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HERITAGE CONSERVATION PLANNING & MANAGEMENT • ARCHAEOLOGY • COMMUNITY CONSULTATION

Lake George Mine Assessment of Cultural Heritage Values

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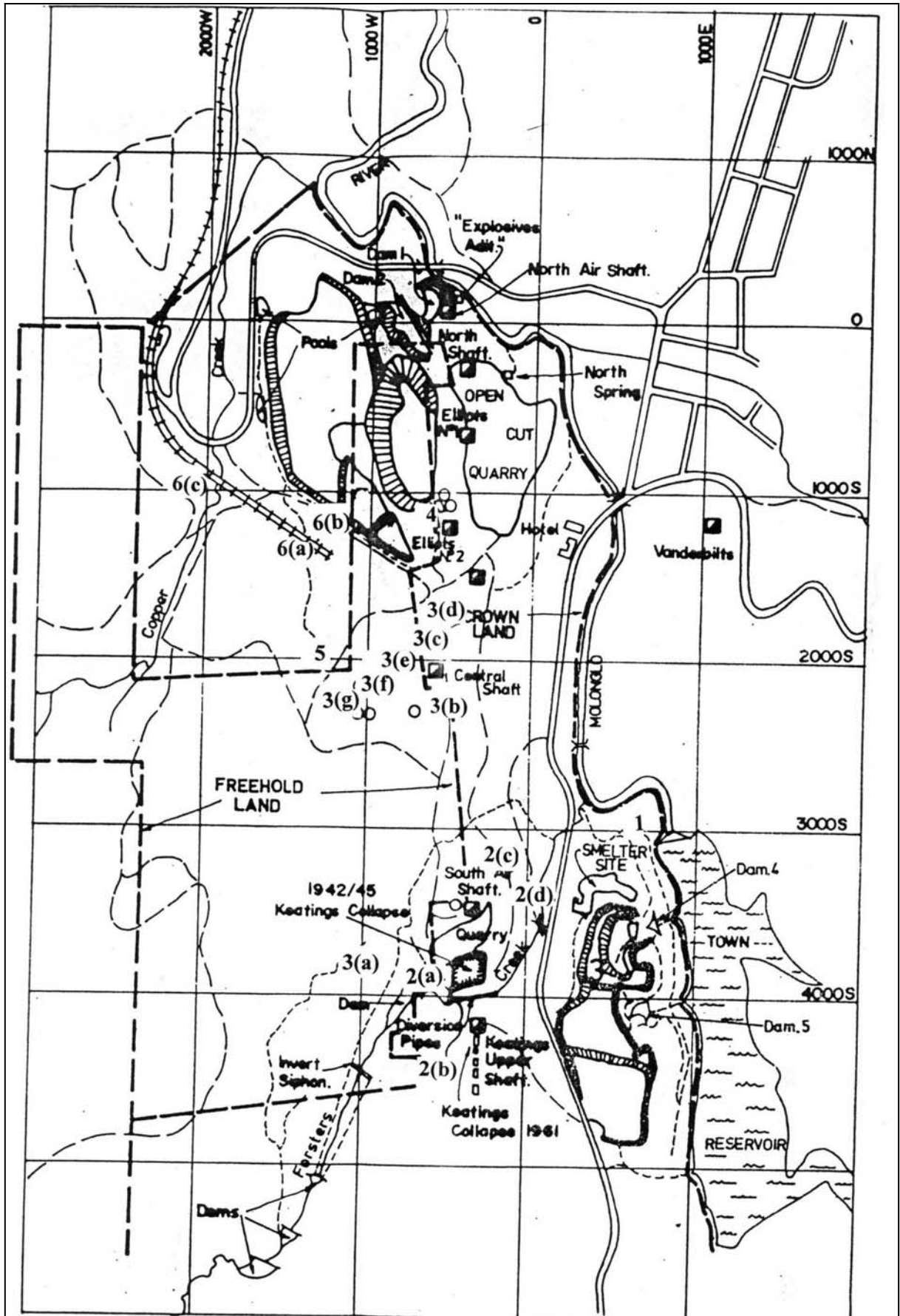
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Lake George Mine. Source: *Mine Waste Pollution of the Molonglo River, Preliminary Report on Remedial Measures*. Joint Government Technical Committee on Mine Waste Pollution of the Molonglo River. April 1974.

1.0 Introduction

The NSW Department of Primary Industries – Derelict Mines is responsible for the management of ongoing environmental and safety issues associated with the Lake George Mine site at Captains Flat.

NSW Department of Primary Industries – Derelict Mines recognise that decisions about the future management of the mine and its remaining physical features should be informed by an identification and assessment of the mines cultural heritage values and significance.

1.1 This Report

This report details the identification, description and assessment of the cultural heritage values and significance of the Lake George Mine. It includes:

- Discussion of the historical context of the mines and the township of Captains Flat;
- Stakeholder consultation;
- Descriptions of the extant elements of the mine; and
- Assessment of the extant elements of the mine against the NSW Heritage Register criteria.

1.1.1 Authorship

This report was prepared by Barry McGowan and Alistair Grinbergs.

2.0 Historical Context

2.1 Lake George Mine & Captains Flat 1858 – 1963

There were two main mining periods, from 1881 to 1899 and from 1937 to 1962. Prior to 1881 mining was intermittent and largely confined to alluvial mining along the Molonglo River. There was no town or village at the Flat, only miner's camps, and these would have been located along the Molonglo from the falls to Foxlow station. After 1899 the town lingered on until the mine reopened in 1937. The mine closed again in early 1962, but the 'deconstruction' phase was long and painful, and our history of the town has been extended to mid 1963 to give some perspective to those years. We have also included an account of the post mining rehabilitation work, a task which is ongoing to the present day. The history is set out in three sections: mining history, class conflict and labour relations, and town and community (including social, cultural and sporting associations).

2.1.1 Mining History 1858-1936

The first account of mining in the Captain's Flat area was in May 1858 at Foxlow. In August it was reported that a payable gold field had been found and that one of the claims was worked by 16 Chinese miners. The property owner had provided rations, and by mid August a considerable amount of wash dirt was

stacked for washing. Several hundred men had left Long Flat and Major's Creek for Foxlow but after prospecting for a few days had returned, for apparently the ground could not be worked because of the quantity of water. By late September there were between 18 and 20 men on the field about 5 km from where the ground had been first worked, and they were believed to be doing well. In 1871 there was a report of applications for miner's rights for the Foxlow Reefs, which were near the head of the Molonglo River 2.5 km above Foxlow House, the stone having assayed at 2.5 oz of gold and 0.5 oz of silver. These mines may have in the Captain's Flat area, but they could not have been very successful for there were no further reports on the reef mines until 1881. In April 1875



1890s smelter & slag dump. Image courtesy of Ms Elizabeth Estbergs

prospectors claimed that they had obtained payable gold for more than six months, and that large quantities had been sold in Braidwood. A party of Chinese had been working the ground, which was known as the Foxlow goldfield, for some time and were apparently doing very well. A subsequent report referred to a deed of agreement with the owner stipulating conditions in the event of a lead being found. By early 1876, however, the prospectors had given up the ground, having had to bail out water every morning.¹

There were further reports of reef mining in May 1881, when two tons of quartz was sent to Major's Creek for a yield of 0.5 oz a ton. A report in July referred to a party paddocking on the Molonglo River about 1.6 km above Foxlow station, and several parties prospecting in the alluvial near Captain's Flat. McNeill's Prospector's claim appeared to be the main one. The party had spent £70, which was a considerable amount of money as they were described as 'only poor men'. About 6 km of the reef had been taken up, much of it by moneyed men who were biding their time, leaving the work to others. One party had constructed a race and had commenced sluicing. It was commented that the field was not for those without capital and that people should await the erection of permanent machinery. Provisions were cheap and plentiful.²



1890s smelter. Image courtesy of DPI – Derelict Mines.

In May 1882 a crossing over the Molonglo River was under construction in anticipation of the arrival of Holtermann's crushing machinery at Captain's Flat. Sheds were being erected and it was expected that everything would be completed and in working order within three months. The crushing plant had 12 head of stampers. Work on the Prospectors' claim had been suspended, however. About a mile south of the Prospector's was Harkness and Co's claim. Owing to the limited gold saving devices the miners were losing about

¹ *Goulburn Herald*, 29 May, 4, 11, 25, 28 August, 29 September 1858; *Queanbeyan Age*, 21 September 1871, 21 April, 15 May, 14 August 1875, 19 February 1876; *Australian Town and Country Journal*, 11 March 1876.

² *Goulburn Evening Post*, 31 May, 21 July 1881.

half of the yield when sluicing the finer parts of ore from the reef. A report some months later described Captain's Flat as a 'morass of ten or twelve acres (4.0-4.8 hectares)' through which ran the Molonglo River; at the boundary fences of the Yorkdale Estate there were prospector's holes lying like 'open graves' all along the river flat. There were also old water races and small patches of stripped alluvial soil. Near the township the soil had been stripped by McNeill and Hohlan, who had cut a water race along the slope of the southern range bordering the Flat, and had worked at their claim for about two years. It had paid them well. At the site of a recent copper discovery about 0.8 km away, the ore was yielding from 75 to 80 per cent copper. A gold discovery had been made at the Coffee claim, 0.8 km east from the copper lode. On a tributary of the Molonglo there was a deep dam, and near that a tunnel and a deep shaft. The gold was very fine and could not be separated without mercury, the owners, Emmerson and Harkness having used sluicing and a blanket, but the process was very wasteful. Mr Blatchford from Araluen had arranged to erect a 16 head stamper to crush the ore and facilitate gold recovery.³

In September it was reported that the discoverers of the copper claim had sold it to Sydney interests for £3,300. A correspondent stated that the Coffee claim was to be the 'hill of renown' in the future. Blatchford's and Emmerson's leases were on opposite sides of a ravine from which the stone was conveyed by about 100 m of tramway to Blatchford's stamper. By 1883 about £600 to £700 of gold had been won from Emmerson's lease. Blatchford's claim had yielded from between 20 to 30 oz a week before the reef was lost. At Montgomery's seven acre (2.8 hectares) lease two shafts had been sunk and a road cut for conveying the stone to Holtermann's battery. Late in 1884 there were reports of alluvial gold in the Molonglo River being worked by a steam engine provided by the owner and a centrifugal pump, the miners paying the owner a royalty. During the year considerable work had been done on Blatchford's claim, most of it while waiting for rain, the lack of which had caused the battery to be idle for the first six and a half months of the year. But the first signs were emerging that something was amiss. Much of Blatchford's ore was refractory and intermingled with iron, which could not be treated with ordinary processes and arrangements were being made for the use of other machinery.⁴

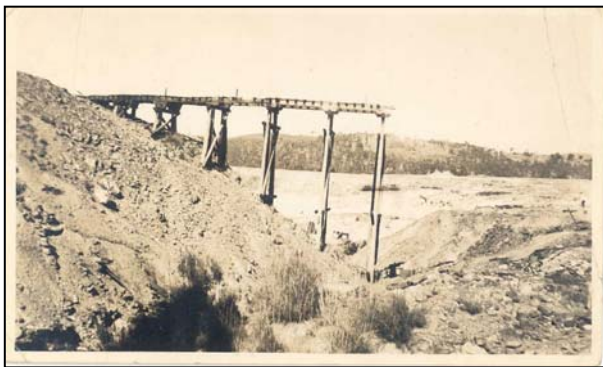
By the following year it was obvious that a change in processing techniques was necessary, for there had been further difficulties caused by the presence of silver and lead in payable quantities. Blatchford discontinued operations and visited Sunny Corner to examine the smelting process in that locality. Believing it to be satisfactory he made arrangements for the erection of a water jacket furnace, and formed a company with a capital of £60,000. Although he employed about 30 men, mining had been suspended because of the preparatory work. Elsewhere, work had been suspended on Montgomery's claim during the last six months of the year because of the lack of water, and little

³ *Goulburn Evening Post*, 13 May 1882; *Queanbeyan Age*, 28 July 1882.

⁴ *Queanbeyan Age*, 22 March 1883, 28 November, 5, 19 December 1884; *NSW Annual Report*, 1883, p.83; 1884, p.82.

prospecting work had been done on the leases held by representatives of the late Mr Holtermann.⁵

Early in 1886 there were 300 miners at the two main mines, the El Capitan (Blatchford's) and the Kohinoor (formerly Montgomery's), both of which were equipped with blast furnaces. The El Capitan was the largest mining concern. Many of the miners had worked in Nevada and Sunny Corner, while others were from Araluen and other mining centres. During 1886 and 1887 the mining operations were, however, plagued by intermittent shut downs of the furnaces, sometimes for repairs and at other times because of shortages of raw material such as timber, coke and iron. The latter was a consequence of the teams bogging down on the bad roads, as most materials were conveyed by bullock dray from the railhead at Bungendore. Another difficulty was lack of capital, and in November 1886 it was commented that people were 'suffering great privations rather than leave, knowing that eventually when a start is



Remains of 1890s railway trestle bridge – Forster's Gully. Image courtesy of Ms Elizabeth Estbergs

effected there will be sure prosperity'. All the while, alluvial mining continued. In 1886 it was remarked that the nearby gullies were frequented by fossickers who were making more than tucker wages with average earnings not far short of £3 a man'. The whole of the Flat was riddled with shallow trial holes and resembled a 'newly made cemetery of unfilled graves'.⁶

Disruptions were also caused by changes in ownership and management and occasional attempts to reconstitute the

companies. In September 1886 Sydney interests were reported as having purchased the Kohinoor, the El Capitan and Holtermann's battery. The Kohinoor was under new management again in July 1887. In early 1888 no smelting was undertaken at the El Capitan pending steps to acquire more capital. The mine was eventually reconstituted a few months later as the Commodore, and was managed jointly with the Vanderbilt, both companies using the same assaying and smelting facilities. Mining at the Kohinoor was also suspended following the termination of a tribute agreement, but later that year it was acquired by a company with substantial capital resources, and active work resumed soon thereafter.⁷

1889 was a relatively prosperous year. Work had been carried on very successfully at the Commodore with a large amount of ore delivered to the furnaces, and smelting had been conducted more or less continuously at the Kohinoor, where an extra water jacket smelting furnace had been erected. At the Kohinoor, a reverberatory furnace was also under construction to treat the sulphide ores, as the silver ore was now regarded as very refractory. A 20 head battery and a Huntington mill were also under construction for the treatment of an expected large body of

⁵ *NSW Annual Report*, 1885, p.77.

⁶ *Queanbeyan Age*, 29 April, 1 July, 3, 24 August, 1886, 7, 18 September, 11 November, 21 December 1886, *NSW Annual Report* 1886, p.76; 1887, p.81.

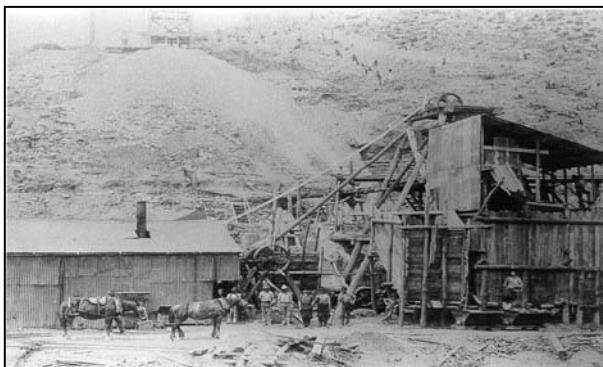
⁷ *Queanbeyan Age*, 7, 18 September 1887, 29 February, 19 March, 4 April, 23, 30 May, 27 June, 3 August 1888; *NSW Annual Report*, 1888, p.91.

gold bearing ore. When in full work it was expected that this mine would employ about 250 men.⁸

By early 1890, the increasingly refractory nature of the sulphide ores had led to a change in the method of treatment. The silver required roasting prior to smelting, and operations were to be curtailed until such time as a calciner was erected. A number of roasting stalls were built, but they were very dependent on dry weather, and they were not particularly successful. At the Commodore Vanderbilt a second hand Desulphurising furnace had been bought, but it too had been unsuccessful. These vicissitudes continued into the following year, and by March the Commodore Vanderbilt was smelting with only one furnace, with another lying idle. At the New Kohinoor (formerly the Kohinoor) the only processing was the extraction of gold.

In March 1891 it was commented that both companies had worked their mines in the wrong direction, relying on the gossan to make lead bullion as at Broken Hill and Sunny Corner. If they had proven the mines by testing if there was copper, which there was, then they would have only had to decide whether to smelt with the blast furnace or the reverberatory furnace to make copper matte. But there had been a misconception in the nature of the ore, the mode of treatment, extravagance in the construction of the works and errors of judgement in laying them out.⁹

In 1893 steps were taken to rectify the earlier production problems. New furnaces and treatment methods were introduced by both companies and there were about 200 miners employed in both ventures, with the Commodore Vanderbilt now reconstituted as the Lake George Copper Mining Company. The main mineral now extracted was copper rather than silver, and there were about 25 teams on the road carrying coke from Bungendore. Towards the end of the year the furnaces were running continuously and progress had been made at the Lake George mines in the erection of a new copper treatment plant.



1890s Mine Site. Image courtesy of DPI – Derelict Mines.

At the New Kohinoor a new smelter had been blown in and more men were employed in early November. The ore was now roasted in a calciner prior to smelting. By now, however, there were new challenges in the form of depressed metal prices, for the world wide economic depression of the 1890s was in full swing. In November the men at the New Kohinoor accepted a reduction in wages on condition that the old rates would be restored when conditions improved. In September 1894 it was commented that

everything at the Flat was dull, flat and unprofitable, and both mines had shut down their furnaces pending an amalgamation.¹⁰

⁸ *Queanbeyan Age*, 29 May 1889, *Braidwood Dispatch*, 11 May, 3, 24, 27 August, 26 October, 6 November; *NSW Annual Report*, 1889, pp.91-92.

⁹ *NSW Annual Report*, 1890, p.97; *Queanbeyan Age*, 5 February 1890; *Australian Town and Country Journal*, 28 March 1891.

¹⁰ *NSW Annual Report*, 1894, p.27; *Cooma Express*, 12 August 1893; *Braidwood Dispatch*, 28 October, 11 November, 9 December 1893.

By September 1895 an air of optimism had returned, and by the middle of 1896 the amalgamation had been effected and the share price had risen sharply, largely as a result of a steep increase in copper prices. Mining was now to be directed primarily to copper. Steps were also to be taken to reconstitute the company. It had been concluded that the property must be worked on a very large scale, with a plant capable of treating a much larger quantity of ore and reducing it to a much richer product than at present. A large London-based company was to provide the necessary working capital, and it was predicted that there could be 1,000 men and boys employed by early 1897. A direct pyritic smelting process similar to that at Mt Lyell in Queenstown, Tasmania was to be adopted, with the plant having a smelting capacity of 2,500 tons per week as against the present output of 625 tons. It was expected that the mine would also be a large gold producer, and a large cyanide plant was also to be erected. A report in late 1896 stated that the 'forlornness which was so apparent among the men for the last five months is gradually drawing back once more, and now with fresh faces, announcements of men being given employment, and the town becoming busier daily, the result is that we are getting younger daily'.¹¹

The adoption of the pyritic process was an important milestone. It had been invented by Robert Sticht, an American metallurgist and mining engineer who commenced working for the newly formed Mount Lyell Mining & Railway Co in Queenstown Tasmania in 1893. He persuaded the company principals in Queenstown to abandon blast furnace smelting in favour of the more efficient but 'fickle' process of pyritic smelting. In 1902 Sticht proclaimed the Queenstown smelters as the first successful pure pyritic smelting experience in the world. The

use of this process at Captain's Flat was bold and innovative, and it was probably only the second time that pyritic smelting had been used in Australia.¹²

In the pyritic smelting process the ore was treated by the heat generated from its own oxidation, without the aid of extraneous heat. This was achieved by the aid of a hot blast and the addition of from 1.5 to 5 per cent of coke, by weight of the charge, thus saving on the fuel and labour costs of roasting or calcining. The air was forced into the main air pipe by blowers and forced over a stove and heated to very high temperatures, before passing through the blast furnaces. In the furnaces the sulphur in the ore was burnt by the hot blast, and converted into fuel, the sulphur in the pyritic ore doing its own smelting.¹³ At Captain's Flat there were three hot air stoves located between the blower house and the blast furnaces. The



1890s Processing Plant.

Image courtesy of DPI – Derelict Mines.

¹¹ NSW *Annual Report*, 1895, p.24; *Queanbeyan Age*, 21 September 1895, 18 July, 15 August, 9 September, 5 November 1896.

¹² Ian McShane, 'Sticht, Robert Carl (1856-1922)', *Australian Dictionary of Biography, 1891-1939*, Smy-Z, Vol.12, John Ritchie (ed), Melbourne University Press, Carlton, 1990, pp.93-94.

¹³ D.D. Peters, *Modern Copper Smelting*, Hill Publishing Company, New York, 1907, pp.372-425; Carne, *The Copper Mining Industry and the Distribution of Copper Ores in New South Wales*, NSW Department of Mines, Geological Survey, Mineral Resources No.6, Sydney, 1908, pp.24-30.

process was referred to as partial pyritic smelting as some coke was used, a practice which soon became the norm at Mt Lyell. The slag from the smelting process was dumped below the smelter on the north and west slopes of the hill on which the smelter stood and in full sight of the town, where it remains (or the remnants thereof) to this day.¹⁴

Erection of plant and equipment proceeded steadily throughout the early part of 1897. However, not all the miners shared the company's confidence, for while men were flocking to the Flat from all parts of Australia, a good many of the old miners were leaving for Sydney where they obtained ready work on the sewers at a much better rate of pay. In March, 20 left for Sydney in one week. The plant was extensive and included a smelting plant with a large smoke stack and a tramway between Elliott's shaft and the smelters, with a viaduct across the Commodore Gorge. A blacksmith and engineer's shop, which included four forges, with modern machinery such as lathes, drilling, punching and screwing machinery, were constructed near Elliott's shaft. There were three hot air stoves and four furnaces, each capable of smelting from 100 to 120 tons, and an elevator was constructed for lifting the copper matte from the floor of the furnaces to the concentrating furnaces. Four hundred men were directly employed in and about the mines, with this number to increase when all the furnaces were blown in. It was estimated that there was enough ore to give employment for 100 years.¹⁵

The new found prosperity came to a sudden end, however, for a year later all miners had been retrenched and the officials given four weeks notice. Mining was to continue in the northern section pending the future of the pyritic treatment process. There were now only about 80 men employed in smelting and these would only be needed until the present stocks of coke and limestone were consumed. It appeared that the company had not verified the quality and quantity of the ore and the adequacy and efficiency of the reduction process. By October large numbers were leaving the district. There were representations to the local member from the progress committee protesting against the suspension of labour to the company as it was considered that the leases would yield from one to five ounces of gold per ton, which would give employment to a number of men. This matter was raised in Parliament and suspension was granted for two months to allow the Company to experiment with new treatment methods.¹⁶

By early December mining and smelting had recommenced, and several months later the Company's shares rose sharply. However, in August 1899 a large number of hands were again laid off. The sulphide ores were now of too low a grade to warrant smelting, and the furnaces were closed down. By October only a few miners were working, and they were engaged in erecting a cyanide plant, the future being seen to rest where it had started, with gold mining and processing. Many of the furnace hands left for Dapto and Burruga. There was still a strong feeling that the Flat would recover in a few

¹⁴ *Town and Country Journal*, 7 August 1897.

¹⁵ *Queanbeyan Age*, 27 February, 13 March, 5 May 1897; *Town and Country Journal*, 7 August 1897.

¹⁶ *Braidwood Dispatch*, 26 October 1898; *Queanbeyan Age*, 1, 22 October 1898.

months, but the reality was that base metal mining was finished, and would remain that way for almost another 40 years.¹⁷

The cyanide also had operational problems and in June 1900 it was closed because of the inefficiency of some of the equipment. These difficulties allowed the company to successfully apply for a suspension of labor on a number of occasions over the next few years, and a full complement of men was never employed. In 1902 there was again much criticism of the Department of Mines for granting suspensions, particularly as there were a number of men reported as willing to take up the leases and work them on a cooperative basis. By 1903 there were only 12 men at work, most of whom were prospecting, and two years later much of the machinery was removed because of the refractory nature of the ore. Over the next 30 years there was to be rarely more than ten men working at the mines.¹⁸ There was little change to the pace of life at the mines, the Department of Mines' *Annual Reports* often merely telling of continuing efforts to dewater the mine and to maintain the existing equipment.

2.1.2 Post 1937

In 1927 the National Mining Corporation of London began a very thorough testing of the lode with an option to purchase. Its interest was then transferred to the Lake George Metal Corporation. In 1930 the NSW Parliament passed legislation to provide for the construction of a railway from Captain's Flat to Bungendore, but with the onset of the Great Depression and low metal prices plans for further development of the mine were delayed. In 1934 there were again some glimmerings of hope, and investigations were commenced to determine the value of

the pyrites contents of the ore for use in the manufacture of commercial sulphur and super phosphate. Most sulphur used in Australia was imported. The experiments were conducted using the Leese process and in 1935 20 tons of pyrites were shipped to England for treatment.¹⁹

The results were successful and in 1937 Lake George Mines was incorporated in London with a capital of £1,110,000, to acquire and develop the leases held by the Lake George Metal Corporation. It was



Captains Flat in the 1930s.
Image courtesy of Ms Elizabeth Estbergs

expected that if the present favourable metal prices held while the company reached its optimum production then an annual profit of £1,250,000 would be realised. The ore body had been tested extensively to a depth of 800 feet (244 m) and ore reserves were estimated at over two million tons, with a prospective ore body of five million. The ore body was highly complex and consisted of an admixture of lead zinc, copper and iron sulphides. It was proposed to treat 1000 tons of ore per day, the first section of the plant beginning with a capacity of 500 tons.

¹⁷ *Queanbeyan Age*, 3 December 1898, 5 April, 3 September, 7 October 1899; *Braidwood Dispatch*, 2 September 1899.

¹⁸ *Queanbeyan Age*, 5 March 1900, 12 December 1900, 5 June, 19 October 1901, 1, 10 October 1902, 7 January, 21 February 1903; 4 April, 23 June 1905.

¹⁹ *NSW Annual Report*, 1934, p.25, 1935, p.24, 1936, p.24; *Queanbeyan Age*, 12 March 1937.

Elliot's No.2 shaft was sunk to 750 feet (365 m) and a new general shaft for skip haulage was sunk and connected by a conveyor tunnel. Drives were installed at the 300 (91 m), 400 (122 m) and 600 (183 m) foot levels. Mechanical loaders and scrapers were used and electric locomotives were being installed.

Mine working was to be by the cut and fill system of ore extraction, with three winzes sunk from the surface as passages for the delivery of back fill to the stopes. It was proposed to rail 80,000 tons of iron pyrites yearly to Port Kembla for the large scale manufacture of sulphuric acid and superphosphate. 367 men were employed during the year, of whom 167 were occupied on the surface. Treatment was to be by the selective flotation system, yielding lead, copper, zinc and iron pyrites concentrates with tailings going to the residue dams. The treatment plant was to be built of steel and concrete and consist of a large jaw breaker, Symons vibrating screens, Symons cone crusher, concrete storage bins, two ball mills, Akins classifiers, Dorr thickeners, subaeration flotation machines and filters for dewatering the different concentrates. Lead and zinc concentrates were produced initially. All units were to be driven by electric power procured from the generation station at Burrinjuck dam and later through the State power grid.²⁰

Work continued in 1938 in preparation for an initial mining rate of 15,000 tons a month. The general shaft was sunk to 850 feet (259m) and equipped for skip haulage, and further work was conducted in Elliott's section and in connecting that section with the general shaft at the 600 foot (183m) level. Construction of the commenced in January and the dam on the Molonglo River in February. By the end of the year the dam was built to a height of 42 feet (18m), which allowed for an impounding of 85 million gallons (386 million litres) of water. But mill construction was delayed due to slow deliveries of structural steel and a shortage of skilled workmen, and the equipment was not installed until September. Power from Burrinjuck was connected to the mine on December, continuing supplies being dependent on the water level in that dam. The company's diesel driven power service was not sufficient for its full needs but could be used to augment a limited supply. It was expected that the railway would be completed to a point 12.5 miles (20km) from the mine by January 1939. 1000 tons of concentrates would be trucked weekly by lorry to the railhead and then railed to Port Kembla and the lead and zinc concentrates shipped overseas. The pyrites concentrates would be treated at Port Kembla.²¹

Production commenced in 1939. The milling plant was operative at an initial capacity of 500 tons and ore hoisting commenced on 10 January. One of the main impediments to mine production and development was the acute shortage of skilled miners, with the result that the initial objective of 700 tons per mine working day was not achieved until September. Because of difficulties in obtaining shipping in that year a large percentage of the production was stacked at the mine. Originally the mine was prepared for flat back cut and fill stoping, with mechanical handling of the ore and filling by mechanical scrapers, but this

²⁰ *NSW Annual Report, 1937*, p.17, 61; 1938, p.53; *Queanbeyan Age*, 2, 30 April 1937.

²¹ *NSW Annual Report, 1938*, pp.17, 52-53.

did not prove entirely satisfactory in the narrow part of the lode and a change over to rill stoping was effected. Most of the development work was in Elliott's section; the main exception was the drive at the 600 foot (183m) level to explore Keating's ore body. Development of the Elliott's, Central and Keating's ore bodies was carried out from the general shaft, which was located centrally and through which the total mine output was hoisted. A number of working levels were driven out from the main shaft to intersect the ore bodies. The general shaft was enclosed by an 87 foot (26m) steel head frame and was timbered throughout with steel bearers at vertical intervals of about 100 feet (30m); access to the general shaft was via a tunnel adit. Elliott's No. 2 shaft was used for ventilation purposes and for bailing water in emergencies, and Elliott's No.1 was used as a waste pass. Ventilation was later provided through the North and Keating's air shafts. From 1939 on practically all shaft sinking was by two shifts on a five day working week.²²

Most of the mine's output was hoisted during the night shift in skips of 5.5 tons capacity, after replacing the cage with skips. In the day and afternoon shift one skip and a cage operated in balance to assist in hoisting development rock from waste pockets. The cages accommodated 20 men. An electric signal system was used in the shaft with call buzzers at each main level. Most of the ore was trammed on the day and afternoon shifts with only one train operating on the night shift. Ore from the various levels was dumped from the skips into a hopper bin and then fed directly to a jaw crusher where the ore was reduced to a 5 inch (12.7cm) product. The crushed ore was transported from the jaw crusher to the Symons vibrating screens and cone crusher to the storage bins and from there to the classifiers and ball mills by conveyor belts, and from the mills to the Dorr thickeners and flotation plant by Wilfley pumps. Residue from the flotation process was pumped through pipes to earthen dam storage areas where the solid material settled out and the water was either drained away for reuse or ponded to evaporate. There were a number of different work shops, the main one being the steel shop, which was located next to the general shaft tunnel adit. It was equipped with oil fired furnaces, the fire bricks of which needed replacing every six months, and shank furnaces, which had a life of three years. Other shops were the rock drill and blacksmith's shops.²³

The flotation process was first developed at Broken Hill in the early 1900s for the handling of complex ores and so successful was it that its use became standard mining practice throughout the world. It was described thus

Chemical reagents in carefully measured quantities are mixed with the ore in the presence of oil, and on aeration the valuable metallic compounds adhere to the bubbles created. The metals not required in the first stage do not adhere to the bubbles but remain in the material passed on the next stage. Long batteries of electrical agitators whip the troughs of crushed ore, chemical ore and air into an unlovely frothy mass. Horizontally revolving

²² *NSW Annual Report, 1939*, pp.19-20; A.G. Palmer, *Lake George Mines Pty Ltd, Captain's Flat, N.S.W., Mining Methods and Statistical data 1939 to 1948*, GS1948/063, (R00028834), pp.17-25.

²³ Palmer, *Lake George Mines Pty Ltd, Captain's Flat, N.S.W.*, pp.17-24; *NSW Annual Report, 1938*, p.53.

blades skim off the bubbles into flumes flushed with water. The concentrates flow into tanks where the water is drawn off, leaving the concentrates virtually dry. In the first stage of chemical treatment lead concentrates are recovered...In the second stage, on treatment with different reagents, but under the same mechanical conditions, zinc concentrates are produced. The next stage produces iron pyrites.²⁴

Mine drainage was to provide a continuing challenge, and one that probably endures to the present day. The mine water was not confined to any particular horizon but seeped through the lode along its entire length. Extra water was also introduced for drilling purposes, making a total water flow of 130 gallons (591 litres) a minute. Pumping was done through the general shaft using a variety of pumps. The water was stored in underground dams located at the 750 foot (228m) and 312 foot (95m) levels, from where it was pumped to the surface. To minimise the acidity in the mine water, a neutralising agent in the form of milk of lime was prepared at the mill and piped to the underground dams. The handling of sludge was also to present a problem. Fine material from stoped areas found its way through chute openings and blocked main haulage level drains with slimes. The condition was aggravated where excessive water was used for wetting down. This extremely fine material was stowed underground in mud dams or removed in trucks to the surface. Dust levels were minimized by a number of measures, including attention to water tubes in machine drills, blowing out drill and blast holes with water rather than air, watering faces with hoses after each blasting, and water spraying of material hauled by mechanical scrapers. Dust tests were conducted regularly. The pollution problem reached new heights of intensity when the tailings dams burst in October.²⁵

Production and development continued during the war years. In 1940 the general shaft was sunk to a depth of 952 feet (290m) below the collar to permit the construction of an ore pocket to serve the 750 foot (228m) level and in preparation for the driving of the 910 foot (277m) level. The 600 foot (183m) level was driven to Keating's orebody and work proceeded in preparing the orebody for stoping. Stoping was also carried out on other levels. Both the Keating and the central orebodies yielded substantial tonnages of development ore. The most important work in 1941 was the further opening up of the Keating orebody where development work had exposed a large tonnage of ore. Shaft sinking ceased during the year and in 1942 the mine was not developed to any extent as the men were required to maintain production of important base metals. In 1943 and 1944 shaft sinking was resumed and a considerable amount of work done on drives and stopes to prepare the ore bodies for stoping. By 1945 the main shaft had been sunk to 1374 feet (419m).

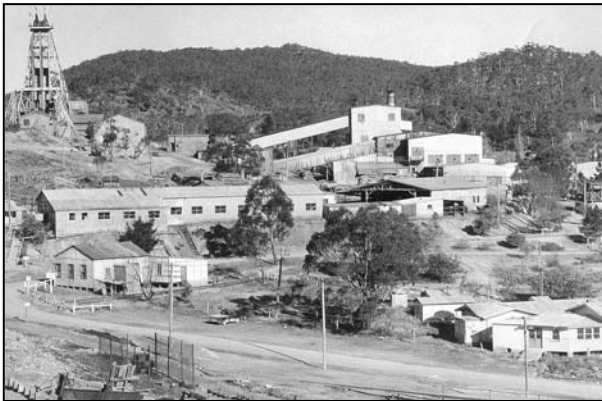
The war had a significant impact on the economics of the mine. Lead and zinc concentrate had been sent to Belgium, and then with the fall of that country to France. After that country's demise the zinc was sold to the British Ministry of Supply to be used largely in the production of brass. The lead was shipped to the

²⁴ *Cooma Monaro Express*, 10 January 1941.

²⁵ Palmer, *Lake George Mines Pty Ltd, Captain's Flat, N.S.W.*, pp.41-44; *Queanbeyan Age*, 30 October 1939.

United States. Despite heavy tariff duties the US market generated large reserves of foreign exchange earnings which assisted in the war effort. It was estimated that with the US market the company could create enough foreign exchange to purchase about ten million gallons (45.6 million litres) of petrol annually. The pyrites concentrates were sold locally for fertilizer production and were a means of saving foreign exchange.²⁶

Between 1939 and 1942 shipping space was almost unprocurable and large quantities of concentrates were accumulated at grass. From 1943 on shipping improved and by the end of 1945 the stocks had been reduced very considerably. Because of the steep rise in shipping, smelting and marketing costs in 1941 financial relief had to be obtained by the NSW Government in the form of reduced power and freight charges. This assistance was dispensed with in 1942. In that year the copper section of the plant was completed and production of copper concentrates began in August. Other work included the building of a new tailings dam in 1940 to allow for an improvement in the air-drying of the material. The storage capacity of the Molonglo dam was increased during 1942 by adding a further 10 feet (3m) to the main wall. Workforce numbers were more or less stable ranging between 439 and 456. Pollution of the Molonglo River continued unabated. In March 1943 the river was described as 'getting into a very dirty state from slime', and other products from the mine. It was in such a state that the water was useless to graziers for stock purposes, as the stock would not drink it.²⁷



Poppet Head & Mill Site.
Image courtesy of DPI – Derelict
Mines

however. Even more critical was the impact of coal shortages. These resulted in a scarcity of railway trucks in the last half of the year which forced the curtailment of deliveries of pyrite's concentrates. An additional 14 staff cottages were completed and plans were in train for the erection of a further six staff and 30 worker's cottages. Of the latter, eight were completed in 1947. The main shaft was sunk to 1538 feet (469m) and work on a ventilation shaft commenced. 1948 was a difficult year. Mining operations were seriously curtailed in September by an industrial dispute over the lead bonus. The miners were seeking a review of the lead bonus system more in conformity with the Mt Isa bonus which was about £6 a week. Currently the bonus stood at £1 a week. A proposal by the company to offer the miners 20 % of the company's profits was rejected by the unions' membership. The disruptions began on 6 September and there was a complete cessation in all operations on 12 October. By the end of the year work had not resumed. This disruption meant that there was insufficient ore to keep the mill running at full time.

²⁶ *Cooma Monaro Express*, 10 January 1941.

²⁷ NSW Department of Mines, *Summary of the Reports of the Department of Mines New South Wales, for the years, 1939-1945 inclusive*, Sydney, 1946, pp.22-24; *Queanbeyan Age*, 26 March 1943.

During 1948 progress was, however, made on a number of other fronts. Work on the ventilation system was sufficiently advanced to allow the mine to be cleared of fumes and smoke during the half hour shift interval; the charges were fired at the end of each shift. The air shaft was timbered and provided with an emergency manway and an Aerex exhaust fan, which was erected at the shaft head. Plans were also in train to conduct sludge from the various levels through diamond drill holes to a collecting sump planned for the 1390 foot (424m) level. Sludge pumps would be installed to remove the material from the sumps to the surface in a single lift. The sludge would then be delivered to the mill for treatment and recovery of concentrates. At the mill the introduction of sulphur dioxide in the flotation system had resulted in a cleaner separation of copper concentrates and a higher recovery of lead, but it was noted that further research was need to further improve recovery rates on all minerals. Wages paid to the men employed underground varied from £2 to £7 per shift; the highest wages of between £6 and £7 were paid to those on contract. The remaining workers' cottages were erected during the year and work commenced on the erection of a new bunkhouse and 20 steel-framed cottages.²⁸

Industrial disruptions continued to seriously disrupt production in 1949. The bonus strike continued for the first four months of the year and work was not resumed until 3 May. During the strike many men obtained work in Canberra and Sydney. But on 22 June operations were again suspended as a result of the Australia-wide coal strike and were not resumed until 15 August. However, the bunkhouse was completed and occupied, new shower rooms and lavatories were installed and septic tanks constructed to service the bunkhouse and messhouse block. 23 new steel frame cottages were almost completed by the end of the year. There were no disruptions in 1950. By the year's end the main shaft had reached 1621 feet (494m) and the number of employees had increased to 526. Construction of a new tailings filter plant was also begun. Twenty four worker's cottages were completed and occupied and new underground and surface change houses were also completed. In 1951 the main shaft was extended to a depth of 1758 feet (536m) and a further shaft was sunk from the 1230 foot (375m) level. The number of employees increased to 595 and nine new cottages were built. Construction of the tailings filter plant continued.²⁹

In 1952 the main shaft was deepened to 1854 feet (565m) and the internal shaft sunk to 504 feet (154m). The number of employees continued to increase to 611 and two new cottages were built. But there were some ominous signs. Substantial falls in world prices of lead and zinc together with steep increase in operating costs posed a threat to future profitability. It was considered that some underground work and surface drilling may have to be discontinued and the NSW Government approached for a reduction in rail freight and power charges. The economic position of the mine worsened in 1953. Heavy losses were incurred with lead and zinc prices at very low levels. Prices fell further in early 1954 and it was considered that prospects for

²⁸ *NSW Annual Report*, 1946, pp.16-17, 1948, 14, 31-32, Palmer, *Lake George Mines Pty Ltd, Captain's Flat, N.S.W.*, pp.41-42; *Queanbeyan Age*, 22 October 1948, *Canberra Times*, 20 October, 4 November 1948.

²⁹ *NSW Annual Report*, 1949, pp.14-15; 1950, pp.24-25; *Queanbeyan Age*, 7 January, 3 May 1949.

continued operations were dim without government assistance. Cottage building was at a standstill, although additions to the underground and surface change houses were completed. There was some industrial unrest in 1953 and the average number of persons employed fell to 557. The main shaft was sunk to 1939 feet (591m). During 1954 the economic position of the company worsened. All operations were suspended at the end of June as a result of an industrial dispute over the deepening of the general shaft by an outside contractor. No settlement was reached before the end of the year and the property was maintained by staff. Only 304 men were employed. The industrial dispute ended on 1 February 1955 and steady work was maintained for the rest of the year. Separate agreements were entered into with the main unions on the field.³⁰

From 1956 on market and mining conditions became increasingly difficult. In February, production of pyrites concentrates was suspended due to a falling off in demand for superphosphate. It was lamented that plants using imported brimstone were still operating whilst pyrites' furnaces were closed down. 522 men were employed. In the last half of 1957 the world price of lead and zinc fell to such an extent that the continuity of operations was seriously threatened. To counter the low prices, production was increased, but it was stated that this level only be maintained at the present rate of 18,000 tons a month for a limited time. At one period of the year the sea freight rate for zinc concentrates shipped to Europe had reached the crippling rate of 200s sterling per wet ton. The increased production rate was maintained throughout 1958 and enabled the company to survive the period of low metal prices. However, towards the end of the year restrictions were imposed by the USA on the importation of Australian lead and there were concerns that export controls may be imposed by the Commonwealth Government. More ominous was the lack of immediate success in locating further ore bodies. The main drive at the 2030 foot (619m) level was extended to 3000 feet (914m) in an attempt to locate the Kohinoor ore body, which had been indicated by surface drilling. However, it had intersected a strong flow of water and driving was suspended. Keating's ore body appeared to have bottomed on the 1870 foot (762 m) level but it was intended to prospect below that level.



Miner's Meeting 1961. Image courtesy of DPI – Derelict Mines

The search for further ore bodies continued during 1959 but with little success. At the 2030 foot (619m) level the main drive was extended to 4000 feet (1219m) and the heavy flow of water encountered in previous years was sealed off by cementation. In 1960 diamond drilling at the end of the drive failed to locate any ore of economic importance, and further prospecting from underground was abandoned. It was estimated that the present ore bodies would be worked out within the next two years. A survey by the BMR had located a promising anomaly two miles south of the present workings and this was to be tested in the following year. Mining of the sub level stopes in Keatings was almost completed but due to deterioration of the weak footwall the rill system was abandoned for the flat back method of working. Thousands of tons of slag from one of the old slag dumps were placed around the banks of

³⁰ *NSW Annual Report*, 1952, pp.27-28; 1953, 28-29; 1954, pp.25-26; 1955, p.31.

the slime dams to prevent erosion and minimize pollution of the Molonglo River.

During 1961 no development work was undertaken; the labour force was devoted almost entirely to the extraction of ore from the remaining working places, which were rapidly approaching exhaustion. No underground drilling was undertaken and surface drilling did not disclose any new ore bodies. To further complicate matters serious ground movements interfered with normal mining operations and prevented further mining in some sections, further reducing the 'already fast diminishing ore reserves'. A large fall of ground occurred in the Elliott's Section and it was decided to fill the stope and bury the fallen ore. However heavy rain caused water to run into the filling passes which delayed the filling operations and caused further deterioration to the stope. The men were withdrawn for safety reasons and following further falls the stope was abandoned. Later in the year serious ground movements occurred at the No 16, 20 and 22 levels. These were 'so alarming' that all the men were withdrawn from these levels. Local falls of ground later occurred in the stopes. The movement eventually settled and mining resumed north and south of the affected areas. On 20 October men were withdrawn from a stope above the No 2 level in Keatings. This section collapsed through to the surface on 28 October. Circulars were sent to all residents of the town warning them to keep away from the affected areas. With the present low price of lead it was estimated that the mine production needed to be 16,000 tons a month with a minimum grade of 5 per cent. By the end of the year this target was becoming increasingly difficult. In anticipation of the mine closing salvage operations of equipment not in use underground began. Protection of the surface slime dumps against collapse was done by strengthening the walls of the dumps with slag and rock.³¹

During 1962 mining operations were only carried out for 37 days due to the exhaustion of the ore bodies. No underground development work or diamond drilling was undertaken and prospecting and exploration was discontinued following negative results from field parties sent to the area by State and Federal authorities. All stocks of concentrates, except low grade sulphur bearing materials stored in dumps, were cleared by the end of the year. When the closure was announced there were 169 men working underground and 178 on the surface. Salvage operations began immediately and all openings to the mine were either filled in or sealed. While using an oxy-acetylene torch preparatory to sealing the main shaft with a concrete slab the shaft timber caught fire and burnt the shaft out from the surface to the water level, as well as burning out the timber in the surface adit. The entrance to the adit was covered with earth and the shaft sealed, and it was proposed to seal the walls of the slime dams adjacent to the Molonglo River with a bituminous compound to prevent erosion and possible contamination.³²

While mining may have ceased, a negative aspect of its legacy continued for many years in the form of pollution and contamination. During the life of the mines four million tons of ore were milled to produce zinc, pyrites, lead, copper and gold,

³¹ *NSW Annual Report*, 1961, pp.38-39.

³² *NSW Annual Report*, 1962, pp.38-39

and 2.5 million tons of mine waste were stockpiled in evaporation dams and slimes dumps, which covered an area of 15 hectares. The dumps contained significant quantities of heavy metal and were extremely acidic, with very high levels of salinity. Over the years the evaporation dams were continually built up with fresh material until the slime dumps reached a considerable height. There were six slimes dams, three of which were collectively called the northern dumps and three the southern dumps.³³

Environmental pollution had been a concern in the 1890s but the first official report of pollution was not until 1911, when the Premier of New South Wales drew attention to a report that drainage from the mines was causing serious pollution of the Molonglo River. Investigations then revealed that the water was acidic. When the possibility of further mining operations at the Flat was raised in the 1920s the prospect of increased pollution was discussed by the Commonwealth and NSW Governments. To counter this problem, conditions were included in mining leases for the areas, which required the lessee not to pollute the Molonglo watershed. There was, however, a continuous discharge of mill waste water and mine water into the Molonglo. This level of pollution was aggravated by the collapse of mine waste dams in 1939, 1942 and 1945. The slime dams were reinforced in 1961, and in 1963 after the mine closure the surfaces were sprayed with 70 cubic metres of tar. After closure of the mine in 1962 the shaft filled with water and overflowed into the Molonglo River through the air shaft at the northern end of the workings, causing further pollution.³⁴

The pollution problem was two fold, the continuous seepage of water into the underground workings and its discharge into the Molonglo River and the threat posed by the tailings dumps and dams. J. Fitzgerald, Chief Investigations engineer, Australian Department of Housing and Construction, stated that the underground workings had been incompletely backfilled with quarried rock, as settlement problems had precluded the use of the finely ground tailings for back filling. The tailings were stored in the southern and northern dumps, 10 per cent in the former and 90 per cent in the latter. The largest threat was posed by a high dam in the northern dumps area which was lacking in stability and slowly moving in a downstream direction. In 1966 and 1968 the NSW Department of Mines attempted to minimise pollution by filling in and sealing the ventilation shaft to prevent discharge of mine water and draining, and grading and reinforcing the southern dumps to improve their stability and prevent erosion. These actions were partly successful, but the concern for further pollution due to increased erosion and dump instability remained. It was also feared that construction of the Googong dam would adversely affect pollution levels by reducing the diluting effect of the Queanbeyan River. A joint Commonwealth NSW working group was formed to prepare a report examining the situation and outlined guidelines for a solution to the problem. As a result of ministerial level discussions in 1974 a Joint Government Technical Committee

³³ Barry Craze, 'Restoration of Captain's Flat Mining Area', *Soil Conservation Journal of New South Wales*, 1977, Vol.33, pp.98-105.

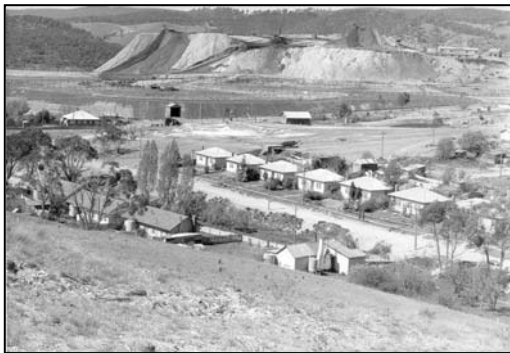
³⁴ Joint Government Technical Committee on Mine Waste Pollution of the Molonglo River, *Mine Waste Pollution of the Molonglo River: Final Report on Remedial Measures, June 1974*, Department of Capital Territory, Canberra, 1974, pp.3-4.

was formed. The Committee recommended that the dumps be reshaped and that water running into the mine be diverted. The reshaped dumps were to be covered with consecutive layers of clay, rock and soil, and sown with grasses. Reshaping involved a reduction in the height of the main solids dams and construction of terraced slopes with reduced grades to minimize scouring. Some of the workings were filled in and Forster's Creek, which flowed through Keating's collapse, was diverted around the central mine area with concrete drains.³⁵

The importance of the Captain's Flat mine during the post 1937 phase requires elaboration. While dwarfed by the mighty Broken Hill field (which was not only the largest mining fields in Australia, but one of the largest in the world), it was one of the largest base metal mining field in NSW, if not in Australia. The Mt Isa and Mt Lyell fields were larger, but were primarily copper producers. For example, in 1943 8,579 and 8,633 tons of lead concentrates were extracted from Mt Isa and Mt Lyell respectively compared to 11,850 tons from Captain's Flat. In 1945 there were no lead concentrates from Mt Isa and 6,298 tons from Mt Lyell compared with 7,944 tons from Captain's Flat. The Captain's Flat mine became fully operational in 1939, just prior to the commencement of World War II. Base metals such as lead were of great strategic importance and were highly valued as a source of foreign exchange (in this instance USD\$).

2.1.3 Class, Conflict & Labour Relations 1858-1936

Labour relations were not an issue until the advent of large scale mining and processing in the mid to late 1880s. Prior to that time the leases were worked either by small syndicates or cooperatively by groups of working miners. In this latter period



Copper Creek Houses (with North dump in the background). Image courtesy of DPI – Derelict Mines

Captain's Flat was institutionally and socially different in character to other base metal mining communities in southern NSW, such as Currawang and Frogmore. At the former in particular there was a strong Welsh presence, and both mining communities were ethnically more cohesive and influenced strongly by the hegemony of the mine managers. There was no union representation, although there were lodges, and political debate was scant. At Captain's Flat the mine managers had only a limited authority in the town, for almost all the mine employees were union (Amalgamated Miners' Association) members and the progress committees were active at a very early stage in the town's development. Union and localist concerns were, however, closely aligned and community discussion and debate had an edge to it that was absent almost entirely at Currawang and to a lesser extent at Frogmore. At Captain's Flat public meetings were used extensively as a forum for debate and also for the expression of localist sentiments. Discussion and debate were generally more expressive politically and more conscious of national issues.

³⁵ *Mine Waste Pollution of the Molonglo River*, pp.3-4; Craze, 'Restoration of Captain's Flat Mining Area', pp.98-105; B. J. Fitzgerald, 'Mine Water Pollution in the Lake Burley Griffin Catchment', *Captain's Flat Mine Waste Dumps Remedial Works*, Ancold, November 1975, pp.1-2; Helen Hunt, 'You cant' have it both ways at Captain's Flat', *Heritage Australia*, Winter 1988, pp.14-16.

For instance, in 1888 there was a visit by the local MLA, E. O'Sullivan, Garvan MLA and a Dr Fitzpatrick, at which a crowd of about 45 miners asked for and received an address by O'Sullivan on protection, mining claims, the land bill and general politics. O' Sullivan fitted in well with the mining fraternity, for alone of all the local politicians he had been a strong labour supporter and had launched several newspapers in which he espoused his views. The *Mining on Private Property Bill* was a hot topic, as it was elsewhere in major mining centres throughout New South Wales, and in 1893 a well attended meeting 'of all classes in the community' was held to elect delegates to represent the Flat at the forthcoming conference in Sydney. At a subsequent report on the conference residents were advised of the necessity of communicating with other leagues to agitate for a fair and equitable bill. In another debate later that year James McInerney, Secretary of the Goulburn branch of the Shearer's Union, accompanied by W.G. Spence, addressed electors at a public meeting.³⁶

One of the more famous meetings concerned the fate of the Lucknow miners. In 1897 a large public meeting heard Messrs Hughes MLA and Brown MLA speak on behalf of the miners. Money was collected and the men agreed to pay 2s 6d a week from their wages. A much-awaited debate on this issue was held the following year between O'Sullivan and Hughes, who was accompanied by Griffiths MLA, the Labor member for Waratah, before an audience of 500. Federation was another important issue at the Flat. In 1898 O'Sullivan addressed a large gathering of miners on the subject of Federation, and the following year those in favour of the bill held a torchlight procession on the night of voting, with much excitement at the victory of the federal cause.³⁷ Disputation over wages, working conditions and the use of non-unionised labour occurred only occasionally.³⁸

Consistent with this level of political awareness, there were frequent visits by O'Sullivan and his political opponents, particularly at election time. In January 1897 O'Sullivan visited the Flat to inquire into local needs such as the bad state of water supplies, and the need for public buildings, such as a police barracks, court house and post and telegraph office. But by the late 1890s he was encountering increased opposition. For instance, he won the 1898 election, but the Free Trade candidate obtained a majority at the Flat. At times he also came in for direct criticism, for there were occasions when he was perceived as out of step with local sentiments and concerns. In 1892 dissatisfaction was expressed at the way he had voted on the Broken Hill affair, and the following year he was criticised for his infrequent visits.³⁹

³⁶ *Queanbeyan Age*, 15 February 1888; Bede Nairn, Geoffrey Serle, *Australian Dictionary of Biography, 1891-1939*, vol.11, Nes-Smi, Melbourne University Press, 1988, pp.106-107; *Braidwood Dispatch*, 2, 27 September, 9 December 1893.

³⁷ *Queanbeyan Age*, 21 August 1897; *Braidwood Dispatch*, 18 September 1897, 9 February 1898, 28 June 1899.

³⁸ *Queanbeyan Age*, 21 December 1886, *Braidwood Dispatch*, 29 November 1893; John Dean, *Captain's Flat*, privately published paper, 2001, p.14, 17.

³⁹ *Queanbeyan Age*, 4 April 1888, 8 October 1892, 16 January, 27 July, 3, 6 August 1898; *Braidwood Dispatch*, 27 September 1893, 26 October 1898.

After the closure of the mines in 1899 there were occasional visits by Captain Millard and Dr Blackall, and subsequently by Colonel Ryrie. In 1906 Ryrie visited the Flat to give thanks for his election to the Legislative Council and was enthusiastically received by a large audience. At a subsequent banquet he queried why the squatter, farmer, shearer and labourer could not live together in harmony, and severely denounced bigotry in any shape or form. Ryrie was very popular at the Flat, as elsewhere, and in 1907 it was commented that many of those who had thrown their lot with him had hitherto voted 'Labour'. His ascendancy is clearly indicative of the over-riding of traditional class allegiances by localist ideology. Ryrie's popularity contrasted with that of Messrs Chapman and Millard, who were sometimes chided for their absences.⁴⁰ By this time the Flat was a very different community to what it had been some ten years ago. Many residents were living at subsistence levels, and there were food shortages and occasional concerns at the numbers of pigs, horses, goats and sheep that were depleting the grass in the vicinity of the town and the fate of the town common.⁴¹

Conflict between parents, teachers and the authorities over education matters were commonplace in most mining communities, particularly on the goldfields, which the authorities regarded as more ephemeral and less deserving of financial assistance. Most conflicts occurred at either the early stage or in the declining years of a mining community's existence, when its future was more in doubt. An added factor in the latter was the increasing level of poverty and economic uncertainty, which heightened feelings of insecurity and neglect. One of the more traumatic conflicts at Captain's Flat occurred in 1913 over the fate of the school piano. In 1913 an application was made for music to be taught in one of the school's spare rooms, the parents having obtained a piano by time payment, but this was declined. The parents wrote again in February 1914 and representations were made to Miller MLA for a personal approach to the Minister, but the Department still objected. Eventually lessons were held in the school during the winter months, but with summer approaching the teacher refused permission. Several public meetings were held, with one correspondent remarking that there 'never had been anything since I have been here that has caused so much friction, in fact the whole place is fighting it like as if the gates of hell is opened here'. At the time there was no properly constituted Parents and Citizen's Association, and the town was a mere shadow of its former self.⁴²

Class sentiments were more commonly given expression in the various progress committees, which we set up ostensibly for the betterment of the community. Some times the ire of the committees was directed at the authorities, but often it was a reflection of internal divides in the community. A committee was established very early on in 1886 and almost immediately it approached O'Sullivan on a number of matters of local

⁴⁰ *Queanbeyan Age*, 3 June 1904, 27 February, 1 June 1906, 20 November 1906, 22 February 1907.

⁴¹ *Queanbeyan Age*, 1 October 1902, 19 March 1907, 17 March 1908.

⁴² J. Pola to G. Miller, MP, 17 February 1914; petition to Minister for Public Instruction, undated; W. Ballard to G. Miller, MP, 15 September 1914; W. Ballard to Minister for Public Instruction, 16 September 1914; G. James to Chief Inspector, 17 October 1914, 4 November 1914, Department of Public Instruction, 5/15292.2, SRCNSW, Sydney.

importance, such as the establishment of a better mail service, a public school, better roads and the presence of a mining registrar and a permanent policeman. The selection of a site for the school was a vexed question, for the temporary site was very close to the hotel and in swampy ground with diggers' holes all around. A much more suitable site had been selected by the committee, but the Inspector had refused to look at it. A police station and petty sessions court were, however, established shortly thereafter. A new progress committee approached the authorities in 1887 requesting the establishment of a money order office, but the request was refused, and the matter was subsequently taken up by O'Sullivan following a public meeting.⁴³

In 1889 the progress committee (s) was riven by class conflict. A public meeting was held for the purpose of forming a new progress committee, but there was a very poor attendance and a deal of opposition by those living in the less salubrious environs of Bogtown, who felt that the failure of the previous committee through party feeling would be repeated. A further meeting was held, and some of the candidates were elected, but not long thereafter, another public meeting was convened to protest at the alleged unrepresentative nature of the committee. After considerable discussion it was decided to appoint delegates from those parts of the district that were not represented on the committee to consult and devise a remedy. Even after this process a satisfactory arrangement could not be arrived at, and another meeting was called at which it was decided to reconstruct and elect a representative committee. On this occasion the results were accepted unanimously.⁴⁴

One explanation for the tensions in the progress committees was the prevalence of health and sickness and the generally poorer living conditions at Bogtown, though there are few reports on these conditions in the early years. For instance, in 1895 influenza was very prevalent and there was also a shortage of vegetables, and in 1897 there was an attack of scarlatina, which caused the school to be closed until the end of the following week. Many people were struck down by influenza in 1898, and by early 1899 there was considerable sickness in the town through want of water. Whooping cough and other ailments were widespread among the children, several of whom died. Pollution contributed to some of these illnesses, for on one occasion some residents were forced to shift their homes because of fumes from the calciners, and subsequently concerns were expressed at the effect of the smoke and fumes on the residents of Bogtown.⁴⁵ Fortunately, in the 1890s the Flat was blessed with the services of one, and sometimes two, resident doctors.

⁴³ *Queanbeyan Age*, 27 May, 24 August 1886; J.McDonagh to Postmaster General, 2 February 1887, E. O'Sullivan to Postmaster General, 17 August 1887, SP 32/1, Box 106, NAA, Sydney.

⁴⁴ *Braidwood Dispatch*, 27 July, 6 November 1889.

⁴⁵ *Queanbeyan Age*, 12 October, 23 November 1895, 27 August 1898, 11 March, 27 September, 7 October 1899; E. Keys to W. Cooper, District Inspector, 29 March 1897, Department of Public Instruction, 5/15292.2, SRCNSW, Sydney *Braidwood Dispatch*, 11 October 1893.

2.1.4 Post 1937

Labour relations were to be important sticking point in the post war industrial environment and were to impact substantially on the mine, miner's families and all other residents of the town. The rate of remuneration was governed by arbitration awards established for each occupation. Additional allowances were also in force, such as, special locality allowances, shift-workers' allowances and war loadings. From 1 July, 1947 all employees of the company, both contract workers and wages men received a "lead bonus" in addition to their other earnings. This bonus was based on a schedule under which the realized prices of lead and zinc determined the amount of weekly bonus payable. A pro rata amount of bonus was paid in respect of any part of a week worked and employees also received the bonus during annual holiday periods and statutory sick leave. Realisation prices of metals were published each month and the amount of bonus for any given month was established by the prices obtained during the preceding month.

A Staff Provident Fund was inaugurated by the company on 1 June 1947, and staff officers became eligible to join on completion of 12 months service. Contributions by members amounted to 2.5 % of salary and were augmented by an additional 5% of salary which was paid by the company. The return of a member's contributions was assured; payment of additional benefits being subject to certain service qualifications. Insurance of the company's liability under the Worker's Compensation Act was provided for by a fund which insured up to a specified maximum amount for any one accident. Liability in excess of the specified amount was undertaken by a firm of underwriters.

Rules for safety observance were rigidly enforced, and a persistent effort was made to secure the co-operation of workmen, who had their own Check Inspectors paid by the company under a monthly agreement with the AWU (Australian Workers' Union). In addition, the services of a full-time Safety Director were made available from December, 1947. Foremen and shift bosses attended weekly safety meetings, which were conducted by the mine superintendent or his assistant. A General Safety First Meeting was held once a month, at which supervisors from the mine and other departments attended to discuss accidents and their prevention, together with representatives from the various unions. Mechanical safeguarding was practised wherever possible and improvements constantly sought. Protective devices such as safety hard hats, goggles and visors, gloves, shin-guards, safety ropes and belts were employed and their use insisted upon. Guard rails and danger signs were placed at dangerous openings and mine officials and miners educated continuously in safety methods and accident prevention.

Several safety aspects received priority from the outset. For instance, a Safety First Committee, comprising representatives of management and employees was established in 1938 and met regularly to discuss safer working methods. A competitive spirit was enshrined by the grant of state lottery tickets to parties who worked a specified number of shifts without accident. Protective hard hats were compulsory and together with gloves were

provided for underground employees without charge from the outset.⁴⁶ Other changes were, however, much slower in coming. For instance, additional safety measures such as safety boots with steel capped toes had proved beneficial and avoided serious injury in several cases, but appear to have been a later introduction, possibly post-war. Life lines and safety belts also appear to have been a later addition.⁴⁷ The mine first aid station was located on the surface near the mine entrance. An official of St Johns Ambulance was in attendance day and night, with an ambulance car at the ready to transport hospital cases to Queanbeyan. A medical practitioner was also in attendance at his residence near the Casualty Clearing Station, which had accommodation for four patients. Telephones were located at all main level stations and principal waste pass stations underground. Despite all these precautions there were 10 fatal accidents at the mine and one at the mill between 1939 and 1948.⁴⁸

Some housing accommodation and recreational facilities were provided by the company. By 1948 there were 152 cottages on and around the mining leases and township subdivision for rental by employees. Staff members occupied 49 of these houses and wages employees, 103, with more cottages planned. A boarding house with accommodation for 132 single men was provided by the company, and 40 shillings per week was charged for board and lodging. Rents of sub-division cottages for employees and their families ranged from 14s to 19s per week. Electric light, water, firewood and sanitation were additional charges. Senior members of the staff occupied 5 to 6 roomed bungalows. A staff mess was also provided for single men, who were charged 36 shillings per week for board and lodging. An additional charge of 5 shillings per week was made for laundry service. Since the end of the war recreational facilities had been provided, including a tennis court, swimming pool, cricket pitch and billiard tables. A club house was in course of erection.⁴⁹

The Captain's Flat work force was highly unionised and there were several serious industrial disputes, in particular those of 1948-49 and 1954-55. It was also a politically literate and aware community, and visited regularly by various political candidates at election time. In the midst of the 1948-49 dispute the town was visited by Robert Menzies, who was then leader of the United Australia Party. He addressed a meeting of 300 people at Molonglo Park to explain the differences between socialism and liberalism. Afterwards he thanked the crowd for giving him such a good and attentive hearing. The meeting was attended by a good number of striking miners. In 1981 Robert Darby stated that the strike was in marked contrast to the 1954 dispute as the mine management did not take a vindictive stand against the workers. The *Women's Weekly* reported that miners occupying company houses would not be evicted if they fell behind with rent as a result of the strike. It is noteworthy that the first debate held by the debating club in 1944 concerned the

⁴⁶ *NSW Annual Report*, 1938, p.52.

⁴⁷ *NSW Annual Report*, 1948, pp.31-32.

⁴⁸ Palmer, *Lake George Mines Pty Ltd, Captain's Flat, N.S.W.*, pp.46-47.

⁴⁹ Palmer, *Lake George Mines Pty Ltd, Captain's Flat, N.S.W.*, p.47.

arguments for and against an extension of Commonwealth powers. A citizens 'Yes' committee was organized to campaign locally and in surrounding areas for the 'Yes' vote in the forthcoming referendum on that question.⁵⁰ The main political forum for the community was the progress association and the Yarrolumla Shire Council, for it was within the latter's walls that vital questions of community health and welfare were decided.

On 4 May 1953 O. Kemp, from the Captain's Flat Industrial Committee described the situation between management and union officials as a cold war. To combat falling metal prices the company had taken a number of measures to ensure the mine stayed open. One of the more significant decisions had been the cutting of bonus payments in January of that year. According to Tom Kerr the lead bonus had been as high as £10 a week and the union readily agreed to concede on this point to keep the mine open, on the basis that it would be reinstated once the situation improved. Some time later there were several retrenchments. The company agreed to take some of the men back provided they worked at the mill. Kerr commented that the mill, affectionately referred to as Siberia, was one of the worst places in the world to work. According to Kerr the company began to institute intimidation tactics in all sections of underground work, such as forcing the men to do more jobs than they were supposed to do. Following further meetings between management and unions the union members worked without a single pit top stoppage; usually there were about two a week. Several weeks later a rolling strike of 24 hours each week was instituted in protest at management's refusal to employ additional storemen underground. According to management the union had been informed earlier that the issue of employing additional storemen would be referred to the Arbitration Court, but the strike took place before that could happen. The rolling strike developed into an indefinite strike following the dismissal of a storeman who had been directly involved in the dispute, which then spread to about 250 AWU members. Reinstatement of the member was achieved following an order from the NSW Industrial Commission, though on the matter of policy the order was only partially favourable to the men. The dispute had lasted for ten working days.⁵¹

Industrial conditions in the town were commented on from the pulpit by the Rev. Fr. M. J. Crow of St. Brigid's church, Captain's Flat. In referring to the miners' reduced remuneration he stated that the lead bonus as paid prior to the year's end was less in the nature of a gift than a just wage. The loss of most of the bonus had caused considerable hardship, which had even affected the well being of the church from a fall off in contributions. A mood of 'sullen resentment' had spread in the town which would lead to sharply defined and bitterly opposed factions, with 'families disunited and sectarianism rampant'. He invoked a trinity of god, capital and labour and called on an equitable division between the latter two. Part of a just wage should be enough for a worker to 'provide for himself a modest fortune which he can bequeath to his heirs'. On conditions in the town he commented that:

⁵⁰ *Queanbeyan Age*, 10 August 1943, 28 July 1944, 5 April 1949; *Captain's Flat Mining Record*, 3 October 1981, p.4.

⁵¹ *Queanbeyan Age*, 12, 22, 29 May, 4 September 1953.

We live in a village which offers few amenities, a place of small houses, which will shortly prove inadequate to accommodate four children, a filthy water supply, no dance hall, a picture theatre which sits 300 of a 2000 town population, unsealed streets, no sewerage and roads which make owning a car a dire liability.

Father Crowe also remarked that those living at the Flat needed higher wages because opportunities for female employment were extremely limited and parents should be able to send their girls to colleges to allow them to find employment otherwise closed to them. High wages may also give make it possible for families to open small businesses which would give employment to their sons and daughters.⁵²

Another strike commenced on 13 July following the dismissal of the president of the local AWU branch, Mr Tom Kerr. He was dismissed for 'threatening a foreman with violence on the job'. A special AWU meeting that day unanimously resolved that Kerr was being victimised for his consistent defence of members' working conditions. The local AWU committee, union organiser, Mr Kemp, and witnesses to the incident approached the general manager, Mr J Ireland, to discuss the issue. They were informed that the company would withdraw the dismissal notice providing that Kerr undertook to leave the town. The committee took the suggestion as an insult and agreed to go on strike until Kerr was reinstated. Within 24 hours no union labour was employed on the field. The dispute was heard by the State Industrial Commission at Captain's Flat and evidence was taken from both sides. At a private conference a settlement was reached on the basis of Kerr's unconditional reinstatement. Following this a Board of Reference was set up comprising two representatives each from the union and the company, and chaired by the company's assistant general manager, in whom the union members had considerable confidence.⁵³

Several months later Mr S.T. Hopkins, Vice-president of the Captain's Flat AWU Branch and Senior Vice-president of the ACT Trades and Labor Council, provided an overview of industrial conditions on the field. He stated that conditions on the field were equal to or better than other fields with the notable exception of the lead bonus. Conditions such as the bonus could not be written into awards. Payment of the bonus was won following the 1948-49 dispute and then stood at £5 per week, reaching a peak of £10 in the 1950-51 period, and then declining to £6 15 shillings in January 1953. Because of depressed markets and increased costs the company announced that the bonus would be reduced based on a change in the basis of calculation. This meant a reduction to £6 15 shillings and was accepted by the unions. However, by March the bonus was only £1 15 shillings. He stated that management had been implacable in its dealings with the miners, and in particular the AWU, resulting in a number of pit top and stop work meetings.⁵⁴

⁵² *Queanbeyan Age*, 14 July 1953.

⁵³ *Queanbeyan Age*, 17 July, 4 September 1953.

⁵⁴ *Queanbeyan Age*, 4 September 1953.

More industrial trouble began to brew at Captain's Flat in November of that year following a pit top meeting of AWU members who decided to take no further part in the Board of Reference. A 24 hour stoppage had been called the previous day in protest at the placement of a staff member and his family in a house previously used exclusively for mine workers. A two day a week stoppage was also called as a protest against a management decision on 'smoke money', which was an allowance paid to underground workers who were unable to begin a shift until smoke from explosive charges fired by the previous shift had cleared. If they managed to lift the full face in the remaining time of the shift, they were paid for a full normal shift on top of that. From now on they would receive only the normal shift pay irrespective of waiting time and whether the full face was lifted or not.⁵⁵ Tom Kerr was elected to the Yarrowlunla Shire Council in December of that year.

There were further 24 hours stoppages in the period leading up to Christmas. The most serious one concerned the availability of skipmen during the Christmas period when the mine work was confined to maintenance. There were several versions of events. Tom Kerr from the AWU stated that 150 unionists were suspended for resuming work with non-union labour. Following the suspension the men applied for accrued holiday pay, but this was withheld. Previously the skipmen had made a claim for the continuance of their average rate of pay while working over the Christmas shutdown. But the company refused and then refused to pay for their annual holiday. The general manager replied strongly to these statements and denied that the company had engineered stoppages of work to deprive workers of their Christmas pay. He was particularly critical of Kerr, stating that the record of stoppages over minor matters had escalated since Kerr had adopted a direct action policy as opposed to arbitration. As a result Captain's Flat had become known as one of the worst labour camps in Australia despite earnings and working conditions the envy of all other camps. A letter from Kerr, reacting to these statements, was published in the *Queanbeyan Age*. In it he challenged the mine manager to a debate. The mine reopened on 25 January 1954.⁵⁶

A serious mine accident at in March of 1954 prompted Tom Kerr to write to the *Age* describing the Flat as a town of 'doom, gloom and despair with a seeming hoodoo hanging over it', with strikes, lockouts and threatened shutdowns and an appalling safety record induced by speedups, all of which was management's fault. This view did not go unchallenged. Two writers, one of whom was a miner, spoke of the virtues of the contract system. The other writer described Kerr as 'a most unhappy man' and suggested that if other places be more fair he 'pack his bags and hasten there'.⁵⁷

In May of that year there was further trouble brewing at the mine over the company proposal to let a contract for the deepening of the main shaft to a Norwegian firm. The union claimed that the work should be done by the miners, and that if there was a labour shortage to set aside the contract and accept the

⁵⁵ *Queanbeyan Age*, 27 November 1953.

⁵⁶ *Queanbeyan Age*, 18, 22, 30 December 1953, 8, 15 January 1954.

⁵⁷ *Queanbeyan Age*, 5, 12, 23 March 1954.

Norwegians as workmen. The first batch of men from the Norwegian company was scheduled to arrive at the Flat on 15 June and start work the next day. Several days later the company notified its intention to issue dismissal notices to all miners and put the mine and plant on a caretaker basis until the shaft contract and other development work could be proceeded with. The mine's own shaft crew were to be fully occupied in sinking another shaft. On 25 June 300 men were dismissed, although 140 men on safety, essential services and maintenance gangs were still to be employed. Officers from the Departments of Labor and National Service and Social Services arrived at the Flat shortly thereafter to receive applications for unemployment benefits and place unemployed men in other jobs.⁵⁸

In an attempt to end the deadlock a Committee of Neutral Citizens, which included Rev. Fr Crowe, Rev. G.F. Pyke, Dr Rickard-Bell and Mr J. Brown, hotelkeeper, was formed to invite representatives to a meeting. But not long after all hope of an early settlement faded when a combined meeting of the AWU and FEDFA members in late August decided to declare the mine 'black' to all unionists in Australia. The decision followed an unsuccessful meeting between the unions and management at which the Citizen's Committee was present. An offer by the Committee to chair the meeting was rejected by the company, whose manager appointed himself chairman. According to the committee the company was in an uncompromising mood and the meeting doomed from the beginning. The committee considered approaching the State Government but did not pursue the idea; the Minister for Mines later declared in Parliament that he was prepared to mediate in the dispute if requested. By September the prospect of unemployed miners finding temporary work as cane cutters in northern NSW was mentioned⁵⁹

In late October a report circulated that an agreement had been reached between the company and the unions concerned at a conference before a Full Bench of the Arbitration Court in Sydney. The union representatives agreed to recommend to their members to lift all embargoes on the letting of the contract to sink the main shaft. It was also agreed that any disputes over re-employment of labour or working conditions be referred to arbitration without any work stoppages. Two weeks later the agreement was put to the members at the Flat. Half of those present rejected it and half abstained. Rev. Fr. Crowe addressed the meeting and urged a return to work. Further conferences were held before a Full Bench of the Commission and at which the unions affirmed that no bans existed on the contract work proceeding. Notices to that effect were circulated by the AWU throughout the town. Following a further agreement between the company and the unions it was agreed to reopen the mine on 1 February 1955. The agreement dealt with dispute settling procedures, new contract schedules, shift work and overtime and many other matters over which friction had arisen in the past. A subsequent article in the *Age* saw the agreement as heralding a new era for the town. Average earnings were high and most underground workers were paid on contract and

⁵⁸ *Queanbeyan Age*, 28 May, 15, 18, 25 June 1954.

⁵⁹ *Queanbeyan Age*, 31 August, 3, 7 September, 1 October 1954.

earned between £5 and £6 a shift. Surface workers received award rates with special loadings and all employees received the lead bonus which at current prices would be about £3. The company had erected 186 homes for married workers and provided single quarters for another 195 at moderate rents.⁶⁰

Industrial disputation was not only confined to the miners, for in May 1955 a dispute arose over the dismissal of 17 years old T. Cusack, a shire employee, for loafing on the job. Two months later the Council agreed to reinstate all men involved in the dispute to their former positions with the exception of Cusack, who was to be given a job away from the Flat. In August the ganger in charge was suspended for using abusive language. He was later reinstated and an inquiry held into the matter. A Shire Councillor stated subsequently that mine relations were better than they had been for many years. The councillor was broadly correct. There were still strikes and stop works but they were relatively minor compared to those of the past. For instance, in late May 1956 there was a seven day stoppage over the use of staff labour on union work on a weekend, and in August a 24 hour stoppage was called over the miners being asked to carry out their own timber work. In February 1957 the company chairman stated that by far the most favourable factor at the mine was the change in labour relations. A strike commenced in late May in protest against the dismissal of a number of AEU unionists who refused to work unless they were paid additional money for working underground. The dispute ended a few days later pending an investigation into the claim by the NSW Industrial Relations Commission.⁶¹

A factor in the improved relations may well have been the realisation that the company was facing a difficult time with high freight charges, rising costs, low metal prices and limited reserves. The latter was common knowledge in the town. Labour relations came to the fore again in November 1957 following on from the company chairman's letter to the townsfolk. In a subsequent meeting in December the manager stated that the company wished to increase production from 16,000 to 18,000 tons per annum to offset the impact of lower metal prices for lead and zinc. Since July production had been lost on eight days as a result of stoppages. He called on the miners to resolve the disputes quickly, to tighten discipline and reduce absenteeism. He hoped that certain restrictive practices applied by some of the unions would also be removed. The company's pleas must have had some effect, for the incidence of disputes fell in the months ahead. But they did not disappear. There were brief stoppages in September and December 1959 and a three day stoppage over contract rates was held in March 1960.⁶²

2.1.5 Town & Community 1858-1963

There are no reports on the size and disposition of the mining communities in the area prior to July 1882, when abandoned

⁶⁰ *Queanbeyan Age*, 26 October, 9, 19, 26 November 1954, 25 January, 4 February 1955.

⁶¹ *Queanbeyan Age*, 10 July, 9 August, 23 September, 25 November 2 December 1955, 1 June, 31 August 1956, 28, 31 May 1957.

⁶² *Queanbeyan Age*, 2 February, 6 December 1957, 1 September, 6 December 1959, 22, 25 March 1960.

huts or the ruins of miner's cabins were reported all along the river flat upstream from Yorkdale, these obviously being the remnants of earlier pre 1882 mining camps. Inhabited miner's huts were located near the current mining area some kilometres upstream near the site of the crushing plant, where there were several buildings in course of erection, including a store and a large boarding house. There were 50 men on the field. Rations were purchased with gold from Mr Harrison of Yorkdale. By November there were several neatly finished and beautifully clean looking houses in which several of the miners lived with their wives and children close to Holtermann's battery, and dotting the side of the distant hills were the homes of men who were working the alluvial or who were employed in connection with the crushing machines. A blacksmith's and carpenter's shop, miner's huts, tents and gardens with some new houses had been erected near Blatchford's machine site. In January 1883 Holtermann stated that he expected the Flat to be a lasting goldfield. There were about 80 miners, two crushing machines and an expected population of about 500.⁶³

In May 1886 buildings at Captain's Flat were 'springing up in all directions', with building sites scarcely available. Until then there had been only a few humpies, but a number of substantial houses had since been constructed and the Flat was gradually becoming a canvas town. There was a public house, 'the Flat', but it had not yet acquired the status of a hotel, and there was a sprinkling of very mediocre stores. Hoskingtown, on the road to Bungendore, was described as a 'sleepy little hollow, blessed by a church, an inn, a bush school and a few weather board barns and cottages'. By August a new boarding house had been built close to the hotel and the shops included a baker, butcher and three or four stores. In August 1887 O'Sullivan, MLA, stated that the population was about 350, which included many families, several more stores, a police station and a mining registrar.⁶⁴

Over the next few years the population and infrastructure grew rapidly. In 1888 the 'rising township' had six or seven stores, three hotels, besides boarding houses, two baker's shops, two butcher's shops, two private billiard rooms, a barber's shop, tailors and shoemakers, and a post and telegraph office. O'Sullivan had written to the Minister for Public Instruction requesting that a larger school be built.⁶⁵ In February 1889 the postmaster estimated the population to be 530 and increasing daily. In July O'Sullivan estimated that there were 1,000 living at or near the town, and the Postmaster put the town population at about 800. Whatever its size the town was big enough to be divided along class lines, with Bogtown near the smelters decidedly more down market than Newtown. A police court and two skating rinks were built during the year.⁶⁶

⁶³ *Queanbeyan Age*, 28 July, 17 November 1882.

⁶⁴ *Goulburn Evening Penny Post*, 29 May 1886; *Queanbeyan Age*, 24 August 1886; 27 May 1898; E. O'Sullivan to Postmaster General, 17 August 1887, SP 32/1, Box 106, NAA, Sydney.

⁶⁵ *Braidwood Dispatch*, 29 August 1888; E. O'Sullivan to J.Inglis, Minister for Public Instruction, 27 August 1888, 5/15292.2, SRCNSW, Sydney.

⁶⁶ E. O'Sullivan to Postmaster General, 16 July 1889, W. Arrowsmith to the Secretary, GPO, 7 February, 18 July 1889, SP 32/1, Box 106, NAA, Sydney; *Braidwood Dispatch*, 11 May, 27 July 1889. According to the NSW Department of Mines the population, including children, was 650. *NSW Annual Report*, 1889, pp.91-92.

From hereon, however, the town was to experience a stop-start existence. By late 1890 business prospects had deteriorated, and there were a number of parents whose school fees were in arrears. The teacher reported that none of those in town were in a position to pay, and that several of them were in a state of extreme poverty because of the cessation of work at the mines some five months ago. At the post office the decline in business was such that the postmaster was removed to another location and the messenger appointed in his stead. The money order and savings bank facilities were retained.⁶⁷

By December 1891 the town's fortunes had turned around again. According to the postmaster, business was increasing very much and likely to continue. A petition forwarded later that year provides some idea of the range of businesses. Of the 30 signatories, there was a tobacconist, blacksmith, two hotel keepers, a billiard room proprietor, fruiterer, bootmaker, grocer, accountant, brewer, baker and three storekeepers.⁶⁸ There was another upturn in mining activity in 1893, an account in August stating that there were three pubs and about as many stores, with Nomchong from Braidwood expected to open a general store soon. However, this revival was again short-lived, for by March 1894 there were reports of a great exodus to other mining fields, in particular the West Wyalong goldfield, and by September the Flat was described as 'dull, flat and unprofitable'.⁶⁹

In late 1895 Captain's Flat entered a new growth phase. Mining and commercial activity was on the increase and the town was crowded with strangers from 'all parts of the colony', most of whom were miners and nearly all of who were obtaining employment. The business people were prospering and sites for houses were being taken up gradually, nearly all selecting Newtown. Concerns at the chemical smoke and fumes assailing the inhabitants of Bogtown were an indication of this increased level of activity. In November 1896 it was commented that 'the forlornness which was so apparent among the men for the last five months [is] gradually drawing back once more...' There were 'fresh faces, announcements of men being given employment and the town becoming busier daily...' Reflecting the increase in population, school enrolments almost doubled between 1895 and 196.⁷⁰

Captain's Flat reached its zenith in 1897. By May there were three hotels, four stores, three butcher's shops and two blacksmith's shops, one correspondent commenting that, although the Flat was nearly dead two years ago, it was now rising in importance.⁷¹ A few months later new cottages and business premises were under construction in Newtown,

⁶⁷ J. Filshie to the NSW Department of Public Instruction, 29 September 1890, 5/15292.2, SRCNSW, Sydney; Inspector Tucker to Secretary, GPO, 4 December 1890, SP 32/1, Box 106, NAA, Sydney.

⁶⁸ T. Stokes to Secretary, GPO, 31 December 1891, SP 32/1, Box 106, NAA, Sydney; petition from Captain's Flat residents to the Minister for Public Instruction, undated, but in July 1892, 5/15292.2, SRCNSW, Sydney.

⁶⁹ *Cooma Express*, 12 August 1893; *Queanbeyan Age*, 21 March 1894; *Braidwood Dispatch*, 15 September 1894.

⁷⁰ *Queanbeyan Age*, 12 October 1895, 5 November 1896

⁷¹ *Cooma Express*, 19 May 1897.

Bogtown and Coppertown. Mrs Goggins, the owner of the Captain's Flat hotel, had made considerable improvements to the hotel and was building several shops. Her hotel was one of the most important establishments in the town. She was regarded as a 'mother' to the miners, many of whom boarded at her hotel, and she was a patron of many sporting clubs. There was a large sprinkling of Braidwood people among the rapidly increasing population. Furner's store was the largest and most commodious of the business places, followed by McDonagh's, and one of the bakers, Coffey, had opened a confectionery business.⁷²

In September O'Sullivan estimated that by using a yardstick of four to every family within a three kilometre radius, there was a population of 2,000. If farmers, selectors and wood carters who lived outside this radius were included there would be 2,500. As a sign of this burgeoning prosperity a new town had been laid out at Copper Creek, and a new public court and police station were to be established. The postmaster estimated that 2,000 people were on the field, and stated that the town was crowded with speculators.⁷³ Copper Creek was reported to be turning into a little village, with the buildings appearing to be permanent, and there were large numbers from Braidwood, Araluen, Majors Creek and surrounding districts in the town.⁷⁴

A year later, however, this burst of prosperity was severely checked by the closure of the mines. Because of earlier laudatory statements about the longevity of the mines many men had spent their savings in making their homes at the Flat and there was much bitterness at the closure. In some quarters, however, there was still an air of optimism, presumably on the basis that the Flat would recover as it had in the past, and many men were delaying their departure in the hope that something would shortly be done to provide employment. All storekeepers, butchers and hoteliers were still open, the new post office building was ready for business, and in December construction of the new courthouse began.⁷⁵ The mines and smelter reopened not long after, and by mid-1899 a fresh fish and oyster saloon and a tailoring shop had been opened. Disaster struck in September, however, for the mines and smelters closed again, and this time the closure was to be permanent, with a further exodus of people and businesses. Reflecting these wild swings in fortune, the school population fell by two thirds between 1897 and 1898.⁷⁶

Following the closure of the smelters in 1899, Captain's Flat went into a long period of decline. In May 1900 it was remarked that things 'seemed to be gradually growing worse and worse'. Business was 'simply paralysed, coach loads of coach loads are leaving almost daily and it is very long time since we saw the Flat in such a low state'. By the following year the town was

⁷² *Braidwood Dispatch*, 7 July 1897; *Town and Country Journal*, 7 August 1897; John Dean, *Captain's Flat*, unpublished private paper, p.33, 37-38.

⁷³ *Braidwood Dispatch*, 22 September 1897; T. Stokes to Deputy Postmaster General, 30 September 1897, SP 32/1, Box 106, NAA, Sydney.

⁷⁴ *Braidwood Dispatch*, 10 November 1897.

⁷⁵ *Queanbeyan Age*, 7, 10 September, 1 October 1898; *Braidwood Dispatch*, 12 October 1898.

⁷⁶ *Queanbeyan Age*, 19, 27 September, 7 October 1899.

described as 'dead to the world, people going away in dozens, houses being sold for practically nothing to country people for building purposes are being pulled down on all sides'. To add to the difficulties of the unemployed, there were complaints that the men working on relief had had to wait for their money, some families practically starving or only surviving on credit. The relief work had, in any event, only been for about two to three weeks.⁷⁷

The closing of the Burruga mines caused a return of some residents late in 1902, but the reopening of these mines led to a further exodus early in the New Year. In February monies were granted for relief work on the local roads, and by May people were being pestered with offers to sell their houses at sacrificial prices. The total population was about 200. To add to this gloom the continued dry weather meant that the residents were lucky to get meat once a week, and they were subsisting on hares, rabbits and wallabies, a hunting and gathering state not far removed from that experienced by their colleagues at the Cowra Creek gold fields.⁷⁸

While there was an occasional resurgence of hope with every new, but invariably short lived burst of mining activity, there was an overriding air of pessimism. In 1906 it was commented that the 'inertness of this place is becoming more and more apparent', and the following year the town was described as 'lifeless as it had been for the last few years'. The population had by then gradually dwindled away so that those who were left could generally find enough employment to 'keep starvation away'.⁷⁹ In 1908 the licence for the Miner's Arms was renewed for a further three years, for it was well patronised and taxed for accommodation at race time and court days. It was estimated that there were about 500 persons within a radius of 15 miles.⁸⁰ In 1909, Mrs Hogan, a widow with four young children, was appointed as postmistress.

By 1911, however, the Flat was described as gradually 'becoming less and less. One house after another was pulled down and taken away to Queanbeyan or elsewhere for erection'.⁸¹ Despite these parlous conditions, the prospects of renewed mining seemed to be always around the corner, and there remained a handful of commercial enterprises and other institutions. For instance, in 1912 the Flat possessed one hotel, one large and one small general store, a post and telegraph office, courthouse, police station and public school.⁸²

Although it was clearly in serious decline, Captain's Flat was still one of the larger mining settlements in the Southern Mining Region. But very few of its residents were mining, and in May 1922 Captain's Flat was described as a deserted village. The correspondent wrote:

⁷⁷ *Queanbeyan Age*, 12 May 1900, 3 March 1901.

⁷⁸ *Queanbeyan Age*, *Queanbeyan Age*, *Queanbeyan Age*, 1 October 1902, 7 January, 21 February, 9 May 1903.

⁷⁹ *Queanbeyan Age*, 20 November 1906, 22 February 1907.

⁸⁰ *Queanbeyan Age*, 24 April 1908.

⁸¹ *Queanbeyan Age*, 5 November 1911.

⁸² *Queanbeyan Age*, 26 March 1912.

...a large chimney stack was felled at one of the abandoned mines. The bricks will be used at Queanbeyan. Two of these huge pillars have been standing for years on the side of the hill overlooking the village, appearing as if sentinels watching for the advent of the speculator who would re open the mine. He never came. One sentinel now remains to keep watch. The prospect of a revival of the mining industry here is growing more remote.

2.1.6 Regional Impact

In its prime Captain's Flat had a significant employment effect, and compensated substantially for the lack of activity at the gold mining settlements in the Braidwood District. In November 1897, when the Captain's Flat mines were at their peak, it was commented that there were many well known faces from Braidwood, Araluen, Majors Creek and surrounding districts, all of whom seemed 'well contented with their lot'. They had 'a chance of earning and saving a little money', something that had been difficult to do 'for some considerable time past in their own immediate districts'. Reference was also made to the presence of four butcher's shops in the town. The meat supplied was 'of a first class description', not only reflecting credit on the butchers, 'but also on those instrumental in fattening, that is the Braidwood graziers. It was commented that nearly all the Flat market was supplied from these sources, 'showing that a considerable amount of the Flat money found its way into the Braidwood district'.⁸³

Another insight into the Flat's regional impact is illustrated by the complaints in 1893 concerning the lack of money spent on the road to Braidwood through Harold's Cross compared to that through Parker's Gap. There were many selectors in the Harold's Cross and Ballalaba area, and in the former location there were 30 selectors whose chief market was Captain's Flat.⁸⁴ Extensive use was made of carters, not only for local timber supplies, for which there were a number of sawmills, but for the haulage of supplies and raw materials such as iron, limestone and coke from the rail head at Bungendore. Carters were also needed to transport the ore from the mines to the smelters and to transport the finished product to the railhead. There were 30 teams in operation in 1889 and 25 in 1893.⁸⁵

Conversely, the sudden and unexpected closure of the mines also had a substantial impact. The first wave of miners to leave in June 1898 included many from the Braidwood district, and there was 'a great deal of destitution among the families unable to get away ...' In October there was 'quite a stampede from the neighborhood', with everything seeming 'to wear a woe-begone appearance, many leaving for Gundagai, Cobar and the Snowball gold fields'. As a measure of the regional importance of the mines, and in the hope that the stoppages were temporary, unemployment relief was provided. There were 140 unemployed men, 53 of whom were provided with work on the roads for three weeks at 5s to 6s a day.⁸⁶ In October 1899

⁸³ *Braidwood Dispatch*, 10 November 1897.

⁸⁴ Letter to the Editor, *Braidwood Dispatch*, 10 May 1893.

⁸⁵ *Braidwood Dispatch*, 24 July 1889, *Cooma Express*, 12 August 1893.

⁸⁶ *Queanbeyan Age*, 12, 15 October 1898.

roadwork was again allocated to the unemployed, reports indicating that all had been catered for and that the town now had a busy appearance. It was not to last.⁸⁷

2.1.7 Social life, Sporting & Cultural Institutions

One of the most important institutions at the Flat was the public school, which superseded the house to house school in 1886. It was erected in 1889 following representations from O'Sullivan concerning its inadequate size and inappropriate location. An evening school was established in the same year, using the existing public school building.⁸⁸ Religious activity was also important, although the first mention of ecclesiastical matters was not until 1893, when the Anglican bishop arrived to consecrate the burial ground and lay the foundation stone for the new church. Roman Catholic and Wesleyan churches were not built until 1897, and the first mention of the Presbyterians was not until 1899. They held their services in the Wesleyan church. A convent was built later that year following a visit by Mother Mary McKillop, Foundress of the Order of the Sisters of St Joseph.⁸⁹

Sport was also very popular and there was a full array of sporting bodies and facilities. The first reference to a cricket club was in 1886, and the first football match played at the Flat was in 1895. Both sports would have been played on the recreation ground in the centre of town.⁹⁰ A gymnastic club was formed in October 1893, probably using a hired hall, and in November a preliminary meeting was held of those interested in the formation of a racing club for Christmas meetings. From thereon the Boxing Day race meetings were a regular sporting feature. In 1897 a pony and galloway racing club was formed and in the following year the athletics club was reopened in Goggin's hall. A meeting of the tennis club was held in 1899 to renovate and repair the court.⁹¹

There were also a number of more culturally inclined bodies, most of which used church and hotel halls, such as Mrs Goggin's and Cooper's. In February 1895 a public meeting was held with the aim of establishing a School of Arts, for which a progress committee had been formed and a number of books already received. In addition, there was a progress association, a branch of the Amalgamated Miners Association (AMA) and a dramatic club, which was subsequently transformed into a social club.⁹² The Captain's Flat Early Closing Association was formed

⁸⁷ *Queanbeyan Age*, 7, 14, 28 October, 4 November 1899.

⁸⁸ New South Wales Department of School Education, *Government Schools of New South Wales 1848 to 1993*, Sydney 1993, p.46; Inspector Dawson to District Inspector Dwyer, Department of Public Instruction, 24 May 1884, petition to the Minister for Public Instruction, July 1889, Inspector Willis to District Inspector Dwyer, 12 August 1889, 5/15292.2, SRCNSW, Sydney.

⁸⁹ *Braidwood Dispatch*, 16 September 1893; *Town and Country Journal*, 17 August 1897; *Queanbeyan Age*, 5, 29 April, 16 September 1899.

⁹⁰ *Queanbeyan Age*, 21 December 1886, 27 May, 29 November, 9 December 1893, 15 May, 21 September 1895.

⁹¹ *Braidwood Dispatch*, 28 October, 11, 29 November 1893; *Queanbeyan Age*, 20 February 1897, 27 July 1898, 3 September 1899.

⁹² *Queanbeyan Age*, 1 July 1886, 6 November 1889, 6 February 1895, 6, 27 August, 24 September 1898, 3 September 1899.

in 1898, and a band and the Band of Hope were established in 1899. A minstrel troupe was also formed in 1899 with the idea of holding entertainments regularly for the benefit of different institutions.⁹³

Following the closure of the mines and smelters many of the social institutions formed in the 1890s continued. More remarkable, some new ones were added despite a dwindling population. For instance, there was still a progress association and Anglican, Roman Catholic and Methodist churches, and in 1900 there was considerable discussion on the need for a rifle corps and in 1906 the Sino-Japanese war led to attempts to form a rifle club.⁹⁴ Cricket, tennis and rockley (a form of women's cricket) matches were held frequently, with the Britannia Rockley Club active as late as 1904. Horse and bicycle races meetings were also held regularly, a bicycle club having been formed in 1905.⁹⁵

2.1.8 Post 1937

By 1937 the town was only a shadow of its past. That was, however, soon to change, for it was projected that the population would increase dramatically to about 2,000 and that the mine would continue for many years. State Cabinet approved the construction of the Bungendore to Captain's Flat railway in March 1937. As the costs of town and infrastructure development would be beyond the Yarrowlumla Shire's capacity the NSW Government had recognised that State funding would be needed. At the suggestion of the Minister for Works and Local Government, Mr Spooner, a board of five members was appointed in May 1937 to formulate proposals for the layout of the township and the development of roads and essential services. Two members were to be appointed by the Shire and three by the Minister. It was expected that the board would address matters such as roads, water supply, sanitary arrangement and general layout of the town. Haggling over the terms and conditions attached to any assistance provided for road construction was to continue for some time.⁹⁶

A Braidwood visitor commented in July of that year that beyond a few new buildings and signs announcing the erection of up-to-date premises there was no untoward indication that the visitor was in a prospective city. The hotel appeared to harbour mostly 'swarthy, foreign looking men exuding a pungent odour of gum-leaves and eucalyptus'. But on the top of the hill there were signs of much greater activity. Thousands of tons of ore had already been extracted and plant and machinery buildings were being erected nearby. A few weeks later a correspondent for the *Braidwood Review* was lauding the Flat as a 'new Broken Hill'. Three weeks later again a writer for the *Sydney Morning Herald* described the town of 280 people as 'consisting of a single straggling main street-an unprepossessing array of cottages and empty shops'. He conceded, however, that it was 'the most

⁹³ *Queanbeyan Age*, 5 October 1898, 21, 28 October 1899.

⁹⁴ *Queanbeyan Age*, 27 February 1900, 27 February 1906, 4 October 1910, 26 March 1912.

⁹⁵ *Queanbeyan Age*, 25 March 1903, 3 June 1904, 10 February 1905, 13 March 1906, 2 February 1907, 20 March, 29 May 1908.

⁹⁶ *Canberra Times*, 18 March, 28 May, 27 August 1937; *Queanbeyan Age*, 8 October 1937.

important development in the NSW mining industry for many years'.⁹⁷

The pace of development was rapid and with it there was a raft of immediate decisions to be taken on matters of public welfare and town development. For instance, it was decided early on that the site of the township would continue to be in the valley. The heavy traffic now taking place on the existing roads meant that they were to receive immediate attention. Water supply was another immediate problem, particularly given the future water needs of Canberra. At one stage it was suggested that storage dams in the headwaters of the Queanbeyan River should be constructed for the dual purpose of supplying Captain's Flat and maintaining a steady flow into the Molonglo River at Canberra. The possible need for a hospital was also mooted; the company had already declared its intention to build an emergency dressing room and have an ambulance available. Another concern was to ensure the enforcement of building regulations to prevent the erection of sub-standard dwellings as had occurred in many other mining towns. Some estimates had the population as high as 5,000, while others stated that the normal multiplier for mining towns was five times the number of miners, which would have put the population at 2,000-2,500. The latter calculation was more realistic. Captain's Flat would still, however, be one of the largest towns in the Southern Tablelands. In the boom years its population would be about one quarter of Queanbeyan. By January 1938 there were 40 cottages, a number of shops and large quarters for 64 single men. Another singles men's quarters was to be constructed. A decision had also been taken to construct a weir across the Molonglo River.⁹⁸

A rather telling commentary on Captain's Flat was made in January 1938 by a visitor who referred to himself (or herself) as Nullah Nullah. He (she) described the workers' cottages as very nice with new appliances ready to be installed, but was less impressed with other aspects, stating that:

Everything would be beautiful if the surroundings were in comparison. Huddled together as they are down in a gorge and built on a swamp with every likelihood of being flooded, the site for the future town did not appeal...with no provision made even for a small garden. A miner's wife's life will be very monotonous.....

He described the site as miserable and inconvenient. 'Just imagine a workman clambering up and down those gorges at all hours to get to his work: not very soothing on his nerves after a hard day's toil'. He stated that the site for the town should have been in the vicinity of Copper Creek, but that had been reserved for the 'tall poppies', and very little consideration given to the employees who had to do the heavy manual toil underground and on the surface.⁹⁹

There were many teething problems. Housing and sanitation were among them. Most of the buildings did not comply with

⁹⁷ *Braidwood Dispatch*, 20 July 1937, 27 August 1937; *Braidwood Review*, 3 August 1937.

⁹⁸ *Canberra Times*, 18 March, 28 May, 28 July 1937; *Queanbeyan Age*, 30 April, 13 August, 21 September 1937; *Braidwood Dispatch*, 6 April 1937, 7 January 1938.

⁹⁹ *Queanbeyan Age*, 7 January 1938

local regulations, which stipulated that the walls could not be built from galvanised or corrugated iron. There were also insufficient sanitary conveniences and natural water courses were polluted with refuse. Council agreed that there was an urgent need for a sanitary service and for this purpose two carts from Queanbeyan were to be made ready and painted. Correspondence had been received to the effect that while the earth closets may be unsatisfactory they were superior to nine out of ten in Queanbeyan. But progress was rapid. By April the company had erected a mess hall capable of seating 180 people, the old residents commenting that the buildings were far and away ahead of those in the 1890s. Movement was also afoot to augment the casualty station, with the company making two acres (0.8 hectares) of land available and agreeing to contribute to its maintenance.¹⁰⁰

By the middle of the year the estimated cost of infrastructure expenditure was such that the NSW Government offered to provide substantial assistance to the Shire. For instance the road from Captain's Flat to Carwoola would be built by the Shire and that between Carwoola and Queanbeyan by the State Government. Other roads to be improved or reconstructed were those to Bungendore and Braidwood. Concerns over sanitation again surfaced in August, with one report referring to Bagtown conditions. A large number of tents and temporary dwellings had been erected and many residents were living in very unsanitary conditions. Toilets were under construction on a special camp reservation and all campers were to be ordered to that area as soon as the work was completed. Some protests were voiced by the men camped along the river who were working on the dam, but it was insisted that if there was a danger of the river being polluted then these men too would have to move. Extensive improvements and alterations to the public school were also approved. But the growth of the town did not please everyone, with one councillor commenting that as far as the ratepayers were concerned it would not matter if the town were shut down tomorrow for it contributed nothing to Shire's revenue and only added expense and worry.¹⁰¹

A wonderfully impressionistic account of the town prior to 1937 and as it was now emerging was penned by a writer to the *Sydney Morning Herald* in July of that year. It is quoted in full:

A year ago at Captain's Flat all was desolation. Under the grey slag heaps of the old copper workings a few tumbledown wooden shacks, dirty, unpainted and unlovely straggled on up the gully between bare, forbidding hills, or huddled about the solitary hotel. Today, thrusting up in midst of the old shanties, is an aggressively new block of shops, whose modern frontages gaze at the dusty, unmade main street, with the inevitable bored cows drowsing in the shade of the trees. Beside an open air barber's shop – the chairs exposed to the four winds of heaven - workmen are busy on a big new establishment. Nine new shops have been built with the last three months, and others are proposed or are already in the course of construction. The Union Bank of Australia, now occupying temporary quarters in a wooden shack, is building new quarters on the corner of the

¹⁰⁰ *Queanbeyan Age*, 12 April, 13 May 1938.

¹⁰¹ *Canberra Times*, 16 July, 18 August 1938; *Queanbeyan Age*, 23 August, 18 September 1938.

main street. A cinema hall is to be built shortly, and probably a hospital. The post office has been enlarged and a substantial courthouse-cum-police station.

Speaking of the old hotel the writer described the 'low, dingy bar-room crowded to the doors with roughly-clad miners, and the accents of Cornwall and Wales mingling with a solid stream of good Australian profanity, sweat and tobacco smoke' Last year, according to the writer, Captain's Flat was definitely a "tough" town. There were big two-up schools in the main street, constant brawls, and occasional free-for –all fights for good measure, when the bulk of the male population would betake their differences in a convenient paddock and settle them in traditional style. But times have changed, the company has seen to that.¹⁰²

But whatever progress was being made in the town and mine, little was apparently happening to the Braidwood Captain's Flat road, in particular the Cooma stretch. In October 1938 it was described by a Mr Izzard as consisting of 'corrugations, potholes, drains, washed out, bad watercourses, in affect everything but a decent travelling surface'. The part before Ballalaba was 'absolutely the worst stretch of the road, and would not only shake out the false teeth...but is liable to shake anyone out of a car'. The following month Councillor Hassall stated that the Shire received continual complaints from people who were compelled to use the road and who 'were smashing springs, shackles, etc'.¹⁰³ The other momentous event in 1938 was the commencement of construction of the present hotel; the 32 metre long bar was reputed to be the longest in Australia.

There was little outside interest in the Flat during the War Years. People's minds were understandably focussed elsewhere. Complaints on services or lack thereof, however, continued to be conveyed to the Shire Council by the Progress Association. In May 1940 there were complaints concerning inadequate street lighting, people swimming in the dam, and the non-collection of sanitary fees. Electric power and freight concessions of up to 50% were granted to the mine in October and extended in April 1941. In May it was proposed that a garbage service be run in tandem with the sanitary service. The company advised the Government in June 1942 that it no longer needed the mining concessions; without which it would have needed to close the mine. Its re-opening would have been long delayed for 'no one would have been game to re-open it'. As a measure of the basic state of much of the town's facilities, by 1944 there was still no town water supply or street lighting and improvements were still needed to many of the roads. A hospital movement was inaugurated in that year to raise funds for the construction of a hospital; about 60 per cent of the funds were to come from private fund raisings, the rest from the NSW Government.¹⁰⁴

With the war's end improvements continued to be made, albeit slowly. In March 1949 there was a call for an adequate sewerage system to replace the existing pan system and do

¹⁰² *Braidwood Review*, 26 July 1938.

¹⁰³ *Braidwood Dispatch*, 21 October 1938; *Braidwood Review*, 22 November 1938.

¹⁰⁴ *Queanbeyan Age*, 30 January, 14 May 1940, 29 April, 30 May 1941, 23 June 1942; 26 May, 20, 30 June, 18, 28 July, 11 August 1944.

away with the 'offensive and insanitary conditions caused by the lack of adequate house drains'. The Shire Council agreed to take steps to implement a sewerage system and to obtain information on the prospects for implementing a town plan. Movements were also afoot to obtain a loan for improvements to Molonglo Park, to erect a soldier's memorial and a swimming pool. It was admitted, however, that any further improvements depended upon the life of the mine and industrial harmony. Building of the hospital had been ongoing since 1944. In September 1949 it was decided that the Captain's Flat District Hospital Board would take over the administration of the clearing station. However, dissatisfaction with the slow rate of progress on construction of the hospital led to the resignation of the full board in February 1950. The hospital commenced operations in July of that year. At one stage the hospital had difficulty in obtaining trained nurses, despite the very comfortable nurses' quarters, but more serious was the cutting of the Government subsidy in 1954. At the time it was pointed out that patients who were normally treated at the Braidwood, Queanbeyan or Canberra hospitals were being admitted to the Captain's Flat hospital.¹⁰⁵

Despite obvious improvements in some areas and the construction of many dwellings by the company, even as late as 1951 the housing situation was regarded as unsatisfactory. A survey by the Shire health inspector in December 1949 found that of the 382 dwellings in the town, 98 were substandard and in normal times would have been condemned. The erection of houses for tradespersons, teachers, police officers and railway staff was at a standstill, although the company had built about 200 good standard houses for its own employees. The Shire Council approached the NSW Housing Commission on the matter but was rebuffed in April 1951. A further approach was mooted at the time. The roads still left much to be desired, even as late as 1953. Foxlow Street was sealed only in the middle and not from kerb to kerb causing difficulties in very wet and dry periods from mud and dust. The northern part of the street was also unsealed as was the steep driveway into the hospital and the southern part of the street where it merged with the Jerangle Road. In January of the following year G.V. Burnett, a Shire councillor and staff employee at the mine, described the Queanbeyan - Captain's Flat road as 'an entirely inadequate cross-country trail'. Council agreed to approach the NSW Government on the matter.¹⁰⁶

A major program of works was authorised for Captain's Flat in March 1954, which included road sealing, guttering, kerbing and foot paths. And in May the Shire announced a scheme for cheaper homes at Bungendore and the Flat. But the closure of the mines in June 1954 came hard on the heels of many other disputes and again led to concerns about the future of the mine and town. The two Flat councillors, Kerr and Burnett, sponsored a move at the July Shire meeting to have the possibility of introducing new industry to the Flat thoroughly investigated. At the same meeting, however, it was questioned whether the program of public works should go ahead in view of the mine

¹⁰⁵ *Queanbeyan Age*, 4 March, 30 August, 29 September 1949, 21 February 1950, 14 September 1951, 25 August 1953, 29 January 1954.

¹⁰⁶ *Queanbeyan Age*, 9 December 1949, 4 May 1951, 3 November 1953, 12 January 1954.

possibly shutting down. In a report later that month it was stated that most of the men were employed, but some had taken work in Canberra and Sydney at reduced wages. Where the men had not yet found work the families were finding it increasingly difficult to make ends meet. Frequent mine stoppages over the last few years had affected some businesses; two grocery stores had closed and some families had left town.¹⁰⁷

A picture of doom and gloom was painted by the Federal Labor member for Eden-Monaro, Allan Fraser, in a radio broadcast in August. He stated that life at the Flat was paralysed, residents gripped by depression and anxious for their future. The impression was that the company had deliberately brought about a stoppage to force acceptance of worsened working conditions and to exclude from future employment men who had been active in trade union leadership. Tom Kerr announced his intention to resign from the Shire Council stating the present employment situation at the mine. The Citizen's Neutral Committee stated that the unions' decision to 'black' the company would speed up the exodus of families from the Flat. A number of families had departed over the last two weekends.¹⁰⁸

The dispute was resolved in 1955 and many now felt that the Flat could look forward to many years of progress. In July the Shire Council proposed to write to the NSW Housing Commission to investigate the need for more rental homes in the town. Previous representations to the Commission had been unsuccessful due to an impression that the town was dying out. A number of sub-standard homes had been closed and demolished at the Flat over the last eight years, but this work had come to a stop because there were no means of housing the displaced occupants. Late that month a Shire councillor stated that the life expectation of the mine was improving as the lower levels were reached and urged the introduction of a full sewerage scheme in the town. In November the Council approved construction of a drainage scheme for part of Foxlow Street. It was to be designed as part of a sewerage system if the Council decided to install the latter at any time in the future. Subsequently it was suggested that the proposal be amended to assist the hospital in disposing of its sullage water. As further signs of progress that year the convent opened new additions to its premises in September and in December there was a move by union members to band together for a cooperative society with a butcher's shop as their first venture. The shop was sold to them by one of the town's two butchers.¹⁰⁹

But it was not long before the town news was again laced with negatives as uncertainties emerged concerning the mine's future. In September 1956 it was remarked that the hospital was facing a grim year from an acute cash shortage arising mainly from the delays in collecting patients' accounts. There was also a seeming spate of fatal injuries in the mine. Two miners were killed from rock falls, one in October 1956 and another in March 1957. In November a miner was killed in a mine explosion. The first hints of problems on the mine's future were in February 1957 when it was announced that the mine had ore reserves for

¹⁰⁷ *Queanbeyan Age*, 26 March, 7 May, 29, 30 July 1954.

¹⁰⁸ *Queanbeyan Age*, 3, 6, 13, 31 August 1954

¹⁰⁹ *Queanbeyan Age*, 22 July, 2, 23 September, 11 October, 22 November, 9 December 1955

another seven years. A subsequent drop in the price of lead and zinc caused further concerns, for the company was now operating at a loss. In November the company chairman took the unusual step of writing to the town residents calling for more production in an effort to allow the company to break even on its operations. A public meeting involving a cross section of the town community and the mine management was held the following month to discuss the mine crisis.¹¹⁰

Despite uncertainties over the town's future the town maintained a vibrant sporting and social life and there was still plenty of energy to express concerns over matters of housing, roads and the like. For instance, in 1958 the health inspector reported on the appalling housing conditions of a railway man, his wife and two children who occupied two tents while using a former stable as a kitchen and using a dilapidated sanitary closet. He stated that Captain's Flat was the only town of its size in NSW that had been completely neglected by the Government Housing Authority. But a visitor in the following year waxed eloquent on the modern facilities in the town, such as the school, the picture theatre and well equipped clubs, the hospital and sporting facilities. He described the town as an 'intriguing place, whispering one moment of bullock teams and the days gone by, and the next instant reminding you that it is very up-to-date'. Tragically, in the same issue of the *Age* two men were reported killed in a rock fall at the mine. It was the mine's worst single accident. Several days later the NSW Minister for Mines, Mr Simpson visited the mine. It was the first visit by a State Minister for eight years. He expressed his surprise at the size of the mine operations and the numerous amenities at the mine and in the town.¹¹¹

Later that year it was announced that the hospital would close due to staff shortages. It was proposed that a staff bonus scheme be re-introduced to compensate for the reduced recreational facilities at the town. There were also repeated calls for improvements along the Queanbeyan road at Whisker's Creek crossing, and along the Jerangle road; in several sections the road was so narrow that two vehicles could barely pass. Continued flooding of the Molonglo River on the Bungendore road near the Briars was also causing problems. In April 1960 Councillor Ireland described the condition of the Queanbeyan road as deplorable. Perhaps there was better news on the health front. An analysis of Captain's Flat water revealed that it was not dangerous to health, although it was discoloured by rust from the steel pipes. It was stated that few people used the water because of health concerns. There were also concerns at the flooding of the bowling green and adjacent areas from the Molonglo River.¹¹²

By mid 1960 the focus was shifting strongly towards the town's future, and in July a symposium was arranged by the Captain's flat Citizens Committee on the subject. The symposium was to clarify the future prospects of the mine, to give consideration to the possibilities of transporting the local work force with housing

¹¹⁰ *Queanbeyan Age*, 21 September, 12 October 1956, 5 February, 15 March, 18 October, 19, 22 November, 6 December 1957.

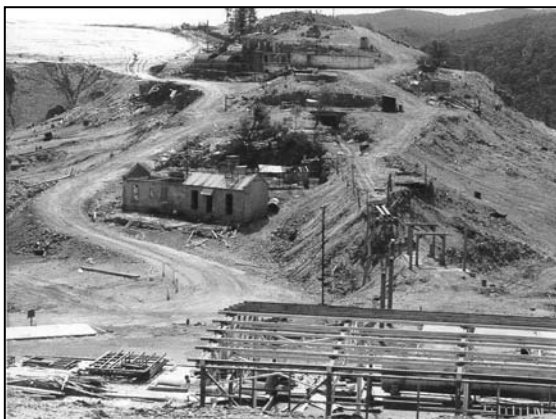
¹¹¹ *Queanbeyan Age*, 15 July 1958, 12, 15, 19 May 1959

¹¹² *Queanbeyan Age*, 1, 29 September, 20 October 1959, 19 January, 12 April, 17 May 1960

to nearby towns, and try and face the problem of keeping the town's amenities should the company vacate the town. The company manager had informed the committee that the mine would close down in 1963. But all was not well, for 6 weeks later the symposium was abandoned. The committee had been set up by a number of businessmen and graziers of the district. However, the exclusion of some businessmen and union representatives from the committee, together with an alleged attack on Mr Fraser, the Federal MP, after he indicated that he would be unable to attend, resulted in an immediate boycott of the committee and its activities by all unionists in the town. A new committee was subsequently elected.¹¹³

A summary of developments regarding the committee and of the observations made by many people in the town and of information obtained from the original committee were outlined in the *Age* of 26 July 1960. It was a most despondent report, which commenced by describing the present outlook as 'gloomy and pessimistic' and stating that it did not seem worthwhile for any industry to be established unless some sort of substantial government subsidy could be obtained. Several options were outlined. The establishment of a limestone industry was out of the question. The existing deposits were not of a particularly high grade and limited in extent. A large timber concern was a physical impossibility. The main area of timber was Tallaganda State Forest, but it would not be possible to increase the supply of timber to existing mills; it was clear that the forest was being heavily over cut. The present rail services between the town and Bungendore were very poorly patronised and would need reviewing. Neither was the Housing Commission in a position to purchase or acquire residential properties. The costs involved in purchase and transportation would make the proposition uneconomic. The roads were a problem and would discourage most entrepreneurs even if all other factors were adequate.

It was also highly improbable that the work force of the mine, who had received very high wages compared to other unskilled occupations, would consider for a moment becoming basic wage earners. No one would stay if all they could obtain was half their current remuneration. The mining work force would gravitate to other well paid mining or labouring jobs. In addition the physical environment was very limiting. There were no good roads, poor soil, a short growing season, very little extensive level land, and few good homes in comparison to elsewhere. Neither were there any great markets or tourist attractions nearby and the town did not lie on any important arterial



Removal of Infrastructure in the 1960s. Image courtesy of DPI – Derelict Mines

route. There seemed little hope for the 'material elevation of the town'. The only hope lay in the cooperation of the federal government in building roads and campaigning for an industry, or from the importation of migrants who would be prepared to work hard at a manual task for the basic wage. But even more important was the time factor. If any concern large enough to employ all the workers at the Flat was to be established and

¹¹³ *Queanbeyan Age*, 7, 14 June 1960.

ready in time for the mines closure, then construction of the plant should have been under way already.¹¹⁴

The matter of finding jobs in Canberra or establishing other industries continued to be under active discussion at the state and regional level and by mid June 1961 discussion had turned to finding additional ore deposits to prevent the pending closure of the mine. It was foreshadowed that unless new deposits were found within the next two or three months then the mine would close as early as mid 1962. The future of the mine and the town had been front page news for some time, and was a major preoccupation of Allan Fraser, MHR. He had already met with the mine management and unions and conceded that the reports to date were not encouraging, although it was too soon to say yet that the mine would close. The NSW Government was meeting half the cost of drilling and the mining management stated that Government had given the company the 'utmost cooperation'. The future of those employed at the mine was also receiving close attention from L.J. Tully MLA.¹¹⁵

Allan Fraser's first approach to Prime Minister Menzies met with a rebuff, for the road was regarded as a state responsibility. In the meantime there were further complaints about other roads, in particular the Harold's Cross Road which was used for carting timber by saw millers to Captain's Flat, and the Captain's Flat Braidwood road. As if this was not drama enough a major controversy was brewing over the Captain's Flat sanitary contract. The contractor had noticed a lack of toilet paper in the children's toilets at the Catholic school, with the children being forced to use other means to clean themselves, including handkerchiefs. He complained to the Health Inspector and the department but they advised him that there was nothing they could do as there was no law compelling the provision of toilet paper. The contractor pointed out that the miners had toilet paper so why not the children. There were also problems with overflowing urinal pans, which were often filled through a careless hosing down of the toilet block. The contractor offered his resignation but this was not accepted pending an investigation. The inquiry stated that the controversy was the result of a building up of trivial matters that should never have come before the council or the public, and that it certainly did not warrant anyone losing his job over it.¹¹⁶

By November 1961 Allan Fraser was again urging the Commonwealth Government to assist in reconstructing the road from the Flat to Queanbeyan, particularly as the test boring for further ore deposits had been unsuccessful and the closure of the mine was imminent. The town was clearly now in wind down mode. The Southern Tableland County Council stated that it may buy the electrical installation assets of the mine when it closed, and the Yarrowlumla Shire deferred consideration of further improvements to the pool. It was considered that they were not warranted due to the position of the mine. There was a somewhat myopic view that the town would not be a ghost town as there were grazing and timber industry interests that would keep the town alive, but then that all came down to a definition of

¹¹⁴ *Queanbeyan Age*, 26 July 1960.

¹¹⁵ *Queanbeyan Age*, 20, 27 June 1961.

¹¹⁶ *Queanbeyan Age*, 18 July, 1, 22, 26 September, 10 October, 7 November 1961.

what constituted a ghost town.¹¹⁷ The town's future depended largely on the improvements to the road link with Queanbeyan.

In February 1962 a conference was held in Canberra to discuss the road link. Those present included the NSW Premier, Mr Heffron, J Tully MLA, J Seiffert MLA, Councillor P Osborne, the Shire President and representatives of local business and clubs. The Premier said that his Government would go ahead with arrangements for the reconstruction of the road, and that a formula for paying for it would be worked out between the State Government, the Shire, the Main Roads Board and the Commonwealth Government. He would ask the Prime Minister at the Loans Council meeting to make a substantial contribution to the road as it had done for the Canberra Bateman's Bay and Cooma roads. The state of the road was now headline news, particularly following an accusation by Tully, MLA that the 'Liberal' Shire President Mr Osborne had prevented the road from being sealed. In a strongly worded reply Mr Osborne refuted this accusation. He had, however, urged the Premier not to underestimate the cost of road works. Several days later Tully announced that the NSW Government was to make an immediate grant of £50,000 for the road. It had been agreed at the earlier meeting that £150,000 was needed to commence the project, the Shire to contribute £16,200, DMR £33,200 and the State and Commonwealth Governments £50,000 each.¹¹⁸

The road issue received heightened attention following the closure of the mine on 11 March. Several days later Commonwealth social service and labour officials visited the town to give on the spot assistance to those made redundant by the closure to enable them to register for employment and for unemployment benefits. Of the 350 employees all but 70 had been made redundant. Those retained were to be employed in salvaging equipment from the mine and preparing the plant and machinery for disposal. There was already a general exodus of men to Queanbeyan and Canberra, with others going to the South Coast and the Snowy Mountains. It was expected that most families would stay on for the time being while the men were employed elsewhere. Later that month a special bus service to Canberra and Queanbeyan had commenced, dropping the men off at their respective places of employment and picking them up in the afternoon. The company was having problems retaining the 70 men needed for mopping up operations as they were also accepting jobs in Canberra. Homes in the town were being occupied by servicemen who were unable to obtain accommodation in Canberra and Queanbeyan. A report in early April stated that 90 per cent of the men had found alternative employment and that there was no slacking off in business in the town as the men did not have time to spend their money in the other centres. A subsequent report put the unemployment at about 20 per cent, with the Shire contributing money for relief work, which would employ about 20 men. Some men were also getting employment at Wollongong, Port Kembla and other distant mining centres. On 20 March the

¹¹⁷ *Queanbeyan Age*, 14 November, 1, 19 December 1961, 9, 23 January 1962.

¹¹⁸ *Queanbeyan Age*, 13, 16, 23, 27 February 1962.

Prime Minister was visited by a deputation, which included Allan Fraser, concerning road funding.¹¹⁹

But there was no hiding the fact that the town was in decline. In April the resident medical officer left the town and the pharmacy had closed down during normal day time trading hours. An arrangement had been made for a Canberra doctor to visit the town twice a week. Many were also demolishing their homes and transporting them elsewhere. They were charged a deposit of £25 refundable on proof that the site was not left in an untidy condition. Ironically, the two issues uppermost in people's minds were similar to those 25 years ago; housing, employment and the state of the roads, the latter not to get people to the Flat but away from it. Reconstruction work was on some sections to be done on the cheap, the Council accepting lower standards than those usually adopted for modern traffic in order to minimise cost. But the good news in mid May was the announcement that the Federal Government was to contribute £50,000 to the road work. Allan Fraser, MHR, stated that the Prime Minister, Mr Menzies had taken 'a keen personal interest in the problem of Captain's Flat and its potentiality as a satellite of the National Capital'. He was very thankful for the efforts of the Shire President Mr Osborne and in particular the 'indomitable efforts of Councillor Tom Kerr'.¹²⁰

Local residents were very happy at the news of the federal grant. One correspondent waxing eloquent at the potential of Captain's Flat for pine forest plantations, brick manufacture, lime quarries, the exploitation of iron ore deposits and other minerals, trout fishing and tourism. With the road issue to an extent resolved, attention turned to the housing removals. A motion was put to the shire Council by Tom Kerr that all applications for removal be submitted and considered by the full Council. He stated that if the removal of homes went on unchecked there would 'simply be no Captain's Flat'. He was not so concerned about the houses on the mine property but rather those in the town. Most councillors were of the view that what individuals chose to do with their own homes was their own concern, but saw no harm in the motion. A private survey in August of Captain's Flat put the population at 832. Eight homes were listed for sale in the *Age* on 25 September. The highest price, for a five bedroom house, was £350. Some days later, Mr Tully, MLA for Goulburn, told State parliament that between 30 and 40 families had purchased homes at the town for about £300 each, and that 70 per cent of the work force had found work in Canberra. Some Canberra army workers had also bought homes in the town, thus avoiding the high rents and other costs associated with living in the city. He stated that there was not one vacant home, and took the opportunity to put in a plea for the introduction of a septic toilet system at the public school.¹²¹

Despite this optimism the reality was a little different. On 20 November it was announced that the hospital would close the following week, all attempts at finding a doctor having failed. The Hospitals Commission considered that the cost of maintaining the hospital, in view of the little use it was receiving,

¹¹⁹ *Queanbeyan Age* 13, 16, 20, 27 March, 3, 10 April 1962.

¹²⁰ *Queanbeyan Age*, 17 April, 8, 18 May 1962.

¹²¹ *Queanbeyan Age*, 18 May, 5, 19 June, 10 July, 28 August, 2 October 1962.

was too high. But finding a doctor was not the only problem, for three nurses had already left and the remaining three were scheduled to leave shortly. The cook and matron were also leaving. Concern was also expressed at the damage caused to culvert posts by contractors removing homes to Queanbeyan.¹²²

The final stage in the life of Captain's Flat as a mining town took place with the giant sale of the company's mine assets in early February 1963. More than 400 attended the sale on the first day, although the crowd thinned out on succeeding days. The auction was to last all week and was expected to realise between £100,000 and £150,000. Prices realised for the more expensive items had, however, been very disappointing. Scrap metal dealers were the most active buyers. Meanwhile it was not only the hospital that was in trouble but the ambulance service. A deputation of Ambulance Branch Service members from the Flat told a District meeting that the ambulance was being used as a taxi service for transport to doctors in Queanbeyan and Canberra and for physiotherapy and other treatment, and that there was a problem in collecting fees. The service was now running at a loss.¹²³

The fate of the mining town received close scrutiny from over the border in Canberra. In an article in the *Canberra Times* on 8 February 1963 it was stated that the town was facing the grim prospect of becoming a ghost town as the equipment went under the auctioneer's hammer that week. Less than 10 of the 30 odd shops in the main street still opened daily, and the following Saturday the town was to lose its only chemist. But there was hope, declared the *Times*. People with jobs in Canberra were taking advantage of cheap homes and moving back, and the population of the town had steadied at about 1,050 people. A director for the hospital board, Mr Dahlenburg, stated that Captain's Flat's future was as a 'kind of suburb of Canberra'.¹²⁴

Despite the decline in the town there was plenty of life left in some of the residents. A dispute between Tom Kerr and the Shire President, Mr P. Osborne, surfaced in late February and early March, when Kerr accused the Council of going slow on reconstruction of the road. He also accused the Council of collaborating with the company for the destruction of the town. Kerr had walked out of the Shire meeting when the council declined to increase the Captain's Flat Local Fund rate. Osborne strongly refuted these comments. A meeting of the Captain's Flat Progress Association passed a vote of confidence in Kerr. In March it was announced that an English doctor had accepted the position of resident medical officer. Although the hospital had been closed for some time it was still fully equipped and could be reopened and operating at short notice. This would also be the 'salvation for the ambulance'. The Shire Council also agreed to visit the Flat in April to get first hand knowledge of the town's problems. A special meeting was held with representatives of local organisation, who informed the Councillors that the two most urgent works were improvements to the water supply and the removal of silt from the river. It was

¹²² *Queanbeyan Age*, 20, 23 November, 11 December 1962.

¹²³ *Queanbeyan Age*, 5, 12 February 1963.

¹²⁴ *Canberra Times*, 8 February 1963.

feared that heavy rain could result in severe flooding of the centre of the town due to siltation at the rear of the park.¹²⁵

But these hopeful signs soon faded. The committee of the Queanbeyan District Ambulance Service announced on 13 May that the Captain's Flat ambulance would close down no later than 30 June for financial reasons. Several days later it was announced that the NSW's Hospital Commission had dismissed the entire hospital board and appointed an administrator. The new doctor, Dr Lunt, had arrived only a few days earlier. It had been confidently expected in the town that the Commission would approve the early re-opening of the hospital following the arrival of Dr Lunt. But two weeks later Dr Lunt had disappeared. He had seen no patients or opened a practice and there was some speculation whether he had acted on information he had received from the Hospital Commission. Meanwhile the demolition of homes in the town continued. One particular contractor was described at a Shire meeting as 'ruthless'. Not only was damage caused to roads and guide posts, but street trees had been lopped and some even removed.¹²⁶ The fate of the trees seemed to mirror the town's situation, as both houses and people continued to disappear. For many years to come Captain's Flat was to be in a steady process of decline.

Another institution to fade with time was the railway. The main purpose of the railway had been to serve the mine. Passengers were still carried however and a separate station and platform was built to cater for the town's needs as distinct from the mine traffic and freight. A rail motor took residents into Queanbeyan on Saturdays. The company made use of the railway for the removal of mine tailings until the end of June 1963 and in November 1964 steps were taken to close the line as the remaining goods traffic was negligible. In January 1964 the Monday rail motor connection with the down Cooma Mail which also connected with the down Canberra Monaro and the up morning train from Canberra to Goulburn ceased. The goods service was reduced to once a week from 12 April 1964. During 1966-67 there was only a small amount of traffic handled and the last train ran on 28 August 1968.¹²⁷

2.1.9 Regional Impact

The importance of a revived Captain's Flat in the 1930s was not lost on Braidwood residents, particularly the pastoralists and agriculturists. From the outset there was considerable agitation by the Tallaganda Shire for an upgrading of the Braidwood to Captain's Flat road which it was stated would be used 'to convey practically the whole of Captain Flat's fruit, vegetable, meat and primary produce when the mines began working. The road was described as 'nothing short of a nightmare'. Several days later the Minister for Works and Local Government, Mr Spooner, came in for considerable criticism from the *Braidwood Review*. It was stressed that not only foodstuffs but also timber for the mines and buildings was transported along the road. With work on the mine under way there was no excuse for further delay. At a meeting of the Tallaganda Shire Council in August the

¹²⁵ *Queanbeyan Age*, 29 January, 26 February 5, 19, 26 March, 16, 28 April 1963.

¹²⁶ *Queanbeyan Age*, 14, 17, 28 May, 18 June 1963.

¹²⁷ *Captain's Flat Mining Record*, 3 October 1981.

advisability of a three mile deviation of the existing Captain's Flat to Braidwood road through Major's Creek was debated. Councillor Hassall stated that the deviation would serve four important centres, namely Araluen, with its 'sub-tropical climate' which was capable of producing practically anything in the way of fruit, vegetable and fat stock, Reidsdale, which was famed everywhere for its butter and cheese, Jembaicumbene and the timber sawmill at Monga. Others disagreed with the deviation on a number of grounds including cost, but there was no doubting the importance of the Captain's Flat market, one councillor reminding the meeting of the role that the Flat had played as a market some 40 years ago.¹²⁸

The regional importance of the new mining venture within the region generally was evident from the outset. Work was to start on road improvements, with the majority of men drawn from the labour bureaux of Goulburn and other towns on the main railway line. The majority of the local unemployed were expected to find work on the Captain's Flat railway line, the bill for which had been passed in the NSW Parliament in December. Mr Vincent, the Minister for Mines, stated that the Captain's Flat lode was second only to Broken Hill and that the life of the mine would be 30 years. M.R. Gillespie penned a poem for the *Canberra Times* which expressed well the sentiments among many local and other more distant battlers at the time.¹²⁹

*O we've loaded up the waggon and we're off to Captain's Flat!
(The team's a hack and three old draughts, all pretty lean at that).*

For we've years of drought behind us, and dreams of wealth ahead - Dad says the farm's a failure, so he'll tackle tin or lead we've tied the chairs and table on, and Mum feels queer inside, (She hates to leave the old place 'cos she came here as a bride).

Dad, he's an old-time fossicker, and Jim can take his shift, While Kevin-well, poor Kev's a lad who'll always sort of drift...(You see a brumby threw him when he worked at Cuppawong).

And tho' his body grew quite big his head stayed kind o' young.) Mum wants to take her chickens, and Tib the old grey cat... Says things like that will make her feel at home, at Captain's Flat.

O we've camping gear and tucker 'cos the trek'll last for days, Across the old Molonglo...way where those last hills haze. For we've years of drought behind us, (Our stock don't run to fat!) So we've loaded up the waggon and we're off to Captain's Flat!¹³⁰

The regional impact of the towns' decline was rather different to the events of the early 1900s. Allan Fraser, MP, stated that attempts to persuade secondary industry to establish itself in the town had been unsuccessful, and his present aim was to enable the men, if they wished, to take part in the 'rushing development

¹²⁸ *Braidwood Dispatch*, 28 May, 31 May, 27 August 1937

¹²⁹ *Canberra Times*, 9 November 1937, 7 January 1938.

¹³⁰ *Queanbeyan Age*, 3 December 1937; *Canberra Times*, 18 December 1937.

of Canberra'. The population was then 55,000 and it was expected to be 100,000 eight years hence. Acute housing shortages in Canberra were a problem, and there was a very poor road from the town to Canberra, but he felt that this could be overcome. To be able to add 400 to the Canberra work force without any need to provide immediate housing would be a substantial boon. It would also mean a substantial saving in unemployment benefits.¹³¹ Thus the Flat's decline was to be a boon to Canberra, enabling construction work to proceed more rapidly. The provision of cheap housing in the Flat also helped relieve temporary housing shortages in Canberra, particularly for defence personnel.

2.1.10 Social Life, Sporting & Cultural Associations

The relationship between the mine and the town went much further than the provision of employment and housing and underpinned much of the town's social life as well. In her book *Boom to Bust - and Back Again*, Susan Pryke, states that it was the mining company that re-built Captain's Flat by providing much of the housing and other accommodation, water and electricity. When fire destroyed the Savoy picture theatre the company erected a new one. The company also donated a substantial amount of money to the building of the swimming pool built a golf course and club house, and donated funds to the bowling club. On the other hand the Shire approached the town with mixed feelings, and this was reflected by the fierce and bitter debates that took place between Council members on matters affecting the town. The Shire's responsibility for sanitation and roads was unlikely to generate much enthusiasm, and it took until 1956 for the major streets to be surfaced and for kerbing and guttering to be provided. The council also contributed to the swimming pool and built a children's play ground, tennis courts and a tree nursery.

Captain's Flat had a vibrant social and sporting life, even in the War years. A musical and dramatic club was established and in June 1944 a debating club was initiated. At the first concert for the former crowds lined the approaches to the hall and many were turned away, the hall 'being packed like the proverbial tin of sardines'. The hall was also packed for first meeting of the debating club in June. A children's health centre was opened in August. Arbor Day was celebrated in that year with the planting of fifty exotic trees on the school playground.¹³²

In 1956 wide interest was shown in the establishment of a youth centre in the town. The headmaster of the high school commented that the bad state of the Captain's Flat roads meant that the community was isolated and that youths in the 13-15 year age group were thrown on their own resources with the risk of juvenile delinquency. The police sergeant put something of a dampener on the proposal by stating that the incidence of delinquency was not particularly high. In January of the following year it was announced that a new cinema was to be built and paid for by the company. The theatre opened in August of that year with over 350 people attending the opening ceremony. The old Savoy theatre was to be used by town

¹³¹ *Queanbeyan Age*, 20, 27 June 1961.

¹³² *Queanbeyan Age*, 26 May, 20, 30 June, 18, 28 July, 11 August 1944

organisations as a dance hall and for youth purposes. In July the town was regaled by a visit of the Governor General, Sir William Slim. Almost the entire town turned out to watch a wreath laying ceremony at the War Memorial. The Governor General then went on to officially open the new RSL building before proceeding to the Lake George Mine and inspecting the surface workings.¹³³

Several writers have referred to the 'countless victories' of the rugby league team. It could boast the scalps of all other contenders in the local competition, which included teams from Queanbeyan and Canberra, and won several premierships. The Redmen, as they were called, won their first premiership in the Group 8 competition against Goulburn, although finishing the game with only eleven players. In 1952 the team won the grand final against the Causeway, successfully defending their premiership again the following year. In 1957 they beat Queanbeyan, the junior team also winning the Group 8 grand final as well. With the decline of the town the team could no longer compete in Group 8 and entered the Group 19 competition. They won in 1978 against the Canberra Camels and again in 1979 against the ANU. In the 1950s there were also Boy Scout and Girl Guide companies with a Brownies pack and Cubs. The churches were also well represented and included buildings for the Anglican, Methodist, Catholic and Presbyterian congregations. In addition to the RSL and Worker's clubs the Kerr family billiard hall was converted into a worker's club in the early 1950s.¹³⁴

3.0 Stakeholder Consultation

Whilst the fabric of the Lake George Mine and its environmental foot-print is well known and documented – having been the subject of a number of studies and investigations in recent years - little attention has been focused on the importance of the mine to the local Captains Flat community. The NSW Heritage Office raised this issue with the NSW Department of Primary Industries in a letter dated 26th September 2005:

The Heritage Office noted that the assessment of the Lake George Mine (at Captains Flat) provided insufficient evidence to conclude that the mine holds no heritage significance. This may be seen in a lack of consideration for strong of [sic] special association with the local community (criterion d – seen in the local community's attempts at interpreting the site).

A consultation approach was developed in consultation with DPI – Derelict Mines that focused upon:

- Allowing primary stakeholders (essentially landowners and the mines neighbors) significant opportunities to provide their views and be involved in the development of management options for the mine site;

¹³³ *Queanbeyan Age*, 29 June, 8 January, 26, 29 July, 13 August 1957.

¹³⁴ Susan Pryke, *Boom to Bust - and Back Again, Captain's Flat from 1883...*, Captain's Flat Residents & Ratepayers Association, Captain's Flat, 1996, pp.31-37; 66-74; *The Captain's Flat Mining Record*, 4 October 1980.

- Engaging groups or individuals active in the Captains Flat community; and
- Providing the wider Captains Flat community with an opportunity to express their views on the mine, its importance and its ongoing management.

3.1 Consultation Methodology

The stakeholder consultation strategy adopted for this project included:

- Canvassing and identification of stakeholders;
- Consultation with interested community organisations;
- direct contact with affected landholders;
- Site inspections with interested stakeholders;
- hosting a community “open house” forum; and
- written submissions from stakeholders.

3.1.1 *Canvassing & Identification of Stakeholders*

Scoping of the range of people and organisations with an interest in the Lake George Mine involved discussions with DPI - Derelict Mines to determine which groups, organisations or individuals had been consulted in the recent past. This discussion identified:

- the owners of the land that the mine is on;
- former employees of the Lake George Mining Company; and
- the Captains Flat Community Association.

3.1.2 *Consultation with Interested Community Organisations*

Alistair Grinbergs and Barry McGowan attended the Captains Flat Community Association (CFCA) meeting held on 22nd March 2006. The CFCA committee was provided with a briefing on the nature of the project and its aims and desired outcomes. Barry McGowan provided the committee with a briefing on the history component of the project.



Open House Forum. Photo – A Grinbergs 2006

A significant component of the discussions with the CFCA committee centered on the most effective way to engage stakeholders in the wider Captains Flat community. It was agreed that a community workshop would be a suitable way to achieve this and the CFCA representatives present advised that it would be possible for the CFCA to help promote the workshop and to raise community awareness of the project.

Issues raised by CFCA committee members included:

- much of the mine site is in private ownership and there were concerns about unauthorised public access;
- the surge bin and some associated features were on Palarang Shire land and public access was allowed although there were safety issues that needed to be considered;
- existing interpretation of the mine site near the mine entrance could be improved and it may be possible to

explore interpretation of other areas from the vantage point offered by the surge bin – as long as privacy concerns could be addressed.

3.1.3 *Direct Contact with Landholders*

A significant portion of the Lake George Mine site is on privately owned land contact with land holders was facilitated by DPI – Derelict Mines.

A meeting was held with Mara and Richard Herba who own the bulk of land that has remnant mining fabric. Richard and Mara live in an original the Lake George Mine office and assay laboratory. A tour of the site was provided by Mara Herba who pointed out issues that she felt needed to be addressed in the management plan for the site. These included the need to:

- Install appropriate fencing of the boundary between the Herba's property and land owned by Palarang Shire to restrict access by visitors to the mine entrance area;
- Provide appropriate screening to afford privacy from a number of publicly accessible vantage points on Palarang Shire land – in particular the area around the surge bin;
- Clean up and remove damaged and dangerous fabric elements (predominantly twisted and rusting metal); and
- Rehabilitate and landscape degraded areas that had been contaminated during the mines operation and that were continuing to erode and leach contaminants.

3.1.4 *Site Inspections with Interested Stakeholders*

An inspection of the Lake George Mine site in the company of Scott Brooks (DPI – Derelict Mines), Brian Dumbrell, Ken Winchester (both former employees of the mine), Sean Rossiter Captains Flat / DPI community liaison representative and the project team was held on the 14th December 2005. The site visit allowed the project team to:

- Gain an understanding of the management issues faced by DPI – Derelict Mines with respect to site contamination, stabilisation, management of surface and sub-surface water as well as consideration of heritage issues; and
- Obtain detailed primary information on the nature of the remnant fabric at the mine site as well as the mining and processing of ore from Brian Dumbrell and Ken Winchester who were employed by the Lake George Mining Company.

3.1.5 *Hosting a Community "Open House" Forum*

Captains flat has a population of approximately 420 people. The Lake George Mine is directly linked the history of the town's development and it is a dominant physical feature even 45 years after the closure of the mine. Providing the wider Captains Flat community with the opportunity to express their views on the mine and its future management was considered an essential aspect of the development of this management plan.

Through consultation with DPI – Derelict Mines and the Captains Flat Community Association it was agreed that an "Open House" forum would be the most effective way to reach interested members of the Captains Flat community.

The “Open House” model and designed to ensure information exchange and a maximum level of participation from attendees (see information box – below).

The ‘Open House’ Forum

The ‘Open House’ is designed to avoid the common pitfalls of a traditional public meeting. You know the story – sitting on a hard seat in a cold, uncomfortable hall, late in the evening, listening to a series of (sometimes) boring speakers when you would rather be somewhere else. Often, the most beneficial aspect of a public meeting is the cup of tea afterwards, when information is shared in a relaxed manner.

The ‘Open House’ meeting is really about extending the ‘cup of tea’. Within the nominated timeframe, you can call in to discuss the proposed plan of management when, for as long as and with whom you like.

Participants are met at the door by members of the project team who explain the range of information and contribution activities on offer.

Commonly an “Open House” forum will consist of up to five ‘stations’ or activity centres. Participants choose which ‘station’ they wish to visit (none, one or all). They are:

GRAFITTI WALL – Participants can write their thoughts up on the wall in response to the posted questions.

MAPPING AREA – Participants can identify areas of interest on maps or site plans.

GROUP THINK TANK - a small group session discussing key management issues. These are run at a pre-scheduled time at each workshop.

CUP OF TEA - have a cup of tea and chat with the project team.

The objectives of the “Open House” forum were to:

- inform the interested members of the community of the study and why it is being undertaken; and
- provide an opportunity for attendees to identify key issues associated with the history and heritage significance of the Lake George Mine that are important to them and to explore strategies and actions for the future management of these values.

The Captains Flat community was advised of the “Open House” workshop via an information flyer that was delivered to every household in Captains Flat¹³⁵.

The forum was held between 9.00am and 12.00pm on Saturday 22nd April 2006 at the Captains Flat Community Hall. Eleven people participated in the forum.

The following issues were raised and discussed by participants:

- Safety hazards within the abandoned mine precinct;

¹³⁵ The information flyer on the “Open House” forum was distributed via an arrangement with the Captains Flat Early Childhood Centre. The flyer may not have been delivered to properties where “No Junk Mail”, “No Advertising Material” or “Addressed Items Only” notices were displayed on the letter box.

- The general decline of heritage values within the mine area and the town;
- The aesthetically un-attractive nature of the post industrial landscape of the abandoned mine;
- The majority of the people who worked at the Lake George Mine have left Captains Flat and contemporary community interest in preserving the mine infrastructure is limited;
- The possibility of re-opening parts of the mine for tourism;
- Issues surrounding the possible removal of the surge bin which is visible from the town; and
- The impacts of existing or increased public access to the Lake George Mine site upon adjoining landholders.

Some comments from participants on what should happen at the Lake George Mine site include:

Keep the landscape of the mine and get rid of the infrastructure as long as we preserve and interpret the stories and information about the mine.

Rehabilitate the mine landscape with trees.

Don't promote tourism to the mine while there are private property and safety issues

Interpret and promote the mine as part of a regional mining tourist route

Develop a walking track along the old railway line

Conclusions from the workshop include:

1. The majority of participants were well informed in relation to the history of the mine and the management issues associated with it – they understood that it is not practical or responsible to open many areas of the mine site for visitors.
2. Many participants expressed the view that it was important to collect and interpret the cultural heritage of the mine and that in the longer term this would require community initiative to achieve.

There was a small turn out for the workshop however this does not necessarily reflect community interest in the mine. It could be that it was an inconvenient time for people to meet or that people were uncomfortable with a workshop setting.

Following the "Open House" forum a brief inspection of the main mine site was conducted with interested community members.

Community stakeholder concerns in relation to the Lake George Mine are essentially focused on the need to:

1. Protect the interests of property holders;
2. Make the site safe for landholders, neighbors and visitors;
3. Record its significant elements before they deteriorate or have to be removed for safety reasons; and
4. Explore the potential role of the Lake George Mine site in local tourism.

3.1.6 Written Submissions from Stakeholders

Two written submissions were received in relation to the development of the heritage management plan:

- Claudia Koelndofer; and
- Richard & Mara Herba

Claudia Koelndofer's submission was made on the day of the "Open House" forum (22nd April 2006):

I moved to Captains Flat in May 2005. I find the mine a very interesting historical site. I often walk along the tracks around the mine and have invited friends to visit the site. The lookout and information plaques are very informative. I would like to see the mine become heritage listed and I would like to see Captains Flat Mine [sic] become a historical tourist spot.

The Herba's also provided a written submission dated 5th May 2006 in relation to the poppet head and surge bin:

The report dated 10 June 2004 by URS Australia Pty Ltd to the Department of Mineral Resources clearly states the following:

"The preferred option for the surge bin is to remove all the timber and steel elements of the structure; these are in varying stages of decay, and will eventually disintegrate to the extent that they collapse. In fact, it is quite possible that the residual ore within the bin is providing some support to the steel and timber, and that its removal will either initiate or accelerate the eventual collapse."

This conclusion is supported by ourselves, given the evidence of deterioration to the structure since 1963 – witnessed by ourselves through inspections by walking up to and around the area at regular intervals.

We strongly believe that it is only a matter of time before the structure collapses and becomes another pile of rubbish waiting for disposal. We would prefer it to be dismantled totally in a safe and timely manner – before it collapses – causing actual or perceived injuries.

Any heritage aspects of this structure should be recorded through film and other media as soon as there will nothing left to record. In actual fact, many such records have already been made and filed at various locations.

Mara and Richard Herba also attended and participated in the "Open House" forum and site inspection that followed.

4.0 Site Descriptions

The Captain's Flat mining area is large and diffuse. Some elements of it have been subject to extensive land rehabilitation and reclamation work and in most instances there is little in the way of infrastructure such as machinery or buildings left. However, the foundations and walls of many structures remain, and enough is left of the mine and processing plant to allow for meaningful interpretation. We have identified six basic clusters of items at Captain's Flat:

- 1890s smelter site, slag and slime dump-southern;
- Other 1890s sites, Forster's Gully and Keating's Collapse;

- 1930s-60s mining and processing sites-south;
- 1930s-60s processing site-north;
- Residential sites; and
- Railway precinct-mining.

The site descriptions are numbered and set out in the text from south to north, beginning with the 1890s smelter site and Foster's Gully area. Comments upon safety and environmental aspects are included.

4.1 1890s Smelter Site, Slag & Slime Dump - Southern

The southern slime and slag dumps and 1890s smelter site have been subject to extensive mine rehabilitation work and there is no building infrastructure left. However, the site is a large and prominent one, overlooking the town dam and the town at its southern end. Despite the lack of infrastructure the contours from the rehabilitation work give some indication of the scale of mining operations during the pre 1900 and post 1937 periods, and the extent of the conservation work, which is ongoing. The hill is very much part of the aesthetic landscape of the town.

4.2 Other 1890s Sites, Forster's Gully & Keating's Collapse

4.2.1 Forster's Gully

This gully runs into the Molonglo River below the slag heap and was the site of some of the early gold mining activities at Captain's Flat in the 1880s. The leases were owned by Grant, Grant and Dunshea and Emmerson and party. Emmerson's leases adjoined Blatchford's to the north. There were several dams in the gully. The alignment of the creek has been changed considerably to allow for the construction of a concrete drain as an erosion prevention device. Keating's Collapse 1942/45 is located on the north side of the creek and is adequately fenced off. Some remnants of the collapsed railway bridge trestles are located on the embankment south of the creek

4.2.2 Keating's Collapse 1961, Ventilation Shaft & Commodore Machine Site

Keating's collapse 1961 is located on the south side of the creek. It now forms a deep and dangerous pit with precipitous and unfenced sides. A deep and uncovered ventilation shaft is located immediately above the collapse. In their present condition the shaft and collapse are extremely unsafe. A 10m x 15m cutting is located about 5m above the shaft. It was probably the site for some of the machine sheds for the Commodore mine. The west side of the cutting overlooks Keating's Collapse. The east and south sides are cut into the hill. Remains include a scatter of fire bricks and the possible remains of an old smoke stack.

4.2.3 Railway Track

Another significant feature from the 1890s operations is the track constructed for the railway line, which was used to transport ore from the vicinity of the main shaft to the smelters.



Southern slag dump – 1890s smelter site. Photo – Barry McGowan 2006



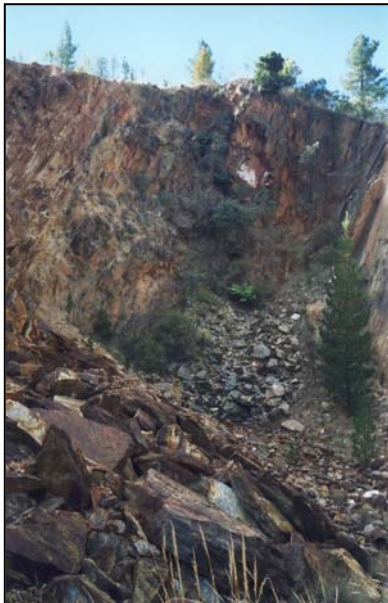
1890s Railway embankment. Photo – Barry McGowan 2006



Forster's Gully. Photo – Barry McGowan 2006



Old Road and Bridge. Photo – Barry McGowan 2006



Keating's Collapse 1941-2. Photo – Barry McGowan 2006



Trestle remains – Forster's Gully. Photo – Barry McGowan 2006



Keating's Collapse 1961. Photo – Barry McGowan 2006

The track for the line was cut into the side of the hill and is distinctly visible from the southern part of the valley floor. It is from 3-5m wide and in some parts an embankment and posts remain. For most of its length it is a relatively easy walk, although there are a few pot-holes, and the lack of railing along the sides of the track and at its terminus overlooking Forster's Gully pose a safety risk. In one small section the track has been destroyed by the actions of 4WD drivers.

4.2.4 Old Road & Bridge

The remains of the old road and bridge are located immediately below the old rail track and to the west of the present road and the uncovered (non-rehabilitated) remains of the slag dump and northern part of Forster's Gully. The old road runs almost parallel to the present road and the gully and provides a unique perspective on the gully and the slag dump. It is well supported by dry stone walling. The bridge is supported by brick embankments on either side of the gully. These are in good order. However, the bridge is in very poor condition and is unsafe. Much of it has collapsed. The slag dump is a pollution hazard.

4.3 Mining & Processing Sites - South

4.3.1 Powder Magazines

Two concrete built magazines are located along a track which passes through the area of staff housing and amenities to the south of the processing plant mine. Two of these houses are now private residences. One magazine measures 10m x 6m and is built into the side of a hill. There are three compartments and two steel doors. The second magazine is located about 60m further south along the track. It is smaller, measuring about 4m x 6m, consists of one compartment, and is not built into the side of the hill. Both structures are in very good condition.

4.3.2 Surge Bin

The surge bin is possibly the most iconic of all the mining and processing sites. It sits atop a large hill overlooking the town at its southern end, and is visible from almost all directions. It is circular in shape and constructed primarily of riveted iron plates in three sections. The walls are largely intact, although some sections are corroded and weather worn and could be regarded as unsafe. A large pile of ore is located inside the bin. Above the riveted sections the bin is constructed of wooden boards. A concrete and wooden structure is located inside the bin against its north east side. This would appear to be part of a wooden bay or chute, which protrudes externally where it is supported by several upright wooden beams. It appears to be intact and in good condition. The ore in the bin covers part of this structure.

4.3.3 Infrastructure Adjoining the Surge Bin

Almost all of this fabric consists of concrete slabs and concrete walls. It is important, however, as it relates to the operation of the mine and the first stage of the ore processing. Immediately adjoining the surge bin on its northern side is a concrete slab which covers the main shaft. The mine poppet head was set over the slab and surge bin. Adjoining the slab on its north side



Mine Adit. Photo – Barry McGowan 2006



Storage Bins and Ball Mill. Photo – Barry McGowan 2006



Flotation Mill. Photo – Barry McGowan 2006



Dorr Thickeners (northern site). Photo – Barry McGowan 2006



Change Rooms and Equipment Store. Photo – Barry McGowan 2006



Screens (northern site). Photo – Barry McGowan 2006



Commodore Machinery Site. Photo – Barry McGowan 2006



Gantry & Railway Store. Photo – Barry McGowan 2006



Powder Magazine. Photo – Barry McGowan 2006



Rail Turntable. Photo – Barry McGowan 2006



Staff housing. Photo – Barry McGowan 2006



Weigh Station & Loading Ramp. Photo – Barry McGowan 2006

is another large concrete slab, and some concrete buttresses, which would have been the site for the winding and pumping machinery. A cellar or storeroom is located under the north-west corner, and in front of this is some dry stone walling.

Beneath the surge bin on its western side is a large hopper which deposited ore into the jaw crusher, which was located below. The preliminary crushing of the ore took place in the jaw crusher. This site consists of two tall concrete walls, which enclosed the jaw crusher, a deep concrete pit, and a concrete room, which adjoins the southern wall on the outside. High concrete walls and foundations adjoin the northern wall of the jaw crusher. A separate area of high concrete walls is located downhill and to the west of the jaw crusher, towards the storage bins. Immediately above this structure and 50m south of the jaw crusher a track leads to a large circular concrete water tank. Above and to the south of the surge bin a track leads 65 m to three galvanised water tanks. This track continues on to Keating's Collapse 1942/45.

4.3.4 Stairs, Mine Entrance, Change Rooms & Workshop Area

A series of wood and stone built stairs led from the valley floor to what is now the car park, which is located below the mine entrance. The stairs are visible but in poor condition. The car park area was once the site of the employment and paymaster's offices. A concrete staircase leads to the change room workshop area and the mine entrance. It is now used by visitors to the viewing platform. Above the staircase there are three areas of concrete floors. The west section was the site for the electrical, carpenter's and possibly plumbing and fitter's workshops. Small concrete blocks and some wall remains are located to the south of this area. The scout hall is an 'import'.

Another area of concrete floors adjoins the visitor's walkway to the viewing platform, to the east of the staircase. This was the time office, battery room (for the helmets), change, shower, toilet and locker rooms. To the west of this area is another concrete staircase. West of the staircase is the mine entrance, which was uncovered during recent excavation work. The entrance has been sealed off with bricks. Above the adit is a concrete beam engraved with the words, Lake George Mines 1937. The entrance is visible from the walkway. As an iconic structure it now rivals the surge bin.

4.3.5 Storage Bins, Sulphur Plant & Ball Mills

The storage bins constitute another iconic part of the mining fabric. They have been recently subject to rehabilitation work to prevent further site contamination. This has included the repair of broken concrete walls, the sealing of the base of the bins and deposition of waste material in the bins with sealing on the top. Although the bins are not visible from the valley floor they are very visible from the surge bin and the road near the mill. The concrete walls and foundations of the sulphur plant are located about 30 m south of the storage bins. It was used to produce sulphur and sulphuric acid, which was used as a reagent in the flotation mill. The walls and foundations of the plant are in very good condition. The ball mills were located immediately in front of the storage bins. Only a part of the mill foundations are left. Crushed ore was transported by conveyor belt from the bins to

the mills, where it was further reduced, before conveyance to the Dorr thickeners.

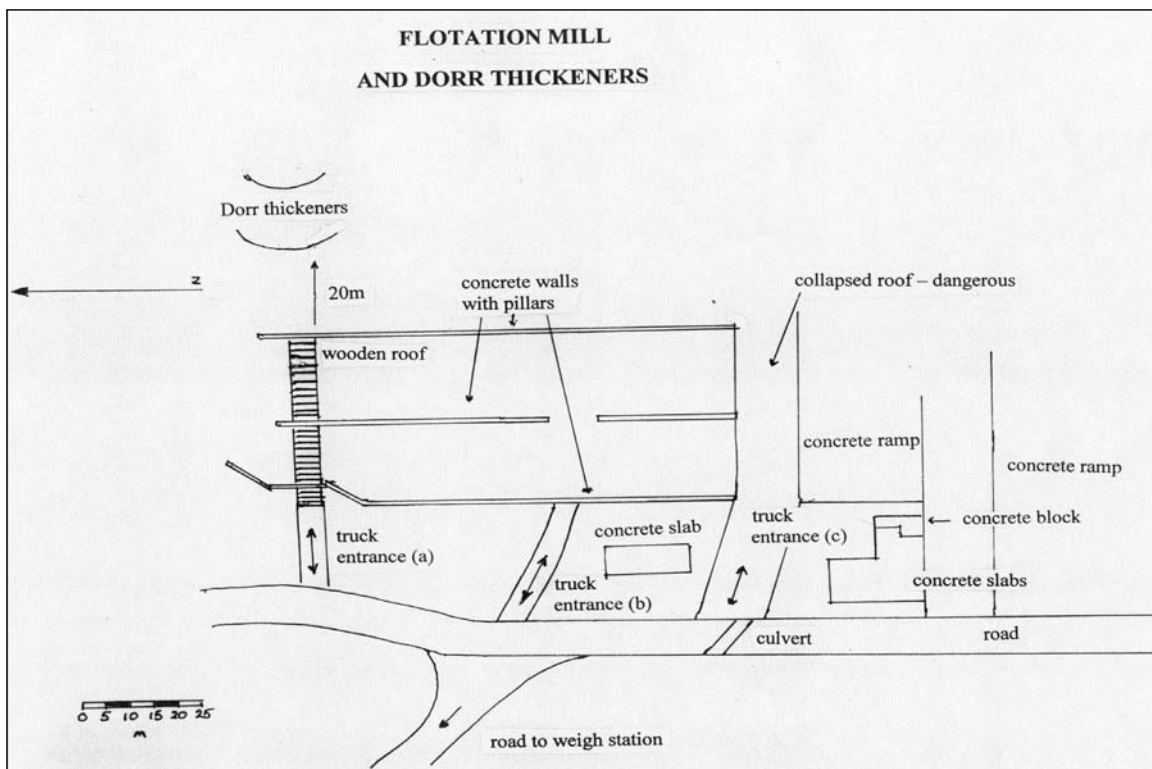
4.3.6 *Dorr Thickeners*

Two Dorr thickeners are located immediately below the ball mill site and about 20m east of the flotation plant, between the plant and the ball mills. The walls and floor of one of the thickeners are still largely intact although part of a wall is broken; the other thickener is full of contaminated material and silt. The thickeners converted the finely ground ore from the ball mills to a liquid slurry which was then conveyed to the flotation mill. Up until very recently the area was heavily degraded and in urgent need of a cleanup of toxic waste, broken concrete and metal.

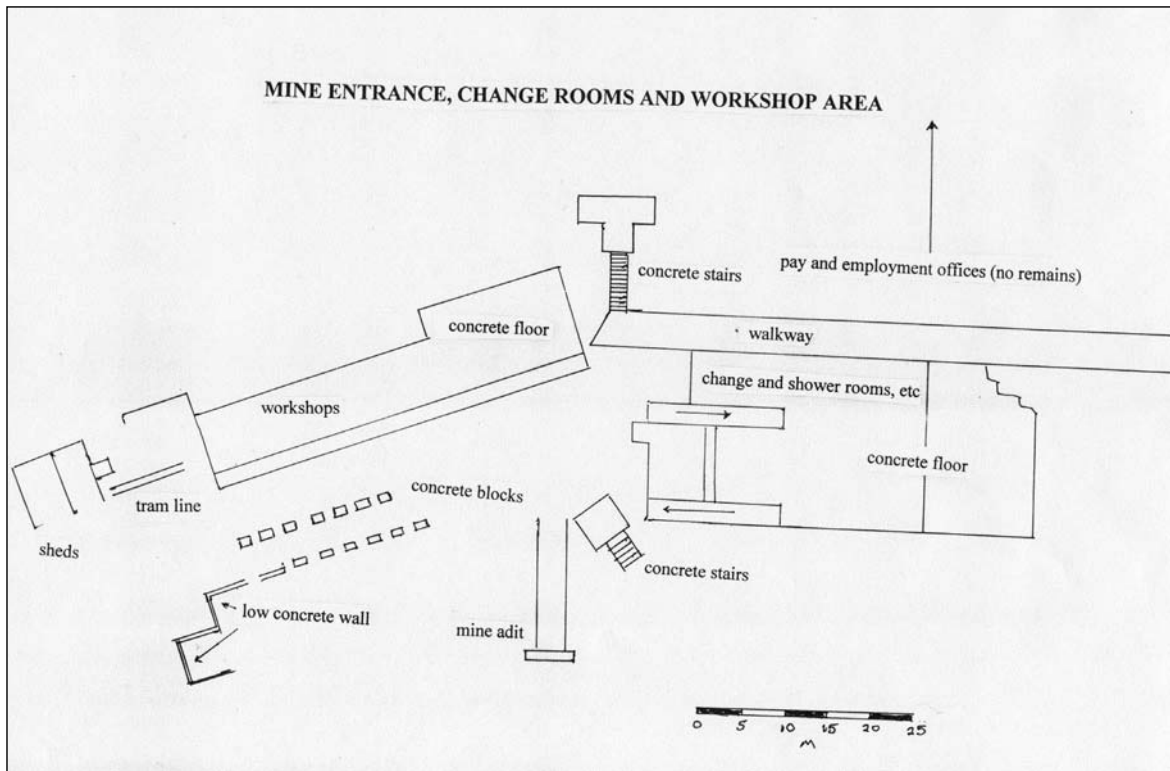
4.3.7 *Flotation Mill*

This was the main processing area where the various minerals were separated one from the other by the flotation process. It consists primarily of a large area of concrete floor, in the middle and on either side of which are the remains of the concrete walls and pillars. Concrete ramps leading into the plant are located at the northern and southern ends. There are three tunnels under the floor of the plant. The tunnels were used by road trucks which took the metal concentrates (the product of the flotation process) to the weigh station for transport by rail.

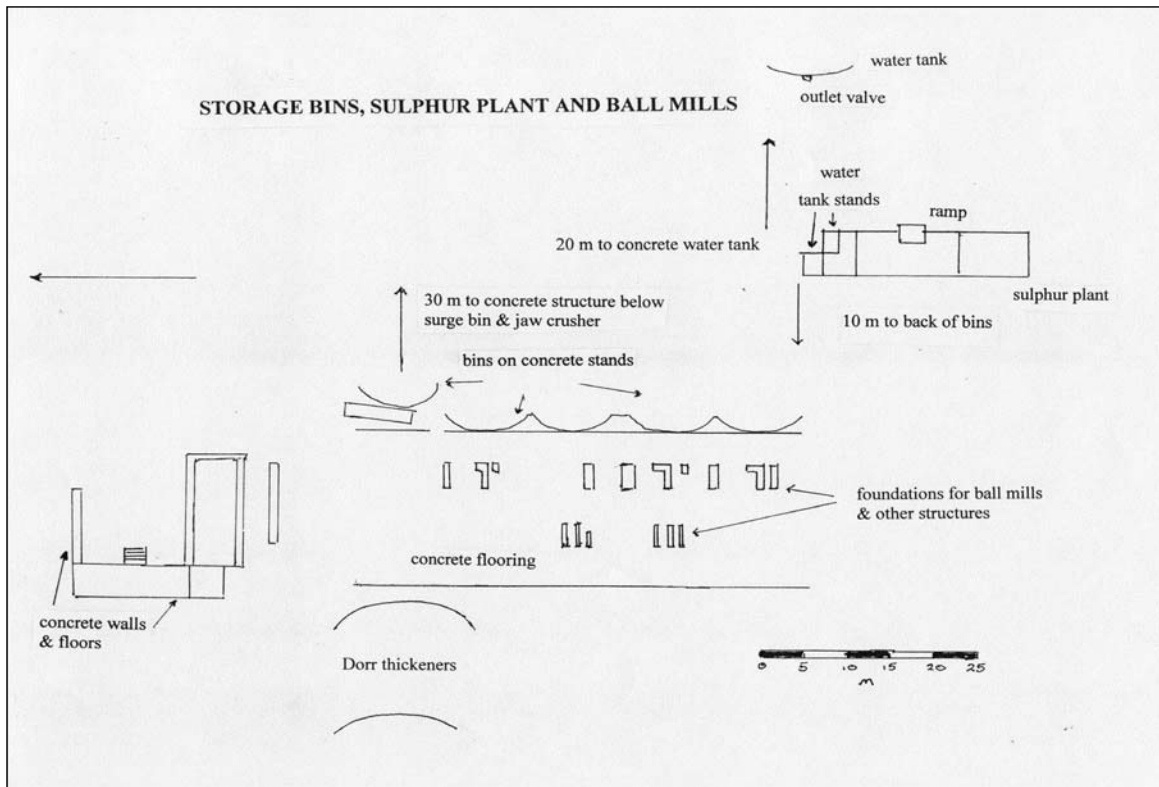
Two of the tunnels ((a) and (b)) remain, although they are littered with debris and rubble, and in urgent need of a cleanup. Tunnel (a) has a wooden roof, which is still largely intact, although part of it has collapsed. A third tunnel (c) is located on the southern end of the plant. It has totally collapsed and is in a very dangerous condition. Concrete slabs and building foundations are located to the west of the plant and north and south of the driveway to tunnel (c). The southern most set of foundations/blocks adjoins a concrete ramp, which in turn adjoins the concrete ramp leading into the plant. A sealed/concrete roadway is located to the west of the plant. Another road leads to the weigh station. A road culvert is located near the entrance to tunnel (c).



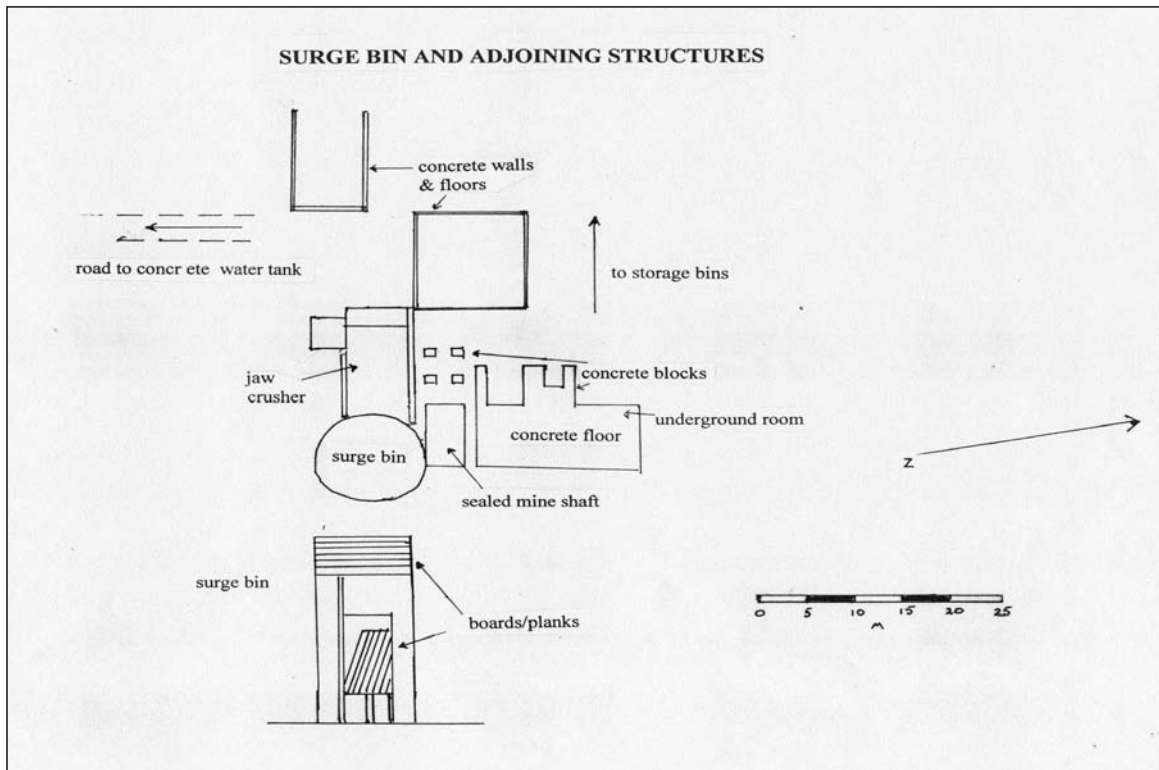
Flotation Mill & Dorr Thickeners. Site plan prepared by Barry McGowan.



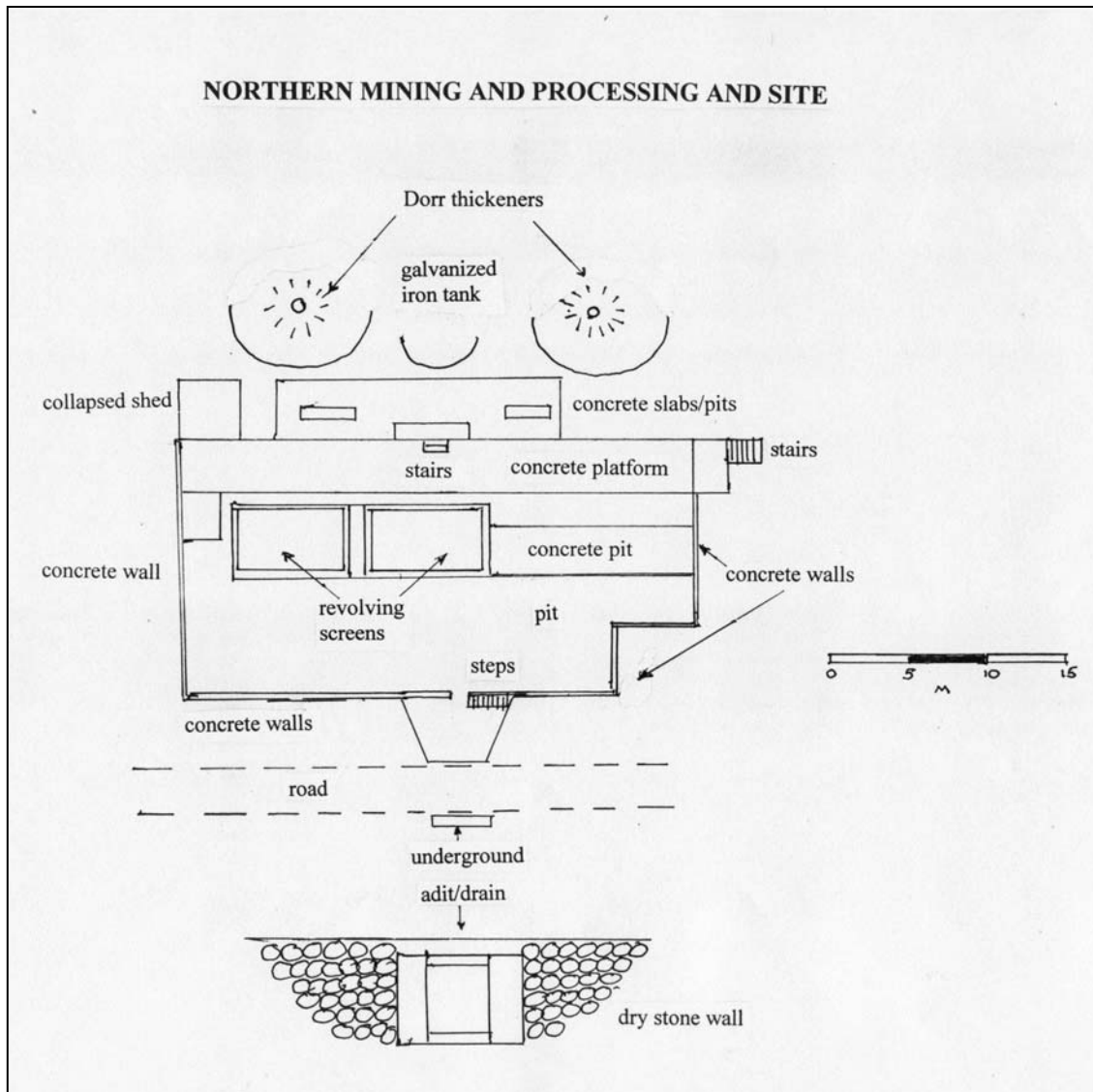
Mine Entrance, Change Rooms & Workshop Area. Site plan prepared by Barry McGowan.



Storage Bins, Sulphur Plan & Ball Mills. Site plan prepared by Barry McGowan.



Surge Bin & Adjoining Structures. Site plan prepared by Barry McGowan.



Northern Mining & Processing Site: Kohinoor & Elliots, Slime Dumps & Tailings Dams. Site plan prepared by Barry McGowan

4.4 Northern Mining & Processing Site (Kohinoor & Elliots), Slime Dumps & Tailings Dams

This site is located at the top of a hill to the north of the main mine site and immediately adjacent to the now rehabilitated remains of the slime dumps and dams. The main part of the structure consists of a large area of concrete foundations and pits designed primarily to house two large revolving screens for separation of the ore. A concrete faced underground entrance or drain is located under the road about 5m west of the foundations and pits. At this point the road is reinforced with dry stone walling either side of the entrance.

Steps lead up to the screen housing from the southern part of the structure. Further steps leading to a smaller area of concrete pits and a possible shed site are located on the east side of the main screen area. Two concrete Dorr thickeners (about 60m in circumference) and a galvanized water tank are

located several metres further east. It is likely that this site was used for the reprocessing of tailings in the 1930-60s period. The residue from the tailings was conveyed directly to the slime dams. Photographic evidence suggests that the old Kohinoor smelters were located downhill and on the southern slope of the hill, and facing the surge bin and poppet head area. There is a cutting into the hill in this area, but no other remnants.

A four-tiered area of stone and concrete walled embankments, concrete footings and blocks is located about 45m south west of the underground entrance or drain referred to above. This site has all the appearances of a gold stamper site and may date back to the 1880s. Stamper sites were normally located downhill from the main mine site to allow for gravity feed of ore.

4.5 Residential Sites

4.5.1 Staff House Sites

While not part of the mining complex these sites are an important part of the social fabric of the mine. They were the house sites for key mine personnel (the various managers). The area is now a pine plantation, although the trees have not encroached on the structures. Enough remains of the foundations and other structures to get some idea of the size of these dwellings, which were large and built into the slope of the hill. Three of them overlooked the flotation plant site. Building (a) measures about 16m x 8m and comprises largely intact concrete walls, which were the foundations for the building, and concrete pillars for supporting the floor. A cellar is located on the exterior of the eastern wall, with entrances on the southern and western sides. To the north of the cellar is an area of concrete slabs, which was probably a verandah. The concrete foundations for a toilet/bath block are located on the interior of the west wall of the foundations, and a fire place was located near the southern wall. Some brick foundations remain. A wooden retaining wall with wooden steps is located to the west of the building foundations. This leads to a large flat area, part of which was the driveway and garage for a motor vehicle.

Site (b) is very similar to site (a). The building is about the same size, and the toilet/bath block, chimney area and cellar are in the same location. Concrete steps adjoin the northern wall. To the north west of the foundations is a concrete retaining wall which supports a large flat area, probably the site for a garage. The cellar does not have an outside window/door; a window /door is located on the north side of the foundations. Site (c) is different in dimension to (a) and (b), for it does not have any elaborate concrete foundations. On its west side the building was set into an embankment. A retaining wall has been built on this slope. There appears to have been three fireplaces in the building.

Site (d) is located well to the west of the other buildings and faced Copper Creek to the north west. This was a prime location, out of sight and sound of all the mine workings and the processing plant. The site measures broadly 12m x 20m, and included an adjoining or possibly separate building. The site was built into the side of the hill. Remains of low concrete walls are located on the north west side of the main building. Elsewhere there are several broken and unbroken concrete slabs, piles of broken concrete and bricks and concrete and stone and mortar footings for walls. A road passes along the

north west side of the building. About 8 m along the road there is a low concrete wall, which was probably the retaining wall for a garden, and about 15 m further on the road terminates in a flat concrete slab, which would have been the floor for a motor garage.

4.6 Railway Precinct - Mining

4.6.1 Weigh Station

This is another prominent and iconic part of the mining fabric. The concrete road leads up a ramp built on concrete trestles with wooden trusses to a large shed, also built on trestles and constructed over the weigh station shed and the railway line. The shed walls and roof are constructed of galvanised iron and the floor is built of timber planks and logs. In the middle of the floor are two metal hopper bins, through which concentrates were deposited direct into the railway trucks. The weigh station is constructed of galvanised iron and includes a weighing machine. A voice pipe for sending messages from the upper shed floor to the weigh station is also intact. This is an important site and is in a good condition, but there is a certain level of toxicity from the remnants of concentrates that were accidentally deposited from the hoppers in and around the weigh station. Some of the ground near the station is steep and eroded and may pose a safety risk.

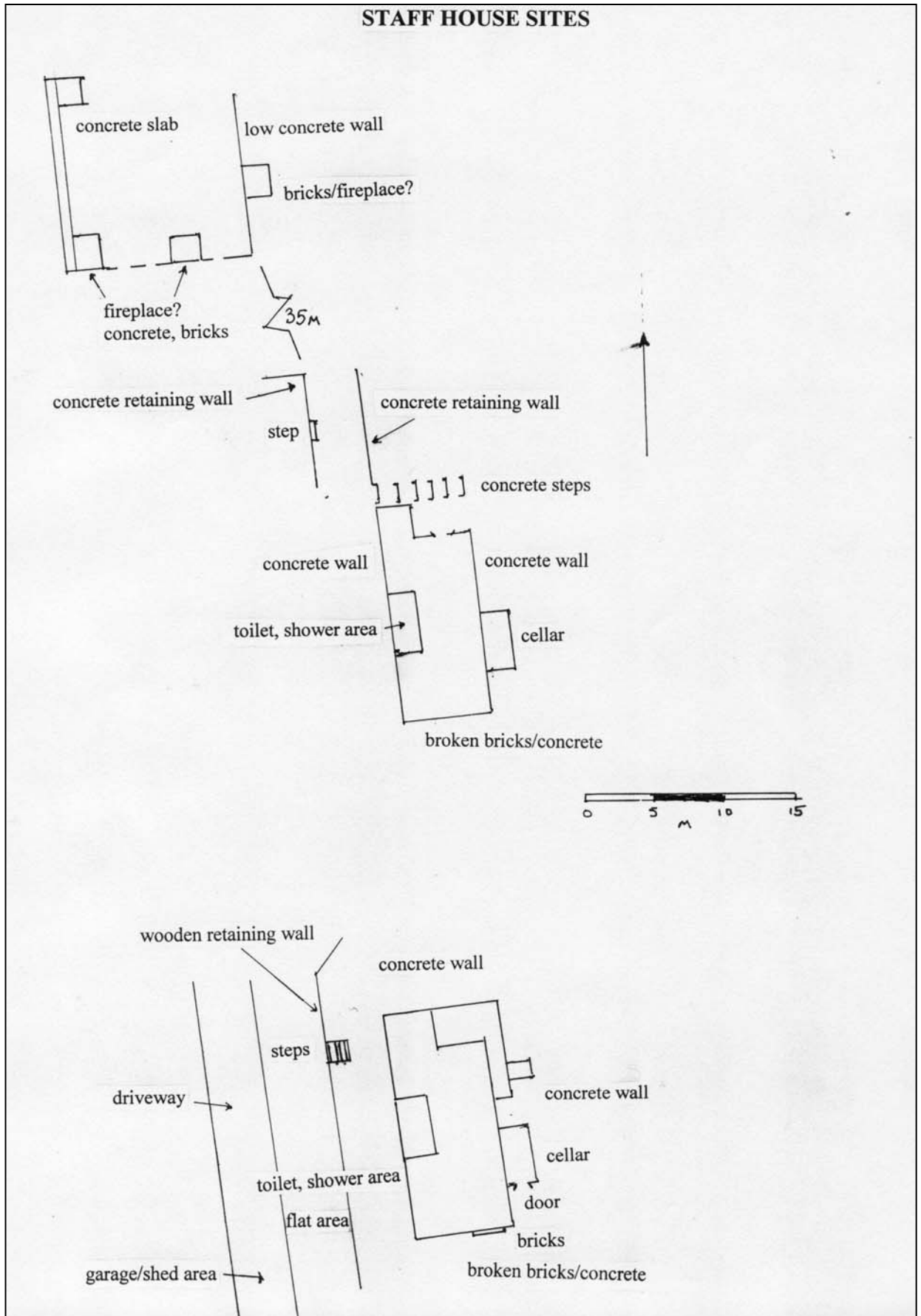
4.6.2 Railway Lines, Gantry & Railway Platform

There are three railway lines in the area near the turntable and the railway platform. The gantry is located 27 m south east of the weigh station, and is constructed of metal and built on concrete blocks. It is in very good condition. The platform is located about 86 m east of the gantry and is in very good condition. All three railway lines continue for a further 30 m and terminate at a rock face.

4.6.3 Turntable

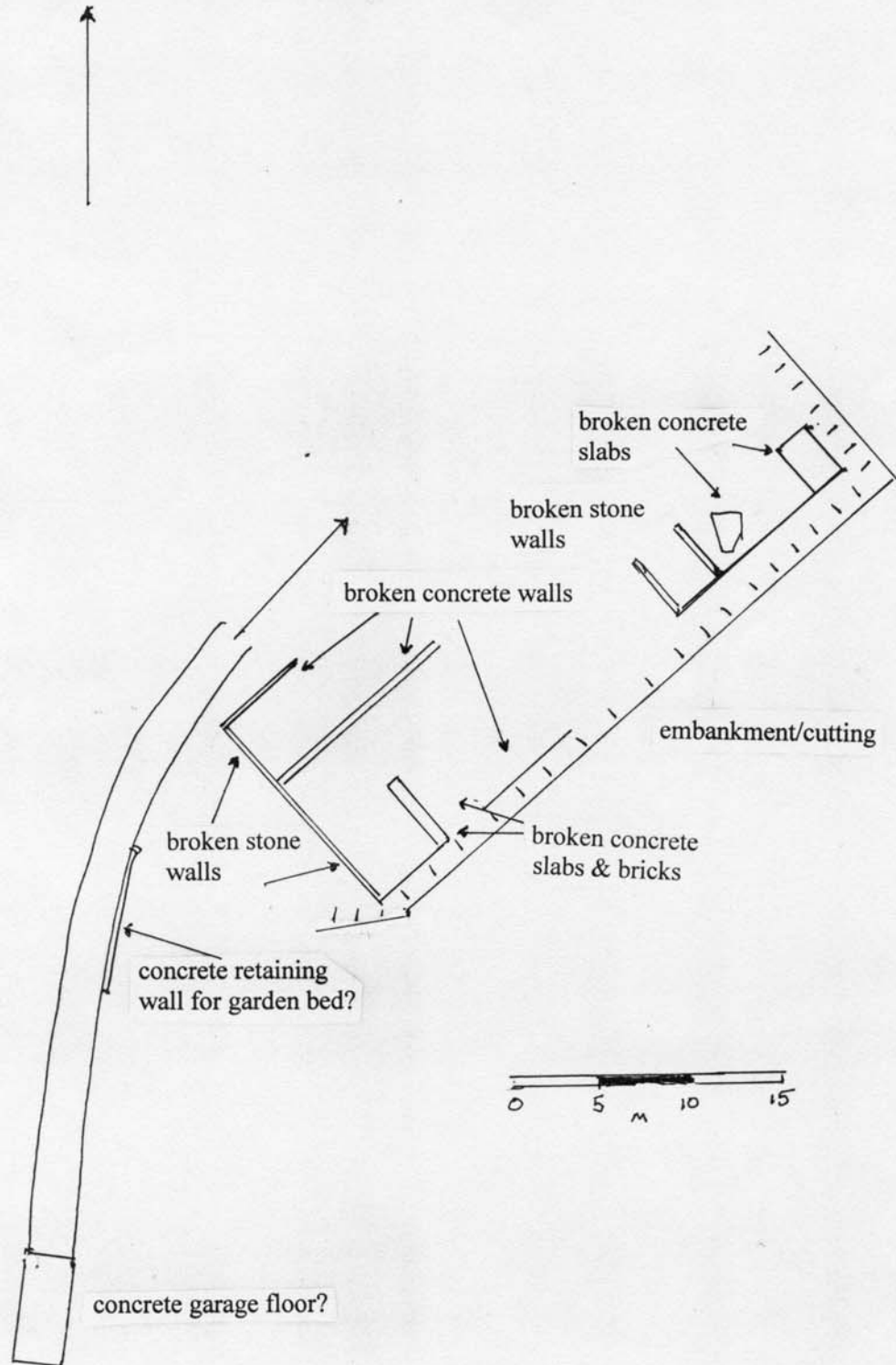
The rail line diversion to the turntable is located about 270 m west of the weigh station. At this point a separate rail line diverges from the most southerly of the three rail lines and runs in a south east direction for about 50 m, before passing over a

STAFF HOUSE SITES

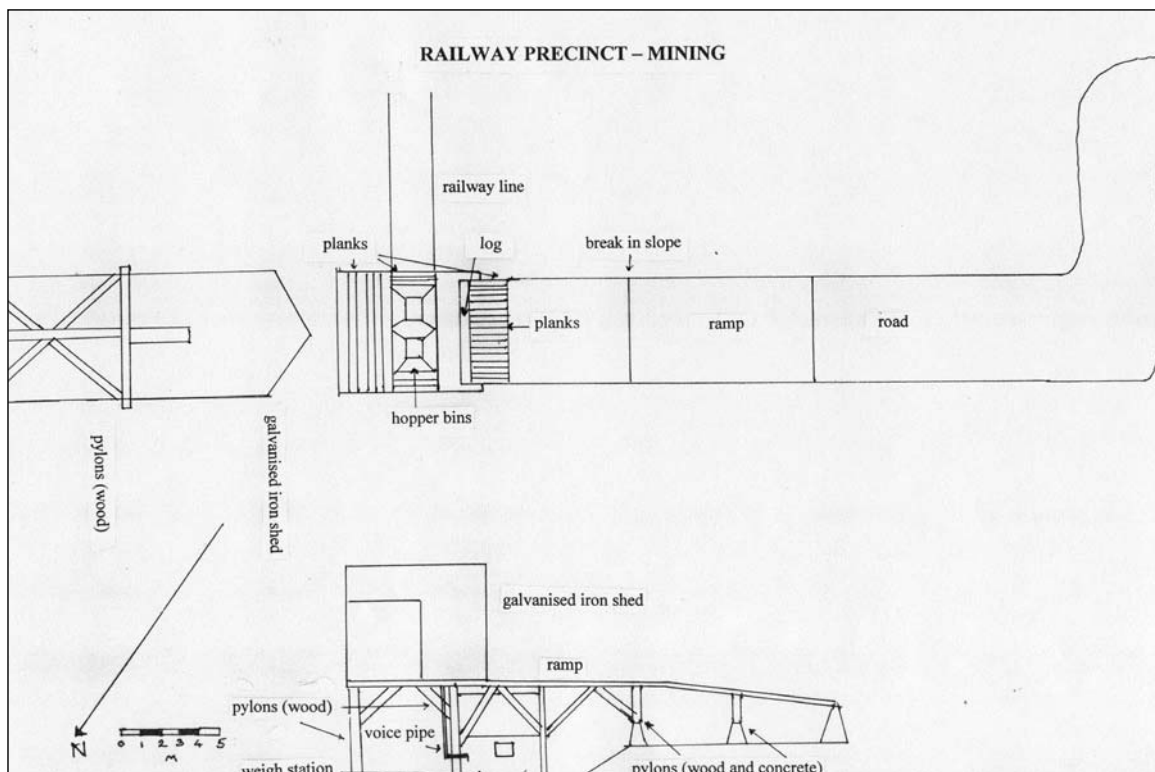


Staff House Sites. Site plan prepared by Barry McGowan

STAFF HOUSE SITE - WEST



Staff House Sites (West). Site plan prepared by Barry McGowan



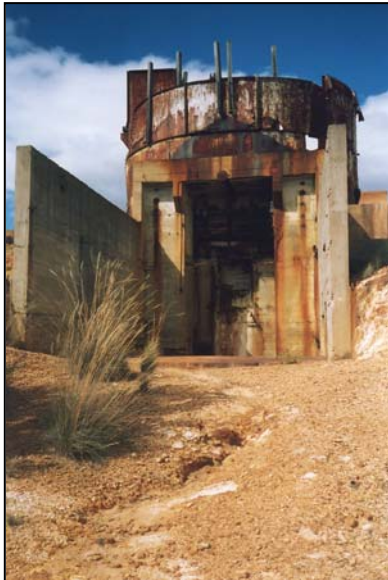
Railway Precinct: weigh station and loading ramp. Plan prepared by Barry McGowan.



Waste Drain – Northern Site. Photo – Barry McGowan 2006



Surge Bin & Associated Structures. Photo – Barry McGowan 2006



Surge Bin & Jaw Crusher. Photo – Barry McGowan 2006



Surge Bin. Photo – Barry McGowan 2006



Store Room Below Surge Bin. Photo – Barry McGowan 2006



Railway Complex. Photo – Barry McGowan 2006

deep concrete pit about 20 m long. Some small concrete blocks and a floor area are located on the south side of the line. The turntable is located about 6 m south east of the pit. It is built on concrete pylons and constructed of wood and metal, and is about 30 m long. The visible part of the turntable is in very good condition, however much of the rest is hidden by brambles and its condition is difficult to determine.

5.0 Existing Heritage Listings

The Lake George Mine is not currently listed on any of the following recognised heritage registers:

- National Heritage List;
- Commonwealth Heritage List;
- NSW State Heritage Register;
- Palarang Shire Council S.170 Heritage Register; and
- Register of the National Estate.

The absence of its inclusion on any of these registers should not be seen as being indicative of the mines heritage value or significance as it is most likely that the site has simply not been previously assessed against the criteria for inclusion on any of these registers or lists.

The Lake George Mine is listed in the Register of the National Trust of Australia (NSW) as a heritage item. Items included on the Register have been determined by the Trust to have heritage significance and worthy of conservation. The Register does not provide any statutory obligation for protection of a site. Listing does, however, lend weight to the heritage value of the item. Part of the Captain's Flat railway station group is included on NSW Heritage Register. This site includes the concrete built railway station, platform, crane, triangle and galvanized iron goods shed with awning. Some of these features are either no longer in existence or have been misnamed. For instance the station is not built of concrete and is now a private residence, the crane is a gantry, there are two railway platforms and it is not clear what is meant by goods shed or triangle. Our assessment only relates to the mining precinct items. It is recommended that the current listing be supplemented with one comprising only the mining railway precinct items.

6.0 Assessment of Heritage Values

The inclusion criteria employed in this study for assessing the heritage significance of the Captain's Flat mining area are those specified in the NSW Heritage Act. There are six basic clusters of items at Captain's Flat; 1890s smelter site, slag and slime dump-southern, other 1890s sites, Forster's Gully and Keating's Collapse, 1930s-60s mining and processing sites-south, 1930s-60s processing site-north, residential sites and the railway precinct-mining. The site descriptions are numbered and set out in the text from south to north, beginning with the 1890s sites and Fosters Gully. To allow our assessment to be as accurate as possible, and bearing in mind that the clusters may be the subject of rehabilitation or modification work, each one has been

'deconstructed' into its major elements, referred to thereafter as items. Each item will be assessed according to these criteria. In assessing significance each item will be measured against each of the NSW Heritage Office's heritage criteria using a four tiered grading system based on that recommended by the Heritage Office. The four grades are exceptional, high, moderate, and low. In most cases, an item will be significant under more than one criterion. Prima facie an item will be ranked as exceptional, high, moderate or low if assessed as such against a majority of the criteria. It is recognized, however, that it is not necessary for every criterion to be satisfied, as significance within just one might be sufficient to warrant listing.

In assessing the items under each criterion exceptional indicates a rare or outstanding item of local or State significance, with a high degree of intactness and relative ease of interpretation. High indicates an item with a high degree of original fabric, demonstrating a key element of the item's significance and one in which alterations do not detract from its significance. Moderate relates to altered or modified elements, with little heritage value, but which contribute to the overall significance of the item, and which have limited relevance under that criterion. A low rating means that the fabric of the item has been damaged or compromised seriously, or that the item is difficult to interpret or of no or little relevance under that particular criterion. A summary of the heritage significance of each item as measured against each criterion is included in the summary tables (attached). Our assessment will also address the significance of the five major clusters.

6.1 NSW Heritage Register Criteria

The NSW State Heritage Register is established under Part 3A of the Heritage Act 1977 (as amended in 1998) for listing of items of environmental heritage¹³⁶ which are of state heritage significance¹³⁷.

To be assessed for listing on the State Heritage Register an item will, in the opinion of the Heritage Council of NSW, meet one or more of the following criteria¹³⁸:

- (a) an item is important in the course, or pattern, of NSWs cultural or natural history;
- (b) an item has strong or special association with the life or works of a person, or group of persons, of importance in NSWs cultural or natural history;
- (c) an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;
- (d) an item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons;

¹³⁶ *environmental heritage* means those places, buildings, works, relics, moveable objects, and precincts, of state or local heritage significance (section 4, *Heritage Act, 1977*).

¹³⁷ *state heritage significance*, in relation to a place, building, work, relic, moveable object or precinct, means significance to the State in relation to the historical, scientific cultural, social, archaeological, architectural, natural or aesthetic value of the item (section 4A(1), *Heritage Act, 1977*).

¹³⁸ Guidelines for the application of these criteria may be published by the NSW Heritage Office.

- (e) an item has potential to yield information that will contribute to an understanding of NSWs cultural or natural history;
- (f) an item possesses uncommon, rare or endangered aspects of NSWs cultural or natural history;
- (g) an item is important in demonstrating the principal characteristics of a class of NSWs cultural or natural places, or cultural or natural environments.

An item is not to be excluded from the Register on the ground that items with similar characteristics have already been listed on the Register.

6.2 Criterion A

An item is important in the course, or pattern, of NSWs cultural or natural history

6.2.1 General Statement

The Captain's Flat mining field is significant for its contribution to base metal mining in Australia, and in particular, New South Wales, over a period of 80 years. It was the major mining site in southern NSW in the 1890s and part of the 1880s and again in the period 1937 to 1962. In the 1880s-90s it was first a gold, then silver, and later, a predominantly copper mining operation. In the 1930s-60s period Captain's Flat was one of the most important mining sites in Australia, as a producer of lead, silver, zinc and sulphur and to a lesser extent, copper and gold. Its production was particularly valuable during World War II. The highly complex mineralogy of the ore body and consequently the varied and changing processing technology was a unique aspect of mining at Captain's Flat.

During both periods Captain's Flat was one of the largest towns in the southern mining region and was economically significant as an employer and market for farm produce, timber and other raw materials. It had a considerable impact on development and settlement and was totally dependent upon the mines for its existence. The mines also had a significant negative impact on the natural landscape because of pollution and environmental degradation, both in the mine and town area and downstream of the mine area. Extensive rehabilitation works bear witness to the significance of this impact and they can now be regarded as part of the mining heritage fabric.

6.3 Sites with an Exceptional Level of Significance Against Criterion A

6.3.1 Surge Bin

The bin was built in the 1930s to hold ore prior to processing by the jaw crusher, which was located immediately below. It is an iconic structure overlooking the town and visible from many parts of the valley floor. Although largely intact, part of the fabric is in poor condition.

6.3.2 Infrastructure Adjoining & in Proximity to the Surge Bin

These structures were built in the 1930s. Almost all of this fabric consists of concrete slabs and walls. It is important, however, for it is largely intact and relates to the mine operations and the

first stages of ore processing. Included in this site are the jaw crusher and the circular concrete water tank 50 m to the south.

6.3.3 Stairs, Mine Entrance, Change Rooms & Workshop Area

This area relates to the 1930s, and is located mostly on and above the car park. Stair remains are located below the car park, which is the site for the former employment and paymaster's offices. The main entrance (adit) and concrete beam engraved with Lake George Mines 1937 was uncovered during recent excavation work, and is in excellent condition. The change rooms included the time office, battery room, shower, toilet and locker rooms and workshop area included electrical, carpenter, plumbing and fitters shops. These remains are comprised almost entirely of concrete foundations and blocks, with the exception of the scout hall, which is an 'import'. This area is one of the most visible and accessible of the 1930s-60s mine sites.

6.3.4 Storage Bins, Ball Mills & Sulphur Plant.

The storage bins held crushed ore prior to its conveyance to the ball mills. They are largely intact and have been subject recently to rehabilitation work to prevent further site contamination. The bins are highly visible and form an iconic part of the mining landscape. Foundations and walls of the sulphur plant are located south of the bins; it was used for the production of sulphur and sulphuric acid for use in the flotation mill. The foundations of the ball mills are located immediately below the bins.

6.3.5 Weigh Station

This is another prominent and iconic part of the mining fabric. Concentrates from the flotation mill were trucked by road to the mill and dumped through hopper bins into railway trucks. This was the final step in the mining process. The station is substantially intact and visually significant.

6.3.6 Turntable

This was the area where the train engines were reversed so that railway trucks could be backed up towards the weigh station. The turntable would appear to be largely intact and in very good condition. However, part of it is overgrown with brambles, which makes a definitive assessment difficult. The turntable is an important part of the railway precinct.

6.4 Sites with a High Level of Significance Against Criterion A

6.4.1 1890s Smelter & Slag & Slime Dump-Southern

This site has been considerably compromised by rehabilitation work and nothing at all is left of the structure of the smelter site. However, the dumps are a very prominent part of the mining and processing landscape and have some aesthetic appeal. They are also an indicator of the size of mining operations during the 1890s and 1930s-60s periods and an example of successful mining rehabilitation work. This area is one of the few reminders of the earlier period of mining and smelting operations.

6.4.2 1890s Railway Track

The track was cut into the side of the hill below the main mine site and is readily visible from the southern part of the valley floor. It is in good condition along most of its length. The railway line conveyed ore from the mines to the smelter site. It was a significant part of the mining infrastructure and one of the few visibly prominent relics from the 1890s period.

6.4.3 Powder Magazines

There are two magazines located on a track which passes through the area of staff housing and amenities. They are a substantial size and built of concrete. Both are in an excellent condition.

6.4.4 Dorr Thickeners

The thickeners converted the finely crushed ore into a liquid slurry prior to its conveyance to the flotation mill. One of the thickeners remains although part of the wall is broken. The other one is silted up. They were an important part of the processing infrastructure.

6.4.5 Flotation Mill

This area relates to the 1930-60s. It was the main processing area where the various minerals were separated one from the other using the flotation process. Captain's Flat is one of the few mining sites in Australia where the remains of a flotation mill can be seen. The flotation mill was central to the operations of the mine.

6.4.6 Northern Mine Site & Processing Area

The northern mine site and processing area (Kohinoor & Elliott's), slime dumps and tailings dams comprises separating screens and an area of largely intact concrete pits, foundations and walls. It also includes an underground entrance or drain and two Dorr thickeners. The plant was probably used for secondary processing of tailings. A second processing site downhill of the main site may have been part of this process or it may relate to an earlier period of mining in the 1880s. Rehabilitation work has preserved the contours of the slime dumps and tailings dams, which are a reminder of the scale of the mining and processing operations and the extent of rehabilitation work.

6.4.7 Staff House Sites

This area relates to the 1930s. Four separate house sites have been identified. Although the sites are now part of a pine plantation their integrity is very high and the alterations to the area have not detracted from their significance. None of the building superstructure is left, however, the foundations, walls and footings are all intact, together with stairs and some car garage areas. The sites provide a unique insight into the level of social stratification in the town and the standard of living for senior mine management.

6.5 Sites with a Moderate Level of Significance Against Criterion A

6.5.1 1880s-90s Road & Bridge

The remains of the old road and bridge are located immediately below the old rail track and to the north west of the present road, the uncovered (non-rehabilitated) remains of the slag dump and Forster's Gully. The road runs almost parallel to the present road and the gully and is built upon dry stone walling. The bridge is supported by brick embankments on either side of the gully. It is in very poor condition and is unsafe. Much of it has collapsed. The slag dump is a pollution hazard.

6.5.2 Forster's Gully

This gully runs into the Molonglo River below the slag heap and was the site of some of the early gold mining activities at Captain's Flat in the 1880s. The alignment of the creek has been changed considerably to allow for the construction of a concrete drain as an erosion prevention device. Keating's Collapse 1942/45 is located on the north side of the creek. Some remnants of the collapsed railway bridge trestles are located on the embankment south of the creek.

6.5.3 Keating's Collapse 1961, Ventilation Shaft & Commodore Machine Site

Keating's collapse 1961 is located on the south side of Forster's Gully. It is a deep and dangerous pit with precipitous and unfenced sides, but relates to an important incident in the history of the mine. Collapses of this magnitude are rare. A deep and uncovered ventilation shaft is located immediately above the collapse. In their present condition the shaft and collapse are extremely unsafe. A 10 m x 15 m cutting is located about 5 m above the shaft. It was probably the site for some of the machine sheds for the Commodore mine. Remnants include a scatter of fire bricks and the possible remains of an old smoke stack.

6.5.4 Railway Lines, Platform & Gantry

These three items are an important element of the railway precinct, but are not as significant as some other items in the precinct.

6.6 Criterion B

An item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history

6.6.1 General Statement

The mines have associations with mining companies, managers and a former local mining community, but these associations are normal on any mining field.

6.7 Sites with a High Level of Significance Against Criterion B

6.7.1 1890s Smelter & Slag & Slime Dumps-Southern

This was the site of the pyritic smelting process invented by Robert Sticht and first used in Australia at Mt Lyell in Tasmania.

Captain's Flat was the second mining field to use this method in Australia. Unfortunately this site has been considerably compromised by rehabilitation work and nothing at all is left of the smelter structure. The slag heap is of some significance as a measure of the size of the smelting operations in the 1890s.

6.8 Sites with a Low level of significance Against Criterion B

All other sites.

6.9 Criterion C

An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW

6.9.1 General Statement.

An important aspect of the first part of this criterion is whether the place has a relationship between its parts and the setting that reinforces the quality of both. Some sites are located in elevated positions in full view of the valley floor. Other sites have elevated structures which are also highly visible. Some of the reclaimed slime dumps also fall into the aesthetic category.

The highly complex mineralogy of the Captain's Flat ore body and consequently the varied and changing mining emphases and technology were unique aspects of mining at Captain's Flat. This complexity and in turn the exceptional creative or technical level of achievement is best demonstrated by 1930s-60s mining and processing sites, which include the surge bin, flotation plant and other associated fabric, and the northern mine site and processing area, slime dumps and tailing dams. Other features demonstrating a high degree of creative or technical achievement include the 1930s weigh station and the associated railway system and the remains of the 1890s rail system. All these areas have considerable interpretative potential.

6.10 Sites with an Exceptional Level of Significance Against Criterion C

6.10.1 1890s Smelter & Slag & Slime Dumps-Southern

This site is highly visible from all parts of the valley floor. Earlier rehabilitation work removed almost all of the fabric, but stabilized the dumps and slag heaps and enhanced their appearance. The essential contours of the dumps and heap remain.

6.10.2 1890s Railway Track

The track was cut into the side of the hill below the main mine site and is readily visible from the valley floor. It also provides compelling views of much of the valley floor.

6.10.3 Surge Bin

The bin was built in the 1930s to hold ore prior to processing through the jaw crusher, which was located immediately below. It is an iconic structure overlooking the town and visible from almost all parts of the valley floor. Although largely intact, part of the fabric is in poor condition.

6.10.4 Infrastructure Adjoining & in Proximity to the Surge Bin

Some of these structures, in particular the jaw crusher site, are highly visible and an integral part of the surge bin site.

6.10.5 Stairs, Mine Entrance, Change Rooms & Workshop Area

This area relates to the 1930s, and is located mostly on and above the car park. Stair remains are located below the car park, which is the site for the former employment and paymaster's offices. The main entrance (adit) and concrete beam engraved with Lake George Mines 1937 was uncovered during recent excavation work, and has some aesthetic appeal. Aesthetically, the appeal of the change rooms and workshop area relates solely to its association with and proximity to the mine entrance. For many miners this was the only above ground area of the mining complex that they visited.

6.10.6 Storage Bins, Ball Mills & Sulphur Plant

The storage bins are largely intact and have been subject recently to rehabilitation work to prevent further site contamination. They are highly visible and form an iconic part of the mining landscape although the high level of rubble and debris in the vicinity detracts from their aesthetic value. Foundations and walls of the sulphur plant are readily visible and largely intact. The foundations of the ball mills are located immediately below the bins.

6.10.7 Weigh Station

This is a highly visible and iconic part of the mining fabric. The station is substantially intact and visually significant.

6.10.8 Northern Mine Site & Processing Area

The northern mine site and processing area (Kohinoor & Elliott's), slime dumps and tailing dams are visible from the surge bin area. Earlier rehabilitation work allowed some of the fabric to be retained, stabilized the dumps and tailing dams and enhanced their appearance. The essential contours of the dumps and dams remain.

6.11 Sites with a Moderate Level of Significance Against Criterion C

6.11.1 Forster's Gully

This gully runs into the Molonglo River below the slag heap and was the site of some of the early gold mining activities at Captain's Flat in the 1880s. The alignment of the creek has been changed considerably to allow for the construction of a concrete drain as an erosion prevention device. Keating's Collapse 1942/45 is located on the north side of the creek. Some remnants of the collapsed railway bridge trestles are located on the embankment south of the creek.

6.11.2 Keating's Collapse 1961, Ventilation Shaft & Commodore Machine Site

Keating's collapse 1961 is located on the south side of Forster's Gully. It is now a deep and dangerous pit with precipitous and unfenced sides, but together with other parts of the collapse has

some aesthetic appeal. A deep and uncovered ventilation shaft is located immediately above the collapse. A 10 m x 15 m cutting is located about 5 m above the shaft was probably the site for some of the machine sheds for the Commodore mine. Remnants include a scatter of fire bricks and the possible remains of an old smoke stack

6.11.3 1880s-90s Road & Bridge

The old road runs almost parallel to the present road and the gully and is built upon dry stone walling. Although the bridge is supported by brick embankments on either side of the gully, it is in very poor condition and is unsafe. The embankments and road are in good condition. The road provides a good view of the northern end of Forster's gully and the slag dumps.

6.11.4 Powder Magazines

There are two magazines located on a track which passes through the area of staff housing and amenities. They are a substantial size and built of concrete. Both are in an excellent condition and have some aesthetic value.

6.11.5 Dorr Thickeners

The thickeners converted the finely crushed ore into a liquid slurry prior to its conveyance to the flotation mill. One of the thickeners remains although part of the wall is broken. The other one is silted up. They were an important part of the processing infrastructure and have some aesthetic value.

6.11.6 Flotation Mill

A large part of the walls of this structure are still intact and highly visible, although the rubble and debris currently in the area detract from its aesthetic value.

6.12 Sites with a Low Level of Significance Against Criterion C

6.12.1 Turntable

The turntable was built in the 1930s. This was the area where the train engines were reversed so that railway trucks could be backed up towards the weigh station. It is an important part of the railway precinct, but it is not prominent in the landscape and does not have a significant aesthetic value.

6.12.2 Railway Lines, Platform & Gantry

These three items were built in the 1930s, and are part of the railway precinct, but perhaps with the exception of the gantry they are not prominent in the landscape and do not have a significant aesthetic value.

6.12.3 Staff House Sites

This area relates to the 1930s. Four separate house sites have been identified. Although the sites are now part of a pine plantation their integrity is very high and the alterations to the area have not detracted from their significance. None of the building superstructure is left, however, the foundations, walls and footings are all intact, together with stairs and some car

garage areas. The sites are not prominent in the landscape and do not have a significant aesthetic value.

6.13 Specific sites - Sites with an Exceptional Level of Significance Against the Second Part of Criterion C

6.13.1 Surge Bin

The bin was built in the 1930s to hold ore prior to processing by the jaw crusher, which was located immediately below. It was an integral part of the mining and processing complex. Although largely intact, part of the fabric is in poor condition.

6.13.2 Infrastructure Adjoining & in Proximity to the Surge Bin

These structures were built in the 1930s, and were an essential part of the mining and processing complex. They are largely intact and relate to the mine operations and the first stages of ore processing.

6.13.3 Storage Bins, Ball Mills & Sulphur Plant

The storage bins are largely intact and have been subject recently to rehabilitation work to prevent further site contamination. Foundations and walls of the sulphur plant are readily visible and largely intact. The foundations of the ball mills are located immediately below the bins. These structures were an integral part of the processing complex.

6.13.4 Dorr Thickeners

The thickeners converted the finely crushed ore into a liquid slurry prior to its conveyance to the flotation mill. They were an integral part of the processing complex.

6.13.5 Flotation Mill

The mill was built in the 1930s for the separation of the minerals one from the other using the flotation process. Captain's Flat is one of the few mining sites in Australia with remains of a flotation mill from this era. It was an integral part of the processing complex.

6.13.6 Northern mine site and processing area

The main processing area was built in the 1930s and its processing area comprises separating screens and an area of largely intact concrete pits, foundations and walls. It also includes an underground entrance or drain and two Dorr thickeners. A further area of processing plant, possibly a battery, is located downhill of this site. This site demonstrates a different processing technique to that employed at the flotation mill. The secondary processing site downhill of the main site may have been part of this process or it may relate to an earlier period of mining in the 1880s.

6.14 Specific sites - Sites with a Moderate Level of Significance Against the Second Part of Criterion C

6.14.1 1890s Smelter & Slag Dump & Southern Slime Dumps

This site has been considerably compromised by rehabilitation work and nothing at all is left of the structure of the smelter site. However, the dumps have some aesthetic appeal and are a very prominent part of the mining and processing landscape. They also are an indicator of the size of mining operations during the 1890s and 1930s-60s periods and an example of successful mining rehabilitation work. The site's technical significance relates to the 1890's processing plant, even though there are no remains of this plant.

6.14.2 1890s Railway Track

The track was cut into the side of the hill below the main mine site and the line continued on trestles over Forster's Creek to the smelter site. It was a significant part of the mining infrastructure and one of the few relics from the 1890s period. The railway was technically significant.

6.14.3 Powder Magazines

There are two magazines located on a track which passes through the area of staff housing and amenities. They are a substantial size and built of concrete. Both are in an excellent condition.

6.14.4 Weigh Station

The station was built in the 1930s. Concentrates from the flotation mill were trucked by road to the mill and dumped through hopper bins into railway trucks. This was the final step in the mining and processing of the ore. The railway precinct's technical and/or creative significance is related to its linkage with the mining and milling complex.

6.14.5 Turntable

The turntable was built in the 1930s. This was the area where the train engines were reversed so that railway trucks could be backed up towards the weigh station. It is an important part of the railway precinct. The railway precinct's technical and/or creative significance is related to its linkage with the mining and milling complex.

6.15 Specific sites - Sites with a Low Level of Significance Against the Second Part of Criterion C

6.15.1 Forster's Gully

This gully runs into the Molonglo River below the slag heap and was the site of some of the early gold mining activities at Captain's Flat in the 1880s. The alignment of the creek has been changed considerably to allow for the construction of a concrete drain as an erosion prevention device. Keating's Collapse 1942/45 is located on the north side of the creek. Some remnants of the collapsed railway bridge trestles are located on the embankment south of the creek. The area has little technical or creative significance.

6.15.2 1880s-90s Road & Bridge

The old road runs almost parallel to the present road and the gully and is built upon dry stone walling. Although the bridge is supported by brick embankments on either side of the gully, it is in very poor condition and is unsafe. The embankments and road are in good condition, but have little technical or creative significance.

6.15.3 Keating's Collapse 1961, Ventilation Shaft & Commodore Machine Site.

Keating's collapse 1961 is located on the south side of Forster's Gully. It is now a deep and dangerous pit with precipitous and unfenced sides. A deep and uncovered ventilation shaft is located immediately above the collapse. A 10 m x 15 m cutting is located about 5 m above the shaft was probably the site for some of the machine sheds for the Commodore mine. Remnants include a scatter of fire bricks and the possible remains of an old smoke stack. The area has little technical or creative significance.

6.15.4 Stairs, Mine Entrance, Change Rooms & Workshop Area

This area relates to the 1930s, and is located immediately above the car park near the viewing platform. The main entrance (adit) and concrete beam embossed with Lake George Mines 1937 was uncovered during recent excavation work and has some aesthetic appeal. The change rooms and workshop area is comprised almost entirely of concrete foundations and blocks, with the exception of the scout hall, which is an 'import'. The area has little technical or creative significance..

6.15.5 Railway Lines, Platform & Gantry

These were built in the 1930s, and form an integral part of the railway precinct. The area has little technical or creative significance.

6.15.6 Staff House Sites

This area relates to the 1930s. Four separate house sites have been identified. Although the sites are now part of a pine plantation their integrity is very high and the alterations to the area have not detracted from their significance. None of the building superstructure is left, but the foundations, walls and footings are all intact, together with stairs and some car garage areas. The area has little technical or creative significance.

6.16 Criterion D

An item has strong or special associations with a particular community or cultural group in NSW for social, cultural or spiritual reasons

6.16.1 General Statement.

The Captain's Flat mining and processing areas are crucial to the present community's sense of place and identity. Some of the town residents were former employees of the mining company or worked in other occupations in the town. The mining field and town have been the subject of a large number of feature articles and several local history books. A monument

has been constructed near the recreation park in memory of men who were killed in the mining operations. Much of the town consists of buildings relating to the 1930-60s period of mining, and there are some buildings relating to the earlier period of mining in the 1890s. The mining past is integral to the present community's sense of identity.

6.17 Sites with an Exceptional Level of Heritage Significance Against Criterion D

6.17.1 1890s Smelter & Slag & Slime Dumps – Southern

This site has been considerably compromised by rehabilitation work and nothing at all is left of the structure of the smelter site. However, the dumps have some aesthetic appeal and are a very prominent part of the mining and processing landscape. They also are an indicator of the size of mining operations during the 1890s and 1930s-60s periods and an example of successful mining rehabilitation work.

6.17.2 1890s Railway Track

The track was cut into the side of the hill below the main mine site and is readily visible from the valley floor. The railway line conveyed ore from the mines to the smelter site. It was a significant part of the mining infrastructure and one of the few visibly prominent relics from the 1890s period.

6.17.3 Surge Bin

The bin was built in the 1930s to hold ore prior to processing through the jaw crusher, which was located immediately below. It is an iconic structure overlooking the town and visible from almost all parts of the valley floor. Although largely intact, part of the fabric is in poor condition. The bin was an integral part of the mining and processing complex.

6.17.4 Infrastructure Adjoining & in Proximity to the Surge Bin

These structures were built in the 1930s. Almost all of this fabric consists of concrete slabs and walls. It is important, however, for it is largely intact and relates to the mine operations and the first stages of ore processing. Included in this site are the jaw crusher and the circular concrete water tank 50 m to the south. The site was an integral part of the mining and processing complex.

6.17.5 Stairs, Mine Entrance, Change Rooms & Workshop Area

This area relates to the 1930s, and is located immediately above the car park near the viewing platform. The main entrance (adit) and concrete beam embossed with Lake George Mines 1937 was uncovered during recent excavation work. The change rooms and workshop area is comprised almost entirely of concrete foundations and blocks, with the exception of the scout hall, which is an 'import'. For many miners this was the only above ground area of the mining complex that they visited.

6.17.6 Storage Bins, Ball Mills & Sulphur Plant

The storage bins are largely intact and have been subject recently to rehabilitation work to prevent further site

contamination. Foundations and walls of the sulphur plant are readily visible and largely intact. The foundations of the ball mills are located immediately below the bins. These structures were an integral part of the mining and processing complex.

6.17.7 Weigh Station

This is another prominent and iconic part of the mining fabric. Concentrates from the flotation mill were trucked by road to the mill and dumped through hopper bins into railway trucks. This was the final step in the mining and processing of the ore. The station is substantially intact and visually significant and an integral part of the mining and processing complex.

6.17.8 Northern Mine Site & Processing Area

The main northern mine site processing area comprises separating screens and an area of largely intact concrete pits, foundations and walls. It also includes an underground entrance or drain and two Dorr thickeners. This site demonstrates a different processing technique to that employed at the flotation plant. A second processing site downhill of the main site may have been part of this process or it may relate to an earlier period of mining in the 1880s. Rehabilitation work has preserved the contours of the slime dumps and tailings dams.

6.17.9 Staff House Sites

This area relates to the 1930s. Four separate house sites have been identified. Although the sites are now part of a pine plantation their integrity is very high and the alterations to the area have not detracted from their significance. None of the building superstructure is left, although the foundations, walls and footings are all intact, together with stairs and some car garage areas. The sites provide a unique insight into the level of social stratification in the town and the standard of living for senior mine management.

6.18 Sites with a High Level of Significance Against Criterion D

6.18.1 Dorr Thickeners

The thickeners converted the finely crushed ore into a liquid slurry prior to its conveyance to the flotation mill. They were a very important part of the processing infrastructure and of community significance.

6.18.2 Flotation Mill

This area relates to the 1930s. It was the main processing area where the various minerals were separated one from the other using the flotation process. Captain's Flat is one of the few mining sites in Australia where remains of flotation mills can be seen. The flotation mill was central to the operations of the mine and is of community significance.

6.18.3 Turntable

This was the area where the train engines were reversed so that railway trucks could be backed up towards the weigh station. The turntable would appear to be largely intact and in very good

condition, even if overgrown. The turntable is an important part of the railway precinct and of community significance.

6.19 Sites with a Moderate Level of Significance Against Criterion D

6.19.1 Forster's Gully

This gully runs into the Molonglo River below the slag heap and was the site of some of the early gold mining activities at Captain's Flat in the 1880s. The alignment of the creek has been changed considerably to allow for the construction of a concrete drain as an erosion prevention device. Keating's Collapse 1942/45 is located on the north side of the creek. Some remnants of the collapsed railway bridge trestles are located on the embankment south of the creek. There is a community association with this area.

6.19.2 1880s-90s Road & Bridge

The old road runs almost parallel to the present road and the gully and is built upon dry stone walling. Although the bridge is supported by brick embankments on either side of the gully, it is in very poor condition and is unsafe. The embankments and road are in good condition. There is a community association with this area.

6.19.3 Keating's Collapse 1961, Ventilation Shaft & Commodore Machine Site

Keating's collapse 1961 is located on the south side of Forster's Gully. It is now a deep and dangerous pit with precipitous and unfenced sides, but it is important to the community's association with the mine. A deep and uncovered ventilation shaft is located immediately above the collapse. A 10 m x 15 m cutting is located about 5 m above the shaft was probably the site for some of the machine sheds for the Commodore mine. Remnants include a scatter of fire bricks and the possible remains of an old smoke stack. There is a community association with this area.

6.19.4 Powder Magazines

There are two magazines located on a track which passes through the area of staff housing and amenities. They are a substantial size and built of concrete. Both are in an excellent condition, and there is a community association with these structures.

6.19.5 Railway Lines, Platform & Gantry

These three sites are an important part of the railway precinct and there is a community association with this area.

6.20 Criterion E

An item has potential to yield information that will contribute to an understanding of NSWs cultural or natural history

6.20.1 General Statement

The highly complex mineralogy of the Captain's Flat ore body and consequently the varied and changing mining emphases and technology were unique aspects of mining at Captain's Flat.

This complexity and in turn the exceptional creative or technical level of achievement is best demonstrated by 1930s-60s mining and processing sites, which include the surge bin, flotation plant and other associated fabric, and the northern mine site and processing area (Kohinoor & Elliott's), slime dumps and tailing dams.

Captain's Flat is important for its potential to yield information about past mining and processing techniques. The main mine and processing site, though not unique, is rare as there are few integrated base metal mining plants using the flotation system remaining in NSW or in Australia from the 1930s-60s period. Although all equipment has been removed there is enough integrity in the remaining structures to allow for a considerable degree of interpretation. Also important from an interpretative aspect is the Northern mine site and processing area (Kohinoor & Elliott's), slime dumps and tailing dams.

6.21 Sites with an Exceptional Level of Significance Against Criterion E

6.21.1 1890s Smelter Site & Slag & Slime Dumps – Southern

This site has been considerably compromised by rehabilitation work and nothing at all is left of the structure of the smelter site. However, the dumps are a very prominent part of the mining and processing landscape and have some aesthetic appeal. They are also an indicator of the size of mining operations during the 1890s and 1930s-60s periods and an example of successful mining rehabilitation work. This area is one of the few reminders of the earlier period of mining and smelting operations. It has interpretative significance environmentally and historically.

6.21.2 Surge Bin

The bin was built in the 1930s to hold ore prior to processing through the jaw crusher, which was located immediately below. It is an iconic structure overlooking the town and visible from many parts of the valley floor.

6.21.3 Infrastructure Adjoining & in Proximity to the Surge Bin

These structures were built in the 1930s. Almost all of this fabric consists of concrete slabs and walls. It is important, however, for it is largely intact and relates to the mine operations and the first stages of ore processing. Included in this complex are the jaw crusher site and a circular concrete water tank 50 m to the south.

6.21.4 Stairs, Mine Entrance, Change Rooms & Workshop Area

This area relates to the 1930s, and is located immediately above the car park near the viewing platform. The main entrance (adit) and concrete beam embossed with Lake George Mines 1937 was uncovered during recent excavation work. The change rooms and workshop area is comprised almost entirely of concrete foundations and blocks, with the exception of the scout hall, which is an 'import'. For many miners this was the only above ground area of the mining complex that they visited.

6.21.5 Flotation Mill

This area relates to the 1930s. It was the main processing area where the various minerals were separated one from the other using the flotation process. Captain's Flat is one of the few mining sites in Australia where remains of flotation plants can be seen. The flotation mill was central to the operations of the mine.

6.21.6 Storage Bins, Ball Mills & Sulphur Plant

The storage bins are largely intact and have been subject recently to rehabilitation work to prevent further site contamination. Foundations and walls of the sulphur plant are readily visible and largely intact. The foundations of the ball mills are located immediately below the bins. These structures are a very important part of the processing complex.

6.21.7 Dorr Thickeners

The thickeners converted the finely crushed ore into a liquid slurry prior to its conveyance to the flotation mill. They were a very important part of the processing infrastructure.

6.21.8 Weigh Station

All elements of the railway precinct were built in the 1930s. The weigh station is a prominent and iconic part of the mining fabric. Concentrates from the flotation mill were trucked by road to the mill and dumped through hopper bins into railway trucks. This was the final step in the mining and processing of the ore.

6.21.9 Turntable

This was the area where the train engines were reversed so that railway trucks could be backed up towards the weigh station. The turntable would appear to be largely intact and in very good condition. However, part of it is overgrown with brambles, which makes a definitive assessment difficult. The turntable is an important part of the railway precinct.

6.21.10 Northern Mine Site & Processing Area

This processing area comprises separating screens and an area of largely intact concrete pits, foundations and walls. It also includes an underground entrance or drain and two Dorr thickeners. This site demonstrates a different processing technique to that employed at the flotation plant. The secondary processing site downhill of the main site may have been part of this process or it may relate to an earlier period of mining in the 1880s. Rehabilitation work has preserved the contours of the slime dumps and tailings dams.

6.22 Sites with a High Level of Significance Against Criterion E

6.22.1 1890s Railway Track

The track was cut into the side of the hill below the main mine site and is readily visible from the valley floor. The railway line conveyed ore from the mines to the smelter site. It was a significant part of the mining infrastructure and one of the few visibly prominent relics from the 1890s period.

6.22.2 Staff House Sites

This area relates to the 1930s. Four separate house sites have been identified. Although the sites are now part of a pine plantation their integrity is very high and the alterations to the area have not detracted from their significance. None of the building superstructure is left, but the foundations, walls and footings are all intact, together with stairs and some car garage areas. The sites provide a unique insight into the level of social stratification in the town and the standard of living for senior mine management.

6.23 Sites with a Moderate Level of Significance Against Criterion E

6.23.1 Forster's Gully

This gully runs into the Molonglo River below the slag heap and was the site of some of the early gold mining activities at Captain's Flat in the 1880s. The alignment of the creek has been changed considerably to allow for the construction of a concrete drain as an erosion prevention device. Keating's Collapse 1942/45 is located on the north side of the creek. Some remnants of the collapsed railway bridge trestles are located on the embankment south of the creek.

6.23.2 1880s-90s Road & Bridge

The old road runs almost parallel to the present road and the gully and is built upon dry stone walling. Although the bridge is supported by brick embankments on either side of the gully, it is in very poor condition and is unsafe. The embankments and road are in good condition.

6.23.3 Keating's Collapse 1961, Ventilation Shaft & Commodore Machine Site

Keating's collapse 1961 is located on the south side of Forster's Gully. It is now a deep and dangerous pit with precipitous and unfenced sides, but has interpretative value. A deep and uncovered ventilation shaft is located immediately above the collapse. A 10 m x 15 m cutting is located about 5 m above the shaft was probably the site for some of the machine sheds for the Commodore mine. Remnants include a scatter of fire bricks and the possible remains of an old smoke stack.

6.23.4 Powder Magazines

There are two magazines located on a track which passes through the area of staff housing and amenities. They are a substantial size and built of concrete. Both are in an excellent condition and have interpretative significance.

6.23.5 Railway Lines, Platform & Gantry

These three sites are an important part of the railway precinct and have interpretative significance.

6.24 Criterion F

An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history

6.24.1 General Statement

Captain's Flat is significant as an uncommon historic mining centre by virtue of its mineralogy and the integrity of the remaining structures. The highly complex mineralogy of the Captain's Flat ore body and consequently the varied and changing mining emphases and technology were unique aspects of mining at Captain's Flat. It produced primarily gold, silver and then copper in association with other ores in the 1880s-90s period. In the 1930s-60s period it produced all the aforementioned minerals and was one of Australia's leading lead producers. Its complexity is best demonstrated by 1930s-60s mining and processing sites, which include the surge bin, flotation plant and other associated fabric, and the northern mine site and processing area (Kohinoor & Elliott's), slime dumps and tailing dams. It is one of the few integrated base metal mining and processing complexes demonstrating the past use of the flotation process in NSW, and of these it is probably the second most significant. Lead mining and processing sites, in particular, constitute a rare class of industrial activity. Some of the sites are subject to ongoing mine rehabilitation work and from that viewpoint can be regarded as endangered.

6.25 Sites with an Exceptional Level of Significance Against Criterion F

6.25.1 Surge Bin

The bin was built in the 1930s to hold ore prior to processing through the jaw crusher, which was located immediately below. It is an iconic structure overlooking the town and visible from many parts of the valley floor. Although largely intact, part of the fabric is in poor condition. However, surge bins from this period are unusual.

6.25.2 Infrastructure Adjoining & in Proximity to the Surge Bin

These structures were built in the 1930s. Almost all of this fabric consists of concrete slabs and walls. It is important, however, for it is largely intact and relates to the mine operations and the first stages of ore processing. Included in this site are the jaw crusher and the circular concrete water tank 50 m to the south. It is unusual to find as much infrastructure as this from sites of this period.

6.25.3 Stairs, Mine Entrance, Change Rooms & Workshop Area

This area relates to the 1930s, and is located mostly above the car park near the viewing platform. The main entrance (adit) and concrete beam engraved with Lake George Mines 1937 was uncovered during recent excavation work. The change rooms and workshop area is comprised almost entirely of concrete foundations and blocks, with the exception of the scout hall, which is an 'import'. For many miners this was the only above ground area of the mining complex that they visited.

6.25.4 Storage Bins, Ball Mills & Sulphur Plant

The storage bins are largely intact and have been subject recently to rehabilitation work to prevent further site contamination. Foundations and walls of the sulphur plant are readily visible and largely intact. The foundations of the ball mills

are located immediately below the bins. These structures are a very important part of the processing complex. It is unusual to find as much infrastructure as this from sites of this period.

6.25.5 Dorr Thickeners

The thickeners converted the finely crushed ore into a liquid slurry prior to its conveyance to the flotation mill. They were a very important part of the processing infrastructure.

6.25.6 Flotation Mill

This area relates to the 1930s. It was the main processing area where the various minerals were separated one from the other using the flotation process. Captain's Flat is one of the few mining sites in Australia where remains of flotation plants can be seen. The flotation mill was central to the operations of the mine.

6.25.7 Northern Mine Site & Processing Area

The main processing area comprises separating screens and an area of largely intact concrete pits, foundations and walls. It also includes an underground entrance or drain and two Dorr thickeners. This site demonstrates a different processing technique to that employed at the flotation plant. A second processing site downhill of the main site may have been part of this process or it may relate to an earlier period of mining in the 1880s. Rehabilitation work has preserved the contours of the slime dumps and tailings dams. It is unusual to find as much infrastructure as this from sites of this period.

6.26 Sites with a High Level of Significance Against Criterion F

6.26.1 1890s Railway Track

The track was cut into the side of the hill below the main mine site and is readily visible from the valley floor. The railway line conveyed ore from the mines to the smelter site. It was a significant part of the mining infrastructure and one of the few visibly prominent relics from the 1890s period. It is unusual to find remains of mine railways from this period.

6.26.2 Keating's Collapse 1961, Ventilation Shaft & Commodore Machine Site

Keating's collapse 1961 is located on the south side of Forster's Gully. It is now a deep and dangerous pit with precipitous and unfenced sides, but examples of mine collapses of this size are rare or uncommon. A deep and uncovered ventilation shaft is located immediately above the collapse. A 10 m x 15 m cutting is located about 5 m above the shaft and was probably the site for some of the machine sheds for the Commodore mine. Remnants include a scatter of fire bricks and the possible remains of an old smoke stack.

6.26.3 Weigh Station

All elements of the railway precinct were built in the 1930s. The weigh station is a prominent and iconic part of the mining fabric, and could be regarded as uncommon. Concentrates from the flotation mill were trucked by road to the mill and dumped

through hopper bins into railway trucks. This was the final step in the mining process. The railway precinct's importance under this criterion is related to its linkage with the mining and milling complex.

6.26.4 Turntable

This was the area where the train engines were reversed so that railway trucks could be backed up towards the weigh station. The turntable is an important part of the railway precinct, and could be regarded as uncommon. The railway precinct's importance under this criterion is related to its linkage with the mining and milling complex.

6.27 Sites with a Moderate Level of Significance Against Criterion F

6.27.1 1890s Smelter Site & Slag & Slime Dumps – Southern

This site has been considerably compromised by rehabilitation work and nothing is left of the structures on the smelter site. However, the dumps are a very prominent part of the mining and processing landscape and have some aesthetic appeal. They are also an indicator of the size of mining operations during the 1890s and 1930s-60s periods and an example of successful mining rehabilitation work. This area is one of the few reminders of the earlier period of mining and smelting operations.

6.27.2 Powder Magazines

There are two magazines located on a track which passes through the area of staff housing and amenities. They are a substantial size and built of concrete. Both are in an excellent condition.

6.28 Sites with a Low Level of Significance Against Criterion F

6.28.1 Forster's Gully

This gully runs into the Molonglo River below the slag heap and was the site of some of the early gold mining activities at Captain's Flat in the 1880s. The alignment of the creek has been changed considerably to allow for the construction of a concrete drain as an erosion prevention device. Keating's Collapse 1942/45 is located on the north side of the creek. Some remnants of the collapsed railway bridge trestles are located on the embankment south of the creek. These features are not rare or uncommon.

6.28.2 1880s-90s Road & Bridge

The old road runs almost parallel to the present road and the gully and is built upon dry stone walling. Although the bridge is supported by brick embankments on either side of the gully, it is in very poor condition and is unsafe. The embankments and road are in good condition, but they are not rare or uncommon.

6.28.3 Staff House Sites

This area relates to the 1930s. Four separate house sites have been identified. Although the sites are now part of a pine plantation their integrity is very high and the alterations to the area have not detracted from their significance. None of the

building superstructure is left, although the foundations, walls and footings are all intact, together with stairs and some car garage areas. The sites provide a unique insight into the level of social stratification in the town and the standard of living for senior mine management, but they are not rare or uncommon.

6.28.4 Railway Lines, Platform & Gantry

These three sites are an important part of the railway precinct, but are not rare or uncommon.

6.29 Criterion G

An item is important in demonstrating the principal characteristics of a class of NSWs cultural or natural places or cultural or natural environments

6.29.1 General Statement

Captain's Flat demonstrates the principal characteristics of a class of NSW's cultural places and environments as a complex base metal mining and processing centre. It retains almost all the key elements of such a centre and has considerable interpretative potential. There are few such sites in NSW and Australia compared to gold and copper sites, and they constitute a separate class of cultural places. Lead mining and processing sites, in particular, constitute a rare class of industrial activity.

6.30 Sites with an Exceptional Level of Significance Against Criterion G

6.30.1 1890s Smelter Site & Slag & Slime Dumps – Southern

This site has been considerably compromised by rehabilitation work and nothing at all is left of the structure of the smelter site. However, the dumps are a very prominent part of the mining and processing landscape and have some aesthetic appeal. They are also an indicator of the size of mining operations during the 1890s and 1930s-60s periods and an example of successful mining rehabilitation work. This area is one of the few reminders of the earlier period of mining and smelting operations.

6.30.2 Surge Bin

The bin was built in the 1930s to hold ore prior to processing through the jaw crusher, which was located immediately below. It is an iconic structure overlooking the town and visible from many parts of the valley floor. Although largely intact, part of the fabric is in poor condition.

6.30.3 Infrastructure Adjoining & in Proximity to the Surge Bin

These structures were built in the 1930s. Almost all of this fabric consists of concrete slabs and walls. It is important, however, for it is largely intact and relates to the mine operations and the first stages of ore processing. Included in this site are the jaw crusher and the circular concrete water tank 50 m to the south.

6.30.4 Stairs, Mine Entrance, Change Rooms & Workshop Area

This area relates to the 1930s, and is mostly located immediately above the car park near the viewing platform. The main entrance (adit) and concrete beam embossed with Lake George

Mines 1937 was uncovered during recent excavation work. The change rooms and workshop area is comprised almost entirely of concrete foundations and blocks, with the exception of the scout hall, which is an 'import'. For many miners this was the only above ground area of the mining complex that they visited.

6.30.5 Storage Bins, Ball Mills & Sulphur Plant

The storage bins are largely intact and have been subject recently to rehabilitation work to prevent further site contamination. Foundations and walls of the sulphur plant are readily visible and largely intact. The foundations of the ball mills are located immediately below the bins. These structures are a very important part of the processing complex.

6.30.6 Dorr Thickeners

The thickeners converted the finely crushed ore into a liquid slurry prior to its conveyance to the flotation mill. They were a very important part of the processing infrastructure.

6.30.7 Flotation Mill

This area relates to the 1930s. It was the main processing area where the various minerals were separated one from the other using the flotation process. Captain's Flat is one of the few mining sites in Australia where the remains of a flotation plant can be seen. The flotation plant was central to the operations of the mine.

6.30.8 Northern Mine site & Processing Area

The main processing area comprises separating screens and an area of largely intact concrete pits, foundations and walls. It also includes an underground entrance or drain and two Dorr thickeners. This site demonstrates a different processing technique to that employed at the flotation plant. A second processing site downhill of the main site may have been part of this process or it may relate to an earlier period of mining in the 1880s. Rehabilitation work has preserved the contours of the slime dumps and tailings dams.

6.31 Sites with a High Level of Significance Against Criterion G

6.31.1 1890s Railway Track

The track was cut into the side of the hill below the main mine site and is readily visible from the valley floor. The railway line conveyed ore from the mines to the smelter site. It was a significant part of the mining infrastructure and one of the few visibly prominent relics from the 1890s period.

6.31.2 Powder Magazines

There are two magazines located on a track which passes through the area of staff housing and amenities. They are a substantial size and built of concrete. Both are in an excellent condition.

6.31.3 *Weigh Station*

All elements of the railway precinct were built in the 1930s. The weigh station is a prominent and iconic part of the mining fabric. Concentrates from the flotation mill were trucked by road to the mill and dumped through hopper bins into railway trucks. This was the final step in the mining process. The railway precinct's importance under this criterion is related to its linkage with the mining and milling complex.

6.31.4 *Turntable*

This was the area where the train engines were reversed so that railway trucks could be backed up towards the weigh station. The turntable is an important part of the railway precinct. The railway precinct's significance under this criterion is related to its linkage with the mining and milling complex.

6.32 Sites with a Moderate Level of Significance Against Criterion G

6.32.1 *Railway Lines, Platform & Gantry*

These three sites are a part of the railway precinct and help demonstrate characteristics of these areas.

6.33 Sites with a Low Level of Significance Against Criterion G

6.33.1 *Forster's Gully*

This gully runs into the Molonglo River below the slag heap and was the site of some of the early gold mining activities at Captain's Flat in the 1880s. The alignment of the creek has been changed considerably to allow for the construction of a concrete drain as an erosion prevention device. Keating's Collapse 1942/45 is located on the north side of the creek. Some remnants of the collapsed railway bridge trestles are located on the embankment south of the creek.

6.33.2 *Keating's Collapse 1961, Ventilation Shaft & Commodore Machine Site*

Keating's collapse 1961 is located on the south side of Forster's Gully. It is now a deep and dangerous pit with precipitous and unfenced sides and could be regarded as rare or uncommon. A deep and uncovered ventilation shaft is located immediately above the collapse. A 10 m x 15 m cutting is located about 5 m above the shaft was probably the site for some of the machine sheds for the Commodore mine. Remnants include a scatter of fire bricks and the possible remains of an old smoke stack.

6.33.3 *1880s-90s Road & Bridge*

The old road runs almost parallel to the present road and the gully and is built upon dry stone walling. Although the bridge is supported by brick embankments on either side of the gully, it is in very poor condition and is unsafe.

6.33.4 *Staff House Sites*

This area relates to the 1930s. Four separate house sites have been identified. Although the sites are now part of a pine plantation their integrity is very high and the alterations to the

area have not detracted from their significance. None of the building superstructure is left, but the foundations, walls and footings are all intact, together with stairs and some car garage areas.

6.34 Summary of Identified Heritage Values

6.34.1 1890s Smelter Site, Slag & Slime Dumps - Southern

Criteria	Exceptional	High	Moderate	Low
A		X		
B		X		
C(1)	X			
C(2)			X	
D	X			
E	X			
F			X	
G	X			

6.34.2 Forster's Gully

Criteria	Exceptional	High	Moderate	Low
A			X	
B				X
C(1)			X	
C(2)				X
D			X	
E			X	
F				X
G				X

6.34.3 Keating's Collapse, etc

Criteria	Exceptional	High	Moderate	Low
A			X	
B				X
C(1)			X	
C(2)				X
D			X	
E			X	
F		X		

G				X
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6.34.4 1890s Railway Track

Criteria	Exceptional	High	Moderate	Low
A		X		
B				X
C(1)	X			
C(2)			X	
D	X			
E		X		
F		X		
G		X		

6.34.5 Old Road & Bridge

Criteria	Exceptional	High	Moderate	Low
A			X	
B				X
C(1)			X	
C(2)				X
D			X	
E			X	
F				X
G				X

6.34.6 Powder Magazines

Criteria	Exceptional	High	Moderate	Low
A		X		
B				X
C(1)			X	
C(2)			X	
D			X	
E			X	
F			X	
G		X		

6.34.7 *Surge Bin*

Criteria	Exceptional	High	Moderate	Low
A	X			
B				X
C(1)	X			
C(2)	X			
D	X			
E	X			
F	X			
G	X			

6.34.8 *Infrastructure Near Surge Bin*

Criteria	Exceptional	High	Moderate	Low
A	X			
B				X
C(1)	X			
C(2)	X			
D	X			
E	X			
F	X			
G	X			

6.34.9 *Stairs, Mine Entrance, etc*

Criteria	Exceptional	High	Moderate	Low
A	X			
B				X
C(1)	X			
C(2)				X
D	X			
E	X			
F	X			
G	X			

6.34.10 *Storage Bins, Ball Mills, Sulphur Plant*

Criteria	Exceptional	High	Moderate	Low
A	X			
B				X
C(1)	X			
C(2)	X			
D	X			
E	X			
F	X			
G	X			

6.34.11 Dorr Thickeners

Criteria	Exceptional	High	Moderate	Low
A	X			
B				X
C(1)			X	
C(2)		X		
D		X		
E	X			
F	X			
G	X			

6.34.12 Flotation Mill

Criteria	Exceptional	High	Moderate	Low
A		X		
B				X
C(1)			X	
C(2)	X			
D		X		
E	X			
F	X			
G	X			

6.34.13 Northern Processing Site, Dumps, etc

Criteria	Exceptional	High	Moderate	Low
A		X		

B		X
C(1)	X	
C(2)	X	
D	X	
E	X	
F	X	
G	X	

6.34.14 Staff House Sites

Criteria	Exceptional	High	Moderate	Low
A		X		
B				X
C(1)				X
C(2)				X
D	X			
E		X		
F				X
G				X

6.34.15 Weigh Station

Criteria	Exceptional	High	Moderate	Low
A	X			
B				X
C(1)	X			
C(2)			X	
D	X			
E	X			
F		X		
G		X		

6.34.16 Turntable

Criteria	Exceptional	High	Moderate	Low
A	X			
B				X
C(1)				X

C(2)			X
D		X	
E	X		
F		X	
G		X	

6.34.17 *Railway Lines, etc*

Criteria	Exceptional	High	Moderate	Low
A			X	
B				X
C(1)				X
C(2)				X
D			X	
E			X	
F				X
G			X	

Appendix One - Stakeholder Consultation

Captains Flat Community Association Meeting

Alistair Grinbergs and Barry McGowan attended the Captains Flat Community Association meeting held on 22nd March 2006. The meeting was attended by:

- Judy Cross
- Brenda Carter
- Elizabeth Estbergs
- Peter Marshall
- John Sandow
- Christine Sandow
- Phil Dickson
- Christine Kennedy
- Jan Booth
- Leanne Brown
- Anita King
- Vernon Uncles
- Chrissy Uncles
- Dereck Uncles

Open House Workshop

The following people attended the “open House” workshop held on Saturday 22nd April 2006.

- Alex Wells
- Col Marks
- Jan Booth
- Mara Herba
- Richard Herba
- Christine Sandow
- John Sandow
- Anne Fry
- Alex Fry
- Gillian Igracev
- Mike Hedges
- Claudia Koelndofar