

# Hill End gold deposits

## Mineral Resources

The gold in the Hill End district occurs in quartz veins generally parallel to the bedding in a sequence of slate and greywacke (sandstone); alluvial deposits are also common along the Turon and Macquarie Rivers and other major streams.

The host rocks are interbedded sandstones and shales of the Silurian Chesleigh Formation. This formation is part of a deep marine shale-sandstone-silicic volcanic series deposited in the Siluro-Devonian Hill End Trough.

The sediments have been deformed into large-scale north-trending folds. The major fold in the area is called the Hill End anticline.

The veins strike north-south and typically dip at 60-70° to the east in the immediate Hill End area, however elsewhere in the district they may dip east or west, depending on which limb of a fold the vein occurs. They are generally about 10-20cm wide, but can range up to 30-40cm.

Some of the veins were followed for more than 600m horizontally; the Star of Peace and Mica veins at Hawkins Hill were followed down for over 200m. The richest values came from the top 120m.

Quartz veins commonly occur as bedded or laminated veins, bedded veins in the form of normal and inverted saddle reefs in fold hinges, and blows (often the top or 'caps' of a saddle reef).

Blows are commonly associated with faults, sometimes contain brecciated slate fragments, and in places grade into bedded veins with depth.

'Cross courses' are also an important source of gold. Mining at Hawkins Hill resulted in the discovery of a number of east west trending cross courses (faults). These structures often were the source of rich 'bonanzas'.

Other minerals associated with the gold include pyrite, pyrrhotite, arsenopyrite, sphalerite, galena and magnetite. The gold generally occurs as fine-coarse grained granules. Little or none is present in the grains of other minerals.



*Whim and shaft houses along the western slope of Hawkins Hill, Hill End, 1872*

The gold and quartz were deposited from solution, probably after the cross-faulting subsequent to regional folding. The source of the gold, however, is uncertain.

It may have been derived from granitic bodies such as those near Bruinbun and Bathurst, from the host sediments themselves, or from basaltic and ultrabasic rocks similar to those at Lucknow, or as recently suggested from underlying volcanic and sedimentary sequences.

## History of mining

The Hill End-Tamboora Gold Field was one of the richest gold mining areas in NSW, and the first reef mining area in Australia.

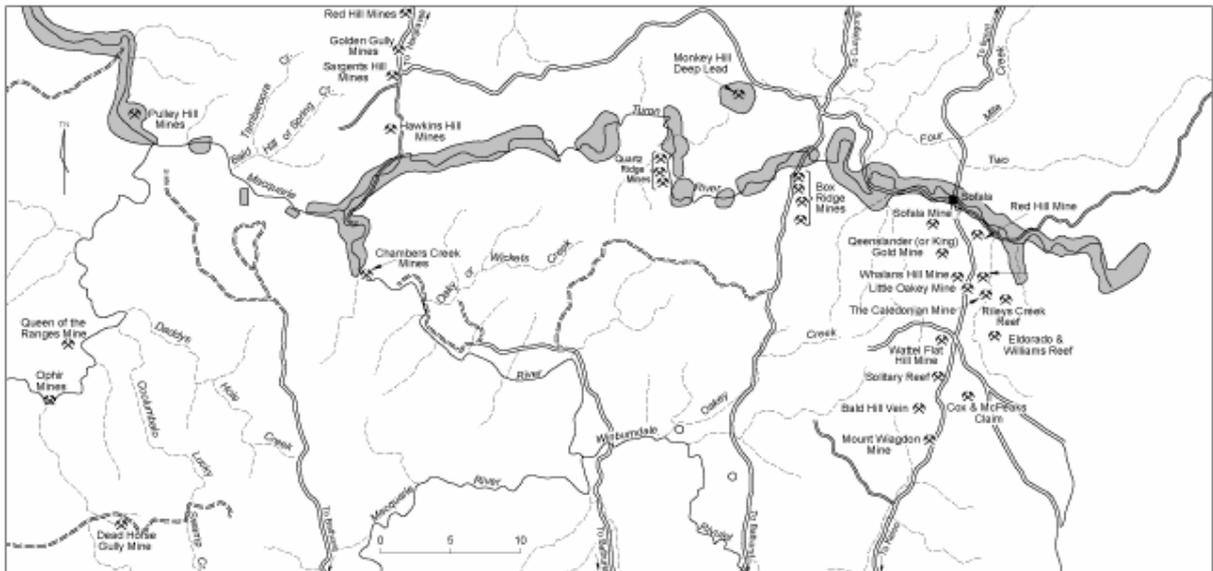
Gold was discovered in 1851 at Golden Gully, when prospectors worked their way north east from Ophir, where the first alluvial gold mining in Australia had commenced a few months previously.

Gold mining licences were introduced in May 1851; they cost 30 shillings per month and were only issued for alluvial gold.

During 1851-1852, a miner called Collinson crushed reef gold to pass it off as alluvial gold.

He eventually won the right to mine 'gold in matrix' from the line of country between the Turon River and Dirt Hole Creek.





SIMPLIFIED MAP OF THE HILL END GOLDFIELD

Surface gold was won from Hawkins Hill in 1855 and reef claims were worked along the right bank of Golden Gully from 1859.

The Alpha Gold Mining Co. (commonly known as 'The Old Company'), was one of the first on the field.

They brought out Cornish miners and in 1857 erected the first stamper battery in Australia at 'The Old Company's Ground'.

In 1855 gold-bearing quartz was worked on the surface of Hawkins Hill by the Rowley brothers, but the existence of a reef extending to depth was discovered by Daddy Nichols, a Cornish miner. This vein was first worked in 1860.

In 1870 a five head stamper was erected by Mr Pullen at Hill End. Soon after he erected a modern 15 head stamper near the Hill End Post Office.

There was a slump in the early part of 1871, but fresh finds towards the end of the year led to a bigger gold rush.

Between 1870 and 1872 Hawkins Hill yielded very rich deposits at depths of 40-50m. The deepest workings on Hawkins Hill went down to about 240m.

The Beyers and Holtermann nugget, the largest single piece of reef gold ever discovered in the world, was found in the Star of Hope mine on Hawkins Hill on 19 October 1872. It weighed about 286kg, and was worth at least £12 000 at the time.

Production from Hawkins Hill declined during 1873 and no new ore bodies of comparable size or quality have been found since then.

During the boom years of 1871-1874 about 8 000 people lived at Hill End and Tambaroora. The total recorded production for the district is over 50 tonnes of gold, 12.4 tonnes from Hawkins Hill alone.

After 1874 mines closed down, and prospectors moved to other fields, leaving only isolated mining of old reef workings and alluvial diggings.

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