VICTORIAN GOLDFIELDS PROJECT

HISTORIC GOLD MINING SITES IN THE SOUTH WEST REGION OF VICTORIA

REPORT ON CULTURAL HERITAGE

Department Of Natural Resources & Environment

August 1999

1. Background

1.1 Introduction

This report is based on the results of a historical archaeology survey undertaken from 1996 to 1999. The historical research, fieldwork and public consultation undertaken within the study indicated that various parts of the region experienced extensive gold mining from 1851 until the present day.

The study area stretches from Creswick in a south westerly direction to Stawell.

The majority of the sites investigate date from the late nineteenth century, and the main gold mining site types recorded are associated with shallow alluvial, deep lead, quartz reefing and ore retreatment. The recent age of surviving mining relics is a reflection of the temporary and basic nature of the early gold rush activities undertaken and the constant re-mining that occurred, resulting in the disappearance of earlier sites.

1.2 Site Gazetteer

The work underlying the gazetteer involved a desktop survey of recorded sites, analysis of historical records, fieldwork and community consultation. The assessment process used was designed to achieve the best practical results within the project's time frame and limited budget. Places not previously recorded and which were assessed as likely to have significant heritage values were visited and included in the gazetteer that forms part two of this report.

2. Introduction

2.1 Purpose of report

The study seeks to identify, assess and document the cultural heritage values relating to the historic theme of gold mining in South West Victoria. The categories or types of sites to be covered by the report are shallow alluvial (shaft sinking, sluicing and dredging), deep lead (tunnelling and shaft sinking); quartz reefing (tunnelling, shaft sinking and open cutting), and re-treatment of ore (by chlorination and cyaniding).

The study will make a significant contribution to a State-wide investigation of the theme of gold mining.

2.2 Aims of report

The aims of the project were to:

- undertake a desk-top survey of known sites,
- conduct research on the theme of gold mining,
- compile information on historic gold mining places in South West Victoria,
- identify and record previously unrecorded historic mining places assessed as having State or regional significance, and
- document the project's methodology and decision-making processes.

3. Methodology

3.1 Introduction

This study forms part of a State-wide inventory of historic gold mining sites, which commenced some eight years ago. The primary aim of the inventory is to systematically record, interpret, and assess historic gold mining sites on public land in Victoria for the purpose of providing a sound basis for management of such sites. Where possible sites on private land were also considered. The report has been written to assist the Department of Natural Resources, Parks Victoria and Heritage Victoria in conserving a very widespread and diverse resource.

3.2 Historical Research

The assessment process was designed to achieve the best practical results within the project's time frame and limited budget. The first stage of the assessment was an investigation of primary and secondary historical sources, including Mining Surveyors Monthly, Quarterly and Annual Reports; Mines Department maps, plans and reports; photographs and illustrations; published local histories and newspapers. This stage also involved a desktop survey to identify places already recorded.

3.3 Assessment Process

3.3.1 Site gazetteer

For each gold mining locality, a chronology of activity was compiled, detailing gold discoveries, mining parties and machinery, settlement patterns, population levels, and gold production figures. This information was used to target important mining localities and specific sites that had not been previously recorded, and also aided in the interpretation of sites.

The focus of the survey work was entirely on relics of above ground mining operations. For obvious reasons of access and safety, it did not cover any aspects of underground mining. The perspective presented by the inventory is thus biased, for on some types of mining sites, in particular; quartz reefing and deep lead mining, the bulk of operations and human effort took place below ground, hidden away from sight. A physical picture of underground mining technology and features can only realistically be gathered and recorded when new mining ventures take place on old gold mining sites.

3.3.2 Site selection process

The sites identified for survey were those considered likely to have significant heritage values. Some 150 sites were considered, 72 sites were visited resulting in 12 sites being identified as having potential State significance and recommended for listing on the Victorian Heritage Register. The following two-stage assessment process was used to determine what sites were visited:

i) *Consultation process*—Given the comprehensive historical research undertaken as part of the State-wide survey, additional information was mainly sought through consulting present and former Department of Natural Resources and Environment field staff (foresters and land protection officers), Parks Victoria rangers, and local community members. Information sought included:

- the integrity and condition of sites: in particular, whether the site still exists or has visible remains (including foundations),
- whether they know of other sites of a similar nature which had physical remains, and
- names of other informants who may have knowledge of gold mining activity sites in the south west region.

The consultation process was designed to sieve out sites not worth a visit because no substantial evidence remained, and to pick out sites which had played only marginal historical role (and hence not highlighted by the historical assessment) but now may have a high scientific significance due to their rarity and intactness.

ii) *State heritage threshold*—The following significance indicators were further used to refine the list of site to be surveyed:

- the role the place played in the historical development of the region and State's gold mining industry. For any given place significance will be greater where evidence of an association or event survives in situ,
- the scientific importance of the data represented in the features of a place and upon the degree to which the place may contribute further substantial information,
- the degree to which the place can be demonstrated as having historical integrity and /or rareness in its intactness or condition better than any other similar place,
- the measure of the awareness in the local community of the site and its role in the history of the locality, and
- the degree the setting of the place had been modified.

3.4 Site survey

The terms of reference for the project required that previously unrecorded sites assessed as having potential significant heritage values be visited and documented following set guidelines, so that they were comprehensively and uniformly described. Time and budgetary constraints necessitated that recording be of a fairly basic standard: brief descriptions, rough plans and photographs. It was envisaged that more detailed recording of the more significant sites would be undertaken in the future, when all sites have been identified, and the more significant sites have been determined.

3.5 Final ranking

The main thrust of current heritage assessment in Australia is that the more significant cultural places are generally those that retain unique qualities which can best explain the past to present and future generations. Seventy two gold mining heritage places were identified as having high significance during the course of the study. Only twelve were assessed as having the potential for nomination to the Victorian Heritage Register.

Places were assessed against the following criteria developed by Heritage Victoria to determine whether a place or object is of State significance and should be placed on the Victorian Heritage Register:

a. The historical importance, association with or relationship to Victoria's history of the place or object.
b. The importance of a place or object in demonstrating rarity or uniqueness
c. The place or object's potential to educate, illustrate or provide further scientific investigation in relation to Victoria's cultural heritage.
d. The importance of a place or object in exhibiting the principal characteristics or the representative nature of a place or object as part of a class or type of places or objects.
e. The importance of the place or object in exhibiting good design or aesthetic characteristics and/or in exhibiting a richness, diversity or unusual integration of features.
f. The importance of the place or object in demonstrating or being associated with scientific or technical innovations or achievements
g. The importance of the place or object in demonstrating social or cultural association.
h. Any other matter which the Council deems relevant to the determination of cultural heritage significance.

3.6 Victorian Heritage Register

The Heritage Act (1995) provides for the protection and identification of places of heritage significance to the State. It applies to both private and public land and to both public authorities, private owners and companies. The Act expands the type of place that can be listed on the register to include buildings, archaeological sites and landscapes. If a site is placed on the Heritage Register, a permit must be sought for works from Heritage Council unless those works are covered by an exemption negotiated at the time of registration

In the course of the project twelve historic gold mining places were identified as having high heritage values and were recommended for listing on the Victorian Heritage Register.

The table below shows the current state of registration for historic mining sites in the south west region of Victoria.

VHR	Name	Goldfield
HR1556	Heatherlie quarry	Stawell
HR1044	Hard Hills Workings	Ararat
HR	Langi Logan No. 2	Ararat
HR	Baxter Track Workings	Beaufort
HR1250	Tipperary Gully Workings and Race	Beaufort
HR	Hepburn Estate Deep Lead Mine	Creswick
HR1740	Berry No. 1 Deep Lead Mine	Creswick
HR1741	Berry Consols Extended	Creswick
HR1302	New Australasian No. 2	Creswick
HR1228	Humbug Hill Alluvial Workings	Creswick

HR	Borhoneyghurk Company	Dollys Creek-Morrisons
HR1759	Lal Lal Iron Mine	Dollys Creek-Morrisons

3.7 Victorian Heritage Inventory

The Heritage Act (1995) establishes a Heritage Inventory for all archaeological sites recorded in the State. The Act contains provisions to protect all archaeological sites and relics whether known or unknown. The consent of the Executive Director of Heritage Victoria is required to excavate, damage or deface an archaeological relic. Any relics found during excavation have to be reported to the Executive Director, and consent is required to sell relics.

Until the assessment of the proposed nominations by Heritage Victoria, all sites included in the gazetteer will be registered as archaeological sites and placed on the Victorian Heritage Inventory.

4. Report Body

4.1 Introduction

The research of primary resource material undertaken was designed to trace the development of gold mining activities in south west Victoria. This data helped produce a picture of the underlying technology and physical remains and to identify potential sites. Fieldwork and community consultation found the surviving gold mining heritage to be well preserved, on a majority of the goldfields. This was due to the mountainous nature of the country.

The following historical overview is designed to provide a context for the surviving gold mining heritage in South West Victoria. Because of the extent of the study area the historical overview is broken up into nine mining divisions: Stawell, Ararat, Beaufort, Landsborough (or Barkly), Creswick, Clunes, Blackwood-Blakeville, Steiglitz, Mount Egerton-Gordon.

4.2 Historical Overview

Stawell mining division

Early gold discoveries
William McLachlan is credited with the discovery of the Stawell or Pleasant Creek goldfield: he found gold in cement - ancient river gravels cemented together into a very hard conglomerate - in the bed of Pleasant Creek in May 1853.[1] The first rush took place in the winter of 1854: only forty diggers attended it. During this time, a few miners also extracting gold from quartz reefs outcropping on Big or Waterloo Hill, about a mile north-east of the first alluvial workings.

The mining population of the Stawell field remained relatively small (averaging 200 or less) until 1857 when a series of new alluvial gold discoveries were made. These included the Commercial Street Lead (Stawell proper); Wet or Deep Lead (four miles northwest of Stawell); and several cement-hills around Stawell (variously called forty-foot, fifty- foot, and seventy-foot after the depth at which gold was obtained). A large goldfield at Four Posts was also rushed in 1858, which led to the opening of the Welcome Lead [2], and in the same year, diggers opened the Great Western goldfield, which was subsequently rushed in August 1858 by some 9,000 diggers.[3]

The discovery of new alluvial ground in the Stawell district continued into the early 1860s. Shallow (dry) ground was successfully prospected at Navarre or Blue Mountains (on the west side of Pyrenees) and a rush set in at the end of 1861. The following year saw new ground at Great Western rushed. Known as the Great Western Township Rush, it was notable because of the large number of Chinese gold seekers.

Working the auriferous cement

1 Flett, The history of Gold Discovery in Victoria, 1979, p.330
2 Flett, The history of Gold Discovery in Victoria, 1979, p.332
3 Flett, The history of Gold Discovery in Victoria, 1979, p.342

At Stawell itself, alluvial gold continued to be obtained from auriferous cement into the 1860s with mining focussed on several hills, including Forty-Foot Hill, Seventy-Foot Hill, Silver Shillings Hill. On the latter hill, sinking was reported as being from 40 to 45ft, and the cement was yielding from 2 to 8 ounces per ton. The mining registrar estimated that the parties would realise from £1,000 to £1,500 per man.[4] The cement raised was carted to public crushing works for treatment, eg., the Cambrian Crushing Company were charging 15 to 20 shillings per ton, including cartage.[5]

The auriferous cement was also mined by hydraulic sluicing. In October 1863, three sluicing companies had completed their races and dams - the water coming from the Black Ranges.[6] Favoured sluicing localities were Church Hill, Taylor's Gully, Cooper's Hill, and Forty-Foot Hill. The old ground along the Commercial Street Lead was also extensively sluiced; sluice boxes were working the soft pipe clay in 1864. Sluicing along the Commercial Street lead appears to have been monopolised by Chinese miners [7] and as time went on, there was a general trend for the Chinese to monopolise shallow alluvial mining throughout the division.

There was a brief flourish in alluvial mining in 1871 with a rush to the Welcome Lead: in December 1871 the mining registrar reported that there were 250 miners working the lead with some 70 shafts having been sunk, to a depth of 65 to 90 feet, through cemented gravels and dry drift. By March 1872 the rush had peaked, with the lead having been opened up for nearly one mile and a small mining village had been formed which included two stores, a bakery, a shoemaker's shop, five public houses and about a 100 dwellings.[8] The demise of the Welcome Lead Rush alluvial rush marked the end of any more notable alluvial mining operations. About the only thing mentioned by the mining registrar after the early 1870s was the crushing of cement, obtained from Stawell's old Deep Lead by the Band of Hope and Hand-in-Hand Companies.[9]

Deep Lead mining

In 1861, several parties commenced mining deep ground with payable results on the Wet or Deep Lead to the northwest of Stawell. No permanent and defined gutter, however, was picked up. Two deep leads - Wild Cat or Wet Lead and Beyman's - were worked at Great Western in 1864, and for brief period these lead became the division's principal alluvial ground. Both leads were reported as being lost in the winter of 1865.[10] It was not until 1867, that matters improved once more, when a continuation of the Wet or Deep Lead was picked up in Welshman's Flat. The gutter yielding auriferous cement of above average yields, and was cited by the mining registrar as helping to remove the prejudice that had hitherto existed in regards the division's deep leads.[11] By the end of the year, three companies - Welshman's Flat, Red Star and Reef - had sunk and driven into payable ground; and their success had seen a small rush set in. The lead in Welshman's Flat, however, did not live up to expectations, and by the end of the decade only one deep lead company, the Royal Standard, was working. Deep lead mining limped on into the 1870s. The Trega Alluvial Company, in 1871, took over the Royal Standard Company's ground but closed down after only a few months. The Ophir Company also mined the Deep Lead during this time.

Rise of quartz reefing

Although the working of quartz reefs at Stawell can be traced back to the first gold discoveries in 1853, it took around ten years for reef mining to develop into a major industry. Whilst the Stawell reefs drew most of the attention during the division's main mining period between the 1860s to 1880s, other small reefing fields were opened. The early 1860s saw auriferous reefs discovered at Bald Hills (Concongella Run); Church Hill, near Stawell; Glen Dhu Reef at Crowlands; Elizabeth Creek (five miles north of Stawell); and on the eastern slopes of the Ironbark Ranges. Of these discoveries, it was the reefs - particularly Flying Doe and Dundee - discovered at Elizabeth Creek were the most extensively worked.[12]

---

4 Mining Surveyor's Reports, September 1861
5 Mining Surveyor's Reports, December 1861
6 Mining Surveyor's Reports, July 1862
7 Mining Surveyor's Reports, June 1864
8 Mining Surveyor's Reports, March 1872
9 Mining Surveyor's Reports, September 1873
10 Mining Surveyor's Reports, September 1865
11 Mining Surveyor's Reports, March 1867
12 Mining Surveyor's Reports, March 1865

By 1864, eleven distinct auriferous reefs were being worked at Stawell. These reefs tended to be aligned along two roughly parallel running ore bodies: Scotchmans line of reef (which included Moonlight, Mariner's, Perthshire, Hampshire and Victoria); and the North Cross Reef line (which included New Chum, Sloan's Flat, No-where and Wexford). The two lines of reef tended to converge as they ran southeast.

The quartz reefs were being worked by a large number of small companies or parties of working miners, each one holding 100-foot claims. Unlike reefs on many other quartz-mining fields, those at Stawell were found to get richer the deeper they were worked. This provided the Stawell field with its most enduring characteristics, that of deep sinking and the persistence of small mining claims. The richness of the ore made the claimholders unwilling to amalgamate into large companies, as was the tendency on some other reefing fields. Instead they were prepared to continue on their own, in the only direction available - downwards.

By December 1859, many of the claims had sunk shafts down to the 250-foot or water level. Once claim-holders hit the water level they became reliant on the pumping companies who had positioned themselves on the southern and northern ends of the reef lines. For example, the pumping companies draining North Cross Reef were the Cross Reef Company (also known as Grant, Lamont Company) and the North Cross Reef Company. By 1866, the drainage companies on Cross Reef were pushing their shafts down beyond the 600-ft level.

The small claimholders were also reliant on public crushing works. In 1861 there were at least eight crushing companies working on the field, namely the St George's, Wimmera, Moonlight, Great Northern, Victoria, Cambrian, North and South, and Lamont. The St George's Crushing Company appears to have been the largest to operate on the field during this time: in 1864 they had a 40 h.p. engine working 24-head of stamps which was later supplemented with several Chilian mills. Being a dry place, the batteries often went on reduced output (sometimes stopping completely) because of lack of water for crushing purposes. This was especially so in the prolonged drought during 1865 and 1866. There was also the other extreme - in July 1863 a flood swept away the water dams of the Wimmera, St George's, Victoria, Moonlight, and Grant, Lamont companies forcing all their stampers to ceased work.[13] All these companies had to erect new dams, described as being of improved construction.

The field's stamping power was continually being upgraded, eg., in 1867, an additional 96 heads were installed, with at least two of the old crushing companies, St George's and Grant & Lamont Company (also known as Pioneer and Galetea Company), replace their old plant. The latter company also erected another new plant of 40-heads in 1876, which was considered by the mining registrar as the most perfect in the colony.[14] During the upgrading, there was little change to the actual number of mills in operation on the field: an 1878 plan of the field shows seven mills: Leviathan Crushing Company (only battery east of Big Hill), Moonlight, Grant's Crushing Mill, Newington Crushing Company, Victoria Company, St George Company, and the Wimmera Company.

In order to maximise yields from small tonnages, there was an unusually long-time reliance on roasting quartz in kilns on the Stawell field. This reliance on quartz roasting parallels that of the Maldon goldfield, with the process being employed from the 1860s to late 1880s. Various reports issued by the mining registrar suggests that all claim holders burnt quartz before sending it to the batteries; in March 1868 he reported that many of the claims had room for no more than two kilns of moderate dimensions.[15]

1868 investment spree

In December 1868, the mining registrar reported that there had been four years of successful quartz mining in the division. This had been achieved by a host of small claimholders, eg. in March 1867 there were 71 claims being worked on 11 reefs.[16] This uninterrupted success attracted the attention of outside capital, instigating an investment spree which led to the rapid formation of numerous joint-stock (public) companies, and the marking off in leases of a very extensive area of country, principally

13 Mining Surveyor's Reports, July 1863
14 Mining Surveyor's Reports, June 1876
15 Mining Surveyor's Reports, March 1868
16 Mining Surveyor's Reports, March 1867

to the north-west of the worked reefs.[17] The new spate of prospecting led to two new reefs in the vicinity of Stawell being opened: the Clifton Reef (to northwest of Stawell); and the Birmingham and Wonga Wonga reefs to the southeast of the town. Several minor reefs were also discovered in the lesser-known areas of the division: Scallon and Company struck a payable reef at Bolangum; the Cosmopolitan Reef (southern part of the Parish of Bellelba, west of Black Ranges); and the Germania Reef (on Newington Station, 6 miles northwest of Stawell).

The investment spree, which saw £12,000 invested in machinery in three months, bore little fruit. By June 1870, many of the newly formed companies had ceased to operate and of the 85 mining ventures working, only 16 were producing payable results. Fortunately for the local community - two-thirds of the 5,500 population being directly involved in quartz mining [18] - the field's fortunes reversed when two mines, the Pleasant Creek North Cross Reef and Oriental, commenced producing rich gold from below the 600-ft levels.

Pleasant Creek North Cross Company

By 1872, Pleasant Creek North Cross Company had risen far above the pack of small claimholders, producing to rich gold and paying out large dividends to its shareholders: in March 1871, its owners were dividing £5,000 every three or four weeks and were 'three kilns off producing a ton of gold'. [19] The Pleasant Creek North Cross Company was cited by the mining registrar as the perfect example of what the amalgamated system of mining could achieve: that the joining together of small claims into one large lease increased efficiency and provide sufficient capital to prospect and mine profitably at depth. The process of amalgamation was slowly adopted on the field, some of the biggest mergers included: the Scotchmans No. 3 to 11 became the Scotchmans United, lease 11½ acres; the southern end of the Scotchmans Reef was taken over by the Amalgamated Scotchmans and Cross Reef Company, lease 23 acres; and the Federal Company, ended up with the largest lease, 96 acres.

The North Cross, and to a lesser extent, the Oriental Company, dominated the field's gold production through the 1870s: in 1874 the North Cross Company paid out £103,000 in dividends. The success of the Pleasant Creek North Cross and Oriental companies on mining the deep formations encouraged others. The mining registrar also links the mining revival to the widespread adoption of the tributing system of mining. [20] The revival quickly transformed the field and by the end of 1870, with claims that had not been abandoned for many years, and others that had been prospected for ten or twelve years with the expenditure of heavy calls, being worked with vigour and encouraging results. The shafts of the new progressive companies of the early 1870s - such as the Magdala, Prince Patrick, Prince Alfred, Carolina, Great Northern and Newington & Pleasant Creek companies - were all downwards to intersect the deep formations. By the end the winter of 1877, eight shafts had been pushed through the 1,000-foot level - Magdala (1,750ft); Prince Patrick (1,500 feet); South Scotchman's (1,262ft); Oriental (1,145 ft); Pleasant Creek Cross Reef (1,112ft); Extended Cross Reef (1,057ft); West Scotchman's (1,052ft); and Crown Cross United (1,045ft) - and one, the Newington and Pleasant Creek Company's was approaching the 2,000-foot level.[21]

Despite coming across the odd rich patch, none of the progressive mines were to go anywhere near matching the success of the North Cross Reef and Oriental companies. By 1879 the mining registrar was reporting common themes - a falling off in the amount of quartz crushed and a general decline in average yields. In contrast to the mania at the beginning of the decade, quartz mining was now described as extremely dull.

The lethargy gripping quartz mining was broken in 1880 when the Stawell mining companies commenced using National rock drills. These drills, driven by compressed air, proved to be extremely effectively and enable both prospecting and mining operations to be carried out with great economy. In several mines, the drills were used in conjunction with diamond drilling. The most successful use of the new technology was by the Magdala Company. It picked up some good indication in a diamond drill core in 1883 and commenced driving towards the ore body. In 1885 the company went through re-organisation to acquire the necessary funds to complete its prospecting program; and in 1886, the

17 Mining Surveyor's Reports, December 1868
18 Mining Surveyor's Reports, June 1870
19 Mining Surveyor's Reports, March 1871
20 Mining Surveyor's Reports, December 1860
21 Mining Surveyor's Reports, March 1877

fortunes of the new venture, the Moonlight Company, began to improve. The companies quarterly crushing from June 1886 showing a healthy and constant increase in the average gold yield. The improved showing of the Moonlight Company encouraged several other ventures - Cross Reef Consolidated, North Magdala and Moonlight Extended - to prospect hitherto untried country. The mining registrar wrote in September 1888 that the successful prospecting of this new country would once again make Stawell one of the principal centres of the mining industry in Victoria.[22]

The vigour of the late 1880s was not maintained in the 1890s and the fortunes of the Stawell field had declined dramatically by the turn-of-the-century. In 1903 the Stawell field was described as dull, with only three mines working, two of which - the Amalgamated Scotchmans and Perthshire and Three Jacks (an English company, also known as The General Goldfields Syndicate) - were in a prospecting stage of development. Only the Magdala-cum-Moonlight was mining on large scale: in 1903 it crushed 17,339 tons for 3,810 ounces, which was further augmented by 3,486 ounces gained through chlorination and cyanidation.[23] The Magdala Company continued to dominate Stawell's gold production until 1917, when the mine and plant was sold.[24] By this time the Magdala had exhausted all known reserves and were unwilling to commit any capital towards progressive works. In the course of its life, this mine had produced 315,467 ounces of gold worth approximately £1,261,868.

Discovery of gold in the Grampians

With the demise of the Magdala-cum-Moonlight, the Stawell field lost its appeal to miners. In the meantime, the Stawell mining division did however witness one more notable event. In 1900 there was a large rush to the Grampians area, south of Mount William, to what became known as the Maefking Rush.[25] Gold was first found in the area by two wood splitters, named Arthur and David Schache, but was not found in payable quantities, until Philip and Frank Emmett prospected the area. In July 1900 a small rush set in and gold was found in at least ten gullies.

The surveyed township at the Maefking rush was called Naram Naran. The rush was short lived and soon the mining population had been reduced to about 60 or 70 men. These men were described as sluicers and fossickers who were reported as making 'good wages' when water was available. At other times, the men found work in the local sawmills. As little to no new country was opened up the field did not experience in dramatic revivals or development of organised mining . One prospecting party did spend a couple of years driving a tunnel into Sugar-Loaf in search of a reef, but with no success. There was also a syndicate formed (Maefking Syndicate) to undertake extensive sluicing operations at Mount William. In 1938, the syndicate's tail race was reported as completed, but that sluicing had been postponed due to lack of water. The syndicate does not appear to have mined with any success.

SOURCES

Brough Smyth, R., *The Goldfields and Mineral Districts of Victoria*, Queensberry Hill Press, 1980 (reprinted 1980)
Flett, J., *The History of Gold Discovery in Victoria*, Poppet Head Press, Melbourne, 1979 (2nd ed.)
Geological Survey of Victoria, Ararat Mine Data, unpublished report, 1991/15, K. Inan
Geological Survey of Victoria, Ararat Economic Geology Notes, unpublished report, 1990/45, K. Inan
Mining Surveyors' Reports (Mount Pleasant or Stawell Division)
Sawyers, C.E., *Shepherd's Gold: The Story of Stawell*, F.W. Cheshire Pty Ltd, 1966

22 Mining Surveyor's Reports, September 1888
23 Annual Reports, 1903, p.70
24 Annual Reports, 1917, p.14
25 Flett, The History of Gold Discovery in Victoria, 1979, p.345

Ararat Mining Division

When Gold Commissioner Rede visited the newly opened Mount William field (later known as Ararat) in June 1854 he found 30 claims being worked by about 200 men. The small rush stemmed from a gold discovery, at Pinky Point, by a party headed by Joseph Pollard.[26] The Ararat district experienced several new alluvial rushes in 1855, which led to the development of two other goldfields: Cathcart and Armstrong's. Several auriferous reefs were also opened up, but were not worked to any degree until the 1860s.

From 1856 to 1858, one after another auriferous creek and gully was opened. Ferdinand Krause, who undertook one of the first geological surveys of the Ararat goldfield, lists 42 different auriferous locations opened during this time. Known as the Ararat Rush, the series of discoveries resulted in the assembly of one of the largest mining populations to grace any Victorian diggings. The peak of the Ararat Rush came in 1857, when Chinese gold seekers discovered the Canton Lead [27], and a party of European miners, opened Campbell's Diggings [28] (site of present day Moyston).

After the intensity of the Ararat Rush, the pace of shallow alluvial mining slowed. In the early 1860s there were only a few small rushes taking place, the two largest being Picnic Gully [29] (2½ miles from Ararat) and Londonderry (in the Black Ranges, west of Ararat). [30] With little new ground being opened up, the bulk of gold obtained was coming from the old ground mainly through the efforts of small sluicing and puddling parties. In 1864, the bulk of the division's 1500 mining population was reported as being concentrated in five main localities: Moyston, Rocky Point, Ararat, Opossum Gully and Armstrong's. They were still principally involved re-working the gullies: in March 1864, the mining registrar calculated that 30 puddling machines and 200 sluices and toms were in use throughout the division.[31]

The operations of the shallow alluvial miners were to be greatly affected by a prolonged drought through 1865/1866, which caused most of the gullies to be deserted. Conditions were so bad in March 1866, that the only available water souse, Opossum Flat Reservoir, in Oliver's Gully, was appropriated by the Borough Council for the exclusive use of the residents of Ararat.[32] The scarcity of water, plus the obvious fact that after ten years of attention, that the easily won gold on the field was becoming exhausted, induced many miners to end full-time mining and devote some of their time to the cultivation of land recently acquired by them under the 42nd. section of the *Amending Land Act*, 1865.[33]

1860s deep lead mining

From the mid 1860s, local miners began to take a serious interest in prospecting for deep leads that were believed to lie below the basalt formation, at a depth of 170 feet.[34] In September 1864, the mining registrar reported that 20 large prospecting claims had been taken up: four at Cathcart, six at Opossum Gully, five at Ararat, and five at Armstrong's Diggings.[35] A year later, more ground was taken up as several new mining companies acquired claims under a clause of the mining bye-laws known as 'extended block claims'. The new bye-law saw four companies - the Black Lead, Ararat, Canton and Burrumbeep - between them occupied 12,313 acres.[36] The bye-law, which linked the amount of land taken up to the number of miners involved, meant that the companies comprised a large number of miners, eg. the Grand Junction Company was listed as having 200 men and the Burrumbeep, 150 men. [37]

---

26 Flett, The History of Gold Discovery in Victoria, 1979,p.333
27 Flett, The History of Gold Discovery in Victoria, 1979, p.339
28 Flett, The History of Gold Discovery in Victoria, 1979, p.342
29 Mining Surveyors' Reports, March 1861
30 Flett, The History of Gold Discovery in Victoria, 1979,p344
31 Mining Surveyors' Reports, March 1864
32 Mining Surveyors' Reports, March 1866
33 Mining Surveyors' Reports, June 1867
34 Mining Surveyors' Reports, December 1865
35 Mining Surveyors' Reports, September 1864
36 Mining Surveyors' Reports, December 1865
37 Mining Surveyors' Reports, March 1865

The Great Extended Moyston, in early 1866, was the first of the deep lead company to commence mining. Its efforts inspired at least eight other large companies to work, all of which installed steam engines for winding, pumping and driving puddling machines. Of the deep lead companies, the Ararat Black Lead Co. had the most impressive machinery and plant: in March 1868 the company had five steam engines and two large iron puddling machines [38]: its first two steam engine (of 60h.p. and 25h.p.) having been installed in June 1866. Other companies to erect powerful plant were the Duke of Edinburgh Company, Cathcart Freehold, Cathcart Company, and Canton Company. Others, such as the United, Northern Junction, and Plutus companies, failed to progress beyond the paper-work.[39] None of the large deep lead companies formed in the mid 1860s mined profitably, and one by one, closed down. When the most powerful of them all, the Ararat Black Lead Company ceased work in the early 1870s, it placed a great damper on the development of the division's deep leads, and for the rest of the decade the industry saw only a few brief appearances from several small ventures, including the Cathcart and Rescue companies.

1860s-1880s quartz mining

The division's quartz miners had more success during the 1860s and 1870s than the deep lead miners. By the end of the 1850s several promising reefing locations had been opened up, including Campbell's Reef at Moyston, and Mitchells Reef. By 1860, Campbell's Reef was being intensively worked: at the reef's southern end the Three Crown Claim Company had installed a 20h.p. engine to drive pumping and winding gear, and 6-heads of stamps; alongside, running northwards were 19 smaller claims, many worked by whims; and at the reef's northern terminus was the Campbells Reef Pioneer Quartz Mining Company, with a 25 h.p. steam engine.[40] Two other reefs had been newly opened in the vicinity of Campbells Reef and their prospectors were burning kilns ready for crushing; at one of these new reefs, the Cambrian, there were two kilns, each capable of holding 14 tons.[41]

Campbell's Reef continued to be the focus for quartz mining into the 1860s. In March 1864, the mining registrar reported that the reef was responsible for almost all the division's quartz gold.[42] Mining on the reef was however being retarded by inadequate pumping machinery. In June 1865, a new company, the North Star, rectified this by installing a powerful 40h.p. engine for pumping purposes. This engine not only enabled its owners to mine down to the 500- to 600-ft level, but also made it easier for neighbouring claims to work below the water level. By the following year, mining along Campbell's Reef was booming with five companies having erected steam-powered crushing mills: North Star (20-heads); Southern Cross (16-heads); Kangaroo (12-heads) , and Perseverence (6-heads). All the companies went onto to mine profitably during the late 1860s. [43] The reef also boasted a large pryrites works, with the Crescent City Company treating refuse tailings with plant which comprised two sets of amalgamating pans, one erastor with iron drags, one saveall, and a furnace for roasting tailings. [44] The company's mill was located on the flat opposite the Southern Cross Company's mine and treated the tailings from the various Campbell's Reef batteries.[45]

The success of the Campbell's Reef mines inspired others. The Eaglehawk Company commenced working at Armstrong's, Mitchell's Reef was taken up by a large company, and the Noah's Ark Company, at Ararat, installed a 24 h.p steam engine and 8-head of stamps.[46] By early 1869 prospecting was reported as being 'prosecuted in all directions'. The mining boom intensified when prospectors profitably opened up Rhymney Reef [47] and also discovered some minor reefs - the Amalia, Bourke's and Hodge's - at Port Fairy. These latter reefs were taken to be a continuation of the Mitchells line of reefs proved to be rather poor in gold

By the following year, Ararat's quartz boom had collapsed with several mines having closed down. Particularly damaging had been the failure of the Eaglehawk Company, whose closure had thrown a

38 Mining Surveyors' Reports, March 1868
39 Mining Surveyors' Reports, December 1866
40 Mining Surveyors' Reports, May 1861
41 Mining Surveyors' Reports, May 1861
42 Mining Surveyors' Reports, March 1864
43 Mining Surveyors' Reports, September 1868
44 Mining Surveyors' reports, March 1868
45 Mining Surveyors' Reports, June 1872
46 Mining Surveyors' Reports, September 1867
47 Mining Surveyors' Reports, March 1869

'great blight' over other mining leases in the district. There had also been the tendency for over speculation, with new ventures being floated by persons of very small pecuniary means. [48] The only really bright news in 1870 was from Ryhmney Reef, where some good trail crushings had convinced the Victoria Company to erect a steam crushing (8-stamps) and pumping plant. [49] The companies first crushing of 120 tons yielded 134 ounces[50], but unfortunately was not able to maintain this high percentage and soon joined the rest of the quartz companies in a state precarious mining existence.

Quartz mining remained very dull throughout most of the 1870s with the main focus being on the development of the Ryhmney Reef. Towards the end of 1875, the Ryhmney Reef Company were reported as having struck payable quartz at the 294-foot level, and as a result erected a battery.[51] The first crushing of 249 tons yielded on average a ½ ounce to the ton, but the company could not maintain this yield and its battery was sold, and removed by the Ararat Quartz Mining Company, Mitchell's Reef. The latter company, in 1879, were reported as burning a small kiln of quartz [52] but were idle by the end of the year, pending the receipt of calls and the erection of additional machinery. The Try Again Company also worked Mitchell's Reef (with an equal lack of success) at the same time as the Ararat Company.

There was a resurgence in prospecting the division's lines of reefs in 1880s. Apart from the traditional prospecting methods, miners also utilised a small government diamond drill. Despite considerable activity, most of the decade passed without any payable results being obtained. The most promising discovery was made by Smart and Whitten on the eastern spur of Moyston Reef. Trial stone from their prospecting shaft went 21dwt to the ton, and in September 1887, the prospectors formed the Golden Gate Company. This company erected steam machinery (obtained from the General Gordon Company, Mitchell's Reef) but immediately closed down after an initial poor crushings.[53]

1870s hydraulic sluicing

In June 1872, the mining registrar reported that there were no companies or large co-operative parties at work on any of the division's alluvial fields. What mining was taking place, was being carried out by individual diggers (called fossickers) or small groups of two to four men.[54] By this time most of the shallow ground, commanded by existing water sources, had been puddled, sluiced and worked with tub and cradle to such an extent as to be no longer payable. Towards the end of 1872 alluvial miners began to construct reservoirs and cut races at elevations which enabled them to work the relatively untouched higher ground. One of the main sluicing ventures was by Hooper and party (also known as Port Curtis Sluicing Company), who constructed an expensive aqueduct from a reservoir in Opossum Gully to sluice the drift-capping of Port Curtis Hill. The aqueduct was being constructed in 1875 and had a 1,700-foot length of raised wooden fluming.[55] The Seimering Company also did a large quantity of race-cutting during 1876, and were reported as making £4 per man weekly from their sluicing operations in Sawpit Gully.[56] The company were sluicing to a depth of 20 feet, with their refuse being carried away by a 1,500 foot long tail race.[57] Opossum Gully and its tributaries was also a favoured sluicing locality during this time.[58]

The mining of cement (ancient river gravels cemented together into a hard conglomerate) was also undertaken around Ararat during the early 1870s. This was carried out profitably by the Londonderry Company. Others also mined this ore body: Kneal and party, on Bridle Hill, were reported as working a cement bed at 'a depth of 40 feet' and calcining the stone before crushing it in an inexpensive horse-

48 Mining Surveyors' Reports, December 1869
49 Mining Surveyors' Reports, March 1870
50 Mining Surveyors' Reports, June 1870
51 Mining Surveyors' Reports, March 1876
52 Mining Surveyors' Reports, June 1879
53 Mining Surveyors' Reports, September 1888
54 Mining Surveyors' Reports, June 1872
55 Mining Surveyors' Reports, March 1876
56 Mining Surveyors' Reports, September 1876
57 Mining Surveyors' Reports, March 1876
58 Mining Surveyors' Reports, June 1872

crushing mill [59]; and in 1875, the Maryborough Company were obtaining 3½ dwt per ton from cement obtained from 12 inch thick deposit on Commissioners Hill.[60]

1880s onwards - -mining focus shifts to deep lead mining
During the early 1880s, the flagship for the deep sinking alluvial miners was the Grand Junction Company, on Black Lead, near Ararat. The Grand Junction's powerful pumping was completed by December 1881, and six month's later its pumping shaft was down 170 feet. The company encountered so much underground water that it was not until the end of 1883 that it had managed to master the water; by this time they had increased their pumping capacity and were de-watering at a rate of 3 million gallons of water a day. [61] With the water finally under control, the company were able to mine enough gold to get into a position to pay off most of their working expenses. Despite a large amount of work towards the end of 1885, the company were unable to remain profitable and closed down in September 1885, after the expenditure of £32,000, and without paying out a single dividend.

The Heather Bell Company had the most successful at deep lead mine during the 1880s. This company was floated in late 1883 to test the ground at Burrumbeep, the supposed junctions of two leads: Cathcart and Phillip's.[62] The Heather Bell Company was puddling wash by June 1884, and after getting a yield of 156 ounces from 25 machines, continued to obtain steady returns, soon paying out its first 6d per share dividend.[63] The company mined until the end of 1886. Profitable mining by the Heather Bell Company caused a small rush to the area. Several ventures were floated, but with the exception of the Wheal Harriet, none actually mined.[64]

The 1880s ended with prospecting (by boring) being undertaken along the Hopkins River Valley. In September 1888, the Lani Logan Company secured leases, totalling 930 acres, around the first series of bore holes. Their shaft, approximately 5½ miles south of Ararat, was initially sunk with a whim, but after meeting with heavy water at the 65-foot level, a 24h.p. engine was installed.[65] The water got steadily heavier the deeper the company went, and in December 1880, the company suspended operations.

Matters did not improve for deep lead mining until the dawn of the new century. By this time a number of deep lead companies had tried and failed. In 1903 the Golden Gate Company at Moyston was reported as closing down; the Cathcart Proprietary Company (Denicull Creek) suspending operations pending the erection of electric power, winding, pumping and puddling machinery; and the Caledonian company had exhaustively prospected without finding any defined gutter. By the following year the Cathcart Proprietary was the only mine working of any scale in the division: in 1905, the company was reported as employing 105 men and winning 2,236 ounces of gold.[66]

Despite having relatively rich wash, the Cathcart Company found the ground very expensive to work and struggled to remain profitable. In 1909, the Cathcart Company's perseverance was rewarded with sensational yields from a narrow strip in the gutter. The richness of the gold created a mining boom and the lead was worked in a south-easterly direction to meet with the main Langi Logan Lead. The companies spawned, between 1909 to 1915, by the Cathcart Company's efforts included the Cathcart North, British Queen , Cathcart Victory, Cathcart Central, New Langi Logan, Langi Logan Extended, Langi Logan North, Langi Logan West, Great Langi Logan and Upper Langi Logan.

The new progressive deep lead companies did not find the going very easy. The water difficulties proved expensive and very difficult to over come, demanding the most up-to-date appliances available, eg. in 1915, the New Langi Logan Company's pumps were displacing some 3,000,000 gallons per day, and the Langi Logan South were discharging about 1,500,000 gallons.[67] Due to water

59 Mining Surveyors' Reports, June 1872
60 Mining Surveyors' Reports, September 1875
61 Mining Surveyors' Reports, June 1883
62 Mining Surveyors' Reports, December 1883
63 Mining Surveyors' Reports, December 1884
64 Mining Surveyors' Reports, September 1884
65 Mining Surveyors' Reports, June 1889
66 Annual Reports, 1905
67 Annual Reports, 1915

problems, most companies were taking 3 to 4 years to drain their section of the gutter, and as a result, several, such as the Cathcart North, British Queen, and Langi Logan Extended closed down, capital exhausted, without reaching the lead. Only the Cathcart Central (2,159 kg of gold) and New Langi Logan (1,113 kg.) went onto to mine extensively and join the Cathcart Company (1,766 kg) as major gold producers. [68] The New Langi Logan and Langi Logan South companies were the last to work on the field: the former closed down in 1925, the latter around 1922.[69]

In 1932 the New Langi Logan Deep Leads Company was formed; its leases covered most of the ground held by the two preceding companies. Water difficulties forced the new venture to close down before reaching the production stage.[70] The closure of the mine effectively ended deep lead mining in the Ararat area.

SOURCES Department of Mines, Bulletin 62, Deep Lead Gold deposits of Victoria, 1988
Department of Mines, Annual Reports, 1903-1915
Flett, J., *The History of Gold Discovery in Victoria*, Poppet Head Press, Melbourne, 1979 (2nd ed.)
Mining Surveyors' Quarterly Reports, 1859-1891

68 Bullentin 62, Deep Lead Gold deposits of Victoria, 1988, p54
69 Bullentin 62, Deep Lead Gold deposits of Victoria, 1988, p54
70 Bullentin 62, Deep Lead Gold deposits of Victoria, 1988, p55

Beaufort Mining Division

In the winter of 1854 gold was discovered at the Yam Holes, a small hill on the outskirts of the present day Beaufort. The gold's discoverers, Windus, Johnston, Jewell and Thomas, also claimed responsibility for opening up the ground which sparked the famous Fiery Creek Rush. The rush to Fiery Creek in early 1855 was lauded as one of the most exciting, richest and violent rushes in the colony.[71] The first place opened along Fiery Creek (also called the Main lead) appears to have been Musical Gully.[72] By November 1855, most of the tributary gullies into Fiery Creek had been opened. The rush extended in 1856 when gold was discovered in gullies and flats, such as Wingfield Gully, Waterloo Flat and Sailor's Gully, which lay on the other side of the ranges, to the east of Beaufort. New ground continued to be opened up in the area up until at least 1858, by which time the fury and size of the rush had been greatly dissipated: in December 1859 the division's mining population numbered 3,800 (3,200 European miners and 600 Chinese).[73]

1860s - Handsome returns from sluicing and puddling
As the pace of discovery slackened in the early 1860s, miners commenced to re-work old ground. The mining registrar's reports for this time continually describe the results from this pursuit as being 'most handsome'. No greater illustration of the success of sluicing and puddling was the fact that by 1861 European miners had re-occupied, and displaced Chinese miners from, the upper portions (northern part) of the Main Lead, and nearly all the available auriferous hills. This was against the usual trend for Victorian alluvial fields, which tended, by this time, to be monopolised by Chinese miners.[74]

Success on re-working old ground rested an ample supply of water to puddle or sluice large volumes quickly. By October 1861, the whole of the surface water rights in the division (available for mining purposes) was in the hands of European capitalists.[75] The water to the Beaufort field came via two main water race systems. One race line appears to have been constructed by the Wimmera Sluicing Company and brought water in from Mount Cole area.[76] The other major system appears to have been linked to Black Swamp, near Waterloo. At the swamp, a mile square dam had been constructed, from which the water was elevated, by a steam engine, to fluming on a hill, and then conveyed by race to the workings. Water from the swamp was being used in 1861 - by the Bill's Hill Sluicing Company, Rankin's Sluicing party, and the Waterloo Company - for ground sluicing purposes.

The mining registrar lists several companies and locations in respect to sluicing during 1861: the Dancing Feather and Phoenix sluicing company, near Golden Point, Fiery Creek; Red Hill Sluicing Company, Nuggetty Gully; Wimmera Sluicing Company, Jonathan's Gully; Fiery Creek Steam Sluicing Company, near Cemetery Hill; Watkins and Bill's Hill sluicing companies (Waterloo Hill and Bill's Hill); and the West of England Sluicing Company, Surface Point. Sluicing also was carried out at Yam Holes Hill. Puddling was also widely used when the washdirt proved unsuitable for sluicing. While many puddlers were able construct their own dams, some paid a rent to the sluicing companies for the water they required to carry out their vocation.[77] The mining registrar cited Upper Golden Point (upper Fiery Creek) as a favoured puddling location - there were seven puddling parties (6 European and 1 Chinese) were working with great success in 1861. Six of the puddling parties were renting water, and the other had its own dam.[78] Although horse-power was the norm for puddling, at least one operation. by Messrs Allen and Company, involved the installation of steam-powered puddling machine.[79]

During the early 1860s some alluvial miners also carried out tunnelling operations. The mining registrar recorded one Chinese party running tunnels and tramways into a hill and carrying on their

---

71 Flett, The History of Gold Discovery in Victoria, 1979, pp.310-318
72 Flett, The History of Gold Discovery in Victoria, 1979, pp.318
73 Mining Surveyors' Reports, December 1859
74 Mining Surveyors' Reports, October 1861
75 Mining Surveyors' Reports, October 1861
76 Mining Surveyors' Reports, November 1861
77 Mining Surveyors' Reports, September 1861
78 Mining Surveyors' Reports, October 1861
79 Mining Surveyors' Reports, December 1861

work in a most extensive manner.[80] There was also one small battery erected to crush cement obtained from the bed of Fiery Creek.

By the mid 1860s, dwindling returns saw the European miners drifted away from shallow alluvial mining. From this time the mining registrar reports the Chinese monopolising the shallow ground, occupied mainly with puddling. As this branch of mining was seasonal, confined to the winter months, the Chinese were prepared to do other things during the summer: they were reported as being were particularly sought after by farmers for harvest work, being prepared to work for wages well below that acceptable to a European miner.[81] The Chinese also took part in deep sinking, usually reported as taking over whim claims from disgruntled European owners. One party of Chinese were particularly noted by the mining registrar during the early 1870s - first mining on the Main Lead, then Southern Cross Lead, from which they moved to work a claim at Charlton.

1860s-1870s - Limited quartz mining
The alluvial rushes of the 1850s did not result, as on many other Victorian goldfields, in large numbers of auriferous quartz reefs being worked; in fact, by the late 1860s only four reefs had been found to be gold bearing.[82] There were only two brief periods in Beaufort's early mining history when these reefs received any significant attention. The first was in 1868 when several shafts were sunk on the Sheet Anchor Reef, at Waterloo (6 miles north-east of Beaufort). This work was done by a co-operative party of 10 men (Sheet Anchor Company) who also constructed a dam and installed an 18h.p. engine and 12-head of stamps. After suffering several delays, which included the bursting of their boiler, having to remove the battery to a new location (over the hill, to the next gully north), and sinking to 190 feet, the company closed down and sold off their plant.[83] The Red Hill Reef was also unsuccessfully prospected during this time by at least two shafts.

There was also another burst of quartz mining in the early 1870s. In March 1872, six parties, respectively led by Graves, Nettleton, Tullock, Brown, Downie and Lockhart, commenced prospecting operations in the district. By the end of the year their efforts had led to three main mining ventures - the Richmond Reef Quartz Mining Company, Camp Hill Quartz Tunnelling Company and Charlton Quartz Prospecting Company. Only the Richmond Company managed to progress to the production stage: the company erected a small battery and crushed several batches of ore from the 180-foot level (98 tons for an average of 21 dwts, and 55 tons for average of 1¼ ounces). The company then closed down. Their battery was erected on the site of the old Sheet Anchor's mill.[84] The Tunnelling Company on Camp Hill stopped work, from lack of capital, after driving 600 feet[85]; and the Charlton Prospecting Company was wound up after sinking to a depth of 180 feet.[86]

1860s - Early deep lead sinking
In the early 1860s, a small number of miners commenced to prospect the shallow leads around Beaufort in an attempt to find deeper running auriferous gutters. Many of the men taking part in the search for deep leads were new arrivals, skilled in the art of deep sinking, having learnt the trade on the Ballarat field, at places such as Brown's, Linton's, Carngham and Smythesdale.[87] The tools of trade for these miners were horse-powered haulage machinery (either whips or whims), and for the more affluent, or go-ahead, steam engines. Deep lead mining involved sinking to depths of beyond 100 feet, often through very wet and dangerously unstable ground. It was to be this type of mining, which was to provide the division with its most enduring character. The miners searched for buried leads along Fiery Creek, particularly at the Beaufort and Raglan ends; and along the Trawalla Creek valley, at Chute (also called Charlton), Waterloo and around Trawalla.

By 1861 the focus of deep lead mining was on two leads at Beaufort - the Southern Cross and Garibaldi (or Jock's). Each of these leads had at least eight companies sinking and driving with the

80 Mining Surveyors' Reports, June 1865
81 Mining Surveyors' Reports, December 1870
82 Mining Surveyors' Reports, March 1867
83 Mining Surveyors' Reports, December 1869
84 Mining Surveyors' Reports, September 1872
85 Mining Surveyors' Reports, December 1872
86 Mining Surveyors' Reports, September 1872
87 Mining Surveyors' Reports, June 1861

assistance of steam engines.[88] So concentrated was the mining at Beaufort in 1861 that the only unoccupied mining ground was the Police Paddock. Even this was later taken up and mined. [89] Despite a few of the small parties hitting on some rich patches, none were able to prove the existence of a permanent payable lead. This failure was attributed to the lightness or inefficiency of the steam engines being used, and the small number of men employed in proportion to the labour required for the speedy development of a lead. Bad judgement was also cited, especially an expensive mistake of putting drives in at too low a level. According to the registrar many miners assumed that the heaviest deposits of gold lay in the lowest point of the gutter, but experience showed that it was often deposited on the slopes. As result, the miners sunk too low and had to bore up from anything from 4 to 14 feet.[90] There was also the fact that the routes of the leads themselves were very tortuous and therefore difficult to trace. The mining registrar described the Southern Cross lead as having a particularly 'crotchety character.[91]

By 1863, the mining community's hopes were particularly pinned on the operations of the Beaufort Junction Company on the Fiery Creek Lead. Unfortunately for all concerned, the company worked for only 12 months on the southern end of the creek, expended all its capital of £4000, and only obtained four ounces of gold.[92] Its engine, purchased for £1600 was sold to a Creswick mine for £600.[93] Failure was also experienced at the northern end of Fiery Creek, where the Old King Charlie's Company was prospecting near Raglan. Their lease had previously been tried by the Daughters Of Freedom Company.[94] On the heels of the failures along Fiery Creek came the end of profitable mining on the Southern Cross Lead, with all companies closing down in quick succession.

Prospecting along the Trawalla Creek Valley (Chute to Trawalla) caused the most excitement in the mid 1860s. In September 1865, a party of 12 men (Defiance Company) obtained upwards of 200 ounces in three weeks from a claim at the southern end of the valley, from a lead in Sailor's Gully. Their success, and the gully's previous history of good yields from puddling and other shallow work, influenced the mining registrar to predict that the Sailor's Gully would eventually the best diggings in the division.[95] His prediction was wrong, and the Defiance, and other companies who worked alongside - the Helmsdale and Royal Saxon - were shortlived ventures. The same situation took place at the northern end of the valley, where the Charlton, Crinoline and Prince of Wales companies mined successfully at Chute. They picked up a rich lead in Sulky Gully and worked profitably until 1868. The Phoenix Company (Seal's and party), mining in the same area, was however a notable failure. In 1869, this company's engine and plant were described as the best in the division, but within a year, the shaft was swamped and the company was defunct. [96]

Deep sinking in the early 1870s was extremely dull with a number of companies prospecting (referred to as progressive companies); and only two established companies, at Waterloo, the Young Duke and Band of Hope mining profitably. The Young Duke (comprising 14 men) was particularly successful, eg. in one month they obtained £800 worth of gold. [97] When the company stopped work in mid 1871, the mining registrar reported that for its three years the miners had averaged £5 per man weekly.[98] A third co-operative party, Toe and Company, also mined with handsome results from 1871, and in 1874 was reported as having three steam engines and two puddling machines. Both the Young Duke and Toe and Company were re-organised in 1874, and re-named Beaufort and Waterloo companies respectively. This move, to supply extra capital for more ambitious mining, proved fatal in both cases. The collapse of the Waterloo Company was reported by the mining registrar as throwing a 'great damp upon the immediate district.

Mid 1870s-1880s: Successful deep sinking

88 Mining Surveyors' Reports, June 1861
89 Mining Surveyors' Reports, June 1861
90 Mining Surveyors' Reports, July 1861
91 Mining Surveyors' Reports, August 1861
92 Mining Surveyors' Reports, June 1864
93 Mining Surveyors' Reports, September 1864
94 Mining Surveyors' Reports, March 1865
95 Mining Surveyors' Reports, September 1865
96 Mining Surveyors' Reports, March 1869
97 Mining Surveyors' Reports, March 1871
98 Mining Surveyors' Reports, June 1872

By 1875 three progressive companies had made a profitable transition to mining: Tomen and party, on Waterloo Lead; and the Golden Fleece Company (also known as Cummings and Party) and Got-him-By-The-Wool Company (Manners and Party), at Beaufort. The Golden Fleece Company were mining on Garibaldi Lead, and the Got-Him-By-The Wool Company were working on the Red Streak Lead. A third company, the Market Reserve, also mined profitably within the township boundary. Two other new ventures, the New Charlton and Band of Hope companies, also mined with limited success at Chute.

In 1875, the mining registrar reported that a want of capital amongst the miners was proving a great impediment to the development of the field. Future hopes, he predicted, rested the Got-Him-By-The Wool Company, and the New Victoria and the Golden Gate companies on the Waterloo Lead. In March 1876, the New Victoria Company picked up a 100-foot wide auriferous gutter which averaged some 2½ ounces of gold to a puddling machine [99] and by the following year it had produced enough to spark a rush. In March 1878, the mining registrar reported that work was progressing on some eight to ten new leases, and the division's major leads at Waterloo, Sailor's Gully, Beaufort and Chute were being investigated. The New Victoria Company led a lively mining scene which included the Hobart Pasha, Perseverance, New Discovery and South Victoria companies, on the Waterloo Lead; Telegraph Co-op, Homeward-bound and Beaufort companies, Beaufort; Royal Saxon and South Defiance, Sailor's Gully; and Waterloo Consols, Charlton.

The late 1870s deep lead mining boom had run its course by 1884. Some of the companies, such as the Telegraph Co-op, Homeward-bound and Beaufort, were early causalities; but all the others went onto to mine with various degrees of profit. By 1884, the profitable mines were gradually added to the list of defunct mining companies. When the New Victoria Company stopped work in 1885, it had gained the record of being the division's greatest deep lead mine: having obtained 36,778 ounces of gold, valued at £153,488.[100]

A decline of the Beaufort field rapidly set in after the demise of the New Victoria. Within a year or so, most of the companies had closed down and their plant and machinery removed from the mining division. In March 1887, the mining registrar wrote that he could see little prospect for the immediate recovery of the field and concluded that the 'mining pulse beats very low indeed'.[101] The late 1880s saw several ill-fated attempts to revive the field by the New Royal Saxon, Saxon Consols, and Waterloo companies. Through the 1890s, the field was the realm of a few small co-operative parties.

Short-lived revival at the turn of the century

Deep lead mining was revived in the Beaufort Division at the turn of the century when the Raglan Lead was profitably worked for about 2kms of its length by the Sons Of Freedom group of companies. The principal mines that operated on this lead between 1900 to 1904 were the Sons of Freedom Central, Sons of Freedom, Sons of Freedom South, and Sons of Freedom Extended. The last mine in operation at Raglan was the Sons of Freedom Junction.[102] In 1904, this company erected a winding and pumping plant and sunk a shaft.[103]

With the demise of the Sons of Freedom group of companies, deep lead mining entered a new prospecting phase. In 1907, a new company called The Carter's Deep Leads (an English concern) commenced to cart machinery and plant to a site about the junction of the Waterloo and Beaufort leads. [104] By the following year, the company had sunk a main shaft and risen to the wash from which payable dirt had been obtained. Unfortunately for the company, the ground proved expensive to work and they struggled to mine profitably. The company was re-organised at the end of 1911 and renamed the Beaufort Deep Leads. In 1912, two other companies - the Northern Hope (formerly Morris and party) and the Hope Company - were also engaged in extensive mining operations. The Northern Hope proved to be the most successful of the three, it mined until 1916 and produced 553 kg of gold. The other two mines, produced about 250kg of gold each.[105] The Beaufort Deep Leads Company

---

99 Mining Surveyors' Reports, March 1876

100 Mining Surveyors' Reports, July 1887

101 Mining Surveyors' Reports, March 1887

102 Canavan. F, Deep Lead Gold Deposits of Victoria, 1988, p.78

103 Annual Reports, 1904, p.68

104 Annual Reports, 1907, p.138

105 Canavan. F, Deep Lead Gold Deposits of Victoria, 1988, p.78

also suspended operations in 1916, which left the Northern Hope as the only operating deep lead mine in the district. The Northern Hope closed down shortly after, finding it impossible to find any further payable runs of wash.[106]

Twentieth century sluicing and dredging

The re-working of shallow alluvial ground through pump-sluicing and bucket dredges became an important factor in the gold production of the Beaufort district from about 1906. In this year, two main operations commenced: the Yam Holes Sluicing Company and the Fiery Creek Dredging Company. The latter venture was the most successful and operated on the upper part of the Fiery Creek or Beaufort Lead to around 1918.[107]

SOURCES Canavan. F, Deep Lead Gold Deposits of Victoria, 1988
Department of Mines, Annual Reports, 1904 -16
Flett, The History of Gold Discovery in Victoria, 1979, pp.318
Mining Registrars' Monthly and Quarterly Reports, 1859-91

106 Annual Report, 1916, p.48

107 Canavan. F, Deep Lead Gold Deposits of Victoria, 1988, p.78

Landsborough or Barkly Mining Division

1850s-1860s: gold discoveries

Gold mining history of the Landsborough Division commenced with a series of small discoveries between 1853 and 1855.[108] The first gold diggings were on Malakoff Lead (also referred to as the Crowlands Diggings and later known as the Landsborough Lead) which experienced its first major rush in 1856 by diggers from the nearby Fiery Creek field.[109] The miners traced the lead northwards, and in 1858 found another rich patch, which was called Glasgow Lead. A small temporary mining village, known as Edinburgh, formed around the Glasgow Lead workings. The lead was lost and four years passed until it was refound: in April 1862, a load of washdirt from prospecting shaft bottomed on the Glasgow Lead, yielded 1½ ounces of gold. The lead was rushed and traced towards for some distance towards the old workings of the original rush to Malakoff Lead.

At the same time miners refound the Glasgow Lead, other gold seekers were vigorously working Barkly Flat, to the east of Landsborough, stock-piling their washdirt until the onset of winter rains. Subsequent washings yielded rich gold and the rush expanded to take in all gullies draining to the flat. The Barkly Flat Rush was short-lived but increased the division's mining population to over 3,600 miners.[110] It was immediately followed (in September 1862) by the Landsborough Rush, which saw the local mining population joined by an army of diggers from surrounding goldfields. This new rush commenced when a prospecting shaft bottomed at 65 feet on a 12 inch thick gutter of auriferous wash. The washing was extremely rich and by the following month there were some 6,500 miners working the lead.[111] The Landsborough Lead was situated a third of mile north of the point where the old Glasgow Lead had been lost. The lead from 4 to 8 chains wide, running through a 14 mile flat, offered plenty of opportunity for the large army of miners. As the lead was traced north-west down the gully it proved very patchy, with some sinking golden holes that yielded as much as 7 ounces to the load, while others sunk duffers, which only yielded as many pennyweights.

By May 1863 the power of the Landsborough Rush was over and the miners were gradually drawn away by a series of new rushes culminating with the Great Western rushes in 1864, which, within a space of three months, reduced the mining population from 1,980 to 970.[112] Although the mining registrar predicted that the bulk of the population would return, a prolonged drought in 1865 and 1866 and the opening of other fields in the late 1860s, such as Spring Creek and Berlin kept the division's population relatively small.

New rushes still continued to occur after the great Landsborough Rush, but they tended to be less significant. They led to a series of new leads being opened around the town during the mid 1860s.[113] The miners found a new lead to the north of the town (Burwood or Snake), but found its route torturous and only managed to trace it for less than a mile. At the same time, there was also a rush to Emu Flat (3 miles west of Landsborough). The lead found running through Emu Flat also proved difficult to trace, but despite the depth of sinkings (77 to 100 feet) it was followed for three miles before being lost. Working the lead was also difficult because the nearest water for washing purposes was 3 miles away. Yields were also quite varying ranging from 4 dwts to 3 ounces.[114] The following years saw persevering miners re-finding a lost lead called the Native Youth, which was subsequently traced for a distance of ¾ miles with results varying from 17dwts to 3 ounces per load[115]; and also open up two new leads. The rushes created by the discovery of the two new leads were known as Paul's and Ray's. The lead traced by Ray's Rush was reported by the mining registrar as being the most remunerative opened since the Landsborough Rush.[116]

Paul's and Ray's rushes were short-lived and by the December 1866, the mining registrar reported that the centre of mining had been shifted westwards, where a number of leads and patches of rich gold

---

108 Flett, The History of Gold Discoveries in Victoria, 1979, p.447
109 Flett, The History of Gold Discoveries in Victoria, 1979, p.447
110 Mining Surveyor's Reports, July 1862
111 Mining Surveyor's Reports, September 1862
112 Mining Surveyor's Reports, March 1864 and June 1864
113 Flett, The History of Gold Discoveries in Victoria, 1979, p.448
114 Mining Surveyor's Reports, December 1865
115 Mining Surveyor's Reports,June 1866
116 Mining Surveyor's Reports, September 1866

had been found, the principal location being known as the Cambrian Lead. This lead was worked by some 800 miners, and traced in a south-westerly direction for a distance of 3 miles. It was hoped, but never proven, that the Cambrian Lead would eventually lead its followers to a junction with the main Landsborough Lead.[117] The Cambrian Lead had been lost by March 1867 and from this time, alluvial mining began to become very dull, with fewer new discoveries, the most notable being Wallers Rush in 1867 [118] and the opening of lower Malony's Lead in 1868.[119]

1860s - Re-working old ground: puddling and sluicing

While the Landsborough mining news of the 1860s was dominated by the discovery and working of new leads, re-working of abandoned ground was steadily being undertaken. This involved both puddling and sluicing, though the statistic supplied by the mining registrar shows that sluicing became the dominate technology: in mid 1864, 40 puddlers and 50 sluices and toms are listed for the division; 18 months later the ratio had changed to 28 puddlers, 125 toms and 26 sluice boxes.[120] The reworking of the old ground continued throughout the 1860s, but by the end of the decade it was becoming harder to mine the old ground profitably.

Glenpatrick, in particular, was the focus of large scale alluvial mining operations, though initially work was carried out with much difficulty because of a great underflow of water. Messrs Skellett, Hartle and Company had rectified this situation by September 1865 (after three years of exertions) by the construction of a large tail race. The race not only drained much of the higher part of the gully, but also carried off the sluiced waste-materials. Messrs Skellett, Hartle (also known as Midland Sluicing Company) continued to sluice successfully until the late 1860s. In September 1866, the sluicing company was reported as making £6 per man weekly.[121] This company were joined by two other sluicing operations - Blane and Party, and Johnson and Party - and several parties of Chinese miners.

While the sluicing parties worked the higher portions of the gully at Glenpatrick, the Glenpatrick Gold Mining Company commenced a prospecting shaft at the head of the gully in hope of picking up a deep lead. This company erected a whim and a puddler, but by June 1866 had found the horse-powered machinery inadequate for drainage purposes. The Glenpatrick Co-operative Company also sunk a shaft looking for a deep lead. Being higher up the gully, they soon hit water and were forced to construct a tailrace approximately 2,100 feet long, the greater part of which was established by tunnelling.[122] The tailrace enable the Co-operative company to bottom their shaft, but no lead was found. Both companies had ceased to exist by the late 1860s.

1860 s- Quartz mining

The diggers working the alluvial gold also discovered several quartz reefs, but all proved to be poor gold producers. One of the earliest worked was the Glen Dhu Reef, at Crowlands. This reef, situated about 25 miles north-north-east of Ararat had some 70 to 80 claims taken out on it, but only a handful were worked. Within a couple of months most of the miners had left the reef to attend the Lamplough and Inglewood gold rushes.[123] The July 1862 mining statistics shows how little interest was being shown in quartz mining: 3,671 alluvial miners and only 50 quartz miners, and only six known auriferous reefs and one steam-engine employed in quartz mining purposes.[124] The attention shown towards the reefs did not increase until the mid 1860s, when a prolonged drought halted most alluvial mining. The mining registrar reports three new reefs being found during this time (one of them being at the head of Emu Flat); and that the old reefs of Native Youth, and Glendhu were receiving some attention. The latter reef was being prospected for both gold and silver. The registrar also reported that company at Glenpatrick were driving a tunnel to prospect the main range. [125] The tunnel was driven 250 feet before work was suspended. Work on the reefs at Emu Flat progressed far enough for the Emu Flat Quartz Mining Company to be formed in 1866, but the company never mined.

---

117 Mining Surveyor's Reports,December 1866
118 Mining Surveyor's Reports,December 1867
119 Mining Surveyor's Reports,December 1868
120 Mining Surveyor's Reports, June 1864 and December 1865.
121 Mining Surveyor's Reports, September 1866
122 Mining Surveyor's Reports, June 1866
123 Mining Surveyor's Reports, March 1860
124 Mining Surveyor's Reports, July 1862
125 Mining Surveyor's Reports, September 1865

In 1869 the mining registrar reported that a considerable extent of ground had been taken up on various lines of abandoned reefs, including Tramway, Woodlands, Criterion, Victoria, Montgomery, Powis, Glendhu and Stringy-bark reefs.[126] Five companies had been formed, and that one of these, the Empire Company (on Montgomery Reef) was in the process of installing a battery. The company was both tunnelling into a hill and sinking a shaft. Their battery was completed in March 1870, but had been sold and removed from the division by March of the following year.[127] None of the other companies fared any better and the reefs were again abandoned.

1870s-1880s depression

Mining during most of the 1870s and 1880s was not very notable. Most of the alluvial prospecting undertaken during this time was mainly directed towards trying to find a deep lead. For example, in 1875 the Kara Kara Company unsuccessfully bottomed a shaft on Landsborough Flat [128]; and in 1880, the Cosmopolitan Company, on the main lead at Barkly also tried unsuccessfully.[129] There was also some limited quartz prospecting, for example, the Wimmera Company tunnelled for a quartz reef, but they suspended their work after driving the tunnel only 100 feet.[130] The consistent theme running through the mining registrar's reports are dullness, apathy and depression. On several occasions the mining registrar was at pains to point out that of the mining population, which now number no more than 400 hundred or so, only about one-third was actively involved in gold mining. The rest were doing anything that came their way.[131] The gold produced during this time was mainly obtained by the Chinese who persevered working the old ground through puddling and paddocking.

Late 1880s - Government Prospecting Vote

Mining in the division during the late 1880s, given its depressed state during the preceding 15 or so years, was pursued with some vigour. Aided by funds from the government widespread prospecting took place which resulted in some interest being shown in several areas, including the Glenpatrick alluvial workings, the Glendhu Reef, and in the Powys and Wimmera reefs near Landsborough. By the end of 1889, pumping machinery being erected at Glenpatrick by the New Victoria Company; and a shaft had been sunk on the Wimmera Reef. The Wimmera Reef shaft was only sunk 25 feet, with parcels of quartz being crushed at Melbourne, and at the Moonlight Company's battery (Stawell) which gave an average yield of 1½ ounces to the ton.[132] The reef, however was not mined and the prospecting funds were withdrawn.

Twentieth century sluicing

Gold mining in the twentieth century was not a significant feature of the Landsborough district. The only notable operation commenced in the late 1930s with the upper and shallower parts of Landsborough Lead being hydraulically sluiced by the Avoca Development Company (later Malakoff Alluvials). This company worked intermittently from 1937 to 1951.[133]

SOURCES Deep Lead Gold Deposits of Victoria, Canavan, 1988, Bulletin 62
Flett, The History of Gold Discoveries in Victoria, 1979
Mining Surveyors Monthly and Quarterly Reports, 1859-1891

126 Mining Surveyor's Reports, June 1869
127 Mining Surveyor's Reports, March 1871
128 Mining Surveyor's Reports,March 1875
129 Mining Surveyor's Reports, June 1880
130 Mining Surveyor's Reports, March 1875
131 Mining Surveyor's Reports, December 1872
132 Mining Surveyor's Reports,December 1889
133 Deep Lead Gold Deposits of Victoria, Canavan, 1988, Bulletin 62

Creswick Mining Division

Early to mid 1850s - Early gold discoveries
Two parties of miners, known as Mains' and Hogbens', are jointly credited with the discovery of the Creswick goldfield. These discoveries, made in the latter part of 1851, led to the field being rushed. Early alluvial mining at Creswick was mainly focussed on a system of shallow auriferous leads around the site of the present town, and the adjoining ground to the north and east. In 1854 there was a dramatic increase in the mining population when an extensive system of shallow leads was opened to the west of the town. The focal points of the 1854 rush were a series of low hills, which included Grahams, Bald, Clarkes, Hard, White, Humbug, Lucknow and Ironstone; and their associated gullies like Long, Mopoke and Nuggetty. After the 1854 rush had subsided, the diggers who stayed (not lured away by other rushes) carried on four different branches of mining: re-working the abandoned auriferous ground with puddling machines and sluice boxes; working cement (ancient river gravels cemented together into a hard conglomerate); extracting gold from quartz reefs; and tracing and mining deep alluvial leads.

Mid 1850s-1860s: Reworking of shallow alluvial ground - sluicing and puddling
Sluicing at Creswick was confined to the shallow end of the field, principally to the west and south of the town. Water to work the alluvial deposits was brought in open channels (called races) from dams constructed in the higher catchments of Slaty and Back creeks. The races wound their way for considerable distances round the heads of intervening gullies before reaching their destinations. One sluicing company, the Humbug Sluicing Company, also used a patent bitumentized pipe to cross Slaty Creek: the pipe had a diameter of 8 inches, was a half mile long, and had a maximum thickness of 7/8th of an inch.[134]

The hills opened during the 1854 rush proved to be extremely suitable for sluicing, being covered to considerable depths by rich gold-bearing soil, for example, some 30 feet of soil was washed from the surface to bedrock at Humbug Hill. Sluicing could pay very well, for instance, one party working on Bald Hill in the winter of 1860 were making £6 to £10 per man weekly.[135] Due to the dryness of the environment, sluicing was extremely seasonal, and when a good stream of water came through, work was carried on both day and night. This was the case on Humbug Hill in the winter of 1859, where a sluicing party worked shifts (6 hours on, 12 hours off) managing to wash 1,500 cubic yards of soil before the water run out. For their efforts they obtained 245 ounces of gold.[136] The Humbug Hill operation, which involved cutting faces, turning the water along the base of the face and collapsing blocks of ground from 20 to 50 tons, appears to be the principal sluicing technique used at Creswick. A more novel technique was used in 1862 at Lucknow Hill, where a sluicing party ploughed and harrowed the surface after which the upturned soil was thrown into various races for washing.[137] The supply of water for sluicing was improved in 1864 when the Creswick Borough Council completed a water race from Bullarook to their White Hills reservoir.[138]

The use of horse-powered puddling machines was widespread on the Creswick field. Puddling, though it could only process a fraction of the ground that could be worked by sluicing parties, held one great advantage over the latter - it required much less water and thus the puddlers generally had a much longer mining season. The mining registrar reported 159 of these machines at work in August 1859, and this number appears to have remained fairly constant until prolonged droughts in 1865 and 1866 forced many of the puddlers out of business.

Both sluicing and puddling required capital, and many alluvial miners were unable or un-willing to invest in the necessary machinery. For these, the old way of tub, cradle and tin dish mining continued. The hope of these miners, by now referred to as fossickers, was to drop onto a rich patch missed during the chaos of the early rushes. Such was the case for one lucky party working on Banjo Lead, Mopoke Gully in 1860: their haul after 1½ month's work was 142 ounces.[139] Despite the odd success story, the miners working the shallow ground gradually declined in number through the 1860s. On at

134 Mining Surveyors' Reports, September 1860
135 Mining Surveyors' Reports, December 1860
136 Mining Surveyors' Reports, September 1859
137 Mining Surveyors' Reports, September 1863
138 Mining Surveyors' Reports, June 1864
139 Mining Surveyors' Reports, September 1860

least two occasions, in June 1863 and March 1866, the mining registrar reported mass migrations from the Creswick field; both times citing drought and exciting news from the New Zealand goldfields as reasons for the departures. Diggers also left for the Gippsland goldfields.

By the end of the 1865 and 1866 droughts only the Chinese were still persevering with shallow alluvial mining, particularly sluicing. Chinese sluicers were to be particularly successful in the 1870s when the Spring Hill leads were opened, for example, in 1874, a Chinese party sluiced up a 96 ounce nugget in Mosquito Gully, near Spring Hill.[140]

Early 1860s - Cement mining

This branch of mining commenced in 1859 when two companies - Hard Hill and Enterprise - took out claims on Hard Hill.[141] Both companies erected steam-powered crushing batteries (12h.p. and 12-head of stamps, 10h.p. and 8-heads respectively). Both company's washed its crushed rock in puddling machines. The first washing obtained by the Hard Hill Company (5¼ ton for 28 ounces) caused a small rush which resulted in mining operations spreading to nearby Clarkes Hill, where the Little Wonder and Friendship companies also erected crushing mills. Besides crushing cement, the four batteries also treated headings and refuse from puddlers. Although the returns from the latter materials was often quite poor, it was profitable because its acquisition required little effort. The importance of cement mining at Creswick had declined by the end of 1863 when the various cement mining companies were reported to be unable to work the deeper ground due to water.[142]

1860s - quartz mining

The first period of quartz mining at Creswick (covering the 1860s) was not particularly extensive or successful, and what mining took place did not proceed much below the water level, around 180 feet. Only one auriferous reef, Frenchmans, was being worked by 1859, and only a handful had been discovered and worked by the end of the 1860s, including the Amargh, Springhill, Opossum, Sulky Gully, White Horse and Scandinavian.

In May 1860, there were six small claims being worked on the Frenchmans Reef, and the Frenchmans Quartz Crushing Company were operating the division's first steam-powered quartz crushing battery (12-head of stamps). Two other companies - Prince of Wales Reef and Springhill - also erected batteries in 1860.[143] The yields from the three quartz crushing companies were uniformly poor, for example, in June 1860, the Frenchmans Reef Company crushed 240 tons for only 65 ounces of gold.[144] All the companies had ceased work by the end of 1862. By the mid 1860s, other companies had come and gone without any success. The most notable of these were the William Tell Company, who erected a battery (22h.p. driving 12-heads) in 1864 on Scandinavian Reef; and the Kuboid Quartz Mining Company, on White Horse Reef, who constructed a 300ft long, 15ft high, reservoir across Schicer Gully and installed a 25h.p engine to drive a 10-head battery.[145]

Late 1850s- early 1860s: Early deep lead mining

After the 1854 rush, miners began to trace the various shallow leads down the hills and under the volcanic rock (basalt) covering the plains. The sinking of shafts through the basalt was the main method employed to reach the gutters of the ancient river system. There was, however, some tunnelling into the sides of hills, eg. at White Hill where there the Princess Alexandra Company drove an adit some 1,250 feet.[146] In this early period of deep lead mining most companies used horse-powered haulage whims, for instance, in May 1860 there were 120 whims at work compared to 14 steam engines. The washdirt extracted from the gutters was washed in wood-lined puddling machines, but by 1865 some of these puddling machines were constructed of cast iron.[147]

The deep leads worked during the late 1850s and 1860s all trended in a northerly direction from Creswick, and shafts sunk to reach the gold got progressively deeper as the miners advanced in that

140 Mining Surveyors' Reports, September 1874
141 Mining Surveyors' Reports, November 1859
142 Mining Surveyors' Reports, October 1863
143 Mining Surveyors' Reports, April 1860
144 Mining Surveyors' Reports, June 1860
145 Mining Surveyors' Reports, June 1865
146 Mining Surveyors' Reports, June 1864
147 Mining Surveyors' Reports, December 1865 and March 1866

direction. The deep leads worked during this time provided mixed results. Some, like the Havilah and Banjo leads, both opened in 1860, proved unpayable and were abandoned; while others, like the Sulky Gully and Grahams Hill leads provided some rich rewards. The former was worked successfully by the Little Extended Company, and the latter, by the Republic and Garibaldi companies. Another of the more rewarding leads was Rocky Flat Lead, which was mined profitably by five companies: the Jupiter, Golden Gate, You Know, Golden Emporium and Smythesdale.

One of the main leads worked was the Bald Hill lead, which was successfully prospected in November 1859 at a depth of 100 feet. [148] As the lead was traced northwards it proved to be extremely rich, for example, in 1860 miners on the lead were averaging £10 to £15 per man weekly.[149] By this time, shafts on the lead were down 140 feet. The lead continued to provide miners with large profits until 1863, when the deepness of the ground placed it beyond the scope of small companies. In June 1864 there were only three companies at work on the deep section of the lead, including the Better-late-than-Never and Great Eastern.[150] These companies lost the lead, and after another unsuccessful attempt by the Great Extended Company in 1865, the lead was abandoned.

Another of the main gold-bearing gutters of the ancient river system was called the Red Streak. It was the continuation of a shallow lead (Black Lead) which was worked with great success in the early days. In 1859 the Red Streak Lead was the principal place in the division where new ground was being opened; that all the leads coming from the east and south of Creswick tended to drain into it. The gold from the lead was also being obtained from very deep and wet ground. In 1860, the Crown or Ten Acre Company lost its shaft (swamped by drift at a depth of 146 feet), but by 1865 at least seven companies - the Imperial, Grand Trunk or Key (original Red Streak), Australasian, Sir Charles Darling, Junction, Rose of Alandale, and Hit-or-Miss - were mining with considerable success. The Hit-or-Miss Company became notable as one of the greatest gold producers of the 1860s.[151]

1860s - upgrading plant and progressive companies

From the mid 1860s many companies began to cease operating because they had exhausted their known gold reserves, or had, like the Imperial Company, used up their capital without getting gold sufficient gold to pay expenses. During the late 1860s several of these companies were re-organised and erected more powerful plant so as to sink deeper and extend new drives. The new ventures during this prospecting phase were commonly referred to as progressive companies. The leader of the new bunch of progressive companies was the Golden Trunk, which, in 1865 was prospecting the deepest ground ever tried at Creswick.[152] It was to be, however, the Australasian Company, formed in 1867, which was to have the most influence on the future direction of the field. In March 1868, the company was prospecting at 275 feet and by the end of the year was obtaining payable gold. It had proven the richness of the deep country. The next few years, until 1872, were comparatively dull for deep lead mining as the other claims on the Red Streak sunk deeper and drove towards the rich ground prospected by the Australasian Company. The Australasian Company continued to mine profitably until the mid 1870s. The stoppage of this mine was cited by the mining registrar as a serious loss to the district, as, besides the loss of employment by a number of miners, it was the most advanced claim on the Creswick deep lead system.[153]

Early 1870s - Discovery of the Spring Hill leads

Deep lead mining was shaken from its dullness in May 1872 when Carter, Brown and Graham discovered rich gold (at a depth of 100 feet) on Spring Hill. Their discovery, in Bloomsfield Gully, on the north side of the hill caused a rush, which led to three distinct leads being found - Lewers Lead (prospected by Lewers Freehold Company); Reserve Lead (prospected by Reserve Company and later Hawkins Company); and Spring Hill Lead (prospected by Southern Cross Company).[154] With the discovery of the new leads a familiar scene unfolded during the mid 1870s as the leads were traced down the hill to the plains, and under the basalt. With past experience in mind, the Ballarat Seven Hills Estate Company purchased the rich agricultural land that lay ahead of the three leads and

148 Mining Surveyors' Reports, November 1859
149 Mining Surveyors' Reports, June 1860
150 Mining Surveyors' Reports, June 1864
151 Mining Surveyors' Reports, December 1865
152 Mining Surveyors' Reports, December 1865
153 Mining Surveyors' Reports, March 1876
154 Flett, The History of Gold Discovery in Victoria, 1979, pp416-417

commenced leasing to other mining companies. Two of the Spring Hill leads junctioned just before the purchased land, and the third junctioned within its boundaries.[155] The united lead (main gutter) was to be traced northwards where it, and the Red Streak combined and became known as the Berry Lead, which became synonymous in the 1880s and 1890s with Victoria's greatest and richest deep lead mines - Madame Berry, Berry Consols, Lone Hand , Ristori, and New Australasian.

Mid 1870s - Golden years on the Spring Hill-Red Streak leads

The mining of the Spring Hill leads down to the Berry Lead spanned three golden years, during which at least ten companies - Baron Rothschild, Bunyans Freehold, Richardsons Western Freehold, Robinsons Freehold, Cummings Freehold, Kingston Park, Richards Freehold, Hawkins Freehold, Lewers Freehold and Western Lewers Freehold - mined profitably. Sometimes the yields from these mines were hailed as extraordinary, for instance, the Richardsons Freehold Company obtained 1,032 ounces in a week [156], and the Baron Rothschild Company unearthed a nugget weighing 242 ounces.[157] By the late 1870s deep lead mining on the Spring Hill leads had reached another familiar situation: rich claims worked out and progressive companies being formed to test new ground in advance of the old workings. Matters on the Red Streak section were in a similar state with a prospecting period spanned four years from 1876 to 1880, reflecting the increasing difficulties faced by companies to mine extremely deep and wet ground.

The progressive companies of the late 1870s were aided by the introduction of the diamond drill and confidence in the field were maintained by gold production from companies like the New Australasian, Camerons Freehold, Ryans Junction, Dykes Freehold, De Murska and Ristori Freehold.

1880s boom - halcyon days of Creswick's deep lead mining

In 1879 there were encouraging signs from both the Red Streak and Spring Hill Leads. On the former, the New Australasian Company were obtaining rich yields and had caused two new claims to be taken up in the area: the Australasian Extended and Davies Junction Freehold. On the Spring Hill Lead, the Lone Hand Company (the furthest advanced on the lead) was expected to soon be on gold.[158] By this time the Berry section of the lead was also being worked and its progressive mines were beginning to join the list of gold producers, including among the gold producers was the Madame Berry (Victoria's greatest deep lead mine). Mining speculation was now rife, and in 1881 nearly all the country for miles north of Spring Hill, and extending beyond the limits of Creswick mining division, had been taken up under lease.[159] The new work bore fruit, and a new tributary to the main gutter, known as the Kingston or Hepburn Lead was opened. This new lead drained into the Berry lead from the east and was prospected by the Lord Harry Company in 1883.[160]

The 1880s saw a continual stream of companies move onto (and then to dominate at various times) the division's gold producing list. First came the Loughlin, Lone Hand and Madame Berry companies, in 1881; followed by the North Australasian and Lord Harry, in 1883; Ristori Freehold, in 1884; Australasian Freehold and Australasian & Eaglehawk, in 1885; Hepburn Estate, Midas, and Lady Hepburn, in 1886; Berry Consols and Earl of Beaconsfield, in 1888; Midas Company, in 1889; and Berry No. 1, in 1891. The Midas Company was particularly lucky in respect to nuggets: in 1887 it uncovered the "Lady Loch" (617 ounces) and "Lady Brassey" (167 ounces). Five of the 1880s companies - the Madame Berry (387,313 ounce), Berry Consols (190,799 ounces), Lone Hand (126,030 ounces), Ristori Freehold (104,224 ounces), and New Australasian (90,203 ounces) - were to produce such large amounts of gold as to put them amongst Victoria's greatest deep lead mines.

1882: New Australasian gold mining disaster

Apart from entering the record books as a major gold producer, the New Australasian Company also holds a less enviable record. On 12 December 1882 a drive from the company's No. 2 shaft was flooded and 22 miners perished.[161] To date, is Australia's largest gold mining disaster.

---

155 Flett, The History of Gold Discovery in Victoria, 1979, pp416-417
156 Mining Surveyors' Reports, June 1875
157 Mining Surveyors' Reports, September 1875
158 Mining Surveyors' Reports, December 1879
159 Mining Surveyors' Reports, September 1881
160 Mining Surveyors' Reports, December 1883
161 Hanging Files, Historic Places Section, 16 May 1986

Machinery and technology of the 1880s-early 1890s

Mining machinery installed on the Creswick deep leads varied considerable in cost and size, but through necessity got more extensive and powerful as mining moved northwards and progressed through the 300 feet to beyond 400 foot. Thus the most spectacular machinery installed on the field was on the Berry lead. All the deep lead mines shared common features - steam engines for pumping, winding and puddling; steam boilers and brick chimney stacks; wooden poppet heads, and raised tramways and cast iron puddling machines. Some companies, such as Madame Berry, also had crushing batteries to treat cement obtained from the gutter. [162] Horizontal acting engines were the norm for the Creswick field, with only two companies - Berry No. 1 and Hepburn Leasehold Estate - erecting Cornish vertical beam engines.

Shaft sinking on the field was a very complicated business. The main problem was sinking through drift (a quicksand-like deposit of gravel and sand). In 1883 the mining registrar reported three different techniques being used: the Davies Junction Company were using "travelling shaft"; the Australasian Consols "iron box" ; and Berry Consols "iron cylinder". The latter system involved forcing iron cylinders - one inside the other, like a telescope - through the drift by hydraulic pressure.[163]

1880s - Formation of towns

As the agricultural land was taken over for deep lead mining several mining villages sprung up along the lead system. These included Allendale and Broomfield. In 1881 the new town of Allendale held only 18 houses and 139 inhabitants; by 1891 the number of houses was 315 with 1,562 inhabitants. The hamlet of Broomfield was listed in the census for the first time in 1901: 100 dwellings and 482 inhabitants. [164] Today only Creswick survives as a large town. The other places have few physical remains, except for a few houses.

1880s onwards - attempts at quartz mining

There had been some interest shown in the reefs during the heady days of deep lead mining. Most of the quartz mining appears to have carried out around Allendale. In 1885 the mining registrar reported that a great quantity of quartz had been raised and crushed, and that quartz was being obtained at a greater depth than hitherto before and the number of men engaged in work had doubled.[165] Two companies who erected crushing plant during this time were the Surprise Company on Mills Reef (a 10-head battery)[166], and the Creswick Working Miners.[167]

Quartz mining also flourished for a brief time in the late 1890s. In October 1897, the New Working Miners Company was floated, and shortly afterwards the New Nuggetty Gully mine was opened. The latter company erected a battery, both were unsuccessful. The New Nuggetty's plant was sold off in 1903.[168] The mine was taken up again in 1913 by the Creswick Quartz Mining Company. This attempt was also a failure and was cited as the third or fourth time that winding equipment had been erected on the shaft. [169] There was also a failed quartz mining attempt in 1911 by the George Reef Company.[170]

1890s - 1900s: End of large scale deep lead mining

By the early 1890s the Halcyon days of Creswick deep lead mining had passed; its greatest mine, the Madame Berry having closed down in 1895. In 1900, the Creswick field only produced 35,000 ounces of gold, and in 1901 only 10,686 ounces and by 1911 the yield had dropped to 5,642 ounces. On overview of Creswick's deep lead mining in 1899 (in the Australasian Mining Standard) calculated that from the year 1881 miners had obtained 1,333,759 ounces of gold from the Spring Hill-Berry leads, valued at £5,488,935 and paid out dividends to shareholders of £2,260,343; and concluded that

---

162 The Berry Deep Lead, Historic Places Branch, October 1986

163 The Berry Deep Lead, Historic Places Branch, October 1986, p.15

164 The Berry Deep Lead, Historic Places Branch, October 1986, p.12

165 Mining Survyors' Reports, June 1885

166 Mining Survyors' Reports, September 1887

167 Mining Survyors' Reports,June 1891

168 Annual Report, 1903

169 Annual Report, 1913

170 Annual Report, 1911

every known auriferous lead which took their rise near Creswick had more-or-less been worked to a distance of six or more miles north.[171]

Deep lead mining at Creswick did continue after the demise of its great mines. In 1903 there were still two companies at work - the Madame Berry West and the Berry Consols Extended. These two mines worked until the commencement of the First World War and both, at times, employed considerable work forces: eg. in 1906 the Madame Berry West annual work force averaged 145 men, the West Berry Consols, 185 men.[172] The New Madame Berry & Central Leads Company was floated in 1908 to determine whether reputed blocks of underworked ground in the old Madame Berry lease existed. The new company sunk a shaft and opened out onto the wash but found nothing of a payable nature.

As the deep lead mines closed down their machinery was sold and removed from the field. As early as 1908 the railway saw a use for the mining by-products and carted off mullock and pebbles for ballast. The heaps were later quarried for road making material.

1900s - Successful bucket dredging and pump-sluicing
In 1899 the *Australasian Mining Standard* reported that Mr M'Queen had nearly completed the construction of a bucket dredge, for the purpose of working the bed of Creswick Creek. Negotiations were also reported underway for the division's first hydraulic sluicing plant.[173] By 1903 there were two dredges at work along the creek, operated by the Creswick Creek and Enterprise Bucket companies; and in 1905 it was estimated that that some 85 men, not including wood cutters and carters, were being employed by the various dredging and hydraulic sluicing companies. The industry peaked during 1906-1908 with the two dredges operating along with at least eight sluicing plants. Companies working the latter type of plant included: the Great Creswick Sluicing Company, Creswick Gold Estates Sluicing Company, Creswick Sluicing Company (Slaty Creek), Portuguese Flat Sluicing Company, Creswick Spring Gully Sluicing Company, Creswick Black Lead Sluicing Company and Creswick Nuggetty Gully Sluicing Company.

The Creswick Black Lead Company was reported to have had one of the most powerful plants in the district, being required to remove some 70 feet of overburden to get to the gold. In 1906 this company was employing 25 men.[174] The sluicing industry declined dramatically in 1908 when one bucket dredge and four hydraulic sluicing plants were forced to close down due to unprofitable yields. The last sluicing plant to remain in operation was the Creswick Sluicing Company on Slaty Creek; it was still working payable ground in 1918.

1930s - Depression
During the depression there were various attempts made to revive the Creswick deep leads with a number of miners engaged in prospecting, many being assisted by governments grants. None of the prospecting proved successful. The reasons given for the lack of success included a lack of experienced deep lead miners and companies whose combined efforts were needed to drain the leads, and the high costs of equipment and mine labour.

SOURCES
Australasian Mining Standard, Special Edition, 1899
Department of Conservation, Forests and Lands, *Field Report on the Berry Lead System*, June 1986
Department of Conservation, Forests and Lands, *The Berry Deep Leads: An Historical Assessment*, Historic Places Section, Charles Fahey, October 1986
Department of Mines, Annual Reports, 1903-1918
Flett, The History of Gold Discovery in Victoria, 1979
Mining Surveyors Monthly and Quarterly Reports, 1859-91

171 Australasian Mining Standard
172 Annual Report, 1906
173 Australasian Mining Standard, 1899
174 Annual Report 1906

Clunes Goldfield

The Clunes goldfield was one of the earliest, if not earliest discovered of the Victorian goldfields. The date of the field's discovery was recognised by the colony's goldfields rewards committee as being March 1850, with three men - Campbell, Esmond and Bruhn - credited with obtaining the first gold.[175] The discoveries made by these men were all along a single auriferous reef that outcropped on a hill in the midst of a great lava bed (basalt) plain. This unusual situation meant that the Clunes goldfield differed from most Victorian fields, being almost deficient in shallow alluvial gold, though there was some alluvial gold obtained under the basalt in deep leads.[176]

Early alluvial mining - deep lead and sluicing
Deep lead mining was one of the earliest forms of mining undertaken at Clunes. By 1859 the Clunes goldfield boasted an a number of mining companies actively engaged in sinking for deeply buried alluvial leads. The companies were dropping shafts, through the basalt on the plains to the north and south of the township of Clunes, to depths varying from around 100 to 140 feet. These companies were not on the whole highly capitalised ventures, mainly using horses to drive haulage whims and puddling machines. Only a few companies, such as the No.1 Clunes Co-operative Company, operated steam-powered machinery. Sinking through the basalt proved to be very hard work, for example, the Young Sons Of Freedom took seven months to bottom their shaft.[177]

The more successful early alluvial mining companies included the No. 1 Clunes Co-operative, Clunes Alluvial, North Clunes Eureka, Friends of Justice, Young Sons of Freedom, Southern Lights, John Bull, and All Nations. By 1862, all these companies had ceased working and deep lead mining went into temporary abeyance, overwhelmed by events in quartz mining and generally poor results. At least one of the alluvial companies, however, managed to live on in another guise, the Sons of Freedom Alluvial Company commenced quartz mining in 1859 under the name of the Yankee Company.[178] The Yankee Company, mining quartz, went onto to become the field's seventh largest gold producer.

Some sluicing was also carried out at Clunes. In late 185, Messrs Eaton and Company were using a 12h.p. engine to raise water, which was then conveyed, by a one mile race, to his workings. Another company to work the bed of Creswick Creek at North Clunes was the Criterion Company. This company were sluicing opposite the Port Phillip Company [179] and comprised eight working miners who were treating the auriferous wash in large cradles fitted with amalgamating apparatus. To facilitate their operations the Criterion Company turned the bed of the creek with a race.[180] The water from the sluicing operations also appears to have been used to rework tailings from abandoned claims.[181]

The early 1860s sluicing attempts were short-lived. There was another burst of sluicing in the mid 1860s. In March 1864, the mining registrar reported two parties - Captain Davis and Party and Matthew Bennett and Party - were engaged in stripping and washing the banks of the creek. The former company were using an undershot wheel to supply power to operate a shaking table and amalgamating barrel; the latter were using wire gauge and blankets to capture very fine gold. A third party was also operating a puddling machine.[182]

Early developments on the Clunes quartz mining field
Prior to 1857, the reef at Clunes had not attracted much attention because the bulk of it run through private property; being part of a purchased pre-emptive right belonging to Messrs Cameron and Ryder. Mining on private land required compensation to be paid and no miner was really interested in doing so through the stunning years of the first gold rushes. In February 1857, two different bodies - The Port Phillip Company and Clunes Quartz Mining Company - became interested in the reef. The Port Phillip Company negotiated a 21-year lease with the landowners for 160 acres of ground (subject to a

175 Flett, The History of Gold Discovery in Victoria, 1979, p.418
176 Flett, The History of Gold Discovery in Victoria, 1979, p.437
177 Mining Surveyors' Reports, November 1859
178 Clunes Conservation Study
179 Mining Surveyors' Reports, July 1860
180 Mining Surveyors' Reports, August 1860
181 Mining Surveyors' Reports, June 1860
182 Mining Surveyors' Reports, March 1864

royalty of 10% on gross yield of gold) and then proceeded to sub-let the ground, upon the same terms, to the Clunes Company, with a proviso that they (the Port Phillip Company) were to crush all the quartz raised by the latter at a fixed charge per ton. [183] Together the two companies became synonymous with economy, experiment and innovation in respects to both mining and crushing quartz, which not only proved beneficial to themselves but to the general advancement of quartz mining in Victoria.

The Clunes Quartz Mining Company was a model in proper management and economy, it commenced with only £1500 in capital and from such an unpretending start found themselves by 1862 in possession of a mine that had already produced gold valued at over £400,000. Several other companies commenced mining in the vicinity. Of these, the South Clunes, North Clunes, Clunes United, Victoria, Yankee and Great Western companies developed into stable companies which, along with the Port Phillip and Clunes Quartz mining companies, provided the backbone of the Clunes economy until the early 1890s. Others, like the White Flat Quartz Mining Company (formed in 1858), proved to be ill-fated ventures and their leases were purchased by more successful neighbours.

A feature of Clunes' early quartz industry was the extensive scale of the Port Phillip and Clunes companies: its battery (which had commenced crushing in July 1857) had been enlarged to 40-head by 1859 (and by 1864 had grown to 80-heads): in comparison the batteries of neighbouring mines were puny, eg. in 1860, the Clunes United had 12-heads; Yankee Company, 8-heads; and Victoria Company, 12-heads.[184] At the same time, the Clunes Company were mining from five shafts and one tunnel; had two large steam engines for winding and pumping (combined 50h.p.); were accepting tenders to sink to 600 feet; and employing 140 men independent of wood cutters and carters.[185] At the same time many of the neighbours were still mining using horse-powered whims eg. the Yankee Company in November 1860 was only just getting around to erecting a 35h.p.engine, it had mined up to this time (to a depth of 230 feet) with two whims.[186]

The Port Phillip Company also led the way in experimenting with new ways to extract the gold from the quartz, using a variety of appliances such as Chilian grinding mills (also known as Arastras); blankets and silvered metal plates; amalgamating barrels; stone-breaking machines; and quartz roasting kilns. The success or failure of the company's experiments were closely watched. For example, the Port Phillip Company found that the roasting of quartz prior to crushing increased its gold yield: in September 1860 the company had completed the erection of two kilns, capable of roasting 2,000 tons per week.[187] Other companies, such as the Criterion Co. and Yankee Co. were soon embracing the new practice of quartz roasting. [188] The Port Phillip Company also experimented with ways to recover gold from the difficult pyritic ore. By 1864 the company were crushing the pyritic ore, concentrating the pyritic tailings in buddles and blankets, then roasting the concentrates in furnaces and regrinding them in Chilian mills.[189]

The concentration of mines at Clunes put a considerable strain on the region’s water supply, which led to several attempts to ensure an adequate water supply for crushing purposes. By 1859, several water schemes were under way. One of the most ambitious was undertaken by four mining companies - Port Phillip, White Flat Association, Criterion, and Clunes United Company. These companies pooled resources to construct a large dam on Tullarook Creek, about one mile upstream from the mines. The large dam, which had a 462 foot long embankment (105 foot thick at base and faced with stone), was expected to throw water back some 3 miles. It was designed to feed water into a lower dam near the mines. The water from the lower dam was conveyed by open race, or tunnels to the various crushing works [190], for example, the White Flat Association's water tunnel was 1,898 feet long.[191] At the same time, the Clunes Water Supply Company constructed a dam on Bullarook Creek and dug a nine mile race to deliver water for mining.

---

183 Dickers Mining Record, October 1862, P.2
184 Mining Surveyors' Reports, November 1859
185 Mining Surveyors' Reports, September 1859
186 Mining Surveyors' Reports, November 1860
187 Mining Surveyors' Reports, September 1860
188 Mining Surveyors' Reports, December 1860
189 Mining Surveyors' Reports, December 1864
190 Mining Surveyors' Reports, September 1859
191 Mining Surveyors' Reports, September 1859

Revival in deep lead mining

A revival in deep lead mining took place at Clunes in the mid 1860s and was instigated by the efforts of the Clunes Alluvial Company. By March 1864, this company were nearing the completion of their machinery. The company's efforts at mining were curtailed shortly after when their shaft was swamped; but by June 1866, the company had overcome this disaster and were producing rich gold, 2,437 ounces in three months.[192] By this time the company had erected a buddle to re-work the sludge from the puddlers and were using pumps to elevate the sludge into raised launders (drains) to carry off the sludge. The company at this time were also planning to introduce horses for underground work.[193] The perseverance and ultimate success of the Clunes Alluvial Company inspired others to take on the deep leads, such as the Clunes Extended Alluvial, Comet Alluvial, and Prince of Wales. This second period of deep lead mining was brief and came to a halt with the demise of the Clunes Alluvial Company in 1868.

Rise of the New North Clunes Company

The use of more powerful machinery and improved systems of quartz mining continued to have a good effect on the Clunes goldfield throughout most of the 1860s. During this time the field continued to be dominated by the Port Phillip and Clunes Companies. The next most notable quartz mining company was the re-organised North Clunes Company. The New North Clunes Company had commenced work by 1863 and over the following two years sunk several shafts, one of which went to a depth of 600 feet. The company worked on without much success until 1868 when it commenced crushing extremely rich ore, eg. its quarterly crushing end December 1868 was 4,955 tons for 4,707 ounces of gold. In comparison, the Port Phillip Company crushed 17,089 tons yielded only 6,719 ounces. The richness of the ore being raised by the New North Clunes Company resulted in a mining boom, which saw several new leases being taken up.[194] The New North Clunes worked with great success to become the field's second largest producer of gold and the twentieth in the state.

Gradual decline in the field

The 1870s saw little new development on the Clunes field, in fact, the field gradually slipped into a depression. None of the companies formed during the late 1860s boom had been successful, and the older established mines were beginning to struggle. The rot was firmly established by the closure, in 1870, of the Victoria and Yankee companies. By 1872, even the Port Philip Company was battling to mine profitably. With declining yields the struggling companies sought to become more economical. In 1872 the New North Clunes Company switched from steam- to water-power for crushing purpose: they installed a turbine to work 30-heads of stampers. The turbine run at a velocity of 500 revolutions per minute and used 2,500, 000 gallons per diem.[195] The company purchased the necessary water from the Clunes Water Commission.[196] The Port Phillip Company continued using steam-power and fixed new multi-tubular boilers to reduce fuel consumption.

As the old companies exhausted their known reserves they slipped from being gold producer to prospectors and by 1874 there were only two companies - the Port Phillip and Clunes and New North Clunes - still working payable quartz. A third company, the South Clunes getting gold from working the alluvial section of their claim. The Lothair Company also commenced deep lead mining during this time and later was taken over by the South Clunes Company. The South Clunes group of mines ended up being the field's most successful deep lead mining venture. With the depression came industrial strife, which led to what became known as the 'Chinese Riot'. In September 1873, the miners at the Lothair and South Clunes mines went on strike over hours and wages. In order to break the strike the mines' proprietors decided to use Chinese miners. On 8 December 1873, coach loads of Chinese miners from Creswick and Ballarat were reported heading for Clunes. The coaches were turned back before they reached the town by a 1,000 strong demonstration.[197]

Field's last period of deep lead mining

192 Mining Surveyors' Reports, June 1866
193 Mining Surveyors' Reports, June 1866
194 Mining Surveyors' Reports, September 1868
195 Mining Surveyors Reports, December 1872
196 Mining Surveyors Reports, March 1872
197 Talbot and Clunes Conservation Study, p.135

The 1880s commenced with several mines still working, but with no outstanding prospects. By 1881, the Port Phillip and Clunes Company was not mining profitably [198] and despite crushing large volumes of ore throughout the decade was always in the red. The only brightness on the horizon for the Clues field came in 1882 with the anticipated prospects of two new deep lead mining companies: the Butes and Downes, and Clyde. A year later, the former had opened up on a large body of payable wash, but the latter had failed. Two years later, matters looked decidedly better for the field: the Butes and Downes Company was still mining profitably, and the New North Clunes were making noises about a new ore body. Unfortunately for the local community, the Butes and Downes stopped working in 1888, and the New North Clunes failed to find any payable ore body in its deep ground. Despite a flurry of deep lead mining at the end of the decade - by the South Clunes Extended, Clunes United, Clunes Goldfield and New North Clunes Extended - the eighties closed with the Clunes field in a very poor state of health.

The decline of quartz mining at Clunes was gradual and mirrored well by the fate of its greatest mine, the Port Phillip Company. At the end of the 1880s the company had exhausted all its capital and operations were suspended. A similar fate befell the New North Clunes Company who suspended operations in 1888. This company, unlike the Port Phillip Company, was immediately re-organised and mined for four more years as the Dixon's New North Clunes Company. When this company stopped work in 1892 it marked the end of large scale quartz mining at Clunes.[199]

Turn of the century

From the 1890s, the Clunes goldfield witnessed several grand proposals for its re-opening. In 1894, Thomas Cornish, Chairman of the Port Phillip Company, secured consent from the proprietors of the other mines to form a company to re-work the whole field. Efforts to raise the £20,000 considered necessary to do so were unsuccessful.[200] There was another major attempt in the 1930s when the Clunes Limited (later Clunes Goldfields Limited) managed to take over the whole field and sunk a new prospecting shaft. The shaft led to nothing and by 1935 had been rendered useless by rising water. [201] A London firm, John Taylor and Sons, were then commissioned to appraise the potential of the field. They hired an experienced mining engineer, Charles Heathcote, and his examination found that all the shafts on the field, bar two, had fallen in. He reached the conclusion that to re-open the field would require £280,000 in capital and then it would only ever be marginally profitable.

With the demise of the large quartz mining companies the field became the domain of small tributing parties. In 1897 there was a jump in the gold production when cyaniding parties commenced treating the massive dumps of tailings that lay downstream from the batteries

SOURCES Dickers Mining Record, October 1862, p2
Flett, The History of Gold Discovery in Victoria, 1979
Mining Surveyors Monthly and Quarterly Reports, 1859-91
Talbot and Clunes Conservation Study

198 Talbot and Clunes Conservation Study, p.135
199 Talbot and Clunes Conservation Study, p.135
200 Talbot and Clunes Conservation Study, p.148
201 Talbot and Clunes Conservation Study, p.149

BLACKWOOD-BLAKEVILLE MINING DIVISION

In June 1855, the news of gold discoveries by Edward Hill as a spot called Red Hill saw a large rush set in along the course of the Lerderderg River and its tributaries. When the Blackwood Rush peaked in September 1855, there were some 13,000 diggers along the river and its tributaries. By this time, mining was focussed on six localities around Blackwood: Golden Point, Nuggetty Gully, Long Gully, Yankee Gully, Frenchman's Gully and Dead Horse Gully. The last named gully was noted for the discovery of the district's largest nugget, 29lbs in weight. During this time, two main mining villages were established: one at Red Hill, the other at Golden Point. The latter settlement was surveyed and laid out as Blackwood.

By the end of 1856, the bulk of Blackwood's mining population had left for the Fiery Creek (Beaufort) Diggings. For those that remained, less than one tenth of the old population, profitable alluvial mining proved to be a struggle. Very little new ground was opened, the exception was the Blue Mountain Diggings in 1862. Most of the alluvial miners focussed their attention on the bed of the Lerderderg River, which was worked time and time again using sluice boxes, pumps and water wheels. Puddling, common on some Victorian goldfields, was a rare practice in the district: eg., in October 1859 there were only two- horse-driven puddlers in operation, and their numbers never appears to have exceeded five.

At first, the sluicing along the Lerderderg was carried out by a mixture of Chinese and European miners, but by the 1870s, it was increasingly monopolised by the Chinese. The few Europeans that continued this form of mining were usually referred to as lonely fossickers or hatters. The Chinese monopoly was looked on darkly by the mining registrar, who saw it as the reason why there was a lack of local capital available to develop the field.. For some thirty years, he wrote, the Chinese had enjoyed the same rights and privileges as Europeans. During this time they had confined their attention almost exclusively to mining Blackwood's main lead (the bed of the Lerderderg River) where their primitive peg and brush dams had proved excellent foils to ordinary floods, and many had returned to China with large quantities of gold. Their constant re-working of the Lerderderg had left nothing for the local quartz miners to fall back on in difficult times, and the thousands of ounces of gold that the Chinese had taken home, if it had been left for the Europeans, he argued, would have mainly been used for developing the district's quartz reefs.[202]

Apart from sluicing of alluvial deposits, two companies, the Great Tunnel Quartz Mining and All Nations, also crushed auriferous gravels in the early 1870s. The cemented gravels (ancient river bed materials) were obtained from the old alluvial workings at Golden Point. Both companies also did their own quartz mining and erected substantial plant.

Reef discoveries

At the end of the mid 1850s Blackwood Rush, miners began to tackle two lines of reefs, the Trewhella or Barrys, and Yankee or Union. The working of the former reef led to the survey of the township of Bayup, later named Barrys Reef. Although proving to be rich, near the surface, both reefs, and two others discovered in 1858 - Simmons and Johnstons reefs - proved to be very unpredictable and difficult to work: often narrowing or terminating suddenly at depth and trending east-west rather than the conventional north-south direction. A few quartz reefs were also successfully prospected away from Blackwood during the late 1850s. These included the Snake Gully line of reefs, Hit and Miss Reef, and the Garibaldi line of reefs.

The first period of Blackwood's quartz mining was funded and undertaken by small parties of working miners. These small parties mainly tunnelled into the hills from the creek beds, dropping shafts from inside their adits. Some of the tunnels were driven for great distances, for instances, a tunnel commenced by the Egerton Company to intersect Annie Laurie Reef (Barrys Reef) ended up being some 2,300 feet long[203] ; and the Clyde Banks Company's tunnel went in over 1,300 feet.[204] Most of the shafts dropped by the companies never went far below the water level, though one sunk by the Sultan Company eventually reached 900 feet. Some of the parties also erected small crushing mills which were either powered by steam or water power: e.g, in July 185, there were 17 companies

---

202 Mining Surveyors' Reports, June 1888

203 Mining Surveyors' Reports, March 1888

204 Mining Surveyors' Reports, December 1889

operating crushing mills, 13 of which were powered by water, the other by steam.[205] The water to drive the wheels were delivered by races from the nearest, most reliable water course.

Gold production in the Blackwood district was heavily linked to the water supply. Drought-induced obstructions to both alluvial sluicing and quartz crushing was an annual event. Some years proved to be particularly bad, eg. a very dry period from 1865 to 1867 forced many miners to leave the district.

1870s - Districts first and only investment spree
Blackwood's first, and only mining investment spree commenced in 1868. During the 1865-67 drought, the small mining parties , unable to crush, had stock-piled large reserves of ore. Once the drought broke and the water-wheels had their 'fuel' there was a massive jump in gold production. There was also an influx of outside capital, mainly from Clunes and Ballarat, which saw a hundred mining, leases taken up in a twelve month period.[206]

The flagships of the investment spree were four public companies: the Clunes & Blackwood, Trojan and Union companies on Yankee Reef, and the Sultan Company on Barrys Reef. These companies experienced mixed fortunes, which had diverse influences on the district's mining industry. The Clunes and Blackwood and Union companies became famous for their extravagance, expenditure on large steam-powered machinery, and their dismal failures. For years after, the fate of these two companies were cited as one of the major constraints to the district attracting outside capital.[207] The Sultan Company, on the other hand was successful. It mined for some ten years, was the district's largest employer of mining labour, and became the only public company to mine profitably in the district's history: 82,000 tons, 66,000 ounces of gold, for 60,000 in dividends.[208]

Whilst the public companies briefly basked in the glory of highly capitalised mining, and then mostly failed miserably, the small co-operative mining parties maintained the industry. Their perseverance is no better illustrated by the efforts of the Victoria Company. This company, which rose among the wreckage of the ill-fated public companies on Yankee Reef in 1876, worked for ten years before mining on a profitable basis.[209]

The companies working in the 1870s still continued to use both steam and water power for crushing. On Yankee Reef, most companies preferred steam power, whereas those on Simmons Reef were exclusively water-powered. On the latter reef, companies such as the Simmons Reef, Koh-i-Noor, Imperial and Lerderderg all upgraded their plant in the early 1870s, eg., the Simmons Reef Company installed a 36ft diameter wheel, cited as the then largest in the district.[210] The water for all the Simmons Reef mills came from the Lerderderg River. To drive their mill, the Imperial Company constructed a race which was 6-3/4 miles long, 670 feet of which was through tunnels.[211] The Koh-i-Noor Company received its water from a government reservoir. Another company, the Garibaldi, also installed a new battery, which was fed by a 8 mile race from Korgamnunnip Creek.[212]

During the early 1870s, two new auriferous reefs were successfully opened in the district; Wrights Reef, located five miles south of Blackwood; and Brown's Reef, about 8 miles south-west of Blackwood. The latter reef discovery, in 1871, led to the establishment of the township of Blakeville. The rush to Blakeville saw a handful of other reefs discovered, the most significant being Ashtons Freehold in 1872.[213] Companies were formed to work the two new reefs. Wrights Reef was worked by the Red White & Blue and North Britain companies; and Browns Reef, by the Undaunted Company. All these companies erected substantial machinery, and one, the North Britain Company, went on to become the district's most prominent mine. During this time, some of the mines also began to treat

205 Mining Surveyors' Reports, July 1859
206 Mining Surveyors' Reports, December 1869
207 Mining Surveyors' Reports, June 1882; and Mining Surveyors' Reports, March 1875
208 Mining Surveyors' Reports, March 1887
209 Mining Surveyors' Reports, June 1886
210 Mining Surveyors' Reports, June 1871
211 Mining Surveyors' Reports, September 1872
212 Mining Surveyors' Reports, March 1873
213 Mining Surveyors' Reports, March 1872

highly mineralised ore: the North Star Company on Union Reef roasted quartz in kilns [214] and the New North Britain Company erected a pyrites works.[215]

By the mid 1870s, Barry's Reef was the main location producing gold. By 1874 a sizeable village had formed around the mines on Barrys Reef and its chief mine, the Sultan, was employing a large number of men. When this company's production declined during the late 1870s, matters were particularly bleak for the miners, and many left the district. By 1879 the mining registrar was reporting a mass removal of machinery from the field, as companies such as the North Cornish, Star of the West, British Lion and Albion, auctioned their plants.[216] The next year brought further calamities: the Sultan Company suddenly closed down throwing out of work a large number of men; and a violent flood down the Lerderderg River swamped all the creek claims, sweeping away fluming, water-wheels, sluice-boxes and other mining materials, and destroying or damaging most of the bridges.[217]

Mining in the 1880s

Although mining bounced back in the 1880s, it never really recovered from the disasters of the 1870s. The first hints of a revival in quartz mining come in September 1881 when the registrar reported that plant that had been removed in the late 1870s (valued at about 18,000) was now being replaced . One of the newly equipped mines was the Simmons Reef Amalgamated Company. Apart from the new plant, the company planned to invest £2,329 in the construction of a large reservoir of 25¾acres (approximately 109,000,000 gallons).[218] The company intended to use the water to crush all year round, and also supply other mill owners. Unfortunately, the company could not fund the work, and thereafter were continually affected by the lack of water. To add to the company's woes, its fancy new crushing plant (a turbine-powered battery from America) proved to be very uneconomical.

Other companies to erect new plant during the 1880s revival included the New Sultan, New North Britain, Countess, and New Cosmos (Snake Gully). Of these, the New North Britain Company was the only company to be significantly productive, but by 1886, even this company success was beginning to wane. With the decline of the New North Britain, the mining registrar reported a gradual drop in the mining population as men gained permanent employment on other fields and removed their families from the district. The closure if New North Britain mine in 1889 sounded the death-knell for large-scale quartz mining in the Blackwood district. From the 1890s onwards, the district rarely featured in mining reports, except for the odd mention on the activities of small co-operative prospecting parties.

Deep lead mining

Apart from witnessing the last hurrah for quartz mining, the 1880s also saw an attempt at deep lead mining. By 1884, several companies were prospecting for deep alluviums at Green Hill. A discovery of auriferous drift in the following year by the North Benedetti Company sparked a small boom. The North Benedetti Company went as far as constructing a dam across Green Hill Creek, a tramway from its tunnel and a puddler.[219] It appears to have not mined profitably and mentions of the company, and its neighbours, such as the Benedetti Amalgamated and Benedetti, do not feature in mining reports after 1887.

Twentieth century quartz mining

By the turn of the century there was little happening on the Blackwood reefs, except for the work of a few individual prospectors. These miners were often assisted by government prospecting grants. The

214 Mining Surveyors' Reports, March 1879
215 Mining Surveyors' Reports, June 1883
216 Mining Surveyors' Reports, March 1880
217 Mining Surveyors' Reports, September 1880
218 Mining Surveyors' Reports, September 1881
219 Mining Surveyors' Reports, September 1885

government also installed a small crushing battery at Blakeville in 1907. This prospecting period appears to have had only one notable success in 1918, with some large bodies of payable ore being worked at the Yankee mine by a co-operative party. On the same line, the Countess Company sunk a main shaft 108 feet and opened up on a lode 2 to 5 feet in width.[220] These mining operations were both short-lived.

[220] Annual Report 1918

STEIGLITZ MINING DIVISION

The division's first gold discoveries were along the Moorabool River, near Morrison's Station; at Dollys Creek; and in the vicinity of Steiglitz. Made as early 1851, these discoveries, and others, did not lead to anything as the gold was not recovered in payable quantities.
Gold rushes to the area did not take place until late 1855 after Hooley and Davis discovered a rich reef at Steiglitz [221]. Gold from this reef, when assayed at Geelong, went 72 ounces to the ton.[222] The assay results saw Steiglitz rushed and there were soon 200 miners on the field.[223] During the next four years, the bulk of Steiglitz's reefs (over forty) were discovered: the more important being the New Chum, Boxing, Portuguese, Yankee Smith, Sailors, Ironbark, Hanover, Victoria, Gibraltar, Tam-O-Shanter and New Years. The working of the reefs at Steiglitz turned the place into the division's most important, though relatively small in comparison to other Victorian fields, quartz mining centre.

Development of alluvial field
Alluvial mining at Steiglitz, on the other hand, did not develop into anything of note, though there was some sluicing, puddling and paddocking carried out at places like Sutherlands Creek and Yankee Gully.
The discovery of the Steiglitz's reefs did led to the successful working of the shallow alluvial deposits on the Moorabool River (Morrisons Diggings) and Dollys Creek. [224] It was not until gold was extracted from much older geological deposits (known as cemented leads) that mining flourished on the two fields. By 1858, miners at Morrison's were tunnelling under the basalt along western bank of the Moorabool and by the following year had also discovered a cemented lead at Dolly's Creek running from Campbell's to Brown's Hill. The auriferous gravels extracted by the miners were treated in sluice boxes and puddling machines.

Expansion of alluvial mining
Towards the end of the 1850s other alluvial goldfields were opened in the northern portion of the division. The first of the new fields were the Mt Doran or Tea-Tree diggings: by 1859, shallow alluvial and cemented gravel deposits were being worked at the head of Tea-Tree Creek.[225]
The Stony Rises Diggings (later known as Elaine Diggings) were opened in 1862 by a small rush , which led to the whole of a flat next to the Geelong-Ballarat road being occupied and worked. As the sinkings were through basalt, it was anticipated, but never proven, that a deep lead existed in the area.[226] After a brief period of alluvial mining at Stony Rises, the discovery of two auriferous reefs in 1863 [227] saw the focus of mining switch to quartz. Several companies - including the Royal George, Royal Charlie, Prince of Wales, Australasian Gold Mining, Stony Rises, Yorkeys Reef and Rose & Thistle - were formed. The Prince of Wales and Australasian Gold Mining companies took out large leases covering the whole of the old diggings intending to operate with both crushing and puddling machinery [228]. Both worked with little success, and the latter company went onto to search, unsuccessfully, for a deep lead. After this, quartz mining became the business conducted on the field: both the Royal George and Royal Charlie had erected crushing batteries by 1865.[229]
In 1864, the Woodbourne Creek field was opened, gold being discovered in Munroe's Gully (tributary of Reeds or Woodbourne Creek, south-west of Meredith). In the following year, gold was obtained from along Woodbourne Creek itself, and also Cargarie Creek.[230]

Dominance of sluicing and Chinese miners
The richness of cemented leads at Morrison's and Dollys Creek, and the topography of the northern part of the division, determined that sluicing would be the most prevalent and important branch of alluvial mining. By the mid 1860s, this industry was monopolised by Chinese miners, which was probably a reflection of how difficult and unrewarding the mining was. In May 1860, the Dollys Creek

221 Steiglitz: a history of a mining town, undated, p.5
222 Flett, The History of Gold Discovery in Victoria, 1979, p.385
223 Steiglitz: a history of a mining town, undated, p.5
224 Flett, The History of Gold Discovery in Victoria, 1979, p.372
225 Flett, The History of Gold Discovery in Victoria, 1979, p.374
226 Mining Surveyors' Reports, October 1863
227 Mining Surveyors' Reports, June 1863
228 Mining Surveyors' Reports, March 1864
229 Mining Surveyors' Reports, September 1865
230 Flett, The History of Gold Discovery in Victoria, 1979, p.373

Diggings were described by the mining registrar as a 'poor man's field' [231], that is, only suited to being worked by individual, or small parties of, miners and only capable of rewarding efforts with wages.
By the early 1860s the Chinese miners on Dollys creek were working the auriferous deposits that covered the various hills to a depth of four feet.[232] The auriferous material was mainly treated in sluice boxes, though there were also five puddling machines on the field. Being a very dry area, the miners at Dolly's Creek became reliant on water supplied by a twelve-mile water race, which came from a source above the Lal Lal Falls.[233] This race was constructed by the Moorabool Waterworks Company (also referred to as Lal Lal Waterworks Company) and was later extended south to the Morrison's and Tea-Tree Diggings. According to the registrar the water from the Lal Lal race enabled the Chinese to 'turn over with profit every portion of the ground about Dolly's Creek containing the most minute particles of gold'.[234]
Morrison's and Tea-Tree diggings also had a very intensive cement mining, involving shaft sinking, tunnelling and the treatment of material in sluice boxes and puddlers Initially only rich deposits on the west side of Moorabool River, and up Tea-Tree Creek, were worked, but in 1864, two rushes - Evan's and Wallace's - opened up extensive deposits along the east bank of the Moorabool. By 1863, the Lal Lal water race had been extended to Morrisons and the mining registrar felt that it enabled miners to wash with profit about 50% more material than previously treated.[235]
By 1866, alluvial mining on both the Dolly's Creek and Morrison's fields, was declining. The miners had by this time treated most of the easily won auriferous material. Attempting to arrest the decline on the latter field, two companies - Golden Rivers and Borhoneyghurk - embarked on ambitious new mining ventures. The former sunk a shaft (beyond 400 feet) and extended numerous drives in order to discover the continuation of the rich Ballarat deep leads; and the latter, installed the division's largest crushing plant, a 70hp steam engine and 28-head of stamps to crush cement deposits.[236] In June 1866, the registrar reported that the failure of the crushing works had caused a severe mining depression in the area, eg. Dolly's Creek was virtually deserted with the exception of one small party of Chinese miners.[237]

Alluvial mining revival

With a general decline in quartz mining in the mid 1870s, alluvial mining revived.[238] The focus of the work was Dolly's Creek and Morrisons[239] where miners again relied on the water from the Lal Lal race. By this time the race appears to have been taken over by the government.[240] In June 1879, the registrar was of the view that Dolly's Creek was on the verge of another golden era because a cement-lie deposit, overlooked in the past, had been proven to be gold bearing, going as much as 2½ ounces to the ton. [241] Sluicing and crushing ventures were formed to work the deposit, eg. David Morrisons Water Scheme in 1879 [242] and the Happy Dinah Company erected a 5-head battery in 1883.[243] The renewal of activity was brief and mining on a large scale ended.

Working of the early quartz reefs

While the alluvial miners efforts were concentrated in the northern part of the division, the miners at Steiglitz quickly established a vigorous quartz mining industry. The first crushing machinery appears to have been erected on Davis Reef, by a Mr Kitz [244], and by the end of 1856 there were seven crushing machines on the Steiglitz field, four of which were steam-driven. Some of the early mills, like Love's and Otway's crushing works had both stamping batteries and chilian wheels. [245] The high cost of crushing at these works, often forced mines to be abandoned. Despite improvements in plant, miners by

231 Mining Surveyors' Reports, May 1860
232 Mining Surveyors' Reports, October 1860
233 Mining Surveyors' Reports, December 1860
234 Mining Surveyors' Reports, October 1863
235 Mining Surveyors' Reports, October 1863
236 Mining Surveyors' Reports, June 1865
237 Mining Surveyors' Reports, June 1866
238 Mining Surveyors' Reports, June 1874
239 Mining Surveyors' Reports, June 1876
240 Mining Surveyors' Reports, June 1881
241 Mining Surveyors' Reports, June 1879
242 Mining Surveyors' Reports, June 1881
243 Mining Surveyors' Reports, June 1883
244 Steiglitz: a history of a mining town, undated, P.6
245 Steiglitz, Memories of gold, Ray Sumner, 1982, p16

1859 still had to obtain stone going more than 1 oz. to the ton before it could be crushed for a profit.[246] Despite the odd patches of richness, sometimes up to 33 ounces per ton, the miners were working a complex reef geology, and their smallness of their claims made it generally impossible to achieve a steady and payable gold production. By 1859 many of the small claims were being amalgamated into large leases worked by public companies (known as joint-stock companies). These companies erected large and very expensive pumping, winding and crushing machinery. The local community eagerly awaited the time when the new mines - Steiglitz, Perseverance, Gibraltar, Albion, Malakoff, Sailors Reef, and Redan - would commence producing gold. None of the companies, however, were successful, with the Albion Company on Portuguese Reef being the most vigorous of the early companies. It was estimated that is cost £6000 to sink a shaft to the water level - average depth of 140ft - on the Steiglitz field. The registrar calculated that about half a million pounds had been expended on the field - some shafts having reached 350 ft - an no large (permanent) ore body had been found.

When the 1859 company boom collapsed, many of the Steiglitz companies prevailed by crushing mullock and quartz discarded by previous ventures. A second boom burst on Steiglitz in 1865, with twenty new or re-formed companies appearing within the space of three months. The boom was based a reliance on new technology and improved (systematic) methods of underground mining. By September 1865, some £16,000 had been invested on new machinery, dams, and underground works. Within the year at least ten of the new companies had floundered, eg., Follow-the-Leader Co. crushed 1,780 tons for a measly 178 ounces of gold.[247] Others such as the New Year, Albion, Ballarat Steiglitz, Sailors Reef, Malakoff and Redan struggled on but by the end all had either suspended or seriously curtailed their operations.
The field's fortunes, in respect to investor confidence, were improved somewhat when the Albion Company in December 1867 crushed 1,087 tons for 2,401 ounces. This company continued to get good returns and provide a backbone for the field and enabled other mines - Alice, Ballarat, Native Youth and Dividend companies - to continue to receive investment.

New Reefs
During the late 1860s, some new reefs were discovered away from Steiglitz - at Darriwall, Mount Doran, Little Forest and Elaine. All these fields had experienced a burst of mining activity. Quartz mining at Darriwal (3-½ miles south-east of Steiglitz) commenced in 1868 and was mainly confined to the operations of the Galetea Company on Prince Alfred Reef, Long Gully. This company worked a tunnel (124 ft) and erected a battery.[248] During the same time there was a rush to the Mount Doran Ranges and by 1871 one company, the Glencoe, had erected steam-powered winding, pumping and crushing plant.[249] A few years later the Ballarat Tunnel Company was also at work on the Mount Doran field: by December 1876 their tunnel was in 893 feet. The Little Forest field was opened in 1872, but did not witness much activity: by 1873 most of the claims were abandoned, except for those being worked by the Welcome and the Forest Queen companies.[250]The Elaine field was cited as the chief feature of the Steiglitz Mining Division in March 1873, with several reefs being worked by small co-operative parties: one of the most successful being the Minerva.[251] Another company, the Lindsay, sunk to 325 feet on the Elaine field.

Steady decline
For most of the 1870s mining on the Steiglitz field was extremely dull. By 1879 only a hundred or so miners were at work on the field. About the only notable thing to have occurred during this time, was the construction of a pyrites works by the Albion Company. There was a brief flurry of activity in the early 1880s when three new co-operative companies were formed and along with a couple of the field's stalwarts, the companies - Britannia Rivals, Sailors Reef, Britannia Alliance, Albion Steiglitz, Birmingham and North Birmingham - carried the hopes and expectations of the local mining industry. It was not until the close of the decade that one of them, North Birmingham, struck rich gold and gave a glimmer of hope for the future.[252]

246 Mining Surveyors' Reports, August 1859
247 Mining Surveyors' Reports, March 1866
248 Mining Surveyors' Reports, September 1868
249 Mining Surveyors' Reports, December 1871
250 Mining Surveyors' Reports, June 1873
251 Mining Surveyors' Reports,September 1875
252 Mining Surveyors' Reports, September 1889

Mining at Steiglitz in the 1890s was revived by the increased production from the North Birmingham and also the New or United Albion. With the rise in gold yields, capital once more flowed into the field and new companies formed. One of the new companies, the New Mariner, which was working ground on the southern end of the field, was to be extremely successful (in terms of Steiglitz) and paid out £56,000 in dividends. The other main dividend payer of the early 1890s boom was the United Albion with £15,000 in dividends.[253] The mining boom peaked in 1984 with some forty reefs being worked and the town's population at 2,000. [254]

Black Thursday - September 8 1896
On this day a bushfire swept down on Steiglitz and consumed many of the town's buildings along with the top gear of the major mines. For the mining community it could not have come at a worse time: its two leading mines were struggling, they had exhausted all known ore reserves. By the end of 1896 both the New Mariners and United Albion were being worked by tributers. The formation of the Ballarat Steiglitz G. M. Company in 1897 turned out to be the last effort in haling the decline of the field. This company, funded by English capital, took over a large section of the field and installed a hauling plant capable of working to 3,000 feet. The company, even for Steiglitz standards, was extraordinary unsuccessful: it mined only 9 tons of ore. [255]

Cyanide process
While large scale underground operations collapsed during the 1890s, the Steiglitz field received a boost through the introduction of the cyanide process. By 1897 there were at least two companies using the new technology: the Hanover Cyanide and Hans Irvines Cyanide works.[256] By means of these plants lost gold (naked to the eye) was retrieved from the waste (tailings) left behind by the crushing mills. The new technology could not save the field, and by 1904 the town's population had dropped to 150.[257] By this time there were on small prospecting parties working on the field. The Kinglock Company in 1915, was the last of these prospecting ventures to close down.

1930s depression
The Great Depression, which saw the price of gold rise from £4 to £8 generated considerable mining activity in Victoria. There was renewed prospecting and cyaniding of tailings on the Steiglitz field during this time, but with no notable results. There was also some tunnelling into the sides of Sutherland Creek. The Dreadnought mine was the last to operated in this brief period of revived mining. It closed down in 1941.

253 Steiglitz, a history of a gold mining town, undated, p.15
254 Clark, Travis., Steiglitz, Golden Town of Yesteryear, undated
255 Steiglitz, a history of a gold mining town, undated, p.16
256 Steiglitz, a history of a gold mining town, undated, p.16
257 Clark, Travis., Steiglitz, Golden Town of Yesteryear, undated

MOUNT EGERTON-GORDON GOLDFIELD

The division's first goldfield, Mount Egerton, was discovered in 1853 by a party of Ballarat miners led by George Grell.[258] The field was rushed in 1854 with miners concentrating their efforts on extracting gold from one long line of quartz reefs. Some shallow alluvial mining was also taking place along several of the gullies that drained west and east from the line of reefs, eg. All Nations Gully and West Gully. Later on, shallow alluvial ground was also opened at Cobbler's, Greenhill and Mount's gullies.[259] The division's other major goldfield, Gordon's, was opened in May 1858 with the discovery of Kangaroo Bob Reef.[260] Some shallow alluvial ground was also opened in conjunction with this reef, with mining mainly confined to Parker's and Providence gullies.
The discovery of rich quartz gold at both Mount Egerton and Gordon started small rushes - in 1856 the population on the former field was 600, and the population on the latter field, when it was rushed in July 1858, quickly grew to 300. The prospecting and mining activities of these miners were to show that the two fields were actually one - the Mount Egerton-Gordon line of reefs. There was a tendency, however, for each discovery on this long line of auriferous reefs to be named something different.[261]

Early quartz mining
With quartz mining being the main industry it was not too long before machinery to crush the quartz was introduced - within a space of two years from discovery there was reported to be 25 crushing machines operating at Mount Egerton. These would have been a mixture of hand-, horse- and steam-powered devices.[262] Mining on both fields during the latter part of the 1850s was fairly basic, with miners removing the surface payable stuff, from small 12ft square claims. The dash for quick profits saw the bulk of early quartz workings abandoned by 1858-59 when the shafts dropped onto water. During this early period there was no systematic work carried out to prove future ore bodies.

Commencement of company mining and leasing system
In August 1859 the mining registrar set the scene for the next period of quartz mining: that the abandoned reefs could be profitably mined only by large companies working large leases and through the investment of powerful efficient steam-powered mining and crushing machinery. Only these companies argued the mining registrar could secure the necessary capital and labour which was beyond the capacity of the individual or small co-operative parties of working miners.
The local mining community responded quickly to the government's promotion of the leasing system; by the end of 1859 the mining registrar recorded that the entire area of the reefs had been taken up.[263]
The commencement of mining operations on the leases was to be a less rapid and certain thing. By the start of 1860 there were only four companies doing anything at Mount Egerton, where mining was confined to the Big Hill section of the reef [264]; and there were only two companies, Kangaroo Bob Reef and Parker's, at work on the Gordon end of the field.[265] The some of the newly formed companies quickly installed steam powered engines (ranging from 10h.p. to 20h.p.), small batteries (up to 12-head of stamps), Chillian mills; and constructed dams and reservoirs.[266] The Rose Company on Little Hill Reef (Egerton) was also reported as having erected a 65 foot brick and stone chimney stack.[267] By December 1858, £9,200 had been invested new machinery.[268]The erection of plant, preparation and sinking of shafts draggen on into 1860. The companies who manage to raise ore during this time had poor crushings, which not only spelt disaster for them, but sapped the confidence of those not so well advanced. Most companies, as a result, closed down. By the end of 1860, surviving companies were reduced to crushing debris and tailings that had been discarded in the fifties. The division's only water-

258 Flett, The History of Gold Discoveries in Victoria, 1979, p.374
259 Flett, The History of Gold Discoveries in Victoria, 1979, p.374
260 Flett, The History of Gold Discoveries in Victoria, 1979, p.375
261 Mining Surveyors' Reports, December 1860
262 Flett, The History of Gold Discoveries in Victoria, 1979, p.375
263 Mining Surveyors' Reports, December 1859
264 Mining Surveyors' Reports, August 1859
265 Mining Surveyors' Reports, Decemb er 1859
266 Mining Surveyors' Reports, August 1859
267 Mining Surveyors' Reports, October 1860
268 Mining Surveyors' Reports, December 1859

wheel, on Cantwell's Creek was erected during this time to re-crush tailings.[269] Another company, the Mount Hope Company (Gordon) was also reported engaged in roasting quartz.[270]
By 1863 quartz mining in the division had stagnated. Only the Parker's Reef Company was at work at the Gordon end; and the industry was almost totally being maintained by the operations of the Egerton Quartz Mining Company. The latter company were crushing large quantities of stone obtained from an open cut.[271]
The mid 1860s held little joy for most companies and the bulk of the division's mining plant was sold and removed - by 1865 the value of the division's mining plant had been reduced by two thirds, to £2,500

Alluvial mining
During the 1860s the division's shallow alluvial ground received scant attention. Both shaft sinking, tunnelling and surfacing was undertaken with the wash being treated in mainly horse-powered puddling machines. One of the main localities worked during this time was All Nations Gully at Egerton. Puddling proved to be particularly successful and at least one steam-powered plant operated for several years, eg. in 1863 this machine treated 1,500 tons in three moths for an average of ¾dwt per ton.[272]
Ground sluicing was also carried out along Parker's Gully and the banks of the Werribee River (10 miles north of Gordon).[273]

Deep lead mining
In March 1865 there was failed attempt at deep lead mining at Lal Lal, when the Lal Lal Basin Company took up a block lease, in Sawpit Gully, adjoining the leasehold of the Victoria Lignite Company (division's first coal mine). There were also failed attempts at deep lead mining in the 1870s: by the Bonshaw Company and Egerton Lead Prospecting Association (All Nations Gully), and Kerrit Bareet Company (Parker's Gully). These companies all sunk deep shafts, eg. Bonshaw Company's shaft went down 278 feet; and all installed small steam-powered pumping and winding plants. The last attempt in the division at deep lead mining was undertaken at Lal Lal in the early 1890s by the Yendon Company.[274]
Between the brief episodes of deep lead mining, shallow alluvial mining was continually referred to by the mining registrar as being in a very depressed state and described as mainly confined to the activities of a few lonely fossickers.

Lat e1860s mining revival and subsequent depression
By 1867, steady and sometimes outstanding yields by the Egerton Company had revived some confidence in the field. Another company, the Black Horse at Egerton was also producing good gold.[275]In March 1868 the mining registrar reported that a large extent of ground had been taken up, stretching north from the Egerton mine to Parker's, Kangaroo Bob and Hicks reefs at Gordon. New companies formed moved to a progressive stage - including the Flying Scud, North Egerton, Prince of Wales, Hicks reef, Victoria, Kangaroo Bob, Ercildoun, Emu and Greeds Reef - and erected steam-powered mining and crushing machinery, and undertook shaft sinking and driving. The late 1860s mining boom marks the time when mining was undertaken at considerable depth, by December 1869, mines like the Egerton, Black Horse and Flying Scud were dropping beyond the 500 foot level. The late 1860s mining revival proved to be short-lived.
In December 1870 the mining registrar recorded that apart from the Egerton Company, no one else was at work.[276] This state of affairs was to prevail more or less through the mid 1870s. About the only excitement during this time was the introduction of a new explosive compound called 'Dynamit Patronen' (dynamite) in 1872 [277] which proved to particularly effective reducing time taken in shaft sinking and driving. The Egerton Company continued to carry the field, in September 1875 it was

269 Mining Surveyors' Reports, June 1860
270 Mining Surveyors' Reports, March 1860
271 Mining Surveyors' Reports, July 1863
272 Mining Surveyors' Reports, October 1863
273 Mining Surveyors' Reports, July 1860
274 Mining Surveyors' Reports, September 1891
275 Mining Surveyors' Reports, March 1868
276 Mining Surveyors' Reports, December 1870
277 Mining Surveyors' Reports, September 1872

employing an average of 130 men [278]and was carrying out extensive underground operations at two shafts - Quarry and Rose shafts.

Rise of the New Black Horse and Parker's United mines
After 1875 two new companies - the New Black Horse and Parker's United - began to experience success equalling that of the Egerton. The Black Horse was the adjoining claim to the Egerton, the Parker's United held ground at Gordon. By 1877 the two new companies were producing rich gold and were employing large numbers of men, ie. former had 78 staff and the latter 50. At the same time, the Egerton Company was employing an average of 175 men.[279] These companies had by now very large crushing plants, eg. the Egerton was operating a battery with 43-head of stamps, the New Black Horse's battery had 22-head. All three companies were paying out large dividends to their respective shareholders.

New quartz fields discovered in the early 1880s
The successes of these companies sparked a small mining boom in 1883, which led to a flurry of machinery installation. Some of this machinery was erected at two recently discovered goldfields, ie. the Great Northern Parker and Jones-Bradford companies erected steam-powered plant at Korweinguboora; and the Summer Hill, Shamrock and South Shamrock companies all erected mining plant, including batteries, at Moorabool West, to the north of Gordon. Auriferous reefs were also discovered 1 ½ miles to the south-east of Barkstead, which gave some rich but very small parcels of ore. This field did not develop passed the prospecting stage.[280]

Dominance of Egerton, Black Horse and Parkers United mines during the 1880s
The dominance of the Gordon-Egerton field by the Egerton, New Black Horse and Parker's United continued throughout much of the 1880s. Despite the Parker's United proved to be the lesser of the three in terms of production it does seem to have had a remarkable influence on the field's mining nomenclature with many 1880s hopefuls bearing its name, eg. Parkers Extended, Great Northern Parker, Parker's United No. 1, Central Parkers, South Parkers, North Parkers, Parkers Freehold and Parker's United Miners.
The Egerton and Black Horse companies both had their turns at being the division's largest gold producer. The former held the record throughout much of the 1880s, and the latter for a shorter time during the late 1880s/early 1890s. The Egerton was to pay out some £300,000 in dividends and the Black Horse obtained £460,000 worth of gold and paid out £178,000 in dividends.[281]

Retreatment of tailings by Chinese
With the three mines crushing large volumes of ore, the retreatment of tailings became a feature of the field. The work was monopolises by Chinese and was taking places as early as 1875 and continued right through the 1880s. The Chinese treated the tailings in cradles, downstream from the batteries. The Chinese were also recorded as treating the tailings from the Kangaroo Bob Reef battery.

Iron mining and smelting at Lal Lal
Another new industry to emerge in the division during the mid 1870s was the mining and smelting of iron at Lal Lal. The Lal Lal Iron Company installed mining machinery (engine and boiler), erected smelting furnaces and constructed a tramway from its mines to smelting works. The company also had a foundry at Ballarat. For a brief time in the early 1880s the Lal Lal Iron Company was another large employer of labour, eg. in December 1883 the company had a staff of 150 men.[282] Apart from employing miners and furnace men, the company also had men getting limestone (flux) and firewood from its lease and making charcoal. The Lal Lal Iron Works had ceased operations by the end of the 1880s.

Coal mining at Lal Lal
Coal was discovered at Lal Lal in 1858 as the result of prospecting for alluvial gold. The deposit was subsequently developed by the Victoria Coal and Lignite Company whose chequered career was due to

278 Mining Surveyors' Reports, September 1875
279 Mining Surveyors' Reports, December 1877
280 Mining Surveyors' Reports, September 1883
281 Australian Mining Standard, June 1, 1899
282 Mining Surveyors' Reports, September 1883

a large extent to the variability in the quality of the coal.[283] In the late 1880s a second attempt at coal mining was undertaken at Lal Lal by the Australian Deodorizing and Fertilser Company. This company also only obtained moderate results.

Prolonged depression in gold mining

Throughout the 1890s the Egerton-Gordon line produced very little gold. One by one its principle mines suspended or cut back operations as known reserves were exhausted. They were uniformly unable to discover any new ore bodies. By the turn of the century, the Black Horse Company had the field to itself and was prospecting at the 2,000 ft level. Unable to sustain the cost of such deep work, the company ceased operations and the field was left to the devices of a few small prospecting parties. To assist the locals, the government installed a small battery at Egerton. During the first decade of the twentieth century there were also several parties engaged with small cyanide plants, gathering the sand from the gullies where it had previously been treated by the Chinese.[284]

1930s Depression - a brief moment of quartz mining glory

During the 1930s depression the price of gold rose from £4 to £8 and ounce. This rise promoted a revival in gold mining throughout Victoria. Some prospectors were to be lucky. In September 1933 Daniel Toohey discovered the Gordon Gold reef - 60 tons from the reef crushed at the Egerton State Battery yielded 356 ounces of gold. The exceptional richness of the first crushing drew attention to the field and numerous leases were taken up. Although some of the new companies, such as the Gordon Horse got to the mining stage, none other than the Gordon Gold Development Company (formed to work Toohey's discovery) paid dividends. The Gordon Gold Company installed a 10-head battery and, until the company closed down in 1939, crushed 29,102 tons for 30, 121 ounces of gold. In 1936, the company, with an annual total of 7,857 ounces, was the biggest gold producer in Victoria. [285]

Mining of kaolin

With the demise of the Gordon Gold Mining Company in 1939, the mining of kaolin (china-clay) became the main attraction in the division. Kaolin mining was carried out at both Lal Lal (by the Ceramic Kaolin Mines Pty Ltd) and Mount Egerton (by the Victoria Tile Company and Miss M. Malone Company).[286] All three mines were underground operations, with a whip being used for haulage at the Lal Lal mine.[287] The three mines continued to mine into the fifties with much success, with demand often outstripping supply.

283 Mining and Geological Journal, September 1950, p52
284 Annual Report, 1904
285 Mining and Geological Journal, July 1939, p.5
286 Annual Report 1946
287 Mining and Geological Journal, March 1947

VICTORIAN GOLDFIELDS PROJECT

HISTORIC GOLD MINING SITES IN THE SOUTH WEST REGION OF VICTORIA

GAZETTEER: STATE & REGIONAL SIGNIFICANT SITES

Department Of Natural Resources & Environment

August 1999

Name	Goldfield	Ranking	Page
Heatherlie quarry	Stawell	HR1556	
Maefking goldfield	Stawell	Inventory	
Great Western lead	Stawell	Inventory	
Hand in Hand cyanide works	Stawell	Inventory	
Welshmans crushing works	Stawell	Inventory	
Four Post diggings	Stawell	Inventory	
Three Jacks mine	Stawell	Inventory	
Moonlight-cum-Magdala	Stawell	Inventory	
North Magdala	Stawell	Inventory	
Oriental Company	Stawell	Inventory	
Leviathan mine cyanide works	Stawell	Inventory	
Eaglehawk Company	Ararat	Inventory	
Hard Hill alluvial workings	Ararat	HR1044	
Langi Logan South	Ararat	Inventory	
New Langi Logan No. 2	Ararat	HR to do	
New Langi Logan No. 1	Ararat	Inventory	
Golden Point Workings	Beaufort	Inventory	
Fiery Creek Lead	Beaufort	Inventory	
Fiery Creek Dredge hole	Beaufort	Inventory	
Baxter Track deep lead workings	Beaufort	HR ????	
Tipperary Gully Workings and race	Beaufort	HR1250	
Northern Hope Company	Beaufort	Inventory	
Beaufort Deep Lead Company	Landsborough	Inventory	
Glenpatrick Creek workings	Landsborough	Inventory	
Wet Patch Lead, Middle Creek	Landsborough	Inventory	
Malakoff Lead Workings	Landsborough	Inventory	
Malakoff Alluvials Pty Ltd	Landsborough	Inventory	
Charlsons and Davies No. 1	Creswick	Inventory	
Madame Berry Company	Creswick	Inventory	
Lord Harry	Creswick	Inventory	
West Berry Consols No. 3	Creswick	Inventory	
Madame Berry West No. 3	Creswick	Inventory	
Hepburn Estate	Creswick	HR to do	
Berry Consols No. 2	Creswick	Inventory	
Berry No. 1	Creswick	HR1740	
Berry Consols Extended	Creswick	HR1741	
Spring Hill and Central Leads	Creswick	Inventory	
Kaboonga Company	Creswick	Inventory	
Berry United	Creswick	Inventory	
New Australasian No. 2	Creswick	HR1302	
Humbug Hill alluvial workings	Creswick	HR1228	
Lincoln Gully	Creswick	Inventory	
Mills Reef workings	Creswick	Inventory	
Russells Reservoir	Creswick	Inventory	
Mopoke Gully Sluicing	Creswick	Inventory	
Tavistock Hill	Creswick	Inventory	
Creswick State Battery	Creswick	Inventory	
Lothair mine	Clunes	Inventory	
Port Phillip Company	Clunes	Inventory	
Clunes Powder Magazine	Clunes	Inventory	
Benedetti Deep Lead mine	Blackwood	Inventory	
New Sultan Reef Company	Blackwood	Inventory	
Crown Company	Blackwood	Inventory	
Yankee Creek alluvial workings	Blackwood	Inventory	
Trojan mine site	Blackwood	Inventory	

Yankee-Big Reef workings	Blackwood	Inventory	
Countess Company	Blackwood	Inventory	
Malakoff and Ballarat Mine	Steiglitz	Inventory	
Son of Redan Engine Shaft	Steiglitz	Inventory	
United Albion Company	Steiglitz	Inventory	
New Mariners Company	Steiglitz	Inventory	
Ironbark Reef Workings	Steiglitz	Inventory	
Dollys Creek	Dollys Creek-Morrisons	Inventory	
Borhoneyghurk Company	Dollys Creek-Morrisons	HR to do	
Red Jacket	Dollys Creek-Morrisons	Inventory	
Golden Gate	Dollys Creek-Morrisons	Inventory	
Lal Lal Iron Mine	Dollys Creek-Morrisons	HR1759	
Champion Hill Reef Workings	Dollys Creek-Morrisons	Inventory	
Victorian Tile Co.	Mount Egerton	Inventory	
New Black Horse Company	Mount Egerton	Inventory	
Mount Egerton Government Battery	Mount Egerton	Inventory	
Gordon Gold Mine	Mount Egerton	Inventory	

NAME: **HEATHERLIE QUARRY**
LOCATION: **Grampians Goldfield**
HI NO: **H7323-0012**

LOCATION: At base of Mount Difficult Range, eastern side. The quarry is west off Halls Gap-Mount Zero Road, 13.5kms north of Halls Gap
MUNICIPALITY: Northern Grampians Shire
CURRENT STATUS: Grampians National Park

EXISTING HERITAGE LISTING: National Estate and Victorian Heritage Register—provides a high quality building stone which has been used in over 20 distinguished buildings in the City of Melbourne. Two fine examples are Parliament House and the Town Hall.

SITE HISTORY:
Early in the 1860s Francis Watkins, a stonemason from Stawell, discovered an outcrop of freestone which appeared extremely durable. He then went on to secure a lease and submitted samples for Government projects following successful use of this stone in Stawell (Stawell Courthouse). By the 1880s the stone was accepted to be of a high quality and later a tramway was built from Stawell to the quarry by the Public Works Department. Control of the line was later transferred to the Victorian Railways.
Production of stone from the quarry peaked in the 1880s. In 1886-87 over 100 men were employed at the quarry and lived in crude stone and timber huts adjacent to the quarry. Many of these men came from Italy. The township of Heatherlie was declared and surveyed, and in August 1888 a school house was moved from Darra to cater for the 33 children present at the time. However, by October of the following year the school was closed with only 4 children attending. This was thought to be attributed to the poor living conditions, the inclement weather and the quarry workers choice to travel home on weekends to families established at Stawell.
The quarry closed in 1893 after the Public Works Department contract ceased. It was later re-opened by a private firm at the turn-of-the-century and closed due to lack of orders in 1938. Some minor extractions of freestone occurred in 1971 and 1981. Today stone is only used for repairs and maintenance of existing historic buildings, which have used the stone from the Mount Difficult quarry.
Wildflower expeditions from Stawell and Ararat to Heatherlie were undertaken by train until the line was officially closed to all traffic in 1949. All but a few pieces of the line were removed in 1951.
Reference "Grampians National Park, Historic Heatherlie Site", *CNR Information Sheet*, November 1986.

DESCRIPTION & INTERPRETATION OF FEATURES:
Stone houses (Date of construction unknown, c.1888, said to have been built by Italian masons who worked at the quarry).
House No. 1 - Restored with galvanised iron roof. Overall measurement, 15½ ft x 12 ft, walls 1¼ ft thick and 7½ ft high. One doorway and windows on all other walls. Remains of a stone forge near the house.
House No. 2. Restored with galvanised iron roof. Overall measurement, 21½ ft x 12 ft, walls 1¼ ft thick and 6½ ft high. Window and doorway on north wall, stone chimney on east wall, and south wall has two windows. House probably had two rooms.
House No. 3. Restored with galvanised iron roof. Overall measurement, 21½ ft x 14½ ft, walls 1¼ ft thick and 8 ft high. Two roomed house, adjoining doorways on south wall, also has adjoining fireplaces. Single window on west wall.
Machinery and foundations at Quarry siding.
Boiler--out of situ, 23 ft long egg-shell boiler which rests on demolished engine bed.
Boiler setting and chimney stack. Intact double stone boiler setting, 18 ft square, 1¼ ft thick walls, and standing 7 ft. On the north-west corner of the boiler setting is an intact flue and 4 ft square stone chimney stack (approximately 25 ft high). Boiler setting has two different types of boilers: a multi-tubular and a Cornish boiler. The Cornish boiler was first inspected on 1/5/1908 and last, in 14/7/1933.
Quarry. Large quarry with vertical faces and lots of stone debris. Vertical faces have well defined bore holes.
Powder magazine. Collapsed dug-out which has a wooden lintel.
Railway. Sections of railway track, cuttings and embankments.
Crane. 12 ft square concrete foundation for crane or derrick.

CONDITION OF FEATURES:	The eastern wall of the boiler setting is partly collapsed. Stone houses have been restored and interpretation track put in.
SIGNIFICANCE RANKING:	Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **MAEFKING ALLUVIAL WORKINGS**
LOCATION: **Mount William Goldfield**
HI NO: **H7323-0013**

LOCATION: Eastern flank of Mt William. East of junction of Emmett and Maefking roads, 25 kms south of Halls Gap
MUNICIPALITY: Northern Grampians Shire
CURRENT STATUS: Grampians National Park

EXISTING HERITAGE LISTING: National Estate—part of Grampians National Park. The story that is told by Maefking today is more about revegetation. There are other more visible sluicing landscapes elsewhere which document the technology.

SITE HISTORY:
In 1900 there was a large rush to the Grampians area, south of Mount William, to what became known as the Maefking Rush. Gold was first found in the area by two wood splitters, named Arthur and David Schache, but was not found in payable quantities, until Philip and Frank Emmett prospected the area. In July 1900 a small rush set in and gold was found in at least ten gullies. The government issues free rail passes to field, and within a few weeks 10,000 men were on the Maefking field.
The surveyed township at the rush was called Naram Naran. The gold was found in several steep-sided gullies draining off the eastern flank of Mount William. The rush was short lived and soon the mining population had been reduced to about 60 or 70 men. These men were described as sluicers and fossickers who were reported as making "good wages" when water was available. At other times, the men found work in the local sawmills. In all some 25,000 ounces of gold was won from the field.
As little to no new country was opened up the field did not experience in dramatic revivals or development of organised mining. One prospecting party did spend a couple of years driving a tunnel into Sugar-Loaf in search of a reef, but with no success. There was also a syndicate formed (Maefking Syndicate) to undertake extensive sluicing operations at Mount William. In 1938, the syndicate's tail race was reported as completed, but that sluicing had been postponed due to lack of water. The syndicate does not appear to have mined with any success. In 1939 the township of Maefking was destroyed by a bushfire.
References Flett, "The History of Gold Discovery in Victoria", *CNR Information Sheet*, 1979, p.345.

DESCRIPTION & INTERPRETATION OF FEATURES:
Alluvial gold memorial. Construction of granite boulders now marks the site of Maefking Township and goldfield, gold discovered by PE & FH Emmett in June 1900, population 10,000 erected by the Shire of Ararat and subscribers, 25th March 1964.
Alluvial workings. Maefking interpretation walk goes by two large sluice holes with 20 ft high vertical faces: Poverty Gully and Brownings open cuts. Both open cuts have large dumps of pebbles and are very overgrown with trees and ferns. There is a deep tail race running from the eastern end of Browning's open cut, and presumably one would also run from the end of the Poverty Gully hole. Around the open cuts are sections of water races, dams and open shafts. Like the open cuts, these features are well hidden by vegetation. According to local information sections of wooden fluming (used for supplying water for sluicing) still survive in the open cuts.

CONDITION OF FEATURES: Very overgrown. Stone fireplaces marking the site of Maefking were destroyed as part of a clean-up for a Back-to-Maefking celebration in 1964.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME:	**GREAT WESTERN LEAD**
LOCATION:	**Stawell Goldfield**
HI NO:	**H7323-0014**

LOCATION:	Workings bounded by Ruthvens Access and Great Western roads, Great Western.
MUNICIPALITY:	Northern Grampians Shire
CURRENT STATUS:	Great Western Lead Historic Reserve

SITE HISTORY:

At the beginning of 1862 there was a large rush to Great Western. The ground rushed--now known as Great Western Lead--was located a half mile from the Stawell Road. The gold was obtained from Tertiary or high level gravels and proved to be very rich. A great portion of miners attending this rush (known as the Great Western Township Rush) were Chinese. Sinkings on the new field was from 30 to 40 feet. The lead received considerable attention for several years and then, like many other alluvial workings in Victoria, which proved unsuitable for sluicing, became the realm of lonely fossickers or hatters. These miners tended to be old men, and mainly Chinese.

DESCRIPTION & INTERPRETATION OF FEATURES:

Sinkings. Narrow band of intensive sinkings (shafts and small mounds) along an old cement lead. Very scrubby but workings are undisturbed and do provide an appreciation of the nature of this type of gold mining.

CONDITION OF FEATURES:	Some quarrying of small mullock heaps but the bulk of the diggings are undisturbed.
SIGNIFICANCE RANKING:	Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **1994.**

NAME: **HAND IN HAND CYANIDE WORKS**
LOCATION: **Stawell Goldfield**
HI NO: **H7323-0015**

LOCATION: 3 km north-west of Stawell
North side of the Deep Lead-Sand Bar Road, Deep Lead
MUNICIPALITY: Northern Grampians Shire
CURRENT STATUS: Historic Reserve

SITE HISTORY:
The Deep Lead was first worked in 1857, and during the 1860s the shallower sections of the lead were monopolised by Chinese miners who used cradles to treat the auriferous wash. In the late 1860s one deep lead mining company--the Standard Co.--attempted to work the lead at depth. In 1868, the company's efforts were thwarted when its shaft was flooded.
In 1871 there was an attempt to find the continuation of the Deep Lead which had been lost when the Standard Company's shaft had been flooded. The Tregea Alluvial Company commenced work on the lease with an old steam-powered engine and was soon getting payable gold. The company was then reformed into the Hand-in-Hand Company. The new company erected steam-powered machinery for winding and puddling in 1873 and mined with limited success until 1876. During this time the Hand-in-Hand produced 150.71 kg. of gold. Other companies to mine with some success during this time were the Band of Hope, Ophir, and North & South.
Reference Mining Surveyor's Reports, September 1873.
Inan, K. "Ararat Mine Data". *Geological Survey of Victoria, Unpublished Report 1991/15.*

DESCRIPTION & INTERPRETATION OF FEATURES:
Cyanide works. Most of the plant is located on top of a flattened tailings dump. Treatment plant consists of a row of five, 12 ft diameter, brick soakage vats; and a row of three, 17 ft diameter, brick soakage vats. The vats are rendered with concrete and set 4 ft apart. A raised 12 ft diameter, 3 ft deep, galvanised iron tank is located where the two rows of vats converge.
At the base of the heap is a brick trough, 12 ft x 3 ft; and 9 ft diameter, concrete-rendered, brick drainage vat. The brick trough is petitioned off into five compartments by thin concrete walls. This probably housed the zinc boxes. Iron pipes run from both ends of the trough to the drainage vat. Near the processing plant foundations are the footings of a small brick building, 9 ft x 8 ft, with a 2½ ft square fire place.
Mullock heap. Intact large mullock heap with 16 dumping lines and filled shaft. The heap is located to the west of the cyanide works.
Machinery site. Flattened machinery site with spread of rubble.
Dam. Large full dam.
In the 1930s, along with a general trend elsewhere in the State, the Hand-in-Hand tailings would have been treated by the cyanide process. The large scale cyaniding operations that took place in the 1930s was brought on by a rise in the price of gold, and the introduction of new filtration process which enable low grade tailings to be cyanided profitably.

CONDITION OF FEATURES: Mine site has an intact mullock heap; cyanide works are in good condition and site has high integrity.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **WELSHMANS CRUSHING WORKS**
LOCATION: **Stawell Goldfield**
HI NO: **H7323-0016**

LOCATION: Off Deep Lead Cemetery Road, Deep Lead
MUNICIPALITY: Northern Grampians Shire
CURRENT STATUS: Martins Sand Reserve

SITE HISTORY:
Further research required.

DESCRIPTION & INTERPRETATION OF FEATURES:
Water dam. Large full dam (lots of bird activity).
Battery. Flattened battery site situated between track and eastern end of dam's embankment. Little above ground except for some protruding tie bolts, brick and granite rubble.
Tailings. Currently being mined and the area rehabilitated.
Eucalyptus distillery. To the north of the dam, on freehold land, is an intact square brick stack approximately 25 ft high, raised concrete distilling trough, remains of wooden crane and two underground vats. Plant is situated in a small block of land off the reserve (possibility it could be public land, grazing licence).
Pumping engine? Above the Eucalyptus plant is a small, partly buried brick engine bed, 12 ft x 4 ft, x 4 ft high. The boundary fence of the reserve runs across the bed. Associated with the bed is a circular concrete pit.

CONDITION OF FEATURES: Trace of foundations, only the Eucalyptus and dam are in good condition.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **FOUR POST DIGGINGS**
LOCATION: **Stawell Goldfield**
HI NO: **H7323-0017**

LOCATION: East of Warracknabeal-Deep Lead Road, Deep Lead
MUNICIPALITY: Northern Grampians Shire
CURRENT STATUS: Reserved for Education Purposes

SITE HISTORY:
According to Flett, the Four Post goldfield was discovered and rushed in 1858. The field continued to be a focus for alluvial miners into the early 1860s: eg., in 1861, the *Mining Register* reported that the greater portion of the division's alluvial mining population was still engaged at the Four Post Rush. The field was reported in 1863 as being abandoned, except for Chinese miners.
Reference Flett, "The History of Gold Discovery in Victoria 1979",
Mining Surveyor's Reports, June 1861.

DESCRIPTION & INTERPRETATION OF FEATURES:
Shallow sinkings. Wide band of intensive shallow sinkings (small mounds and shaft depressions).
House site. Located where lead crosses gully, marked by building rubble and olive tree.
Puddling sites. Down gully (south) of house site are three low embankments and associated banks of pebble-wash. No puddlers visible.

CONDITION OF FEATURES: Shallow sinkings are undisturbed, good integrity.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **THREE JACKS MINE**
LOCATION: **Stawell Goldfield**
HI NO: **H7323-0018**

LOCATION: 2 kms north-west of Stawell, off Golf Course Road, north of Newington Road
MUNICIPALITY: Northern Grampians Shire
CURRENT STATUS: State Forest

SITE HISTORY:

The Three Jacks mine is the most westerly of the Stawell mines. It was an English-funded company, which was also known as the General Goldfields or Victorian Consolidated Gold-fields. By 1903 gold production on the Stawell goldfield was particularly low, with only three mines working. Two of these mines--the Amalgamated Scotchmans & Perthshire and the Three Jacks--were only in the prospecting stage of development. Only the Magdala-cum-Moonlight was mining successfully.

In 1906, the Three Jacks Company, on opening up onto what seemed an extensive ore-bearing formation, erected a 20-head stamp mill. The first few hundred tons crushed in the new mill were found to be highly payable and the mine was touted as the next star of the field: the saviour of Stawell. Unfortunately for the company, and Stawell, the ore body did not live up to expectations and little more ore was ever crushed. The company closed down and the plant was sold off in 1909. By this time the shaft had been sunk 358 ft. During its life the mine produced 63 kg of gold from 4582 tonnes, including production from crushings and treatment of concentrates and tailings.

Reference "Records of the Geological Survey", Vol 111, Part 1, 1909,
Geological Survey of Victoria, Ararat Economic Geology Notes, *Unpublished Report*, 1990/45, K. Inan.

DESCRIPTION & INTERPRETATION OF FEATURES:

Mullock heap. The heap has been largely quarried and the shaft has been filled.

Mining machinery. Remains of large brick, tank-like engine bed, 26 ft x 10 ft, 3 ft high. The bed has 2½ ft thick walls. The bed has been modified with the addition of a 9 ft square concrete winder bed.

Demolished boiler house. Large spread of brick rubble near the southern side of the engine bed. There is a possibility of buried foundations.

Battery. To the north of the mining machinery foundations is a large brick engine bed, 24 ft x 4 ft, 3 ft high, with 1 inch bolts and an extensive concrete slab. The slab is largely buried by soil and rubble. The slab has two levels , the upper is 60 ft x 30 ft and lower floor is 60 ft square. The upper floor has two, 15 ft long linear slots (mortar blocks burnt out).

CONDITION OF FEATURES: Area been used for dumping rubbish.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **MOONLIGHT-CUM-MAGDALA**
LOCATION: **Stawell Goldfield**
HI NO: **H7323-0019**

LOCATION: Stawell, east side of Darlington Road (Donald-Stawell Road)
MUNICIPALITY: Northern Grampians Shire
CURRENT STATUS: Crown Land

SITE HISTORY:
The Magdala shaft was worked from 1868 to 1918, reached a maximum depth 2,140 feet, and yielded 315,417 ounces of gold valued at £1,293,652. Its shaft was the deepest on the Stawell goldfield.
In the 1870s, the Magdala Company was one of a number of companies at Stawell who were engaged in sinking on new ground to intersect a very deep formation which was being successfully worked by mines to the north. By the winter of 1877, the Magdala shaft was down 1,750 ft, making it the second deepest on the field. Despite all its endeavours the Magdala company was not to mine successfully for some 18 years.
By the late 1870s, the Stawell field had slipped into a deep depression. The lethargy gripping the Stawell field was broken in 1880 when companies commenced using National rock drills. These drills, driven by compressed air, proved to be extremely effectively and enable both prospecting and mining operations to be carried out with great economy. The new technology eventually brought the Magdala Company success when it picked up some good indications in a diamond drill core in 1883 and commenced driving towards the ore body. In 1885 the company went through re-organisation to acquire the necessary funds to complete its prospecting program; and in 1886, the fortunes of the new venture--the Moonlight-cum-Magdala--began to improve. The company's quarterly crushing from June 1886 showing a healthy and constant increase in the average gold yield. The improved showing of the company encouraged several other ventures--Cross Reef Consolidated, North Magdala and Moonlight Extended--to prospect hitherto untried country.
The Moonlight-cum-Magdala Company dominated the Stawell goldfield from the late 1880s onwards. In 1903 it was the only Stawell company still mining profitably and it continued to produce gold until it closed down in 1917. By this time the Magdala had exhausted all known reserves and was unwilling to commit any capital towards progressive works.
During the 1930s Stawell Gold Mines was unsuccessful in its attempts to work the mine. Today the Magdala ore body is being profitably mined--via a decline--by Stawell Gold Mines Pty. Ltd.

References *Stawell & Grampians Tourist Guide*, Spring/Summer, 1994/95, pp16-17.
Annual Reports, 1917, p.14.
Mining Surveyor's Reports, March 1877.

DESCRIPTION & INTERPRETATION OF FEATURES:
Shaft. Fenced shaft and display sign (Worked from 1868-1918, maximum depth 2,140 feet, yield 315,417 ounces, Historic Marker, Stawell Progress Association).
Water dams and slum ponds. The water dams abut Byrne Street. Below the dams are two (approximately 150 metres wide) quarried slum ponds.

CONDITION OF FEATURES: The slum ponds have been mined, but the embankments are intact. The water dams are now used as storage basins.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME:	**NORTH MAGDALA**
LOCATION:	**Stawell Goldfield**
HI NO:	**H7323-0020**

LOCATION:	Stawell, North Magdala Company, east side of Woods Street
MUNICIPALITY:	Northern Grampians Shire
CURRENT STATUS:	Crown Land

SITE HISTORY:
In 1886, the newly formed Moonlight-cum-Magdala, began to mine profitably. The improved showing of the company encouraged several other ventures in the vicinity--Cross Reef Consolidated, North Magdala and Moonlight Extended--to prospect hitherto untried country.

DESCRIPTION & INTERPRETATION OF FEATURES:
Mining machinery. Located on a vacant block of land between two houses, is a large U-shaped brick engine bed (36 ft x 13 ft, 7 ft high, and 2 ft thick walls), and a raised narrow brick bed (21 ft x 5 ft, and 6 ft high). At ground level, next to the narrow bed, are the outlines of two demolished beds. The oundations are obscured by vegetation.
Mullock heap. 18 metres from the foundations are a filled shaft and remains of mullock paddock.

CONDITION OF FEATURES: Area around the standing foundations has been levelled.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory

Assessed by: **David Bannear** ***Date:*****July 1994.**

NAME: **ORIENTAL COMPANY**
LOCATION: **Stawell Goldfield**
HI NO: **H7323-0021**

LOCATION: Stawell. The shaft is immediately north of Magdala shaft, east side of Darlington Road. The battery foundations are on the west side of the road
MUNICIPALITY: Northern Grampians Shire
CURRENT STATUS: Crown land

SITE HISTORY:

The Oriental mine was one of the richest of the Stawell mines and was worked to a depth of 1,866 feet. The mine had two main periods, with its earliest being the most productive. From the early 1860s to the time of the company's amalgamation with the adjoining North Cross Company in August 1888, the Oriental produced, from a very small claim, 4387 kg of gold from 90315 tonnes (141,036 ounces, from 38,893 tons, valued at £556,612) and paid out £300,000 in dividends; and the Oriental & North Cross Reef Company--1888 to 1906--produced 96 kg of gold from 7977 tonnes of ore.

In December 1868, Stawell's mining registrar reported that there had been four years of successful quartz mining on the field. This record had been achieved not by any one company but a host of small claimholders, eg. in March 1867 there were 71 claims being worked on 11 reefs. The uninterrupted success of the small claimholders, according to the mining registrar, was beginning to attract the attention of outside capital, instigating an investment spree. This spree led to the rapid formation of numerous joint-stock (public) companies and the marking off in leases of a very extensive area of country, principally to the north-west of the worked reefs.

The investment spree, which saw £12,000 invested in machinery in three months, proved to be unsuccessful. The field's fortunes were quickly reversed when two of the old established mines--the Pleasant Creek North Cross Reef and the Oriental--commenced producing rich gold from below the 600-ft levels. The North Cross, and to a lesser extent, the Oriental Company, were to dominate the field's gold production through the 1870s. Their success on the deep formations encouraged others, such as the Magdala, Prince Patrick, Prince Alfred, Carolina, Great Northern and Newington & Pleasant Creek companies.

References
Sayers, C.E. *Shepherd's Gold, The Story of Stawell*, 1966, p.154.
Inan, K. “Geological Survey of Victoria, Ararat Economic Geology Notes”, *Unpublished Report*, 1990/45.
Mining Surveyor's Reports, March 1867.
Mining Surveyor's Reports, December 1868.

DESCRIPTION & INTERPRETATION OF FEATURES:

Battery. Large brick engine bed, 20 ft x 4 ft, and 7 ft high. Running north from the bed (approximately 18 ft) is a line of partly buried mortar blocks and tie bolts. The battery foundations are obscured by a large pepper tree.

Pumping plant. Abutting the north-west corner of the battery engine bed is a concrete pumping bed, 12 ft x 5 ft, with 1¼ inch mounting bolts.

Shaft. Oriental shaft (fenced) is located on the opposite side of Darlington Road.

CONDITION OF FEATURES: The area around the standing foundations has been levelled.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **LEVIATHAN MINE CYANIDE WORKS**
LOCATION: **Stawell Goldfield**
HI NO: **H7323-0022**

LOCATION: Stawell, North-east of junction of Bulgana and Leviathan roads
MUNICIPALITY: Northern Grampians Shire
CURRENT STATUS: Crown Land

SITE HISTORY:
In the late 1860s, the Leviathan Company installed a crushing plant on the eastern slopes of Big Hill. This mill, with 66-heads of stamps was the largest to operate on the Stawell goldfield. A tramline was constructed to bring ore to the mill from the various mines working on Big Hill. An 1871 map of the Borough of Stawell--by F.W.Wright 1 March 1871--shows the mill as part of the Scotchmans Reef Quartz Company's lease.
In the 1930s, along with a general trend elsewhere in the State, the old Leviathan tailings were treated by the cyanide process. The large scale cyaniding operations that took place in the 1930s was brought on by a rise in the price of gold, and the introduction of new filtration process which enabled low grade tailings to be cyanided profitably.
References *Map of the Borough of Stawell* by F.W.Wright 1 March 1871.
Stawell & Grampians Tourist Guide, Spring/Summer, 1994/95, p.17.

DESCRIPTION & INTERPRETATION OF FEATURES:
Tailings. Massive dump of treated tailings.
Vats. On top of the flattened tailings dump is a line of six 18 ft diameter, concrete-rendered brick soakage vats. Four of the vats are still raised above the tailings, the other two are buried. To the north of the vats is a 10 ft square galvanised iron vat, which contains a L-shaped brick trough. At the base of the flattened dump is a 15 ft diameter, 9 ft deep, concrete-rendered drainage vat. The northern side of the vat has been demolished.
Leviathan Dam. Large full dam. Apparently this dam was restored by the Mines Department in 1971.[288]

CONDITION OF FEATURES: Good, but vats are largely buried. Trail bike riding, the Leviathan Dam was restored in 1971.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory

Assessed by: **David Bannear** ***Date:*** **July 1994.**

---

[288] Stawell & Grampians Tourist Guide, Spring/Summer, 1994/95, p.17

NAME:	**EAGLEHAWK COMPANY**
LOCATION:	**Ararat Goldfield**
HI NO:	**H7423-0035**

LOCATION:	500 m west of Murphy Hill, 1.3 km west of the Western Highway, Armstrong
MUNICIPALITY:	Ararat Rural City
CURRENT STATUS:	Public Land--Whitten Reserve

SITE HISTORY:

By the end of 1868, Ararat's mining registrar was reporting the region's first quartz mining boom with interest being shown towards reefs at Ararat, Moyston, Armstrong's, and Rhymney. One of the most promising mines to emerge from what turned out to be a "disastrously unsuccessful" boom, was the Eaglehawk Company, at Armstrong's. This company installed steam-powered machinery (including a stamping battery) and sunk to 250 feet. The company could not mine profitably and closed down in 1870.

The Eaglehawk Company's lease was then taken up by a succession of companies and tributing parties during the late nineteenth century, all of whom failed to make a go of the mine. The most substantial of the later ventures took place in 1888 when the Eaglehawk and adjoining Eldorado mining leases were amalgamated and worked by the Eldorado Company. This company installed new plant.

The surviving foundations on the site would most probably belong to the Eldorado Company.

DESCRIPTION & INTERPRETATION OF FEATURES:

Mining machinery. Two brick mounting beds (6.0 metres x 1.0 metres, 1.8 metres high; and 7.0 metres x 1.0 metres, 1.0 metres high).

Boiler setting. Stone boiler setting, partly obscured by rubble.

Mullock. Two small intact mullock heaps and associated shaft depressions.

Dams. Two water dams.

Slum. Partly quarried small slum pond.

Shallow sinkings. South-west of the mine is a band of well defined shallow sinkings.

CONDITION OF FEATURES: Good, but foundations obscured by rubble.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **Ray Supple** ***Date:*** **July 1994.**

NAME: **HARD HILL WORKINGS**
LOCATION: **Ararat Goldfield**
HI NO: **H7423-0014**

LOCATION: 2.5kms north-west of Armstrong's
MUNICIPALITY: Ararat Rural City
CURRENT STATUS: Long Gully shallow alluvial workings are on Public Land; Hard Hill cement workings are on Freehold Land

---

SITE HISTORY:

Gold was first found at Long Gully, near Hard Hill in 1855, and in the following year gold was obtained from the hill itself. The Keogh brothers are credited with the latter discovery, which was to become the first of many finds of gold in high level tertiary gravels. By the time of the Keogh brothers discovery, there were 2,000 miners reported in the area.

Hard Hill contained a lead of Tertiary or older high level gravels, which were cemented together into a hard conglomerate. The records show that the mining of the cemented gravels became the main source of alluvial gold in the Ararat-Great Western region during the 1860s-70s. The cemented gravels were sluiced, with the water brought in by water races. The mining records also show that by 1870s, alluvial mining had became the realm of Chinese miners only; with the European miners being predominantly involved in quartz and deep lead mining.

The dating of the workings at Hard Hill to this general period (1860s-70s) is supported by Krauses' Ararat Gold Field Map of 1875 which shows a Chinese camp east of Hard Hill and at the north end of Long Gully. This map also shows a fairly large dam in the position of the existing described below. The archaeological evidence today shows that this dam supplied water for sluicing purposes.

References *Mining Surveyors' Report*, July 1863
Krauses' *Ararat Gold Field Map* of 1875

DESCRIPTION & INTERPRETATION OF FEATURES:

Cement workings. Numerous filled but subsiding shafts (both round and rectangular) sunk through a cement cap (remnant of ancient river bed). Several of the shafts have subsided to a depth of four to six metres. Some of the shafts have been disturbed by gravel quarrying. The east side of the cement cap has been extensively open cut (quarried) and tunnelled. A water race runs along the hill just below the workings. Stone retaining walls separate the water race from the workings suggesting that the two are contemporary. Below the water race are partly quarried dumps of silt and gravel (debris from the washing of the auriferous soil obtained from the gutter or base of the cement cap).

Dams and water races. A large breached dam is located in Garden Gully, to the south (east side) of the Hill. The dam has the remains of a stone by-pass on the western end of its embankment. The water race mentioned above comes from this dam. Down Garden Gully from the large dam are at least two smaller breached dams. Both the smaller dams are associated with large mounds of wash. A water race runs from one of the small dams down the west side of the gully.

Ground sluicing (sluicing of auriferous soil from the hill slope). Both the upper and lower races are associated with extensive ground sluicing (surfacing) of the slope.

Shallow sinkings. A wide band of shallow sinkings (holes and low mounds) run along the eastern side of the gully. The sinkings are obscured by scrub and high grass.

Chinese camp site. On the west side of Armstrongs Road is a camp site, which has at least two house platforms and a bottle dump, which has been disturbed by, treasure hunters. Only nineteenth century artefacts are visible.

1930's house site. To the west of the large dam is a small stone and mud fireplace and small (four by three metre) house platform outlined by post stumps. Associated with the house are a small dam, fenced yard and several open shafts. One of the shafts still retains its wooden collar.

CONDITION OF FEATURES: The cement workings, dams, water races, surfacing and shallow lead diggings are relatively undisturbed and hence have high integrity.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **LANGI LOGAN SOUTH**
LOCATION: **Ararat Goldfield**
HI NO: **H7423-0026**

LOCATION: South side of Mine Dump Road, 1.3 kms west of Tatyoon Road at Langi Logan South
MUNICIPALITY: Ararat Rural City
CURRENT STATUS: Freehold

SITE HISTORY:
There were four main deep lead mining periods in the Ararat Mining Division: mid 1860s, 1880s, early 1900s, and 1930s mining revival.
The Langi Logan South Company was involved in the third mining period which commenced in 1909 when the Cathcart Company obtained some sensational yields from a narrow strip in the gutter of a tributary (Victory Lead) of the main Langi Logan Lead: 7,916 ounces from 5,077 fathoms. The richness of the gold created a mining boom and the lead was worked in a south-easterly direction to met with the main lead. The companies spawned, between 1909 to 1915, by the Cathcart Company's efforts included the Cathcart North, British Queen, Cathcart Victory, Cathcart Central, New Langi Logan, Langi Logan Extended, Langi Logan North, Langi Logan West, Langi Logan South, Great Langi Logan and Upper Langi Logan. The new progressive companies did not find the going very easy. The water difficulties proved expensive and very difficult to overcome, demanding the most up-to-date appliances available, eg. in 1915, the New Langi Logan Company's pumps were displacing some 3,000,000 gallons per day, and the Langi Logan South were discharging about 1,500,000 gallons. Due to the water problem most of the companies took 3 to 4 years to drain their section of the gutter, and as a result, several, such as the Cathcart North, British Queen, and Langi Logan Extended closed down, capital exhausted, without reaching the lead. Only the Cathcart Central (2,159 kg of gold) and New Langi Logan (1,113 kg.) went onto to mine extensively and join the Cathcart Company (1,766 kg) as major gold producers. The New Langi Logan and Langi Logan South companies were the last to work on the field; the former closed down in 1925, the latter around 1922.
In 1932 the New Langi Logan Deep Leads Company was formed; its leases covered most of the ground held by the two preceding companies. Water difficulties forced the new venture to close down before reaching the production stage.
References "Deep Lead Gold deposits of Victoria", *Bulletin 62*, 1988, pp. 54-55.
Banfield. L, *Like The Ark: The Story of Ararat*, revised edition 1986, p.174.

DESCRIPTION & INTERPRETATION OF FEATURES:
Mullock heap. Large intact heap (70 metres x 50 metres, and 10 metres high) with two main dumping lines.
Pebble/wash. Small dump (30 metres wide and 6 metres high).
Slum. Extensive pond (200 metres wide and 3 metres high).
Mining machinery. Two large intact brick mounting beds: the largest is 15.7 metres x 5 metres; the other, is 7.9 metres x 3.5 metres. All the other foundations have been demolished to ground level.
Bob pit. Largely buried brick bob pit.

CONDITION OF FEATURES: Good.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **Ray Supple** ***Date:*** **July 1994.**

NAME:	**NEW LANGI LOGAN NO. 2**
LOCATION:	**Ararat Goldfield**
HI NO:	**H7423-0012**

LOCATION:	West side of the Ararat to Hamilton Railway, 1.0 kms south of Logans Road
MUNICIPALITY:	Ararat Rural City
CURRENT STATUS:	Freehold Land

SITE HISTORY:

In 1932 the New Langi Logan Deep Leads Company was formed; its leases covered most of the ground held and partly worked by two previous companies--New Langi Logan and Langi Logan South--that had ceased operations in the early 1920s. Water difficulties forced the new company to close down before it reached the production stage.

References "Deep Lead Gold deposits of Victoria", *Bulletin 62,* 1988, p.55.

DESCRIPTION & INTERPRETATION OF FEATURES:

Mullock. Large intact heap, 100 metres x 50 metres, and 10 metres high.

Pebble/wash dump. Largely intact small dump (30 metres x 20 metres and 5 metres high) with remains of wooden supports for aerial puddlers.

Slum. Extensive intact slum pond (200 metres wide and 3 metres high).

Mining machinery. Extensive arrangement of brick pumping and winding beds covering an area approximately 40 metres x 20 metres. Various pieces of machinery lie to the west of the shaft, including cages and baling tank.

Bob pit. Intact brick pit measuring 7 metres x 5 metres.

CONDITION OF FEATURES:	Extensive range of features, good integrity. The bob-pit is beginning to bow.
SIGNIFICANCE RANKING:	Site Listed Heritage Inventory.

Assessed by: **Ray Supple** ***Date:*** **July 1994.**

NAME: **NEW LANGI LOGAN NO. 1**
LOCATION: **Ararat Goldfield**
HI NO: **H7423-0011**

LOCATION: 150 metres south-east of the intersection of Tatyoon Road and Station Road
MUNICIPALITY: Ararat Rural City
CURRENT STATUS: Freehold Land

SITE HISTORY:
In 1932 the New Langi Logan Deep Leads Company was formed; its leases covered most of the ground held and partly worked by two previous companies--New Langi Logan and Langi Logan South--that had ceased operations in the early 1920s. Water difficulties forced the new company to close down before it reached the production stage.
References "Deep Lead Gold deposits of Victoria", *Bulletin 62*, 1988, p.55.

DESCRIPTION & INTERPRETATION OF FEATURES:
Mining machinery. Adjoining brick engine mounting beds. The largest bed is 11.7 m x 4.3 m, 2.75 m high, and has 0.075 m diameter mounting bolts; the other bed is 8.35 m x 4.8 m, and 2.4 m high. There are also some smaller beds.
Mullock. Partly quarried large heap, 100 metres x 50 metres, 10 metres high.

CONDITION OF FEATURES: Good.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **Ray Supple** ***Date:*** **1994.**

NAME: **GOLDEN POINT WORKINGS, FIERY CREEK LEAD**
LOCATION: **Beaufort Goldfield**
HI NO: **H7523-0048**

LOCATION: West of Beaufort-Amphitheatre Road, 4.5km north of Beaufort
MUNICIPALITY: Pyrenees Shire
CURRENT STATUS: Crown Land

SITE HISTORY:
The Fiery Creek Lead was opened during the great rush to the area in 1855. The gullies running into the main lead proved to be very rich. The main lead and its tributaries were worked by both sluicers and puddlers. The mining registrar lists, in 1861, the Dancing Feather and Phoenix sluicing company as sluicing near Golden Point. Puddling was also widely used when the washdirt proved unsuitable for sluicing. While many puddlers were able construct their own dams, some paid a rent to the sluicing companies for the water they required to carry out their vocation.[289] The mining registrar pinpointed Upper Golden Point (on the Main Lead) as a favoured puddling location--there were seven puddling parties (6 European and 1 Chinese) working with great success in 1861. Six of the puddling parties were renting water from the Phoenix and Wimmera sluicing companies, and the other had its own dam.[290]
The upper parts of the Fiery Creek Lead were dredged in the early 1900s. The auriferous ground at Golden Point was last worked in the 1940s, by Norm Dickman's father.
References *Mining Surveyors' Reports*, September 1861
Mining Surveyors' Reports, October 1861
Personal communication, Norm Dickman, Beaufort.

DESCRIPTION & INTERPRETATION OF FEATURES:
Shallow alluvial landscape, the product of different mining methods--shaft sinking, ground sluicing, water races and puddling. Main puddling features include:
Large (200 metres wide) open cut. Identified by Norm Dickman (local resident) as where his dad removed everything for treatment in nearby puddler. The shallow sinkings to the south of the open cut have been disturbed by recent mining operations.
18 ft diameter puddler (1). Located on west bank of open cut. Inner mound is pronounced and puddling trench has sheer walls. No pivot post or trench slabbing. Intact pebble-wash dump, 14 metres wide and 2 metres deep.
Adjoining puddlers. Located 75 metres south-west of puddler (1). The southern-most puddler has been partly destroyed by a track and what survives is extremely weathered. The second puddler is ocated five metres away, and although in better condition it has been partly excavated by gold fossickers. This puddler was identified by Norm Dickman as the one operated by his dad in the 1940s.

CONDITION OF FEATURES: Good. Workings have not been recently disturbed, but one of the puddlers has been partly excavated.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

289 Mining Surveyors' Reports, September 1861
290 Mining Surveyors' Reports, October 1861

NAME: **FIERY CREEK DREDGE HOLE**
LOCATION: **Beaufort Goldfield**
HI NO: **H7523-0049**

LOCATION: Junction of Main Lead and Jonathan Gully, west of Beaufort-Amphitheatre Road 4.0 kms north of Beaufort
MUNICIPALITY: Pyrenees Shire
CURRENT STATUS: Crown Land

SITE HISTORY:
The re-working of shallow alluvial ground through pump-sluicing and bucket dredges became an important factor in the gold production of the Beaufort district from about 1906. In this year two main operations commenced: the Yam Holes Sluicing Company and the Fiery Creek Dredging Company. The latter venture was the most successful and operated on the upper part of the Fiery Creek lead to around 1918. For a time, from 1909 to about 1914, the company operated two plants.
References Canavan. F, *Deep Lead Gold Deposits of Victoria*, 1988, p.78.
Personal communication, Norm Dickman, Beaufort, 1994.

DESCRIPTION & INTERPRETATION OF FEATURES:
Dredge hole. Long narrow hole full of water.

CONDITION OF FEATURES: Good. No recent disturbance to dredge hole.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **BAXTER TRACK DEEP LEAD WORKINGS**
LOCATION: **Beaufort Goldfield**
HI NO: **H7523-0050**

LOCATION: Off Lexton-Beaufort Road, north side of Baxter Track
MUNICIPALITY: Pyrenees Shire
CURRENT STATUS: State Forest

SITE HISTORY:
Further research required.

DESCRIPTION & INTERPRETATION OF FEATURES:
Line of five whim shafts, each with a whim platform, shaft/mullock heap and puddler/pebble dump/slum pond, along a deep lead.
Shaft site No. 1
Whim. Traces of ground-level whim platform. This whim, like all the rest, is raised about 1 ft above ground level.
Puddler. Weathered, 18 ft diameter puddler. The puddler's inner mound has gone, no timberwork survives. The puddler is associated with three intact pebble dumps, the largest of which, is 10 metres wide and 3.5 metres high. Below the puddler is a small slum pond.
Shaft. The shaft has been filled and is associated with a single (10 metre long) mullock heap.
Shaft No. 2
This shaft is located 80 metres up the gully from No. 1 shaft.
Whim. Well defined, 32 ft diameter, ground-level whim platform. It is still possible to discern the horse walk-way and central post hole.
Puddler. Weathered 18 ft diameter puddler. It is still possible to discern the puddler's inner mound and puddling trench. No pivot post or slabbing survives. The puddler is ringed by a 2 metre wide, 2 metre high, pebble dump. Below the puddler is an intact small slum pond.
Shaft. The shaft has been filled and is associated with an intact mullock heap, which has several small dumping lines.
Shaft No. 3
This shaft is located 60 metres up the gully from No. 2 shaft.
Whim. Well defined, 30 ft diameter, ground-level whim platform. It is still possible to discern the horse walk-way and the whim's central post hole.
Puddler. A well defined 16 ft diameter puddler with distinct inner mound and relatively sheer puddling walls. Associated with the puddler are two pebble dumps. The largest of the dumps is 8 metres long and 3 metres high. The slum pond associated with the puddler has been partly quarried.
Shaft. The shaft has been filled and is associated with one (15 metre long) mullock heap.
Shaft No. 4
This shaft is located 60 metres up the gully from No. 3 shaft.
Whim. Well defined, 30 ft diameter, ground-level whim platform. It is still possible to discern the horse walk-way and the whim's central post hole.
Puddler. Weathered 16 ft diameter puddler which is associated with two pebble dumps of similar size to those surviving at Shaft No. 3.
Shaft. The shaft has been filled and is associated with one (20 metre) long mullock heap.
Shaft No. 5
This shaft is located 30 metres up the gully from No. 4 shaft.
Whim. Well defined, 28 ft diameter, ground-level whim platform. It is still possible to discern the horse walk-way and the whim's central post hole.
Puddler. Weathered 16 ft diameter puddler. The puddler's inner mound has collapsed. No pivot post or slabbing survives. The puddler is associated with two small pebble dumps.
Shaft. The shaft has been filled and is associated with a 20 metre long mullock heap, which has three short dumping lines.

CONDITION OF FEATURES: Good, some of the dumps have been slightly quarried.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **August 1995.**

NAME: **TIPPERARY GULLY**
LOCATION: **Beaufort Goldfield**
VHR NO: **H1250**
HI NO: **H7523-0051**

LOCATION: 1.15 kms down Twin Puddler Track, south side of Tipperary Gully, 5.0 kms north of Beaufort
MUNICIPALITY: Pyrenees Shire
CURRENT STATUS: State Forest

SITE HISTORY:
The Mount Cole water race was constructed by the Wimmera Sluicing Company in the early 1860s. Various sluicing companies and proprietors of puddling machines used its water to work the Fiery Creek Lead and its rich tributaries such as Tipperary and Musical gullies. The archaeological evidence, couple with local information supplied by Norm Dickman, suggests that the gully was a focal point for puddling in the 1930s and 1940s. Norm's father operated one of the puddlers on the site, using water from the race.
References *Mining Surveyors' Reports*, November 1861.
Personal communication, Norm Dickman, Beaufort, 1994.

DESCRIPTION & INTERPRETATION OF FEATURES:
Mount Cole water race. The race crosses Tipperary Gully via a 50 metre long, 4 metre high, embankment. The race supplied water for the puddlers.
Puddling complex (east to west). Puddlers are located from 8 to 10 metres apart and fed by water from small dams and channels off Mount Cole water race. There are six adjoining puddlers:
Puddler 1
Diameter 16 ft, inner mound pronounced and puddling trench is deep with sheer sides. Puddler is obscured by fallen tree. Outlet and inlet channels are visible.
Puddler 2
Diameter 18 ft, inner mound is pronounced and puddling trench is deep with sheer sides (still possible to see impressions of slabbing in walls). Slight depression on northern side of puddler where sluice box was set up. Outlet and inlet channels are visible. This puddler identified by Norm Dickman as the one operated by his dad in the 1940s.
Puddler 3
Diameter 20 ft, inner mound is pronounced (traces of burnt pivot post) and puddling trench is deep with sheer sides. Outlet and inlet channels are visible. Seven dumping lines of wash extend from puddlers 3 and 4.
Boundary fence between Puddlers 3 and 4.
Puddler 4
Puddler is very weathered but still retains its pivot post. Seven dumping lines of wash extend from puddlers 3 and 4. The longest dumping line would extend for 15 metres and is 1 metre deep.
Puddler 5
Puddler is very weathered, the inner mound has gone, distinguished by outer rim.
Puddler 6
Diameter 20 ft, the inner mound is beginning to weather, puddling trench is still quite deep and pronounced. The outlet channel is visible and associated with several large dumps of pebbles-wash.
Shallow sinkings. Running along the north side of Tipperary Gully, opposite the puddling complex, is a patch of well defined shallow sinkings.
Shallow workings. The head of Tipperary Gully has been extensively surfaced. There is at least one embankment with very weathered puddling machine site.

CONDITION OF FEATURES: Good. No recent disturbance.

SIGNIFICANCE RANKING: Site Listed Victorian Heritage Register
Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **NORTHERN HOPE COMPANY**
LOCATION: **Beaufort Goldfield**
HI NO: **H7523-0052**

LOCATION: The mine is situated between Beaufort and Waterloo, north of Racecourse Road 4.5 kms north-east of Beaufort
MUNICIPALITY: Pyrenees Shire
CURRENT STATUS: Crown Land

SITE HISTORY:

Deep lead mining was revived in the Beaufort Division at the turn of the century when the Raglan Lead was profitably worked for about 2 kms of its length by the Sons Of Freedom group of companies. The principal Sons Of Freedom mines operated on this lead between 1900-1904.

With the demise of the Sons of Freedom group of companies, deep lead mining entered a new prospecting phase. In 1907, a new company called The Carter's Deep Leads (an English one) commenced to cart machinery and plant to a site about the junction of the Waterloo and Beaufort leads. By the following year, the company had sunk a main shaft and risen to the wash from which payable dirt had been obtained. Unfortunately for the company, the ground proved expensive to work and they struggled to mine profitably. The company was re-organised at the end of 1911 and renamed the Beaufort Deep Leads. In 1912, two other companies--the Northern Hope (formerly Morris and party) and the Hope Company--were also engaged in extensive mining operations. The Northern Hope proved to be the most successful of the three, it mined until 1916 and produced 553 kg of gold. The other two mines, produced about 250 kg of gold each. The Beaufort Deep Leads Company also suspended operations in 1916, which left the Northern Hope as the only operating deep lead mine in the district. The Northern Hope closed down shortly after, finding it impossible to trace any payable run of wash.

References Canavan. F, *Deep Lead Gold Deposits of Victoria*, 1988, p.78.
Department of Mines, *Annual Report*, 1907, p.138.
Department of Mines, *Annual Report*, 1916, p.48.

DESCRIPTION & INTERPRETATION OF FEATURES:

Mullock heap. Large mullock heap.

Mining machinery. Large concrete engine bed, 34 ft x 9 ft, 3 ft high. The main bed has smaller concrete beds running along its east and west sides.

Bob pit. Concrete pit, 20 ft x 9 ft, with 1¼ ft thick walls.

Slum pond. Small intact slum pond immediately north of the mullock heap.

CONDITION OF FEATURES: Good. No evidence of any recent disturbance.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **BEAUFORT DEEP LEAD COMPANY**
LOCATION: **Beaufort Goldfield**
HI NO: **H7523-0053**

LOCATION: Between Beaufort and Waterloo, immediately south of Racecourse Road 6.0 kms north-east of Beaufort
MUNICIPALITY: Pyrenees Shire
CURRENT STATUS: Freehold Land

SITE HISTORY:

Deep lead mining was revived in the Beaufort Division at the turn of the century when the Raglan Lead was profitably worked for about 2 kms of its length by the Sons Of Freedom group of companies. The principal Sons Of Freedom mines operated on this lead between 1900-1904.

With the demise of the Sons of Freedom group of companies, deep lead mining entered a new prospecting phase. In 1907, a new company called The Carter's Deep Leads (an English one) commenced to cart machinery and plant to a site about the junction of the Waterloo and Beaufort leads. By the following year, the company had sunk a main shaft and risen to the wash from which payable dirt had been obtained. Unfortunately for the company, the ground proved expensive to work and they struggled to mine profitably. The company was re-organised at the end of 1911 and renamed the Beaufort Deep Leads. In 1912, two other companies--the Northern Hope (formerly Morris and party) and the Hope Company--were also engaged in extensive mining operations. The Northern Hope proved to be the most successful of the three, it mined until 1916 and produced 553 kg of gold. The other two mines, produced about 250 kg of gold each. The Beaufort Deep Leads Company also suspended operations in 1916, which left the Northern Hope as the only operating deep lead mine in the district. The Northern Hope closed down shortly after, finding it impossible to trace any payable run of wash.

References Canavan. F, *Deep Lead Gold Deposits of Victoria*, 1988, p.78
Department of Mines, *Annual Report*, 1907, p.138.
Department of Mines, *Annual Report*, 1916, p.48.

DESCRIPTION & INTERPRETATION OF FEATURES:

Mullock heap. Large mullock heap with two dumping lines.

Mining machinery. Large brick tank-like engine bed, 38 ft x 10 ft, standing 6 ft. The bed has stepped brickwork, its walls are 3 ft thick and it still retains its wooden bedlogs (1½ft square) with 2 inch mounting bolts. There are two small solid beds, either side of the main bed, at its southern end.

Chimney stack. Near the north-east corner of the main engine bed is the base of a circular iron stack.

Bob pit. The pit is constructed of brick and measures approximately 25 ft x 5 ft.

Slum pond. Large pond which is partly quarried.

CONDITION OF FEATURES: Good. Slum pond has been partly quarried.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **GLENPATRICK CREEK WORKINGS**
LOCATION: **Landsborough Division**
HI NO: **H7523-0054**

LOCATION: Head of Glenpatrick Creek, Glenpatrick
MUNICIPALITY: Pyrenees Shire
CURRENT STATUS: Crown Land

SITE HISTORY:
One of the more extensive sluicing fields in the Barkly Mining Division was at the head of Glenpatrick Creek. Sluicing was being carried out in the headwaters of this creek gully by December 1864, though the mining registrar records it was done with much difficulty because of a great underflow of water. Messrs Skellett, Hartle and Company had rectified this situation by September 1865 (after three years of exertions) by the construction of a drainage level. The drainage level not only drained much of the higher part of the gully, but also carried off the sluiced waste-materials. Messrs Skellett, Hartle (also written as Skellet and Hartlett and known as Midland Sluicing Company) continued to sluice successfully until the late 1860s. In September 1866, the sluicing company was reported as making £6 per man weekly. This company was joined by two other sluicing operations, Blane and Party, and Johnson and Party, and several parties of Chinese miners.
References *Mining Surveyor's Reports*, September, 1866.

DESCRIPTION & INTERPRETATION OF FEATURES:
Alluvial workings. The flats at the head of the creek have been extensively worked. The main features are patches of open shafts and associated heaps; remains of water races; bank sluicing; stone retaining; two stone-retained diversion sluices, pebble dumps; and one hut site (stone fireplace).
Hut sites. Stone fire place, west side of creek, near underground wildlife shelter; east side of creek, two stone fireplaces; site of Glenpatrick cemetery (no gravestones) some mounds, stone outlines and flat stones; stone fireplace on east side of the track; and several stone fireplaces at current site of township.

CONDITION OF FEATURES: Good, but alluvial workings are obscured by leaf litter, etc. Relics show little signs of any recent disturbance.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME:	**WET PATCH LEAD, MIDDLE CREEK**
LOCATION:	**Avoca-Warrenmang Goldfield**
HI NO:	**H7523-0055**

LOCATION:	The lead crosses Miles Track 3.75 kms from its junction with the Glenlofty-Warrenmang Road. Located approximately half-way between Lands-borough and Avoca
MUNICIPALITY:	Pyrenees Shire
CURRENT STATUS:	State Forest

SITE HISTORY:

Middle Creek diggings opened in 1854 with the discovery of the Sardine Lead. New ground was still being found up until the early 1870s. The archaeological evidence shows that the lead was extensively worked, and the main technology used to treat the wash was puddling machines.

DESCRIPTION & INTERPRETATION OF FEATURES:

Puddlers. Up the gully (south) from Miles Track are the remains of four puddling dams. All the embankments have been breached and the dams are positioned from 150 to 200 metres apart. The puddling site nearest the track has a well defined puddler (covered by fallen tree) but its pebble dump has been quarried. The next puddling site is the best preserved--its 22 ft diameter puddler being associated with a 30 metre long embankment. The last two puddling sites have been extensively quarried but both sites have large slum ponds (50 metre wide and 1 metre high).

Shallow workings and camp sites. The shallow workings above the puddlers, at the head of the lead, are associated with several deep holes (dams) ringed with small banks of wash. The wash may have been generated by cradling operations. Associated with the workings are several camp sites, one of which has shards of Chinese pottery.

CONDITION OF FEATURES:	The shallow workings at the head of the lead are well preserved. Only one of the four puddling sites has escaped disturbance.
SIGNIFICANCE RANKING:	Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **MALAKOFF LEAD WORKINGS**
LOCATION: **Landsborough Goldfield**
HI NO: **H7523-0056**

LOCATION: East side of Elmhurst-Landsborough Road, 7.5 km north-east of Landsborough
MUNICIPALITY: Pyrenees Shire
CURRENT STATUS: Malakoff Historic Reserve

SITE HISTORY:
Malakoff Lead. First rushed in 1856, main period of sluicing and re-working by puddlers appears to have been the 1860s/70s.

DESCRIPTION & INTERPRETATION OF FEATURES:
Puddler. Southern end of Historic Reserve, east side of channel, is a weathered 20 ft diameter puddler. It is just possible to distinguish the inner mound from the puddling trench. The puddler's outlet channel is visible. Water for the puddler probably came from a higher water race.
Ground sluices. On the slope (east) above the puddler is a network of raised ground sluices, which come off a north-south running water race. Another patch of ground sluices survives near the Reserve's southern boundary fence.
Cement workings. Above the ground sluicing is an open cut, two weathered puddlers and associated pebble dumps. The pebble dumps are both approximately 10 metres wide, 2 metres high and have faint dumping lines. Above the puddlers are at least two dams (connected by a short race) and some well defined ground sluices.

CONDITION OF FEATURES: Good. No evidence of any recent disturbance.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **MALAKOFF ALLUVALS**
LOCATION: **Landsborough Goldfield**
HI NO: **H7523-0057**

LOCATION: East side of Elmhurst-Landsborough Road, 7.5 km north-east of Landsborough
MUNICIPALITY: Pyrenees Shire
CURRENT STATUS: Historic Reserve

SITE HISTORY:
The Avoca Development Company (later Malakoff Alluvials) operated from 1937 to 1951. Results were poor.
References Canavan, "Deep Lead Gold Deposits of Victoria", *Bulletin 62,* 1988.

DESCRIPTION & INTERPRETATION OF FEATURES:
Treatment plant foundations. 30 ft square concrete floor that contains four concrete mounting beds and a 28 ft long pit. The largest of the mounting beds measures 16 ft x 9 ft, stands 1 ft high and has 1½ bolts. On the north-west corner of the slab is a 8 ft diameter concrete vat. There is also a 6 ft diameter brick vat on the north-east corner.
Slum disposal. An underground culvert runs east from the brick vat and connects to a by-pass channel coming from a large breached embankment. The by-pass channel runs north for approximately 200 metres to a large intact slum pond.
Sluice hole. Large sluice hole now full of water.
Shallow sinkings and second (north) sluice hole. There is another sluice hole approximately 400 metres to the north of the treatment site. This hole is silted and covered by reeds. Downstream from the silted hole is a network of 3 shallow slum ponds. Between the two sluice holes is a band of well defined shallow sinkings.

CONDITION OF FEATURES: Good.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **CHARLSONS AND DAVIES NO.1**
LOCATION: **Creswick Goldfield--Berry Deep Lead**
HI NO: **H7623-0278**

LOCATION: East of Lawrence-Creswick Road, 7.2 kms south-west of Smeaton
MUNICIPALITY: Hepburn Shire
CURRENT STATUS: Freehold Land

EXISTING HERITAGE LISTING: "Site 39", *Survey of Berry Deep Lead System*, Department of Conservation, Forests and Lands, Ballarat Region, 1986.

SITE HISTORY:

The above relics probably located at Davies' Junction Freehold Company's No. 1 shaft. The following history was extracted from *The Berry Deep Leads: An Historical Assessment*, CF&L, October 1986, Charles Fahey.

The Davies Freehold Company was formed in March 1879 by local speculators. By their fifth half yearly report the directors reported that the erection of the plant was complete. By September 1881 the shaft had been completed to a depth of 272 feet. Bores had also proved the existence of wash dirt in the southern portion of the claim, and a second shaft was sunk. The works had by October 1881 exhausted all capital, and the capital per share was raised to 24 shillings.

The No. 1 shaft was eventually abandoned and the sinking of No. 2 shaft proved difficult due to heavy drift and influx of water. The first gold was recovered from No. 2 shaft in June 1884, and over the next four years the company produced 7533 ounces of gold.

References Defunct Company File VPRS 567/1691
Department of Mines, *Mining Surveyors' and Registrars' Reports*, 1875-1887.

DESCRIPTION & INTERPRETATION OF FEATURES:

Mullock. Small intact heap with one dumping line.

Machinery foundations. Remains of tank-like brick bed measuring 36 ft x 14 ft, with 4 ft thick walls.

Powder magazine. Near the eastern side of the machinery foundations is doughnut-like feature with stone retained earth walls. The structure has a 30 ft diameter, narrow entrance and slot that leads to a small chamber.

Shaft/bob pit. Shaft depression with small section of stone bob-pit.

Tramway. Poorly defined tramway embankment runs south-west from the mine site towards the adjoining Australasian Extended Company's mine.

CONDITION OF FEATURES: Good.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **MADAME BERRY COMPANY**
LOCATION: **Creswick Goldfield--Berry Deep Lead**
HI NO: **H7623-0008**

LOCATION: Madame Berry No. 1, east side of Charlesons Road
MUNICIPALITY: Hepburn Shire
CURRENT STATUS: Freehold Land

EXISTING HERITAGE LISTING:
No. 1 shaft. Site 19, Survey of Berry Deep Lead System, Department of Conservation, Forests and Lands, Ballarat Region, 1986. No. 2 shaft. Site 16, Survey of Berry Deep Lead System, Department of Conservation, Forests and Lands, Ballarat Region, 1986.
Significance
In the history of Victorian gold mines the Madame Berry is unquestionably one of the more important mines. As a gold producer and dividend payer it was only rivalled by the Long Tunnel Extended in Walhalla, the Garden Gully United in Bendigo and the Albion Band of Hope Consols in Ballarat. The Madame Berry also represented the most advanced technology of its day. The plant at the mine was more extensive than most city factories, and sinking through drift was a major engineering feat. As an employer Madame Berry had few rivals in Australia at the mid 1880s.

SITE HISTORY:
The following history was extracted from The Berry Deep Leads: an historical assessment, CF&L, October 1986, Charles Fahey. The Madame Berry was the most famous and richest mine on the Berry Deep Leads system. Registered in 1878, on the Seven Hills Estate, the Madame Berry mine had 20 original shareholders. Work on the company's No.1 shaft commenced in 1879 and on its No. 2 shaft in 1883. The No. 2 shaft was bottomed at 462 feet and in 1886 £45,131 was reported as having been spent on the shaft. Besides wages, the money had been spent on a 90 ft high poppet head; 90,000 bricks; one 26 inch cylinder pumping engine (5 ft stroke); a 24 inch cylinder engine (5 ft stroke) for winding; and two boilers (26 ft x 6 ft). A further two boilers were added in 1884, and three puddlers and also a second hand engine purchased from Dykes Freehold.
The capital works for the No. 2 shaft were funded from the enormous returns from the No. 1 shaft. By 1885 the drive from the No. 1 shaft had been extended some 2,000 feet and all hands were employed blocking at the extreme end of the mine. With over 250 employees, the mine was one of the largest industrial concerns in the colony of Victoria; only Melbourne's largest foundries--Austral Otis, for example--would have employed more hands. The No. 2 shaft proved to be equally as successful as the No. 1 shaft. In fact, yields in the late 1880s exceeded those of the mid 1880s. In 1888 a horse tramway was laid from No. 1 shaft to No. 2 shaft, and all the tailings were treated at No. 2 shaft. By the end of the year a 15-head stamp mill was treating cement.
By 1890 the No. 1 shaft was closed and in 1895 the company was wound up. By this time the Madame Berry had produced 307,312 ounces of gold and paid dividends and royalties of £983,770. The last balance sheet in the defunct company file for April 1887 gives the total expenses up to that date of £700,629.
References Defunct Company Files, VPRS 567/1629; *Annual Reports* of the Secretary of Mines, 1891-1895; Department of Mines, *Mining Surveyors' and Registrars' Reports*, 1875-1891; *Creswick Advertiser*, 29 December 1884; McGeorge, Buried Rivers, pp.58-59.

DESCRIPTION & INTERPRETATION OF FEATURES:
Madame Berry No. 1 shaft.
Mullock heap. Mullock heap with single dumping line; and Tailings. Extensive spread of slum.
Madame Berry No. 2 shaft.
Mullock heap. Large mullock heap; and Slum pond. Partly quarried.

CONDITION OF FEATURES: Poor, only mullock heap remains. Recent disturbance.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **LORD HARRY**
LOCATION: **Creswick Goldfield--Berry Deep Lead**
HI NO: **H7623-0027**

LOCATION: North slope of Birch Hill, 3.1 kms south-west of Smeaton
MUNICIPALITY: Hepburn Shire
CURRENT STATUS: Freehold

EXISTING HERITAGE LISTING: "Site No. 20", *Survey of Berry Deep Lead System*, Department of Conservation, Forests and Lands, Ballarat Region, 1986. As a gold producer Lord Harry was insignificant. It does illustrate the difficulties posed for profitable mining.

SITE HISTORY:

The following history was extracted from *The Berry Deep Leads*: an historical assessment, CF&L, October 1986, Charles Fahey. The Lord Harry was floated in August 1879. When shaft sinking commenced, problems with water were soon encountered. In August 1883 capital was increased to £36,000. By March 1884 only 900 ounces of gold had been won from the payment of £24,364 in calls. In March of the following year the company was obliged to suspend operations pending the installation of additional capital. Nominal capital was increased to £72,000. The mine remained idle until the last quarter of 1885 when preparations were made to begin pumping.

By the following February six weeks of pumping had been undertaken but without help from adjoining claims, this proved to be of little effect. In the second half of 1887 pumping was recommenced, and by September 1888 the directors reported they had opened up 'an extensive field of payable wash. Six months later the wash had not proved "equal to expectations". By February 1891, shortly before its closure, the mine had produced gold worth £43,896 and shareholders had contributed £59,600. Working expenses had reached almost £109,000 but no dividends had been paid. By the date of its closure in 1891, the Lord Harry had produced only 6,850 ounces of gold and paid £2,250 in dividends.

Machinery

Information extracted from *The Significance of Some Mining Machinery Sites in the Creswick Division, 1859-1927*, P. Milner, March 1988.

September 1886. 45,000 gallons per hour pumped out but barely able to lower water level. 10 x 7 foot strokes required on pump to keep water at Level 1015, 50 feet above the plat. Water pumped into Bullarook Creek. Tangye steam engine used to pump mine water for use in the boiler.

1886. Continuously pumping then with 18 inch pumps (6 million gallons per week); water 40 feet up shaft which is 620 feet deep.1901: 26 inch cylinder non-condensing steam pumping engine, 18 inch pumps, 7 foot stroke, 9 stokes per minute to 600 feet.

References *Annual Report* of the Secretary for Mines and Water Supply; Defunct Company Files, VPRS 567/1764; and Department of Mines, *Mining Surveyors' and Registrars' Reports*, 1875-1890.

DESCRIPTION & INTERPRETATION OF FEATURES:

Mullock. Intact heap with one dumping line.

Pebble. Intact dump with one dumping line.

Shaft/bob-pit. Open fenced shaft with small section (east wall) of brick bob-pit.

Machinery site. Benched platform containing an extensive spread of rubble (red brick, stone and mortar) and shell of Cornish Boiler.

Powder magazine? On the western side of the benched platform is doughnut-like feature with stone retained earth walls. The structure has a 35 ft diameter, narrow entrance and slot that leads to a 7 ft diameter chamber.

CONDITION OF FEATURES: Heaps are intact, most of foundations have been flattened. Sites location on Birch Hill provides a good view of surrounding deep lead mines.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **WEST BERRY CONSOLS NO.3**
LOCATION: **Creswick Goldfield--Berry Deep Lead**
HI NO: **H7623-0034**

LOCATION: West side of Creswick-Lawrence Road, 5.9 kms west of Smeaton
MUNICIPALITY: Hepburn Shire
CURRENT STATUS: Freehold Land

EXISTING HERITAGE LISTING: "Site 18", *Survey of Berry Deep Lead System,* Department of Conservation, Forests and Lands, Ballarat Region, 1986.

SITE HISTORY:
The following history was extracted from *The Berry Deep Leads: An Historical Assessment,* CF&L, October 1986, Charles Fahey.
The West Berry Consols mine commenced mining operations in August 1892. The mine proved hopelessly unprofitable for shareholders. By 1911 calls for the West Berry Consols stood at £67,000 and in that year the company paid its first and final dividend of £2,250.
Machinery. Information taken from *The Significance of some Mining Machinery Sites in the Creswick Division* 1859-1927, Technology Report TR-88/1, P. Milner, March 1988.
9 January 1897. Work ceased at the West Loughlin shaft; erecting new plant on the site of the old shaft, to the west of Charlson's Hill.
June 1897. Phoenix Foundry compound condensing steam winding engine to the design of David Milliken, 120 pounds per square inch working pressure ... Two sets of 18 inch pumps to 500 feet.
31 December 1900. Erecting puddling machines.
1906. First shaft abandoned as too far from the lead and too small for economic operations; sinking a second shaft.
1907. Second shaft completed, machinery erected.
References: Defunct Company Files, VPRS 657/4759; *Ballarat Courier*, 26 June 1897; 9 January 1897, and 31 December 1900; Stanley Hunter, P61; and *Annual Reports of the Secretary of Mines,* 1902-1911.

DESCRIPTION & INTERPRETATION OF FEATURES:
Mullock. Large raised heap.
Pebble dump. Partly quarried.
Sand. Dump partly quarried.
Machinery foundations. Large tank-like bed which measures 32 ft x 11 ft, and stands 6 ft high. The bed has stepped brickwork and 2 inch bolts. Running alongside the main bed are two narrow beds, both measure 28 ft x 5 ft.
Shaft/bob pit. Shaft depression and remains of brick bob-pit.
Boiler house. East side of the machinery foundations is a spread of rubble (brick, stone and mortar).
This is the third shaft to be worked by the West Berry Consols , the machinery at the shaft was installed in 1907.

CONDITION OF FEATURES: Good.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **MADAME BERRY WEST NO. 3**
LOCATION: **Creswick Goldfield--Berry Deep Lead**
HI NO: **H7623-0026**

LOCATION: South of McKenzies-Beaconsfield Road, 4.7 kms south-west of Smeaton
MUNICIPALITY: Hepburn Shire
CURRENT STATUS: Freehold Land

EXISTING HERITAGE LISTING: "Site 15", *Survey of Berry Deep Lead System,* Department of Conservation, Forests and Lands, Ballarat Region, 1986.
Significance. Although we have little documentation on the Madame Berry West, the value of its gold production makes it a significant mine: only the Madame Berry and the Berry Consols produced more gold. The Madame Berry West was also highly profitable in the late 1890s, when most other mines were experiencing decline.

SITE HISTORY:
The following history was extracted from *The Berry Deep Leads: An Historical Assessment,* CF&L, October 1986, Charles Fahey.
The Madame Berry West Company was formed in 1882, from the western portion of the Madame Berry lease. Prior to the 1890s the mine appeared to have produced little gold. The first major return of gold was in 1893, when 9681 ounces were produced. In the 1890s the Madame Berry West was a major employer of labour in the district: from a work force of 180 men and boys in 1893, the number rose to 350 in 1897. Thereafter the Madame Berry West mine was a regular producer of gold. In 1903 there were only two companies--Berry West and Berry Consols Extended--engaged in productive mining. These two mines worked until the First World War and both, at times, employed considerable work forces: eg. in 1906 the Madame Berry West work force averaged 145 men. By 1907 the Madame Berry West had produced 147,467 ounces of gold and paid £81,137 in dividends. Called up capital amounted to only £9,000. At this date foul air proved to be a major problem for the working of the mine.
Machinery. Madame Berry West Company. 3 shafts, No's 1, 2 and 3. Shafts No. 1 and No. 2 "of this company are steamless".
References. Defunct Company Files VPRS 567/2668; Stanley Hunter, p.61; *Annual Report* of the Secretary of Mines, 1892-1903; *Creswick Advertiser,* 1 January 1897; *Ballarat Courier,* 30 December 1893; and The Indicator series of booklets on Gold Mining, No. 3, *The Creswick Field*, William Bradford, undated, p.43.

DESCRIPTION & INTERPRETATION OF FEATURES:
Mullock. Large heap.
Pebble. Remains of dump.
Sand. Massive sand dump.
Machinery foundations. Large tank-like bed which measures 58 ft x 11 ft and stands 7 ft high. The bed has stepped brick work and 2 inch mounting bolts. Hand-made bricks set in concrete mortar. Smaller bed on the east side which measures 26 ft x 4 ft, with 1½ inch mounting bolts.
Bob pit. North end of main bed, measures 33 ft x 6½, and 1½ thick walls. Pit constructed of a combination of basalt blocks and red bricks.
Boiler house. North-west corner of boiler house survives--west wall 30 ft long and north wall 23 ft. Stone walls stand to height of 5 ft. The western wall appears to be intact and has a line of six portals, each one measures 2½ ft x 10 inch. Rest of building reduced to rubble.

CONDITION OF FEATURES: Foundations in good condition and relatively free of agricultural rubbish.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME:	**HEPBURN ESTATE**
LOCATION:	**Creswick Goldfield--Berry Deep Lead**
HI NO:	**H7623-0022**

LOCATION:	North side of Daylesford-Clunes Road, 2.7 kms west of Smeaton
MUNICIPALITY:	Hepburn Shire
CURRENT STATUS:	Crown-owned Land

EXISTING HERITAGE LISTING:

"Site 14", *Survey of Berry Deep Lead System*, Department of Conservation, Forests and Lands, Ballarat Region, 1986.

Significance: The Hepburn Estate mine indicates many of the problems faced by mines on the northern end of the Berry leads. Although the eighth producer of gold this mine was less profitable than the 16th producer. To deal with the water problems the company possessed some of the most extensive plant on the lead, particularly its 70 inch cylinder, Cornish beam pump and brick engine house.

SITE HISTORY:

The following history was extracted from *The Berry Deep Leads: An Historical Assessment*, CF&L, October 1986, Charles Fahey.

Located on the farm of the Anderson brothers--millers at Smeaton--the Hepburn Leasehold was floated in June 1881. In December 1881 the first bores were sunk. The company's initial shaft sinking operations were frustrated by water. In 1884 the company placed a tender for a 70-inch Cornish beam engine--the contract was let to Mr John Hickman for £3,415. In their report for December 1884, the directors reported that a contract for 300,000 bricks had been let and 100,000 had been delivered. A new contract was let to sink the shaft through rock to 316 feet. Two new boilers—26 ft x 6½ ft--were purchased from the Duke No. 1 Company (Maryborough). A brick stack 80 feet high, footings for four more boilers and a 83 feet high poppet head were also erected. By the end of November 1884 calls had exceeded £21,000.

By June 1885 the company's shaft had been sunk 274 feet, the engine house had been completed and the beam engine installed, a blacksmiths shop had been built, and three boilers purchased. The works so far had cost £37,162 and gold valued at £58 had been won. By the following year the shaft had been sunk to 508 feet and a changing room, office and mine manager's residence had been built. Gold production picked up in the late 1880s--three years work producing 15,828 ounces of gold--but the yields were still insufficient to cover investment costs. The company, despite the size of their plant, were still being plagued by water, which required even more pumping power: in June 1888, an additional two boilers and a Tangye pump were added. As much of the gold was found in cement was a ten-head stamper had also to be installed.

The company continued to operate into the 1890s. In 1893 the company discovered a rich run of wash and in 1894 were able to pay out its first dividend: 6 pence per share. Up to this date the gold returns had been £125,087, calls £90,600, and expenses £216,743. By 1895, however, the drives from the main shaft had been driven to an unprofitable distance and plans were drawn up for a new shaft. The following plant was to be shifted to the new (No. 2) shaft--one 24 inch cylinder pumping engine and gear, one 16 inch winding engine and gear, a capstan engine and gear, one roots blower, three Cornish flue boilers, four puddling machines, and one puddling engine. A mine managers house, store room and blacksmith's shop was also erected at the new shaft.

The surplus plant at the old (No. 1) shaft, including the 70 inch Cornish beam engine, was offered for sale. When the No. 1 shaft was abandoned it had produced gold to a value of £153,481.

The No. 2 shaft went onto to become one of the main Creswick mines of the late 1890s: by 1901 the shaft had yielded gold worth £80,941 but expenses had totalled over £71,000. It had paid out £14,000 in dividends, but this was a small return for the £94,900 invested by shareholders.

Machinery. In 1884 the company's plant consisted of one 24 inch cylinder winding engine (used for pumping); one Cornish pumping engine--70 inch cylinder, 9 feet stroke--capable of working two sets of pumps--14 inch and 17 ¾ inch; four Cornish flue boilers; four puddling machines and one 16-inch cylinder engine to drive same. Additional plant was to be installed to this due to the large volumes of water encountered.

References: Defunct Company Files, VPRS 567/2230, 1696, 2517, 5951; Department of Mines, *Mining Surveyors' and Registrars' Reports*, 1875-1891; *Annual Reports* of the Secretary of Mines, 1891-1910; and McGeorge, *Buried Rivers*, pp.58-59.

DESCRIPTION & INTERPRETATION OF FEATURES:

Mullock heap. Large mullock heap with single dumping line.
Pump arch. On the northern end of the mullock heap is a brick pump arch which measures 26 ft x 24 ft and stands approximately 20 to 25 ft. The adjoining cockpit is full of rubble. The top of the pump arch is capped with basalt blocks.
Cylinder bed. 10 ft diameter with 3 inch mounting bolts. Majority of the bed is brick, capped with basalt blocks. Near the cylinder bed is another brick bed, 11 ft x 7 ft, standing 5 ft.
Boiler house site. Basalt rubble, glimpses of foundations, and depressions.
Shaft. Filled with agricultural rubbish.
Pebble dump. West side of mullock heap, largely quarried.
Sand heap. Only partly quarried.

CONDITION OF FEATURES: Foundations are in good condition, dumps are fairly prominent.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **BERRY CONSOLS NO.2**
LOCATION: **Creswick Goldfield--Berry Deep Lead**
HI NO: **H7623-0020**

LOCATION: North of McKenzies-Beaconsfield Road, 4.5 kms west of Smeaton
MUNICIPALITY: Hepburn Shire
CURRENT STATUS: Freehold Land

EXISTING HERITAGE LISTING: "Site No. 12", *Survey of Berry Deep Lead System,* Department of Conservation, Forests and Lands, Ballarat Region, 1986.
Significance: After the Madame Berry, the Berry Consols was the most productive mine on the Berry Deep Lead System. Its troubled early history graphically illustrates the technological problems involved in recovering gold from "hidden rivers" of gold.

SITE HISTORY:
The following history was extracted from *The Berry Deep Leads: An Historical Assessment,* CF&L, October 1986, Charles Fahey.
The Berry Consols mine was established by five of the more prominent Creswick speculators: John Parkin, John Leishman, Henry Gore, TJ Dibdin and Joseph English. After exploratory bores had been sunk, the shaft site was determined. In April 1882, the directors reported that tenders for 100,000 bricks and a quantity of sawn timber had been called for, and that John Hickman's Union Foundry in Ballarat was constructing a pump. Six months later they reported that: a 40 foot chimney had been erected that the double action winding gear was in a forward state; and that the boilers were being built. By April 1883, Hickman had delivered a pumping engine of 26 inch cylinder and 6 inch stroke; and a 15 inch pump was at work in the shaft. The poppet head had also been completed.
Unfortunately for shareholders of the Berry Consols, problems were encountered when attempts were made to sink the shaft. Shaft sinking commenced in late 1882, but at the depth of 247 feet a burst of water was encountered. Work was suspended pending the erection of more powerful machinery. By June 1883 tenders had been let to sink the shaft with cylinders, and by September 1883 five sections of the iron shaft had been fixed in place. In the following year the problem with drift had become so acute that sinking of No. 1 shaft was abandoned. As this had exhausted the company's capital, shares were raised from £1-10-0 to £3-0-0 in July 1884. With this new capital, a new shaft was commenced.
By April 1885 the second shaft (No. 2) had reached a depth of 263 feet, and by the following April had bottomed at 403 feet. Work on the new shaft depleted company funds and the price of shares was increased to £5-0-0. By 1887 no gold had been won and over £85,000 had been spent.
The fortunes of the company changed in 1888, when 9,766 ounces of gold were won. For the next decade the mine continued to be one of the leading--and often the leading--mine in Creswick. The company produced--from 1888 to 1901--319,874 ounces of gold. During this time the company paid out over £350,00 in dividends.
References: Defunct Company Files, VPRS 567/2155; Department of Mines, *Mining Surveyors' and; Registrars' Reports,* 1875-1891; *Annual Reports* of the Secretary of Mines, 1888-1901; and McGeorge, *Buried Rivers.*

DESCRIPTION & INTERPRETATION OF FEATURES:
Mullock. Intact small heap with single dumping line.
Pebble. Dump largely intact but currently being quarried.
Sand. Large intact pond.
Machinery foundations. Remains of tank-like bed measuring approximately 60 ft x 10 ft, standing 8 ft. The bed has stepped brickwork at its base and has 2 inch mounting bolts. Two other small brick beds, the largest of which measures 28 ft x 4½ ft.

CONDITION OF FEATURES: Good.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **BERRY NO. 1**
LOCATION: **Creswick Goldfield--Berry Deep Lead**
HI NO: **H7623-0017**

LOCATION:	West side of Daylesford-Clunes Road, south-east of Berry Consols Extended, 4.2 kms west of Smeaton
MUNICIPALITY:	Hepburn Shire
CURRENT STATUS:	Crown-owned Land

EXISTING HERITAGE LISTING: "Site No. 8", *Survey of Berry Deep Lead System,* Department of Conservation, Forests and Lands, Ballarat Region, 1986.
Significance: The ninth gold producer on the Berry Leads, the Berry No. 1 is more important for illustrating the problems frequently encountered with drift. Its engine was one of the major achievements of 19th century Australia engineering. The ruins of the engine house at Berry No. 1 are a crucial reminder of this technological development and the use of Cornish technology and labour.

SITE HISTORY:
The following history was extracted from *The Berry Deep Leads: An Historical Assessment,* CF&L, October 1986, Charles Fahey.
The Berry No. 1 mine was floated in March 1881 by William Bailey, Henry Gore, Thomas Dibdin and William Graham. Work on machinery, buildings and shaft sinking commenced shortly after registration. By the end of 1884 the shaft had been sunk 494 feet with no payable results; and at the end of the following year £12,500 had been spent on wages and £14,700 on plant. The Berry No. 1 was confronted with large flows of water and the company erected some of the most extensive machinery on the Berry Leads System. A single acting beam engine was purchased in 1884 from John Hickman's Union Foundry, Ballarat. The beam 32 ft long and 6 ft wide, was cast in two sections. The cylinder was 70 inches in diameter and weighed 10 tons. In December 1888 this pump lifted 60,000 gallons of water per hour. It was housed in a brick Cornish engine house.
In January 1886 all capital was exhausted and the value of the shares lifted from £2 to £4. By the end of the year gold had been found, but a heavy drift had been encountered which had clogged up the company's pumps.
The company was reconstructed in June 1889, with the capital being raised to £6 per share, and in September 1890 the mine produced its first gold. Riches did not follow: by September 1893 gold returns had raised £80,728 but declining yields induced the directors to lay off 83 hands. By the following year the gold workings were still not paying expenses and the directors suspended work except for pumping. Advertisements for tributers were called, but all offers were considered "unworthy". Work continued with an overdraft, and to add to the company's problems, foul air slowed down output in 1895. The capital was increased to £7 in September 1898. The new capital was exhausted by the turn of the century and the company was wound up. In all the Berry No. 1 produced 50,000 ounces of gold, and dividends of less than £5,000 were paid on calls of £140,000. As of March 1901, the Berry No. 1 had operating costs of £278,764.
Machinery. Information taken from *The Significance of some Mining Machinery Sites in the Creswick Division* 1859-1927, Technology Report TR-88/1, P. Milner, March 1988.
1905. 275 horsepower compound condensing steam engine, 20 horsepower steam winding engine, 25 horsepower steam capstan engine, and 14 horsepower steam driven air compressor.
1906. To install a second pump; presently discharging 6 million gallons a day.
1907. Main shaft enlarged by 20 feet x 6½ ft; 26 inch Cornish pump installed, driven by a geared compound Corliss steam engine and 2 Babcock and Wilcox boilers. 22 inch and 26 inch pumps now capable of lifting 4 million gallons per day; old pump raising one million per day; since October the new pump has been lifting a similar amount.
1908. First motion steam winding plant and steam puddling plant erected.
References: Defunct Company Files, VPRS 567/2359; Department of Mines, *Mining Surveyors' and Registrars' Reports*, 1875-1891; *Annual Reports* of the Secretary of Mines, 1891-1901; and *Creswick Advertiser*, 31 December 1888.

DESCRIPTION & INTERPRETATION OF FEATURES:
Cornish Pump House. Pump house measures 32 ft x 25 ft and its brick walls survive to a height of approximately 25 ft.
Shaft/bob pit. Immediately in front of the pump house is a fenced shaft depression and remains of stone bob-pit. To the west of the bob-pit is a long, narrow brick mounting bed.

Boiler house site. To the west of the pump house is a spread of rubble, depressions and traces of stone foundations.
Mullock heap. Massive heap.
Pebble dump. Adjoining the mullock heap is a massive pebble dump.

CONDITION OF FEATURES: Pump house is in good condition, rest of visible foundations are partly covered by rubble.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME:	**BERRY CONSOLS EXTENDED**
LOCATION:	**Creswick Goldfield--Berry Deep Lead**
HI NO:	**H7623-0016**

LOCATION:	West of Daylesford-Clunes Road, 5.5 kms north-west of Smeaton
MUNICIPALITY:	Hepburn Shire
CURRENT STATUS:	Freehold Land

EXISTING HERITAGE LISTING: "Site No. 6", *Survey of Berry Deep Lead System,* Department of Conservation, Forests and Lands, Ballarat Region, 1986.
Significance. The Berry Consols Extended mine was the fifth gold producer on the Berry deep Leads. Although a major producer of gold the problem with water reduced its profitability, and the mine was run at a loss. Between 1902 and 1905 it was the leading mine of the field, and in those mines made substantial developments in the use of electric lighting and locomotives.

SITE HISTORY:
The following history was extracted from *The Berry Deep Leads: An Historical Assessment*, CF&L, October 1986, Charles Fahey.
The Berry Consols Extended Company was floated in 1881. The company struck water difficulties soon after commencing work and by the mid 1880s had, as a result, suspended operations. More capital was sought and in 1889 the company recommenced work. The first gold returns for the company were in 1897, by which time shareholders had paid £75,500 in calls. For the next decade the Berry Consols Extended was one of the premier mines on the Berry Leads. Technologically the mine was important for its introduction of electricity in 1902 and for the adoption of electric locomotives in its drives. In 1903 the mine employed 180 of the field's 160 miners, and a further 70 men were engaged in supplying laths and firewood. The mine closed in August 1908. By the end of 1907, the total gold yield for the mine was 100,727 ounces and dividends were £69,000. However, shareholders had contributed £84,666.
Machinery. Information taken from *The Significance of some Mining Machinery Sites in the Creswick Division* 1859-1927, Technology Report TR-88/1, P. Milner, March 1988.
1891. Lonie and Dingle 14 inch by 26 inch by 52 inch tandem compound steam pumping engine (first started in December 1889) 2 Galloway tube boilers, 26 ft x 6½ ft, 75 lbs per square inch pressure
16 inch plunger lift (212 feet) and 16.5 inch draw lift (40 feet), both operating 9.5-10 stokes per minute.
1903. Electric haulage underground substituted for horse traction during the year.
1905. Main pump rods broken due to age and rot; new pumping engine and new pump rods placed in both compartments of the shaft. New steam pumping engine erected.
August 1908. 3 x steel Cornish flue boilers 26 ft x 6½ ft, 2 x iron Cornish flue boilers 26 ft x 6½ ft, 15 inch x 26 inch compound steam engine, Condenser, 26 inch horizontal steam engine, 20 inch double cylinder steam winding engine, 12 inch single cylinder steam engine driving electric dynamo and mortar, 12 inch single cylinder driving capstan, 2 x vertical steam engines driving Roots blowers, 7 inch single cylinder steam engine driving 5-head battery, 16 inch single cylinder steam engine driving puddlers, and 2 x 16 inch plunger pumps and draw lift, pumping 19 million gallons per month.
References: Defunct Company Files, VPRS 567/2260; Stanley Hunter, pp.61-62; Bradford, p.43; *Annual Reports of the Secretary of Mines*, 1897-1907; and *Creswick Advertiser*, 31 December 1888.

DESCRIPTION & INTERPRETATION OF FEATURES:
Pebble dump. Massive pebble dump.
Mullock heap. Massive mullock heap with two dumping lines.
Machinery foundations include a large roughly H-shaped mounting bed measuring 60 ft x 20 ft, standing 10 ft high. The bed is constructed of a mixture of hand and machine-made bricks set in concrete mortar. The bed has 2½ inch mounting bolts. There are also two 5 ft wide beds (one either side of the H-shaped bed).
Shaft/bob pits. A shaft depression lies to the south of the H-shaped bed and contains the remains of adjoining brick bob-pits.
Boiler house site. To the north of the H-shaped bed is a spread of rubble and foundations for two stone boiler settings.

CONDITION OF FEATURES:	Mullock heap and pebble dump both survive on a massive scale. Machinery beds are in good condition. Portion of the pebble dump has been quarried.
SIGNIFICANCE RANKING:	Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **SPRING HILL AND CENTRAL LEADS**
LOCATION: **Creswick Goldfield--Berry Deep Lead**
HI NO: **H7623-0013**

LOCATION: West side of Central Leads Lane, 5.5 kms north-west of Smeaton
MUNICIPALITY: Hepburn Shire
CURRENT STATUS: Freehold Land

EXISTING HERITAGE LISTING: "Site No. 3", *Survey of Berry Deep Lead System*, Department of Conservation, Forests and Lands, Ballarat Region, 1986. The Spring Hill and Central Lead gold mine was only the 15th gold producer on the Berry Deep leads. Although it failed to pay, the geological problems it encountered illustrate most graphically the problems faced by companies on the northern end of the leads. That shareholders were prepared to invest over £100,000 without any returns demonstrates how strongly some investors held onto the hope of another Madame Berry.

SITE HISTORY:
The following history was extracted from *The Berry Deep Leads: An Historical Assessment*, CF&L, October 1986, Charles Fahey. This company was registered in 1881, when the Berry Deep Leads were beginning to yield large quantities of gold, which provided handsome dividends. Unfortunately the shareholders of the Spring Hill and Central lead mine did not share in the prosperity of the early 1880s. Instead calls on the shareholders were the order of the day: by January 1887, £14,000 had been called up. The larger part of this sum was spent on putting the claim and plant in order and prospecting. The boring continued for almost five years. It was not until August 1895 that shaft sinking operations commenced.
The company's problems sprang from the existence of "hydrothermals"--geological subsidence that had been filled with water--in their lease. To cope with the water problem, a pumping and winding plant was installed which consisted of a 300 hp engine and two lifts of 18 inch and 20 inch was installed. Other plant included two 20 inch cylinder winding engines, a steam capstan, four puddling machines and engine, and five pressure steam boilers. The total cost of the plant was £21,724.
By 1897 the main shaft had been sunk to 525 feet. The company found they had a much reduced body to work with. They were forced to conclude that the underground subsidence had dropped the auriferous wash to unworkable depths. All the company had to work on where the undisturbed sections of the lead. The first gold was not obtained until 1897, by which time calls were £44,874. In the following decade gold returns increased, but the 29,265 ounces recovered were not sufficient to defray costs. By July 1901 gold returns had contributed £122,000 and shareholders had paid out £115,000. By this time the company had expended £240,141. The company was wound up in 1902.
Machinery. Information taken from *The Significance of some Mining Machinery Sites in the Creswick Division* 1859-1927, Technology Report TR-88/1, P. Milner, March 1988.
9 January 1897. One of the finest winding and pumping plants in the colony erected during the past year; and 1901--11.5 inch by 16 inch by 30 inch by 60 inch triple expansion horizontal condensing steam pumping engine.3 Cornish boilers, 26 ft x 6½ ft, 140 pounds per square inch working pressure, and 2 x 18 inch pumps to 500 feet References: Defunct Company Files, VPRS 567/255; and Stanley Hunter, pp.62-63.

DESCRIPTION & INTERPRETATION OF FEATURES:
Mullock heap. Mullock heap with four dumping lines. Pebble dump. Pebble dump with three dumping lines, one of which has been partly quarried. Sand dump. Partly quarried. Machinery foundations. Arrangement of brick mounting beds. The largest bed measures 80 ft x 12 ft, and stands 7 ft high. This bed has 2½ inch bolts and is constructed of machine-made red bricks. The bricks are set in concrete mortar. There are also two large parallel beds (30 to 35 ft x 4 ft, with 1½ inch bolts); and two small brick beds; and Boiler house. To the south-west of the machinery beds is a partly buried stone chimney stack bases. Mounds of rubble near the stack base suggests the likelihood of buried boiler settings.

CONDITION OF FEATURES: Mullock heap and pebble dump are relatively intact.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME:	**KABOONGA COMPANY**
LOCATION:	**Creswick Goldfield--Berry Deep Lead**
HI NO:	**H7623-0012**

LOCATION:	West side of Creswick-Newstead Road 4.5 kms north of Smeaton
MUNICIPALITY:	Hepburn Shire
CURRENT STATUS:	Freehold Land

EXISTING HERITAGE LISTING: "Site No. 2", *Survey of Berry Deep Lead System*, Department of Conservation, Forests and Lands, Ballarat Region, 1986.

SITE HISTORY:
Further research required.

DESCRIPTION & INTERPRETATION OF FEATURES:
Mullock heap. Small intact peaked mullock heap.
Machinery foundations. Single multi-bed foundation having an overall measurement of 38 ft by 20 ft, and standing 7 ft high. Majority of mounting bolts are 2 inch diameter. Bricks are machine-made, have a single frog and are set in concrete mortar.
Shaft/bob pit. Located to the south of the machinery foundations and are both full of agricultural rubbish.
Slum pond. Partly quarried.

CONDITION OF FEATURES: Good. The site is degraded by extensive dump of agricultural rubbish.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **BERRY UNITED**
LOCATION: **Creswick Goldfield--Berry Deep Lead**
HI NO: **H7623-0011**

LOCATION: South side of Ullina-Kooroocheang Road, 7.1 kms north-west of Smeaton
MUNICIPALITY: Hepburn Shire
CURRENT STATUS: Freehold Land

EXISTING HERITAGE LISTING: "Site No. 1", *Survey of Berry Deep Lead System*, Department of Conservation, Forests and Lands, Ballarat Region, 1986.

SITE HISTORY:
Dr J W Gregory, Director of the Geological Survey after visiting the northern end of the Berry Deep lead concluded that the disturbance that had been encountered by the Spring Hill and central Lead mine was due to the eruption of material from Clover Hill which resulted in deep subsidence of the surrounding area. He concluded that the evidence suggested that the Berry Deep lead would be found to the north of the subsided zone.
The Berry United Company commenced in 1902 to explore to the north of the disturbed zone. Yields were low in comparison to those obtained south of the disturbance; suggesting that the true course of the Berry Lead had not been located. The Berry United Company produced only 12,500 ounces of gold prior to its closure. This disappointing production discouraged further exploration. The Berry United thus remained the northern most mine.
References: *Field Report on the Berry Lead System*, CF&L, Ballarat Region, June 1986

DESCRIPTION & INTERPRETATION OF FEATURES:
Mullock heap. Large heap with single dumping line.
Machinery foundations. Two periods of machinery installation marked by an arrangement of large brick and concrete mounting beds. The brick beds are confined to the western side of the site and are dominated by a large solid engine bed measuring 36 ft by 12 ft, standing 9ft (2 inch bolts). Associated with this bed are two parallel beds (28 ft by 4 ft, 1½ mounting bolts); and two smaller beds. The bricks are machine-made and set in concrete mortar. The concrete foundations (eastern side of the site) are dominated by an engine bed, which measures 25 ft by 18 ft, standing 4½ ft high.
Bob pits/shaft. Associated with the two engine beds are adjoining bob-pits, the western one constructed of brick and the eastern, of concrete. The bob-pits and large shaft depression are filled with agricultural rubbish.
Slum dump. Largely quarried.

CONDITION OF FEATURES: Good. Site has been used for dumping rubbish.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **NEW AUSTRALASIAN NO.2**
LOCATION: **Creswick Goldfield**
VHR NO: **H1302**
HI NO: **H7623-0059**

LOCATION: North side of Moores Road, 3.9 kms north-west of Creswick
MUNICIPALITY: Hepburn Shire
CURRENT STATUS: Historic Reserve

EXISTING HERITAGE LISTING: "Site No. 72", *Survey of Berry Deep Lead System,* Department of Conservation, Forests and Lands, Ballarat Region, 1986.
Significance. The New Australasian mine was the scene of the most tragic accident in the history of Victorian gold mining. As a gold producer the mine is also of local importance, being the richest gold producer in the Creswick district.

SITE HISTORY:
The following history was extracted from *The Berry Deep Leads: An Historical Assessment*, CF&L, October 1986, Charles Fahey. The Australasian Company began prospecting in 1867 and the first return of gold was reported in the September quarter of 1868. From 1868 to 1875 the company obtained at least 19,000 ounces of gold. By 1876, the mine was in financial difficulties and its creditors--including Peter Lalor--secured a high court judgement against the company, and sold off its plant claim.
The Australasian claim was purchased from the Bank of Australia by two Ballarat speculators--Edward Morey and George Hawthorn--for £3,200. Morey and Hawthorn floated the New Australasian as a public company. To get at the gold a second shaft was sunk and extensive plant erected. The company erected a 65 ft high brick stack (set on bluestone foundations) and a 72 ft high poppet head. Aerial tramways run from the poppet head to the mullock heap and to the puddling machines.
In the early 1880s the New Australian mine was a substantial producer of gold and paid out handsome dividends. The mine closed in 1888 producing around 88,000 ounces of gold, paid out £98,250 in dividends on £11,250 in calls. The company expended in this time £373,267.
The New Australasian mine was the scene of the most tragic accident in the history of Victorian gold mining. At 4.45am, Tuesday 12 December 1882, H. Reeves and W. Mason struck water overhead in the southern drive. They rushed along the drive and at the shaft they warned the plateman, before escaping up the incline. In the ensuing flood 29 miners were trapped and when all available engine power had been employed in reducing the water level (at 50,000 gallons per minute) only five of the 27 imprisoned miners were brought safely to the surface. The 22 men who perished left 17 widows and 75 dependent children.
An accident on the scale of 1882 did not occur again on the Berry Deep Leads, but mining continued to be an essentially dangerous occupation. Indeed the incident rate rose as the yields declined and miners worked as tributers. In 1884 one quarter of the Creswick miners applied for accident relief from the union; in 1891 almost 40% of miners sought relief. In the 1890s, as the mines were concentrated on the northern water saturated leads, foul air became the major health problem. This problem reached a head when Alex Cowie was overcome with foul air and suffocated in 1897.
Machinery. By 1878 plant at the new shaft included: a 16 inch cylinder 30-hp engine for pumping and puddling, and a 22 inch cylinder engine (4 ft stroke) for winding; two boilers, 30 ft x 6½ ft, one of which was fitted with galloway tubes.
References: Defunct Company Files, VPRS 567/1447, 1476; and of Mines, Mining Surveyors' and Registrars' Reports, 1875-1888

DESCRIPTION & INTERPRETATION OF FEATURES:
Mullock. Large heap. Pebble dump. Remnant of pebble dump. Shaft. Filled, slight depression and surrounded by picket fence; and Stone cairn. The cairn is located to the east of the shaft. It was unveiled by John Cain, premier 1982. Near the cairn is a small interpretation shelter providing information on the mine disaster.

CONDITION OF FEATURES: Only remains of mullock heap, pebble dump and shaft visible.
SIGNIFICANCE RANKING: Site Listed Victorian Heritage Register and Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME:	**HUMBUG HILL WORKINGS**
LOCATION:	**Creswick Goldfield**
VHR NO:	**H1228**
HI NO:	**H7623-0249**

LOCATION:	West side of Humbug Hill, off Slaty Creek Road, 2.7 kms south-east of Creswick
MUNICIPALITY:	Hepburn Shire
CURRENT STATUS:	Crown Land

SITE HISTORY:

The alluvial workings surviving on Humbug Hill are mainly associated with the mining of high terrace Tertiary gravels, which were deposited up to 40 million years ago. The hill, along with others in the vicinity, was rushed in 1854 and proved to be extremely good for sluicing, being covered by 30 ft of rich gold-bearing gravels.

Water to work the deposits was brought in an open channel (called a race) from a reservoir, now known as Russells Reservoir. The race from this reservoir wound its way for considerable distance round the heads of intervening gullies before reaching the hill. The Humbug Sluicing Company used a patent bitumentized pipe to cross Slaty Creek: the pipe had a diameter of 8 inches, was a half mile long, and had a maximum thickness of 7/8th of an inch.

Due to the dryness of the environment, sluicing was extremely seasonal, and when a good stream of water came through, work was carried on day and night. This was the case on Humbug Hill in the winter of 1859, where a sluicing party worked shifts (6 hours on, 12 hours of) washing 1,500 cubic yards of soil before the water run out. For their efforts they obtained 245 ounces of gold. The Humbug Hill operation, which involved cutting faces, turning the water along the base of the face and collapsing blocks of ground from 20 to 50 tons, appears to be the principal sluicing technique used at Creswick.

The main work on the Tertiary gravels at Creswick had ended by the mid 1860s. By the end of the 1865/66 drought only the Chinese were still preserving with shallow alluvial mining at Creswick, particularly sluicing.

DESCRIPTION & INTERPRETATION OF FEATURES:

Modern quarry. Large stone quarry, Selkirks extraction lease, crown of Humbug Hill.

Sluice hole. Immediately north of the entrance to the extraction lease is a massive sluice hole, which is approximately 200 metres wide and 50 metres deep. The sluice hole is partly filled with wash, which has now turned the sluice hole into a dam. There is a smaller sluice hole further down the track (to the south).

Cement workings. The workings are located 500 metres south of the entrance road to extraction lease, near summit of Humbug Hill. Workings consist of extensive open cutting (5 metre high faces), dumps of pebbles, drainage channels and traces of a water race. Several tail races run from the open cutting, some appear to fed into slum ponds.

Hillslope sluicing. The slopes below the cement workings have been stripped to bedrock: now a bare landscape containing dumps of quartz, water races and dam embankments.

Mine workings. On the hill, to the east of the cement workings, are a partly quarried mullock heap, several small heaps with short dumping lines and a collapsed adit.

Sand dumps. Below the cement/hill-slope workings (east of track) is a large full sand pond.

Tail race/sand pond. 200 metres from the junction of Slaty Creek and Petticoat Road two deeply cut tail races are visible in the cutting on the western side of the track. The races drain to a large sand pond, which lies immediately below the eastern side of the track.

CONDITION OF FEATURES:	Good. Alluvial workings are relatively undisturbed, but cement workings are threatened by any expansion south of the stone quarry.
SIGNIFICANCE RANKING:	Site Listed Victorian Heritage Register and Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **LINCOLN GULLY**
LOCATION: **Creswick Goldfield**
HI NO: **H7623-0248**

LOCATION: Off Lincoln Gully Road, east side of Humbug Hill
MUNICIPALITY: Hepburn Shire
CURRENT STATUS: Creswick Regional Park

SITE HISTORY:
The alluvial workings are associated with the mining of Humbug Hill. Main mining period would have spanned mid 1850s to 1870s.

DESCRIPTION & INTERPRETATION OF FEATURES:
Eastern slope of Humbug Hill there are the remains of an extensive system of water races, hillslope sluicing, dams and pebble heaps.
Sluiced Gully. Lincoln Gully has been deeply sluiced, and littered with large dumps of wash and pebbles. Parts of the gully are heavily timbered. 500 metres along Lincoln Gully Road, from Creswick Road, is a good viewing location.

CONDITION OF FEATURES: Good. Gully is heavily timbered but there is at least one good viewing location.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **MILLS REEF WORKINGS**
LOCATION: **Creswick Goldfield**
HI NO: **H7623-0247**

LOCATION: Off Lincoln Gully Road, 5.0 kms south-east of Creswick
MUNICIPALITY: Hepburn Shire
CURRENT STATUS: State Forest

SITE HISTORY:
Quartz mining did not develop into a large industry at Creswick. There was brief flurry of activity in the early 1860s, mid 1880s and at the turn of the century. The main period of mining on Mills Reef appears to have been the mid 1880s, when it was reported that the Surprise Company were erecting a 10-head battery. The reef appeared to be poor, and both the archaeological and historical record suggests that the reef was not worked much beyond the water level.

DESCRIPTION & INTERPRETATION OF FEATURES:
Adit. Open adit with intact mullock heap which has two dumping lines (heap 20 metre wide and 3 metres high). Mine is located on the south side of the gully.
Forge. Remains of stone blacksmith forge on end of mullock heap.
Humbug water race. At the head of Lincoln Gully, above the reef workings, is a large (breached) dam. The embankment is over 7 metres high and some 70 metres long. The dam is associated with the Humbug water race. The crosses the head of the gully and runs down south side of the gully.

CONDITION OF FEATURES: Good. No evidence of any recent disturbance.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **RUSSELLS RESERVOIR**
LOCATION: **Creswick Goldfield**
HI NO: **H7623-0246**

LOCATION:	Reservoir, off (west) Creswick-Bungaree Road, 5.8 kms south-east of Creswick
MUNICIPALITY:	Hepburn Shire
CURRENT STATUS:	Crown Land

SITE HISTORY:
The reservoir appears to have been constructed by the Humbug Sluicing Company. The race running from the reservoir would have been used by other miners, including Chinese, to work the various gullies draining from the hill.

DESCRIPTION & INTERPRETATION OF FEATURES:
Embankment. 100 metres long, approximately 20 metres high.
Water race. The Humbug water race commences at the base of the reservoir's embankment, south side of the gully.

CONDITION OF FEATURES: Good. Still used.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **MOPOKE GULLY SLUICING**
LOCATION: **Creswick Goldfield**
HI NO: **H7623-0245**

LOCATION: Mopoke Gully, west of Petticoat Road, 5.3 kms south of Creswick
MUNICIPALITY: Hepburn Shire
CURRENT STATUS: State Forest

SITE HISTORY:
No history was found on this site. The workings are well preserved and their scale suggests that they would date to the nineteenth century. The revival of alluvial mining during the Great Depression (1930s) tended to be fairly small scale stuff. Creswick's main sluicing period was during the 1860s and 1870s.

DESCRIPTION & INTERPRETATION OF FEATURES:
Sluice hole. 200 metre x 50 metre, 10 metre deep hole, which is heavily timbered. The north end of the hole is chocked with dumps of quartz pebbles and wash. A tail race runs from the north end of the sluice hole to Mopoke Creek.
Sluice hole. A second sluice hole lies to the south. It has two tail races and would be slightly larger than its northern neighbour.
Sluice hole. A third patch of sluiced workings lies to the south of the second hole. It is a small open cut into a hill and has a tail race and dumps of quartz pebbles.

CONDITION OF FEATURES: Good. No evidence of any recent disturbance.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **TAVISTOCK HILL**
LOCATION: **Creswick Goldfield**
HI NO: **H7623-0244**

LOCATION: Tavistock Hill, west side of Petticoat Road, north of junction with Long Gully Road, 3.9 kms south of Creswick
MUNICIPALITY: Hepburn Shire
CURRENT STATUS: State Forest

SITE HISTORY:
Owing to the focus on deep lead mining at Creswick, the mining records do not contain much information on the working of the shallow deposits. The working of high level Tertiary gravels commenced in the area in 1854. During this year there were a number of rushes to work the gravels that topped a number of low hills, which included Grahams, Bald, Clarkes, Hard, White, Humbug, Lucknow and Ironstone. Presumably Tavistock Hill was also worked at this time. By 1860 many of the hills were being extensively sluiced.

DESCRIPTION & INTERPRETATION OF FEATURES:
Cement workings. Bulk of hill has been extensively sluiced: a 300 metre long, 20 metre to 50 metre wide open cut through the crown of the hill. The open cut has 5 metre high faces and is littered with dumps of pebbles. Tail races run down the east and west slopes of the hill.
Hillslope sluicing. North-eastern slope of the hill has been extensively worked. The gully below is chocked with wash from the sluicing.
Water race. A well defined race runs around the north-east corner of Tavistock Hill. The race is just above creek-level.

CONDITION OF FEATURES: Good. The south end of the open cut has been cut by a track, the northern end is undisturbed.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **CRESWICK STATE BATTERY**
LOCATION: **Creswick Goldfield**
HI NO: **H7623-0239**

LOCATION: Off Battery Crescent, Creswick
MUNICIPALITY: Hepburn Shire
CURRENT STATUS: Crown land

SITE HISTORY:
From 1897 the Victorian government provided assistance to quartz gold prospectors through the installation and operation of small quartz crushing facilities (known as government or State batteries) in localities where no privately-owned batteries were available for public use. The batteries were erected in places where auriferous reefs showed promise, and were moved as demand (or lack of it) required. Their number peaked between the wars, with a maximum of 33 in operation. Government crushing facilities were quite small concerns, at first equipped with only three head of stamps, rising in 1904 to a standard of five head. Sometimes the batteries were equipped with 6-heads. The batteries were originally powered by steam, but producer-gas, oil, and electricity eventually replaced steam power.
The Creswick State battery was installed in 1902 and is one of the six that still survive in Victoria. The others are Maldon, Wedderburn, Rutherglen, Bright and Egerton.

DESCRIPTION & INTERPRETATION OF FEATURES:
Working battery. Galvanised iron, timbered framed battery shed with small brick chimney stack. Building is painted light green and has a small verandah.
Cyanide vat. Small circular vat. One of the six surviving government batteries. All have recently been decommissioned.

CONDITION OF FEATURES: Good. Working facility, which has recently decommissioned.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **LOTHAIR MINE**
LOCATION: **Clunes Goldfield**
HI NO: **H7623-0238**

LOCATION: Clunes, immediately south of Maryborough-Ballarat railway
MUNICIPALITY: Hepburn Shire
CURRENT STATUS: Crown Land

SITE HISTORY:
The Lothair Company commenced deep lead mining during the late 1860s and in the early 1870s was later taken over by the South Clunes Company. The South Clunes group of mines ended up being the field's most success deep lead venture but in terms of the State's mining history were relatively insignificant.

DESCRIPTION & INTERPRETATION OF FEATURES:
There is a small wetland located to the south-east of the mullock heap.
Mullock heap. Large heap with fifteen dumping lines. The longest dumping line is about 60 metres.
Mining machinery foundations. The foundations are located at the base of the heap, north-west corner.
Boiler setting. Remains of stone (basalt blocks set in soft mortar) boiler setting. One wall of the boiler setting still stands, it is 30 ft long, 2 ft thick and 6 ft high. The wall still has traces of its brick lining.
Building. To the south of the boiler setting are the remains of concrete footings for a building measuring approximately 50 ft x 20 ft.
The rest of the mining foundations have been flattened but there is a likelihood of buried foundations.

CONDITION OF FEATURES: Mullock heap is relatively intact. The surviving wall of the boiler setting is being pushed over by a pepper tree.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **PORT PHILLIP COMPANY**
LOCATION: **Clunes Goldfield**
HI NO: **H7623-0240**

LOCATION: East side of Creswick Creek, Clunes
MUNICIPALITY: Hepburn Shire
CURRENT STATUS: Freehold Land

EXISTING HERITAGE LISTING: **National Estate**

SITE HISTORY:
A single auriferous reef, discovered in 1850, that outcropped on a hill in the midst of a great lava bed (basalt) plain became one of the most extensively wrought and most permanently productive in the state. The Port Phillip and Clunes companies (English concerns) became synonymous with the working of this reef. Between 1857 and the early 1890s, the two companies extracted and processed 514,886 ounces of gold which made the mine the third largest gold-producer in Victoria. The gold produced by the mine was valued at £2,123,905 and paid out £481,455 in dividends.

In February 1857, two different ventures - The Port Phillip Company and Clunes Quartz Mining companies - became interested in the Clunes reef. Due to the fact that the reef was situated on private property, the Port Phillip Company negotiated a 21-year lease for 160 acres of ground (subject to a royalty of 10% on gross yield of gold) on the hill; and then proceeded to sub-let the ground, upon the same terms, to the Clunes Company with a proviso that they (the Port Phillip Company) were to crush all the quartz raised from the mine at a fixed charge per ton. Together the two companies rose to prominence in terms of gold production, but also through their progressive and scientific approach to quartz mining. The latter was often cited in scientific journals as being not only most beneficial to themselves but to the general advancement of quartz mining in Victoria.

The Port Phillips Company was renowned for the size of its battery , which had commenced crushing in July 1857, had been enlarged to 40-head by 1859, ,and by 1864 had grown to a monster of 80-heads. The Port Phillip Company also led the way in experimenting with new ways to extract the gold from the quartz, using a variety of appliances such as Chilian grinding mills (also known as Arastras); blankets and silvered metal plates; amalgamating barrels; stone-breaking machines; and quartz roasting kilns. The success or failure of the company's experiments were closely watched. For example, the Port Phillip Company found that the roasting of quartz prior to crushing increased its gold yield: in September 1860 the company had completed the erection of two kilns, capable of roasting 2,000 tons per week. The Port Phillip Company also experimented with ways to recover gold from the difficult pyritic ore: by 1864 the company were crushing the pyritic ore, concentrating the pyritic tailings in buddles and blankets, then roasting the concentrates in furnaces and regrinding them in Chilian mills.

From 1872 the Port Philip Company, despite crushing large volumes of ore were getting very poor average yields. Although continuing to crush large volumes of ore throughout the decade the company had ceased mine profitably by 1880-1881. By the early 1890s the company had exhausted all its capital and operations were suspended.

References Mining Surveyors' Reports, December 1864; Dickers Mining Record, October 1862, p2; and Mining and Geological Journal, Vol 4, No. 4, September 1951, p13

DESCRIPTION & INTERPRETATION OF FEATURES:
Mullock heaps - Group of mullock heaps, main heap has eight dumping lines.
Quartz roasting kilns - Remains of some kilns, at the base of the hill, south end of the site. Likelihood of buried foundations.
There is a quartz mining monument erected at the Town Look-out.

CONDITION OF FEATURES: Poor integrity, but would have archaeological potential. Prominent landscape feature.

SIGNIFICANCE RANKING: Site listed Heritage Inventory

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME:	**CLUNES POWDER MAGAZINE**
LOCATION:	**Clunes Goldfield**
HI NO:	**H7623-0241**

LOCATION:	Off, Glengower Road, 2.2 kms north-east of Clunes, north of Consols Street, west side of Birch Creek
MUNICIPALITY:	Hepburn Shire
CURRENT STATUS:	Freehold Land

SITE HISTORY:

The powder magazine was designed by the Victorian Public Works Department and erected in 1869 at a cost of £899-11-0.

Reference Talbot and Clunes *Conservation Study*, Aitken, 1988, p.375.

DESCRIPTION & INTERPRETATION OF FEATURES:

Magazine. Overall measurement is 35 ft x 20 ft, with 2¼ ft thick (13 ft high) brick walls which rest on basalt footings. The magazine has two rectangular chambers with vaulted brick ceilings. A 10 ft square entry porch is unroofed and partly demolished.

CONDITION OF FEATURES:	Good, but entry porch partly demolished. According to Talbot and Clunes Conservation Study the magazine's twin chambers were once covered by roof of slate or corrugated iron and it had a timber floor (now rotted out).
SIGNIFICANCE RANKING:	Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **BENEDETTI DEEP LEAD MINE**
LOCATION: **Blackwood-Blakeville Goldfield**
HI NO: **H7722-0033**

LOCATION: South of Green Hills, north of Paradise Road
MUNICIPALITY: Moorabool Shire
CURRENT STATUS: State Forest

SITE HISTORY:
By 1884, several companies were prospecting for deep alluviums at Green Hill. A discovery of auriferous drift in the following year by the North Benedetti Company sparked a small boom. The North Benedetti Company went as far as constructing a dam across Green Hill Creek, a tramway from its tunnel and a puddler. It appears to have not mined profitably and mentions of the company, and its neighbours, such as the Benedetti Amalgamated and Benedetti, do not feature in mining reports after 1887.

References *Mining Surveyors Quarterly Reports:* September 1885; December 1885; and September 1887.

DESCRIPTION & INTERPRETATION OF FEATURES:
Mullock heap. Small mullock heap and filled, but slightly collapsed, shaft.
Track. Well defined track runs down the west side of the creek to a second (open) shaft.
Puddler. 100 metres down the gully from the mine site, east side of the creek, is a 22 ft diameter Puddler. The puddler is obscured by grass and fallen vegetation, has a pronounced inner mound and its puddling trench has sheer sides. No pivot post or trench slabbing but both inlet and outlet are visible. The puddler obtained its water from a race and has a small bank of wash.

CONDITION OF FEATURES: Good. No recent disturbance.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **NEW SULTAN REEF MINE**
LOCATION: **Blackwood Goldfield**
HI NO: **H7723-0499**

LOCATION: South-west of Barrys Reef, off Greendale Trentham Forest Road, east side of Lerderderg River
MUNICIPALITY: Moorabool Shire
CURRENT STATUS: State Forest

SITE HISTORY:
The New Sultan Company was a spectacularly unsuccessful mining venture of the early 1880s. This company, which took over a lease once held by the Mounter Brothers, and the Township Reef Company (late Sultana Company), installed a very large and expensive mining plant. Within two years the company had closed down and the plant was being removed from the mine: ie., September 1883 it was reported that the last remaining plant--a 80-hp engine, chilian mill, pumping gear and a chimney stack--was in the process of being removed from the site.

DESCRIPTION & INTERPRETATION OF FEATURES:
Mullock heap. Large mullock heap with three dumping lines and open shaft.
Mining machinery. North of the shaft is an arrangement of decaying bedlogs.
Battery. Benched platform with decaying mortar blocks (10-head of stamps). To the west is 5 metre wide sludge pond.
Boiler. Well preserved stone boiler setting measuring 14 ft x 10½ ft. Walls are 2 ft thick and 5 ft high. The north wall of the boiler setting has partly collapsed but most of the settings internal brickwork survives.
Stack base. 6 ft square stone stack base at rear of boiler setting.

CONDITION OF FEATURES: Boiler setting is in good condition but the battery and mining machinery foundations are in a poor state of preservation.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **CROWN COMPANY**
LOCATION: **Blackwood Goldfield**
HI NO: **H7723-0498**

LOCATION: Simmons Reef. Garden of St Erith, near Blackwood
MUNICIPALITY: Moorabool Shire
CURRENT STATUS: State Forest

SITE HISTORY:
The Crown Company was one of the main companies--along with Imperial, Cornish, Lerderderg, and William Brothers--to work Simmons Reef during the 1860s. The Crown Company's battery, like all others erected on the reef during this time, was powered by waterwheel.

DESCRIPTION & INTERPRETATION OF FEATURES:
Open cut/stope--large partly filled excavation with several adits.
Battery site. Haulage adit leads to battery site on Back Creek.

CONDITION OF FEATURES: Good. The open cut is part of an interpretive trail established by the proprietors of the adjoining Garden of St Erith.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **1994.**

NAME:	**YANKEE CREEK ALLUVIAL WORKINGS**
LOCATION:	**Blackwood Goldfield**
HI NO:	**H7723-0497**

LOCATION:	South side of Yankee Creek, north side of Yankee Road
MUNICIPALITY:	Moorabool Shire
CURRENT STATUS:	State Forest

SITE HISTORY:

When the Blackwood Rush peaked in September 1855 there were some 13,000 diggers on the field. By this time, most of the locations which were to become famous for their alluvial gold had been opened: such as, Golden Point, Nuggetty Gully, Long Gully, Yankee Gully, Frenchman's Gully and Dead Horse Gully.

The actual bed of the Lerderderg River (and tributaries) was the main focus of alluvial mining. In some places, however, such as along Yankee Creek, high level terraces (Tertiary gravels) were also found to be gold bearing. The mining register reported the Yankee Creek Sluicing Company working the creek in the mid 1860s.

References Flett, J., *The History of Gold Discoveries in Victoria*, 1979.
Mining Surveyors *Quarterly Reports*: February 1860; March 1865; and December 1866.

DESCRIPTION & INTERPRETATION OF FEATURES:

Alluvial workings. Extensive sluicing workings are located along the western bank of Yankee Creek. One of the most notable feature of the workings is a small open cut which has an adit, a stone retained dam, small intact pebble dump and drainage channels. Below this site are more adits/open cuts, stone retained pebble dumps and drainage channels.

CONDITION OF FEATURES: Good.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **TROJAN MINE SITE**
LOCATION: **Blackwood Goldfield**
HI NO: **H7723-0496**

LOCATION: Trojan mine site, Yankee Reef, Yankee Creek, north of Yankee Road
MUNICIPALITY: Moorabool Shire
CURRENT STATUS: State Forest

SITE HISTORY:

The first major venture on the mine site was probably undertaken either by the Trojan or the Clunes and Blackwood companies. Both these companies installed steam-powered mining plant during Blackwood's 1869 mining boom, eg., the Blackwood & Clunes had a 40-hp engine and 2-heads of stamps. The venture was not successful and by 1872 the plant had been purchased and removed to Golden Point by the All Nations Company.

After the collapse of the Trojan and Blackwood & Clunes, a small co-operative company, the Victoria Co., commenced to work in the area in 1873. This company preserved for some thirteen years before striking profitable ore. In the late 1880s (around 1887) the Victoria company erected a battery and also installed a steam winch at the end of an adit.

References March 1869; December 1869; March 1872; June 1876; June 1872; June 1886; September 1888; and June 1889.

DESCRIPTION & INTERPRETATION OF FEATURES:

Battery. Collapsed timbers of the battery's loading platform cover well preserved mortar blocks. The number of mortar blocks suggests the battery had ten-head of stamps. The lower floor of the battery is obscured by blackberries but some concrete mounting beds, timberwork and tie bolts are visible. The overall dimensions of the battery house are 40 ft by 20 ft.

Boiler setting/chimney stack. On the west side of the battery is a largely buried boiler setting, concrete stack base and two sections of collapsed iron stack.

Water tank. Near the collapsed sections of the iron stack is a 7 ft square concrete water tank. The tank stands 3 ft and has 1 ft thick walls.

Tailings pond. In the gully below the battery, to the north-east, is a recently quarried tailings pond.

Mullock heap/mining machinery. To the west of the battery is a largely quarried mullock heap and a buried concrete winder bed.

The archaeological evidence suggests that the battery was constructed in the twentieth century, probably during or after the 1930s mining revival.

CONDITION OF FEATURES: Good.

SIGNIFICANCE RANKING: Site Listed heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **YANKEE -BIG REEF WORKINGS**
LOCATION: **Blackwood Goldfield**
HI NO: **H7723-0500**

LOCATION:	Southern end of Yankee or Union line of reef. Located between the Trojan and the Countess mine sites, junction of Snake and Peacock gullies
MUNICIPALITY:	Moorabool Shire
CURRENT STATUS:	State Forest

SITE HISTORY:

By the end of the 1855 the Yankee or Union line of reef was being worked. The reef received little attention until 1869 when two companies--the Trojan, and Blackwood & Clunes--installed large and expensive mining plants. Both these companies failed, exhausting their capital on plant, rather than proving-up a profitable ore body.

After the collapse of the two companies, the reef was mined in the 1870s and 1880s from two main localities; by the Victoria Company from the southern end of the line (former Trojan mine), and the Countess, from the northern end (possible Blackwood and Clunes mine site).

The battery relics that now survive at the Trojan mine also shows that the reef was worked in, or later than, the 1930s.

DESCRIPTION & INTERPRETATION OF FEATURES:

Creek-levels adits. On the north side of Yankee Creek is a well defined benched track. This track runs east, then north around the base of a steep ridge. The most notable features associated with this track are: an open adit and small heap, open adit with three intact dumping lines, 50 metre long trackway cutting, and an open adit with six intact dumping lines.

Ridge-top workings. Running along the ridge overlooking the Trojan mine are some undisturbed shallow reef workings. The most notable features are at least ten narrow cuttings from which shafts have been dropped. Several other cuttings run right through the ridge. Also several adits and benches on the slopes below the cuttings.

STATE OF DISTURBANCE:	Little recent disturbance, particularly of the adits at the base of the ridge.
SIGNIFICANCE RANKING:	Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **COUNTESS COMPANY**
LOCATION: **Blackwood Goldfield**
HI NO: **H7723-0501**

LOCATION: Union and Big Reef, between Snake and Peacock gullies, 3.5 kms south-east of Trentham
MUNICIPALITY: Moorabool Shire
CURRENT STATUS: State Forest

SITE HISTORY:

The mine, on Union Reef, was being worked by the North Star Company in the late 1870s. This company was reported to be operating a steam-powered crushing plant in 1879. The North Star Company appears to had previously known as the Empress Co.

In 1881 the mine was being worked by the Countess Company (late North Star) who had erected steam-powered pumping and winding plant. Two years later the company were reported as operating a 18-head stamping battery which was crushing ore from Big Reef. The company appears to have not mined profitably and by 1886 had been wound up and its plant sold off.

References Mining Surveyors *Quarterly Reports:* June 1877; March 1879; June 1883; and June 1886.

DESCRIPTION & INTERPRETATION OF FEATURES:

Mullock heap. Large heap with two dumping phases. The latest phase is represented by a single dump (35 metres long, 10 metres high) which overlies a dump, which has four distinct dumping lines. The latter dump is approximately 75 metres long and 15 metres high. At the rear of the heap (east) is an open shaft.

Mining machinery. East side of the open shaft is a small stone pump-pit and some parallel depression (decayed bedlogs) and possible boiler setting (obscured by vegetation).

Dams. A small dam with 5 metre high embankment is located north of the shaft; and there is another dam near the mining machinery foundations.

Large dam. In the gully below (west) the mullock heap is breached embankment (50 metres long, 6 metres high).

Mullock heap. Below the large dam is an intact mullock heap (single dumping line).

Battery. Below the mullock heap is a 100 metre wide sludge pond. Above the north-east corner of the sludge pond is a benched platform, which contains the decaying remains of mortar blocks and horses belonging to approximately 20-head of stamps. There are also some protruding tie bolts and brick rubble. The platform is very overgrown and there is the possibility of buried features.

Reef workings. The workings continue north from the mine site. The main features are a long stretch of open cutting and associated mullock heap, open shaft and intact mullock heap and a patch of partly bulldozed heaps and shaft.

Alluvial workings. A second embankment runs south from the mullock heap. Water from this dam was used to sluice the western bank of the creek. The bank has been sluiced to a depth of two metres and has mounds of pebbles at its base.

Yankee Reef workings (northern end of line, south to Countess Company). At least three distinct patches of narrow open cuts, mullock paddocks and small dumps of quartz. Reef exposed in open cuts.

CONDITION OF FEATURES: Poor.

SIGNIFICANCE RANKING: Site Listed heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME:	**MALAKOFF AND BALLARAT MINE SITES**
LOCATION:	**Steiglitz Goldfield**
HI NO:	**H7323-0068**

LOCATION:	Head of Yankee Gully, west of Durdidwarrah Road, Steiglitz
MUNICIPALITY:	Golden Plains Shire
CURRENT STATUS:	Steiglitz Historic Area

SITE HISTORY:

Steiglitz's 1866 mining revival--main companies were New Year, Albion, Ballarat, Steiglitz, Sailors Reef and Malakoff. Albion Company maintains its gold production.

DESCRIPTION & INTERPRETATION OF FEATURES:

Mullock heaps. Two large intact mullock heaps. The southern heap is the larger, measuring approximately 60 metres and standing 15 metres. It has two main dumping lines.

Tramway. Area is very overgrown but what appears to be a raised tramway or track runs between the two mullock heaps.

Mining machinery foundations. To the west of the southern heap are a set of stone engine beds. The northern bed has been partly demolished, but the southern bed is intact and measures 28 ft by 6 ft, and stands 6 ft high.

Bob-pit? On the south-east corner of the intact bed is the remains of a U-shaped stone structure.

Boiler setting. At the rear of the engine beds, largely obscured by bracken, is a stone boiler setting.

Battery site. Possibility of battery foundations on the slope between the two mullock heaps. Area is covered by thick bracken.

Dam and ponds. In the gully below the mine workings are a dry water dam and two intact tailings ponds. A culvert drains into the higher tailings pond, presumably it derives from the battery.

CONDITION OF FEATURES: Good, but very overgrown with bracken.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME:	**SON OF REDAN ENGINE SHAFT**
LOCATION:	**Steiglitz Goldfield**
HI NO:	**H7323-0069**

LOCATION:	West of Durdidwarrah Road, Steiglitz
MUNICIPALITY:	Golden Plains Shire
CURRENT STATUS:	Steiglitz Historic Area

SITE HISTORY:
Further research required.

DESCRIPTION & INTERPRETATION OF FEATURES:
Mullock heap. Small intact mullock heap approximately 35 metres long and 5 metres high.
Boiler setting. To the south of the mullock heap is a relatively intact stone boiler setting measuring 28 ft by 11½ ft. The boiler setting has 2 ft thick walls and has a 6 ft square stone chimney stack base adjoining its back wall.
Dams. Directly below the mine site, in Blackwood's Gully, is a large full water dam. On the dam's eastern side are the remains of a small stone house and a small tailings pond. Down the gully is another large dam.

CONDITION OF FEATURES: Well preserved boiler setting.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **UNITED ALBION COMPANY**
LOCATION: **Steiglitz Goldfield**
HI NO: **H7323-0070**

LOCATION:	West side of Sutherland Creek, opposite junction of Yankee Gully and Durdidwarrah roads
MUNICIPALITY:	Golden Plains Shire
CURRENT STATUS:	Steiglitz Historic Area

SITE HISTORY:
Mining at Steiglitz in the 1890s was revived by the increased production from the North Birmingham and also the New or United Albion. With the rise in gold yields, capital once more flowed into the field resulting in new companies forming. One of the new companies, the New Mariner, which was working ground on the southern end of the field, was to be extremely successful (in terms of Steiglitz) and paid out £56,000 in dividends. The other main dividend payer of the early 1890s boom was the United Albion with £15,000 in dividends.[291] The mining boom peaked in 1984 with some forty reefs being worked and the town's population at 2,000. [292]

DESCRIPTION & INTERPRETATION OF FEATURES:
Mining machinery foundations. Arrangement of brick mounting beds. The majority of bricks are machine-made, with a single frog. The measurements of the main beds are as follows: large intact bed, 30 ft by 6 ft, standing 5 ft high with 1-1/2 inch mounting bolts; smaller bed, 15 ft by 4 ft, 5 ft high, no bolts; small bed 7 ft by 2 ft, standing 5 ft high; tank-like bed measuring 11 ft by 8 ft, with 1-1/2 ft thick walls; partly demolished bed approximately 23 ft by 5 ft, with 1-1/2 inch mounting bolts; remnants of an E-shaped bed 16 ft by 13 ft (the lower courses of this bed are of stone); and two small parallel beds of which only one bed still stands, 12-1/2 ft by 3 ft.

Bob pit. To the east of the machinery foundations, near mullock heap are some largely buried stone foundations. There appears to be to parallel beds.
Mullock heap. Large intact heap. The top of heap has been flattened.
Battery. Foundations for a battery are located in a 86 ft wide benched platform. The foundations consist of a 40 ft long stone wall, which divides the upper and lower floors, and a largely buried brick and stone engine bed.
Ponds. In the gully below the battery are two large slum ponds and a dry water dam.

CONDITION OF FEATURES: Good. Top of mullock heap has been levelled.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

291 Steiglitz, a history of a gold mining town, undated, p.15
292 Clark, Travis., Steiglitz, Golden Town of Yesteryear, undated

NAME: **NEW MARINERS COMPANY**
LOCATION: **Steiglitz Goldfield**
HI NO: **H7323-0071**

LOCATION: South of Steiglitz, west of Steiglitz-Maude Road
MUNICIPALITY: Golden Plains Shire
CURRENT STATUS: Freehold Land

SITE HISTORY:
Mining at Steiglitz in the 1890s was revived by the increased production from the North Birmingham and also the New or United Albion. With the rise in gold yields, capital once more flowed into the field resulting in new companies forming. One of the new companies, the New Mariner, which was working ground on the southern end of the field, was to be extremely successful (in terms of Steiglitz) and paid out £56,000 in dividends. The other main dividend payer of the early 1890s boom was the United Albion with £15,000 in dividends.[293] The mining boom peaked in 1984 with some forty reefs being worked and the town's population at 2,000.[294]

DESCRIPTION & INTERPRETATION OF FEATURES:
Mullock heap. Large intact mullock heap approximately 50 metres long, 15 metres high.
Mining machinery foundations. The foundations are located on a benched-platform, western end of the mullock heap. The area is overgrown with braken and ferns. Visible are a brick mounting bed, 17 ft by 3½ ft, standing 6 ft high. The base of the bed has stepped brickwork.
Boiler setting. To the north of the brick mounting bed is the remains of a demolished stone boiler setting.
Large chimney stack base? On the north side of the mullock heap is a large brick and stone structure that measures 15 ft by 12 ft, and stands 11 ft high. The base has one arched portal (south side) which measures 3 ft by 1¾ ft.
Battery. To the north of the stack base are some poorly preserved concrete stamper foundations and a stone engine bed.
Raised platform. To the north of the battery site is a stone-retained platform, which measures 36 ft by 30 ft. An arrangement of post holes on the platform suggests it may have been a stables.
Blacksmith's forge. Near the raised platform is a small stone forge.
Dam and tailings. In the gully below is a large full dam and extensive spread of tailings.

CONDITION OF FEATURES: Good, very overgrown with bracken.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

---

293 Steiglitz, a history of a gold mining town, undated, p.15
294 Clark, Travis., Steiglitz, Golden Town of Yesteryear, undated

NAME: **IRONBARK REEF WORKINGS**
LOCATION: **Steiglitz Goldfield**
HI NO: **H7722-0047**

LOCATION: South of Steiglitz, west of Steiglitz-Maude Road
MUNICIPALITY: Golden Plains Shire
CURRENT STATUS: Freehold Land

SITE HISTORY:
Further research required.

DESCRIPTION & INTERPRETATION OF FEATURES:
Dam. Small silted dam at head of gully.
Whim shaft. Down from the dam is a raised whim platform, filled shaft and an intact mullock heap (single dumping line). To the west of the whim shaft is an intact small mullock heap/filled shaft.

CONDITION OF FEATURES: Well-preserved example of whim shaft.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **DOLLYS CREEK**
LOCATION: **Dollys Creek-Morrisons Goldfield**
HI NO: **H7722-0010**

LOCATION: Borhoneyghurk Common, east of junction of Mystery Lane and Egerton Road
MUNICIPALITY: Moorabool Shire
CURRENT STATUS: Historic Reserve

SITE HISTORY:

The first gold discoveries in the Steiglitz Mining Division were along the Moorabool River, near Morrison's Station; at Dollys Creek; and in the vicinity of Steiglitz itself. The focus of alluvial mining were on the two first localities, where miners found gold in high terrace Tertiary gravels. These gravels, commonly referred to cement, were deposited up to 40 million years ago. They were, in fact, the remnants of ancient river systems. By 1858, miners at Morrison's were tunnelling under the basalt along western bank of the Moorabool and by the following year had also discovered a cemented lead at Dolly's Creek running from Campbell's to Brown's Hill.

In May 1860, the Dollys Creek Diggings were described by the mining registrar as a "poor man's field", that is, only suited to being worked by individual, or small parties of, miners and only capable of rewarding efforts with wages. Because of the nature of the field, mining at Dolly's Creek tended, over time, to became monopolised by Chinese miners. By the early 1860s the Chinese miners on Dollys creek were reported working the auriferous deposits that covered the various hills to a depth of four feet. The auriferous material was mainly treated in sluice boxes, though there were also five puddling machines on the field.

Being a very dry area, the miners at Dolly's Creek became reliant on water supplied by a twelve-mile water race which came from a source above the Lal Lal Falls. This race was constructed by the Moorabool Waterworks Company (also referred to as Lal Lal Waterworks Company) and was later extended south to the Morrison's and Tea-Tree Diggings. According to the registrar the water from the Lal Lal race enabled the Chinese to "turn over with profit every portion of the ground about Dolly's Creek containing the most minute particles of gold". By 1866, alluvial mining at Dolly's Creek was declining. The miners had by this time treated most of the easily won auriferous material. In June 1866, the mining registrar reported that Dolly's Creek was virtually deserted with the exception of one small party of Chinese miners.

Alluvial mining at Dollys Creek revived somewhat in the mid 1870s when there was a depression in the local quartz mining industry. In June 1879, the registrar was of the view that Dolly's Creek was on the verge of another golden era because a cement-lie deposit, overlooked in the past, had been proven to be gold bearing, going as much as 2½ ounces to the ton. Sluicing and crushing ventures were formed to work the deposit, eg. David Morrisons Water Scheme in 1879 and the Happy Dinah Company erected a 5-head battery in 1883.[295] The renewal of activity was brief and mining on a large scale ended.

References Mining Surveyors *Quarterly Reports:* May 1860; October 1860; September 1860; October 1863; June 1866; June 1879; June 1881; June 1883.

DESCRIPTION & INTERPRETATION OF FEATURES:

Dollys Creek camp sites. Number of stone fire places and scatters of domestic artefacts. For more information on habitation sites at Dollys Creek, see Susan Lawrence Cheney, *Dollys Creek Historic Mining Site, Prelimanry Report*, December 1990.

Sluiced hillslope. Approximately 2.5 km x 1 km area of sluicing. Hill-slope sluiced to bedrock and littered with dumps of quartz pebbles. Water races run around the top of the workings and there are at least eight tail races (drainage cuttings) at the base of the workings. The tailraces appear to connect into a waste management system that has dams, sand dumps and a water race.

Ground sluices. Surviving sections of ground sluices at the northern end of the workings.

Cement workings. The hill top, above the ground sluicing area, has been deeply open cut. The eastern end of the open cut has been obliterated by modern quarry. A well defined tailrace runs from the western end of the open cut. The tail race terminates above Dollys Creek.

Battery site. 7722-4-3: 427.181. Near the terminus of the tail race is a benched platform, which contains the remains of a stone boiler setting and part of a flue. The eastern wall of the boiler setting

---

[295] Mining Surveyors' Reports, June 1883

still stands and is 18 ft long and 2 ft thick. The flue runs to a chimney stack depression. A gully to the south of the battery site has been sluiced, and also has some cement workings including some open cutting and at least one adit.
Cement workings. A hill, on the east side of the track to Dolly's Creek, has been partly open cut and contains large dumps of pebbles. Battery foundations most probably belong to the Dinah Company.

CONDITION OF FEATURES: Good. Limited archaeological work done on some of the hut sites. Apart from some limited modern quarrying of the cemented lead, the bulk of the alluvial workings have not been recently disturbed.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **BORHONEYGHURK COMPANY**
LOCATION: **Dollys Creek--Morrisons Goldfield**
HI NO: **H7722-0039**

LOCATION: South side of Tea Tree Creek, just above junction with Moorabool River, Morrisons
MUNICIPALITY: Moorabool Shire
CURRENT STATUS: Freehold

SITE HISTORY:

The first gold discoveries in the Steiglitz Mining Division were along the Moorabool River, near Morrison's Station; at Dollys Creek; and in the vicinity of Steiglitz itself. The focus of alluvial mining were on the two first localities, where miners found gold in high terrace Tertiary gravels. These gravels, commonly referred to as cement, were deposited up to 40 million years ago. They were, in fact, the remnants of ancient river systems. By 1858, miners at Morrison's were vigorously tunnelling under the basalt along western bank of the Moorabool.

The Morrison's and adjoining Tea-Tree diggings had a very intensive cement mining, involving shaft sinking, tunnelling and the treatment of material in sluice boxes and puddlers. Initially only rich deposits on the west side of Moorabool River, and up Tea-Tree Creek, were worked, but in 1864, two rushes--Evan's and Wallace's--opened up extensive deposits along the east bank of the Moorabool. By 1863, the Lal Lal water race had been extended to Morrisons and the mining registrar felt that it enabled miners to wash with profit about 50% more material than previously treated.

By 1866, alluvial mining on the Morrison's field was declining. The miners had by this time treated most of the easily won auriferous material. Attempting to arrest the decline on the field, two companies--Golden Rivers and Borhoneyghurk--embarked on ambitious new mining ventures. The former sunk a shaft (beyond 400 feet) and extended numerous drives in order to discover the continuation of the rich Ballarat deep leads; and the latter, installed the division's largest crushing plant, a 70-hp steam engine and 28-head of stamps to crush cement deposits. In June 1866, the registrar reported that the failure of the crushing works had caused a severe mining depression in the area.

With a general decline in quartz mining in the mid 1870s, alluvial mining revived. The focus of the work was Dolly's Creek and Morrisons where miners again relied on the water from the Lal Lal race. By this time the race appears to have been taken over by the government. The renewal of activity was brief.

References Mining Surveyors *Quarterly Reports*: October 1863; June 1865;June 1866; June 1874; June 1876.

DESCRIPTION & INTERPRETATION OF FEATURES:

Battery. Benched platform, obscured by black berry bushes, which contains a massive stone engine bed. The engine bed is 26 ft x 5 ft, 9 ft high and has 3 inch mounting bolts. The bed is constructed of stone blocks and concrete mortar and is capped with a solid bed of basalt blocks. Possibility of obscured or buried foundations.

Tailings dump. Below the benched platform is a large dump of crushed pebbles.

Golden Rivers Company. Mullock heap--200 metres up (west) Tea Tree creek from battery site, north side, is an intact mullock heap with several dumping lines. No machinery foundations visible.

CONDITION OF FEATURES: Battery foundations in good condition, rest of the site overgrown by blackberries.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **RED JACKET MINE**
LOCATION: **Dollys Creek-Morrisons goldfield**
HI NO: **H7722-0040**

LOCATION: Morrisons Diggings, west side of Moorabool River
MUNICIPALITY: Moorabool Shire
CURRENT STATUS: Freehold Land

SITE HISTORY:
The first gold discoveries in the Steiglitz Mining Division were along the Moorabool River, near Morrison's Station; at Dollys Creek; and in the vicinity of Steiglitz itself. The focus of alluvial mining were on the two first localities, where miners found gold in high terrace Tertiary gravels. These gravels, commonly referred to cement, were deposited up to 40 million years ago. They were, in fact, the remnants of ancient river systems. By 1858, miners at Morrison's were tunnelling under the basalt along western bank of the Moorabool and by the following year had also discovered a cemented lead at Dolly's Creek.
Initially only rich deposits on the west side of Moorabool River, and up Tea-Tree Creek, were worked, but in 1864, two rushes--Evan's and Wallace's--opened up extensive deposits along the east bank of the Moorabool. By 1863, the Lal Lal water race had been extended to Morrisons and the mining registrar felt that it enabled miners to wash with profit about 50% more material than previously treated.
By 1866, alluvial mining on the Morrison's field was declining. The miners had by this time treated most of the easily won auriferous material. Attempting to arrest the decline on the latter field, two companies--Golden Rivers and Borhoneyghurk--embarked on ambitious new mining ventures. The former sunk a shaft (beyond 400 feet) and extended numerous drives in order to discover the continuation of the rich Ballarat deep leads; and the latter, installed the division's largest crushing plant, a 70-hp steam engine and 28-head of stamps to crush cement deposits. In June 1866, the registrar reported that the failure of the crushing works had caused a severe mining depression in the area.
With a general decline in quartz mining in the mid 1870s, alluvial mining revived. The focus of the work was Dolly's Creek and Morrisons where miners again relied on the water from the Lal Lal race. By this time the race appears to have been taken over by the government. The renewal of activity was brief.

References Mining Surveyors *Quarterly Reports:* October 1863; June 1865;June 1866; June 1874; June 1876.

DESCRIPTION & INTERPRETATION OF FEATURES:
Mullock heap. Large intact mullock heap. Remains of swing bridge (wooden uprights) on side of river below the mine.
Morrisons Diggings. The surrounding hill-side has been extensively sluiced: bank of river, under basalt cap, has been extensively worked and still retains evidence of collapsed adits and associated mullock heaps, carting tracks and large sluicing holes or open cuts.

CONDITION OF FEATURES: Mullock heap relatively intact--landscape feature.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **GOLDEN GATE REEF WORKINGS**
LOCATION:
HI NO: **H7722-0041**

LOCATION: East of Elaine-Blue Bridge Road
MUNICIPALITY: Golden Plains Shire
CURRENT STATUS: Freehold Land

SITE HISTORY:
The Elaine field was cited as the chief feature of the Steiglitz Mining Division in March 1873, with several reefs being worked by small co-operative parties: one of the most successful being the Minerva. Another company, the Lindsay, sunk to 325 feet. Elaine did not develop in a major gold field, though it was reworked from time to time. The concrete foundations belong to a company, which would have probably operated during, or after, the 1930s mining revival.
References Mining Surveyors *Quarterly Reports*, September 1875.

DESCRIPTION & INTERPRETATION OF FEATURES:
Engine shed. Remains of concrete slab (40 ft x 20 ft) and post stumps.
Mining machinery foundations. The main features surviving on the slab are a large winder bed (12 ft x 8 ft, with ¾ inch bolts) and associated engine bed (14 ft x 5 ft, with ¾ inch bolts), and some air receiver pads. The slab and mounting beds are obscured by gorse.
Mullock heap/shaft. 12 metres east of the winder bed is a filled shaft. The abutting mullock heap has two phases: a single dumping line (20 metres long and 8 metres high) which partly covers an earlier heap.
Mullock heaps/whim shaft. To the north of the mine site are several small mullock heaps, one of which has the remains of a circular whim platform.

London Reef workings. Main features are located at the southern end of the line and include a small mullock heap with 2 dumping lines, collapsed adit with small heap, and a whim platform/mullock heap with five dumping lines. Workings continue north of the track and include one large mullock heap.

CONDITION OF FEATURES: Machinery foundations are in good condition.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **LAL LAL IRON MINE**
LOCATION: **Lal Lal Gold Field**
HI NO: **H7722-0011**

LOCATION: Lal Lal
MUNICIPALITY: Moorabool Shire
CURRENT STATUS: Lal Lal Historical Reserve

EXISTING HERITAGE LISTING: National Estate
It is the only Blast Furnace of the Colonial Era left standing.
It is the only Blast Furnace built in the 19th century left standing in the Southern Hemisphere.
The Furnace is 18th century in design, materials used in construction, location of site and method of working.
It was the last Blast Furnace built during the Colonial Era of Australia and its construction sought to overcome the problems of an under-capitalised company.
It represents the only attempt to smelt iron ore with a Blast Furnace, in 140 years of European settlement in Victoria.
It was a catalytic industry and in an ethnological sense, a forerunner to present-day industries using non-British, New-settler labour.
The Lal Lal Pig Iron had a special place in the iron industry of the largest provincial city in Australia.
The Lal Lal Blast Furnace is an unusual industrial relic of the Australian Goldfields.
The Lal Lal Blast Furnace has become part of the historical legend in Ballarat and district.
SOURCES: *The Lal Lal Blast Furnace Reserve Report,* Staughton and Ashley, 1976.

SITE HISTORY:
A new industry to emerge in the Mount Egerton-Gordon division during the mid 1870s was the mining and smelting of iron at Lal Lal. The Lal Lal Iron Company installed mining machinery (engine and boiler), erected smelting furnaces and constructed a tramway from its mines to smelting works. The company also had a foundry at Ballarat. For a brief time in the early 1880s, the Lal Lal Iron Company was another large employer of labour, eg. in December 1883 the company had a staff of 150 men.[296] Apart from employing miners and furnace men, the company also had men getting limestone (flux) and firewood from its lease and making charcoal. The Lal Lal Iron Works had ceased operations by the end of the 1880s.
References Mining Surveyors *Quarterly Reports*, September 1883.
For further information see *The Lal Lal Blast Furnace Reserve Report,* Staughton and Ashley, 1976.

DESCRIPTION & INTERPRETATION OF FEATURES:
Lal Lal Iron mine. The reserve contains the remains of blast furnace, Cornish flue, machinery foundations, tramway bed and open cuts. For full site description see *The Lal Lal Blast Furnace Reserve Report*, Staughton and Ashley, 1976.

CONDITION OF FEATURES: Good.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **Staughton and Ashley** ***Date:*** **1976.**

---

296 Mining Surveyors' Reports, September 1883

NAME: **CHAMPION HILL REEF WORKINGS**
LOCATION:
HI NO: **H7722-0042**

LOCATION:	Travel approximately 1.0kms south from the Lal Lal Blast Furnace Picnic Area where an unmarked 4WD track runs east towards the river. The workings commence at the end of this track
MUNICIPALITY:	Moorabool Shire
CURRENT STATUS:	Historic Reserve and State Forest

SITE HISTORY:
No historical information found.

DESCRIPTION & INTERPRETATION OF FEATURES:
Reef workings. Line of open shafts along the summit running north-south. The shafts are all open (20 to 30 metres deep) and are located 5 to 10 metres apart. Associated with the workings is a well preserved stone fireplace and a benched track. An open adit is located north of the summit, just below the benched track. The adit is dry and open for approximately 200 metres.
Iron mine Road reef workings [7722-4-3: 424.244]. Some more shallow workings located at the astern end of the above benched track where it joins Iron Mine Road. The workings have been bulldozed and are associated with several hut sites.
Moorabool River reef workings [7722-4-3: 418.240]. Line of workings commence with a number of collapsed adits and hut sites. The line of workings extend north along the west bank of the river culminating in a large stope.
Stope. A large open stope, which still has some timber landings supporting parcels of rock. The stope can be viewed in safety.

CONDITION OF FEATURES: Good, the site contains a range of features.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **Ray Supple** ***Date:*** **March 1995.**

NAME: **VICTORIAN TILE COMPANY**
LOCATION: **Mount Egerton Goldfield**
HI NO: **H7722-0043**

LOCATION: Egerton, north of Trounces Lane.
MUNICIPALITY: Moorabool Shire
CURRENT STATUS: State Forest

SITE HISTORY:
With the demise of the Gordon Gold Mining Company in 1939, the mining of kaolin (china-clay) became the main attraction in the division. Kaolin mining was carried out at Mount Egerton by the Victoria Tile Company and Miss M. Malone Company.[297] Both mines were underground operations, and both companies continued to mine into the fifties with much success, with demand often outstripping supply.
References Department of Mines, *Annual Report* 1946.

DESCRIPTION & INTERPRETATION OF FEATURES:
Engine shed. Obscured by gorse, remains of concrete slab approximately 50 ft x 20 ft which is divided into upper and lower floors.
Upper floor. Major features are a concrete boiler setting (19 ft x 3 ft, with 2 ft thick walls), a small concrete mounting bed (5 ft x 2½ ft, with ½ inch bolts), and a concrete retaining wall running along the south side of the building.
Lower floor. Main features are three small concrete mounting beds (the largest is 6 ft x 3 ft. with ½ inch bolts), a raised galvanised iron/concrete tank (4 ½ ft diameter, resting on wooden bedlogs), and a continuation of the concrete retaining wall.
Shaft. Open shaft located near the north-east corner of the shed.

CONDITION OF FEATURES: Good, but obscured by gorse.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

---

[297] Annual Report 1946

NAME: **NEW BLACK HORSE MINE**
LOCATION: **Mount Egerton-Gordon Goldfield**
HI NO: **H7722-0044**

LOCATION: Egerton, immediately east of town
MUNICIPALITY: Moorabool Shire
CURRENT STATUS: Crown Land

SITE HISTORY:

The Mount Egerton goldfield was discovered in 1853 by a party of Ballarat miners led by George Grell. The field was rushed in 1854 with miners concentrating their efforts on extracting gold from one long line of quartz reefs. This line was eventually traced from Mount Egerton to Gordon and beyond. The dash for quick profits saw the bulk of early quartz workings abandoned by 1858-59 when the shafts dropped onto water.

During the early to mid 1860s the Mount Egerton field experienced several disastrous mining booms and busts. In 1867 confidence in the field was maintained when the Egerton Company, along with an adjoining Black Horse Company, were successful in obtaining steady and sometimes outstanding yields. These two companies, through various re-organisations, continued to dominate the Mount Egerton field for the next twenty or so years. The Black Horse had three main re-organisations--Black Horse (1867-1874), New Black Horse (1874-early 1880s) and Black Horse United (early 1880s-1900s).

Both the Egerton and Black Horse companies had their turns at being the division's largest gold producer. The former held the record throughout much of the 1880s, and the latter for a shorter time during the late 1880s/early 1890s. The Egerton was to pay out some £300,000 in dividends and the Black Horse obtained £460,000 worth of gold and paid out £178,000 in dividends.

The Black Horse mine continued to work through the 1890s and into the early 1900s. The later mining efforts of the company proved unprofitable because of the expense of working at great depths--by the 1900s the company was exploring below the 2,000 foot level.

Machinery. The mining register records the following machinery installation for the Black Horse mine:

Sept 1870 30-hp engine;
June 1877 22-head stamp battery;
June 1877 New boiler and brick stack; and
March 1879 Erection of new 30-head stamping battery.

Foundations surviving today would date to the 1870s.

References Flett, J., *The History of Gold Discoveries in Victoria*, 1979, p.374.
Mining Surveyors *Quarterly Reports*: December 1860; July 1863; September 1870; June 1877; December 1877; March 1879.
Department of Mines, *Annual Reports* 1903 and 1904.
Australasian Mining Standard, June 1, 1899.

DESCRIPTION & INTERPRETATION OF FEATURES:

Mining machinery. Site is obscured by black berry bushes. Only visible feature is a massive brick mounting bed which measures 50 ft x 5 ft, stands 9 ft and has line of thirteen, 2½ inch mounting bolts. The bed, set in an excavated platform, has stepped brickwork and bricks are set in concrete mortar.

Tramway. Traces of an embankment to the north of the mine site. The tramway once connected the mine to a battery (now obliterated) which was located near site of government battery. The tramway largely runs through freehold land.

Tailings. Have been extensively quarried

CONDITION OF FEATURES: Site obscured by blackberry bushes. The engine bed in good condition and there is the prospect for buried (or obscured) foundations.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME:	**MOUNT EGERTON GOVERNMENT BATTERY**
LOCATION:	**Mount Egerton--Gordon Goldfield**
HI NO:	**H7722-0045**

LOCATION:	Egerton, north of New Black Horse Company
MUNICIPALITY:	Moorabool Shire
CURRENT STATUS:	Crown Land

SITE HISTORY:
The Mount Egerton Battery was installed in 1912.

DESCRIPTION & INTERPRETATION OF FEATURES:
Working battery. Small A-framed iron battery shed, with adjoining furnace room. The latter has a small galvanised iron stack.
Water dams. To the north of the battery shed are two large (full) water dams).
Now one of only six intact government batteries in the State: the others being Creswick (1902), Rutherglen (1902), Wedderburn (1905), Maldon (1914), and Bright (1950s).

CONDITION OF FEATURES: Good.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**

NAME: **GORDON GOLD MINE**
LOCATION: **Mount Egerton--Gordon Goldfield**
HI NO: **H7722-0046**

LOCATION: North of Gordon
MUNICIPALITY: Moorabool Shire
CURRENT STATUS: Freehold Land

SITE HISTORY:

The Gordon Reef was discovered by Daniel Toohey in September, 1933. After 60 tons was crushed at the Egerton State Battery, for a yield of 356 ounces of gold, several companies took out leases on the reef and commenced mining operations. The Gordon Gold development Company (1934 to 1939) was the only company to reach the dividend paying stage: ie., 30,121 ounces of gold obtained, and dividends of £109,989 paid to shareholders and £21,000 paid to company itself. The company erected a 10-head stamp battery and by the end of 1937 its shaft had reached a depth of 610 feet. The production from the mine peaked in 1937 when 8,327 ounces of gold was produced for the year, making the company the fifth largest gold producer for that year in the State.

DESCRIPTION & INTERPRETATION OF FEATURES:

Mullock heap. Small, partly quarried heap and associated shaft.
Mining machinery foundations. An extensive arrangement of small concrete beds and remains of one boiler setting.
Battery. Arrangement of concrete foundations and timber mortar blocks.
Cyanide vats. Line of five vats: three circular (16 ft diameter) galvanised iron and two 11 ft square concrete vats.
Mullock heap. Small mullock heap located below the battery site.
Water dams. Three dams in the gully below the mine site.

CONDITION OF FEATURES: Good. Grazed paddock.

SIGNIFICANCE RANKING: Site Listed Heritage Inventory.

Assessed by: **David Bannear** ***Date:*** **July 1994.**
