

**BATEMANS BAY BUSHWALKERS INC.
WALK PROPOSAL FORM**

Please complete form with as much detail as possible online and email to the Walks Organiser or complete in black and mail to the Walks Organiser by the due date shown on program.

Walks Organiser: Charles Stuart, 2/14 Graydon Ave, Denhams Beach Ph 4472 5097
Assistant: Donna Franklin, 0421 484 217

PROPOSED DATE/S 24th May 2012 DATE LAST WALKED / NEW WALK 31/07/2004

NAME OF WALK Three Moruya Silver & Gold Mines

MAP/S (eg. Kioloa) New Series (GDA94) _____ or Old Series (AGD66) Moruya 8926-3-S

GRID REFERENCE (Start) 340177 (Finish) 340177 CAR SHUFFLE? No

WALK LEADER/S John Foulis Telephone 4474 5607

Note: It is compulsory to carry a BBBW GPS (or your own) and spare batteries on all BBBW walk
Do you wish to be issued with a BBBW GPS for this walk? No PLB required? No

WALK GRADING: Please ✓
EASY Good tracks, relatively flat terrain
EASY/MEDIUM Good tracks, some hills or more difficult sections
MEDIUM Rougher tracks, fairly steep hills
MEDIUM/HARD Rough tracks, steep hills, possibly rock scrambling & creek crossings
HARD Up to 8 hrs, rough terrain, possibility no tracks; for fit & capable walkers
EXPLORATORY Walks in terrain unfamiliar to leader, fit & capable walkers only

NATURE OF TERRAIN: Please ✓
GOOD WALKING TRACK G
HILLY (H) H
ROUGH TRACK RT
NO TRACK NT
CREEK CROSSING CkX
ROCK SCRAMBLING RS
BEACH WALKING BW
BRING Refresh & Fluids BR&F

WALK TIME 3.5 hrs TOTAL TIME 5 hrs WALK DISTANCE 7.3 kms DRIVE 70 kms
(return from BB)

ASSEMBLY POINT & DEPARTURE TIMES: BATEMANS BAY (CP) 09.30 hrs Will you be at CP? No

MOGO _____ hrs MORUYA (CPM) 10.00 hrs Degree of Difficulty 12

OTHER MEETING PLACE Leader will be at Moruya CP at 10.00 hrs

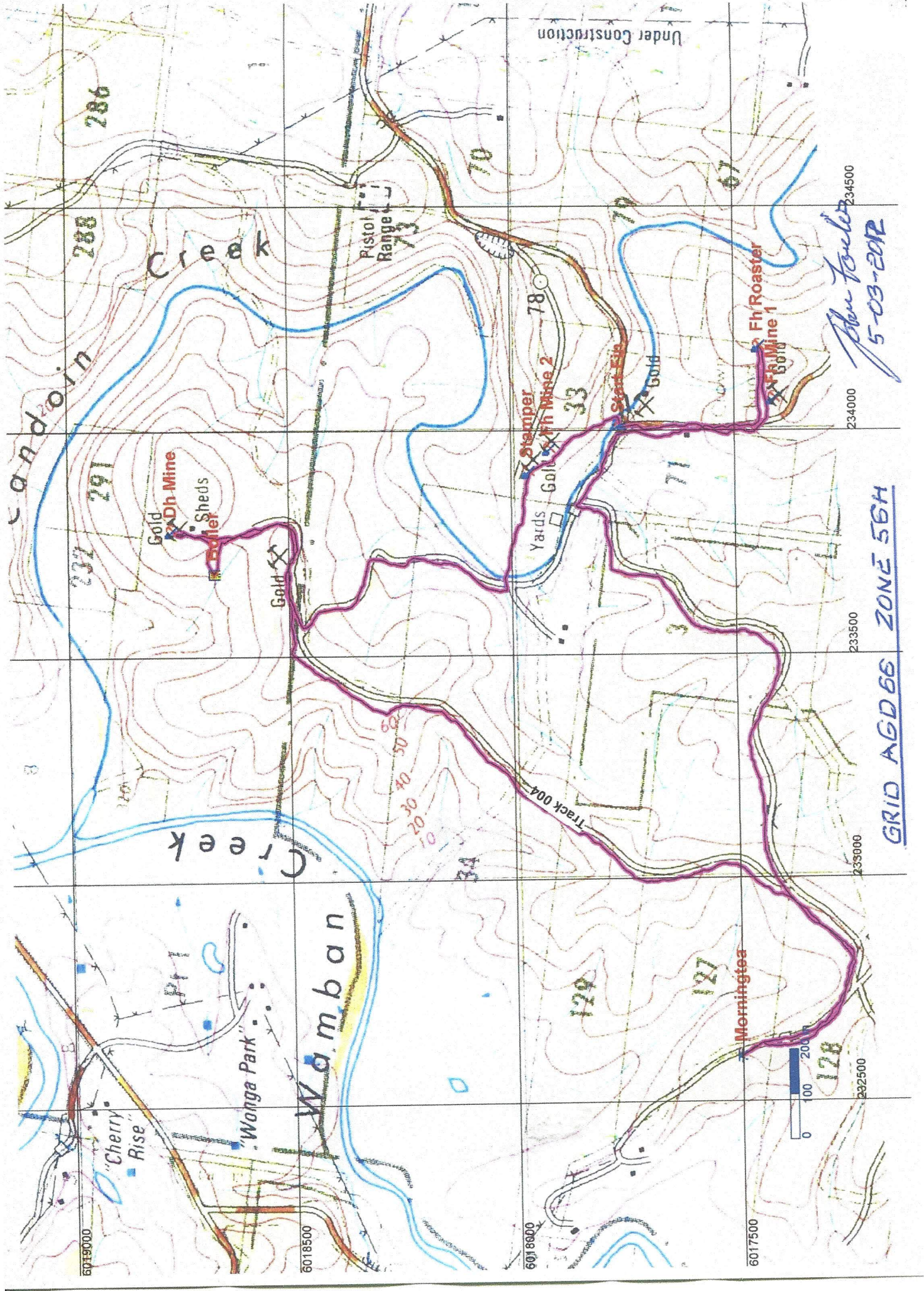
ADDITIONAL (eg. Barbecue, Swimming, etc) _____

ROUGH MAP OF ROUTE (either attach a copy to scale of the map with route marked; or draw a facsimile of the route in the space below; or give a description of walk using grid references, eg. (Kioloa map) START at 573674 (18 Mile Peg Rd) Walk east to 582672 (road junction on right) turn south – follow road to 489663 take left fork to 586669 etc.)
LIST ANY STATE FORESTS TRAVERSED.

Distance from Moruya CP to walk start (intersection of Dwyers Creek & Spring Creek Roads on south side of Cadoin Creek Causeway) is 7 kms.
A significant portion of the walk is on private property, all three Land Owners have given their permission for this access.
This is a significantly historical walk in a normally inaccessible area. We will visit the site of two silver and one gold mine. The silver & gold bearing ore was heavily impregnated with sulphides of lead, iron & arsenic. We will also see the remains of a kiln where an ill fated attempt was made to treat/separate the sulphides by first roasting the ore.
Map of proposed walk is attached.

John Foulis
6-03-2012

Walks Organiser's Use Only
DATE ALLOCATED 24.5.2012 WALK NO. 2012.350
WALK APPROVED [Signature] PASSENGER CONTRIBUTION BB \$ 5.00 Other \$ 1.00
(Walks Organiser)



Silver Mining at Moruya

(Acknowledgement: This document was published by:
Moruya and District Historical Society
Museum: 85 Campbell Street, Moruya 2537, NSW)

MORUYA SILVER MINE: The Department of Mines knows it as: - "The lode" is situated about four (4) miles south of Moruya. It occurs in slate (probably in Upper Silurian Age) near its junction with granite and trends about N20%E, dipping in a westerly direction. Its width is very irregular, varying from 3 inches to 3 feet. The zinc blend and galena carry most of the silver, and the bulk of the gold is contained in the arsenopyrite.

Although silver, both in the free state and in galena and other ores, was known to occur in numerous places in the Colony, it was in the Moruya Mine that the first attempt was made to test the commercial value of our argentiferous deposits. Unfortunately the ore in this mine is of an extremely refractory nature, consisting of arsenopyrite (Fe As S), zinc blend (ZnS) and galena (PbS) in a quartz gangue. This ore could not be treated locally, and, in 1864 one hundred and twenty (120) tons were shipped to London. This ore is said to have contained an average of 32 ozs. of silver and 1 oz. 8 dwt. of gold per ton. However, as the freight and costs in London absorbed nearly all the money realised by the sale, mining operations were suspended. The ore was then shipped to Wallaroo Smelting Works in South Australia, where, it is understood, satisfactory results were obtained from two classes of ore. According to the present owner, Mr. Guy—

No. 1 ore equals:

Zinc 17%; Lead 26%; Arsenic 91/2%
Silver 54 ozs. per ton;
Gold 11 dwt. per ton.

No. 2 Ore equals:

Silver 10 ozs. per ton; Gold 4 ozs. 2 dwt.
per ton; High Arsenic content also but little

Zinc or Lead.

1894 the Department of Mines Annual Report states: — "The Moruya Silver and Gold mine has been worked at intervals for a number of years, but is now shut down. The ore is of an essentially refractory nature."

Mr. L. R. (Dick) Foreman, submitted the following to the Moruya and District Historical Society:— "I was born on the Creek (Dwyer's Creek) in 1902. The following is written from memory and from information handed down by my ancestors who settled there in the 1850's — Silver was reported to occur at Dwyer's Creek (or Candoin Creek to use the map name) as early as 1839. Gold must also have been noted at the same time, as both metals are in conjunction in varying proportions in the same ore body. For the peace of the Colony, such finds were not made public at that time.

During the hectic gold rush days of the 1860's, alluvial gold deposits were discovered in Dwyer's Creek, and the precious metal was also noted to be present in quartz outcrops in the locality. By the end of the decade men were giving these attention, as 'likely to have greater permanency of supply.

In 1861, Want and Sir Saul Samuel opened the Silver Mine at Dwyer's Creek, and a sample of ore taken from the lode assayed 3% ozs. of gold and 53 ozs. of silver per ton. A company was formed and a shaft put down. This being close to the creek, pumps had to be installed. It is recorded that in 1863 twenty (20) tons of ore was shipped to England for sale. This ore would be broken to suitable size, bagged, and taken by horse or bullock drays to the wharf on Moruya River and shipped to Sydney for transshipment to England for sale. The venture, not proving profitable, was abandoned, and the mine lay dormant for some years.

About 1890, leases were acquired by F. Guy, a Sawmiller from Bateman's Bay, who worked the lode with considerable success. He had as Mine Francis. A ten-head gravity stamper mill Was erected on the south bank of Dwyer's Creek, where a granite bar formed a natural barrier. To increase the holding capacity of the pond, a log weir was built atop the rock bar, the logs flattened on two sides and spiked together. There were three of these log walls placed level and parallel several feet apart, the spaces between being filled with rock and earth from a nearby quarry. The structure was then planked over to form a roadway. Several large flanged metal pipes passed transversely through the weir, served as ties and could be plugged to retain the water, or freed to release it, should the level rise above the deck.

For better access to the mill and mine, a contract was let to George Foreman, (Big George) to cut a dray road around the side of the Francis Hill. Aided by several of his younger brothers, he completed this for the sum of £12.0.0 (A\$24.00).

Implements used — pick, shovel, axe, crosscut saw and wheel barrow. Small trees along the way were grubbed, large ones felled and the stumps axed or burned off below the road surface level. This road is still in use but now crosses the creek a few yards below the weir.

Two vertical shafts were sunk in the rising ground south of the creek cutting the lode at 90 feet and continued to 213 feet, the bottom work level being at 200 feet, the remaining 13 feet a well for pumping. This was known as No. 1 Shaft, and from it the best ore was raised. About 10 chains to the north of it, No. 2 Shaft was sunk to 140 feet, the lode being encountered at 40 feet. Tunnels were driven from above flood level on both sides of the creek and on the northern side of Francis Hill. From a break in the hill between No. 1 and No. 2 Shafts, the lode was worked by open cut, the northerly cut extending almost to No. 2 Shaft. A young man named Hancock, while working on night shift at the

Shaft and mistaking his direction in the dim light, fell to his death by walking into the deep end of the cut.

THE LODE: The strike is north-south, with a slight shade to west. It has been exposed over approximately 2 miles. The width varies from several inches to a few feet. Depth has not as yet been proved. There is considerable variation in the ore along the line, both as to composition and values, some parts bearing payable gold and little silver, others only a few dwts. of gold and several ounces of silver per ton, or again to quote an assay that comes to mind from the rich ore, 11 ozs. gold and 240 ozs. per ton. I have heard higher values than this quoted, but would say they referred to concentrates rather than the ore as it came from the mine. Much of the material is too refractory to be satisfactorily treated locally, it being heavily impregnated with sulphides of lead, iron and arsenic. The incidence of the last named mineral being so great even modern smelters such as "E. R. & S." at Port Kembla do not care to handle it.

F. Guy had a market for the ore in Germany. The heavy sulphide ore was bagged and des-patched untreated; the less heavily mineralised ore was crushed and concentrated at the Mill, and the concentrates sent to the same market. A quantity of free milling gold-bearing quartz was also won from a quarry adjacent to the mill, mercury amalgamation being employed in treatment of this material.

At one stage in the working of No. 1 Shaft, heavy galena was encountered. Miners working at the 200 ft. level, resuming after an off-shift, found their way blocked by a huge cube of this sulphide which had fallen from the stope during their absence. With some difficulty it was brought to the surface intact, and Guy, with the thought of placing it in a forthcoming exhibition to be held at Hamburg (Germany), had the Moruya Stonemason, Ziegler, go to the mine and dress it. Unfortunately galena, with its bright

shining crystals, an attractive ore when freshly broken, does not lend itself to polishing, so the end result was a dull leaden block which was eventually broken up and bagged with other ore for export. After a time the quality of the ore declined and the mine closed down.

With the exception of a little desultory prospecting by local individuals and "noodlers", who won small quantities of ore by picking over the dump at No. 1, it lay dormant till well into the first decade of the 20'th Century.

The leases were taken over by a Company who employed as Mine Manager, a big South Australian named Frank Rowe. Frank had Worked in mines in several states, including a stint at Broken Hill. He had as Assayer, Bob Harris, and as Mill Boss, another big man, John Summers. The latter had earlier come to the field from mines at Major's Creek, and in partnership with both Charles Stubbs Snr. and Jnr., Harry Waters and Alf Foreman, operated a crushing mill on the Little Gem Gold Mine. A knowledgeable man in his job, John was the first on this field to employ the Cyanide Process in gold recovery, a method that was to bring a big uplift in production.

Two, and at times, three shifts were worked in the mine and the Mill kept running at full capacity. Ore was taken to the Mill in half ton trucks pushed along tramlines laid from the tunnel near the creek and below No. 2 Shaft.

I would not vouch that Shareholders made a fortune from the venture, but it did provide steady employment for a fair number of men for a few years, during which time many large ingots of bullion (gold and silver) and some tons of Concentrate were despatched from the Mill. As this meant new wealth freshly wrested from the earth, it must have given some boost to the town and district. A boon to us youngsters of the day Was the establishment of a school at Dwyer's Creek, which opened in February, 1909?

An attempt to treat the sulphide by first roasting it in a revolving furnace was made by Gordon Johnson. This not being a success, the mine closed in 1914.

John Summers and his son-in-law Tom Henry, obtained good results from mining the oxidised ore in the upper level at No. 1. Bert Hunt also won payable ore from a shaft at Francis Hill. In 1902, Gordon Johnson returned to the field, and in partnership with Harry Waters, had No. 2 Shaft pumped out, and began mining operations there.

In the initial stages treatment was carried out at Charles Stubbs' mill about half a mile downstream.

Later they took over and reconditioned the Silver Mine Mill. Here they carried on for several years, crushing and concentrating the ore raised from No. 2 and also much mineralised rock from the dump at No. 1.

In 1923, Masters and Edwards, representing mainly Victorian interests arrived on the scene. Two Syndicates were involved — "The Moruya Gold and Arsenic Company" and "The Moruya Prospecting Company". The former worked the Silver Mine from a shaft on the south bank of the creek, while the latter prospected to the south of the old workings and also did some work on the south-east slope of Donkey Hill. Ore raised, mainly from the Silver Mine was treated at Stubbs' Mill. As the outgo far exceeded the return; the venture was of short duration. Masters left the field, but Edwards remained for a time, and in company with local identity, George Gordon, extended the old tunnel on the north side of Francis Hill. The ore mined in doing this is still stacked near the tunnel entrance, it not being deemed of sufficient value to warrant the road work required for its removal.

The Johnson-Waters plant continued on for a time under the captaincy of a man named Bone. Finally it too closed down. The mill was later purchased by Horan and Crossan, the Auburn Engineering firm who moved it to the "Little Gem

Gold Mine". An engine using charcoal gas was used there to power the plant. Due to the mine proving unprofitable, most of the equipment was sold or removed by the owners, but the fine ten-stamper mill was left standing. Years later Council workmen, in order to gain access to the mine dump, the rock being required for filling purposes, wrecked the mill with a bulldozer. The remains were seized by scrap metal scavengers. So passed a relic of history.

BACK TO THE SILVER MINE: — Thomas Henry and his son Albert, won a few crushings from a portion of the lode giving fair gold values, but low in silver content, and relatively free of sulphides. The ore was treated by Alf Foreman who had a small mill a short distance down the creek.

The "Moruya Gold Mining Co." who were operating on Donkey Hill, held for a time that portion of the silver mine known as M. L. 10, but did no mining there. In 1948, C. H. Stubbs and L. R. Foreman took possession of M. L. 10 and also the old mill site, on which they erected a five-stamper mill and cyanidation plant. They put

down a 70 ft. shaft between No. 1 and No. 2 Shafts and several shallower pits to the south of No. 1. Many tons of ore were also taken by them from the old workings, while several small cross-veins, discovered to westward of the main strike, gave good returns. Following the death of C. H. Stubbs in 1960 at the age of 81 years, the mill was sold to Ray Hunt, who has since used it to treat the ore from his gold mine on Donkey Hill." (Sgd.) L. R. Foreman 22/2/1977.

In 1923, the Department of Mines had this to say with regard to these two old mines: — "The old silver mine on M. L. 10, Parish of Bergalia, workings are now inaccessible; the ore deposits of the Donkey Hill area are developed in, and close to, the margins of a boss-like mass of granite, approximately 60 chains long by 40 chains wide, with the longer axis running in a north-west, south-west direction. The boss is an off-shoot of the Moruya granite and is intrusive into slate of pre-Devonian (possible Ordovician Age) etc. etc."

It has also been reported (though no dates given) that Silver was mined at Bergalia and Dromedary Mountains, but no quantities given.