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MINES DEPARTMENT

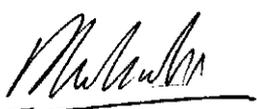
AUTHORITY TO PROSPECT, QUEENSTOWN

APPLICATION FOR RENEWAL

AND REDUCTION TO 10 SQ. KM.

<b>MINES</b>	
File Ref. 11919	
- 4 JUN 1987	
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**MICROFILMED**



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Report No. Tas/87/4

001

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1.

## 1. INTRODUCTION

Application is made to renew a 10 sq. km. area of the Queenstown A. to P. for a further 12 months and to relinquish the remainder.

The Queenstown A. to P. surrounds the Mt. Lyell Mining Lease and coincides with 40 Mining Lease Applications lodged by the Mt. Lyell Mining & Railway Co. The southern and eastern sections of the A. to P., which are the subject of this submission, cover fourteen of those M.L.A.'s viz 2M/84, 3M/84, 4M/84, 5M/84, 6M/84, 7M/84, 8M,84, 9M/84, 11M/84, 26M/84, 27M/84, 37M/84, 38M/84 and 39M/84 (see Figures 1 and 2) and occupies an area of 10 sq. kms.

This submission summarizes recent work on the southern section of the A. to P. and explains why retention of the A. to P. is preferred rather than processing the M.L.A.'s.

## 2. WORK COMPLETED, 1986-87

Encouraging dump and rock chip gold assays were obtained by contract geologist W. Herrmann during the course of his mapping the southern section of the Mt. Lyell mining field (Herrmann, 1986) in April, 1986.

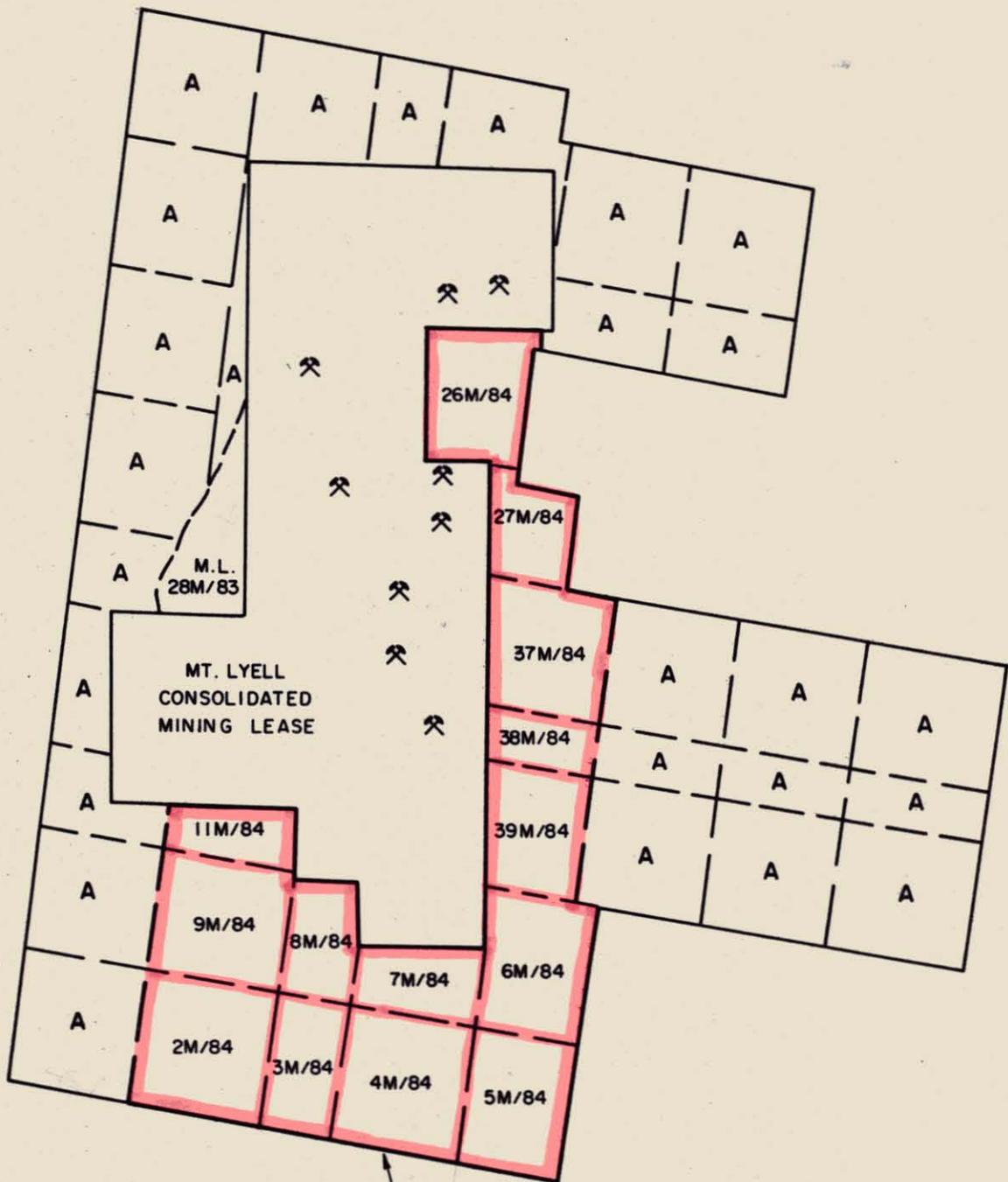
Herrmann's results were followed by systematic rock chip sampling of the Little Owen Spur area and channel sampling of three adits located therein (see Figure 3). The latter was carried out using a helicopter-transported compressor and was completed in December, 1986.

Highly encouraging results were obtained from channel sampling the Upper Little Owen adit and crosscuts (see Figure 4) with peak values of 15 and 20 g/t Au being obtained over 2m intervals. Such gold values are exceptionally high grade for the Mt. Lyell district.

The gold mineralization consisted of hematite-veined, chloritic and pyritic schists.

The channel sampling results were followed up rapidly with two helicopter-supported diamond drill holes in March and April, this year. These holes, LO1 and LO2, totalling 310m, both intersected a 10 to 20m wide zone carrying anomalous gold values (see Figure 5) but failed to obtain the high grades seen in the Upper Adit.

Approximately \$120,000 has been spent exploring the Little Owen area in the last twelve months.



AUTHORITY TO PROSPECT  
BOUNDARY

5 cm



M.L.A.'s proposed for retention

A

Recommended for relinquishment

GOLD FIELDS EXPLORATION PTY. LIMITED

MT. LYELL

**LOCALITY PLAN**  
(Showing location of  
proposed retained M.L.A.'s)

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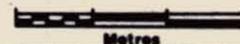
DRAFTSMAN:

DATE : May '87

REVISIONS :

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SCALE 1:50,000



Metres

FIG. 1

## 2.

It is now clear that the gold anomalous zone observed in the Little Owen prospect has a WNW trend and is virtually directly along strike with a major WNW trending fault which offsets the Great Lyell Fault to the south-east (see Figure 2).

Recent thinking about the Henty Gold Prospect to the north of Queenstown suggests that the intersection of faults, and the fact that one of those structures is the Great Lyell Fault, have been important factors in the localization of the gold mineralization there.

Although the Little Owen gold mineralization differs geologically from that seen at Henty, similar structural controls may have played a role in localizing the gold. This has three important implications:

- (1) The amount of drilling carried out so far at Little Owen has not been sufficient to test the prospect given the patchy nature of gold distribution in structurally-controlled gold deposits (cf. Henty).
- (2) The area where the Great Lyell Fault and the Little Owen mineralized trend intersect is prospective for gold mineralization. Indeed, as Figure 2 shows, two known old workings lie close to this structural location, viz. the Empress Lyell and Duke Lyell workings.
- (3) WNW striking structures parallel to the Little Owen mineralized trend may also be prospective for high grade gold mineralization, particularly where such structures approach the Great Lyell Fault.

### 3. WORK PROPOSED, 1987-88

The following program is proposed on the area under application:

- (1) Completion of one 300-400m long diamond drill hole testing the gold mineralized zone at the Little Owen Adits, approximately 200m below the surface.
- (2) Systematic, detailed bedrock sampling along wide spaced grid lines across the WNW trending structures both to the west and east of Little Owen and east of the Mt. Lyell mining operation.

3.

- (3) Channel sampling of selected old workings near the Great Lyell Fault and/or the Little Owen mineralized trend e.g. Empress Lyell, Duke Lyell, Great Lyell.
- (4) Assaying selected drill holes for gold e.g. Great Lyell holes GL1 to 5, Pickands Mather hole RM201.

This work is expected to cost a minimum of \$100,000.

#### 4. DISCUSSION

This area is prospective for gold because:

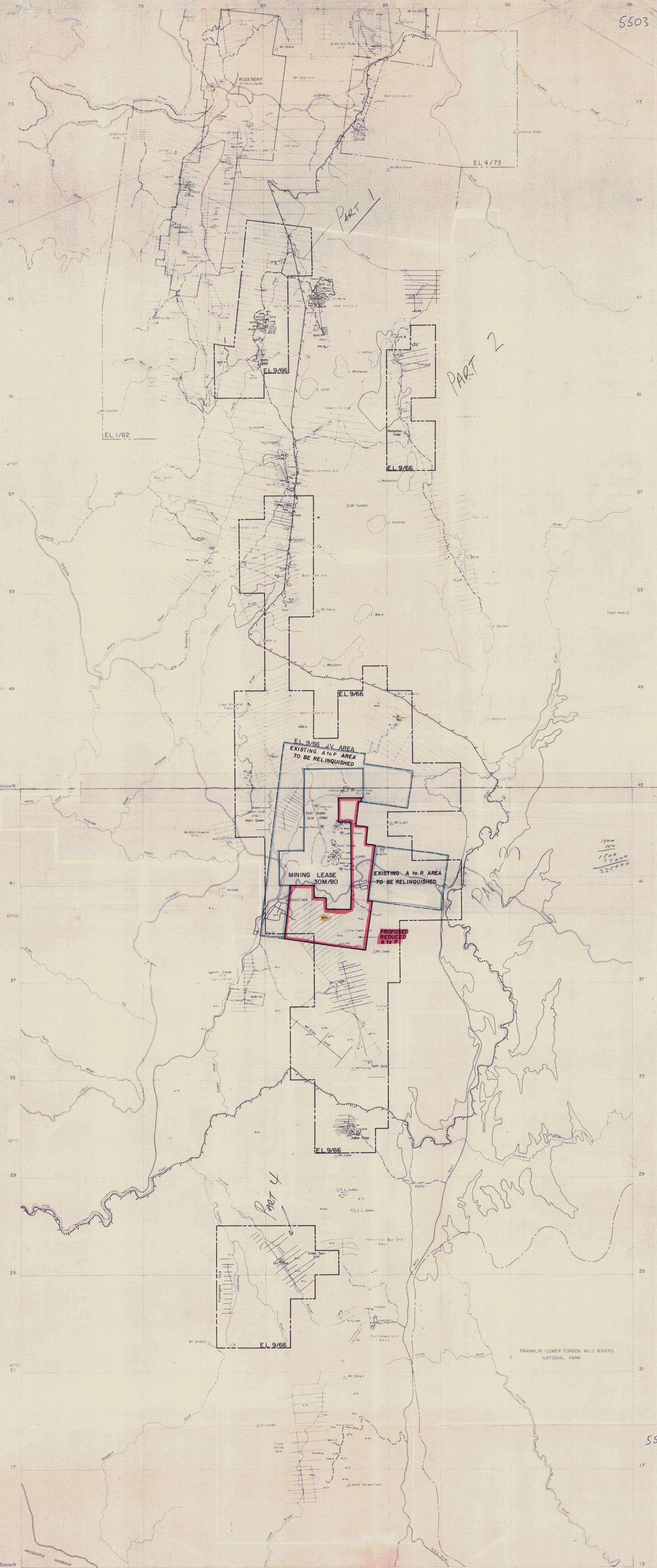
- (1) Some geological similarities with the Henty area can be seen, and
- (2) It lies on the southern and eastern fringes of the Mt. Lyell mining field, a major gold producing district (40 tonnes Au to date).

Recent work has highlighted the area's potential for high grade gold mineralization, however this rests on the results from one adit only. The proposed program of work should establish whether similar high grades are to be found elsewhere in the area south and east of Mt. Lyell. If it is successful, application will be made to process some or all of the fourteen (14) M.L.A.'s. However if exploration results are discouraging, the area will be relinquished and the M.L.A.'s withdrawn.

Alternatively, application could be made to process the M.L.A.'s at once. However, given the real possibility that the exploration program, which is still at quite an early stage, fails to obtain significant encouragement, no mining will take place on the area under application. Consequently, it is suggested that it would be inappropriate to apply for Mining Leases at this stage.

#### 5. REFERENCE

Herrmann, W., 1976: Notes on geological mapping in the Queenstown area, Tasmania, February-April, 1986. A report for Gold Fields Exploration Pty. Ltd. G.F.E.L. Report No. T/86/4, 51 pages.



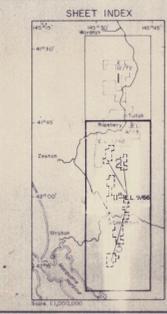
500  
150  
1500  
7500  
22500

**LEGEND**

- Main Road
- - - Vehicular Track
- ~ River, Creek
- - - Railway (abandoned)
- - - E.L. Boundary
- - - M.L. Boundary
- △ Prominent Peak
- ⊗ Major Mine Working
- ⊗ Major Mine Abandoned
- Old Workings, Mineral Occurrence
- Alluvial Workings
- Drill Hole
- ⊗ Exploration Camp

SCALE 1:50,000

0 1 2 3 4 5  
KILOMETRES



87-2669

**GOLD FIELDS EXPLORATION PTY. LTD.**

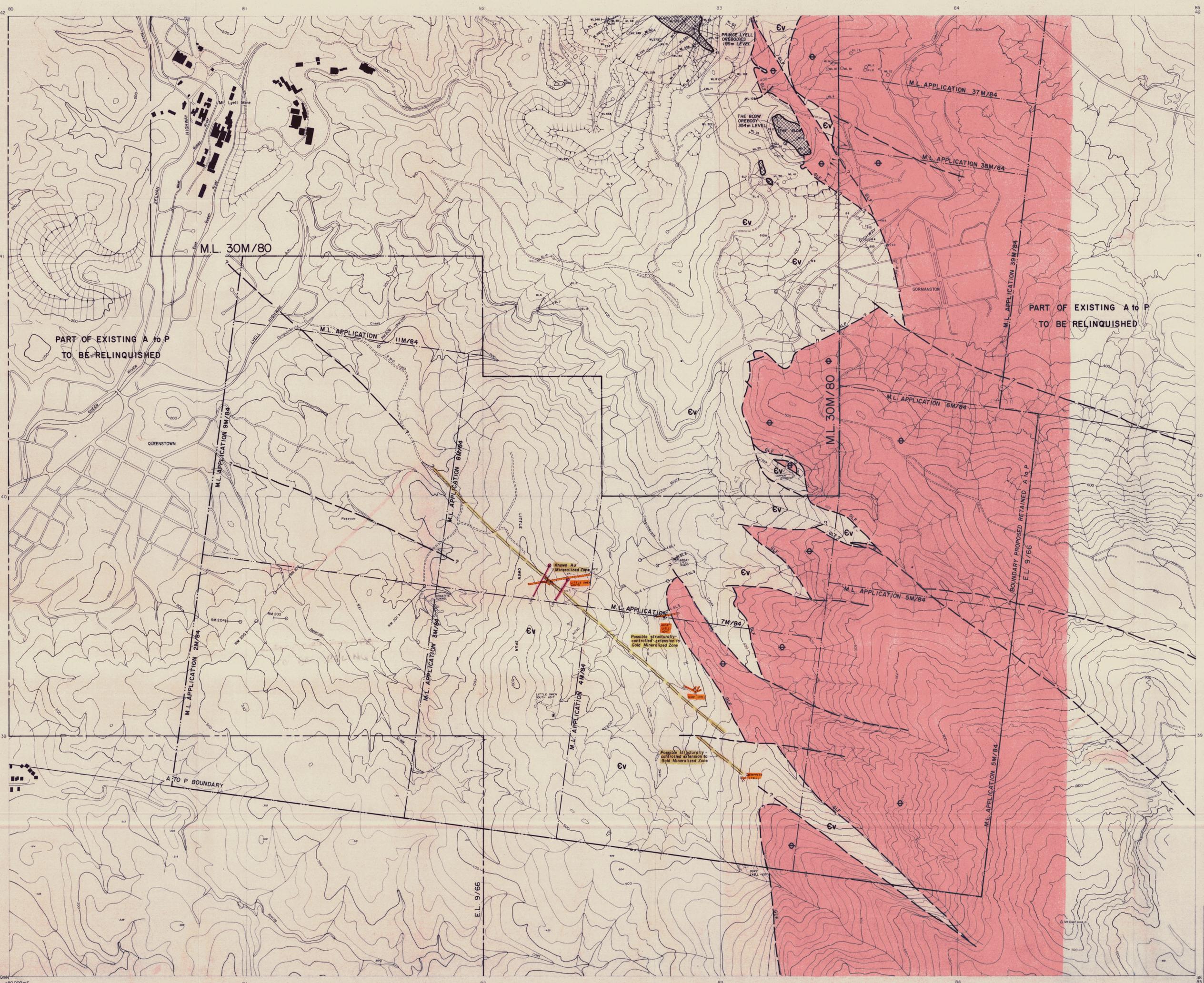
**AUTHORITY TO PROSPECT**

**PROPOSED REDUCED A to P**

**LOCALITY PLAN**

917007 FIG. 2

GRID DENOTES 1:50,000 MAP SERIES BASED ON 100METRE INTERVALS OF AUSTRALIAN MAP GRID ZONE 55



5504

PART OF EXISTING A to P  
TO BE RELINQUISHED

PART OF EXISTING A to P  
TO BE RELINQUISHED

BOUNDARY PROPOSED RETAINED A to P  
E.L. 9/66

- LEGEND**
- Faults
  - GLF Great Lyell Fault
  - ⊕ Ordovician Siliclastics
  - ⊕ Cambrian Volcanics

**SHEET INDEX**

Diamond	Mine	Lyell
Airport	Township	Princes
Lynchford	Owen	Tofti

917008 87-2669

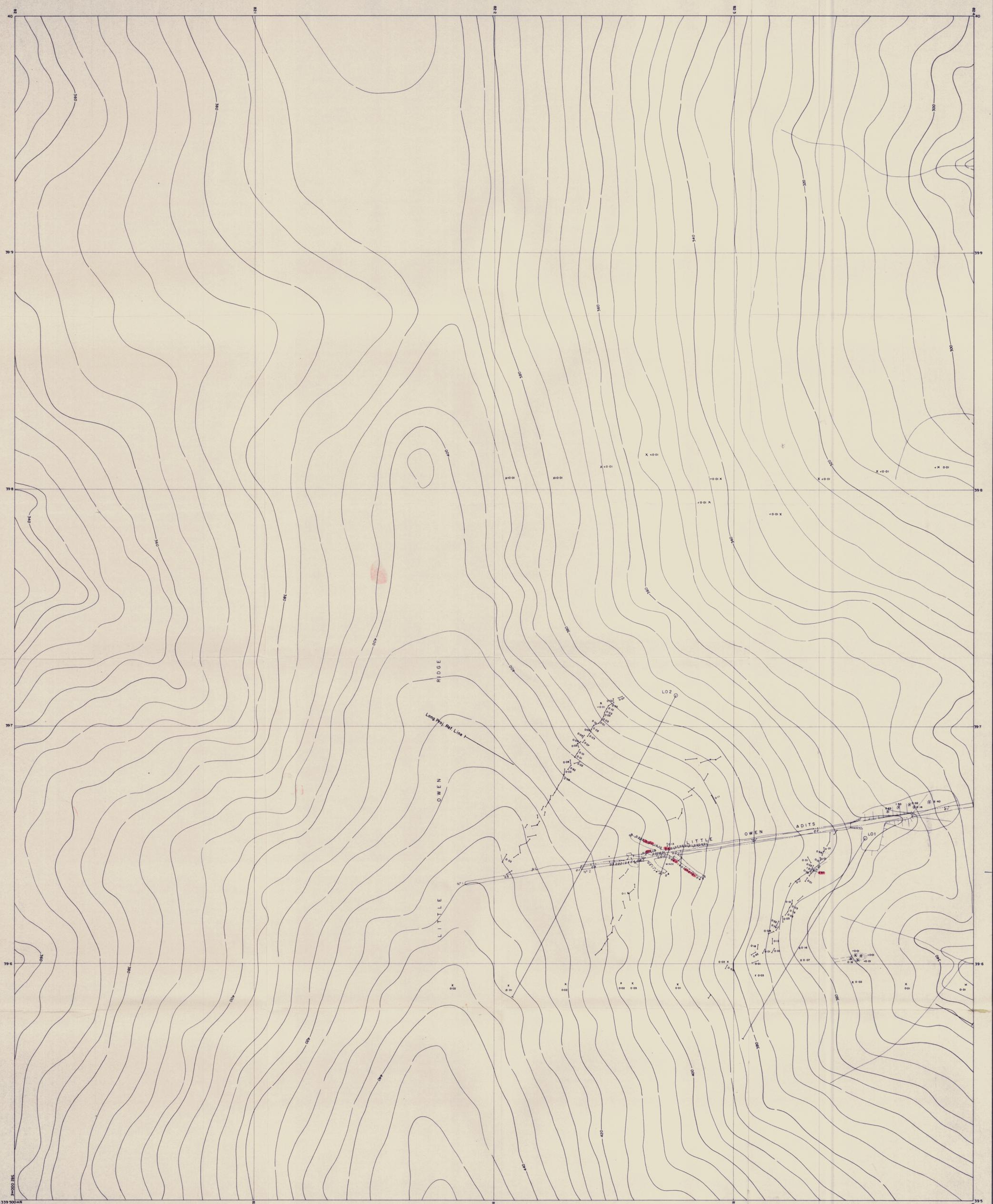
**GOLD FIELDS EXPLORATION PTY LIMITED**

**MT LYELL AREA**  
TOWNSHIP SHEET  
**PROPOSED REDUCED A to P**  
(showing elements of structural geology)

SCALE 1:5000

FIG 3

DRAWN BY: F.G.F.  
DRAFTERMAN: T.G.D.S.  
DATE: May 1986  
REVISIONS:  
P.A.R. May 1987  
FILE NO.



- LEGEND**
- Surface channel sample  
Only those assays > 0.01 g/t Au shown
  - Adit wall channel sample (N° 1 Adit)  
Only those assays > 0.05 g/t Au shown
  - Adit wall channel sample (N° 2 Adit)
  - X Rock outcrop sample
  - ⊗ Rock float or dump sample

**SHEET REFERENCE**

1:5000 TOWNSHIP SHEET
1:500 LITTLE OWEN SHEETS

87-2669

**GOLD FIELDS EXPLORATION PTY. LIMITED**

LINDA VALLEY A to P  
LITTLE OWEN  
**GOLD GEOCHEMISTRY**

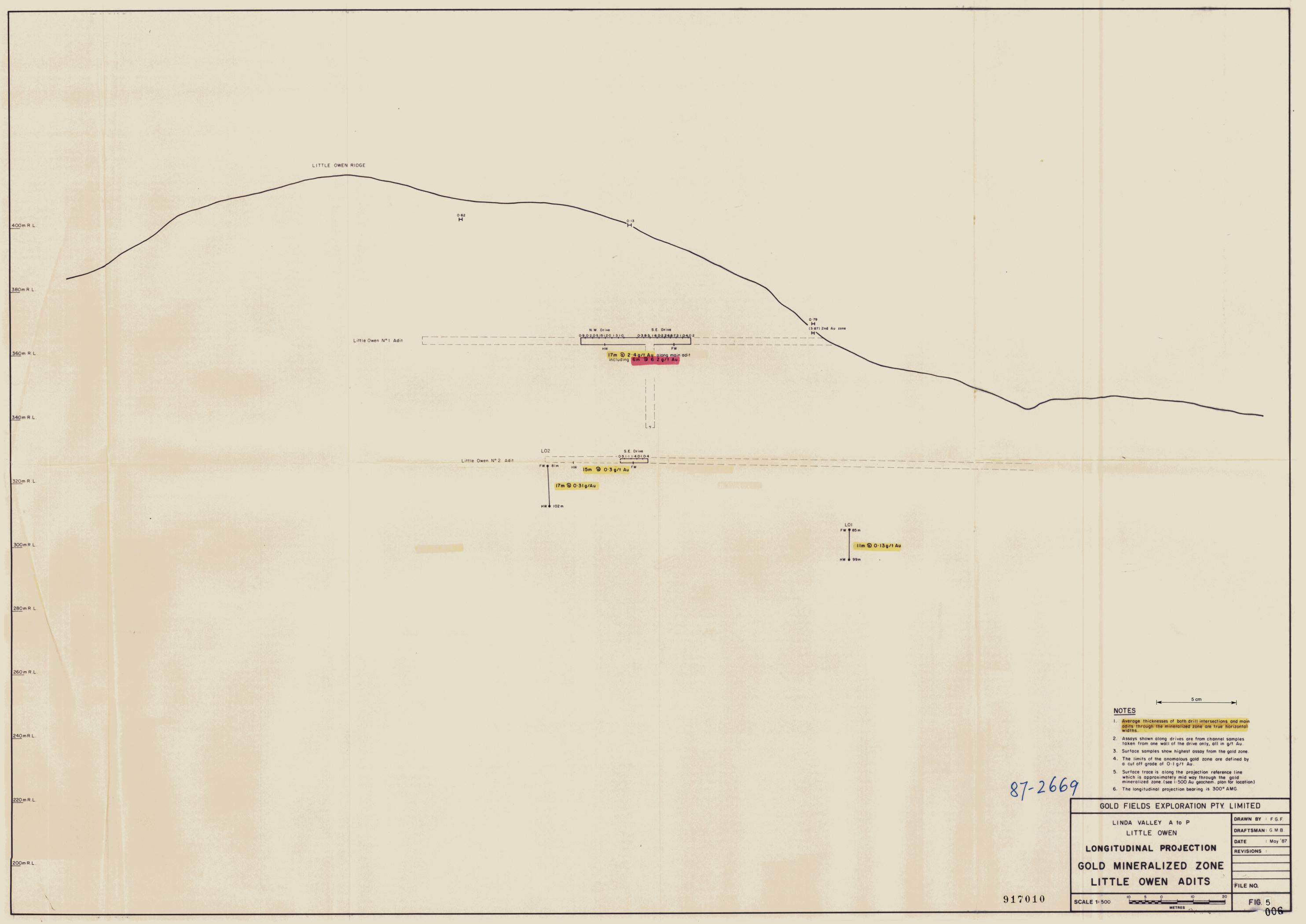
DRAWN BY	F.G.F.
DRAFTSMAN	G.M.B.
DATE	May '87
REVISIONS	
FILE NO.	

SCALE 1:500

50m

FIG. 4

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**NOTES**

1. Average thicknesses of both drill intersections and main adits through the mineralized zone are true horizontal widths.
2. Assays shown along drives are from channel samples taken from one wall of the drive only, all in g/t Au.
3. Surface samples show highest assay from the gold zone.
4. The limits of the anomalous gold zone are defined by a cut off grade of 0.1 g/t Au.
5. Surface trace is along the projection reference line which is approximately mid way through the gold mineralized zone (see 1:500 Au geochem. plan for location).
6. The longitudinal projection bearing is 300° AMG.

87-2669

GOLD FIELDS EXPLORATION PTY. LIMITED	
LINDA VALLEY A to P LITTLE OWEN	
<b>LONGITUDINAL PROJECTION GOLD MINERALIZED ZONE LITTLE OWEN ADITS</b>	
DRAWN BY : F.G.F.	DATE : May '87
DRAFTSMAN: G.M.B.	REVISIONS :
FILE NO.	FIG. 5

917010

