

**2020 Annual Report on Exploration  
EL 2/2015 - Dans Rivulet**

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**REPORT DATE:** 27 May 2020

*Distribution:*

- 1 *Mineral Resources Tasmania*
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Note: All figures, grids and contained data are presented according to the GDA/MGA94 grid system.

## EXECUTIVE SUMMARY

During the year, Webb Mining Pty Ltd was actively seeking joint venture partners or a sale of Exploration Licence 2/2015.

In November 2019, Stavely Tasmania Pty Ltd agreed to purchase EL 2/2015 and the transfer took effect on 12 February 2020. No exploration could be undertaken by Stavely Tasmania prior to the tenement anniversary due to the current Covid-19 pandemic travel restrictions.

Exploration work programmes have been developed for the tenement and include detailed soil sampling, re-processing of the historical aeromagnetic surveys, trenching and, if warranted, drilling of selected high priority targets.

The proposed exploration at the Chinamens Hill prospect as outlined in MacDonald (2016) is still warranted with the trenching a priority.

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## INTRODUCTION

EL 2/2015 "Dans Rivulet" lies ~60 kilometres east of Launceston and runs in a north-northwesterly direction up the Dans Rivulet valley capturing the hills on both sides.

Access to the licence is by bitumen road via the Fingal Valley. Access within the licence is by the Mathinna Plains Road and Dans Valley Road as well as a number of logging tracks. Access to the hills on the eastern side, and particularly the northeastern corner, is more difficult than on the much better accessed western side.

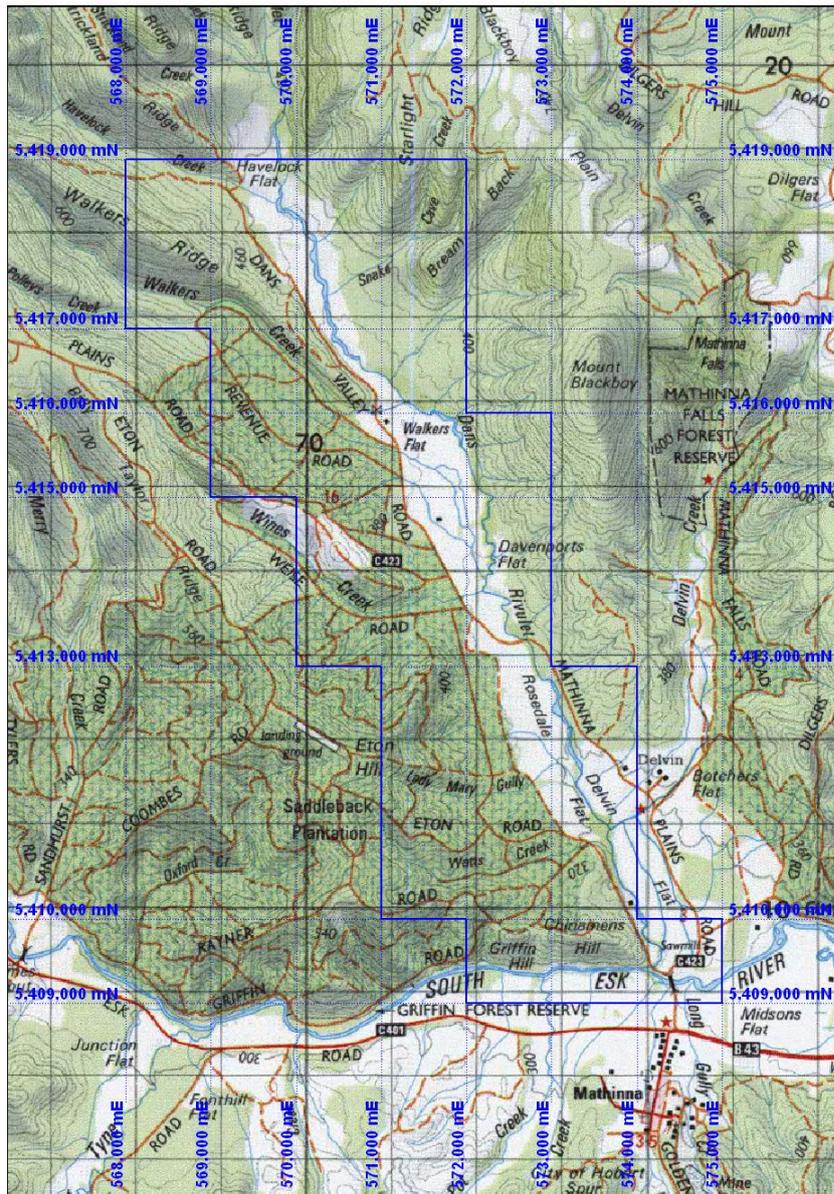


Figure 1. EL 2/2015 Location Plan.

## *Licence Details*

### **Land status and usage**

The bulk of the land is State Forest with only the valley floor privately owned and it too is largely covered in timber plantation.

### **Tenure**

The licence was granted to Webb Mining Pty Ltd on 27 May 2015. In November 2019, Stavelly Tasmania Pty Ltd agreed to purchase the tenement. The transfer was completed on 12 February 2020. The tenement is the subject to an extension of term application.

## *Geology & Mineralisation Overview*

The tenement is directly along strike from the New Golden Gate and North Golden Gate Mines which are located in the Mathinna goldfield in Tasmania's north eastern gold province (Figure 2 & 3). The Mathinna goldfield lies on the Mangana- Lyndhurst trend, a north-northwest trending zone which accounts for over half of the gold occurrences in Tasmania's north-eastern gold province (Figure 4). The bulk of the gold occurrences in the province are in discrete high-grade quartz+minor sulphide (predominantly pyrite and arsenopyrite) reefs hosted in Ordovician to Devonian aged shale-siltstone-sandstone sequence of turbiditic origin. These reefs were emplaced structurally during the Middle Devonian Tabberrabberan Orogeny.

The New Golden Gate Mine which produced over 250,000 oz at 26 g/t gold, exploited 4 larger (and a number of smaller) steeply plunging shoots over a vertical extent of over 600 metres. These reefs are north-northeast striking and sub-vertical with the ore-shoots generally <50m along strike. The New Golden Gate and North Golden Gate Reefs are hosted on the steep eastern limb of a west verging, north-northwest striking fold in a package of dominantly shale and siltstone. Structurally the reefs appear to be hosted in north to north-northeast striking faults which splay off north-northwest striking faults (specifically the steeply west-southwest dipping main and second slides).

Shoots within these north to north-northeast striking structures are short strike length, large vertical extent (steeply south plunging), lensoidal "pipes" within these more laterally extensive faults. The main shoot of high grade and width in the New Golden Gate Mine occurred where the Main and Loanes Reefs converged.

Mineralisation at Mathinna is interpreted to be hosted within dextral strike-slip shear zones with right-hand jogs creating dilatant zones that host the structurally controlled quartz vein arrays. Mineralisation is described as being hosted in quartz veins of variable width from a few centimetres to 10m and ranging in strike length from 5m to over 300m. The majority of gold productive veins are reported to be less than 1m wide and between 30m to 60m in strike length.

The recent geological 3D model developed by the MRT, which is based on mapping and multiple cross sections and constrained by 3D geophysical modelling using MRT gravity and magnetic survey data coupled with drilling and rock physical property databases is invaluable in assisting with exploration targeting. The

structural architecture of the area is associated with NNW trending dextral wrench shears which control the orientation of lode dilation and mineralisation. The primary lodes at Mathinna are orientated NNE with both linking structures and orthogonal structures. This architecture will provide the philosophy for ongoing exploration activities and drill targeting.

The identification of these regional structural controls provides an excellent exploration target along strike of the Mathinna goldfield into EL 2/2015.

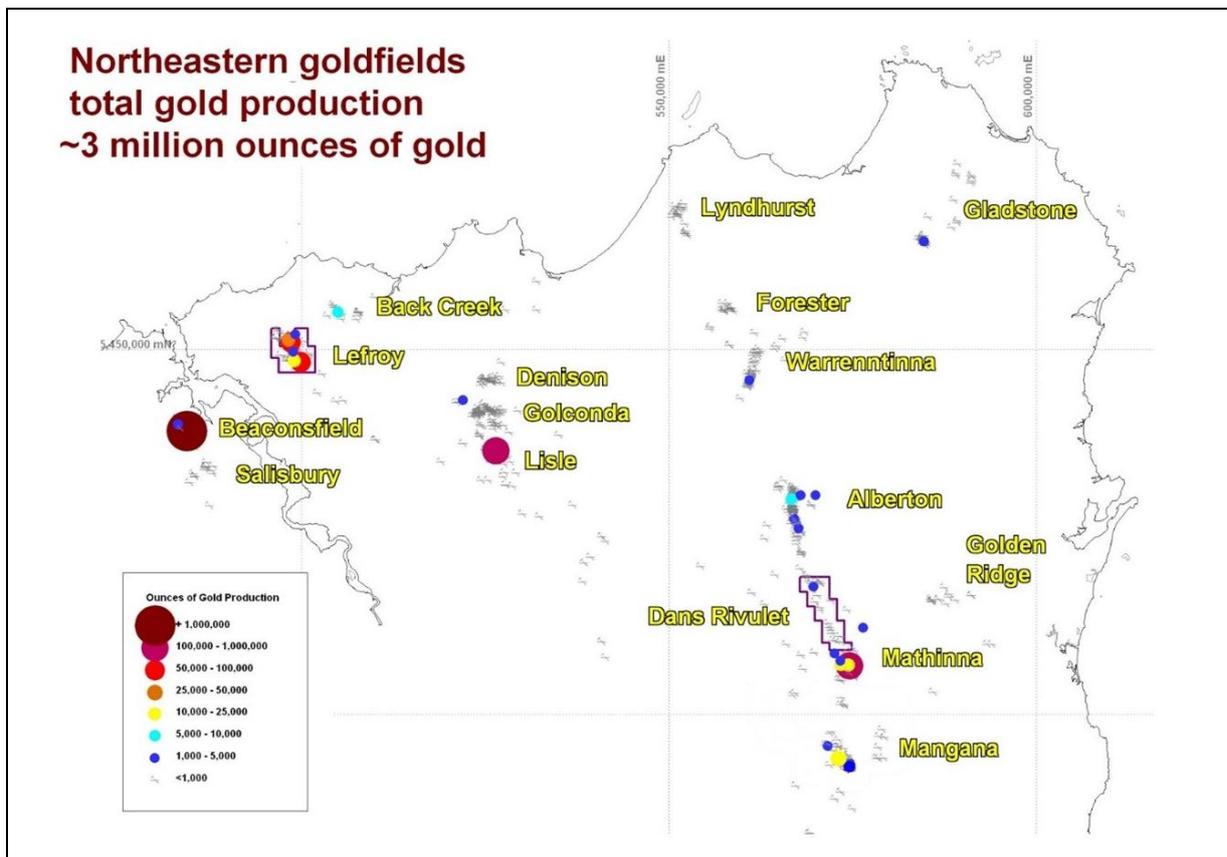


Figure 2. Location Dans Rivulet Goldfields in Tasmania's North-eastern Gold Province.

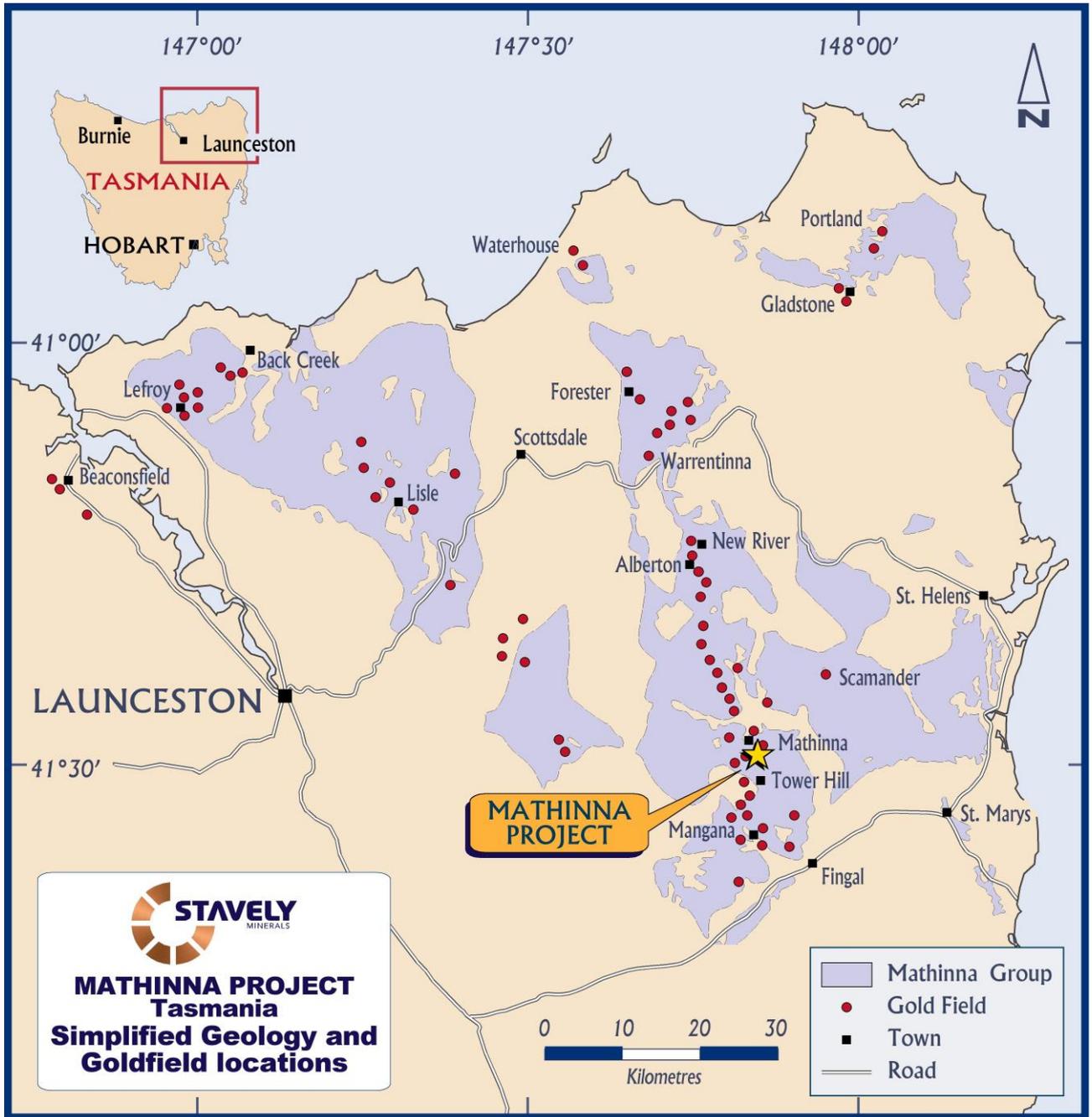


Figure 3. Mathinna Project – Regional Geology Plan.

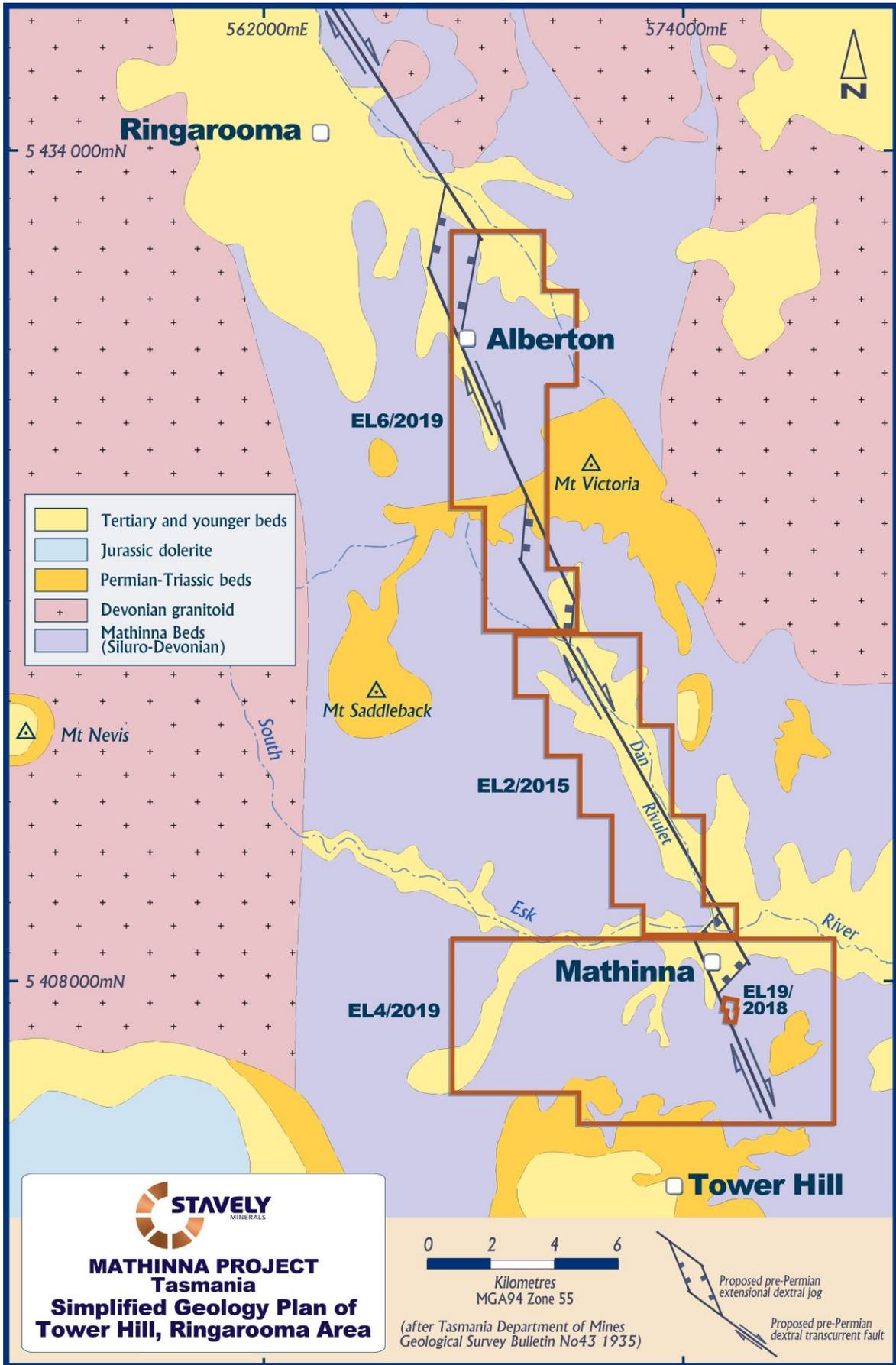


Figure 4. Mathinna Project – Local Geology Plan.

## *Exploration Rationale*

Stavelly Tasmania has been actively exploring in the area, most recently at the Mathinna goldfield where 7 diamond holes have been drilled. This drilling is part of a regional tenement consolidation, where Stavelly Tasmania has been identifying regional structural trends which have historically been high grade goldfields.

The Mangana to Alberton is one of the most significant gold bearing structural trends in the North east of Tasmania (See Figure 2 -4). Most of the historical mines within EL 2/2015 were closed by the 1920's and since then exploration has been extremely patchy and largely ineffective. To be economic, the production grades in the early 1900's had to be around 1 oz/t (30 g/t) gold. Only the very high-grade reefs were mined and little attention was paid to mineralisation which today can be mined economically due to a higher gold price and improved mining and processing techniques. In addition, a recent (2018) geological 3D model which demonstrates a new structural synthesis based on mapping and multiple cross sections has been developed by the MRT.

The favourable structural corridor is interpreted to extend from the high-grade Golden Gate Mine at Mathinna through EL 2/2015 and continue north to Alberton. This trend has not been systematically explored and based on the structural interpretation is considered a highly prospective area. There is also the potential to discover new shallow high-grade shoots similar to those that host the New Golden Gate Mine, which produced over 250,000 ounces of gold at a grade of approximately 26 g/t gold.

### **REVIEW OF PREVIOUS WORK**

The previous work on EL 2/2015 can be separated into two distinct groups, the first is the historical mining and prospecting and the second is the "modern" exploration (post 1950's) activities where exploration and drilling has been undertaken. Much of the modern exploration has been targeted near the historical workings with very little regional exploration undertaken. As a result, no systematic exploration has been undertaken over the entire tenement.

A summary of previous activities is summarised below.

### *Early Mining and Prospecting*

Without having thoroughly researched the history of the Dans Rivulet goldfield through the newspapers of the day which would add considerable detail, the earliest discovery of gold in the Dans Rivulet Valley appears to be the City of Melbourne Mine in 1872.

The late 1980's was a period of major activity with the Havelock and Revenue discovered in 1887, O'Briens and Lady Mary in 1888 and Carnegie and Starlight in 1889. The field appears to have fallen quiet in the very

early 1890's with resurgences in the mid to late 1890's and the mid 1930's when most old mines would have seen unreported activity.

Hughes (1947) is the best summary of this early mining history and Taheri (1992) for a more recent compilation from which much of the following is drawn.

Mine	production tons ore	production gold oz	average grade g/t
Golden Horseshoe	1836	204	3.5
City of Melbourne		55	
	13	20	47.9
	25	6	7.4
New Golden King	1904	1212	19.8
Mabel	120	69	18.0
Revenue	418	95	7.1
O'Briens	1341	1273	29.5
King Edward	235	294	39.0
Carnegie	102	50	15.2
Havelock	885	541	19.0
Strickland	7	17	74.6

### **O'Briens Mine**

The O'Briens Mine was worked over two periods, 1888 to 1890 and 1901 to 1911. There is also likely to have been unreported activity in the depression of the mid to late 1930's.

From 1888 to 1890 the O'Briens Prospecting Association NL (O'Briens PA) drove adits on reefs and sunk two shallow winzes on the reef, crushing a total of 900 to 1,200 tons ore at ~30 g/t gold total of which 700 to 900 tonnes came from the #1 reef.

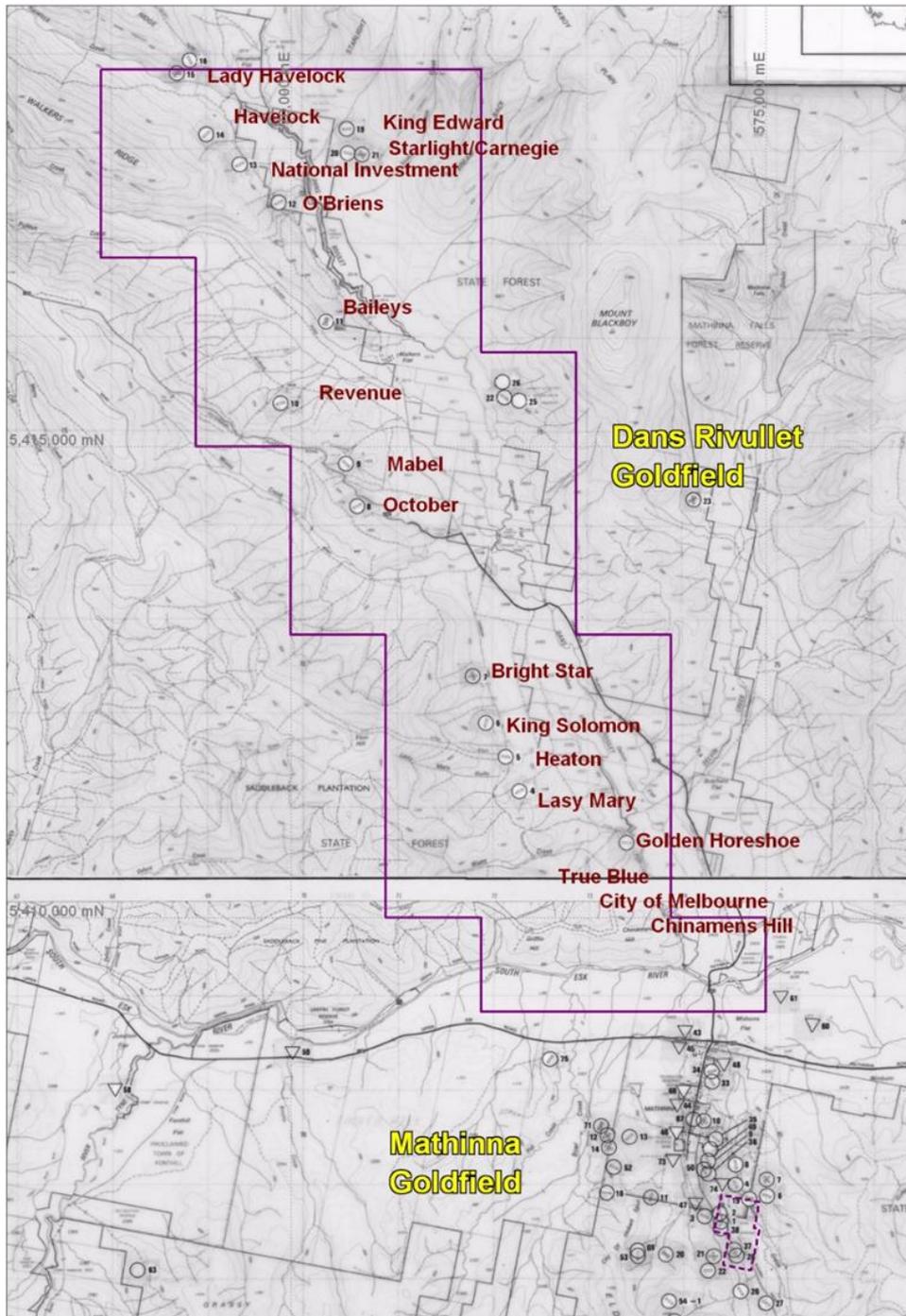
From 1910 to 1911, the New Golden Gate Company (NGG) sunk the Main Shaft to 160' and drove cross-cuts at 145' level to intersect the #1 reef. They also extended one of the shallow winzes from 16' to 60'.

### **Havelock Mine**

The Havelock Mine area was first leased prior to 1887 and was held by various individuals and companies until the 1940s with workings including a 52m adit, a prospecting shaft, and a 61m deep main shaft with levels at 12m, 15m, 30m, 40m and 60m. The average width of the formation was estimated by Twelvetrees (1904) to be around 0.45m.

At the 30m level the reef was driven for 54m and about 250 tonnes of quartz at a gold grade of 23 g/t was obtained. At the 42m level the reef was followed for some 60m, of which 45m was payable.

The main shaft was sunk to a depth of 60m, but the pumping plant was not efficient and no development took place at this level.



**Figure 5. Dans Rivulet Goldfield with Historical Workings on Mineral Resources Plan (Taheri, 1992).**

It is not known whether one or two reefs were worked on the different levels. The reef(s) appear to continue to depth, but because of the lack of sufficient capital or efficient machinery the workings were abandoned. Production figures for 1900, 1901 and 1903 report a total production of 16.66 kg (588 oz) of gold which was obtained from crushing of 621 tonnes of quartz i.e 29 g/t gold. About 170 g of gold was also obtained from 51 kg of pyrite which is 100 oz/t in the concentrate indicating that the gold is at least a large part refractory.

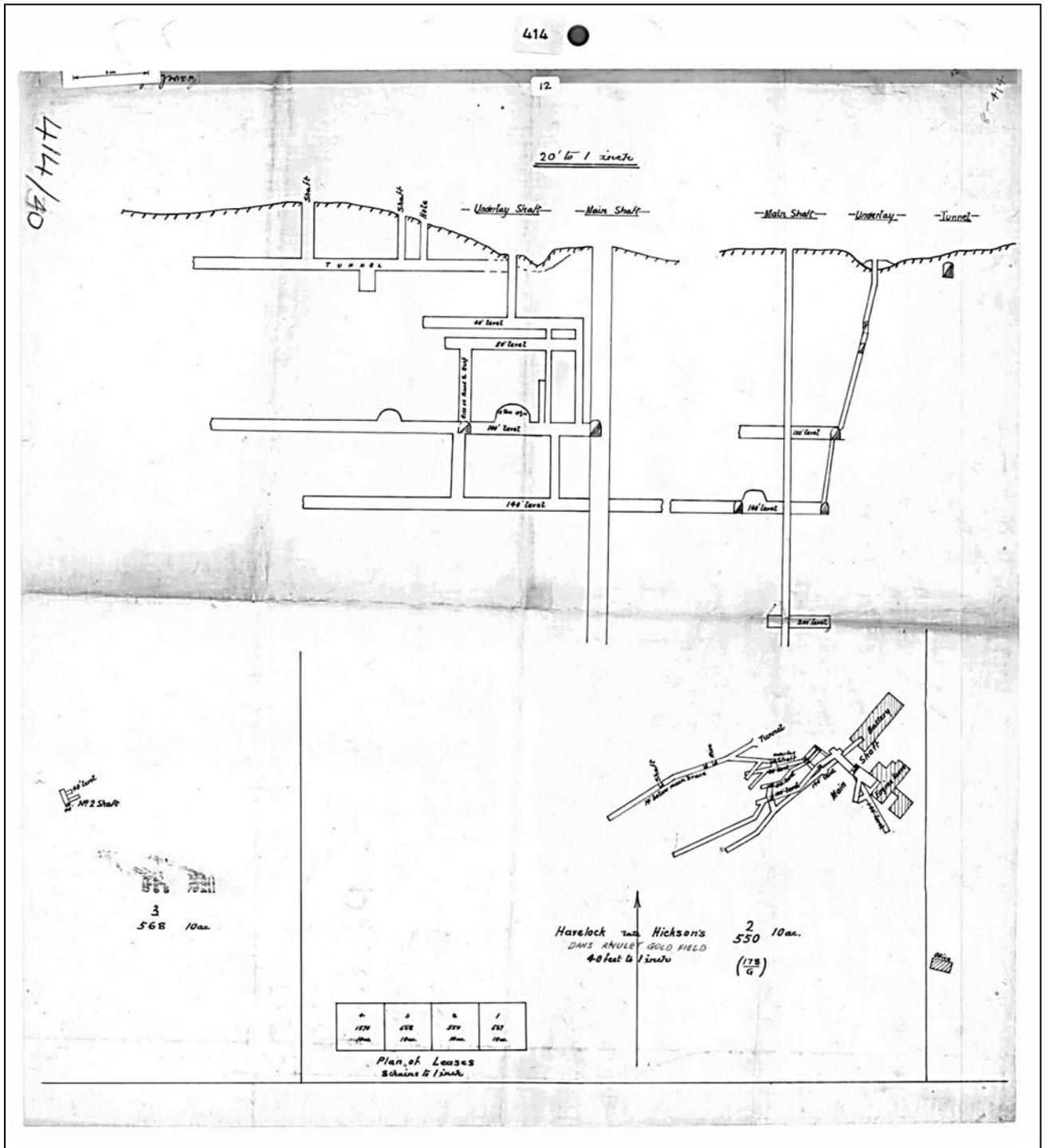
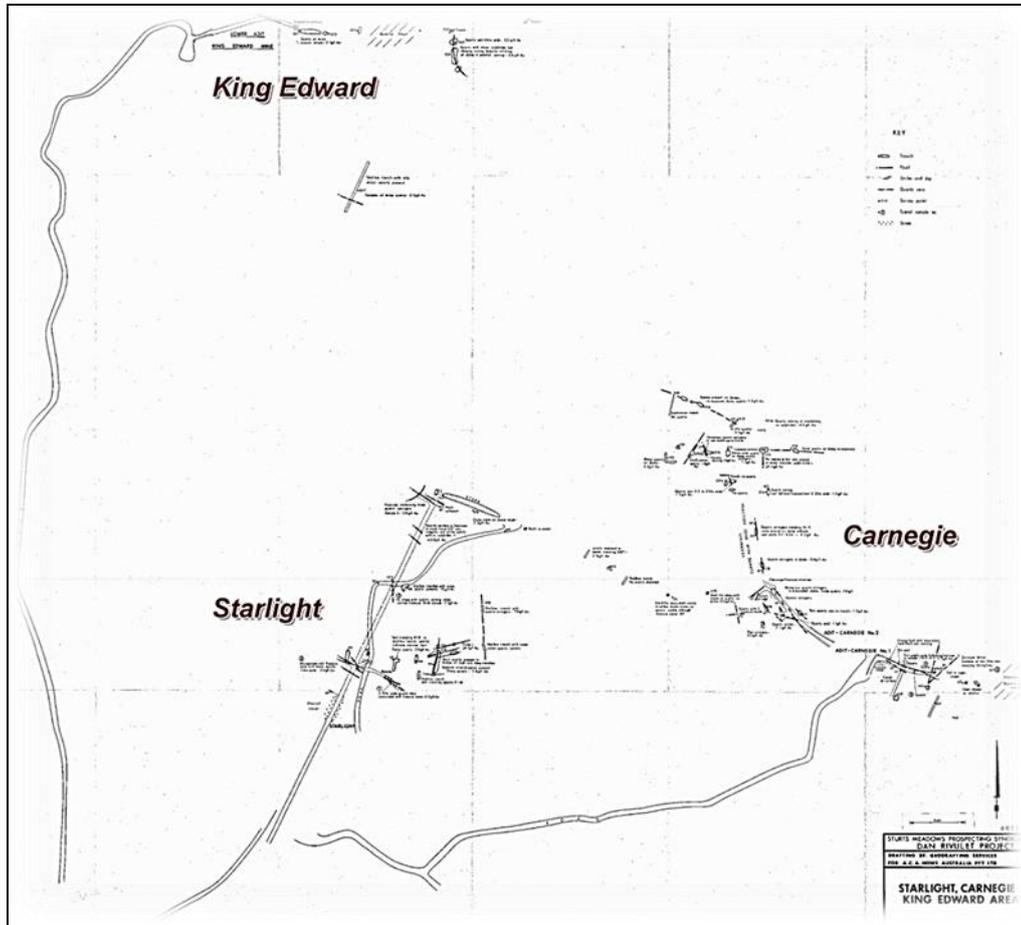


Figure 6. Havelock Mine Long Section and Plan.

### Starlight Mine

At the Starlight Mine, the main mining activity appears to have taken place between 1889 and 1904 and in the depression between 1935 and 1942. Workings included a 152m long adit, a shaft, and some surface workings. The quartz vein was mostly about 0.9m wide but up to 3.6m wide in places (Twelvetrees. 1904). Total gold production has been estimated to be between 17.01 to 22.68 kg (600 to 800 oz). Small tonnages (-10 tonnes) with high gold grades up to 85 g/t were reported (Twelvetrees. 1904).



**Figure 7. Starlight, Carnegie and King Edward Mines Location Plan**

### **King Edward Mine**

The King Edward Mine lease was first taken up in 1902 and cancelled in 1904. A second phase of mining activity was between 1935 and 1942.

Mine workings consisted of two adits and some surface workings. The lower adit was driven for 35m and a few centimetres of pebbly quartz was intersected. The upper adit was driven on a small vein which widened to 60cm at 20m from the adit entrance. Sections with high gold contents appear to have been intersected in the adit.

Total reported production is 9.157 kg (323 oz) gold between 1904 and 1906.

### **Carnegie Mine**

The main periods of mining activity were 1889 to 1904 and 1935 to 1942.

Workings consisted of two adits and some surface stopes. Adit no. 1 was driven on a 90cm thick quartz vein and was stoped from 12m to the surface. A crushing of 100 tonnes of quartz from adit no.1 is said to have averaged 15.5 g/t of gold though other reported gold values from underground sampling are relatively high, ranging from 15 to 71 g/t.

Adit no.2 was driven for 32m and intersected a one metre thick quartz formation containing fine, disseminated sulphides, mainly arsenopyrite. The vein appears to occur in a 7m wide, NW -trending shear zone which can be traced over 80m. There are also narrow quartz stringers and pods with lower gold values (0.8 to 6.8 g/t). It is interpreted that the main lode in the Starlight Mine was intersected by this adit, and was around 10cm wide and carrying 1.1 g/t gold.

### **Revenue Mine**

The Revenue Mine area was first leased in 1897 with mining activity continuing at different intensities until 1904. Workings consist of some shallow shafts, a 114m long adit, and surface stoping.

A total of 2.962 kg gold was reportedly obtained from crushing of 411 tonnes of quartz giving an average yield of 7.3 g/t gold. A trial crushing of 18 tonnes of quartz from a second reef 1.2 to 1.5 m wide, yielded 670g of gold at an average gold content of 37 g/t (Hughes. 1947).

### **City of Melbourne Mine**

Mining apparently commenced in 1872 and continued intermittently until 1906. Main workings included two inclined shafts (43m and 27m deep) and a vertical main shaft 30m deep. Recorded gold production to 1900 was 1.701 kg. In 1905, 623 grams of gold were produced from 13 tonnes of quartz (47 g/t). and in 1906 the production was 184 g from 25 tonnes of quartz (7.4 g/t).

Gold values up to 58 g/t were obtained from relatively narrow (-15 cm) quartz veins (Nye. 1941).

### **Other mines and prospects**

The Horseshoe Mine lease was first taken in 1895 but there are no records of production until 1907. Extensive surface prospecting without any significant development at depth was undertaken. Main shaft was sunk to a depth of 33m without intersecting a quartz vein. A prospecting shaft, 24m deep, was also sunk SW of the main shaft (Hughes, 1947).

Underground workings also failed to locate the ore shoots. The total recorded gold production from the surface workings is 6.357 kg (224 oz) which was obtained from 1,807 tonnes of quartz (-3.5 g/t).

At the Lady Mary Mine work started in 1888 by sinking shallow shafts and surface trenching. A main shaft was sunk to a depth of at least 32m to intersect the veins at depth. However, it is not certain whether the main shaft intersected the veins and there is no record of any gold production. (Montgomery. 1892; Hughes. 1947).

True Blue (The Bell) workings included two shallow shafts sunk on the reef.

At the National Investment Mine an adit was driven for 30m sometime between 1888 and 1908.

At the King Solomon Mine, workings consisted of four shallow shafts (<10m deep) and a number of stopes and trenches. Prospecting started in 1896 and the field appears to have been abandoned in the same year.

The Bright Star lease was initially taken up in 1888. Workings included a short adit, some surface trenches and a shallow shaft (Hughes, 1947).

The Heaton Mine lease was first taken up in 1895 and the mining activities continued until 1908. The workings consisted of a main shaft, several shallow shafts, and surface stopes. Quartz veins are about 10m wide and there is no record of gold production. (Hughes, 1947).

The Baileys Mine area was worked sporadically from 1899 to 1942 by an adit and two shallow shafts.

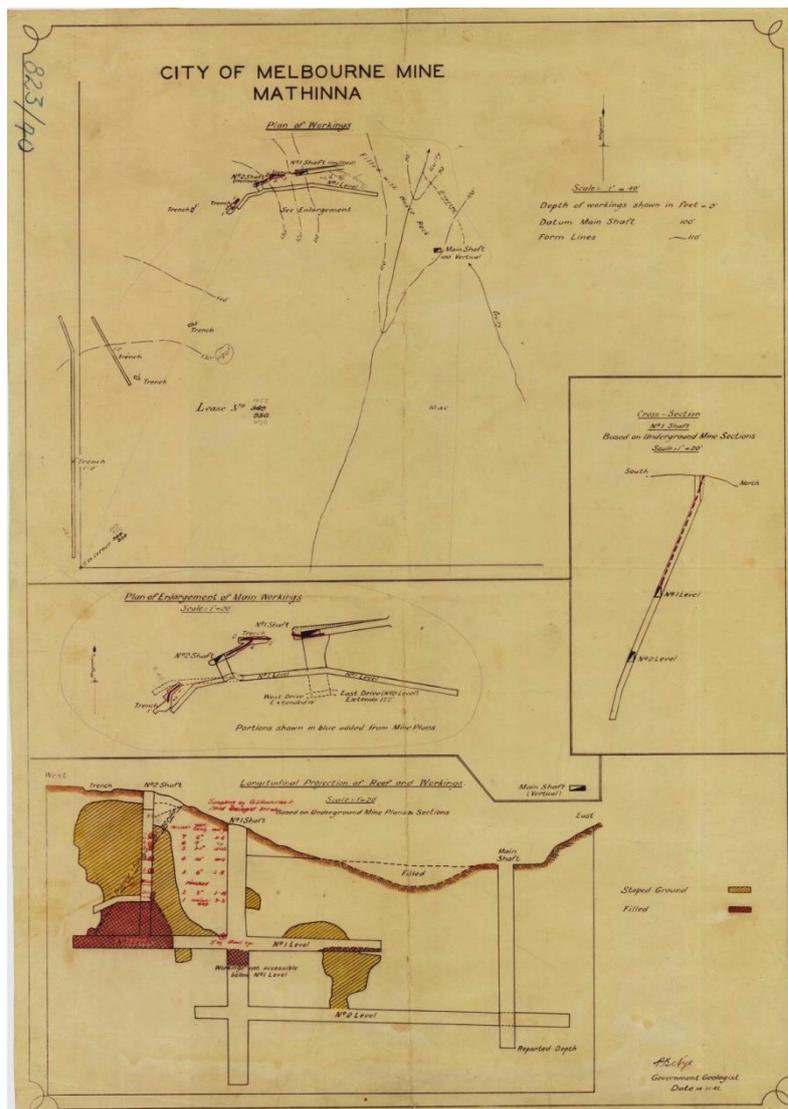


Figure 8. City of Melbourne Mine Plan and Section.

October Mine mining activity began in 1897 and continued until 1901. Workings included three shafts with a level at 24m in the main shaft. The lode was driven on the 24m level for 24m with a gold grade of around 30 g/t. It is not known if further development was attempted below the 24m level. No production records are available.

Mabel Mine lease was first held in 1896 with mining continuing intermittently until 1900. The workings consisted of a shaft at least 30m deep and some surface cuts. In 1898, a trial crushing of 96 tonnes of quartz yielded 1.077 kg (38 oz) of gold (11.2 g/t), and the result was considered to be disappointing. In 1900, another 1.077 kg of gold was also obtained from the crushing of 22 tonnes of quartz at a grade of 49g/t gold.

### *Modern Exploration (1950 – 2015)*

There has been little systematic exploration of the Dans Rivulet goldfields.

The main work has been that of Sturts Meadows (Martin, 1980) who mapped and sampled a number of old workings, as detailed below, and the efforts at re-establishing the O'Briens Mine by Cuttack and Montroyal (Newnham 1993a, Newnham 1993b, Anon 2001).

Post WW2, the Department of Mines drilled 5 holes at the O'Briens Mine intersecting 3m @ 11.1 g/t gold. Since the 1990's considerable effort has been made in attempting to re-establish the O'Briens Mine with the drilling in total of 13 holes and the mining of a 75m long access decline from surface but with no production.

#### **O'Briens Mine**

The O'Briens Mine's exploration history is as follows.

- 1954 – 1955 Department of Mines (DOM) drilled 5 holes MD1 to MD5 beneath #1 reef:
  - MD1 (57m) - hit old workings.
  - MD2 (83.5m) - no significant intersection.
  - MD3 (49.4m) - two quartz+arsenopyrite veins within 3.0m wide (horizontal) reef structure with a HW vein 0.35m @ 47 g/t gold, and FW vein 1.45m @ 11.4 g/t gold within an overall reef structure 3.0m @ 11.1 g/t gold.
  - MD4 (81.7m) - three quartz+arsenopyrite veins within a 1.55m (horizontal) width reef structure, HW vein 0.2m nil (looked good though), middle 0.24m @ 6.4 g/t gold and FW vein 0.22m at 4.08 g/t gold within overall reef structure of 1.55m @ 1.6 g/t gold.
  - MD5 (78.6m) - minor quartz veins not assayed.
- In 1980, Sturts Meadow Prospecting (Martin, 1980) carried out sampling of the adits (Mitchell, 1980) and revealed that most of the quartz veins were auriferous. with the best value being 17.8 g/t gold over a length of 73cm. Sampling of the dump material indicated values up to 26 g/t gold.
- 1992 – 1993 Montroyal Mining N.L (Newnham, 1993a and Newnham, 1993b) drilled 6 holes (GS1, GS2 & GS4 to GS7) beneath #1 reef, 1 hole (GS3) beneath #2 reef:
  - GS1 tested #1 reef approximately 75m below the adit and 50m below MD3. The hole intersected 0.3m @ 2.58 g/t gold and 1.35% As but not in the reef.
  - GS2 intersected a zone fractured and quartz veined zone with 2.75m (horizontal) @ 3.7 g/t gold including a HW vein 0.7m @ 9.0 g/t gold.
  - GS4 intersected a 4.0m (hori.) reef @ 0.69 g/t gold with a HW vein 0.55m @ 1.45 g/t gold and FW vein 1.05m @ 1.6 g/t gold.
  - GS3 tested beneath the #2 reef with no significant intersections.

- GS5 intersected no clear reef structure but a concentration of quartz veins that is associated with a narrow fault zone at 126.7m but gold values are low.
- GS6 did not intersect a clear reef structure but did intersect a zone of quartz veinlets with elevated arsenic from 81m to 85m.
- GS7 intersected a zone of quartz veinlets between 130m and 139m associated with a narrow fault and anomalous gold and arsenic
- 1997 – 2001 Cuttack Mining (Anon. 2001)
  - Mined box-cut portal and 75.5m decline to intersect O'Briens #1 Reef.
  - Stopped short of reef due to ground conditions.
  - Drilled two holes (CM1 and CM2) from end of decline.
  - Holes appear poorly placed

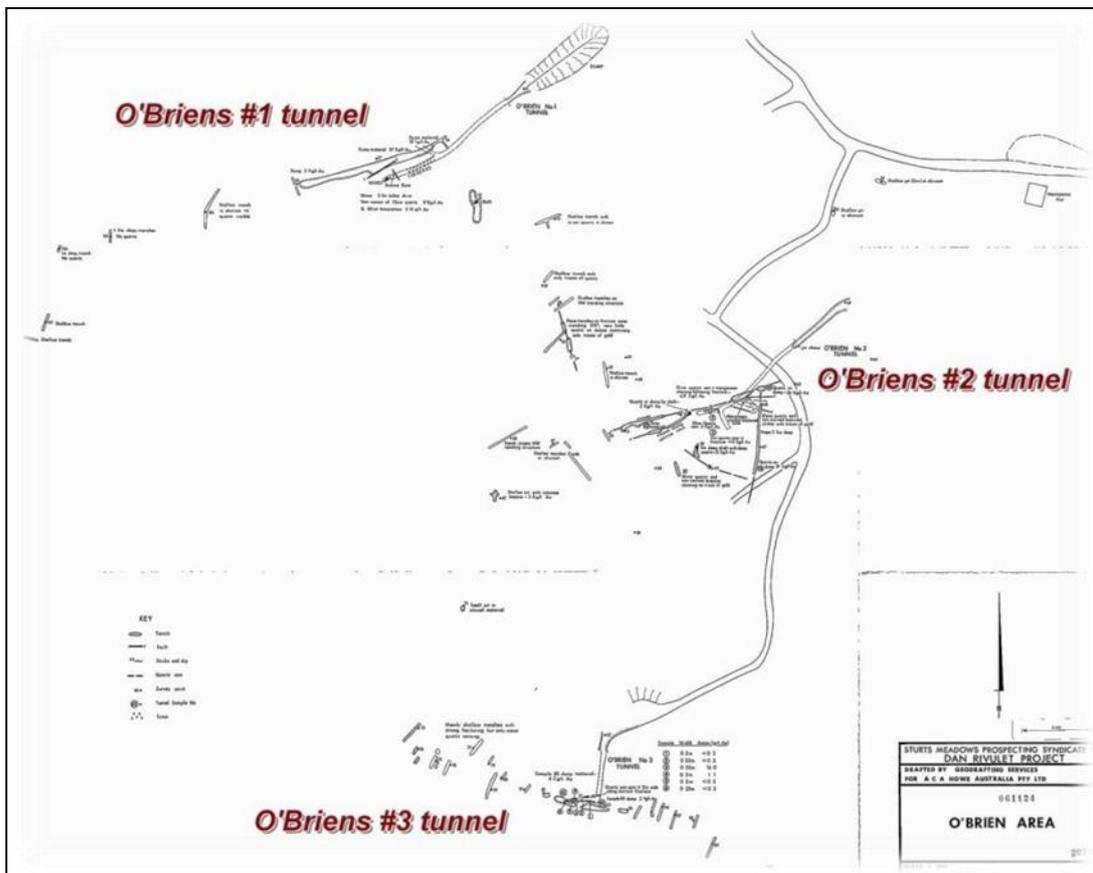


Figure 9. O'Briens Area Plan (after Mitchell, 1980).

### Carnegie Mine

At the Carnegie Mine, two diamond drill holes were drilled in the area in 1962 by the Department of Mines (Threader, 1963a). Numerous barren quartz veins were intersected, although no gold or silver assays were reported.

It has been suggested that the main reef between the Starlight and Carnegie Mines could carry higher gold contents at depth.

**Havelock Mine**

Mitchell (1980) undertook some systematic sampling across the reef with grades 0.45m @ 4.7, 0.5m @ 9.3, 0.25m @ 5.8, 0.4m @ 2.7, 0.2m @ 0.07 and 0.3m @ 0.66 g/t gold. The reef in the adit occurs as numerous lenses occurring in brecciated slate zones

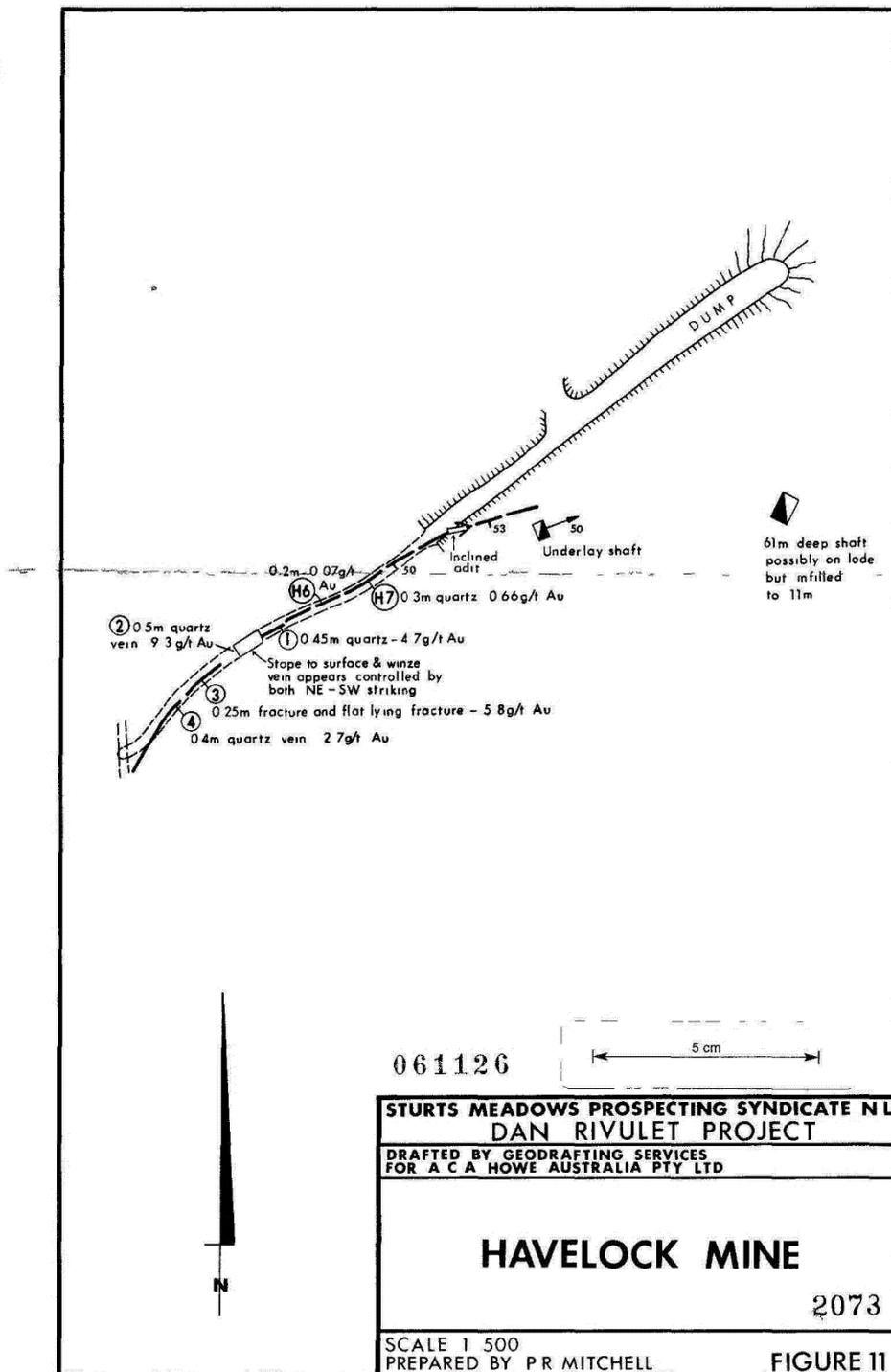


Figure 10. Havelock Mine Plan showing Sample Locations and Assays from Mitchell (1980).

## Starlight Mine

At the Starlight Mine, grab and dump sampling by Mitchell (1980) returned assays of up to 24.7 g/t gold. A major 5m wide fracture system containing quartz veins assays up to 2.0 g/t gold (Mitchell (1980) though reported gold contents of these veins appears to have been low (up to 2 g/t).

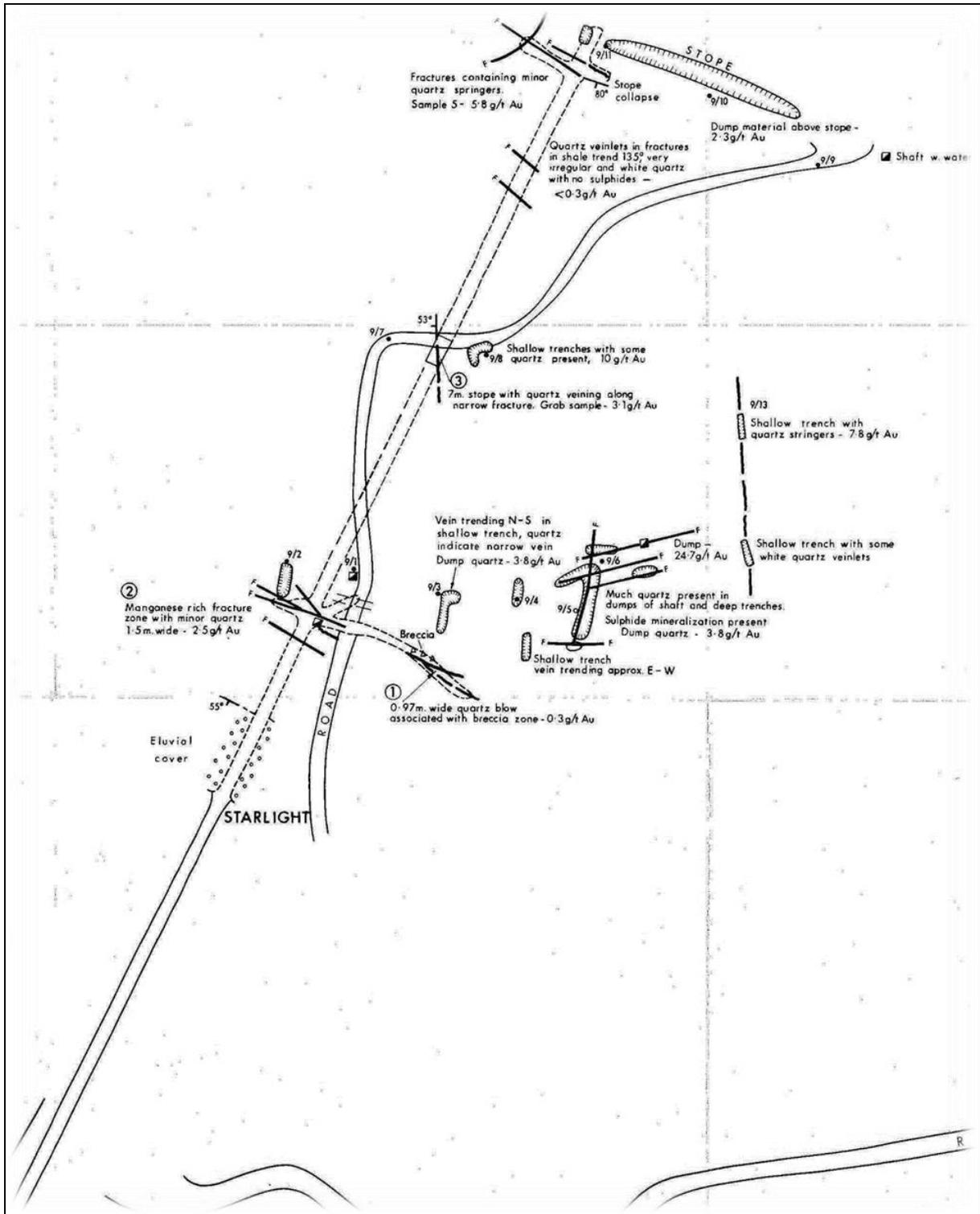
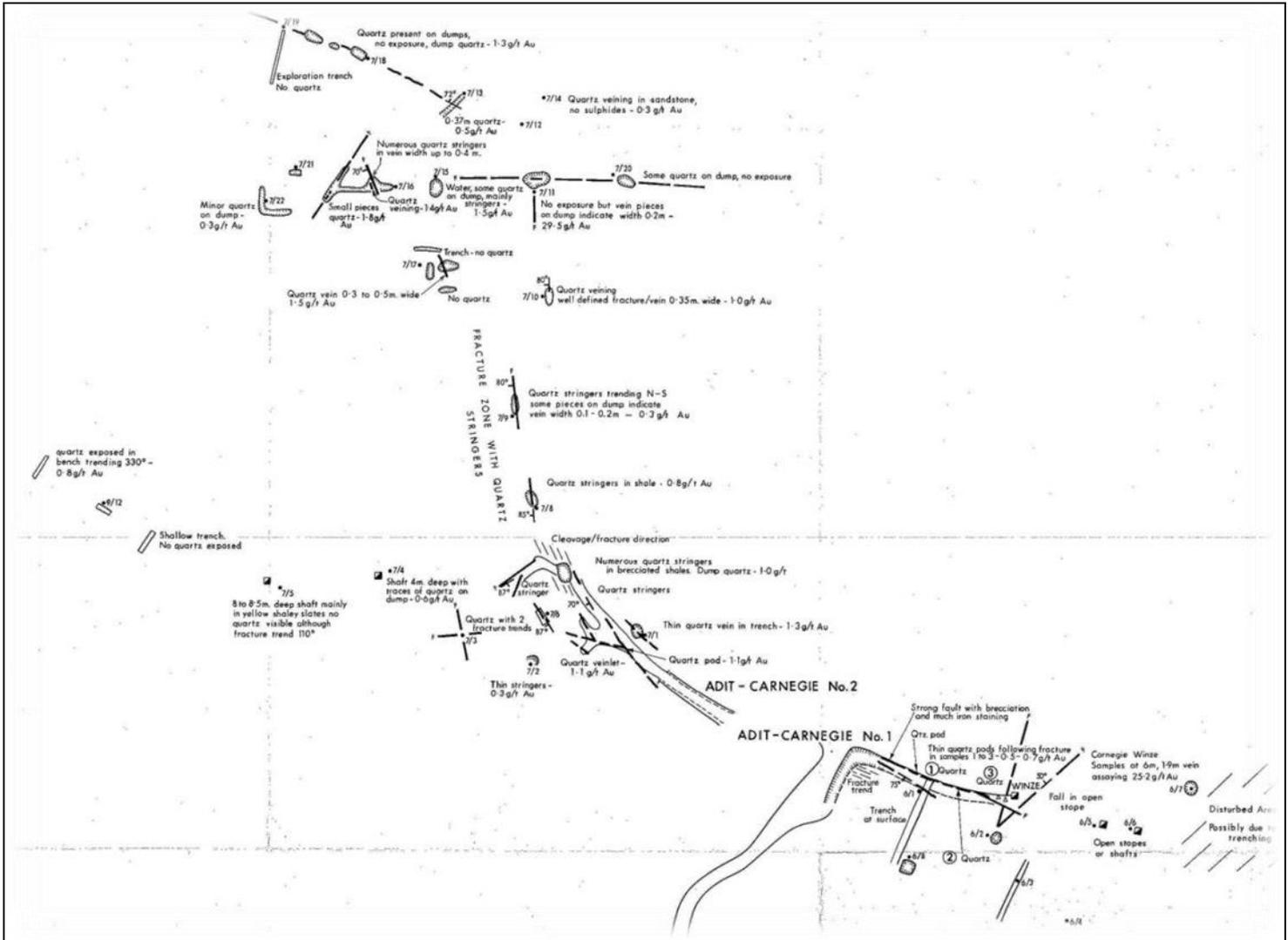


Figure 11. Starlight Mine Sampling (Mitchell, 1980).



## Revenue Mine

In 1987, Herrmann (1987) mapped and sampled the Revenue Mine.

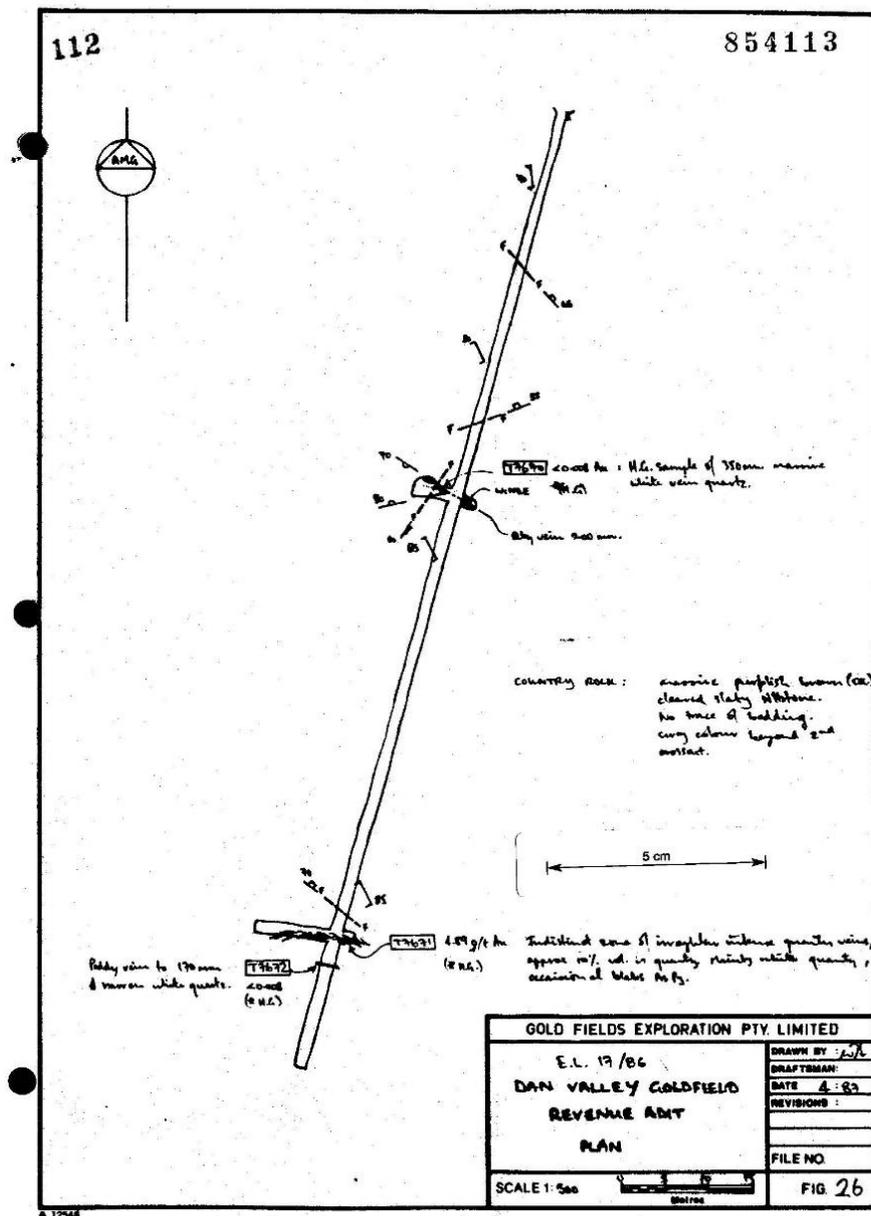


Figure 13. Revenue Mine Plan from Herrmann (1987).

## Chinamens Hill Prospect

The Chinamen's Hill prospect was discovered by Resolute Limited in 1995 using soil geochemistry.

The coincident gold and arsenic anomaly extends in a north-south orientation for approximately 1.4 kms with part of the northern section obscured by a perched river channel which is known to have sourced 10z nuggets to Chinese miners.

To date only 2 excavator trenches and 1 RC drill hole have tested a 50m section near the middle of the anomalous trend.

Northern trench (#1) cut across a zone assaying 17m @ 1 g/t gold including 3m @ 3.28 g/t gold with a 0.2m rock assaying 20.8 g/t gold. Mineralisation is in a quartz stockwork style which has potential for larger tonnages.

In Southern trench (#2), 50m south, the zone assayed 4m @ 1.55 g/t gold with small individual veins assaying 7.35, 4.92 and 4.06 g/t gold.

The one RC hole MT026 drilled beneath trench #1 intersected 1m @ 0.71 g/t gold.

The three intersections already define an anomalous trend that is interpreted to be a mineralised structure that extends approximately 1.4 km long.

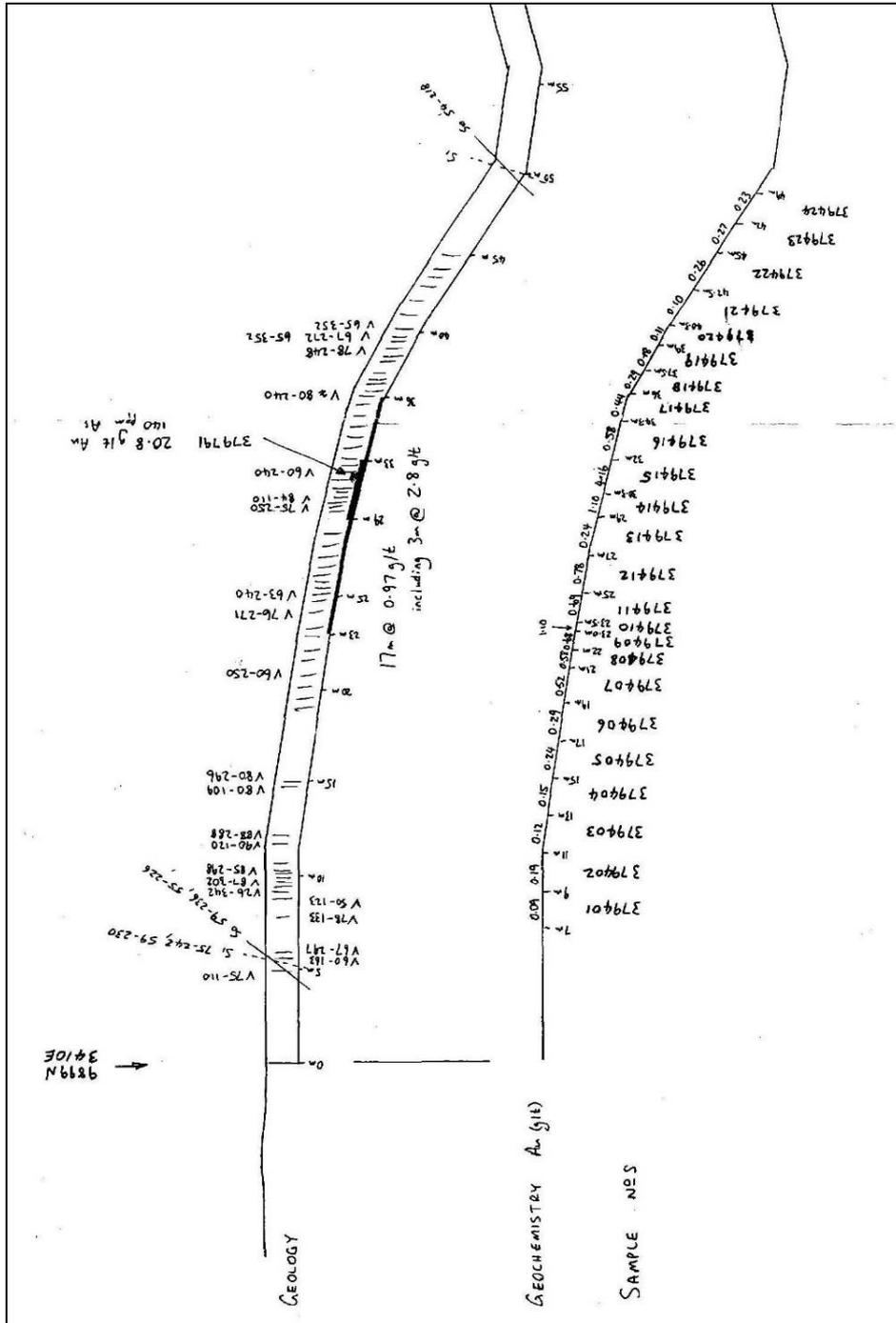


Figure 14. Chinamens Hill Costean #1 (MacDonald, 1995).

## EXPLORATION ACTIVITIES

EL 2/2015 was transferred to Stavely Tasmania Pty Ltd on 12 February 2020. As a result of the Covid-19 pandemic and the resulting state boarder closures, no exploration could be undertaken during the year by Stavely Tasmania.

Exploration work programmes have been developed for the tenement and include detailed soil sampling, re-processing of the historical aeromagnetic surveys, trenching and if warranted drilling of selected high priority targets.

The proposed exploration at the Chinamens Hill prospect as outlined in MacDonald (2016) is still warranted with the trenching considered a priority.

## DISCUSSION OF RESULTS

There are no new exploration results to discuss.

## CONCLUSION

As a result of the recent 3D modelling conducted in the Mathinna – Alberton structural trend by Mineral Resources Tasmania, and the identification of regional structures controlling the mineralisation, it appears significant potential remains in the area and that a review of the effectiveness of previous exploration is required.

## ENVIRONMENTAL MANAGEMENT

A desktop review of natural values of the Chinamens Hill prospect was completed by Philip Milner Landscape Consultants in 2015. No other environmental studies have been undertaken.

## EXPENDITURE

During the year, no on ground exploration activities were completed. As a result, expenditure for the tenement was low. A total of \$3,020 was spent on the tenement during the year.

A significant work programme has been developed for the next year including detailed soil sampling, re-processing of the historical aeromagnetic surveys, trenching and, if warranted, drilling of selected high priority targets which is expected to exceed \$50,000.