VICTORIAN GOLDFIELDS PROJECT

HISTORIC GOLD MINING SITES IN GIPPSLAND MINING DISTRICT

GAZETTEER: STATE & REGIONAL SIGNIFICANT SITES

Department Of Natural Resources & Environment

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Jordan–Aberfeldy–Donnelly's Creek goldfield

HI No. 1.0 ***H8122-0026***
HI No. 1.1 ***H8122-0028***
HI No. 1.2 ***H8122-0029***

LOCATION: Toombon mine and township are situated along Toombon Creek, a tributary of the Aberfeldy River. The main shaft, winding machinery foundations, the upper level mullock dump and several building sites are just above where Donnelly's Creek Road crosses Toombon Creek. The battery is at the lower end of the township on the northern side of Toombon Creek, and overlooking the Aberfeldy River.

MUNICIPALITY: Baw Baw Shire Council

LAND USE/STATUS: State Forest—recommended Historic Reserve

EXISTING HERITAGE LISTING: Historic Reserve recommended.

SITE HISTORY:

A reef was first worked on Mt Lookout in 1864 by a prospector named Jessop. In 1868, two residence leases were taken up at Mt Lookout under the new 42nd section of the Lands Act, and the original prospectors of BB Creek worked the land as a market garden known as The Farm. Jessop persevered with his reef for years, sinking shafts and driving tunnels and "obtaining such encouraging results that he underwent great privations rather than relinquish his hold on the ground, in consequence of which," according to a report in 1871, "he died about twelve months ago". He did not live to see the success of the reef that would be worked variously as Jessop's, Fleming's, the Aberfeldy, Lily of the Valley, and Toombon.

Just after Jessop's death it was announced that, "A new reef on the Aberfeldy, containing fine gold, and of considerable width, has been taken up within the last week … situated four miles below the crossing of the Gippsland road". Fleming was the discoverer, and a rush ensued. In 1871, Fleming's party was cutting a race in preparation for a battery, and the next year, as the Aberfeldy Co., they erected a "powerful" water-powered battery of ten heads near the mouth of their tunnel. The returns were not much good and the shareholders were in disagreement about how best to develop the mine, so its performance during the 1870s was.

In 1881 the Toombon GMC was formed and a new main shaft commenced north of the road. The next year, a Langland's Cornish boiler, 33-hp steam engine, double winding drum, and pumping gear were installed near the shaft. A good-looking reef was struck in 1883, causing many new claims to be pegged out in the vicinity. In 1886, the Toombon Co.'s battery was increased to twenty heads, powered by a larger (40-ft) waterwheel, but with an auxiliary steam engine of 35 horsepower.

The Toombon mine closed down in 1898, having reached a depth of nearly 1,000 ft. With a total yield of 50,844 oz from 61,888 tons, it had been the largest gold-producer in the Aberfeldy–Donnelly's Creek district.

Another Toombon Co. was formed in 1934 to re-open the mine. Thirty thousand pounds was spent on clearing out the main shaft and winzes, but poor prospects closed the mine in 1940. Of the plant installed in the 1930s, only the water tube boiler remains.

References:
Ainsworth.
Bailey & Bailey, p. 10.
Baragwanath, pp. 10-11.
Kenny
Mining Surveyors' Reports (Jericho Division), September 1872, September 1879, June 1881; (Stringer's Creek Subdivision), June & September 1872, March 1874, (Aberfeldy Subdivision), 1876-83; (Donnelly's Creek Division), September 1875, December 1882, September 1886.
Supple et al, after Milner (1989/1).

DESCRIPTION & INTERPRETATION OF FEATURES:

TOOMBON MINE

Upper level mine workings, mining machinery—At the top of the dump, and level with the shaft collar, are foundations for a horizontal engine and winding drum, the remains of a Babcock and Wilcox water tube boiler and a metal chimney stack made from the fire tube of a Cornish boiler. On the level above and to the east of the shaft is an arrangement of foundation bolts which were probably used for other winding and pumping machinery.

Lower level mine workings—The shaft is plugged at the 180-ft level and connects with the main adit, the entrance of which is situated at creek level between Donnelly's Creek Road and the main street of Toombon. Below the adit is a second dump and fragments of a tramway formation along the northern margin of the creek. This connected the mine to the battery site at the other end of the township.

Mine manager's house—The chimney and some walls from what was probably the mine manager's house are located at the base of the mullock dump adjacent to the Donnelly's Creek Road where it crosses Toombon Creek.

TOOMBON TOWNSHIP

Township—The township of Toombon is generally disposed along, and both sides of, the main street, with one or two isolated sites (like the coach house) situated above the Donnelly's Creek Road itself. Several of the buildings are marked out by the rubble masonry remains of their chimneys (as at the bakery and hotel) whilst others are no more than the series of small and shallow terraces which were cut into the hillside and on which the buildings were placed.

Toombon cemetery—Located about a kilometre north-west of the township. Most of the graves are unmarked except for a shallow mound or depression in the slope.

TOOMBON MINE—BATTERY

Boiler—A three-pass Cornish boiler with Galloway tubes and a metal chimney stack. The boiler flue is connected to the base of the metal chimney-stack (which is mounted on the slope above the site) by a rise cut up about six metres through the solid rock at the base of the boiler.

Battery engine—Components for a single-cylinder horizontal double-acting steam engine with a loose eccentric.

Stampers—Components for two 10-head wooden framed stamp batteries, a riveted cylindrical drum possibly used either for water storage or feed-water heating, several countershafts and sundry pieces of battery strapping and other ironwork.

Battery manager's house— On the southern bank of the creek there is a flat area, which was probably the house site.

Tailrace—The creek is channeled past the battery site through stone-retained walls, which may have formed the tailrace for the original waterwheel installation.

Waterwheel pit—At the south-west end of the site there is a large pit where the second waterwheel (of 40ft diameter) was positioned.

Roasting kilns—On the slope above the wheel pit there are the remains of two roasting kilns, constructed of rubble masonry.

Water race—Water for the wheels was supplied by a race from a dam constructed on Aberfeldy River at a point immediately below the New Dawn mine.

INTEGRITY/CONDITION: Good

CULTURAL SIGNIFICANCE:

The precinct has:

Historical significance—The Toombon Gold Mining Precinct is historically significant as a characteristic and well preserved example of an important form of gold mining. Gold mining sites are of crucial importance for the pivotal role they have played since 1851 in the development of Victoria. As well as being a significant producer of Victoria's nineteenth century wealth, with its intensive use of machinery, played an important role in the development of Victorian manufacturing industry. The Toombon mine is also historically important as the principal mine in the Aberfeldy/Donnelly's Creek Mining Division.

Scientific significance— The Toombon Gold Mining Precinct is scientifically significant because it contains a unique collection of relics representing a sequence of quartz mining from 1870 to the 1930s.

Archaeological potential— The Toombon Gold Mining Precinct is archaeologically important for its potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining and the gold miners themselves.

Natural values— The abandoned mining machinery at the Toombon Mine is also important for its evocation of the adventurousness, hardship, and isolation that was part of mining life in the high country areas of the State.

SIGNIFICANCE RANKING: Sites listed on Heritage Inventory

Assessed by: Peter Milner/Supple, Perham & Griffiths *Date:* 1988/89.

PLACE NO. & NAME: **2.0 NEW DAWN MINE & BATTERY**
Jordan–Aberfeldy–Donnelly's Creek goldfield
HI No. ***H8122-0033***

LOCATION: Mine—About 1 km NNW of the Toombon mine site and high up on the slopes overlooking the Aberfeldy River.
Battery—Just off the Donnelly's Creek Road, on the northern bank of the Aberfeldy River and between the road and Lily Creek.
MUNICIPALITY: Baw Baw Shire Council.
LAND USE/STATUS: State Forest— Recommended Historic Reserve.

EXISTING HERITAGE LISTING: Historic Reserve recommended.

SITE HISTORY:
The New Dawn workings are part of the 1930s revival of interest in mining in the Toombon area. Miners' huts and a 20-head battery were constructed at Clarke's Flat but the returns failed to measure up to expectations and the mine was closed down. The huts and machinery were not left on the site.

References: Milner (1989/1).
Supple et al, M13.

DESCRIPTION & INTERPRETATION OF FEATURES:
Features of the New Dawn mine and battery sites are adits, a battery shed and intact battery, and huts.
Workings—adit levels.
Battery shed—Plant still in shed.
Stampers—Two coupled Thompson 5-head iron-framed stamp batteries, and formwork for copper plates/corduroy strakes, and a Wilfley table.
Battery engine—A Southern Cross 4-cylinder vertical in-line diesel engine with Vee-belt drive to a first motion shaft and belt drive from there to the battery.
Huts—Between the battery building and the Aberfeldy River bridge (on Clarkes Flat) are four timber huts with corrugated iron roofs. (constructed in the 1930s for the miners workings at the New Dawn mine).

INTEGRITY/CONDITION: Inspected in 1989.

CULTURAL SIGNIFICANCE:
The site has:
Scientific significance—Contains a range of relics documenting quartz mining and human occupation during the 1930s.
Archaeological significance—The site has the potential to yield artefacts and evidence which will be able to provide significant information about the technological history of gold mining and the gold miners themselves.

SIGNIFICANCE RANKING: Site listed on heritage Inventory

Assessed by: Peter Milner *Date:* 1989.

PLACE NO. & NAME: **3.0 MOUNTAIN MAID BATTERY**
Jordan–Aberfeldy–Donnelly's Creek goldfield
HI No. ***H8122-0039***

LOCATION: Fiddler's Green.
MUNICIPALITY: Baw Baw Shire Council.
LAND USE/STATUS: State Forest.

SITE HISTORY:
Records indicate that this mine operated from 1906-13, producing 284 oz of gold from 159 tons of ore.

References: Milner (1989/2), p. 20.
Supple et al, M15.

DESCRIPTION & INTERPRETATION OF FEATURES:
Mountain Maid battery.
Stampers—Horwood 4-head gravity-fed stamp battery, concentrating table, and a Jaques primary crusher.
Battery engine—Petter 2-cylinder 10hp diesel engine, Coote and Jorgensen warm reduction gear box; and McDonald single-cylinder diesel engine.

INTEGRITY/CONDITION Recorded in 1989.

CULTURAL SIGNIFICANCE:
The site has:
Scientific significance—Contains a range of relics documenting quartz mining operations carried out on the site.
Archaeological significance—The site has the potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: Peter Milner *Date:* 1989.

PLACE NO. & NAME*:* **4.0 VICTOR'S QUARTZ MINE & BATTERY**
Jordan–Aberfeldy–Donnelly's Creek goldfield
HI No. ***H8122-0040***

LOCATION: Ross Creek.
MUNICIPALITY: Baw Baw Shire Council.
LAND USE/STATUS: State Forest.

SITE HISTORY:
Victor's quartz mine operated on Victor's Spur, on the high range between Ross Creek and Dry Creek, from 1894–1912. Originally worked as the Defiance Reef during the 1860s and 70s, it was renamed Victor's Reef in the '90s.

The Defiance Co. commenced driving a long, low-level tunnel in 1872, after striking a good reef in their shaft, "about one and a half miles north of the Harbinger". In 1876, a 10-head steam-powered battery was erected at the tunnel mouth. After just a few poor crushings, the mine was abandoned.

Between 1894-1900, Victor's mine yielded 21,193 oz from 42,634 tons. It was floated as public co. in 1900, but fell prey to speculators and little development took place. Operations recommenced (under a new company?) in 1902. It appears that a 15-head battery was initially employed, then a 12-head from 1906. In 1907, a 12½-hp oil engine and winding plant were erected at the end of the lower adit. Electricity was used for underground working. From 1902-12, gold production amounted to 8470 oz from 23,401 tons of ore.

References: Milner (1989/2), p. 52.
Mining Surveyors' Reports (Jericho Division), December 1872, 1876.
Tomlin, Bosa and Chamberlain, pp. 104 & 107.

DESCRIPTION & INTERPRETATION OF FEATURES:
Features of Victor's quartz mine are mine workings and a battery.
Workings—Several adits along the creek.
Battery—Two 6-head gravity stamp batteries, electric generator components, and steam engine foundations.

INTEGRITY/CONDITION: Recorded in 1984.

CULTURAL SIGNIFICANCE:
The site has:
Scientific significance—Contains a range of relics documenting quartz mining operations carried out on the site.
Archaeological significance—The site has the potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: Peter Milner *Date:* 1984.

PLACE NO. & NAME: **5.0 MORNING STAR CO. MINE & MACHINERY SITE**
Jordan–Aberfeldy–Donnelly's Creek goldfield
HI No. ***H7624-0112***

LOCATION: Morning Star Creek, Donnelly's Creek goldfield
MUNICIPALITY: Wellington Shire Council
LAND USE/STATUS: State Forest

SITE HISTORY:
Reefs were worked on Morning Star Creek by 1864, the most successful being the Crinoline Reef. Further down the creek, the Morning Star Co. put some rich stone through their steam-powered 12-head battery, erected (according to Milner/Supple et al) in 1865—(I found no record in the Mining Surveyors' Reports).

Mines along Morning Star Creek were re-tried between 1904-10, and it was probably during this period that the extant waterwheel was installed at the Morning Star mine site. The amount of actual mining carried out was minimal and little gold was produced.

References: Milner (1989/1)
Supple et al, M12

DESCRIPTION & INTERPRETATION OF FEATURES:
Features of the Morning Star Co. mine and machinery site are a waterwheel and race, mine workings, and hut sites.

Waterwheel—Thompson 20ft diameter, 6ft wide, fabricated metal pitch-back waterwheel, which was supplied with water from a race along the southern margin of the creek.

Mine workings—The mine associated with the waterwheel is on the northern side of the creek a short distance upstream. The shaft at creek level has been filled in and the lower adit has collapsed. There is a second adit higher up the slope and above this the reef has been stoped to the surface.

Huts—There is some evidence of building sites on both sides of the creek but the area is thickly infested with blackberries.

INTEGRITY/CONDITION: The wheel is relatively free from rust but the timber supports for the axle have rotted and the wheel is now resting on the ground.

CULTURAL SIGNIFICANCE:
The site has:

Historical significance—The Morning Star Battery is historically significant as a characteristic and well-preserved example of an important form of gold mining. Gold mining sites are of crucial importance for the pivotal role they have played since 1851 in the development of Victoria. As well as being a significant producer of Victoria's nineteenth century wealth, with its intensive use of machinery, played an important role in the development of Victorian manufacturing industry. The use crushing batteries in the Alpine gold fields was very common. These batteries were powered by either water or steam. The Morning Star site is only one of a handful that remain which have substantial remains representing the treatment of quartz in mills driven by water wheels.

Scientific significance— The Morning Star Battery is scientifically significant because it is a well-preserved example of a waterwheel, the largest of only a handful still surviving in Victoria. The other notable examples are Wells battery (Murmungee), New Chum battery (Lower Tambo), and Golden Treasure battery (Saltpetre Creek**)**.

Archaeological potential—The Morning Star Battery site is archaeologically important for its potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining.

Natural values— The abandoned mining machinery at the Morning Star site is also important for its evocation of the adventurousness, hardship, and isolation that was part of mining life in the high country areas of the State.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: Milner/Historic Places Section *Date:* 1988/89

PLACE NO. & NAME: **6.0 CRINOLINE BATTERY**
Jordan–Aberfeldy–Donnelly's Creek goldfield
HI No. ***H8222-0002***

LOCATION: Some distance upstream from the Morning Star waterwheel, on the same (northern) side of Morning Star Creek, at a point where it turns northwards, and at a junction of a small gully coming in from the east.
MUNICIPALITY: Wellington Shire Council
LAND USE/STATUS: State Forest—recommended Historic Reserve

EXISTING HERITAGE LISTING: Historic Reserve recommended

SITE HISTORY:
The Crinoline Co. was the first to have a battery on the spot at Morning Star Creek, in 1864. The next year, the water-powered 12-head battery was expanded to 16 heads and a supplementary steam engine added. The Crinoline was by far the most successful of the Morning Star mines between 1864-8. It was subsequently worked by the North Crinoline Co. (1868), Victoria Co. (1869-71), and Golden Key Co. (1871-5). A tramway connecting the battery with the Bismark mine on Concord Creek was constructed in 1872. No mention was found of the Crinoline battery after 1874; however, the Bismark United Co. acquired its own 15-head battery at about the same time.

In 1880, the peculiarly-named Gnome Co. was formed to work the old Crinoline ground. Prospecting, however, turned up nothing payable and the company quickly faded from the record.

Mines on the Crinoline line were re-tried during a revival early in the twentieth century, but little gold was produced.

References: Milner (1898/1)
Mining Surveyors' Reports (Donnelly's Creek), 1864-75, December 1880–June 1881
Supple et al, M12

DESCRIPTION & INTERPRETATION OF FEATURES:
Features of the Crinoline battery are a Cornish boiler, steam engine, and battery.
Boiler—A Cornish boiler, 5½ ft in diameter x 17-ft long, still set in its stone setting.
Battery engine—Partly dismantled Canal Basing Foundry horizontal single-cylinder double-acting steam engine, complete with flyball governor and 9ft-diameter flywheel.
Battery—Partly dismantled battery. Two Fulton and Shaw wooden-framed 4-head stamp batteries cast in Melbourne in 1866, and a Fulton wooden-framed 4-head stamp battery, cast in Melbourne in 1864.

INTEGRITY/CONDITION: Both the steam engine and the stamp batteries have been partially dismantled.

CULTURAL SIGNIFICANCE*:*
The site has:
Scientific significance—Contains a range of relics documenting quartz mining operations carried out on the site.
Archaeological significance—The site has the potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: Milner/Historic Places Section *Date:* 1988/9

PLACE NO. & NAME: **7.0 LADY VERA (FULTON'S CREEK?) BATTERY**
Jordan–Aberfeldy–Donnelly's Creek goldfield
HI No. ***H8222-0008***

LOCATION: Fulton Creek, left branch
MUNICIPALITY: Wellington Shire Council
LAND USE/STATUS: State Forest

SITE HISTORY:
The Lady Vera mine was in production from 1904-8, and again for a period from 1918. During the initial period, the mine produced 1687 oz of gold from 1670 tons of ore.

When operations resumed in 1918, a long tramway was constructed to convey stone from the mine to the Fulton's Creek battery. A 10-head battery (christened the 'Fulton's Hope') had been erected by the Fulton's Creek Co. in 1897; likewise, the Oriental Co. had brought a 10-head plant across from Bulumwaal in 1905. Probably the former of these was the one connected by tramway with the Lady Vera mine in 1918, and is possibly the one recorded by Dr Peter Milner as the Lady Vera battery. On the other hand, the Oriental mine was re-worked by the New York Co. in the early 1930s, so it might be expected that the battery connected with that mine would be the last to survive.

References: Adams, pp. 95, 120
Department of Mines Annual Reports, 1904-18
Milner (1989/1)
Mining Surveyors' Reports (Donnelly's Creek Division), June 1882

DESCRIPTION & INTERPRETATION OF FEATURES:
Alex Cooke (a four-wheel-drive enthusiast of Castlemaine) visited the site in 1994 and observed the following features:

Crushing plant—An iron-framed battery of 15 heads (all standing), two Berdan pans and other milling plant.

Portable engines—Wheels have been removed from the engine and stored to one side. Lying near the engine is a winding winch for a tramway.

Tramway—Halfway down spur is a crab winch (lashed to a tree), still attached to wire rope—part of the self-acting tramway system.

Dr Peter Milner inspected the site in 1989, noting a portable engine, two 5-head gravity stamp batteries, a Berdan pan and tramway.

INTEGRITY/CONDITION: Good

CULTURAL SIGNIFICANCE:
The site has:

Historical significance—The Lady Vera Battery site is historically significant as a characteristic and well preserved example of an important form of gold mining. Gold mining sites are of crucial importance for the pivotal role they have played since 1851 in the development of Victoria. As well as being a significant producer of Victoria's nineteenth century wealth, with its intensive use of machinery, played an important role in the development of Victorian manufacturing industry. The use of crushing batteries in the Alpine gold fields was very common. Batteries were driven either by water or steam power. Today few batteries survive in situ.

Scientific significance— The Lady Vera Battery site is scientifically significant because it contains a unique collection of quartz mining relics, including a well preserved steam-powered battery. The battery has escaped being tampered with, and is still standing. The battery is probably one of the most intact examples of its type surviving in Victoria.

Archaeological potential—The Lady Vera battery site is archaeologically important for its potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining.

Natural values— The abandoned mining machinery at the Lady Vera site is also important for its evocation of the adventurousness, hardship, and isolation that was part of mining life in the high country areas of the State.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: Peter Milner *Date:* 1989
Alex Cooke, 29 McGrath St, Castlemaine 1994

PLACE NO. & NAME: **8.0 WHITE STAR NO. 1**
8.1 WHITE STAR NO. 2
Jordan–Aberfeldy–Donnelly's Creek goldfield
HI No. ***H8122-0024*** ***White Star No. 1***
HI No. ***H8122-0025*** ***White Star No. 2***

LOCATION: Donnelly's Creek
MUNICIPALITY: Baw Baw Shire Council
LAND USE/STATUS: State Forest

SITE HISTORY:
The White Star was one of the main mines during the initial phase of quartz mining at Donnelly's Creek, commencing in 1863. The mine closed in 1867 and remained idle for almost 20 years. It was reworked between 1885-9. Prospectors reopened the White Star in the early years of the century, and in 1908 obtained a government loan to install a water-powered battery and drive the No. 2 tunnel at creek level. The battery was one of the last manufactured by H.W. Mould of South Melbourne; the company closed down in 1910. The White Star No. 2 operation failed to pay off and the mine closed in 1910.

References: Bailey & Bailey, pp. 6-7
Baragwanath, pp. 9, 33
Milner (1989/1 and /2)
Supple et al, M 11
Tomlin, Bosa & Chamberlain, p. 134

DESCRIPTION & INTERPRETATION OF FEATURES:
Features of the White Star No. 1 site (recorded by Milner/Supple et al as White Star No. 2) are the remains of a battery, a boiler, and mine adits.

Battery site—Located about 500-600 m above the White Star No. 2, the original battery has been blown up, and parts of it are scattered about the site.

Boiler—A Langland's under-fired return tubular boiler is still in situ.

Mine workings—An adit is located approximately 10 m east of the machinery site, on the same level. A number of adits are located at different levels up the slope.

Features of the White Star No. 2 site (recorded by Milner/Supple et al as White Star No. 1) are a lower adit, tramway, battery, pelton wheel, and water race.

Lower level workings—The lower (1908) level workings of the White Star Co. consists of a tunnel into the steep southern bank of White Star Creek. This is connected by a short level 20-inch gauge tramway to the battery.

Battery—H.W. Mould iron-framed 5-head battery, two mercury wells, a Wilfley table, two Berdan pans complete with bevel gears and fast and loose pulleys, a 3-inch and 4-inch drive shaft complete with spur gear and 5-sheave rope pulley, and the remains of a 10ft-diameter wood-staved water tank.

Pelton wheel—A 24-bucket pelton wheel with an outer diameter of 6½ ft is situated on the slope behind the battery.

Race—Water is supplied to the pelton wheel by a race, which runs around the slope some distance above the battery site.

INTEGRITY/CONDITION: Good

CULTURAL SIGNIFICANCE:
The site has:

Historical significance—The White Star gold mining precinct is historically significant as a characteristic and well preserved example of an important form of gold mining. Gold mining sites are of crucial importance for the pivotal role they have played since 1851 in the development of Victoria. As well as being a significant producer of Victoria's nineteenth century wealth, with its intensive use of machinery, played an important role in the development of Victorian manufacturing industry. The use of crushing batteries in the Alpine gold fields was very common. Batteries were driven either by water or steam power. The latter technology involved

both water wheels and pelton wheels. Today few batteries survive in situ, and of those, the White Star is a representative of pelton wheel technology.

Scientific significance— The White Star gold mining precinct is scientifically significant because it contains a unique collection of mining relics, including battery powered by a pelton wheel. The pelton wheel is still in its original location. The battery is probably one of the most intact examples of its type surviving in Victoria.

Archaeological potential— The White Star gold mining precinct is archaeologically important for its potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining.

Natural values— The abandoned mining machinery at the White Star gold mining precinct is also important for its evocation of the adventurousness, hardship, and isolation that was part of mining life in the high country areas of the State.

SIGNIFICANCE RANKING: Sites listed on Heritage Inventory

Assessed by: Peter Milner/Historic Places Section *Date:* 1985/89

PLACE NO. & NAME: **9.0 DRY CREEK–HARBINGER (New Chum) BATTERY & MINE WORKINGS**
Jordan–Aberfeldy–Donnelly's Creek goldfield
HI No. ***H8122-0084***

LOCATION:	The mine workings (adits) are driven into the northern slope of a gully running south into Dry Creek. The machinery site is situated a short distance south-east of the mine workings on the northern margin of Dry Creek.
MAP REFERENCE:	8122: 406.332
MUNICIPALITY:	Baw Baw Shire Council
LAND USE/STATUS:	State Forest

SITE HISTORY:

The New Chum Reef was opened in 1864. Its prospectors drove a tunnel which, by September 1865, was in 300 ft. Early in 1867, the New Chum Co. undertook "the necessary works"—a track or tramway—to enable crushing at the Dry Creek battery (erected in 1864). The following year, a 17-head battery, engine and boiler ("Mr. Hodgson's crushing plant on the Red Jacket Creek"—Dry Creek seems to have also gone by that name) were erected "for the purpose of crushing the stone from the New Chum Reef"—the two main mines being those of the No. 1 South New Chum and Manoa GMCs (the New Chum Co. had dropped from the records). The battery had formerly operated at the Smile of Fortune mine at Jericho (installed 1867), and its new location was below the Moonlight Reef and immediately above the (later discovered) Harbinger. In 1869, the battery was called "Polglaise's crushing mill" and was the only one on Dry Creek. The Manoa was then the only claim at work on the New Chum Reef.

The newly discovered Harbinger Reef was the big news on Dry Creek: in 1870 the Harbinger Co. laid a tramway to the battery. Other mines crushing at the Dry Creek battery were the Commercial and Moonlight. In 1871, only the Harbinger mine was sending stone to the machine: the New Chum and other reefs were abandoned. In 1876, the mine *and plant* of the Harbinger Co. was sold and the new owner immediately got the steam-engine and battery in thorough working order. By 1878 (and probably earlier) kiln/s operated at the Dry Creek/Harbinger battery, burning the quartz prior to crushing. For several years from that date, work in the Harbinger mine was confined to driving the main tunnel and prospecting, with no crushing taking place. During that period, bushfire "burned down" the battery and steam engine, and the claim was left idle for a few years. In 1884-5, the battery and engine were repaired, additional gold-saving appliances installed, and (new) quartz-roasting kilns constructed. In 1886, active mining recommenced in the Harbinger, resulting in a few good yields before the gold cut out. A lower tunnel was driven to again cut the reef, and crushing resumed in 1888.

A 10-head battery and other plant was erected on another site for the Harbinger mine sometime later, and was removed in the late 1970s to Walhalla where it forms part of the Long Tunnel Extended mine restoration. Adits were worked on the New Chum line, on the opposite site of the spur, and a battery erected there in about 1903. The New Chum was worked until 1915.

Although the battery on this site appears to have operated in connection with the Harbinger mine for the greater part of its career, it has generally been recorded as the New Chum battery. The 12 heads of battery, steam engine and boiler remaining on the site are presumably part of the original 17-head crushing plant installed in 1868 (ex-Smile of Fortune, 1867). The missing five stampers may have been discarded when the battery was repaired after bushfire damage in the early 1880s. The substantial kilns would be those constructed by the Harbinger Co. in 1885. Despite their being generally attributed to the New Chum, the battery and plant seem to have never been exclusively associated with that reef.

References: Adams, p. 133
Historic Places Section file—source of material unknown
Milner (1989/1)
Mining Surveyors' Reports (Jordan South and Part of Omeo Subdivisions), June 1864; (Jericho Division), March 1867, September 1869, March 1870, September 1871, June 1876, June & December 1878, June 1881, March–September 1884, June 1885–September 1886, March 1888
Tomlin et al, pp. 110 & 112

DESCRIPTION & INTERPRETATION OF FEATURES:

(This site has previously been recorded as the New Chum battery.)

The Dry Creek–Harbinger (New Chum) site features mine adits, the remains of a battery, a boiler, steam engine, two roasting kilns, and the site of another small battery.

Mine workings—Four adits driven in a north-easterly direction into the northern slope of a gully which runs south into Dry Creek. Several smaller adits have been driven in a westerly direction into the spur from the opposite slope.

The machinery site is situated a short distance south-east of these workings on the northern margin of Dry Creek. The machinery is located almost at creek level with the battery boxes positioned across a shallow gully, which runs down into the creek.

Battery—Components of three 4-head stamp batteries with front discharge battery boxes.

Boiler—A low pressure Cornish boiler, 5½ ft in diameter x 16½ ft long, with pointed head rivets on all seams; and a largely buried 3ft-diameter cylindrical vessel (possible steam accumulator).

Steam engine—A double-acting horizontal steam engine complete with 8ft-diameter cast iron flywheel with an elliptical sectioned rim.

Roasting kilns—Two intact, adjoining, 12ft-diameter roasting kilns constructed of stone. The kilns are positioned on a rock platform on the slope behind the battery, at the terminus of a quartz track from the mine workings.

Small battery site—On the northern margin below the creek and some distance upstream from the other one, is another small battery site.

INTEGRITY/CONDITION: Good

CULTURAL SIGNIFICANCE:

The site has:

Historical significance— The Dry Creek–Harbinger (New Chum) site is historically significant as a characteristic and well preserved example of an important form of gold mining. Gold mining sites are of crucial importance for the pivotal role they have played since 1851 in the development of Victoria. As well as being a significant producer of Victoria's nineteenth century wealth, with its intensive use of machinery, played an important role in the development of Victorian manufacturing industry. The use of crushing batteries in the Alpine gold fields was very common. Batteries were driven either by water or steam power. Today few batteries survive in situ, and of those, the Star Extended is a representative of steam-powered technology.

Scientific significance— The Dry Creek–Harbinger (New Chum) site is scientifically significant because it contains a unique assemblage of gold mining relics, including 1. extensive and well preserved remains of a steam-powered battery; and, 2. two quartz roasting kilns.

Archaeological potential— The Dry Creek–Harbinger (New Chum) site is archaeologically important for its potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining.

Natural values— The abandoned mining machinery at the Dry Creek–Harbinger (New Chum) site is also important for its evocation of the adventurousness, hardship, and isolation that was part of mining life in the high country areas of the State.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: Peter Milner/Historic Places Section *Date:* 1989/1983

PLACE NO. & NAME*:* **10.0 LILY CREEK BATTERY & MINE SITE**
Jordan–Aberfeldy–Donnelly's Creek goldfield
HI No. ***H8122-0021***

LOCATION: Lily Creek or Mount Lookout battery is situated on the west side of Lily Creek at the base of a steep slope.
MUNICIPALITY: Baw Baw Shire Council
LAND USE/STATUS: State Forest

SITE HISTORY:
The reefs on Lily Creek, south-east of Mt Lookout, were discovered in 1871 and in 1872 a 10-head battery was erected. Up to 1887 some 10,000 tons of stone were crushed but yields were generally low and the mine changed hands several times during that period. An attempt was made to rework the mine in 1909 and it is probably to this period that the machinery belongs. The stamp battery has not had a great deal of use and as the casting inscription indicates that the battery was made at Jeffcott Street, West Melbourne (and Anderson's were there only until 1910) this is consistent with it having been installed new at that time.

References: Supple et al, M9 (after Dr P. Milner)

DESCRIPTION & INTERPRETATION OF FEATURES:
Features of the Lily Creek battery and mine site are a tramway formation, battery, boiler and converted chimney stack, foundations for other machinery, mine workings, and settlement site.
Tramway—Formation of self acting tramway from the mine to the battery hopper.
Battery—Anderson iron-framed 4-head stamp battery
Boiler—Cornish boiler and chimney stack which has been converted for use as a roasting kiln.
Foundations—There are foundations for a steam engine, concentrating table and other machinery.
Mine workings—Several adit levels into the east slope of Lily Creek.
Settlement site—A wide flat area, upstream from the battery site and between the tramway formation and the creek.

CONDITION OF FEATURES: Heavily infested with blackberries.

CULTURAL SIGNIFICANCE:
The site has:
Historical significance—as the first mine opened in the Aberfeldy Division.
Scientific significance—Contains a range of relics documenting quartz-mining operations carried out on the site.
Archaeological significance—The site has the potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: Peter Milner *Date:* 1982

PLACE NO. & NAME: **11.0 WILDFLOWER MINE & BATTERY SITE**
Jordan–Aberfeldy–Donnelly's Creek goldfield
HI No. ***H8122-0023***

LOCATION: Dry Creek. About 300 m upstream from the Dry Creek–Harbinger (New Chum) battery site.
MUNICIPALITY: Baw Baw Shire Council
LAND USE/STATUS: State Forest

SITE HISTORY:
The Wildflower was one of the mines active in the Dry Creek area in the late 1890s. It had originally been worked as the Homeward Bound in 1862.

References: Tomlin, Bosa and Chamberlain, pp. 107-10

DESCRIPTION & INTERPRETATION OF FEATURES:
Features of the Wildflower mine and battery site are an adit, tramway, battery and shed, engine, and pump.
Mine workings—Collapsed adit just above creek level which connects via a short tramway to the battery site.
Battery shed—Partly collapsed corrugated iron shed.
Battery—Two-head battery made by Vickery of Bromley complete with an ore feeder and wooden blanket tables.
Battery engine—An internal combustion engine and gear box.
Pump—A pump by Gardue of Illinois, USA.

INTEGRITY/CONDITION: Good

CULTURAL SIGNIFICANCE:
The site has:
Scientific significance—Contains a range of relics documenting quartz-mining operations carried out on the site.
Archaeological significance—The site has the potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: Historic Places Section *Date:* 1989

PLACE NO. & NAME: **12.0 CHINESE PIG OVEN**
Jordan–Aberfeldy–Donnelly's Creek goldfield
HI No. ***H8122-0087***

LOCATION: Chinaman's Point, Jericho. Precise location unknown, but to the north-east of Red Jacket Track, about 1 km south-east of Jericho.
MUNICIPALITY: Baw Baw Shire Council
LAND USE/STATUS: State Forest

SITE HISTORY:
In 1864 (three years after the Jordan goldfield was rushed) the population of Jericho was 400 Europeans and 95 Chinese. Eight years later, the European population of the district was on the decline: they were "gradually making way for the Chinese" who were, at that time, occupying most of the old creek claims on the Jordan. "The ground that was considered worked out by the lucky ones ten years ago", wrote the mining registrar, "will continue to pay a low rate of wages for re-working, by the more industrious though less fortunate miners, for many years to come".

The only sizeable Chinese settlement on the Jordan goldfield, of about 200 people, was located on the Jordan River between Red Jacket and Jericho. A joss house was established and several unmarked graves of Chinese are said to exist in the cemeteries at Jericho and Red Jacket.

The ovens were used by the Chinese to roast entire pigs on feast days. A fire would be lit in the base of the oven and fed from the opening at the base, then large stones would be lowered and allowed to become red hot. A whole pig would be lowered onto the stones and a brass or metal covered placed over the opening until the meat was thoroughly cooked.

Two ovens originally existed and were unearthed during sluicing operations in the late 1940s. Tins full of Chinese coins were found buried near one of the ovens. One of the ovens has since been destroyed by roadworks. The other was again hidden by undergrowth until its rediscovery in the 1970s. Officers from the Melbourne Metropolitan Board of Works reported that the site had deteriorated by the late 1980s.

Chinese pig ovens have been recorded on goldfields in Tasmania, north Queensland and the Northern Territory, but this is the only site of its type identified in Victoria.

References: Mining Surveyors' Reports (Jericho Division), June & September 1872, June 1873
Steenhuis
Supple et al, M21
Tomlin, Bosa & Chamberlain, pp. 99-100

DESCRIPTION & INTERPRETATION OF FEATURES:
The Chinese pig oven is a round structure made of earth and rocks. It is open at the top and has a small opening in the base.

INTEGRITY/CONDITION: Overgrown and deteriorating. Partially excavated (see photo in Tomlin et al) in 1977.

CULTURAL SIGNIFICANCE:
The site has:

Historical significance—Chinese gold miners were an integral part of historic alluvial gold mining in Victoria.
Scientific significance—because of its rarity, the only known Chinese pig oven site in Victoria.
Social value—as rare evidence of Chinese occupation and ceremonial life on the goldfields.
Archaeological potential—Possibility of associated archaeological features

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: Tomlin et al *Date:* 1979

PLACE NO. & NAME: **13.0 JERICHO–JORDAN RIVER ALLUVIAL WORKINGS**
Jordan–Aberfeldy–Donnelly's Creek goldfield
HI No. ***H8122-0041***

LOCATION: Diversion tunnel is on the Jordan River adjacent to, and south of, day visitor area at Jericho.
Township site is on the junction of BB Creek and the Jordan River.
MUNICIPALITY: Baw Baw Shire Council
LAND USE/STATUS: State Forest

SITE HISTORY:

One of the earliest reports (dated February 1862) of the Jordan River workings reads like this:

> *An important rush has taken place to a district ten miles from the Upper Goulburn workings, and thirty miles south of Mount Bulla, contiguous to a creek denominated by the miners the River Jordan. The river runs through a flat 500 yards wide, and already a small township has been built on its banks. The bed consists of clay, slate, and, in some instances, sandstone. The flats on each side are composed of gravel, covered with rich soil, the whole of which appears to be auriferous, although the present workings are confined to the bed of the creek, and its intermediate sides. The workings on the main creek extend for fourteen miles, besides which there are numerous tributaries which are worked successfully, particularly one named Fern-tree Creek, which is ten miles long. A party of four got here 280 oz in one week. About 4,000 persons were on the ground…*

The Jericho township site was continuously occupied from the time of its formation, in 1861, until the last of the sluicing operators (the Christie family) departed in the 1950s. The hotel had closed in 1938 and the remnants of the township—numerous abandoned wooden buildings—were destroyed in the Black Friday bushfires the next year.

Hydraulic sluicing was carried on along the Jordan River from above Jericho to Blue Jacket from 1895 until 1950s, obliterating most signs of earlier alluvial mining on the river. An exception is a diversion tunnel cut through a river bend just below the township. No record has been found of the tunnel's construction and use. It has been alternatively attributed to either river-bed sluicers during the earliest mining period at Jericho (1861-5) or to an attempt in 1872 to hasten floodwaters away from the township. Certainly, sluicing was confined to the bed of the river until 1865; from that date sluicers spread to the spurs above the river.

References: Historic Places Section (CNR) hanging files
Mining Surveyors' Reports (Western Buckland Division), February 1862; (Jordan South and Part of Omeo Subdivisions), September 1864; (Part of Jordan South Subdivision), September 1865; (Matlock Subdivision), March & June 1866

DESCRIPTION & INTERPRETATION OF FEATURES:

Features of the Jericho-Jordan River alluvial workings are evidence of extensive sluicing, a diversion tunnel, and the Jericho township site.

Diversion tunnel—The tunnel is about 30 m long x 4 m high x 3 m wide, cut through rock. The river still runs through it. A narrow ledge slightly above water level provides a pathway through the tunnel.

Sluicing—Extensive sluicing along the river from above Jericho to Blue Jacket mine.

Jericho township site—Little remains of the original township. Most of the area has been heavily sluiced by hydraulic water pressure, which has disturbed the site beyond recognition. The main features of the township that still exist are the cemetery (one broken headstone plus some iron work) and site of the Police Reserve.

INTEGRITY/CONDITION: Extensive re-working

CULTURAL SIGNIFICANCE:

The sites have:

Scientific significance—Site contains a range of gold mining relics documenting various periods and methods of alluvial mining.

Archaeological significance —Possibility of buried artefacts

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: Historic Places Section *Date:* 198?

PLACE NO. & NAME: **14.0 BB QUARTZ BATTERY**
Jordan–Aberfeldy–Donnelly's Creek goldfield
HI No. ***H8122-0089***

LOCATION: Battery site located within 500 m of Jericho, on a spur dividing the Jordan from BB Creek.
MUNICIPALITY: Baw Baw Shire Council
LAND USE/STATUS: State Forest

SITE HISTORY:
The BB Quartz mine is on a reef originally known as the Charleston, discovered in 1863. At that time, the reef's proximity to water (for driving machinery) was seen as a great advantage. The Charleston and BB Co. (claim nos. 1 & 2 on the North Charleston Reef) worked the reef from 1865; by mid-1866 their tunnel was in 300 ft. According to Tomlin et al, the mine was worked until the late 1870s, apparently on a small scale with no noteworthy results. No record has been found of a battery at the mine during that initial period of working.

After 20 years' idleness, the mine was re-opened by the BB Quartz GMC in 1897, who worked it with a 5-head battery and 38-ft overshot waterwheel until 1918. The mine's yield during that period was 1,768 oz from 2,076 tons. Small-scale, intermittent working of the BB Quartz mine continued until about 1935. A 1929 photograph showed the BB Quartz mine's waterwheel in an advanced state of decay.

References: Mining Surveyors' Reports (Gipps Land Division), May 1863; (Matlock Subdivision), June 1866
Tomlin et al, pp. 83-6

DESCRIPTION & INTERPRETATION OF FEATURES:
The remains of the BB Quartz battery were photographed by Tomlin in 1974. Features included a collapsed 5-head battery and metal components of a waterwheel (hub, driving wheel and belt wheel—all corresponding with a 1929 photo of the waterwheel). Tomlin also photographed the entrance to the main adit of the BB Quartz mine.

INTEGRITY/CONDITION: In 1974, the site was densely infested with blackberries and bracken.

CULTURAL SIGNIFICANCE:
The site has:

Scientific significance—Contains a range of relics documenting quartz-mining operations carried out on the site.

Archaeological significance—The site has the potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: Luke Steenhuis (BB township) *Date:* 1989

PLACE NO. & NAME: **15.0 RED JACKET TOWNSHIP SITE**
Jordan–Aberfeldy–Donnelly's Creek goldfield
HI No. ***H8122-0090***

LOCATION: Junction of Red Jacket and Dry Creeks with Jordan River.
MUNICIPALITY: Baw Baw Shire Council
LAND USE/STATUS: State Forest

SITE HISTORY:
Red Jacket was first settled in 1862 during the initial gold rush to the valley. The first licensed hotel in the Jordan Valley was O'Keefe's, which was operated by that family until about 1913.

References: Steenhuis

DESCRIPTION & INTERPRETATION OF FEATURES:
All that remains to identify the Red Jacket township site are the ruins of the post office chimney, the sites of the Red Jacket Hotel, school, cemetery, and a few other buildings. The cemetery has a number of headstones.

INTEGRITY/CONDITION: Disturbance due to 'treasure hunting'

CULTURAL SIGNIFICANCE:
The site has:

Archaeological significance— archaeologically important for its potential to yield artefacts which will be able to provide significant information on the cultural history of the gold mining community at Red Jacket Township.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: Luke Steenhuis *Date:* 1993

PLACE NO. & NAME: **16.0 VIOLET TOWN & SLUICING AREA**
Jordan–Aberfeldy–Donnelly's Creek goldfield
HI No. ***H8122-0091***

LOCATION: Lower Jordan River, north of where Violet Town Track crossing and on west side of river.
MUNICIPALITY: Baw Baw Shire Council
LAND USE/STATUS: State Forest

SITE HISTORY:
Research needed.

DESCRIPTION & INTERPRETATION OF FEATURES:
A foot track or packhorse track, overgrown with blackberries, is believed to link the site of Violet Town to the Violet Town track. Nearby, a sluiced area and long rock wall (diversion sluice?) are shown on a mud map drawn by J.G. Rogers of Moe, c.1992 (included in Steenhuis report).

INTEGRITY/CONDITION: —

CULTURAL SIGNIFICANCE:
The site has:

Archaeological significance— archaeologically important for its potential to yield artefacts which will be able to provide significant information about the technological history of gold mining, and to yield artefacts which will be able to provide significant information on the cultural history of the gold mining community at Violet town.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: J.G. Rogers of Moe (in Steenhuis report) *Date:* c.1992

PLACE NO. & NAME: **17.0 EMPRESS COMPANY MINE**
17.1 EMPRESS COMPANY BATTERY
Walhalla Goldfield
HI No. ***H7824-0051***

LOCATION: Walhalla township
MUNICIPALITY: Baw Baw Shire Council
LAND USE/STATUS: Historic Reserve

SITE HISTORY:
1868: Company formed to work an area formerly occupied by the Alpine and South Gippsland companies.
1869: Pumping and winding machinery, blacksmith shop and a poppet head were erected and the main shaft started.
1870: 20-head battery erected, but on reaching 302 feet with the shaft, operations ceased in 1872.
1874: The United Walhalla General Mining Company formed (an amalgamation of four companies - Empress, Emperor, Stringer's Creek and Molesworth).
1881: Acquired by the Long Tunnel Company. The total yield up to this time was 5358 ounces.
1889: The Great South Long Tunnel Company was formed, the Empress Company's machinery was overhauled and the shaft deepened.
1902: The company had a 30-head battery and by 1903 the company was erecting more powerful winding machinery and the shaft was down to a depth of 1,445 feet. The Great South Long Tunnel Company won 18,571 ounces of gold and paid dividends of £62,500.
1980s: Attempt to re-open shaft.

References: *Walhalla Conservation Study*, Graeme Butler, 1984
Action Plan for Conserving and Interpreting Historic Places at Walhalla, Chris Smith & Ray Supple, Historic Places Section, 1998

DESCRIPTION & INTERPRETATION OF FEATURES:

Empress mine site
The site is very overgrown. Main historic features include brick winding engine foundations, a stone chimney, and a large mullock heap, which cascades down to Stringers Creek. Also present are some terracing and tramways.
There are also features on the site from recent mining activity including a metal head-frame above the shaft and five concrete water storage tanks.

Empress battery site
Relics of the Empress battery are located on a benched area on the western side of Stringers Creek. The battery is immediately opposite the Walhalla hotel. The benched area is retained by a concrete and stone wall and contains mortar blocks for 10-head of stampers. The bench is cut into an extremely steep face. The hillslope below and above the stamper foundations is thickly timbered.

INTEGRITY/CONDITION: Difficult to assess due to regrowth. Some disturbance to historical relics at the mine site due to modern mining activity. The battery site has not been disturbed but a section of the benched area may have collapsed taking away a section of the battery.

CULTURAL SIGNIFICANCE:
The sites have:

- *Historical significance*—Mine and battery relics associated with Walhalla's peak mining period, when the field was second only to Bendigo in gold production.
- *Scientific significance*—The sites contain a range of features which document different mining operations.
- *Archaeological potential*—Both sites have the potential to yield artefacts and evidence, which will be able to provide information about the technological history of gold mining.

Network values—The range of historical features, in combination with an extensive photographic record and physical attributes of the Stringers Creek Valley produce one of the State's most evocative and unique cultural landscapes.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: Bannear *Date:* 1998

PLACE NO. & NAME: **18.0 LONG TUNNEL MINE SITE**
18.1 LONG TUNNEL BATTERY
18.2 TRAMWAY
Walhalla Goldfield
HI No. ***18.0 H7723-0607***
18.1 H7723-0670
18.2 *H7723-0222*

LOCATION: Walhalla township
MUNICIPALITY: Baw Baw Shire Council
LAND USE/STATUS: Historic Reserve

SITE HISTORY:
The Long Tunnel Gold Mining Company was formed in 1863 eventually closing in 1914. By the 1870s, the Long Tunnel was one of Victoria's leading mines and it developed into the richest mine in Australia during the 'eighties By December 1887, it was hailed as the premier mine of Victoria and Walhalla field was, in terms of gold production, second only to Bendigo in gold production.
The company drove adits into the steep sided Stringer Valley and by 1867 had achieved success discovering gold 30 feet below the creek level. The tunnel was enlarged and a machinery chamber excavated. The company began to prosper; it purchased powerful pumping machinery in 1868. There was a continual expansion of its operations both in terms of its mining lease and its plant and equipment. By 1884 it was reworking both the Walhalla and Empress companies shafts and by 1901 its lease of 251 acres covered the whole valley. Its mine workings eventually extended down 23 levels, 2284 feet below the main adit level. When it finally closed in 1914 the company had produced 813,644 ounces of gold and paid dividends totaling £1,283,400.
By 1869 the company had a 20-head battery, multi-tubular boiler, patent concentrator, the latest improvements for amalgamation and treatment of pyrites, plus a 20hp pumping engine. In 1875 the company overhauled its pumping equipment, battery and associated gold recovery equipment, and erected more powerful winding machinery. In 1889 a powerful compressor and associated piping and equipment were installed. By 1892 the company was operating a 45-head battery and in 1903 electric lighting was installed. The plant was updated again in 1908 and included a 30-head battery, Wilfley tables, grinding pans, Allen compound steam engines, electrical plant, draught fan, super heaters, compressors and a new winding plant.
The mine's incline tunnel was been witnessed extensive mining attention in recent times.

References: *Walhalla Conservation Study*, Graeme Butler, 1984
Action Plan for Conserving and Interpreting Historic Places at Walhalla, Chris Smith & Ray Supple, Historic Places Section, 1998

DESCRIPTION & INTERPRETATION OF FEATURES:

Long Tunnel Mine
The Long Tunnel mine is located on a benched platform, above the town, on the west side of the valley. The mining platform contains a decline shaft and the remains of the concrete foundations of the winding engine. The winder foundations are on stone footings perched on the edge of the platform. cascades down to Stringers Creek.
The features on the site from recent mining activity include a steel head-frame, security fence around the shaft and poppet head, and concrete foundations of a shed and winding engine.

Long Tunnel Battery and Ore Processing Works
The battery and associated gold recovery works are located on the western bank of Stringers Creek, below the mining platform. The site is very overgrown but contains substantial evidence of the company's 1908 upgrade. The mining relics are located on three levels. The upper level contains the stamper foundations (including the mortar blocks). The middle level contains concrete, stone and brick foundations, and the lower level contains some evidence of the company's earlier battery. The mining relics on the lower level have been partly incorporated in the outbuildings and gardens belong to a private residence.

A tramway cutting runs south from the upper level. Twenty metres along this tramway is a benched area containing a roasting furnace and brick flue. The brick flue originally run up the hill to a large stack located on the slope above the incline shaft. Only a section of the flue survives. According to the owner of the private residence, the roasting oven is intact. It is now buried by debris and obscured by thick undergrowth.

Tramway

The mining platform is associated with a tramway, which connects all the major gold mines on the western side, including Long Tunnel Extended, Walhalla and Empress. This tramway is now used as a walking track and has been developed as part of the Alpine Walking Track.

INTEGRITY/CONDITION: Good

CULTURAL SIGNIFICANCE:

The site has:

Historical significance— The Long Tunnel Battery and Ore Processing Works is historically significant as a characteristic and well-preserved example of an important form of gold mining. Gold mining sites are of crucial importance for the pivotal role they have played since 1851 in the development of Victoria. As well as being a significant producer of Victoria's nineteenth century wealth, with its intensive use of machinery, played an important role in the development of Victorian manufacturing industry. The Long Tunnel Mine was Australia's richest gold mine during the 1880s and one of the State's most profitable mines.

Scientific significance— The Long Tunnel Battery and Ore Processing Works is scientifically significant because it contains a unique collection of relics belonging to the company's 1908 upgrade. Of particular note is the well-preserved evidence of the metallurgical process used by the company to unlock gold from heavily mineralised ore. Evidence of these metallurgical processes, such as the one carried out by the Long Tunnel Company, are extremely rare in Victoria.

Archaeological potential—The Long Tunnel Battery and Ore Processing Works has good integrity and high potential to yield artefacts and evidence which will be able to provide significant information about the technological history of gold mining.

Network values—The range of historical features, in combination with an extensive photographic record and physical attributes of the Stringers Creek Valley produce one of the State's most evocative and unique cultural landscapes. The Long Tunnel Battery and Ore Processing Works forms an integral part of this landscape.

SIGNIFICANCE RANKING: Sites listed on Heritage Inventory

Assessed by: Bannear/Smith & Supple *Date:* 1998

PLACE NO. & NAME: **19.0 WALHALLA CONSOLS MINE**
Walhalla Goldfield
HI No. ***H8122-0081***

LOCATION: Walhalla Township
MUNICIPALITY: Baw Baw Shire Council
LAND USE/STATUS: Historic Reserve

SITE HISTORY:

References:

DESCRIPTION & INTERPRETATION OF FEATURES:
Walhalla Consols mine
The site is located at the head of a gully and requires serious scrub bashing to visit. The surviving mining features are obscured by vegetation and include an open shaft, large intact mullock heap with well defined dumping lines, arrangement of machinery foundations, and vertical stone flue leading to remnants of square stone chimney stack. The flue may be associated with a boiler and/or roasting oven.

INTEGRITY/CONDITION: Off the beaten track, very overgrown, and has good integrity.

CULTURAL SIGNIFICANCE:
The site has:

Historical significance—Mine and battery relics associated with Walhalla's peak mining period, when the field was second only to Bendigo in gold production.

Scientific significance— Site contains a range of well preserved features, which document the different mining operations undertaken on the site.

Archaeological potential— The site has good integrity and high potential to yield artefacts and evidence, which will be able to provide significant information about the technological.

Network values—The range of historical features, in combination with an extensive photographic record and physical attributes of the Stringers Creek Valley produce one of the State's most evocative and unique cultural landscapes.

SIGNIFICANCE RANKING: Site is listed on the Heritage Inventory

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Assessed by: Bannear *Date:* 1998

PLACE NO. & NAME: **20.0 LONG TUNNEL EXTENDED GOLD MINE RESERVE**
Walhalla goldfield
HI No. ***H8122-0092***

LOCATION:	Mine Road, Walhalla
MUNICIPALITY:	Baw Baw Shire Council
LAND USE/STATUS:	Comprising Promotion of Tourism Reserve (CA 112B) and Historic Interest Reserve (CA 112, 1134 & 162), Town of Walhalla. Also forms part of Walhalla Conservation Area.

EXISTING HERITAGE LISTING:
National Estate registered (Australian Heritage Commission file no. 004821 2/10/269/0009/01)—Significant within a Registered Area (i.e., Walhalla Conservation Area).

SITE HISTORY:
The Long Tunnel Extended Mine was commenced in 1871 adjacent to the successful Long Tunnel Mine from which it took its name. Between the two mines and the Walhalla mine, almost 47 tons (1.5 million troy ounces) of gold were produced from crushing 1.42 million tonnes of ore. Of this, about 13.7 tonnes of gold were produced from the Long Tunnel Extended Mine. During the years 1885 to 1908 it was one of Australia's principal reef gold producers, being top Victorian producer for six of those years. When the mine closed in 1911, its past dividends were the fifth-highest of any Victorian gold mine. The New Long Tunnel Company opened unworked ground near the Long Tunnel Extended mine between 1927-38.

References: Adams
Australian Heritage Commission file no. 004821 2/10/269/0009/01

DESCRIPTION & INTERPRETATION OF FEATURES:

Long Tunnel Extended Mine Site
The following description of the Long Tunnel Extended Gold Mine Reserve forms part of its National Estate citation:
'The entrance to the mine is from the main adit which was commenced in an earlier operation in 1866 and extends 274 metres to the main shaft and machine chamber. The adit is timbered where required but is for the most part self-supporting. It was cleared and regraded after 1975 and a steel rail tramway installed along the main haulway.

The machine chamber is an excavation made in 1876 to house a boiler and winding gear for the main shaft, and extended progressively until 1905 to its present size of about 43m x 9m x 4m high, to house five boilers, pumping and winding engines and gear, compressors, air receivers and the like to drive twenty-six rock drills. The equipment, some of which would have had to be assembled inside the chamber because it would not fit through the adit, was removed after the mine ceased operation, but the chamber is in good condition since its partial clearing of fallen debris and stabilisation. The upper surface has been secured in some parts with rock anchors and mesh, and the boiler flue and inclined airshaft are secured with steel mesh. Brick bases of two Cornish boilers have been excavated and partly reconstructed. Short cross tunnels and an exploratory winze are accessible where they extend from the main adit about halfway along its length. They were excavated in 1871 where the adit intersected the reef, before driving further with the adit and excavating the main shaft to expose the reef again at lower levels. The shaft was continuously deepened below the machine chamber until 1908 when a depth of 923 m was reached. After closure of the mine in 1911 and liquidation of the Long Tunnel Extended Company, the workings were taken over by the Long Tunnel Company, which mined down to 1120 m before operations ceased in 1914. Workings below the main adit level were extensive but are no longer accessible.

A separate Renown adit tunnel excavated in the 1930s has been recently discovered and its history authenticated with one of the miners concerned. It is proposed to open this to the public and to excavate a short underground link to the main adit so that it can form part of underground tours of the Long Tunnel Extended Mine. This is not expected to seriously diminish the National Estate values of the mine if it is appropriately interpreted.

Outside of the mine the Long Tunnel Extended Mine Reserve contains a stamper battery and other mining machinery, tramways, a museum collection of mining equipment, and several buildings reconstructed from photographic evidence.'

Long Tunnel Extended Battery Site

At the lower level near the creek are the remains of a 20-head battery. A large paling and iron workshop (recent origin) has been placed on the site. Behind the shed are some mortar blocks. A 5-head Langlands iron frame battery has been erected over one set of the mortar blocks. On the west side of the shed are some massive concrete engine beds. The site has been substantially modified and is partially overgrown.

INTEGRITY/CONDITION: Restoration of the site for tourism purposes is underway, under the joint management of the local shire, Department of Conservation & National Resources, and the Long Tunnel Extended Mine Reserve Committee of Management. The restoration incorporates machinery components foraged from other mine sites. The main adit has been timbered where required. Cross cuts on Cohen's line of reef made safe and openings to vertical, flue and inclined airshaft secured. Original mine workings have been made safe where required. The large machinery chamber and underground boiler house now being restored.

CULTURAL SIGNIFICANCE:

The site has:

Historical significance— The Long Tunnel Mine Extended Mine is historically significant as a characteristic and well preserved example of an important form of gold mining. Gold mining sites are of crucial importance for the pivotal role they have played since 1851 in the development of Victoria. As well as being a significant producer of Victoria's nineteenth century wealth, with its intensive use of machinery, played an important role in the development of Victorian manufacturing industry. The Long Tunnel Mine Extended Mine was one of the three highly productive major underground mines on the Cohen's line of reef at Walhalla, and for six years was the richest and most successful gold mine in Victoria.

Scientific significance— The Long Tunnel Mine Extended Mine is scientifically significant because it illustrates the principal characteristics of underground gold mining as practised in this part of Victoria. Through the unusual construction practised in this group of mines, involving access from the surface through a near horizontal adit to a large machine chamber excavated deep underground, Long Tunnel Extended Mine is important in demonstrating a process which is no longer practised nor open to view in the other associated mines. It is of exceptional interest because it not only involved the use of winding and de-watering equipment within the chamber, but the housing of boilers underground to generate steam to drive the winding and pumping equipment and the rock drills, with the need to constantly convey timber for fuel through the adit, and to exhaust the boilers through a brick lined shaft driven more than 140 metres to the surface above.

Archaeological potential—The Long Tunnel Mine Extended Mine has potential to yield artefacts and evidence that will be able to provide significant information about the technological history of gold mining.

Network values—The range of historical features, in combination with an extensive photographic record and physical attributes of the Stringers Creek Valley produce one of the State's most evocative and unique cultural landscapes. The Long Tunnel Battery and Ore Processing Works forms an integral part of this landscape.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: Smith & Supple/Bannear *Date:* 1998

PLACE NO. & NAME: **21.0 HOUSE SITES ADJACENT EAST SIDE OF STRINGER CREEK VALLEY**
Walhalla Goldfield
HI No. ***H8122-0082***

LOCATION: Walhalla Township
MUNICIPALITY: Baw Baw Shire Council
LAND USE/STATUS: Historic Reserve

SITE HISTORY:
The hills surrounding the Walhalla town centre are covered with the remains of benched hut platforms, ruined stone walling, fireplaces and chimneys. The majority of the hut sites are located on the east side of the valley, with the major line of quartz mines located on the opposite side.

References: *Action Plan for Conserving and Interpreting Historic Places at Walhalla*, Chris Smith & Ray Supple, Historic Places Section, 1998

DESCRIPTION & INTERPRETATION OF FEATURES:

A collection of benched hut platforms, ruined stone walling, fireplaces and chimneys. The house sites are associated with a tramway that runs along the east side of the valley. One of the most substantial house sites has a wall 3.1m wide by 3.8m high with the chimney extending a further 0.4m above the top of the wall.

INTEGRITY/CONDITION: Some disturbance by 'treasure' hunters

CULTURAL SIGNIFICANCE:
The site has:

Historical significance—The significance of Walhalla lies with its outstanding representation of, and historical role in, an important period in the State's history. The collection of house sites demonstrates the extent of the township of Walhalla, and documents the story of the development and decline of the Walhalla Goldfield.

Archaeological potential—Archaeologically important for its potential to yield artefacts which will be able to provide significant information about the cultural history of gold mining and the gold miners themselves.

Network values—The range of historical features, in combination with an extensive photographic record and physical attributes of the Stringers Creek Valley produce one of the State's most evocative and unique cultural landscapes.

SIGNIFICANCE RANKING: Site is listed on the Heritage Inventory

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Assessed by: Smith & Supple *Date:* 1998

PLACE NO. & NAME: **22.0 PIG POINT SLAUGHTERYARD AND SETTLEMENT**
Walhalla Goldfield
HI No. ***H8122-0083***

LOCATION: Walhalla Township
MUNICIPALITY: Baw Baw Shire Council
LAND USE/STATUS: Historic Reserve

SITE HISTORY:

Pig Point was a suburb of Walhalla. The most substantial historic features are the stone foundations of a slaughter yard. There are also features remaining from a number of hut sites.

References: *Action Plan for Conserving and Interpreting Historic Places at Walhalla*, Chris Smith & Ray Supple, Historic Places Section, 1998

DESCRIPTION & INTERPRETATION OF FEATURES:

The site is on the end of a spur and extends for approximately 150m along the top of the ridge and is approximately 50m wide. There are several stone chimney remains spread across the site. The most substantial feature at the site is an area approximately 6m by 4m covered with flagging stones and an adjoining area cleared of vegetation, which marks the site of the slaughter yard. There are also a few low stone walls at the site. The cleared area is where bones and offal were dumped down the slope from the slaughter-yard. Other features include a large cutting for a building, a collapsed shaft, introduced garden plants and pieces of china and scraps of iron. Additional features are probably hidden by vegetation.

INTEGRITY/CONDITION: Good

CULTURAL SIGNIFICANCE:
The site has:

Historical significance—The significance of Walhalla lies with its outstanding representation of, and historical role in, an important period in the State's history. The collection of house sites demonstrates the extent of the township of Walhalla and documents the story of the development and decline of the Walhalla Goldfield.

Archaeological potential—Archaeologically important for its potential to yield artefacts which will be able to provide significant information about the cultural history of gold mining and the gold miners themselves.

Network values—The range of historical features, in combination with an extensive photographic record and physical attributes of the Stringers Creek Valley produce one of the State's most evocative and unique cultural landscapes.

SIGNIFICANCE RANKING: Site is listed on the Heritage Inventory

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Assessed by: Smith & Supple *Date:* 1998

PLACE NO. & NAME: **23.0 WINDEN HUT RUINS, MAIDENTOWN**
Walhalla Goldfield
HI No. ***H8122-0085***

LOCATION: Walhalla Township
MUNICIPALITY: Baw Baw Shire Council
LAND USE/STATUS: Historic Reserve

SITE HISTORY:

Charles Refardt's name is shown on the 1899 survey plan of Maidentown township. He is listed as a shareholder in the 101 Victorian Directory. It is likely that he lived in this cottage.

References: *Action Plan for Conserving and Interpreting Historic Places at Walhalla*, Chris Smith & Ray Supple, Historic Places Section, 1998

DESCRIPTION & INTERPRETATION OF FEATURES:

The Winden Hut ruins consist of two separate stone buildings, stone-lined garden beds, and a dam. Winden hut comprises a rubble stone chimney, brick and rubble stone sections of wall, plus a rubble stone room attached to the west side of the main room. There appears to be an oven built onto the west side of the chimney. The second stone chimney on site is gradually deteriorating with stones being displaced. The more substantial hut remains, garden beds and introduced trees provide a very interesting site with some archaeological potential

INTEGRITY/CONDITION: Bush poles and iron (primarily from road signs) have been draped across the hut to provide a crude shelter. The second stone chimney on site is gradually deteriorating with stones being displaced.

CULTURAL SIGNIFICANCE:
The site has:

Historical significance— The significance of Walhalla lies with its outstanding representation of, and historical role in, an important period in the State's history. The collection of house sites demonstrates the extent of the township of Walhalla and documents the story of the development and decline of the Walhalla Goldfield.

Scientific significance— Archaeologically important for its potential to yield artefacts which will be able to provide significant information about the cultural history of gold mining and the gold miners themselves.

Archaeological potential—The range of historical features, in combination with an extensive photographic record and physical attributes of the Stringers Creek Valley produce one of the State's most evocative and unique cultural landscapes.

SIGNIFICANCE RANKING: Site listed on the Heritage Inventory

Assessed by: Smith & Supple *Date:* 1998

PLACE NO. & NAME: **24.0 THOMSON RIVER TAILRACE/DIVERSION TUNNEL**
Walhalla goldfield
HI No. ***H8122-0093***

LOCATION: East of Platina
MUNICIPALITY: Baw Baw Shire Council
LAND USE/STATUS: Historic Reserve

SITE HISTORY:
According to Aitken and Supple et al, the tunnel was cut through a hill to divert the Thomson River and enable alluvial miners to work the dry bed of the river. This interpretation varies from the mining surveyor's account of the tunnel's purpose in 1871: "At Cooper's Creek a party are engaged in tunneling in the bed-rock, to form a tail-race for the purpose of draining the flat, which is supposed to be the old bed of the Thomson River".

References: Aitken, p. 39
Mining Surveyors' Reports (Stringer's Creek Division), December 1871
Supple et al, Site M24 (i)

DESCRIPTION & INTERPRETATION OF FEATURES:
Some water still passes through the tunnel.

INTEGRITY/CONDITION: Good

CULTURAL SIGNIFICANCE:
The site has:

Scientific significance—Rare gold mining relic documenting the efforts that some miners were prepared to go to, to mine alluvial gold from creek beds in the Alpine region of the State.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: Richard Aitken *Date:* 1981
Supple, Perham & Griffiths 1989

PLACE NO. & NAME: **25.0 COOPER'S CREEK COPPER MINE & SETTLEMENT**
Cooper's Creek copper field
HI No. ***H8122-0094***

LOCATION: Coppers Creek
MUNICIPALITY: Baw Baw Shire Council
LAND USE/STATUS: Historic Reserve

SITE HISTORY:

A vein of copper was discovered near the gold diggings at Cooper's Creek in 1864. The Thomson River Copper Mining Co. was formed in 1865, with leases on both sides of the river and ambitious plans for smelting works. In 1867 tributers erected two furnaces (the works managed by "Captain" Osborne, late of Kapunda, SA) which failed to effectively smelt the ore. Other copper companies operating during this period included the Advance Copper Co. and Vulcan Copper Co.

Following modifications to the smelters, the Thomson River copper mine tributers in 1871 began re-smelting the regulus produced by their earlier operations. Tramways were constructed to ensure a steady supply of firewood. Still the furnaces proved ineffective. In 1874, the Walhalla Copper Mining Co. was floated—with 30,000 shares of £1 each—to work the "splendid mass of ore" on show in the Thomson River mine. The company set about remodeling the smelting works, "using a large quantity of firebricks made from good-quality fireclay found a short distance from the works". After spalling (breaking up) the ore, it was calcined (roasted) in large heaps in the open. The broken, burnt ore was then smelted in reverberatory furnaces (the main hearth measuring 14-ft in length), together with a flux of poor carbonates. The smelting process reduced the ore first to coarse metal, then to blue metal, and lastly, by roasting, to coarse copper. Pack horses and mules carried the copper out, for transit to "Swansea, &c." for further refinement. A "substantial and well constructed bridge" was built across the river to improve access to timber and to connect the smelting works by tramway with the copper mine and spalling and calcining floors (these were situated on a "spacious plat" excavated in 1875). Cooper's Creek township took shape around the smelting works and opposite the mine, presenting "a lively appearance" and promising to become "a flourishing little place".

Initial smeltings were unprofitable, because of high firewood consumption and depressed copper prices. In 1878, a new shoot of copper was opened up, and "Captain" Saunders (ex Burra) took over as superintendent of works, instigating a major overhaul of the plant. A stone-breaker and Pioneer crushing mill were installed, kilns were built for calcining, and the smelting furnaces were rebuilt on a larger scale—the hearth of the main furnace measuring 16¼ ft x 9 ft. In 1879, the mine was in full work, with 70 men employed. There were hopes that a tramway might link Cooper's Creek with the railway line at Erica, giving access to La Trobe Valley lignite for smelting fluxes. But by the time the third of the new furnaces was lit in 1880, the shoot of copper was practically exhausted and a tributer was being sought. For almost twenty years, things went pretty quiet at Cooper's Creek.

Periodic attempts were made to work the copper deposits at Cooper's Creek from the late 1890s (at which time diamond drilling struck new lodes), but no real development took place until about 1910, when the Gippsland Copper, Platinum & Gold Mining and Smelting Co. took up leases with a view to opening up and proving the lode at existing and deeper levels. Smelting plant was built and long tramways linked the mine to the railway line, which now extended to Walhalla. The settlement of Platina developed around the mine and works. Despite the company's intention of proving the copper lode at depth, work was confined to smelting of remnants of ore from the old stopes, mullock heaps, and smelter bottoms. A gold mine operated on the Happy-Go-Lucky Reef—an adjacent lease—during the same period, and the last ore mined there, in 1915, was sold to the copper smelting works for fluxing purposes. The copper mine and works apparently ceased work soon after.

In 1962, a small party (the Cooper's Creek Syndicate) cleared out the old copper mine and restored the tramways. Five years later, Cooper's Creek Pty. Ltd. commenced mining. A smelter was built in 1969, and ore was conveyed thence by tramway and flying fox. Operations ceased in 1971, when the price of copper fell. Some years later, the machinery, gear and sheds connected with the mine were shifted to the Long Tunnel Extended mine at Walhalla, when it was re-opened as a tourism venture.

References: Adams, J., *Mountain Gold: a history of the Baw Baw and Walhalla country of the Narracan Shire, Victoria*, Narracan Shire Council, 1980
Aitken, R., *Areas of Historical Significance in Central and South Gippsland*, report prepared for the Latrobe Valley Ministerial Council, 1981

Baragwanath, W., 'Some Victorian Goldfields: No. 1 Walhalla', in *Mining & Geological Journal*, March 1948, pp. 4-8
Department of Mines, Mining Surveyors' Reports (Stringer's Creek Subdivision)
Rosales, H., 'Copper Mines, Cooper's Creek, Gippsland', in *Progress Report VI*, Geological Survey of Victoria, 1880, pp. 60-64
Supple, R., Perham, G., & Griffiths, T., *Historic Sites in the Melbourne East Study Area*, report to the Land Conservation Council, Historic Places Section, Department of Conservation, Forests and Lands, n.d. (1989?)

DESCRIPTION & INTERPRETATION OF FEATURES:

Mine workings are in three levels on the eastern side of the Thomson River, commencing with the lowest level about 10-15 m above the Thomson River. Associated with the mine workings are remains of the 1867 smelter (repaired c.1875 and re-erected on a larger scale in 1879), remains of the 1969-71 ore heaps, tramway formations, an 80-ft steel girder tramway bridge, ore hopper and skip, incline tramway, winch support, and leveled building sites.

The settlement of Cooper's Creek was located on the opposite side of the Thomson River from the main mine. The only remaining building is the former Copper Mine Hotel. Other features include clearings and building sites.

INTEGRITY/CONDITION: Requires extensive survey and recording

CULTURAL SIGNIFICANCE:

Aitken (p. 46) wrote of the copper mines site: '…the site is of great importance interpretively. Accumulations of industrial equipment and processes have been juxtaposed providing the industrial archaeologist with a complex yet intriguing area to document.'

The site has:

Historical significance—as the site of the first copper mining and smelting operations in Victoria.

Scientific significance— Contains an accumulation of relics documenting a range of industrial equipment and processes

Network values—Possibly associated with limeburning works (Site No.28). The area should be re-visited for more extensive survey and recording to determine the extent of the surviving mining relics.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: Richard Aitken *Date:* 1981
Supple, Perham & Griffiths 1989

PLACE NO. & NAME: **26.0 WHITE ROCK LIMEWORKS**
Cooper's Creek
HI No. ***H8122-0095***

LOCATION: Western side of Cooper's Creek Road.
MUNICIPALITY: Baw Baw Shire Council
LAND USE/STATUS: Historic Reserve

SITE HISTORY:
Copper mining activity at Cooper's Creek initially resulted in the development of limeworks nearby, as lime was required as a flux in the smelting process. However, once the Erica–Walhalla rail link was constructed early this century, the lime quarries were able to reach a wider market, with the Platina railway station established as a transport outlet. The White Rock Lime Co. at Platina operated from the late 1920s until 1951.

References: Adams, p. 121
Supple et al, Site M20 (ii)

DESCRIPTION & INTERPRETATION OF FEATURES:
Features of the White Rock Limeworks site are the remains of three kilns, a lime dump, quarry, track, and tramway.

There are two types of kiln structure at the site, one a circular brick-lined pit (possibly an ore bin) situated at the bottom edge of the quarry and just on the west of Cooper's Creek Road. The two easily recognisable adjoining brick kilns are on the east of the road, as are the remains of the lowering gear, brake wheel for an incline tramway, and some lengths of steel rail adjoining the kilns. A large lime dump extends down the slope for several hundred metres from the kilns, and there is an old skip at the base of the slopes. The quarry is on the western side of Cooper's Creek Road. A track heads north towards the copper mine from the base of an incline tramway, which runs down the slope for several hundred metres below the remains of the lime kilns.

INTEGRITY/CONDITION: Good

CULTURAL SIGNIFICANCE:
The site has:

Historical significance— Lime burning activities have been attested in Victoria since 1835. Victorian limeburners primarily burnt limestone to create a product that was principally used as a constituent for mortar. The industry lost its pre-eminence in the early 1900s due to the increased use of cement as a building product.

Scientific significance—The site contains well preserved relics belonging to lime burning operations undertaken from the 1920s to 1951.

Archaeological potential—Lower section of the site has good integrity and thus high archaeological potential for yielding evidence of historic limeburning technology.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: Supple, Perham & Griffiths *Date:* 1989

PLACE NO. & NAME: **27.0 PLATINA KILNS (EVANS BROTHERS LIMEWORKS)**
Cooper's Creek
HI No. ***H8122-0096***

LOCATION: Platina
MUNICIPALITY: Baw Baw Shire Council
LAND USE/STATUS: Historic Reserve

SITE HISTORY:
In 1912, the Evans brothers built two lime kilns at Coopers Creek, which continued operation until the 1920s. During the twenties, Proudfoot's limeworks (possibly the same) were in work, and were considered a tourist attraction for train travellers to Walhalla. Also operating at Cooper's Creek during the 1920s-30s were the Snowflake limeworks. In 1937, a foreman was killed by a fall of stone at a Cooper's Creek limestone quarry. In 1944, the railway line between Platina and Walhalla was closed. Lime-quarrying at Cooper's Creek was revived briefly in the late-1940s, to meet the demand created by CSR's use of lime in sugar processing, but the quarry/ies and kilns ceased operating in 1951, causing the closure of the Erica to Platina railway the following year.

References: Adams, p. 114, 121
Mining and Geological Journal, July 1937, p. 48
Supple et al, Site M20 (iii)

DESCRIPTION & INTERPRETATION OF FEATURES:
Evans Brothers had their own siding at the Platina railway station. The kilns are connected to the siding via a tramway. The site is at three levels, each with a tramway formation. There are concrete machinery foundations at the upper level, some parts from skips and the remains of the lime kiln between the middle and lowest level. The kilns are in a very dilapidated condition.

INTEGRITY/CONDITION: The kilns are in a very dilapidated condition.

CULTURAL SIGNIFICANCE:
The site has:

Historical significance— Lime burning activities have been attested in Victoria since 1835. Victorian limeburners primarily burnt limestone to create a product that was principally used as a constituent for mortar. The industry lost its pre-eminence in the early 1900s due to the increased use of cement as a building product.

Archaeological potential— The kilns are in a very dilapidated condition but some potential to yield information on historic limeburning technology.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: Supple, Perham & Griffiths *Date:* 1989

PLACE NO. & NAME: **28.0 COOPERS CREEK LIMEKILN 2**
Cooper's Creek
HI No. ***H***

LOCATION: West of Coppers Creek on the bank of the creek, at a point roughly equidistant between Evans Brothers and White Rocks works
MUNICIPALITY: Baw Baw Shire Council
LAND USE/STATUS: Historic Reserve

SITE HISTORY:

The town of Coopers Creek was established in 1864 with the discovery of copper deposits. As part of the copper smelting process, it is probable that kilns were erected to produce lime (lime being an essential flux for the smelting of copper).

References: *Operation, History and Archaeological Record of limeburing activities in Victoria*, Jane Harrington, 1999

DESCRIPTION & INTERPRETATION OF FEATURES:

The kilns were recorded by Ray Supple, Daniel Catrice & Noel Lees in 1996. The following description was obtained from *Operation, History and Archaeological Record of limeburing activities in Victoria,* Jane Harrington, 1999

The site contains a pair of adjoining kilns of random rubble construction with brick-lined shafts and brick barrel vaults. The front walls are about 9 metres high. The southern kiln has been breached and the front shaft area has collapsed. The kilns are fronted by three wing walls, of which the most northerly has collapsed. The central wall contains sockets for the insertion of beams. A mound of earth and lime tailings has formed a ridge in front of the kilns, near the creek.
The random rubble construction is consistent with a 19th century date and the description of the kilns is consistent with the type used at other 19th century limeburning sites. It is likely that these kilns were constructed in the late 1860s to meet the lime needs of the copper smelting works.

INTEGRITY/CONDITION: Sections have collapsed but kilns still retain their integrity

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CULTURAL SIGNIFICANCE:
The site has:

- *Historical significance*—Lime burning activities have been attested in Victoria since 1835. Victorian limeburners primarily burnt limestone to create a product that was principally used as a constituent for mortar. The industry lost its pre-eminence in the early 1900s due to the increased use of cement as a building product. On at least one occasion in the State's history limeburning was undertaken as part of a copper mining & processing operation at Coppers Creek.
- *Scientific significance*— The site contains well preserved relics belonging to lime burning operations undertaken from c.1871 to produce a flux for copper smelting.
- *Archaeological potential*—Site retains integrity and thus potential to yield archaeological information and artefacts.
- *Network values*—Possibly associated with copper mining and processing operations at Coppers Creek (Site No. 26). The site should be revisited for more extensive survey and recording

SIGNIFICANCE RANKING:

Assessed by: Supple, Catrice & Lees *Date:* 1996

PLACE NO. & NAME: **29.0 LONE GRAVE COOPERS CREEK**
Cooper's Creek
HI No. ***H7922-0155***

LOCATION: East side of Coopers Creek Road
MUNICIPALITY: Baw Baw Shire Council
LAND USE/STATUS: Historic Reserve

SITE HISTORY:

There is supposed to be a historic cemetery at Cooper's Creek that has not yet been located. There is no sign of any other graves in the vicinity of this one

References: Historic Places recording sheet.

DESCRIPTION & INTERPRETATION OF FEATURES:

A lone grave marked by a wooden headstone and pieces of rough quartz. The pieces of quartz are roughly the size of a person's fist and have been placed around the grave fairly recently. The wooden headstone appears to be of considerable age judging from the weathering and evidence of burning around the edges. Any writing has weathered away. The grave is near the top of a slope. Nearby are a hut site and mine shaft.

INTEGRITY/CONDITION: Good

CULTURAL SIGNIFICANCE:
The site has:

Historical significance—There is supposed to be a historic cemetery at Cooper's Creek that has not yet been located. There is no sign of any other graves in the vicinity of this one.

Scientific significance—Rare and well-preserved timber headstone of unknown date.

Archaeological potential—Grave is near a hut site that could yield archaeological evidence which may help identify and date the grave.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: Supple and Catrice *Date:* 1996

PLACE NO. & NAME: **30.0 GLADSTONE CREEK ALLUVIAL WORKINGS**
Freestone Creek goldfield
HI No. ***H8322-0006***

LOCATION: At junction of Upper Gladstone Creek and Blink Bonny Gully, below Boyce's Find quartz workings.
Gladstone Creek is an eastern tributary of Freestone Creek, approx. 25 km north of Stratford—nearest town is Briagolong.
MUNICIPALITY: Wellington Shire Council
LAND USE/STATUS: State Forest

SITE HISTORY:

Alluvial gold was first worked on Gladstone (sometimes called Maximilian) Creek in 1868, and a minor rush ensued. Numerous small branch gullies were worked—all on the northern side of the creek; not a colour was obtained from gullies to the south. Ground near Blink Bonny Gully was the richest, yielding nuggets as big as 44 oz. By 1872, most miners had moved on, but those remaining soon switched their attention to reefs discovered in a gully at the lower end of Gladstone Creek. Late in the 1880s, however, the persevering Jorgensen brothers* were still working alluvial ground at the junction of Gladstone Creek and Blink Bonny Gully, a particularly nuggetty locality.

Miners worked their claims by ground-sluicing—using head-races and sluice-boxes—and by tunnelling into the creek terraces. The coarse character of gold in the vicinity indicated that it was being shed from a reef close by (alluvial gold tends to be finer and more waterworn when found at a distance from the originating ore body). Prospecting failed to locate the source reef until the Boyce's Find discovery in 1894.

*The Jorgensen brothers (a mining family based in Stratford) were among the first and last miners at the Gladstone diggings, and appear to have centred their activities there. Seemingly omnipresent, the Jorgensens were among the most active prospectors in 19th-century Gippsland: Niels Jorgensen was a member of the party which discovered the first reef at Crooked River in 1864; they were at Aberfeldy in 1875; in 1884, the Union battery at Omeo was owned by Jorgensens; that same year, the brothers ("old Gippsland prospectors") discovered the rich Hans Reef at Haunted Stream; Niels was prospecting at Nowa Nowa in 1887; and there were Jorgensens at Bulumwaal in 1888.

References: Department of Mines, Mining Surveyors' and Registrars' Reports (Sale and Donnelly's Creek divisions), 1864-88

Flett, J., *The History of Gold Discovery in Victoria*, Poppet Head Press, Melbourne, 2nd ed., 1979, p. 147

DESCRIPTION & INTERPRETATION OF FEATURES:

Gladstone Creek alluvial workings feature several adits at creek-level, water races, and extensive bank sluicing. At least one large sluice-hole with a 150m-long tail race.

INTEGRITY/CONDITION: Intensive alluvial workings, relatively undisturbed but overgrown.

CULTURAL SIGNIFICANCE:

The site has:

Historical significance—The Jorgensen brothers (a mining family based in Stratford) were among the first and last miners at the Gladstone diggings, and appear to have centred their activities there. Seemingly omnipresent, the Jorgensens were among the most active prospectors in 19th-century Gippsland.

Scientific significance—A rare type of mining site containing well-preserved alluvial workings.

Network values— Gladstone Creek alluvial workings and Boyce's Find quartz workings.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* April 1995

PLACE NO. & NAME: **31.0 'BOYCE'S FIND' QUARTZ WORKINGS**
Freestone Creek goldfield
HI No. ***H8322-0007***

LOCATION: Upper Gladstone Creek, at junction with Blinkbonnie Gully. The mine workings are on the hillside between track and creek level.
MUNICIPALITY: Wellington Shire Council
LAND USE/STATUS: State Forest—under current mining lease

SITE HISTORY:
In 1894, a rich gold-bearing reef was struck in the sandstone on Gladstone Creek, near Blink Bonny Gully. The reef was worked by the Jorgensen brothers and another miner named Boyce, and was called Boyce's Find. Working by shallow shafts, they obtained several hundred ounces of nuggetty gold over a couple of years. Here, it seemed, was the long-sought source of the coarse alluvial gold on Gladstone Creek.

The main significance of the 1894 find, though, was that it was the first Victorian discovery of a gold-bearing reef in Devonian rock—that is, "younger" rock than the types in which gold was usually found. Geologists "experienced considerable astonishment" and were forced to re-examine their theories as to where gold might be found: large tracts of Victoria that had previously been branded non-auriferous took on a new allure.

In 1899, the Jorgensen brothers were still at work on the Boyce's Find claim, and sixteen years later were driving a tunnel in quest of further deposits of the rich matrix formerly worked by shallow shafts. No record exists of their success or otherwise.

Gladstone Creek is still noted as the site of one of only a handful of Upper Devonian gold occurrences in Victoria.

References: *Australian Mining Standard* (special edition), 1 June 1899, pp. 67-71
Department of Mines Annual Report, 1915
Department of Mines, Mining Surveyors' and Registrars' Reports (Sale and Donnelly's Creek division), 1864-88
Kenny, J.P.L., 'Prowd's Workings, Briagolong', in *Mining and Geological Journal*, January 1938 (report dated August 1937), p. 21

DESCRIPTION & INTERPRETATION OF FEATURES:
Mining operations are currently underway at the site. The current mine consists of an adit below the track, a small mullock heap, rails, and a modern shed. Lower down the slope, close to the alluvial workings, are several collapsed adits with quite extensive mullock heaps.

The collapsed adits and mullock heaps are the remains of workings by the Jorgensens, Boyces, and others, between 1894 and WWI.

INTEGRITY/CONDITION: Old adits have collapsed, but their mullock heaps are extensive and intact.

CULTURAL SIGNIFICANCE:
The site has:

Historical significance— The Jorgensen brothers (a mining family based in Stratford) were among the first and last miners at the Gladstone diggings, and appear to have centred their activities there. Seemingly omnipresent, the Jorgensens were among the most active prospectors in 19th-century Gippsland.

Scientific significance—as the site of a rare geological occurrence in Victoria, where gold found in Upper Devonian rock.

Network values— Gladstone Creek alluvial workings and Boyce's Find quartz workings

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* April 1995

PLACE NO. & NAME: **32.0 OLD GOOD HOPE MINE**
Dargo–Crooked River goldfield
VHR ***H1268***
HI No. ***H8323-0001***

LOCATION:	At head of Good Hope Creek, south of McMillan Track, Grant Historic Reserve.
MUNICIPALITY:	Wellington Shire Council
LAND USE/STATUS:	Grant Historic Reserve (7,300 ha)

EXISTING HERITAGE LISTING: National Estate (as part of Grant Historic Reserve)

SITE HISTORY:

During the great reefing rush of 1864, four reefs were worked on the Good Hope spur. The reef in the Good Hope mine was the only one on the Crooked River field that showed any permanence. At surface and shallow levels, it was far less rich than many others; but at depth, it proved its worth. It went on to be the longest-worked and deepest of the Crooked River mines. Its best years were 1865-70, and when the original Good Hope Co. gave up in 1877, the mine had yielded nearly 20,000 oz of gold.

The Good Hope Co. erected a 12-head battery (powered by a portable 10-hp steam engine, soon replaced by a 15-hp horizontal engine) on Good Hope Creek in 1865, to crush for the Collingwood and Uncle Tom reefs as well as its own. Due to a limited supply of water, only eight head of stamps were usually employed. Pumping machinery and settling boxes were erected to keep the water supply to the battery constant. In 1866, a Chilean mill, percussion tables, and a furnace were added to the plant; these proved very effective in retrieving gold from the pyritic ore.

The mine was worked by a series of tunnels from the east side of the spur. In 1868, driving began for a fourth tunnel, lower than the first three, but the rock proved too hard and driving was discontinued in 1870. Pumping and winding machinery, and the small engine from the battery, were installed in a chamber cut in the No. 3 level of the original tunnel in 1869. The mine was yielding "2 oz stone" (ore yielding 2 oz per ton) at a depth of 620 ft, in 1871.

From 1873, the Good Hope Co. struggled to find a run of gold in its mine. It was let on tribute to a party of ex-employees in 1877, but returns continued to be "miserably poor". In 1878, the tributers re-tried the lower tunnel (650 ft above Crooked River), abandoned ten years earlier, with promising results. A new company—the New Good Hope Co.—was formed to continue working the mine from that tunnel (the No. 4), bringing in an expensive National rock drill for the purpose. An air receiver and air pump (driven by the portable engine removed from No. 3 tunnel) was installed at the mouth of No. 4 tunnel. The mine continued to use the original treatment plant, and constructed a dam in 1884 to enable crushing in dry weather.

The new company failed to find gold when it finally struck the reef, and was re-formed and recapitalised in 1885. A winding plant and air compressor were installed at a cost of £3000, but returns were sporadic until 1888 when good gold was struck at a depth of 780 ft. The company repaired its battery and installed two Watson and Denny's pans for pyrites treatment. No record has been found of the mine's operation during the 1890s—nothing, in fact, until 1905, when the Good Hope Consolidated Co. first rated a mention.

In 1906, Dunn wrote that the old workings (four adits) had produced a total of 23,357 oz from 14,461 tons of stone. At that time, the No. 4 adit was 1,112 ft long, and plant at the tunnel mouth consisted of a 4½-hp Otto oil engine and dynamo, which worked an electric drill and lighting in the mine. The original four adits and plant appear not to have been worked beyond 1906, when a new adit was commenced on the opposite side of the spur. SEE "GOOD HOPE CONSOLIDATED MINE", BELOW.

References: Christie & Gray, pp. 72-85
Department of Mines Annual Report, 1905
Dunn (1907/2)
Flett (1965)
Harrison
Mining Surveyors' Reports (Crooked River Subdivision), December 1864, June 1865, March & December 1866, March, June & December 1868, September 1869, September

1871, March 1873, September 1875, March 1877, June 1878, March 1879, June & September 1880, December 1884, September 1885, September & December 1888,

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DESCRIPTION & INTERPRETATION OF FEATURES:

Features of the Good Hope mine site include mine workings, tracks, inclined tramway, intact battery (including boiler and steam engine), water supply dam and race, and hut sites.

Mine workings—Four levels of workings. Features and artefacts include adits, mullock heaps, shafts, and items of plant, including ore trucks, trolley wheels and iron rails.

Tracks—Network of tracks linking the various workings.

Inclined tramway—Well-defined tramway with three winching platforms and remains of a winch on one of them.

Battery—The battery appears to be more-or-less intact but has collapsed and is now very overgrown. The main visible features associated with the battery are:

Boiler setting and in situ Cornish boiler—The boiler has a diameter of 5½ ft and is approximately 23 ft long. The boiler still has its fire-box door and was manufactured by "Enoch Chambers, Melbourne and Prahran". The stone boiler setting measures 10 ft x 23 ft, 6 ft high and has 2ft-thick walls. The rear of the boiler setting is obscured by thick blackberry growth but a short stone flue appears to lead to a stone chimney stack base. The flue takes a right-angle after leaving the rear of the boiler.

Horizontal steam engine —The engine lies on its side, is partly buried, and a tree has grown around part of the fly wheel. The engine is 17-ft long, single cylinder (1¾-ft diameter, 3½ ft long), and was manufactured by Canal Basin Foundry Co., Engineers, Glasgow. The fly wheel is spoked and 10½ ft in diameter.

Stampers—Two battery boxes (four head to a box; eight stampers in all) and a jumble of stamper rods are visible. The lifters are on screw tappets. Also observed were a camshaft, drive shaft with three pulley wheels, and an iron grinding wheel.

Water supply dam—Upstream from the battery are a breached stone-retained dam and a water race.

Hut sites—Upstream from the battery are the remains of a stone fireplace and at least three hut sites.

The battery site dates to 1865. Originally, a portable engine powered the plant, but was soon replaced by a 15-hp horizontal engine. Only 8 stampers were observed; another battery box of 4 heads must have been removed or obscured. The grinding wheel would have formed part of the pyrites treatment plant: either the 1866 Chilian mill, or the 1888 Watson and Denny's pans. The water supply dam was constructed in 1884.

INTEGRITY/CONDITION: Collapsed and overgrown, but largely intact.

CULTURAL SIGNIFICANCE:

The site has:

Historical significance—The Old Good Hope site is historically significant as a characteristic and well preserved example of an important form of gold mining. Gold mining sites are of crucial importance for the pivotal role they have played since 1851 in the development of Victoria. As well as being a significant producer of Victoria's nineteenth century wealth, with its intensive use of machinery, played an important role in the development of Victorian manufacturing industry. The Good Hope mine was the main quartz mine of the Crooked River goldfield.

Scientific significance— The Old Good Hope site is scientifically significant because it contains a unique collection of mining relics, including a quartz crushing battery that is powered by a Cornish boiler. The use of crushing batteries in the Alpine gold fields was very common. Today few batteries survive in situ. The Good Hope battery site is not only rare because of its intactness, but because, along with the Royal Standard at Standers Creek, is a very early site. Both batteries were erected during the mid 1860s.

Archaeological potential— The Old Good Hope site is archaeologically important for its potential to yield artefacts and evidence which will be able to provide significant information about the technological history of gold mining.

Natural values— The abandoned mining machinery at the Old Good Hope site is also important for its evocation of the adventurousness, hardship, and isolation that was part of mining life in the high country areas of the State.

Network values—as part of the Good Hope network of sites, which is one of the key attractions of the Grant Historic Reserve—also as part of the overall site network comprising the Grant Historic

Reserve: mining settlements, cemeteries, quartz mines and alluvial mining landscapes, all overgrown but linked by a navigable network of carting tracks.

SIGNIFICANCE RANKING: Site listed on Victorian Heritage Register
Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* April 1995

PLACE NO. & NAME: **33.0 GOOD HOPE CONSOLIDATED MINE**
Dargo–Crooked River goldfield
VHR ***H1268***
HI No. ***H8323-0002***

LOCATION: On spur between Crooked River and McMillan tracks, Grant Historic Reserve.
MUNICIPALITY: Wellington Shire Council
LAND USE/STATUS: Grant Historic Reserve (7,300 ha)

EXISTING HERITAGE LISTING: National Estate (as part of Grant Historic Reserve)

SITE HISTORY:
In 1906, the Good Hope Consolidated Co. commenced a fifth adit, on the opposite side of the spur from the four existing adits of the Good Hope mine, with the intention of tracing the continuation of the reef from the No. 4 adit. The venture was luckless, but in 1909 the New Good Hope Consolidated Co. was formed to push on with the tunnel. A 5-head steam-powered battery was erected at the tunnel mouth in 1910. In 1912, the tunnel was 3,350 ft in length, and was ventilated by a powerful blower and "capacious air pipes", driven by an oil engine. The tunnel failed to intercept the reef, and further prospecting turned up nothing payable. The mine closed down in 1915, an amount in excess of £20,000 having been spent since 1906, for negligible return.

References: Christie, p. 23
Christie & Gray, p. 85
Department of Mines Annual Reports, 1910-15

DESCRIPTION & INTERPRETATION OF FEATURES:
Features of the Good Hope Consolidated mine site are a portable engine, battery, adit, and mine workings.

Portable engine—Well-preserved portable engine with fly wheel and flue. All brass fittings have been removed. The engine is upright and still standing on its iron wheels. Diameter of fly wheel, 5 ft; diameter of cylinder, 8 inch; overall dimension of engine, 12ft. The boiler was last inspected on 6-2-1914.

Battery—five head of stamps, iron-framed, manufactured by A. Roberts & Sons, Engineers, Bendigo. Mortar blocks have been burnt away.

No. 5 adit—The adit is blocked by weeds and running water. An associated large intact mullock heap has been retained in places.

Mine workings—Above the battery are an open stope, mullock heap, and the remains of an ore truck. Another ore truck is situated further down the slope.

The No. 5 adit was worked between 1906-15, reaching a length of 3,350 ft. The 5-head battery and steam engine were installed in 1910.

INTEGRITY/CONDITION: Battery and portable steam engine in excellent condition.

CULTURAL SIGNIFICANCE:
The site has:

Historical significance—The Good Hope Consolidated site is historically significant as a characteristic and well preserved example of an important form of gold mining. Gold mining sites are of crucial importance for the pivotal role they have played since 1851 in the development of Victoria. As well as being a significant producer of Victoria's nineteenth century wealth, with its intensive use of machinery, played an important role in the development of Victorian manufacturing industry.

Scientific significance— The Good Hope Consolidated is scientifically significant because it contains a unique assemblage of gold mining relics dating from the early 1900s.

Archaeological potential— The Good Hope Consolidated is archaeologically important for its potential to yield artefacts and evidence which will be able to provide significant information about the technological history of gold mining.

Natural values— The abandoned mining machinery at the Good Hope Consolidated is also important for its evocation of the adventurousness, hardship, and isolation that was part of mining life in the high country areas of the State.

Network values—as part of the Good Hope network of sites, which is one of the key attractions of the Grant Historic Reserve—also as part of the overall site network comprising the Grant Historic Reserve: mining settlements, cemeteries, quartz mines and alluvial mining landscapes, all overgrown but linked by a navigable network of carting tracks.

SIGNIFICANCE RANKING: Site listed on Victorian Heritage Register
Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* April 1995

PLACE NO. & NAME: **34.0 CROOKED RIVER MINING SETTLEMENTS:**
34.1 BULLTOWN
34.2 HOGTOWN
34.3 TALBOTVILLE
Dargo–Crooked River goldfield

HI No. ***34.1 H8323-0017***
34.2 H8323-0018
34.3 ***H8323-0019***

LOCATION: Crooked River, Grant Historic Reserve.
MUNICIPALITY: Wellington Shire Council
LAND USE/STATUS: Grant Historic Reserve (7,300 ha)

EXISTING HERITAGE LISTING: National Estate (as part of Grant Historic Reserve)

SITE HISTORY:
With the alluvial gold rush at Crooked River in 1861, settlements sprang up all along the river's course. The most populous of them was Bulltown (the first place on the river that beef was killed), with Hog(g)town (named after Mr. Hogg, a pioneer resident) one mile downstream, and Thiel Town (named by storekeeper Phillip Thiel) about three miles up-river. Bulltown had the field's only licensed hotel, a post office, and public hall, while the other settlements had their share of stores and unlicensed grog shanties. Seven hundred diggers were on Crooked River early in 1861, and their number probably increased later that year before falling away in favour of rushes elsewhere. The field continued to support a population of 200–300 through 1863.

When quartz reefs were discovered in 1864, the early reef workings were centred some six miles from Bulltown, so a settlement was formed on Crooked River, south of the Pioneer Reef. Originally named Ram Town, it soon changed to Talbotville. Opposite the Pioneer, on the northern side of the Wongungarra River, was the township of Howittville. Like the alluvial deposits, the reefs were worked in pockets along the river and its tributaries, and other new settlements sprang up. Winchester (also known as Little London and Rathmines) was three miles downstream from Talbotville, on the Wongungarra. Stonewall (after Confederate hero, General Stonewall Jackson) was at the junction of Good Luck Creek and Crooked River. Away from the river, on Mt Pleasant, a town grew up which would become the main centre for the goldfield—it was later named Grant.

In 1865, Talbotville boasted a butcher's shop, bakery, blacksmith's, three stores, doctor, chemist, newsagency and circulating library, brewery, post office, racecourse, and three licensed hotels. Winchester had three stores, and wine and spirit merchant, two hotels, a blacksmith, two butchers, photographer's studio, post office, and bakery.

The reefing rush on Crooked River was short-lived. By 1866-7, mining activity and population were greatly reduced. Hogtown, Stonewall and Winchester disappeared in 1867, and Howittville in 1868 when the Pioneer Co. abandoned its reef. Bulltown ceased to exist in the 1880s (its school closed in 1881), although the last inhabitant remained until 1905. Of the river towns, only Talbotville survived into the twentieth century. Unlike the others, it was not wholly dependent on mining. Situated on a large river flat, Talbotville was suitable for crop-growing, enabling its residents to rely on the land, rather than gold, for a living. At the turn of the century, the settlement still had its own pub and store, as well as numerous houses. Talbotville outlived even Grant, in the end. In 1946 there were still three houses, and the last family left in 1950.

References: Christie & Gray, pp. 29-30, 43-4, 60-63, 90-93
Mining Surveyors' Reports (Gipps Land Division), May 1863; (Buckland Division), March 1863

DESCRIPTION & INTERPRETATION OF FEATURES:
In reality, signs of occupation occur in an almost continuous band along the east side of the river, rather than in the form of distinct 'townships'.

Bulltown—Largely overgrown, but some stone fireplaces are visible. Patches of alluvial mining can be seen along the river, also water races.

Hogtown—Largely overgrown, but some stone fireplaces are visible and one stone baker's oven. The oven is domed-shaped and measures 4 ft wide x 2 ft high. Some extensive patches of alluvial workings can be seen, also water races.

Between Talbotville and Hogtown—A well-preserved stone baker's oven is located near the walking track to the New Good Hope mine. It measures 10 ft x 7 ft x 5 ft high.

Talbotville—Large clearing (cleared river flat), now a major camping site. Main features are exotic trees (cherry plum, fig, walnut, popular, pear and pine), hut sites (mainly bulldozed rubble), and a cemetery. The cemetery features two headstones, numerous mounds and pine trees.

INTEGRITY/CONDITION: Principally landscape features, with an odd visible relic, such as the stone baker's ovens and fireplaces.

CULTURAL SIGNIFICANCE:

The site has:

Historical significance—The township sites document as the gold rushes at Crooked River that took place 1861 and 1864-5, when as many as 1,000 miners occupied camps along the river during "a period of reef discovery … without parallel in Victoria". (Flett [1965])

Archaeological significance— archaeologically important for its potential to yield artefacts which will be able to provide significant information which could contribute to an understanding of the cultural history of early gold mining rushes.

Network values—The township sites are focal points of site network comprising the Grant Historic Reserve, which also includes quartz mines and alluvial mining landscapes, all overgrown but linked by a navigable network of carting tracks. The Grant Historic Reserve offers the visitor a sense of discovering the authentic remains of an abandoned goldfield. The Crooked River mining settlement sites are part of this experience. Any future development of the site should maintain the "abandoned" character of the place.

SIGNIFICANCE RANKING: Sites listed on Heritage Inventory

Assessed by: David Bannear *Date:* April 1995

PLACE NO. & NAME: **35.1 STONEWALL WORKINGS**
35.2 HOGTOWN WORKINGS
35.3 TALBOTVILLE DREDGE-HOLES
Dargo–Crooked River goldfield

HI No. ***35.1 H8323-0020***
35.2 H8323-0021
35.3 H8323-0022

LOCATION: Stonewall—junction of Crooked River and Good Luck Creek.
Hogtown—west side of Crooked River, below (south) of Hogtown.
Talbotville—east side of Crooked River, just above camping ground.

MUNICIPALITY: Wellington Shire Council

LAND USE/STATUS: Grant Historic Reserve (7,300 ha)

EXISTING HERITAGE LISTING: National Estate (as part of Grant Historic Reserve)

SITE HISTORY:

In 1906-7, the Crooked River Dredging Co. erected a barge-mounted dredge (ex-Omeo) to work a lease near the junction of Good Hope and Jungle creeks. The plant dredged an extent of three miles, from Winchester to Good Hope Creek. The last ground worked was in the neighbourhood of Talbotville in 1912, after which the dredge was removed to Tongio West.

References: Christie & Gray, pp. 87-9
Department of Mines Annual Reports, 1906-12

DESCRIPTION & INTERPRETATION OF FEATURES:

The Crooked River has been extensively dredged. Most workings are now overgrown, but three sites stand out.

Stonewall—On the northern side of Crooked River is a large (100-200 m) dredge-hole with stone-retained pebble dumps and tail race. Water for sluicing was supplied by water races that run above the workings. A well-preserved baker's oven is located approximately 20 m upstream from the sluice-hole.

Hogtown—The base of a spur (an area of 100-200 m) has been dredged away. Features include large, stone-retained pebble dumps and a major tail race.

Talbotville—A large (100-200 m) dredge-hole containing stone-retained pebble dumps and a tail race. The tail race can be traced through the camping ground to the river.

INTEGRITY/CONDITION: Well-preserved examples of dredged workings.

CULTURAL SIGNIFICANCE:

The site has:

Scientific significance—The three localities give a clear illustration of past alluvial mining (including dredging) activity, which took place at Crooked River from 1861.

Network values—The dredged workings form part of the site network comprising the Grant Historic Reserve, which also includes mining settlements, cemeteries, quartz mines and alluvial mining landscapes, all overgrown, but linked by a navigable network of carting tracks.

SIGNIFICANCE RANKING: Sites listed on Heritage Inventory

Assessed by: David Bannear *Date:* April 1995

PLACE NO. & NAME: **36.0 CAPTAIN COOK REEF**
Dargo–Crooked River goldfield
HI No. ***H8323-0003***

LOCATION: On the left-hand (east) branch of Bakers Creek, at the end of Hiberia Spur, and south of Conway Track
MUNICIPALITY: Wellington Shire Council
LAND USE/STATUS: Grant Historic Reserve (7,300 ha)

EXISTING HERITAGE LISTING: National Estate (as part of Grant Historic Reserve)

SITE HISTORY:
Recorded crushings from the Captain Cook Reef span the period 1867-72, during which a total of 119 tons of quartz was crushed (at the Crinoline battery) for a yield of just 37 oz of gold.

References: Christie & Gray, p. 125
Mining Surveyors' Reports (Crooked River Subdivision), December 1867, September 1868

DESCRIPTION & INTERPRETATION OF FEATURES:
On the Captain Cook Reef, a large open cut/stope (often referred to as a glory hole) extends for a considerable distance down the spur.

INTEGRITY/CONDITION: Good

CULTURAL SIGNIFICANCE:
The site has:

Scientific significance—The site possess a large glory hole which is a rare mining feature in the context of Alpine quartz mining, where the reefs were generally worked by adit.

Network values—as part of the site network comprising the Grant Historic Reserve, which also includes mining settlements, cemeteries, quartz mines and alluvial mining landscapes, all overgrown, but linked by a navigable network of carting tracks.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: Sandra Bardwell *Date:* c.1985

PLACE NO. & NAME: **37.0 GRANT TOWNSHIP & CEMETERY**
Dargo–Crooked River goldfield
HI No. ***H8323-0004***

LOCATION: Mt Grant
MUNICIPALITY: Wellington Shire Council
LAND USE/STATUS: Grant Historic Reserve (7,300 ha)

EXISTING HERITAGE LISTING: National Estate (as part of Grant Historic Reserve)

SITE HISTORY:

Grant was the main township established during the Crooked River reefing rush of 1864, and the only one situated away from the river itself. In July 1864, the Union Reef was discovered near Isaac's Shanty, a grog shop on Mt Pleasant. Within a month, the hilltop was taking on the appearance of a town, with a butchery and boarding house, and other buildings (including a pub) under construction. Many more reefs were shortly struck and the locality became the centre of activity on the Crooked River field. The township was called Skye or Mt Pleasant; but in April 1865, it was surveyed and given the name Grant. At that time, the digging population of Crooked River was estimated at about 1,250, and it continued to increase throughout 1865. A Cobb and Co. coach service operated from Sale, bringing new arrivals.

Town allotments were sold in August that year. According to the *Illustrated Australian News*, Grant was "composed of buildings which for material comfort and appearance are comparable with goldfield townships of much longer standing". Another visitor in 1865 saw "a large and flourishing township composed of substantial weatherboard and log buildings". Not all structures could be called substantial, though: the courthouse comprised just "a few slabs and half a dozen sheets of bark". A directory of the period listed eighteen hotels, four banks, fourteen general stores, two cordial manufacturers, nine stores, three wine and spirit dealers, two chemists, several barristers and solicitors, a post office, a great number of restaurants (including Australia's first beer garden—Muller's Café—where Italian diggers gathered to sing opera), a school, church, mining exchange, newspaper office, and government camp. Most of the buildings were on Gertrude, Dawson and Darling streets, although the surveyor had calculated that Winchester Street would develop as the town centre.

Before the end of the 1860s, the Crooked River reefs were largely abandoned. At the beginning of 1867, only one of the four banks still operated at Grant, and many other businesses had closed. The cost of bringing food and other supplies in from Sale or Bairnsdale was crippling, and self-sufficiency was out of the question as the rugged land around Grant was scarcely suitable for growing crops. In 1875 only 18 diggers remained at Grant, and 30 on the river. A visitor wrote:

> *Grant is now a deserted village. A great number of houses are empty. The windows of most of them are boarded, and where not boarded they are broken; the once busy streets are now silent and the pathways are thickly covered with broken bottles, rusted sardine tins, iron hoops, staves of casks and fragments of bush furniture.* (A.W. Howitt in GSV Progress Report III, p. 13, 1876, quoted by Flett)

In fact, the town was not *quite* deserted. The school remained until 1890, when it closed, leaving Henry Harrison's store and two hotels. A policeman based at Dargo estimated the average takings of the Grant hotels to be five shillings per week, as there were only about six families living in the town and very few visitors. "I may say", he remarked, "that Grant people are always quarrelling amongst themselves, in fact there are hardly two of them that are on speaking terms". Just a couple of prospectors and two old age pensioners remained in 1916, one of them Mick Murphy who been at Grant since 1864. Apart from a couple of houses, the only buildings were the "recently abandoned Pioneer Hotel, a couple of dilapidated shops and a fine old church now crumbling to decay". In 1931 a visitor wrote that the only thing left at Grant was the cemetery. A bushfire had recently been through, but one huge pine tree overlooked the few standing headstones. A visitor the following year found "the streets red tracks in grassy sward and some inverted bottles and a gooseberry bush where once was a flower bed, and some hardy fruit trees". Grant had a government battery then, but it was used infrequently and was soon moved on.

References: Christie & Gray, pp. 43, 47, 51, 91, 94, 97, 115-6
Flett (1965)

DESCRIPTION & INTERPRETATION OF FEATURES:

Grant township—The main remaining features are exotic trees (pears and elderberries), traces of street formations and tracks, benched house sites, remains of fireplaces, the site of the Church of England (outline of building stumps), and scatters of domestic artefacts.

Grant cemetery—Two standing headstones are visible: (1) Alfred Reford, December 1870, and Lewis Reford, November 1912; and (2) Henry Harrison, March 1902, and Sarah Fox, 1890. Also visible are at least 25 distinct grave mounds and a grave surrounded by the remains of a low post & rail fence.

Henry Harrison (headstone 2) was mining registrar for the Crooked River Division from 1884 until the 1890s. He was also a storekeeper and mine owner, having purchased the Good Hope mine in 1879 (Christie & Gray, p. 84)—see "GOOD HOPE MINE", above. His was the sole remaining store at Grant in 1890.

INTEGRITY/CONDITION: It is estimated that about two-thirds of the Grant township site has been reclaimed by forest. Although the township is identifiable mainly as a domesticated landscape feature, a very good historical photographic record of the town still exists. If matched with features still discernible on the ground, historical photos could be used to "resurrect" the township for visitors.

CULTURAL SIGNIFICANCE:

The site has:

Historical significance—Grant was the "capital" of the Crooked River goldfield during the 1860s.

Archaeological potential— archaeologically important for its potential to yield artefacts which will be able to provide significant information which could contribute to an understanding of the cultural history of early gold mining rushes.

Network values—Grant township and cemetery are a focal point of the site network comprising the Grant Historic Reserve, which also includes mining settlements, cemeteries, quartz mines and alluvial mining landscapes, all overgrown, but linked by a navigable network of carting tracks. As with the rest of the Grant Historic Reserve, the township and cemetery sites offer the visitor a sense of discovering the authentic remains of an abandoned goldfield. Any future development of the site should maintain the "abandoned" character of the place.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* April 1995

PLACE NO. & NAME: **38.0 LONE HAND BATTERY & CYANIDE WORKS**
Dargo–Crooked River goldfield
HI No. ***H8323-0005***

LOCATION: Jolly Sailor Reef, near Grant township
MUNICIPALITY: Wellington Shire Council
LAND USE/STATUS: Grant Historic Reserve (7,300 ha)

EXISTING HERITAGE LISTING: National Estate (as part of Grant Historic Reserve)

SITE HISTORY:
(The Lone Hand mine east of Grant appears to have no connection with an earlier Lone Hand [formerly Mountaineer] Reef worked at Good Luck Creek in the 1860s and 1880s.)
The Lone Hand Reef is an easterly continuation of the Jolly Sailor's, a reef that was worked as early as 1864. The Lone Hand extension was opened up in the early 1900s by a co-operative party of miners. They crushed stone with a 5-head battery, driven by an 8-hp engine, situated in Mornington Gully near the reef. The Royal Flush Reef, nearer to Grant, was worked in conjunction with the Lone Hand, but was a poor performer. Work on the Lone Hand mine ceased in 1907, and although prospectors re-tried the reef in 1913-14, nothing payable was found.

There was a battery in Mornington Gully as early as 1865, when Kitchingham & Co. erected a steam-powered Balfour's patent crusher "immediately next to" the Jolly Sailor's claim, to service mines along the reef. Like most Crooked River reefs, the Jolly Sailor's was abandoned in the late 1860s, but it was re-worked in the early 1870s by the Hopeful and Ballarat companies. The Mornington battery (or "Mornington *mills*", as it was called) was again put to use, and was rebuilt in 1875 after it was seriously damaged by bushfire. Nothing more is known of the Mornington battery, other than it was used for a trial crushing from a new reef in 1880. The Jolly Sailor's Reef was again worked in the late 1880s, when a 300-ft tunnel was driven to intersect it. The next recorded workings were those on the Lone Hand extension. It is possible, though unlikely, that the repaired Mornington battery was re-used in the early 1900s.

References: Christie & Gray, p. 130
Department of Mines Annual Reports, 1907, 1913-14
Dunn (1907/3)
Mining Surveyors' Reports (Crooked River Subdivision), September 1865, June 1873, December 1874, March 1875, December 1880

DESCRIPTION & INTERPRETATION OF FEATURES:
Features of the Lone Hand battery & cyanide works site are chimney stack, battery site, track, and cyanide works.
Chimney stack—Substantially intact 5ft-square stone chimney stack standing 13 ft high.
Battery site—Below the stack is a benched platform, formerly the site of a battery, although no foundations are visible.
Track—A benched track leads from the site westwards to Grant.
Cyanide works—In a gully below the battery site are three galvanised iron cyanide vats, partly buried and obscured by ferns.

It is not known whether the Lone Hand battery site (early 1900s) coincides with the site of the earlier (1865/rebuilt 1875) Mornington battery.

INTEGRITY/CONDITION: The chimney stack is in good condition, but scarcely any trace of the battery survives.

CULTURAL SIGNIFICANCE:
The site has:
Scientific significance—The site contains a combination of features that have not survived elsewhere on Alpine sites, including the substantial remains of a stone chimney stack and cyanide works.

Network values—as part of the site network comprising the Grant Historic Reserve, which also includes mining settlements, cemeteries, quartz mines and alluvial mining landscapes, all overgrown, but linked by a navigable network of carting tracks.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* April 1995

PLACE NO. & NAME: **39.0 MOUNTAINEER MINE SITE**
Dargo–Crooked River
HI No. ***H8323-0006***

LOCATION: Northern bank of Good Luck Creek, at junction with Bottleneck Creek.
MUNICIPALITY: Wellington Shire Council
LAND USE/STATUS: Historic Reserve

EXISTING HERITAGE LISTING: Grant Historic Reserve (7300 ha)

SITE HISTORY:
The Mountaineer Reef was discovered and worked during the Crooked River reefing rush of 1864-5. In 1880, the "well-known reef" on Good Luck Creek was reworked as the Lone Hand. It was at that time described as a very large reef, which could be worked very cheaply because of its proximity to the creek—meaning that a water-powered battery could be erected close to the mine. A crushing from the mine was recorded in 1882, and the Lone Hand Co. was sufficiently encouraged by the average yield of just over an ounce per ton to make plans for a battery of its own. In December that year, it was reported that "preparations [were] being made" by the company for the erection of a battery, which (it was speculated) might lead to the opening up of some of the many reefs known to exist in the locality. No further records of the mine were found, but the physical remains suggest that construction of the battery indeed went ahead.

References: Christie & Gray, p. 131
Mining Surveyors' Reports (Crooked River Subdivision), December 1864, March 1865, March 1880, September 1881, December 1882

DESCRIPTION & INTERPRETATION OF FEATURES:
Features of the Mountaineer mine site are a 10-head battery, possible waterwheel, tramway, reef workings and alluvial workings with water race.
Battery—A wall, 2 m high, rising from the creek bank, retains a platform, on which is a 10-head battery lying on its side. In the gully nearby is a "large wheel (device)".
Tramway—A tramway incline on which are two trolley trucks, one still attached to a steel cable.
Quartz workings—Adit and tailings heap at Mountaineer site, little (if at all) disturbed since it was abandoned. Also several adits, mullock heaps, and two stone fireplaces on the southern bank of the creek, opposite the Mountaineer.
Alluvial workings—Evidence of alluvial workings on both sides of the creek, including a water race on the south side.

INTEGRITY/CONDITION: Battery collapsed.

CULTURAL SIGNIFICANCE:
The site has:
Scientific significance—contains a range of mining relics including the remains of a water-powered crushing battery.
Archaeological significance—The site has the potential to yield artefacts and evidence which will be able to provide significant information about the technological history of gold mining.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: Sandra Bardwell, NPS Historian *Date:* c.1985

PLACE NO. & NAME: **40.0 RED ROSE BATTERY**
Dargo–Crooked River goldfield
HI No. ***H8323-0007***

LOCATION: At base of Red Rose look-out spur.
MUNICIPALITY: Wellington Shire Council
LAND USE/STATUS: Historic Reserve

EXISTING HERITAGE LISTING: Grant Historic Reserve (7300 ha)

SITE HISTORY:
Nothing is known of the history of the Red Rose site. An historical photo of a water-powered battery, captioned "Red Rose Waterwheel and Battery near Grant", featured in Flett's 1965 article on the Crooked River goldfield. It is possible that the mine/reef was known by another name during its early history. There is a remote possibility of a connection with the Rose of Australia Reef, listed during 1864-5, as being in the Good Luck Creek vicinity—Red Rose Creek is an upper tributary of Good Luck Creek.

References: Bardwell, S., report on Grant historic sites, for National Parks Service, c.1980
Flett (1965), p. 43
Mining Surveyors' Reports (Crooked River Subdivision), December 1864, March 1865

DESCRIPTION & INTERPRETATION OF FEATURES:
The Red Rose battery site is engulfed by blackberries. National Parks Service historian Sandra Bardwell was unable to find the site when she visited the area in c.1980. Local historian Rob Christie is familiar with the site and says that it comprises the remains of a waterwheel (framework wired together), collapsed 10-head of stampers, and several adits.

INTEGRITY/CONDITION: A good ensemble of features, in a state of collapse.

CULTURAL SIGNIFICANCE:
The site has:

Scientific significance—contains a range of historic mining relics including the substantial remains of a water-powered crushing battery.

Archaeological significance—The site has the potential to yield artefacts and evidence which will be able to provide significant information about the technological history of gold mining.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: Rob Christie (Dargo) *Date:* 1990s

PLACE NO. & NAME: **41.0 JUNGLE CREEK FALLS DIVERSION SLUICE**
Dargo–Crooked River goldfield
VHR No. ***H1258***
HI No. ***H8323-0008***

LOCATION: North of Hibernia Track, Jungle Creek Falls
MUNICIPALITY: Wellington Shire Council
LAND USE/STATUS: Grant Historic Reserve (7,300 ha)

EXISTING HERITAGE LISTING: National Estate (as part of Grant Historic Reserve)

SITE HISTORY:
Jungo or Jungle Creek was rushed in June 1861. The discoverer, Jean Gamel, told how: "the first party were soon stripping a twelve by twelve paddock and had a tail race completed … Each of the sixteen claims averaged from eight to twelve ounces to the paddock". By 1863, Jungle Creek was the major diggings at Crooked River: "it has assumed an air of permanence, men making comfortable homes and bringing their families up". By the end of 1864, the full extent of Jungle Creek had been worked for alluvial gold, and reefs were opened up. At that time, a party of alluvial miners was constructing a channel to divert the Wongungarra River across a flat near Howittville, in order to work the river bed and later the flat itself; the scheme was regarded as a pioneering enterprise. It would have been similar in function to—although larger in scale than—the Jungle Creek Falls diversion.

During 1865, the alluvial mining population of Jungle Creek fell to only 15, as the focus of alluvial mining shifted to Upper Crooked River and its tributaries, and the Dargo. From the 1870s, alluvial mining at Crooked River was largely confined to creek and river *banks* rather than beds and flats, and it became increasingly rare for alluvial miners to work in parties of more than two or three. In 1874, however, the mining registrar remarked that, "The falling off in quartz mining has had a beneficial effect upon the alluvial, leading to a more general prospecting of the rivers and creeks"—including Jungle Creek—"some of which are paying more than ordinarily good wages".

Because the Crooked River alluvial rush of 1861-3 coincided with a three-year lapse in mining surveyors' reports, little exists in the way of records for the period. When reports recommenced in 1864, and for a few years afterwards, the local mining surveyor was understandably preoccupied with the phenomenal reefing rush that was in full swing. The Jungle Creek Falls diversion sluice probably dates to the period 1861-5 or mid-1870s; but no record of its construction or use has been located.

References: Christie & Gray, pp. 22-3 (quoting Jean Gamel's diary)
Flett (1979), p. 150
Gippsland Times, 30 January 1863 (quoted by Christie & Gray, pp. 28-9)
Mining Surveyors' Reports (Crooked River Subdivision), December 1864, September 1874

DESCRIPTION & INTERPRETATION OF FEATURES*:*
Diversion sluice—100ft-long cutting, 6 to 8 ft deep, which now runs as the main course of the creek. During winter, the original course also runs. Directly below the cutting is a high waterfall to which a walking track has been established. Construction rubble lies either side of the cutting and very overgrown alluvial workings (bank sluicing, pebble dumps and water races) lie upstream.

INTEGRITY/CONDITION: Diversion sluice/cutting is in good condition; the alluvial workings, upstream, are very overgrown.

CULTURAL SIGNIFICANCE:
The site has:

Historical significance—The Jungle Creek Diversion Sluice is historically significant as a characteristic and well-preserved example of an important form of gold mining. Gold mining sites are of crucial importance for the pivotal role they have played since 1851 in the development of Victoria. As well as being a significant producer of Victoria's nineteenth century wealth, with its intensive use of machinery, played an important role in the development of Victorian manufacturing industry.

Scientific significance— The Jungle Creek Diversion Sluice is scientifically significant as a well-preserved diversion sluice. Water diversion and sluicing are important key ingredients in an understanding of gold mining technology as it was employed in mountainous country where water was plentiful and perennial.

Natural values— The abandoned mining machinery at the Jungle Creek Diversion Sluice is also important for its evocation of the adventurousness, hardship, and isolation that was part of mining life in the high country areas of the State.

Network values—because of its proximity to the Jungle Creek battery and quartz mine site, which illustrates a different aspect of gold mining in the vicinity; and as part of the overall site network comprising the Grant Historic Reserve.

SIGNIFICANCE RANKING: Site listed on Victorian Heritage Register
Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* April 1995

PLACE NO. & NAME: **42.0 JUNGLE CREEK BATTERY & QUARTZ MINE SITE**
Dargo–Crooked River goldfield
HI No. ***H8323-0009***
H8323-0010

LOCATION: North of Hibernia Track, south of Union Jack Spur
MUNICIPALITY: Wellington Shire Council
LAND USE/STATUS: Grant Historic Reserve (7,300 ha)

EXISTING HERITAGE LISTING: National Estate (as part of Grant Historic Reserve)

SITE HISTORY:
At the start of 1865, 157 miners were working 39 reefs at Jungle Creek. Two batteries—those of Hartley & Co. (known as the Jungle mill) and the Victoria Co.—were erected in 1865, to crush for reefs on upper and lower Jungle Creek, respectively. Both batteries were driven by steam-power; the Jungle mill had five head of stamps, the Victoria probably eight.

The Victoria battery seems to have operated for only a short time: yields from the Victoria Reef itself were "remarkably poor" and, by the end of 1866, the 20 or so miners remaining at Jungle Creek were on the upper reaches. The battery was removed to another part of the Crooked River field in 1870.

The Jungle mill was rented in 1867 by the partnership of Whiting & Willmott, to crush for their mines on the Speedwell, Anchor, and Time-will-tell reefs. The battery continued operating until at least mid-1869. After some time idle, the Time-will-tell Reef was again taken up in 1872, along with the Bismark Reef, and a water-powered battery was erected on Jungle Creek. The Speedwell Reef, "in the immediate vicinity of this mill", was re-occupied at the same time. None of these reefs yielded at all well, but a new rich reef, the Bright Star, was struck not far from the Bismark. By the middle of 1875, the Bright Star had run its course, and no more was heard of the battery/s on Jungle Creek.

References: Christie & Gray, p. 73
Mining Surveyors' Reports (Crooked River Subdivision), September 1865, December 1866, June 1867, June & December 1869, September & December 1872, June & September 1873, March–December 1874, June 1875

DESCRIPTION & INTERPRETATION OF FEATURES:
Features of the Jungle Creek battery and mine site are fragments of a battery and boiler, a line of reef workings, and a benched track.

Battery site—Most relics from the site appear to have been scavenged. All that is visible is a 4-head battery box and two sections of an egg-end or cylinder boiler. The site is very overgrown.

Workings—A line of reef workings is situated about 20 m above the battery site. The workings run in a south-westerly direction and consist of at least four open shafts with mullock paddocks, a stone fireplace (two more were seen on the walk into the battery site), and an open adit. The adit is at the end of the line of workings and has a large mullock heap, blacksmith forge, and a well-preserved quartz paddock on its northern side. Above the adit is another level of workings, dominated by a large stope that appears to be connected to the adit.

Benched track—A well-defined track leads to the adit.

Situated at Upper Jungle Creek, the site would relate to the mines in that locality: principally, those on the Speedwell and Time-will-tell reefs worked in the 1860s and 1870s. The original "Jungle mill" *was* steam-powered, but comprised five head of stamps; the later (1873) Time-will-tell Co. battery was water-powered, but a steam engine may have been added. The workings are most likely on Speedwell Reef, which was "in the immediate vicinity" of the latter battery.

INTEGRITY/CONDITION: ?

CULTURAL SIGNIFICANCE:
The site has:

Scientific values ¾ Site contains a range of relics documenting quartz mining activities undertaken from the mid 1860s

Archaeological significance—The site has the potential to yield artefacts and evidence which will be able to provide significant information about the technological history of gold mining.

Network values—because of the range of relics and elements which combine to illustrate a small-scale reef mining operation; because of its proximity to the Jungle Creek Falls diversion sluice, which illustrates a different aspect of gold mining in the vicinity; and as part of the overall site network comprising the Grant Historic Reserve.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* April 1995

PLACE NO. & NAME: **43.0 BLACK SNAKE BATTERY & CYANIDE WORKS**
Dargo–Crooked River goldfield
HI No. ***H8323-0011***

LOCATION: Black Snake Creek Track, at the head of the creek, on the south side.
MUNICIPALITY: Wellington Shire Council
LAND USE/STATUS: State Forest

SITE HISTORY:
Reef claims at Black Snake Creek were first opened up in 1865. In 1867, the Kong Meng Co. took up the Black Snake claim (called "the most promising looking reef in the neighborhood of Grant"), about 5 km from the junction of Black Snake Creek and Wonnangatta River. The company erected a 4-head water-powered battery, and worked the mine for about three years, reputedly crushing 600 tons of quartz for an average of over 1 oz per ton. The Black Snake mine was idle for a number of years before it was taken up again and a lower tunnel driven along the line of reef for about 150 ft without striking payable stone. In 1907, a party obtained a government grant to extend the Kong Meng tunnel, but again got nothing payable.

During the depression of the early 1930s, the government encouraged unemployed men to take up mining on Black Snake Creek. A small "susso" settlement, with a post & telegraph office and school, was established. The diggings yielded poorly and by 1933 only 15 men remained. The following year, the government initiated roadworks to supplement the diggers' employment. Eight men were prospecting in the area (with government assistance) in 1936, and their eleven children attended the school at Black Snake. By 1942 the field was deserted.

References: Christie & Gray, p. 88
Kenny (1925)
Mining Surveyors' Reports (Crooked River Subdivision), March 1866, June 1867, December 1868

DESCRIPTION & INTERPRETATION OF FEATURES*:*
Features of the Black Snake battery site are a portable steam engine and 5-head battery.

Portable steam engine—A portable engine is partly buried by flood debris. The engine is still in fair condition, but all brass fittings have been removed. The single-cylinder engine is upright and the flue is still intact. Diameter of fly wheel, 5 ft; diameter of cylinder, 10 inch, length 1½ ft; overall dimension of engine, 12 ft. The boiler was inspected in 1935.

Battery—Iron-framed battery of five head of stampers, manufactured by Machar & Teal, Melbourne. The camshaft has been dislodged and lies on the ground.

The inspection date on the boiler (1935) connects this site with the Black Snake "susso" settlement of the 1930s depression.

A two-head battery, cyanide works, and quartz workings are located downstream from the main Black Snake battery.

Battery site—The battery's wooden bearers are *in situ*, but other relics have been scavenged or dislodged: the stamper box and fly-wheel lie 10 m downstream, and a pulley wheel in the creek bed.

Cyanide works—50 m downstream is a small dump of tailings with an *in situ* 9ft-diameter galvanised iron vat, and two uprooted vats. The vats are very overgrown.

Quartz workings—Several levels of adits with machinery remains (not surveyed).

The two-head stamper box and battery relics are likely to be remains of the 4-head battery installed by the Kong Meng Co. in 1867. The higher adit level/s represent the workings of the Kong Meng Co. (reworked in 1907); a lower adit was driven in the 1870s or 80s. Nothing is known of the cyanide workings, but they probably date to the 1930s, when miners are known to have been active on the field.

INTEGRITY/CONDITION: Black Snake battery is in good condition; portable engine is partly buried and badly rusted.

CULTURAL SIGNIFICANCE:
The site has:

Scientific significance—The site is scientifically significant containing a well-preserved battery ensemble, with five head of stamps and portable steam engine.

Archaeological significance—The site has the potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* April 1995

PLACE NO. & NAME: **44.0 EXHIBITION BATTERY**
Dargo–Crooked River goldfield
HI No. ***H8323-0012***

LOCATION: West of Dargo-Stratford Road, 175 m north of Short Cut Road, near Exhibition Reef mine.
MUNICIPALITY: Wellington Shire Council
LAND USE/STATUS: Crown Land

SITE HISTORY:
The Exhibition Co., mining about 5 km south-west of Dargo township (in a paddock on the south side of the road to Waterford), installed a steam-powered battery in September 1881, at which time they already had 100 tons of quartz awaiting crushing. With yields of 1¼ oz per ton, the company was able to pay a £200 dividend by the end of that year. The battery also crushed for other mines in the vicinity, including the Parnell and the Perseverance. Constant water shortages dogged the battery's operations: in the winter of 1884, its passes and hoppers were choked with quartz, which could not be cleared until sufficient rain fell to fill the battery dam. The Exhibition mine was worked by tributers from 1885, and continued to give good returns from a "thin and difficult" reef throughout the 1880s.

Due to a large gap in mining records, the next-found reference to the Exhibition Reef is dated 1906, at which time payable stone was being raised by the Exhibition Co. No mention was made of a battery at the mine; a government battery at Dargo served other small mines in the vicinity at that period. The Exhibition mine was in the hands of tributers from 1908 until it closed down in about 1910.

Christie & Gray say that the battery now located in Shortcut Road, 5 km south of Dargo, is the government battery which was removed from Dargo to Grant in 1911, then moved to its present site during the 1930s. Churchward (Table 4.1) calls the site the Exhibition battery and, given that the location coincides with that of the Exhibition Reef, that interpretation seems more plausible than Christie & Gray's claim that it was the government battery. Had the government installed a battery for the use of prospectors in the Exhibition/Perseverance reefs locality during the 1930s, it is unlikely to have been left on the site to decay.

References: Christie & Gray, pp. 87-9
Department of Mines Annual Reports, 1907-10
Dunn (1907/4)
Mining Surveyors' Reports (Dargo Subdivision), 1881-9

DESCRIPTION & INTERPRETATION OF FEATURES:
Features of the Exhibition battery site are relics of a battery and a portable steam engine.

Battery box—5-head battery box, from which the stampers have been removed. The box, manufactured by Johns & Waygood Ltd, Hydraulic & General Engineering, Sturt Street, Melbourne, still rests on well-preserved timber mortar blocks. To the west of the battery is a cam shaft and 6ft-diameter fly wheel. The fly wheel is of solid (not spoked) construction.

Portable steam engine—Below and slightly to the east of the battery is a portable, single-cylinder steam engine. The flue has rusted away and the fly-wheel is held in position only by a single strand of wire. The engine is upright, still standing on its iron wheels. Apparently the engine had collapsed but was re-erected in 1982. Diameter of fly wheel, 5 ft; diameter of cylinder, 8½ inches; overall length of engine, 11 ft. The boiler was inspected on 2-3-1905, and the inscription further reads "N3, M.D., T180, W90".

INTEGRITY/CONDITION: The site is overgrown. The engine and battery foundations are in fair condition. The portable steam engine's fly wheel is held in position by a single strand of wire.

CULTURAL SIGNIFICANCE:
The site has:

Scientific significance—The site is scientifically significant containing an in situ portable steam engine and battery foundations.

Archaeological significance—The site has the potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* April 1995

PLACE NO. & NAME: **45.0 'HARRISON'S CUT' DIVERSION SLUICE**
Dargo–Crooked River goldfield
VHR No. ***H1263***
HI No. ***H8323-0013***

LOCATION: On Dargo River, north of junction of Upper Dargo and Matheson tracks.
MUNICIPALITY: Wellington Shire Council
LAND USE/STATUS: State Forest

SITE HISTORY:
The Dargo River was worked by alluvial miners as early as the 1850s, but the first rush occurred in 1862 in the vicinity of Dargo township. The following year, the Upper Dargo (in the now Alpine National Park) was rushed, and that part of the river remained the focus of alluvial—and later quartz—workings for years to come. In 1869, alluvial miners (mainly Chinese) were again shifting their attention to the Lower Dargo river. The Middle Dargo was rushed in 1880, and was worked—along with the rest of the Dargo and the Wentworth—with fair success throughout the eighties. Several claims on the Middle Dargo were reported as giving very good yields in 1885, and in 1886 "Antonio and mate" won 40 oz in six weeks from their claim on that part of the river.

No record was found of Harrison's Cut or any undertaking of its kind. Its position would probably qualify as the Middle Dargo, therefore suggesting a construction date in the 1880s. Nothing is known of the name's origin, but the name Harrison has strong connections with the area. Edward Harrison was mining registrar for the Crooked River–Dargo goldfield from 1879-84, after which (his brother?) Henry Harrison took over. Henry Harrison was also a storekeeper and mine-owner, and one of the last residents of Grant.

References: Mining Surveyors' Reports (Crooked River Subdivision), September 1869, March & December 1880; (Dargo Subdivision) June 1885, December 1886

DESCRIPTION & INTERPRETATION OF FEATURES:
The "Harrison's Cut" diversion sluice is formed by a 20ft-deep, 8ft-wide, 150ft-long channel cut through a narrow spur. The river now flows through the diversion, creating a small waterfall. The site is a popular recreation and scenic location.

INTEGRITY/CONDITION: Good

CULTURAL SIGNIFICANCE:
The site has:

Historical significance—Harrisons Cut Diversion site is historically significant as a characteristic and well preserved example of an important form of gold mining. Gold mining sites are of crucial importance for the pivotal role they have played since 1851 in the development of Victoria. As well as being a significant producer of Victoria's nineteenth century wealth, with its intensive use of machinery, played an important role in the development of Victorian manufacturing industry.

Scientific significance— Harrison's Cut Diversion site is scientifically significant as a well-preserved diversion sluice. Water diversion and sluicing are important key ingredients in an understanding of gold mining technology as it was employed in mountainous country where water was plentiful and perennial.

Social value—as a popular recreation and scenic spot.

SIGNIFICANCE RANKING*:* Site listed on Victorian Heritage Register
Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* April 1995

PLACE NO. & NAME: **46.0 GOLDEN RIDGE BATTERY & MINE**
Dargo–Crooked River goldfield
HI No. ***H8323-0014***
H8323-0015

LOCATION: Long Spur Track, Shepherds Plain, Dargo High Plains
MUNICIPALITY: Alpine Shire Council
LAND USE/STATUS: Alpine National Park, Bogong Unit

EXISTING HERITAGE LISTING: National Estate—Alpine National Park

SITE HISTORY:
In 1900, a government battery was erected at Livingstone Creek on Dargo High Plains, as an aid to quartz prospectors. Several reefs were opened up as a result. One of them appears to have been the Golden Ridge, although the only reference to that mine is a fleeting reference dated 1907, stating simply that the mine was working.

Although the site is locally known as the Golden Ridge, it is possible that its remains relate to a later mining operation, that of Chambers and Martin. From about 1916, they worked a quartz mine "in very mountainous country above the snow line", equipped with a battery and winding machinery, both driven by steam. The mine was still operating in 1918, when regular Department of Mines reports ceased.

References: *Australian Mining Standard*, 3 January 1901, p. 15
Department of Mines Annual Report, 1907, 1916-18

DESCRIPTION & INTERPRETATION OF FEATURES:
Features of the Golden Ridge battery and mine site are a battery site, portable steam engine, cyanide works, mine workings, and vertical boiler and winch.

Battery site—The battery has been removed, leaving only an excavated platform. All that is visible are some decaying bed-logs and protruding bolts. Near the battery platform is a stone blacksmith's forge.

Portable steam engine—The single-cylinder engine has been moved a short distance from its original location and now lies partly sunk in swampy ground. It still stands on its iron wheels but its flue is missing. The boiler and smoke box have partly rusted out and no inspection mark could be found. Diameter of cylinder, 10 inches, length 1½ ft; total length of engine, 12 ft. The engine's 5ft-diameter fly wheel has been removed and lies nearby in the swamp. Various fragments lie around the engine, including a plate of the cylinder bearing the inscription "The Deming Co., P105".

Cyanide works—To the south-east of the battery site is a relatively large heap of tailings (approx. 20 m diameter x 2 m high). A rusted galvanised iron drainage vat, measuring 12½ ft in diameter, is at the base of the heap, with two similar soakage vats on the heap. Near the soakage vats is a 3ft-diameter galvanised iron water tank.

Mine site—The main feature of mine workings on the spur above the battery is a large, intact mullock heap with four major dumping lines, each about 50 m long. The shaft has been filled, but is now slightly subsided. Near the shaft is a stone blacksmith's forge.

Vertical boiler & winch—The plant is located 200 m south of the mine. The vertical boiler has a diameter of 4 ft and stands 10 ft high, and is complete with flue and damper. According to the inscription on the plate, the boiler was inspected in either 1913 or 1918. On the northern side of the boiler is a well-preserved double-cylinder winch. The cylinders are of 6-inch diameter and 1 ft long. The 2ft-diameter drum still has its brake lining. The manufacturer's mark on the winch reads "Hampson and Halliday, Engineers, Footscray, Melbourne". The winch would have been used to extract ore from an open stope, 200 m down the spur.

INTEGRITY/CONDITION: The battery itself has been fairly thoroughly looted. The portable engine and cyanide vats are in fair condition, and the vertical boiler and winch at the mine site are in excellent condition.

CULTURAL SIGNIFICANCE:
The site has:

Historical significance — The Golden Ridge battery and mine site is historically significant as documenting the extreme limits of historic gold mining, when it was undertaken in very mountainous country above the snow line.

Scientific significance—Site contains a range of relics documenting quartz-mining operations undertaken from 1916 to 1918.

Archaeological significance—The site has the potential to yield artefacts and evidence which will be able to provide significant information about the technological history of gold mining.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* April 1995

PLACE NO. & NAME: **47.0 DONNELLY'S or TRAILL BROTHERS' MINE**
Dargo–Crooked River goldfield
HI No. **H8323-0023**

LOCATION: At the head of Donnelly's Creek, a tributary of the Wentworth River, between Little Kelly's and Kelly's creeks.
MUNICIPALITY: Wellington Shire Council
LAND USE/STATUS: State Forest

SITE HISTORY:
Traill brothers were active prospectors and miners at the Wentworth River from the 1880s. In 1884, they discovered the Joker Reef near the Normanby, on Teapot Creek. The reef was worked by shaft, and quartz from the mine was crushed at the Normanby battery. The Normanby Reef was first worked in 1879, the battery erected the following year. Bushfires in 1889 destroyed the original Normanby battery, but a 10-head battery stood at the mine when it was taken up in 1933. Five of the ten heads were moved up the creek, closer to the mine, which was worked by tunnels driven south.

In 1898, the Traills found a new reef at the head of Donnelly's Creek, another Wentworth tributary. The reef, which they worked by shaft, promised to be very rich but the prospectors were held back by a lack of battery facilities in the area—"a fortune awaits any capitalist or company erecting batteries in the various creeks for public crushing". No further reference to the Traill brothers' mine has been found.

If the existing battery site is in fact at Donnelly's Creek, it must be assumed that the reef discovered in 1898 was later developed on a fairly large scale (although no reference to such workings has been found). The presence of adits is puzzling, as the reef was initially worked by shaft. It is possible that the location given for the battery site is incorrect, and that it is actually the site of the Normanby mine, which was worked by adits and is known to have had a 10-head battery. Even so, the two five-head battery boxes were separated in the mid-1930s, and Rob Christie says that the Normanby battery has been removed from its site.

References: *Australian Mining Standard*, 28 April 1898, p. 2883
Christie, Rob—pers. comm., April 1995
Kenny (1940/1)
Mining Surveyors' Reports (Dargo Subdivision), December 1884, March 1888; (Crooked River) December 1879, March 1880

DESCRIPTION & INTERPRETATION OF FEATURES:
The Traill brothers' battery site comprises a standing 10-head battery, with five associated levels of quartz workings (collapsed or open adits), baker's oven, numerous hut sites, and a network of tracks. A steam engine has been removed from the site.

INTEGRITY/CONDITION: Extensive site

CULTURAL SIGNIFICANCE:
The site has:

Scientific significance— Site contains a range of relics documenting quartz-mining operations undertaken from late nineteenth century.

Archaeological significance— archaeologically important for its potential to yield artefacts which will be able to provide significant information about the technological history of gold mining, and the cultural history of the gold miners themselves.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: Rob Christie (Dargo) *Date:* pers comm 1995

PLACE NO. & NAME: **48.0 UPPER DARGO DIVERSION SLUICE**
Dargo–Crooked River goldfield
HI No. ***H8323-0024***

LOCATION: Near Sydney Reef, just north of Louisville, Upper Dargo River.
MUNICIPALITY: Alpine Shire Council
LAND USE/STATUS: Alpine National Park, Bogong Unit

SITE HISTORY:
The Upper Dargo River was worked by alluvial miners from as early as the 1850s right through to the turn of the century and beyond. For much of its mining history, the alluvial ground at the Upper Dargo was largely populated by Chinese diggers. No record was found concerning this diversion sluice or any undertaking of its kind.

DESCRIPTION & INTERPRETATION OF FEATURES:
According to Rob Christie (local historian at Dargo), who has visited the site, the Upper Dargo diversion sluice comprises a 4 m-deep stone-retained channel running through a massive pebble dump. The pebble dump is some 20 m wide and has several dumping lines: Rob says it is still possible to trace wheelbarrow tracks. The miners appear to have moved the whole course of the river, so that it now runs through the diversion sluice and a waterfall has been created.

INTEGRITY/CONDITION: To be visited

CULTURAL SIGNIFICANCE:

Given the description of the site (subject to confirmation) it would have:

Historical significance—The Upper Dargo Diversion Sluice is historically significant as a characteristic and well preserved example of an important form of gold mining. Gold mining sites are of crucial importance for the pivotal role they have played since 1851 in the development of Victoria. As well as being a significant producer of Victoria's nineteenth century wealth, with its intensive use of machinery, played an important role in the development of Victorian manufacturing industry.

Scientific significance— The Upper Dargo Diversion Sluice is scientifically significant as a well-preserved diversion sluice. Water diversion and sluicing are important key ingredients in an understanding of gold mining technology as it was employed in mountainous country where water was plentiful and perennial.

Archaeological significance— The remoteness of the site raises the potential for the site to be archaeologically rich and to yield artefacts which will be able to provide significant information about the technological history of gold mining, and the cultural history of the gold miners themselves.

Natural values—The Upper Dargo Diversion Sluice is also important for its evocation of the adventurousness, hardship, and isolation that was part of mining life in the high country areas of the State.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: Rob Christie, Dargo *Date:* pers comm 1995

PLACE NO. & NAME: **49.0 ORIENTAL SLUICING CLAIMS**
Omeo goldfield
VHR No. ***H1225***
HI No. ***H8423-0001***

LOCATION: Approx. 2 km south of Omeo, on western side of Livingstone Creek.
MUNICIPALITY: East Gippsland Shire Council
LAND USE/STATUS: Oriental Claims Historic Area (40 ha)

EXISTING HERITAGE LISTING: Oriental Claims Historic Area

SITE HISTORY:

The Oriental Claims Historic Area encompasses a number of sluicing claims worked on a large scale in the Dry Gully area between 1855-1904. The name "Oriental" comes from the name of a sluicing company which worked the area from 1876-1904; but the term also acknowledges the significant contribution of Chinese miners to the area's history.

Champagne and Co. was the first party to establish a claim on the ground, in 1855, and they constructed a long sluicing race to feed their ground sluicing operations. In 1857, Fitzgerald and party took up ground they called the Pioneer claim at the junction of Livingstone Creek with Dry Gully and Mountain Creek. Fitzgerald gained a virtual monopoly on water supply—and, in effect, on sluicing—by taking up agricultural ground around Dry Hill and west of Livingstone Creek, preventing rival parties in the vicinity from constructing water races to their claims.

Early sluicing claims were worked using sluice boxes and Californian pumps and wheels. The Pioneer Co.'s extensive water races enabled it to graduate to hydraulic sluicing in the early 1870s. The use of the high-pressure hose allowed the processing of far greater quantities of washdirt, and this was the first operation of its kind in the district. The high-pressure jet of water was trained on the lower section of a high face, undermining the upper section and causing it to collapse, thereby delivering massive amounts of washdirt to the sluice boxes with relatively little effort.

In 1876, the Oriental Sluicing Co. was formed (the pioneering Champagne was a partner) to work ground south of the Pioneer claim by hydraulic sluicing. The company intended cutting a six-mile water race up the Livingstone Valley to their claim, but Fitzgerald objected to it crossing his private property, the only practicable route. Completion of the race was delayed until the introduction of the Mining on Private Property Act in 1884.

In 1883, Fitzgerald and Co. sold the Pioneer claim to a party of Chinese for £1,000. In its first 25 years of operation, the claim had yielded an estimated 7,500 oz of gold. Under its new ownership and following a drought in the early 1880s, the Pioneer claim never regained its old vigour. By 1886, the Oriental Co. was in full operation at last and on its way to being the premier gold producer of the district. Its contentious water race was complete and capable of supplying water enough for two hydraulic hoses and twelve 36-inch sluice heads. In 1889, the Oriental Co. installed a Giant hydrant and nozzle—the latest sluicing technology—in the hope of doubling its gold production. The tail-race was deepened and extended to 600 feet in length. High-pressure water was delivered to the sluicing site through a line of iron pipes which gradually reduced in diameter—from one foot, to nine inches, to six inches, to a hose nozzle of only two or three inches' diameter. The result was the best yield for years.

The Oriental Co. continued operating until 1904, when the Sludge Abatement Board halted all sluicing on Livingstone Creek. The company's total gold production was estimated at 12,500 oz, and other sluicing claims in the vicinity were thought to have yielded about 21,000 oz since 1857. Griffiths put the total production of the Oriental claims at close to 42,000 oz (or an average 5 grain per cubic yard), which made them "without a doubt the largest and most profitable sluicing venture in Gippsland".

In 1911, a new Oriental Co. took up the old ground and installed new, up-to-date sluicing plant. A 120-foot face was sluiced, with the tailings deposited on ground already worked, so as not to pollute the creek. Low yields forced operations to cease within a year.

References: Christie, pp. 9-14
Department of Mines Annual Reports, 1911-12
Fairweather (1), pp. 36-6
Flett, p. 170

Griffiths, p. 33
Mining Surveyors' Reports (Kobana Subdivision East), March 1867; (Omeo Subdivision), September 1876, September 1883, December 1885, March–December 1886, December 1889
Omeo Standard, 24 April 1891

DESCRIPTION & INTERPRETATION OF FEATURES:

Features of the Oriental sluicing claims site include a picnic area and interpretation trail, sluice holes, pebble dumps, and tail races.

Picnic area—A large picnic area has been established near the northern end of the sluicing claim, with an interpretation trail running from the picnic area through the northern section of the sluicing works.

Northern end of sluicing works—A vast sluice-hole with sheer face, up to 30 m in height, an extensive system of tail races, and a scattering of stacked pebble dumps.

Southern end of the sluicing works—The sluice-hole at this point contains a network of paddocks, stacked pebble dumps and tail races which are linked to major drain channels.

INTEGRITY/CONDITION: Good, lightly timbered.

CULTURAL SIGNIFICANCE:

The site has:

Historical significance—The Oriental Claims Hydraulic Sluicing site is historically significant as a characteristic and well-preserved example of an important form of gold mining. Gold mining sites are of crucial importance for the pivotal role they have played since 1851 in the development of Victoria. As well as being a significant producer of Victoria's nineteenth century wealth, with its intensive use of machinery, played an important role in the development of Victorian manufacturing industry. The total production of the Oriental claims at close to 42,000 oz (or an average 5 grain per cubic yard), which made them without a doubt the largest and most profitable sluicing venture in Gippsland.

Scientific significance—The Oriental Claims Hydraulic Sluicing site is scientifically significant because it has the well-preserved remains of one of the State's largest hydraulic sluicing operations. Although quite common, physical evidence of hydraulic sluicing in many parts of the State is becoming increasingly rare as urban expansion and gravel quarrying take their toll of landscapes that often present an image of environmental disasters. In some places, away from the touches of habitation, sluicing sites have reached a compromise with nature and have produced quite unusual and exotic landscapes. Some of the largest surviving sites, such as Oriental Claims, have an awesome ambience not shared by any other type of alluvial gold mining site.

Archaeological significance—Archaeologically important for its potential to yield artefacts and evidence which will be able to provide significant information about historic sluicing technology.

SIGNIFICANCE RANKING: Site listed on Victorian Heritage Register
Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* May 1995

PLACE NO. & NAME: **50.0 NEW ADVENTURE DIVERSION TUNNEL**
Omeo goldfield
HI No. ***H8423-0002***

LOCATION: Omeo
MUNICIPALITY: East Gippsland Shire Council
LAND USE/STATUS: Crown land—reserve

SITE HISTORY:
The New Adventure tunnel and tail-race was cut by Griffiths and party, through a high rocky bluff known as Frenchman's Hill, on Livingstone Creek opposite Omeo township, in 1868. By diverting the creek waters through their "extensive" tunnel, the party was able to re-work a large section of the best part of the creek bed. In 1870 the New Adventure claim was in abeyance, but work re-started after it was bought by a Chinese party. Disastrous floods in 1871 leveled most of the creek claims, but the damage was repaired and the New Adventure was the premier alluvial ground on Livingstone Creek in 1872. No further reference was found to the New Adventure claim and tunnel, but large-scale sluicing operations on Livingstone Creek continued until early this century.

References: Mining Surveyors' Reports (Omeo Subdivision), June 1868, September 1870, June 1871, September 1872

DESCRIPTION & INTERPRETATION OF FEATURES:
New Adventure Co. diversion tunnel—75m-long tunnel and 20m-long cutting. The tunnel can be blocked off and the large pool at its entrance is used as the town's swimming pool.

INTEGRITY/CONDITION: Good

CULTURAL SIGNIFICANCE:
The site has:

Scientific significance— a characteristic and well-preserved example of an important form of gold mining. Water diversion and sluicing are important key ingredients in an understanding of gold mining technology as it was employed in mountainous country where water was plentiful and perennial.

Social value—swimming pool

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* May 1995

PLACE NO. & NAME: **51.0 MOUNTAIN CREEK BATTERY**
Omeo goldfield
HI No. ***H8423-0003***

LOCATION: Off High Forest Road, Mountain Creek, Omeo.
MUNICIPALITY: East Gippsland Shire Council
LAND USE/STATUS: Crown Land

SITE HISTORY:
The battery would appear to be associated with the small, rich reefs worked at Mountain Creek, about 6 km south-west of Omeo, from the early 1880s. A couple of batteries—Mountain Maid (1884), government battery (1901)—are known to have operated on the field, but were subsequently removed to other locations. The battery now standing at Mountain Creek presumably later served one, or several, of the small mines that operated in the area.

References: Fairweather (1), p. 27
Fairweather (2), p. 203
Mining Surveyors' Reports—September 1884, March 1886, December 1888

DESCRIPTION & INTERPRETATION OF FEATURES:
Features of the Mountain Creek battery site are a battery, engine, and dam.
Battery— Small 4-head battery, still standing. The battery is iron-framed and has a 4-ft pulley wheel.
Engine—Car engine.
Dam—Full water dam below the battery.
The presence of a car engine and an apparently contemporary battery (in too good a condition to date to 19thC) suggests that the site probably dates to the 1930s or later. No historical information is available to further interpret the site.

CONDITION OF FEATURES: Good

CULTURAL SIGNIFICANCE:
The site has:

Scientific significance—as a rare type of mining site: ie. an intact battery ensemble dating from the 1930s. An excellent example of adaptive technology.

Archaeological significance—The site has the potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* May 1995

PLACE NO. & NAME: **52.0 GAMBETTA REEF BATTERY**
Omeo goldfield
HI No. ***H8423-0004***

LOCATION: Dry Gully, Omeo
MUNICIPALITY: East Gippsland Shire Council
LAND USE/STATUS: Crown land

SITE HISTORY:
The Gambetta was one of the first and best of the Dry Gully reefs, west of Omeo. The Gambetta GMC was formed to work the reef in 1883 and, according to Fairweather, erected a battery at that time. Operations were short-lived and the battery was sold. The mine was subsequently worked by a succession of small parties. In 1901, the New Gambetta Co. took over the mine and installed a 10-head battery, which had previously operated at two other Dry Gully mines: the Association (c.1884) and the Polar Star. In 1905, the Gambetta adit was 1,000 ft long, and the neighbouring Polar Star and Thistle mines were also being worked. The battery was overhauled in 1906, and a Card concentrating table added, to improve gold retrieval from the complex ore. Later that year, the Gambetta lease was forfeited. A *new* New Gambetta GMC subsequently worked the mine, but prospecting below adit level found nothing payable and operations ceased in 1912. The last-known working of the Gambetta mine was by a Mr Tunbridge in 1934.

References: Department of Mines Annual Reports, 1903-11
Fairweather (1), pp. 20-27

DESCRIPTION & INTERPRETATION OF FEATURES:
Features of the Gambetta Reef battery site are a Cornish boiler, traces of battery blocks, 5-head battery, portable engine, water tank, and various components.

Boiler—The decayed outer shell and intact inner tube of a Cornish boiler (26 ft x 5½ ft) resting in the remains of its stone boiler setting, of which the east side and rear walls still stand. At the rear of the boiler, a short stone flue leads to a square stone base, which retains traces of an iron chimney stack, and continues uphill a further 20 m to a second stone chimney base.

Battery blocks—Near the boiler are traces (very overgrown) of stamper blocks for a 10-head battery. These would relate to the battery installed by the Gambetta Co. in 1901 (ex-Association, c.1884).

Battery—A standing iron-framed 5-head battery, manufactured by Horwoods Foundry, Bendigo. The battery's mortar blocks have rotted away and its wooden fly wheel has been burnt, only the hub now present on the cam shaft.

The battery's good condition indicates a 20thC date and its connection with the portable engine with a 1908 inspection date suggests that both were part of an upgrading/expansion of plant by one of the New Gambetta companies of the 1900-10 period.

Portable engine—A single-cylinder (12-inch diameter; 16 inches long) engine, manufactured by J. Renshaw & Co., South Melbourne. One inspection mark appears on the firebox: A4, TP180, WP90, 31-08-1908. The engine is in good condition apart from some rusting around the smoke box. Some brass fittings are retained, including around the two main bearings and the crank shaft. The turntable and undercarriage are still in place. The engine rests on wooden foundations; its wheels are stacked nearby.

Engine wheels—The wheels lie to the west of the engine. They are double-spoked and inscribed "J.C. Renshaw & Co., Engineers, Melbourne" around the hubs. Other artefacts in the vicinity include the toe-bar and outer rim casing for the battery's fly wheel.

Water tank—Near the front of the portable engine is a square iron water tank, sections of the engine's flue, and a partly-buried semi-circular trough (7 ft diameter, 15 inches wide and 6 inches deep).

INTEGRITY/CONDITION: Battery in good condition, apart from wooden fly wheel having been burnt.

CULTURAL SIGNIFICANCE:
The site has:

Historical significance—The Gambetta Reef Battery site is historically significant as a characteristic and well preserved example of an important form of gold mining. Gold mining sites are of crucial importance for the pivotal role they have played since 1851 in the development of Victoria. As well as being a significant producer of Victoria's nineteenth century wealth, with its intensive use of machinery, played an important role in the development of Victorian manufacturing industry.

Scientific significance— The Gambetta Reef Battery site is scientifically significant because it contains a unique assemblage of mining relics, including a steam-powered crushing battery that operated from 1901 to 1912.

Archaeological potential— The Gambetta Reef Battery site is archaeologically important for its potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* May 1995

PLACE NO. & NAME: **53.0 NEW CHUM BATTERY**
Little Mt Tambo (Omeo district)
HI No. ***H8424-0003***

LOCATION: South-east of Benambra, on south bank of De Greaves Creek, at its junction with another, unnamed creek.
MUNICIPALITY: East Gippsland Shire Council
LAND USE/STATUS: State Forest

SITE HISTORY:
The site forms part of the Little Mt Tambo goldfield, a minor field dating to the mid-1890s when gold was found at Bluey's Creek, a tributary of the Upper Tambo River some 50 km from Omeo. In 1898, Walterson and Denham installed a 4-head battery and iron waterwheel (ex-Riley's Creek goldfield) at De Greaves Creek. According to report, they were obtaining an average of 3 oz to the ton from their mine.

References: du Cros, H. (for Heritage Resource Services, ANUTECH Pty Ltd), *An Archaeological Survey of Two Mine Sites and Associated Developments near Benambra, Victoria*, report to Kinhill Stearns Pty Ltd, Canberra, 1987, pp. 21-5.
Fairweather K.M., *Time to Remember: the history of gold mining on the Tambo and its tributaries*, published by the author, Bairnsdale, 1975, p. 255.

DESCRIPTION & INTERPRETATION OF FEATURES:
The New Chum battery site includes the following features: battery, waterwheel, water race, and hut sites.

Battery—Collapsed battery of 4 head of stamps. The timber frame of the battery has gone, presumably burnt. No manufacture mark is discernible on the battery box or cam shaft.

Waterwheel—An iron waterwheel with brass fittings has collapsed onto the stampers. The waterwheel is 15 ft in diameter, with 8 spokes and 34 curved buckets, each measuring 2¼ ft wide and 1¼ ft deep. The ring gear around the perimeter of the waterwheel is 6 inches wide. The waterwheel pit has been cut into the bedrock and a silted-up tailrace runs from the pit. A wooden tailrace extends from underneath the wheel to the creek nearby.

Race—A water race runs to the battery site from the south-east, along the side of the slope near De Greaves Track, for about 1 km.

Huts—Several hut platforms are visible along the track near the battery site.

INTEGRITY/CONDITION*:* Good, although the timber framing of the battery and waterwheel have been burnt.

CULTURAL SIGNIFICANCE:
The site has:

Historical significance— The New Chum Battery site is historically significant as a characteristic and well preserved example of an important form of gold mining. Gold mining sites are of crucial importance for the pivotal role they have played since 1851 in the development of Victoria. As well as being a significant producer of Victoria's nineteenth century wealth, with its intensive use of machinery, played an important role in the development of Victorian manufacturing industry. The use crushing batteries in the Alpine gold fields was very common. These batteries were powered by either water or steam. The New Chum Battery site is only one of a handful that remain which possess substantial remains representing the treatment of quartz in mills driven by water wheels.

Scientific significance— The New Chum Battery site is scientifically significant because it is a well-preserved example of a waterwheel, the largest of only a handful still surviving in Victoria. The other notable examples are Wells battery (Murmungee), Morning Star Battery (Donnelly's Creek), and Golden Treasure battery (Saltpetre Creek**)**.

Archaeological potential—The New Chum Battery site is archaeologically important for its potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining.

Natural values— The abandoned mining machinery at the New Chum Battery site is also important for its evocation of the adventurousness, hardship, and isolation that was part of mining life in the high country areas of the State.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* May 1995

PLACE NO. & NAME: **54.0 MT MURPHY WOLFRAM TREATMENT WORKS**
Mt Murphy (Omeo district)
HI No. ***H8424-0005***

LOCATION: Mt Murphy
MUNICIPALITY: East Gippsland Shire Council
LAND USE/STATUS: Mt Murphy Historic Reserve (660 ha)

EXISTING HERITAGE LISTING: Mt Murphy Historic Reserve

SITE HISTORY:

Wolfram was discovered on the north-west slope of Mt Murphy, 50 km from Benambra, in about 1890. Access was limited to horseback, and the resource was not much exploited until early in the 20th century when wolfram was in demand for alloying steel. Renewed prospecting revealed several parallel lodes and in a flurry of speculation several leases were taken up. According to the *Omeo Standard*, assays showed the Mt Murphy wolfram ore to be the most valuable in the world. Wolfram concentrates could fetch close to £200 per ton, but in 1906 its market value was under £50, which did not justify the heavy expense of transport to and from the mines.

In 1907, the price rose to £175 per ton and the Benambra Wolfram Syndicate erected a crushing plant on its Buonbar lease—steam-driven rock-breaker, rollers, and jigs (wolfram is easily separated from quartz, so that coarse crushing was sufficient). The wolfram price kept rising, but by 1911 the company had spent £5,500 without reaping a dividend. It was refloated as the Mt Murphy Wolfram Mining Co. in 1913, with extra capital of £4,000. A second adit was driven 30 m below the first, an 800-ft tramway was built between adit and crushing plant, and a large storage dam was constructed. In 1916, the capital was exhausted and, in view of the booming wartime wolfram market, the company was again re-floated, this time raising £30,000 in capital. The crushing plant was remodeled; it was driven by a single-cylinder steam engine, with steam supplied by six miniature portable under-fired boilers connected together.

Up to 1919, the company had spent £15,000 for negligible returns (its yield for 1918 was 1 ton 2 cwt. of concentrates, worth just £193). In 1920, an air compressing plant and rock drills were installed, but the wolfram price fell dramatically post-war and the company stopped work. Much of the plant was removed to Benambra in 1922 and sold, but the high cost of cartage meant that some items were left on site at Mt Murphy. Among the plant left behind were the six small boilers, ore dressing and concentrating plant (including Wilfley tables), about 2,000 ft of 2-inch wrought iron piping, galvanised iron buildings, a rock-drilling machine, tram rails, and mine trucks.

During World War Two, the Mt Murphy mine was re-opened by the Controller of Mineral Production, owing to the wartime demand for tungsten. Plant was erected and prospecting carried on, but with disappointing results: just one ton of concentrates was produced. At 1943, after only a year's operation, the mine closed and the new plant was removed and sold. An amount of exploration work has taken place subsequently, but the mine has not been further developed.

References: Dunn, E.J., 'Wolfram at Mt Murphy, Buckwong River, County of Benambra', in Geological Survey of Victoria *Records*, vol. 2, part 2, Department of Mines, Melbourne, 1907 (report dated 1906), pp. 120-21.

Christie, R.W., *Ghosts and Gold in the Victorian High Country*, High Country Publishing, Dargo, 1993, pp. 84-77.

Department of Mines Annual Report, 1909

Kenny, J.P.L., 'Mount Murphy Wolfram Mine', in *Mining and Geological Journal*, September 1948 (report dated June 1947), pp. 47-9.

Land Conservation Council, *Proposed Recommendations: Alpine Area Special Investigation*, Melbourne, 1983, p. 43.

DESCRIPTION & INTERPRETATION OF FEATURES:

Mt Murphy wolfram treatment works is on two levels and the major features include concrete floors and foundations, loading ramps, a tailings pond, and numerous machinery components and fragments.

Upper works—The site has been heavily scavenged of plant and mullock. The main *in situ* features include the concrete floor and foundations of a battery, a Wilfley table, loading ramp and small tailings

pond. Scattered around the site are various components, including parts of a rod mill, roller mill, and another Wilfley table.

Lower works—A long, benched platform with a loading ramp and two levels of substantial concrete foundations. With the exception of a muffler, all machinery has been removed from the foundations.

Scrap metal—At the eastern end of the platform is a scatter of artefacts including an injector pump (manufacturer: "A.S. Cameron's Patent, Tangye Brothers, Sole Maker, Birmingham"), components of a single stamper (cam shaft, parts of pulley and bearing, and the stem), and parts of a single-cylinder horizontal engine. On a small bench above the machinery parts are fragments of a boiler.

INTEGRITY/CONDITION: The upper works has been heavily scavenged and has little integrity. The lower works are less disturbed.

CULTURAL SIGNIFICANCE:

The site has:

Scientific significance— Mt Murphy wolfram treatment works is scientifically significant because it has a large collection of mining relics, especially the lower level of the mine.

Archaeological potential— Mt Murphy wolfram treatment works is archaeologically important for its potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of mining.

Network values—Sites contain a range of relics documenting the mining operations undertaken from the 1900s.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* May 1995

PLACE NO. & NAME: **55.0 JIRNKEE WATER RACE**
Swifts Creek goldfield
HI No. ***H8423-0005***

LOCATION:	Wentworth River to Tongio West (partially within Cassilis Historic Area)
MUNICIPALITY:	East Gippsland Shire Council
LAND USE/STATUS:	Combination of freehold and Crown land (including Cassilis Historic Area)

EXISTING HERITAGE LISTING*:* Reported to National Estate—not yet listed.

SITE HISTORY:

Chinese miners opened up alluvial ground in Long Gully and its tributaries during the 1860s. By the mid-1880s, quartz reefing was on the ascendant and few alluvial miners remained in the locality. Prospecting activity in 1890-91 showed promise and led to new interest in the Long Gully alluvial. Between 1892-6, the Working Miners Co. (a group of six men) drove an adit some 1,000 ft in length and produced about 800 oz of gold.

In 1896, the Working Miners put forward a proposal to sluice the whole length of the Long Gully alluvial ground, with water supplied by a water race from the Wentworth River. A race of 26 miles (42 km) extent and costing £2,000 was originally envisaged. Two years later, the Jirnkee Hydraulic Sluicing GMC was formed in London, with a capital of £40,000. By the end of 1898, the company had mining leases totalling 185 acres, extending about 6 km from the Warden battery at Cassilis, downstream to Chinaman's Crossing, about 1½ miles below Tongio West.

The water race was constructed in 1899-1900, with an eventual length of 48 miles (77 km), costing approximately £14,000. It commenced at the head of Wentworth River, picked up water from New Rush Creek, crossed the dividing range twice, then came down Waterfall Gully just below Cassilis Gap to terminate just above Tongio West, on the western side of Gray's Creek.

Trial sluicing operations commenced at Tongio West in 1900, initially using a gravel pump, then a jet elevator. Both types of plant had trouble dealing with the presence of large obstacles (boulders and timbers). To make matters worse, the water supply was insufficient due to collapses in the banks of the water race. Repairs were made, and production began in September 1901. Soon after, the manager of the Jirnkee Co., Jonathan Lang, died after being struck by a jet of water from the hydraulic nozzle.

In 1902, the Jirnkee water race was extended to over 56 miles (90 km) in length, when a branch was cut to pick up additional water from the heads of the Wentworth. But the race continued to supply insufficient water to operate the plant at more than half its capacity. After the company's enormous initial outlay, running costs continued to far outstrip gold production. When operations ceased at the end of 1905, after four years' operation, the total yield stood at just over 750 oz of gold.

The leases, race, and plant were purchased for a small price by the Jirnkee Hydraulic Syndicate in 1907. Trials were carried out with and without the jet elevator used by the previous company, and it was found that conventional hydraulic sluicing yielded more than twice the gold won with the jet elevator. Even so, the gold obtained failed to pay running costs, and operations ceased for good at the end of 1909.

DESCRIPTION & INTERPRETATION OF FEATURES*:*

Intact sections of the Jirnkee water race now survive mainly on Crown land where the race runs around the heads of gullies. Sections on the lower reaches of the gullies and spurs—now grazed freehold land—have largely been ploughed in. Where still visible, the race is partially filled with silt, vegetation, and forest debris.

CONDITION OF FEATURES:	Intact sections of water race are mainly to be found at the heads of gullies on public land. Sections of the water race on freehold land have been eroded/destroyed by grazing and ploughing

CULTURAL SIGNIFICANCE:

The site has:

Historical significance—The Jirnkee Water Race is historically significant as a characteristic and well-preserved example of an important form of gold mining. Gold mining sites are of crucial importance for the pivotal role they have played since 1851 in the development of Victoria. As well

as being a significant producer of Victoria's nineteenth century wealth, with its intensive use of machinery, played an important role in the development of Victorian manufacturing industry. The Jirnkee Water Race was one of the longest privately owned water race constructed in Victoria.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* May 1995

PLACE NO. & NAME: **56.0 WARDEN BATTERY & TREATMENT WORKS SITE**
Swifts Creek goldfield
HI No. ***H8423-0006***

LOCATION: On bank of Gray's Creek
MUNICIPALITY: East Gippsland Shire Council
LAND USE/STATUS: Cassilis Historic Area

EXISTING HERITAGE LISTING: Cassilis Historic Area

SITE HISTORY:

The Warden battery began its working life as the Hope battery, erected by the Rose of Australia Syndicate in 1889, when the Cassilis quartz reefs were first coming to life. In 1893, it was purchased by McCulloch and Eckberg, who operated it on the same site as a public treatment works, adding a chlorination plant. In 1894, the plant consisted of a 10-head battery, hydraulic separator, Frue vanners, and a large settling pit, and was described as "the best fitted plant to treat the sulphide ores … and will probably shortly be furnished also with the necessary furnaces, apparatus, &c., to work them on metallurgical principles". A Cyanogen (cyanidation) plant was added soon after, to treat tailings from the settling pit.

As a public treatment works, the battery and plant were instrumental reviving the Cassilis reefs, many of which had been idle since 1890, when miners found it difficult to retrieve gold from the complex ore. Prospectors were able to prove the value of abandoned claims, by having ore tested at McCulloch and Eckberg's up-to-date works.

In 1896, the Warden GMC purchased the plant, which by then consisted of battery with boiler and steam engine, two Wilfley tables, five Frue & Triumph vanners, two Watson & Denny grinding pans, chlorination plant, 160-ton capacity cyanide plant, and 38 x 10 ft open-hearth roasting furnace with flue and chimney stack. The Warden Co. added an Otis rotary mill (ex Mt Hepburn Co.) and fitted their battery and mine with electric light.

The Warden mine was located on Mt Markey, about 1 mile east of Cassilis, with the battery at the mouth of a gully which headed on the opposite side of the ridge. Ore was sleighed uphill from the mine, then tipped down a chute to the head of the gully, and finally carted by drays to battery. The Warden battery crushed and treated ore for most mines on the Markey line of reef during the 1890s-1900s, and their treatment process consistently achieved a higher average yield than the far more expensive plants associated with the Mt Hepburn mine. The Warden mine was one of the main mines at Cassilis until 1905, after which it was tried with less success until 1913.

References: Department of Mines Annual Reports, 1903-8.
Fairweather (2), pp. 40, 79, 94-5, 103.
Rosales

DESCRIPTION & INTERPRETATION OF FEATURES:

Features of the Warden battery and treatment works site include the remains of a battery, cyanide vats, slum pond, furnace, and calcined sand heap.

Battery site—Partly collapsed timber uprights and framework for 10-head of stamps. The stampers and other machinery have been removed from the site. Only one set of mortar blocks survives.

Cyanide works—Near the battery are two uprooted and one *in situ* 16ft-diameter galvanised iron cyanide vats with concrete bases, and two full slum ponds. Above the battery, on the top side of the road, are several circular impressions containing jumbles of circular iron rings. These are the remains of decayed or burnt oregon cyanide vats.

Furnace—To the east of the cyanide vats is the stone base of a roasting furnace and an extensive scatter of red bricks. The furnace base measures 40 ft x 10 ft and is partly surrounded by a small pond of burnt (calcined) sand. Most of the furnace's brickwork has been demolished, but some *in situ* ironwork remains at the front end of the furnace.

Calcined sand—Apart from the slum pond near the furnace, there is a small, peaked dump of burnt sand above the road.

INTEGRITY/CONDITION: Machinery has been removed; only foundations and some fragile relics (battery framework and cyanide vats) remain.

CULTURAL SIGNIFICANCE:

The site has:

Scientific significance—The site contains a range of relics that document the gold mining operations that were undertaken on the site.

Archaeological significance—The site is archaeologically important for its potential to yield artefacts and evidence which will be able to provide significant information about the technological history of mining.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* May 1995

PLACE NO. & NAME: **57.0 MT HEPBURN CO. TREATMENT WORKS**
Swifts Creek (Cassilis) goldfield
HI No. ***H8423-0007***

LOCATION: Cassilis
MUNICIPALITY: East Gippsland Shire Council
LAND USE/STATUS: Cassilis Historic Area (3,620 ha)

EXISTING HERITAGE LISTING: Cassilis Historic Area

SITE HISTORY:

In 1858, William Power made the first reef discovery in Gippsland near the junction of Power's Gully and Swifts Creek. His claim, named the Morning Light, formed part of the later Mt Hepburn–King Cassilis leases.

The reefs in the vicinity of the later Mt Hepburn leases were first opened up in the late 1860s. A battery operated briefly, but was removed when the mines were abandoned in about 1870. The difficulty of retrieving gold from the complex, pyritic ore of the district was doubtless to blame for that early exodus.

Mining entrepreneurs Ball and Smart took out leases on the Mt Hepburn ground in 1888, and initially crushed stone from their mine at their Brave George battery at Swift's Creek. After the death of Smart in 1889, Ball continued the development of the mine. In 1893, his Mt Hepburn Co. installed an Otis ball mill (one of the first in Victoria) and short blanket tables, driven by 16-hp portable steam engine. The plant cost relatively little to run, but its lack of concentrating plant caused a substantial loss of gold in the tailings and operations were halted at the end of 1895. At that time, the Government Geologist, R.A.F. Murray, visited the mine and hailed it as the most remarkable on the field—at least, in terms of its *potential* yields. But he lamented that the company's inadequate treatment plant allowed at least half the gold to escape with the tailings.

In 1896, an English company, the Mt Hepburn Co. Ltd, was formed to take over the leases. The Otis mill was replaced by a traditional stamp battery made by Thompsons of Castlemaine. A 60-head battery was originally ordered, but was deemed excessive and only 20 heads were eventually delivered. A 90-horsepower boiler, intended to drive the 60-head battery, was also delivered but was never used. Also superfluous was a 60-ft high brick chimney stack, built on the hillside near the battery to serve the large boiler. Other works developed at this time included a water race from Upper Swifts Creek, water storage, and a new tramway from the Beehive level of the mine.

In 1897, the Mt Hepburn Co. contracted with the General Exploration Co. (GEC) that the GEC could treat all its tailings. In return, the GEC agreed to build a cyanide treatment plant and pay the Mt Hepburn Co. a royalty on gold retrieved. In 1898, GEC constructed a large cyanide plant, costing £7,000 and said to be one of the best in Australia at that time.

In September 1898, after just three months' continuous crushing with their new battery, the Mt Hepburn Co. ceased operations, due to negligible gold returns. The stamp battery had achieved poorer returns than the old Otis mill: only 207 oz from 2,893 tons of ore. Summarising the performance of the Mt Hepburn Co. Ltd., Griffiths (1978) wrote that it "was floated on the premise of huge ore reserves and simple metallurgy, neither of which were investigated properly at the time, and both of which were quickly found to be incorrect". Shareholders lost some £180,000. The crushing plant was sold to the Cassilis GMC in 1900.

The GEC's cyaniding plant had commenced work in mid-1898. It was soon found that the plant's operational capacity was only 720 tons per month, rather than the 3,000 tons anticipated. The complexities of the local ore resulted in low gold recovery, demanded a large consumption of lime, and lengthened the cyaniding process. Proving unprofitable, operations ceased in early 1900, and the cyanide plant was sold to the Allsop brothers (its former managers). At the same time, they acquired outbuildings, chimney stack, engine bases, and other structures from the defunct Mt Hepburn Co.

The Allsops constructed an integrated treatment works on the Mt Hepburn site. Recognising the need to treat the pyritic Cassilis ores in a furnace prior to cyanidation, they installed a large de-sulphurising roasting furnace, complete with condensing chamber and 360ft-long ground flue connected to the unused 60-ft chimney. The furnace occupied the GEC's former extraction house, between the southerly group of vat bases and the creek. It was one of the largest ore-roasting furnaces

in Victoria, measuring 50 ft long and 10 ft high. In July 1901, J.L. Allsop, manager of the plant, died, aged just 34, as a result of inhaling the poisonous gases generated by the cyanide process.

The Allsops' plant treated tailings from local mines and from as far away as Sunnyside and Glen Wills. In fact, in 1901 most of the plant was moved to Sunnyside, to treat the huge volume of tailings on-site. Between 1900-03, it is estimated that the plant at Mt Hepburn treated 2,500 tons of concentrates and tailings for a yield of about 5,000 oz. The gold recovery process was said to have been nearly 95 per cent effective.

In 1902, the King Cassilis GMC was formed. From 1904, the company rented Allsop's treatment works, gradually modifying the plant to incorporate an economical Merton furnace, Dodge rock breaker, and a Niagara pulveriser (later replaced by a Krupp ball mill). The plant's small size and unsuitability for the hard local ore resulted in poor yields, and the mine closed down in 1906. Since 1888, the Mt Hepburn/King Cassilis mine had yielded 1,852 oz from 4,172 tons of ore.

In 1907, the remaining useful components of Allsop's treatment works were removed to sites at Glen Wills and Sunnyside, and over the ensuing few years operations at Mt Hepburn were confined to the cyaniding of tailings remaining on the site. Some small-scale prospecting and mining took place prior to World War One.

The King Cassilis leases were worked by the National Gold Mining and Milling Co. in the early 1930s. A small plant was installed, consisting of a 5-head battery with two concentrating tables, a small hand-charged reverberatory furnace, and cyanide plant. Only 220 tons of ore were treated, for a yield of 114 oz.

J.D. Avery took up the leases in the late 1940s and erected a small water-jacketed blast furnace, in which he smelted ore for many years.

References: Christie, pp. 43-9.
Department of Mines Annual Reports, 1903-13.
Fairweather (2), pp. 81, 87-8.
Griffiths, pp. 28-31, 121-83.
Murray
Rosales

DESCRIPTION & INTERPRETATION OF FEATURES:

Features of the Mt Hepburn treatment works site include the King Cassilis and other mine workings, and remains of the Mt Hepburn treatment works and Avery's treatment works.

Mine workings and associated features—The gully above the treatment works has three adit levels of the Mt Hepburn/King Cassilis mine: No. 2, King Cassilis and Beehive. The King Cassilis adit has a very large intact mullock heap. Also in the gully are several stone fireplaces, a concrete-lined dam (fed by water race), and an excavated powder magazine with stone-lined entrance.

MT HEPBURN TREATMENT WORKS

Vats and foundations—Three levels of foundations which are largely buried by battery sand and partly obscured by vegetation.

Upper level—Row of four stone vats, each has one internal dividing wall. The vats are 13 ft in diameter, stand 9 ft high and have 2ft-thick walls.

Middle level—200 to 300m-long tramway cutting (6 ft wide) with 2ft-thick stone wall which cuts through six 23ft-diameter vat footings. The tramway runs through a brick archway under the one of the vats. This vat is sealed by a stone floor with the remains of a 12ft-square brick chimney stack base. The tramway cutting continues on from the vat foundations and terminates near Avery's iron blast furnace.

Lower level—At least four 17ft-diameter vat foundations, largely buried by a large full slum pond. Also visible on the slum pond are the stone base of a roasting furnace (40 ft x 10 ft, most brickwork demolished) and another substantial structure with a floor and a row of three small vats. Near the furnace is another largely buried structure (stone footings) and a scatter of furnace ironwork.

These remains represent treatment works operated on the site by a succession of companies: Mt Hepburn Co. Ltd (brick chimney stack, water race—1896-1900); General Exploration Co. (cyanide vats and footings, tramways—1897-1900); Allsop brothers (1900-03); King Cassilis Co. (1904-6).

The stone walls and piers for the General Exploration Co.'s cyanide plant were constructed downhill from the Mt Hepburn battery in late 1897. The contractors brought skilled masons from Melbourne to build the walls of local schist. The vats themselves were made by Bowman and Bow, coopers of

Maldon. Griffiths (p. 155) provides the following description of the GEC works, to which operation most of the structural remains relate.

"Tailings were taken by tramway from their discharge at the battery plates to six collecting vats, each of 60-ton capacity. Each collecting vat was built over a tramway … After draining in the collecting vats the sands were discharged into trucks underneath which were hauled up an inclined tramway by means of a steam winch, to the top level of the six treatment vats, each of which was 23 foot diameter, 8 foot high and had a capacity of 90 tons. These also had a tramway underneath and after discharge of the sand again by bottom discharge doors, it was transferred by truck to the sand dump and dam".

"Prior to discharge of the treated sand, the solution was run to four storage vats each 13 foot diameter, and thence through intermediate vats prior to its discharge into the electrolytic precipitation boxes which were 40 feet long and 6 feet 4 inches wide".

"In all there were 26 vats, the elevated vats being supported on circular walls or on semi-circular walls and the walls either side of the central discharge tramway".

AVERY'S MINING PLANT

The plant is surrounded by an extensive dump of modern processing equipment.

Crushing shed—Timber-framed, galvanised iron roof. The shed contains a range of plant including a jaw crusher (manufactured by Jacques Bros. Pty Ltd, Richmond, Melbourne), rod mill, diesel engine, and generator.

Furnace—Small iron blast furnace and slag dump. The blast furnace stands on the foundations of the earlier Mt Hepburn treatment works.

Avery's plant was installed in the late 1940s and was used over a long period (until as recently as 1978?).

CONDITION OF FEATURES: Good

CULTURAL SIGNIFICANCE*:*

The site has:

Historical significance—The Mt Hepburn/King Cassilis site is historically significant as a characteristic and well preserved example of an important form of gold mining. Gold mining sites are of crucial importance for the pivotal role they have played since 1851 in the development of Victoria. As well as being a significant producer of Victoria's nineteenth century wealth, with its intensive use of machinery, played an important role in the development of Victorian manufacturing industry.

Scientific significance— The Mt Hepburn/King Cassilis site is scientifically significant because it has a large range of relics associated with a great variety of ore reduction and metallurgical treatment methods. It is doubtful if such a varied layout and assembly of basic remains related to complex ore treatment can be seen on any other single site elsewhere in Victoria.

Archaeological potential— The Mt Hepburn/King Cassilis site is archaeologically important for its potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* May 1995

PLACE NO. & NAME: **58.0 CASSILIS GMC TREATMENT WORKS**
Swifts Creek (Cassilis) goldfield
HI No. ***H8423-0008***

LOCATION: Cassilis
MUNICIPALITY: East Gippsland Shire Council
LAND USE/STATUS: Cassilis Historic Area (3,620 ha)

EXISTING HERITAGE LISTING: Cassilis Historic Area

SITE HISTORY:

Cassilis Reef was discovered in 1890, the most westerly of seven reefs on a high ridge to the west of the Cassilis townships—it eventually became the main lode of the Cassilis GMC mine. Ore from the Cassilis Reef was heavily mineralised (containing no less than six minerals associated with the gold), and became increasingly so at depth, making gold retrieval virtually impossible using ordinary methods. In 1894, a small syndicate installed a five-head battery and small chlorination plant close to their tunnel. The chlorination plant proved inadequate and was replaced by a larger one in 1896, but still the ore proved too refractory.

The Cassilis GMC was formed in 1897, with a capital of £12,000 in 24,000 shares. Extensive exploratory works were carried out—shafts sunk, tunnels driven—and the chlorination plant was further enlarged and improved. Test parcels of the ore (solid arsenical pyrites) yielded 5 oz to the ton. In 1898, the Cassilis Co. purchased the leases of the neighbouring North Cassilis Co. where an incredibly rich reef was soon after opened up—this lode was called the Ceresa. Additional treatment plant was installed in 1899: a Halley table, Berdan pan, a hand-operated reverberatory furnace.

The Cassilis Co. had been having its ore crushed at the Warden battery, but in 1900 the company bought a 20-head battery from the Mt Hepburn Co. and installed it at the foot of the range, in Power's Gully. During 1900-01, further plant was installed at the new site: a Jacques rock-breaker, two Edwards mechanical furnaces, and a new chlorination plant operating on the Munktell process using seven 11-ton leaching vats, seven precipitating vats, and six other accessory vats. A gravity tramline ran between mine and plant. In 1902, a new compressor, additional furnace, new engine, offices, and workshop were added. The large compressor delivered compressed air over two miles uphill to the mine, to power ten rock drills; its engine had a very heavy fly-wheel, to maintain an even speed to ensure constant air pressure at the mine. The company increased the capacity of its dam in Power's Gully to 3 million gallons, and piped the water race from dam to battery. By 1903, the Cassilis Co.'s sprawling plant also included a dynamo to supply electric light, two large Berdan pans, amalgamating barrel, Kelly and Lewis vertical 150-hp engine, two large Cornish boilers (26 ft x 6 ft 6 in), two multi-tubular boilers (14 ft x 5 ft 6 in), and a cyanide plant of five 80-ton vats. Over 200 men were employed in the mine and treatment plant, with another hundred or so employed indirectly in carting, and supplying wood, charcoal, and lime.

Additions to the Cassilis Co. plant continued in 1905, when 130 men were employed and 13,450 tons of ore were treated for a yield of 12,032 oz gold. The gravity tramline between mine and battery was replaced; a Hornsby oil-engine was installed for driving furnaces, conveyors, elevators, machines in shop, dynamo, and blowers (cheaper and more efficient than coke); and a foundry was erected, complete with testing-room and cupola furnace, enabling the company to 'work up all the old iron and steel obtainable in the district, making a great saving in the manufacturing of numerous parts of the plant'. A telephone system was also installed. The company's works were described as "quite a model plant".

The shortage—and consequent high cost—of firewood threatened to undermine the company's "handsome profit", so it was decided to construct a hydro-electric scheme, operating from the Victoria River, to power the mine and treatment plant. The scheme was completed in 1907, and by 1909 all old engines at the Cassilis Co.'s works were replaced with electric motors. But the holding dam for the hydro-electric works was never finished, and the company's operations were crippled by power shortages during the drought years from 1910-14.

In 1909, a new electrically-powered rotary air compressor was added to the Cassilis Co.'s plant, which was hailed as "one of the most extensive and complete in the State". A new plant was installed in 1910 for treatment of the accumulated slimes by the vacuum filter process (replacing the chlorination plant), and the following year a tube mill was erected for re-treating residues from the roasting furnaces by the

cyanide process. But output from the mine was falling—largely due to power shortages—and the ore from deeper levels was becoming increasingly difficult to treat. A grant from the Mines Department, enabled the company to prospect still deeper, in search of better ore—to no avail. Actual mining was confined to the Ceresa lode, which grew increasingly thin and poor in quality. By 1916, the Cassilis Co. was defeated and its mine and works closed.

Between 1898-1916, the Cassilis Co.'s workings—by adit and internal shaft—reached a maximum depth of 1,300 ft, and 124,607 tons of ore were treated for a yield of 93,572 oz, valued at £383,645. The Cassilis Co. mine was the largest and most successful on the Cassilis field.

From 1949, ore from the Cassilis mine was treated at Avery's furnace plant at the Mt Hepburn/King Cassilis mine. Mining exploration of the former Cassilis Co. leases has taken place on several occasions since.

References: Cecil & King
Christie, pp. 49-50.
Department of Mines Annual Reports, 1904-16.
Dunn (1907/2)
Fairweather (2), pp. 43-64.

DESCRIPTION & INTERPRETATION OF FEATURES*:*

CASSILIS GMC TREATMENT WORKS

The treatment works is located on a spur overlooking a gully containing a number of intact (brightly-coloured) slum ponds. The works has four main levels:

Level 1 (uppermost)—This level has the remains of a large loading ramp, which was fed by a tramway that runs around the spur to the mine workings.

Level 2—On this level are the battery foundations and engine beds. The front of a platform is retained by a substantial brick wall.

Battery—At the base of the ramp are a row of decaying mortar blocks, tie bolts and concrete footings for 20 head of stamps.

Battery engine—An arrangement of large concrete mounting beds are located on the side of the loading ramp. Covering 10 m square, they are partly buried and obscured by blackberries.

Level 3—Features on this level include:

Levelled area—25 m x 10 m retained by a substantial brick and stone wall.

Vats—Outlines of a row of five narrow (10 ft x 4 ft) brick and concrete-rendered vats.

Furnace—20ft-high riveted iron furnace. The 6ft-diameter furnace is completely lined with red fire bricks and has a 9 ft high, 3 ft diameter, chimney stack.

Level 4—Gully level.

Unidentified foundations—At the foot of the brick and stone wall associated with Level 3 is a largely buried arrangement of decaying bed-logs and concrete footings.

Furnace bed—At the base [?] of the first slum pond is the remains of a roasting furnace. Most of its brickwork has been demolished; only the stone base is intact, measuring approximately 40 ft x 10 ft. Visible in the face of the first slum pond is a section of the furnace's brick chimney stack, standing 8 ft high. Its flue measures 4 ft wide, with walls [OF FLUE OR STACK?] two courses thick.

Electricity substation—On the opposite side of the gully to the iron furnace on Level 3 are the concrete foundations of a small electricity substation. The foundations are enclosed by thick blackberries.

INTEGRITY/CONDITION: Good

CULTURAL SIGNIFICANCE:

The site has:

Historical significance—The Cassilis GMC Treatment Works is historically significant as a characteristic and well preserved example of an important form of gold mining. Gold mining sites are of crucial importance for the pivotal role they have played since 1851 in the development of Victoria. As well as being a significant producer of Victoria's nineteenth century wealth, with its intensive use of machinery, played an important role in the development of Victorian manufacturing industry. The Cassilis Gold Mining Company was the largest and most successful mine on the Cassilis field and in the early 1900s had the most extensive treatment plant in Victoria.

Scientific significance— The Cassilis GMC Treatment Works is scientifically significant because it contains a large range of relics documenting the different treatment processes undertaken on the site.

Archaeological potential— The Cassilis GMC Treatment Works is archaeologically important for its potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining.

Natural values— The Cassilis GMC Treatment Works is also important for its evocation of the adventurousness, hardship, and isolation that was part of mining life in the high country areas of the State.

Network values— Linked to Site No. 59.0, Victoria Falls Hydro-Electric Power Station. The Cassilis GMC constructed a hydro-electric power station on the Cobungra River, about 6.5 km from its junction with the Victoria River, just below the Victoria Falls.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* May 1995

PLACE NO. & NAME: **59.0 VICTORIA FALLS HYDRO-ELECTRIC POWER STATION**
[Connected with] Swifts Creek (Cassilis) goldfield
HI No. ***H8323-0016***

LOCATION: South bank of Cobungra River, about 6.5 km from junction with Victoria River, just below Victoria Falls.
MUNICIPALITY: East Gippsland Shire Council
LAND USE/STATUS: Victoria Falls Historic Reserve (100 ha)

EXISTING HERITAGE LISTING: Victoria Falls Historic Reserve

SITE HISTORY:
In 1907, the Cassilis GMC constructed a hydro-electric power station on the Cobungra River, about 6.5 km from its junction with the Victoria River, just below the Victoria Falls. Water from Victoria River was delivered to the power station by a race built along the spur separating the Cobungra and Victoria Rivers. The race was unlined and measured 3 ft deep, 4 ft wide at the bottom, and 7 ft wide at the top. It filled a settling dam at the top of the spur, from which point water was delivered to the power plant by 1650 ft of piping, which reduced in size from 34 inches to 38 inches diameter. The power station was equipped with a Voith pelton wheel, and began operating in 1908. A power line ran between the power station and the Cassilis mine, a distance of some 27 km.

A holding dam of 250 million-gallon capacity was to have been constructed on the Victoria River, at the commencement of the water race, but this was not done. As a result, an insufficient supply of water caused frequent power shortages and stoppages at the Cassilis mine. The power station's poor performance was largely to blame for the ultimate closure of the Cassilis mine in 1916. Early in that year, a dam was built above the power plant, but the first substantial rains washed it away. The power plant was sold to a Tasmanian silver mine in 1917.

References: Christie, pp. 57-61

DESCRIPTION & INTERPRETATION OF FEATURES:
Features of the Victoria Falls power station site are concrete floor and footings, tower, settling dam, pipeline site, and former water race.

Power station—A concrete floor (48 ft x 32 ft) with mounting beds, etc., for a large pelton wheel, and a concrete tower. The tower (11 ft x 5 ft x 12 ft high) has three cubicles, which housed the choke coils. The largest mounting bed (10 ft x 6 ft, 2 ft high, with 1½ft-thick walls) has a 7ft-deep sump from which runs a 4ft-wide, 3ft-deep culvert which drains to the river. The pelton wheel has been removed from the site.

Settling dam—An oval-shaped dam, measuring approximately 40 m x 25 m, is located at the top of the spur overlooking the power station. The dam has a large concrete outlet station (9 ft x 6 ft, with 1ft-thick walls) which has a 16ft-deep sump.

Pipeline—An overgrown channel running down the spur marks the position of the pipeline, which ran from pressure dam to generating plant.

Water race—The old water race from Victoria River to the power station now forms the road to the Victoria Falls

CONDITION OF FEATURES: Apart from some wild roses are free of vegetation.

CULTURAL SIGNIFICANCE:
The site has:

Historical significance—The Victoria Falls Power Station site is historically significant as a characteristic and well preserved example of an important form of gold mining. Gold mining sites are of crucial importance for the pivotal role they have played since 1851 in the development of Victoria. As well as being a significant producer of Victoria's nineteenth century wealth, with its intensive use of machinery, played an important role in the development of Victorian manufacturing industry. The power station was built by the Cassilis Gold Mining Company, the largest and most successful mine to operate on the Cassilis field.

Scientific significance— The Victoria Falls Power Station site is scientifically significant because it is one of the few sites left in Victoria which documents the adoption of electric power for gold mining. The remains of power stations associated with gold mining sites are rare in Victoria. The foundations of the Victoria Falls Power Station in Gippsland, alongside those of the Victorian Deep Lead Power Station (at Moolort) are the best preserved in the State.

Archaeological potential— The Victoria Falls Power Station site is archaeologically important for its potential to yield artefacts and evidence which will be able to provide significant information about the technological history of hydro electric power in Victoria.

Natural values— The Victoria Falls Power Station site is also important for its evocation of the adventurousness, hardship, and isolation that was part of mining life in the high country areas of the State.

Network values— Linked to Site No. 58.0, Cassilis Gold Mining Company. The Cassilis GMC constructed the hydro-electric power station on the Cobungra River in 1908.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* May 1995

PLACE NO. & NAME: **60.0 ODELLS GULLY BATTERY**
Swifts Creek (Cassilis) goldfield
VHR No. ***H1275***
HI No. ***H8423-0009***

LOCATION: North side of Odells Gully, Upper Swifts Creek
MUNICIPALITY: East Gippsland Shire Council
LAND USE/STATUS: Cassilis Historic Area (3,620 ha)

EXISTING HERITAGE LISTING: Cassilis Historic Area

SITE HISTORY:

Odells Gully, a tributary of upper Swifts Creek, between Cassilis and Brookville was named after Jack Odell, who was Mining Registrar for the Omeo Subdivision during the early 1880s. The locality was characterised by small, patchy reefs. Like those at Long Gully (Cassilis) to the north, the Odells Gully reefs were first opened up in about 1888. Operations there probably peaked in the early 1890s, but small parties worked the reefs throughout that decade and into the early twentieth century.

According to Fairweather, a handful of batteries operated in the Odells Gully–Upper Swifts Creek locality between the early 1890s and 1908, but details of their precise locations are sketchy. The Dawson family—of Dawson City, Haunted Stream—were active in the area, and Fairweather mentions a battery erected by them in 1896 at the head of Swifts Creek, which a Dawson descendant claims was once part of the original (1867) Swifts Creek Quartz Crushing Co. battery, at the foot of Charlotte Spur. That was a 15-head plant—probably three boxes of five heads—so the Dawson's battery could conceivably have been one of the five-head components. Also mentioned is a Dawson-owned steam-driven battery on the ridge between the two branches of New Rush Creek, also nearby, in c.1898. It is possible that the two Dawson batteries were actually the same one, shifted from one locality to another. The remains of the battery now standing on the north side of Odells Gully might correspond with the same battery, or components of it, moved again at a later period.

Fairweather also refers to a battery of unspecified size, erected at Hayward's Old Stop mine near the junction of O'Dell's Creek and Swifts Creek in the early 1890s, and later known as Dyson's battery. Frank Cherry erected a battery—said to be four-head, ex-Haunted Stream—at the head of Swifts Creek in 1908, which was most recently used by Martin and son, working the Arizona mine at Brookville, in 1937. Writing in 1975, Fairweather believed that the battery was still standing.

References:
Fairweather (2), pp. 202-4.
Flett, p. 176.
Mining Surveyors' Reports (Omeo Subdivision), September 1867.

DESCRIPTION & INTERPRETATION OF FEATURES:

Features of the Odells Gully battery site are a standing 5-head battery, portable engine, and small cyaniding plant.

Portable engine—Double cylinder engine, still standing on its four wheels, but moved about 100 m from its original position. The wheels have wooden spokes and felloes, steel hubs and tyres, and were manufactured by "…[illegible], Gainsborough". The engine is in good condition and still has its wooden cladding and some brass fittings around the piston rod. The cylinder is 10 inches in diameter and 14 inches long, and the total length of the engine is 11 ft.

Battery—5-head, wooden-framed battery, still standing although the cam shaft has dropped slightly. The battery was manufactured by Langlands, Foundry, Melbourne. The fly wheel is 4 ft in diameter. The stems are of the screw-tappet type and the battery box has a wooden splash plate. The steel-lined wooden loading chute has collapsed. Nearby is a small ore truck.

Iron framework—Above the battery is a heap of iron framework, perhaps intended for repairing or upgrading the battery.

Cyanide works—In the gully near the engine is a small tailings dump, one small galvanised iron vat and at least one depression containing iron rings from a collapsed timber (oregon) vat.

The presence of cyaniding vats suggests 20th-century use (or re-use) of the plant—probably as recently as the 1930s. Cherry's 1908 battery, used by Martin and son as late as 1937, seems the most likely candidate, were it not said to have only four stampers, rather than the five of the extant battery.

CONDITION OF FEATURES: The smoke box of the steam engine has rusted out. Otherwis e the site components are in good condition for their age. The shifting of the portable steam engine from its original position suggests a [recent?] abandoned attempt to remove it from the site altogether.

CULTURAL SIGNIFICANCE:

The site has:

Historical significance—Odells Gully Battery site is historically significant as a characteristic and well-preserved example of an important form of gold mining. Gold mining sites are of crucial importance for the pivotal role they have played since 1851 in the development of Victoria. As well as being a significant producer of Victoria's nineteenth century wealth, with its intensive use of machinery, played an important role in the development of Victorian manufacturing industry.

Scientific significance— The Odells Gully Battery site is scientifically significant because it contains a unique collection of relics, including an extraordinarily well-preserved battery and portable steam engine.

Archaeological potential— The Odells Gully Battery site is archaeologically important for its potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining in Victoria.

Natural values— The Odells Gully Battery site is also important for its evocation of the adventurousness, hardship, and isolation that was part of mining life in the high country areas of the State.

SIGNIFICANCE RANKING: Site listed on Victorian Heritage Register
Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* May 1995

PLACE NO. & NAME: **61.0 TIERNEYS CREEK BATTERY & MINE SITE**
Haunted Stream goldfield
HI No. ***H8423-0010***

LOCATION: 4.4 km along Tierneys Creek Track
MUNICIPALITY: East Gippsland Shire Council
LAND USE/STATUS: State Forest

SITE HISTORY:
Tierney's Creek junctions with Haunted Stream at Stirling township. Mines operated along Tierney's Creek (mainly the lower reaches) from 1882 until the early 20th century. In the mid-1880s, Sawyer and party tunneled on a reef near the head of Tierney's Creek—about 5 km above Stirling—erecting a battery in 1887.

According to Fairweather, Dan Fay moved a battery to his mine at the head of Tierney's Creek in c.1915 from the Lone Hand mine (some distance up Haunted Stream from the Hans mine), where it had been powered by a Pelton wheel since at least the early 1900s. Fairweather tells how Fay "set up the battery on the banks of the creek … driving the mill with a motor fuelled by charcoal gas, as petrol was at that time rationed". Reefs at Tierney's Creek were prospected as recently as 1937.

References: Fairweather (2), pp. 244-50.
Mining and Geological Journal, July 1937.
Murray

DESCRIPTION & INTERPRETATION OF FEATURES:
Features of the Tierneys Creek battery and mine site are a battery, footings for a gas-fired engine, gas producer, tailings dump, mine workings (shafts), winch, and truck engine.

Battery—The crushing plant appears to have originally consisted of two 5-head battery boxes—ten head, in all—but one of the boxes has gone. A standing 5-head wooden-framed battery remains. The cam shaft has been cut and the fly wheel removed. The battery was manufactured by Langlands Foundry Co., Limited, Melbourne.

Battery engine—A Crossley wood-gas-fired stationary engine was present on the site until recently [?], but has now been removed by persons unknown. Footings for the engine are still present: a set of timber bearers, measuring 14 ft long x 2 ft square, with 2-inch mounting bolts.

Gas producer—A tubular 11ft-long iron retort has fallen over and lies on a tailings dump in the gully below the engine footings.

Tailings dump—A small, intact dump, measuring 30 m x 15 m, and 2 m deep.

Mine workings—Several open shafts with mullock paddocks.

Winch—Below one of the open shafts is a winch with a 3-ft drum, complete with wire rope. Next to the winch is an old 4-cylinder truck engine, which has been mounted on a 10 ft x 4 ft wooden sledge. A tree has grown up through the sledge and has lifted the engine a metre above the ground. Part of the metalwork of the engine has been overgrown by the tree.

INTEGRITY/CONDITION:

CULTURAL SIGNIFICANCE:
The site has:

Scientific significance—Contains a range of well-preserved quartz mining relics including the remains of a gas-producer plant.

Archaeological significance—The site has the potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* May 1995

PLACE NO. & NAME: **62.0 DOGTOWN (HANS REEF) AREA**
Haunted Stream goldfield
HI No. ***H8423-0011***

LOCATION: On the track from Dawson City to Stirling, which frequently crosses Haunted Stream. Precise directions are impossible, due to terrain, vegetation, and a new track differing from the course of the old.
Battery site (1) is on the immediate west side of the track, just before Dogtown.
Dogtown is a somewhat cleared area, just before the track crosses the stream to the Hans battery.
Hans battery site is on the east side of Haunted Stream, opposite Dogtown.
Battery site (2) is downstream from the Hans battery, on the east side of stream.

MUNICIPALITY: East Gippsland Shire Council

LAND USE/STATUS: State Forest

SITE HISTORY:

Early in 1884, the Jorgensen brothers (ubiquitous Gippsland prospectors) discovered a rich quartz reef on Haunted Stream, about 5 km upstream from the later Stirling township. Their mine was called the Hans, and it went on to become the most important on the goldfield. Almost immediately, a 10-head battery was erected, powered by a 30-ft diameter waterwheel—soon after, a portable Robey steam engine of 10 or 12 hp. was installed for auxiliary power, and a further 5-head battery (Munro & Co., Melbourne) was added. Early yields from the Hans mine—averaging 7 dwt to the ton—do not sound especially promising, but because the ore was plentiful and easy to treat on site, it was considered fairly payable. Mining operations in the Hans–Dogtown vicinity relied on the processing of large quantities of low-grade ore.

The mining settlement that grew up around the Hans mine was known as Dogtown. By early 1887, there was an established feel to the place, with good gardens surrounding the miners' huts.

The Commotion Reef was discovered in 1886 in one of the Hans leases, but remained virtually un-worked until 1894. At that time, an initial crushing of 50 tons yielded 157 oz. A 5-head water-powered battery was installed downstream from the Hans battery, on the opposite side of the stream. Five more stampers were added to the Commotion battery in 1900.

In 1895, the Hans mine was idle, although still held under lease by the Jorgensens. Plant at that time included tramways totaling 2,400 ft in length, bringing ore to the battery, as well a firewood tramway and a 325-ft iron-lined ore chute. Cherry and Co. took up some of the Hans ground in 1895, installing their own 10-head battery (later known as Dominey's battery) a little downstream from the Hans plant.

In 1902, a Jorgensen Proprietary Co. was formed to work ground adjoining the Hans mine by tunneling, and their mine paid well for a number of years. The Hans mine itself became active again during the same period. In 1905-6, a steam-powered 20-head battery with four Wilfley concentrating tables was erected, together with a new winding plant at the shaft. The large investment in plant failed to pay off: after two years, the Hans Co. had obtained just 60 oz of gold from 700 tons of ore. The Jorgensen Co. meanwhile employed more than 20 men and achieved consistent yields of ½ oz to the ton, until 1907 when water in their mine proved too much for their equipment. The Hans Co. recommenced work for a couple of years, working on low-grade ore and prospecting for something better. Their main shaft was 360 ft deep and equipped with a winding winch and air compressor; with the help of a government grant in 1909, they acquired a neighbouring lease (Jorgensen Co.?) on which they erected a winding plant and sank a new shaft to 200 ft. The company failed to find payable gold, though, and operations ceased in 1911. Their battery and plant were sold at auction the following year, but the battery's new owners never took it away. Over the years, scrap dealers broke and blew it up and carted most of it away. The Commotion battery met a similar fate.

References: Department of Mines Annual Reports, 1904-14.
Fairweather (2), pp. 241-5.
Fairweather (3), p. 118.
Mining Surveyors' Reports (Mitchell River Subdivision), March 1884–September 1885.
Murray

DESCRIPTION & INTERPRETATION OF FEATURES:

Features of the Dogtown/Hans Reef area include two battery sites, Dogtown settlement, and the site of the Hans battery and mine workings.

BATTERY SITE (1)

Waterwheel—Waterwheel pit and mortar block foundations/slots. Heavily looted site with a scatter of artefacts and features including a cam shaft for 10 head of stamps, a shaft and numerous 4ft-wide iron waterwheel paddles.

Race—A water race runs to the site.

The Commotion battery was erected on the opposite side of the stream (downstream?) from the Hans battery in 1894. It was water-powered with five head of stamps; five more were added in 1900, making 10 head in all. The mine operated until the early 1900s. Otherwise, this could be the site of Cherry's 1895 battery.

DOGTOWN SETTLEMENT

Hut sites—Several hut platforms, some with the remains of stone or brick fireplaces, visible from the track. Also one substantial clearing near the Hans mine site.

HANS BATTERY, MINE WORKINGS, AND CYANIDE WORKS

Opposite a small clearing (now used as a camping ground and probably once the centre of the Dogtown settlement) is a large benched platform, which once housed a battery.

Battery—Mortar block foundations and slots for a 20-head battery. The battery itself has been blown up for scrap iron. The platform is littered with machinery fragments, including sections of cam shaft and battery stems.

Boiler—A multi-tubular boiler, measuring 16½ ft x 6 ft. All the tubes have been removed and ends blasted away. The brick and stone boiler setting has been largely demolished.

Mine workings—Several adit levels and benched carting tracks above and up the gully from the battery sites.

Cyanide works—On the opposite side of the stream to the battery site, on the edge of the clearing, is a tailings dump with at least one galvanised iron cyanide vat.

A steam-powered 20-head battery was erected on the site in 1905-6. After the Hans mine closed in 1911, the battery was left on the site, but was eventually demolished and largely removed by scrap dealers. An extensive network of tramways may formerly have run along the benched tracks. The cyanide works would date to post-WW1—probably 1930s—when the tailings from the Hans battery (and probably others in the area) were re-processed. Murray noted in 1887 that the quartz at Haunted Stream was of a pyritous character, requiring treatment by special appliances and processes; but no reference was found to any such plant at the Hans or other mines in the area.

BATTERY SITE (2)

Mine workings—Adit with large mullock heap. A tramway runs from the mine to a battery site.

Waterwheel—Largely-buried mortar block foundations, slots and tie bolts for 10 head of stamps, and a partly-buried waterwheel pit. The battery has been blown up for scrap metal.

Water race—A water race runs to the site.

Possibly Cherry and Co.'s (later Dominey's) 1895 battery.

CONDITION OF FEATURES: All three batteries have been blown up for scrap metal.

CULTURAL SIGNIFICANCE:

The site has:

Scientific significance—The Haunted Stream valley contains a range of relics documenting quartz mining.

Archaeological significance—The place is archaeologically important for its potential to yield artefacts, which will be able to provide significant information about the cultural history of gold-rush mining.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* May 1995

PLACE NO. & NAME: **63.0 BLACK CAT BATTERY**
Haunted Stream goldfield
HI No. ***H8423-0012***

LOCATION: Near Mt Dow.
MUNICIPALITY: East Gippsland Shire Council
LAND USE/STATUS: State Forest

SITE HISTORY:
Research required.

DESCRIPTION & INTERPRETATION OF FEATURES:
Andrew Buckley, of CNR Bairnsdale, observed a 5-head stamp battery which has been destroyed (flattened?) by a large dead ash tree.

CONDITION OF FEATURES: Collapsed. Disturbed/flattened by large dead ash tree.

CULTURAL SIGNIFICANCE:
The site has:

Scientific significance—Contains a range of relics documenting quartz mining, including the remains of a battery.

Archaeological significance—The site has the potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: Andrew Buckley, CNR Bairnsdale *Date:* 1995

PLACE NO. & NAME: **64.0 DEPTFORD PROPRIETARY MINE**
Deptford goldfield
HI No. ***H8422-0003***

LOCATION: On the west bank of Nicholson River, at the northern end of the former Deptford township and approximately 35 km north of Bairnsdale.
MUNICIPALITY: East Gippsland Shire Council.
LAND USE/STATUS: State Forest

SITE HISTORY:
The Deptford Proprietary GMC was formed, with a capital of £12,000, in 1891. A small battery, steam engine and 8-ton boiler were installed the following year. Three quartz lodes were worked in the company's lease: the Tubal Cain, Success, and Duke of Edinburgh. Yields from the Tubal Cain tunnel, west of the Nicholson River, went as high as 7½ oz to the ton, but the main workings were on the Success lode, worked by tunnel and shaft (to 495 ft) from the east side of the river for yields of up to 4 oz per ton. A bridge was built between the two, but floods carried it away in 1894 and it was replaced by a cable tramline. The same floods damaged the crushing works, and they were substantially rebuilt in 1895, with a new 8-head Jacques battery. According to Fairweather, though, the new battery performed so badly that the Jacques Co. was asked to take it away.

Overall, the company averaged nearly 1 oz to the ton, but calls on shareholders outweighed dividends paid. In 1896, the Deptford Proprietary mine was sold to a London company, but the river broke through into the Success workings soon after and the lease was abandoned.

References: Fairweather, pp. 104-5.
Murray

DESCRIPTION & INTERPRETATION OF FEATURES:
Features of the Deptford Proprietary mine site include a battery site, hut or building platforms, mine workings, and boiler site.

Battery site—A 16ft-long multi-tubular boiler has been bulldozed against a square iron water tank. A small battery excavation features decaying mortar blocks for five head of stampers—no stampers remain on the site.

Hut or building platforms—Downstream of the battery site are several stone-retained platforms.

Mine workings—Upstream of the battery is a filled (but subsiding) shaft.

Mining machinery—Near the shaft is a stone boiler setting, with walls at one side and rear still standing. At the rear of the boiler setting is the 7ft-square, 3ft-high stone base of a chimney stack, still bearing traces of its circular iron stack. Also near the boiler setting is the skeleton (inner tube) of a 21ft-long, 5ft-diameter Cornish boiler.

In c.1989, CNR's Historic Places Section recorded the site, and relics included an oil engine. Churchward states that a cast iron-framed Renshaw 5-head battery was also among relics that have now disappeared. The oil engine would have corresponded with a phase of mining subsequent to that outlined in the history above. The 5-head battery—to which the excavated platform, mortar blocks, and boiler are related—may have been the original crushing plant installed by the Deptford Proprietary Co. in 1892.

INTEGRITY/CONDITION: A good range of features.

CULTURAL SIGNIFICANCE:
The site has:

Scientific significance—Contains a range of relics documenting quartz-mining operations carried out on the site.

Archaeological significance—The site has the potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* May 1995

PLACE NO. & NAME: **65.0 TUBAL CAIN MINE & BATTERY**
Deptford goldfield
HI No. ***H8422-0009***

LOCATION: Deptford
MUNICIPALITY: East Gippsland Shire Council
LAND USE/STATUS: State Forest

SITE HISTORY:

Alluvial gold was found on the Nicholson River as early as January 1852 and for years afterwards the only gold reports from Gippsland concerned the Nicholson. Deptford mining settlement grew up on the edge of the river, almost opposite the Navigation Creek junction.
In 1866, quartz reefs were discovered at Store Creek and Deptford. The Deptford reefs ran closely parallel and were said to be the best-defined in Gippsland. The mines were all worked by co-operatives of working miners, who struggled to develop their mines with insufficient capital. At Deptford, ore was carted to one central battery for crushing, and the cost strangled most mines. The reefs were abandoned in 1871, and miners returned to ground sluicing for a living.
The Deptford quartz mines revived between 1880-85. The Great Success Co., working the Success and Tubal Cain lodes, lasted longest: the mine produced 1,000 oz to the end of 1885—an impressive result for this unremarkable field.
Late in the 1880s, mining on the Nicholson River was almost wholly alluvial, and was on the decline. There was a short-lived rush to Waterholes Creek, south of Deptford, in 1887, but disastrous floods in 1888 saw even long-time locals retiring from the field. But a handful of prospectors was paying the reefs renewed attention and at the close of the decade quartz mining was again looking up. The Gift Reef was discovered at Yahoo Creek, and the Deptford Proprietary Co. was formed to work the old Great Success ground. Both mines—and a handful of others—continued with moderate success until the mid-1890s.

DESCRIPTION & INTERPRETATION OF FEATURES:
Battery—In situ 5-head battery, resting on a concrete slab. Four heads remain in the battery box; one has been removed and lies near the battery. Next to the battery lie the scavenged remains of a large oil engine.
Adit—Reportedly, a nearby adit is associated with the Tubal Cain mine.

CONDITION OF FEATURES: Good

CULTURAL SIGNIFICANCE:
The site has:
Scientific significance—Contains a range of relics documenting quartz-mining operations carried out on the site.
Archaeological significance—The site has the potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: Andrew Buckley, CNR Bairnsdale *Date:* September 1995

PLACE NO. & NAME: **66.0 DEPTFORD TOWNSHIP**
Deptford goldfield
HI No. ***H8422-0004***

LOCATION: On the southern bank of the Nicholson River, approximately 35 km north of Bairnsdale. The township extends from the Deptford Proprietary mine site to the Houghton's/McCoy's Flat diversion tunnel.
MUNICIPALITY: East Gippsland Shire Council.
LAND USE/STATUS: State Forest.

SITE HISTORY:
The township of Deptford, named in 1864, was built on the banks of the Nicholson River, almost opposite the Navigation Creek junction. Before that, Store Creek settlement had been the district's service centre since about 1857, and there was also a store at the junction of the Barmouth and Nicholson Rivers, early on.

Deptford township consisted of a hotel, post office, store, blacksmith's shop, chemist, and baker's. There were only ever three timber houses—all other buildings, apart from the hotel and store, were simple bush structures of spars and bark. Fairweather observes that, bark huts not being suitable for removal, people leaving the area just walked out of their houses and left them. At most, the population numbered about 300, but during the prolonged slumps in mining, the township was reduced to a few families. In 1888, for example, the mining registrar noted that, despite a great depression in alluvial mining, "some of the old residents still have faith in the district".

The Miner's Rest Hotel started business at Deptford in 1865 and was extended in 1894, after which it had a bar, service rooms, six guest rooms, and family quarters, as well as extensive stables and a chaff house at the rear. The hotel burned down in about 1905, after which premises were licensed at Store Creek. The flat on which the Miner's Rest Hotel stood has been partially washed away by flood waters.

The Deptford School No. 3151 opened in January 1892—formerly, Deptford children had attended a farm school some three miles below the township. Deptford School closed in 1928, after which the bark, one-roomed building was used as a camp. Also during the 1890s, a church was established, as well as a cemetery—the original one, on Navigation Creek, having been eroded by flood waters. There being no hall, dances were regularly held in a large storeroom opposite the general store.

The road to the township from Bairnsdale was always in a deplorable state and was the cause of much complaint to the Shire of Bairnsdale, which scarcely spent a penny on it, despite the business brought to that town by the mines of Deptford. In the early 1890s, the Shire of Omeo upgraded the track between Deptford and Stirling (on Haunted Stream) to coaching standard, but it was soon allowed to degenerate again.

References: Fairweather, pp. 75-90.
Mining Surveyors' Reports (Mitchell River Division), December 1888.

DESCRIPTION & INTERPRETATION OF FEATURES:
The main features of the Deptford township site are numerous hut platforms (some with stone fireplaces) which are visible along the track on the southern bank of the Nicholson River. One substantial clearing is now used as a picnic area, with one table and a barbecue.

CONDITION OF FEATURES: Looting by bottle/treasure hunters?

CULTURAL SIGNIFICANCE:
The site has:
Historical significance—The main gold township of the Mitchell River Mining Division.
Archaeological significance—Archaeologically important for its potential to yield artefacts which will be able to provide significant information about the cultural history of gold rush mining and the gold miners themselves.
Social value—picnic spot

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* May 1995

PLACE NO. & NAME: **67.0 HOUGHTON'S/McCOY'S FLAT DIVERSION TUNNEL**
Deptford goldfield
VHR No. ***H1262***
HI No. ***H8422-0005***

LOCATION: Houghton's/McCoy's Flat is now known locally as Piggery Point. Situated on the Nicholson River, at the southern end of the former Deptford township and approximately 35 km north of Bairnsdale.
MUNICIPALITY: East Gippsland Shire Council.
LAND USE/STATUS: State Forest.

SITE HISTORY:
According to Fairweather, Chinese miners of the 1860s are credited with driving the diversion tunnel to drain the river from the horseshoe bend forming Houghton's Flat (also known as McCoy's Flat) and enable the working of that section of the river bed. Mining activity at Deptford was poorly reported during that period. The only large-scale alluvial mining operation recorded by the mining registrar was that of the Nicholson River Sluicing Co. in 1873, when a long water race was cut "for the purpose of working ground hitherto inaccessible to the individual miner". It is possible that the scheme included a river-diversion tunnel.

Elsewhere on the goldfields of Gippsland and the north-east, large diversion tunnels are popularly attributed to "Chinese miners"; but such claims have been found to be incorrect. Records seem to show that, while large parties of Chinese commonly worked creek and river claims during the 1850s-70s, it was European parties or companies which undertook the construction of substantial diversion tunnels. It is true, though, that Chinese parties would sometimes later purchase and work the tunnel claims (as in the case of the New Adventure tunnel at Omeo).

References: Fairweather, p. 77
Mining Surveyors' Reports (Mitchell River subdivision), June & December 1873

DESCRIPTION & INTERPRETATION OF FEATURES:
The diversion tunnel at Houghton or McCoy's Flat is cut through a narrow isthmus (no more than 50 m wide) on the Nicholson River. The inlet is blocked by a concrete wall, through which passes a pipe, allowing water to flow through the tunnel.

Hut site—A track leads from the diversion tunnel to a clearing about 200 m distant. Within the clearing is a large stone chimney with a galvanised iron-lined, arched fireplace.

CONDITION OF FEATURES: Good

CULTURAL SIGNIFICANCE:
The site has:

Historical significance—Houghton's Flat Diversion Tunnel is historically significant as a characteristic and well-preserved example of an important form of gold mining. Gold mining sites are of crucial importance for the pivotal role they have played since 1851 in the development of Victoria. As well as being a significant producer of Victoria's nineteenth century wealth, with its intensive use of machinery, played an important role in the development of Victorian manufacturing industry.

Scientific significance— Houghton's Flat Diversion Tunnel is scientifically significant as a well-preserved example of a diversion tunnel. Water diversion and sluicing are important key ingredients in an understanding of gold mining technology as it was employed in mountainous country where water was plentiful and perennial.

Natural values— Houghton's Flat Diversion Tunnel is also important for its evocation of the adventurousness, hardship, and isolation that was part of mining life in the high country areas of the State.

SIGNIFICANCE RANKING: Site listed on Victorian Heritage Register
Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* May 1995

PLACE NO. & NAME: **68.0 MURRINDAL SILVER-LEAD MINE**
Buchan field
HI No. ***H8523-0002***

LOCATION: Basin Road, Buchan.
MUNICIPALITY: East Gippsland Shire Council.
LAND USE/STATUS: State Forest.

EXISTING HERITAGE LISTING: Historic Places Section site no. 2131

SITE HISTORY:
In 1873, the Murrindal Silver & Lead Co. was working a 30-yard-long quarry, and had erected smelting furnaces and smelting house, blacksmith's shop, and powder magazine. The failure of the company's furnaces was blamed on defective construction and lack of skilled smelters. In 1881, the Nevada Co. made “certain alterations” to the furnaces, but their operations lasted less than a year. In 1885, the old furnace was pulled down, and a large excavation cut into the hillside to house a new furnace “on the latest improved principles”, but the 'flues, stack, &c.' were still to be used. The Melbourne syndicate which held the Murrindal lease at that time had an English-made Vortex turbine on the Buchan River, as well as a steam engine on the Murrindal, supplied with water from a well. In 1898, Rosales wrote that earlier smelting techniques at Murrindal had employed “an American ore hearth and a Spanish reverberating furnace”. These were presumably the furnaces employed by the Murrindal Co. and the later Melbourne syndicate.

In 1894, the Buchan Proprietary Co. took over the Murrindal and Back Creek mines, using its plant at the Murrindal mine to treat ore from Back Creek. In 1896, the plant at Murrindal (treating ore from the Back Creek mine) comprised a Flintshire furnace, 8-hp engine, 7-ton boiler, ore-breaking machine, sluice-box for cleaning ore from clay, and two jigging sieves. Also mentioned was a dressing plant, constructed by May Brothers of Gawler, SA, on their patented system. It was estimated that £100,000 had been spent on mine works and plant, and thirty men were employed at the mine and works. The mine closed in 1896.

References: East Gippsland Regional Planning Committee, p. 66.
Historic Places Section database.
Lewis/Aitken & McCann.
Mining Surveyors' Reports (Mitchell River Subdivision), June 1873, March 1874, December 1881, December 1885.
Rosales (1 & 2).

DESCRIPTION & INTERPRETATION OF FEATURES:
The only features of the Murrindal silver-lead mine known to survive are remnants of the stone-lined hillside flue (Photographs taken by Clive Willman [Geological Survey, DAEM] in 1995).

According to the East Gippsland Regional Planning Committee's report, the (original?) flue ran up the hillside for 505 ft, 2 ft wide and 18 inches thick, with local rock and mortar as the building material. A 70-ft brick chimney stack dispersed gases above the flue. The mine machinery was scrapped in WW1 and the bricks were removed and re-used for house chimneys around Buchan.

INTEGRITY/CONDITION: Good

CULTURAL SIGNIFICANCE:
The site has:
Historical significance—Silver and lead mining in Victoria was a minor industry and sites containing tangible evidence are rare.
Scientific significance—Well preserved stone-lined hillside flue.

SIGNIFICANCE RANKING: Site listed on the Heritage Inventory

Assessed by: East Gippsland Regional Planning C'tee *Date:* 1980
Clive Willman, DAEM 1995

PLACE NO. & NAME: **69.0 BLACK SNAKE COPPER MINE**
Accommodation Creek
HI No. ***H8623-0013***

LOCATION: Accommodation Creek.
MUNICIPALITY: East Gippsland Shire Council.
LAND USE/STATUS: Snowy River National Park.

SITE HISTORY:
No information was found that relates specifically to the Black Snake mine. The copper lode at Accommodation Creek, east of Mt Deddick, was known and prospected early this century. In 1907, Dunn referred to a prospectors' camp on Hell Hole Creek. Of developments so far, he wrote: "In too many cases the money that should be devoted to testing the lode where it has not been impoverished by surface action is frittered away in shallow surface trenches and pits, and nothing but disappointment results". The transport difficulty posed by the field's isolation was, he conceded, a serious one, but he expected it to be overcome by the introduction of railways—this was a dying hope which had arisen with the discovery of silver-lead at Deddick in the mid-1890s. Copper mining at Accommodation Creek did not actually develop until the 1930s, and operations were carried on intermittently until as recently as 1971.

References: Brady, A., *The Forests of East Gippsland - A history of occupation and utilization*, draft report to Department of Conservation and Environment, August 1992.
Dunn, E.J. (1909/2), "Mt Deddick and Accommodation Creek, East Gippsland", in *Records*, vol. 3, part 1, Geological Survey of Victoria, Department of Mines, Melbourne, 1909 (report dated 1907), pp. 75-9.

DESCRIPTION & INTERPRETATION OF FEATURES:
Features of the Black Snake copper mine are a blown-up battery, slum pond, and mine workings.
Battery—Remains of galvanised iron, wooden-framed shed with two concrete-floored levels:
Upper floor (20 ft x 15 ft)—Timber uprights still support the battery cam shaft and 5ft-diameter flywheel. The battery box and stamper stems (5 heads) lie scattered around the site. The battery's timber framework appears to be of oregon and its various components are carved with Roman numerals for ease of assembly. Two parallel sets of steps connect the upper and lower floors.
Lower floor (30 ft x 20 ft)—Scattered machinery fragments, including part of a pulley.
Slum pond—Below the battery is a small, full slum pond.
Mine workings—Adits and mullock heaps.

CONDITION OF FEATURES: Battery has been blown up.

CULTURAL SIGNIFICANCE:
The site has:
Historical significance—Copper mining in Victoria was a minor industry and few sites survive.
Scientific significance—The site is scientifically significant because it has a range of features associated with copper mining, including a crushing battery and mine workings.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* May 1995

PLACE NO. & NAME: **70.0 VICTORIA STAR QUARTZ MINE**
Bendoc goldfield
HI No. ***H8623-0002***

LOCATION: 5 km south of Bendoc, off Clarkeville road.
MUNICIPALITY: East Gippsland Shire Council.
LAND USE/STATUS: Victoria Star Mine Historic Reserve (35 ha).

EXISTING HERITAGE LISTING: Victoria Star Mine Historic Reserve (35 ha).

SITE HISTORY:
The Victoria Reef was originally worked as the Luck & Leisure in 1869; it was renamed the Victoria in 1871. A rich lode was discovered on Victoria Reef in 1909. Hopkins and party acquired the mine the following year and crushed nearly 100 tons for an average yield of 4 oz per ton before selling the mine to Bendoc Victoria Reefs Co. That company sank a new shaft and installed a steam winding plant, to replace a horse whim. In 1911, the company enlarged the shaft to three compartments and contracted for sinking another 100 ft. A large high-pressure Cornish boiler replaced three small ones in 1913, but, although the auriferous stone was of high quality, there was not enough of it to make the mine pay. It shut down early in 1915.

In 1928, the mine was worked by Victoria Reef GMC and yielded 437 oz from 276 tons. By 1935, the Victoria Star Co. had a main shaft down 190 ft, from which a crosscut was driven to intersect the nearby Welcome Stranger Reef. The mine's yield for 1935-6 was 804 oz from 507 tons. In 1938, the mine was operating as the Mayfair, but it closed down the next year.

Reputedly the highest yielding mine in East Gippsland, the mine was worked to a depth of more than 90 m for a total yield of 5,337 oz.

References: Brady & Perham, p. 36.
Department of Mines Annual Reports, 1909-15.
Easton
Mining & Geological Journal, 1938-9.
Mining Surveyors' Reports (Bendoc Subdivision), June 1869, June 1871.

DESCRIPTION & INTERPRETATION OF FEATURES:
The features of the Victoria Star mine site include a mullock heap, mine workings, machinery foundations, remains of a battery, portable steam engine, and cyanide works.

Mullock heap—A partly quarried heap (40-m diameter) with three short dumping lines.

Mine workings—A couple of filled shafts and small mullock paddocks lie to the south of the mullock heap.

Mining machinery—36 ft x 20 ft concrete floor with an arrangement of winding and engine mounting beds.

Battery site—Intact mortar blocks and *in situ* 5-head battery box. The remainder of the stamping plant has been removed from the site. Sections of the battery's wooden framework lie on the ground around the box. A mark on the battery box identifies the manufacturer as "Langlands Foundry Co., Limited, Melbourne".

Portable engine—Bulldozed onto the battery foundations is an 11½ft-long portable steam engine. All fittings have been removed. A second portable boiler (10½ ft long) lies below the battery. It is in similar condition to the other, except that a section has been cut from its boiler tube.

Cyanide works—A tailings dump, measuring 40 m x 30 m and 1½ m high, has a row of three 8ft-diameter galvanised iron vats. Two of the vats are in reasonable condition; the third has partially decayed. At the base of the tailings dump is a 13ft-diameter galvanised iron drainage vat.

CONDITION OF FEATURES: The machinery has been looted for scrap metal, and remaining components have been damaged and moved from their original locations.

CULTURAL SIGNIFICANCE:
The site has:

Scientific significance ¾ Site contains a range of relics documenting mining and ore processing methods.

Archaeological significance—The site has the potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining.

SIGNIFICANCE RANKING*:* Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* May 1995

PLACE NO. & NAME: **71.0 ASPEN'S BATTERY**
Bendoc–Bonang goldfield
HI No. ***H8623-0003***

LOCATION:	On benched platform in gully below the junction of Aspen Battery Track and Bendoc–Clarkeville road.
MAP REFERENCE:	8623: 666.876
MUNICIPALITY:	East Gippsland Shire Council
LAND USE/STATUS:	State Forest

SITE HISTORY:

The Aspen battery was first mentioned by name in 1889, when quartz from the Crœsus and Welcome Stranger mines was being crushed there. Apparently, though, the battery was nearly derelict. Referred to as 'the Old Dolley, at Aspdens', it was constructed of wood, with 4 stamp heads and 9 ft diameter waterwheel, fed by a half-mile race. Of the Welcome Stranger's crushing, the mining registrar wrote that 'owing to the machine having stood so long idle, and being so much out of repair, the yield was very disappointing, the stone yielding only 2 oz of gold per ton'. Soon after, it was reported that the Welcome Stranger Co. had completed erection of a wooden, 4-head, iron-shod dolly. Probably, the company had decided it could do better with a new version of the dilapidated dolly at their own mine; but perhaps they merely reconditioned Aspen's.

The Aspen battery site is potentially an important one for the Bendoc–Bonang area, as the wooden dolly here was one of the latest incarnations of a form of battery commonly employed in this district throughout its quartz-mining history. Most other goldfields had abandoned this form of crushing machinery by the early 1860s, but the practical miners of East Gippsland typically constructed (or recycled) these rough wooden batteries, with iron-shod stampers, to test the stone from their mines before deciding to bring in expensive plant from 'outside'. The main disadvantage of the dolly was that it had no gold-saving devices (or only crude ones) and much gold was lost in the crushing process. Successive mining registrars and visiting experts despaired at the 'primitive' standard of machinery employed on the field.

The first battery in East Gippsland was a wooden dolly which served the original Bendoc reefs in 1867. The mining registrar remarked that satisfactory yields were being obtained from stone crushed 'in the rudest manner.' The Rising Sun Co.'s first battery (in 1869) was a hand-made dolly, as was the Union Co.'s machine, installed at the same time. (The Union Co. was soon after forced to stop work, as their dolly was losing so much gold.) The holders of the Albert claim, opposite the Aurora Borealis on the Bonang River, tested their reef with a dolly in 1873. In 1874, the Union Jack Co. erected a wooden dolly on its claim on the Bonang River, but lost so much gold during crushing that they were unable to make their mine pay. At this time, the mining registrar remarked that: 'reefs in this district require at present to be rich and yield well under the present mode of working and state of machine appliances.' The Crœsus Co. (which soon after crushed at Aspen's battery) built its own 'primitive machine, in the shape of a dolly' in 1887, and got 40 oz from 35 tons. Likewise, the Welcome Stranger Co., which had also crushed at Aspen's, erected its own 4-head dolly in 1889. The Eclipse Co., on the Bendoc River, early in 1888, erected a 4-head wooden dolly and crushed 30 tons for a yield of 90 oz. James Stirling, who visited the field soon after, marveled that the Eclipse battery and water race would not have cost more than £150, and remarked: 'As the machinery is a typical specimen of bush carpentry and construction, I have photographed it, as a relic, in striking contrast with the machinery employed at the Rising Sun mine.' (Does his photograph survive?) In 1898, such 'relics' were still being constructed: a group of prospectors between Mt Bendoc and Bendoc River built a wooden 4-head battery and wheel for testing a reef.

References: Howitt
Hunter (1898/4)
Mining Surveyors' Reports (Omeo Subdivision), September 1867
Mining Surveyors' Reports (Bendoc Subdivision), March 1869, March 1870, September 1873, September & December 1874, September & December 1887, March & June 1888, March, June & September 1889
Stirling (1889/3) & (1889/4)

DESCRIPTION & INTERPRETATION OF FEATURES:

Features of the Aspen's battery site are an excavated platform and portable steam engine.

Battery—Excavated platform overgrown with ferns. Traces can be seen of timber uprights and mortar blocks to support five (four?) head of stamps.

Portable engine—The engine now lies in a clearing near the battery foundations. The smoke box is partly buried and all engine fittings have been removed. The engine is 11 ft long, and each of its two cylinders measures 7 inches in diameter and 16 inches in length. An inspection stamp on the firebox reads: LDS, 27/08/03, 30. The engine's wheels and fly wheel have been removed from the site.

PHOTOS:	1 & 2 Aspen's battery
ARTEFACTS:	—
CONDITION OF FEATURES:	Machinery and structures have been either removed from the site or dislodged from their original positions. The site is very overgrown. The site has been bulldozed.

CULTURAL SIGNIFICANCE:

The site has:

*Scientific significance*¾Site contains a range of relics documenting the operation of a steam-powered crushing battery.

Archaeological significance—The site has the potential to yield artefacts and evidence which will be able to provide significant information about the technological history of gold mining

SIGNIFICANCE RANKING: The site is listed on the Heritage Inventory

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Assessed by: David Bannear *Date:* May 1995

PLACE NO. & NAME: **72.0 CLARKEVILLE BATTERY**
Bendoc–Bonang goldfield
HI No. ***H8623-0004***

LOCATION: Beside a creek on the east side of Bendoc–Clarkeville road, 105 m beyond the Aspen Battery Track turn-off and 30 m from the second culvert.
MUNICIPALITY: East Gippsland Shire Council.
LAND USE/STATUS: State Forest.

SITE HISTORY:
Possibly Welcome Stranger, Clarkeville GMC, Sunbeam, Lewis's.
Reefs were discovered on the Dividing Range, at the head of the Bendoc River, in 1889. Claims included the Waratah, Welcome Find, Jungle King, Belle of Bendoc, Snowstorm, and No Name, on two distinct lines of reef, about 400 yards apart. In 1898, small parties at work included Clarkeville GMC, Clarkeville Extended Co., and the Waggra, Empire, Band of Hope, and Sunbeam claims. All claims were worked by shaft, the deepest being that of the Sunbeam at 160 ft (including winze).

In 1889, the Welcome Stranger mine erected a 4-head wooden dolly, having originally used Aspen's. A 20-head battery was installed, but never used, at the New North Discovery mine (later worked by the Clarkeville GMC) in the early 1890s. Two batteries operated at Clarkeville in 1898: the Sunbeam, of 10-head with a 20-hp engine; and Lewis's 6-head, run by a 25-ft waterwheel. S.B. Hunter, who surveyed the field in 1898, appeared to think little of it and was scornful of past mismanagement. At the turn of the century, a Ballarat syndicate attempted to re-open the New North Discovery mine, sinking the shaft to about 300 ft. They found an abundance of quartz, but it yielded poorly.

References: Dunn (1909/1).
Hunter (1898/1).
Mining Surveyors' Reports (Bendoc Subdivision), September & December 1889.

DESCRIPTION & INTERPRETATION OF FEATURES:
Features of the Clarkeville battery site are a collapsed 5-head battery and a portable steam engine. Battery foundations are located in a dark, overgrown excavation at creek-level.

Battery—On a dark, overgrown excavation at creek-level is a collapsed, iron-framed 5-head battery, along with traces of the timber bed-logs and mortar blocks on which it once stood. The stampers have been removed from the site and the battery box shifted. Only the iron framework and cam shaft appears to be *in situ*. Part of manufacturer's plate survives on the battery box: P.N. Russell & Co.

Portable engine—A portable steam engine lies above the battery foundations. It has been bulldozed and is largely buried, only the firebox being visible. The single cylinder has a 7-inch diameter and is 13 inches long. The manufacturer's plate is visible but almost illegible: it appears to read "Ransomes, Head & Jeffries".

The battery was manufactured in Sydney by the same maker as the Pioneer battery. Both are 5-head and iron-framed—it is possible that the two five-head boxes were once part of a ten-head plant. The Pioneer battery bears the date 1868; the Clarkeville battery may be contemporary. (Research P.N. Russell & Co.—dates?) Of the Clarkeville batteries identified by historical research, the Sunbeam battery (1898) appears to provide the closest match with the physical remains: a 10-head battery with a 20-hp engine.

CONDITION OF FEATURES: Machinery has been either removed from the site or dislodged from its original position. The site is very overgrown and visibility is negligible. Site has been bulldozed.

CULTURAL SIGNIFICANCE:
The site has:

*Scientific significance*¾Site contains a range of relics documenting the operation of a steam-powered crushing battery.

Archaeological significance—The site has the potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* May 1995

PLACE NO. & NAME: **73.0 DELEGATE RIVER DIVERSION TUNNEL**
Bendoc–Bonang goldfield
VHR No. ***H1261***
HI No. ***H8623-0005***

LOCATION: Off Bonang–Bendoc road, west of Bendoc—on the Delegate River above its junction with Chinaman Creek.
MUNICIPALITY: East Gippsland Shire Council.
LAND USE/STATUS: State Forest.

SITE HISTORY:
Popular legend has it that the Delegate River tunnel was constructed by Chinese miners in the 1860s to divert the river and allow working of the bed. It is true that by 1868, a party of Chinese on the Upper Delegate had constructed "a flood-race of considerable length, calculated to carry all the Delegate River", but this sounds more like a channel than a tunnel. In 1889 the Delegate River Gold Sluicing Co. was formed to sluice the terrace wash above the alluvial flats just below the point where the Bendoc to Bonang road crossed the Delegate River. A water-race, 1 mile 55 chains long and 2 ft deep, was cut, and a tunnel of approximately 200 ft (60 m) in length was driven through hard rock as a tail-race.

References: Brady & Perham, p. 40.
Howitt
Mining Surveyors' Reports (Bendoc Subdivision), March, June & September 1889.

DESCRIPTION & INTERPRETATION OF FEATURES*:*
The Delegate River tunnel is cut through a narrow isthmus and diverts the river away from its original course. The sluiced river bed is completely overgrown with blackberries. A picnic area and a walking track to the tunnel are currently being established.

CONDITION OF FEATURES: Good. Diversion tunnel still operational.

CULTURAL SIGNIFICANCE:
The site has:

Historical significance—Delegate River Diversion Tunnel is historically significant as a characteristic and well-preserved example of an important form of gold mining. Gold mining sites are of crucial importance for the pivotal role they have played since 1851 in the development of Victoria. As well as being a significant producer of Victoria's nineteenth century wealth, with its intensive use of machinery, played an important role in the development of Victorian manufacturing industry.

Scientific significance— Delegate River Diversion Tunnel is scientifically significant as a well-preserved example of diversion tunnel. Water diversion and sluicing are important key ingredients in an understanding of gold mining technology as it was employed in mountainous country where water was plentiful and perennial.

Natural values— Delegate River Diversion Tunnel is also important for its evocation of the adventurousness, hardship, and isolation that was part of mining life in the high country areas of the State.

SIGNIFICANCE RANKING: Site listed on Victorian Heritage Register
Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* May 1995

PLACE NO. & NAME: **74.0 DUNLOP MINE**
Bendoc–Bonang goldfield
HI No. ***H8623-0006***

LOCATION: Splitters Creek, south-east of Bendoc, via Beasley Road.
MUNICIPALITY: East Gippsland Shire Council.
LAND USE/STATUS: Freehold land.

SITE HISTORY:
In 1910, the Dunlop Co. sank a shaft to water-level, then erected a small treatment mill to test the value of its lode. The following year, the battery was fully employed and the company increased its plant. Nothing more is known of the Dunlop mine or battery.

References: Department of Mines Annual Reports, 1909-11.

DESCRIPTION & INTERPRETATION OF FEATURES:
Features of the Dunlop battery site are an intact battery, vertical boiler, dam, and mine workings.
Battery—An intact 5-head iron-framed battery, still standing. The manufacturer's plate reads: "Thompson & Co., Engineers & Iron Founders, Castlemaine". The cam shaft has a solid iron 5-ft fly wheel and the stampers have screw-type stems.
Boiler—An intact vertical boiler (10 ft x 5 ft) which has fallen onto its side. The boiler is in excellent condition and retains most of its fittings, including the safety valve—only the flue is missing.
Dam—A large, full dam is situated below the boiler. No trace was found of any tailings.
Mine workings—Shaft and mullock.

CONDITION OF FEATURES: Good

CULTURAL SIGNIFICANCE:
The site has:
Scientific significance—Site contains a well-preserved battery, vertical boiler associated with mine workings.
Archaeological significance—The site has the potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* May 1995

PLACE NO. & NAME: **75.0 MILLER'S SLUICING WORKS**
Bendoc–Bonang goldfield
HI No. ***H8623-0007***

LOCATION: Sluiced ground is centred on Back Creek where the Flu Track crosses.
MUNICIPALITY: East Gippsland Shire Council.
LAND USE/STATUS: State Forest.

SITE HISTORY:
Alluvial ground at Back Creek was worked during from the late 1850s onwards, with many Chinese among the diggers.

From 1881-7, at least one substantial puddling claim was worked at Back Creek. The ground was puddled as the clay in the vicinity was too dense for working by sluice and much gold was lost in the tailings. In 1889, two companies commenced sluicing at Back Creek on a large scale: one by ground-sluicing, the other by hydraulic power. Dredging was carried on (with meagre results) in the Bendoc area during 1906-8; it is possible that sections of Back Creek were tried.

Miller and Sons' Back Creek Sluicing Co. worked the area on a large-scale from the 1930s, stopping work during WW2, recommencing in 1946, and continuing until at least 1952 (floods in 1951 damaged their operations). In 1946, the Millers bulldozed a road in to their workings and constructed a second penstock dam. New settling and storage dams were built during 1947-8, and a new hydraulic sluicing plant installed in 1959. Their operations consistently paid well, yielding 150 oz during 1950.

References: Department of Mines Annual Reports, 1906 & 1908.
Flett, p. 177.
Mining Surveyors' Reports (Bendoc Subdivision), 1881-7, September 1889.
Mining & Geological Journal, 1946-52.

DESCRIPTION & INTERPRETATION OF FEATURES:
An extensive area of alluvial gold workings off Flu Track. Features include a dam of approximately 150 x 30 m, water race, patches of dry diggings, stacked pebble dumps, and several tail races. Machinery remnants are scattered through the lightly wooded site.

INTEGRITY/CONDITION: Undisturbed sluiced landscape.

CULTURAL SIGNIFICANCE:
The site has:

Scientific significance—An extensive area of alluvial gold workings containing evidence (including remnants of machinery) of a large hydraulic sluicing operation.

Archaeological significance—The site has the potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* May 1995

PLACE NO. & NAME: **76.0 PIONEER BATTERY**
Bendoc–Bonang goldfield
VHR No. ***H1429***
HI No. ***H8623-0008***

LOCATION: Pioneer Creek, a tributary of the Bonang River.
MUNICIPALITY: East Gippsland Shire Council.
LAND USE/STATUS: LCC Reference Area.

EXISTING HERITAGE LISTING: —

SITE HISTORY:
No references were found concerning the Pioneer battery, mine, or reef. In 1898, Stirling noted the Pioneer lease on the Bonang River. In the early years of the 20th century, the Bonanza, South Bonanza, and Rising Sun mines were worked in the vicinity with fair success. In 1904, the Bonanza mine (owned by an English company) had a "good treatment mill". [Check Jack Mustard book?]

References: Department of Mines Annual Reports, 1904-6.
Stirling (1898/1).

DESCRIPTION & INTERPRETATION OF FEATURES:
The features of the Pioneer battery site include a 5-head battery, hut site, cyanide works, and mine workings. [According to Jack Mustard, the battery originally crushed for the Bonanza mines and then used for the Pioneer Reef mines. The battery's portable engine was removed to crush for the Cambridge mine].
Battery—A 5-head iron-framed battery and cam shaft. The battery's fly wheel has been removed and lies in pieces on a benched platform above the battery. The manufacturer's mark reads: "P.N. Russell & Co., -No.-, Engineers, -16-, Sydney 1868". The timber uprights and mortar blocks of the battery have been slightly burnt. The stamper stems are of the screw-tappet type and the tappets show considerable wear; some have been very roughly repaired.
Hut site—Hut platform above the battery.
Tailings—In the gully below the battery is a dump of tailings and some poorly preserved cyanide vats.
Mine workings—On the side of the track leading to the battery is a line of reef workings, consisting of open shafts and mullock paddocks.

The manufacturer's mark on the battery bears out the historically strong connection between the Bendoc-Bonang gold field and Sydney, rather than Melbourne. Its early date (pre-dating this goldfield) suggests that the battery had previously been in use elsewhere—probably in NSW, possibly Kiandra–Cooma? Or possibly at the Rising Sun mine, where a NSW owner installed steam plant as early as 1871?

CONDITION OF FEATURES: The battery is nearing the point of collapse, and there a dead tree growing hard against its side is likely to fall across it.

CULTURAL SIGNIFICANCE:
The site has:

Historical significance—The Pioneer Battery is historically significant as a characteristic and well-preserved example of an important form of gold mining. Gold mining sites are of crucial importance for the pivotal role they have played since 1851 in the development of Victoria. As well as being a significant producer of Victoria's nineteenth century wealth, with its intensive use of machinery, played an important role in the development of Victorian manufacturing industry. The manufacturer's mark "P.N. Russell & Co Sydney Engineers 1868" bears out the historically strong connection between the Bendoc-Bonang goldfield and Sydney, rather than Melbourne.

Scientific significance— The Pioneer Battery is scientifically significant because it contains the only known *in situ* battery that documents the links that the Gippsland miners had to Sydney machinery manufacturers rather than the more usual Victorian ones.

Archaeological potential—The Pioneer Battery is archaeologically important for its potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining.

Natural values— The abandoned mining machinery at the Pioneer Battery site is also important for its evocation of the adventurousness, hardship, and isolation that was part of mining life in the high country areas of the State.

SIGNIFICANCE RANKING: Site listed on Victorian Heritage Register
Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* May 1995

PLACE NO. & NAME: **77.0 CAMBRIDGE BATTERY**
Bendoc-Bonang goldfield
HI No. ***H8623-0009***

LOCATION: 1.65 km along Hobbs Track, and just 10 m from the track.
MUNICIPALITY: East Gippsland Shire Council.
LAND USE/STATUS: State Forest.

SITE HISTORY:
No reference has been found to the Cambridge mine or battery. The Rising Sun mine had steam-powered plant as early as 1871, and the Royal Albert Co. had an 8-hp portable engine powering its battery at Bonang River in 1889. Other plants of that period were water-powered. [Jack Mustard book?].

References: Mining Surveyors' Reports (Bendoc Subdivision), September 1889.

DESCRIPTION & INTERPRETATION OF FEATURES:
The features of the Cambridge battery site are a battery excavation and a portable steam engine.
Battery—Battery excavation. The 5-head battery has disappeared from the site fairly recently.
Portable steam engine (ex-Pioneer mine)—The engine has wooden wheels, its spokes have now rotted away, and the engine now rests on the wheel hubs. The manufacture mark around the hubs reads: "Robey & Co. Lincoln". The single-cylinder engine is in good condition, except for its smoke box having rusted out. The engine still has some of its brass fittings, including the governor. The firebox still has its door and bears two inspection marks: 10/12/03 and ?/12/30. The engine is 10 ft long, the cylinder measures 9 inches in diameter and 16 inches long, and the fly wheel 5 ft diameter.

CONDITION OF FEATURES: Good

CULTURAL SIGNIFICANCE:
The site has:
Scientific significance—Site contains a well-preserved portable steam engine associated with a battery site.
Archaeological significance—The site has the potential to yield artefacts and evidence, which will be able to provide significant information about the technological history of gold mining.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: David Bannear *Date:* May 1995

PLACE NO. & NAME: **78.0 SPOTTED DOG QUARTZ MINE**
Mallacoota
HI No. ***H8822-0002***

LOCATION: View Track, between Harrisons Creek Inlet and Cemetery Bight.
MUNICIPALITY: East Gippsland Shire Council.
LAND USE/STATUS: State Forest.

SITE HISTORY:
In the 1880s and 1890s the Mines Department built a network of tracks throughout the forests of East Gippsland, and improved access brought a new round of discoveries and mining revivals. Prospectors concentrated on water courses, particularly the heads of river systems in the south of the region. Gold panning around the shores of Mallacoota Inlet in 1894 led to a rush of claims in the following year. Shallow excavations were made at the lake's edge, and quartz lodes were worked down to depths of 100 ft in places around the Inlet. Gold claim no. 2036 was registered at Mallacoota in June 1894 by Robert Stewart of Mallacoota Inlet, George Alfred of Bairnsdale, George Evans of Yarragon, and Thomas Ridgeway of Leongatha. It was granted for an area of 90 acres in January 1895.

In 1894, the shaft was described as 30 feet deep, equipped with a windlass, and with a heap of earth nearby. A trial crushing at the Bairnsdale School of Mines yielded an average of 2.7 oz per ton. The prefabricated mine office was relocated and reputedly survives at surveyor Edward Lee's former property, Fairhaven. The Spotted Dog mine was the most famous in the Mallacoota district, featuring a line of shafts driven into a reef approximately 100 metres long. The claim was worked steadily until 1896-7, reputedly producing 899 oz of gold. Cyaniding took place on the site in 1898.

References: East Gippsland Regional Planning Committee, "Sites and Features of Historical Significance in the East Gippsland Region", October 1980, p. 54.
Lewis, N., Aitken, R., Pty Ltd., and McCann, J., *Assessment of Historic Values: East Gippsland Forest Project*, report for the Australian Heritage Commission, December 1993.
Sumner, R., *Croajingolong National Park—a review of historical themes and sources*, National Parks Service, April 1979.

DESCRIPTION & INTERPRETATION OF FEATURES:
Visible signs of mining activities are the opening to the main shaft, various prospecting excavations, mounting bolts for a battery, engine base, line of water race, earthen dam embankment, butts of wharf piles, and some heaps of stones and clay from miners' hut fireplaces. Lewis/Aitken & McCann further recorded a cyaniding site, and a nearby cemetery (the original Mallacoota cemetery).

INTEGRITY/CONDITION: Good

CULTURAL SIGNIFICANCE:
The site has:
Scientific significance—Site contains a range of relics documenting quartz-mining operations.
Archaeological significance— archaeologically important for its potential to yield artefacts and evidence which will be able to provide significant information about the technological history of gold mining and the cultural history of gold rush mining.

SIGNIFICANCE RANKING: Site listed on Heritage Inventory

Assessed by: East Gippsland Regional Planning C'tee *Date:* 1980.
Lewis, Aitken & McCann 1993.