REGISTER OF HERITAGE PLACES - ASSESSMENT DOCUMENTATION

11. ASSESSMENT OF CULTURAL HERITAGE SIGNIFICANCE

The criteria adopted by the Heritage Council in November 1996 have been used to determine the cultural heritage significance of the place.

The documentation for this place is based on the heritage assessment completed by Irene Sauman, Historian, and Laura Gray, Heritage and Conservation Consultant, in August 2004, with amendments and/or additions by HCWA staff and the Register Committee.

PRINCIPAL AUSTRALIAN HISTORIC THEME(S)

- 3.4.3 Mining
- 5.1 Working in harsh conditions

HERITAGE COUNCIL OF WESTERN AUSTRALIA THEME(S)

- 110 Resource exploitation & depletion
- 303 Mining (incl. mineral processing)

11.1 AESTHETIC VALUE*

Halley's Comet Gold Mine, Marble Bar is highly valued by the Marble Bar community as a landmark which has an industrial aesthetic clearly associated with the significant history of gold mining in the Pilbara in the 1930s. (Criteria 1.1 & 1.3)

The buildings, equipment and elements that comprise *Halley's Comet Gold Mine, Marble Bar* are of individual significance, and together form a gold mining industrial environment that makes a significant contribution to the goldfields character of Marble Bar. (Criterion 1.4)

11.2 HISTORIC VALUE

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* For consistency, all references to architectural style are taken from Apperly, R., Irving, R., Reynolds, P. *A Pictorial Guide to Identifying Australian Architecture. Styles and Terms from 1788 to the Present,* Angus and Robertson, North Ryde, 1989.
For consistency, all references to garden and landscape types and styles are taken from Ramsay, J. *Parks, Gardens and Special Trees: A Classification and Assessment Method for the Register of the National Estate,* Australian Government Publishing Service, Canberra, 1991, with additional reference to Richards, O. *Theoretical Framework for Designed Landscapes in WA,* unpublished report, 1997.

Halley's Comet Gold Mine, Marble Bar was a major development in Western Australia in the 1930s, garnering interest from major mining investment companies and eliciting Government support. (Criterion 2.1)

Halley's Comet Gold Mine, Marble Bar sparked a resurgence of mining activity in the Marble Bar district and was important to the economy of the town and surrounding area. (Criterion 2.2)

Halley's Comet Gold Mine, Marble Bar is closely associated with prospectors Tommy Starr, Harry Boyd and Bill Robertson, who made the find, and with prominent mining entrepreneur Claude de Bernales, whose Great Boulder Mining and Finance Ltd bought a controlling share in the Mine and was responsible for the development of the plant and settlement. (Criterion 2.3)

11.3 SCIENTIFIC VALUE

Halley's Comet Gold Mine, Marble Bar has the ability to provide information relating to a number of mining activities and functions including the mining and extraction of ore as demonstrated by the hillside tunnel and mining shaft, three specific processes of gold extraction and the changes that have taken place over the years to facilitate those functions, and the provision of power for the mine and the town of Marble Bar. (Criteria 3.1 & 3.2)

11.4 SOCIAL VALUE

Halley's Comet Gold Mine, Marble Bar is valued for social and cultural reasons as a significant remnant of the goldmining history of the district which, as an ongoing tourist attraction, continues to provide an economic benefit to the community. (Criterion 4.1)

Halley's Comet Gold Mine, Marble Bar contributes to the local and wider community's sense of place as a remnant of the gold mining history of the area. (Criterion 4.2)

12. DEGREE OF SIGNIFICANCE

12.1 RARITY

The treatment and processing plant at *Halley's Comet Gold Mine, Marble Bar* is rare as a comprehensive example of such plant in Western Australia, as it comprises intact crushing mills, roasters, cyanide plant, copper treatment plant and associated elements. (Criterion 5.1)

12.2 REPRESENTATIVENESS

The buildings, equipment and elements that comprise *Halley's Comet Gold Mine, Marble Bar* are significant in demonstrating a representative intact gold mining environment from the 1930s in an isolated gold field. (Criterion 6.1)

Halley's Comet Gold Mine, Marble Bar demonstrates a range of occupations and ways of life, gold mining extraction and processes, and recreational activities. (Criterion 6.2)

12.3 CONDITION

Halley's Comet Gold Mine, Marble Bar is in fair condition overall. The museum and manager's house are both occupied and maintained. The mine buildings are in fair condition with missing or damaged cladding, water ingress, deteriorated timbers, and rusted steel. The equipment and other elements mostly remain in situ, but are rusted. Generally the site is maintained for public use.

12.4 INTEGRITY

The museum is open on a daily basis and includes tours of the mine group and the tunnel. The manager's house is occupied by the museum manager, but the other three dwellings are in various states of reconstruction and unoccupied. None of the mine buildings, machinery or other elements are operational. It is unlikely that the place would be reinstated as an operational gold mine, but it has a high degree of integrity for the interpretive opportunities it presents.

12.5 AUTHENTICITY

Except for the reconstruction of the three employee houses, and alterations to the museum buildings (former dwellings), there has been very minimal intervention to the buildings, elements and equipment that comprises *Halley's Comet Gold Mine, Marble Bar*. The place has a high degree of authenticity.

13. SUPPORTING EVIDENCE

The documentary evidence has been compiled by Irene Sauman, Historian. The physical evidence has been compiled by Laura Gray, Heritage and Conservation Consultant.

A curtilage encompasses the buildings and the entrance to the No. 3 adit (horizontal tunnel). The adit can be accessed to a length of at least 100 metres before the first shaft is reached and the curtilage could extend to this point.

13.1 DOCUMENTARY EVIDENCE

Halley's Comet Gold Mine, Marble Bar, established in 1936, comprising elements from a gold mine operation including an office, store, assay room, fitting shop, crushing shop, power house, gold room and various treatment elements including carbon columns, cyanide tanks, copper processing, roasters, stack, machinery and equipment; the mine tunnel (No. 3 adit) in the side of the hill and associated elements; the museum and associated elements; four houses; remnants of domestic and mining activities and various outbuildings.[1]

The first non-indigenous settlers of Pilbara were pastoralists in the 1860s, following the explorations of Augustus Gregory. The pastoralists and their shepherds were always ranging further afield in search of good land. When Nathaniel Cook saw the multi-coloured stone bar that stretched across the Coongan River, he thought he was looking at marble and named the area Marble Bar. The stone was actually jasper, but the name remained. When the Pilbara Goldfield was declared on 1st October 1888 and in 1891, alluvial gold was discovered on the Coongan River, bringing miners to the district. A campsite was established near the bar but when deep gold reefs were found about five kilometres north east, the camp followed the gold. It was at this latter site that the town of Marble Bar was established.[2]

In 1898, Mines Department statistics listed 180 mine workers on 73 leases at Marble Bar and Nullagine. The population of the district probably peaked at 500-750 in the 1895-1898 period.[3]

> Pilbara fields (gold and tin) although promising, has not been prospected to any extent. Somewhat remote and imperfect communication and expense of transport has prevented a good many prospectors from coming. Cost of haulage causes living conditions to be very expensive. Mining on a large scale is prevented by scarcity of fuel and timber.[4]

The opening of the railway from Port Hedland to Marble Bar in 1909 and the establishment of the Marble Bar State Battery in 1910 encouraged mining in

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1 The original name, Halley's Comet Gold Mine, has been used to distinguish the place from the Comet Gold Mine in the Cue district.

2 Edwards, Hugh, *Gold Dust and Iron Mountains: Marble Bar and Beyond, The story of the Eastern Pilbara*, East Pilbara Shire, 1993, p. 25.

3 Edwards, Hugh, op cit, p. 26.

4 *Twentieth Century Impressions of Western Australia*, Facsimile of 1901 edition, Perth, Hesperian Press, 2000, p. 308.

the region. In 1915, there were estimated to be 400 miners within a fifty mile radius of the town, mining gold and tin.[5] Alluvial and reef mines continued to be worked in the Pilbara goldfield in the 1920s at places such as Whim Creek, but there was less mining activity in the Marble Bar area.[6]

In 1931, the Commonwealth Government introduced a Gold Bounty of £1 per ounce to encourage gold production and assist the economy during the Depression. Many unemployed men tried their luck on the goldfields in the 1930s. Thomas James (Tommy) Starr had been prospecting and working in the East Pilbara region since at least 1916. In the early 1930s he had been getting alluvial gold at the bottom of a particular hill for some time, but had been unable to locate the source. He was not a young man and he had lost one eye in an accident, making prospecting more difficult. In 1935, he joined up with two young newcomers, Henry (Harry) Boyd and Gilbert William (Bill) Robertson, both in their twenties. Starr offered them an equal partnership if they joined him in his search for the source of his alluvial gold.[7]

It is said locally that the young men shifted many tons of stone looking for the gold. One morning, Starr (or Robertson, depending on who is telling the story) dollyed some stone on top of a hill near their camp and found sufficient gold for the partners to continue working the area. A 10-acre mining lease was pegged on 27 June 1936 and registered three days later.[8] A flying-fox was set up using half a ton of wire rope, bush poles with metal supports scrounged from an old battery, and buckets fashioned from 44-gallon drums cut down to a third in size. The stone they collected was bluish-grey in colour, not the type usually associated with gold in the Marble Bar district.[9]

The first crushing of 71.5 tons was carried out at the Marble Bar State Battery and returned 246 ounces of gold.[10] It immediately inspired wide interest.

> The mine is five miles from the town on a spur which forms part of a line of outcrops over the Marble Bar and Just In Time areas, and was located by loaming about six weeks ago. The ore chute is an exceptionally wide formation, apparently overlooked by prospectors in the past, who generally look for quartz-bearing gold in this locality. It is expected that the mine will prove very rich when opened up.[11]

Tommy Starr named the find *Halley's Comet Gold Mine, Marble Bar*, because it was a once-in-a-lifetime event, similar to the observation of Halley's Comet. Other miners quickly took up adjoining leases.

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5 Battye, J. S. *The History of the North West of Australia: Embracing Kimberley, Gascoyne and Murchison Districts,* Perth, Jones & Co, 1915, pp. 190.

6 Orr, Bert, 'Early years in the North: Stations, mining towns, goldfields and tinfields', 11-page typescript memoirs, Battye PR 6053.

7 Mallett, Kathleen, *To the Bar Bonded: A history of early Marble Bar*, East Pilbara Shire & Hesperian Press, 1992, p. 265.

8 Mining lease no. 927, Dept of Industry & Resources Archives, Halley's Comet Mine Vol. 1, 3596/70.

9 Mallet, Kathleen, op cit, p. 265.

10 'Marble Bar Yield', *West Australian*, 2 July 1936, np., Dept of Industry & Resources (DIR) Archives, Halley's Comet Mine Vol. 1, 3596/70.

11 'Marble Bar Yield', *West Australian*, 2 July 1936, np., op cit.

> Development of the new find - Halley's Comet - is proceeding satisfactorily along a lode over 12 ft. wide. Its thickness is not yet known. Values, if anything, are higher even than the first return yielded. Pegging still continues in the country around the claim.[12]

A second crushing of 71 tons in August returned an even better yield from the amalgamation process, and both crushings returned over 4 ounces per ton from the tailings.[13] Investors were queuing to take an option on the Mine, while the partners had eighteen men employed in costeaning and shaft sinking as they waited for the State Battery to crush several hundred ton of stone already 'at grass'. This crushing, of 260 tons, was carried out on 6 November 1936 and returned over 10 ounces per ton.[14]

On 10 October 1936, it was reported that the De Bernales group had exercised its option and purchased *Halley's Comet Gold Mine, Marble Bar* for £40,500, after their initial offer of £20,000 was refused.[15] A number of the smaller adjoining leases were also purchased including 'The Alexander' (later known as McKinnon's). Comet Gold Mines Ltd was floated, two-thirds owned by De Bernale's Great Boulder Mining and Finance Ltd and one-third by Commonwealth Mining and Finance Ltd.[16]

Claude Albo de Bernales migrated to Western Australia in 1897, at the age of 21, attracted by the gold boom. He established himself as a machinery salesman and did well, his charm and his appearance (handsome, tall, always well-dressed) being major assets. By 1911, he was a member of the Kalgoorlie Chamber of Mines, managing director of the Kalgoorlie Foundry (which manufactured mining plant) and a director of Hoskins Foundry, Perth. In 1926 he acquired control of Great Boulder Proprietary Gold Mine, and was involved in the development of Wiluna and the passing of the Gold Bounty Act 1931. Between 1932 and 1935 he formed twenty new companies in London and sold gold leases. He was also involved in property development and in 1937-38 developed London Court and Piccadilly Theatre and Arcade in the Perth city centre. Many of his ventures failed, but his proportion of successes was better than average for the mining industry, and he was hailed as Western Australia's greatest ambassador in the 1930s.[17]

Londoners who invested in de Bernales developments were not so lucky. In 1939, the London Stock Exchange suspended trading in his companies and

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12 'Tailings Assay 4 oz.', *Kalgoorlie Miner*, 6 July 1936, DIR Archives, Halley's Comet Mine Vol. 1, 3596/70.

13 'Another rich crushing', *Kalgoorlie Miner*, 12 August 1936, np., DIR Archives, Halley's Comet Mine Vol. 1, 3596/70.

14 Marble Bar State Battery, Crushing Register book 60, 16 July 1936-1987, entries no. 824, 825, 830, 841, 844, 861 & 878, 17 October 1936 to 1 April 1937 for Halley's Comet, Dept of Industry & Resources Archives, State Batteries Box 34; Mines Dept, *Annual Report*, 1936, p. 43, Paper 5 in *Votes & Proceedings of the Western Australian Parliament*, 1937, Vol. 1.

15 *Northern Times*, 14 October 1936.

16 'Halley's Comet Mine. Bernales group exercises option', *Kalgoorlie Miner*, 12 October 1936 & 'Comet Gold Mines Ltd', *Kalgoorlie Miner*, 21 October 1936; DIR Archives, Halley's Comet Mine Vol. 1, 3596/70.

17 *Australian Dictionary of Biography*, MUP, Melb., 1981, Vol. 8 1891-1939, p. 264-265; Colebatch, Hal, *Claude de Bernales: The Magnificent Miner*, Hesperian Press, Perth, 1996.

he was investigated for fraud. While attempts to bring him to trial failed his companies eventually went into liquidation after World War Two.[18]

Halley's Comet Gold Mine, Marble Bar was placed under the management of the Australian Mines Management and Secretariate Ltd. The two shafts that had been started were extended and a five-head battery was erected, water for its operation being supplied by a five-mile pipeline from the White Angel Well. The high values from crushings continued and in May 1937 a cyanide plant for the treatment of tailings was under construction at the site.[19] Also in 1937, the eight adjoining mining leases owned by the Company, namely Halley's Comet (lease no. 927), Sydney (928), Jupiter (945), Lone Star (946), Stirling Castle (934), Jupiter South (963), Halley's Comet North (964) and Halley's Comet North East (965) covering almost 87 acres, were amalgamated into one parcel for economy of operation.[20]

Details of the development of the settlement and plant are not well documented, as newspaper editors were more interested in reporting the gold yield, but the place was well established by October 1938 according to aerial and other photographs of the time. These show managers' residences, men's huts and various plant installations.[21] There were some 100 to 120 men employed at *Halley's Comet Gold Mine, Marble Bar* at its peak of operation. For the benefit of workers, there was a swimming pool, tennis court, soft drink factory, and a butcher shop built by George Mallett of Limestone Station, a former butcher in Marble Bar. The facilities were more generous than usually found at a mine site in the 1930s, but would have been considered necessary to compensate for the harsh climate and the lack of other attractions in the district.[22]

There was some unrest among the workers during the development phase. On 7 July 1938, the men at *Halley's Comet Gold Mine, Marble Bar*, Tassie Queen and Alexander mines all walked out in protest at the employment of an Italian at *Halley's Comet Gold Mine, Marble Bar*, stating that they meant to keep the north free from foreigners. The objection was stated as being 'not personal, but general', as the Italian in question was Australian born and had a union ticket. The Ironclad Hotel at Marble Bar was expected to be blacklisted because it employed foreign labour in the kitchens.[23] The outcome of this issue is not known but the attitude was not uncommon at the time, having already come to the fore in the goldfields during the Kalgoorlie riots in 1934.

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18 *Australian Dictionary of Biography*, op cit, p. 264-265; Colebatch, Hal, op cit.

19 *Kalgoorlie Miner*, 23 January, 4 February, 26 April, 10 May 1937.

20 Correspondence and sketch of mining lease sites, 26 November 1937, DIR Archives, Halley's Comet Mine Vol. 1, 3596/70.

21 Aerial photo filed with 1938 geological survey maps of Halley's Comet and adjacent mines, Pilbara goldfield, produced in 1938 by Aerial, Geological and Geophysical Survey of Northern Australia, Battye Library map collection 9/11/10; photos from the Battye Government Photographer's Collection, 816B / B5722-5748.

22 Mallet, Kathleen, op cit, p. 270-71; *Northern Times*, 13 September 1983, p. 9; Comet Gold Mine, brochure, September 1986, Battye PR8679/MAR.

23 *Kalgoorlie Miner*, 9 July 1936, DIR Archives, Halley's Comet Mine Vol. 1, 3596/70.

Halley's Comet Gold Mine, Marble Bar created much interest in the Marble Bar district, resulting in an increase in mining activity. To encourage and facilitate this activity, the Mine's Department upgraded the Marble Bar State Battery from a 5-head to a 10-head mill in 1938.[24]

A major ongoing development in 1938-39 was the construction of a full treatment plant, part of which was relocated from the abandoned Lalla Rookh Mine.[25] In August 1938, the coarse crushing section of the new plant was under construction and work was ongoing into the following year. In July 1939, it was reported that:

> The bulk of the men are employed on erecting the plant, and the open cut and the winze are the only places where ground is being broken. It has been agreed between the men and the management that in the summer time the mine will work one shift only, which starts at 4 a.m. and knocks off at 12 a.m.[26]

A winze was a shaft, either vertical or inclined, that connected different levels within a mine. *Halley's Comet Gold Mine, Marble Bar* was worked with adits (horizontal tunnels) cut into the hill on three levels and connected by several winzes.[27]

Noel Butcher was the manager from 1939 to the early 1940s, when he enlisted in the RAAF. He married Eileen Mallett from nearby Limestone Station.[28] Matt Fitzgerald, Leo Gibbons and Wally Smales were later managers in the 1940s during Comet Gold Mines Ltd ownership.[29] Production at *Halley's Comet Gold Mine, Marble Bar* continued during World War Two, though with a reduced workforce. In February 1941, an arsenic plant was proposed and duly installed.[30] Two years later, when the demand for arsenic in Australia and the United States exceeded supply, mine management held talks with the Mines Department regarding the installation of settling chambers to recover arsenic from the treated sands.

> This would involve the Company in a substantial expenditure, but the Company would be quite willing to undertake same if they knew that the arsenic they would produce would be of assistance to the war effort.[31]

The result of this discussion is unclear and it is not known if the arsenic settling chambers were installed. There was another contribution made to the war effort when, in January 1944, a request for a Stopehamer Rock Drill was recommended for approval, it was noted that :

> The whole of the employees form a V.D.C. [Volunteer Defence Corp] unit of considerable importance to this North West centre. Should this mine for any reason, close down, Marble Bar would be most seriously affected...

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24 Mines Department, *Annual Report*, 1939, p. 62.

25 Mines Inspector's report, 12 July 1938, DIR Archives, Halley's Comet Mine Vol. 1, 3596/70.

26 *Manganese Record, Peak Hill, Nullagine and Marble Bar Gazette*, 7 July 1939, p. 1.

27 Aerial, Geological and Geophysical Survey of Northern Australia, *Halley's Comet and adjacent mines, Pilbara goldfield*, 1938, Plate 1.

28 Mallet, Kathleen, op cit, p. 270.

29 Mallet, Kathleen, op cit, p. 270.

30 Correspondence, 15 February 1941, DIR Archives, Halley's Comet Mine Vol. 1, 3596/70.

31 Correspondence 26 February 1943, DIR Archives, Halley's Comet Mine Vol. 1, 3596/70.

> The State Government and, as far as I am aware, the Commonwealth Government, are both desirous that the mine should continue in operation, maintaining as it does, an important North West out-post.[32]

There were at least two deaths at *Halley's Comet Gold Mine, Marble Bar*. In September 1940, Arthur Thomas Ware, aged 40, was trapped by an earth fall. He is buried in the Marble Bar cemetery. Another employee, named Peterson, died in Perth from poisoning from the arsenic plant.[33]

At the end of World War Two, the issue of rehabilitating the mining centres was under discussion. Comet Gold Mines Limited wrote to the Mines Department in January 1946, outlining the difficulties:

> [D]uring the war years the outback gold mines have been placed at a considerable disadvantage through lack of manpower. The Comet Gold Mine, in particular, has suffered through its comparative isolation, and the difficulty of its climate... [W]e now find the McKinnon's Mine well behind in its development, and short of ore reserves; whilst ... the Comet lode itself was lost for several months through faulting. It is only recently that diamond drilling located what appears to be the Comet ore body continuation, but there again we are now faced with having to develop, and, at the same time, produce.[34]

Finance for the development work could not be obtained from the several holding companies as they had gone into liquidation and the Company's overdraft limit of £20,000, secured by the *Halley's Comet Gold Mine, Marble Bar* plant, had almost been reached.[35] The Company, which at that time was employing 80 men, was requesting a grant of at least £15,000, otherwise the mines would have to be closed. The Mines Department did not consider the ore reserve sufficient to grant assistance, and when further diamond drilling failed to locate a reliable seam Comet Gold Mine Ltd ceased operation. *Halley's Comet Gold Mine, Marble Bar* and associated leases were let on tribute (share mining).[36]

Stuart Henry Stubbs, who had been the last manager for Comet Gold Mines Ltd, commenced tribute of lease 927 and the Sydney Mine (lease 928) on 1 January 1948. From that date to 14 March 1950, Stubbs extracted 3,345 ounces of gold. He then purchased *Halley's Comet Gold Mine, Marble Bar* and all plant and buildings for £8,700 with the assistance of a loan from the Government. Repayment was to be made at the rate of 10% of all concentrates extracted. A detailed list of the mill plant, equipment and buildings at this time provides an indication of the extent of the operation during peak performance from 1936 to the mid 1940s.[37]

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32 Correspondence from Under Secretary for Mines to the Division of Import Procurement, Sydney, 4 January 1944, DIR Archives, Halley's Comet Mine Vol. 1, 3596/70.

33 Mallet, Kathleen, op cit, p. 270.

34 Correspondence, 4 January 1946, DIR Archives, Halley's Comet Mine Vol. 1, 3596/70.

35 Correspondence, 4 January 1946, DIR Archives, Halley's Comet Mine Vol. 1, 3596/70; Mines Rehabilitation application, 29 July 1946, DIR Archives, Halley's Comet Mine Vol. 2, 3597/70.

36 Correspondence 16 January 1947 & 21 January 1948, DIR Archives, Halley's Comet Mine Vol. 2, 3597/70.

37 Correspondence from Under Secretary for Mines to Solicitor General, 10 August 1950; S. H. Stubbs, 'List of plant, buildings and equipment to be purchased from Comet Gold Mines Pty Limited', 23 October 1950, DIR Archives, Halley's Comet Mine Vol. 2, 3597/70.

Briefly, the buildings comprised:

> Millroom 60' x 35' of wood and iron construction.
>
> Goldroom 70'8" x 40' of structural steel construction with jarrah battens covered with C.G. Iron.
>
> Acidroom 12'9" x 12'9" of jarrah framing covered with wire mesh and
>
> Flotation Building 34' x 34'6" of wood and iron construction with two sides open and being extension of Millroom all with concrete floors.
>
> PowerHouse comprising Main room 70' x 40' of structural steel covered with C.G. Iron with jarrah battens and purlins complete with overhead gantry and Annex 10' x 7' of wood and iron construction, both with concrete floors.
>
> Mine Office 32' x 12' wood and asbestos construction with C.G. Iron and Roof and concrete floors divided into two offices and plan room.
>
> Assay Office Building comprising 60' x 16' building constructed of 2" piping with jarrah battens and purlins with 6' verandah on North end divided into 5 sections with 3 partitions of Hessian and one of C.G. Iron.
>
> Assay Crushing Room 10' x 14' of wood and iron connected by leanto to Assay Office.
>
> Blacksmithing and Toolsharpening Shop 29'6" x 20'6" constructed of 3" piping jarrah and C.G. Iron with wood leanto 17'6" x 13'6".
>
> Fitting Shop 25' x 15' of wood and iron construction with 8' x 10' leanto...
>
> Four Large Houses and Seven Small Houses comprising:-
>
> 4 only large Houses 31' x 23' with 8' verandah of 4 rooms each with bathroom in verandah corner comprised of jarrah and caneite with C.G. Iron Roofs flywired.
>
> 6 only small houses 28' x 28' overall verandah front and side of three rooms with cement floors wood and asbestos walls and C.G. Iron Roof.
>
> 1 only small House as above except totally enclosed on three sides by verandah.[38]

The powerhouse was equipped with a Ruston engine, one of the first of its kind in WA. The battery at *Halley's Comet Gold Mine, Marble Bar* was a 15-head stamp mill, and a ball mill was used to grind the concentrates. The ore mined in the area contained various impurities including arsenic and sulphides, which had to be removed. The arsenic plant installed in 1941 removed the arsenic from the ore concentrate, after which the concentrate was roasted to remove the sulphides. A 250-foot stack, which was reputed to be the tallest in the southern hemisphere at the time, vented the sulphide high into the atmosphere.[39] Mercury, zinc and cyanide were all used in the extraction and amalgamation processes at various periods during the Mine's operation.

Stuart Stubbs and his family lived on site and mined gold until 1955, by which time a total of 4.79 tons of gold had been extracted from the hill. Stubbs then acquired an interest in the Copper Hills Copper Mine, 65 kms south. He installed a copper treatment plant at *Halley's Comet Gold Mine, Marble Bar* and the copper produced provided almost half of Western Australia's requirements for superphosphate manufacture.[40] This operation

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38 S. H. Stubbs, 'List of plant, buildings and equipment ...' op cit, pp. 4-5.

39 *Northern Times*, 13 September 1983, p. 9; Insurance list, 1958-59, DIR Archives, Halley's Comet Mine Vol. 3, 3598/70.

40 Correspondence, 20 December 1957, DIR Archives, Halley's Comet Mine Vol. 3, 3598/70; *Northern Times*, 28 August, 1965, p. 30; Shire of East Pilbara, *Community Directory 1985-86*, pp. 12-13.

continued until 1963. In 1960, the Stubbs family took an interest in two white (chrysotile) asbestos mines, Lionel and Fibre Queen, about 90 kms from Marble Bar, and a treatment plant was purchased and installed at *Halley's Comet Gold Mine, Marble Bar*.[41] The plant produced 200 tons of fibre a month, making it the 2nd largest producer in Australia behind the plant located at Baryulgil in New South Wales.[42] It was a non-viable operation and only worked until the mid 1960s. Financial assistance for the developments by Stubbs was provided by Government loans.[43]

From 1964 to 1968, the Stubbs family mined tin at Split Rock. Stuart's son, Maurice was involved in the mining operations with his father by this time. Power for the Marble Bar township was generated from *Halley's Comet Gold Mine, Marble Bar* during this period. In the late 1960s and early 1970s, the Stubbs family prospected for nickel in the Pilbara. The place was leased to Austral Mining Company NL in 1969 and then to Amber Gold in 1971. Five residences on the site were retained by the Stubbs family for their own use during the lease periods. In 1973, the Stubbs commenced cyanide treatment of gold tailings, for which process much of the existing plant had to be rebuilt.[44]

In 1976, a display of Pilbara minerals, which had been opened at Port Hedland in 1970, was transferred to *Halley's Comet Gold Mine, Marble Bar* as the nucleus of a museum & tourist centre.[45] Treatment of the tailings continued through the 1980s, with 40 tons a day being treated for a yield of 90-100 ounces of gold per week.[46] The family also worked other mining leases in the area using the open cut method, with the ore treated at either *Halley's Comet Gold Mine, Marble Bar* or at Bamboo Creek.[47]

In 1989, the site was gazetted Reserve 41179 for the purpose of mining and vested in the East Pilbara Shire.[48] In 1999, the place was entered on the Shire of East Pilbara Municipal Inventory with a high level of protection recommended.[49]

A number of the buildings, especially those used for residential or ancillary purposes, have been removed or fallen into ruin through disuse. Several

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41 Correspondence 26 September 1958, DIR Archives, Halley's Comet Mine Vol. 3, 3598/70; Correspondence 5 December 1961, DIR Archives, Halley's Comet Mine Vol. 4, 3599/70

42 *Northern Times*, 13 September 1983, p. 9.

43 Correspondence, Loan account S. H. Stubbs, 31 May 1978, DIR Archives, Halley's Comet Mine Vol. 10, 1506/74; 'History of Comet Gold Mine - Marble Bar', 1 page, possibly by a member of the Stubbs family. Date for end of operation of the asbestos plant has variously been given as 1964 and 1966.

44 Correspondence 23 July 1969 & 7 January 1971, DIR Archives, Halley's Comet Mine Vol. 8, 3606/70; Correspondence, Loan account S. H. Stubbs, op cit.

45 'History of Comet Gold Mine - Marble Bar', op cit.

46 *Northern Times*, 13 September 1983, p. 9.

47 'History of Comet Gold Mine - Marble Bar', op cit.

48 DOLA, Land Record Vol. 3000 Fol. 36 & Register 85/DP189228; Reserves Index, Reserve 41179.

49 O'Brien Planning Consultants, *Shire of East Pilbara Municipal Inventory*, 1999, Place MB4.

residences were destroyed by fire and storm.[50] A modern transportable has been placed on site as a manager's residence.

In 2004, *Halley's Comet Gold Mine, Marble Bar* is a non-operating mine and is run as a tourist attraction with conducted tours and the Mineral Museum & Display Centre housed in the former mine manager's residence and adjacent house.

13.2 PHYSICAL EVIDENCE

Halley's Comet Gold Mine, Marble Bar is located approximately 10 kilometres south of Marble Bar on a gravel road that continues through to Hillside Station. The buildings, equipment and elements that comprise *Halley's Comet Gold Mine, Marble Bar* are located in a valley between ranges of hills, and although the mine operation buildings are on a level site, the mine tunnel immediately to the south west, is located in the side of a hill, the museum is located on a rise, and the manager's and employee dwellings are on the lower slopes of a range of hills along the north east. The stack, central within the mine buildings, is a landmark identifiable some distance from the mine.

Halley's Comet Gold Mine, Marble Bar comprising elements from a gold mine operation including an office, store, assay room, fitting shop, crushing shop, power house, gold room and various treatment elements including carbon columns, cyanide tanks, copper processing, roasters, stack, machinery and equipment; the mine tunnel (No. 3 adit) in the side of the hill and associated elements; the museum and associated elements; four houses; remnants of domestic and mining activities and various outbuildings.

The gravel road enters the site in the north west, with the museum buildings on a rise on the left (north east); there are domestic and mining remnants along the right side, and the mine site ahead. The road veers around to the north east, before veering again in a south east direction. An extension of the first bend leads both to a track around the base of the hill, up to the museum where the immediate setting is lush kikuyu grass, or straight on to the manager's house, also surrounded by grass. On the right (south east) of the access to manager's house, is a large below ground concrete swimming pool and remains of the tennis courts, also grassed. From the manager's house, the access road turns south east, parallel with the main road through the site, with three former employee houses on the north east side, again each surrounded by grass.

The first buildings in the gold mine group, when approaching from the entry at the north west, as per the tourist tour, is the office and store, with the assay room adjacent on the south west. The office is a timber framed building with dado corrugated iron cladding and no cladding above dado on the exterior. The interior is lined with battened plasterboard. The roof is barrel vault corrugated iron with a skillion verandah on all four sides. The store adjoins via the verandah. It is timber framed and clad with corrugated

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50 Various entries, lists of buildings, etc, DIR Archives, Halley's Comet Mine Vols. 1-10.

iron with a gable roof. It has double hung windows flanking a central door and is likely also originally an office. The assay office is a long rectangular steel framed and corrugated iron clad gable roofed building that now houses lapidary equipment, and is a part of the tourist experience. Further south east, are a small group of outbuildings including a carport, and beyond that is the main group of buildings, equipment and other mining elements. The tour enters the power house, passing a group of skillion and gabled roofed timber framed and corrugated iron clad sheds, two of which are referred to as fitting shop and crushing shop. The powerhouse is dominant with a curved ridge vent on the gable roof. The powerhouse has a concrete floor, is steel framed with expansive roof trusses and unlined walls on the interior. Extensive machinery elements remain insitu throughout.

The powerhouse connects directly through several similar buildings with various equipment also remaining insitu, and the last building is the gold room. The gold room, as for the other buildings, is timber framed and clad with vertical corrugated iron on the exterior. The gable roof features a rectangular ridge vent. A number of wall and roof sheets are missing. A timber frame with cyclone mesh forms a wall up to the underside of the roof. On the north east wall there are a three brick kilns. The cast iron doors on the kilns remain insitu.

From the gold room, the tour continues along the south east side of the buildings, in a north west direction. The carbon columns, a series of vertical steel tanks are located adjacent to the gold room. Further to the north west, adjacent to the open side of the building, are a series of rusted cast iron cyanide tanks, and a number of skillion roofed corrugated iron sheds above steel framing and various copper processing elements. Further along, extending at right angles to the buildings, and parallel to the copper process elements and sheds, are the roasters comprising a series of brick ovens and zigzag steel boxed channels above, facilitating a heating and cooling process.

Adjacent to the roaster is the stack. It is a riveted steel plate vertical cylinder extending high into the sky, with a steel staircase and steel tie rods anchoring it to the ground at several points. Immediately adjacent is a double storey height formed concrete element that was part of the most recent cyanide process.

From the group of mine buildings, a hundred metres to the south west, is the entry into the mine tunnel through the hillside. Excavated out of the earth, the tunnel is shored with timber at various points, and pipes and services are in the roof of the tunnel. The tunnel continues for several hundred metres before opening into an expansive deep mine working. Trolley rails are still evident on the floor of the tunnel. Trolleys are in place near the museum.

The museum was originally two dwellings. They are both timber framed corrugated iron clad buildings with hipped roofs and surrounding verandahs. The two buildings have been connected by roofing between the verandahs. The museum is entered from the north west side where there is a large steel framed carport. The interior walls are unlined, and most

interior walls between rooms have been removed to facilitate an open museum display area.

The later manager's house is a transportable that was relocated from another mine site. The three employee houses retain their original form with hipped roofs and surrounding verandahs, but the fabric in its entirety has been reconstructed due to voracious termite activity.

Halley's Comet Gold Mine, Marble Bar is overall in fair condition. The museum and manager's house are both occupied and maintained. The mine buildings, equipment and other elements are in fair condition with many elements rusted and weathered.

The museum is open on a daily basis and includes tours of the mine group and the tunnel. None of the mine buildings, machinery or other elements are operational. The three employee houses are in various states of reconstruction and unoccupied. The pool is well maintained, and the site in general is well maintained for public use. It is unlikely that the place would be reinstated as an operational gold mine, but it has a high degree of integrity for the interpretive opportunities it presents. Except for the steel frame and some re-cladding, there has been relatively minimal intervention to the original fabric. The place demonstrates a high degree of integrity and authenticity.

13.3 COMPARATIVE INFORMATION

There are over 350 mine and mining related sites on the Heritage Council Database, but only four mines are on the State Register. These are the *Coles Shaft (fmr)*, Armadale (P15263), the earliest extant mining shaft in the State, dating from the 1840s, *Geraldine Lead Mine Site*, Galena (P3455) and *Wanerenooka Mine Site*, Northampton (P4568), which are the earliest lead mines in the State and contain ruins and archaeological material dating from the 1850s, and *Baderra Mines*, Alma, (P8924), a lead mine, which opened in 1873 and operated intermittently until 1956. The remaining plant at *Baderra Mines* includes a lead battery.[51]

Most of the mines at Kalgoorlie-Boulder, on the Golden Mile, have been removed and their site overtaken by the Super Pit. A gold battery remains at the Hainault Tourist Mine, Kalgoorlie. At Gwalia, the site of another large isolated mine operation, the open pit mining has also removed most of the early mining structures, with only a headframe and winder remaining, relocated to another site. The mine office, assay office and mine superintendent's residence are extant and in good condition at Gwalia.[52]

Gold roasters were used to burn off the sulphide impurities in the ore, and in Western Australia were only needed north of Kalgoorlie. According to Pearson & McGowan's *Mining Heritage Places Assessment Manual*, there are only seven sites in Australia with extant gold ore roasting kilns, six of

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51 HCWA database and assessment documentation.

52 HWCA assessment documentation, *Gwalia Museum Precinct,* Place 01465.

these being in Victoria.[53] A search for roasters or roasting kilns returned 16 gold roasting sites on the National Estate database, five of which were registered.[54] At least one other roaster kiln remains in the State, at the Lancefield Mine site, Laverton, and the *Halley's Comet Gold Mine, Marble Bar* kilns are considered likely to be rare in the State.

The mine manager's residence is one of only two such Inter-War residences known to exist in Western Australia, the other being at Wiluna, which was developed in 1926 by Claude de Bernales. The Wiluna residence is the only surviving example of the houses built at the mine for senior staff. It is in largely original condition, unlike the residence at *Halley's Comet Gold Mine, Marble Bar*, which has undergone extensive internal alterations for its use as a museum facility.[55]

The plant at *Halley's Comet Gold Mine, Marble Bar* is therefore a rare comprehensive example of gold treatment plant in the State.

13.4 KEY REFERENCES

Halley's Comet Mine files, Dept of Industry and Resources archives, cnr Harris & Cohn streets, Carlisle.

13.5 FURTHER RESEARCH

The demographics of mine workers.

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53 Pearson, Michael & McGowan, Barry, *Mining Heritage Places Assessment Manual*, Australian Council of National Trust and Australian Heritage Commission, Canberra, 2000, p. 31.

54 Register of the National Estate

55 HCWA assessment documentation, *Mine Manager's House, Wiluna*, Place 05507.