

200 years of mining - Gems

The history of gem mining in NSW is closely bound with the history of gold mining.

Up until the first NSW gold rush in 1851 the economy of the colony was slow to develop. There was simply not a lot of money to be spent on luxuries like gems and jewels.

But with the enormous and sudden wealth created by the discovery of gold luxuries became more commonplace. There was now an incentive for prospectors and miners to look for gems.

Gold mining also aided the discovery of gem deposits. The first discovery of diamonds and sapphires in NSW occurred in the same alluvial beds that prospectors were scouring for gold. The gems were a by product of gold mining.

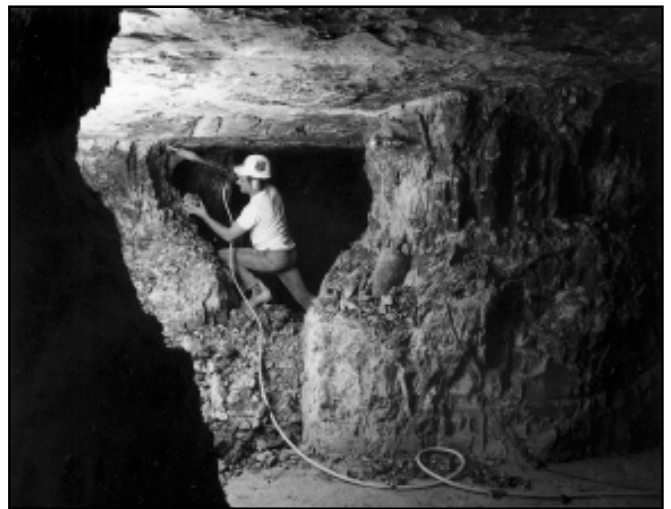
Gem mining time line

1851 - The first gold rush in NSW.

- Sapphires are discovered in the Macquarie River and the Cudgegong River.

- It is reported that diamonds have been found in Reedy Creek and the Turon River near Bathurst. However there are doubts about this discovery as the stones may not have been correctly identified.

1851-1853 - Topaz is found in the Cudgegong River and the Castlereagh River.



Mining for opal underground at Lightning Ridge

1853 - The discovery of sapphires is reported at Broken Hill.

- Hyalite is discovered near Cookabiandi in the Namoi River area. Hyalite is also known as Mullers glass. It is a transparent and colourless opal that looks like glass, although sometimes it is slightly coloured.

1860 - The first confirmed discovery of diamonds - at the Macquarie River, Pyramul Creek and Caloola Creek.

- Emerald discoveries are reported in several gold fields.

1867 - Diamonds are discovered at Two Mile Flat on the Cudgegong River, near Mudgee.

1867 - Diamonds are discovered at Bingara.

- 1868** - Diamond mining begins at the Reedy Creek-Cudgegong River junction, continuing to 1870.
- 1869** - Sapphires are discovered near Gulgong.
- 1872-1873** - There is a diamond "rush" to the Bingara area, with mining continuing until 1904 and 1909.
- 1872-1875** - The discovery of diamonds in the Copeton area triggers another "rush". Mining continues until about 1922.
- 1876** - Diamonds are discovered at the mouth of the Muckerawa Creek.
- 1877** - Mining for precious opal in igneous rocks begins at Rocky Bridge Creek, a tributary of the Abercrombie River, in the Central West. Precious opal has the characteristic "play of colours". It has been found in volcanic rock, filling cavities in basalt, but this type of opal tends to be less valuable than that found in sedimentary rocks.
- 1880** - Topaz is reported in the Glen Innes area.
- 1881** - Opal is discovered at Milparinka, near Tibooburra in the Far West. Precious opal in sedimentary rocks forms when silica gathers in veins, fractures and other voids - and sometimes as replacement of organic materials (wood, shells, even bones).
- 1883** - Diamond mining from deep leads begins at Copeton, continuing until 1922.
- 1884** - Diamonds are reported in the Mittagong area.
- Opal is discovered in sedimentary rock at White Cliffs in the Far West.
- 1889** - Precious opal is discovered at White Cliffs.
- 1880s or 1891** - Opal is discovered in sedimentary rock at Lightning Ridge (Wallangulla) and other localities in the area, but its commercial value is not recognised.
- 1890** - Precious opal mining begins at White Cliffs (continuing to 1915 then going into decline).
- 1890** - Small-scale diamond mining begins near Narrabri (with some production to 1902).
- 1890-1891** - Sapphires are discovered in the Wingecarribee River (with topaz etc.).
- 1894** - Non-alluvial or "hard roc" emerald is discovered at Emmaville and mined intermittently to 1908-1909.
- Turquoise is reported near Bodalla (but apparently only a small deposit).
- 1896** - Opal is discovered at Purnanga and Grenville-Bunker Field. These occurrences are near White Cliffs and so extend the size of that opal-bearing district.
- 1897** - Opal is discovered in igneous rock at Tooraweenah, near Coonabarabran.
- 1901** - A few diamonds are discovered at Mount McDonald (Abercrombie River).
- Opal is discovered in igneous rock at Tintenbar, on the Far North Coast.
- 1901-1905** - Opal mining begins at Lightning Ridge - a good example of how small-scale mining operations can support a remote population centre - in this case a centre which produces some of the most famous (and valuable) opal in the world: the black opal. The first shaft was put down around 1901 or 1902 by Jack Murray, a boundary rider who lived on a property nearby. Some time later, possibly a few months, a miner from Bathurst named Charlie Nettleton arrived and commenced shaft sinking. It was he who in 1903 sold the first parcel of gems from the field for \$30, not a fiftieth of the price that could have been obtained five years later.
- 1908** - Opal mining begins at the Grawin-Sheepyard Field in the Lightning Ridge area, increasing the importance of the opal fields in the district.
- 1916** - Diamond mining begins again near the Reedy Creek-Cudgegong River junction.
- 1919** - Sapphire mining begins at Sapphire.
- Opal mining begins at Tintenbar, continuing to 1922.
- Sapphire mining begins near Inverell and Glen Innes and Tingha continuing, in the first instance, to about 1929.

1920 - The Newfield opal area is discovered.

1930s - Gold and diamond deposits are worked at Airly Mountain, near Lithgow, during the Depression - with irregular operations to 1963 and again to the 1980s.

1950 - Dredging for diamonds (during gold operations) occurs along the Macquarie River near Wellington (until 1958).

1960 - Spectacular growth in sapphire mining begins around Inverell and Glen Innes, continuing to 1980.

1985- Seminal work by the Geological Survey of NSW leads to better, more scientifically controlled exploration for opals.

1989 - The Coooran opal area is discovered in the Lightning Ridge district.

1994-1995 - Minor sapphire production occurs in the Oberon district.

1995 - The value of NSW, annual sapphire production peaks at \$11.4 million. NSW is a major world producer of sapphires.

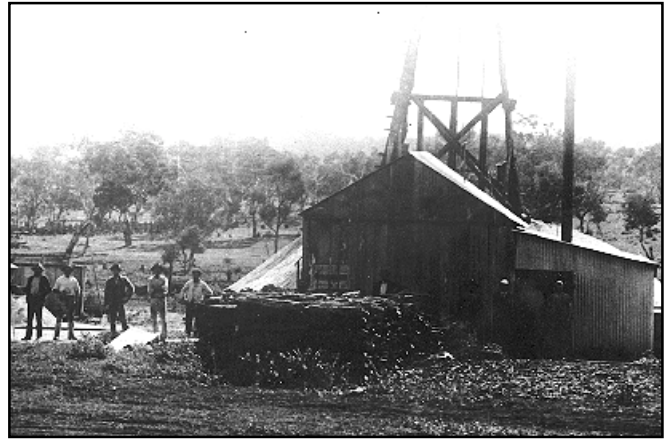
1995-1996 - The value of NSW opal production reaches an annual level of about \$70 million. NSW (and Australia) is a leading world producer of opals.

1998-1999 - The estimated value of opal production in the State is about \$44 million.

A modest number of rubies have been recovered during sapphire prospecting and mining in NSW, for example in the Barrington Tops area. Sapphires (blue, green etc.) and rubies (red) are all different types of corundum (Al_2O_3).

Much of the early sapphire mining in New England also yielded cassiterite (SnO_2). Other gems found in NSW (apart from those already mentioned) include agate, garnet, zircon, spinel, rhodonite and nephrite (jade).

Current exploration for and mining of sapphires and diamond in NSW has been assisted by research by the Geological Survey of NSW. The Survey's proposition that some NSW diamonds formed during the relatively recent subduction of crustal rocks makes the discovery of hard rock diamond deposits a possibility in NSW.



Elliot's Diamond and Tine Mine, Copeton, c1900



Old-time prospectors like "Rabbit Jack" from Saw Pit Gully near Drake were responsible for many gem discoveries in NSW, c1880s



Modern sapphire mining in the New England region of NSW. Back-hoe loading sapphire-bearing soil for transport to the processing plant