

**BETTER HERITAGE INFORMATION
SUMMARY OF STATE HERITAGE PLACE
Former Petersburg Cyanide Works**



Former Petersburg Cyanide Works SHP 14252, 2010.

Source: Swanbury Penglase Architects Pty Ltd

ENTRY IN THE REGISTER

Description or notes with respect to a place entered in the South Australian Heritage Register in accordance with either the *South Australian Heritage Act 1978* or the *Heritage Places Act 1993*.

The South Australian Heritage Council may correct errors or inaccuracies in the Entry in the Register in accordance with s21 of the *Heritage Places Act 1993*.

NAME: Former Petersburg Cyanide Works

PLACE NO.: 14252

ADDRESS: Lot 205 Tripney Avenue, Peterborough
CR 5753/227 A205 FP34204 Hundred of Yongala

CONFIRMED IN THE SOUTH AUSTRALIAN HERITAGE REGISTER:

12 October 1993

COMMENTARY ON THE LISTING

Additional information provided as a part of the content of the South Australian Heritage Register in accordance with s14(6) of the *Heritage Places Act 1993* 'hold information in association with the Register'.

KNOWN AS: Peterborough Government Battery; Peterborough Gold Battery

ADDRESS Ngadjuri Country

STATEMENT OF HERITAGE SIGNIFICANCE

Built predominantly to serve the Northeastern Goldfields and opened in 1895, the Former Petersburg Cyanide Works demonstrates the active role taken by the South Australian government to spur gold mining and prospecting during periods of economic depression from the mid-1890s onwards, by providing access to crushing, amalgamation, cyanidation and other facilities which individuals and small mining syndicates could not afford to establish themselves. The crushing and amalgamation facilities are intact and remained operational into the 1990s.

INDICATIVE CRITERIA (under section 16 of the *Heritage Places Act 1993*)

(a) it demonstrates important aspects of the evolution or pattern of the State's history

The Former Petersburg Cyanide Works demonstrates the active role taken by the South Australian government in encouraging gold mining and prospecting, in particular during periods of economic slump from the mid-1890s onwards.

By providing access to gold processing facilities at strategic locations proximate to goldfields throughout the state, the South Australian government spurred gold prospecting and mining, in particular by individuals or small syndicates lacking capital to invest in their own processing plants. Gold-bearing rock requires processing to yield pure gold, and by the end of the nineteenth century a variety of mechanical and chemical processes had been devised to accomplish this task, including crushing, amalgamation and cyanidation. Notably, the cyanidation process enabled the recovery of fine gold particles that could not be collected easily through other means. Gold processing facilities also provided a source of local employment during economic depressions.

Built in 1895 to serve the Northeastern Goldfields opened up by the Petersburg to Cockburn railway line (1887), the Former Petersburg Cyanide Works offered a ten-

head stamp battery, amalgamation tables and a cyanidation plant among other facilities, and was one of five similar government-owned facilities across South Australia. The crushing and amalgamation facilities remain highly intact and at the time of its listing in 1993, the facility was still operational.

Draft for Consultation

SITE PLAN

Former Petersburg Cyanide Works

PLACE NO.: 14252

Lot 205 Tripney Avenue, Peterborough



Aerial view of the Former Petersburg Cyanide Works. Note two iron tanks (moveable components) to west of Outline of Elements of Significance.*

Elements of heritage significance include:

- Stamp battery, amalgamation tables, engine, raised feed floor, and associated equipment (including moveable components),
- Battery shed,
- Office building,
- Engine shed,
- In-ground tanks and channels,
- Remnants of cyanidation plant and shed (footings), including 2 iron tanks (moveable components),
- Remnant tailings heap.

Elements not considered to contribute to significance of place include:

- Rainwater tanks,
- Vegetation, fencing and signage.

N ↑

LEGEND

- Parcel boundaries (Indicates extent of Listing)
- Outline of Elements of Significance for State Heritage Place

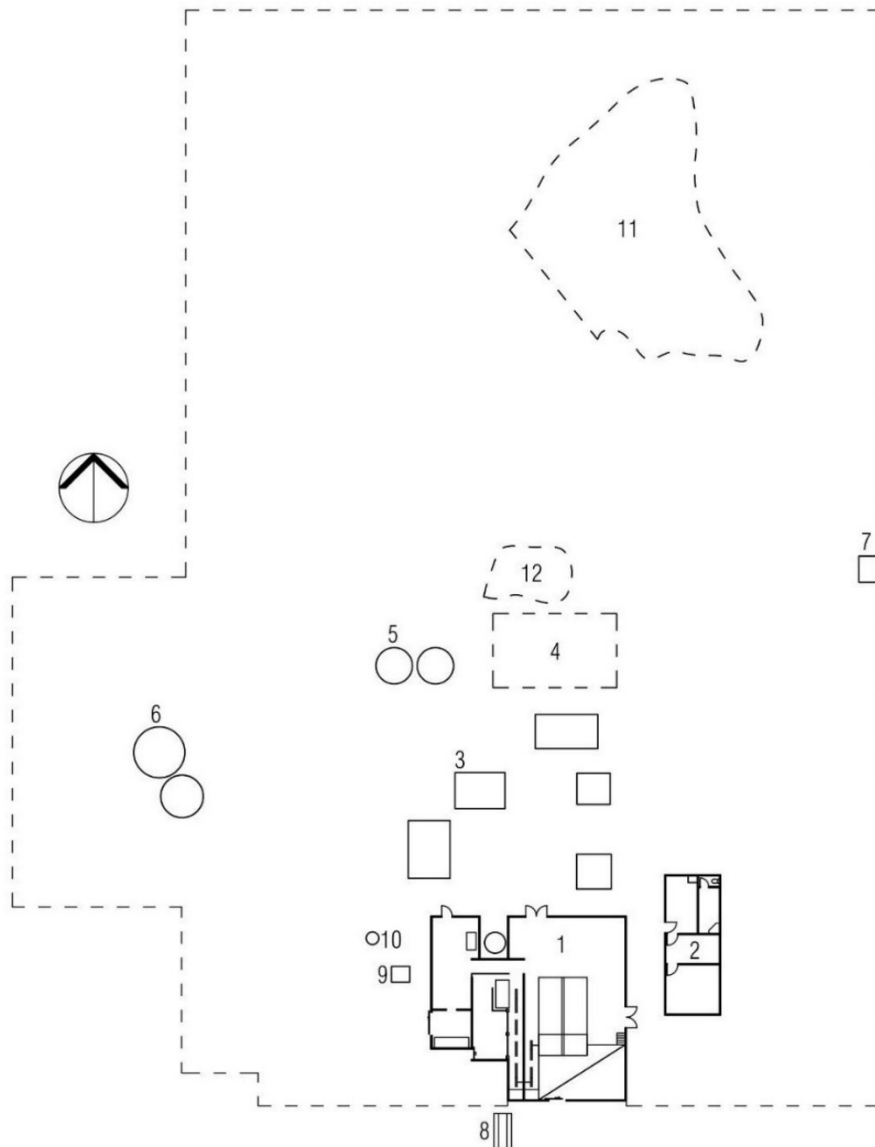
*Red outline is indicative of elements of significance, noting imperfect alignment of aerial imagery with parcel cadastre.

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PHYSICAL DESCRIPTION



Former Peterborough Cyanide Works, indicative plan.

Source: adapted from Swanbury Penglase, Peterborough Gold Battery & Office (SHP 14252) Conservation Management Plan p. 10

- | | |
|---|-------------------------------------|
| 1. Battery shed | 7. Engine shed (relocated) |
| 2. Office building | 8. Weighbridge pad |
| 3. In-ground tanks | 9. Concrete-infilled well |
| 4. Approximate location of former cyanide plant | 10. Elevated diesel tank |
| 5. Rainwater tanks (c.2000) | 11. Remnant tailings heap |
| 6. 2 iron tanks (moveable components) | 12. Return pump and pit (relocated) |

*Dotted outline indicates site fence; note parts of site fence are located inside cadastral boundaries.

The Former Petersburg Cyanide Works comprises a gable-roofed, timber-framed, weatherboard-clad office building; a gable-roofed, timber-framed, corrugated steel-clad battery shed, located west of the office building; stamping plant and associated machinery, housed in the battery shed, and remains of a cyanide plant.

Additional features of the site include:

- brick fireplace and chimney to office building,
- two lean-to additions to battery shed,
- stamping plant comprising 10-head stamp battery, amalgamation tables, engine, raised feed floor,
- associated machinery including retort table, and equipment (including moveable components), housed in the battery shed,
- engine shed,
- five rectangular, in-ground tanks with associated connecting channels, located immediately north of the battery building, constructed in rendered brick (2 western tanks) and reinforced concrete (3 eastern tanks),
- footings of cyanidation plant building,
- concrete weighbridge pad,
- round rivetted iron tanks associated with cyanidation plant (2 objects),
- elevated diesel tank,
- remnant tailings heap,
- two recent rainwater tanks (not significant fabric).

Elements of Significance:

Elements of heritage significance include:

- Stamp battery and amalgamation tables, engine, raised feed floor, and associated equipment (including moveable components),
- Battery shed,
- Office building,
- Engine shed,
- In-ground tanks and channels,
- Remnants of cyanidation plant and shed (footings), including 2 iron tanks (moveable components),
- Remnant tailings heap.

Elements not considered to contribute to significance of place include:

- Rainwater tanks,
- Vegetation, fencing and signage.

HISTORY OF THE PLACE

Gold mining and processing in South Australia to 1945

South Australia pioneered metal mining by Europeans on the Australian continent. Wheal Gawler (1841, Wheal Gawler Mine Historic Site SHP 11606) was Australia's first colonial metal mine and produced the continent's first mineral exports of silver and lead for British and European markets.¹ While copper mining played a larger role in the South Australian economy during the nineteenth century, gold mining also made an important contribution to the development of the colony and had a marked effect on short-term population movements within the state.²

Native gold typically occurs in veins or reefs embedded in rock and is often associated with quartz or pyrite. Over time gold, which is one of the least reactive chemical elements and does not oxidise nor dissolve in water, is displaced from its parent rock through erosion and is deposited in the alluvial beds of creeks, rivers or other watercourses, which may comprise silt, sand, clay or gravel or a mixture of these components.

During the nineteenth and early twentieth centuries, reef gold was mined by excavating costeans (trenches), shafts (vertical excavations), adits (horizontal or inclined tunnels opening to the surface) and drives (horizontal tunnels opening to a shaft) to facilitate access to subterranean reefs.³ Ore in reefs was typically excavated from below, leaving behind voids (stopes). Gold-bearing ore was processed by crushing or stamping the ore in a large plant called a battery, typically powered by a steam engine. Crushed ore was mixed with water to form a slurry and gold was then extracted from the slurry using a variety of mechanical or chemical processes. The latter included amalgamation and cyanidation. In amalgamation, gold was dissolved in mercury to form an alloy and the resulting amalgam smelted to drive off the mercury, leaving behind pure gold. In cyanidation, gold-bearing ore was dissolved in a solution of potassium, sodium, calcium or bromo-cyanide, then precipitated into pure gold.⁴ Cyanidation enabled the recovery of fine gold particles that could not be recovered effectively through other means.

Alluvial gold was typically recovered by playing water on alluvium, washing away the lighter sediment tailings and allowing the denser, heavier gold, which naturally sinks, to be more easily collected. This could be achieved by various methods, from manually swirling sediment in a metal pan, to complex systems of races and flumes feeding sluice boxes with running water,⁵ supplied by dams. Reef mining typically demanded greater investment in plant and equipment than alluvial mining.⁶ Waste rock (mullock) was left in heaps and eventually trenches, shafts and other excavations slumped through erosion, contributing to the characteristic appearance of an abandoned gold mining landscape.⁷

In South Australia, gold was first recognised by Europeans on 4 April 1846 at what became known as the Victoria Mine near Castambul in the Adelaide Hills, northeast of Adelaide. Afterwards, gold was reported at several other localities including South Rhine (near Cambrai, 1846), Kanmantoo (1847), Sixth Creek (1847), and Gumeracha (1849).⁸

Europeans found gold in Ballarat in 1851, leading to a mass exodus of working men from South Australia, creating a severe labor shortage and leading, in turn, to a serious downturn in the colonial economy. In response, on 18 December 1851, the South Australian government offered a conditional £1,000 reward for the reportee of the first payable goldfield in South Australia. During the following year, the *Bullion Act 1852* averted general bankruptcy of the colony by providing a South Australian market for diggers' gold exceeding that paid by Victorian bullion merchants. Between March 1852 and December 1853, the Act also offered monthly armed gold escorts, led by Police Commissioner Alexander Tolmer, to provide secure passage for diggers returning with gold into South Australia from the Victorian goldfields. These measures, as well as promulgating regulations governing the issuance of licences to search and dig for gold in South Australia, encouraged prospectors and miners to remain in the colony to search for gold, rather than travelling elsewhere.⁹

In 1852, William Chapman found gold at Donkey Gully,¹⁰ and shortly afterwards at Chapman's Gully near Echunga and led to the development of South Australia's first payable goldfield. Now known as the old Echunga goldfield, the area was worked extensively between 1852 and 1858, yielding an estimated £18,000 worth of gold.¹¹ Ten years later in July 1868, Thomas Plane and Henry Saunders found gold at Jupiter Creek, 3km southwest of Chapman's Gully, leading to further intensive mining (see Jupiter Creek Diggings below). The total yield from the greater Echunga goldfield, including Old Echunga and Jupiter Creek, is estimated to stand at 6,000kg of gold, making it South Australia's most productive.¹²

During 1858, gold was also reported at Spike Gully, south of Sandy Creek, and later at Parra Wirra (1869), Birdwood and Uloomoo (1870), Waukaringa (1873, Alma and Victoria Mine Site and Structures SHP 10316) and Woodside (1879). These mines, which became known as the Barossa goldfield, became South Australia's second-most productive, yielding 3,110kg of gold, mainly from alluvial workings. Waukaringa became South Australia's largest individual gold mine. Elsewhere, sporadic prospecting occurred around Algebuckina on the Neales River from 1870.¹³

The finding of rich silver-lead lodes at Silverton (1875) and Broken Hill (1883) in New South Wales (NSW) encouraged the construction of a railway line between Petersburg (Peterborough after 1918) and Cockburn near Broken Hill, completed in 1887. The construction of the railway brought regular visitors to the surrounding country and resulted in the identification of gold at Manna Hill (1885), Teetulpa (1886), Kings Bluff

(1887), Wadnaminga (1888) and Mount Grainger (1891) near Oodlawirra and Dawson. Collectively, the mining leases opened up by the railway were known as the Northeastern Goldfields. Gold was reported at Tarcoola in 1893 and worked between 1900 and 1912, producing 2,400kg of gold, while the nearby Glenloth Goldfield (1899) produced around 315kg.¹⁴ Tarcoola developed into one of the largest goldfields in the state.¹⁵

In 1894, the South Australian government leased the Mount Torrens Cyanide Works and the neighbouring Criterion Mine, which it operated until c.1956 and 1917 respectively. This marked the first active involvement by the government in mining and processing gold ore in South Australia. The government subsequently built new cyanide works, including stamp batteries, at Petersburg (1897 – c.1990, see Petersburg Cyanide Works below), Arltunga NT (c.1897) and Tarcoola (1901 – 1955, Tarcoola Goldfield, Government Battery and Township SHP 20767),¹⁶ and subsequently purchased a further existing battery at Glenloth (1907 – 1924, Glenloth Gold Battery Site SHP 14642).¹⁷



Stamp battery and operators at the Arltunga Cyanide Works, NT, c.1898.

Source: SLA B 18350

Government batteries and cyanide works served to encourage prospecting and mining in South Australia during times of economic depression, by providing access to crushing, amalgamation, cyanidation and other facilities that individuals and small

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syndicates could not afford on their own. The South Australian government also encouraged gold prospecting and mining through measures such as subsidies and new legislation. For example, the *Gold Dredging Act 1905* allowed the issue of leases over former alluvial goldfields no longer considered capable of being profitably worked by traditional alluvial mining methods.¹⁸

During the twentieth century, gold was mined at Deloraine, near Kersbrook in the Mount Lofty Ranges (1909) and Mongolata, northeast of Burra (1930). The Moonta-Wallaroo Mines also produced an estimated 3,200kg of gold as a by-product of copper mining between 1860 and 1938.¹⁹

In 1931, the price of gold, previously fixed at £4 per troy ounce, was floated and began to rise steadily. Men left unemployed as a result of the depression were again encouraged to turn to prospecting on abandoned goldfields, and the government provided aspiring miners with equipment and improved access to processing plants in the form of new, rebuilt or upgraded batteries and cyanide works. The South Australian Department of Mines also offered generous subsidies to new mines and the Commonwealth offered bounty on all new gold production.²⁰

Petersburgh, Petersburg and Peterborough

The Ngadjuri people are the traditional owners of the Mid North region including Peterborough and were among the first Aboriginal groups 'to suffer the full impact of European intrusion'²¹ following the introduction of pastoralism into South Australia from the late 1830s. The growth of European pastoral and agricultural activities around Peterborough had irrevocable consequences for the Ngadjuri people.²² Notably, sheep polluted the waterways, degraded the landscape and competed with local fauna, and the expansion of agricultural settlement north of Burra from the mid-1870s caused Ngadjuri people to be 'fenced out of their own land.'²³ After 1911, many Ngadjuri people were removed from Country and confined to missions and reserves under oppressive legislation.²⁴ Nevertheless, Ngadjuri people and culture 'have endured and continue to thrive.'²⁵ In recent decades, Ngadjuri people have returned to country and are engaged in a process of rediscovering lost places and cultural knowledge.²⁶

The passage of the *Waste Lands Amendment Act 1869* (Strangways Act) enabled both the resumption of pastoral land for agricultural purposes and the selection of land on credit. The County of Dalhousie and the Hundred of Yongala were proclaimed on 20 July 1871. In July 1875, farmer Peter Doecke and his son-in-law Heinrich Herman Rohde acquired Sections 216 and 218, respectively, of the Hundred of Yongala, the future site of Peterborough.²⁷ The following year Johann Heinrich Koch, who married Doecke's niece August Ernstine, acquired Section 216 from his uncle-in-law,²⁸ and began farming wheat.

Meanwhile, from the mid-1870s South Australia embarked on a 'massive railway construction frenzy', intended to satisfy the demands of the agricultural, pastoral and mining industries by connecting inland frontiers to sea ports.²⁹

In c.1878-1879, the South Australian government planned two major narrow-gauge railway lines which would cross a junction station on Section 216, Hundred of Yongala: one from the existing broad-gauge railhead at Terowie in the Mid North to an existing narrow-gauge line at Pichi Richi (Quorn) in the Flinders Ranges, and another from Jamestown to Petersburg and thence east to the NSW border, planned ultimately to connect Port Pirie and Broken Hill.³⁰

At the end of 1879, government surveyors arrived on Section 216 and determined the precise location of the railway junction. Spurred by the imminent arrival of the railway, Johann Heinrich Koch subdivided the private township of Petersburg on Section 216, which is believed to have been named after the first selector Peter Doecke. Heinrich Herman Rohde subdivided the adjoining private township of Petersburg North on Section 218 and Richard Cheffers subdivided a third adjoining private township, Petersburg West, on Section 217. Town allotments in Petersburg and Petersburg West were auctioned on 18 August 1880 and town allotments in Petersburg North the following day. When the General Post Office opened in December 1880, the gazettal notice omitted the 'h' at the end of the Petersburg, resulting in the official spelling of the greater township, Petersburg.³¹

The railway line from Jamestown reached Petersburg on 17 January 1881. Petersburg and Terowie were linked by rail later that year, and in 1882, the line was completed between Petersburg and Quorn.³² Eastwards, the railhead reached Cockburn near the NSW border in 1887. Petersburg ultimately emerged as a major junction station linking Adelaide to the south, Port Pirie to the west, Alice Springs to the north and Broken Hill to the east. Petersburg was renamed Peterborough during the First World War due to the original name's German connotations and by the mid-twentieth century, the town served as the regional service centre and base of operations for the South Australian Railways' northern narrow-gauge railway network (Northern Division).

Petersburg Cyanide Works

The overhauled Mount Torrens Cyanide Works (SHP 13288) reopened in May 1894 and the Petersburg Progress Committee petitioned the South Australian government to build a cyanide works at Petersburg over the following year. The Committee argued a cyanide works would serve and encourage prospecting and mining on the Northeastern Goldfields and alleviate the expense of sending ore to be treated at Mount Torrens.³³ Citizens supporting construction of a cyanide works at Terowie produced a similar petition.³⁴ At Petersburg, four local landowners offered land free

of charge on which to build the works, including Johann Heinrich Koch and farmer Richard Cochrane.³⁵

On 8 July 1896, the Commissioner of Public Works announced the construction of two cyanide works, one at Petersburg and the other at Arltunga in the East MacDonnell Ranges, located in the Northern Territory, then administered by South Australia.³⁶ Petersburg was reportedly selected both on the basis of a third petition from the Wadnaminga and Waukaringa Goldfields, and on the recommendation of the Government Geologist, H. Y. L. Brown.³⁷

In August 1896, Brown travelled to Petersburg, met with the manager of the Mount Torrens Cyanide Works, J. G. Woolcock, and recommended Cochrane's land, adjacent to a railway line, as the most appropriate site.³⁸ The works was designed by the Engineer-in-Chief's Department under supervision of Alexander Bain Moncrieff.³⁹ On 15 October 1896, the Crown Lands Department called tenders for the supply of cyanide plant, including 'mining machinery, engine, boiler, stone-breaker, ten-head stamp battery, amalgamating and cyanide plant, and sundries.'⁴⁰

The cyanide plant itself comprised three wrought-iron leaching vats of 25-, 12.5- and 8-ton capacities, elevated on masonry walls; an inclined, wire-driven railway leading to a charging platform above the vats; two elevated wrought-iron cyanide solution vats; a precipitation box; and tailing and slime pits and sumps, excavated into the ground and lined and floored with timber slabs.⁴¹

One timber-framed, corrugated galvanised iron-clad shed covered the boiler, engine, stamp battery and amalgamation tables, and raised feed floor; another covered the cyanide works. An office, assay-room, furnace and laboratory were housed in a separate, weatherboard building.⁴² The total estimated cost of the works was £1,250.⁴³

The successful tenderer for the cyanide plant was Messrs May Bros & Co, Gawler,⁴⁴ while James Martin & Co Ltd, Gawler,⁴⁵ supplied a 14 hp horizontal steam engine and 60psi Cornish boiler.⁴⁶ The contract for building the office was won by W. Heithersay at a price of £170.⁴⁷ A 126-foot-deep well supplying the works with water was sunk by W. Gourlay into the Petersburg bedrock.⁴⁸

On 3 March 1897, the Minister of Mines, Crown Lands Commissioner and local member, Laurence O'Loughlin laid a foundation stone for the Petersburg Cyanide Works.⁴⁹ The stone, a gift of the Petersburg Progress Committee, was prepared by local firm Messrs Schultz and Habich in Italian marble.⁵⁰ A few months later, the Petersburg Cyanide Works was opened on 6 August 1897 by the Commissioner's wife, Francis O'Loughlin. At least 500 people witnessed the opening ceremony.⁵¹

In 1898, the charge for treating ore was five shillings per ton by battery, and a further five shillings per ton for cyanide treatment of the tailings. During the first six years of

operation to the end of 1902, the Petersburg Cyanide Works treated 250 parcels of ore totalling approximately 2,850 tons, in turn yielding approximately 2,170 ounces (61.5 kg) of gold bullion. A new 45-ton capacity leaching vat was added in that year, increasing the maximum possible output of the works to 50 tons per week. Most of the ore processed at Petersburg during its early years of operation came from the Mount Grainger Goldfields, but also from the Adelaide Hills, Tarcoola, the Northeastern Goldfields and as far away as Kangaroo Island.⁵²

The original steam plant was later replaced by a suction gas engine, in turn replaced by a second-hand 42hp Fielding oil engine, installed in 1930. This third engine, dating from the late nineteenth century, was reportedly acquired from a South East timber mill. Later during the 1930s, the Former Petersburg Cyanide Works treated some of the first ore recovered from the Tennant Creek, NT goldfields.⁵³

Cyanidation at Peterborough ended in 1954 due to a low demand for the process. Subsequently, the cyanide plant and shed were demolished, leaving only the tailing and slime pits and sumps. No crushing was conducted in 1956 – 1957, but afterwards and to 1983, over 2,700 tonnes of ore was treated, yielding approximately 35.5kg of gold. During the second half of the twentieth century, most of the ore treated at Peterborough came from the Kirkeeks Treasure Mines at Nillinghoo, north of Yunta.⁵⁴ The cyanidation plant and associated shed were demolished sometime after 1978.⁵⁵



Aerial view of Former Petersburg Cyanide Works, c.1970, showing now-demolished cyanidation plant and shed (indicated).

Source: SLSA B 67803

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On 21 October 1993, the Former Petersburg Cyanide Works was confirmed in the Register under the *South Australian Heritage Act 1978* as Gold Battery & Office. The Works was still operating in 1987, working an average of one week in four.⁵⁶ At this time, it was the only operating gold battery remaining in South Australia, and mainly used as a testing plant for small, trial parcels of ore submitted by prospectors to determine gold content.⁵⁷ The Department for Mines and Energy continued upgrading the works throughout the 1980s. At least one rivetted iron tank associated with the cyanidation plant remained on site in 2010.



Stamp battery and amalgamation tables (foreground), Former Petersburg Cyanide Works, 1988.

Source: SLSA B 49506

Gold stamping, amalgamation and cyanidation process

The gold stamping and amalgamation process occurred as follows:

1. Ore is delivered to the weighbridge and weighed.
2. If necessary, the ore is broken up to ensure no stone exceeds approximately 3 inches (75mm) in diameter.
3. Ore is fed to the stamp battery and crushed to the consistency of fine sand.
4. Stamped ore is mixed with water to form a slurry, which passes through a screen and across amalgamation tables, consisting of copper plates coated with mercury. Free gold amalgamates with the mercury, while the tailings pass outside to the sand pits.
5. Amalgam is scraped from the plates at regular intervals.
6. Amalgam is heated in the adjoining retort room. Mercury is driven off as a gas, while gold and other heavy metals remain in the retort.

The cyanidation process occurred as follows:

1. Tailings are transferred to leaching vats where they are stirred with cyanide solution over a period of hours.
2. Cyanide solution containing dissolved gold is drained to the precipitation box where gold is precipitated onto zinc wire.
3. Cyanide solution is drained to the cyanide sump for recovery and reuse.

Zinc and gold precipitate is smelted to recover pure gold.

Aboriginal Cultural Considerations

The *Heritage Places Act 1993* makes provision for the identification, recording and conservation of places and objects of non-Aboriginal heritage significance. The protection and preservation of Aboriginal heritage is provided for under the *Aboriginal Heritage Act 1988*. Contact the Aboriginal Heritage Unit for listings.

CHRONOLOGY

Year Event

- | | |
|------|--|
| 1841 | Wheal Gawler at Glen Osmond (Wheal Gawler Mine Historic Site SHP 11 606) is Australia's first metalliferous mine. |
| 1846 | 4 April, gold is first found by Europeans in South Australia at Castambul in the Adelaide Hills.

Gold is reported at Rhine, near Cambrai. |
| 1847 | Gold is reported at Kanmantoo and Sixth Creek. |
| 1849 | Gold is reported at Gumeracha. |

- 1851 1 July: pastoralist Alexander McCulloch takes up Pastoral Lease 30, incorporating the future site of Peterborough, which becomes known as the Eldoratrilla Run.⁵⁸
- Gold is reported at Ballarat, Victoria, causing a mass exodus of working men from South Australia and a serious downturn in the local economy.
- 18 December, the South Australian government offers a conditional £1,000 reward for the reportee of the first payable goldfield in South Australia.
- 1852 The *Bullion Act 1852* averts general bankruptcy of the colony by providing a South Australian market for diggers' gold exceeding that paid by Victorian bullion merchants.
- March, the first armed gold escort under Police Commissioner Alexander Tolmer provides secure passage for diggers returning with gold into South Australia from the Victorian goldfields.
- 23 August William Chapman, his father and two friends, Hampton and Hardiman, report the discovery of gold at Donkey Gully, near Echunga, to the Treasury. The area becomes known as the Echunga Goldfield and later, the old Echunga Goldfield.
- December, Tolmer leads the last gold escort from the Victorian goldfields.
- 1869 Passage of the *Waste Lands Amendment Act 1879* (Strangways Act).
- 1870s The South Australian government intensifies railway construction.
- 1870 Gold is reported at Birdwood and Uloomoo. Sporadic prospecting occurs around Algebuckina on the Neales River around this time.
- 1871 20 July: the County of Dalhousie and the Hundred of Yongala are proclaimed.
- 1873 Gold is reported at Waukaringa.
- 1875 July: farmer Peter Doecke and his son in law Heinrich Herman Rohde acquire Sections 216 and 218, respectively, of the Hundred of Yongala, the future site of Peterborough.
- A silver-rich load is found at Silverton, NSW.
- 1876 Johann Heinrich Koch acquires Section 216 from his uncle-in-law Doecke and begins farming wheat with his wife August Ernstine (nee Doecke).
- c.1878 The South Australian government plans a narrow-gauge railway line from – 1879 Terowie to Quorn and a branch line to Port Pirie via Jamestown, meeting at a junction station on Section 216, Hundred of Yongala.
- 1879 Three private townships namely Petersburg, Petersburg North and Petersburg west are subdivided on Sections 216, 218 and 217,

respectively, by Johann Heinrich Koch, Heinrich Herman Rohde and Richard Cheffirs.

1880 18 August: town allotments in Petersburg and Petersburg West are sold at auction.

19 August: town allotments in Petersburg North are sold at auction.

23 December: the Petersburg General Post Office, opened on 13 December, is gazetted with the name Petersburg, omitting the 'h' from the end of Petersburg.

1881 17 January: railway line between Jamestown and Petersburg opens.

11 May: railway line between Terowie and Petersburg opens.

22 November: railway line between Petersburg and Orroroo opens.

1882 22 May: Adelaide and Port Augusta are linked by rail via Terowie, Petersburg and Quorn.

1883 A silver-rich lode is reported at Broken Hill, NSW.

1885 Gold is reported at Manna Hill.

1886 Gold is reported at Teetulpa.

1887 14 June: railway line between Petersburg and Cockburn opens.

1893 Gold is identified at Tarcoola (Tarcoola Goldfield, Government Battery and Township SHP 20767), which is worked between 1900 and 1912 and develops into one of the largest goldfields in the state, producing 2,400kg of gold.

1894 May: the overhauled Mount Torrens Cyanide Works reopens.

1895 The Petersburg Progress Committee petitions the South Australian Government to build a cyanide works at Petersburg.

1896 The Commissioner of Public Works announces the construction of cyanide works at Petersburg and Arltunga, NT.

24 August: Government Geologist H. Y. L. Brown travels to Petersburg with Mount Torrens Cyanide Works manager J. G. Woolcock to select a site for the Petersburg Cyanide Works.

15 October: the Crown Lands Department calls tenders for the supply of cyanide plant.

1897 3 March: the Minister of Mines, Crown Lands Commissioner and local member Laurence O'Loughlin lays the foundation stone of the Petersburg Government Battery and Cyanide Works.

6 August: the Petersburg Cyanide Works is opened by Francis O'Loughlin.

1899 Gold is found at Glenloth (Glenloth Gold Battery Site SHP 14642).

1902 A new 45-ton capacity leaching vat is added to the Petersburg Cyanide Works.

December: the Petersburg Cyanide Works has treated a total of 250 parcels of ore totalling approximately 2,850 tons, in turn yielding approximately 2170 ounces (61.5 kg) of gold bullion.

1918 10 January: Petersburg is renamed Peterborough under the *Nomenclature Act 1917*.

1930 A second-hand 42hp Fielding oil engine is installed at the Former Petersburg Cyanide Works replacing an older powerplant.

1931 The price of gold, previously fixed at £4 per troy ounce, is floated and begins to rise steadily. Men left unemployed as a result of the depression are encouraged to turn to prospecting on abandoned goldfields.

1954 Cyanidation at Peterborough ceases due to low demand.

1956 No crushing is conducted at the Former Petersburg Cyanide Works.

– 1957

1957 Over 2,700 tonnes of ore is treated at the Former Petersburg Cyanide Works

– 1983 yielding approximately 35.5kg of gold.

1978 The cyanidation plant and its associated shed are still standing.

1980s The Department for Mines and Energy continues upgrading the Former Petersburg Cyanide Works throughout the decade.

c.1980 The cyanide plant and associated shed are demolished.

1987 The Former Petersburg Cyanide Works is still operating, working an average of one week in four, and is the only operating gold battery remaining in South Australia.

1993 21 October: the Former Petersburg Cyanide Works is confirmed in the Register under the South Australian Heritage Act 1978 as Gold Battery & Office.

2002 The Former Petersburg Cyanide Works is presented to the District Council of Peterborough.

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- Donovan & Associates, 'Peterborough Heritage Survey' (January 1988)
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- South Australian Government Gazette* 15 October 1896

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- 'The Petersburg Cyanide Works.' in *South Australian Register* 5 August 1895 p. 5
- 'Cyanide Works for Petersburg' in *Petersburg Times* 11 October 1895 p. 4
- 'Cyanide Works at Petersburg' in *Adelaide Observer* 12 October 1895 p. 42
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- 'Cyanide Works at Petersburg.' in *South Australian Register* 25 January 1897 p. 5
- 'The Peterborough Cyanide Works.' in *Evening Journal* 3 March 1897 p. 2
- 'Petersburg Cyanide Works. The Foundation-Stone.' in *Advertiser* 5 March 1897 p. 3
- 'Messrs. May Bros. & Co.'s Works. Extension of Premises. Good Supply of Work' in *Bunyip* 2 April 1897 p. 2
- 'Country News. Country Letters. ... Petersburg, April 23' in *Adelaide Observer* 1 May 1897 p. 9
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https://www.energymining.sa.gov.au/home/events/discover_gold/historical_gold_mines
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- Lionel Nobel Photo Collection, Peterborough Gold Battery
<https://lionelnoble.com/peterborough/goldbattery/>

Archival

- B 18350 SLSA
- B 49506 SLSA
- B 67803 SLSA

SITE DETAILS

Former Petersburg Cyanide Works

PLACE NO.: 14252

Lot 205 Tripney Avenue, Peterborough

FORMER NAME:	Petersburg Cyanide Works
DESCRIPTION OF PLACE:	Former cyanide works including shed, battery and amalgamating tables, engine, feed floor, weatherboard office building, and in-ground tanks.
HISTORIC THEME/S	5. Developing South Australia's economies 5.1 Mining (including copper mining)
DATE OF CONSTRUCTION:	1896 – 1897; 1902; 1930
REGISTER STATUS:	Recommended: 19 August 1989 Provisionally Entered: 28 May 1993 Confirmed: 23 October 1993
CURRENT USE:	Disused, 2002 - present
PREVIOUS USE(S):	Cyanide works including crushing battery, 1897 – 1954 Crushing battery, 1958 – c.1990
DESIGNER:	Alexander Bain Moncrieff, 1896
BUILDER:	May Bros & Co, Gawler, cyanide plant; James Martin & Co Ltd, Gawler, steam engine and boiler; W. Heithersay, buildings; W. Gourlay, well, 1896 - 1897
LOCAL GOVERNMENT AREA:	District Council of Peterborough
LOCATION:	Address: Tripney Avenue, Peterborough SA 5422
LAND DESCRIPTION:	Title CR 5753/227 A205 FP34204 Reference: Hundred: Yongala

PHOTOS

Former Petersburg Cyanide Works

PLACE NO.: 14252

Lot 205 Tripney Avenue, Peterborough

All images in this section were taken by Swanbury Penglase Architects Pty Ltd on 3-4 June 2010; copies held in DEW Files. Used with permission.



Exterior of battery shed, showing lean-to additions on western side.



Exterior of battery shed, showing lean-to additions on western side.

Former Petersburg Cyanide Works

PLACE NO.: 14252

Lot 205 Tripney Avenue, Peterborough



Office building on left; note brick chimney.



Western side of battery shed; note iron tanks associated with cyanidation plant (moveable components) in left foreground.

Former Petersburg Cyanide Works

PLACE NO.: 14252

Lot 205 Tripney Avenue, Peterborough



Stamp battery viewed from south, showing feed floor in foreground (left image) and view from north, showing amalgamation tables in foreground with protective covers in position (right image).

Former Petersburg Cyanide Works

PLACE NO.: 14252

Lot 205 Tripney Avenue, Peterborough



Fielding oil engine.



Retort table.

Former Petersburg Cyanide Works

PLACE NO.: 14252

Lot 205 Tripney Avenue, Peterborough



Foundation stone.



One of five in-ground tanks.

REVISIONS

Date	Changes

¹ Bernard O'Neil, 'Mines and Mining' Wilfred Prest (ed), *The Wakefield Companion to South Australian History* (2001) Kent Town SA: Wakefield Press p. 356

² C. M. Horn and W. P. Fradd, 'Gold mining in South Australia: the first fifty years' in Jonathan Shelby (ed) *South Australia's Mining Heritage (Special Publication No. 7)* (1987) Adelaide SA: Department of Mines and Energy South Australia/Australian Institute of Mining and Metallurgy p. 63; Government of South Australia, Energy & Mining, Historical Gold Mines https://www.energymining.sa.gov.au/home/events/discover_gold/historical_gold_mines

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⁴ Michael Pearson and Barry McGowan, *Mining Heritage Places Assessment Manual* p. 175

⁵ Michael Pearson and Barry McGowan, *Mining Heritage Places Assessment Manual*

⁶ Greg Drew, *The Echunga Goldfields: Geology, History and Selected Newspaper Readings* (2012) Adelaide SA: Government of South Australia Primary Industries and Resources SA p. 12

⁷ Michael Pearson and Barry McGowan, *Mining Heritage Places Assessment Manual* p. 175

⁸ C. M. Horn and W. P. Fradd, 'Gold mining in South Australia: the first fifty years' p. 63

⁹ C. M. Horn and W. P. Fradd, 'Gold mining in South Australia: the first fifty years' pp. 65-66

¹⁰ J. F. Drexel, *Mining in South Australia: a pictorial history* (Special Publication No. 3) Adelaide SA: Department of Mines and Energy of South Australia p. 103

¹¹ Register Research Programme 1982/1983, Historical Research Report: Echunga Goldfield, DEW Files

¹² Government of South Australia, Energy & Mining, Historical Gold Mines (web)

¹³ C. M. Horn and W. P. Fradd, 'Gold mining in South Australia: the first fifty years'

¹⁴ Government of South Australia, Energy & Mining, Historical Gold Mines (web)

¹⁵ J. F. Drexel, *Mining in South Australia* p. 103

¹⁶ J. F. Drexel, *Mining in South Australia* p. 129

¹⁷ Peter Bell, Carol Cosgrove, Susan Marsden & Justin McCarthy, Historical Research Pty Ltd, 'Twentieth Century Heritage Survey Volume 2, Report to Department for Environment and Heritage' (2008) p. 236

¹⁸ Act No. 881 of 1905 'An Act to provide the Issue of Leases for Dredging for Gold' (*Gold Dredging Act 1905*)

¹⁹ Government of South Australia, Energy & Mining, Historical Gold Mines (web)

²⁰ Government of South Australia, Energy & Mining, Historical Gold Mines (web)

²¹ Ngadjuri Nation, *About Us* <http://www.ngadjuri.com.au/aboutus.html>

²² Peter Birt and Vincent Copley, "Coming back to country: a conversation at Firewood Creek" in Claire Smith and H. Martin Wobst (eds) *Indigenous archaeologies: decolonizing theory and practice* (2005) London/New York: Routledge p. 250

²³ Ngadjuri Nation, *About Us* (web)

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- ²⁴ Tom Gara, "The Aboriginal Presence in Adelaide, 1860s-1960s: From exclusion to assimilation" in Peggy Brock and Tom Gara, *Colonialism and its Aftermath: a history of Aboriginal South Australia* (2017) Mile End SA: Wakefield Press p. 97
- ²⁵ Ngadjuri Nation, *About Us* (web)
- ²⁶ Swanbury Penglase, *Australian Cornish Mining Sites: Burra Swanbury Penglase, Australian Cornish Mining Sites: Burra Conservation Management Plan* (March 2021 ref 18188) p. 22
- ²⁷ Donovan & Associates, 'Peterborough Heritage Survey' (January 1988) p. 8.
- ²⁸ Anita Woods, *Petersburg to Peterborough: A Journey from 1875 to 1986* (1986) Peterborough SA: Peterborough and Local Districts History Club pp. 9, 13
- ²⁹ Donovan & Associates 'Railway Heritage of South Australia Volume 1' (January 1992) pp. 18-21
- ³⁰ Donovan & Associates 'Railway Heritage of South Australia Volume 1' pp. 18-21
- ³¹ Anita Woods, *Petersburg to Peterborough* pp. 13-15
- ³² Anita Woods, *Petersburg to Peterborough* p. 15
- ³³ 'Cyanide Works for Petersburg' in *Petersburg Times* 11 October 1895 p. 4
- ³⁴ 'Cyanide Works at Petersburg' in *Adelaide Observer* 12 October 1895 p. 42
- ³⁵ 'Petersburg Cyanide Works' in *Advertiser* 14 July 1896 p. 5; 'Cyanide Works at Petersburg' in *Advertiser* 23 June 1896 p. 4
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- ³⁹ 'The Peterborough Cyanide Works' in *Adelaide Observer* 7 August 1897 p. 29
- ⁴⁰ *South Australian Government Gazette* 15 October 1896 p. 945
- ⁴¹ 'The Petersburg Cyanide Works.' in *South Australian Register* 5 August 1895 p. 5
- ⁴² 'The Petersburg Cyanide Works.' in *South Australian Register* 5 August 1895 p. 5
- ⁴³ 'Commissioner of Crown Lands.' in *Adelaide Observer* 22 August 1896 p. 29
- ⁴⁴ 'Messrs. May Bros. & Co.'s Works. Extension of Premises. Good Supply of Work' in *Bunyip* 2 April 1897 p. 2
- ⁴⁵ Anita Woods, *Petersburg to Peterborough* pp. 125-128
- ⁴⁶ 'The Petersburg Cyanide Works.' in *South Australian Register* 5 August 1895 p. 5
- ⁴⁷ 'Petersburg Cyanide Works. The Foundation-Stone.' in *Advertiser* 5 March 1897 p. 3
- ⁴⁸ 'To Correspondents.' in *Chronicle* 23 January 1897 p. 8; 'Country News. Country Letters. ... Petersburg, April 23' in *Adelaide Observer* 1 May 1897 p. 9
- ⁴⁹ 'The Peterborough Cyanide Works.' in *Evening Journal* 3 March 1897 p. 2
- ⁵⁰ Anita Woods, *Petersburg to Peterborough* pp. 30-32
- ⁵¹ Anita Woods, *Petersburg to Peterborough* pp. 30-32
- ⁵² Anita Woods, *Petersburg to Peterborough* pp. 125-128
- ⁵³ Anita Woods, *Petersburg to Peterborough* pp. 125-128
- ⁵⁴ Anita Woods, *Petersburg to Peterborough* pp. 125-128
- ⁵⁵ Lionel Nobel Photo Collection, Peterborough Gold Battery
<https://lionelnoble.com/peterborough/goldbattery/>
- ⁵⁶ Donovan & Associates, 'Peterborough Heritage Survey' (January 1988)
- ⁵⁷ Anita Woods, *Petersburg to Peterborough* pp. 125-128
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