



**NEW GOLDEN GATE - TASMANIA  
RL2/2008**

**ANNUAL PROGRESS REPORT  
2<sup>nd</sup> February 2015 – 2<sup>nd</sup> February 2016**

**Tenement Holder/Manager**  
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**Note: All figures, grids, and contained data are according to the GDA/MGA94 grid system.**

## ABSTRACT

Cala has an approved drill program to test the Dylans and Sophies shoots and some deeper targets within the mine footprint. This program totals 1100m in 8 diamond drill holes for an estimated cost of \$250,000.

Cala also engaged Grant McDonald to conduct a data review to identify near surface targets and cost out a drill program to test these targets (attached). A further drill program of \$195,500 has been quantified.

For approximately the last 6 months the company has been in discussions with Cape Clear Minerals Pty Ltd (CCM), a subsidiary of Titeline Drilling Pty Ltd (a Ballarat based drilling company) with a view to entering into a drill-for-equity agreement on Mathinna Gold Pty Ltd. Mathinna Gold Pty Ltd owns two tenements covering the Mathinna Goldfield. It has been agreed that any agreement would be at a company level and not the tenement level to ensure the project as a whole progresses forward with the best chance of success.

CCM has conducted substantial due diligence over the project area and had a site visit late in 2015 to confirm a Ballarat, Saddle Reef style exploration target. CCM, specialists in saddle reef styles of gold mineralisation, are of the view that the Mathinna Goldfield may have the potential to host +2Moz of gold based on the Main Slide structure alone. Both companies are of the view that there is potentially a second and maybe a third parallel structure that could lift the resource potential of the same magnitude.

Both companies have agreed that the best approach to test this target is to design a program that completes the following steps:

- Redo the 3D model for Mathinna and include structure and all soil results for the surrounding goldfield from the New Golden Gate in the north and south to the Volunteer Mine and from the Main Slide in the east and west to an area parallel with the City of Hobart. Also review how this ties in with the area further to the west.
- Based on the new model define near surface drill targets both around the NGG and to the south and west and commit a 2000m drill program to test these targets
- Review data post initial drill program with a view to undertaking a further 18,000m of drilling to further test hits from the previous program and hopefully start to define resources.

Both companies are working towards structuring an agreement that meets these objectives and also the Perpetual Gold insitu development model in the attached cover letter.

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**APPENDIX 1** - Exploration Proposal for RL 2/2008 targeting further resources around the New Golden Gate Mine and Tasmanian Consolidated mines at Mathinna, north eastern Tasmania (Grant MacDonald)

## **1. INTRODUCTION**

This report is a summary of the exploration activities conducted on the New Golden Gate retention licence RL2/2008, for the period of 2nd February 2015 to 2nd February 2016. The area of the licence remains 0.267km<sup>2</sup>.

The owner of the tenement is Cala Resources Pty Ltd (Cala), which is a wholly owned subsidiary of Mathinna Gold Pty Ltd.

The tenement is of particular interest to Cala as it encompasses the New Golden Gate and Tasman Consols mine workings and associated tailings. This was the most significant historical gold mine in this part of NE Tasmania and produced 260,000oz at a calculated average head grade of ca. 26g/t Au. Drilling along strike of the historic mine lead to a discovery by Defiance Mining of narrow zones of mineralisation known thereon as Dylan's and Sophie's reefs (totalling ca. 25,000oz).

Cala believe that there is scope for further discovery as well as evaluating the remnant resource within the immediate mine area. During the reporting period Cala has been in discussions with Cape Clear Minerals Pty Ltd to investigate the potential for the discovery of new surface orebodies amenable to open cut mining and to design a drill program to test these targets.

### **1.1 Location**

The tenement is located approximately 1.5 km SSE of the township of Mathinna, in eastern Tasmania (Figure 1). Access to the license area is via gravel road from the southern margin of the Mathinna township. Mathinna is located approximately 20km NNW from Fingal and is accessed by sealed road.

The licence area can be found on the Mathinna (5640) 1:25,000 scale, and the Forester (8415) 1:100,000 scale; topographic map sheets.

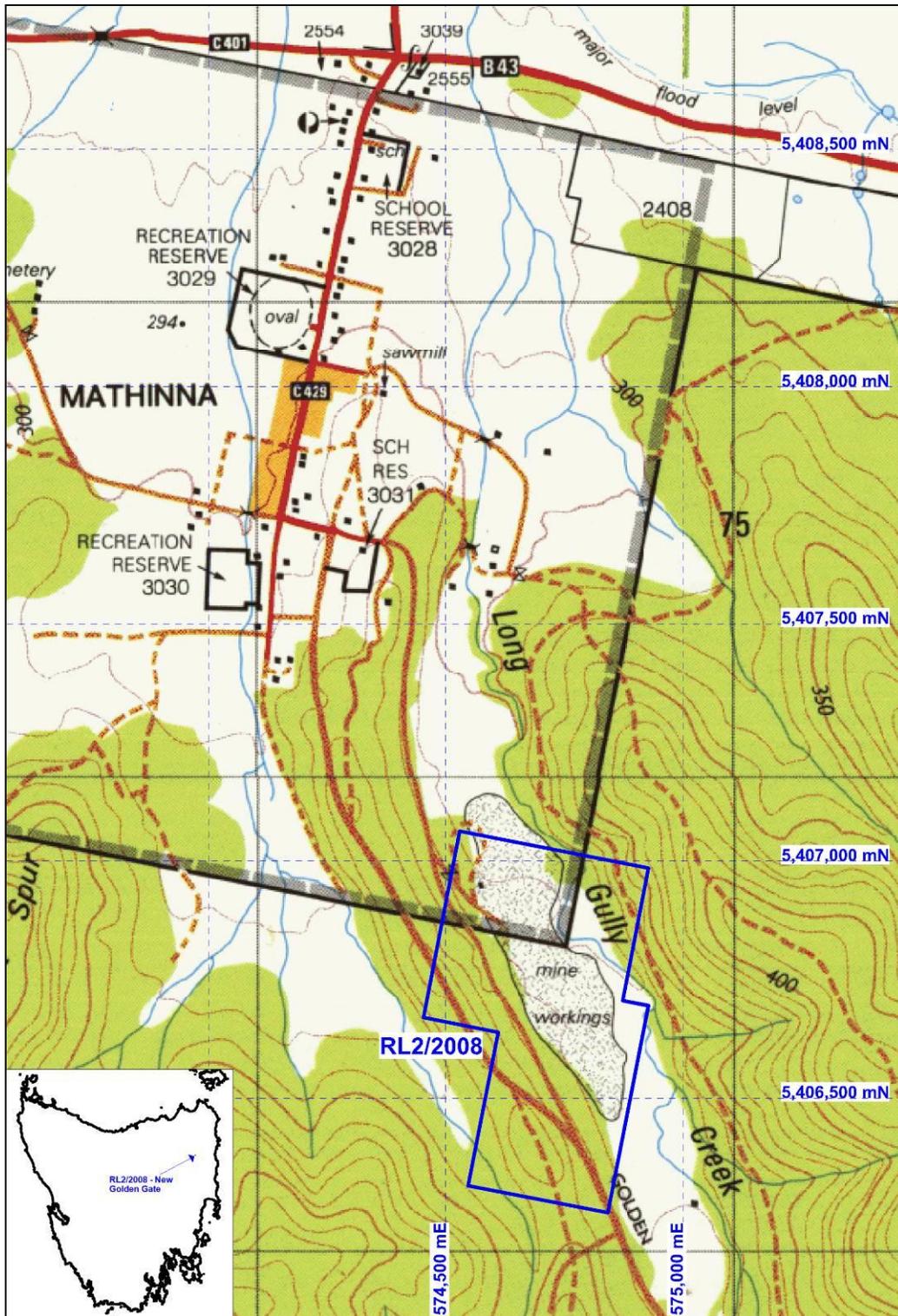


Figure 1. New Golden Gate Retention Licence (RL2/2008) is located in northeastern Tasmania and proximal to the township of Mathinna.

## 1.2 Geology Overview

### 1.2.1 Stratigraphy

The tenement comprises sub- and outcropping Mathinna Supergroup siltstones, sandstones, and subordinate shales. Revision of the internal stratigraphy of the Mathinna Supergroup as detailed in Seymour et al. (2011) and summarized in Table 1 below,

Group	Formation	Member	Age	Brief description
Panama Group	Sideling Sandstone		Early Devonian (plant fossils)	Dominantly fine-grained sandstone, some interbedded siltstone
	Lone Star Siltstone		Late Silurian (graptolites)	Dominantly thin-bedded siltstone with interbedded fine-grained sandstone increasing towards the top
	Retreat Formation		Silurian?	Interbedded turbiditic medium to very fine-grained sandstone and subordinate siltstone-mudstone
	Yarrow Creek Mudstone		Silurian?	Dominantly thin-bedded mudstone, with subordinate cross-laminated siltstone
Inferred faulted unconformable contact				
Tippogoree Group	Turquoise Bluff Slate		Early-Middle Ordovician (graptolites)	Phyllitic dark grey-black slate; recumbent folds and cleavage
		Industry Road Member	Ordovician?	Interbedded phyllitic slate and foliated very fine-grained sandstone; ridge-forming recumbent folds and cleavage
	Stony Head Sandstone		Ordovician?	Graded thick-bedded fine-grained turbiditic sandstone with minor interbedded pelite; large-scale recumbent folds and cleavage

**Table 1. Revised Stratigraphy of the Mathinna Supergroup**

The New Golden Gate and associated vein deposits are hosted within the Lone Star Siltstone formation (pers. comm M. Vicary 2011). The Lone Star Siltstone Formation comprises basal bioturbated marine siltstone/shale/mudstone which is laminated to thinly bedded (Seymour et al., 2011). Minor black shale occurs and is commonly pyritic. The Lone Star Siltstone Formation grades upward with quartz-rich thick-bedded sandstone becoming more common toward the boundary with the overlying Sideling Sandstone Formation (Seymour et al., 2011).

The regional geology (Figure 2) is dominated by Mathinna Supergroup rocks and granitoids. Note that the granitoids are interpreted to be at a depth of approximately 4km below the New Golden Gate gold system (Leaman D.E. & Richardson R.G., 1992).

### **1.2.2 Structure and Mineralization**

The host-rocks to gold mineralization in the Mathinna area preserve several overprinting deformation features which are documented in Keele (1994) and modified for the specific geometries and observations of the New Golden Gate mine area below.

#### **D<sub>1</sub>**

Observations by Keele (1994) of minor folding and spaced cleavage overprinted by the dominant S<sub>2</sub> cleavage. Not observed at the New Golden Gate deposit to date.

#### **D<sub>2</sub>**

Regional folding with NW/NNW trending axial planes. Pervasive slaty cleavage. Dominant fabric in hand-specimen (Figure 3).

#### **D<sub>3</sub>**

Local folding with N/NNE trending axial planes. Antiformal fold observed by Twelvetrees as central to the reefs of the New Golden Gate and Tasman Consols mines is likely to be and F<sub>3</sub> fold. S<sub>3</sub> cleavage recorded in geological logs of Defiance Mining diamond-drilling in the licence area. Intersection lineation (L<sub>3</sub><sup>0</sup>) in hand specimen (Figure 3) post-dating S<sub>2</sub> and pre-dating late kinking. Occurs at ~60degree angle to L<sub>2</sub><sup>0</sup> in the plane of bedding. Observations by Twelvetrees (1906) that the 'apparent' drag of reefs into the main slide, previously assumed to be fault-drag folding, is actually a manifestation of simultaneous brecciation along the reef line and the main slide. This gives the effect of the reef turning sharply. His evidence for this was that although the reefs exhibited this 'apparent' drag on intersection with the main slide, bedding in the host-rocks did not. This observation is supported by TGL interpretation of the controls on high-grade and wider mineralization in the mine as being located at the intersection of NW striking faults and the NNE striking reef structures. NNW trending faults (Main Slide, Western, Central, East and West branch) may represent domainal reactivation of the S<sub>2</sub> slaty cleavage concurrent with the development of N/NNE trending fault/shear-zones which became reef 'channels'. Folding of bedding and the main S<sub>2</sub> cleavage may have created a zone of restraining during D<sub>3</sub> reactivation of S<sub>2</sub> and this is seen as the contributing factor as to why the New Golden gate reef system is located where it is. Note that both orientation of structures are mineralised. The main phase of gold mineralisation is interpreted as late- to post D<sub>3</sub>.

#### **Post-D<sub>3</sub>**

Kink-folding is recognized in hand-specimen and overprints all other fabrics (see Figure 3).

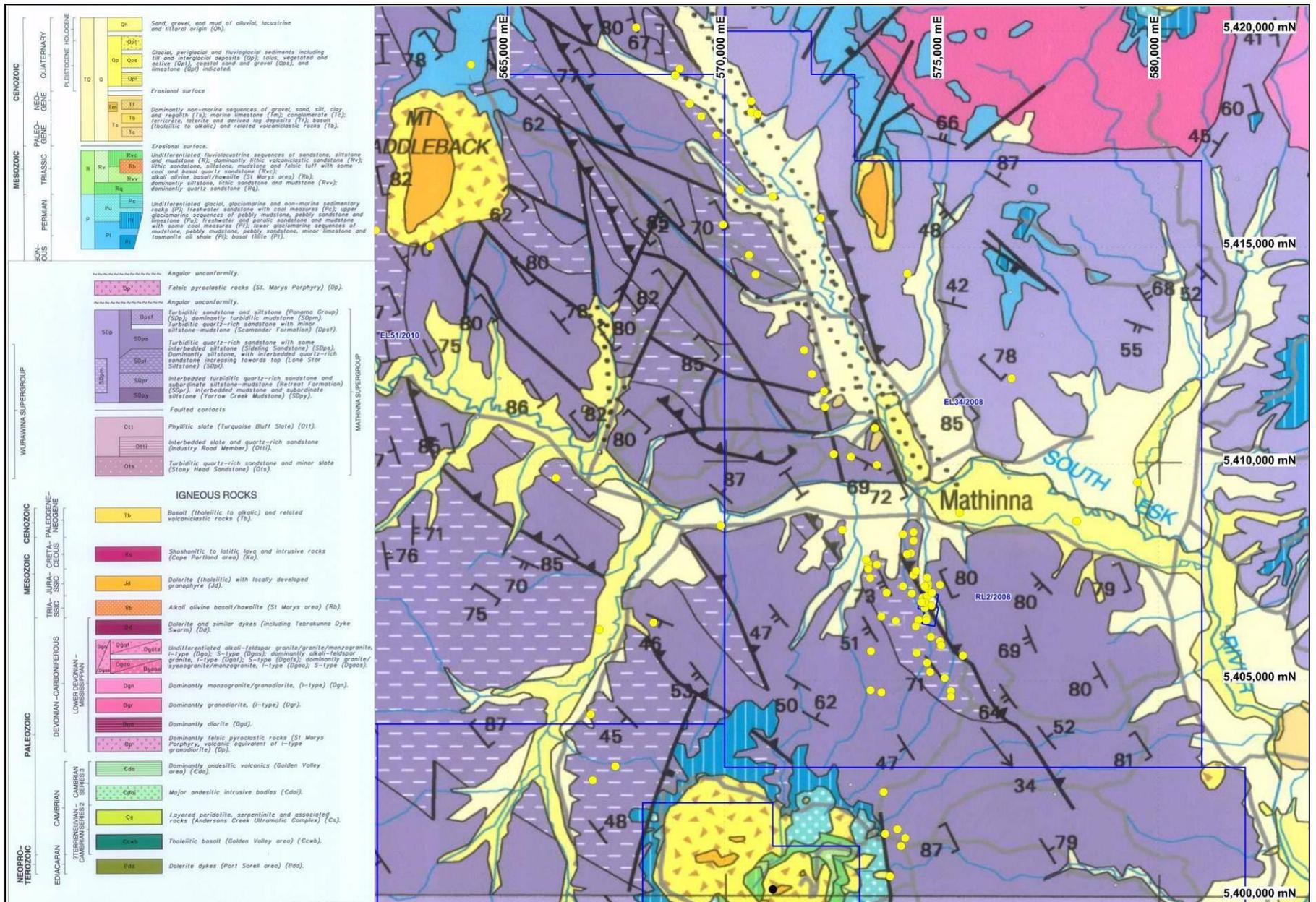


Figure 2. Geology of the Mathinna area. Yellow dots are locations of gold deposits/prospects/occurrences and these partially obscure the RL2/2008 tenement boundary in the lower-center of the map.

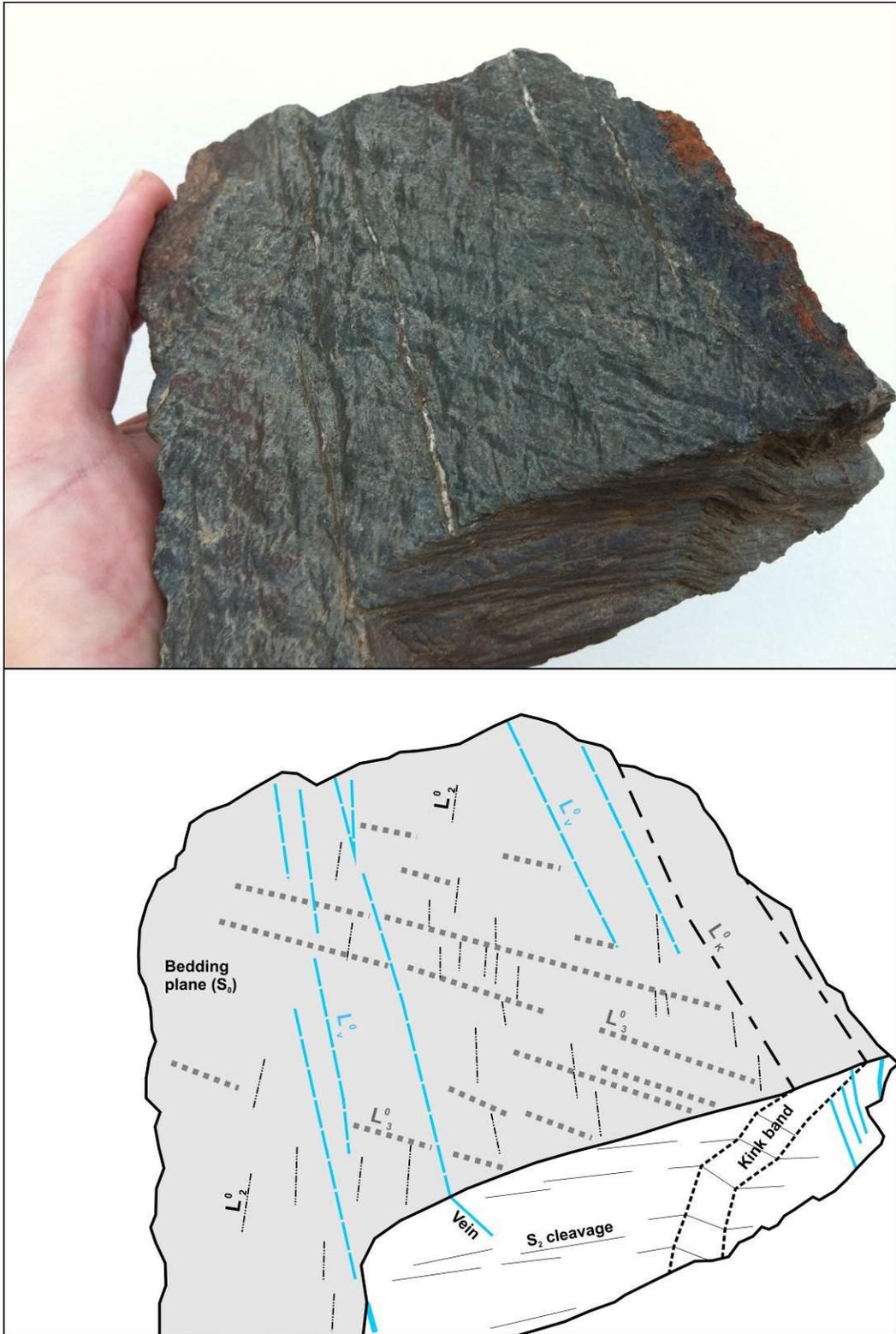


Figure 3. Hand specimen from New Golden Gate surface stockpile. Photograph and explanatory line diagram.

### 1.3 Exploration Rationale

The New Golden Gate mine was one of the most significant gold mines in Tasmania when operating ~1888 – 1908. The mine produced ca. 260,000oz from a multiple reef system within the polydeformed host rocks.

The discovery of the Dylan's and Sophie's reef system (Defiance Mining 1999) along strike to the NNE from the historic workings shows that mineralisation can still be discovered in the vicinity of this historic mine which, as was the case 100 years ago, was developed without exploratory drilling. Cala believe that there is potential to discover new reefs and to locate mineralisation on those reefs intersected in the old workings but not explored.

Historical records indicate that the cut-off for stoping in the New Golden Gate mine was approximately >15g/t. Interpretation of the historical mine development data also suggest that the individual reefs were driven for some distance (up to 300m) and only very selected areas stoped. This means that areas of the historic mine still contain mineralised reef that has not been mined due to historical cut-off constraints.

Cala plans to explore the New Golden Gate area with the aim to build on the existing small resource base with through new discovery, extension of the Dylan's and Sophies's reefs, and evaluation of remnant reef material left in the mine itself and remnant tails on surface.

## 2. REVIEW OF PREVIOUS WORK

### 2.1 Historical Mining

Mining of the New Golden Gate (**NGG**) shaft commenced in 1888 following discovery of Loanes reef in the adit level (Twelvetrees, 1906). Samples from Loanes reef were grading between 1 and 1.5oz/t and a decision was made to sink a shaft. The Main reef was discovered when the shaft intersected it at ~100ft below surface and together the Main and Loanes reefs account for a significant amount of the gold production from the mine (Twelvetrees, 1906). The NGG shaft was sunk to 556m below surface and mine development reached 585m below surface. Mining development occurred on 19 levels. Stopping occurred on four significant reefs (Main, Loanes, Lower east, and Lower West) and several minor reef/fault structures were driven but not stoped.

The Tasman Consols (**TC**) Mine was developed on an adjacent mine-lease and the distance between this and the NGG shaft is approximately 80m. Mining in the TC mine largely occurred between 1906 and 1908. Stopping only occurred on one of the reefs mined in the adjacent NGG mine, namely the Lower West reef. The TC shaft was sunk to 494m below surface and mining development occurred on 11 levels.

Gold production amounted to 260,000oz with just 10,000oz of this attributable to the Tasman Consols mine.

## **2.2 Exploration**

The area has been the focus of a number of exploration companies since the 1980s, the most notable work being carried out by the following companies:

### **Dept of Mines**

The Department of Mines drilled 3 holes (GG1-3), in the current licence area, for 669m between 1962 and 1965. Two holes, GG1 and GG2, tested the 'South Gate' area and while significant quartz veining was intersected, no significant assays were returned. GG3 intersected:

- 3.4m @ 5.8g/t Au from 59.4m, and 3.2m @ 10.9g/t Au from 153.8m.

Location of these collars needs confirmation as they are plotted in different locations on a Resolute Samantha map.

### **Epoch Mining**

Epoch Mining drilled 11 percussion holes (PDH1-11) for 825m in 1987. The drill-holes targeted shallow resource potential and were the first test of the mine remnants and the area immediately adjacent to the historic workings. The drilling was located at the northing of the NGG shaft and extend 100m to the south. Best results of the program included:

- 8.0m @ 8.5g/t Au from 40m down-hole in PDH5

### **Resolute Samantha**

Resolute Samantha were active in the Mathinna area in the mid 1990's and drilled 26 RC drill-holes. None of these are situated within the licence area, however, MT024, drilled to follow up on the intersection in GG3, ends approximately 55m west of the western licence boundary.

### **Defiance Mining**

Between 1999 and 2000, Defiance Mining drilled 67 RC and RC/Diamond holes within the licence area for a total of 7199m. This included 953m of diamond-core as tails on RC holes. The drilling tested multiple areas of the NGG deposit and environs and lead to the discovery of the Dylan's and Sophie's shoots to the immediate NNE of the historic mine workings. Best results from the Dylan's and Sophie's discovery include:

- 4.0m @ 15.4g/t Au from 51m in MT039
- 2.0m @ 11.3g/t Au from 137.3m in MT040
- 2.0m @ 26.8g/t Au from 92m in MT046
- 2.0m @ 15.9g/t Au from 30m in MT054
- 3.0m @ 23.1g/t Au from 46m in MT055
- 2.0m @ 25.4g/t Au from 220m in MT075

Other mineralization intersected at the Central 'reef' included:

- 10.0m @ 9.3g/t Au from 60m in MT028
- 3.0m @ 18.1g/t Au from 33m in MT029

### **Cala Resources Pty Ltd**

Cala Resources undertook an RC program which straddled the northern boundary of the current licence area in 2004. The drill-program was hampered by operational issues and of the 8 holes drilled, one was within RL2/2008. This hole, MT105, reached 19m and returned no significant intersection.

### **Tamar Gold Ltd**

As previously reported, Tamar Gold (under an option to purchase agreement) completed a significant program whereby all relevant drilling data was captured digitally from reports and reconfigured from existing digital records to form a cohesive database. Some of the key advances of this program are listed below:

- Lithology data was either assigned rockcodes where absent or codes were 'standardized' to allow for data discrepancy between the five organizations which have drilled in the area.
- Data was extracted from text descriptions and captured in separate fields. This included 'oxidation', 'colour', 'lithcode' including major/minor rock type, mineralization percentages for up to 3 minerals incl. visible gold, quartz-percentage, and a new field which quantifies the cumulative down-hole length of quartz intersected. This latter change enables more significance to be placed on say 10m@50% Quartz (i.e. 5m of quartz intersected, as compared with 2m@50% Quartz (1m of quartz intersected); where simply using logged percentage quartz would not quantify the difference.
- Drill-hole collar locations were corrected using the LIDAR surface (kindly made available by D. Green – MRT). It was found that a ~2m discrepancy existed between 1999 surveyed collar RLs and that obtained from the LIDAR surface.
- All drill data including collars and surveys exist in GDA/MGA94. Pre-1990 drill-hole locations require field confirmation as to accurate location.
- All historic workings within the New Golden Gate and Tasman Consols mines were captured digitally in 3D using Mapinfo and Datamine. This was conducted by digitizing historic mine plans and georeferencing these in Mapinfo. The individual levels have been imported into Datamine at their nominal RL. Figure 4 illustrates the extent of workings digitized. Mine development data is included in Appendix 2.
- From descriptions in text (MacDonald, G., 1996) and observations of the 3D geometry of the underground mine development, a 3 dimensional model of the reefs and faults was constructed. Some of the results of this work are illustrated in Figure 5 and data available in Appendix 3. A greater understanding of the controls on reef terminations and the contemporaneous reef (NNE-striking) and fault (NW-striking) development (as discussed on page 4) has enabled the

observation that the intersection between these structures is a locus for higher grade mineralisation, as indicated by the location of stoping (Figure 6); and wider mineralization.

- This relationship resulted in the steep southerly pitch observed of the stoped-out high-grade shoots viewed in longitudinal projection (Figure 6). In plan-view, the model suggests that there are several untested targets where projections of reefs along strike intersect the NW-striking faults. Some of these are likely to be blind from surface.

The terms of the option agreement was based on Tamar Gold becoming listed on the ASX. As this didn't eventuate (after the final date was extended several times), the option to purchase agreement was terminated.

### **Silver City Ltd**

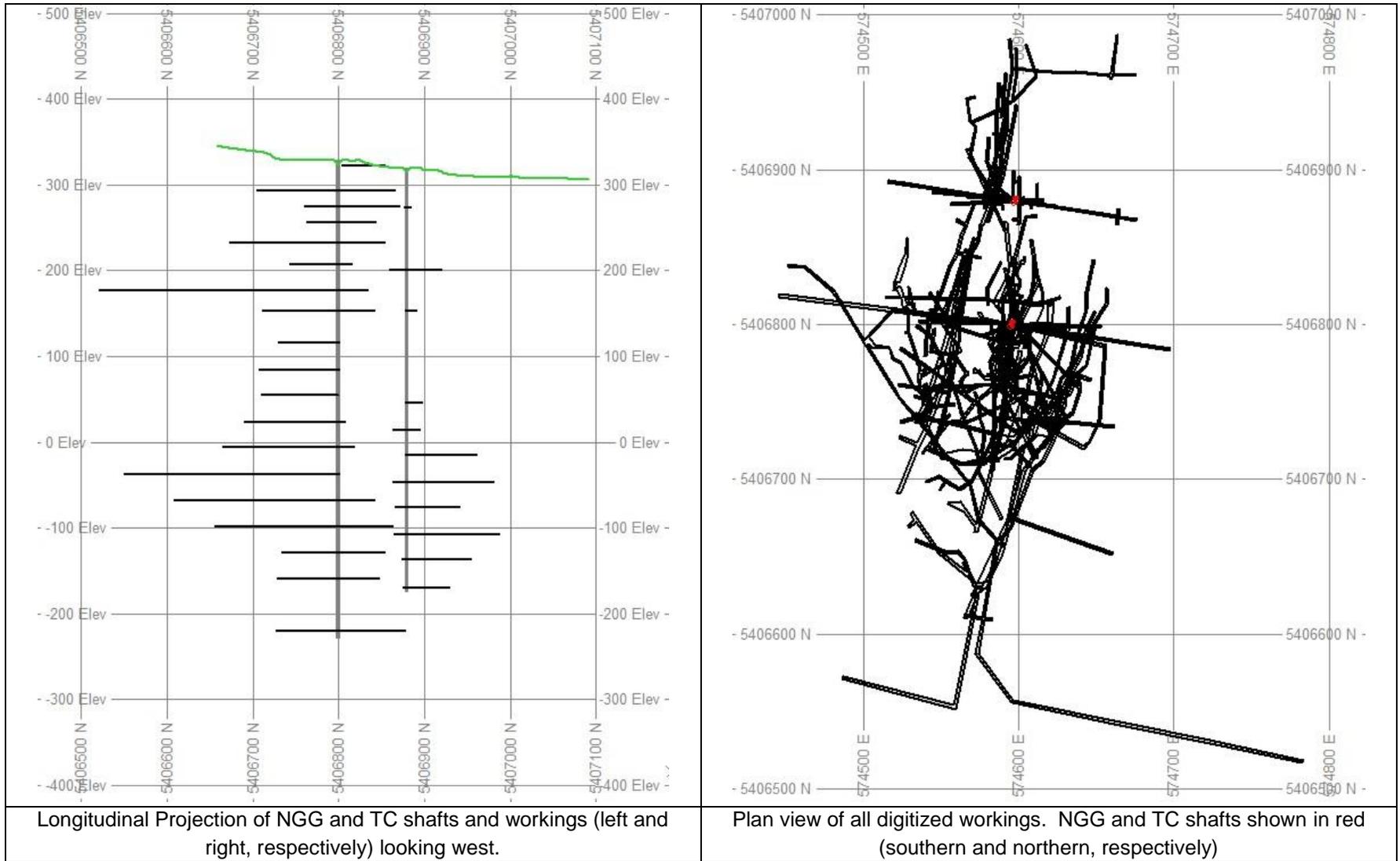
Silver City (under an option to enter into a Joint Venture) conducted some significant work evaluating the tailings as a stand-alone project to commercialise proprietary Intellectual Property (developed and owned by Silver City) to treat tailings resources.

A 49 hole RC drill program was conducted over the tailings area resulting in a newly defined preliminary resource of 343,664t @ 1.1 g/t Au.

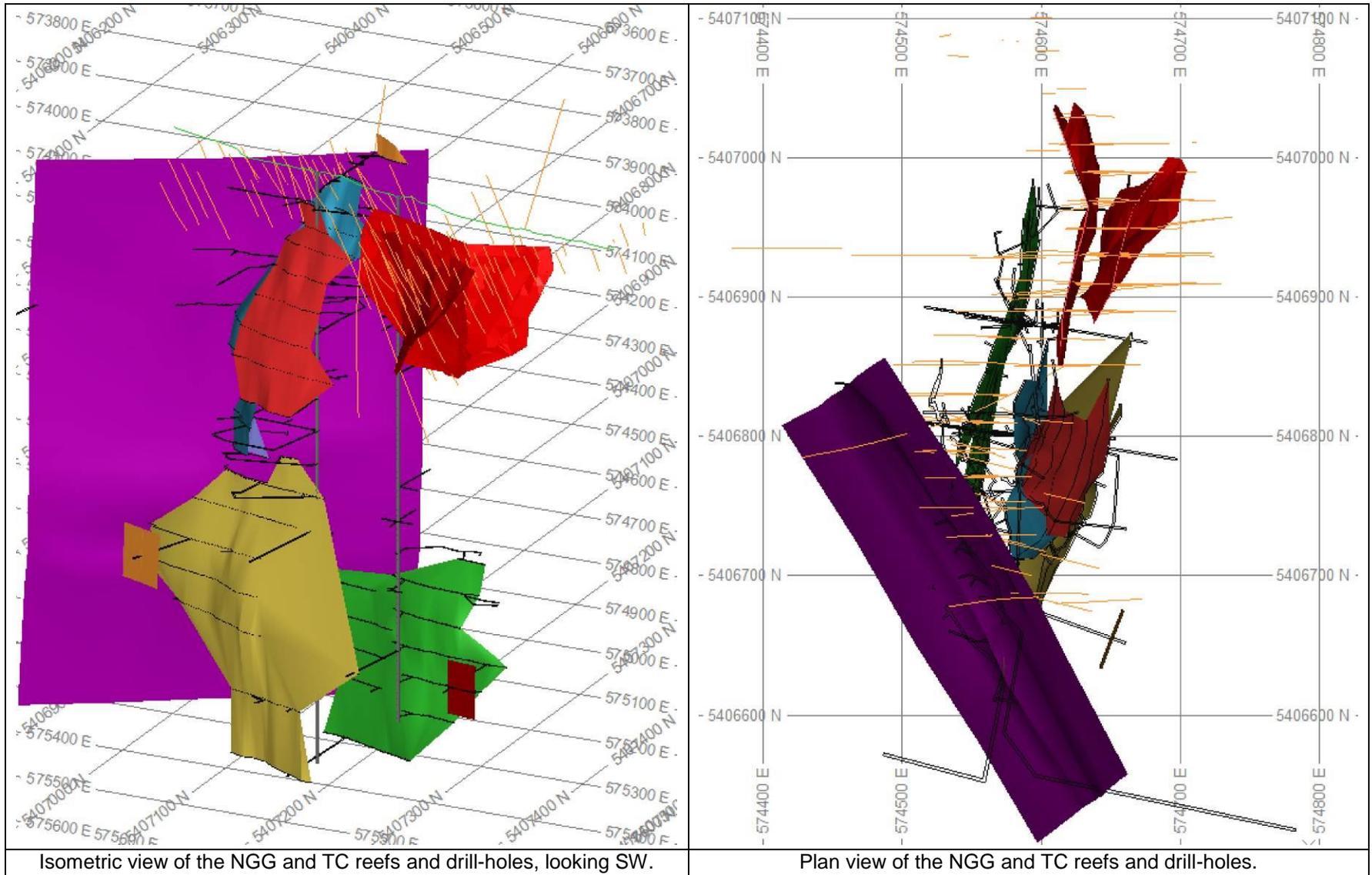
The project was deemed too small as a stand-alone project and Silver City IP failed to perform as expected and the agreement was terminated by Silver City.

### **3. WORK DURING THE CURRENT REPORTING PERIOD**

No on-ground work was undertaken on the tenement during the reporting period



**Figure 4. New Golden Gate and Tasman Consols mines: digitized workings**



**Figure 5. New Golden Gate and Tasman Consols mines: 3D structural model. Reefs: red (no drilling) = Main, blue = Loanes, Yellow = Lower east, Green = Lower west, Red (with drilling) = Dylan's and Sophie's, orange (rectangle) = Lower Far East, Brown (rectangle) = Lower North.**

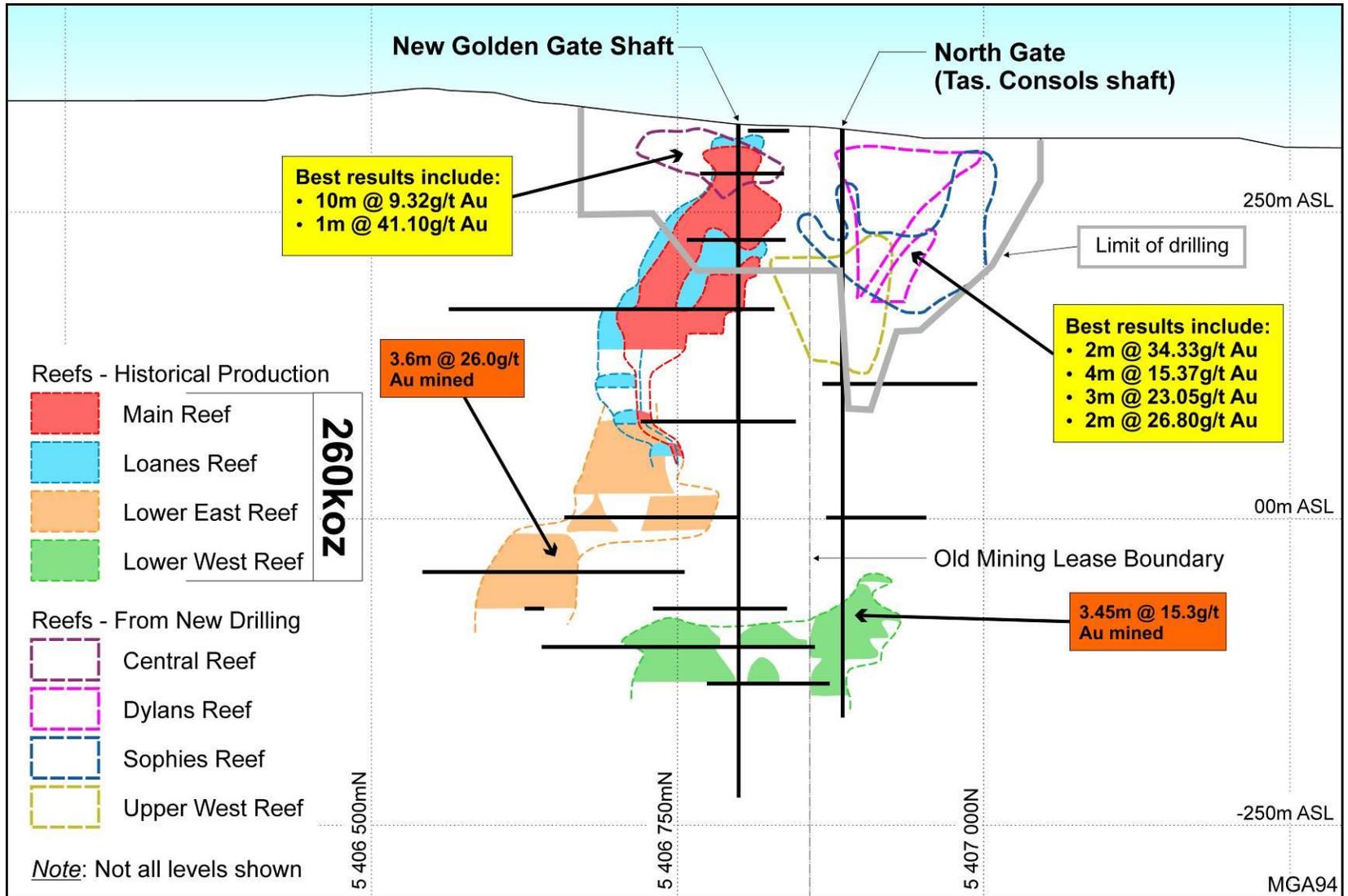


Figure 6. New Golden Gate and Tasman Consols longitudinal projection illustrating stoped areas.

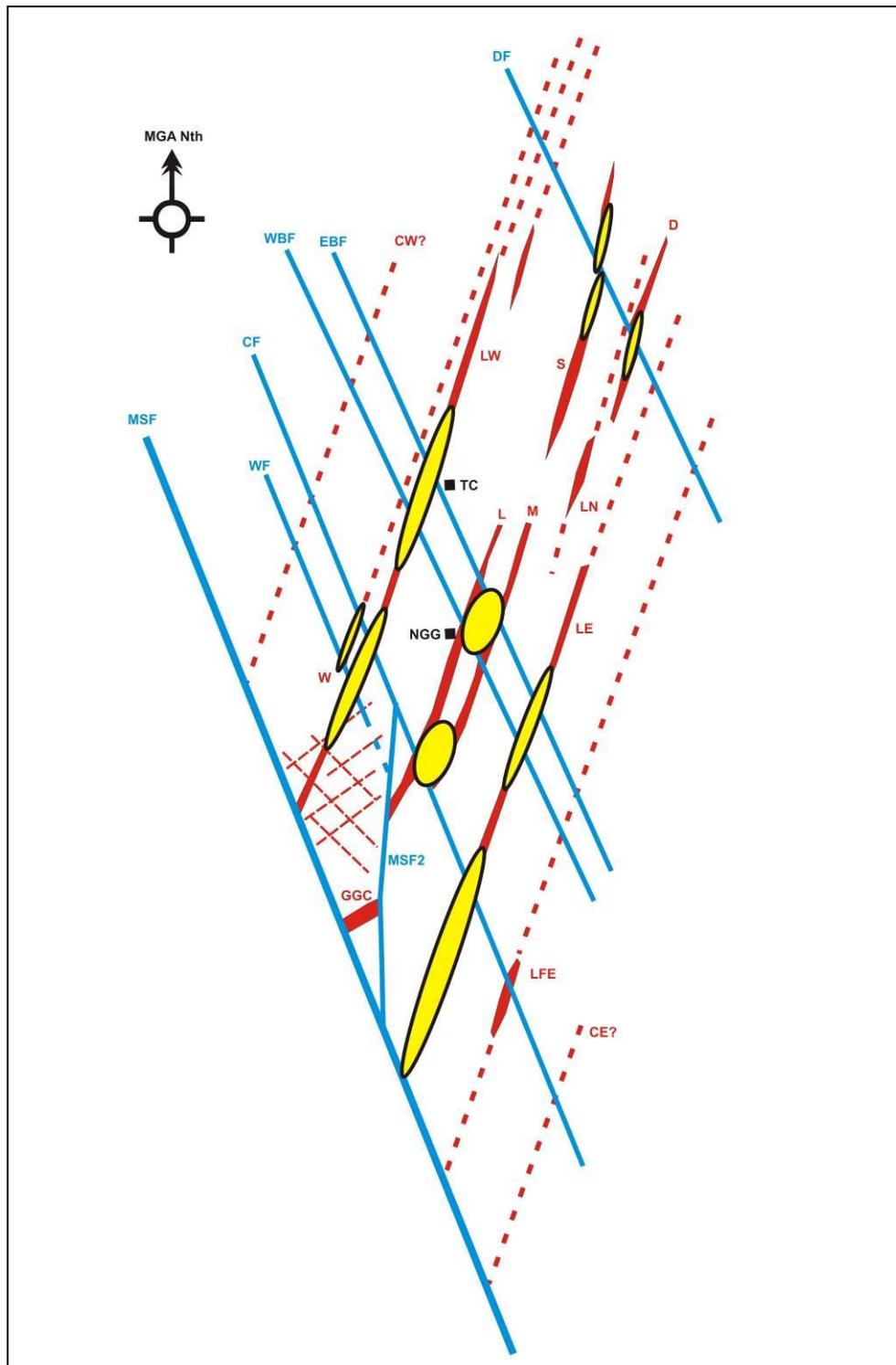


Figure 7. Schematic plan-view of the reef and fault geometries at the NGG-TC deposit and the approximate location of high-grade stopes and intersections (Dylan's and Sophie's only). Abbreviations: MSF = main slide fault, MSF2 = second slide, WF = western fault, CF = central fault, WBF = western branch fault, EBF = eastern branch fault, DF = defiance fault, M = main reef, L = loanes, LE = lower east, LW = lower west, w = western, D = dylan's, S = sophie's, LN = lower north, LFE = lower far east, GGC = golden gate consolidated, CW & CE = conceptual west and east.

#### **4. PROPOSED EXPLORATION**

Agreement has been reached to design a program that completes the following steps:

- Redo the 3D model for Mathinna and include structure and all soil results for the surrounding goldfield from the New Golden Gate in the north and south to the Volunteer Mine and from the Main Slide in the east and west to an area parallel with the City of Hobart. Also review how this ties in with the area further to the west.
- Based on the new model define near surface drill targets both around the NGG and to the south and west and commit a 2000m drill program to test these targets
- Review data post initial drill program with a view to undertaking a further 18,000m of drilling to further test hits from the previous program and hopefully start to define resources.

Both companies are working towards structuring an agreement that meets these objectives and also the Perpetual Gold insitu development model in the attached cover letter.

#### **5. ENVIRONMENT**

The company has environmental policies in place, including compliance with the Mineral Exploration Code of Practice, which minimise the impact that exploration activities have on the environment. The policies include guidelines on how to reduce the risk of spreading plant diseases and weeds as a result of day-to-day exploration tasks.

## 6. EXPENDITURE

3 <sup>rd</sup> February 2011 – 2 <sup>nd</sup> February 2012		
<b>Geoscientific Costs</b>	<b>Geology</b>	
	<b>Geochemistry</b>	
	<b>Geophysics</b>	
	<b>Remote Sensing</b>	
<b>Drilling &amp; Gridding Costs</b>	<b>Gridding</b>	
	<b>Drilling</b>	
	<b>Land Access Costs</b>	
	<b>Rehabilitation Costs</b>	
	<b>Feasibility Study Costs</b>	
	<b>Other Costs</b>	
	<b>Admin Costs</b>	\$0.00
	<b>Total - eligible</b>	<b>\$0.00</b>

**Table 1. Expenditure for the reporting period.**

**Note that no admin costs have been lodged for this tenement.**

## 7. REFERENCES

- Keele, R.A., 1994.** Structure and veining in the Devonian-aged Mathinna-Alberton Gold Lineament, northeast Tasmania. Mineral Resources Tasmania Report 1994/06.
- Leaman D. E. & Richardson R. G., 1992.** A geophysical model of the major Tasmanian granitoids. Department of Mines, Tasmania, Report 1992/11.
- MacDonald, G., 1996.** Resolute Samantha Limited Annual Report for Licence EL17/91 "Mathinna". MRT reference 96-3843.
- Seymour, D.B.; Woolward, I.R.; McClenaghan, M.P.; and Bottrill, R.S., 2011.** Stratigraphic revision and re-mapping of the Mathinna Supergroup between the River Tamar and the Scottsdale Batholith, northeast Tasmania. MRT 1:25000 scale digital map series – Explanatory Report 4.
- Twelvetrees, W.H., 1906.** Report on the Mathinna Goldfield. Part 1. MRT reference OS/233.

## **APPENDIX 1**

**Exploration Proposal for RL 2/2008  
targeting further resources around the  
New Golden Gate Mine and Tasmanian Consolidated mines  
at Mathinna, northeastern Tasmania**

**Author: Grant MacDonald**