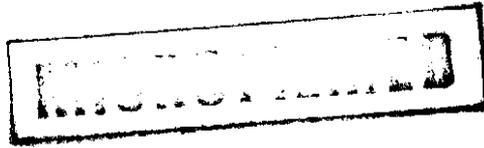


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SUBMISSION TO THE TASMANIAN

MINES DEPARTMENT

E.L. 9/66

TYNDALL AREA

APPLICATION FOR RENEWAL OF E.L. 9/66 OVER  
HENTY GOLD PROJECT AREA

MINES	
File Ref. E.L. 9/66	
- 4 JUN 1987	
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Action Officer	Initials
Resubmit to	Date

By: P.A. Roberts  
Senior Regional Geologist

June, 1987

Report No. T/87/5

SUMMARY

Application is made for renewal of a 15 sq. km. area, comprising the majority of Part I of E.L. 9/66.

The area under application includes the Henty Gold Prospect which has been the subject of a serious and sustained exploration effort since mid-1984 when re-assaying of an early drill hole revealed a potentially economic gold intersection i.e. 3.7m (true width) at 10.0g/t Au.

Retention of the 15 sq. km. area is requested for the following reasons:

- (1) To permit the continuation of a major program of diamond drilling (currently in progress) which is designed to lead to an early trial mining operation at Henty.
- (2) To allow for on-going drilling programs aimed at locating extensions of the currently indicated resource, both along strike to the north and south and down dip to the west and possibly east.
- (3) To permit the proper establishment of a major mining operation which would probably include the development of a footwall decline for access to shallow ore, construction of a deep shaft, milling, stockpiling, waste disposal and workshop support facilities.

Work proposed for 1987-88 consists of:

1. Completion of current drilling program and metallurgical studies by December.
2. Completion by December of an Indicative Feasibility Study (I.F.S.) on the merits of constructing a shallow trial mining operation.
3. Given a favourable I.F.S., application for a Mining Lease.
4. Continuation beyond December of drilling programs, testing for extensions of the known gold mineralisation.

It is estimated that the above work will cost a minimum \$793,000. However, if a decision to commence trial mining is made, expenditures will be substantially above that figure.

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1.

## 1. INTRODUCTION (Figures 1 and 2)

The area under application for renewal covers the Henty Gold Prospect and adjacent areas with potential for extensions of the currently drill indicated gold mineralization.

This area consists of the western slopes of the Goseneck, the south-eastern flanks of Mt. Read and the headwaters of the Henty and Stitt Rivers. The area is largely heavily vegetated however there is relatively little virgin forest because of extensive logging in the past.

Geologically, the area consists of Cambrian volcanics, acid lavas and mafic dykes of the Mt. Read Volcanics overlain and/or faulted against Ordovician siliclastics of the Newton Creek Sandstone and Owen Conglomerate. The area is bifurcated by the N.N.E. trending Henty Fault, a fundamental deep-seated structure which is thought to divide the Mt. Read Volcanics into two separate volcanic provinces.

Gold mineralization at Henty is found in siliceous veins and massive sulfide lenses which are hosted by a 20 to 40m wide zone of weakly auriferous, altered and pyritic sheared volcanics close to the footwall of the (west dipping) Henty Fault.

E.L. 9/66 is due for expiry on August 5th, 1987. However, the Mines Department has stated that licences may be renewed beyond the expiry date "Where a discovery is made in the final years of the tenure of a licence ....." The Henty Gold Prospect is one such discovery. This submission therefore, makes application for renewal of a 15 sq. km. area around that discovery and provides reasons why retention of that area is important.

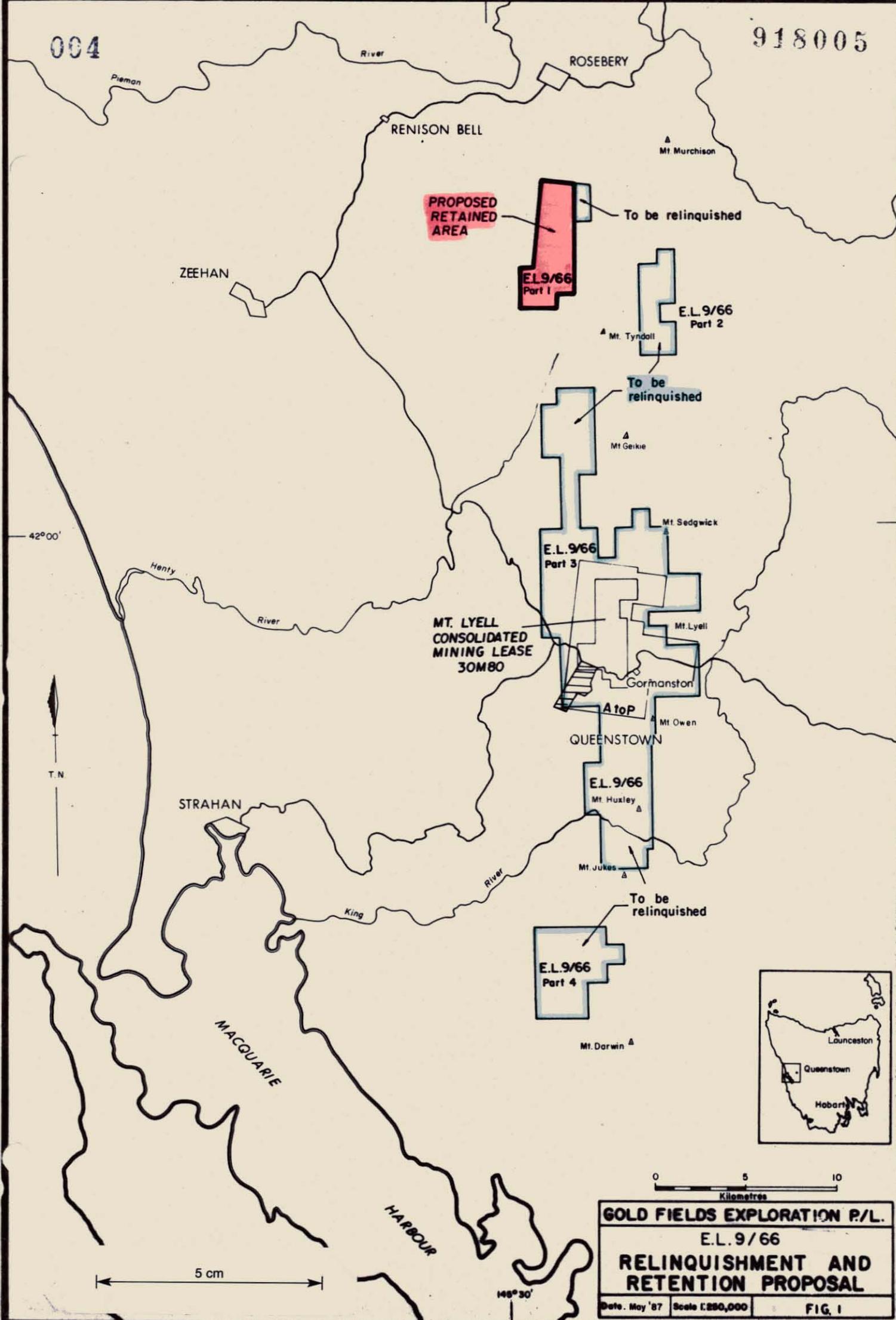
## 2. HISTORY

There are no old mines in the immediate vicinity of the Henty Gold Prospect. In fact, the only working of any note on the area under application is a small copper show 3 km to the north. Hence, there is little record of mineral exploration in the area before the modern era.

Mt. Lyell commenced exploration for base metal sulfides around Henty in 1968-69. Programs of gridding, geological mapping, soil geochemistry and ground geophysics followed. In 1974, a 1.5m thick base metal-bearing massive sulfide band was exposed in a costean near the Henty River. Shortly thereafter, two holes were diamond drilled, one beneath the costean

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918005



**PROPOSED  
RETAINED  
AREA**

**E.L. 9/66  
Part 1**

To be relinquished

**E.L. 9/66  
Part 2**

To be relinquished

**E.L. 9/66  
Part 3**

**MT. LYELL  
CONSOLIDATED  
MINING LEASE  
30M80**

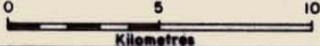
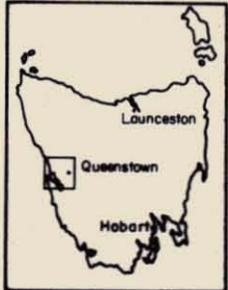
**QUEENSTOWN**

**E.L. 9/66  
Mt. Huxley**

To be relinquished

**E.L. 9/66  
Part 4**

**Mt. Darwin**



**GOLD FIELDS EXPLORATION P/L.**

**E.L. 9/66**

**RELINQUISHMENT AND  
RETENTION PROPOSAL**

Date: May '87 Scale 1:250,000

**FIG. 1**

5 cm

148° 30'

42° 00'

T.N.

## 2.

(HFZ5) and one 125m to the south (HFZ6). Of these, only the latter intersected a massive sulfide which turned out to be very thin (0.55m). At about the same time, six other holes were drilled to the north and south with very disappointing results.

Little further work was undertaken at Henty until 1982 when the prospect's potential for volcanogenic massive sulfides was re-assessed. Subsequently, four holes were drilled in the vicinity and to the south of HFZ5 and 6 with relatively discouraging results. At this time, however, it was recognized that some relatively base metal-poor mineralization was present in most of the drill holes quite apart from the thin massive sulfide intersections. Nevertheless, no economically attractive base metal sulfide intersections were obtained.

With the advent of increased gold exploration in Australia, it was decided to re-assay sections of Henty core previously unassayed for gold. Thus in May, 1984 an intersection of low grade copper mineralization in HFZ5 (the original hole beneath the Henty costean) was quartered and assayed for gold. The results, which included a 3.7m true width carrying 10.0 g/t Au, caused an immediate upsurge in interest in the prospect which has not waned since. Although some very low gold values had been obtained in Henty drill core previously, the recognition of this gold zone in HFZ5 marks the discovery of the Henty gold deposit.

Since May, 1984, 7,300m of core in 21 holes and 5 wedged second cuts of the mineralized zone have been completed at Henty. In addition, detailed geological mapping, bedrock geochemistry and dipole-dipole I.P. surveys have been carried out along the strike extent of the Henty Fault within Part I of E.L. 9/66. These efforts have cost approximately \$800,000.

## 2. WORK COMPLETED, 1986-87

In the eight months to the end of February, 1987, Gold Fields Exploration completed all of the programs outlined in the previous licence renewal application for E.L. 9/66 (dated 25th June, 1986). In summary, the work carried out during that time comprised:

- (a) Completion at Henty of three diamond drill holes and two wedged second cuts, totalling 1,670m. In addition, a small costean was excavated over the gold mineralized zone adjacent to the original "massive"

3.

sulfide costean".

- (b) At Basin Lake, two diamond drill holes, totalling 623m, which were followed up by down-hole EM surveys.
- (c) At White Spur, one diamond drill hole, 360m long, which was subsequently surveyed by down-hole EM.
- (d) At West Sedgwick, one helicopter-supported diamond drill hole, 230m long.
- (e) At Jukes Proprietary, one 226m long diamond drill hole.

Thus, a total of eight diamond drill holes were completed on the E.L. for 3,109m. This work cost approximately \$380,000 to complete.

The only encouraging results obtained in the above program were at Henty. Two holes, HP11 and HP13, located to the north and down-dip of the previous holes, respectively, (see Figure 3) encountered subeconomic gold values; nevertheless the host sequence in both holes was strongly altered and mineralized. The third hole, HP12 intersected a 3.2m (true width) zone carrying 22.0g/t Au approximately 400m beneath the costean. A wedged second cut of this zone (HP12A) obtained 2.5m (true width) of 21.0g/t Au.

By early February, this year, it had become apparent that:

- (i) No further work could be justified on the E.L. except in the Henty area, and
- (ii) There was potential for a major, vein-style gold deposit at Henty.

Consequently, a decision was made to accelerate activities on the Henty Prospect and cease exploration elsewhere on the E.L. It was then recognized that the feasibility of mining a patchy, vein-style gold deposit such as exists at Henty could not be assessed without opening up part of the deposit in a trial mining exercise at the earliest opportunity. At the same time, it was agreed that a decision to go to trial mining could not be made without first obtaining more information about the potential for a relatively shallow resource on which such an operation could be based. Thus the following program of work was planned:

- (a) Completion of sixteen cored HQ holes totalling 3700m in two 50 x 50m<sup>2</sup>

4.

square patterns around two of the more encouraging shallow intersections, HP4 and HP9, (see Figure 4) by October, 1987.

- (b) Completion of six cored HQ holes, totalling 2800m, to test for extensions to the known mineralized system to the north, south and at depth (see Figure 4) by December, 1987.
- (c) Metallurgical testwork on selected higher grade mineralized intersections.
- (d) Given sufficient encouragement from the above, completion of an Indicative Feasibility Study (I.F.S.) on the trial mining proposal by the end of December, 1987.

Work commenced on the above program in early March, 1987. To date, eight diamond drill holes have been completed for a total depth of 1,900m (see Figure 3). Of these, assays have been received for four holes, the best of which are as follows (true widths quoted):

HP14 2.0m at 2.2g/t Au

HP15 1.0m at 6.1g/t Au

HP16 no significant results (more assays awaited)

HP17 1.3m at 13.9g/t Au.

Metallurgical testwork has been completed on the HP12 mineralized intersection by Warman International with gratifyingly encouraging results. Recoveries averaged approximately 90% through a combination of gravity and cyanidation techniques. Cyanide consumption was low.

It is anticipated that 1986-87 expenditure on E.L. 9/66 will be \$695,000 (see Appendix 1).

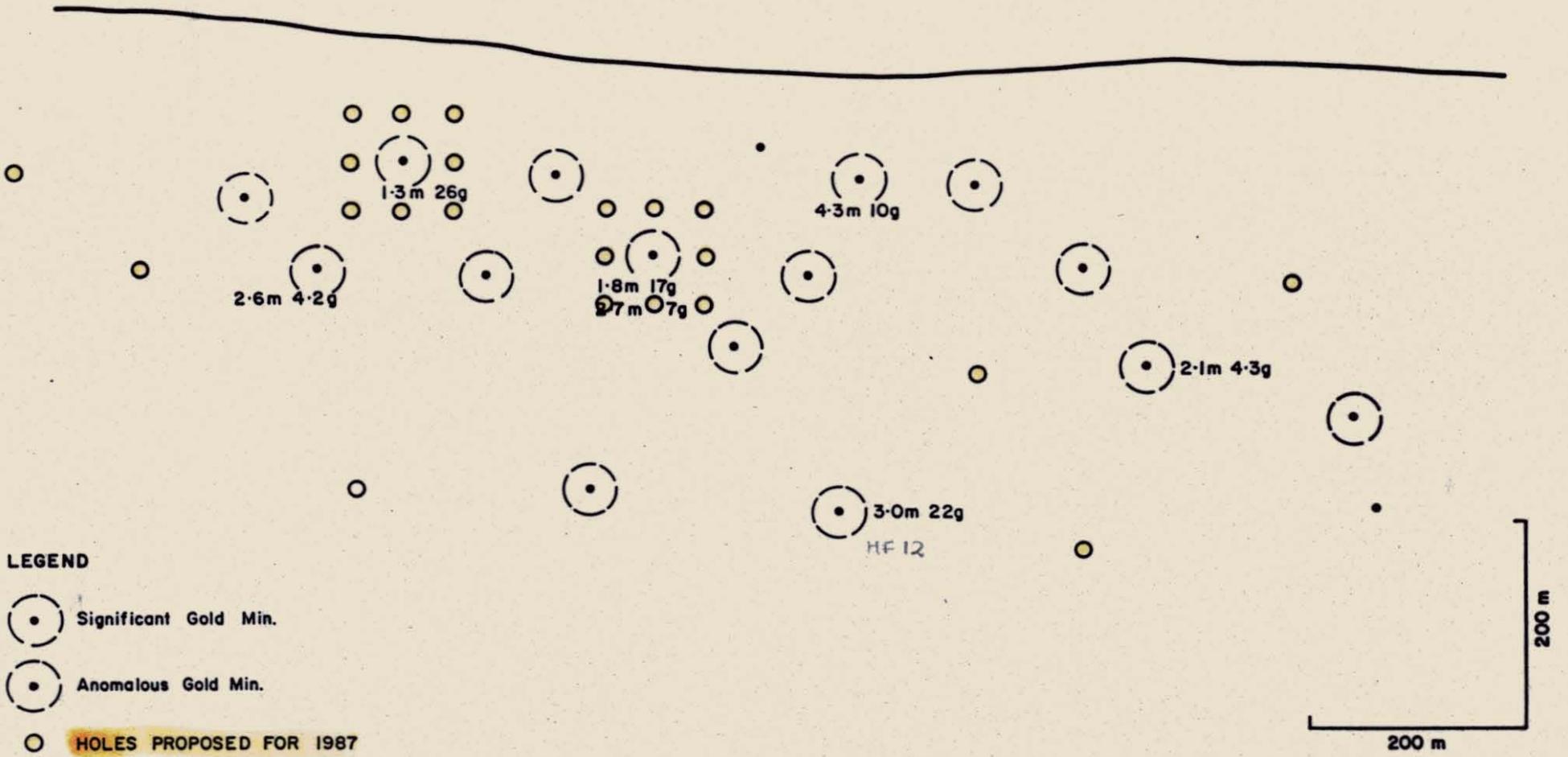
#### 4. WORK PROPOSED, 1987-88

It is proposed to complete the program outlined above in the first half of 1987-88. Expenditure during that period is expected to reach \$460,000.

If an I.F.S. demonstrates that trial mining is justified, then further detailed environmental and planning studies will be completed prior to application for Mining Leases over the Henty area, with a view to commencing underground operations there in 1988. At this stage, no attempt has been made to budget for these further detailed studies and mine development costs, as their nature will be totally dependent on the outcome of the current

NORTH

SOUTH



# HENTY PROJECT

## LONGITUDINAL PROJECTION

FIG. 4

## 5.

drilling program and metallurgical studies. It is sufficient, however, to say that likely expenditures at this stage will be very substantial.

An unfavourable I.F.S. would not necessarily indicate that the Henty gold mineralization is an uneconomic proposition. Nevertheless it would mean that further exploration along strike and down-dip of the current drill pattern will be required to test for thicker and/or higher grade sections of the auriferous veins. On the other hand, a favourable I.F.S. should not preclude the need for exploration for extensions to the known mineralized system.

Thus, irrespective of the I.F.S. results, diamond drilling to test for along-strike and down-dip extensions to the mineralized zone should continue during the second half of 1987-88. A program comprising three to six HQ cored holes totalling 2,400m is proposed. In addition, geological studies on the nature of and controls on the gold mineralization should be carried out. A budget of \$333,000 is required to complete this work.

To summarize: a minimum program comprising the completion of about 6,000m of HQ coring and metallurgical and geological studies is planned for 1987-88. This should cost approximately \$793,000 to complete (see Appendix 1). If a decision is made to proceed with a trial underground mining operation, expenditure will probably be substantially higher than this figure.

#### 5. JUSTIFICATION FOR RETAINING THE AREA UNDER APPLICATION

The location of the 15 sq. km. area under application is shown in Figures 1 and 2. It comprises Part I of E.L. 9/66 except for a 2 sq. km. area in the north-east corner of the block which lies largely within the S.W. Conservation Area.

Retention of the 15 sq. km. is necessary for the following reasons:

- (1) To permit continuation of the current program of diamond drilling and metallurgical investigations.
- (2) To allow for future mine-based exploration for Henty-style gold mineralization at depth along the Henty and Great Lyell Faults. The association of various styles of base and precious metal mineralization with these two major structures here and elsewhere in Western Tasmania suggests that they are both highly prospective for gold

6.

mineralization throughout the area under application. Surface exploration suggests that the Henty gold mineralized system only outcrops in the area shown on Figure 2. Nevertheless, future deep drilling of the mineralized zone and/or development of new concepts about the nature and structural controls on the Henty mineralization may lead a long way away from the current drilled area. In the event of a mine being established, such exploration would assume great importance in the search for additional ore reserves to extend the mine's life.

It is worth noting that both the Henty and Great Lyell Faults dip west. If the patterns of folding and/or imbricate thrust development seen at Mt. Lyell also exist in this area, the overall westerly dip of these structures may be substantially less than the 60 to 70° apparent on surface. Consequently gold mineralization related to such structures may extend a long way to the west of the faults' outcrop positions. Hence they are good geological reasons for retaining a broad swath of ground west of the faults.

- (3) To permit the proper establishment of a major mining operation which would probably involve development of:
- . a footwall decline for access to shallow ore.
  - . a shaft for access to deeper ore. Such a shaft would probably be well to the west of the current drilling area in view of the anticipated poor ground conditions associated with the Henty Fault and the flat dip of deep mineralization mentioned above.
  - . a treatment facility, including ore stockpiles, mills and tailings dams.
  - . waste and low grade stockpiles.
  - . workshops, offices, stores and lay-down areas.

It is most important at this early stage that sufficient area is available to permit the thorough evaluation of all development options in this rugged and difficult area with a view to maximising operational efficiency and minimising environmental disturbance.

APPENDIX 1

E.L. 9/66

ANTICIPATED EXPENDITURE, 1986-87 and

BUDGET, 1987-88

TYNDALL PROJECT, E.L. 9/66ANTICIPATED EXPENDITURE, 1986-87

	<u>JULY-DEC</u>	<u>JAN-JUNE</u>	<u>TOTALS</u>
	\$	\$	\$
SALARIES	38,400	64,600	103,000
TRAVEL & ACCOMODATION	1,000	2,000	3,000
CONSULTANTS & CONTRACTORS	15,700	54,300	70,000
ASSAYING	4,900	7,100	12,000
DRILLING	147,700	292,300	440,000
STORES	1,700	1,300	3,000
VEHICLES/PLANT	3,800	8,200	12,000
TENEMENT COSTS	3,300	700	4,000
COMPUTING	-	1,500	1,500
FIELD OFFICE COSTS	3,100	1,400	4,500
ADMINISTRATION CHARGES	14,400	27,800	42,200
	<u>234,000</u>	<u>461,200</u>	<u>695,200</u>

TOTALS:

TYNDALL PROJECT, E.L. 9/66BUDGET, 1987-88

	<u>JULY-DEC</u>	<u>JAN-JUNE</u>	<u>TOTAL</u>
	\$	\$	\$
PERSONNEL	70,000	51,000	121,000
TRAVEL & ACCOMODATION	5,000	3,000	8,000
CONSULTANTS & CONTRACTORS	54,000	25,000	79,000
ASSAYING	15,000	10,000	25,000
DRILLING	261,000	203,000	464,000
STORES	8,000	4,000	12,000
VEHICLES/PLANT	9,000	7,000	16,000
TENEMENT COSTS	-	3,000	3,000
COMPUTING	3,000	2,000	5,000
FIELD OFFICE COSTS	7,000	5,000	12,000
ADMINISTRATION CHARGES	28,100	20,100	48,200
	<u>          </u>	<u>          </u>	<u>          </u>
<u>TOTALS:</u>	<u>460,100</u>	<u>333,100</u>	<u>793,200</u>

5 368 000 m N

382 000 m E

AREA TO BE RELINQUISHED

PROPOSED RETAINED AREA

EXPLORATION LICENCE 9/66 BOUNDARY

KEY  
Au MINERALISED ZONE (AT SURFACE)

UNTESTED DRILLED

5 364 000 m N

5 364 000 m N

63

63

62

382 000 m E

918015

5 cm

87-26687274

GOLD FIELDS EXPLORATION PTY LIMITED

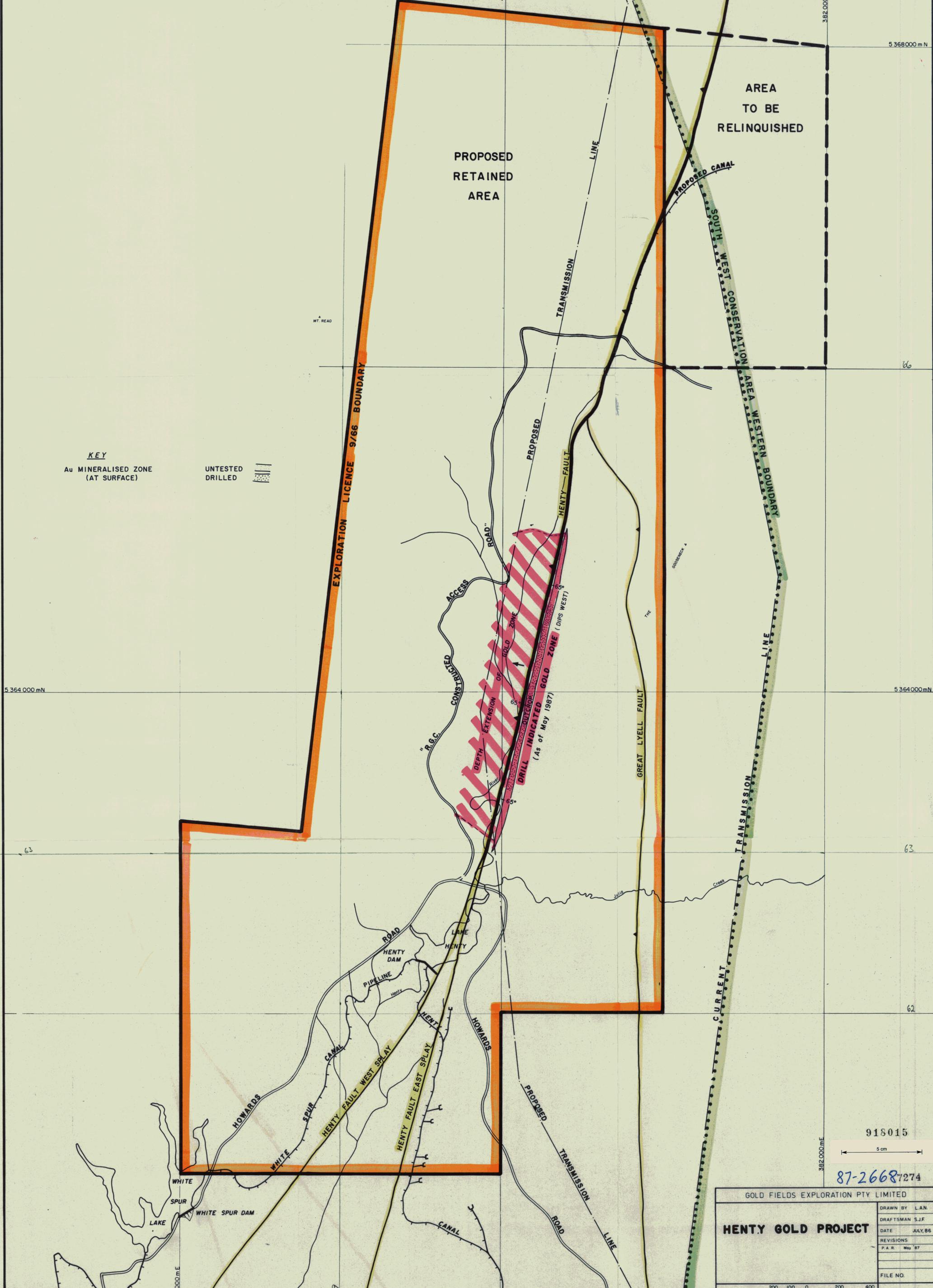
HENTY GOLD PROJECT

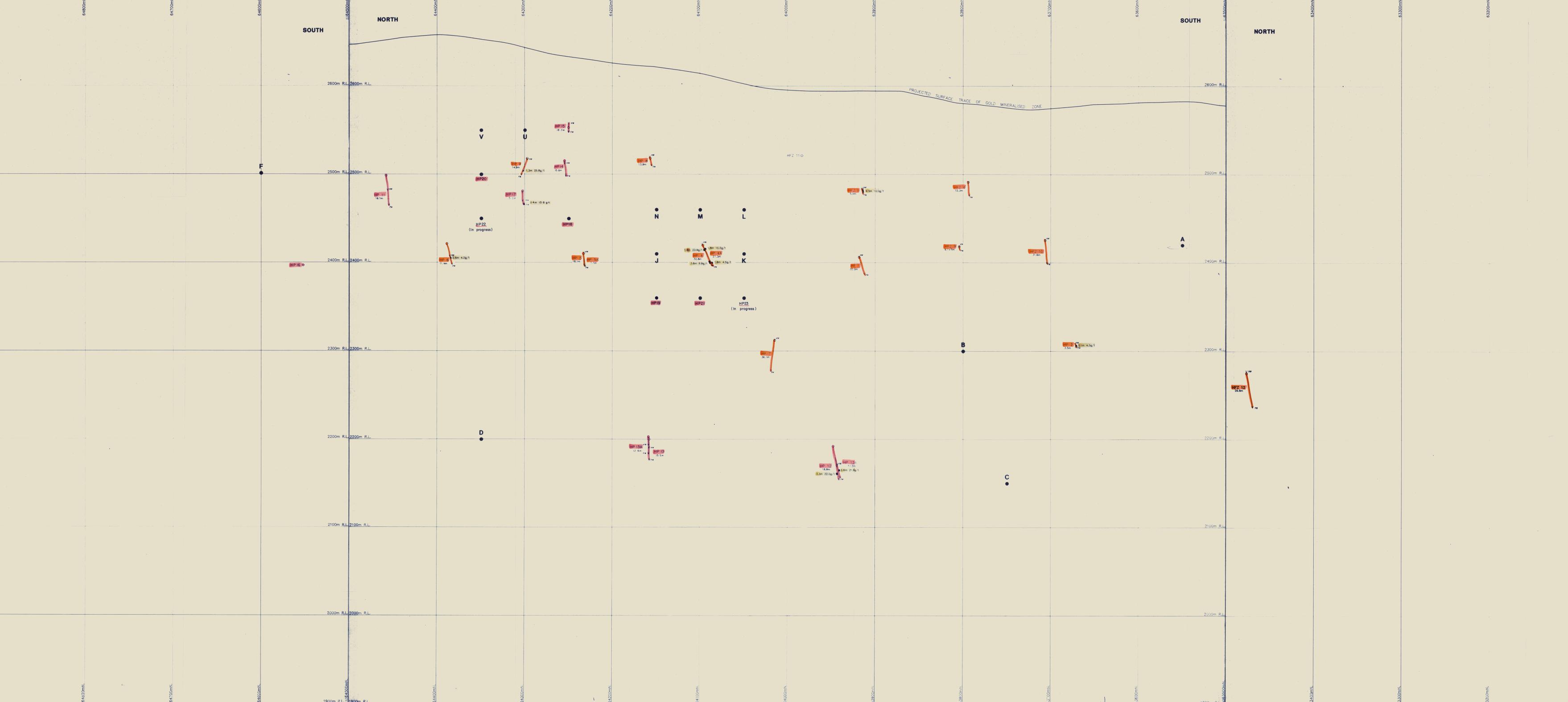
DRAWN BY	L.A.N.
DRAFTSMAN	S.J.F.
DATE	JULY 86
REVISIONS	
P.A.R.	May '87
FILE NO.	

SCALE 1:10000



FIG 2





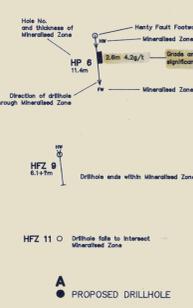
**LEGEND**

**THE GOLD MINERALISED ZONE**

The Mineralised Zone is defined in each hole as the zone between the first assays of greater than 0.1 g/t Au and the last assays of greater than 0.1 g/t Au. These may in some cases be separated by a barren interval.

**SIGNIFICANT GOLD MINERALISATION**

The grades and thicknesses of significant mineralisation have been calculated using a minimum average grade of 4.0 g/t over a minimum horizontal thickness of 2.0m, i.e. a grade-thickness cut-off of 8 g/t-metres.



**NOTES**

1. All thicknesses are horizontal.
2. Projection line is 380400mE.
3. 2000m has been added to the true RL's.
4. Projected surface of the Mineralised Zone is approximate only, taken from 1:1000 and 1:2000 geology plans. A 5.0m height adjustment has been assumed for the true-top-ground difference.



815016  
1:5000

87-2668 7275

GOLDFIELDS EXPLORATION PTY. LIMITED		DRAWN BY: A.C.
TYNDALL - E.L. 9/86		DRAFTSMAN: T.G.D.S.
HENTY PROSPECT		DATE: Jan '97
LONGITUDINAL PROJECTION OF GOLD MINERALISED ZONE		ISSUES: P.A. No. 47
SCALE 1:1000		FILE No.
		FIG. 3