been sunk on the eastern boundary of the Wallaroo claim adjoining the Matta. After getting down to the 28-fathom level the stoppage of the Matta so greatly increased the difficulty of keeping the shaft in fork that it had to be abandoned. A joint arrangement had been made by the two Companies for drainage, under which the Wallaroo people drove through into the Matta Shaft in order to have the benefit of their pumping machinery.*

*The first to the westward is now called the Office Shaft, from the fact of its standing exactly opposite the Company's Offices, which are on the Kadina side of the mine. This, though it may now be reckoned a main shaft, was originally only a whip-shaft. It is worked by a horse-whim, and is down to the 30-fathom level, with drives at the 10 and 20 fathoms. West of it are the two deepest shafts*

in the mine—Young's and Hughes'. The first is down to the 60-fathom, and in some levels has been driven right through to Hughes—the others being all in progress. Hughes'—the deepest shaft of all, and the focus of the mine—is down to the 83-fathom, with drives at every ten. Here a bunch of rich ore was met near the surface, and followed down to the 80-fathom. It has yielded not merely the largest quantity, but the best average percentage. On the west side of it are two rather poor shafts—Warmington's and Smith's. Both are down to 35 fathoms, and are being connected in the usual way by drives, though neither of them seems to be so vigorously prosecuted as their central neighbours. Warmington's is being sunk more for purposes of ventilation than for ore-raising. Smith's and a whim-shaft connected with it, are both worked by one-horse-whim. Thus, though the western extreme looks better than the eastern, it has also a comparatively undeveloped appearance. The greatest activity on the main lode is concentrated between Hughes' and Young's Shafts.

The Mechanical appliances of the Wallaroo Mine are not such as its extent and productiveness would lead a Cornishman to consider necessary. The secret of its early success lay as much perhaps in the cheapness with which the ores could be raised as in their richness. The largest pumping-engine that has been needed is the 60-inch cylinder at Taylor's Shaft. It can work efficiently down to fifty fathoms, while a few sections farther north at the New Cornwall an 80-inch cylinder is needed for a similar depth. All the new engines of the Peninsula are of the same class—low-pressure Cornish, and many of them of the same manufacture—Harvey's. This 60-inch cylinder at the Wallaroo Mine is a magnificent machine, and its accommodation is proportioned to its value. But in the superiority of their masonry the engine-houses and chimney-stacks at Wallaroo are not exceptional.



Taylors Enginehouse, Wallaroo Mine c. 1890.

*Such structures throughout the Peninsula are hardly behind the best English models, and far before the average. Full brother to Taylor's is the 48-inch cylinder at Hughes' Shaft, which has to raise the water more than eighty fathoms. Of a smaller, and, we believe, less modern type, is the Wombat 24-inch cylinder. It was erected at the Warrington Shaft, but being no longer required there, it has been connected with Hughes's Shaft, where it does the winding. The next is a 22-inch cylinder, erected about thirty fathoms to the east of Taylor's Shaft. Its multifarious duties include crushing and winding from three distinct shafts—Taylor's on the one side, Elder's on the other, and a whim shaft between. The last and smallest engine is a 12-inch cylinder at the Home Shaft, erected for pumping, but now used for winding. In that capacity it has three shafts to serve—the Office on the west side of it, Taylor's on the east, and the Home in the middle.*

*The engine-power of the mine comprises, therefore, two large pumping-engines, and three smaller ones for winding. The former, though nominally confined to Hughes's and Taylor's Shafts, drain, in fact, all the workings on the main lode, the water being carried from the minor shafts into the principal ones. With the exception of Stirling's, at the eastern extremity, all the older shafts are connected by a perfect system of drainage. It will be observed that in the winding there has also been a very economical organization of labour. Captain Dunstan's principle has been to provide the best machinery for every purpose, and instead of scattering it over the mine in small appliances to fix it at central points from which connections can be thrown out as required. Wooden beams working in trenches at your*



*Miners about to proceed underground at Wallaroo Mine c. 1910.*

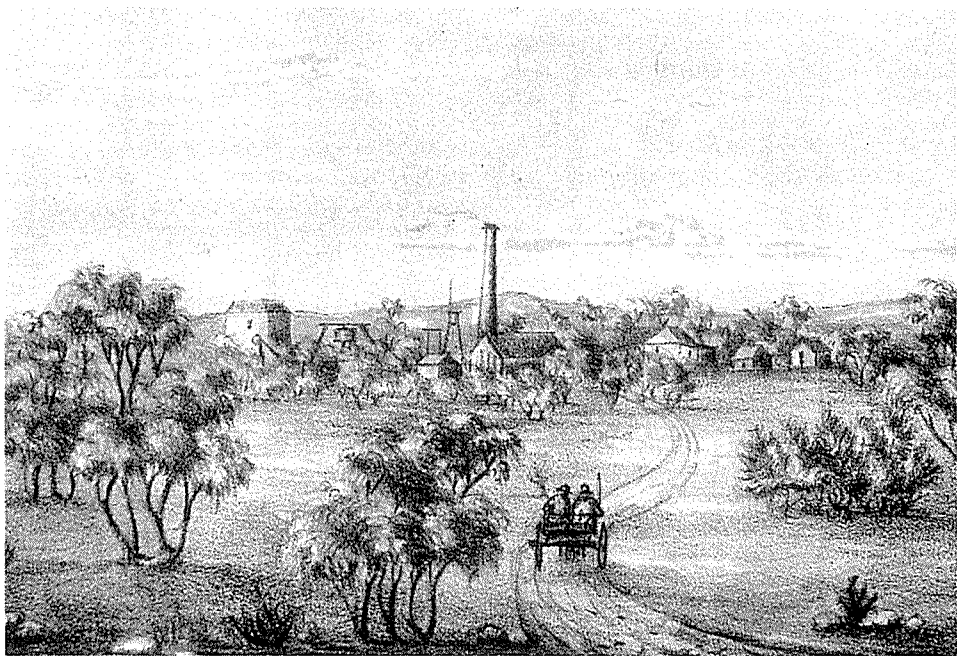
feet, and flat ropes rolling on pulleys overhead, produce a maze of apparent confusion, in which, however, there is the most perfect order. These are the ever-moving threads with which a web of very complex pattern is woven. They are the sinews through which the motive power of the establishment can be distributed along a line of operations quite a mile in extent. What cannot be connected with one or other of the engines has still to be done by horse power; hence the considerable number of whims to be seen at the smaller shafts, especially on the side lode.

It will be found by and by that there was a substantial reason for explaining at length the working of this mine before speaking of its results. The one throws a good deal of light upon the other. Looking to its ores alone the Wallaroo cannot be termed a rich mine. The average of the main lode has been from 8 to 12 per cent. The western shafts have hardly reached that much, but their shortcoming has been made up by Hughes' Shaft. This is flanked on the east side about the middle of the lode by a large stretch of poor country, which has been very slightly worked. The disposition of the ores is different from that of the Moonta. Down to the 10-fathom level they generally consist of green sulphurets. Between the 10 and 20 fathoms are varieties of black and grey oxides. At the latter level the standard ore of the mine—yellow sulphuret—begins to make its appearance. Carbonates and muriates also occur at the higher levels, and are very useful for smelting with the sulphurets. In the side lode the stratification is similar, but the quality is invariably superior. On the floors in that vicinity there were many heaps which would range from 18 to 40 per cent. The extent of variation is indicated by the range of prices paid for tribute work—one and ninepence to six or seven shillings in the pound.

Putting the side lode out of view as a recent and not yet complete development, it cannot be said that quality alone has made the Wallaroo a payable mine. Other circumstances have to be taken into account. Highest among these may rank quantity, for the productiveness of the mine has always been enormous. At the present time it varies from 1800 to 2000 tons per month. The second is economical transport. The mine is traversed by a branch of the Wallaroo Tramway, so that trucks can be brought close to every ore floor, every workshop, and every centre of traffic on the ground. Approaching from Kadina, you have on your left hand the old workings, and on your right the new ones, with a line of rails between. The trucks have only to be drawn a short distance along the tramway when they come to a decline, down which they are carried by their own weight into Wallaroo—either into the Smelting Works or on to the jetty for shipment. The cost of such carriage can be only a trifle, and nothing can exceed its regularity. A third source of economy on the mine is the organization of labour formerly alluded to. No matter whether brute, human, or mechanical, every particle of motive power has its proper place in Captain Dunstan's system. Horses and engines have their appointed work, and so has each of the six hundred hands on the establishment. There is payment by results everywhere that the principle can be applied at all. The shafts are sunk by tutwork, or at so much per fathom. The levels are driven by tribute, or at so much per pound in value of the ore extracted—the miners being allowed to dress themselves. The surface work is farmed out, in quarterly contracts, to gangs of four—in imitation of the "lumping" business, we presume. The quiet regularity and expedition with which hundreds of distinct operations were being performed simultaneously would have suited Carlyle's idea of rhythmic drill. Of Captain Dunstan, as a professional, we shall not presume to speak; but his faculty of organizing labour requires no professional eye to discover. It is patent from the one end of the mine to the other, and in all matters, from the highest to the lowest.

## OTHER MINES IN THE KADINA AREA

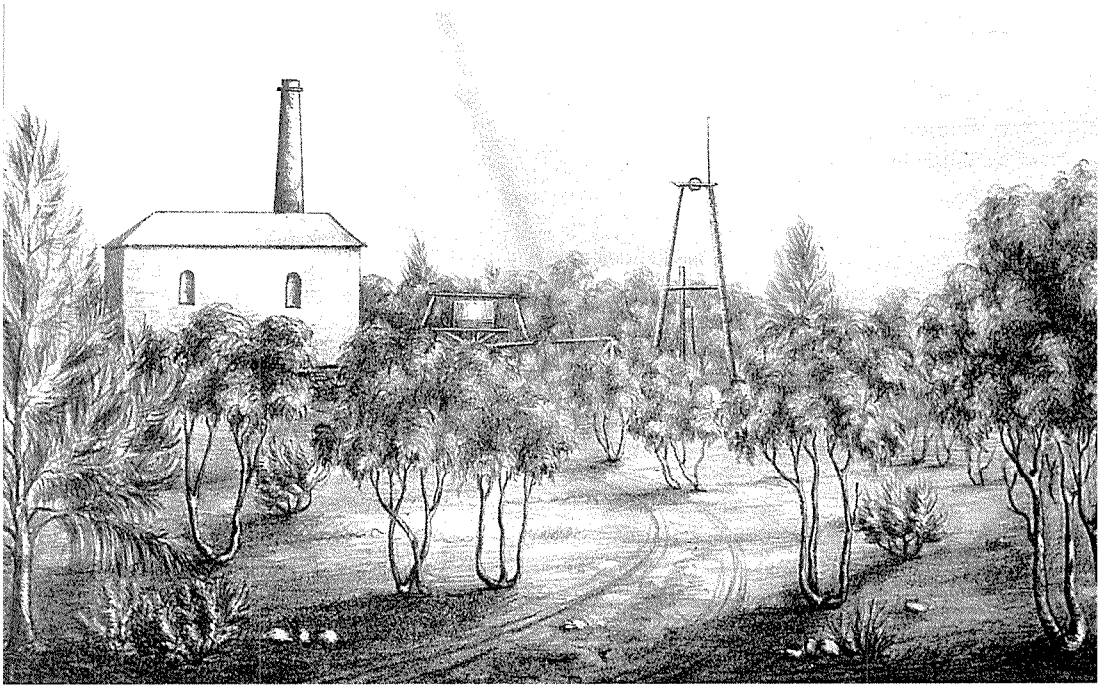
These sketches, drawn by W. Wyatt about 1863, show several smaller mines in the vicinity of Kadina. The locations are shown on page 14.



*New Cornwall Mine.*

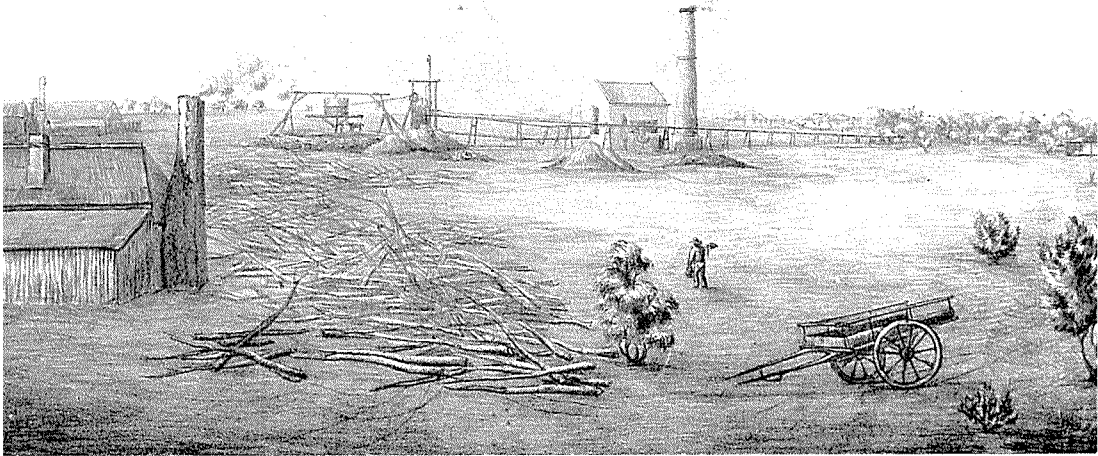
*This produced about 5000 tonnes of ore between 1861 and 1870. An 80-inch beam engine was erected in 1866 and re-erected at Elders Shaft, Wallaroo Mine in 1888.*





*Kurilla Mine and enginehouse.*

*This mine operated periodically from 1862 until 1877 when it was purchased by the Wallaroo Mining Co. and worked until 1906.*



*Matta Mine, showing a small enginehouse erected in 1862.*

*A 60-inch Cornish beam engine was erected in 1864. At extreme right is Matta House, the mine manager's residence. The mine produced a few thousand tonnes of ore up to 1870.*

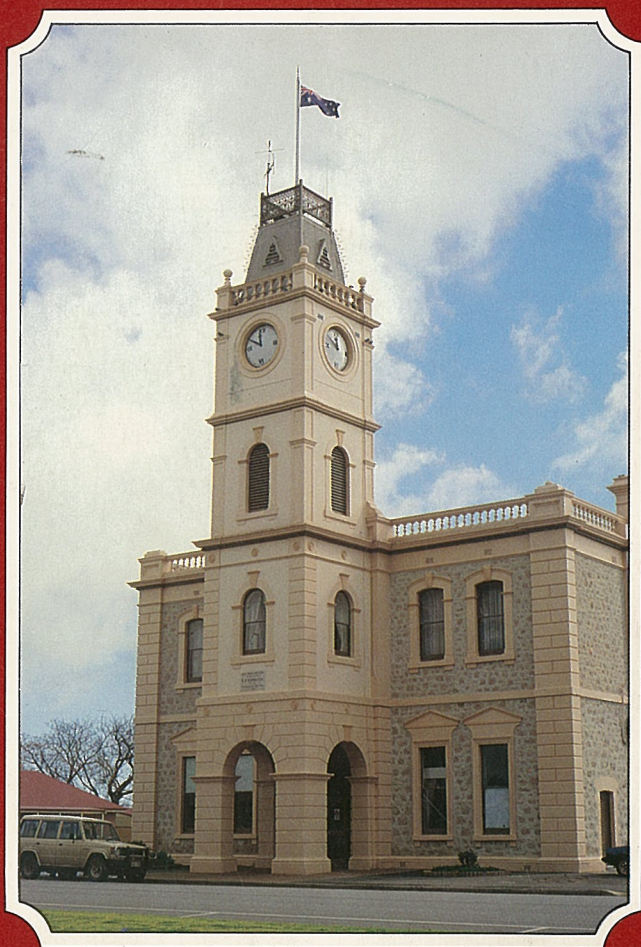


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## REFERENCES AND FURTHER READING

- Bailey, H.K., 1985. *The Wallaroo Mine. A Pictorial History*. Lutheran Press, Adelaide.
- Drew, G.J., 1989. *Discovering Historic Wallaroo*. Kitchener Press, Adelaide.
- Drexel, J.F., 1982. *Mining in South Australia. A Pictorial History*. S.A. Dept of Mines & Energy, Adelaide.
- Payton, P., 1978. *Pictorial History of Australia's Little Cornwall*. Rigby, Adelaide.
- Pryor, O., 1962. *Australia's Little Cornwall*. Rigby, Adelaide.



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