NORTH EAST VICTORIA HISTORIC MINING PLOTS

1850-1982

Historic Notes

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CONTENTS:

Alexandra Goldfield	3
Beechworth Goldfield	8
Benalla Goldfield	18
Bethanga Goldfield	20
Big River Goldfield	25
Corryong Goldfield	29
Dart River Goldfield	31
Dry Creek-Maindample-Merton Goldfield	36
Edi-Cheshunt Turquoise Field	42
Eldorado	43
Gaffney's Creek Goldfield	44
Granya Goldfield	55
Howqua Goldfield	58
King River-Broken River Goldfield	61
Mansfield District	63
Mitta Mitta Goldfield	64
Myrtleford Goldfield	69
Nine Mile Historic Reserve	73
Chiltern-Rutherglen Goldfield	80
Jamieson-Ten Mile Goldfield	86
Koetong Tin Field	92
Indi (Upper Murray) River Goldfield	94
Upper Ovens District	95
Wahgunyah Mining District	113
Woods Point Goldfield	123
Yackandandah	129

ALEXANDRA GOLDFIELD

DATE	HISTORY:
1864:	Alluvial workings at Snobs Creek (south-east of present-day Alexandra), near junction with Goulburn River, by 1864.[1]
1866:	Mt Pleasant (Alexandra) quartz reefs discovered, 1866 - 2 payable reefs: Eglinton (south-east of Alexandra) and Luckie - 2 alluvial gullies 40 claims, 75 miners - crushing mill erected - nucleus of township formed.[2]
1866-73:	Luckie line of reef worked extensively from 1866-73 - main workings during the period were: Lucky Prospecting GMC (prospecting claim), Alfred GMC, Albert GMC, Aurora QGMC, Fireworks QMC, Ajax Co., and Connolly's or the Defined Reef GMC - of these, the Albert produced by far the most gold (13,075 oz from 6,330 tons - av. 2.06 oz/ton), but the next-largest producer, the Ajax, was by far the richest, yielding an average 11 oz/ton from 203 tons crushed (total 2,223 oz) - overall average yield obtained from these claims was 2.17 oz/ton.[3]
Early 1867	300 miners at Alexandra by early 1867 - Luckie Reef very rich - from one claim, 103 tons yielded 1,751 oz.[4] During first 12 months (1866-7), Alexandra goldfield yielded 6,716 oz from 1,501 tons crushed.[5] Alluvial gold discovered at Johnson's Creek (Robinson Crusoe Gully), north of Alexandra, and UT (Ultima Thule) Creek, about 8 miles east, in early 1867.[6]
1868:	Alluvial ground re-occupied on River Goulburn, between Darlingford and Eildon, 1868.[7] Crushing machine erected at United Kingdom Reef, Spring Creek, 1868.[8] Quartz crushings from: Pig-and-Whistle Reef, Molesworth; head of UT Creek; Steel's Creek; Johnson's Creek; Spring Creek; and Alexandra reefs, 1868.[9]
1868-69:	Durham Lead and Long Gully, at head of Spring Creek, on south flanks of Puzzle Range - mining activity at its height in 1869 - mining villages.[10] Rush to Thornton, on Goulburn River south-east of Alexandra, 1868.[11] Lord Nelson QMC, Black Range, Molesworth, 1868 - boiler and steam engine - first engine erected on the Black Range.[12] Godfrey's Creek the main attraction in 1868 - alluvial gold and quartz reefs discovered - also deep lead, the first in district - nuggets up to 64 oz - mining settlement surveyed as Gobur, 1869.[13] By the end of 1868, mining at Alexandra was already in a slump, due to over-speculation - outside capital was withdrawn - 'rude appliances' were still used for pumping mines, slowing down operations in the dividend-paying mines (on Luckie, Mysterious and Homeward Bound lines of reef) working at or below water-level.[14] Six crushing mills in Alexandra vicinity, 1869 - during 1870, two were moved to mines in Puzzle Range - eg. to Albion Reef, Durham Gully, _ mile east of Spring Creek.[15]
1870:	Extensive deep lead mining, 1870 - at Gobur, Johnson's Creek, Durham Gully, Spring Creek, Middle Creek, Home Creek - many puddling machines, as well as pumping and winding gear - eg. Never Can Tell GMC, Working Miners Lead, Gobur, had two steam engines for pumping, winding, and puddling, together with four puddling machines - cost £5,000.[16] Gold discovered at Swamp Creek (Acheron diggings), 1870 - deserted in 1876, but re-occupied for a time in 1879.[17]
1871:	Miners leaving for Gulgong, NSW, 1871.[18]
1871:	Rush to new goldfield, July 1871, in a creek running into the Jerusalem Creek, 3_ miles from the nearest previously known gold - 100 miners on the ground - 4-5 ft sinking - some Californian pumps on the ground - named Wilson's Creek.[19] 'The lately opened-up tributary of the Jerusalem, known as Wilson's Creek, has given payable returns, and is now occupied by about seventy-five miners', 1871 - 2 quartz veins struck - 95 alluvial and 7 quartz claims registered, but half of them remained unworked or abandoned within three months.[20] European alluvial miners (other than those on deep leads) chiefly working shallower gullies heading south from Puzzle Range, 1872.[21]
1873-74:	Luckie Reef abandoned 1873 - last claims worked were Ajax (350 ft) and Albert (400 ft).[22] Much machinery being sold and removed from field, 1873-4.[23]
Mid 1870's:	During early to mid-1870s, mining was focused on the Gobur deep leads and reefs at Acheron (eg. Kangaroo and Emu reefs).[24] Reef workings at Durham Gully abandoned, 1875 - steam crushing plant moved to the Acheron - also a water-

driven battery (ex-Luck's All, Big River) erected at the Acheron (Triumph Co.?).[25] Six-head battery at Lily Reef/Gully (where?), 1875-7.[26] Albion Co. erected pumping machinery and puddling machines on Working Miners' Lead, Godfrey's Creek, 1875 - mine abandoned, machinery removed (to Durham Gully reef) 1876 - too much water.[27] Linney and party reworked old Fireworks claim on Luckie Reef, Alexandra, 1876-7 - 297 tons gave 548 oz - in shallow ground (surface to 50 ft) - success inspired other small parties to work nearby ground, with poor results.[28]

1876-77: Just-in-Time Co. worked reef at Gobur, 1876-8 - battery - little success.[29] Acheron reefs gave out, 1876-7 - steam-powered battery moved to Alexandra - also Triumph Co. battery (waterwheel?)[30]

1878: Revival Co. on Working Miners' Lead, Godfrey's Creek, 1878 - erected steam machinery (ex- Durham Gully).[31]

1879: Swamp Creek Lead, Acheron, taken up again, 1879 - machinery erected.[32] By end of 1870s, quartz mining very dull - the Mining Registrar commented that, on the hundreds of reefs in the Division, 'the ground has been taken up, scratched, and abandoned.'[33]

1880: Durham Gully reefs worked by Hope of Richmond Co., 1880 - battery, pumping and winding gear moved from Just-in-Time mine, Gobur (removed to Ancona, 1883).[34] Gobur almost abandoned 1880.[35] Antimony prospecting at head of Johnson's Creek, 1880.[36] Battery erected on 'Sulphur' (Solferino) Reef prospecting claim, at head of Italian and Mountaineer creeks, 1880.[37] Candlelight and Fiery Reefs, Acheron River, being worked, 1880.[38]

1881: Mining revival, 1881 - much speculation - four leases on Luckie Reef, also Mysterious Reef, Invincible Reef at Steele's Creek, Durham reefs, and Pig and Whistle, Molesworth ('in the hands of a persevering old miner') - revival over by end of 1882.[39]

1881-82: Vulcan syndicate reworked a shaft on Luckie Reef, down below 400-ft level, 1881-2 - pumping gear, steam engine, 10-head battery, tables - 761 tons gave 576 oz - poor values for Luckie Reef.[40] Mt Pleasant Co., Eglinton Reef, operating 1882-5.[41]

1883-85: Mining slump, 1883+ - Alexandra mining at a standstill - much machinery being removed from district - 'There is no probability of any early or lasting revival.'[42] Deep sinking (100 ft) at foot of Luckie Gully, Alexandra, 1884.[43] Pig and Whistle Reef, Molesworth, reworked by Northcote Co., 1885-9 - 'necessary outhouses and appliances' erected.[44] Only three mines at work, 1885: Mt Pleasant and Pig and Whistle. Alexandra mines idle - alluvial miners not making more than 'tucker' - many engaged in farming and roadwork.[45]

1889: Battery erected at Barker's Reef, Eildon, 1889 - a sandstone reef on 'the Delatite Fall', briefly worked 18 years before.[46] Divette Dyke [?] mine, Upper Thornton proposed erecting pumping plant, 1889[47] - probably a reference to Goulburn Golden Diorite GMC - erected machinery and put a wing dam into the Goulburn River - stoped beneath the river bed - machinery removed to Bonnie Doon, 1892.[48] To 1899, total production figures for Luckie Reef, Alexandra were 4,843 oz from 978 tons - largest producer (no longer operating) had been the No. 2 Albert Vulcan claim, from which 20,140 oz gold were obtained and £40,000 paid in dividends.[49]

1903-10: Alexandra Reefs Consolidated worked Homeward Bound Reef, 1903-8 - poor results - moved operations to Luckie Shaft (old Fireworks shaft?[50]) - poor results.[51] Timber for the mine during 'the latter days' obtained from the present-day McKenzie Flora Reserve.[52] Alluvial lead at Alexandra/Johnson's Creek worked in a small, unsuccessful way by Abundance Co. and others, 1903.[53] Mt Gobur Gold Mines Co. working reef at Gobur, 1903-10 - very substantial winding plant, boiler, poppetheads, battery - also working Gobur reef at this period: Nuggetty Gully Co., Ascot Co.[54] Mining at Homewood, near Yea, pretty much abandoned, 1904.[55] Marmont mine, Alexandra, 1905 - 10-head battery.[56] Junction Reefs Co., Alexandra, 1908-9 - 10-head battery.[57] Robb's Reward mine, Upper Thornton - worked co-operatively for many years - 6-head battery - closed down, 1909 - ore bodies depleted.[58] Helen's Peak Extended Co., Upper Thornton, 1909-11 - worked by cross-cut tunnel lode worked by windlass shaft in earlier years - no luck - in 1911 attention shifted to old Helen's Peak mine, adjoining, which produced a lot of gold in the early days.[59]

1910-11: Maintongoon Co. resuscitated old mine, 1910-11 - winding and crushing plant (10-head battery) - unsuccessful.[60]

1914: Reef worked on UT Creek, 1914, about seven miles from Alexandra.[61] New Year's Gift Co., Alexandra, 1914 - 10-head battery.[62]

1930's: Abandoned shafts 'protected' on Mining Reserve at Alexandra, 1937.[63] Rickards and Son claim, Wilson's Creek, 1936-7 - further developmental work to be carried out - ore will be handled from bottom adit by incline tramway to battery - adit about 400 ft long - in 1936 crushed 210 tons for 35 oz.[64] New Acheron Co., 1937-8 - dewatered shaft, erected 4-head battery and cyanide plant.[65]Sluicing party at Godfrey's Creek, Gobur, 1937.[66] Prospecting in old Strathmore quartz mine, Alexandra, 1937-40 - disappointing results.[67] Acheron Gold Reef Co., 1938 - dewatered mine, erected plant - ceased operations 1940.[68]

1950's: Small-scale antimony mining at Steel's Creek (where?), 1952-57.

SOURCES:

Australian Mining Standard, special edition, 1/1/1899.

Dunn, E.J., 'Some Gold Reefs at Alexandra', Geological Survey of Victoria *Records*, vol. 2, part 2, 1907, pp. 112-4 (report dated 1905).

Milner, P., *On Mining Machinery Sites in the Alexandra/Maindample Divisions*, a report to the Historic Places Section of Conservation Forests and Lands, 1989 (Department of Mechanical and Manufacturing Engineering, University of Melbourne, Technology Note no. TN-89/27).

Steenhuis, L., 'Central Highlands Alluvial Mining Areas', report to CNR Central Highlands Regional Assessment, 1993.

Sumner, R., 'A Preliminary Report on the History of Gold Mining at Wilson's Creek, Eildon State Park', Historical Services Branch, National Parks Service, July 1981.

Supple, Perham, & Griffiths, *Historic Sites in the Melbourne East Study Area*, for Land Conservation Council, 1989.

Wylie, A., *Gold in the Shire of Mansfield: An Outline of the Smaller Discoveries*, Mansfield Historical Society, 1987.

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1 Flett, p. 117

2 Mining Surveyors' Reports (Jamieson Subdivision), September & December 1866; Flett, p. 118

3 Steenhuis, pp. 34-5

4 Mining Surveyors' Reports (Jamieson Subdivision), March & June 1867

5 Mining Surveyors' Reports (Jamieson Subdivision), September 1867

6 Flett, p. 118

7 Mining Surveyors' Reports (Jamieson North Subdivision), March 1868

8 Mining Surveyors' Reports (Jamieson North Subdivision), March 1868

9 Mining Surveyors' Reports (Jamieson North Subdivision), June & September 1868

10 Flett, p. 120

11 Flett, p. 117

12 *Dicker's Mining Record*, 6 June 1868

[13] Flett, p. 119; Mining Surveyors' Reports (Jamieson North Subdivision), December 1868 and June 1869
[14] Mining Surveyors' Reports (Jamieson North Subdivision), December 1868; (Alexandra Subdivision), December 1869
[15] Mining Surveyors' Reports (Alexandra Subdivision), September 1870
[16] Mining Surveyors' Reports (Alexandra Subdivision), June 1870
[17] Flett, p. 117
[18] Mining Surveyors' Reports (Alexandra Subdivision), March 1871
[19] Mining Surveyors' Reports (Jamieson Subdivision), June 1871 (postscript)
[20] Mining Surveyors' Reports (Big River subdivision), September 1871
[21] Mining Surveyors' Reports (Alexandra Subdivision), December 1872
[22] Steenhuis, p. 35
[23] Mining Surveyors' Reports (Alexandra Subdivision), June 1873, June 1874
[24] Mining Surveyors' Reports (Alexandra Subdivision)
[25] Mining Surveyors' Reports (Alexandra Subdivision), June 1875
[26] Mining Surveyors' Reports (Alexandra Subdivision), December 1875, June 1877
[27] Mining Surveyors' Reports (Alexandra Subdivision), December 1875, December 1876
[28] Steenhuis, p. 36
[29] Mining Surveyors' Reports (Alexandra Subdivision), March 1876 - June 1878
[30] Mining Surveyors' Reports (Alexandra Subdivision), December 1876, June 1877
[31] Mining Surveyors' Reports (Alexandra Subdivision), March 1878
[32] Mining Surveyors' Reports (Alexandra Subdivision), March & June 1879
[33] Mining Surveyors' Reports (Alexandra Subdivision), September 1879
[34] Mining Surveyors' Reports (Alexandra Subdivision), March 1880; March 1883
[35] Mining Surveyors' Reports (Alexandra Subdivision), June 1880
[36] Mining Surveyors' Reports (Alexandra Subdivision), September 1880
[37] Mining Surveyors' Reports (Alexandra Subdivision), September 1880
[38] Mining Surveyors' Reports (Alexandra Subdivision), December 1880
[39] Mining Surveyors' Reports (Alexandra Subdivision), March 1881.
[40] Steenhuis, p. 36
[41] Mining Surveyors' Reports (Alexandra Subdivision), December 1882-December 1885
[42] Mining Surveyors' Reports (Alexandra Subdivision), June 1883, June 1884, December 1885
[43] Mining Surveyors' Reports (Alexandra Subdivision), September 1884
[44] Mining Surveyors' Reports (Alexandra Subdivision), June 1885, March 1889
[45] Mining Surveyors' Reports (Alexandra Subdivision), December 1885, March 1886
[46] Mining Surveyors' Reports (Alexandra Subdivision), March 1889
[47] Mining Surveyors' Reports (Alexandra Subdivision), June 1889
[48] Mining Surveyors' Reports (Alexandra Subdivision), December 1889, March 1890; Wylie, p. 19
[49] *Australian Mining Standard*, p. 103
[50] Steenhuis, p. 36)
[51] Department of Mines Annual Reports, 1903-7
[52] Steenhuis, p. 36
[53] Department of Mines Annual Report, 1903
[54] Department of Mines Annual Reports, 1903-10
[55] Department of Mines Annual Report, 1904
[56] Department of Mines Annual Report, 1905
[57] Department of Mines Annual Reports, 1908-9
[58] Department of Mines Annual Report, 1909
[59] Department of Mines Annual Report, 1910
[60] Department of Mines Annual Report, 1910
[61] Department of Mines Annual Report, 1914
[62] Department of Mines Annual Report, 1914
[63] *Mining and Geological Journal*, July 1937
[64] Department of Mines Annual Report, 1936; *Mining and Geological Journal*, July 1937, January 1938
[65] *Mining and Geological Journal*, January 1938
[66] *Mining and Geological Journal*, January 1938
[67] *Mining and Geological Journal*, January 1938
[68] *Mining and Geological Journal*, July 1938, July 1940

BEECHWORTH GOLDFIELD

DATE	HISTORY: ·
1852:	First discovery on present site of Beechworth, February 1852.[1]
1853:	Woolshed (part of Reedy Creek, about 6 km below Beechworth) opened 1853 - extraordinarily rich by 1855 - township extended for 2_ miles, but almost deserted within a few years.[2]
1855:	Discoveries of new fields at Eldorado in 1855 and Wooragee (Magpie Creek), north of Beechworth, in 1856.[3]
1856:	Small party cut a tail-race from the Spring Creek falls up to the alluvial flats on Spring Creek, east of Beechworth, then virtually abandoned, 1856 (future Rocky Mountain Co. claim) - had been held in very small claims and worked by sinking and driving, then tub-and-cradled - tail-race 20 chains long, blasted 2-8 ft deep through rock - took 18 months to complete, cost £3,000 - not deep enough to drain deepest ground - much gold left behind.[4]
1859:	Spring Creek, 1859 - called Spring Creek above the Upper Falls and Woolshed Creek below the Lower Falls - originally worked in paddocks - slabs and bark used to prevent sides falling in - then worked over again with sluice-boxes - now being worked for third time, by improved sluicing methods.[5]
1860:	2,310 European miners, 2,139 Chinese[6] - Upper Three-Mile Creek worked since 1852 - now chiefly taken up by Chinese, sluicing (likewise Lower Three-Mile/Bowman's).[7]
1861:	Battery of 16-head, 15-hp steam engine erected at Two-Mile Reef, 1861.[8]
·	The 'great' Excelsior tail-race, Reid's Creek, being extended by blasting through tough granite, 15 ft deep, 1861.[9]
1861:	Bawden's (or Rawden's) Steam Co., Woolshed, 1861 - 'have given up the system they first adopted, of ground sluicing their claim, and in consequence of having little or no fall to work upon, lifting up the tailings and water by buckets on an endless band of vulcanised India rubber some 15 ft and discharging it over the bank into the creek; they now only lift the water and bank up the tailings as well as they can.'[10]
1861:	German and Durham crushing machine, 2-Mile Creek, 1861 - 12-head, 12-16 hp engine.[11]
1861-62:	European miners leaving for the Lachlan and New Zealand, 1861-2 - Chinese taking over ground.[12]
1864:	March 1864: 2,048 sluice-boxes, 181 sluices and toms, 21 waterwheels on alluvial, 17 steam engines on alluvial, 3 on quartz, 4 puddling machines, 1 hydraulic hose.[13] Rush of about 150 Chinese to Magpie Creek and Wooragee Flat, 1864 - all surfacing and sinking down to 40 ft.[14]
1865:	Bowman's Forest quartz crushing mill (Bolam and Wood) moved to Wooragee reefs, 1865.[15] Wooragee Flats (Magpie and Wooragee creeks), 1865 - Chinese the envy of European miners, now flocking to spot - mining there on private land.[16]
June 1866:	725 European alluvial miners, 936 Chinese - 180 quartz miners. Chinese predominate at Woolshed, Spring Creek, and Three-Mile Creek - Magpie Creek exclusively Chinese.[17]
June 1866:	3,200 sluice-boxes, 170 sluices and toms, 60 suction and elevator pumps, 16 hydraulic hoses, 13 steam engines on alluvial, 9 puddling machines, 27 water wheels on quartz, 1 steam engine on quartz.[18]

1866: Wooragee, 1866 - many Chinese miners get 30 or 40 oz per week from claims.

Spring Creek reefs (eg. Canadian Reef, Madman's Gully) again getting attention, 1866 - abandoned about 3 years ago.[19] Reefs at Wooragee are all one reef - a continuation of Homeward Bound, etc., on Twist's Creek side of range.[20]

1867: Rocky Mountain Gold Sluicing Co., 1867 - to increase depth of tail-race another 8-10 ft, to work deep ground higher up the Spring Creek valley - tail-race extended by 450 yards - cost £3,000.[21]

1867: Beechworth Division, 1867: 3,100 sluice-boxes at work - only 6 puddling machines. 1,538 alluvial miners (560 European, 978 Chinese), 130 quartz miners. Stanley: 12 puddling mills, 1 steam-powered battery.[22]

1867: Cement claims at Sebastopol, 1867—gold and tin.[23]

1868: Ah Gee & Co. among quartz miners at Six-Mile Creek, 1868.[24]

1869: Hunt's diamond machine washing tailings from Finn's old claim at the Woolshed, 1869—most diamonds in district found.[25] Discovery of large quantities of stream tin at Pilot Range, north of Beechworth-Chiltern road, 1869.[26]

1870's: Woolshed and tributaries, 1870s—in wet seasons, tin more profitable than gold—every creek and gully from both sides of ranges contains black sand—'tin streaming' will provide work for years to come.[27]

1870: Heaviest floods since gold discovered, winter 1870—creek claims washed out, but tailings accumulations washed away and tail-races cleared.[28]

1871: Donald Fletcher's tail-race, Pennyweight Flat, rivals that of Rocky Mountain Co. Rocky Mountain Co.'s tail-race just completed—half a mile long—cost £10,000—14 ft deep (on average), 6 ft wide, through granite—'This is, without doubt, the greatest undertaking of the kind in the colony.' [29] 'The miners have conveyed water in numerous races from the heads of the streams to their claims in the lower parts of the district, and an immense quantity of gold has been got out of the alluviums. Perhaps no part of the colony - not even Ballaarat - shows more remarkably the energy and activity of the mining population than this area [Beechworth-Yackandandah].'[30]

1872: Two quartz prospecting associations started, 1872—'on account of a general feeling in the public mind that the future prosperity of the goldfield must depend on quartz mining.'[31] Woolshed creeks and gullies being worked for tin, 1872—much water—very profitable.[32]

1869-76: 6,500 oz obtained from Rocky Mountain claim - £7,000 in dividends. As sluicing operations proceeded higher up the creek valley, ground became deeper and richer - tail-race no longer adequate - decided to cut a tunnel through granite from a point about 200 yards below the Newtown Falls to company's workings, east of town. Company reorganised as Rocky Mountain Extended Gold Sluicing Co. - increased capital to £26,000 - adjacent claims purchased and amalgamated under a new lease.[33]

1876-78: Basin Creek reefs (where?), 1876-8 - Caledonian, North-eastern, and near the Kangaroo Springs.[34]

1877-78: Summer of 1877-8 - driest season on record.[35]

1877-1890: Rocky Mountain Co. produced 308 kg gold. Operations dogged by dry seasons and lack of water - paid first dividend (3s per share) after wet season of 1887-8 - ceased operating in 1890? [36]

1876-9: Rocky Mountain tunnel cut - 3,600 ft long, 6 ft high, in some places as much as 150 ft below surface - cost £12,000.[37]

1880: Rocky Mountain Co. cut an open-cut through surface granite - about 1,000 ft long, from upper end of tunnel to a point higher up creek valley - cost £1,000 - completed 1880.[38]

June 1880: Rocky Mountain Co. - head-race turned into tunnel for first time, June 1880 - sluicing of deep ground commenced.[39]

Late 1880: Rose Reef Co. erected machinery in Madman's Gully, 1880 - several old, abandoned claims in Beechworth locality have been taken up - gave splendid returns about 20 years ago and were left for want of machinery to pump and crush. 'They ought to pay well, now the cost of labour and machinery is being reduced.'[40]

1881-82: Summer of 1881-2 the driest season ever experienced in the region - sluicing at a standstill - water races giving only one working day's water per week.[41]

· Biddington's battery erected at Tubal Cain Reef, Basin Creek (where?), 1882 - removed 1883.

1882: Rose Reef mill again started, 1882 - a boon to mining at Three-Mile and Stanley - also on Beechworth side of Wooragee Range.[42]

1887: Winter 1887 - wettest season in at least 10 years.[43]

1887: Much of Reid's Creek Valley has been washed down to the bed rock, and removed by the Excelsior Company, 1887 - steadily advancing towards the falls at the upper end of the valley - when they have finished, there will be scarcely a trace of gold left in this once fabulously rich locality. Magpie Creek valley, 1887 - extensive deposit of shingle over the wash-dirt - 'For over twenty years a large party of Chinese have been working the lead. They are now sluicing away the whole of the drift, and it if proves payable there is ground enough for another 30 years' work.'[44]

1890: Rocky Mountain Co., 1890 - 1,738 oz from 2.5 acres of ground.[45]

1890: Company formed to re-work Woolshed Creek by extensive tail-race has abandoned that idea and now propose to operate by the new system of 'dredging'. Woolshed Valley Co. making preparations on an extensive scale for dredging - flood-races, barges, and pumps.[46]

1890: A very large percentage of gold in this division is a result of extensive sluicing operations - system adopted by the major companies is to wash down only twice a year.

1891: Woolshed Valley Co., 1891 - methods could lead to opening up of a new era in alluvial mining.[47]

1899: No quartz mines of note near Beechworth, 1899 - best is Jubilee Reef on Yankee Spur.[48] Rocky Mountain claim, 1899 - 'a credit to local enterprise and determination' - uses a giant nozzle and has an enormous tunnel driven under the town across the bend of the stream - clayey ground - much gold lost by clay forming into balls and rolling away out of tunnel mouth - now dirt pulverised by nozzle, more gold - Co. may claim to be mother of hydraulic sluicing by gravitation in Victoria - has 50 or 60 miles of water-races.[49] Wallace working Woolshed with a dredge and Jennings pump, 1899 - ground already worked over twice, but 'splendid yields were got - Sebastopol and Kangaroo worked in same way - not payable.[50]

1900-03: Government battery at Woolshed Flat, 1900-03.[51]

1904: Rocky Mountain Extended Co., sluicing - produced 1,096 kg gold, 1904-21.[52]

· Quartz mining left to individual miners and small parties, who work the surface lodes down to water-level, when work ceases either due to influx of water or refractory ore, which commonly occurs below that level.[53] Most gold in Beechworth area obtained by sand pumping, sluicing, dredging, 1900s - chiefly by Rocky Mountain Co., New Wooragee Co. (sand pump), Fletcher's sluicing claims at Silver Creek, and John Pund's 3- and 6-Mile claims. Tin ore got in gullies running into Reed's Creek. Woolshed Valley dredge (gravel pump) lower down creek.[54]

1907: Pilot Tin Co., 1907 - erecting pumping engine on Wooragee Creek to supply water.[55]

1909: Rocky Mountain Sluicing Co. installed a jet elevator, 1909.[56]

1911: New Wooragee Sluicing Co., Wooragee - poor results. Woolshed Valley Co. - suspended operations. Pund at 3-Mile Creek, Fletcher at 6-Mile - sluicing by gravitation. Wilberforce Sluicing Co., Stanley - ceased operations - gravitation sluicing.[57]

1912-17: Myrtleford dredge removed to Woolshed, 1912-17.[58]

1914: Rocky Mountain Extended Co. completed dredge and started operations, 1914.[59]

1912-16: Sir Wilfred Lawson and Perfect Cure - only quartz mines worth noting, 1912.[60] Rocky Mountain Dredging Co. on old ground on Spring Creek, 1916.[61]

1917: Pund's hydraulic sluicing, 3-Mile; Fletcher's, Deep Creek.[62] Small parties still prospecting at Stanley, 1917.[63] Molybdenite prospecting on steep hillside about 2 miles north of Everton railway station - 5 claims at work.[64]

1918: GSG Co. sluicing (ex. Punds?) - also Fletcher.[65]

· Rocky Mountain Extended Co. produced 1,096 kg gold, 1904-21.[66]

pre-1937-50: GSG Amalgamated - gravitation sluicing-elevating plant working alluvium on banks of 3-Mile Creek (Baarmutha?).[67]

1937-44: Everton molybdenite mine operated intermittently, 1937-44 - most important field for the metal in Victoria - closed due to drop in ore grade and labour shortage.[68]

1937: Everton molybdenite mine, 1937 - situated about 2 miles east of Everton and approx. 400 yards from railway line - worked by open cut into side of large granite hill - cave-shaped opening - 4 shafts sunk to 70 ft, but flooded - old 6-mile water-race being recondition, to bring creek water to plant - crushing plant worked by 20-hp oil engine - tramline from mine to plant [full description of plant] - mine working 24 hours a day - molybdenite in demand as alloy for strengthening steel - used in high speed tool steels, car parts, magnets, dye chemicals, textile fire-proofing, and ceramics.[69] Reedy Creek Alluvials, Baarmutha? - electric pump sluicing plant, 1937-.[70]

1950-57: GSG Amalgamated sluicing claims taken over by Parkinson's Alluvials, 1950 - plant transferred to new site at Baarmutha, 1954 - still continuously sluicing 1957 - also working leases at Stanley - digging head races and building slum dams.[71]

STANLEY/NINE-MILE

- 1859: 'The value of water, and the distress arising from the want of it in this district, may be understood from the fact that, in some cases, a sluice-head of water is used no less than eight times from its source until it falls into the creek again. In former times, when sluicing first commenced in this district, the third right had but a very scanty supply; now there are more than 100 rights, and each right gets a supply, if not all the year, at least (unless in a very dry season) from seven to nine months therefrom. Such have been the fruits of opening up Creek and Bank Springs.' Very extensive operation in progress by Wallace's Co, to bring water from a number of springs near the Bald Hills, for sluicing on a large scale the old worked ground left behind by 'parties working with small streams' - starting with tunnel nearly 1 mile long and 105 feet below the surface at deepest point.[72]
- Stanley, 1859: 'Sluicing being almost the sole means used in this district for extracting the gold from the soil, a plentiful supply of water is indispensable, and small streams are almost wholly useless…'
- European population at Stanley, 1859, mostly settled -comfortable homes and gardens - consists chiefly of raceowners who employee more or less hands, depending on supply of and demand for water.[73]
- Lower portion of Europa Gully, Stanley, 'completely worked out' by 1859 - Adams and Co. commenced operations at its junction with Nine-Mile Creek and washed everything before them, from bank to bank, carrying a tail-race up with them as the work advanced - tail-race now more than 400 yards long - the best-worked sluice in operation in the district. Other gullies all occupied by sluicers, the dry diggers having worked them out, 'as they considered', long since. Richest were Nuggetty Gully (coarse gold) and Long Dick's Gully (portions of this worked six times over and will yet pay to sluice).[74]
- Stanley, 1859: During dry periods, parties work on hills and in gullies leading into the creek. Lack of water and tail-races means gullies &c. choked with tailings. Hopes pinned on project of Leviathan Co. - now tunnelling - to bring supply of water to district.[75]
- Box-sluicing fast giving way to ground sluicing at Stanley, 1859 - greatly improved method coming into use - eg. the claim of Thomson and Party on Hurdle Flat - have cut a deep tail-race or sluice from Europa Gully up to their claim - parts of race being sunk 12 ft deep on the rock - 4 grains of gold, or 6d, to the load will pay them well - wash a ton of dirt every five minutes - 4 partners - water supplied from springs on Hurdle Flat.[76]
- Dillon and Co., Europa Gully, Stanley, 1859 - have nearly completed 'a stupendous undertaking' for a party of 4 miners - have cut tail-race which, when complete will be 900 yards long - mostly through rock - at upper part of Europa Gully - ground 'partially worked and fossicked - that is, holes and paddocks put down pretty well all over it', but gully is at present completely smothered with tailings - tail-race will cost about £1,000.[77]
- Chappell and Son working by 2 hydraulic hoses at lower portion of Europa Gully, Stanley, 1859 - upper portion of claim, as far as tail-race extends, is worked by this party 'in a rather unique style, viz., with bullocks' - tail-race wide enough for two bullocks to walk in - they draw up and down first a plough, to loosen the difficult-to-wash, stiff, blue clay, and then a harrow to puddle it.[78]
- Foster and party's claim, on right-hand bank of Nine-Mile Creek, just above township of Stanley, 1859 - puddling mill (one of only 4 in Stanley area).[79]
- Leviathan Co., Stanley, now the Ovens Gold-fields Water Co., 1859 - first public mining Co. in district.[80]
- Dillon and party, Europa Gully, Stanley, 1859 - washing on an extensive scale - tail-race - banks stripped down to bed rock.[81]
- Scarcity of water more severely felt in the Nine-Mile (Stanley) division than in the (adjoining) Yackandandah division.[82]
- Ovens Water Co. reservoir to be formed on Nine-Mile Creek, 1860.[83]
- Chinese population of Stanley/Nine-Mile increasing, 1860 - 1,086 Chinese, as against 500 in Yackandandah division.[84]
- Nine-Mile not a diggings for dry sinkers (1860) - 'without water and plenty of it nothing can be done. The only part of the population who may be termed dry sinkers are the Chinese; but such a very slight amount of gold remunerates them, that they must be put down as an exception.'[85]

- Six puddling mills in combined Nine-Mile/Yackandandah Divisions, 1860 - all in Nine-Mile, due to scarcity of water - 'A great saving of water is effected by the use of these mills, but they cannot in point of efficiency, saving of labour, or amount of work done, be compared with the system of sluice washing. No party in these districts having a sufficiency of water, unless in exceptional cases, would ever think of giving up their sluice to take to puddling.'[86]
- Many claimholders at Stanley/Nine-Mile employ Chinese (1860), mainly for throwing out tailings from end of sluices. Chinese also owners of some very good claims - pay high prices for them to Europeans - seldom take them up in the first instance, preferring to purchase proven claims.[87]
- Tail-races and sluicing races cost £200 to £800 each, 1860.[88]
- Large tail-race completed by Dillon and Co. in Europa Gully, Stanley, 1860 - two years in the making - Dillon holds more than 10 acres.[89]
- Prince of Wales Reef, Nine-Mile, discovered 1861 - abandoned almost immediately.[90]
- Tunnel of 500+ yards being driven through a portion of Hurdle Flat, to connect with the One-mile and procure more water for sluicing, 1861.[91]
- Homeward Bound Reef discovered 1861 - first reef in Nine-Mile Division - near Rocky Point.[92]
- 'New Zealand fever' having little effect on Nine-Mile miners, 1861 - 'most comfortably settled down, and very dubious of changing fairly paying claims and comfortable homes for the uncertainty of a new gold field.'[93]
- Wonganee Reefs, Rocky Flat (Point?), 1863 - formerly abandoned on account of scarce water, likely to be reworked - Hurdle Flat water race intended to carry water to reefs.[94]
- 'Tank claims' (?) at Nine-Mile, 1864.[95]
- Homeward Bound, Rocky Point, 1864 - tunnel - tramway from tunnel to mill - nearly completed erection of overshot waterwheel.[96]
- Kerry Eagle Reef, Jackson's Gully, 1864 - new reef situate about half a mile from Hurdle Flat, on the summit of the range between there and the Rocky Point reefs - by far richest in locality.[97]
- Bolam and Wood's crushing mill, formerly at 2-Mile Creek, erected at head of 3-Mile Creek by Stanley Crushing Co., 1866 - surrounded by reefs.[98]
- Upper Nine-Mile quartz reefers 'waiting their turn at the mill' (Rocky Point).[99]
- 1867: 12 puddling mills, 1 steam-powered battery.[100]
- Robert Burns Reef is only payable reef at Stanley.[101]
- Reefs up Upper Nine-Mile (Stanley) have failed, 1868 - only mill in district is advertised for sale.[102]
- Rocky Point reefs, 1868 - Homeward Bound, Kerry Eagle, Evening Star.[103]
- Mining at Stanley confined to Rocky Point reefs and sluicing, 1868.[104]
- From 1868, Stanley/Nine-Mile became part of Beechworth Division - formerly was a separate sub-division.
- During 1870s, quartz mining activity increasingly focused on Hurdle Flat.[105]
- O'Dwyer and Co., Hurdle Flat, erected mill, 1870 - boon to reefs in area - trial crushing from Perry's Teetotal Reef.[106]
- Old reefs at Hurdle Flat turning out well, 1871.[107]
- 1872: Stanley prospectors finishing a tunnel commenced years ago, into the Dumpy Reef, in the Dingle Range, at the back of Stanley.[108]
- Hurdle Flat mines steady performers during 1870s-80s - Wallaby, Rechabite, etc.[109]
- Carnival Reef, Stanley, 1874 - deepest reef workings in locality.[110]
- Kingston (formerly Cead Mille Failtha) Reef, Hurdle Flat, being worked 1875.[111]
- Carnival Reef, Stanley - pumping engine on McLeod's claim.[112]
- Wallaby Co., Hurdle Flat, purchased Kingston crushing mill and Rechabite pumping wheel, 1875 - erecting latter at mouth of tunnel to drain the reef.[113]
- Phillips and Co., 1881 - long tail-race at Lower Nine Mile - also Lang and Son tail-race at same place.[114]
- Rose Reef mill again started, 1882 - a boon to mining at Three-Mile and Stanley - also on Beechworth side of Wooragee Range.[115]

- Old reefs being taken up again at Stanley, 1884.[116]
- Simpson's crushing mill erected at head of Nine-Mile Creek, Stanley, 1884 - impetus to mining there.[117]
- 1890 - Gold from alluvial mines (Beechworth Division) exceeds yield of many years past - 5,956 oz - major producer Lang and Co., Stanley (1,400 oz).[118]
- Quartz mining left to individual miners and small parties, who work the surface lodes down to water-level, when work ceases either due to influx of water or refractory ore, which commonly occurs below that level.[119]
- Homeward Bound Co., Stanley - working up towards the surface (glory hole), 1906 - has been working several years - small parties prospecting around Stanley.[120]
- Several small parties prospecting around Mope-Poke (!) Gully and Dingle Range, Stanley, 1906.
- Wilberforce Dredging Co. gravel pump, Stanley, 1907.[121]
- Hurdle Flat locality one of the most promising for reefs in the neighbourhood of Beechworth, 1908 - have produced a good deal of gold and are of persistent character - on Wallaby side of creek are two tunnels driven into the hill just above creek level - one into the Kingston workings opens out into a large quarry - in this quarry a whim was erected and shaft sunk - 3 chains lower down the creek is the Wallaby tunnel - just below it are remains of old battery, burnt by a bushfire - Wallaby Tunnel 600 ft long and runs into large open workings. [122]
- Wallaby battery - timber frame repaired, 1908, but battery finally closed four years later as mining operations came to a virtual end.[123]
- Pund's tunnel, Stanley, 1908 - now in 3,000 ft - driven with dual object of tapping water (Pund sluicing at 3-Mile) and cutting Perseverance (Bowman's Forest?) lode.[124]
- 1911: Wilberforce Sluicing Co., Stanley - ceased operations - gravitation sluicing.[125]
- Small parties of ground sluicers on Nine-Mile Creek at Stanley, 1912 - doing well.[126]
- Parkinson's Alluvials, 1955+, working leases at Stanley - digging head races and building slum dams.[127]

SOURCES:

Australian Heritage Commission, 'Listing of all historic places recorded in the Register database', March 1994.

Beever, A., 'Notes on mines near Beechworth', 23/8/1977, on National Trust file no. 3218; also map with sites marked (copy on file).

Butler, G., 'North East Review: Historic Sites Survey' (draft), for the Land Conservation Council of Victoria, May 1982.

Davidson, H., 'History of the Rocky Mountain Extended Gold Sluicing Co. Ltd., Spring Creek, Beechworth', Appendix E to Mining Surveyors' Reports, December 1889.

Department of Conservation and Natural Resources, *Beechworth Historic Park Visitors' Guide*, 1993.

Dunn, E.J., 'Geological Progress Report on the Beechworth Mining District', Appendix 1 to Mining Surveyors' Reports, September 1887 (report dated 3/10/1887).

Historic Places Section, CNR, Historic Sites Database.

Land Conservation Council, *Final Recommendations: North-East Region*, 198?

McKay, J.E., 'Mining in the Fifties at Spring Creek, Beechworth', in Geological Survey of Victoria *Records*, vol. III, part 3, 1914 (report dated 1907), p. 289.

Mining Surveyors' Reports, Spring Creek/Beechworth Mining Division, 1859-91, and Nine-Mile/Stanley Mining Sub-division, 1859-68.

Myers, G.W., (14 Bridge Street, Beechworth), Nomination of Rocky Mountain tunnel to National Trust of Australia (Victoria), June 1980 (NT file 4756).

National Trust of Australia (Victoria) files.

Watson, J.C., 'The Everton Molybdenite Mine', in *Mining and Geological Journal*, July 1937, pp. 17-19.

1 Flett, p. 62

2 Flett, pp. 62-5; Dunn

3 Flett, pp. 65-6

Davidson; Mining Surveyors' Reports, May 1859
Mining Surveyors' Reports, Oct 1859
Mining Surveyors' Reports, June 1860
Mining Surveyors' Reports, July 1860
Mining Surveyors' Reports, June 1861
Mining Surveyors' Reports, July 1861
Mining Surveyors' Reports, July 1861
Mining Surveyors' Reports, Oct 1861
Mining Surveyors' Reports, 1861-2
Mining Surveyors' Reports, March 1864
Mining Surveyors' Reports, March 1865
Mining Surveyors' Reports, March 1865
Mining Surveyors' Reports, Sept 1865
Mining Surveyors' Reports, June 1866
Mining Surveyors' Reports, June 1866
Mining Surveyors' Reports, Sept 1866
Mining Surveyors' Reports, Dec 1866
Davidson
Mining Surveyors' Reports, March 1867
Mining Surveyors' Reports, June 1867
Mining Surveyors' Reports, December 1868
Mining Surveyors' Reports, Sept 1869, December 1869
Mining Surveyors' Reports, Sept 1869
Mining Surveyors' Reports, Dec 1870
Mining Surveyors' Reports, Sept 1870
Mining Surveyors' Reports, June 1871
Brough Smyth, p. 83
Mining Surveyors' Reports, March 1872
Mining Surveyors' Reports, June 1872
Davidson
Mining Surveyors' Reports, 1876-8
Mining Surveyors' Reports, Dec 1877
Canavan; Davidson
Davidson
Davidson
Davidson
Mining Surveyors' Reports, Dec 1880
Mining Surveyors' Reports, March 1882
Mining Surveyors' Reports, June 1882
Mining Surveyors' Reports, June & Sept 1887
Dunn
Mining Surveyors' Reports, March 1890
Mining Surveyors' Reports, June 1890
Mining Surveyors' Reports, March 1891
Australian Mining Standard, pp. 90-93
Australian Mining Standard, pp. 90-93
Australian Mining Standard, pp. 90-93
Department of Mines Annual Reports
Canavan
Department of Mines Annual Report, 1905
Department of Mines Annual Report, 1906
Department of Mines Annual Report, 1907
Department of Mines Annual Report, 1909
Department of Mines Annual Report, 1911
Department of Mines Annual Report, 1912
Department of Mines Annual Report, 1914
Department of Mines Annual Report, 1914
Department of Mines Annual Report, 1916
Department of Mines Annual Report, 1917
Department of Mines Annual Report, 1917
Department of Mines Annual Report, 1917
Department of Mines Annual Report, 1918

66 Canavan
67 *Mining and Geological Journal*
68 O'Shea, P.J., *Explanatory Notes on the Beechworth 1:50,000 geological map*, Geological Survey of Victoria Report No. 71, Department of Energy and Minerals, Melbourne, 1981, p. 8
69 Watson
70 *Mining and Geological Journal*, July 1937
71 *Mining and Geological Journal*, 1950-7
72 Mining Surveyors' Reports, May 1859
73 Mining Surveyors' Reports, June 1859
74 Mining Surveyors' Reports, June 1859
75 Mining Surveyors' Reports, July 1859
76 Mining Surveyors' Reports, Aug 1859
77 Mining Surveyors' Reports, Aug 1859
78 Mining Surveyors' Reports, Aug 1859
79 Mining Surveyors' Reports, Aug 1859
80 Mining Surveyors' Reports, Sept 1859
81 Mining Surveyors' Reports, Oct 1859
82 Mining Surveyors' Reports, Dec 1859
83 Mining Surveyors' Reports, Feb 1860
84 Mining Surveyors' Reports, Feb 1860
85 Mining Surveyors' Reports, March 1860
86 Mining Surveyors' Reports, April 1860, Jan 1861
87 Mining Surveyors' Reports, May 1860
88 Mining Surveyors' Reports, Nov 1860
89 Mining Surveyors' Reports, Nov 1860
90 Mining Surveyors' Reports, Feb 1861
91 Mining Surveyors' Reports, June 1861
92 Mining Surveyors' Reports, Aug 1861
93 Mining Surveyors' Reports, Sept 1861
94 Mining Surveyors' Reports, Oct 1863
95 Mining Surveyors' Reports, March 1864
96 Mining Surveyors' Reports, Sept 1864
97 Mining Surveyors' Reports, Dec 1864
98 Mining Surveyors' Reports, Sept 1866
99 Mining Surveyors' Reports, Sept 1866
100 Mining Surveyors' Reports, March 1867
101 Mining Surveyors' Reports, June 1867
102 Mining Surveyors' Reports, June 1868
103 Mining Surveyors' Reports, Sept 1868
104 Mining Surveyors' Reports, December 1868
105 Mining Surveyors' Reports
106 Mining Surveyors' Reports, June 1870
107 Mining Surveyors' Reports, Dec 1871
108 Mining Surveyors' Reports, March 1872
109 Mining Surveyors' Reports
110 Mining Surveyors' Reports, Sept 1874
111 Mining Surveyors' Reports, June 1875
112 Mining Surveyors' Reports, June 1875
113 Mining Surveyors' Reports, Dec 1875
114 Mining Surveyors' Reports, June 1881
115 Mining Surveyors' Reports, June 1882
116 Mining Surveyors' Reports, Sept 1884
117 Mining Surveyors' Reports, Dec 1884
118 Mining Surveyors' Reports, June 1890
119 Department of Mines Annual Report, 1905
120 Department of Mines Annual Reports, 1905-6
121 Department of Mines Annual Report, 1907
122 Dunn
123 Australian Heritage Commission
124 Department of Mines Annual Report, 1908
125 Department of Mines Annual Report, 1911
126 Department of Mines Annual Report, 1912

[127] *Mining and Geological Journal*, 1950-7

BENALLA GOLDFIELD

DATE	HISTORY:
1850's:	Diggings worked at Violet Town, 1850s - near junction of Stony Creek and Violet Ponds or Honeysuckle Creek (north-west of town).[1]
1860:	Minor goldfield 'some miles' south-west of Benalla, 1860 - site of present Reef Hills Park - deep sinking - alluvial gold at 130 ft depth.[2]
1861:	Alluvial workings within three miles of Benalla, 1861 - Reef Hills Park area? - 'given up' within months.[3] Six quartz reefs discovered at Badaginnie (then 3-4 miles west of Benalla) 1861 - including Palmers, Liverpool, and Nova Scotia - quartz from Nova Scotia, on 4-Mile Creek, was previously used to metal the Sydney Road - quartz initially sent to Chiltern (nearest battery) for crushing.[4] Wallace's steam-powered crushing machine moved to Badaginnie from Yackandandah, end of 1861 - removed 1863.[5]
1862:	Deep lead discovered 3 miles from Benalla, 1862.[6] Reef discovered on 'Bond's run', 12 miles west of Benalla, 1862.[7]
1866:	Lion Co. on Lion Reef (Reef Hills area), south-west of Benalla, 1866 - battery - trial crushings disappointing - reefs nearly deserted by end of year.[8]
1867-68:	Reefs opened at Euroa, post-1867.[9]
1869-80:	Benalla mining at a standstill, 1869-80.[10] Payable reefs at Gowangardie (about 15 km north of Violet Town), 1878 - gold first found in area in 1850s, but not payable - by 1880, working claims were Onward QGMC (battery), Hope of Violet Town Co., and Honeysuckle Co. (10 km nearer Violet Town), and Forward Co. (adjoining) - Onward battery removed and reefs abandoned, 1882.[11]
1880:	Old Lion Reef, Benalla, reworked, 1880 - adjoining claims taken up - much local investment - many miners who were on their way to Temora diggings in NSW were drawn instead to the new Benalla reef - hence called 'New Temora'.[12] The mining registrar predicted in 1880 that the Benalla subdivision 'in a few years will stand in the front rank with other mining centres of population and industry.'[13]
1881:	New Temora alluvial (deep lead?) claim, Benalla, 1881 (shaft shown on 1899 plan of field) - also Royal Exhibit Co., washing dirt with puddler.[14] Large areas of quartz alluvial ground taken up under extended areas by-law, 1881 - more speculation than development - little activity resulted.[15]
1885:	Onward claim ('old Gowangardie workings') retried, 1885.[16] Reefing rush to Thoona, about 17 miles north of Benalla, 1885 - 24 claims pegged out in two days - 'a complete failure'.[17]
1886-87:	Lion claim, Benalla, reworked, 1886-7 - crushing at Chiltern.[18]

1889: Prospecting at Onward claim, Gowangardie, 1889.[19] Benalla (Reef Hills) reefs being worked in a small way, 1899 - about eight men employed, many reefs unworked. Reefs described: situated on the highest ridge (trending NW-SE) of a series of low scrubby hills, 3 to 4 miles south-west of Benalla. Plan shows claims: Benalla Reef (two holes); Standard Reef (100 ft shaft - unworked); Golden Crown Reef (110 ft shaft - badly worked); Lion claim (principal reef of the field - worked to depth of 210 ft; Little Wonder claim (two men surfacing - very little gold); Golden Queen claim (working by tunnel); Ajax claim (160 ft shaft - abandoned); Shannon Reef (00 ft shaft - abandoned); Royal Mail claim (100 ft shaft); Royal Mail Extended and Lane's-road claims (in Lane's paddock - battery nearby). Capital and perseverance required - 'Hitherto the practice has been to work out a patch of good stone and then allow the mine to remain idle.' Total production of Benalla reefs approx. 6,000 oz.[20] Alluvial gold also being worked in Reef Hills Park area in 1899. Plan shows claims near Lane's paddock battery, in Hyland's Gully, Wrangle Gully (including cement), Lady Ethel Gully, and several other gullies near reefs - working by shaft, whim, puddler, tub, cradle and dish - insufficient water for sluicing. Several shafts on lead along Lady Ethel Gully - Lady Ethel claim (120 ft, abandoned) the most successful.[21]

SOURCES:

Brough-Smyth, R., *The Goldfields and Mineral Districts of Victoria*, Government Printer, Melbourne, 1869; facsimile edition, Queensberry Hill Press, Carlton, 1979.

Department of Conservation Forests and Lands, *Reef Hills Park* interpretive brochure, 1986/88.

Ferguson, W.H., 'Report on Benalla Gold-fields', in Geological Survey of Victoria *Monthly Progress Report* No. 3, June 1899, pp. 13-16.

---

1 Flett, p. 74
2 Flett, p. 74
3 Mining Surveyors' Reports (West Buckland), July 1861
4 Flett, p. 74; Mining Surveyors' Reports (Beechworth Division), June 1861; Mining Surveyors' Reports (West Buckland Division), August 1861
5 Mining Surveyors' Reports (Beechworth Division), Dec 1861
6 Flett, p. 74
7 Mining Surveyors' Reports (West Buckland), May 1862
8 Mining Surveyors' Reports (Jamieson Subdivision), September & December 1866
9 Flett, p. 75
10 Mining Surveyors' Reports (Benalla Subdivision)
11 Mining Surveyors' Reports (Benalla Subdivision), June 1880, June 1882
12 Mining Surveyors' Reports (Benalla Subdivision), September 1880
13 Mining Surveyors' Reports (Benalla Subdivision), September 1880
14 Mining Surveyors' Reports (Benalla Subdivision), September 1881
15 Mining Surveyors' Reports (Benalla Subdivision), December 1881
16 Mining Surveyors' Reports (Benalla Subdivision), December 1885
17 Mining Surveyors' Reports (Benalla Subdivision), June & September 1886
18 Mining Surveyors' Reports (Benalla Subdivision), December 1886
19 Mining Surveyors' Reports (Benalla Subdivision), December 1889
20 Ferguson
21 Ferguson, p. 15

BETHANGA GOLDFIELD

DATE	HISTORY:
	Discovery
1852-1876:	Alluvial gold finds in the Bethanga area were reported as early as 1852. The Talgarno diggings, on the Murray about 8 km north of Bethanga, were visited by mining officials by 1854. But the opening-up of the Bethanga goldfield came with the **discovery of a reef, the New Year's Gift**, on 1 January 1876. The prospectors, Rhodes and party, erected a 4-head battery on their claim.[1]
June 1876:	In June 1876, an estimated 400 miners were on the field, and by September stone was being crushed out of twelve reefs and a township was rapidly taking shape.[2] A total of 50 stamp heads and nine steam engines were at work by the following September.[3]
1877:	As a spin-off of the Bethanga quartz field, **alluvial ground on Ruby Creek and Gold Creek**, north of Bethanga, and **Jarvis Creek**, to the south-east, was worked in 1877. These were almost certainly instances of renewed attention, rather than fresh discovery: Ruby and Gold creeks would have formed part of the old Talgarno diggings.[4]
	'The Burra Burra of Victoria'
Mid 1877:	Bethanga was no straightforward quartz reefing field; in fact, many had doubts as to whether it was a goldfield at all. The stone close to the surface was 'gossan', a decomposed form of iron pyrites, and contained gold and silver, iron oxide, and secondary copper minerals, embedded in crumbly quartz. In about mid-1877, the Bethanga miners began to reveal a layer of 'Black Jack' - heavily pyritic ore that is not generally gold-bearing (but when treated later by more sophisticated techniques, the Black Jack yielded payable gold) - beneath the gossanous crust. Some miners gave up in disgust; others discarded the Black Jack as worthless and pushed on to work the more refractory ore beneath it.
1878:	By 1878 most mines were at a depth of 33 metres or more and **copper** had been **struck on all the major Bethanga reefs**. When copper was found, experienced miners recognised a similarity between the ore sequence at Bethanga - gossan, Black Jack, copper - and that indicating major copper deposits in Cornwall and elsewhere. Bethanga was trumpeted as 'the Burra Burra of Victoria' and at the same time was written off as a goldfield.[5]
	Ore treatment
	With the discovery of copper at Bethanga, **Harris and Hollow** (a mining partnership from Rutherglen) built a **smelting works** on the flats at Lower Bethanga, with a view to smelting copper for the public. The first furnace of the Great Eastern Copper Smelting Works was opened with great ceremony in January 1878. Two further furnaces were added by mid-year.[6] As mining entrepreneurs went, Harris and Hollow (themselves working miners made good) had fairly altruistic intentions and won general support from the Bethanga miners. But their intentions were thwarted when the Hon. J.A. Wallace, MLC (the North-east's mining entrepreneur extraordinaire) took an interest in the Bethanga mining scene. **Wallace** purchased important mining leases and major mines at Bethanga and built his own **smelting works** to treat their ore. His three furnaces were complete by June 1878, but Wallace shut them down within two months, having successfully divided the loyalties of the Bethanga miners. Harris and Hollow had been forced to follow Wallace's lead, buying mining leases and smelting only for their own mines. Bethanga was now without a public smelting works.[7] Both smelting works employed the Welsh process: the ore was burnt in open clamps (heaps) or kilns, close to the mines, and the residue was then concentrated in a reverberatory furnace at the smelting works. The product, copper regulus, was sent to Europe (England, Wales, or Germany) for further processing. Some Bethanga miners were determined to unlock the gold from its pyritic host ore. **Kitchingman** erected a **pyrites works** in mid-1878 to treat blanketings and tailings from crushing plants, but his roasting treatment failed to extract much gold and operations ceased within months. Harris and Hollow added quartz-roasting kilns (possibly ex-Kitchingman's) to their works soon after, but their kilns were also a failure.
Early 1880s:	Harris and Hollow introduced 'the wet process' (probably chlorination), but continued to lose gold. Likewise, the **Murray Valley Pyrites Co.**, using the **chlorination** process on ore from its Hamburg Reef lease in 1884, was shortlived. The complex Bethanga ore clung onto its gold.[8]

Goldfield or copper field?

Although most claimholders had resigned themselves to Bethanga being a *copper* field rather than a *gold*field, and although they were unable to extract the gold from the highly cupreous ore, they had to pay for the right to mine both metals. Where gold and copper occurred in the same ore, claim- or lease-holders were required to take out a separate lease for each metal: a gold lease, at ten shillings per acre, and a mineral lease, at two shillings per acre. The requirement for dual leases not only meant extra fees; it also doubled the labour covenants - that is, the number of mining employees stipulated by each lease - so that a mine might be bound by its copper lease to employ six men and by its gold lease to employ a further six, when the labour of only six miners overall was justified. The gold lease was superfluous, miners felt, as Bethanga was no longer a goldfield, but a copper field.[9] Bethanga ore was more difficult to treat than the pyritic ores met with elsewhere in Victoria because it contained *copper* pyrites, in addition to the more common iron pyrites.[10] Not only was the gold virtually impossible to extract, but it soon became clear that Bethanga was *not* another Burra. The copper ore was of low grade and often was to be found only at great depths.[11] By 1879, miners had just about given up on Bethanga. Early that year, reefs were opened up at Cottontree and Rhodes' battery was shifted there from Bethanga. This left Bethanga with only one battery, which was purchased soon after by a Wallace minion who would crush only for Wallace-owned mines. At least half of the two or three hundred miners at Cottontree in mid-1879 had come from Bethanga. Cottontree (or Granya, as the field was coming to be known) was a difficult goldfield, demanding hard work for small returns. But, as historian June Phillip puts it, while at Granya miners had to struggle to make a living, 'Granya offered at least the chance of subsistence when, literally, Bethanga offered nothing.'[12] In June 1879, the mining registrar reported Bethanga mining at a standstill.[13]

Wallace vs. Bethanga

1883: Wallace and Co. took over Harris and Hollow's Bethanga Gold Mining Co. in 1883, resulting in the formation of the Wallace Bethanga Co.[14] It was proving almost as difficult to smelt copper from the Bethanga ore as to retrieve gold from it. But Wallace was determined to conquer it, no matter what the cost. In 1880, he had had very expensive plant constructed - two large boilers, 35-hp steam engine, large air cylinder, and two furnaces - in order to experiment with Holloway's process of ore treatment. Crude ore was melted in a cupola (or low-blast) furnace, then transferred to a 'Wallace's Patent Converter' blast furnace with flux, to achieve concentration of the copper into regulus, which was still shipped to Europe. The Holloway's experiments went on for three years, but were not a success.[15]

1884: In 1884, Wallace brought three smelting experts from Wales to supervise further trials. New works were again commissioned: an improved reverberatory furnace and alterations to the old blast furnaces. But the Welshmen had trouble with 'bears' - congealed lumps of metallic iron, which formed in the furnaces during smelting. The problem was due to the lack of proper fluxes - that is, other ores to mix with the Bethanga ore to achieve effective smelting.[16]

Mid 1880's: The Welsh experiments (1881-5) failed, and Wallace wheeled in a Dr Wunderlich to conduct a new 'wet process connected with electricity'. This involved placing cakes of regulus in a solution of sulphate of iron and passing an electric current through them, after which they were again smelted. The experiment cost £2,500 and failed to eliminate the 'bears', as did an improved vertical furnace installed in 1887 at the instigation of yet another of Wallace's 'sanguine inventors'.[17] The Wallace Bethanga venture - mining and smelting - was costing more than £1,000 a month for working expenses alone. Wallace complained that he was losing money, but was determined not to give in.

Since 1884, Wallace had held a monopoly at Bethanga (he also owned mines and the public battery at Flagstaff Hill [Mt Talgarno][18]): not only did his company dominate ore treatment on the field, it also held fourteen leases controlling the richest ore zones on the major reefs. However, men were employed on only two of the Wallace Bethanga Co.'s leases; the labour covenants on the remaining twelve had been suspended. In effect, Wallace's company monopolised Bethanga's prime mining ground, but was under no obligation to actually work it. This practice was called 'shepherding'. Working miners protested that small parties could make the Bethanga mines pay, but Wallace refused to relinquish his leases or even allow tributers to work them.[19]

1885: A new calcining process commenced in 1885 - setting the ore to burn for a month or more in large open heaps - set Bethanga's mining community in further opposition to Wallace. The township of Bethanga had developed in two parts separated by about 2 km - the lower part centred on Harris and Hollow's smelting works, and the original, upper township, the nucleus of the mines. Wallace's smelting works were situated just north of the upper township, and the choking fumes from his open calcining kilns added injury to insult. Strong objections were lodged. Wallace was of the opinion that the townsfolk, rather than the kilns, should be removed, but in 1887 the Wallace Bethanga Co. was prevented from burning the ore in open kilns. A 400-ton capacity calcining kiln was built for the Wallace Co. on Conness's Reef at Mt Talgarno in 1889.[20]

1887: The Wallace Bethanga Co. was in liquidation in 1887, having spent countless thousands of pounds and paid not a single dividend. A year later, Wallace's attempts to float a new company in London attracted the attention of the Metal Extraction Co., which sent its own representatives - 'three experts from the old country' - to try out their patent process of chlorination under pressure, which inevitably failed, proving too costly to pursue.[21]

Early 1890's: Having spent more than ten years trawling the globe for experts to tame his Bethanga 'bears', Wallace's problem was finally solved by his own works manager. Thomas Martin knew the Bethanga ore better than anybody. The process that finally unlocked the Bethanga ore was a modification of the oldest chlorination process - the Plattner system or 'wet process' - which used open vats. (Chlorination in closed vats by means of dry gas was one of the many techniques already tried and rejected.) He also found the reverberatory furnaces to be faulty, not properly and evenly roasting the ore, and had them rebuilt in 1894. Wallace had his solution at last.[22]

1895: The Wallace Bethanga Co. finally attracted a takeover, and in 1895 the **Bethanga Goldfields Ltd** was formed. Bethanga was once again a goldfield; copper was produced merely as a payable by-product.[23]

Bethanga after Wallace

Late 1890's: The Bethanga Goldfields Co. crushed its ore dry with a ball mill before roasting (the plant had five reverberatory furnaces) and chlorine treatment. By this means it produced an average of over 8,000 oz a year from its mines on the southern Gift line between 1897-1902.[24] In 1899, the company's leases covered five or six hundred acres on the main (Gift) lode and another, minor lode. Mining operations were concentrated on the Leighton Shaft (200 m deep), the Lucknow shaft, and the Gift shaft - the best equipped of the three. To the north, the company was also raising ore from shafts towards Talgarno. On the minor lode, to the east, the two main shafts were the Welcome, worked by horse-whim, and the Excelsior, equipped with steam-winding gear and poppet-legs.[25]

1899-1900: Largely due to the success of the Bethanga Goldfields Co., Bethanga achieved the highest total gold yield of any field in the Beechworth Mining District in the years 1899 and 1900. The other principal mine at Bethanga in those years was the Centennial, yielding more than an ounce to the ton.[26]

1904: In 1904, when the easily-won gold had been extracted from its mines, the Bethanga Goldfields Co. ceased work, and - free at last of Wallace's monopolistic legacy - the Bethanga field was thrown open and new operators moved in.[27]

1907: North of the upper township, on the Currajong lode, the **Mt Corryjong Copper Co**. struck rich copper in 1907. Leases further to the north - extending as far as Mt Talgarno - were taken up by the **North-East District Mining and Ores Treatment**

Co., which extracted gold from the upper, gossanous, layer. The company sank a number of shafts, which met with pyrites at 10 m or less, but never erected treatment plant.[28] The **New Bethanga Gold Mining NL Co**., formed in 1907, was the major successor to the Bethanga Goldfields Co. It installed a small **water-jacket blast furnace** and laid down **450 feet of flues** for the recovery of arsenic trioxide. The cost of running the furnace exceeded the value of gold, silver and copper extracted, and it ceased work within twelve months. In 1909 the company replaced it with an **Edwards roasting furnace and chlorination plant with twelve vats**. The treatment process was a success, but by 1911 the company was unable to find sufficient ore to continue.[29]

1909: In 1909 a **five-head government battery** was erected at Bethanga, but there was little work for it: only 8 tons of stone were treated in 1910.

1912: After 1912, Bethanga was no longer listed as a gold- or mineral-yielding division.[30] E.J. Dunn, head of the Geological Survey of Victoria, had assessed the potential of the Bethanga field in 1907 and had been pessimistic as to the future development of its mines. 'At one time,' he wrote, 'the whole country around was covered with valuable timber, but these forests have been so devastated that only remnants now survive… the dearth of fuel and mining timber will probably prove a serious handicap to mining expansion in this district.'[31]

1912-16: The government battery remained at Bethanga until 1916, and in that year a privately owned 'small but modern' metallurgical plant was installed in its place, to treat the 40,000 tons or so of tailings heaped up at the government battery site and elsewhere on the field. The plant comprised **chlorination works and a steel water-jacket blast furnace**, a Green's blower, Babcock boiler, and steam and gas engines. The freight costs from NSW of coke for fuel and limestone for fluxes were burdensome, and as tailings still remain at some Bethanga mines, the plant must not have been a complete success. But it stimulated a small amount of local mining activity, necessary to obtain raw sulphide ore for the smelting process.[32]

1931: Mining re-commenced at **Talgarno** in 1931 at one of the mines (on freehold land) formerly held by the NE District Mining and Ore Treatment Co., on a lode called the Golden Ridge. A ten-head battery and other plant were erected, but were unable to satisfactorily treat the ore and were removed in 1934. The Hume Refractory Ore Treatment Syndicate took up the mine in 1939 and treated the ore with a five-head battery, roasting furnace and cyanide plant. This venture, too, failed to master the ore and closed down within a few years.[33] The ore of the Bethanga district retains its reputation as being among the most intractable in the State (only the stone from the Cassilis mines is more difficult to treat), but it also retains a perverse lure. Because so few Bethanga mines have met with success, it is reasoned that a substantial ore reserve must remain in the ground.[34] Had it not been for the stifling effect of Wallace's domination, the Bethanga field might long ago have been conclusively proved or disproved by the small-party miners who insisted that, with backing, they were best-equipped to work it.

SOURCES:

Australian Mining Standard, special edition, 1 June 1899, pp. 95-8.

Bethanga Common - Concept Plan, prepared by Crown Land Management Section, CNR, c.1984 (copy on file, Historic Places Section).

Butler, G., 'North East Review: Historic Sites Survey' (draft), for the Land Conservation Council of Victoria, May 1982.

Department of Mines Annual Reports.

Dunn, E.J., 'Some Mines at Bonegilla and Bethanga, North-Eastern District', 17 May 1907, in Geological Survey of Victoria Records, vol. 3, part 1 (1909-16), p. 90.

Flett, J., *The History of Gold Discovery in Victoria*, Poppet Head Press, Melbourne, 1976.

Kenny, J.P.L., 'Talgarno Mine, Talgarno', in *Mining and Geological Journal*, March 1942, pp. 322-3.

Land Conservation Council, 'Final Recommendations, North-East Region', 198?

Mining and Geological Journal.

Mining Surveyors' Reports.

Phillip, J., *A Poor Man's Diggings: Mining and Community at Bethanga, Victoria, 1875-1912*, Hyland House, South Yarra, 1987.

Phillip, J., *The Making of a Mining Community: Bethanga, Victoria 1875-85*, in 'La Trobe University Studies in History' series, Department of History, La Trobe University, 1993.

Watson, J.C., 'Treatment of Refractory Arsenical Ore at Talgarno', in *Mining and Geological Journal*, March 1942, pp. 319-22 (includes photographs of plant.

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1 Flett, p. 163; Mining Surveyors' Reports, March 1876; Phillip (1987), p. 32
2 Mining Surveyors' Reports, June & September 1876
3 Phillip (1987), p. 32
4 Flett, p. 163
5 Phillip (1993), pp. 23-4
6 Phillip (1987), pp. 102-4, 116
7 Phillip (1987), p. 117
8 Phillip (1987), pp. 118-19, 133, 139
9 Phillip (1987), p. 111
10 Mining Surveyors' Reports, September 1878
11 Phillip (1987), p. 113
12 Phillip (1987), p. 123
13 Mining Surveyors' Reports, June 1879
14 Mining Surveyors' Reports, September 1884
15 Phillip (1987), pp. 136-7
16 Phillip (1987), pp. 118-19, 133, 139
17 Phillip (1987), pp. 187-8
18 Mining Surveyors' Reports, June 1882
19 Phillip (1987), pp. 163-6
20 Phillip (1987), p. 170; Mining Surveyors' Reports, June 1887, March 1889
21 Phillip (1987), p. 189
22 Phillip (1987), pp. 189-90; *Australian Mining Standard*, p. 96
23 Phillip (1987), p. 190
24 Phillip (1987), p. 190
25 *Australian Mining Standard*, p. 96
26 Phillip (1987), p. 191; *Australian Mining Standard*, p. 95
27 Phillip (1987), p. 191
28 Phillip (1987), pp. 191-2
29 Phillip (1987), p. 192; Mines Department Annual Report, 1909
30 Phillip (1987), pp. 192-3
31 Dunn
32 Mines Department Annual Reports, 1916-17
33 Kenny
34 LCC Final Recommendations, p. 85

BIG RIVER GOLDFIELD

DATE	HISTORY:
1855:	Rush to Enoch's Point, 1857 - Enoch Hall was reputedly working there from 1855 - reef prospecting followed, from 1859.[1]
Early 1860's:	Most tributaries of Big River worked in early 1860s - main tributary is Frenchman's Creek, rising near Matlock - only its headwaters contained good gold - Big River little worked above Stockman's Reward, where Stockman and party found good gold in mid-60s.[2]
1864:	Warner's waterwheel crushing mill, Warner's Creek, 1864 - 4 heads, steam machinery added.[3] Discovery of True Blue, Unknown, and Seek-and-Find reefs, 1864 - 'the stone now uncovered upon them is second to none in these mountains' - 60 miners on Big River reefs.[4]
1865:	Big River reefs, 1865: True Blue Reef, about 2 mile east of Enoch's Point; Staad's Reef, about half mile north-west of True Blue Reef, on north side of Enoch's Creek; Unknown Reef, about 1 mile north-west of True Blue, and 2 mile east of Enoch's Point; Railway Reef (just discovered), 1 mile north of Unknown Reef; Seek-and-Find Reef, about 2 miles west of Unknown and 3 miles north-west of Enoch's Point, at head of Jem Thomas's Creek; Star of Erin Reef, about 4-5 miles north-east of Enoch's Point, on left-hand branch of Enoch's Creek; Luck's All claim, Warner's Creek; Fountain Head Reef, near head of Frenchman's Creek, about 18 miles south of Enoch's Point; Break of Day Reef, about 3 miles lower down Frenchman's Creek.[5] Luck's All Co., Warner's Creek, about 7 miles south-west of Enoch's Point, 1865 - 4-head, water-powered crushing machine, replaced with 12-head steam-powered battery - foundation laid for a further 4-heads (ie. total 16) - machinery brought up from Melbourne in bullock drays to within half a mile of claim, then sleighed down to machinery site - dray track exists to within a few miles of Enoch's Point (new township) - additional 12-head steam battery at Warner's Reef, 1867.[6] Hope-on Hope-ever Co. machinery, Seek-and-Find Reef, Jem Thomas's Creek, brought by bullock drays from Melbourne in 1865, 'through these, at present, apparently inaccessible ranges' - 12-head steam-powered battery, tramway, etc. - cost £2,750.[7] Unknown Co., Railway Creek, 1865 - erected 30ft-diameter overshot waterwheel, 8-head battery, ripples, blankets, tramway, etc. - plant enclosed in weatherboard building with shingled roof - cost £3,000 - 5-head battery and 16hp engine added in 1866.[8] Alluvial workings, 1865 - 'for a considerable number of years' the Big River and its tributaries have been extensively worked and reworked - numerous parties now sluicing, 'in many instances, turning the bed of the river out of its channel' - likewise the creeks. Alluvial miners on Big River, Jem Thomas' Creek, Sherwin's Creek, 15-Mile Creek, 10-Mile Creek, 16-Mile Creek (soon renamed Bald Headed Creek), Mia-Mia, Wild Dog Creek, Friar's (Fryer's) Creek, Knowles Creek, Caple's Creek, Boyd's Creek, and Goulburn River, near junction of Big River at Darlingford - sluicing was the only form of alluvial mining in division.[9] Most miners making good wages, 1865, but - 'One great want… is assistance of capitalists. Most of the miners in this subdivision are persons of limited means' - unable to develop reefs.[10]
1866:	Nulli Secundus Co., Fortland Reef, 1866 - about 8 miles south of Enoch's Point township.[11] Star of Erin Co., left-hand branch of Enoch's Creek, north-east of Enoch's Point, 1866 - 30ft-diameter waterwheel and 8-head battery, tramway, etc.[12] Nil Desperandum Co., 1866 - 15-head battery, 16hp engine.[13] Staad's Reef Co., 1866 - 16ft-diameter waterwheel, 2-head battery.[14] Payable gold discovered in Frier's (Fryer's) Creek, 4-5 miles from Enoch's Point, 1866 (creek opened by Fry and party, 1864[15]) - rush of 180 miners - sinking 4 to 20 ft - nuggets found - 'fear it will not prove to be either a permanent or satisfactory digging locality'.[16] 1866: 'the utter absence of roads and bridges, the great difficulty of travelling, and the consequent great expense of provisions, &c., &c., are serious drawbacks to the general welfare of the mining community'.[17]

Late 1866: Mining population at Big River dropped late in 1866 - 'partly from the poverty of the miners, and the determination of the storekeepers to cease giving credit' - diminished to 200 in early 1867, and dropping daily - quartz mining depressed & claims abandoned - shareholders unwilling to risk further capital - by late 1867, only two quartz mines at work: Luck's All and Unknown - alluvial population leaving for Mackenzie's Diggings, Warner's Enoch's, Railway and Jem Thomas's creeks having been repeatedly reworked and 'exhausted'.[18]

1867: No Chinese miners early in 1867 - 'the arrival of a small party of Chinese, two in number' rated a mention in June that year - 'It is a matter of surprise that so few Chinese have as yet settled in this subdivision' - also, 'Several Germans and other foreigners have recently arrived.'[19]

Mining registrar explains how physical characteristics of the Big River region hinder mining expansion, 1868-9 - 'a large and payable goldfield exists between Enoch's Point and the head of the Big River; but the physical features of the country, together with dense and almost impenetrable scrub, prevents the unassisted miner from thoroughly prospecting the country.'[20] - 'The valley of the Big River is narrow, and the course of the tributary watercourses short and rapid; it becomes difficult therefore to bring machinery within a reasonable distance of the mines.' - Alluvial mining: 'The large flow of water, and rock-bound bed of the southern part of the river, render flood races difficult and expansive to construct, and cause the miners to prefer the creeks.'[21]

1868: Luck's All, Londonderry, and Hope-on-hope-ever quartz mines at work, 1868-9.[22]

1869: Good alluvial yields in Frenchman's Creek, 1869.[23] Luck's All tributers have gone to considerable expanse running out timber and firewood trams, 1869.[24]

1869-71: 1869-71: 'the district is making little or no progress; its scant population appears powerless and discouraged' - Big River valley has more than 100 miles of unexplored auriferous creeks - what is wanted is a road from the Yarra Track to Darlingford - at present, available tracks extend only a few miles above Enoch's Point - stores must be obtained from Enoch's Point and carried to claims - 'Storekeepers are chary in sending out beyond a certain limit'[25] - mining unprogressive, 'and will in all probability remain so until a thoroughfare is made through the valley, and that valley ceases to be a mere *cul-de-sac* to Darlingford' - mining population and alluvial gold yields diminishing.[26]

1870: Mining on Peppin's claim, Seek-and-Find Reef, 1870.[27]

1870-71: Quartz yields increasing, alluvial diminishing - quartz mines at work: Maid of Erin (4-head battery), Luck's All, Londonderry and Retriever - the two last-named mines were both on the flank of Mt Terrible 'and the shoots, inclines, and trams, through and over which the stuff must pass before reaching the only available machine on the Railway Creek, add a very material item to the cost of raising' - battery moved higher up creek and closer to Londonderry and Retriever claims in 1871.[28] Quartz mining looks like reviving, due largely to Luck's All yields (averaging nearly 12 dwt/ton), 1871 - alluvial mining 'in a very languishing state'.[29] Nugget of 86 oz (reduced by smelting to 65 oz) found in Specimen Creek, south of Enoch's Point, 1871.[30] Belle of Venetia Co. (quartz or alluvial?), Fryer's Creek, worked in a small way for most of 1870s.[31]

1871-73: Londonderry and Retriever cos. amalgamated by 1873.[32] Antimony vein being prospected on Specimen Creek, 1871 - worked 4 or 5 years ago - Specimen Reef (antimony) discovered 1880 - idle by 1884 - prospected again in 1898.[33]

1874: Unknown Reef (Mt Terrible MC No. 1 claim), Railway Creek, yielded 192 oz from 32.5 tons, 1874 - results of three years' work - 5-head battery erected 1876 - mine abandoned 1878 - small party attempted to reopen mine, 1885.[34]

1874-78: Alluvial miners averaging 20 shillings or less a week, 1874-8 - population dropping - 'the withholding of the lands from settlement along the river banks leaves them but a very precarious existence, and drives them out of the district' - 'The exodus has been slow but steady towards those centres of population where the means of livelihood are one-third the cost they are in the mountains, and settlers enjoy the benefits of liberal land laws'.[35] Sluicing banks of Fryer's Creek ('below Newman's'), 1874.[36]

Late 1870's: Luck's All and Londonderry (Railway Reef) only mines at work, 1878.[37] 'Old Surprise ground' taken up, 1879 - on opposite bank of Railway Creek to the Londonderry claim - previously worked in early 1870s - idle by 1882 - prospected again 1886-9 - payable gold struck 1889.[38]

1880: Quartz mines operating, 1880 - Luck's All, Londonderry (Boscobelle Co.), Surprise Co., New Retriever (tunnelling on south side of Gentle Annie spur, on Railway Reef).[39]

1882-85: Luck's All was the only mine at work in 1882-5 - ceased work 1885.[40] Alluvial mining population and yield steadily decreasing, 1880s - in 1883, individual miners said they were doing as well as they did ten years earlier.

1886: Alluvial miners making only half their usual wage of about 15 shillings ('a precarious living') - most turned their attention entirely to land and agriculture in the Big River Basin - in 1889, 'a few "hatters" continue to fossick the alluvial ground'.[41]

1889: Only one mine at work, 1889 - Surprise GMC on Railway Reef - struck gold after three years' prospecting - installed 13-head battery?[42] In 1889, the mining registrar advocated the cutting of 'a good trafficable roadway' connecting Enoch's Point with the Yarra Track - goldfield would be opened up and the entire Big River Valley would 'become a favourite resort for tourists and health-seekers during the summer season' - road built by Lands Department 10-12 years earlier was impracticable even for pack-horses - large part of subdivision practically inaccessible.[43]

1891: Only 25 miners in Big River subdivision in 1891.[44]

Mid 1890's: Luck's All Mine had paid £60,000 in dividends, up to 1899.[45]

1898: From Darlingford to Enoch's Point, a distance of over 20 miles along the valley of the Big River, the bed, flats, and banks of the river have been extensively worked for alluvial gold, and scattered parties are still so engaged.[46]

1898: Enoch's Point reefs had been neglected 'for a long time'. Luck's All Reef about to be further tested. Work underway on Star of Erin Reef - two tunnels and various surface workings and trenches - water-powered battery being erected several hundred feet below workings - processed by 'very primitive appliances' in the past. Workings at Londonderry mine, near head of Railway Creek. Armstrong's Unknown United mine - on south slope of Railway Creek, west of Londonderry - some of main old Unknown workings filled in - about 4,000 oz won from mine. True Blue mine, south of Enoch's Creek - former tunnelling operations. Stead's (Staad's) Reef, on opposite side of Enoch's Creek to True Blue - formerly good yields. Twin Jacks Reef (Rodda's) - on Frenchman's Creek, six miles up from its junction with the Big River - being prospected - water-powered battery to be installed?[47]

1899: Two best claims, 1899: Chester and Locke's (277 oz/76 ton) and Stockman's Tribute (363 oz/226 ton).[48]

1900's: Until 1907, dredging was not allowed on the Goulburn River below Jamieson or on the Big River below Enoch's Point - about 1900 a pump sluice worked on the Big River, at Stockman's, above Enoch's Point - otherwise, only gravitation sluicing, 'which has been carried on for over fifty years'.[49]

SOURCES:

Flett, J., *The History of Gold Discovery in Victoria*, Poppet Head Press, 1979.

Milner, P., *Northern Diversion Sites: Mining Heritage - Preliminary Report*, Report No. 56, Water Resource Management Report Series, Office of Water Resources, Department of Conservation and Environment, Melbourne, 1990.
Murray, R.A.F., 'Report on the Gold-Fields of Gobur, Enoch's Point, Big River, and Bear's Creek', in Geological Survey of Victoria Progress Report No. IX, Department of Mines, Melbourne, 1898, pp. 23-5.
Steenhuis, L., 'Ghost Towns of the Mountain Goldfields: Upper reaches of the Yarra, Goulburn, Latrobe and Thomson watersheds', unpublished manuscript, ABC Maps, Launching Place, 1993?.

---

1 Flett, pp. 97-8
2 Flett, pp. 109-10
3 Mining Surveyors' Reports (Gaffney's Creek subdivision), September 1864
4 Mining Surveyors' Reports (Gaffney's Creek subdivision), December 1864
5 Mining Surveyors' Reports (Big River subdivision), March 1865
6 Mining Surveyors' Reports (Big River subdivision), March 1865; March 1867
7 Mining Surveyors' Reports (Big River subdivision), December 1865, March 1866
8 Mining Surveyors' Reports (Big River subdivision), September 1865, June 1866, March 1867
9 Mining Surveyors' Reports (Big River subdivision), March, September & December 1865
10 Mining Surveyors' Reports (Big River subdivision), March & June 1865
11 Mining Surveyors' Reports (Big River subdivision), March 1866
12 Mining Surveyors' Reports (Big River subdivision), March 1866
13 Mining Surveyors' Reports (Big River subdivision), June 1866
14 Mining Surveyors' Reports (Big River subdivision), June 1866
15 Flett, p. 110
16 Mining Surveyors' Reports (Big River subdivision), March 1866
17 Mining Surveyors' Reports (Big River subdivision), June 1866
18 Mining Surveyors' Reports (Big River subdivision), December 1866, March & September 1867
19 Mining Surveyors' Reports (Big River subdivision), March & June 1867
20 Mining Surveyors' Reports (Big River subdivision), September 1868
21 Mining Surveyors' Reports (Big River subdivision), June 1869
22 Mining Surveyors' Reports (Big River subdivision), September 1868, March 1869
23 Mining Surveyors' Reports (Big River subdivision), March 1869
24 Mining Surveyors' Reports (Big River subdivision), December 1869
25 Mining Surveyors' Reports (Big River subdivision), December 1869
26 Mining Surveyors' Reports (Big River subdivision), March 1871
27 Mining Surveyors' Reports (Big River subdivision), March & June 1870
28 Mining Surveyors' Reports (Big River subdivision), June & December 1870, December 1871
29 Mining Surveyors' Reports (Big River subdivision), June 1871
30 Mining Surveyors' Reports (Big River subdivision), September 1871
31 Mining Surveyors' Reports (Big River subdivision)
32 Mining Surveyors' Reports (Big River subdivision), September 1873
33 Mining Surveyors' Reports (Big River subdivision), September 1873, September 1880, June 1884; Murray, p. 24
34 Mining Surveyors' Reports (Big River subdivision), March 1874, June 1876, June 1878
35 Mining Surveyors' Reports (Big River subdivision), March 1874, March 1877, September 1878
36 Mining Surveyors' Reports (Big River subdivision), September & December 1874
37 Mining Surveyors' Reports (Big River subdivision), March 1876
38 Mining Surveyors' Reports (Big River subdivision), June 1871, March 1879, December 1882, September 1886, December 1889
39 Mining Surveyors' Reports (Big River subdivision), March 1880
40 Mining Surveyors' Reports (Big River subdivision), December 1882, September 1885, March 1886
41 Mining Surveyors' Reports (Big River subdivision), September 1883, March & June 1885, March 1888, March & June 1889
42 Mining Surveyors' Reports (Big River subdivision), December 1889
43 Mining Surveyors' Reports (Big River subdivision), December 1889
44 Mining Surveyors' Reports, September 1891
45 *Australian Mining Standard*, p. 103
46 Murray, p. 23
47 Murray, pp. 23-4
48 *Australian Mining Standard*, p. 103
49 Department of Mines Annual Report, 1907, pp. 74-6

CORRYONG GOLDFIELD

DATE	HISTORY:
1856:	The first gold was reputedly found in the Corryong area in 1856, on the Victorian side of the Jingellic pastoral run, some 25 km north-west of Corryong (as the crow flies). Alluvial prospectors discovered gold at **Cudgewa (or Tintaldra) Creek** in the early 1860s. A handful of diggers (about 25) were on the Cudgewa (or Cudgewong, as it was called), below the Stony Creek junction, in 1865-6.[1]
1866:	In 1866, gold was found in a tributary, **Log Bridge Creek**, just north of Dart River.[2] **Cudgewa Creek** was later (early twentieth century) the site of **tin mining** activity.[3]
1880:	Gold was got at **Thowgla and Bullocky creeks**, south of Corryong, by prospectors in 1861, but no rush ensued until 1880, when discoveries at Zulu Creek renewed interest in the area.[4] A population of over 200 miners worked the creek in the summer of 1880-81.[5] Alluvial miners were still at Thowgla Creek in the mid- to late 1880s, **sluicing with pumps and wheels fed by water races**.[6]
mid-1880s:	Corryong business people and residents sponsored quartz prospecting in the Thowgla-Bullocky Creek area.[7]
1888:	Reefs had been discovered both there and at **Towong**.[8] Workings were still shallow (deepest 12 m) in 1889, and the field lacked crushing machinery until a five-head battery (from Granya[9]) was erected early the following year.[10]
mid 1899:	The Mines Department must have viewed the quartz mines of the Corryong district as permanent, as the field was reported on as a separate subdivision from mid-1889.
1890:	In c.1890, the Native Youth and Mary Jane reefs were prospected near Towong Gap, about 8 km south-east of Towong. Their discovery led to the opening up of the **Mt Elliott** field, a short distance to the south-west. During 1894, many reefs were discovered and opened up, among them the New Chum, Just in Time, Bread and Sugar, Sheoak, Evening Star and Fenby's Reward. The **Little Treasure** battery was erected on the field in 1894.[11]
1898-06:	The field became a mecca for 'refugees from the great depression'.[12] A shanty **township** soon took shape at Mt Elliott: the usual complement of stores and grog shops served the mining community. Between 1898 and 1906 the township even boasted a school.[13] Some of the 'refugees' worked the alluvial ground below the Mt Elliott reefs and on Thowgla Creek. **Thowgla and Bullocky Creeks** were still being worked, by **hydraulic sluicing**, in 1907.[14]
1899:	The *Australian Mining Standard* in 1899 declared the **New Chum**, at Mt Elliott, a 'really good mine': its yields to the end of 1898 totalled 3,593 oz of gold from crushings of 590 tons - an average of over 6 oz per ton.[15]
1903:	The New Chum operations were apparently discontinued soon thereafter: by 1903, the Mt Elliott Co. was the field's only company mine. The only crushing plant on the field was situated about 3 km from that mine.[16]
1904:	A new winding plant was erected at the New Chum in 1904, but nothing more was heard of that mine.[17]
1906-07:	The Mt Elliott school closed in 1906 for want of students, and in 1907 only ten miners remained in the district. The **government battery** was the only crushing facility on the field. The **Just in Time** (in Carkeek's Gully on the mountain's west flank) and Bull and Damper mines were being worked by small parties, but most mines were abandoned, their claimholders lacking the capital to develop them at depth.[18]
1930's:	After the removal of the government battery in 19?, the field was all but dead. A few quartz miners tried the Mt Elliott reefs during the 1930s, with little success.

SOURCES:

Australian Mining Standard, special edition, 1/6/1899.
Butler, G., 'North East Review: Historic Sites Survey' (draft), for the Land Conservation Council of Victoria, May 1982.

Convey, T., *The Days of Gold: Mining in the Tallangatta District*, published by the author, Albury, 1980.
Thowgla Geological Parish Plan, 1927.
Towong Geological Parish Plan, 1924.

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1 Mining Surveyors' Reports (Omeo Central Subdivision), June 1865 to December 1866
2 Flett, p. 167
3 Butler, p. 32
4 Flett, p. 166
5 Mining Surveyor's Reports (Gibbo Subdivision), December 1880
6 Mining Surveyors' Reports, December 1886, March 1888
7 Mining Surveyors' Reports, September 1886
8 Mining Surveyors' Reports, September 1888
9 Convey, p. 27
10 Mining Surveyors' Reports, December 1891
11 Convey, p. 27
12 Flett, p. 167
13 Convey, p. 27
14 Butler, p. 85 (GSV.R3/1, p. 98f)
15 *Australian Mining Standard*, p. 95
16 Mines Department Annual Report, 1903
17 Mines Department Annual Report, 1904
18 Convey, p. 27

DART RIVER GOLDFIELD

DATE	HISTORY:
	(Note: For the sake of consistency, *Dart* River is used throughout (except in the case of mine or company names), although the goldfield was historically known as *Dark* River. Modern maps label the river *Dart*, and the lake and adjoining township are called Dartmouth. It is probable that the river was originally named *Dart* after its English namesake, and that the name was corrupted to *Dark* by early miners.)
	Discovery
1877:	Alluvial gold was first found on the Dart River in 1877. A small rush (of about 25 men) ensued[1], but results proved poor. Access to the field was via a bridle track from Granite Flat, south-east of Mitta Mitta.
1879:	Payable gold was discovered on **Zulu Creek**, about 8-km south-east of Dart River. The two prospectors were the **last to receive a Government reward for the discovery of a payable goldfield**. Each received £25.[2] Prospectors had been in the Zulu-Wheeler's Creek area over many years, but dense scrub had confounded their efforts. The cutting of a track at Wheeler's Creek by the Mines Department had been the impetus to the Zulu Creek find.[3] About 200 men were on the spot at the end of 1879.[4]
1878-79:	Saltpetre and Sassafras (or Cribbage) creeks were sometimes treated by the Mines Department as a southern extension of the goldfield. They are more properly part of the Gibbo River goldfield, in the Gippsland Mining District, but were lumped with Dart River as they were within the boundary of the Beechworth Mining District A rush of diggers to the Saltpetre-Sassafras creek area in 1878-9 prompted the Mines Department to cut a track from Omeo, which, to allow for further prospecting, was eventually extended as far as Zulu Creek.[5]
1880-81:	The Dart River district's first reefs were discovered at Zulu Creek in 1880-1. Chief among them was the Just in Time, and which would form the nucleus of the **Zulu township**.[6] The prospectors of the Zulu reefs, naming themselves the **Albion Co.**, erected a **small crushing plant** early in 1881, as did the **Just in Time Co.** The mining registrar was critical of the latter's plant, and of the fact that the company charged other claimholders £1 per ton for crushing on their 'primitive' wooden battery.[7]
1881:	The **White Stone (or White Quartz) Reef** was discovered on Millar's Creek, a tributary of Larsen's Creek. Quartz was initially packed to the battery at Mitta Mitta, the first crushing of hand-picked stone giving an average of more than 22 oz to the ton. (Difficulty of access would continue to limit the field's development.[8]) By 1884 a **waterwheel-driven battery** was at work on the reef.
1881-82:	More reefs were discovered at Larsen's Creek and near Green's Creek during 1881-2. A pack trail connected Green's Creek with the trail to Granite Flat, at a point about 7 km up from the junction of the Dart and Mitta Mitta rivers, now part of Lake Dartmouth. In early 1883, the **La Mascotte Reef** was discovered near the head of Brown's Creek, about 3_ miles south of the later Glendart settlement. The La Mascotte provided the impetus for the Dart River goldfields development in the mid-1880s and became the biggest producer on the field (during 1884 its crushings gave an average yield of 1 oz 12 dwt to the ton).[9]
	Opening-up of field
1884:	Reef working on the Dart River field was flourishing in 1884, with quartz mines located on the Dart River and Brown's, McKay's, Larsen's and Zulu creeks, as well as Green's Creek. According to John Morrow, an authority on the history of the Dart River field: 'For a time there was more gold being produced per man than from any other goldfield in the country.'[10]

mid-1884: The mining registrar detailed eight crushing plants in his new Dart River subdivision: the La Mascotte, Young Australian, Pioneer, Great Extended Mascotte, and Dart River (all at Dart River and Brown's Creek), and the Morning Star (at Green's Creek), Mitta Mitta, and Mountain Maid (at Larsen's creeks).[11] By the end of the year, the subdivision had ten batteries: seven driven by steam engines and three by waterwheels. The impressive array of machinery available on the field was, in fact, pitifully under-utilised. In 1884, each stamp-head crushed an average of only 28.4 tons; during the same period, each stamp-head in Bendigo-Eaglehawk crushed 276 tons. The average quantity of quartz crushed by Dart River stamp-heads was down to 7.5 tons per annum in 1887, and continued to decline.[12] The **ten-head battery** at the **La Mascotte** was driven by a **10-hp steam engine**, the whole lot carted in by bullock from Wodonga. It took five bullock teams - 100 bullocks in all - to cart the machinery (weighing more than 18 tons) over the steep Mt Gibbo ('the Gibb'), at the head of the Nariel valley. This would be the usual route taken by mining plant bound for the Dart River and Zulu Creek mines.[13] The La Mascotte mine was joined, on the same line of reef, by the **Young Australian**, whose crushing machinery - an **eight-head battery and a 12-hp steam engine** by Robey & Co., Lincoln, England - came over the Gibb in early 1884. The **'elaborate gold-saving measures'** taken by the company in setting up its plant were in vain: the mine closed within six weeks of the battery's commencement, due to poor yields. The Young Australian was later worked on tribute.[14] The **Great Extended Mascotte's crushing plant** comprised a **25-hp steam engine with a multi-tubular boiler and a 10-head battery** capable of extension to 20-head.

Sept. 1884: The **battery at the Morning Star mine, at Green's Creek**, was complete by September 1884 when it was described as 'a very compact plant of eight heads'[15] - in fact, it was a ten-head battery.[16] The plant - consisting of a steam engine, two boilers and the battery itself - came from Langlands Foundry in Melbourne, via the rough pack-trail from Granite Flat. An aerial tramway carried ore from the Morning Star's hillside adit to the battery 150m below. Soon after the battery's installation, its only major crushing was recorded, which resulted in the disappointing yield of 240 oz from 400 tons. Other Green's Creek mines sent ore to the battery - the Golden Eagle mine, 1 km to the west, was connected to the Morning Star battery by a track cut along the hillside.[17] The battery was idle after 1887.[18] The Morning Star battery is important, not because it - or the Green's Creek field - was significant in mining terms, but because it remains in situ to this day. Development of the **Zulu Creek** reefs was retarded until 1884 by a lack of proper crushing facilities. In that year **Wildboar Co.** erected its **battery**, powered by a **portable steam engine**, as did the Albion (Sailor Bill's) Co., and the Just-in-Time Co. replaced its old, unreliable battery.[19] The following year a government party cut a 43-km pack trail between the **Wildboar machine track** and the Tom Groggin-Thowgla track - effectively linking Zulu with Corryong and the world beyond, and eliminating the great bullock hauls over the Gibb.[20] For quartz miners at McKay's Creek, a southern tributary of the Dart, it was a 15-km horse trek through the ranges to the nearest battery, until the **Pioneer and Premier mines** installed **batteries powered by portable steam engines**.[21]

mid-1886: The **Daddy of the Dart Co.** erected an **eight-head, waterwheel-driven battery**, but a dry winter forced the claimholders to have their ore crushed by the **steam-powered public mill at Dart River.** They became the first to transport stone from mine to battery by cart, rather than on horseback[22]. The otherwise unremarkable **Gum-tree or Blue Gum mine** rates a mention for the rare Australian reference in its name.[23] The goldfields main centre was the village of **Glendart**, near the junction of the Dart and the Little Dart Rivers.[24]

Alluvial

Alluvial mining continued in a minor way on the Dart River field, in the form of sluicing along waterways. Only two sluicers were at work on the Dart River itself in September 1884, while a further twenty-five worked the lonely creeks to the south and east, including Zulu, Sassafras, Saltpetre, and Wheeler's.[25]

Pyritic ore

By June 1885, some miners were leaving the Dart River goldfield in disappointment; others were leaving only temporarily, to return when the extremes of winter had passed.[26] But the field's early heyday was over. Between the end of 1885 and 1887, Dart River gold production halved. Snow on the higher parts of the field prevented winter mining, and dry seasons were a blow to mines reliant on water-power for crushing. Most problematic, though, was that the stone at shallow depths was pretty well worked-out and below water-level (about 10 m) the ore became heavily mineralised and difficult to treat. The Dart River mines were mostly owned by working miners ('Muscle is an admirable and enviable possession,' remarked the *Australian Mining Standard* of the Dart River mines in 1899, 'but it is not capital.') who were unable to afford the kind of expensive plant and processes that might have released the gold from the pyrites.

Revival

1886-89: Quartz mining slumped between 1886-9. When rich quartz reefs were discovered at Saltpetre Creek early in 1888, an observer remarked that, 'As there are plenty of batteries lying idle about both Zulu Creek and Dark River a suitable battery can easily be erected at a cheaper outlay than importing the same from Melbourne.'[27] But in mid-1888 the Dart River mining registrar was optimistic: 'the Dart River district will yet be the backbone of the Victorian goldfields'.[28] By the end of the year, a mining revival was underway: old ground was taken up, new reefs opened, and the population was on the rise. During 1889, the Dart River goldfield reached its production peak: a total of 1,052 tons yielded 2,009 oz, an average of almost 2 oz per ton.[29]

Chlorination and 'intractable' quartz

1892: The revival was over, and gold production had again more than halved. The field still lacked special plant for treating the heavily mineralised ore, and much gold continued to escape during the treatment process. The cost of freighting ore to the nearest chlorination works (probably at Bethanga) was £10 per ton.[30] Very rich ore would be sent further afield, to Ballarat, Bendigo, or even Germany, for treatment.[31]

1894: When the Government Geologist visited the field in 1894, he found the Dark River ore 'not of an especially intractable character' and believed that it would be 'easily amenable to the ordinary processes for treatment of iron pyrites' - ie, chlorination.[32] A Company took up the challenge and erected a **chlorination works** on the field that same year. Ore was first roasted in a reverberatory furnace, then treated in a revolving barrel. But the furnace burned for less than three months then closed down, as a result of which most mines were also abandoned.

1897: The **Mascotte Co.** erected a new **chlorination works** on the same site (the old furnace having been pulled down) in 1897, comprising 'A large boiler, engines, a ten-head stamp mill, and a large mechanically rabbled furnace, constructed of iron and lined with fire bricks, together with vats and accessory plant'.[33] This works, too, seemed doomed to early closure because of the excessive costs charged for the transportation of vital fluxes. The government responded with a grant to complete the **road between Glendart and Cravensville**, some 20-km north-west, which was connected by road with Tallangatta and beyond. It was expected that the improved road access would reduce carting prices by half and make chlorination viable at last[34] When the road was completed, chlorination resumed at the Glendart works, but poor returns forced its closure in 1903.[35]

Last gasp

1905: The Dart River area was virtually written off when it was abolished as a mining subdivision in 1905.

1915: The battery at Green's Creek was overhauled by the Dartella Co. in 1915, in a shortlived attempt to revive the mines of the district.[36]

mid 1930's: But in the mid-1930s, the completion of the highway between Corryong and Omeo at last improved access to the Dart River goldfield. A number of mining leases were taken up on the Dart River field, among them the Mountain View (formerly the Alpine Star mine, first worked in the 1890s), the La Mascotte and the Golden Crown. Metallurgical tests conducted on ore from several of the mines showed that, using improved techniques, the refractory stone could be made to yield up most of its gold.

1937: A **chlorination plant** was shifted from Granya to the **Glengarry mine on Sheehan's Creek** in 1937, where it operated in conjunction with a **five-head stamp mill, power unit, and roasting furnace**.[37] At Zulu Creek, ore from the **Just in Time** mine was treated from 1936 by crushing and cyanidation, with plant including a **25ft-diameter waterwheel, five-head battery, cyanide tanks, smelting furnace, laboratory, and blacksmith shop**.[38] The outcomes of these operations must have been unsatisfactory, for in 1941 the Dart River goldfields virtual abandonment was again blamed on the complex nature of its ores and the absence of suitable plant.[39]

1962: A Mines Department geologist noted renewed activity at the **Just in Time** mine at Zulu Creek: an **access road** was being cut and **living quarters** being erected.[40] Nothing came of this, and the field's neglect has continued to the present, broken only by occasional flickers of interest in conquering its intractable ores. Western and southern portions of the Dart River system, and the mines thereon, have been flooded since the creation of Lake Dartmouth in the 1970s.

SOURCES:

Australian Heritage Commission, Register of the National Estate, File No. 017314 2/08/242/0007/01.

Australian Mining Standard, special edition, 1 June 1899.

Butler, G., 'North East Review: Historic Sites Survey' (draft), for the Land Conservation Council of Victoria, May 1982.

Churchward, M., 'The Greens Creek Battery', for Department of Conservation & Natural Resources, May 1993.

Department of Mines Annual Reports.

Flett, J., *The History of Gold Discovery in Victoria*, Poppet Head Press, Melbourne, 1979.

Grieve, J.C., 'The Dart River Goldfield', in *Mining and Geological Journal*, July 1938, pp. 59-61.

Mines Department file no. 131 Cos., reports by mines and tracks inspectors re. South Federation Company, Saltpetre Creek, 1898-1900 (copies held by Historic Places Section, CNR).

Mines Department report by geologist, W.E. Bamford, on Just in Time gold mine, Zulu Creek, 9/4/1962 (copy held by Historic Places Section, CNR).

Mining Surveyors' and Registrars' Reports, 1880-89.

Morrow, J.A., 'A report on the historic gold mining relics and major sites pertaining to the goldfields at Dart River, Greens Creek, Zulu and Saltpetre Creeks, and the hydraulic sluicing operations at Mitta Mitta', for Department of Conservation, Forests and Lands, n.d. (198?).

Murray, R.A.F., 'Report on the Dart River and Zulu Creek Gold-Field', in Department of Mines Annual Report, 1894, pp. 64-5.

Odell, J., 'Special Report on Zulu Creek', in Mining Surveyors' Reports (Omeo Subdivision), December 1879.

Tetu, S., 'Reports on Recent Quartz and Alluvial Discoveries at Saltpetre Creek', Appendix J to Mining Surveyors' Reports, March 1888, pp.l 91-3, plus map.

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1 Mining Surveyors' Reports, March 1877
2 Morrow, p. 6
3 Flett, p. 165
4 Mining Surveyors' Reports (Omeo Subdivision), December 1879
5 Mining Surveyors' Reports (Omeo Subdivision), December 1878 to September 1879
6 Morrow, p. 6;
7 Mining Surveyors' Reports (Gibbo Subdivision), March, June & December 1881
8 Mining Surveyors' Reports, September 1883
9 Morrow, pp. 2, 3
10 Morrow, p. 3

[11] Mining Surveyors' Reports, September 1883
[12] Churchward, pp. 8-9
[13] Morrow, pp. 2-3
[14] Morrow, p. 3
[15] Mining Surveyors' Reports, September 1884
[16] Churchward, p. 7
[17] Churchward, p. 7
[18] Churchward, p. 10
[19] Mining Surveyors' Reports (Gibbo Subdivision), March & June 1884; Morrow, p. 5
[20] Mining Surveyors' Reports, September 1884, March 1885
[21] Mining Surveyors' Reports, March 1885; Morrow, p. 3
[22] Mining Surveyors' Reports, June & September 1886
[23] Mining Surveyors' Reports, September 1884; Morrow, p. 3
[24] Flett, p. 165
[25] Mining Surveyors' Reports, September 1884
[26] Mining Surveyors' Reports, June 1885
[27] Tetu
[28] Mining Surveyors' Reports, June 1888
[29] Morrow, p. 4
[30] *Australian Mining Standard*, p. 103
[31] *Australian Mining Standard*, p. 103
[32] Murray, p. 65
[33] *Australian Mining Standard*, p. 103; Grieve, p. 61
[34] *Australian Mining Standard*, p. 103
[35] Morrow, p. 5
[36] Department of Mines Annual Reports, 1915-16
[37] Grieve, p. 61
[38] Watson, p. 19
[39] Department of Mines Annual Report, 1941
[40] Mines Department report, 9/4/1962

DRY CREEK-MAINDAMPLE-MERTON GOLDFIELDS

DATE	HISTORY:
1851:	Gold first found in Hell's Hole and Glen creeks in August 1851.[1] Hell's Hole Creek was the steep upper reaches of Tallangallook Creek - the diggings were for a short time called 'Wilkinson's'.[2]
1861:	Hell's Hole—These diggings are situate about nine miles, in a straight line, north-easterly from Merton (Big Hill), and comprise workings on three different creeks, viz., Hell's Hole, Dry and Branket Creeks, all of which rise on the Blue Range, on the boundary of Kellsall's station. Hell's Hole Creek is now worked for about four miles downwards from its source; but, with the exception of one party, who have just set in, it is at present entirely deserted. The diggings here, as well as on the other two creeks, are confined to the creek and its banks. The bedrock here is slate. This creek joins the Glen Creek at the Junction Station. The next creek in a westerly direction from the last mentioned one is the Dry Creek, which has been worked from its source to its junction with Hell's Hole Creek, a distance of about two and a half miles. The Dry Creek Sluicing Company, which is the only party working here on anything like a large scale, have brought in their water from the Branket Creek, a distance of over three miles, an undertaking which has fully occupied six men for eight months. A solid granite rock has in many instances been cut through, besides which there is a considerable length of fluming. This party may be said, comparatively speaking, to be only making preparations for working on a greatly extended scale. They are at present clearing the creek up before them, putting all the dirt, however, through the sluice boxes. They contemplate cutting a tail race in the rock in the bed of the creek, and fixing a permanent set of large boxes, and working the points and sides of the creek by means of branch boxes, all, however, falling into the main ones. There are three other parties at work here, who are entirely dependent on the sluicing company for water, as the creek is perfectly dry except in wet weather. A quartz reef lying between Hell's Hole and Glen Creeks has been worked to some small extent… No crushing has yet been had from this reef, as the nearest machine is at Muddy Creek (Yea), a distance of more than 40 miles. The digging on the Branket Creek, which lies westerly from the Dry Creek, is at present confined to the tableland; three parties are at work there, and are making fair wages. the workings are in the immediate vicinity of the creek, in made ground, the depth of which is about 15 feet; the whole of the top dirt is removed by ground sluicing, as having plenty of fall the parties have raised the water above them; the wash-dirt only is put through the sluices. A quantity of rubies have been found in the creek… the largest of which is the size of a horse-bean split length-ways, and much the same shape … This creek has been worked about four miles from its source.[3]
1861:	Sluicers deserting Hell's Hole diggings for Jamieson, 1861.[4]
1864:	Dry Creek Sluicing Co., Merton, 1864 - employed 40 men.[5]
1866:	Hell's Hole quartz workings, near Merton, abandoned in 1866.[6]
1867:	About fifty alluvial miners at Hell's Hole and Dry Creek, 1867.[7]
1867:	Abandoned quartz leases successfully reworked at Hayfield (Ancona), 1867 - Northern Reef GMC formed 1868 to work Hayfield or Knobel Reef - battery - All Nations GMC worked adjoining claim from 1869 - worked until c.1873. (Sites now on private land)[8]
1867:	Numerous reefs found at Maindample, 1867 - no alluvial gold - two batteries by 1868 - because of the proliferation of mine names like Prince Alfred, Prince of Wales, Empress, Royal George, Duke of Edinburgh, etc. the settlement, about 1 mile south of present-day Maindample was called Royal Town - booming shanty town in early 1870s, serving population of about 1000 miners - official Maindample township surveyed 1875 - successful mining short-lived.[9]
1868:	New ground opened on Dry Creek, near Merton, 1868 - heads of Merton Creek worked 1869-70.[10]
1868:	100 Europeans and 50 Chinese miners at what was called Strathbogie Diggings, 1868 - soon formed village of Dry Creek - nearly 200 miners, 1869 - 100 Chinese, mostly camped on opposite banks of creek, below township.[11]

1868-70:	Peak period of alluvial gold production at Dry Creek, 1868-70.[12]
1869:	Steady returns from claims at Hell's Hole, 1869.[13]
1868:	Alluvial rush to Woolshed Creek and Prowd's Gully, Puzzle Range, 1869 - gold beginning to cut out at Alexandra, diggers looking elsewhere - alluvial fossicking, followed by small-scale reef mining.[14]
1869:	Rush to Growler's Gully, north end of Puzzle Range, 1869 - associated localities included Deadshot, Ryan's, Garibaldi and California gullies - substantial settlement at Growler's Gully by early 1870s, sometimes called Shetland Town - alluvial leads worked, then reefs - largest and deepest quartz mine was the Last Chance, at head of California and Garibaldi gullies, worked 1870-80s[15]
early 1870's:	Crushing mill moved to Growler's Creek from Spring Creek (Alexandra).[16] Dry Creek alluvial being worked by a great many fossickers, early 1870s - no quartz mining in Dry Creek area - no payable quartz found.[17]
1872:	New ground opened in Garibaldi Gully, 1872 - soon abandoned by European puddlers - Chinese took over claims.[18]
1873-74:	Chinese miners in the majority at Dry Creek, 1873-4 - MR complained that Chinese not revealing gold yields: 'in fact, were they willing to tender any information, it could not be relied upon, because they would only give such as suited their own purpose.'[19] Redgum and messmate were timbers used in Dry Creek mining, 1870s - obtained no more than _ mile from workings.[20]
1874:	North-East Gold and Tin Co. sluiced bed and banks of Kangaroo Creek, 1874-5 - expensive tail-race - failed to find payable tin or gold.[21]
1875-77:	Perseverance Co., Perseverance Reef, Maindample, 1875-7.[22]
1876:	Antimony lode being prospected at Merton, September 1876.[23]
Late 1870's:	Dry Creek GMC sluiced Dry Creek township area to bedrock, late 1870s - employed many Chinese.[24]
1877:	Alluvial gold production at Dry Creek declining by 1877; attention began to shift to highlands - reef prospecting.[25]
1877:	Chinese party got £6,000 of gold in a short time from reef workings on the Tableland, 1877.[26]
1877:	Meade's Unee claim at Table Land (site of later Golden Mountain mine), 1877 - 10-head battery, 30-ft diameter waterwheel, water-races from Kangaroo and Branket creeks, tramway - quarries on hillside, shaft and tunnel - engine added 1879 - 3,300 oz obtained, 1877-85.[27]
1879:	Alpine Co. sluicing at Dry Creek, 1879.[28]
1879:	From 1879, Perseverance Co. mined slopes above Clear Creek, about one mile from Unee mine, Tallangallook.[29]
1880:	Alluvial mining improving, 1880 - rush to lower part of Hell's Hole Creek, near Doon - New Woolshed Co., on Glen Creek, cutting tail-race.[30]
1883:	Hit or Miss Co., on slopes above Black Charley's Creek (about 2 miles north of Tallangallook), 1881-3 - working by tunnel - battery, water-races, tramways.[31]
1883:	All Nations/Ancona Co., Hayfield, 1883 - battery erected, then collapsed - 'usual mismanagement'.[32]
1885:	No-Liability company formed to work Unee mine on an extensive scale, 1885 - minor operations only.[33]
1886:	Party working Try Again Reef, Maindample, 1886.[34]

1888: Hell's Hole Creek renamed Tallangallook creek, 1888.[35]

1888: Viceroy Co., west side of the Paps, near Maindample, erected battery, 1888.[36]

1888: Abandoned reefs between Glen Creek and Tallangallook Creek taken up, 1888 - trial crushing at Footscray.[37]

1888+: Claims taken up in vicinity of original Unee workings, 1888+ - Tallangallook GMC, New Tallangallook GMC - worked by open cuts on hillside.[38] Branket Black Ore mines, 1888-97 - main claims were Branket Black Ore GMC (1889-91) and Branket No. 1 GMC (1890-97) - former had battery on flats about 500 ft from its two shafts, driven by Pelton wheel, race from Branket Creek - proposed to roast ore (kiln?) - quartz laced with dark sulphide minerals.[39]

1889: New Tallangallook GMC, Table Land, 1889 - erected 10-head battery, Pelton wheel, Watson and Denny's pans - plant on Hell's Hole Creek, below open cut.[40]

1889: Successful prospecting, leases taken up on Branket and Raspberry Spurs, 1889 - Pelton-wheel battery at Glen Creek - Star of the Glen mine - worked successfully 1889-94, then less successfully until 1918.[41]

Late 1880's: Dry Creek township and diggings diminished during late 1880s; future Tallangallook township grew.[42]

1889: 'A few persevering Chinamen' still working old Dry Creek, 1889.[43]

1891-94: Bonnie Doon mine, 1891-4 - battery - also Bonnie Doon South GMC - both mines abandoned due to water at 80 ft.[44]

1891: Unee mine sold to a Ballarat & Creswick group, c.1891 - Golden Mountain GMC formed -plan to work on a extensive scale - issued 60,000 shares at 2/- each - first crushing disappointing - only minor operation ensued - operations ceased 1893 - total gold production approx. 300 oz.[45]

1892-96: New Golden Mountain GMC, 1892-6 - installed roller-crushing machinery and cyanide plant - cost £4,000 - unsuccessful - less than 300 oz gold.[46]

1894: Mining population of Dry Creek area in 1894 was 37 Europeans and eight Chinese.[47]

1897: Golden Phoenix GMC took over Golden Mountain claim, 1897 - reverted to conventional crushing plant - dismantled old Unee waterwheel and battery - ceased operations 1903 - total production 1,300 oz gold - signalled end of serious mining activity on the mountain - thereafter small-scale mining and prospecting.[48]

1903: Five Maindample quartz mines working, 1903 - Welcome Co. the largest.[49]

. Branket Co., Hayfield and Merton, tunnelling and prospecting for the black ore lode, 1903.[50]

Early 1900's:	Small-scale operations at Tallangallook in early 20thC included Golden Mountain Co., 1902-7; Lunatic Co., 1903; Tallangallook Extended, 1902-3; Yum Yum Syndicate (battery, Branket Creek), 1909; and Matchless Syndicate, 1908-18.[51]
1903:	Lunatic mine, Tallangallook, 1903 - being worked by open cut - reef poor - similar work at Golden Phoenix.[52]
1907:	Pump hydraulic sluice plant commenced at Branket Creek, 1907 - one of first on Goulburn River catchment, as dredge mining was restricted on that river and its tributaries because of local opposition to its deleterious effects on water and agriculture - Sludge Board inquiry held in 1906-7 to consider whether dredge mining should be allowed to proceed in region - found that hydraulic sluicing, without elevation, had been carried out for years in Tallangallook and Dry Creeks, without major ill-effects to waterways - Sludge Board could see no reason why applications for dredging leases on Goulburn tributaries should not be 'dealt with on their merits' - ie., approved.[53]
1909-18:	Collegian Bucket Dredge, Dry Creek, 1909-18 - successful results - lease of 202 acres, average depth of ground 15 ft. [54]
1912-18:	Main Reef GMC working Welcome claim, Maindample, 1912-18 - winding plant, 11-head battery, cyanide plant - plant removed 1918 (nothing visible today).[55]
1914-22:	Prospecting at Tallangallook by Golden Mountain Development Syndicate, 1914-22 - unsuccessful.[56]
1917:	Two sluicing claims at Dry Creek, Bonnie Doon, 1917.[57]
1925-27:	Prospecting at Tallangallook by English Syndicate, 1925-7 - unsuccessful.[58]
1930's:	Alluvial mining on lower reaches of Glen Creek, 1930s - tent settlement.[59]
mid 1930's:	Rush to Ancona, c. mid-1930s - alluvial lead on private land.[60]
1937:	Two sluicing parties at Dry Creek, Bonnie Doon, 1937.[61]
1937-38:	Golden Mountain, Tallangallook - tunnelling - complex ores carry scorodite and arsenopyrite - crushing suspended pending investigation of new treatment methods.[62] Maindample Syndicate working Two Jims lease, 1937-8.[63]
1940's+:	Crystal King quartz mine, Tallangallook, 1940s+ - mine commenced in response to demand for piezo-electric quartz for frequency controls in radio transmitters - also used in power stations, electric clocks, microphones, gramophones, etc. - worked by shafts and shallow pits.[64]
1950's:	Golden Mountain claim, 1950s? - diamond drilling carried out - results not encouraging - sporadic interest since.[65]

SOURCES:

Butler, G., 'North-East Review: Historic Sites Survey' (draft), for Land Conservation Council of Victoria, 1982.

Crohn, P.W., 'Piezo-Electric Quartz at the Crystal King Mine, Tallangallook', in *Mining and Geological Journal*, Volume 4, No. 6?, 1952, pp. 31-3 (includes plans of workings).

Land Conservation Council of Victoria, *Final Recommendations: North-East Region*, 198?.

Mining and Geological Journal, 1937+.

Mining Surveyors' Reports, 1859-91 - West Buckland, Jamieson, Jamieson North, Dry Creek, and Alexandra subdivisions.

Wylie, A. (a), *Gold in the Shire of Mansfield: An Outline of the Smaller Discoveries*, Mansfield Historical Society, 1987.

Wylie, A. (b), *Gold in the Shire of Mansfield* Supplement, Mansfield Historical Society, 1988.

MAPS:

'Goldfields Map 40', 1858, Benalla Survey Office.

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1 Flett, pp. 120-21
2 Wylie (a), p. 5
3 Mining Surveyors' Reports (Kilmore Division), January 1861
4 Mining Surveyors' Reports (West Buckland Subdivision), August & October 1861
5 Mining Surveyors' Reports (Jamieson Subdivision), December 1864
6 Mining Surveyors' Reports (Jamieson Subdivision), December 1866
7 Mining Surveyors' Reports (Jamieson Subdivision), March & September 1867
8 Wylie (a), p. 19
9 Mining Surveyors' Reports (Jamieson Subdivision), September 1867; (Jamieson North Subdivision) March 1868; Wylie (a), p. 27
10 Mining Surveyors' Reports (Jamieson North Subdivision), March 1868; Flett
11 Wylie (a), p. 5
12 Wylie (a), p. 7
13 Mining Surveyors' Reports (Jamieson North Subdivision), September 1869
14 Wylie (a), pp. 41-2
15 Wylie (a), pp. 38-9
16 Mining Surveyors' Reports (Alexandra Subdivision), September 1870
17 Mining Surveyors' Reports (Dry Creek Subdivision), June 1874
18 Mining Surveyors' Reports (Alexandra Subdivision), March & September 1872
19 Mining Surveyors' Reports (Dry Creek Subdivision), December 1873 & September 1874
20 Mining Surveyors' Reports (Dry Creek Subdivision), September 1874
21 Mining Surveyors' Reports (Dry Creek Subdivision), December 1874, September & December 1875
22 Mining Surveyors' Reports (Alexandra Subdivision)
23 Mining Surveyors' Reports (Alexandra Subdivision), September 1876
24 Wylie (a), p. 8
25 Wylie (a), p. 8
26 Wylie (a), pp. 8-9 (quoting *Mansfield Guardian*, June 1877)
27 Mining Surveyors' Reports (Dry Creek Subdivision), December 1877; Wylie (a), pp. 9-10
28 Mining Surveyors' Reports (Dry Creek Subdivision), December 1879
29 Wylie (a), p. 18
30 Mining Surveyors' Reports (Dry Creek Subdivision), June & December 1880
31 Mining Surveyors' Reports (Dry Creek Subdivision), September 1881 to September 1883
32 Mining Surveyors' Reports (Alexandra Subdivision), March & June 1883; Wylie (a), p. 21
33 Mining Surveyors' Reports (Dry Creek Subdivision), September 1885 to 1887; Wylie (a), p. 11
34 Mining Surveyors' Reports (Alexandra Subdivision), June 1886
35 Mining Surveyors' Reports (Dry Creek Subdivision), September 1888
36 Mining Surveyors' Reports (Alexandra Subdivision) June 1888
37 Mining Surveyors' Reports (Dry Creek Subdivision), September 1888
38 Wylie (a), p. 13
39 Wylie (a), pp. 16-17
40 Mining Surveyors' Reports (Dry Creek Subdivision), June 1889
41 Mining Surveyors' Reports (Dry Creek Subdivision), December 1889; Wylie (a), p. 17

42 Wylie (a), p. 11
43 Mining Surveyors' Reports (Dry Creek Subdivision), December 1889
44 Wylie (a), p. 18-19
45 Wylie (a), pp. 11, 15
46 Wylie (a), p. 15
47 Wylie (a), p. 22
48 Wylie (a), p. 15
49 Department of Mines Annual Report, 1903
50 Department of Mines Annual Report, 1903
51 Wylie (a), p. 15; Department of Mines Annual Reports,1903, 1909
52 Department of Mines Annual Report, 1903
53 Department of Mines Annual Report, 1907, pp. 74-6
54 Department of Mines Annual Reports, 1909-10; Wylie (a), p. 23
55 Department of Mines Annual Reports, 1912, 1913 & 1916
56 Wylie (a), p. 16
57 Department of Mines Annual Reports, 1917
58 Wylie (a), p. 16
59 Wylie (a), p. 24
60 Wylie (a), p. 25
61 *Mining and Geological Journal*, January 1938
62 *Mining and Geological Journal*, January & July 1938
63 *Mining and Geological Journal*, July 1938-January 1939
64 Crohn, p. 31
65 Wylie (a), p. 16

EDI-CHESHUNT TURQUOISE FIELD

DATE	**HISTORY:**
1887-93:	The turquoise discovered in the district in 1887 was believed to be the first found in Australia. Eighteen months later, the deposit had been traced for 22 km from the discovery site 'on the east boundary of Norton's selection' - 16 km up the King River above Edi, and about 3 km east of the river.[1] Samples of the stone sent to England and Germany for valuing in 1889 drew a favourable report, and thereafter the Edi turquoise was largely exported to those countries for use in ornamental inlays (for example, in the panels of top-of-the-range pianos) and cameo cutting. (It was claimed that Victorian jewellers spurned the local stone.) The turquoise of the district was described as 'of an exquisite blue, which maintains its perfect colour, and is said to equal the best Persian stone'.[2]
1893:	Eight localities were being worked for turquoise between Edi and Cheshunt, by open-face cuttings (often with a shaft at one end) or tunnelling into the hillside.
Early 1900's:	Turquoise mining was also underway near Greta South, to the west of Edi. By 1912, P.C. Gascoigne (the Edi field's main prospector and promoter) had mined about 3000 carats (0.6 kg) of saleable stone. It appears that turquoise mining ceased in the district in about 1921, after Gascoigne failed to get government backing to develop his mine.
1960's:	An exploratory survey in the 1960s concluded that the turquoise deposits were not commercially viable.[3] Since the 1960s, the district has been subject to fossicking by lapidary enthusiasts. Access to the turquoise deposits has been curtailed since a renegade rockhound blasted open a hill face with explosives in the early 1970s.[4]

SOURCES:

Birch, W.D. & Henry, D.A. (eds), *Phosphate Minerals of Victoria*, Special Publication No. 3, Mineralogical Society of Victoria, Melbourne, 1993.

Dunn, E.J., 'The Edi Turquoise Field, King River', *Records of the Geological Survey of Victoria*, vol. 2, part 4, 1908 (report dated 1893), pp. 170-5.

Herman, H., 'Victorian Minerals', in Department of Mines Annual Report, 1912, p. 117.

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1 Report by E.G. Dunn in Mining Surveyors' Reports, December 1888

2 Mining Surveyors' Reports, December 1889, June 1891; Herman

3 Birch & Henry, pp. 86, 90

4 Val & Tony Annear, pers. comm., August 1994

ELDORADO GOLDFIELD

DATE	HISTORY:
1854:	Eldorado opened up 1855 (gold discovered 1854).[1]
1855:	Large sluicing claims in operation from 1855 - 'Races of a mile or a mile and a half are being constructed here'.[2]
1859+:	Deep leads worked from 1859. During the 19thC, only three claims were successfully worked on the Eldorado leads: Kneebone Co., 1859-72; Wellington Co., 1866-78; and McEvoy, 1859-79 and 1890-1901.[3]
1860's:	Eldorado was considered 'the great mining centre' of the Beechworth region during the 1860s - production diminished by 1870.[4]
1869:	Tin-mining lease taken up at Clear Creek, near Eldorado, 1869 - creek beds, banks and flats to be sluiced using Chinese labour - about half the price of European labour.[5]
To 1880:	Eldorado mines idle by 1880 - only remaining plant on McEvoy claim - if that removed, Eldorado 'defunct' as a mining township.[6]
1880:	Tin prices high in 1880 - £85 per ton - some said it would pay to work Eldorado for tin alone.[7]
1890:	Eldorado again a busy locality, 1890 - whole of old ground (including McEvoy shaft) as well as new ground taken up.[8]
1895:	McEvoy mine disaster, 1895 - six miners killed when the mine was swamped by an inrush of water and sand.[9]
1901:	McEvoy mine ceased work, 1901 - estimated total production, 630 kg - much of the company's ground later sluiced by Cock's Pioneer Co.[10]
early 1900's:	Cock's Pioneer Electric Sluicing Co. reworked alluvium by barge-mounted gravel pump, 1899-1913 - from 1903, driven by electricity generated at a steam power plant.[11]
1914-1941:	Cock's Pioneer Gold and Tin Mines NL, 1914-29 and 1934-41 - large-scale hydraulic sluicing - electrically driven from power generated at steam power plant - second highest dividend-paying mine in Victoria, 1935 - total gold production 3,650 kg.[12]
1936-54:	Cock's Eldorado Gold Dredging NL, 1936-54 - at the time of its construction, the dredge was the largest in the Commonwealth - total gold production, 2,198 kg - dredged area of about 10 acres, to an average depth of 75 feet.[13]

GAFFNEY'S CREEK GOLDFIELD - HISTORY NOTES

DATE	HISTORY
	Upper Goulburn River was originally one of the most impenetrable places in Victoria - mountain ranges and deep ravines covered with thick scrub and forest.[1]
1859:	Gaffney's Creek gold discovery was the real beginning of the opening up of the Upper Goulburn - in 1859, Dempsey and party of four arrived at Gaffney's Creek over the range from Big River - worked alluvial, then discovered a rich reef - more parties followed.[2] Reports have reached me of some few parties doing well in alluvial mining at the Upper Goulburn and the Big River; but from what I can learn great difficulties have to be encountered, both from the sudden flooding of the river claims, as well as from the difficulty of obtaining stores, provision, &c., these having to be packed on horses for about 15 miles before reaching the diggings.[3]
1860:	An estimated 200 prospectors, 480 [?] erecting machinery, quartz-crushing, &c., and 120 engaged in mining operations on the Upper Goulburn in January 1860.[4] Rush to Gaffney's Creek—'About 400 men have passed through Yea, *en route* for the new diggings, by far the greatest proportion of whom have returned, some with the intention of revisiting the field with pack horses, stores, &c., &c. A large number, however, never reached the diggings, having discovered that all provisions had to be packed a distance of twenty-five miles (25). The diggings in this locality is entirely confined to the creeks, the country being so precipitous that scarcely any flat ground exists, and what little there is will not pay for working, the whole of the gold being found in the beds of the water courses, and wherever a bar of slate strikes across the creek. Considerable trouble and expense has to be undergone in turning the creeks, cutting races, making sluice boxes, &c., and this fact alone has driven many away, from the want of means to bear the necessary expense. From reliable authority I learn that about one pound (£1) per man per day may be considered as near the best average results obtained, and this clear of all expenses and delay. The best route from Kilmore is to Yea, 37 miles; thence across the Muddy Creek to Close's Station, 10 miles; from there to Glass's, 3 miles; from Glass's to Conolly's, 9 miles. The Acheron River has to be forded at Conolly's as also the Rubicon Creek, between Conolly's and Aitken's Stations, a distance of 9 miles, and from thence to Gaffney's Station and Store, 15 miles; thence follow up the Big River to the junction of Gaffney's Creek, on which creek the present rush has taken place.'[5] Rush to Gaffney's Creek in winter 1860 caused much hardship among diggers - supplies ran out, harsh winter conditions - conditions improved in the summer and gold was found in abundance.[6] Without a mining warden on the spot to enforce mining by-laws, early diggers pegged out claims as they liked - Sandhurst by-laws were hardly appropriate for the mountain terrain - officials found it hard to settle disputes - difficult to make maps of the area.[7] A digger at the Gaffney's Creek rush in 1860 wrote: 'It's a hard place to do anything when a man has no money, for it is next to impossible to get a job; and grub has to be packed 27 miles. It is a bad old place.'[8] American miners were a feature of early Gaffney's Creek - Americans avoided the 'mountain scurvy' suffered by many diggers by eating beans and dried apples.[9]

1 Flett, p. 95
2 Flett, p. 98
3 Mining Surveyors' Reports (Kilmore Division), August 1859
4 Mining Surveyors' Reports (Kilmore Division), January 1860
5 Mining Surveyors' Reports (Kilmore Division), July 1860
6 Flett, p. 100
7 Lloyd & Combes
8 *Ovens Murray Advertiser*, 6/12/1860
9 Lloyd & Combes

early 1861: Jamieson was becoming established as administrative and supply base for diggings to the south.[10] Five quartz reefs had been discovered on the Upper Goulburn by June 1861, but the alluvial gullies were so rich that little attention was paid to the reefs.[11] Early reefs (1860-61) worked at Gaffney's Creek were Dempsey's, Castle (later worked by A1 Co.), Victoria Reef on Raspberry Creek, Cornhill, Wallaby, Butlers, Cannons, and Yorkshire reefs.[12] Quartz from Dempsey's Reef was initially treated by roasting and dollying - 8-head battery and 18-ft diameter waterwheel installed in 1861 - 500-yard water-race from Ryan's Creek - first crushing gave 1,500 oz from 100 tons - shaft right beside creek, became difficult to work.[13]

1861: O'Connor claim, Homeward Bound Reef (later named), 1861 - 8-head battery, 20-ft diameter waterwheel, 50 ft above creek - cut large cavern into hill, 350 ft above creek - at end of 1864, open cut had a vertical face of 60 ft - claim sold to Victoria GMC, 1864 - old machine replaced - claim worked out by 1867.[14] Shakespeare brothers' claim, Homeward Bound Reef, 1861 - 4-head battery, 20-ft diameter waterwheel.[15] Cannon's Reef discovered 1000 yards up Cannon's Creek, on steep hillside on south side of creek, 1861 - 8-head battery with 24-ft waterwheel erected - timber chute from mine - claim abandoned 1863.[16] Lehman's party's water-race, 1861 - from Raspberry Creek down Gaffney's Creek, with 8-10 sluice heads - cost more than £1,000 for three miles.[17]

1862-64: Most Gaffney's Creek reefs were discovered in the period 1862-4, but were not profitably worked until the 1870s.[18] Castle Reef discovered in a gully off Raspberry Creek, 1862 - many claims taken up - No. 1 South partners formed A1 Gold Mining Co. in 1864 - adjoining No. 2 South originally known as 'Cornish Tom's', but Golden Gate GMC registered in 1865 - No. 4 South known as the Root-Hog-or-Die.[19]

1863: Rose of Denmark Co., 1863 - first mine on Upper Goulburn registered as a company - formed to work reef on north side of Cannon's Creek - erected extensive plant before proving ore body - 12-head (3 x 4-head) battery, 26-ft waterwheel, 8-ft spur wheel - at junction of Cannon's and Gaffney's creeks - waterwheel pit cut out of solid rock, 28 ft high x 20 ft deep - rock foundations for battery - 3-ft gauge tramway 1012 yards long - water-race started below junction of Raspberry and Gaffney's Creeks, 790 yards long - battery shed, mine office, carpenter's shop and smithy - one news correspondent called the mine a 'bubble from Paradise' - lack of capital to develop ore body - tributers struck payable stone, 1867 - company restructured 1869.[20]

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10 Lloyd & Combes
11 Flett, p. 107
12 Flett, p. 109
13 Lloyd & Combes
14 Lloyd & Combes
15 Lloyd & Combes
16 Lloyd & Combes
17 Lloyd & Combes
18 Lloyd & Combes
19 Lloyd & Combes
20 *Dicker's Mining Record*, May 1864, pp. 82-3; Lloyd & Combes

1864: Wallaby Reef discovered 1864, high up on western range above Gaffney Creek - prospecting claim had 4-head battery and small waterwheel - adjoining claims taken up - Wallaby United GMC installed 12-head battery driven by 16-hp horizontal steam engine, 1865 - poor crushings - idle after 1866.[21] Drummond's Point QMC formed to work Dempsey's Reef, 1864 - mine workings in bed of Gaffney's Creek - used original crushing machine and another 15_ ft waterwheel - powerful steam pump installed in 1866 - no gold found.[22]

1864-66: Drysdale Co./Lauraville battery, Homeward Bound Reef, Raspberry Creek, 1864-6 - 12-head (Lloyd says 8-head) battery, 35-ft diameter waterwheel, 340-yard tramway - said to be most modern battery in the ranges - low yields - a failure.[23]

1864: Hunt's Co. commenced serious mining in 1864 - 5-head battery, 18-ft waterwheel on opposite side of Gaffney's Creek, fluming water to the wheel from the tailrace of the Victoria - Hunt's GMC formed 1865 - added 5 heads to battery - good results - large production maintained until end of 1860s - portable steam engine added to battery.[24]

1864-65: Great Eastern Co., Outward Bound Reef, initially (1864) worked by puddling machine (only one in subdivision) and quicksilver cradle, with stone and tailings saved for future crushing - erected 8-head steam battery of 10 hp, 1865 - vertical compact steam engine: 'the first engine introduced upon Gaffney's or Raspberry Creeks, and the first which has been attempted to bring complete into the district in one piece, and on its own wheels' - little gold produced.[25]

1865: Raspberry Co. and Wellington Co., Outward Bound Reef, 1865 - erected jointly owned battery - 8-heads, 32-ft waterwheel, 800-yard race from Raspberry Creek - tramway from Wellington mine, chute from Raspberry tunnel - good crushing, 1865 - lease voided 1867.[26]

early 1860's: In original sluicing operations (early 1860s), a large portion, if not all, of the fine gold was lost - still remains in creek tailings - capital and machinery needed to recover it.[27] Once the terrace claims were exhausted, alluvial mining was confined to the bed and banks of the narrowly confined streams - in December 1864 there were estimated 600 sluice boxes on Gaffney's Creek and Big River diggings.[28] Gaffney's Creek township surveyed in 1864-5 - named Lauraville after the surveyor's wife - the township occupied all ground along the creek that could be built upon - Raspberry Point developed as the town centre - the post office dropped the name Lauraville in the 1890s - school reverted to Gaffney's Creek in 1900.[29]

1864-66: The 1864-6 quartz mining boom at Gaffney's Creek reached exaggerated heights, followed by corresponding swing in the other direction - expensive plant was erected before claims were proved payable - at end of boom, surplus machinery remained on field - some almost impossible to move because of its location - 16 crushing plants installed at Gaffney's Creek in 1864; only 8 ever did useful work after the boom.[30]

1865: Golden Belt QMC, Raspberry Creek, working from tunnel, 1865 - stone conveyed by double line of tramway, worked with wire rope, to the 8-head water-powered stamp mill on Raspberry Creek - stone not payable.[31] Shakespeare Co. mill

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21 Lloyd & Combes
22 Lloyd & Combes
23 Mining Surveyors' Reports, March-September 1864; Lloyd & Combes
24 Lloyd & Combes; Mining Surveyors' Reports, June 1865
25 Mining Surveyors' Reports, December 1864, March, June & September 1865; Lloyd & Combes
26 Lloyd & Combes
27 Mining Surveyors' Reports, December 1864
28 Lloyd & Combes
29 Lloyd & Combes
30 Lloyd & Combes
31 Mining Surveyors' Reports, June 1865

increased from four square stamps with an extra four revolving stamps, 1865.[32] Raspberry United GMC lavishly equipped before proven, 1865 - 12-head battery, 35-ft waterwheel - very little gold found.[33] A1 Co. and Golden Gate Co. jointly erected 16-head, 12-hp steam battery with auxiliary waterwheel, 1865.[34]

1865-67: Ten waterwheel crushing mills on Gaffney's Creek goldfield, 1865-7 - steam batteries increased from one in 1865 to five in 1867.[35] Mining localities, 1865, included: Raspberry Creek and branches, Goulburn River, Gaffney's Creek, Wallaby Creek, Cannon's Creek, Victoria Gully, Moonlight Creek, Bald Hills, Cornhill Reefs, Ryan's Creek, Lyrebird Creek, and Granite Mountain.[36] Mining population decreased in 1866 due to fall-off in mining speculation and NZ gold.[37] Root-Hog-or-Die battery, Castle Reef, 1866 - 8-head, vertical steam engine of about 8 hp - little stone found to crush - lease voided 1870.[38] Eldorado QMC battery, Lyrebird Reef, 1866 - 10-head, horizontal engine of 14 hp, large boiler (16 ft x 5 ft 6 in), double tramway - good crushings during 1865-6 - rich deposit worked out by mid-1867 - no more gold - tributers tried, but gave up in 1869.[39] Upper portions of Raspberry and Gaffney's Creeks 'may be now considered as thoroughly worked out', 1866 - not so Gaffney's Creek from Raspberry to Goulburn River: at first neglected because of its depth, but now occupied for nearly the whole of its course.[40] Until 1866, Goulburn River below Gaffney's Creek was only partially worked by means of 'wing dams' from its banks ('Chinamen being the principal adventurers hitherto') - now a party is diverting the stream from its course for about one mile in distance - the current will be carried across the isthmus of a 'highly favourable' bend of the river, by means of an open channel, terminated by a short tunnel - 'The success of one attempt would lead to the working of the bed of the river for many miles of its tortuous course.'[41]

1867: Try Again Co., Cannon's Creek, 1867 - 4-head battery - poor results.[42] Alluvial miners making 'fair wages', 1867 - as much as 50 oz from one paddock (considered to be worked out) on Gaffney's Creek.[43] Goulburn Valley Sluicing Co., Goulburn River near Flourbag Creed, 1866-7 - 14 men sawing timber for boxes - building a dam for raising water into head ditch for sluicing purposes - dam carried away by floods three months later - £800 damage.[44]

1867-71: Largest proportion of Chinese miners at Gaffney's Creek, 1867-71.[45]

1868: Golden Gate Co., Castle Reef, folded in 1868 - ground taken over by A1 Co.[46]

1869: Bristol Reef opened up, 1869 - 8-head battery and waterwheel erected - very little gold - abandoned early 1870s.[47] Only mines estimated to have made profits during the 1860s were: Rose of Denmark, Shakespeare's, Hunt's, the Victoria, Eldorado, Castle Reef Co., A1 Co., and Golden Gate - remaining 40-odd companies made losses - the 8 successful companies produced about 90% of the gold for the 1860s - by end of 1860s all reefs were discovered and successful mines were equipped and ready for further gold production - best survivors at the end of the 1860s were the A1

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32 Mining Surveyors' Reports, June 1865
33 Lloyd & Combes; Mining Surveyors' Reports, September 1865
34 Mining Surveyors' Reports, September 1865; Lloyd & Combes
35 Mining Surveyors' Reports, September 1865, March 1867
36 Mining Surveyors' Reports, September 1865
37 Mining Surveyors' Reports, June 1866
38 Mining Surveyors' Reports, June 1866
39 Mining Surveyors' Reports, June 1866; Lloyd & Combes
40 Mining Surveyors' Reports, September 1866
41 Mining Surveyors' Reports, September 1866
42 Lloyd & Combes
43 Mining Surveyors' Reports, March 1867
44 Mining Surveyors' Reports, June & September 1867; Lloyd & Combes
45 Milner, p. iv
46 Lloyd & Combes
47 Lloyd & Combes

Co., Rose of Denmark, and Hunt's.[48] A1 GMC produced nearly 16,000 oz, 1864-70.[49]

1870: Rose of Denmark erected 20-head steam and water-powered battery, 1870 - £2,000 - ex-Woods Point - doubled existing crushing capacity new plant installed on Gaffney's Creek some way downstream from original - added Munday's patent buddle, Chilean mill and roasting furnaces to plant, c.1874 - struggled, then closed down 1879.[50]

1870: Victoria Co. crushed 5,500 tons for average 1.6 dwt/ton in 1870 - wore out old mill - installed new 15-head battery - poor results, but struggled on until 1880 - then mine was finished.[51]

1871: Gaffney's Creek goldfield depressed, 1871 - in alluvial, the field was restricted by its geography and considered largely worked-out - capitalists were unwilling to risk further capital on development of mines, yet also unwilling to let go their claims (shepherding) - working miners dissatisfied.[52]

1871: Rose of Denmark lock-out, 1871 - reduction of miners' wages attempted - cheap Chinese labour introduced, 'consequent on unskilful management of European labour, with its unavoidable expense' - mine resumed work early in 1872: 'the importation of miners from other districts did not result in all the advantages expected'.[53]

1873: Great Eastern mine worked by Chinese tributers, 1873.[54] Rose of Denmark Co., 1873 - have already built a pyrites furnace with a much greater roasting surface than any in the district, and are now excavating the foundations for a Munday's patent buddle and Chilean mill - first lot of pyrites 'triturated' in September 1873.[55]

1874: Mining depressed, 1874 - mining registrar wrote of the subdivision: 'Its best hope lies in the character of its miners, who here, more than in other parts of the district, show a readiness to stand by their mines through good or ill fortune, and are ever prepared to take them on tribute, which, in the face of the small averages obtained, deserves commendation'.[56]

1874: Danaborg GMC formed in 1874 to work Try Again and Aladdin ground on Cannon's Creek - 12-head battery and waterwheel erected on site of original Rose of Denmark machine - poor results - lease taken over by Rose of Denmark, 1884.[57]

late 1870's: A1 Co. tribute party got poor results until 1876, then good run of gold for the rest of the 1870s.[58]

1877: Discovery of a 'long looked for' reef on Ryan's Creek, 1877 - named Crinoline Reef - specimens obtained from there 12 years before.[59]

1879: Small rush (about 20 diggers) to Lyrebird Creek, 1879 - well-tried many years ago - no great results.[60]

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48 Lloyd & Combes
49 Lloyd & Combes
50 Mining Surveyors' Reports, March 1870
51 Lloyd & Combes
52 Mining Surveyors' Reports, June 1871
53 Mining Surveyors' Reports, June 1871, March 1872
54 Mining Surveyors' Reports, March 1873
55 Mining Surveyors' Reports, June & September 1873
56 Mining Surveyors' Reports, June 1874
57 Lloyd & Combes
58 Lloyd & Combes
59 Mining Surveyors' Reports, June 1874
60 Mining Surveyors' Reports, March & June 1879

1879: Drummond's Point Co., Dempsey's Reef - water a constant problem - poor results throughout 1870s - new battery and waterwheel installed, 1879.[61]

1880: Wallaby mine had only steam battery on the goldfield, 1880 - fills the gap which absence of water for the summer season leaves in returns from mines with waterwheel batteries.[62]

1880's: Fifty per cent more gold was won at Gaffney's Creek during the 1880s than in the previous decade, and from only one-third as much quartz crushed - A1 Co. produced 80% of the gold from only 25% of the stone crushed, averaging 2.5 oz/ton - most low-yielding mines ceased operations after mid-1880s.[63] Alluvial gold poor throughout 1880s - only about twenty men made a bare living from it.[64] Discovery of Transit of Venus Reef, 1881, illustrates difficulty of access - 'The proprietors had some 20 or 25 tons of stone to grass, but, owing to the distance and ruggedness of the country, the packer stayed [ie. stopped] packing as soon as the weather broke badly, and consequently only 7 tons reached the mill' - tunnel about 1,800 ft above Moonlight Creek - Transit of Venus QMC erected 5-head battery and waterwheel, incline tramway - insufficient capital - Co. wound up in 1883.[65] Alluvial mining comparatively neglected, as waged employment is offered by tributers and others - alluvial miners earning 15-20 shillings per week, 1882 - down from 25-30 shillings per week in 1877.[66]

1883: A1 tributers struggled until 1883, then found good gold - 'jeweller's shop' - tribute due to expire in August 1884, so tributers worked flat-out to get out all the gold they could - took out about £2,000 each - when tribute expired, the company erected 4-head battery and moved old A1 Co. steam engine (installed 22 years earlier) down to the Castle plant - new iron waterwheel installed, 1887 - company re-registered in 1889 as A1 GMC NL.[67]

1885: Hunts Extended GMC formed c.1885 - shaft sunk 1000 ft downstream from old Hunts workings - 2 waterwheels (1 of 25 ft, 1 of 30 ft), at right-angles to each other - 12-head battery housed in separate building 120 ft away, with the shaft between (plant sold and removed 1906) - water-races from Gaffney's and Ryan's creeks - mine failed to find payable gold.[68]

1887: Ryan's Creek attracted the attention of alluvial miners in 1887 - good deal of work done in Piccaninny Creek, an upper tributary of Ryan's.[69]

1888: South A1 GMC formed to work old Root-Hog-or-Die ground - obtained new machinery from Melbourne, 1888 - 'There is, of course, plenty of suitable machinery in the district, but the old wheels-within-wheels business, so ruinous to mining, continues to obtain, especially where Melbourne companies are concerned' - 8-head battery, 2-cylinder 12-hp engine, which also ran pump and winder, replacing horse whim.[70] Alluvial mining virtually non-existent, 1888 - mining population fully employed on quartz veins - few remain to work the creeks, now very poor.[71] Victoria ground taken up in 1888 - New Victoria and Golden Belt Co. formed - Victoria battery shifted down hill - no gold found.[72]

1890's: Gold production at Gaffney's Creek during 1890s was only 60% of that of 1880s - A1 Co. production down to 30% of total - despite that, more mining activity - about

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61 Lloyd & Combes
62 Mining Surveyors' Reports, March 1880
63 Lloyd & Combes
64 Lloyd & Combes
65 Mining Surveyors' Reports, June 1881
66 Mining Surveyors' Reports, March, June & September 1877, September & December 1882
67 Lloyd & Combes
68 Lloyd & Combes
69 Lloyd & Combes
70 Mining Surveyors' Reports, March 1888; Lloyd & Combes
71 Mining Surveyors' Reports, December 1888
72 Lloyd & Combes

100 quartz miners and 20 alluvial miners found work during decade.[73] South A1 tributers got 1383 oz from 1677 tons between 1890-93.[74]

1891: A1 mine the major producer, 1891 - in September quarter, the A1 contributed 500 oz to the subdivision's total of 760 oz - mine let on tribute, 1893-8 - mixed success - company took over and struck good stone in 1899.[75] Alluvial mining confined to Goulburn River, 1891.[76]

1893-97: Tributers working Rose of Denmark mine, 1893-7, got 3,620 oz from 2,026 tons - new tribute Co. developing mine, 1899.[77]

1894: Wallaby GM Syndicate, 1894 - 300-ft tunnel, 300-ft iron flume taking the creek over old workings - battery house and mine buildings burnt down by bushfire, 1898 - lease declared void 1899.[78] Lauraville GMC formed, 1894 - old Drysdale battery moved 600 yards up Raspberry Creek, to east bank, near new tunnel.[79]

1895: Great Eldorado GMC on Eldorado Reef, 1895 - salvaged old Eldorado battery and brought it uphill near new tunnel workings - large settling tanks built below battery and water pumped back through - mine let on tribute, 1897.[80]

1897: New Dempsey's Co., 1897 - installed 8-head battery, driven by 30-ft iron waterwheel - 400 ft tunnel.[81] A1 Extended GM Syndicate, 1897 - Melbourne syndicate - spent £1,000 erecting 12-head battery without an engine - 230-ft tunnel, but no gold.[82]

1899: Hunt's Extended mine (amalgamation of Hunt's and Gaffney's claims), 1899 - 12-head battery and waterwheel, 6-inch pump and waterwheel, and double cylinder winding engine.[83] A1 mine, 1899 - 12-head battery, powered by combination of water and steam - Munday's buddle saves pyrites - portion of workings form huge excavation known as the 'concert hall': more than 40 ft high in places and nearly 200 ft wide and long.[84]

1901: Victorian A1 GM Ltd formed in London, 1901 - office erected, still used in 1980 - Wilfley tables replaced old buddle - 96-hp Babcock and Wilcox horizontal fire-tube boiler - old tramway up Dry Gully relaid in part - rock cracker installed above battery bins to reduce size of stone fed to stampers - electric plant installed, 1902 - first in district - 10-head battery added, 1903 - almost doubled crushing capacity - yield down in 1904 - mine closed, out of the blue - merger with South A1, 1908 - Victorian Mining Co. Ltd - work suspended 1909.[85]

1902-05: Eldorado mine worked by tributers, 1902-5 - plant comprised: 9 x 4 ft vertical boiler with two cylinders (at shaft), 10-head battery housed in 26 x 30 ft building, 16 x 5_ ft Cornish boiler, single-cylinder steam engine.[86]

1903: Lady Clare mine opened 1903 - 1.5 miles north of Gaffney's Creek post office, 7 chains south-east of road - small battery erected 1904 - ceased work 1906.[87] Dempseys mine - new plant, 1903: 12-ton boiler, 10-head battery added to existing

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73 Lloyd & Combes
74 Lloyd & Combes
75 Mining Surveyors' Reports, September 1891
76 Mining Surveyors' Reports, September 1891
77 *Australian Mining Standard*, p. 102
78 Lloyd & Combes
79 Lloyd & Combes
80 Lloyd & Combes
81 *Australian Mining Standard*, p. 102; Lloyd & Combes
82 Lloyd & Combes
83 *Australian Mining Standard*, p. 102
84 *Australian Mining Standard*, p. 102
85 Lloyd & Combes
86 Lloyd & Combes
87 Lloyd & Combes

8-head - 1904, erected 45-ft poppet head over old surface shaft - beam of Cornish lift pump rose and fell across path of ore trucks pushed from brace to battery bins - at least one ore truck flattened.[88]

1904: Wallaby mine, 1904 - shaft sinking with poppet head and horse whip.[89]

1905: Lauraville battery very dilapidated, 1904 - plant sold 1905.[90]

1904-07: South Dempseys Co. working Golden Belt tunnel, 1904 - put in 10-head, Pelton wheel-driven battery - folded 1907.[91] South A1 GM Syndicate, 1904 - 45-ft poppet head put over shaft - big Kelly & Lewis first-motion winder (first of its kind in Upper Goulburn district) - 12-head steam- and Pelton wheel-driven battery erected at old A1 Co. battery site - 2-ft gauge tramline, 3,000 ft long from bins at poppet head to top of 400-ft inclined tramway down to battery - 330 ft water race - cost £9,000 - crushings diminished - South A1 merged with A1 in 1908.[92] Mackays QMC worked reef four miles south of A1 Co., 1905 - installed substantial Thompson's Homestake pattern 5-head battery, driven by portable steam engine - mine abandoned after 1909.[93]

1907: New Home Rule battery installed 1907 - 12-head, 30-ft waterwheel - battery ex-Hunts Extended - west side of Gaffney's Creek, about 3 miles from Knockwood and about same distance from Gaffney's Creek township - main tunnel about 25 chains north-west of battery, and 700 ft above it - inclined tramway from tunnel mouth.[94] Rose of Denmark GMC formed 1907 - new plant installed: steam winder, vertical boiler, new battery and Wilfley table - waterwheel rebuilt - crushing commenced 1909 - excellent results - £3,575 in dividends.[95]

1909: Only three mines of importance, 1909: New Dempsey's, Rose of Denmark, and Wallaby - Rose of Denmark has new battery - Wallaby mine excavating for battery.[96]

1918: Gaffney's Creek mines, 1918: A1, Rose of Denmark, New Eldorado, and Hunts (plant removed, work ceased).[97]

1920: New Dempseys mine closed 1920 - little gold production until 1900-09 - only dividends paid in 1901-5 - very wet mine.[98] A writer in 1920 claimed that prospecting in the Gaffney's Creek area had been very thorough - all important reefs had been discovered prior to 1870 and had since yielded little gold.[99]

1923: Wallaby mine taken up in 1923 by Wallaby Gold Mine NL - old 10-head battery, 2 boilers and steam engine moved down 250 ft to new site, 1925 - 8-head battery from Dempseys added, 1926 - poor results - mine closed for good - total yield of Wallaby mine since 1860s was about 7,000 oz at an average of less than 6 dwt/ton - never a significant mine.[100]

1924: Lauraville mine taken up in 1924 - 15-head battery moved from Woods Point and erected at old Lauraville battery site - large waterwheel drive and 45-ft high timber

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88 Lloyd & Combes
89 Lloyd & Combes
90 Lloyd & Combes
91 Lloyd & Combes
92 Lloyd & Combes
93 Lloyd & Combes
94 Lloyd, Table 9-2; Dunn, p. 50
95 Lloyd & Combes
96 Department of Mines Annual Report, 1909
97 Department of Mines Annual Report, 1918
98 Lloyd & Combes
99 Lloyd & Combes, after Junner
100 Lloyd & Combes

	trestle to carry ore from tunnel across road and creek to battery - good crushings in 1925, 1927 and 1929 - small crushings continued until 1934.[101]
1925:	Rose of Denmark mine closed 1925 - total yield since 1861, about 40,000 oz - average 8 dwt/ton.[102]
1926:	Good reef struck in Eldorado mine, 1926- installed 10-head battery - 1400 tons gave 1624 oz - mine ceased work in early 1930s.[103]
1927:	A1 mine sold in 1927 after poor performance during early 20s - former company had stopped driving just short of biggest and richest reef ever worked on Gaffney's Creek goldfield - New A1 GM NL formed in 1929.[104]
1930's:	Most old, unused machinery taken away from Gaffney's Creek during 1930s - only A1 plant and Lauraville battery remained by end of decade.[105] Small party took up German Spur mine, near the Lady Clare, in 1931 - 5-head petrol engine driven battery in gully above the road.[106] A1 Consolidated Gold NL formed in 1932.[107]
1937:	A1 Consolidated mine, 1937 - crushing with 20-head battery.[108] Old Cornhill Mine, 7 miles south-west of Gaffney's Creek, about to re-open, 1937.[109]
1941:	A1 Extended Co. formed to exploit area between Morning Star and A1 Consolidated mines, 1941 - underground workings repaired - ceased work soon after.[110]
1943:	A1 mine - rich ore in Victory Reef (3,980 oz from 860 tons) in 1943 saved mine from closure - mine was most prosperous during World Wars 1 and 2 - same battery (installed 1916) served both booms.[111]
1945:	Charlie Briggs worked German Spur mine, 1945 - 4-head battery below the road, driven by 25-ft waterwheel.[112]
1946:	Lauraville mine (Hunts Consolidated) commenced operations, 1946 - battery erected, adit extended - suspended operations 1948 - unable to cope with water.[113]
1946-47:	A1 Consolidated was the highest producing gold mine in Victoria, 1946-7.[114]
1948:	Homeward Bound mine battery erected, 1948 - driving new adit.[115] A1 Consolidated mine - largest dividend-payer and gold producer in Victoria, 1948 - paid total dividends of £702,000 up to the end of 1948.[116]
1949:	Electric loco introduced to A1 mine for transporting ore to battery, 1949.[117]

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101 Lloyd & Combes
102 Lloyd & Combes
103 Lloyd & Combes
104 Lloyd & Combes
105 Lloyd & Combes
106 Lloyd & Combes
107 Lloyd & Combes
108 *Mining and Geological Journal*, July 1937
109 *Mining and Geological Journal*, July 1937
110 *Mining and Geological Journal*, January & July 1942
111 Lloyd & Combes
112 Lloyd & Combes
113 *Mining and Geological Journal*, 1946
114 *Mining and Geological Journal*, 1946-7
115 *Mining and Geological Journal*, 1948
116 *Mining and Geological Journal*, 1948
117 *Mining and Geological Journal*, July 1949

1951: Ten-head battery (ex-Chewton GMC) installed at A1 mine, 1951 - replaced by 20-head battery, 1955 - plans to install sand pumps and stack tailings in old creek bed.[118]

1953: SEC supply connected to A1 and Woods Point mines in 1953 - major cost - contributed to closure of Morning Star mine at Woods Point.[119]

1955: Miller Cyaniding commenced operations on river gravels at Raspberry Creek, which passes A1 Consolidated, 1955 - equipment damaged by flood, 1956.[120]

1965-68: A1 mine suffered losses, 1965-8 - closed in 1968 - mine and plant sold to syndicate of local miners - Gaffney's Creek Gold Mine NL formed with help of Melbourne capital - 2 rich reefs (Apollo and Moon) found 1969 - paid $87,000 in dividends that year - gold declined in 1971, mine became unprofitable - closed 1974.[121]

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118 *Mining and Geological Journal*, 1951, 1955
119 Lloyd & Combes
120 *Mining and Geological Journal*, January 1956
121 Lloyd & Combes

SOURCES:

Australian Heritage Commission, 'Listing of all historic places recorded in the Register database', March 1994.

Butler, G., 'North East Review: Historic Sites Survey' (draft), for the Land Conservation Council of Victoria, May 1982.

Department of Mines Annual Reports, 1903-1918.

Land Conservation Council, *Final Recommendations: North-East Region*, 198?

Mining and Geological Journal, 1937-54.

O'Shea, P.J., *Explanatory Notes on the Beechworth 1:50,000 geological map*, Geological Survey of Victoria Report No. 71, Department of Energy and Minerals, Melbourne, 1981.

Supple, R.G., 'Cocks Eldorado Dredge', draft paper to be presented to? Conference, NZ, October 1994.

Swift, D.C., 'The Story of Eldorado', in *Mining and Geological Journal*, January 1838, pp. 66-8.

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1 *Argus*, 19 October 1855

2 *Argus*, 19 October 1855

3 Supple

4 Supple; Mining Surveyors' Reports, March 1870

5 Mining Surveyors' Reports, December 1869

6 Mining Surveyors' Reports, September 1880

7 Mining Surveyors' Reports, September 1880

8 Mining Surveyors' Reports, September 1891; Supple

9 Supple

10 Canavan, p. 47

11 O'Shea, p. 7; Department of Mines Annual Reports, 1903

12 O'Shea, p. 7; Department of Mines Annual Reports, 1915

13 O'Shea, p. 7; *Mining and Geological Journal*, 1954

GRANYA GOLDFIELD

DATE	HISTORY:
	Discovery
1868:	As Cottontree Creek, Granya was first worked for alluvial gold in c.1868, but diggers' attempts to sink shafts were defeated by excessive water. Prospecting on the nearby hills revealed several reefs, but the cost of transporting ore about 100 km to the nearest battery (at Hawksview, on the NSW side of the Murray) was prohibitive and the reefs were soon abandoned.[1]
1878:	In 1878 a party of sluicers got an ounce per day from **Cottontree Creek** and a **rush** broke out. As before, attention soon shifted to the quartz reefs on the ranges near the heads of the creek, stone being initially sent to nearby Bethanga for crushing.[2]
1879:	By mid-1879, the Cottontree field had **three batteries** of its own: Rhodes' (ex-Bethanga), Pyke's, and Grant and Sons'. Between two and three hundred miners were on the field and 'quite a **township**' had sprung up on the flat 'outside the last fence up the creek'. The Beechworth District mining surveyor paid a visit and his verdict was that, 'Nothing wonderfully rich is expected, but it will no doubt be a good wages field,' and would support a considerable number of quartz reefs for some time to come.[3] Average yields from most mines ran to an ounce per ton or less and the field was a high-cost one. The reefs were small and hard, and carting and crushing costs remained high: it was estimated that Cottontree quartz took 'fully 12 dwts to pay'.[4]
	Ore treatment
early 1880's:	By the early 1880s, the reefs of Granya (as the field was now known) were proving to contain, like those at Bethanga, a great deal of pyrites. The usual gold-retrieval technique of amalgamation with mercury was unable to save gold, which was bound up in pyrites. Quartz assayed at 7-8 oz per ton yielded only 10 dwt per ton at the mills, so the **Granya Co.** erected a **pyrites treatment works**. In full work by mid 1884, it comprised a furnace and three arastras, and was driven by a portable steam engine. The works must only have treated the ore from the Granya Co.'s own mine, as much pyrites was still carted from Granya to Bethanga for treatment.[5] The Granya Co. was the major mine operator on the field throughout the 1880s, amalgamating with its neighbour, the Maritana Co., in 1884, following which the company erected a 10-head battery to work the Maritana Reef.[6] The Granya Co. added five heads to its mill in 1884 and installed a buddle for extracting pyrites from battery tailings.[7]
1887:	The company abandoned its furnaces and pyrites-leaching equipment in favour of **Watson & Denny's pans and concentrators**.[8] Another **pyrites works** had been erected by the **Border City United Tunnel Co.** in 1886, consisting of a grinding machine, calcining furnace and two Wheeler's pans.[9]

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1 James Markay in a statement on behalf of Cottontree miners, in *Report of a Board appointed to advise the Government as to the Best Mode of Developing the Auriferous and Mineral Resources of the Colony, Victorian Parliamentary Papers*, 1879-80, vol. 3, no. 92, p. 30 (quoted by Philipp [1993], p. 29); Philipp (1987), p. 54

2 Flett, p. 163; Mining Surveyors' Reports, September 1878

3 Mining Surveyors' Reports, March, June, & September 1879

4 Philipp (1987), p. 54; *Ovens and Murray Advertiser*, 13/5/1879

5 Mining Surveyors' Reports, June 1883-September 1884

6 Mining Surveyors' Reports, March & June 1884

7 Mining Surveyors' Reports, December 1884

8 Mining Surveyors' Reports, March 1887

9 Mining Surveyors' Reports, June 1886

Nearby gold finds

1886-87: On outlying fields, **alluvial** ground on **Running Creek**, 10 km north-east of Granya, was rushed in 1886, and in 1887, a **reef** was discovered at **George's Creek**, to the west. Ore from George's Creek was crushed at Sandy Creek, south of Tallangatta.[10]

Mining slump

1889: By the end of 1889, the Granya field was languishing. Presumably referring to the large Granya Co., the mining registrar noted that the labour covenants - which regulated the minimum number of miners to be employed on a mining lease - were being ignored by mine owners: 'so much so that the major portion of the male population have gone to the Dark River and other places to seek a living for their wives and families'. The Border City Co.'s battery was removed to Towong that year.[11]

20th-century mining

1890's: The gap in Mines Department records left Granya largely unremarked-upon during the 1890s. A survey of mining in the State by the *Australian Mining Standard* in 1899 found nothing noteworthy at Granya.

1903: In the early years of this century, the field underwent a revival. In 1903 the **Granya Co.** installed a **five-head battery, winding plant, air-compressing plant, roasting furnace and chlorine vats**. But the complex ore still gave trouble. In 1904, most of the mineral concentrates (which comprised up to 75% of the ore) extracted at Granya were being sent to Dapto in NSW for further processing. Granya got a five-head **government battery** in 1906, which crushed stone for the small mining parties scattered through the ranges.[12]

1909: In 1909, the Granya Co. mine was idle, and a tribute party was chlorinating its battery tailings. The main mine on the field was that of the **Border City Co.**, which erected its own **treatment plant** - ball mill, roasting kiln, and chlorination plant - in 1910 but shut down within a year. By 1914, the Granya mining scene was dormant.[13]

1930's: Granya came back to life in the mid 1930s. In 1935, the government battery was again at work, crushing small parcels of ore for thirty-eight parties. A private **chlorination plant** was erected in the yard of the government battery, where it treated tailings and the local pyritic ore.[14] In the late 1930s, the **Eastern Star Co.** installed a **reverberatory furnace** at the government battery, and reopened first the Star of the East mine and then the Burning Stump shaft.[15]

1937: At Mt Firebrace, just a few kilometres east of Granya, a large ore body was opened up by the **Mt Firebrace Co.** in 1937. The following year, **extensive treatment plant**, included a ten-head battery, was installed at the company's mine. A cyanidation plant was added in 1940, to treat tailings as well as ore, and it was reported that the Mt Firebrace Co. had now mastered its major ore treatment difficulties. That report was apparently based on optimism rather than results, because in 1941 the company sold its lease and assets and the mine had been given over to tributers.[16]

1940's: In fact, the complex ores of the Bethanga-Granya district had defeated most of the Granya miners by the end of 1941.[17] Despite the extensive range of processes tried, none had achieved real success in separating gold from the ore. The

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10 Mining Surveyors' Reports, September 1886, June 1887
11 Mining Surveyors' Reports, September & December 1889
12 Department of Mines Annual Reports, 1903, 1904, 1906
13 Department of Mines Annual Reports, 199-14
14 Department of Mines Annual Report, 1935; *Mining and Geological Journal*, 1937
15 *Mining and Geological Journal*, 1938-41
16 *Mining and Geological Journal*, 1938-41
17 *Mining and Geological Journal*, 1941

government battery remained at Granya until 1949, crushing small tonnages of ore for modest yields of gold, wolfram, tin, and antimony.[18]

SOURCES:

Butler, G., 'North East Review: Historic Sites Survey' (draft), for the Land Conservation Council of Victoria, May 1982.

Department of Mines Annual Reports.

Flett, J., *The History of Gold Discovery in Victoria*, Poppet Head Press, Melbourne, 1976.

Kenny, J.P.L., 'Mount Firebrace Mine, Granya', in *Mining and Geological Journal*, January 1940, pp. 75-6 (includes photos of plant).

Mining and Geological Journal.

Mining Surveyors' Reports.

Philipp, J., *A Poor Man's Diggings: Mining and Community at Bethanga, Victoria, 1875-1912*, Hyland House, South Yarra, 1987.

Philipp, J., *The Making of a Mining Community: Bethanga, Victoria 1875-85*, in 'La Trobe University Studies in History' series, Department of History, La Trobe University, 1993.

18 Department of Mines Annual Reports, 1941-9

HOWQUA GOLDFIELD

DATE	HISTORY:
1860:	Howqua grazing run named after early Delatite pastoralist, John 'Howqua' Hunter - Howqua was a popular brand of Chinese tea.[1] Prospecting party at head of Devil's/Delatite River in 1860 - gold found and claim made for reward - not granted.[2]
1865-66:	Reward paid for official Howqua gold discovery (Cameron's Creek), 1866 - small number of miners (five) at Howqua River in 1865 - rush (165) to Cameron's Creek, Howqua, in 1866 - coarse gold - 35 miners there in 1867 - deserted during winter - gold finds followed at Lickhole, Malcolm's, Barney's and Stockyard creeks.[3]
1866:	First Howqua reef, the Mountain Chief, discovered 1866.[4] Quartz mining at Sharper's Creek, 'Mt Buller goldfield', 1866 - crushing machine erected - quartz workings abandoned by 1867.[5] Copper-mining lease (40 acres) applied for on 'Lick Oh!' (Lickhole) Creek, 1866.[6]
1869-70:	Small parties of alluvial miners at Barney's Creek, Mt Buller diggings, 1869-70 - rush followed in 1871.[7] Track cut into the Howqua in 1869 - crossed river 35 times in 20 miles - supplies brought in from Mansfield.[8] Prospecting during late 1860s-70s.[9]
1882:	By 1882, alluvial workings virtually deserted, 'save by two or three men'.[10] Geological survey of Howqua in 1882 found the reefs highly mineralised - their development would require capital - no 'poor man's diggings'. Mountain Chief Reef taken up again, 1882 - samples averaged as much as 14 oz/ton - beginning of Howqua's most industrious period.[11]
1883:	Mountain Chief Co. erected treatment plant, 1883 - water-powered (6-head?) battery, furnaces, etc. - water-race cut from Howqua River - total cost £3,000 - reef worked by open cut - poor crushings - mineralised ore - mine closed in early 1885.[12]
1883:	Township of Howqua Hills surveyed in 1883 - on north side of Howqua River, between Stockyard and Blackbird Creeks - 63 house blocks, 6 streets - few blocks ever sold - peak population less than 200 (early 1880s), with 40 workings miners - by 1889, only 10-30 miners - town failed to flourish - reserve cancelled in 1885 (other sources say that town of Howqa was proclaimed in 1888).[13]
1883-85:	Howqua United GMC (Rose of Howqua mine), 1883-5 - capital of £12,000 - mine lower down ridge from Mountain Chief - water-powered 20-head battery (Hanney wheel) - 63 ft diameter x 4 ft 6 in wide waterwheel - said to be largest in the southern hemisphere - pit excavated for waterwheel - furnace - three miles of high-level water-race (fell 10 ft over a mile) cut through very difficult country - passed through Tunnel Spur to a supply point about three miles upstream from battery, on flats below mine - cost £9,000 - poor results, ceased operations 1885.[14]
1866:	Howqua Hills GMC took up abandoned Howqua United Co., 1886 - Watson and Denny's amalgamating and concentrating plant erected - worked by shaft and in Howqua United open cut - treated about 300 tons of ore for small returns - ceased operations early 1890s.[15]
1888:	Reef being worked by Rippin brothers at Malcolm's Creek, about a mile above its junction with Lick-hole Creek, 1888.[16] Reef being worked on south side of Cameron's Creek, 1888 - old alluvial workings

immediately below the reef workings - previous reef operations (tunnels) lower down the spur.[17]

1889: By 1889, only 10-30 miners at Howqua.[18]

Early 1890's: Mountain Chief mine again taken up in early 1890s - substantial roasting furnace and tall chimney constructed on river between Sheepyard Flat and Fry's (hut), 1892 - cost £8,000+ - small (Wylie says old Howqua United) waterwheel, battery, etc. reconditioned - shortlived and unsuccessful venture.[19]

1902-03: Great Rand Proprietary GMC took over old Mountain Chief leases, 1902 - £32,000 capital - worked by open-cut - 30-head battery driven by 60-ton waterwheel (ex-Howqua Hills GMC) - reopened and extended old high-level race - insufficient water to run battery - further capital, 1903 - brick roasting furnace, hopper, Krupp ball mill, classifier and concentrating tables installed 1903 - inconsistent yields - operations ceased 1903.[20]

1916: Hanney wheel broken up for scrap in 1916.[21]

1937: Prospecting party at Howqua, 1937.[22]

SOURCES:

Christie, R.W., *Ghosts and Gold in the Victorian High Country: The story of mining and settlement in Victoria's historic alpine areas*, High Country Publishing, Dargo, 1993.

Conservation, Forests and Lands, Proposed Management Plan - Alpine National Park: Wonnangatta-Moroka Planning Unit, 1989.

Flett, J., *The History of Gold Discovery in Victoria*, Poppet Head Press, Melbourne, 1979.

Murray, R.A.F., 'Howqua Hills District', GSV Progress Report 6-7, 1882, p. 57.

Steenhuis, L., 'Ghost Towns of the Mountain Goldfields: Upper reaches of the Yarra, Goulburn, Latrobe and Thomson watersheds', unpublished manuscript, ABC Maps, Launching Place, 1993?

Stirling, J., 'Report on Examination of Reefs at Howqua Valley', Appendix D to Mining Surveyors' Reports, June 1888, pp. 70-71.

Wylie, A., *Gold in the Shire of Mansfield: An outline of the smaller discoveries*, Mansfield Historical Society, 1987.

Wylie, A., Supplement to *Gold in the Shire of Mansfield: An outline of the smaller discoveries*, Mansfield Historical Society, 1988.

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1 Christie, p. 30
2 Christie, p. 31
3 Christie, p. 31; Mining Surveyors' Reports (Jamieson Subdivision), December 1865, September 1866, March & September 1867; Wylie (1987), p. 44
4 Flett, p. 110
5 Mining Surveyors' Reports (Jamieson Subdivision), December 1866, September 1867
6 Mining Surveyors' Reports (Jamieson Subdivision), December 1866
7 Mining Surveyors' Reports (Jamieson Subdivision), September 1869, June 1870
8 Christie, p. 31
9 Christie, p. 31
10 Murray
11 Mining Surveyors' Reports (Jamieson Subdivision), September 1882; Christie, p. 32
12 Mining Surveyors' Reports (Jamieson Subdivision), September 1883; Christie, pp. 32-3
13 Christie, pp. 27, 32
14 Mining Surveyors' Reports (Jamieson Subdivision), December 1883, September 1884, September 1885; Christie, p. 33; Wylie (1987), p. 45
15 Mining Surveyors' Reports (Jamieson Subdivision), December 1886; Wylie (1987), p. 45

[16] Stirling, p. 70
[17] Stirling, p. 71
[18] Christie, p. 27
[19] Christie, pp. 34, 46
[20] Christie, p. 34, Wylie (1988), p. 5
[21] Christie, p. 34
[22] *Mining and Geological Journal*, July 1937

KING RIVER-BROKEN RIVER GOLDFIELD

DATE	HISTORY:
1851:	Minor goldfields on Broken/King Rivers from 1851 - gold found in bars across Broken River, 20 miles above Benalla.[1] Toombullup goldfield - gold discovered pre-1858 in Campbell's Creek, 'an east tributary of Ryan's Creek, halfway to the King River'.[2]
1861:	Rush to new ground (Flett says area prospected since 1855) at foot of Black Range, about 20 miles SSW of parish of Oxley - between Buffalo River and Edi.[3]
1863:	Quartz reefs discovered on fall to Black Range Creek - later worked by Tyrell &c, 1897+.[4]
1866:	A few parties prospecting the King River - Wangaratta people have great expectations - 'I have not much faith in the locality.'[5]
1867:	Gold found on Farrell's station at Edi.[6]
1869:	Claims registered at Barjarg (on Benalla-Mansfield road) - short-lived.[7]
1883:	A Shepparton company testing Khull's Range for gold.[8]
1884:	Broken River Co. ceased operations.[9]
1888:	Two claims taken up at Toombullup - 'hitherto an untried locality'.[10]
1895:	Alluvial rush to Ryan's Creek, Toombullup, 1895 - 230 miners sinking shallow shafts - mixed success, due to inadequate water - localities include Monkey Puzzle Gully and German's Creek.[11]
1899:	Tunnel has been driven about 200 ft by Tyrells - several shafts put down - deepest 50 ft. On eastern side of Stony creek, towards Black Range Creek, several mining leases applied for - in one case, mining machinery erected. Line of reef traced 3 miles.[12]
1903:	About 20 parties working alluvial at Toombullup.[13]
1904:	Toombullup mining population down to about 8.[14]
1913:	Tyrell's gold mine - parish of Edi - on top of steep ridge in the Black Range country, about 4_ miles east of Whitfield township. First found 1897 - Tyrell and party put in a tunnel for a distance of 298 ft and sank several shallow shafts. Nothing more done until 1911, when present party formed to prospect mine close to old main open cut. Government prospecting grant, to further prospect by sinking and driving towards open cut workings. Assays not payable.[15]
1937:	Flannery working by open cut in same vicinity as Tyrell (above) - poor prospects - refractory ore, special plant would be required for treatment (not justified) - crushing hand-picked ore at Chiltern government battery.[16]

SOURCES:

Butler, G., 'North-East Review: Historic Sites Survey' (draft), for the Land Conservation Council of Victoria, 1982.

Howitt, A.M., 'Tyrell's Reef, Black Range, Edi', in Geological Survey of Victoria *Records*, vol. IV, part 2, pp. 145-6 (report dated September 1913).

Kenny, J.P.L., 'Flannery's Workings, Upper Edi', in *Mining and Geological Journal*, 1938, p. 37.

Mining Surveyors' Reports, Beechworth Division.

Stirling, J., 'Report on Gold Discoveries, Upper King River Valley, near Hedi', in Geological Survey of Victoria Monthly Progress Reports Nos. 8 & 9, November and December 1899, pp. 24-5.

Stirling, J. 'Report on the Toombullup Goldfield', Geological Survey of Victoria Monthly Progress Report No. 9, 1898, pp. 45-6.

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1 Flett, p. 75
2 Flett, p. 75
3 Mining Surveyors' Reports (Beechworth Division), October 1861; Flett, p. 75
4 Flett, p. 75
5 Mining Surveyors' Reports (Beechworth Division), March 1866
6 Flett, p. 75
7 Mining Surveyors' Reports (Benalla Subdivision), December 1869
8 Mining Surveyors' Reports (Benalla Subdivision), September 1883
9 Mining Surveyors' Reports (Benalla Subdivision), June 1884
10 Mining Surveyors' Reports (Benalla Subdivision), September 1888
11 Stirling, 1898
12 Stirling, 1899
13 Department of Mines Annual Report (Alexandra Division), 1903
14 Department of Mines Annual Report (Alexandra Division, 1904
15 Howitt
16 Kenny

MANSFIELD DISTRICT

HISTORY:

EXTANT REMAINS:

Phosphate Hill, Mansfield
Abandoned workings, approximately 5 km west of Mansfield, on private property The phosphate deposit was profitably mined by Heathcote Chemical Co., 1915-26. Low-grade fertiliser was produced from the phosphate and sold under the brandname 'Victoria Phosphate'. Until 1919, the deposit was worked by open-cuts and trenches; subsequently several shafts were sunk. The phosphate was found to deteriorate in quality at depth.[1]

SOURCES:

Birch, W.D. and Henry, D.A. (eds), *Phosphate Minerals of Victoria*, Special Publication No. 3, Mineralogical Society of Victoria, Melbourne, 1993.

1 Birch & Henry, pp. 67-9

MITTA MITTA GOLDFIELD

DATE	HISTORY:
	Early alluvial working
1852:	Diggers first tried their luck on the Mitta Mitta River at Tallandoon in 1852 and at Callaghan's and Snowy creeks in 1853, generally with poor results. Successive minor rushes went on throughout the 1850s, but no major rush took place until finds at **Thunder and Lightning (or plain Lightning) Creek** in c.1858.[1]
1860's-70's:	Mining was wholly alluvial until the late 1870s. Initially the Mitta Mitta area had a large Chinese population, but it rapidly dwindled. The alluvium was worked almost entirely by sluicing - initially by sluice box and race (2,000 sluice boxes, 1867[2]), then by hydraulic sluicing. Waterwheels were little utilised for ground sluicing (10 Californian pumps and wheels in 1867[3]), unlike the neighbouring Yackandandah area. Extensive water races were a feature of the area.
	Reef discoveries
1869:	A quartz reef was discovered at the Junction in 1869[4], but due to a lack of crushing machinery (the closest was at Yackandandah, nearly 100 km away), it remained unexploited until the late 1870s.
1878:	In 1878, William Spargo erected a 6-head, **water-powered battery** for public crushing at **Granite Flat**, where reefs were being prospected; local miners contributed £100 towards its transport and insurance. A road had to be constructed between Mitta Mitta and Granite Flat for the battery's transportation.[5] The Granite Flat battery was apparently a short-lived facility: when the first Dark River reef was opened up in 1881, quartz was packed in to Mitta Mitta for crushing, despite the proximity of Granite Flat to the new field.[6]
1879:	By 1879, there was also a **battery at the Junction**, serving the Yellow Girl and Pony mines on Mt Welcome, above the township. The mining registrar called the battery 'Turner's'[7], but a recent local source calls it 'McLeod's battery' and claims it was the first at Mitta Mitta and was situated 'on the lower side of the road opposite the Pioneer Claim and had a tall chimney'.[8] The location is confirmed by an 1888 plan of the Pioneer and Union sluicing claims[9], which shows McLeod's battery in that position, at the northern end of the Mitta Mitta township. (McLeod was at that time the owner of the nearby Union Hydraulic Sluicing Co.)
1880:	In 1880, the battery was purchased by the Yellow Girl Co. and a tramway lay from mine to battery.[10]
1881:	From 1881 the Mitta Mitta reefs were largely abandoned, after attention switched to the Dart River district, about 50 km to the east.
	Hydraulic sluicing & dredging
1880's:	Small-scale alluvial mining continued into the 1880s, using sluicing technology unchanged since the 1860s. Due to the reliance on water, alluvial mining was very much a seasonal occupation. By the 1880s, Chinese miners left their claims during summer for harvesting work on the Ovens and Buckland river tobacco plantations.[11] In 1884, with quartz mining at a virtual standstill, the focus swung back to alluvial mining when the **Pioneer Co.** installed machinery for high-powered hydraulic sluicing. The mining registrar remarked that, 'The use of machinery in sluicing operations is a novelty in this subdivision'.[12]
1888:	The Pioneer Co. cut 'a magnificent race', more than 20 km in length, from 'Lendenfeld's branch' of Snowy Creek to their workings near the Junction. Early in 1888, when the Pioneer Company's works had been operating for seventeen months, a report described them in detail: a large 4_-inch ('Little Giant'[13]) nozzle was used, supplied by iron piping of 11-, 20-, and 22-inch diameters.[14] Sluicing went on day and night, consuming four million gallons of water in twenty-four hours. A hydraulic jet elevator was used to work deep ground, lifting the dirt off bedrock to the height of the sluice.[15] Thomas Hedley, a leading figure in Victorian hydraulic sluicing, managed operations. The activities of the Pioneer Co. had sparked the commencement of other large-scale sluicing operations in the neighbourhood. The other major operator was the Union Co. whose claim (contained within the Pioneer Co.'s lease) was fed by three existing races from Scrubby Creek and was sluiced by three-inch nozzle. The average depth of ground sluiced by the Pioneer Co. was 30 metres, while the Union

Co. was working a face nearly 40 metres deep. Between them, the Pioneer and Union claims had yielded approximately 5,400 oz, worth £19,000, since the commencement of sluicing in the early 1860s. (The ground worked by the Pioneer Co. had originally been supplied by a 10-km race from Scrubby Creek, cut in 1859-60 at a cost of £4000.)[16] In 1888, the Pioneer Co. bought out the Union Co.

Joining in the sluicing boom in the mid- to late 1880s were the Long Point Co. on the Upper Mitta Mitta from 1888 (using 'the latest Californian principle')[17], and the Mammoth Co., formed in 1885 to sluice extensively at Snowy Creek and Granite Flat. 'Their race and flumes, when completed,' wrote the mining registrar, 'will be, it is said, the largest one in the Southern Hemisphere.'[18] The **Mammoth Co.'s flume** was completed in 1886 and carried water across Lightning Creek as part of the 22-km water race from Snowy Creek to the site of the company's operations, Yankee Hill, near Mitta Mitta township. Reputedly, it was the largest flume in Victoria.[19] Originally it had been intended that the race would cross the Lightning Creek gorge by means of two inverted 18-inch syphons; but as suitable timber was available, a structure was built instead of mountain ash spars.[20] (The company had a sawmill on the site of the present-day camping ground, to cut timber for the flume's construction.)[21] Built in two tiers, the flume was nearly 200 metres long and 33 metres high, and the road into Mitta Mitta passed beneath it.[22] After only three years, the Mammoth Co. ceased operations and abandoned its giant flume.[23] It was used briefly by a prospector some years later and water flowed through its boxes until 1906. But it served chiefly as a tourist attraction until, in 1908, its state of disrepair became hazardous to traffic passing below, and the flume was demolished.[24] Some other major constructions associated with Mitta Mitta sluicing claims rate a mention. The Pioneer Co.'s giant box sluice - a series of inclined boxes set on raised trestles - was positioned in a broad passage cut through rock, likened in size to a railway cutting. The tail-race draining the claim carried water to the Mitta Mitta River via a 100-metre-long tunnel, cut by hand through the hillside at the bottom of the claim.[25] In 1888, the **Grand Junction Co.**, with a hydraulic sluicing claim at Snowy Creek, joined the northern and southern ends of its 16-km water-race with a 68-metre-long flume across the creek.[26] Over the ensuing two years, the company extended its head- and tail-races, in some places cutting tunnels or channels through solid rock.[27] The **water-race** used by the **Pride of the Mitta Mitta** sluicing claim was eight miles long, 'heading' at Callaghan's Creek; it had been cut for an earlier sluicing operation in 1873, and the 'Pride' claim had been worked since the late sixties.[28]

1890's: Large-scale company sluicing operations wound up during the 1890s, but sluicing continued on a comparatively small scale into the twentieth century.[29] Sluicing in the old Pioneer claim was eventually halted in 1916 due to the pollution of the river by tailings.[30]

1907-13: Between 1907 and 1913, two **bucket dredges** were at work on the Mitta Mitta River, one near the township and one at Eskdale.[31]

Later quartz mining

A **reefing rush** took place to a spot between **Eskdale and Tallandoon** in 1895, resulting in the prospecting and opening up of numerous small but rich reefs. At least nine small batteries were installed on the field and crushings gave average yields of more than 2 oz per ton.[32] A later report named Tallandoon, McLinchey's, the Mystery, Harper's, the Quandong, Lawrence's and Shymaster's as the principal reefs in the vicinity. To the south of Little Scrubby Creek (west of Tallandoon) was another small network of reefs, the chief of which was the Cherrytree. A water-powered battery on the creek crushed for the reefs.[33] In 1899, the *Australian Mining Standard* described the lodes in the Mitta Mitta South subdivision as impermanent - with the exception of the Dream Reef at Eskdale, which had maintained average yields of 2 oz per ton from crushings of more than 2,000 tons. (However, the report referred to the reef in the past tense.)[34]

1903: By 1903, the Eskdale-Tallandoon field was quiet. The Eskdale reefs were revived in the late 1930s. The principal mine of that period was the Iona ('in the catchment area of the Sachse Creek'), which operated c.1937-42.[35]

Early 1900's: Reefs were discovered and worked at **Mt Elmo**, about 10 km west of Mitta Mitta, from the 1890s. Small co-operative parties worked there until at least 1911, and the Mt Elmo reefs were again prospected in 1941.[36] According to Nigel Watts, the CNR ranger at Dartmouth, evidence of mining activity is still to be seen at Mt Elmo.[37] On the eastern side of the river, north of Mitta Mitta township, two reefs - the Magorra and the **La Fontaine** - were discovered and worked in the late 1890s.

A **battery** was erected near the latter mine's tunnel.[38] After the turn of the century, quartz prospecting and mining continued in a limited way, mainly confined to small parties working on the hills near Mitta Mitta township. The small lodes and short shoots of gold that characterised the region's reefs would not support company mining, but were payable only to small co-operative parties or individual miners.[39]

1918-36: One of the last reefs worked was **Muhlhauser or Malhausen's Reef**, 'in a mountain ravine on the Upper Lightning Creek' which was worked by its namesake, with a **water-powered crushing plant** (described as 'a monument of bush ingenuity') during the period 1918-36.

1936: In 1936, Muhlhauser sold his mine to a company, which carried on its development.[40]

Copper & tin mining

1909-18: Also from 1918, the **Bon Esperance mine at Granite Flat**, formerly worked for gold, was mined for **copper**. The ore was sent for treatment to Port Kembla, but this costly process soon made the mine unpayable.[41] From 1909-c.1915, tin was mined at Tallandoon, where in 1911 the **Tallandoon Tin Mines Co.** installed 'the pioneer **battery** at the north end of the tin-field' (which extended southward to Mt Wills and Sunnyside, in the Gippsland Mining District).[42] The Royal George tin mine, at the head of Digger's Creek, about 8-km north-west of Mitta Mitta, was operating on poor prospects in 1914. In 1916, a crushing and concentrating plant was erected at Spring Creek (possibly the Royal George mine), between Eskdale and Mitta Mitta, for the treatment of tin being worked there.[43]

SOURCES:

Australian Mining Standard, special edition, 1/6/1899.

Butler, G., 'North East Review: Historic Sites Survey' (draft), for the Land Conservation Council of Victoria, May 1982.

Churchward, M., 'The Greens Creek Battery', for Department of Conservation & Natural Resources, May 1993.

Colquhoun, S.A., *Mitta Mitta from the Early Pioneer Days*, published by the author, Mitta Mitta, 1953.

Convey, T., *The Days of Gold: Mining in the Tallangatta District*, published by the author, Albury, 1980.

Department of Conservation and Natural Resources, 'Pioneer Mine Historic Walk - Mitta Mitta' (leaflet), 199?

Department of Mines, Annual Reports, 1903-18.

Flett, J., *The History of Gold Discovery in Victoria*, Poppet Head Press, Melbourne, 1979.

Kenny, J.P.L., 'Royal George Tin Mine, Mitta Mitta', in *Records* of Geological Survey of Victoria, vol. 4, part 2 (1914), p. 160.

Kenny, J.P.L., 'Snowy Creek gold mine, Mitta Mitta', in *Records* of Geological Society of Victoria, vol. 5, part 3, 1937, p. 357.

Land Conservation Council, 'Final Recommendations, North-East Region', 198?

Mining and Geological Journal.

Mining Surveyors' Reports, Department of Mines.

Morrow, J.A., 'A report on the historic gold mining relics and major sites pertaining to the goldfields at Dart River, Greens Creek, Zulu and Saltpetre Creeks, and the hydraulic sluicing operations at Mitta Mitta', for Department of Conservation, Forests and Lands, n.d. (198?).

Stirling, J., 'Third Progress Report on Preliminary Geological Traverse of Mitta Mitta', Appendix F to MSR, Dec 1887, pp. 78-9, plus maps.

Stirling, J., 'Historical Sketch of the Pioneer and Union Claims, Mitta Mitta', Appendix I to Mining Surveyors' Reports, March 1888, pp. 89-90 + plan.

Whitelaw, Kenny, & Easton, 'The Mitta Mitta Tin and Gold Field', Bulletins of the Geological Survey of Victoria, No. 37, 1915 (includes photograph and detailed plan of area).

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1 Flett, pp. 157-8 (Colquhoun [p. 25] says 1861.)
2 Mining Surveyors' Reports, March 1867
3 Mining Surveyors' Reports, March 1867
4 Mining Surveyors' Reports, June 1869
5 Mining Surveyors' Reports, September 1878
6 Mining Surveyors' Reports, December 1881
7 Mining Surveyors' Reports, September 1879
8 Colquhoun, p. 27
9 Stirling (1888) - plan on file
10 Mining Surveyors' Reports, June 1880
11 Mining Surveyors' Reports, December 1880, March 1881
12 Mining Surveyors' Reports, March 1884
13 Morrow, p. 7
14 Stirling (1888)
15 Morrow, p. 7
16 Stirling (1888)
17 Mining Surveyors' Reports, December 1887
18 Mining Surveyors' Reports, June 1885
19 Colquhoun, p. 31
20 Mines Department Annual Report, 1911, p. 65
21 Colquhoun, p. 31
22 Mines Department Annual Report, 1911, p. 65
23 Colquhoun, p. 31
24 Mines Department Annual Report, 1911, p. 65
25 DCNR 'Pioneer Mine Historic Walk' leaflet
26 Mining Surveyors' Reports, March 1888
27 Mining Surveyors' Reports, March & September 1889
28 Stirling (1887), p. 78

29 Mines Department Annual Reports, 1908, 1913-14, 1917
30 Convey, p. 31.
31 Mines Department Annual Reports, 1907, 1911-13
32 Mines Department Annual Report, 1903
33 Whitelaw et al, pp. 18-19
34 *Australian Mining Standard*, p. 103
35 *Mining and Geological Journal*, 1937-42
36 Convey, p. 31
37 Nigel Watts, pers comm, 10/8/94
38 Convey, p. 31
39 Mines Department Annual Report, 1903
40 Mines Department Annual Report, 1918; Colquhoun, p. 27; Kenny (1937)
41 Mines Department Annual Report, 1918; Colquhoun, p. 28
42 Mines Department Annual Report, 1911 - photo of mine and plant on file.
43 Mines Department Annual Reports, 1903-1911; *Mining and Geological Journal*, July 1941

MYRTLEFORD GOLDFIELD

DATE	HISTORY
1852	Gold got in 'Buffalo Ranges', 1852-3.[1]
1853	Myrtleford gold discovered by diggers heading for Buckland River, 1853 - their route took them down the steep Buckland Gap, south of Beechworth, along the north side of the Ovens Valley and across the Myrtle (now Barwidgee) Creek.[2]
1854	First reef discovery, 1854 - Riley's (later Reform) Reform, on hill near Barwidgee Creek-Ovens River junction.[3]
1855	Gold discoveries at Bowman's Forest-Buckland Gap from 1855[4] (at Cunningham's Gully, Murmungee, 1858).[5]
1856	Settlement formed close to Reform Reef workings by 1856 - Myrtleford gazetted in 1859.[6]
1857	New diggings on Buffalo River, 1857 - diggers all along river in 1858 - sluiced in parts, but poor returns.[7]
1861	Numerous reefs found between Buffalo River and Creek, south of Myrtleford, from 1861.[8] Myrtleford deserted for Morses Creek reefs, 1860.[9] Myrtleford reefs virtually the only reefs in the Beechworth area to have been developed by 1860 - main reefing locality until mid-1860s.[10] Deep leads opened from 1860, all running west into Bowman's Forest.[11] Lower Three-Mile (Bowman's Forest) mostly 'handed over to Chinese - sluicing, but hindered by no tail-races (cost £200 to £800).[12] Chinese miners deserting Bowman's Forest (Paddy's Gully, German and California Leads) for Lambing Flat, early 1861 (Lambing Flat riot, June 1861) - claims at top of Perseverance Lead still worked.[13] Nil Desperandum (south of Myrtleford) and Buffalo Reefs - 'a very quartzy part of the district', 1861.[14] Chinese taking over claims abandoned by Europeans leaving for the Lachlan and New Zealand, 1861-2.[15]
1865	Kneebone's Gully, Bowman's Forest, taken up for more than a mile, 1865 - focus on Flower of the Forest prospecting claim.[16] Chinese working Barwidgee Creek, 1865 - deserted as poor by Europeans some years ago - Chinese doing much better.[17]
1866	Barwidgee Creek and Chinaman's Flat (Bowman's) worked exclusively by Chinese miners, 1866.[18] Sluicing (by sluice-box) the main mode of working alluvial throughout 1860s.[19] Kneebone's Gully, Bowman's, almost exclusively Chinese, 1866 - Europeans selling out claims to them - horse whims unable to manage water.[20] Several new reefs discovered on Buffalo River, 1867 - including United Reef - battery erected.[21]
1868	King, Annandale and Solway Reefs being worked in vicinity of Cunningham's Gully, Murmungee, 1868 - battery erected.[22] Bowman's Forest quartz returns increasing, alluvial returns diminishing, 1868.[23]
1868	Myrtleford quartz claims flourishing, 1868 - Racecourse Co. and Tubal Cain Co. erecting machinery.[24] Bowman's Forest reefers were Beechworth Division's main quartz-gold producers, 1868 - alluvial at Bowman's Forest deserted but for Chinese parties.[25]

	Main Bowman's/Murmungee reefs, 1868 - Eskdale, King and Annandale - served by two mills, Dean's and Dalgliesh & Co.'s.[26]
1869	Mountain View Reef, Buffalo, 'taken up again', 1869 - nearest battery at Myrtleford.[27]
1871	Dean's Murmungee mill removed to Morse's Creek, 1871 - disastrous for Bowman's Forest reefers.[28] New ground at Stony Creek (Buckland road), 1871 - heads of gullies falling from the cemetery - payable ground confined to centres of gullies.[29] Only payable alluvial ground on Buffalo River?[30]
1872	Old Perseverance Lead, Bowman's Forest, reopened, 1872 - 'Hitherto the whole of the work has been done by small parties of Europeans and Chinese, whose appliances and means of working are of the most primitive kind, eg. baling water with a cask four or five hours a day.'[31]
1873	Payable reefs (including Northampton) at Buffalo, 1873 - Hart's mill erected - reef-mining in vicinity hitherto inhibited by need to cart stone for crushing.[32]
1874	Reform Co. and Waterloo Co. active on Myrtleford/Barwidgee reefs, 1874.[33] Small reefing rush to ranges in vicinity of Stony Creek, Buckland Road, and 1874 -soon dwindled - rich quartz from Forest View Reef.[34] Discovery of Agamemnon Reef, Barwidgee - very rich.[35] 1874 - Reform Reef, Myrtleford, the longest-worked reef in Beechworth Division.[36] Power's Reef, Buffalo, 1874 - one of patchy reefs in vicinity.[37]
1874	Hanna and Co. and Juvenile Co. erected batteries at Stony Creek, 1875 - quartz hitherto packed on horseback eight miles to Myrtleford for crushing - impetus to mining in area - third mill erected 1877.[38]
1876-8	Basin Creek reefs (where?), 1876-8 - Caledonian, Northeastern, and near the Kangaroo Springs.[39]
1877	J.A. Wallace purchased Nil Desperandum Reef, Myrtleford, 1877 - stone to be carried to his Reform mill at Myrtleford by railway and engine.[40]
1878	Chinese took up abandoned Government Lead, Buckland Gap, 1878-9.[41]
1879	Paul Bros. on Rob Roy (or United?) Reef, Buffalo Creek, 1879 - battery installed pre-1883.[42]
1882	Old reefs taken up at Buffalo Creek, 1882 - including Hart's Reef (Hart & Co.).[43]
1883	Reefing revival at Stony Creek? - Biddington's mill erected at Palmerston to serve Stony Creek miners, 1883.[44]

1882-4	Murmungee Sluicing Co. cutting tunnel through Forest Range, 1882-4 - 1,200 yards long - intended as tail-race (?) and to cut Magpie and Black Magpie reefs - encountered very hard rock - completed? - company continued sluicing until at least 1888.[45]
1883	Old reefs taken up at Bowman's Forest, 1884.[46]
1885	Heaviest rainfall in many years, 1885, following several dry seasons - at Stony Creek and Paddy's Gully, some miners had had washdirt piled up, awaiting washing, for two years.[47] Biddington erected battery at Bowman's Forest, 1885 - will supply a 'want long felt by the quartz miners there.'[48]
1886-8	Alluvial mining at Murmungee, 1886-8 - Murmungee Co. (deep lead) and Murmungee Sluicing Co.[49]
1890	Quartz mining doing well at Bowman's Forest, 1890.[50]
1891	A 'splendid' reef discovered at Palmerston (Stony Creek, by Myrtleford Prospecting Association, 1891.[51]
1898	A survey of reefs near Myrtleford in 1898 identified the following reefs: London, New Northampton, Mountain View, Valentine, Twins, Pass-by, and Connors (all in the Buffalo Creek/River area); Reform, Sensation, Castle Dangerous, Nil Desperandum, Prince of Wales, Race-course, Streak of Luck, Ben Sunds, and Abyssinia (all near Myrtleford, east of the Ovens); and McLean's, Heaps', Alfred, and Pass-by (Connor's) (all at Murmungee/Bowman's Forest). Nearly all reefs were unworked.[52]
1906	Reform Co., Myrtleford, ceased operations, 1906.[53] Small parties at work on reefs around Buffalo Creek (including Nil Desperandum Co.), Murmungee and Merriang, 1906.[54]
1908	Five bucket dredges in Myrtleford vicinity (including Barwidgee Creek), 1908.[55] Reform Dredging Co. working on old Reform Co. tailings near Myrtleford - also has large cyanide plant.[56]
1912	Myrtleford Dredging Syndicate dredge removed to Woolshed, 1912.[57]
1915	Wells and party working on McLeans Reef, Murmungee, 1915 - prospecting of reef continued until at least 1917.[58]
1916	Old Sir John Isaach's Reef, Myrtleford - payable stone discovered, 1916.[59]
1918	Party of miners on deep lead at foot of Buckland Gap, Murmungee, 1918 - again (still?) in 1937.[60]
1937	Myrtleford Reefs Co. sinking prospecting shafts on Bell's and Ablett's reefs, 1937 - unsuccessful.[61] Prospecting at Back Creek (tributary of Buffalo River) on extension of old Lord Byron Reef, 1937.[62]
1939	Wells and son working reef in Cunningham's Gully, Murmungee, 1939 - erected battery - in 1939, crushed 110 tons for average 2 dwt per ton.[63]
1950	Prospecting from shaft on Reform line, 1950 - unsuccessful.[64] Blondin Co. opening up a reef at Buffalo Creek, 1950 - nothing further reported.[65]

1 Flett, p ?
2 Flett, p. ?
3 Flett, p. ?
4 Flett, p. ?

5 Flett, pp. 67-8
6 Flett, p. ?
7 Flett, p ?
8 Flett, p. ?
9 Mining Surveyors' Reports, May 1860
10 Mining Surveyors' Reports, June 1860+
11 Flett, pp. 67-8
12 Mining Surveyors' Reports, October 1859, October 1860, November 1860
13 Mining Surveyors' Reports, September 1861
14 Mining Surveyors' Reports, November 1861
15 Mining Surveyors' Reports, 1861-2
16 Mining Surveyors' Reports, June 1865
17 Mining Surveyors' Reports, September 1865
18 Mining Surveyors' Reports, June 1866
19 Mining Surveyors' Reports
20 Mining Surveyors' Reports, September 1866
21 Mining Surveyors' Reports, June 1867
22 Mining Surveyors' Reports, March 1868
23 Mining Surveyors' Reports, June 1868
24 Mining Surveyors' Reports, June 1868
25 Mining Surveyors' Reports, September 1868
26 Mining Surveyors' Reports, December 1868
27 Mining Surveyors' Reports, December 1869
28 Mining Surveyors' Reports, December 1870
29 Mining Surveyors' Reports, December 1871
30 Flett, p. ?
31 Mining Surveyors' Reports, December 1872
32 Mining Surveyors' Reports, September 1873
33 Mining Surveyors' Reports, 1874
34 Mining Surveyors' Reports, March 1874, June 1874
35 Mining Surveyors' Reports, September 1874
36 Mining Surveyors' Reports, September 1874
37 Mining Surveyors' Reports, September 1874
38 Mining Surveyors' Reports, June 1875, December 1875, December 1877
39 Mining Surveyors' Reports, 1876-8
40 Mining Surveyors' Reports, December 1877
41 Mining Surveyors' Reports, March 1878, September 1879
42 Mining Surveyors' Reports, March 1879, March 1883
43 Mining Surveyors' Reports, December 1882, March 1883
44 Mining Surveyors' Reports, September 1883, December 1883
45 Mining Surveyors' Reports, December 1882, June 1884, December 1884, 1886-8
46 Mining Surveyors' Reports, September 1884
47 Mining Surveyors' Reports, September 1885
48 Mining Surveyors' Report, December 1885
49 Mining Surveyors' Reports, 1886-8
50 Mining Surveyors' Reports, September 1890
51 Mining Surveyors' Reports, September 1891
52 Murray
53 Department of Mines Annual Report, 1906
54 Department of Mines Annual Reports, 1906, 1907
55 Department of Mines Annual Report, 1908
56 Department of Mines Annual Report, 1912
57 Department of Mines Annual Report, 1912
58 Department of Mines Annual Reports, 1915 & 1917
59 Department of Mines Annual Report, 1916
60 Department of Mines Annual Report, 1918; *Mining and Geological Journal*, July 1937
61 *Mining and Geological Journal*, July 1937, July 1938
62 *Mining and Geological Journal*, July 1937
63 National Trust of Australia (Victoria) file no. 3276
64 *Mining and Geological Journal*, July 1950
65 *Mining and Geological Journal*, January 1951

NINE MILE HISTORIC RESERVE—MINING HISTORY

August 1859: Box-sluicing is fast giving way to ground sluicing, and in that respect a greatly improved method is coming into use—for example, the claim of Messrs Thomson and party on Hurdle Flat. The ground now worked by that party has all of it been partially worked in former times, and the present party have gone to a great expense in cutting a deep tail race or sluice from Europa Gully up to their claim, nearly the whole way through a reef which crops out between the claim and the gully, parts of the tail-race being sunk 12 feet deep on the rock. The result is, that although their ground is 16 feet 6 inches deep, the sluice is in the rock, and through such being the case the facility they have of washing the dirt is so great that I am informed by themselves that the incredibly small quantity of 4 grains of gold, or 6d. to the load, will remunerate them well. There are four partners, and on an average they get down and wash a ton of dirt every five minutes. They receive their supply of water from springs on Hurdle Flat.[1]

September 1859: The greater part of the Nine Mile Creek, particularly the lower end, has been taken up by parties who intend re-working it. From the means employed to re-work it, viz, that of detail races, also the large size of the claims granted, in conjunction with the reduced state of wages, it is sure to prove remunerative.[2]

February 1860: The greater portion of this ground [portion of Nine-Mile Creek] has been taken up by the Ovens Water Company for the formation of their reservoir, and with a good head of water will pay well for sluicing out.[3]

March 1860: [Rain at last after a very dry season] On the Lower Nine-mile, four parties have been thus busily engaged, and I am informed their returns are highly remunerative, although the ground on the old system has been wrought two or three times over.[4]

April 1860: No operations have as yet been commenced by the Ovens Water Company, further than calling for tenders for cutting races, &c.[5]

May 1860: The Ovens Water Co. has nearly got the ditch from the tunnel finished.[6]

June 1860: The contractor [for the Ovens Water Co.] has 142 men at present employed on the works opening up the springs, excavating the tunnel, cutting the race from the mouth of the tunnel to the reservoir, (I stated in my last report that this was finished, but owing to some error it has had to be cut over again) and cutting a tail race for the purpose of sluicing the ground intended for the reservoir, a most remunerative method of getting rid of the soil. On Hurdle Flat sluices are in full operation, and a great number of parties are busily engaged re-working, on improved methods, the bed of the lower Nine-Mile Creek.[7]

July 1860: The Ovens Water Co. have been pushing their works steadily forward, the tailrace which they are having cut, for the purpose of sluicing out their large reservoir, being about two-thirds completed.[8]

July 1860: Two quartz reefs within the boundaries of the land reserved for the Hurdle Swamp reservoir have been registered.[9]

September 1860: Flood—less damage to claims in Nine-mile division than Yackandandah, 'as fewer parties working in the bed, the greater portion of the workings being situated on the banks and hills.'[10]

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1 Mining Surveyors' Reports (Snake Valley Division), August 1859
2 Mining Surveyors' Reports (Snake Valley Division), September 1859
3 Mining Surveyors' Reports (Snake Valley & Yackandandah Division), February 1860
4 Mining Surveyors' Reports (Snake Valley & Yackandandah Division), March 1860
5 Mining Surveyors' Reports (Snake Valley & Yackandandah Division), April 1860
6 Mining Surveyors' Reports (Snake Valley & Yackandandah Division), May 1860
7 Mining Surveyors' Reports (Snake Valley & Yackandandah Division), June 1860
8 Mining Surveyors' Reports (Snake Valley & Yackandandah Division), July 1860
9 Mining Surveyors' Reports (Spring Creek, Three-Mile, and Woolshed Divisions), July 1860
10 Mining Surveyors' Reports (Yackandandah & Nine-Mile Divisions), September 1860

October 1860: Although most of the ground has been already worked—and re-worked, in some instances, as many as six times over—yet, with a large supply of water, and the improved methods of working now in use, it pays as high as £7 to £8 per week to the hand on re-working it.[11]

December 1860: The Ovens Water Co.'s scheme for supplying the Nine-mile district is making fair progress.[12]

June 1861: One party, whose water is at a low level, are driving a tunnel upwards of 500 yards long, through a portion of Hurdle Flat, so as to bring their water to bear on the One-mile, a portion of the Beechworth Division. The Ovens Water Co. are progressing, and expect to supply this division in a short time with a large amount of water.[13]

August 1861: The Homeward Bound is the first reef discovered in the Nine-mile division, and is situated near Rocky Point (the lower end of the Nine-mile). No stone has been crushed, but gold seems to be pretty well distributed throughout the quartz.[14]

September 1861: A trial crushing from the Homeward Bound Reef yielded 3 oz 2 dwt to the ton.[15]

December 1861: The Nine-mile Reef (the Homeward Bound) crushed some stone which turned out very well, and as they go deeper the stone looks much better, the gold being very coarse. The discovery of these reefs explains what has long puzzled a great many miners working on these creeks, viz., that in the Nine-mile and Yackandandah portion of the creek the gold should be so fine (like dust), while at Rocky Point (which is situated under these reefs) a part of the same creek and just between the two, the grains of gold could be counted, it was so coarse, as also being very pure. Should these reefs turn out as well as they prospected, it will give an impetus to quartz mining which will, I am confident, result in rendering it the most important feature in these districts, there being numerous reefs hitherto unworked and known to be auriferous, which are sure to be sunk on in case the others turn out well.[16]

March 1864: Mining population of Hurdle Flat—224; Rocky Point—138. Homeward Bound Co. crushed 838 tons of quartz for a yield of 913 oz.[17]

June 1864: Homeward Bound Co. crushed 605 tons for 1,059 oz. The United Mining Co., at Hurdle Flat, have finished their tunnel, and have now commenced to sluice their claim, which is expected to give handsome returns to the shareholders.[18]

September 1864: The reefs at Rocky Point have not yielded so well as formerly. In the shaft, the reef has all but run out, but in the tunnel, which the proprietors have just completed, the reef is found. They laid down a tramway from the tunnel to the mill, and have nearly completed the erection of an over-shot waterwheel, which, with the tunnel and tramway, will enable them to work the reefs and crush at an immense reduction in the cost of labour, and fuel for steam power. A new reef has been discovered, about a mile higher up the ranges, about 11 inches in width.[19]

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11 Mining Surveyors' Reports (Yackandandah & Nine-Mile Divisions), October 1860
12 Mining Surveyors' Reports (Yackandandah & Nine-mile Divisions), December 1860
13 Mining Surveyors' Reports (Yackandandah & Nine-mile Divisions), June 1861
14 Mining Surveyors' Reports (Yackandandah & Nine-mile Divisions), August 1861
15 Mining Surveyors' Reports (Yackandandah & Nine-mile Divisions), September 1861
16 Mining Surveyors' Reports (Yackandandah & Nine-mile Divisions), December 1861
17 Mining Surveyors' Reports (Nine-Mile Creek Subdivision), March 1864
18 Mining Surveyors' Reports (Nine-Mile Creek Subdivision), June 1864
19 Mining Surveyors' Reports (Stanley Subdivision), September 1864

December 1864: Scanlan & Co., on Kerry Eagle Reef, Jackson's Gully, crushed 149 tons for a yield of 548 oz. Several claims are still at work on the Kerry Eagle Reef, but none of them have found it as yet save the prospecting claim, in which one shaft is sunk to a depth of 80 feet, and a second of 50 feet; in both the reef continues good.[20]

March 1865: The reef at Rocky Point (Homeward Bound) is looking better than ever at a depth of 300 ft. Claims 1, 2 & 3 north of the Kerry Eagle Reef, have struck the reef recently. A new reef has also been discovered at Lower Nine-Mile, to the east of the creek, about half a mile from the National Hotel. Several claims have been taken up.[21]

June 1865: The reef at Rocky Point still continues to improve as it descends, and the Kerry Eagle, at 115 ft, is still looking rich. Several parties are out prospecting for reefs, and all report favourably of their discoveries. The difficulty existing in procuring crushing power is a great drawback to the development of quartz mining in this subdivision.[22]

September 1865: The prospectors of the reef at Rocky Point have nearly completed the erection of a new steam engine, of greater power than the old one. The Kerry Eagle has struck water in the shaft at a depth of 120 ft, which has caused them to suspend operations. Two new reefs have been discovered last week, in the immediate vicinity of the Kerry Eagle, which are now being prospected.[23]

December 1865: Kerry Eagle Reef still full of water. Some of the partners are prospecting a new reef lower down the range—Cead Mille Failtha?[24]

March 1866: The Homeward Bound is the only quartz claim actually being worked at the present time—still yielding nearly 1 oz to the ton.[25]

June–Sept 1866: Yields from the Homeward Bound Reef diminishing—well below 1 oz/ton for the first time. The reefs at Rocky Point are not being much worked at the present time, the yield of gold not being sufficiently remunerative to warrant the proprietors in employing many hands.[26]

December 1866: The Homeward Bound has shown a decided improvement, and more hands are to be put on.[27]

1867: Homeward Bound Reef continued to give yields of 1 oz/ton and more, and the Kerry Eagle between _–1 oz/ton.[28]

Sept 1868: Evening Star mine, Rocky Point, yielded over 1 oz/ton. Homeward Bound yields well down.[29]

Sept 1869: A splendid specimen of quartz has been exhibited from the Cead Mill Failtha Reef, situate between Hurdle Flat and Rocky Point. Sufficient stone has not yet been obtained to have a final crushing.[30]

December 1869: Trial crushing from Cead Mille Failtha Reef at Hurdle Flat returned 5 oz/ton. It is intended to erect crushing machinery near the reef, and in the meantime the owners are proceeding with a shaft on the reef.[31]

June 1870: O'Dwyer and Co. have erected a mill at Hurdle Flat, which will enable the reefs in that neighbourhood to be more economically worked. A trial crushing from Perry's Teetotal Reef

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20 Mining Surveyors' Reports (Stanley Creek Subdivision), December 1864
21 Mining Surveyors' Reports (Stanley Subdivision), March 1865
22 Mining Surveyors' Reports (Stanley Subdivision), June 1865
23 Mining Surveyors' Reports (Stanley Subdivision), September 1865
24 Mining Surveyors' Reports (Stanley Subdivision), December 1865
25 Mining Surveyors' Reports (Stanley Subdivision), March 1866
26 Mining Surveyors' Reports (Stanley Subdivision), September 1866
27 Mining Surveyors' Reports (Stanley Subdivision), December 1866
28 Mining Surveyors' Reports (Stanley Subdivision), March–December 1867
29 Mining Surveyors' Reports (Stanley Subdivision), September 1868
30 Mining Surveyors' Reports (Beechworth Division), September 1869
31 Mining Surveyors' Reports (Beechworth Division), December 1869

gave a splendid return of over 4 oz/ton. Cead Mille Failtha promises to be the best reef discovered in that locality.[32]

Sept 1870: Quartz mining in the neighbourhood of Hurdle Flat has received a considerable impetus—a trial crushing from the Wallaby Reef gave 16 oz 18 dwt/ton. The company has about 200 tons ready for crushing, and at 70 ft deep the reef is 5 ft wide. The Welcome Reef also had a trial crushing which gave 1 oz 5 dwt/ton. Several other claims have been taken up near the line of reefs above named, and this hitherto neglected locality is likely to become of considerable importance on account of its reefs.[33]

December 1870: A large quantity of stone has been raised from the Kerry Eagle, but has not yet been crushed.[34]

March 1871: The reefs at Hurdle Flat have not turned out as well as usual; it would appear that as they go down they become poorer. The Wallaby Company are at present crushing about 300 tons.[35]

Sept 1871: Quartz mining seems almost to be abandoned in this division, the only reefs at work being those in the vicinity of Hurdle Flat, the returns of which are remunerative.[36]

December 1871: Some of the old reefs have been turning out very well, notably those in the neighbourhood of Hurdle Flat.[37]

March 1872: Wallaby Reef, Cead Mille Failtha, Rechabite, and Kerry Eagle Co. (putting a straight shaft down on to the reef).[38]

December 1872: Hurdle Flat reefs still paying very well.[39]

June 1873: Homeward-bound Reef, Rocky Point, taken up by Bigelow & Co. and shortly after going to work they discovered a payable reef running parallel to the old one. The reef has been worked down to 400-ft level, and the present company intends to go down still deeper as soon as machinery is erected.[40]

Sept 1873: Homeward Bound Reef—water-powered battery being erected. Hurdle Flat reefs doing well, especially Wallaby and Kingston companies. Wallaby Reef now in hands of new owners, who have adopted the plan of taking out the stone in a face, and not picking it here and there where it may look well. The 650 tons crushed averaged over 6 dwt/ton.[41]

Sept 1874: Homeward Bound Reef at Rocky Point yielding very richly from a depth of 440 ft. This claim lay idle for a number of years, having been abandoned as not payable; but since it was taken up by the present owners, Bigelow and Co., and very handsome returns have been obtained.[42]

March 1875: Fine yield from Rechabite Reef at Hurdle Flat—30 tons 10 cwt yielded 200 oz. From time to time this reef has turned out some very rich stone, but latterly it has been very poor and was let on tribute. The above yield is the first obtained by the tributers.[43]

June 1875: Homeward Bound Reef, Rocky Point, now opened at 470 ft and paying well. Wallaby Co. have got an immense reef (24 ft wide). Kingston (formerly Cead Mille Failtha) Reef, from 120-ft level, have a yield of 3.25 oz/ton.[44]

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32 Mining Surveyors' Reports (Beechworth Division), June 1870
33 Mining Surveyors' Reports (Beechworth Division), September 1870
34 Mining Surveyors' Reports (Beechworth Division), December 1870
35 Mining Surveyors' Reports (Beechworth Division), March 1871
36 Mining Surveyors' Reports (Beechworth Division), September 1871
37 Mining Surveyors' Reports (Beechworth Division), December 1871
38 Mining Surveyors' Reports (Beechworth Division), March 1872
39 Mining Surveyors' Reports (Beechworth Division), December 1872
40 Mining Surveyors' Reports (Beechworth Division), June 1873
41 MSR, September 1873
42 MSR, September 1874
43 MSR, March 1875
44 MSR, June 1875

December 1875: The Wallaby Co. have purchased the Kingston crushing mill and the Rechabite pumping wheel, and are erecting the latter at the mouth of their tunnel for the purpose of draining the reef, which is now making a considerable quantity of water.[45]

1875+: Quartz mining on the wane.

March 1876: Wallaby Co. have been sinking a shaft, and the crushing of stone and mullock gave 7 dwt/ton.[46]

Sept 1877: Wallaby Co. putting through their mullock heap, averaging 5 dwt/ton. Stone in the claim not as rich as it was, but will pay well, as the mill is close to the reef.[47]

March 1878: Homeward Bound Reef tributers have struck good stone. Stone crushed at Wallaby Reef not as good as usual.[48]

June 1878: Homeward Bound tributers on fair stone about 100 ft below the level of the tunnel. Wallaby Reef still payable, but poor.[49]

June 1879: Wallaby Reef now worked down to water-level, and at that point carries good gold; before operations can be extended downwards the mine will have to be drained. Kingston Reef also crushing at Wallaby mill. Homeward Bound tributers raising stone which looks payable.[50]

Sept 1879: Kingston Reef now called Marco Polo and turning out well, although left as being too poor a few years back. Wallaby Tribute continues to pay good profits, nearly 15 dwt per ton having been got from 800 tons. The present tribute has only a short time to run, and when finished, the proprietors intend to put a long tunnel into the mine, for the purpose of working it more economically.[51]

Sept 1880: The Wallaby tunnel at Hurdle Flat goes in very slowly, the ground being particularly hard; about 20 ft per month is the average distance driven. There is about 200 ft to drive before it is finished.[52]

December 1880: Homeward-bound Reef—tributers had a good crushing from a part of the reef that had long lain neglected.[53]

June 1881: Rechabite Co. has opened their mill at Hurdle Flat, and will soon begin crushing. This company has a good claim—it is thought that the whole of the hill on which this reef is situated will pay to work, as there are several lines of reef running through it.[54]

Sept 1881: Rechabite Co. plans to obtain a larger battery, as the present one is much too small for their requirements.[55]

March 1882: Wallaby Reef struck rich stone—looks better than it has done for years past.[56]

December 1882: Wallaby and Kingston reefs giving good returns.[57]

March 1883: Wallaby Co. repairing their mill. Tributers have driven the tunnel into the old workings and struck payable stone there. Total length of the tunnel is 554 ft through very hard slate rock;

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45 MSR, December 1875
46 MSR, March 1876
47 MSR, September 1877
48 MSR, March 1878
49 MSR, June 1878
50 MSR, June 1879
51 MSR, September 1879
52 MSR, September 1880
53 MSR, December 1880
54 MSR, June 1881
55 MSR, September 1881
56 MSR, March 1882
57 MSR, December 1882

the height is 8 ft and the width 4-ft. The total cost for driving the tunnel amounted to about £900. The Rechabite Co. has suspended work, as the shoot of stone has run out.[58]

Sept 1883: Newton's Co., near the same locality as the Wallaby, now crushing at the Wallaby mill.[59]

June 1885: Wallaby Co. have not crushed any stone for some time, as they are prospecting the reef.[60]

December 1885: The Wallaby Co., after being a long time without any payable stone, have again struck a patch, which pays well, and will probably lead on to the line of reef that gave this company such good dividends some years ago.[61]

March 1886: Rechabite Co. are putting in an expensive tunnel, in order to strike the reef at a low level, and where they know rich stone lies.[62]

Sept 1886: Rechabite Co. continues their tunnel, as they have not met with the reef in the place expected. Homeward Bound Co., Rocky Point, has been reorganised, with the intention of working that reef to a greater depth than hitherto; and, with that view, the steam engine from the Sunday Reef has been removed to the claim, where it is to be erected in the tunnel. The Kerry Eagle Reef has also been taken up again by a small company, who has succeeded already in striking payable stone. This reef was discovered many years ago, and, at first, gave splendid returns to the finders, who worked it down to water level, since which time nothing like systematic work has been done in it. The present party, however, intend to put machinery on it and work it on an extensive scale, if the stone extends to such a depth and length as will warrant the outlay.[63]

March 1887: Homeward Bound Co. installed a pumping and winding engine. This reef has been worked for over 25 years, and has generally yielded splendidly. It is the longest and best-defined reef in the district. Received assistance from the Prospecting vote.[64]

June 1887: Homeward Bound Co. had a sample crushing 'but they have a considerable amount of much better stone ready to crush as soon as water can be obtained continuously for the wheel'.[65]

Sept 1887: Homeward Bound Co. have been compelled to reduce the number of hands employed until they find better stone than the last crushing was. It is a pity that a strong company cannot be got to take the working of this reef in hand, as all experienced miners are of opinion that it is the best reef in the locality, and that if it were sunk say to the depth of 1,000 feet, that is 300 feet more, rich shoots of gold would be found.[66]

December 1888: Homeward Bound Co. continues to get payable stone at 800 ft.[67]

March 1889: Very little work being done by the Homeward Bound Co. An amalgamation of the Rechabite, Wallaby, and Marco Polo companies, Hurdle Flat, is contemplated, for the purpose of obtaining machinery to work these mines more profitably by draining them, as they adjoin one another.[68]

Sept 1890: Quartz mining doing well at Rocky Point.[69]

1899-1900: Wallaby mine plant upgraded—25 tons of machinery purchased, including a new boiler, 29 ft x 6 ft 6 in diameter.[70]

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58 MSR, March 1883
59 MSR, September 1883
60 MSR, June 1885
61 MSR, December 1885
62 MSR, March 1886
63 MSR, September 1886
64 MSR, March 1887
65 MSR, June 1887
66 MSR, September 1887
67 MSR, December 1888
68 MSR, March 1889
69 Mining Surveyors' Reports, Sept 1890
70 *Ovens and Murray Advertiser*, 10 January 1899 & 20 January 1900

1905: Homeward Bound Co. has worked for several years.[71]

1906: Homeward Bound Co., Stanley, working up towards the surface [glory hole].[72]

1908: On Wallaby side of creek are two tunnels driven into the hill just above creek level. One into the Kingston workings opens out into a large quarry. In this quarry a whim was erected and shaft sunk. 3 chains lower down the creek is the Wallaby tunnel - just below it are remains of old battery, burnt by a bushfire. Wallaby Tunnel is 600 ft long and runs into large open workings. This locality is one of the most promising for reefs in the neighbourhood of Beechworth - they have produced a good deal of gold and are of persistent character.[73]

1908: Wallaby battery - timber frame repaired but battery finally closed four years later as mining operations came to a virtual end.[74]

1910: Mr G.B. Fletcher, who has gallantly taken in hand the further development of the Wallaby Mine at Hurdle Flat, is persevering with his project. Having erected a 12-head battery at the mouth of the shaft of this mine, he is just now engaged in clearing up his first trial crushing.[75]

1966: Outdoor gold museum and national park proposed by Chairman of National Trust Landscape Preservation Council - as well as restoring mining fixtures, 'I should like to see a typical miners' village with buildings of the period in stone and brick'. Mentioned 'loose machinery scattered around should be collected and taken back to the Council yards, because they will otherwise disappear'.[76]

1977: Wallaby battery and mine classified 'C' by National Trust, but classification kept confidential. Vandalism at mine site - certain items removed and placed in storage by Yackandandah Shire. Local Lions Club encouraged by NT to relocate battery in a small park in Yackandandah, as a temporary measure until such time as vandalism at original site could be 'controlled' - battery to be removed by army. NT Buildings Committee opposed removal, as did Beechworth Shire on grounds that mine site was in Beechworth, not Yackandandah - should be removed instead to Burke Museum area.[77]

1978: Proposal by NT to expand Wallaby Mine Historic Area. Forestry Commission planned to use Homeward Bound mullock heap and tailings from alluvial workings near Jenkins Track for road metal. Forestry Commission had already removed Kerry Eagle mullock heaps and used Kerry Eagle shafts as garbage dumps.[78]

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71 Department of Mines Annual Report, 1905
72 Department of Mines Annual Report, 1906
73 Dunn
74 Australian Heritage Commission
75 *Ovens and Murray Advertiser*, 23 April 1910
76 National Trust of Australia (Victoria), File no. 3218
77 National Trust of Australia (Victoria), File no. 3218
78 National Trust of Australia (Victoria), File no. 3218

CHILTERN-RUTHERGLEN GOLDFIELD

DATE	HISTORY:
1858:	First gold discovered at Black Dog Creek, between Sydney Road and Murray River, 1858.[1]
Sept. 1858:	First discovery at Indigo (native Indigo grew on banks of creek), north of Chiltern, September 1858 - rush of 450 in September - 2,000 by mid-October - original discovery about 4 miles west of Barnawartha on Indigo Creek.[2]
Dec 1858:	New Ballarat (later Chiltern) Lead, Chiltern, discovered December 1858.[3]
Jan 1859:	Rush to Moonlight at head of Black Dog Creek, January 1859.[4]
	· Suffolk Lead, Clydeside Lead, Skeleton Lead, Sebastopol Lead, Caledonian Lead, Durham Lead, Scotchman's Lead, Devonshire Lead, Stanley Lead, and Italian Lead - all discovered in 1859.[5]
1859:	Growth of mining settlements successively on upper Indigo Lead and New Ballarat Lead, then Mt Pleasant at Lower Indigo, Cornishtown, Durham and Christmas Town in 1859.[6] Magenta Reef discovered 1858.[7]
1859:	Influx of Chinese, 1859 - about 1,000 (out of total 3,000 miners) working upper part of Indigo Lead.[8]
1860:	Deeper/lower end of Indigo Lead flourished, 1860 - continued on through Mt Pleasant to Cornishtown.[9] Wahgunyah (Rutherglen) rush, 1860 - one of Victoria's last rushes - development of goldfield supported by government, fearful of losing miners to other colonies - three leads opened up: Wahgunyah, Robert Burns, Lanarkshire - leads ran into private land.[10]
1860:	Magenta Reef battery installed early 1860, removed mid-1860.[11]
1860:	'Old' Chiltern leads almost deserted by Europeans for Wahgunyah rush, 1860 - mainly worked by Chinese, who averaged 'good wages, even for Europeans'.[12]
1860:	Rutherglen reefs - first discoveries, 1860 - stone crushed at Chiltern - reefing at a virtual standstill, 1861-6.[13]
1861:	By 1861, only the upper, dry part of the Chiltern Lead was still called New Ballarat.[14]
1861:	Magenta Reef - principal reef in division, 1861 - new battery erected.[15]
	· Several deaths on Wahgunyah leads during 1860-61, through shafts not being slabbed - flaky red clay strata - surface water caused collapse.[16]
1863:	Minor rush to shallow ground at Barambogie, 1863.[17]
1864:	American Reef, Barambogie, 1864 - two claims worked by open-cutting - reef 'worked out' by end of 1864 - battery proposed - not erected? - also Brady's Reef, 1865.[18]
1864:	Golden Bar Co., Higgins Reef, Chiltern, installed battery, 1864 - 'best in division'.[19]
1864:	Of 2,111 alluvial miners in June 1864, 1,132 were Chinese.[20],
1864:	Murray Valley Mining Co. formed to work Lucknow or Clydesdale Lead, Rutherglen, 1864[21]
1864:	Robbie Burns Lead, Rutherglen, 'abandoned' to Chinese miners, 1864.[22]
1865:	Chinese (84 in number) working whole of Black Dog Lead, 1865.[23]
1865:	Main dividend-paying mines, 1865: Extended Sons of Freedom and Indigo Township Mining Co, both on Chiltern Lead.[24]
1866:	Exodus of miners from Rutherglen to NSW, 1866 - mining population reduced from 250 to 80 - mining almost ceased - most dry leads exhausted - no incentive to invest in pumping plant.[25]

1868: Active quartz mines, 1868: Magenta, United Consols (ex-Golden Bar), and Erin-go-Bragh, Lower Indigo.[26]

1868: Doma Mungi Co. (ex-Sons of Freedom), Chiltern Lead, 1868-c.75 - had by far the most expensive and largest plant in the Beechworth Mining District - worth £10,950 -produced 36,750 oz, but heavy calls on shareholders and no dividends paid - much local capital - company's failure was a severe blow to the district.[27]

1869: Surprise Co. and Rutherglen QMC on Rutherglen reefs, 1869 - batteries.[28]

1869+: Development of Rutherglen reefs, from 1875 - until then, reef mining mainly confined to Magenta and Robert Burns reefs.[29] Claim and machinery of Indigo Township Mining Co., Chiltern Lead, sold to Chinese - first instance of 'these persevering people' investing in steam machinery.[30]

1871: Most alluvial gold now obtained by Chinese on old Indigo and other dry leads, 1871 - reworking sluice tailings using water from deep workings, conserved in small dams and reservoirs.[31]

1872: United Consols (Golden Bar) Co. plant removed, 1872 - tailings treated by Chinese.[32]

1872: Magenta Co. battery the only one in Chiltern area, 1872.[33]

1873: Railway opened in 1873, enabling easier transport of heavy machinery, etc.[34]

1873: Large (alluvial?) claim taken up on Stockyard Creek, between Chiltern and Barnawartha, 1873 - almost untried country (shaft bottomed 12 years earlier, plant destroyed by fire).[35] Great Eastern Reef, Rutherglen, discovered? - biggest quartz find at Rutherglen and most important gold producer in the years before large-scale deep lead development - reef exhausted 1878, but working staggered on until 1884 - total of 10,000 oz produced to 1898.[36]

1876: Harris and Hollow's battery, Great Eastern Reef, Rutherglen (private property?), 1876 - 10-head, 14-hp - formerly Rutherglen reefers had to cart quartz to Chiltern - impetus to quartz mining - old reefs taken up (to little effect) - mining registrar predicted: 'Sooner or later Rutherglen will probably form one of the most important mining centres in the colony.'[37]

1876: Chiltern GMC formed to work former Doma Mungi (alluvial) claim, Chiltern Lead, 1876 - top mining operation in division, 1877+[38]

1878: Few Chinese miners returned to dry leads after first winter rains, 1878 - 'a sure sign that the old workings are no longer remunerative'.[39]

1881: New frontage (deep lead) by-laws of Beechworth Mining Board, 1881 - under old laws, 100 men were entitled to 2_ miles; now they can hold 5+ miles by a width of one mile.[40]

1882: Mooted revival on Rutherglen reefs, 1882 - leases taken up, companies formed - another fizzer - main company was the Revival Co., formed to work Campbell's Reef, 1882 - did practically nothing to develop reef - sold plant, 1884, and turned to alluvial mining.[41]

1885: Rutherglen quartz mining slump, 1885, following collapse of 'scrip' companies.[42]

1885: Harris and Hollow/Great Eastern Co. battery, Rutherglen, removed from district, 1885 - stone now carted to Chiltern.[43]

1885: Magenta Co. tailings (accumulation of about 25 years) retreated, 1885 - using 'an improved process'.[44]

1886: Chiltern Valley Co. was only mine working in entire district, 1886.

1886: Great Northern Lead, Rutherglen, discovered 1886 - very rich - commencement of 15 years of great prosperity for the Rutherglen field.[45]

1890:	Good returns of Great Northern Extended Co. caused a revival in alluvial mining, 1890 - company paid £9,000 in dividends in December quarter that year - in 1894 (during Great Depression), the Great Northern Extended was No. 3 on dividend list of Victorian mines - in 1895, it was No. 1, paying £24,000 - mine exhausted by end of 1890s - in 12 years it had produced 107,999 oz and paid £190,500 in dividends.[46]
1890:	Chiltern GMC employed 180 men, plus wood cutters, c.1890 - machinery: 21-inch cylinder pumping engine, 42-inch stroke; winding engine is 18-inch cylinder, hauls two trucks in each cage; 20-hp puddling engine, working 4 puddling machines and sluicing machinery.[47]
1890:	Rush to Black Dog Creek, 1890 - deep sinking on private property.[48]
1890:	Scarcity and expense of mining timber seen as a threat to future mining in the district, 1890.[49]
1890's:	Large-scale development of deep leads during 1890s - most mines working on Great Southern Lead.[50]
Late 1890's:	Great Southern No. 1 - first mine in Victoria to introduce electric haulage underground - late 1890s.[51]
1898:	Chiltern Valley GMC had produced 180,000 oz gold and paid £150,000 dividends by 1898 - continued working until 1920.[52]
1899:	Government battery installed at Rutherglen, 1899 - got only 628 oz gold from 1,110 tons of quartz in first five years, but made Rutherglen quartz reefs (which produced an average total of only 230 oz per year, 1902-19) viable - battery in operation until 1949.[53]
1899:	Great Southern No. 1 was chief mine in district, 1899 - contained junction of three leads: All England, Glencoe and Lucknow - yielded 14,000 oz between 1895-9 - £12,000 dividends.[54]
1898-99:	Golden Bar Reef - 'Chiltern's most famous' - taken up again in 1898 - up until 1898 a total of 20,000 tons from the reef had yielded an average 1 oz per ton.[55]
1900:	Great Southern mine got into production in 1900, after 8 years' pumping - top alluvial producer in Victoria in 1906, 1907, 1908 & 1912 - best year was 1904, when it produced 14,304 oz and paid £11,700 in dividends.[56]
1900:	Great Southern Consols found gold in 1900, after 8 years' development - top alluvial mine in Victoria in 1905, producing 11,000+ oz.[57]
1900+:	During the deep lead boom of 1890s-c.1912, the major Chiltern-Rutherglen mines employed up to 300 men each.[58]
1903:	Quartz revival on Golden Bar line of reef, 1903 - New Golden Bar Co., Golden Bar No. 1, and Golden Bar Extended cos.[59]
1903-06:	Prentice and Southern United Co. tested Great Southern Lead at Gooramadda, on Murray River, 1903-6 - no success.[60]
1906:	Prentice and Southern Co. leases bought by English capitalists, 1906 - formed Prentice and Southern Deep Leads Ltd - operations reverted to North Prentice shaft - biggest mine-pumping plant in Victoria.[61]
1909:	Chiltern quartz mining reviving, 1909 - 'old' Magenta mine restarted - also Chiltern Golden Bar, Chiltern Golden Bar Extended, Lady Rose Co.[62]
1909:	Prentice and Southern mine closed 1909 - unable to make expensive operations pay, despite high yields (1,000 oz per month at end of 1909) - 300 men thrown out of work - after 17 years of pumping up to 65 million gallons a month, had produced only 33,000 oz - very wet mine.[63]
1910:	Great Northern Extended Consols, Rutherglen, ceased mining, 1910 - needed to pump more than twice the usual amount, due to cessation of Prentice and

	Southern mine, on the same lead - had produced 32,500 oz, but no dividends, between 1902-10.[64]
1911:	Deep lead boom virtually over by 1911 - only companies operating in Rutherglen area by 1911 were the Great Southern and Great Southern Consols; only Chiltern Valley Co. and 2 or 3 co-operative parties on alluvial mining at Chiltern.[65]
1911:	Attempts (unsuccessful?) to treat Great Northern Extended Consols and Prentice and Southern mines' slimes, 1911.[66]
1911-12:	Great Southern Consols moved operations to abandoned Great Southern and Chiltern Valley United shaft (No. 2 shaft), 1911-12 - installed impressive new plant.[67]
1912:	Chiltern Valley Co. chose No. 3 shaft site, 1912 - sinking and erecting plant.[68]
1912:	Chiltern quartz mining flagging by 1912 - Golden Bar and Golden Bar Extended mines shut down; Magenta Co. suspending mining operations and engaged in cyaniding tailings.[69]
1914:	Great Southern Co., Rutherglen, wound up in 1914 - falling gold yield, hampered by water due to cessation of pumping in Great Southern Consols mine - total production of mine was 138,000 oz, paid £74,000 dividends (although shareholders contributed £100,000) - great blow to district, which had already lost most of its large mines/employers.[70]
1914+:	Great Southern Reef, Rutherglen, reworked 1914+[71]
1915:	Lady Rose mine, Chiltern, closed down 1915.[72]
1916:	Electric haulage installed in Chiltern Valley GMC mine, 1916.[73]
1916-17:	Messrs Cross and Curtain working reef at Rutherglen opened by deep alluvial operations many years ago (Surprise Co., 1969?), 1916-17 - crushing at government battery.[74]
1917-18:	Rutherglen government battery crushing full-time, 1917-18 - including quartz from Corowa, NSW.[75]
1917:	Great Southern Consols, Rutherglen, ceased work 1917 - last of district's big alluvial mines - total production was 93,000 oz, but paid only £19,000 dividends.[76]
1919:	Mining at Rutherglen negligible after 1919 - now an agricultural area - one of the district's pioneer agriculturalists said that there was more gold to be won from the top twelve inches of soil than from the depths below.[77]
1920:	Chiltern Valley GMC ceased operations 1920 - the only company to have established truly efficient operations - eventually worked out the lead completely for a distance of about 8-km.[78]
1921:	Magenta Reef Co. still working in 1921 - reef worked almost continuously since 1858.[79]
1937-50:	Rutherglen Dumps Ltd treated deep lead slime dumps from 1937-50 - about 1 million tons of slum available for treatment in 1937 - worked Great Southern dump, 1939-40; Southern Consols dump, 1940-41 and 1946-7; Great Northern Extended Consols dump, 1947-8; Great Southern No. 1, 1948; North Prentice, 1949 - plant removed from Southern Consols dump to Great Northern Extended Consols, 1947 - increase in gold price after WW2 increased the viability and life span of cyaniding operations - plant removed, 1951.[80]
1954+:	Romey's cyananiding plant, Lilliput, 1954+ - sluicing slum from Great Southern Consol dump to the treatment plant - during 1954, treated 4,790 tons for 95 oz.[81]

SOURCES:

Ashley, R., *History of the Shire of Chiltern*, 1974

Ashley, R., letter dated 22/4/1980, in Historic Places Section hanging file on Chiltern

Baragwanath, W., 'Magenta Reef, Chiltern', in Records of the Geological Survey of Victoria, vol. 4, part 4, 1925 (report dated 12/1921) p. 374 + plan (on file)

Brough Smyth, R., *The Gold Fields and Mineral Districts of Victoria*, Government Printer, Melbourne, 1869; facsimile edition, Queensberry Hill Press, Carlton, 1979

Butler, G., 'North East Review: Historic Sites Survey' (draft), for the Land Conservation Council of Victoria, May 1982

Canavan, F., *Deep Lead Gold Deposits of Victoria*, Geological Survey of Victoria Bulletin 62, Department of Industry, Technology & Resources, Melbourne, 1988

Department of Conservation and Natural Resources, 'Chiltern Historic Drive' Parknotes, February 1984 (includes plan of Magenta mine site)

Department of Conservation and Natural Resources, Historic Places Section, Historic Sites Database and hanging files

Department of Mines Annual Reports, 1903-18

Department of Mines, Map 1003/6/4, Chiltern, 40 chains to 1 inch, Sheet No. 1 (18?)

Dunn, E.J., 'Mining Timber in the Chiltern District', Appendix H to Mining Surveyors' Reports, December 1887

Hunter, S.B., *The Chiltern Goldfield*, Memoirs of the Geological Survey of Victoria, No. 1, Department of Mines, Melbourne, 1903

Land Conservation Council, *Final Recommendations: Murray Valley Area*, Melbourne, May 1985

Lloyd, B., *Rutherglen: A history of town and district*, Shoestring Press, Wangaratta, 1985

Mining and Geological Journal

Moon, C., 'Magenta Quartz Mine', report for Chiltern Shire for submission to National Trust, undated (197?)

National Trust of Australia (Victoria), File No. 2292 (Magenta mine)

MAPS:

Chiltern, Department of Mines map no. 1003/6/4, 40 chains to 1 inch.

Deep leads of Indigo, Chiltern and Wahgunyah, 2 miles to 1 inch, in Brough-Smyth, R., *Gold Districts of Victoria,* 1869

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1 Ashley, 1974
2 Ashley, 1974
3 Ashley, 1974
4 Ashley, 1974
5 Ashley, 1974
6 Ashley, 1974
7 Baragwanath
8 Ashley, 1974; Mining Surveyors' Reports, May 1859
9 Ashley, 1974
10 Lloyd, pp. 11-13
11 Mining Surveyors' Reports, March, July & September 1860
12 Mining Surveyors' Reports, November 1860
13 Mining Surveyors' Reports, February 1861; Lloyd, p. 56
14 Ashley, 1974
15 Mining Surveyors' Reports, September 1861
16 Mining Surveyors' Reports, December 1861
17 Mining Surveyors' Reports, January 1863
18 Mining Surveyors' Reports, June 1864, June 1865
19 Mining Surveyors' Reports, June 1864
20 Mining Surveyors' Reports, June 1864
21 Mining Surveyors' Reports, December 1864
22 Lloyd, p. 52
23 Mining Surveyors' Reports, September 1865
24 Mining Surveyors' Reports, September 1865
25 Mining Surveyors' Reports, December 1866; Lloyd, p. 52
26 Mining Surveyors' Reports, September 1868

[27] *Australian Mining Standard*, pp. 83-5; Mining Surveyors' Reports, March 1869
[28] Mining Surveyors' Reports, September 1869
[29] Mining Surveyors' Reports
[30] Mining Surveyors' Reports, September 1870
[31] Mining Surveyors' Reports, March 1871
[32] *Australian Mining Standard*, pp. 88-9
[33] Mining Surveyors' Reports, September 1872
[34] *Federal Standard*, 11/5/1923.
[35] Mining Surveyors' Reports, June 1872, March 1873
[36] Lloyd, p. 70
[37] Mining Surveyors' Reports, June & December 1876
[38] Mining Surveyors' Reports, December 1876+
[39] Mining Surveyors' Reports, March 1878
[40] Mining Surveyors' Reports, September 1881
[41] Mining Surveyors' Reports, June & September 1882, September 1883, September 1885
[42] Mining Surveyors' Reports, September 1885
[43] Mining Surveyors' Reports, March 1885
[44] Mining Surveyors' Reports, March 1885
[45] *Australian Mining Standard*, p. 83; Lloyd, pp. 73-4
[46] Mining Surveyors' Reports, June & December 1890; Lloyd, p. 75
[47] Arrowsmith
[48] Mining Surveyors' Reports, December 1890
[49] Mining Surveyors' Reports, June 1890
[50] Lloyd, p. 113
[51] Department of Mines Annual Report, 1903; Lloyd, p. 1126
[52] *Australian Mining Standard*, pp. 84-5
[53] Lloyd, pp.72, 117
[54] *Australian Mining Standard*, pp. 84-5
[55] *Australian Mining Standard*, pp. 88-9;
[56] Lloyd, p. 117
[57] Lloyd, p. 113
[58] Department of Mines Annual Reports, 1903 & 1909
[59] Department of Mines Annual Report, 1903
[60] Lloyd, p. 116
[61] Department of Mines Annual Report, 1906
[62] Department of Mines Annual Report, 1909
[63] Lloyd, p. 116; Department of Mines Annual Report, 1909
[64] Department of Mines Annual Report, 1910; Lloyd, p. 115
[65] Department of Mines Annual Report, 1911
[66] Department of Mines Annual Report 1911
[67] Lloyd, p. 114; Department of Mines Annual Report 1912
[68] Department of Mines Annual Report, 1912
[69] Department of Mines Annual Report, 1912
[70] Department of Mines Annual Report, 1914
[71] Department of Mines Annual Report, 1918
[72] Department of Mines Annual Report, 1915
[73] Department of Mines Annual Report, 1916
[74] Department of Mines Annual Reports, 1916-17
[75] Department of Mines Annual Reports, 1917-18
[76] Department of Mines Annual Report, 1917; Lloyd, p. 114
[77] Lloyd, p. 33
[78] Canavan, p. 40
[79] Baragwanath
[80] *Mining and Geological Journal*, 1937-51
[81] *Mining and Geological Journal*, 1954

JAMIESON-TEN MILE GOLDFIELD

DATE	HISTORY:
1854:	First authenticated gold rush on the Goulburn, 1854, to Cashine's (or Ration's) Point, about two miles above the junction of the Goulburn and Jamieson rivers - the rush was short-lived, but led to further prospecting - another rush to Jamieson Flat in 1855 - 300 diggers - supplied by storekeeper on Howqua station - again the rush was short-lived - few diggers stayed on.[1]
1861:	Alluvial gold discovered in Sailor Bill's Gully and Baker's Gully, 1861 - other localities worked near Ten-mile from that time.[2] Reefs at Sailor Bill's opened up, 1861.[3] 'Jamieson goldfield' seems originally to have referred to Jamieson-Gaffney's Creek area - Jamieson was main settlement and access point.
August 1861:	Township has sprung up 'at what is known as the Jamieson Flat, at its junction with the Goulburn, the farthest point drays can take stores'.[4] Cost of carting stores to Jamieson, August 1861: £25 per ton.[5] No workings at Jamieson Creek itself, August 1861 - principal workings at Gaffney's Creek and Upper Goulburn.[6] No Chinese miners, 1861.[7]
1862:	Jamieson (Upper Goulburn?) goldfield, 1862: 'The nature of the country is such that each reef will require its own mill, as it would be impossible to carry quartz any distance.'[8]
1864-65:	Mack's Creek township growing, end of 1864 - township surveyed, 1865 - population of 145.[9]
1865:	Focus of population and mining in 1865 was at Sailor Bill's, Swampy and Mack's creeks - 2 x steam crushing mills at Mack's Creek (Star of the West Co.), Luck's All QMC, 12- and 10-head respectively and both powered by Langlands steam engines) - also Hungarian GMC, 5-heads powered by a 30-ft waterwheel, increased in 1866 to 20-head powered by steam - Mountain View QMC, 15-head water-powered battery.[10] Hungarian GMC, Sailor Bill's Creek, 1865 - system of level and inclined tramways and two short water races on Sailor Bill's Creek - the near-vertical inclined tramway, with a grade of 6-in-7, was probably the steepest ever constructed in Victoria - a considerable engineering achievement.[11]
1866-72:	Richest early reef on the Jamieson field was Champion Reef at Sailor Bill's Creek - between 1866-72, claims on the reef yielded a total of 1562 oz from 434 tons.[12]
1866:	Work commenced on Gleeson's lease, Sailor Bill's Creek, 1866 - 16-head, steam-powered battery installed in 1868 - small crushings gave good yields.[13]
1866-67:	Miners left for Alexandra (Mt Pleasant) and Howqua, 1866-7.[14]
1867:	Main focus of mining in 1867 was alluvial on Goulburn River, for five miles north of Jamieson - mining very depressed by mid-1867 - much capital and labour expended in past year for no result - mining population diminished - quartz mining at a standstill.[15]
1868:	Five crushing machines, 1868 - Star of the West, Luck's All (Mack's Creek), Sailor Bill's Creek (new), Mountain View, Gleeson's (new).[16] Crushings from six mines, 1868, on Elizabeth (Swampy Creek), Luck's All, Champion, Hungarian (Sailor Bill's Creek), and Evening Star reefs.[17] In 1868, a crushing of 7 tons from the Alabama Reef at Sailor Bill's Creek yielded 50 oz - the reef had been worked since 1865.[18]
1869-70:	Work commenced on the Venture mine at Mack's Creek in 1868 - in 1869-70, it was the major gold-producer on the Jamieson goldfield - thereafter, it fell into second place behind the Gleeson's mine, until 1877 when it again became No. 1 - total yield for the period 1868-79 were 11,788 oz from 17,090 tons - its gold yield was almost equal to Gleeson's, from only three-quarters the quantity of ore.[19]
1869:	Alluvial mining carrying on a small, steady manner, 1869 - mainly river and bank claims on the Goulburn - no quartz mine rated a mention by name.[20]

1870-73: Substantial population of Chinese alluvial miners, 1870-73.[21]

1871: Two reefs (Pride of Venice & Queen of the Alps) discovered at Baker's Creek, 1871.[22] Belle of Venetia battery, 1871 - steam-powered.[23]

1871-72: Quartz mining activity increased during 1871-2 - gold yield steadily rose: March 1872, 588 oz; June, 1257 oz; September, 2047 oz; December 2757 oz - alluvial gold accounted for 500 oz of that.[24] Output and yields from Gleeson's mine increased dramatically from 1871 - peak year was 1873, when 5,111 tons yielded 3,126 oz - that was the year the Gleeson's Lease GMC was formed, with 15000 x £2 shares - activity diminished after 1876 - for the period 1866-79, a total of 23,181 tons yielded 12,495 oz, making it by far the Jamieson goldfield's major gold producer - its gold yield was only surpassed by the Star of the West mine, 1904-18.[25]

1872: Golden Nugget battery, Baker's Reef, 1872 - steam-powered.[26] Discovery of Specimen Reef, 1872 - 'the richness of which has not hitherto been even approached in this district' - certain to yield enormously - situated on east flank of Mt Terrible, some 1600 feet above level of Goulburn River - great impetus to quartz mining - yield for 1872 was 1340 oz from only 46 tons of stone - impressive, but less spectacular, yields continued until 1876 - a total of 2,105 oz from 276 tons, making it the Jamieson goldfield's richest mine - work ceased in 1878.[27] Mining registrar wrote of 1872 quartz mining revival: 'Although considerable attention is being devoted to quartz mining on the part of the residents, and a number of progressive mining companies, locally supported, have been formed, and are in active work, it is a matter for congratulation that the mining mania has not set in with the improving prospects of the district, so that none but legitimate enterprises are likely to receive much support, thus ensuring the healthy development of the mines' - this proved to be the case - many of the mines developed at this period were worked steadily throughout the 1870s and 80s.[28]

1870's-80's: Main mines throughout 1870s were Venture, Specimen, Gleeson's.[29] From mid-1870s-80s, about six to ten companies worked steadily on quartz (all by tunnel), without spectacular results.[30]

1874: Mack's Creek Co. (future Star of the West) was the major gold producer in 1874 - 3004 tons gave 2655 oz - thereafter only a minor producer until 1879.[31]

1875: in 1875, when the yields from the main gold-producing mines were starting to diminish, the Alabama mine at Sailor Bill's Creek began a series of crushings which would make it one of Jamieson's richest mines of the 1870s - in the three years 1875-7, the mine yielded 2,490 oz from 427 tons - the mine's best year was 1876 when 286 tons gave 1906 oz - the mine's total yield, 1868-79, was 2,701 oz from 608 tons.[32]

1877: Sailor Bill's Co. erected battery, 1877 - 10-head, 40-ft waterwheel - at junction of Sailor Bill's and Purdy's creeks - water being unavailable for nine months of the year - supplementary steam power and five more stamp-heads added to battery in 1883 - battery served Sailor Bill's Creek GMC until 1889 and then the United Gleeson's and Sailor Bill's Co. and its successors until about 1920.[33]

1880's: Quartz mining at Mack's and Sailor Bill's creeks - focus on prospecting.[34] During 1880s, and possibly pre-1880s, gold production from alluvial mining was greater than from quartz mining - thereafter, quartz mining dominated.[35] Gleeson's Lease GMC, 1880-87 - crushed 2,368 tons for 611 oz.[36] Sailor Bill's Creek GMC was the major gold-producer on the Jamieson field during the 1880s - total yield 1880-87 (when work ceased) was 4998 oz from 9772 tons - best year was 1882, when 1116 tons yielded 1494 oz.[37]

1887: Creek claims on Flourbag Creek, 1887 - ground found by prospectors.[38]

1888: Prospectors (engaged by shire council) 'vigorously loaming for quartz reefs' and prospecting for alluvial, 1888.[39]

1889: Clancy Brothers, Sailor Bill's Creek, 1889 - erected 20-ft diameter pitch-back waterwheel, 8-head battery - ingenious use of water tank for baling.[40] Eureka Reef (old Mack's Creek line, near Mt Terrible) opened up by government

prospectors, 1889 - substantial machinery being erected.[41] Quartz mining and prospecting activity increasing, 1889.[42]

1890's: From 1890s onward, quartz mining dominated - main centres of activity were Star of the West group of mines at Kevington, and along Sailor Bill's Creek.[43]

1891: Three reefs opened up at Sailor Bill's and Mack's creeks, 1891 - quartz mining still flourishing.[44] McQuilton and Lloyd parties doing well on Kevington reefs, 1891 - McQuilton, Lloyd, and Aiton's Star of the West Hill mine yielded 3899 oz from 1131 tons during the 1890s, with 1894 its most successful year.[45] Good crushing from Loyola Co., Ten-Mile Creek, 1891 - Loyola mine yielded just 148 oz during the 1890s, ceasing work in 1896.[46] Jamieson's most successful mine of the 1890s was the Blue Ribbon - about 2.5 miles south of Ten-mile township on Purdy's Creek (left-hand branch of Sailor Bill's Creek) - yielded 3929 oz from 2291 tons - battery installed 1892 - best year was 1891, when 300 tons yielded 1200 oz - No. 1 tunnel on hillside, south tunnel in gully.[47]

1892: Blue Ribbon battery erected, 1892 - 5-head, waterwheel - steam engine added 1905.[48] Britannia battery erected 1892 - 6-head, steam-powered - removed 1894.[49] Enterprise battery erected 1892 - small steam-powered battery.[50] Loyola battery erected 1892 - steam-powered.[51]

1893: Quicksilver Creek mercury deposit discovered 1893 - about nine miles from Jamieson as the crow flies, but only access was by a narrow packhorse track through very rough country - reef about nine chains up the creek from the Jamieson River - Australia had no commercially developed mercury deposits at the time - ore body was developed slowly, mainly due to rugged locale - Jamieson Quicksilver Mining Co. formed in 1897 - shaft put down - 140 feet deep in 1900 - water-powered battery erected - GSV surveys said ore not payable - difficult to get labour to work in the remote spot, known locally as 'Siberia' - little work undertaken - interest increased when mercury doubled in price during WWI - plant destroyed by bushfire in 1919. Mine reworked in 1925.[52]

1897: Pride of the Goulburn battery erected 1897.[53]

1898: Nugget battery erected 1898 - 10-head, 30-ft waterwheel, Jones Walker patent ore crusher and amalgamator - removed to Working Miners, 1902.[54] Glen Albion battery, 1898 - 10-head, waterwheel.[55]

1899: First dredge in Victoria began work on Upper Goulburn River near Kevington in 1899.[56]

1900-14: United Gleeson & Sailor Bill's GMC mine, Ten-Mile, 1900-14 - included old Sailor Bill's mine and several other original small holdings - Jamieson's premier gold-producer, 1900-08 - total yield for that period was 4952 oz from 8382 tons - in 1907, Dunn reported little work being done, but immense amount of work done in the past - numerous tunnels, shafts, &c. - within the mine a great mass of very rich gold-bearing quartz was removed when the mine was first worked, leaving a cavity known as the 'Ballroom' - operations ceased 1914.[57]

1902-05: Star of the West GMC formed 1902 - 10-head steam battery erected 1904 - for the period 1903-18, its total yield was 14,998 oz from 19,352 tons - best year was 1905, when 5811 oz were got from 3932 tons - Jamieson goldfield's largest producer for the period 1900-20.[58] Working Miners battery erected 1904 - 10-head, undershot waterwheel, battery ex-Nugget.[59] Extended Sailor Bills Co. battery erected at Baker's Creek, 1904 - 30-ft waterwheel.[60]

1905+: Britannia battery erected 1905 - steam-powered - removed 1917.[61] Working Miners GMC, 1905-9 - working on a large scale, but for little return - crushed 3866 tons of stone for only 324 oz.[62]

1906-08: Goulburn River Dredging Co. pumped sluicing plant operated on Goulburn River at Jamieson, 1906-8 - one of first dredging operations on Goulburn River catchment, as dredge mining was formerly restricted on that river and its tributaries because of local opposition to its deleterious effects on water and agriculture - Sludge Board inquiry held in 1906-7 to consider whether dredge mining should be allowed to proceed in region - found that hydraulic sluicing, without elevation, had been carried out for years in Tallangallook and Dry Creeks, without major ill-effects to waterways - Sludge Board could see no reason why applications for dredging leases on Goulburn tributaries should not be 'dealt with on their merits' - ie., approved.[63]

1907: Blue Ribbon mine, 1907 - driving south tunnel.[64] New Alabama mine, 1907 - about 2.5 miles west of Ten-mile township - shaft sunk 260 feet - small winding plant (erected 1906) and 4-head battery (1904).[65] Birthday mine being worked, 1907 - about 10 chains south of Alabama tunnel.[66]

1908-10: Clancy's Reef GM, Ten-mile, 1908-10 - 5-head battery.[67] Jamieson government battery, 1908-16 - no returns 1911-16.[68] Wheeler and party prospecting at Mt Terrible, 1909 - unsuccessful.[69]

1909-14: Champion mine worked on a large scale from 1909-14 - 10-head Pelton wheel battery replaced old (1905) battery in 1910 - steam-power added in 1912 - total yield, 1909-14, was 5,315 oz from 18,293 tons, making it the second-largest gold producer on the Jamieson field in the period 1900-20.[70]

1914-19: Workings Miners' mine taken up again, 1914-19 - once again, large crushings gave fairly disappointing yields: 2983 tons gave 578 oz - new suction gas plant erected 1918.[71] Champion mine taken up again, 1916 - 15-head suction gas plant installed erected at mouth of tunnel in 1918 - continued working until 1928.[72]

1917: United Gleesons GMC worked 1917-28, with good results in 1924 and 1926.[73]

1918: Working Miners' Co., Ten-Mile, 1918 - suction gas plant, 10-head battery, and small air compressor erected.[74] Star of the West mine, 1918 - prospecting party.[75] Small party working Sailor Bill mine, 1918.[76]

1920-26: Star of the West mine worked from 1920-26.[77]

1925-27: New company formed to work quicksilver mine, 1925 - machinery erected 1927 - insufficient capital - operations ceased 1927.[78]

1929-33: New Champion Co. operated 1929-33 - small operation.[79]

1933: Gleeson's United Co. formed 1933 - installed new double-winding winch and repaired battery gas engine, 1938 - battery and surface plant destroyed by bushfire, rebuilt 1940 - ceased work c.1941.[80]

1934-36: Champion Amalgamated Co. operated 1934-6 - 6089 tons yielded 1583 oz - plant sold, 1937.[81] New Star of the West, Kevington, 1934-c.41 - installed 10-head battery, aerial ropeway, tramways, suction gas plant, 1937[82]

1941: Silver Creek Co. formed to work cinnibar lode at head of Jamieson River, 1941 - track to mine reconditioned, small plant erected, old shaft repaired - some native mercury and cinnibar revealed, but not payable.[83]

1946: Operations commenced at Britannia mine, Ten-Mile, 1946 - diamond drilling results poor - mine closed and plant sold 1948.[84]

1946-48: Operations recommenced at New Star of the West mine, Kevington, 1946 - renamed Northern Star - mine buildings erected, new main adit commenced and main shaft deepened to 1,493 ft, 1948.[85]

1950: New 10-head battery built on site of old battery at Northern Star mine, 1950 - flying fox installed to bring ore from hopper, about 100 ft above the mill - total length of aerial ropeway, 1100 ft.[86]

1955: Northern Star Co. working on lease at Baker's Creek, 1955 - 2-compartment shaft sunk, with poor results - operations ceased at this site - plant moved back to Kevington - operations suspended - tributers tried to continue, but had no success.[87]

SOURCES:

Dunn, E.J., 'The General Features of the Jamieson Goldfield and Some Mines Between Jamieson and Wood's Point', in *Records* of the Geological Survey of Victoria, vol. 3, part 1, 1909 (report dated 1907).

Lloyd, B., *Gold at the Ten Mile: the Jamieson Goldfield*, Shoestring Bookshop, Wangaratta, 1978.

Milner, P., *On Mining Machinery Sites in the Jamieson Division*, 2report to the Historic Places Section, Conservation Forests and Lands, May 1989 (Technology Note No. TN-89/32, Department of Mechanical and Manufacturing Engineering, University of Melbourne).

Steenhuis, L., 'Central Highlands Alluvial Mining Areas', report to CNR Central Highlands Regional Assessment, 1993.

Supple, Perham and Griffiths, *Historic Sites in the Melbourne East Study Area*, report to the Land Conservation Council, 1990?

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1 Flett, pp. 96-7
2 Flett, p. 109
3 Flett, p. 109
4 Mining Surveyors' Reports, August 1861
5 Mining Surveyors' Reports, August 1861
6 Mining Surveyors' Reports, August 1861
7 Mining Surveyors' Reports, December 1861 Mining Surveyors' Reports, December 1861
8 Mining Surveyors' Reports, September 1862
9 Mining Surveyors' Reports, December 1864, September 1865
10 Mining Surveyors' Reports, June 1865; Lloyd, Table 2-4, pp. 30-31
11 Milner, p. iv
12 Lloyd, Table 2-3
13 Lloyd, Table 2-3, pp. 30-31
14 Mining Surveyors' Reports, September 1866, March 1867
15 Mining Surveyors' Reports, March, June, September & December 1867
16 Mining Surveyors' Reports, June & September 1868; Lloyd, Table 2-4, pp. 30-31
17 Mining Surveyors' Reports, December 1868
18 Lloyd, Table 2-3
19 Lloyd, Tables 2-3 and 3-2
20 Mining Surveyors' Reports, 1869
21 Milner, p. iv
22 Mining Surveyors' Reports, June 1871
23 Lloyd, Table 2-4, pp. 30-31
24 Mining Surveyors' Reports, December 1871, December 1872
25 Lloyd, Table 2-3, pp. 30-31
26 Lloyd, Table 2-4, pp. 30-31
27 Mining Surveyors' Reports, June 1872; Lloyd, Table 3-2
28 Mining Surveyors' Reports, September 1872
29 Mining Surveyors' Reports
30 Mining Surveyors' Reports
31 Lloyd, Table 2-4
32 Lloyd, Table 2-4
33 Lloyd, p. 28; Table 2-4, pp. 30-31; Mining Surveyors' Reports, June 1877, June 1883
34 Mining Surveyors' Reports

35 Milner, p. iv
36 Lloyd, Table 7-1
37 Lloyd, Table 7-1
38 Mining Surveyors' Reports, June 1887
39 Mining Surveyors' Reports, March 1888
40 Milner, p. 3; Mining Surveyors' Reports, September 1889
41 Mining Surveyors' Reports, September 1889
42 Mining Surveyors' Reports, December 1889
43 Milner, p. iv
44 Mining Surveyors' Reports, March 1891
45 Mining Surveyors' Reports, September 1891; Lloyd, Table 8-1
46 Mining Surveyors' Reports, September 1891; Lloyd, Table 8-1
47 Lloyd, Table 8-1; Dunn, pp. 44-5
48 Lloyd, Table 9-2
49 Lloyd, Table 9-2
50 Lloyd, Table 9-2
51 Lloyd, Table 9-2
52 Lloyd, pp. 122-4
53 Lloyd, Table 9-2
54 Lloyd, Table 9-2
55 Lloyd, Table 9-2
56 Lloyd, *Bright Gold*, p. 174
57 Lloyd, Table 9-1; Dunn, p. 44; Department of Mines Annual Report, 1909
58 Lloyd, Tables 9-2 & 10-1
59 Lloyd, Table 9-2
60 Lloyd, Table 9-2
61 Lloyd, Table 9-2
62 Lloyd, Table 9-1
63 Department of Mines Annual Report, 1907, pp. 74-6
64 Dunn, pp. 44-5
65 Dunn, pp. 45-6
66 Dunn, p. 47
67 Milner, p. 3; Department of Mines Annual Reports, 1908, 1910
68 Department of Mines Annual Reports, 1908-16
69 Department of Mines Annual Report, 1909
70 Lloyd, Table 9-1
71 Lloyd, Tables 9-1 & 9-2
72 Department of Mines Annual Reports, 1916-18; Lloyd, Tables 9-1 & 15-1
73 Lloyd, Table 15-1
74 Department of Mines Annual Report, 1918
75 Department of Mines Annual Report, 1918
76 Department of Mines Annual Report, 1918
77 Lloyd, Table 15-1
78 Lloyd, pp. 124-5
79 Lloyd, Table 15-1
80 Lloyd, Table 15-1; *Mining and Geological Journal*, July 1938, January & July 1940
81 Lloyd, Table 15-1; *Mining and Geological Journal*, July 1937
82 *Mining and Geological Journal*, January 1938
83 *Mining and Geological Journal*, January & July 1941
84 *Mining and Geological Journal*, 1946
85 *Mining and Geological Journal*, 1946, July 1948, January 1949
86 *Mining and Geological Journal*, January 1951
87 *Mining and Geological Journal*, July 1955, January 1956

KOETONG TIN FIELD

DATE	HISTORY:
	Koetong Black Jack
1873:	Tin was first worked in the Koetong area in 1873. In June that year, stream tin was being worked on Koetong, Dry Forest, Burrowye (or Burrawa), Pleasant, and Cudgewa Creeks and their branches. Stream tin was worked in much the same way as alluvial gold: the upper soil (called 'stripping') on the creek flats was shovelled away until tin-bearing washdirt was exposed; sluicing was then carried out. Mineral leases were pegged out for several miles from the heads of the creeks[1]. The discovery of Black Jack - a heavily mineralised ore which was the despair of gold-miners - gave rise to 'visions of boundless yields' and a frenzy of speculation. But the visions failed to be realised: by September 1873, the ground had been found very patchy and unremunerative, and in 1878 the *Ovens and Murray Advertiser* remembered the Koetong field as 'a rank duffer'.[2]
	First tin-mining boom
1881-82:	Speculators again turned their attention to Koetong, and to Mt Alfred, when tin prices were high in 1881-2. At Mt Alfred the tin was crushed out of the rock from the mountain itself; at Koetong the creeks were worked for alluvial tin.[3] The **Mt Alfred mines** were worked by tunnels and shafts about 100 m above the river flats, south-west of the present-day Mt Alfred township on the Murray River Road. The principal mine was that of the **Alfred Co.** which in 1882 had **plant** comprising a 36-hp engine, stone-breaker, and double-roller and Hemely mills, operating the equivalent of 65 stamp-heads. At least 1,000 tons of ore was raised at Mt Alfred, but tin prices slumped again before any had been treated or sold.[4] Fifty tin miners were working Mt Alfred and Koetong at the end of 1882.[5]
1883:	At **Burrowye**, south-west of Mt Alfred, early in 1883 'stripping' for stream tin was being carried on.
	Walwa gold & tin
1883-1912:	As early as 1856, gold had been found on the Jinjellic pastoral run, on the Victorian side of the Murray (north-west of Corryong).[6] In 1883, quartz mining was underway at nearby Walwa. The **Walwa Co.** planned to erect a **crushing plant** close to the river, connected by tramway with its mine, about 1.5 km away.[7] In 1912, tin lodes were being worked, and the **Walwa Tin Mining Co.** erected a 10-head **battery** equipped with concentrating tables.[8]
	Koetong revival
1905-07:	In 1905, the 'neglected' Koetong tin-mining field was again taken up and the following year the field was booming, with many parties sluicing and sand-pumping. The **Excelsior** was the only company on the field using **steam machinery** in 1907. Tin prices remained high, and parties worked the Koetong Creek deposits by hydraulic sluicing. The **Border Mining Co.**, in 1912, operated three hydraulic nozzles powered by a **network of races and a modern pumping plant**.[9] Tin was worked by a **pump, sluicing and elevating plant** 1,000 m above sea-level at **Mt Cudgewa**, 20 km south of Koetong, in 1916.[10]
	Scheelite
1916-37:	Mining of **scheelite** (an important source of tungsten) began at Koetong in 1916. The ore was initially treated at the Chiltern State Battery, but before the year was out, the government was erecting a five-head, suction-gas-powered battery and concentration plant at Koetong itself. (The swift installation of the State Battery confirms the metal's importance.) Apart from scheelite, the State Battery treated local tin and wolfram from the Tallangatta Valley.[11] The **Koetong State Battery** was still in operation in 1937, when it crushed and treated scheelite ore for just one party of miners. After that date, the battery was idle.[12] (Removed?)
1941-50's:	Alluvial tin was worked by the Happy Valley Tin Sluicing Co. at **Shelley**, 10 km east of Koetong, in 1941[13], and at Koetong during the 1950s by the **Eureka Co**. The latter company treated dirt with a (diesel-powered?) **puddler** in conjunction with a sluice-box.[14]

SOURCES:

Butler, G., 'North East Review: Historic Sites Survey' (draft), for the Land Conservation Council of Victoria, May 1982.

Convey, T., *The Days of Gold - Mining in the Tallangatta District*, published by the author, Albury, 1980.
Department of Mines Annual Reports.
Mining and Geological Journal.
Mining Surveyors' Reports 1882-89.
Philipp, J. *The Making of a Mining Community: Bethanga, Victoria 1875-1885*, in 'La Trobe University Studies in History' series, Department of History, La Trobe University, 1993.

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1 Mining Surveyors' Reports, June 1873
2 Mining Surveyors' Reports, September 1873; *Ovens and Murray Advertiser*, 22/6/1878 (quoted in Philipp, p. 22)
3 Convey, p. 44
4 Convey, p. 44
5 Mining Surveyors' Reports, December 1882
6 Flett, p. 166
7 Mining Surveyors' Reports, March 1883
8 Department of Mines Annual Report, 1912
9 Department of Mines Annual Report, 1912
10 Department of Mines Annual Report, 1916
11 Department of Mines Annual Reports, 1916-17
12 Department of Mines Annual Reports, 1937+
13 *Mining and Geological Journal*, 1941
14 *Mining and Geological Journal*, 1941

Compiled by Robyn Annear, CNR
Historic Mining Sites Assessment Project, August 1994

INDI (UPPER MURRAY) RIVER GOLDFIELD

DATE	HISTORY:
1860-61:	The Omeo Prospecting Association had examined a 32-km stretch of the Indi River and its tributaries by 1861, and declared the whole area auriferous.
late 1860's:	From the late 1860s, alluvial miners worked the river flats at Tom Groggin station and on the upper Buckwong River and Dinner Creek, a lower branch of the Buckwong (south and south-west of Tom Groggin). Gold was also found in granite along the Buckwong.[1]
1866:	In 1886, gold was discovered and worked in the gravels of Bunroy Creek, an Indi tributary about 20 km north of Tom Groggin. Limestone Creek and its tributaries (including Dead Horse and Middle Creeks), south of Buckwong Creek, (Gippsland Mining District) were worked from 1887.[2]
1893:	The Indi River was again rushed in 1893.[3]
1912-21:	In 1912, payable stream tin was found in Surveyor's Creek, an Indi tributary just north of Tom Groggin.[4] Because of its inaccessibility - 'A narrow mining developmental track from Corryong, hugging the precipitous gorge of the Murray for a distance of about 40 miles, provides the most accessible route to the field' - Surveyor's Creek was slow to develop as a mining field; but in 1917 a lease was worked near Dingo Creek for both alluvial tin and gold, by means of an hydraulic jet elevator, fed by race.[5] Yields were only 'fair' and the lease was abandoned in 1921. It was again tried in the early thirties, without much success.[6]

SOURCES:

Australian Mining Standard, 11 March 1897.
Department of Mines, Annual Reports.
Flett, J., *The History of Gold Discovery in Victoria*, Poppet Head Press, Melbourne, 1979.
Kenny, J.P.L., 'Surveyor's Creek, Upper Murray', in *Mining and Geological Journal*, March 1947, p. 26 (includes plan of area).
Kitson, Progress Report of Geological Survey, No. 9, Indi - report and map.
Stirling, J., 'Report on an Examination of the Locality of Prospecting Operations at Dead Horse Creek, Appendix F to Mining Surveyors' Reports, September 1887, p. 79 (plus map).

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1 Flett, p. 168
2 Flett, p. 168; Mining Surveyors' Reports (Corryong Subdivision), December 1886; (Omeo Division), September & December 1886, June 1887; Stirling
3 Flett, p. 168
4 Department of Mines Annual Report, 1912
5 Department of Mines Annual Report, 1916
6 Kenny

Compiled by Robyn Annear, CNR, August 1994
Historic Mining Sites Assessment Project

UPPER OVENS DISTRICT HISTORY

DATE	HISTORY
	Discoveries
1853:	The first gold to draw diggers to the district was found on the Buckland River in 1853. At Maguire's Point, about 15 km up from the Ovens junction, the first payable wash gave an ounce to the dish and 12-kg in a few days. The ground high up the Buckland River was shallow and easy to work.
1854:	An estimated 6,000 diggers were swarming up the Buckland River valley by January 1854.[1] Soon after, though, the rush was abruptly halted by an outbreak of 'colonial fever'. Within a few days, most of the diggers were either dead or had fled. For years thereafter, the Buckland was known as 'The Valley of the Shadow of Death' and was largely shunned by diggers until early in 1857 when there came a great number of Chinese.[2]
1856:	The Morse's Creek and Growler's Creek goldfields, further up the Ovens River valley, opened up in 1856. Growler's Creek reputedly got its name from Robert 'Bob the Growler' Williams, a disgruntled miner who was always threatening to 'clear out'.[3] The settlement which formed at the head of the creek was known by its Aboriginal name, Wandiligong, while the township originally named Morse's Creek or the Ovens township was in 1862 gazetted with the name Bright. (One resident wrote, in an outraged letter to the *Ovens Constitution*: 'And what, in the name of all that's ridiculous do you think our new place is to be? Bright! Instead of Morse's Creek, we are henceforth to call this place "Bright"; we shall expect next to hear of Growler's Creek being christened "Brighter" and the Buckland "Brightest".)[4]
1858:	The Upper Ovens district was assured permanent goldfield status in 1858 when rich quartz reefs were discovered at 'Lyrebird Creek or the Western fork of the Ovens'[5] (Harrietville) and in the ranges between Wandiligong and the Ovens River. The Rose of Australia was among the earliest-worked of the Harrietville reefs; at Wandiligong, the Oriental was the most important of the early reefs.
1859:	The discovery of the Pioneer Reef, close to the Morse's Creek township, followed in 1859.[6]
mid 1860's:	By mid-1860, the district had thirty-two named reefs, including one at the Buckland River; literally hundreds more remained to be found.[7]
	Sluicing on the Buckland
	Whilst on the Ovens River and Morse's and Growler's Creeks, the quartz mines were the focus of activity, only nine of the more than 1,200 miners on the Buckland were reef miners. The rest were occupied in sluicing the beds, banks and flats of the river and its tributaries. A network of races wove along either side of the Buckland, and the river's course was already becoming choked with tailings from sluicing claims on the banks. The higher flats were worked by hydraulic sluicing, using large sluice boxes and a strong head of water (hence the water-races), while the waterways and the lower flats were 'paddocked' or stripped of their goldless overburden and the washdirt then raised to the sluice. Small waterwheels and Californian or elevator pumps were used to drain the lower claims.[8]
1860's:	The vast majority of alluvial miners on the Buckland River were Chinese. After the discovery of reefs in the area in 1860, they had begun filtering back to the field from which they had been violently cast out in July 1857. In what became known

1 Flett, p. 70
2 Adcock, p. 132; *Mining & Geological Journal*, March 1942
3 Flett, pp 71-2
4 Lewis Kinchela, *Ovens Constitution*, 9 August 1862 (quoted in Lloyd & Nunn, p. 48)
5 Mining Surveyors' Reports, July 1860
6 Flett, p. 73
7 Mining Surveyors' Reports, May 1860
8 Mining Surveyors' Reports, May 1860

as the Buckland Riot ('the most disgraceful of the Victorian riots'), an estimated 2,000 Chinese miners were driven out of the Buckland valley by a mob, their camps - about 300 tents and 'tenements', stores, and a joss house - looted and torched, and their possessions destroyed. According to official report next day, 'Broken shovels, cradles, picks, torn garments, ripped up bedding, half-burnt clothing, battered buildings, whole quarters of beef and mutton trodden into the mire, the earth bestrewed with rice, empty sugar bags, and broken tea boxes, were the chief features of the late home of the Celestials.' The Chinese miners were themselves beaten and even, it is claimed, murdered as they were hounded up the river valley by the mob. Twelve men were charged over the riot: three were found guilty of unlawful assembly and one of riot. The Chinese were dismissed as 'deceitful' and their evidence discredited, as was that of the European wife of one of them, who had herself been brutally beaten. It is said that the rioters were principally American and Irish miners, who bore the Chinese the strongest enmity, and that the escaping Chinese were aided - and the rioters condemned - by the English and Scottish of the district.

Harrietville quartz mining

In 1903, William Bradford of the Geological Survey of Victoria, in an overview of the Harrietville field, noted that 'Remnants of mining plants are scattered over the area…, some of which are situated in such out-of-the-way places that one wonders how the machinery was taken in. There are at least twelve crushing mills in the 10 miles square visited, four or five of which are in use.' Bradford described the progress of quartz mining since the discovery of the first reefs in the late 1850s as 'more or less spasmodic', adding that, 'The inaccessible nature of the country around Harrietville has perhaps tended to make its quartz mining a little more spasmodic than would otherwise have been the case.' The Harrietville quartz mines were high in the steep ranges and were serviced by a network of labyrinthine pack tracks, cut by the government to elevations of 1,200 m and more above the town. The remoteness of the mountain reefs gave a different meaning to the term 'payable': yields of at least 1 oz to the ton were needed to justify the cost of packing quartz to distant mills.[9]

Deep leads

Two distinct deep leads - the Morses Creek (or Premier) lead, between Wandiligong and Bright, and the Oven River lead, between Harrietville and Freeburgh - were worked intermittently from 1861-c.1903. The results were patchy, at best, and no mine succeeded in finding a continuous and payable lead.

The first deep lead in the district (a southern extension of the Morses Creek lead) was opened on Growler's Creek, south of Wandiligong, in 1861. It failed to give a payable yield and was soon abandoned. That same year, the Ovens River Deep Lead was discovered at Harrietville, where it was worked with indifferent results for a short time before 'after great expectations [it] fell into the hands of Chinese'.[10]

In 1864, the Morses Creek deep lead was traced near Wandiligong, and several companies were formed to work the lead. The companies held leases along the lead for a distance of 4.6 km downstream from Wandiligong, in the following sequence: Birthday Co., Reform Co., Garibaldi Co. Morses Creek Co., and Wallace Extended Co. Of these, only the Birthday Co. met with any success. When its operations ceased in 1868, the lead was abandoned until 1882. In that year the Wandiligong Estate Deep Lead GMC and the New Wallace Deep Lead Co. took up leases on the lead (the former company at Wandiligong township, the latter near Bright), but neither produced much gold and the lead was abandoned for good in about 1886.

The Ovens River Deep Lead, between Freeburgh and Harrietville, was tried again, with scant success, in the mid 1860s, early 1880s, and for a couple of years from 1901. After that date, the district's alluvial leads were given over to the dredges, which succeeded where underground mining had failed.[11]

1853-9: Within the first three months of the opening of the Buckland field (in Nov 1853), over 8,000 (Flett says 6,000) people rushed there. The first Buckland diggings

9 Bradford, pp. 1, 7, 16

10 Quoted by Flett, p. 74

11 Kenny, pp. 9-13; Canavan, p. 51

were high up the river, where the ground was shallow and easy to work. 'Then, suddenly, a pestilence swept the district and in a few days the greater portion of the population had either died or fled. At no time during the next four years were there more than two or three hundred miners at work until, in the summer of 1857, there came a great influx of Chinese.'[12]

1854-7: Locally the Buckland was called 'The Valley of the Shadow of Death' because of a 'terrible mortality from "colonial fever" during the first rush.[13]

July 1857: Buckland riot - More than 2,000 Chinese on Buckland River, in three main camps along the river - outnumbered Europeans by at least 3:1. Forty or 50 European (Irish and American?) miners threatened the Chinese and drove them out of their camp on Lauder's Flat and claims about the junction of the two river branches - then torched the camp (46 tents and 2 stores). Then moved down river to Stony Point camp, drove out Chinese and set fire to their 30 tents. Further downstream, past Rocky Point, burned about 20 tents on Chinese Point. Largest Chinese camp on Lower Flat - about 200 'tenements', a joss house and stores - all burnt. Stores looted, Chinese knocked down and robbed, their possessions thrown in the river. 'As the eviction proceeded down the stream, the rogues of the locality mustered to gather booty, and acts of brutality and robbery were numerous.' A European wife of a Chinaman was attacked and 'dreadfully cut about the head', and a Chinaman's finger was cut off to get the ring he wore on it. After Lower Flat, the wildest of the mob pursued the Chinese to the ford across the Buckland River, about 4 miles below Lower Flat - the Chinese were helped across a fallen log by a number of 'manly diggers'. Official report next day of the scene of the Chinese camps: 'In place of men, the remnants of their tools, clothing, and dwellings everywhere met our eyes. Broken shovels, cradles, picks, torn garments, ripped up bedding, half-burnt clothing, battered buildings, whole quarters of beef and mutton trodden into the mire, the earth bestrewed with rice, empty sugar bags, and broken tea boxes, were the chief features of the late home of the Celestials. In the chief encampment, the charred frame of the joss-house, with emblematic flag at the door, now torn and defaced, are the only vestiges of the temple which was opened with so much pomp and ceremony but a few days since.' In August 1857, three men were found guilty of unlawful assembly, and one with riot.[14]

July 1857: Buckland riot - 'the most disgraceful of the Victorian riots'. After the riots, a reporter from the *Ovens and Murray Advertiser* found 300 displaced Chinese at the upper Quartz Ridge, 55-km away. 'Many of them were without blankets… all appeared in the most abject state of misery and distress.' At the trial of the 12 men charged, the defence attorney argued that the Chinese were inherently deceitful and none of their evidence could be believed. The European wife of Ah Leen was not believed either - 'Any white woman who would marry a Chinese showed a character of such moral degradation as to warrant not the slightest confidence being placed in her evidence.' Henry Parkes (himself anti-Chinese) disapproved of the rioters' actions, in that 'the animus, which inspired his rage, was not that of virtuous honour at their immoral deeds, but of envy of the good luck of the long-tailed stranger.' (*Empire*, 20/7/1857)[15]

1857-9: After Buckland riot, most Chinese left and the Valley did not revive until quartz mining gained prominence in 1859. (Buckland reefs were always inferior to those in the Ovens Valley, nearby.)[16]

1850s+: Buckland River had large tent population, but little permanent settlement.[17]

1850s: Ovens Crossing - Porepunkah.

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12 *MGJ*, March 1942

13 Adcock, W.E., *The Gold Rushes of the Fifties*, first published 1912, new edition 1977, Poppet Head Press, with notes by J. Flett, p. 132

14 Adcock, W.E., *The Gold Rushes of the Fifties*, first published 1912, new edition 1977, Poppet Head Press, with notes by J. Flett, pp. 130-32

15 Rolls, E., *Sojourners*, pp. 142-4

16 *MGJ*, March 1942

17 Lloyd & Nunn, p. 8

1858-68:	Pioneer Reef, Bright, discovered by ground sluicing - first crushing plant - 4 heads of revolving stamps, roasting kiln, and two Chilean mills. In c.1860, a settlement sprang up around the mine. Mined out and unpayable in 1868 - closed down until late 1890s - major early mine at Bright.[18]
1859:	By the winter of 1859, the Chinese population on the Ovens River (Bright area) was up to 1100 - 'like an Egyptian plague of locusts, they are likely not only to eat up every "green thing", but also to absorb every yellow speck' (correspondent to *Ovens & Murray Advertiser*).[19]
1859:	Bright goldfield population increased from 200 in 1857 to 2,000 in 1859.[20]
1860-1870:	Oriental Reef, Wandiligong, opened up in 1860 - Oriental Restaurant and bunkhouse built at the mine workings, about 1000 ft above the valley. Oriental Perseverance mine produced a reported £300,000 of gold.[21]
1860:	Ebenezer Reef, near head of Growler's Creek east branch - 4-head battery, 2 Chilean mills, 24-ft waterwheel (from Nelson mine, Buckland).[22]
1860+:	Bright-Wandiligong reefs mainly among the hills and gullies of the range between the Ovens River and Morse's Creek. The local mining registrar was based at the Buckland and all claims had to be registered there - led to problem of claim jumping on Bright goldfield.[23]
1860s-70s:	Chinese population overtook European in 1860, and remained that way well into 1870s. A residual prejudice against the Chinese came across in the reports of Mining Surveyors Kinchella and Darbyshire - very opinionated.[24]

18 Lloyd & Nunn, p. 14
19 Lloyd & Nunn, p. 12
20 Lloyd & Nunn, p. 41
21 Lloyd & Nunn, pp. 14-15
22 Lloyd & Nunn, p. 27
23 Lloyd & Nunn, p. 24
24 MSR

May 1860: Timber for firewood, slabs, and building is plentiful in the gullies and on the flats, but timber on the ranges near the reefs is scrubby and generally unsuitable for mining purposes. Tramway, mill and kilns at Nelson Reef, Buckland River (mill moved in June to Growler's Creek). 32 reefs (listed) have been discovered and named in the Division - 29 discovered in past year. Principal operations in Buckland River area - sluicing bed and banks of rivers and creeks, and adjoining flats - driest parts of the flats (worked out) generally only now remunerative for sluicing on the hydraulic (deep ground) principle, with large boxes and a heavy head of water - under any other system, expensive tail races must be cut. System of water-races on either side of river. Bed of river and lower flats are paddocked and raised to the sluice - drained by waterwheels and Californian and elevator pumps. 15 waterwheels draining alluvial claims (12 at Buckland). Upper part of river bed has already been worked once - reworking will be difficult because of the great accumulation of tailings from the bank claims.[25]

July 1860: ` 13 hydraulic sluices at work on Buckland River. Small rush to Lyrebird Creek (Harrietville) or the west fork of the Ovens, about 20 miles from Ovens Township. Mead's Reef, Growler's Creek - water-powered mill, 24-ft waterwheel, 4 dry stampers and 2 pairs of large Chilean wheels, also kilns.[26]

Aug 1860: Nelson Reef, Buckland River - water-powered machinery being erected.[27]

December 1860: Elgin Reef, Growler's Creek - Stephens and Co., 18-head crushing mill from Magenta Co., Chiltern - old square stamp heads, 3 to a battery - very much behind others in Division.[28]

March 1861: Alluvial miners at Buckland River and Ovens River near Harrietville making as much as £20 per week.[29]

July 1861: Chinese populating greatly increasing - most on Buckland and Upper Ovens. Mining population 2,200 - 1,250 Chinese (previous month only 850), 400 European alluvial, 550 quartz.[30]

Aug 1861: Little Portland Reef, Roberts Creek, about 1.5 miles north of Bright.[31]

November 1861: Chinese population increasing; many European alluvial miners leaving. Murray's Reef party, Buckland River, erecting machinery.[32]

1863: Stephen's sawmill and crushing machine erected - sand furnaces operated there for many years - crushing plant in use until 1937 (photo on file).[33]

March 1864: In all parts of the Division, both quartz and alluvial miners 'are generally so settled in well constructed dwellings, with well cultivated gardens and other surroundings of a settled life… The large claims occupied under the Mining Board Byelaws enable the miner who has a payable claim to settle permanently in one locality.'[34]

Sept 1864: Mining population 2,512 - 1970 Chinese, European alluvial 212, European quartz 330. Population centred on Buckland River (especially Lower Flat - 680) - total population 1280.[35]

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25 MSR, May 1860.
26 MSR, July 1860
27 MSR, Aug 1860
28 MSR: Dec 1860
29 MSR, March 1861
30 MSR, July 1861
31 MSR, Aug 1861
32 MSR, Nov 1861
33 Lloyd & Nunn, p. 57
34 MSR, March 1864
35 MSR, Sept 1864

1865:	Best quartz mine the Perseverance on Oriental Reef.[36]
Sept 1866:	Rose, Thistle and Shamrock Reef, Ovens River, most valuable mining property in Division - deepest in the district. (Ceased working Dec. 1868)[37]
Dec 1866:	Buckland River - 'Shallow alluvial workings - This branch of mining gives employment to nearly the whole of the local mining population, and through their labours is produced the larger portion of the gold sent from the entire division, although the Buckland has been opened since 1852, and has been looked on as being worked out.' Deep leads - ground from Bright for more than ten miles towards Myrtleford along Ovens River valley taken up as wet frontage claims and under leases - but no work ever attempted. Several reefs discovered at Running Creek during the past six months - very rich on surface. Ovens River, between Bright and Harrietville - almost entirely worked by Chinese.[38]
March 1867:	Less Chinese miners at the Buckland - exhaustion of older Buckland workings - water-races commanding the best sluicing grounds have depreciated in value nearly 50% during past year. 1,885 miners - 1,359 Chinese, 280 European alluvial, 246 quartz miners.[39]
Dec 1867:	Reefing rush to the left branch of the Buckland, about 25 miles from Bright. New reefs on 'so-called right branch of Growler's Creek; geographically the left branch'.[40]
1867-75:	United Miners Reef, Harrietville produced nearly 20,000, at an average 12.3 dwt/ton. Reef exhausted 1875.[41]
June 1868:	United Miners Reef, Harrietville - paid £16,000+ in dividends since August 1867 - only five stampers crushing.[42]
Sept 1868:	Mining population about 2,000 - 1400 Chinese. Reefs discovered at Robert's Creek, previously unprospected, within two miles of Morse's Creek. United Miner's mill saving gold from pyrites.[43]
Dec 1868:	Quartz returns include Ah Hing & Co., Canton Reef, Morse's Creek; Hau and Co., Hau's Reef, Morse's Creek; Chin Soy and Co., Chinese Reef, Harrietville.[44]
Sept 1869:	United Happy Valley QC new mill - 20 stamps - also pyrites experiment - 'erecting a kiln for burning the quartz by hydrogen gas, obtained from a jet of steam passing through a close furnace of heated charcoal…'. (Later called 'an interesting though somewhat expensive experiment' - 'Wheeler's Muller process')[45]
1870s:	Population of Buckland Division fell from 2,000 to just over 1,000 during the 1870s. United Miners Reef by far the biggest gold producer at Harrietville for the decade.[46]
1870s:	Cornish United Co. - battery in Elgin Gully.[47]
March 1870:	Empire Reef, Roberts Creek, discovered.[48]

36 MSR
37 MSR, Sept 1866
38 MSR, Dec 1866
39 MSR, March 1867
40 MSR, Dec 1867
41 Lloyd, p. 35
42 MSR, June 1868
43 MSR, Sept 1868
44 MSR, Dec 1868
45 MSR, Sept 1869 & Sept 1870
46 Lloyd, p. 28
47 Lloyd & Nunn, p. 87
48 MSR, March 1870

June 1870:	'Tedious and expensive tunnels' (expression regularly used by MS) being driven on major quartz claims - therefore, little actual work/employment.[49]
Dec 1870:	'The custom of taking up and giving new names to quartz claims previously abandoned - several times perhaps - renders my return of "reefs discovered in the division" very unsatisfactory'. Chinese are fewer than a year ago, yet more alluvial gold found - large part of gold coming from Ovens River banks, from Porepunkah to Harrietville - great care should therefore be exercised in the alienation of land close to the river banks, 'as the mere fact of such being fenced prevents the Chinese from entering upon it for mining.' (Later proved a problem - landowners demanded high %s of yields for mining on private land near river.)[50]
June 1871:	More European miners trying shallow alluvial mining - many Chinese co-operative companies (parties of 4-12 men) have broken up and more are working by cradles. In some instances on the Buckland, the European owners of water-races take sleeping shares in Chinese claims, as compensation for use of water. Water-race property, once so valuable, is now almost worthless - no race would fetch £500 if sold.[51]
1872:	Wandiligong named (formerly Growler's Creek).[52]
1872:	New Moon Reef, Wandiligong (discovered 1869) - 8-head battery erected.[53]
March 1872:	'Following the usual rule' the Happy Valley reef at Running Creek became poor in gold yield at a depth of 300 ft.[54]
June 1872:	For past two years, Chinese engaged more with tub and cradle, and less in large sluicing claims, than was previously the case.[55]
Sept 1873:	Large-scale sluicing claims near Bright, at Wandiligong, and at Porepunkah.[56]
early-mid 1870s:	Wandiligong Reefs revived and thrived.[57]
Dec 1873:	'as a rule, alluvial mining pays badly in this division, the average earnings of our sluicers and Chinese cradlers not being over 15s. per week' (quartz mining gross average earnings £5+ per week).[58]
1874:	Kinkaide's Reef, Wandiligong, discovered - 4-head mill and 36-ft waterwheel.[59]
1874-84:	Myrtle/London Reef, Wandiligong, discovered 1874 - 16 head of stamps and steam engine (from Oriental mill) moved there in 1876 - over next decade, the mine got over 1 oz/ton.[60]
1874:	Tiddle de Addle de Reef discovered at Harrietville. Discoverer, Chas Johnston was frequently seen nursing a baby and singing a song with the refrain, 'Tiddle-dee-addle-dee'.[61]

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49 MSR, June 1870
50 MSR, Dec 1870
51 MSR June 1871
52 Lloyd & Nunn, p. 85
53 Lloyd & Nunn, p. 87
54 MSR, March 1872
55 MSR: June 1872
56 MSR: Sept 1873
57 MSR
58 MSR, Dec 1873
59 Lloyd & Nunn, p. 87
60 Lloyd & Nunn, p. 87
61 Lloyd, p.34; Davidson, H., 'Short History of the Tiddle-dee-addle-dee Mine, Harrietville', Appendix C. to MSR, June 1887

Sept 1874:	Closure of the Division's two most important and valuable mines - Happy Valley Reef (Running Creek) and United Miners' Reef (Harrietville) - both opened about 8 years ago.[62]
Dec 1874:	Alluvial mining flourishing at Freeburgh (rich ground found Dec 1873) - mainly Chinese - some making £2 to £6 a week.[63]
March 1875:	Chinese population steadily decreasing.[64]
1875:	Wandiligong reefs - main producers. Gold production in Division at a low ebb.[65]
Sept 1876:	May, Cardwell and Co. have finished a tunnel (tail-race) 1,780 ft long (3 years' work), to drain a large alluvial claim at Bright. West side of Buckland River - prospecting for reefs near 'fine reef' found at Keating's Creek, 'on one of the Buffalo spurs'.[66]
Dec 1876:	London and Myrtle Cos., Wandiligong - two most important mines in the Division.[67]
March 1877:	Large proportion of Chinese 'merely fossicking'.[68]
June 1877:	Oriental Perseverance Reef, Wandiligong - 'by far the most important ever opened in the Beechworth mining district - and from which about half-a-million sterling was taken…' Abandoned Rose, Thistle and Shamrock Reef, Harrietville - 'formerly in wealth and importance was second only to the Oriental Perseverance Reef' - reopened, 8-stamp mill at work.[69]
Dec 1877:	Separate Wandiligong Mining Division formed.[70]
Sept 1878:	Some European miners leaving for farmwork, or as selectors themselves.[71]
Late 1870s:	Many reefs proved to be of an ephemeral nature - mining population diminishing.[72]
June 1879:	About 60 Chinese miners return from tobacco growing.[73]
Sept 1879:	Gold yield up by about 1,000 oz - 'The principal increase has been from old reefs taken up by young men, and found profitable after being abandoned in former years.'[74]
1880s:	Population of Buckland Division fell from over 1100 to 400 during the decade - departure of Chinese?[75]
1880s:	'The sleekness of the Chinese tobacco planters in the Buffalo Valley. They come riding along like lords of the land.'[76] Tobacco grown at south end of Wandiligong

62 MSR, Sept 1874
63 MSR, Dec 1874
64 MSR, March 1876
65 MSR
66 MSR, Sept 1876
67 MSR, Dec 1876
68 MSR, March 1877
69 MSR, June 1887
70 MSR, Dec 1877
71 MSR, Sept 1878
72 MSR
73 MSR, June 1879
74 MSR, Sept 1879
75 Lloyd, p. 39
76 J.S. James ('the Vagabond') quoted in Cannon (ed.), *Vagabond Country: Australian Bush and Town Life in the Victorian Age*, Hyland House, Melbourne, 1981, pp. 14-17

	from late 1880s - Chinese grew crops at Brookside on the Buckland River in the earlier years when unable to obtain opium from overseas.[77] Hop gardens developed at Freeburgh, Harrietville, Wandiligong, and Porepunkah - harvest time in Autumn. Gardens at Roberts Creek, near Porepunkah, where Chinese were employed.[78]
1880s:	Chinese reefers at Freeburgh - Jemmy Ah Ching, Ah Sue and Ah Young. Most Chinese had left district by 1880s.[79]
1880s:	Bright and Wandiligong goldfields finished as notable reef gold producers by the 1880s.[80]
1880-89:	Mons Meg Reef discovered - named after the big cannon at Edinburgh Castle. In 1889, the Mons Meg mine ranked 8th on the Victorian dividend list.[81]
Sept 1881:	Henderson Bros. crushing mill, Porepundah - on edge of Ovens River, about 3 miles below Bright - site excavated in solid rock, about 14 ft deep, just above high-water mark - 20 ft x 4 ft waterwheel, spur wheel is 12 ft x 8 in - water from Ovens River, carried in 'ditch' about 2 miles long - 5 stamps - retorting house adjoins (also cut out of rock) - tramroad with weighbridge. 'A miner by the name of Peter McDuff [at 'Left Branch'] is stripping a paddock by himself 40 feet deep; rather a heavy undertaking single-handed, but, for some time past he has been bringing small nuggets into Bright; and I think his knowledge of the ground warrants him in anticipating a fair reward for his Herculean labours.'[82]
Dec 1881:	Europeans ignore sluicing - all done by Chinese.[83]
Sept 1882:	Buffalo Creek reefs - Young Queen, Anchor Co., Valentine - looking well.[84]

77 Lloyd & Nunn, p. 169
78 Lloyd & Nunn, p. 111
79 Lloyd & Nunn, p. 106
80 Lloyd & Nunn, p. 123
81 Lloyd, pp. 48-9
82 MSR, Sept 1881
83 MSR, Dec 1881
84 MSR, Sept 1882

Dec 1882:	'as the Chinese hold the [alluvial] claims, they add nothing to the prosperity of the local Europeans, many of whom - young men principally - are temporarily engaged at other fields or at the Myrtleford railway works.' Instance of a landowner near Harrietville, through whose land a water-race runs, refusing permission for miners to clear that section of their race.[85]
March 1883:	'although the Chinese New Year holidays have been held, the two or three weeks' loss of time thereby incurred does not seem to have materially affected the quality of gold produced' (alluvial).[86]
June 1883:	Henderson Brothers crushing mill, Porepundah - erected a light bridge across Ovens River, across which a truck will run on rails - shortening distance between mines and battery.[87]
1883-4:	Large parties of Chinese leaving alluvial claims at Freeburgh.[88]
Sept 1884:	Freeburgh shallow alluvial claims - as nearly the whole of the shallow alluvial flats there are held either as freehold or under licences (under the Land Act) the number of shallow claims will decrease and eventually disappear entirely.[89]
Dec 1884:	Chinese reefers at Freeburgh crushing by hand.[90]
June 1885:	Reefing most prosperous at Freeburgh.[91]
Sept 1885:	Wandiligong - 'Quartz mining is in a condition the reverse of prosperous.'[92]
March 1887:	Freeburgh - 'Among the Chinese quartz miners Ah Sue has a good show.'[93]
Sept 1887:	Freeburgh - waterwheels and Californian pumps widely used on the alluvial.[94]
March 1888:	Freeburgh Chinese alluvial miners hop-picking during summer. Queen's Jubilee Co., Murray's Creek, Buckland River valley, erecting 12-head battery.[95]
September 1888:	Edinburgh Co. crushing works, at 'the first cutting', Buckland Valley - water-powered, tramway, water-race, &c.[96]
Dec 1888:	Shamrock Co. treating 20 years' of tailings.[97]
1888-9:	Mining depressed - much prospecting at Wandiligong.[98]
1888-9:	Harrietville mining population down to 56 in 1888 - rose to 144 in 1889, when Harrietville GMC took over main mines.[99]
Sept 1889:	Alluvial earnings - 25-30s per European man, 10-12s per Chinese man.[100]

85 MSR, Dec 1882
86 MSR, March 1883
87 MSR, June 1883
88 MSR, 1883-4
89 MSR, Sept 1884
90 MSR, Dec 1884
91 MSR, June 1885
92 MSR (Wandiligong), Sept 1885
93 MSR, March 1887
94 MSR, Sept 1887
95 MSR, March 1888
96 MSR, Sept 1888
97 MSR, Dec 1888
98 MSR
99 Lloyd, p. 39

Dec 1889: Harrietville GMC (newly floated on London market - formerly Mons Meg and Tiddle-de-addle-de [and Johnson's] claims) erecting a 40 x 5 ft waterwheel, to drive 26-head stamp battery - also large laboratory with three smelting furnaces. Co. holding free classes for its workers on assaying, mineralogy, &. 100 men employed.[101]

December 1890: New discovery in quartz mining at 'Towanga', on Kiewa River - eight distinct lines of reef found - 12 claims.[102]

1890s: Bright-Wandiligong mining industry flagged through 1890s - many mines working, but in a small way.[103]

1890s+: Pioneer mine, Bright reopened and worked with success for several years - cyanide plant - also pumping and treatment plant, powered by 64-hp vertical water turbine, operating from a head of 59 ft - water conveyed in a race from Germantown - race ended near Rifle Butts, from whence water was carried in 1400 ft of 18-in. diameter pipeline to the plant - 12-head battery. Air compressor installed 1907. Mining ceased 1907.[104]

1890s: Introduction of English capital to Harrietville mines - consolidation of small reefs into companies, rather than working partnerships as before. The Harrietville GMC (English Co.) installed the Big Mill (at end of Mill Road, on the west branch of the Ovens) in 1890, to treat ore from Mons Meg, Tiddle de, Johnson's and Jobson's reefs - Thompson's of Castlemaine 40 ft x 5 ft waterwheel - roof over waterwheel - 25-head (700 lb stamp) battery on left side of wheel, together with 12-hp steam engine to augment water power - sand mill by the river - concentrates from sand mill were treated in 3 reverberatory furnaces, 43 ft x 12 ft, in the main building to the right of the waterwheel - also gold retorting, blacksmith's shop, &c. (Photos on file) Harrietville GMC produced 20,000 oz/66,000tons during 1890s - Mons Meg main producer, other mines poor. Co.'s mines put up for sale in 1899. (Amalgamated with New Options Co.)[105]

1891+: Lone Hand Reef discovered, 1.5 miles from Wandiligong on west branch of Growler's Creek. Within 6 years, produced about 7,000 oz from 4,300 tons - by 1894, the mine was 'famous throughout the colony' and returns were increasing. Reef lost in 1897, but refound by 1902 - worked until 1911, then retried in 1917 and 1935.[106]

1891-6: Crescent Reef discovered, about 6 miles from Harrietville, off Omeo Road. Victory Reef found nearby soon after. Crescent and Victory bought by English Co. (Harrietville GMC) - 10-head crushing machine erected in 1896, 400 yards downstream (on Ovens River) from the Victory mine - cutting excavated in steep hillside above river for plant, including pyrites furnace - all housed in weatherboard building. Discovery of Crescent and Victory reefs focused prospectors' attention on the difficult country above the west branch of the Ovens on the eastern range. Big Gun Reef discovered 1895 on south slope of Guns Creek gully - this and other Guns reefs purchased by New Options Co. (English). Monarch Reef discovered 1896.[107]

1894: Tawonga gold-field - on eastern slope of Dividing Range between Ovens and Kiewa rivers - two parallel lines of reef (Spark and Morrison's) opened and traced for about a mile - claims on private property - bridle-track to Bright (14 miles),

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100 MSR (Wandiligong), Sept 1889
101 MSR, Dec 1889
102 MSR, Dec 1890
103 Lloyd & Nunn, pp. 126-9
104 Lloyd & Nunn, p. 151
105 Lloyd, pp. 57-60
106 Lloyd & Nunn, p. 123-6
107 Lloyd, pp. 62-6

	dray road to Yackandandah (40 miles) - 4-head battery, worked by a Robey's portable engine - claims worked by shaft - six claims, some abandoned.[108]
1897:	Cedric mine, Bright - alleged yields of 30 oz/ton, getting richer at depth - mine owned by syndicate headed by Melbourne businessman Harry Weenen - small parcels of ore crushed at South Melbourne - yields proved to be a sham and the mine a front for vast amounts made by Weenen from customs fraud.[109]
1897-1907:	Shouldn't Wonder Reef, Freeburgh - 10-head waterwheel battery.[110]
1897-1900:	First dredging in district began at Eurobin, with trial bores - actual dredging operations began on 5 May 1900 - Buckland & Murray Co. at Eurobin. Soon after, the Maori Queen dredge started at Freeburgh.[111]
1899:	Bright District Prospecting and GMC (Long Tunnel) - local shareholders (26,000 shares) pay monthly calls of _d. per share - 144th call just made. Mt Orient mine - 10-head battery, worked by a Smith turbine. Harrietville Co. (now in liquidation) - worked 6 reefs, 220 acres - 25-head mill [Big Mill], furnaces, buddles, 40-ft waterwheel (photo). Best of Harrietville Co.'s mines was Mons Meg - kept battery in work for 5 years. All mines closed down 1898. New Options works - 2 x 5-head mortars, 2 x 8-compartment slime-settling pits, Pelton wheel, sheds, retort furnace, &c. Fairlie's Creek, Buckland - 30-head battery - 1000 to 1500 tons a month put through - water brought 11 miles by race - incline tramway runs 600 yards from tunnel, then flat horse-tram of _ mile to mill.[112]
1900+:	A typical Ovens Valley dredge employed a seven-man crew for a three-shift operation, 6 days a week: three engine drivers, three winch men, and a labourer, each paid 9-10 shillings a day. Additional men attended to water races, tailings, firewood, and box boys cleared surplus stones from sluice boxes. Dredge technology came from NZ, where it had been pioneered in the 1890s.[113]
1900-04:	All English-owned mines at Harrietville (New Options/English Co.) consolidated under the one company, 1900 - Johnson's, Crescent, Victory, Guns, and Monarch Reefs - cyaniding plant installed at Crescent mill (10-head) - New Options mines closed down 1904.[114]
1900-09:	Buckeye mine, Buckland Valley - 10-head battery - rich stone struck c. 1904 - Harrietville GMC formed - plant moved closer to Morses Creek (probably site of original Buckeye plant) - last crushing 1909.[115]

108 Lidgey, E., 'Report on the Tawonga Gold-field', in Geological Survey of Victoria *Report of Progress* V111, pp. 62-3

109 Lahey, J., *Damn you, John Christie! The Public Life of Australia's Sherlock Holmes*, State Library of Victoria, 1992, pp. 197-203

110 Lloyd & Nunn, p. 153

111 Lloyd & Nunn, p. 174

112 Australian Mining Standard, 1/6/1899

113 Lloyd & Nunn, p. 176

114 Lloyd, pp. 78-9

115 Lloyd, pp. 106-7

1903: Mining revived by dredging. Eleven-bucket dredges in Bright district. All available creek beds and river flats now under lease - these river beds could not be worked at profit by any other means. These fields were long ago considered worked out. When the individual miner ceased to make river bed mining remunerative, sand pumps were tried on the Buckland, without much success - unsuitable wash - 40% of it too coarse to go through runner blades. Dredging started here about 3 years ago. When it first started, the tail elevator was employed by three or four companies - that system was condemned 'on account of the unsightly hummocks of stones and boulders left in their tracks' (a high heap of washed river stones left by the Maori Queen, an early-type dredge, remained until 1980, when it was crushed for road gravel[116]) - method superseded by a sluice box where all tailings are discharged without classification. Any dredge will clear working expenses on a return of 12 oz per week. Pioneer mine, Bright - 12-head battery driven by 30-ft x 22 in waterwheel - furnace and cyanide plant. London and Myrtle Co., Wandiligong - 8-head battery - Pelton wheel to be erected. Lone Hand mine, Wandiligong - 8-head battery, roasting furnace under construction. Wensley GMC, Harrietville - 5-head battery (Pelton wheel). Commonwealth mine, Harrietville - 3-head battery. Lady Jane (New Options) mine - 25-head battery (water-driven) at foot of hill - concentrators, grinding pans, and roasting furnace. Monarch, Crescent, Victory & Guns mines - battery close to Victory tunnel - 10-heads, concentrators, grinding pans, and cyanide plant.[117]

1904: Liffey GMC erecting battery about five miles west of Harrietville.[118]

1905: Nine dredges at work in Buckland Division - Buckland River well suited for dredging - free of clay. Pioneer mine - main quartz mine at Bright - 12-head battery, turbine-driven.[119]

1905-7: Sludge Abatement Board established to deal with issue of stream siltation and muddying of water supplies by dredges. Powers of the Board were strengthened by legislation in 1907 - offenders liable to £100 or 12-months' prison. Anti-Dredging League formed at Myrtleford, 1907, and Ovens River Anti-Sludge Pollution Association formed at Wangaratta. Farmers on river were under pressure to sell their land to dredging cos.[120]

1906: From Eurobin to Harrietville (including the Buckland River and Wandiligong) there are 24 dredges and four more being constructed - initial cost of dredge £3,500-£4,500 - considered a good investment that can, if unsuccessful, be realised at once. Pioneer Quartz mine, Bright - electric pumping, lighting, winding - electricity generated at tunnel mouth by water power (turbine wheel).[121]

1906-34: Rose, Thistle and Shamrock - 10-head battery, steam engine and boiler installed. Cyanide plant added to battery, 1907. Two Pelton wheels added 1921, to supplement steam power - additional boiler installed 1925 - larger compressor installed in 1926, replacing smaller one installed in 1918. Main producer in 1920s. Paid £17,000 dividend in 1929, one of only two mines in Vic to pay a dividend that year. Ceased operations 1934 - plant sold. 1920-34 - 46,000oz from 49,000 tons.[122]

1907: Of the 45 gold dredges in Victoria, the Shire of Bright had 28.[123]

1907: Dredge commenced in Running Creek.[124]

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116 Lloyd & Nunn, p. 184
117 Department of Mines Annual Report, 1903
118 Department of Mines Annual Report, 1904
119 Department of Mines Annual Report, 1905
120 Lloyd & Nunn, pp. 185-6
121 Department of Mines Annual Report, 1906
122 Lloyd, pp. 147-56
123 Lloyd & Nunn, p. 187
124 Department of Mines Annual Report, 1907

1908: Peak years of dredging gold production were 1908-13. In 1908, there were 36-bucket dredges in the Ovens River catchment.[125]

1909: 40+ dredges on Ovens and tributaries, from two miles below Myrtleford to above Harrietville - including Barwidgee Creek.[126]

1910: Dredge at Happy Valley Creek, near Myrtleford.[127]

1910-14: Bright-Buckland area second only to Bendigo as gold-producer.[128]

1910-17: Sambas Reef discovered, Jackass Gully, Harrietville - crushed at Big Mill - reef lost 1917 - mine abandoned.[129]

1910: Twins Reward reef discovered a little beyond the Sambas, Jackass Gully, Harrietville - 6-head battery.[130]

1911: The Ovens/Buckland valley area was second in gold production to the Bendigo field, having formerly been a relatively insignificant goldfield.[131]

1911: Considerable reef mining in district - main mine Rose, Thistle and Shamrock, Harrietville.[132]

1912: Sambas mine, Harrietville, opened up (operated until 1957+) - averaging 2.5oz/ton - reef quite close to famous Mons Meg line. Twins Reward, Harrietville - mining, and cyaniding tailings - erected 5-head battery.[133]

1913: 'The Ovens Valley, from Porepunkah to Harrietville, and including the Buckland Valley, are the homes of the dredging industry, and, as usual, have been scenes of great industry.' Sometimes, 90oz/week from a single dredge.[134]

1913: From 1899-1913, the dredges of Bright produced as much gold as the entire production of the goldfield from reefs to that time.[135]

1913-15: Leviathan Reef discovered at Roberts Creek, about 8 miles east of Bright, by W. Hungfee (of the Quan Kee Hotel) - 10-head battery - worked until 1915.[136]

1914: Many dredges halted by drought - some will never operate again - many men unemployed. Leviathan mine, on Roberts Creek near Bright.[137]

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125 Lloyd & Nunn, p. 189
126 Department of Mines Annual Report, 1909
127 Department of Mines Annual Report, 1910
128 Department of Mines Annual Reports
129 Lloyd, p. 104
130 Lloyd, p. 104
131 Department of Mines Annual Report, 1911
132 Department of Mines Annual Report, 1911
133 Department of Mines Annual Report, 1912
134 Department of Mines Annual Report, 1913
135 Lloyd & Nunn, p. 189
136 Lloyd & Nunn, p. 152
137 Department of Mines Annual Report, 1914

1914:	The Country Roads Board observed that the valley at Porepunkah had been completely devastated, the river a murky yellow and of pea soup consistency. Likewise, the Buckland Valley and the river and creeks between Bright and Harrietville.[138]
1916:	Gold returns from Harrietville less than at any time since field opened. Prospecting at Guns and Monarch mines - battery erected at Crescent mine.[139]
1918:	Eight-bucket dredging plants in operation in Bright and Buckland districts.[140]
1919:	By 1919, only six-bucket dredging plants were operating in the Ovens River catchment.[141]
1919-21:	Junction dredge, Harrietville - dredge hole 1 km upstream of Howard's Bridge - work ceased 1921.[142]
1919-37:	Biplane reef, discovered 1919 in the Black Hole, along the east branch of the Ovens near Harrietville. 10-head battery erected 1921. No crushings after 1925. Bushfire 1926. Battery tailings cyanided on-site from 1937 (concrete vats).[143]
1920:	Last bucket dredge ceased work in the Buckland Valley.[144]
1920-25:	Champion mine, Harrietville reopened - Pelton-wheel battery erected at mine - no gold. (Further tried 1945)[145]
1920s:	Gold mining activity decreased after WWI because of inflation to twice 1900 values and shortage of labour - conversely, the price of gold remained at just under £4 an ounce - same as past 200 years. By 1933, the price index dropped to about 150% of 1900 values and the gold price dramatically increased - mining revived.[146]
1921:	Dredging boom over for Bright district by 1921.[147]
1899-1922:	Up to 1922, the Bright dredges extracted 296,000+ oz of gold, worth £1.2, from 3,200 acres of land - paid out over £303,000 in dividends.[148]
1922-33:	Star Extended Amalgamated GMNL - worked ground on west side of east branch of Ovens, near Baldy Creek, Harrietville - 5-head Pelton-wheel battery - worked until 1924 - reopened (without success) in 1933.[149]
1922:	Dredging in the Harrietville vicinity ceased with closure of Junction dredge.[150]
1920s:	Main Harrietville producer in 1920s was the Rose, Thistle and Shamrock.[151]
1927-35:	Monarch mine, Harrietville - reworked - battery and huts burned down in 1939 bushfires.[152]

138 Lloyd & Nunn, p. 192
139 Department of Mines Annual Report, 1916
140 Department of Mines Annual Report, 1918
141 Lloyd & Nunn, p. 189
142 Lloyd, p. 143
143 Lloyd, p. 140
144 *MGJ*, March 1942
145 Lloyd, p. 136
146 Lloyd & Nunn, p. 198
147 Lloyd & Nunn, p. 200
148 Lloyd & Nunn, p. 189
149 Lloyd, p. 141
150 Lloyd, p. 173
151 Lloyd, p. 136

1926-58: Williams United mine, Wandiligong, started in 1926 - reef uncovered in working alluviums - quartz initially crushed at Stephen's old battery- 3-head steam battery erected in 1937 - stopped for war, 1942 - reopened 1948, installed new battery - mine abandoned 1958.[153]

1927-30s: Sambas mine, Harrietville - erected 5-head battery in Jackass Gully from a Big Mill battery box. Continued through 1930s on poor values.[154]

1928-38: Pioneer mine, Bright, reworked. (Retried 1948)[155]

1930s: Myrtleford farming community prevented a revival of dredging on the Myrtleford river flats. All dredging in 1930s was upstream of Eurobin. Landowners at Harrietville were powerless to prevent dredging, because the land had been declared auriferous.[156]

1934-52: Centenary Reef discovered, on north side of Guns Creek, south of Harrietville - 5-head Pelton-wheel battery - damaged by fires, 1939 - battery reconditioned and work resumed 1946 - work ceased 1952.[157]

mid-1930s+: The Mines Department promoted gold dredging and the rehabilitation of dredged land. Hence, Tronoh Dredge (1939-55), Adelong Estates (1935-42), Bright Valley (1937-39), and Freeburgh Gold Dredging (1940-54).[158]

1937 (first _): Pioneer mine, Bright - operations suspended. Johnson's mine, Bright - 40 years ago, one of the most important gold producers in area - operations resumed - heavy stamp milling plant and power unit being installed. Concrete cyanide vats being erected at Biplane battery site for treatment of tailings.[159]

1938 (2nd _): Tronoh Finance Co. will construct a bucket dredge with a depth capacity of approx. 135-ft[160]

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152 Lloyd, p. 138
153 Lloyd & Nunn, p. 171
154 Lloyd, p. 139
155 Lloyd & Nunn, p. 171
156 Lloyd, p. 173
157 Lloyd, p. 142
158 Lloyd & Nunn, p. 198
159 *M&GJ*
160 *M&GJ*

1938-54: The London-based Tronoh Co. (with dredging interests in Malaya) acquired leases of 880 acres of river flats over a distance of 4.5 miles south from a point halfway between Stoney and Smoko Creeks. The Tronoh dredge was the biggest in the southern hemisphere - until then, Cock's Eldorado had been the biggest in Australia. Tronoh weighed 4,890 tons, was 550 ft long, cost £380,000 - engineering by English firm, construction by Thompson's of Castlemaine. Power line constructed from Bright to provide necessary electricity. Commenced operations in 1942. Closed down for wartime manpower restrictions - recommenced 1946. Dredge turned to face north, 1949 - large dredge hole still at south-east corner of lease. Greatest average yields achieved 1949 - 2.29 grains per cubic yard. Annual volumes of material excavated did not exceed much more than half the design target of 4 million cubic yards. Low yields and high price of labour made operations unprofitable - closed down 1954. Dredge sold 1955 - shipped to Malaya to work on tin deposits. Total Tronoh gold production, 1942-55 - 54,000 oz. Land rehabilitation and reclamation covenants were not honoured.[161]

1940 (1st _): Construction of Freeburgh dredge. Adelong dredge operating.[162]

1946-c.51: Tawonga gold mine - treatment plant (5-head battery) and houses for employees erected, 1946 - underground mining commenced 1948 - poor gold recovery, 1951.[163]

1947-52: Centenary mine operating in a small way.[164]

1950 (2nd _): Centenary mine - waterwheel battery. Sambas - richest of the State's smaller mines - 491 tons/1,228 oz. Freeburgh Dredge - continuing in southerly direction up Bright-Harrietville Road - as work progresses a bulldozer levels off tailings and reforms road. Alice Maud mine, Tawonga - plan to erect battery.[165]

1952 (2nd _): Freeburgh Dredge - planting pine seedlings - total of 8,500. Tailings levelled and road reverted to its original location. Tronoh dredge - 10,000 pine seedlings planted at southern end of lease.[166]

1954: Up to 1954, dredges in the Bright area produced about one-third more gold than from all of the goldfield's reefs - nearly 330,000 oz. Some 3,500 acres of land were dredged, from below Poreunkah to Smoko - half of it classified as derelict, having been left by the original alluvial miners in a state fit for agriculture (see photos on file). Some was rehabilitated with pine plantings - basis of forestry industry in the district.[167]

1954: Dennis cyaniding, Bright - treating tailings from Sambas mine, Harrietville, and Williams United, Wandiligong.[168]

1954: Sambas crushing operations moved to battery in Lady Jane Gully ('Johnson' battery' - 5-heads.[169]

1955 (1st _): Sambas - 'This is by far the best of the smaller mines in Victoria' - 10-head battery being erected close to the town - purchased plant from Tawonga mine.[170]

1955-7: Corrigan sluicing on high terrace ground above Buckland River, about 7 miles from Porepunkah.[171]

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161 Lloyd, p. 173-180
162 *M&GJ*
163 *M&GJ*
164 Lloyd
165 *M&GJ*
166 *M&GJ*
167 Lloyd & Nunn, p. 200
168 *M&GJ*
169 Lloyd
170 *M&GJ*
171 *M&GJ*

1956-7:	Lone Hand being retried - retimbered - plan to erect small crushing plant. Sambas mine, Harrietville - 5-head battery operated continuously. Bright State Battery - average yield for 1956, 28.6 dwt - by far highest at present in Victoria.[172]
1961:	Pioneer Memorial erected, School of Mines site - made of blue/grey mullock, quartz and waterworn stones, symbolising phases of mining - surrounding fence of wire rope from a mine winder, supported by dredge buckets.[173]
1966:	Sambas purchased Williams United battery - 10-head Thompson battery - still in use, 1982.[174]
1982:	Sambas mine still being worked in a small way. Don Hance (Harrietville Caravan Park) had puddling and sluicing plant on Sypher's old lead.[175]
1982:	Occasional glimpse of mullock heap along Omeo Road and Tronoh tailings dump - now stark and barren - source of washed gravel. Two Tronoh dredge holes, filled with water.[176]

172 *M&GJ*
173 Lloyd, p. 195
174 Lloyd, p. 198
175 Lloyd
176 Lloyd, p. 181

WAHGUNYAH MINING DISTRICT – HISTORICAL NOTES

1858: Indigo Lead discovered - attracted a large number of miners, but almost deserted after about 12 months - coarse gold, several nuggets - also great quantity of very fine gold, not recoverable by early methods - later recovered by cyaniding.[1]

May 1859: Chinese coming in very fast - working upper part of Indigo Main Lead - of 3,154 alluvial miners, 1,000 are Chinese.[2]

June-Dec 1859: Three batteries on field. Chalmer's and Gitchell's crushing machine - Stephenson's Patent - 16 revolving stampers, 18-hp engine, rippleboxes, shaking tables. Lounie and Cameron's machine - 8-head, 7-hp. Abbott's - horse-powered.[3]

1859-60: Steam pumping plant installed on Hit-or-Miss Co. claim at junction of Durham and Caledonian Leads - more powerful machinery installed Feb 1860.[4]

March 1860: Magenta Reef machinery installed.[5]

May 1860: Indigo Main Lead abandoned even by Chinese in its upper part.[6]

July 1860: Magenta crushing machine removed to Morse's Creek - Magenta Co. 'in difficulties'.[7]

Sept 1860: Wahgunyah rush - 3 leads opened up: Wahgunyah, Robert Burns, Lanarkshire - leads run into private land.[8]

1860: Wahgunyah rush was one of Victorias last - colonial authorities, keen to retain Victoria's mining population and status, supported the development of town and goldfield - this was at the time of NZ and Lambing Flat rushes. The district was already long-settled by squatters and farmers. Attracted a settled class of miners, after initial rush. From the start, leads ran into freehold land and mining had to be negotiated with owners. First find was Wahgunyah Lead; next was Lanarkshire, on private land. By October 1860, about 3,000 at Wahgunyah rush. Under the frontage system of the Beechworth Mining District by-laws, where sinking did not exceed 100 ft, the claim could be 500 yards square; from 100 to 200 ft, 700 yards square; and 200 ft +, 1000 yards square - such large areas left nothing for late arrivals. First reefs discovered in October, 1860 - stone sent to Chiltern for crushing. By end of 1860, 17 deep leads and 7 reefs had been found - 2,000 miners.[9]

1861: It was soon realised that Rutherglen's deep leads were not as good as was first thought - five abandoned in 1861.[10]

1861: Magenta top reef - new machinery by Sept 1861.[11]

Oct 1860: Mining population 7,624 - 5,500 at Wahgunyah - 1,836 Chinese - old leads in division almost deserted (by Europeans) for Wahgunyah rush - prospects on Wahgunyah vary from 1-8 dwt 'to the oil or nail can' - 'per load (of thirty oil or tin cans)' (Jan 1861)[12]

Nov 1860: Old leads mainly taken up by Chinese, who are averaging 'good wages, even for Europeans'. Wahgunyah rush continues - best leads are Wahgunyah, Robert Burns, and Hibernian. Wet

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1 Canavan, pp. 41-2
2 Mining Surveyors' Reports, May 1859
3 Mining Surveyors' Reports, June, July, Oct, Dec 1859
4 Mining Surveyors' Reports, Dec 1859, Feb 1860
5 Mining Surveyors' Reports, March 1860
6 Mining Surveyors' Reports, May 1860
7 Mining Surveyors' Reports, July 1860
8 Mining Surveyors' Reports, Sept 1860
9 Lloyd, p. 11-13
10 Lloyd, p. 52
11 Mining Surveyors' Reports, 1861
12 Mining Surveyors' Reports, Oct 1861

workings (at depths of over 200ft) at lower end of Old Indigo and Chiltern leads turning out badly - too much water.[13]

Dec 1860: 'it is almost premature to say if even a quartz reef has been struck in this division, as they have not been sufficiently proved.' 17 alluvial leads in Wahgunyah district. Several deaths and accidents through shafts not being slabbed - flaky red clay strata - surface water caused collapse.[14]

Feb 1861: Lounie and Cameron's battery removed from Black Dog Creek to Wahgunyah - private land (John Ford's pre-emptive) - Smith and Sons' quartz crushing machine, 'on the banks of the Murray'. Miners leaving for 'Carorva (or Coroma)' (Corowa) diggings, 4 miles from Wahgunyah, on NSW side of Murray - patchy ground.[15]

June 1861: New mining bye-laws - on old and abandoned ground, an extra claim for four men - caused much taking up of old ground.[16]

Aug 1861: Homeward Bound lead - 2.5 miles NW of Christmas Town - 1.5 dwt to 'five small American buckets'. Quartz mining at Indigo - only one crushing machine - Chalmers and Co., Black Dog Creek - '4_ miles distant over a very bad road'.[17]

Oct 1861: Chalmer and Co.'s battery for sale - insufficient work.[18]

1861-66: Rutherglen reefing at a standstill.[19]

Jan 1863: Slight rush to shallow ground in a gully at Barambogie, five miles SW of Chiltern. Chinese busy washing in every place where water has been stored.[20]

July 1863: Chinese opening up new ground east of Old Indigo Lead - 'obtained what they considered a wages prospect' - satisfied to work ground that would pay them £1 per week - Euros abandoned their claims.[21]

March 1864: Abandoned quartz reefs receiving attention. 30 steam engines on alluvial, 3 steam engines on quartz, 160 steam- and horse-powered puddling machines, 40 horse whims, 100 whips.[22]

June 1864: American Reef Barambogie - prospectors and No. 1 claims working reef by open cuttings from the surface - plan to erect 10-head, 10-hp mill - not erected? (reef 'worked out' by end of 1864). Golden Bar Co., Higgins Reef - crusher from Stanley - 16-head, 16-hp - best in division. Of 2,111 alluvial miners, 1,132 Chinese.[23]

Dec 1864: Magenta Co. crushing stone from reef at Albury. Murray Valley Mining Co. being formed to work Lucknow or Clydesdale Lead, Rutherglen - one of the best leads in the Division.[24]

1864: Robbie Burns Lead, Rutherglen, abandoned to Chinese miners.[25]

March 1865: Golden Gate Co., Rutherglen - claim amalgamated with Murray Valley Co.[26]

June 1865: Brady's Reef, Barambogie, 3 miles SW of Chiltern - promising.[27]

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13 Mining Surveyors' Reports, Nov 1861
14 Mining Surveyors' Reports, Dec 1861
15 Mining Surveyors' Reports, Feb 1861, July 1861
16 Mining Surveyors' Reports, June 1861
17 Mining Surveyors' Reports, Aug 1861
18 Mining Surveyors' Reports, Oct 1861
19 Lloyd, p. 56
20 Mining Surveyors' Reports, Jan 1863
21 Mining Surveyors' Reports, July 1863
22 Mining Surveyors' Reports, March 1864
23 Mining Surveyors' Reports, June, September, December 1864
24 Mining Surveyors' Reports, December 1864
25 Lloyd, p. 52
26 Mining Surveyors' Reports, March 1865

Sept 1865: Extended Sons of Freedom, Chiltern and Indigo Township Mining Co. continue paying handsome dividends. Black Dog Lead 'reported to be' giving large returns to Chinese who occupy whole lead (popn 84).[28]

Late 1860s: Quartz mining dominates local mining scene - or emphasised thus by MS.

June 1866: Engine erected on Black Dog Creek - poor prospects. Nos. of Chinese working on dry leads growing less each year, as workings become exhausted.[29]

Dec 1866: Glencoe and New Ballarat Cos. only alluvial mining cos. now at work near Rutherglen - exodus to NSW has reduced mining popn from 250 to 80.[30]

1866: Mining at Rutherglen almost ceased after exodus of 1866, when most dry leads were exhausted - no incentive to invest in pumping plant.[31]

March 1867: Barambogie machine removed. Great Eastern machine at Rutherglen at a standstill. All Nations QMC machine sold (removed to old Indigo Lead - Dec 1867). Golden Bar Co. dissolved.[32]

June 1867: Rutherglen mining very dull - not more than 50 oz of gold a week, all up.[33]

Dec 1867: Old Indigo Lead abounding in reefs.[34]

Sept 1868: Companies crushing: Magenta Co.; United Consols (ex Golden Bar), West's Reef; Erin-go-Bragh, Lower Indigo.[35]

1868-c.1875: Doma Mungi Co. formed - worked 6 or 7 years, producing 36,750 oz - all returns and £50,000 more spent - no dividends paid.[36]

March 1869: Doma Mungi Co., Chiltern Lead - 90-hp engine, winding engine of 25-hp, puddling engine of 25-hp - £10,950 - by far the most expensive and largest plant in Beechworth District.[37]

Sept 1869: Surprise Co. (alluvial), Rutherglen - found reef under alluvial drifts - erected engine and crushing machine - portable engine, 12-hp, 10-stamp. Rutherglen QMC - new machine of 8-head.[38]

pre-1875: Reef working largely confined to Magenta and Robert Burns reefs - then development of Rutherglen reefs.

Sept 1870: Claim and machinery of Indigo Township Mining Co. have been sold to Chinese - first instance of 'these persevering people' investing in steam machinery.[39]

March 1871: Most alluvial gold now obtained by Chinese on old Indigo and other dry leads - reworking sluice tailings.[40]

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27 Mining Surveyors' Reports, June 1865
28 Mining Surveyors' Reports, Sept 1865
29 Mining Surveyors' Reports, June 1866
30 Mining Surveyors' Reports, Dec 1866
31 Lloyd, p. 52
32 Mining Surveyors' Reports, March 1867
33 Mining Surveyors' Reports, June 1867
34 Mining Surveyors' Reports, Dec 1867
35 Mining Surveyors' Reports, Sept 1868
36 Australian Mining Standard, pp. 84-5
37 Mining Surveyors' Reports, March 1869
38 Mining Surveyors' Reports, Sept 1869
39 Mining Surveyors' Reports, Sept 1870
40 Mining Surveyors' Reports, March 1871

Sept 1872: United Consols Co. plant sold and removed. Magenta Co.'s machine now only one in neighbourhood of Chiltern.[41]

1872+: Chinese profitably treated Golden Bar/United Consols tailings - no trace of refractory ores.[42]

Dec 1872: Deep workings supply sufficient water for washing out the gold, which the Chinese, the sole occupants of the dry workings, conserve for that purpose in small dams or reservoirs.[43]

March 1873: Large claim taken up at Stockyard Creek, between Chiltern and Barnawartha - almost untried country (shaft bottomed about 12 years ago - plant destroyed by fire and ground abandoned).[44]

c.1875: Doma Mungi mine failed - severe blow to district - much local capital.[45]

June 1876: Harris and Hollow's quartz mill, Great Eastern Reef, Rutherglen (private property?) - 10-head, 14-hp engine - formerly reefers had to cart stone 11 miles to Chiltern.[46]

Sept 1876: Chiltern Valley GMC formed to work former claim known as Sons of Freedom, late Doma Mungi.[47]

1877-89+: Chiltern Valley GMC - top gold mining operation in Division.

Dec 1876: Harris and Hollow's claim giving splendid results - several abandoned Rutherglen reefs taken up - quartz workings at Rutherglen hitherto confined to shallow levels - 'Sooner or later Rutherglen will probably form one of the most important mining centres in the colony'.[48]

1877: Only 10 men working on Rutherglen leads and 43 on the reefs.[49]

March 1877: Chiltern Valley GMC erecting machinery and structures, sinking shafts, fixing pumps, opening main drives.[50]

Dec 1877: Chiltern Valley GMC shafts collapsed - sinking new shafts in more secure ground.[51]

March 1878: Chinese who usually throng dry leads at this season of the year, after first winter rains, are now few in number, comparatively speaking, a sure sign that the old workings are no longer remunerative.[52]

Dec 1878: New mill erected at Chiltern by Button, Tomkins & Williams (very old Chiltern reefers) - 8-head, 14-hp engine - boxes and tables on Sandhurst pattern - first of the kind in the division.[53]

June 1880: Hooley & Co., Wee Speck Reef, Rutherglen - new battery - 5-head, 12-hp engine - formerly plant of Rising Star Co.[54]

Sept 1881: New frontage bye-laws of Beechworth Mining Board - under old bye-laws, 100 men were entitled to 2.5 miles; now they can hold five miles or more by a width of one mile.[55]

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41 Mining Surveyors' Reports, Sept 1872
42 Australian Mining Standard, pp. 88-9
43 Mining Surveyors' Reports, Dec 1872
44 Mining Surveyors' Reports, June 1872, March 1873
45 Australian Mining Standard, p. 83
46 Mining Surveyors' Reports, June 1876
47 Mining Surveyors' Reports, Sept 1876
48 Mining Surveyors' Reports, Dec 1876
49 Lloyd, p. 67
50 Mining Surveyors' Reports, March 1877
51 Mining Surveyors' Reports, Dec 1877
52 Mining Surveyors' Reports, March 1878
53 Mining Surveyors' Reports, Dec 1878
54 Mining Surveyors' Reports, June 1880
55 Mining Surveyors' Reports, Sept 1881

1882-4: Campbell's Reef, Treasury Hill, near Rutherglen - discovered 1882 - 15-head battery, 15-hp engine - unsuccessful - plant sold 1884.[56]

June 1882: Every probability that quartz mining will be vigorously pursued in Rutherglen area - mining leases taken up - cos. formed - long-neglected locality set to receive a fair trial.[57]

Sept 1882: Revival Co. battery, Campbell's Reef - 'splendid mill' - 15-head, 15-hp - supplied and erected by Langlands Foundry - also large reservoir.[58]

Dec 1882: Chinese puddlers on the old leads.[59]

Sept 1883: Revival Co. battery removed to Devonshire Reef, near Christmas Town - Revival Co. transferred operations from quartz to alluvial.[60]

1884: Great Eastern Reef - biggest quartz find at Rutherglen and most important gold producer in years before large-scale development of deep leads - 10-head battery, pumping engine - reef exhausted by 1878, staggered on until 1884.[61]

March 1885: Magenta Co. tailings (accumulation of about 25 years) sold and being treated at the mill 'under an improved process'. Great Eastern Co., Rutherglen - quartz mill removed from district - stone now carted to Chiltern, 11 miles.[62]

Sept 1885: Rutherglen quartz mining exceedingly dull - very little since Revival Co. and other 'scrip' cos. collapsed, after doing practically nothing to develop the reef.[63]

1886: Discovery of Great Northern lead, 4.5 miles east of Rutherglen - very rich.[64]

1886: No mine working in entire district, except Chiltern Valley Co. - a party decided to examine a shaft on the Great Northern lead abandoned years before - payable wash found. At end of 1886, Great Northern Extended Co. took up adjacent land - even greater success.[65]

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56 Lloyd, p. 72
57 Mining Surveyors' Reports, June 1882
58 Mining Surveyors' Reports, Sept 1882
59 Mining Surveyors' Reports, Dec 1882
60 Mining Surveyors' Reports, Sept 1883
61 Lloyd, p. 70
62 Mining Surveyors' Reports, March 1885
63 Mining Surveyors' Reports, Sept 1885
64 Australian Mining Standard, 1/6/1899, p. 83
65 Lloyd, pp. 73-4

Dec 1887: Chiltern forests at a critical stage - if reckless and wasteful destruction continues, recovery of forests will be impossible without re-planting. Forest running from Rutherglen to Indigo Creek, on north side of railway - the only strip of ironbark forest known to the east of the Ovens River in Victoria. In the early days of Indigo Lead, forest filled with mature and old ironbarks of great size. Since used mainly for fuel. Crown lands to north of railway near Chiltern and between Indigo and Murdering Hut Creeks should be reserved for forestry and water purposes. Also to south of Chiltern, between Indigo, Wooragee and Eldorado Creeks, and the NE railway. Stringybarks on the Pilot Range - thousands rendered worthless by being stripped of bark - each sheet fetched 6d to 1s.[66]

n.d.: Most mining timber and firewood came from the densely timbered slopes of the nearby hill country, but some came from the forests of dead timber on the flat country.[67]

Dec 1888: Chiltern QMC, Pass-by Reef - 14-hp winding and 37-hp pumping engine - also intended to drive battery - about 1.5 miles north of Chiltern. Revival in quartz mining in division.[68]

March 1889: Chiltern Valley GMC produce most gold raised in division.[69]

1890s: Mining confined to the Great Southern Lead - Barambogie and Chiltern Valley Nos. 1 & 2, Chiltern Valley Extended and the Wallace and Chiltern Valley Consols mines, then Great Southern and Chiltern Valley United (one Co.).[70]

March 1890: Miner's strike and lockout on two of principle mines.[71]

June 1890: Good returns from mines on Great Northern Lead have given an impetus to work on Great Southern and Lancashire Leads. 'I fear the scarcity and increasing cost of timber must have a prejudicial effect on mining operations in this locality in the near future.'[72]

Dec 1890: Great Northern Extended Co. has caused a revival in alluvial mining - paid £9,000 in divisions during quarter. Rush to Black Dog Creek, about 4 miles west of Chiltern - deep sinking (208 ft). Large areas continue to be applied for under Mining on Private Property Act.[73]

1894-9: In 1894 (during Great Depression) Great Northern Extended, Rutherglen, was No. 3 on dividend list of Victorian mines - next year, it was No. 1, paying £24,000. By end of 1890s, mine was exhausted - in 12 years it had produced 107,999 oz and paid £190,500 in dividends.[74]

1894-9: Great Southern mine - spent £60,000 on pumping, with no return.[75]

late 1890s: Great Southern No. 1 mine - first mine in Victoria to introduce electric haulage underground - (includes description).[76]

1898+: Golden Bar Reef taken up again.[77]

1898: Great Eastern Reef - Rutherglen's chief reef - 10,000 oz to 1898.[78]

1898: Chiltern Valley GMC produced 180,000-oz gold and paid £150,000 in dividends.[79]

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66 Dunn
67 Lloyd, p. 120
68 Mining Surveyors' Reports, Dec 1888
69 Mining Surveyors' Reports, March 1889
70 Lloyd, p. 113
71 Mining Surveyors' Reports, March 1890
72 Mining Surveyors' Reports, June 1890
73 Mining Surveyors' Reports, Dec 1890
74 Lloyd, p. 75
75 Australian Mining Standard, pp. 85-6
76 Department of Mines Annual Report, 1903; Lloyd, p. 112
77 Australian Mining Standard, pp. 88-9
78 Australian Mining Standard, p. 83

1870-1899: Rutherglen - 15 years of unremunerative mining activity, followed by 15 years of great prosperity from the deep leads.[80]

1899: Government battery installed at Rutherglen - until 1904 got only 628 oz gold from 1,110 tons of quartz.[81]

1899: Great Southern mine - high yields in prospect - though it has not yet made is mark in any way, 'it is emphatically in one respect *the* mine of the district, for it is on it more than on any other that the future of the district would appear to depend.'[82]

1899: Great Southern No. 1 - chief mine of district - contains junction of three leads: All England, Glencoe, Lucknow or Murray Valley - yield since 1895, 14,000 oz - £12,000 dividends paid.[83]

1899: Magenta mine - worked for 20 years, paid well for first 15. Pass-by and Bobbie Burns reefs - poor below water-level. Golden Bar Reef - Chiltern's most famous - →1898, 20,000 tons averaging 1oz/ton.[84]

1900: Great Southern Consols found gold, after 8 years' development.[85]

1900-12: Great Southern mine got into production, after 8 years' pumping. Top alluvial producer in Victoria in 1906, 1907, 1908, 1912. Best year 1904 - produced 14,304 oz - £11,7000 in dividends.[86]

1902-19: Rutherglen quartz reefs produced only about 230 oz per year - made viable by the State battery.[87]

1902: John Wallace died - had been architect of the deep lead revival, and a pioneer (and namer) of Rutherglen.[88]

1903: Quartz revival on Golden Bar line of reef. Deep lead boom - from the southern end of the Chiltern deep lead system, the mines were as follows: Barambogie Co. (120 men), Chiltern Valley No. 2 (200 men), Chiltern Valley Consols (180 men), Great Southern Co. (250 men), Great Northern Extended Consols, Prentice and Southern United Co.[89]

1903-06: Prentice and Southern United Co. tested Great Southern Lead at Gooramadda, on Murray River - no success.[90]

1904: New Golden Bar Co. - erected battery and 2 Wilfley tables - north on same line are Golden Bar No. 1 and Golden Bar Extended.[91]

1904-09: Rutherglen Quartz GMC, Garibaldi Reef - failed to find gold.[92]

1905: Rutherglen State battery - 3 stampers added (from Wombat battery), making total of 6 heads.[93]

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79 Australian Mining Standard, pp. 84-5
80 Lloyd, p. 67
81 Lloyd, p. 72
82 Australian Mining Standard, pp. 85-6
83 Australian Mining Standard, p. 88
84 Australian Mining Standard, pp. 88-9
85 Lloyd, p. 113
86 Lloyd, p. 113
87 Lloyd, p. 117
88 Lloyd, p. 113
89 Department of Mines Annual Report, 1903
90 Lloyd, p. 116
91 Department of Mines Annual Report, 1904
92 Lloyd, p. 112
93 Department of Mines Annual Report, 1905

1905: Chiltern Golden Bar Co. - crushing and winding plant.[94]

1905: Great Southern Consols' best year - top alluvial mine in Victoria, producing 11,000+ oz.[95]

1906: Magenta United Co. sinking a shaft between two lines of reef. Great Southern Consols, Rutherglen, installed 90-hp electric generator. Prentice and Southern leases bought by English capitalists - Prentice and Southern Deep Leads Ltd commenced operations, reverting to North Prentice shaft - biggest mine-pumping plant in Victoria.[96]

1907: Golden Bar Extended Co. - erecting new battery adjacent to winding engine and air compressing plant. Rutherglen QMC installed air-compressing plant.[97]

1908-16: Rutherglen State battery upgraded, 1908 - new plant managed by local trust. New 16-hp suction gas engine installed, 1910. Trust abolished 1916.[98]

1909: Prentice and Southern Deep Leads Ltd closed down - unable to make expensive operations pay, despite high yields (1000 oz per month at end of 1909) - threw 300 men out of work - after 17 years of pumping up to 65,000,000 gallons a month, had obtained only 33,000 oz - very wet mine.[99]

1909: Rutherglen QMC ceased active operations. Quartz mining reviving in Chiltern area - Chiltern Golden Bar, Chiltern Golden Bar Extended, Lady Rose Co. Old Magenta mine restarted and a steam winch installed - shaft-sinking.[100]

1910: Great Northern Extended Consols, Rutherglen, ceased mining - needed to pump more than twice usual amount, due to cessation of Prentice and Southern mine, on the same lead - produced 32,500 oz, no dividends, between 1902-10. Great Southern Consols Co. erecting a suction gas plant on south shaft. Lady Rose Co., Chiltern, erecting steam winch.[101]

1911: Great Southern and Great Southern Consols, Rutherglen - only companies now operating in Rutherglen area. Efforts being made to treat Great Northern Extended Consols and Prentice and Southern mines' slimes. Only small parties on quartz mining - crushing at Government battery. Chiltern Valley Co. and two or three co-operative parties only alluvial mining in Chiltern district. Numerous cyanide plants operating - treating slimes from the old puddling mills.[102]

1911-12: Great Southern Consols moved operations to abandoned Great Southern and Chiltern Valley United shaft (No. 2 shaft) - impressive new plant installed - suction gas plant - 2 x 100-hp gas units, driving electric generators - electric winders - electric pumps (40-hp motors direct-coupled to five stays turbine pumps).[103]

1912: Great Southern Co. - one of best years since inception. 'The gold yield for some time has exceeded that of any other single alluvial mine in Victoria'. Chiltern Valley Co. - No. 3 shaft site chosen - sinking and erecting plant. Quartz - Golden Bar and Golden Bar Extended mines shut down. Magenta Co. suspended mining operations - engaged in cyaniding sand heaps.[104]

1913: Deep leads of Rutherglen district have 'fallen off alarmingly' during last few years.[105]

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94 Department of Mines Annual Report, 1905
95 Lloyd, p. 113
96 Department of Mines Annual Report, 1906; Lloyd, p. 116
97 Department of Mines Annual Report, 1907
98 Lloyd, p. 117
99 Lloyd, p. 116; Department of Mines Annual Report, 1909
100 Department of Mines Annual Report, 1909
101 Department of Mines Annual Report, 1910; Lloyd, p. 115
102 Department of Mines Annual Report, 1911
103 Lloyd, p. 114; Department of Mines Annual Report, 1912
104 Department of Mines Annual Report, 1912
105 Department of Mines Annual Report, 1913

1914: Great Southern Co., Rutherglen, wound up through falling off in gold yield - hampered by water due to cessation of pumping in Great Southern Consols mine. In all, produced 138,000 oz, worth £552,000 - £74,000 in dividends (although shareholders contributed £100,000). Great blow to district, which had already lost most of its large mines. [106]

1915: Lady Rose mine, Chiltern, closed down. Several small reefs in hills around Chiltern giving small crushings - good returns. Deep lead mines - labour shortages.[107]

1916: Electric haulage installed in Chiltern Valley GMC mine. 'Splendid plant' of Golden Bar Extended sold and removed.[108]

1916-17: Messrs Cross and Curtain working reef opened by deep alluvial operations many years ago, at Rutherglen (Surprise Co., 1869?) - crushing at Rutherglen State battery.[109]

1917-18: Rutherglen State battery crushing full-time - also crushing for Corowa Syndicate, NSW.[110]

1917: Great Southern Consols., Rutherglen, ceased work - plant dismantled and removed - last of district's big alluvial mines - in all, got 93,000 oz, worth £375,000, but paid only £19,000 in dividends.[111]

1918: Deep lead mining - Chiltern Valley Co., Potter's Freehold (Rutherglen) and Little Southern Co. (Rutherglen). Great Southern Reef, Rutherglen - in four years has yielded £7,450 of gold.[112]

1919+: Mining at Rutherglen negligible after 1919 - now agriculture (grain) and wine area. Lindsay Brown, one of the district's pioneer agriculturalists, said that there was more gold to be won from the top twelve inches of soil than from the depths below.[113]

1920: Only the Chiltern Valley GMC established efficient operations, which eventually worked out the lead completely for a distance of about 8-km.[114]

1921: Magenta Reef - Open cut in western portion is 50 ft deep for 15 ft long x 60 ft wide. On west side, open stopes 20 ft wide x 125 ft long x →100 ft deep. Main shaft sunk by present co. in 1909.[115]

1935-49: Rutherglen State battery - gas, 5-head.[116]

1937-50: Rutherglen Dumps Ltd - large-scale cyanidation of (all) deep lead slime dumps at Rutherglen. About 1 million tons of slum available for treatment in 1937 - 'highly mechanised cyanidation plant'. 'The slum, which varies in thickness from 6 to 10 feet, is broken down by sluicing with weak cyanide solution by means of an automatically controlled nozzle. The slurry is then conveyed by gravity along gutters to sumps… From the sumps the slurry is pumped to six large cylindrical iron tanks, holding many thousands of gallons, where the agitation is continued until most of the gold is in solution. Large vacuum filters perform the separation of the solids from gold-bearing solution. Three wells are used for this operation, two for filtrations, while the centre well is used for washing and discharge of the almost gold-free cake.… the gold slimes are smelted in an oil-fired furnace.' (1937) Worked Great Southern dump, 1939-40; Southern Consols dump, 1940-41 & 1946-7; Great Northern Extended Consols dump, 1947-8; Great Southern No. 1, 1948; North Prentice, 1949. Plant removed from Southern Consols dump to Great Northern Extended Consols, 1947 - 3.25 miles of pipelines laid from main treatment plant. In 1948, was only cyanidation works in Beechworth District. An increase in the gold price after WW2 increased the viability and life span of

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106 Department of Mines Annual Report, 1914
107 Department of Mines Annual Report, 1915
108 Department of Mines Annual Report, 1916
109 Department of Mines Annual Report, 1916-17
110 Department of Mines Annual Report, 1917-18
111 Department of Mines Annual Report, 1917; Lloyd, p. 114
112 Department of Mines Annual Report, 1918
113 Lloyd, p. 33
114 Canavan, p. 40
115 Baragwanath
116 Department of Mines Annual Reports, 1935-49

cyaniding operations. Plant removed to Devonshire plant, Bendigo (Gold Dumps Co.), 1951.[117]

1937: Prospectors on Golden Bar Reef, Chiltern. Fossickers and prospectors on Miner's Rights claims at Rutherglen.[118]

193?-8: West Woolshed Gold, near Chiltern - hydraulic sluicing - gold and tin.[119]

1954: Romey's cyaniding plant, Lilliput - sluicing the slum from the Southern Consol dump to the treatment plant - during the year treated 4,790 tons for 95 oz.[120]

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117 *Mining and Geological Journal*, 1937-51

118 Watson, J.C., 'The Gold Recovery Plant of Rutherglen Dumps Ltd', *Mining and Geological Journal*, July 1937

119 *Mining and Geological Journal*, 1937

120 *Mining and Geological Journal*, 1954

WOODS POINT GOLDFIELD

DATE

HISTORY:

Exploring alluvial prospectors working their way up the headwaters of the Goulburn River discovered the Woods Point goldfield. The goldfield lies next to the main dividing range, in steep mountainous country, with altitudes ranging between 1,500 and 4,500 feet above sea-level [1] The topography of the goldfield provided it with its most enduring characteristics - difficulty of access and self sufficiency. The terrain was so rough that none but foot parties and pack horses could enter the region. Two-hundredweight was the usual load for a pack horse and rates were 4d. per pound for store goods and around 6d. for equipment. All mining machinery consigned to Wood's Point had to be specially constructed to suit a pack horse load. Flywheels, steam engine cylinders etc were made in separate pieces and provided with tongues, grooves and flanges so that all parts could be bolted together to form the complete component. [2] The difficulties of access encountered in the mountainous field are well illustrated by the fact that a portable steam engine bound for the Victoria Jubilee mine site had to travel 32 miles more that the engine belonging to the Leichardt Company, although the actual distance in a straight line between the two mines was less than a mile.[3]

The Wood's Point field has four main mining localities: Wood's Point proper, Gooley's Creek, Matlock and Black River-Stander's Creek area. In about May 1861, the first payable gold was found at Gooley's Creek and Wood's Point. Gold was found at Matlock (originally known as Emerald Hill) in 1862. The gold was found in tributary creeks, gullies and the banks of the river itself. The alluvial miners used tin dish, tub and cradle, and later resorted to cutting water races (often having to be stone-retained) and using mainly sluice boxes to treat the wash. The use of horse-powered puddling machines was not to be a feature of the Wood's Point district: the mining registrar's reports from 1864 to 1889 only contain one reference to a puddling machine (Foley's Claim, adjoining the deep cutting at Wood's Point).[4]

The early prospectors traced the alluvial gold up the timbered slopes to its points of origin, the quartz reef. The first reefs opened in the Wood's Point district, in 1861, were the Morning Star Reef (Wood's Point) and All Nations and Lock Fyne reefs (Matlock). Small mining villages sprung up around the reef workings, eg. in August 1861, the mining registrar described Wood's Point as a 'collection of huts and a few stores'.[5] The township of Emerald Hill (now known as Matlock) was established in 1862. It was situated on the top of a mountain on the Dividing Range nearly 5000 feet above sea level. It was the highest inhabited town in Australia. [6] The township of Emerald Hill had its suburbs of Thackeray (later Toorak), Spring Hill, Muttontown, Mahambra and the small hamlet of Loch Fyne.[7] The richness of the Morning Star Reef, turned Wood's Point into a major quartz-reefing centre. This reef was prospected by Joseph Corry and the first claims were taken up in May 1861 by the two brothers, Colin and Duncan McDougall. The reef, located on a spur leading to the junction of the Morning Star Creek (or Left Branch) with the Goulburn River, proved to be extraordinarily rich near the surface. The McDougall Brothers' first crushing was in August 1862 and by October 1866 their claim had paid £120,376 in dividends. One crushing, ten days production of stone, was particularly notable - it produced £40,000 worth of gold.[8]

The richness of the McDougall Brothers' claim caused Wood's Point first quartz reefing rush. The Morning Star Reef was soon intensively occupied - an 1865 plan of the reef shows at least 30 claims and two leases. None of the new claimholders were to match the yields obtained in the prospecting claim, though at least two,

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1 Mining and Geological Journal, Sept 1948, W. Baragwanath, Wood's Point and District, p.16
2 Light Railways, Spring 1975, Tramways of Woods Point District, 1863-68, N. Houghton, p.5
3 Mining Surveyors' Reports, December 1888
4 Mining Surveyors' Reports, September 1864
5 Mining Surveyors' Reports, August 1861
6 Alf Holliday's notes on Wood's Point Goldfields, CNR Hanging Files, p.1
7 Alf Holliday's notes on Wood's Point Goldfields, CNR Hanging Files, p.2
8 Memoirs of the Geological Survey, No. 3,1905, p.19

Scott and Cherry's and Hope companies, paid exceptional dividends to their owners. It is estimated that from its opening to 1915, the reef produced over a £1,000,000 of gold from the surface to the500-foot level. The majority of this gold was won during the 1860s. [9]

The quartz reefing rush led to other reefs being worked during the 1860s, the principal ones being : **Wood's Point** (Waverley line of reefs); **Matlock** (All Nations and Lock Fyne reefs); **Gooley's Creek** (Never Mind, Shamrock, Comet, Johnstone's and Franklin group of reefs); **Black River-Standers Creek area** (Royal Standard, Champion, Robert Burns, and Leviathan reefs). Quartz mining during the early 1860s was a mixture of tunnelling and open cutting, and to a lesser extent, shaft sinking. Since the terrain was hilly and many reefs were on high ground it became usual to convey the quartz down to a battery, that was situated on the nearest watercourse, by chutes or laying a tramway incline down the hill face. These inclines were mostly of the three-rail balanced type ie., self-acting, with the descending full trucks raised the empties.[10]

Because of the early emphasis on tunnelling, the bulk of equipment being carted in was crushing machinery. The batteries were powered by either steam- or water-power, sometimes both. The first water-powered battery installed on the Wood's Point field was installed on the Morning Star Prospecting Claim. The first crushing took place in August 1862. The first steam-powered battery on the field, and claimed to be the first in the Australian Alps, was installed in 1864 by McDougall and Company. The battery was located on Fern Tree Creek and was installed to crush for the public. The battery was known as the Loch Fyne Company and its 8-heads of stampers were powered by a Langland Boiler. The battery and associated plant cost £4,000 to purchase, cart and erect.[11]

By the end of the 1860s, some eighteen batteries had been installed with the intensive concentration being on **Morning Star Reef**: Morning Star Prospectors (water-wheel/20-heads and turbine-power/20-heads), Scott & Cherry (water-wheel/16-heads), Age of Progress (water-wheel/20-heads), Hurley & Scott (water-wheel/15-heads), Lloyd and Company (steam-power/16-heads), Drysdale or Alps Company (steam-power/20-heads), South Woods Point Q M Company (steam-power/20-heads), and Vulcan Gold Mining Company (water-powered battery). The mining registrar recorded the following batteries on other reefs: **Black River-Standers Creek area** - Robert Burns Company (portable steam/10-heads), Champion Company (steam/water-power/15 to 20-heads), and Royal Standard Company (water-wheel/16-heads), and the Victory Company (which crushed at the Royal Standard battery); **Gooley's Creek** - Star of the East or Great Atlantic Gold Mining Company (turbine-powered mill) and Never Mind Company (water-wheel/16-heads); and **Matlock** – All Nations Company (steam-power/16-heads), Lock Fyne Company (steam-powered/8-heads), Charleston and B.B. Gold Mining Company.

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9 Mining and Geological Journal, Sept 1948, W. Baragwanath, Wood's Point and District, p.17

10 Light Railways, Spring 1975, Tramways of Woods Point District, 1863-68, N. Houghton, p.6

11 Light Railways, Spring 1975, Tramways of Woods Point District, 1863-68, N. Houghton, p.15

The focus on quartz mining quickly changed the nature of the place. Wood's Point became an important centre for the development of adjacent mines. In June 1864, the mining registrar recorded that in a 2_-mile radius of Wood's Point there were 216 weatherboard houses and stores, 114 log and slab houses and 390 tents. [12] To service the miners, mines and crushing mills roads, tracks, tram lines, and water races were made, with most of the quartz mining machinery transported in by horse or mules.[13] The goldfield had two main roads: the Yarra Track approached Matlock from the west, and then went on to Wood's Point; the other, came via Jamieson. The latter road One of came from Kelly's (Killar's Creek), down the Waverley spur to Wood's Point; it was 2_ miles shorter than the Matlock Road and the registrar concluded that it would eventually became the district's main road.[14] The forests surrounding the mines and crushing mills also were denuded due to the demand for timber for mining and building purposes, and as fuel.

By 1864, shallow alluvial mining was quite depressed. In June 1864, the mining registrar reported that this form of mining was almost entirely confined to old abandoned ground, and that the Crooked River Rush had taken 200 miners from the field.[15] There was one bit of bright news for the alluvial miners in 1865, with new ground being opened at Standers Creek, below the Royal Standard and Champion reef quartz prospecting claims. The rush left a strip of small settlements along the creek.[16]

During 1866 quartz mining on the Wood's Point field collapsed. Initially the mining registrar sheeted home the blame to a failed mining speculation spree: the depression of the money and share-market, consequent on excessive and imprudent speculation of the summer of 1865, has been felt very severely in the Wood's Point area. A year later the mining registrar was still referring to the 'permanent evils caused by the unwise and reckless speculation in scrip'.[17] For the next twenty of so years, the field suffered from a want of outside capital, having to rely on any mining development being funded by limited local resources. As the depression turned permanent the mining registrar listed other contributing factors: firstly, the great inexperience in reefing, and ignorance (especially among the alluvial miners who had turned their attention to reefing) of the nature of the breaks and faults occurring in mineral veins, and the indications by which they may be traced [18]; and secondly, the baneful effects on the general population of the monopoly in a few hands of the rich returns obtained from our mines. [19] By the early 1870s, some twenty mines had been abandoned.[20]

12 Mining Surveyors' Reports, June 1864
13 Mining and Geological Journal, Sept 1948, W. Baragwanath, Wood's Point and District, p.16
14 Mining Surveyors' Reports, September 1864
15 Mining Surveyors' Reports, June 1864
16 Mining Surveyors' Reports, September 1865
17 Mining Surveyors' Reports, June 1866
18 Mining Surveyors' Reports, March 1869
19 Mining Surveyors' Reports, December 1866
20 Mining Surveyors' Reports, August 1872

The onset of the quartz reefing depression saw many local miners turned their attention once more to alluvial mining. The new lease of life for alluvial mining was mainly focussed on the banks of the Goulburn River, especially below Gooley's Creek, where auriferous drift had been found at a height of as much as 500 or 600 feet. In June 1868, the mining registrar reported that the alluvial miners were making high wages (£3 per week) but that there was a want of skilled miners.[21] The working of the riverbanks received a dramatic setback in June 1870 when a flood (described as the worse since white settlement) swamped workings, and buried tail-races and sluice boxes (many with their week's yield) under tons of sludge and drift. The torrential rain also caused landslips, which damaged tramways and water races.[22] The revival in alluvial mining was shortlived: in June 1878 the mining registrar wrote that 'our alluvial miners are old identities, and it is rare to see a man under forty-five years of age in our creeks; young men do not remain in the district, even when their parents are permanently located'.[23] By the early 1880s the surviving alluvial were reported as making only 15 shillings a week, described as a 'bare subsistence'.[24]

The 1870s saw few mining highlights for the quartz mining industry. Little new machinery was installed, the exceptions being the Hope Company (Morning Star Reef) erected two buddles, a furnace for treating pyrites, and a Chilean mill (plant costing £1,000) for treating tailings[25]; and the Alliance Company (Matlock) erected a 8-head battery [26]. The Sir John Franklin Company (Gooley's Creek) was cited as the only company methodically trying to develop the deeper ground. [27]

Quartz mining had plunged to its lowest levels by the mid 1870s when the mining registrar reported that there were 'not 30 picks at work in the Morning Star claims'[28]; and that the enterprise of the miners was being discouraged by the absence of any material assistance on the part of store-keepers and others.[29]

In 1875 the town of Matlock (or Emerald Hill) on the very summit of the Divide was destroyed by fire, and was not again rebuilt. It was then that Toorak, now named Matlock came into prominence.[30]

Quartz mining began to display some healthier signs by the 1880s. Many of the claimholders, such as those along the Morning Star Reef, amalgamated, and the tributing system began to provide some positive incentives. The revival of the industry, however, appears to mainly come about through the prospecting efforts of William Wye. He referred to Wye's method (called loaming) as being novel for the area, but responsible for discovering one auriferous vein a week.[31] Wye's efforts led to a quartz reefing rush, chiefly to the Black River-Standers Creek area. The area's isolation resulted in on which initial trail crushing being hampered by the great expense of transport and the difficulty of obtaining packhorses.[32]

By the late 1880s, the Black River-Standers Creek field was thriving. The Mines Department had cleared and cut a track into the area [33]; and at least seven companies - Victoria and Jubilee, Leichardt, Leviathan, Golden Fleece, Southern Cross, Burke and Wills and Black River - had installed batteries. Another

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21 Mining Surveyors' Reports, June 1868
22 Mining Surveyors' Reports, June 1870
23 Mining Surveyors' Reports, September 1878
24 Mining Surveyors' Reports, December 1883
25 Mining Surveyors' Reports, June 1871
26 Mining Surveyors' Reports, December 1874
27 Mining Surveyors' Reports, March 1872
28 Mining Surveyors' Reports, June 1875
29 Mining Surveyors' Reports, March 1877
30 Alf Holliday's notes on Woods Point, La Trobe Collection, CNR Hanging Files, p.4
31 Mining Surveyors' Reports, June 1866
32 Mining Surveyors' Reports, December 1886
33 Mining Surveyors' Reports, December 1888

company to work with some success on the field during this time was the McCaul's Reward. [34] A small mining village , named Leichardt, was established on Standers Creek.[35] The field's new lease of life proved to be short-lived and the field once more slipped into depression.

Mining also commenced at Matlock during the late 1880s. In 1887, the New Loch Fyne Company was formed and during its time erected expensive and up-to-date plant, including a cyanide plant. The company also drove an immense tunnel. The tunnel was driven 1,968 feet, and was large enough to use a double horse tram. The timbering in this tunnel was enormous, great logs were fitted to hold the ground. The tunnel cost £16,000.[36] Despite the grand scale of its machinery and plant the company mined with little luck until a shaft sunk at the end of the large tunnel, dropped onto a large formation which was worked with great profit until 1913. During this time, the company crushed 117,930 tons of stone for 85,963 ounces of gold, and paid £109,000 in dividends [37]

Another quartz mining revival took place towards the end of the 1890s. One focus of this revival appears to have been Gooley's Creek where several companies commenced work , including the Comet, Little Comet, Sir John Franklin and North Sir John Franklin. All these companies appear to have erected water-powered batteries. The most successful of them was to be the Sir John Franklin Company. In 1899, this company erected new works, including a tramway and a 10-head battery. The new battery was powered by a 45ft diameter water-wheel. As the new mill was sited on the opposite side of Gooley's Creek to the mine, a high wooden flume had to be erected. This company worked from 1899 to 1909 and produced 6,267 ounces of gold. [38] Another company to work in the Gooley's Creek area in the early 1900s was the Upper Goulburn Gold Recovery Works , which was a pyrites treatment, works built and managed by Mr John Biggs.[39]

After the demise of the Sir John Franklin Company, mining was revived on the Morning Star Reef at Wood's Point. This reef had been more-or-less continuously worked until about 1900, through by the mid 1880s the reef had become unproductive. A contributory feature to the closing down of the Morning Star line lay in the failure to locate by boring operations, which commenced in 1887, to locate any evidence of the recurrence of payable lodes below creek level.[40] Early in 1916 the Morning Star Gold Mining Company was formed and a grant £10,000 was provided by the government. At a point 150 feet above the highest adit a four-compartment shaft was sunk, well equipped with machinery. By 1920 the prospects of the company were gloomy; they had sunk to a depth of 593 feet and had spent over £50,000. Fortunately for the company, its development of a reef formation, known as Whitelaw's, brought success and they commenced mining profitably. When the company closed down in 1917, they had milled 64,417 tons of ore for 65,594 ounces of gold, and paid out dividends amounting to £27,000. At their time of closure the company's machinery and plant were valued at £44,000 and the shaft had reached a depth of 1,000 feet.[41]

The 1930s saw major mining operations kick off on two mines: the Sir John Franklin and Morning Star. The New Sir John Franklin Company commenced work in 1932. It installed new plant consisting of a diesel engine and five-head battery; the old boiler, foundations and smoke stack of an earlier stage being bulldozed to make way for the new plant. The company only had a few crushings between 1940 and 1941; the plant was sold in 1949. [42] Miners experience more success at Wood's Point where after the demise of the Morning Star Gold Mining Company several subsequent attempts were made to prove the deep formations. A

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34 Alf Holliday's notes on Woods Point, La Trobe Collection, CNR Hanging Files, p.1

35 Alf Holliday's notes on Woods Point, La Trobe Collection, CNR Hanging Files, p.5

36 Alf Holliday's notes on Woods Point, La Trobe Collection, CNR Hanging Files, p.7

37 Memoirs of the Geological Survey, No. 13, 1916, p.25

38 Alf Holliday's notes on Woods Point, La Trobe Collection, CNR Hanging Files, p.5

39 Alf Holliday's notes on Woods Point, La Trobe Collection, CNR Hanging Files, p.3

40 Mining and Geological Journal, Sept 1948, W. Baragwanath, Wood's Point and District, p.17

41 Mining and Geological Journal, Sept 1948, W. Baragwanath, Wood's Point and District, p.18-19

42 Alf Holliday's notes on Woods Point, La Trobe Collection, CNR Hanging Files, p.6

shaft was sunk in 1927 by the North Morning Star Company but drives proved valueless.[43] This company took over the old plant, and due to deterioration was forced to repair and remodel it. The property was then taken over by the Morning Star Mines Limited formed with a nominal capital of £40,000, later increased to £80,000. This company conducted extensive diamond drilling which proved a large formation (burns floor above the old No. 7 level) and in 1935 the mine was the biggest gold producer in Victoria. In 1948 the shaft was down to a depth of 1,980 feet. [44]

SOURCES:

43 Mining and Geological Journal, Sept 1948, W. Baragwanath, Wood's Point and District, p.17

44 Mining and Geological Journal, Sept 1948, W. Baragwanath, Wood's Point and District, p.19

YACKANDANDAH GOLDFIELD

DATE	HISTORY:
	Discovery
1852:	Gold was found in the Yackandandah area in 1852, soon after the first discoveries at Reid's and Spring creeks (Beechworth). William Howitt, one of the first diggers on the scene, later recounted finding gold 'hanging in the roots of the shrubs that we pulled up' from the creek.[1] Rowdy, Osborne's, Allan's, and Staghorn Flats all proved very rich in alluvial gold, and the richest and most thoroughly worked part of Yackandandah Creek extended from 2km above the town to 10 km below it.[2] The mining population of about 1,500 in 1855 grew steadily to 3,000 in 1862, thanks to the discovery of quartz reefs at Clear and Twist's creeks in 1860.[3] Sandy Creek, about 25 km east of Yackandandah, was the scene of a rush in 1854, when 300 diggers worked the creek for a length of three miles. From soon after its discovery, the Sandy Creek field supported a substantial Chinese population for many years.[4]
	Early alluvial working Initially the ground was worked by sinking, then by paddocking -wholesale stripping away of the non-auriferous topsoil to reveal the gold-bearing washdirt beneath.
mid 1850's:	From the mid-1850s, the stripping process was commonly performed by Chinese labour (Chinese miners formed about 20% of the population).[5] At Allan's Flat, at the lower end of Yackandandah Creek, the stripping was very 'heavy': the barren overburden was 10 m deep and more and was taken away in carts. In contrast, the actual washdirt was only half a metre or so in depth. The only machinery in use on the field at the end of the 1850s were the small water-wheels used for drainage in creek claims: there were sixty-four of them in the Yackandandah mining division in January 1860.[6] The first (and possibly the only) puddling machine on the field was erected on the bank of Clear Creek in 1860.[7]
1859:	By 1859, the main method of alluvial working on the Yackandandah field was sluicing, 'every available creek and swamp being forced to yield their treasures for the hill sluices'. Sluicing required a constant source of water, which the Yackandandah Creek alone could not provide. In 1859-60, major water-races were under construction: the Pioneer Water Co. were cutting a race more than 100 km in length from the Kiewa River; Carlo Re and party '(foreigners)' were cutting a deep tail-race through hard slate in the creek bank at Hayes' Point (this race took two years to complete and cost £1,200[8]); Edwards and party's tail race - also cut through rock - at the bridge on the road to the township was complete; McGill and party were tunnelling a tail-race through a granite hill nearly opposite the township, to facilitate the working of Whisky Flat; and Griffiths cut a 'splendid specimen' of a tail-race through falls above the junction of Yackandandah and Kinchington's creeks, south of the township.[9] These were real engineering feats in their day, cut through solid rock and over great distances using hand-tools and manpower alone. The investment of money and energy in extensive tail-races gave a relative stability to the non-Chinese mining population of the Yackandandah goldfield. A tail-race was regarded by the mining surveyor as a 'civilising' influence, as it would provide a party with ample work for two or three years, 'thereby inducing them to settle down, and, in fact, make a regular business of mining, contrasting favourably with their former nomadic habits'.[10] Public reservoirs were constructed for the use of sluicers in 1861.[11] In 1859, Chinese diggers still greatly outnumbered Europeans on the Sandy Creek diggings, which extended along the creek for about 8-km. It was patchy ground, not much thought of, and its working required (but failed to justify) long and expensive tail-races.[12] In August 1860, a party of Chinese bought a tail-race and claim for £616 from departing Europeans.[13]
1860's:	Staghorn Flat was taken up for sluicing in early 1861, having been only superficially prospected some years before; at that time, it was the lowest (ie. most northerly) workings on the Yackandandah Creek.[14] During the 1860s, alluvial mining would progress down the creek to its junction with the Kiewa (Little) River.[15]

Quartz mining

mid 1860: In mid-1860, the Yackandandah field could boast its first 16 quartz miners. They were working on the just-discovered Comasimo Reef at Clear Creek [where?]. Henderson's Reef, at the head of Twist's Creek, was found soon after, and by the end of the year three more reefs were proven: the Polar Star, Scandinavian, and Caledonia.[16]

mid 1861: Yackandandah quartz miners were without a crushing machine until mid-1861; meanwhile their stone was carted to Indigo for crushing, costing £5 a ton for cartage alone.[17] The first crushing device on the field was a hand-operated Berdan machine on the Polar Star reef at Twist's Creek. It was found to be of little use, taking over a week to crush a single ton of stone.[18] Steam- and water-powered batteries followed: a 30-ft diameter water-wheel and eight stampers for the Phillippi Co. on Comasimo Reef, and an eight horse-power engine running eight heads on Henderson's Reef. (The latter - Wallace's - found little work and was removed to Benalla within six months of its installation.)[19]

1862-64: For want of capital to develop and equip the mines, quartz mining was faltering at the end of 1862. By 1864, the quartz mining industry was on a firmer footing. Three water-wheels and two steam engines drove batteries and new reefs were discovered near Wodonga, at Kinchington's Creek, Hillsborough, Sutton, and Back Creek, as well as at Clear and Twist's creeks. From that point, quartz mining activity continued on an upward trajectory throughout the 1860s. Twist's Creek was the centre of activity, with at least seventeen companies or parties at work on reefs there in 1868.[20]

1869: Pride and Stringer, at Back Creek, 5 km south of Yackandandah, had a battery of 20 stamps in 1869 - 'the most complete plant in the district'.[21] At least three other companies operated steam-powered crushing plants of 15 heads, and batteries served mines on the Taff Reef at Sutton (5 heads), the Markham Reef at Back Creek, and at Hillsborough.[22] A party operated on pyrites from the Eureka Reef at Hillsborough, probably using quartz roasting kilns.[23] Most shafts reached water-level at a depth of about 10 m and were abandoned at that point, the cost of pumping machinery being beyond the means of small claimholders.[24]

Water power

Water was the key to mining in the Yackandandah district and, from very early on, it was established as a (more than usually) 'seasonal' goldfield. The mining technology employed in the district relied heavily on water and miners - both alluvial and quartz - would leave for other fields when the dry seasons set in. The alpine Kiandra (or Snowy River) goldfield in NSW was a favourite summer resort of Yackandandah miners.

1870: In 1870 - where, just months before, miners had been 'anxiously looking for rain' - the district suffered months of destructive flooding, washing away creek claims, dams and races. Some of the claims flooded were afterwards so heavily silted up as to preclude their re-opening. In fact, the floods of 1870 served as a fitting introduction to the new decade for alluvial miners. Livings became harder to make and the state of alluvial mining was declared 'dull'. 'The alluvial workings,' wrote the mining surveyor in 1872, 'are being slowly but surely exhausted, and but that the miners are comfortably fixed in small farms and large gardens, and with abundance of good grass for their numerous cattle, the workings would not support them in the style they affect.'[25] The 'numerous cattle' were crowded on the town common, as few miners owned less than ten head, and some had more than forty. The Chinese seemed able to survive on a more meagre subsistence than other miners, and hundreds of them continued to wring a living from alluvial claims. Many of them held claims at Sandy Creek which had been 'their' field from the first, and the upper extent of the creek they washed down to bedrock.[26] From the mid-seventies, the Chinese left their claims every summer to work on tobacco plantations on the Buckland and Ovens Rivers. Other alluvial miners worked at fencing or harvesting in the summer months, or left the mining industry altogether. Those with money selected land. A few ('and only a few') were tempted to try their luck on other regional goldfields, joining rushes to Mitta Mitta, Bethanga, or Cottontree, but most returned to their claims and their cattle. For gold miners, they were a settled lot.[27]

Quartz mining

1870's: Work continued on the reefs throughout the Yackandandah district during the 1870s, but with unspectacular results: the mining surveyor's description of his division as 'dull' encompassed quartz mining as well as alluvial'. Many mines were idle, and batteries were periodically removed to new fields. From 1871-c.75, the Von Moltke Reef at Hillsborough was pursued by a miner called James Magill, by means of a substantial tunnel. Virtually no gold was found, although the enterprise cost Magill in excess of £2,000 of his own money. The mining registrar seems to have regarded the Von Moltke tunnel as an expensive folly - and Magill a fool.[28] In 1876, mining was going on at Bruarong, about 10 km south of Yackandandah, and a Berdan crushing mill was moved there from Twist's Creek to be operated by waterwheel.[29]

1876: The abandoned Excelsior mine and battery, at Twist's Creek, were taken up by Pride and Stringer in 1876. A pumping engine was installed to dewater the shaft, which was subsequently sunk to a depth of over 100 m, making it the deepest in the Yackandandah district.[30]

late 1870's: In the late seventies, the discovery of rich reefs on the hills above the languishing Sandy Creek alluvial field created a flurry of quartz mining activity there. In 1880, an investment revival gave rise to renewed interest in reefing throughout the Yackandandah district. Old reefs at Clear and Twist's creeks were again taken up and a fresh crop of mining plant appeared.[31] Quartz mining on the reefs close to Yackandandah quietened after 1883, although quartz mining at Clear Creek (Chambeyron Brothers' crushing mill, Caledonia Co. battery, Albion Reef reopened) and the Homeward Bound Reef at Hillsborough still rated a mention later in the decade and into the nineties.[32] A report on the reefs at Twist's Creek in 1894 explained that the cause of their abandonment was the miners' inability to 'unlock' gold from the ore, which grew more pyritic at depth.[33]

Early 1880's: The Sandy Creek reefs led the revival of the early 1880s, with more than a hundred miners working a rash of reefs, most of them on the high ridge separating Sandy Creek from Lockhart Creek. Chief among the reefs were the Grasshopper, Wild Cat, IXL, and Lockhart's, and they were worked by tunnel rather than shaft. In 1886, the local mining community objected when a number of quartz claims - one of them reportedly yielding 20 oz to the ton - were classified as 'brown' or agricultural land.[34] Two years later, a Mines Department survey of Sandy Creek - apparently to ascertain whether the field was still viable - found many of the reefs deserted, having been worked only superficially. Three batteries were still at work on the field: J'Anson's, below the Wild Cat Reef; one close to the IXL reef; and one on Lockhart's Reef. The survey found that the forest on the creek flats and foothills had already been destroyed, and recommended that the high ridges - on which the reefs were situated - be made timber reserves rather than be denuded for grazing.[35] Evidently the land was exempted from selection, as the lucrative claim mentioned above - that of O'Dell's A1 at Lloyd's Co. - was still 'yielding splendidly' in 1890.[36]

1900: At the end of the century, the *Australian Mining Standard* declared the Von Moltke Co.'s claim - which was paying dividends, in a small way - the best on the Yackandandah quartz reefs.[37] In 1903, the Grasshopper and Leviathan Cos. at Sandy Creek were getting yields of 10 dwt and more to the ton. The Leviathan ceased work by about 1910, but the Grasshopper was taken up by the British and Australian Co. in 1909, which operated until 1915. The company's battery was utilised as a State battery from 1916-18, mainly treating 'tips'.[38]

1906+: The activities of the Go-Ahead and Relay companies from 1906 resulted in a minor revival on the Twist's and Clear creek reefs, which was over by 1914. At Hillsborough, the Homeward Bound and Bon Accord Co. was mining and cyaniding from 1915, and producing yields of almost an ounce to the ton in 1918.[39] Mining records thin out from that point until 1937, at which time a company , after unsuccessfully retrying the Bon Accord mine, was shifting its attention instead to cyaniding the 5,000 tons of tailings on the site.[40] After that, things went quiet on the Yackandandah reefs.

Hydraulic sluicing and dredging

1882: The Premier Gold Mining Co. had a sluicing lease at Rowdy Flat, on the creek just north of the township, from 1882. Its tail-race was excavated, in places (including the present-day Gorge), to a depth of over 2 m through hard rock, and cost more than £5,000 to construct. The company's water-race was extended in 1885.[41] The Pioneer's was one of only two or three alluvial claims still operating in the district, apart from a few old 'hatters' (lone fossickers). Even the Chinese had abandoned the ground as unpayable.[42]

mid 1880's: Thomas Hedley, the senior mining manager of J.A. Wallace's enterprises, experimented in the mid-1880s with a new sluicing method, whereby steam-driven hydraulic sluicing machinery was floated on a flat-bottomed barge.[43] In 1886, Wallace formed the Yackandandah Sluicing Co. to work the creek between the township and Staghorn Flat.[44] The plant, situated at Staghorn Flat, included 'new and unique machinery' - it was a sand-pump, an early form of dredge, equipped with two steam engines, centrifugal pumps, and an elevator for raising the washdirt.[45] The machinery initially proved too light for the ground it had to work, and new engines and a more powerful elevator were installed early in 1889. A larger lease - 14 km in extent - of abandoned ground on Yackandandah Creek was taken up by the company and a second plant was installed at Rowdy Flat to work it 'on the new principal lately introduced into this colony - viz., dredging'.[46] Yackandandah had become 'the Victorian home of hydraulic dredging'.[47] The company's yield for the September quarter that year was around 1,000 oz, and its sand pumps were 'washing the whole of the creek, from top to bottom'.[48]
By the end of the century, Wallace had two sand-pumps at Rowdy Flat, and one each at Staghorn Flat, Sandy Creek, and the McCombe claim, just below Staghorn. The Staghorn barge, erected in 1894, was the largest on the creek, measuring 14 x 11 m. In 1899, the Staghorn lease alone was said to be returning 1,000 oz of gold a fortnight. The Staghorn township stood at the centre of the lease. The McCombe plant was the most expensive on the field, having cost £41,000 to construct. At Sandy Creek, the Argo sand pump - the 'prettiest' in the district - completed the Wallace group and was cleaning up what the Chinese had left behind. As the supply of water at Sandy Creek was limited, a pumping plant was erected on the Kiewa River. All up, Wallace's Yackandandah sand-pumping operations paid wages of £25,000 a year, much of it to timber cutters, who supplied vital firewood for fuel.[49] At Sandy Creek, timber was in short supply and by 1903 the Red Bluff Electric Sluicing Co. (another of Wallace's sand-pumping claims) was operating by electricity, generated by a large power plant. [50]

1905: The first bucket dredge in the division was constructed at Clear Creek in 1905, to work leases held by Fletcher, who also operated two hydraulic jet elevators.[51] By 1910, dredges had replaced sand pumps throughout the district, and were operating in numbers on Yackandandah Creek and Sandy creeks. The Briseis Tin and General Mining Co. (which had acquired Wallace's leases) had four dredges in operation by 1912, and others were operated by Fletcher and Moore. The Yackandandah dredging boom was over by 1918, by which time all dredges had stopped work or were winding down operations.[52] The district's claim to be the 'home' of dredging in Victoria had been short-lived: from 1900 onwards, the Yackandandah dredging industry was overshadowed by that of the Upper Ovens district to the south.

1930-50: Unlike on the Upper Ovens, there was no revival of dredging activity at Yackandandah in the 1930s, although sluicing operations continued, intermittently, until as recently as the mid-1950s.[53]

SOURCES:

Adcock, W.E., *The Gold Rushes of the Fifties*, first published 1912, re-issued with notes by J. Flett, Poppet Head Press, Melbourne, 1977.

Australian Heritage Commission, Register of the National Estate, file no. 004677 2/08/247/0007/01.

Australian Mining Standard, special edition, 1/6/1899, pp. 93-5.

Brough-Smyth, R., *The Gold Fields and Mineral Districts of Victoria*, Government Printer, Melbourne, 1869; facsimile edition, Queensberry Hill Press, Carlton, 1979.

Craig, G.F., 'A History of the Stanley, Hurdle Flat and Hillsborough Districts' in *Stanley Times and Mining Journal*, 1870.

Dunn, E.J., 'Report on Sandy Creek, Parish of Bogong', Appendix B to Mining Surveyors' Reports, September 1888 (includes plan of goldfield).

Dunn, E.J., 'Reefs near Yackandandah, Beechworth District' - 1908? source?

Flett, J., *A History of Gold Discovery in Victoria*, Poppet Head Press, Melbourne, 1976.

Keamy, R.L., 'Report on the early development of the Goldfields Gorge, Yackandandah', 1988, for the Yackandandah and District Historical Society.

Loder and Bayly, *Yackandandah Conservation Study*, for Shire of Yackandandah, 1975.

Murray, R.A.F., 'Report on the Reefs at Twist's Creek, near Yackandandah', in Geological Survey of Victoria *Report of Progress* VIII, 1894, pp.43-4.

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1 quoted in Adcock, p. 122
2 *Australian Mining Standard*, p. 93
3 Flett, pp. 66-7
4 Flett, p. 158; Dunn (1888)
5 Adcock, p. ?
6 Mining Surveyors' Reports, October 1859, January 1860
7 Mining Surveyors' Reports, September 1860
8 Mining Surveyors' Reports, February & July 1860
9 Mining Surveyors' Reports, November 1859, November 1860
10 Mining Surveyors' Reports, August 1860
11 Mining Surveyors' Reports, May 1861
12 Mining Surveyors' Reports, December 1859
13 Mining Surveyors' Reports, August 1860
14 Mining Surveyors' Reports, April 1861
15 Mining Surveyors' Reports, December 1864
16 Mining Surveyors' Reports, June-December 1860
17 Mining Surveyors' Reports, October 1860
18 Mining Surveyors' Reports, May 1861
19 Mining Surveyors' Reports, May-December 1861
20 Mining Surveyors' Reports, 1868
21 Mining Surveyors' Reports, December 1869
22 Mining Surveyors' Reports, March 1867, June 1868, September 1868
23 Mining Surveyors' Reports, September 1868
24 Loder and Bayly, pp. 69-71
25 Mining Surveyors' Reports, December 1872
26 Dunn, 1888
27 Mining Surveyors' Reports, March 1870 to June 1878
28 Mining Surveyors' Reports, 1871-5
29 Mining Surveyors' Reports, December 1876
30 Mining Surveyors' Reports, September 1876; Loder & Bayly
31 Mining Surveyors' Reports, 1878-83
32 Mining Surveyors' Reports, June & September 1886, September 1888, 1889-90
33 Murray, p. 43
34 Mining Surveyors' Reports, December 1886
35 Dunn, 1888
36 Mining Surveyors' Reports, December 1890
37 *Australian Mining Standard*, p. 95
38 Department of Mines Annual Reports, 1903-18

[39] Department of Mines Annual Reports, 1903-18
[40] *Mining and Geological Journal*, 1937-8
[41] Mining Surveyors' Reports, December 1882, March 1885
[42] *Australian Mining Standard*, p. 93
[43] *Australian Mining Standard*, p. 94
[44] *Australian Mining Standard*, p. 93
[45] Mining Surveyors' Reports, September 1888
[46] Mining Surveyors' Reports, March 1889, March & June 1890
[47] *Australian Mining Standard*, p. 93
[48] Mining Surveyors' Reports, March-December 1890
[49] *Australian Mining Standard*, pp. 94-5
[50] Department of Mines Annual Report, 1903
[51] Department of Mines Annual Reports, 1905, 1907
[52] Department of Mines Annual Reports, 1906-18
[53] *Mining and Geological Journal*, 1954-5