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## AUTHORITY TO PROSPECT 1/93

### WARRENTINNA

### ANNUAL REPORT FOR 1994

# 95-3666

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Senior Geologist

22<sup>nd</sup> December 1994

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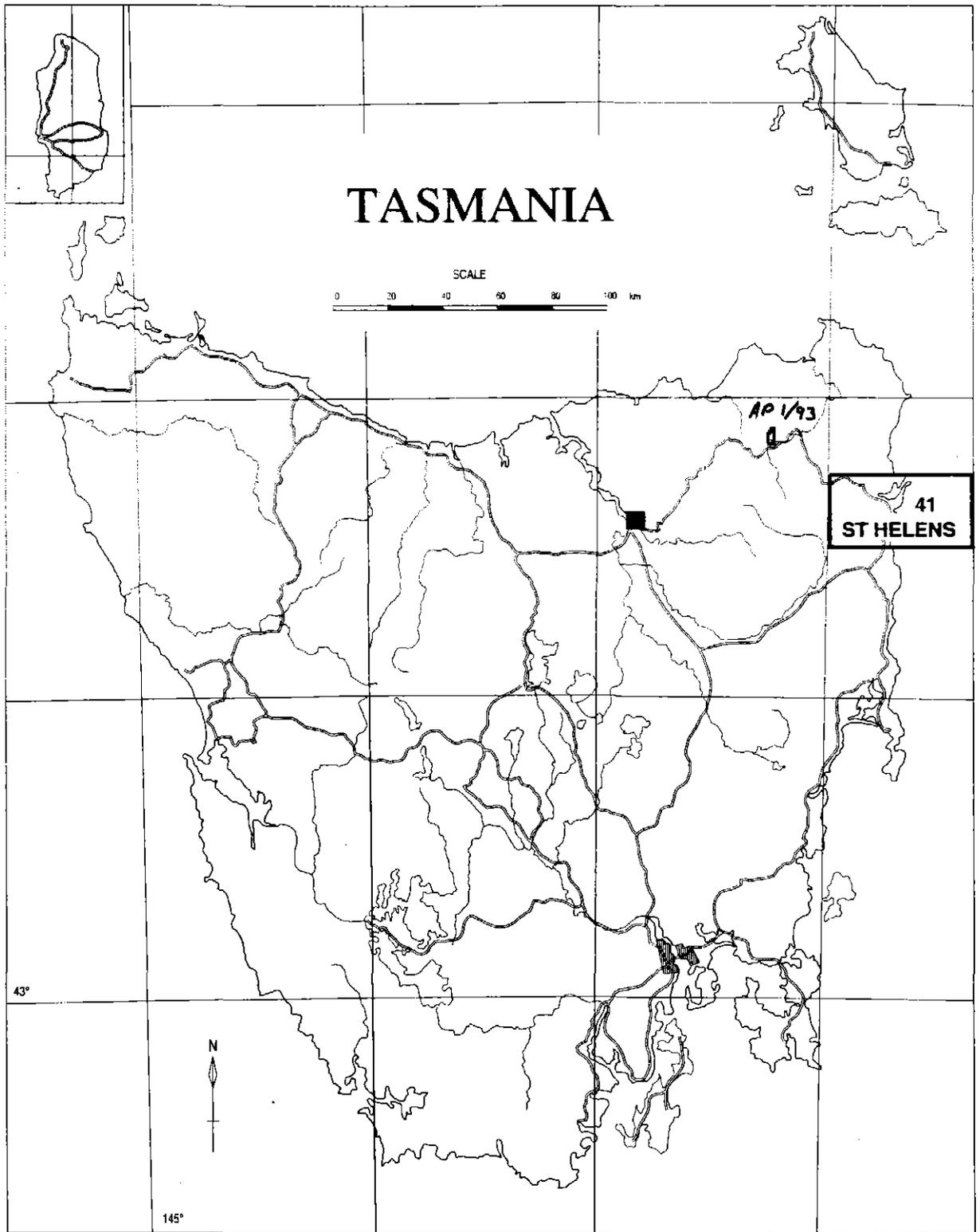
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**Figure 1. Location Plan**  
(from McClenaghan et al 1982)

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## SUMMARY

Authority to Prospect 1/93 was granted on the 22<sup>nd</sup> January 1994, and is current to the 31<sup>st</sup> December 1994. It covers 7 square kilometres, with the southern boundary about two kilometres north of Branhholm.

At the centre of the Authority is the old Golden Mara Gold Mine, which is the initial target of the intended exploration.

With funds and personnel concentrated on other projects, the work on the Authority has not progressed as far as intended. Work to date has been reconnaissance in several visits by management and staff, followed by a concerted effort to locate the tailings at three battery sites.

The practice of tailings disposal at the time of operation of the mine was generally letting them go into the creeks. Therefore they are well scattered, and thin when found at all. Assay results mostly confirmed the tailings were correctly identified. Those at the northern battery site were significantly thicker and higher in grade than at the other two sites, averaging about 2g/t Au against <1g/t Au.

The one chip sample of the Little Branhholm Reef assayed 2.5g/t Au.

Mancala has been approached by Herald Resources, holder of EL 25/94 surrounding AP 1/93, with a proposal of joint venture of the AP. Negotiations are in progress.

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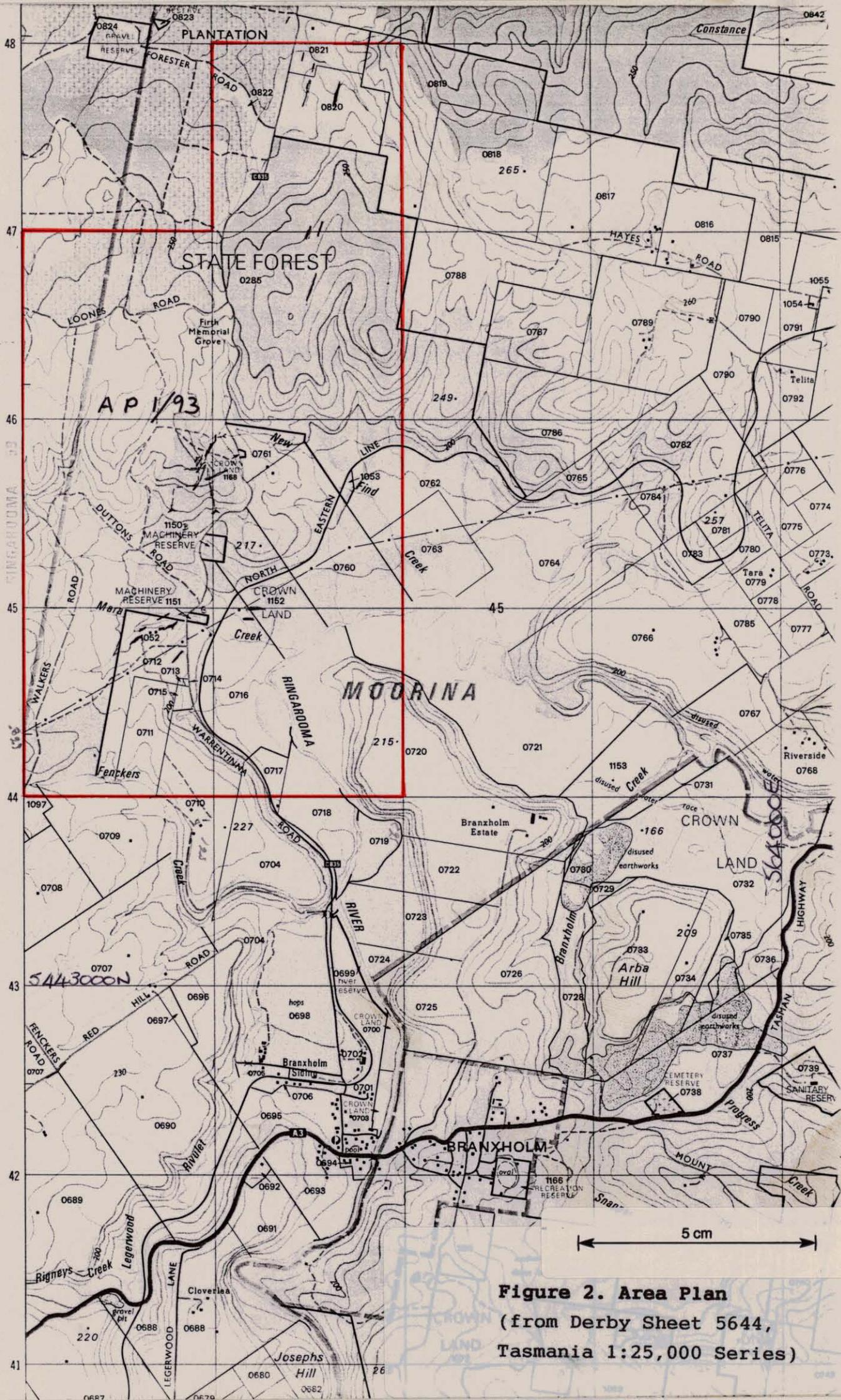


Figure 2. Area Plan  
(from Derby Sheet 5644,  
Tasmania 1:25,000 Series)

## 1. INTRODUCTION

As part of its strategy to explore for gold in the Northeast, commencing in 1993, Mancala requested access to the Warrentinna Field, which was at the time within an Exempt Area; one of those held for the NETGOLD Project. An Authority to Prospect of seven square kilometres was agreed to by the Director Of Mines. This was formally granted on the 22<sup>nd</sup> January 1994.

Central to the AP is the old Golden Mara Mine complex, which Mancala considers the main target for investigation, in view of the limited depth of mining and potential for continuity at depth and along strike.

It was also anticipated the considerable workings and three batteries might have left caches of tailings worth re-treating.

The Golden Mara Mine was worked from 1890 to 1921. Its reported production from 1892 to 1921 was 104.75kg of gold from about 4,850 tonnes of ore treated (Blake 1934); an average grade of 21.6g/t Au (Herrmann, 1987, suggested a grade of 34g/t). This was mined from several reefs in close proximity.

The most recently mined reef on the field was the Renown, at the northern end of the field and outside the AP. This was reportedly mined in the early 1980s. Its production was not recorded.

Today the Golden Mara is marked by many stopes open to surface, several neatly cut shafts and two adits. Of the latter, the East Volunteer Adit, is accessible, arriving first at a leading stope on the Branxholm Reef and then to the Little Branxholm Reef, which has only minor stoping in it at that level. At the end of the East Volunteer adit is the Coronella Shaft to surface.

The other adit, Baileys Adit, accessed most of the workings at that level. This is partly blocked by a fall at the portal and completely blocked about 50m in, at a former airshaft.

## 2. PREVIOUS WORK

The first Mines Department report on the Golden Mara was written by Frank Blake in 1934. This report outlined the production and tenure history of the mine before covering the general geology and a brief description of each reef. The report commented that brief mention of the workings was made in the Secretary for Mines Annual Reports for 1897 to 1901 and 1911 to 1929 inclusive.

More recent work was done by Wally Herrmann on behalf Godfields Exploration Pty Ltd in 1986/87. Herrmann went into and mapped the East Volunteer, Renown and West Renown adits, as well as workings at the North Mara and Derby mines (Herrmann 1987).

### 3. EXPLORATION ACTIVITIES

Ken Bird and his staff in the drafting and data management department of the TDR provided copies of many old plans of the Golden Mara and other mines of the Warrentinna Field. These provided the basis for study and field work on the AP.

#### 3.1 Reconnaissance

With Mancala's attitude of getting into mines as a prime means of exploration, initial visits to the area were in anticipation of going underground, suitably equipped.

We were guided to the Renown adit by the land owner, Mr Jeff Carins. Apparently, the Renown was last worked in the eighties, though the equipment and rails looked older than that. The adit was completely blocked 60m from the portal, by what looks like a collapse, rather than the end of the adit. The adit was comprehensively mapped, sampled and described by Herrmann (1987), who noted heresay of "four to five thousand ounces of gold" mined in the Renown "area". This figure is not backed up by any report.

What was dubbed the 'West Renown Adit' by Herrman was inspected. It is a well executed drive for no obvious reason. It is a dead end, which intersects no reef, nor is it associated with other workings.

Neither of these adits is encompassed by the subsequent AP 1/93.

At the Golden Mara workings, the East Volunteer Adit was found without difficulty and the water level caused no hinderance to access. The Branhholm and Little Branhholm reefs were identified; likewise the Coronella Shaft. A sample was taken of the loose material in the south-south-westerly trending stope of the Little Branhholm Reef (see Table 1, sample 72508). This adit too was comprehensively mapped by Wally Herrmann.

Bailey's Adit proved more trouble to find, its approach obscured by a mass of blackberries. It was accessed over the pile of soil partially blocking the portal. A collapse about 50m in, probably at a former air shaft, prevented inspection of the main workings. It was obvious that gaining entry to the mine would be a major undertaking, on the scale of the exercise undertaken by Mancala to re-open the Ringarooma United Mine at Alberton.

### 3.2 Tailings search

As part of a project to make an inventory of the tailings dumps of the area, several days were spent in search of the tailings of the three batteries in the neighbourhood of the Golden Mara.

The northernmost battery, close to the site of the former Warrentinna post office, left tailings that could be positively identified, though the sands were under pasture and amounted to an estimated maximum of 800t. The tailings were light grey in colour and 0.1m to half a metre thick. There was no reliably indicative topographic form to them, as they have been frequently ploughed over. The fact that they were not dammed in the first place, but were simply poured into the creek, did not help to confine them in a form available to later generations.

About 50m to the south of the tippet of Bailey's Adit the second battery was sited, close to the confluence of a creek and a water race, about 260m west of the Warrentinna Road. Of the battery there was no perceivable sign amongst the manferns, swamp gums, wattles and blackberries, but it was anticipated there should be tailings down creek of this site. The creek is no longer recognisably such between there and the road, though the water race is still quite well preserved.

Remnants of the tailings of this battery were finally identified after several attempts as a thin layer, up to 20cm, of grey, rather uniform sandy soil overlying a tan to red-brown soil with

an assortment of sizes of yellow, weathered Mathinna Beds sandstone pebbles. This covered an area up to 40m long by 10m wide, which amounts to about 160t of thinly spread tailings.

The third battery was apparently located a few metres north of the dam on the east side of the road, on Mara Creek. The writer was informed by a local who grew up nearby that there was a "pile of grey stuff, the colour of your shirt, at the site forty years ago, but it has been spread about since". The "grey stuff" matched the description of the tailings thus far identified. It was found in small patches, only a few square metres at a time, in a top layer up to 10cm thick east of the dam and of the railway line. This was also sampled. One could only guess a tonnage for this widely and thinly scattered material. It would not amount to much.

## 4. RESULTS

TABLE 1: AP 1/93 WARRENTINNA: ASSAY RESULTS SUMMARY

SAMPLE NUMBER	DATE	LOCATION	COORDINATES	COMMENT	Au g/t
72501	23-Aug-93	Renown	5449090N, 562300E	U/G chip sample: sandstone breccia with quartz and Fe staining.	0.008
72502	23-Aug-93	Renown (A)	5449200N, 561550E	U/G chip sample: Fe stained quartz vein <50mm.	<0.008
72503	23-Aug-93	Golden Mara	5445850N, 561200E	Tailings 1: light grey, sandy	2.800
72504	23-Aug-93	Golden Mara	5445850N, 561190E	Tailings 2: tan, sandy.	0.060
72505	23-Aug-93	Golden Mara	5445860N, 561180E	Tailings 3: light grey, sandy.	2.230
72506	23-Aug-93	Golden Mara	5445930N, 561200E	Tailings 4: light grey, sandy.	2.640
72507	23-Aug-93	Golden Mara	5445950N, 561230E	Tailings 5: darker grey, finer than the others.	1.550
72508	23-Aug-93	Golden Mara	5445800N, 560960E	U/G chip sample: Little Branhholm Reef: quartz-filled sst breccia.	2.480
73452	18-May-94	Golden Mara	5445300N, 560840E	Grey, uniform sandy tailings on top of tan soil with wthd sst pebbles.	0.080
73453	18-May-94	Golden Mara	5445290N, 560830E	Grey, uniform sandy tailings on top of tan soil with wthd sst pebbles.	0.100
73454	18-May-94	Golden Mara	5445295N, 560845E	Grey, uniform sandy tailings on top of tan soil with wthd sst pebbles.	0.450
73455	18-May-94	Golden Mara	5445290N, 560850E	Grey, uniform sandy tailings on top of tan soil with wthd sst pebbles.	0.530
73456	18-May-94	Golden Mara	5445280N, 560860E	Grey, uniform sandy tailings on top of tan soil with wthd sst pebbles.	0.800
73487	17-Jun-94	Golden Mara	5445280N, 560950E	In marsh E. of road: pale grey and orange clay 0.8-1m depth: fines?	0.030
73488	20-Jun-94	Golden Mara	5444930N, 560975E	S. battery E. of dam: grey sandy tailings <10cm thick top layer.	0.030
73489	20-Jun-94	Golden Mara	5444870N, 561040E	S. battery site, E. of railway: dark grey sandy tailings <10cm thick.	0.100
73490	20-Jun-94	Golden Mara	5444900N, 561000E	S. battery E. of dam: grey sandy tailings <10cm thick top layer.	0.030
73491	26-Jul-94	Golden Mara	5445300N, 560870E	Dark grey-brown sandy soil with sandstone pebbles: tailings?	0.080
73492	26-Jul-94	Golden Mara	5445290N, 560875E	Dark grey-brown sandy soil with Fe stained sst pebbles: tailings?	0.180
73493	26-Jul-94	Golden Mara	5445280N, 560885E	Dark gry-bm sandy layered soil with Fe stnd sst pebbles: tailings?	0.130
73494	26-Jul-94	Golden Mara	5445275N, 560895E	Dark grey-brown slightly sandy soil: tailings?	0.180
73495	26-Jul-94	Golden Mara	5445270N, 560890E	Dark grey-brown & lt grey slightly sandy soil with sst pebbles: tailings.	0.530
73496	26-Jul-94	Golden Mara	5445260N, 560885E	Dark grey-brown slightly sandy soil: tailings.	0.880

Assays of the samples taken to date on AP 1/93 are summarised in Table 1, above. Twenty of the twenty three samples were of tailings or suspected tailings, the rest were rock chips.

The rock chip samples were hardly enough from which to draw any conclusions, except that taken from the Little Branhholm Reef, number 72508, confirmed it is a reef, though not necessarily an ore shoot. The others, 72501 and 72502, were at or below the detection limit, confirming the structures sampled were not even reefs.

Of the tailings samples, four of the five taken at the Warrentinna Post Office battery site, 72503 and 72505 - 72507, were demonstrably of tailings, averaging 2.3g/t Au. The fifth sample, 72504, tan in colour, rather than the grey which we learned to recognise as the colour of the Golden Mara tailings, was evidently of the normal soil of the site.

Enough of the samples taken in the bush near the battery site south of Bailey's Adit, 73452 - 73456 and 73491 - 73496, were anomalous, sufficient to confirm the thin layer of grey 'topsoil' on top of the normal pebbly forest soil represents the remains of the tailings from this battery. The fine sediments further down the same creek, on the east side of the road, do not seem to contain significant amounts of the fines of these tailings.

The thin and very patchy layer of grey 'topsoil' interpreted as the tailings from the southernmost battery assayed slightly above the perceived background, but were not conclusively tailings by their grade. They must, however, be regarded as remnants of the tailings because they are of comparable colour and texture to the indentified tailings and coincide in colour with the description given by the Branhholm garage proprietor.

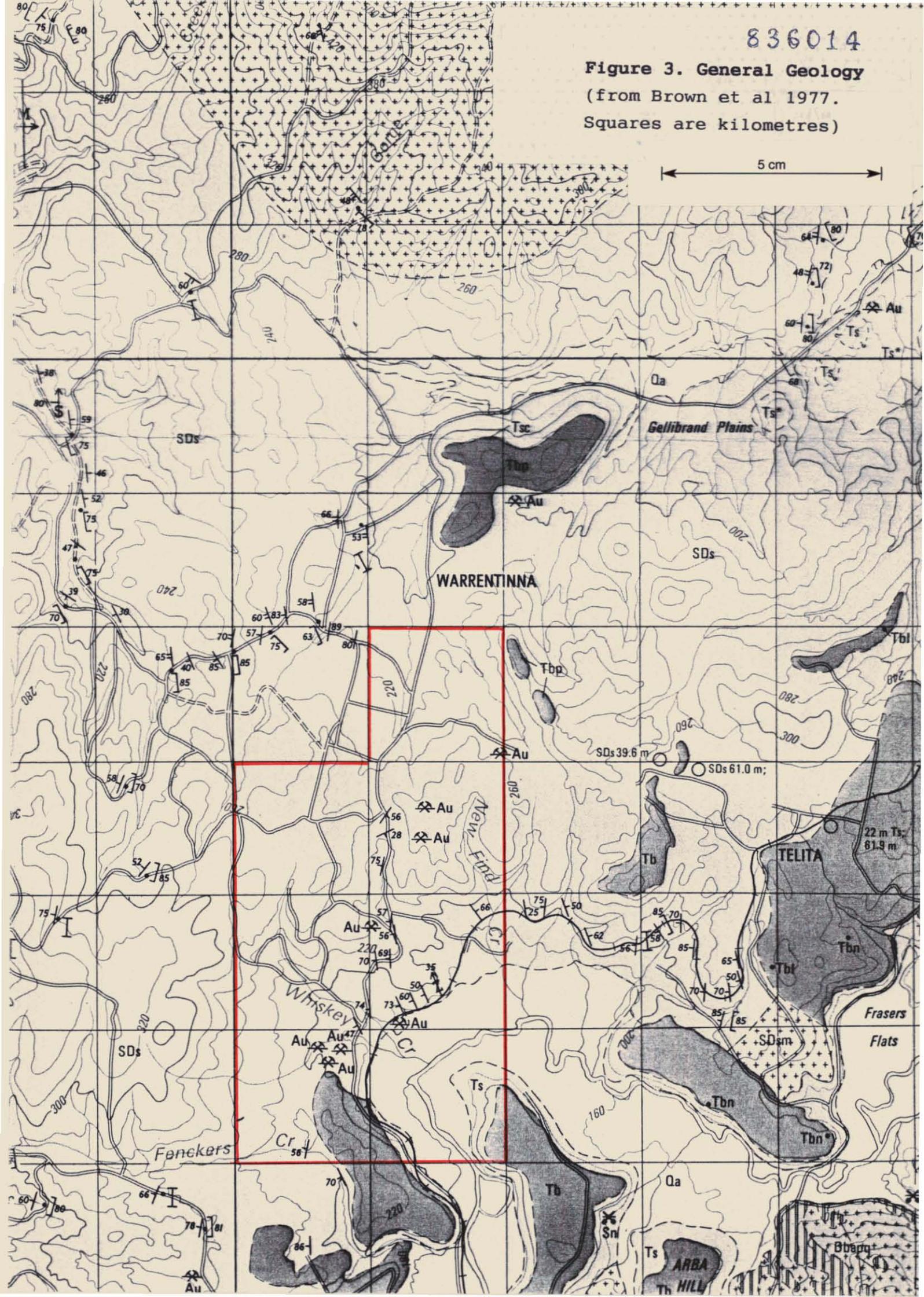
## 5. DISCUSSION

The first year's tenure of the Authority to Prospect did not advance Mancala's knowledge of the ground as much as was hoped., because of other commitments. However, some points were established.

- The workings are limited in depth to about 80m below the highest ground above them.
- The mineralised reefs are very similar to those of Alberton, in being of quartz-filled breccia within Mathinna Beds sediments, which have been regionally metamorphosed rather than hornfelsed by proximity to granite bodies.
- As at Alberton, the reefs are not all gold-mineralised, but contain distinct gold-rich shoots within them.
- The workings of the Warrentinna Field are mainly aligned along a line of bearing about 015° AMG, which suggests they are on a significant structure. This could have potential of containing other reefs and ore shoots as big as those of the Golden Mara, if not bigger.
- A continuous structure like this could have depth as well as lateral potential for economic mineralisation.
- This structure is associated with the Dans Rivulet/Dorset River gold lineament, either as an offshot of it or as a kink in it. Therefore it has potential to contain gold mineralisation of economically significant size.
- There is potential for more northwesterly trending reefs than have as yet been discovered.
- The tailings have been too widely and thinly spread for any contained gold to be recoverable economically under current conditions.
- The next stage of exploration should concentrate on possible extensions of the Golden Mara, both along the

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Figure 3. General Geology  
(from Brown et al 1977.  
Squares are kilometres)



trend and at depth below it.

If it becomes evident the workings lie within a structure of the type envisaged to underlie the Dorset River and Dans Rivulet valleys, the economic potential below the Golden Mara would be greatly enhanced. This is because the structure would be of the size that could contain mineralisation of the scale of that exploited by the Golden Gate Mine (0.3Mt at 26g/t Au), as opposed to the many other small reefs exploited along the gold belt, such as the Alberton reefs, which were rarely more than a few thousand tonnes, albeit averaging about 30g/t Au.

The current state of Mancala's first hand knowledge of the Golden Mara reefs applies only to the Branhholm and Little Branhholm reefs. Underground, these look very similar to the Alberton reefs, but it cannot be ruled out that they are not within a larger structure. Mancala has not yet knowingly seen a reef of the type that occurs within a major shear zone, to compare it with the Alberton-type reefs. Nor has it positively identified a major shear in the core of the Mines Department drill holes at Alberton, of which hole number MD2, and possibly MD1, might have been expected to have passed through the shear anticipated beneath the Dorset River Valley. To date, Mancala's only positive identification of the shear has been on the Mt Victoria Saddle, between the Dorset River and Dans Rivulet valleys. It must be added that nothing has been seen in the vicinity of the Golden Mara that is reminiscent of the Mt Victoria Saddle shear. The country rock of the Golden Mara appears practically unsheared.

At the same time, the alignment of the Warrentinna workings, assuming it is in isolation, seems atypical of the Alberton-type reefs. However, in the observation of the writer, the latter field has two parallel aligned reef zones separated by a zone of cross reefs. This arrangement could be a pointer to exploration of the Warrentinna Field, particularly since to the east of the Warrentinna alignment are a few small workings on cross reefs. Therefore, if the Alberton model is representative of an

arrangement common in the gold belt, it would appear there is potential for discovery of many more mineralised reefs in the Warrentinna Field. It could be expected that there is a zone of cross reefs to the side of the Warrentinna alignment, with another parallel alignment beyond the cross reef zone. The potential seems equal either east or west of the Warrentinna alignment.

## 6. CONCLUSIONS

There is no potential for immediate cash flow to Mancala in the tailings.

Any exploitation of the Golden Mara and the Warrentinna Field as a whole will first necessitate considerable expenditure and effort in exploration.

The primarily perceived potential for the field is in discovery of other reefs containing ore shoots on the scale of the Golden Mara. A slim possibility exists that the Warrentinna alignment represents a major structure, as a kink in the Dorset River/Dans Rivulet valleys shear zone or a large offshoot of it, that could contain gold mineralisation on the scale of the Golden Gate orebody. It cannot be discounted that the Golden Mara is at the top of such mineralisation.

Exploration work must logically start at the Golden Mara, with drilling beneath it and along strike of it to ascertain the nature of the structure that contains it.

## 7. FUTURE ACTIVITIES

Mancala's programme of exploration on a number of tenements includes two diamond drill holes up to 120m each beneath the Golden Mara, to test its depth potential and to better assess the nature of the structure containing it.

Since the drawing up of this programme, Mancala has been approached by Herald Resources Ltd, which holds EL 25/94 surrounding AP 1/93, with a tentative proposal of joint venture of AP 1/93. Herald Resources was unaware that AP 1/93 existed, and had been working on the Golden Mara, with a intention to cut a 150m trench across it. This intention to was made known to David Gatehouse, the Department Environmental Field Officer, who pointed out the prior existence of the AP 1/93. Negotiations have not passed verbal approach at this stage. Mancala awaits a proposal of joint venture conditions and work programme from Herald Resources.

**8. EXPENDITURE**

Expenditure to date, including fees for renewal of the Authority to Prospect, is \$12,881.

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