



General Gold Operations Pty Ltd

ACN 086 085 878

## **GENERAL GOLD OPERATIONS PTY LTD**

# **EL 6800 BLACK MOUNTAIN MT TODD DISTRICT, NT**

## **FINAL REPORT FOR EXPLORATION AREA RETAINED UNDER MCN 29 MAY 1990 – 28 MAY 1999**

**Distribution:**

NTDME	x1
General Gold Operations	x1
Acacia Resources	x1

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September 1999**

**OPEN FILE**

**CR 99 / 380**

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## 1. INTRODUCTION

Exploration Licence 6800 (Black Mountain) was granted to Shell Company of Australia Ltd on 29 May 1990 for a period of five (5) years.

A joint venture agreement (Shotgun JV) between Shell and Zapopan NL was executed on 18th June 1992 to explore EL6800. Initially Shell acted as managers of the joint venture, however from 1<sup>st</sup> October 1992, Zapopan NL (then Pegasus Gold Australia Pty Ltd "PGA") assumed the role of manager.

Renewal of this licence for two periods (2-year terms) until 28<sup>th</sup> May 1999 was granted.

Following the severe decrease in the gold price and faults in the project design criteria, the Mt Todd mine was put on care and maintenance status on 15<sup>th</sup> November 1997 and PGA was placed under Deed of Company Arrangement.

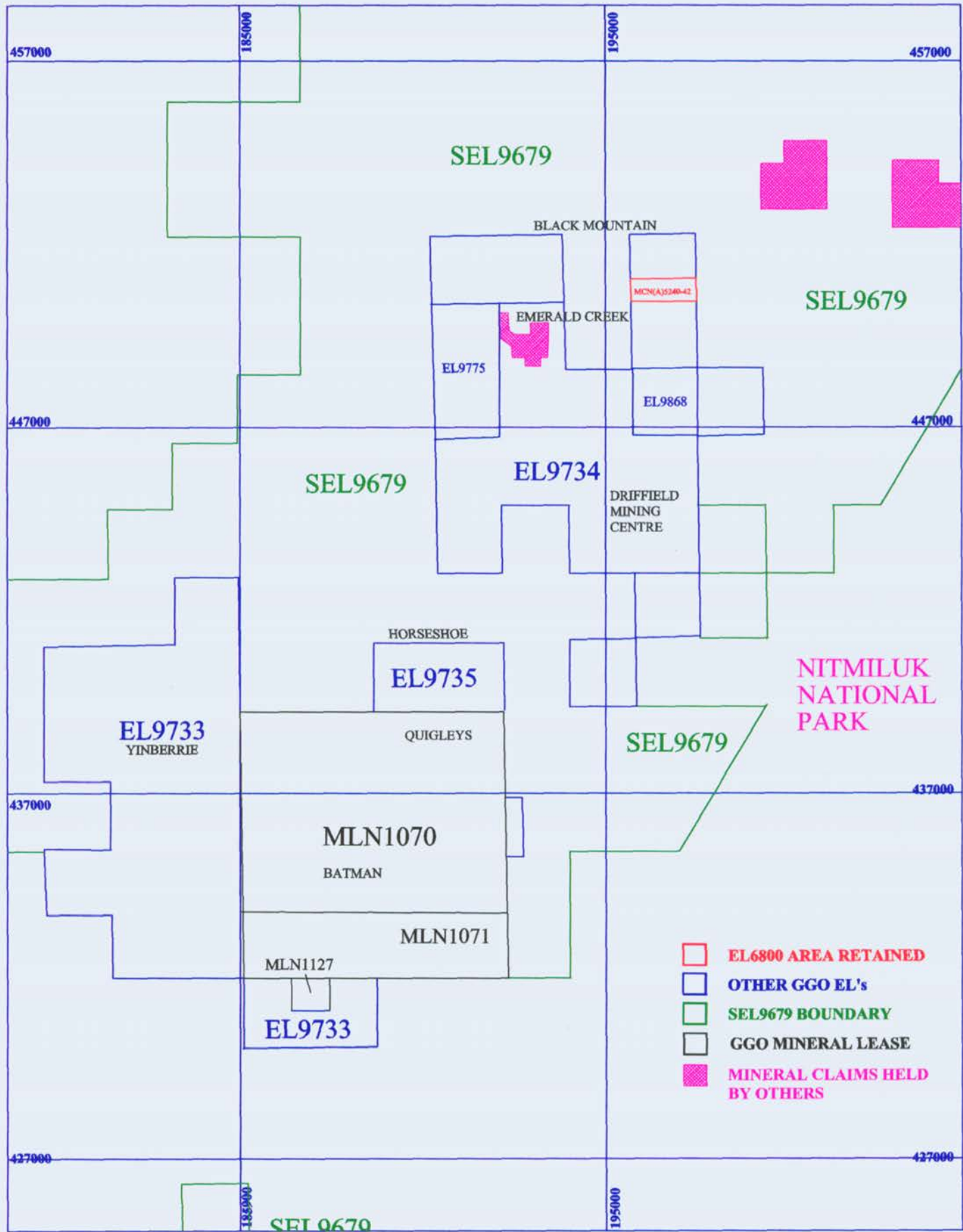
The Administrators of PGA undertook an extended sale process during 1998, with sale to the Yimuyn Manjerr Joint Venture (Multiplex Resources Pty Ltd 93%, General Gold Resources NL 2%, PGA 5%) finalized on the 18<sup>th</sup> March 1999. General Gold Operations Pty Ltd holds the title in trust for the JV and is operator of the joint venture.

This report summarises exploration activities and results, within the retained area, over the term of the licence and the renewal periods (1990-99).

## 2. LOCATION AND ACCESS

EL6800 (Black Mountain) is situated approximately 55km north of Katherine and 17km to the northeast of the Mt. Todd Gold Mine (*Figure 1*). Access is gained via Mt. Todd Mine access roads and exploration tracks north from the sealed Edith Falls Road.

Topography within EL6800 is considerably varied, ranging from low relief scree rises and black soil plains in the north and west, to moderate and high relief rocky ridges and deep valleys in the south and east.



DATE: SEPTEMBER 1999

SCALE: 1:100,000

## EL6800 BLACK MOUNTAIN RETAINED AREA

FIGURE 1

### 3. GEOLOGICAL SETTING

"Black Mountain" is located within the southeastern portion of the Early Proterozoic Pine Creek Geosyncline. Metasediments, granitoids, basic intrusives, acid and intermediate volcanic rocks occur within this geological province (*Figure 2*).

Within the Mt. Todd area the oldest outcropping rocks are assigned to the Burrell Creek Formation. These rocks consist primarily of interbedded greywackes, siltstones and shales of turbidite affinity, which are interdispersed with minor volcanics. The formation contains slump structures, flute casts, graded beds and occasional crossbeds.

Rocks of the Burrell Creek Formation have been folded about northerly trending F1 fold axes. The folds are open to closed style and have moderate to steep westerly dipping axial planes, with some rocks being overturned. A later north-south compression event resulted in east-west trending open style upright D2 folds.

Meta-sediments of the Burrell Creek Formation outcrop extensively throughout EL6800. Ridges within the western portion of the licence expose metasediments which are hornfelsed to hornblende facies metamorphic grade. Abundant quartz veining is apparent, occurring as both narrow quartz/carbonate/muscovite/goethite veins and also as milky white massive "bucky" quartz veins.

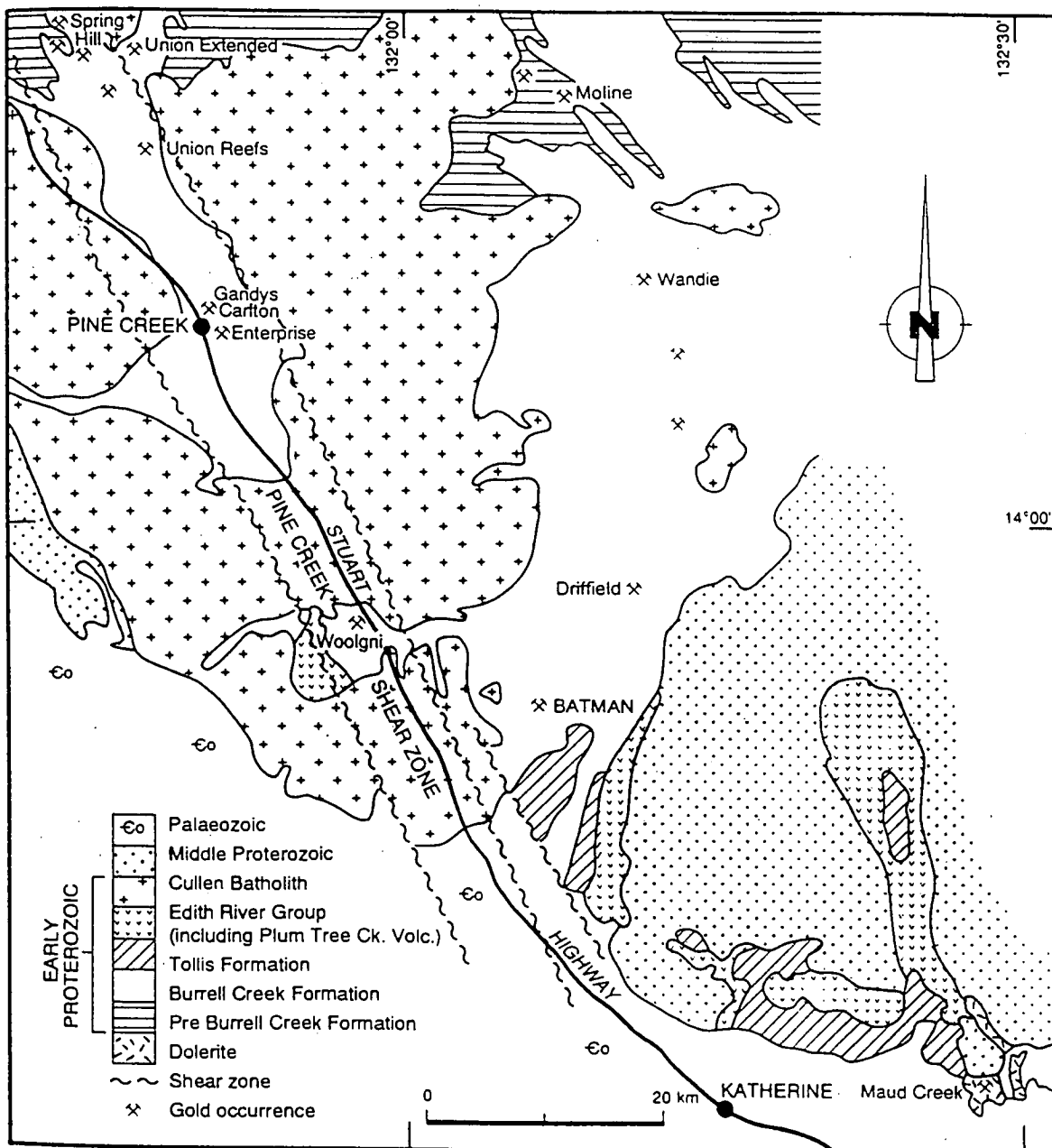


Figure 2. Regional Geological Setting

#### 4. PREVIOUS EXPLORATION

##### 4.1 Year One

Work completed by Shell during Year One involved the collection of 26 stream sediment samples from within EL6800, none of which are located in the area retained under tenure. Samples were assayed for Au using the BLEG technique (detection limit 0.1ppb Au).

##### 4.2 Year Two

Exploration undertaken by Shell during Year Two centred on ground follow-up and stream sediment sampling of the anomalies generated in year 1.

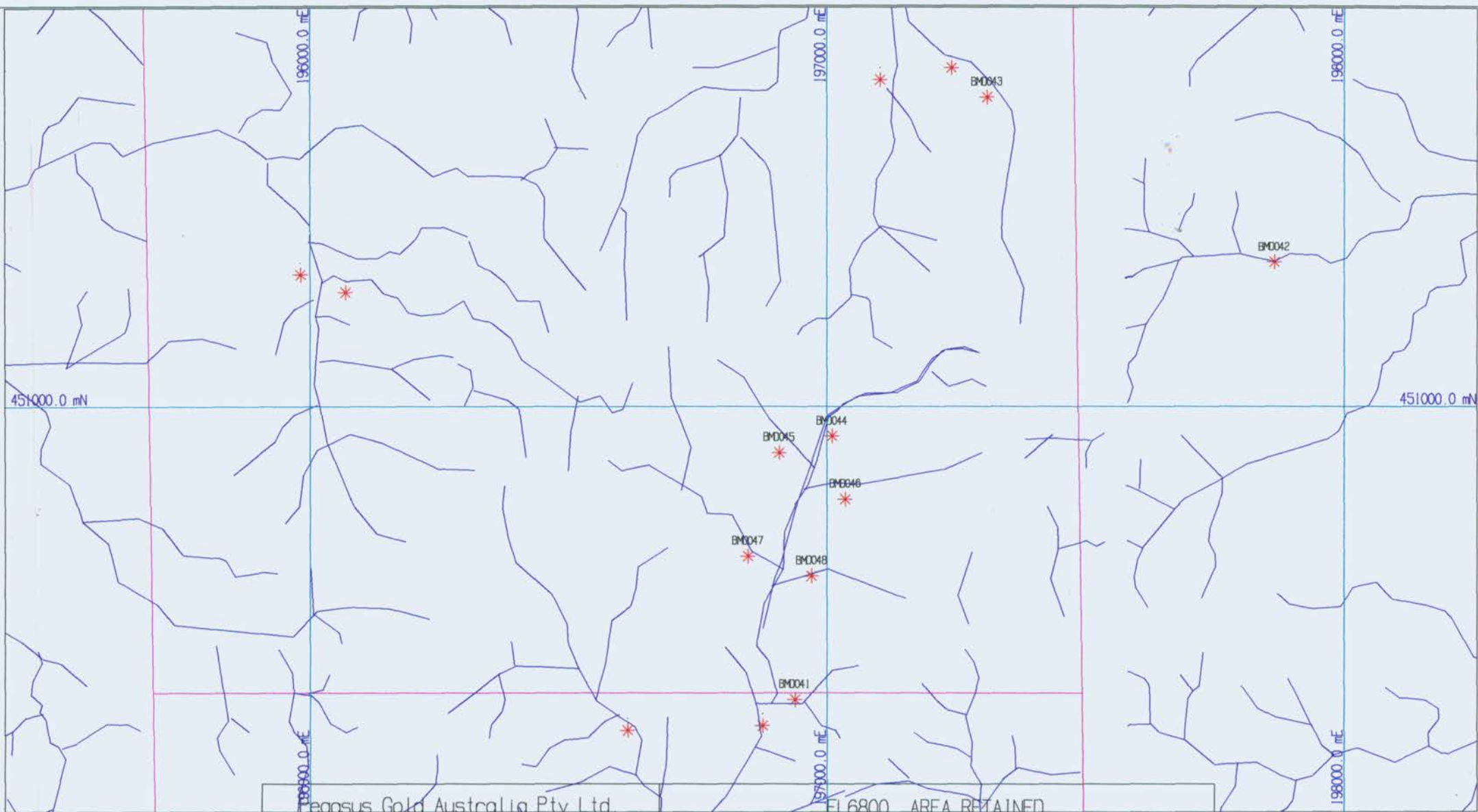
A further 36 stream BLEG samples were collected with six samples located in the area retained under tenure. Maximum values of 68, 12, and 11.6ppb Au were received. Results are shown on *Figure 3* with full analytical results detailed in *Appendix 1*.

Twenty-eight rock chip samples were collected, with samples 241789-793 located in the retained area. Samples were assayed for Au, Cu, Pb, Zn, As, Ag and Bi. Gold values were uniformly low with a summary presented below:

Element	Detection Limit	Range
Au	0.01ppm	<0.01-0.01
Cu	1ppm	10-23
Pb	1ppm	19-700
Zn	1ppm	9-69
As	50ppm	<50-200
Ag	1ppm	<1ppm
Bi	10ppm	<10ppm

Rock chip location is shown on *Figure 4* with assay results listed in *Appendix 1*.





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Edith Falls Road  
Katherine, NT 0852  
Australia

UNITS : METRES DATE: 99/09/07 TIME: 14:07:28

EL6800 AREA RETAINED  
STREAM GEOCHEMISTRY  
SAMPLE LOCATION  
SCALE 1:10000

FIG.3



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Katherine, NT 0852  
Australia

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EL6800 AREA RETAINED  
ROCK CHIP GEOCHEMISTRY  
SAMPLE LOCATION  
SCALE 1:10000

FIG. 4

### 4.3 Year Three

Exploration conducted during Year Three by Zapopan NL, within the retained area, involved geological reconnaissance and stream sediment sampling.

Stream sediment sampling was undertaken to confirm the gold anomalism within the licence and to complete coverage over the remaining area. A peak value of 8.4ppb Au was obtained from the Eastern Prospect. A total of 43 stream sediment samples were processed from EL6800 with three samples (BMD041-43) collected from the area retained (see *Figure 3* for sample location and for full analytical results).

### 4.4 Year Four

Exploration by Zapopan NL during Year Four consisted of further evaluation of the Eastern prospect utilising stream sediment, soil sampling and rock chip geochemistry.

A further 5 stream sediment samples (BMD044-048) were collected from the Eastern prospect with a maximum value of 6.7ppb Au. Sample location is shown in *Figure 3* and assays listed in *Appendix 1*.

Initial soil sampling on a 200m x 50m grid at the Eastern prospect was undertaken in response to the elevated drainage geochemistry. A total of 36 samples (BMS031- 054, 110-121) were processed with a peak value of 43ppb Au and seven other samples returning values greater than 10ppb Au. Sample location is shown on *Figure 5* and assay results shown in *Appendix 1*.

Reconnaissance rock chip sampling was also conducted during Year Four, concentrating on zones of quartz veined metasediments. Sixteen samples (BMR002-017) were collected from the area retained with a highest value of 3.67ppm Au. Rock chip sample locations are shown on *Figure 4* with assay results in *Appendix 1*.

### 4.5 Year Five

Year 5 exploration within EL6800 comprised ongoing testing of the Western and Eastern prospects by way of additional infill and step-out soil sampling, more detailed rock chip sampling and RAB drilling.

#### 4.5.1 Soil Geochemistry

A further 30 soil samples (BMS193-222) were taken during the year to expand on the coverage generated at the Eastern Prospect. A maximum value of 51ppb Au was received from the areas retained from EL6800E.

Sample location and Au assay results are shown on *Figures 5* and listed in



3451000.0 Y

196000.0 X

196000.0 X

~ + 988M13	~ + 988M14	~ + 988M160
+ + 988M12	~ + 988M15	~ + 988M179
~ + 988M11	+ + 988M16	~ + 988M178
~ + 988M10	~ + 988M17	~ + 988M177
~ + 988M09	~ + 988M18	~ + 988M176
~ + 988M08	~ + 988M19	~ + 988M175
~ + 988M07	~ + 988M20	~ + 988M174
~ + 988M06	~ + 988M21	~ + 988M173
~ + 988M05	~ + 988M22	~ + 988M172
~ + 988M04	~ + 988M23	~ + 988M171
~ + 988M03	~ + 988M24	~ + 988M170
~ + 988M02	~ + 988M25	~ + 988M169
~ + 988M01	~ + 988M26	~ + 988M168
~ + 988M00	~ + 988M27	~ + 988M167
~ + 988M09	~ + 988M28	~ + 988M166
~ + 988M08	~ + 988M29	~ + 988M165
~ + 988M07	~ + 988M30	~ + 988M164
~ + 988M06	~ + 988M31	~ + 988M163
~ + 988M05	~ + 988M32	~ + 988M162
~ + 988M04	~ + 988M33	~ + 988M161
~ + 988M03	~ + 988M34	~ + 988M160
~ + 988M02	~ + 988M35	~ + 988M159
~ + 988M01	~ + 988M36	~ + 988M158
~ + 988M00	~ + 988M37	~ + 988M157
~ + 988M09	~ + 988M38	~ + 988M156
~ + 988M08	~ + 988M39	~ + 988M155
~ + 988M07	~ + 988M40	~ + 988M154
~ + 988M06	~ + 988M41	~ + 988M153
~ + 988M05	~ + 988M42	~ + 988M152
~ + 988M04	~ + 988M43	~ + 988M151
~ + 988M03	~ + 988M44	~ + 988M150
~ + 988M02	~ + 988M45	~ + 988M149
~ + 988M01	~ + 988M46	~ + 988M148

197000.0 X

197000.0 X

~ + 988M028	~ + 988M029	~ + 988M079
~ + 988M027	~ + 988M028	~ + 988M078
~ + 988M026	~ + 988M027	~ + 988M077
~ + 988M025	~ + 988M026	~ + 988M076
~ + 988M024	~ + 988M025	~ + 988M075
~ + 988M023	~ + 988M024	~ + 988M074
~ + 988M022	~ + 988M023	~ + 988M073
~ + 988M021	~ + 988M022	~ + 988M072
~ + 988M020	~ + 988M021	~ + 988M071
~ + 988M019	~ + 988M020	~ + 988M070
~ + 988M018	~ + 988M019	~ + 988M069
~ + 988M017	~ + 988M018	~ + 988M068
~ + 988M016	~ + 988M017	~ + 988M067
~ + 988M015	~ + 988M016	~ + 988M066
~ + 988M014	~ + 988M015	~ + 988M065
~ + 988M013	~ + 988M014	~ + 988M064
~ + 988M012	~ + 988M013	~ + 988M063
~ + 988M011	~ + 988M012	~ + 988M062
~ + 988M010	~ + 988M011	~ + 988M061
~ + 988M009	~ + 988M010	~ + 988M060
~ + 988M008	~ + 988M009	~ + 988M059
~ + 988M007	~ + 988M008	
~ + 988M006	~ + 988M007	
~ + 988M005	~ + 988M006	
~ + 988M004	~ + 988M005	
~ + 988M003	~ + 988M004	
~ + 988M002	~ + 988M003	
~ + 988M001	~ + 988M002	

8451000.0 Y

Pegasus Gold Australia Pty Ltd.  
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Edith Falls Road  
Katherine, NT 0852  
Australia

UNITS : METRES DATE: 99/09/08 TIME: 10:30:43

EL6800 AREA RETAINED  
SOIL GEOCHEMISTRY  
SAMPLE LOCATION  
SCALE 1:5000

Fig.5

Software by Gemini Software International

## *Appendix 1.*

### **4.5.2 Rock Chip Sampling**

Rock chip sampling was concentrated on the Eastern Prospect where previous sampling had returned up to 3.67ppm Au. Fourteen samples (BMR29-42) were collected from areas of quartz veined and/or silicified metasediments (see *Figure 5* for sample location).

Seven of 14 samples returned values greater than 0.50ppm Au with a maximum assay of 17.37ppm Au obtained. These strongly anomalous results coincide with the elevated soil anomalies. Assay results are listed in *Appendix 1*.

### **4.5.3 Geological Mapping**

In conjunction with the rock chip sampling, brief reconnaissance mapping was undertaken over portion of the Eastern Prospect.

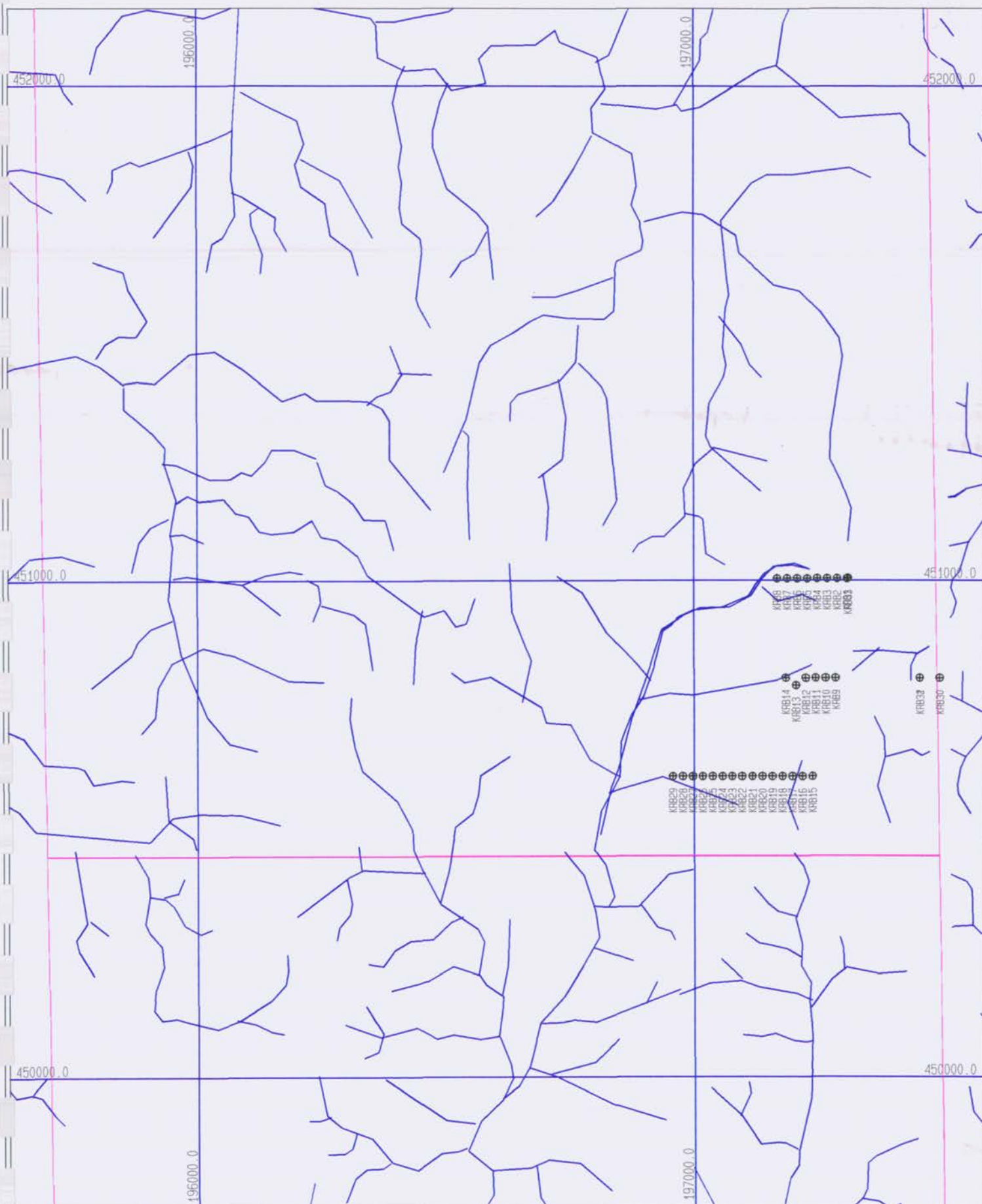
This work identified abundant quartz veins and zones of quartz stockwork hosted by a monotonous sequence of greywacke and siltstone, assigned to the Burrell Creek Formation. These quartz veins strike in a range from 320°M to 025°M and appear to dip subvertically.

### **4.5.4 RAB Drilling**

The anomalous soil and rock chip geochemistry defined at the Eastern Prospect was considered sufficiently encouraging to warrant follow-up by RAB drilling. Three fences of RAB drillholes were completed at 200m line spacing and 20m hole spacing. Holes were angled 60°E and drilled to a depth of 20m, the program totalling 33 drillholes for 648m.

The results from this small program were disappointing. Only five of the 33 holes returned a 3m composite gold value greater than 0.20ppm Au, with a maximum intercept of 3m@0.58 ppm Au. These intercepts were generally associated with thin zones of ferruginous quartz veins. Drillhole location is shown in *Figure 6*.

Full details are listed in *Appendix 1* (files '68RABass, 68RABcol, 68RABgeo, 68RABsur')



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Katherine, NT 0852  
Australia

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**EL6800 BLACK MOUNTAIN  
RAB DRILLHOLE LOCATION**

SCALE 1: 10000

Fig. 6

Software by GEMCOM Services Inc.

#### 4.6 First Renewal Period-Year One

During Year 1 of the first renewal period acquisition of airborne geophysics over the retained area was undertaken.

##### 4.6.1 Airborne Geophysics

A regional airborne geophysical survey, including coverage of EL6800, was completed for Zapopan by World Geoscience during June 1995 at 100m flight line spacing. Specifications of the survey are detailed below;

Aircraft	VH-ADH C206
Magnetometer	Split Beam cesium scintrex VIW2321-CS2 Resolution : 0.001 nano Tesla Cycle Rate : 0.1 seconds Sample Interval : 6.0 metres
Spectrometer	Packets Perm. 1000 256 Channel Volume : 16.56 litres Cycle Rate : 1.0 seconds Sample Interval : 60 metres
Data Acquisition	Packets Pads 1000 digital acquisition system 11 Channel RMS GR33A Chart Recorder
Flight Line Spacing	Traverse Lines : 50 metres Tie Lines : 984 metres
Flight Line Direction	Transverse Lines : 270 – 090 degrees Tie Lines : 000 – 180 degrees
Survey Height	60 metres – mean terrain clearance
Navigation	GPS satellite positioning system

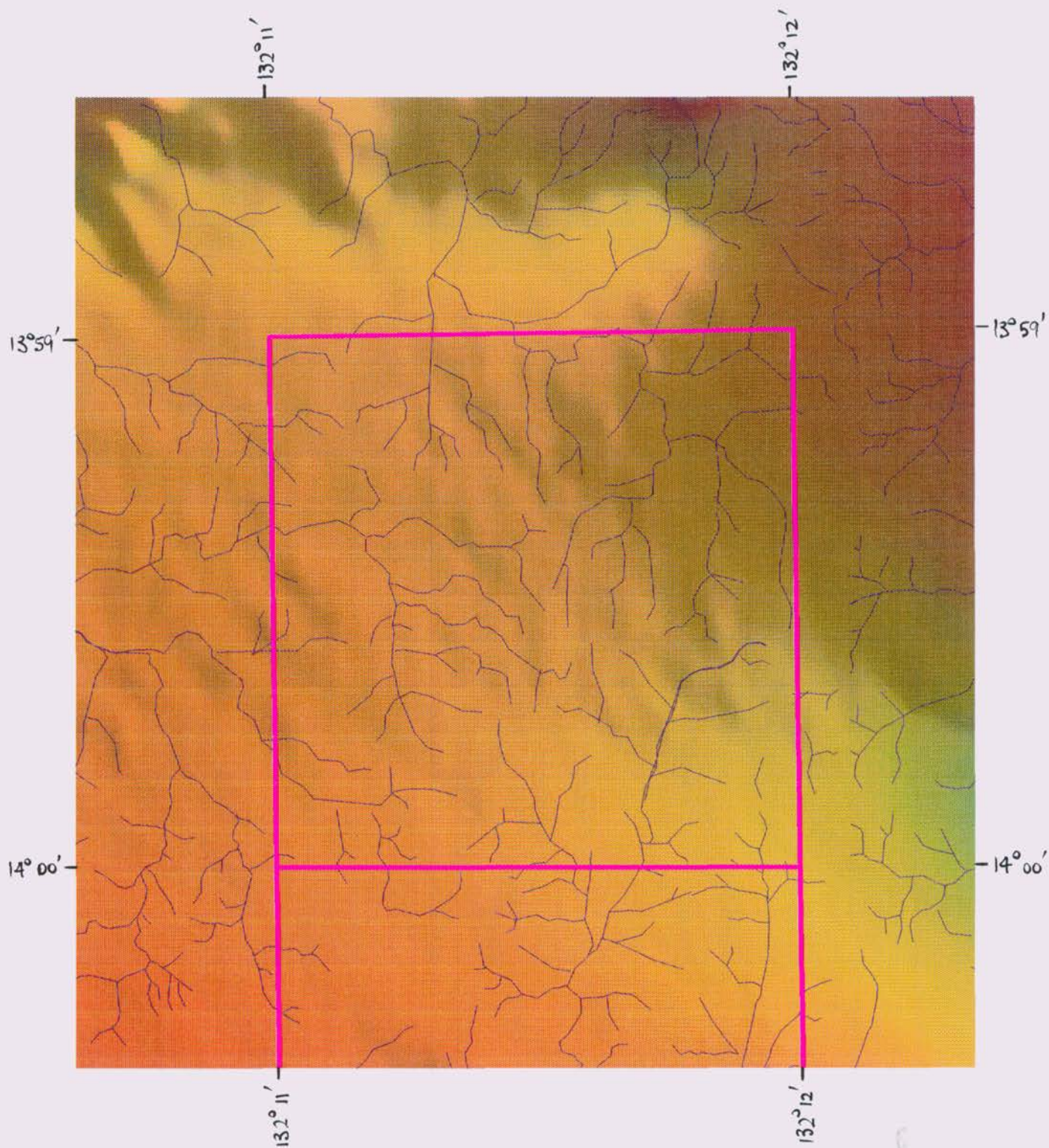
See *Figure 7* for the total field magnetic intensity plan of EL6800E. Digital contours are located in Appendix 1 (file '6800retain').

#### 4.7 First Renewal Period – Year Two

Exploration during the 1996-97 year of tenure consisted of RC drilling, targeting previously located surface geochemistry at the Western Prospect.

No exploration was undertaken over the area retained under tenure.





EL6800E Black Mountain  
Total Magnetic Intensity





#### 4.8 Second Renewal Period – Year One

Exploration undertaken by Pegasus on EL6800 during Year 1 of the second renewal period consisted of:

- Collation and validation of all existing data
- Entry of all existing data into a GIS database
- Acquisition of digital Landsat imagery
- Grid and access refurbishment
- Reconnaissance geological mapping
- Soil sampling

Compilation of all available geochemical exploration data into a single database was undertaken.

##### 4.8.1 GIS and Remote Sensing Studies

Pegasus completed a thorough compilation of a GIS database through the acquisition of digital data from various government and private companies. Data pertinent to the EL6800 region included combined Landsat/SPOT imagery at 1:50,000 scale. Digital aerial photography at 1:60,000 scale with 5m contours and a regional airborne geophysical survey were obtained for the EL6800 licence area and were useful in defining and recognising regional trends.

All the digital data was manipulated in ARCVIEW with all geochemical data in a GEMCOM PCXPLORE database.

##### 4.8.2 Geological Reconnaissance

Geological reconnaissance mapping of the western and eastern geochemical anomalies was undertaken.

Geology within the anomalous zones of the eastern block consists of N to NNE trending fault and/or breccia structures within a broad NE trending zone of complexity. NW trending fold closures and drag folds are located in the SE corner of the eastern block.

Rock chip sampling was undertaken in conjunction with the mapping program. One sample (BMR43) was collected and despatched to Assaycorp Pine Creek for Au analysis by fire assay techniques (detection limit 0.1ppm). This rock chip returned a value of 4.55 g/t Au.

The rock chip sample location is shown on *Figure 4* and listed in *Appendix 1*.

#### 4.8.3 Soil Sampling

Soil sampling was undertaken over three target areas (i) airborne magnetic anomaly in the far west block, (ii) extensions to soil anomalies in the SE corner of the western blocks, and (iii), infill sampling within the eastern block.

Samples (98BM001-180) within the retained area were taken at 25m spacing along E-W grid lines with a -40# size fraction collected in the field. Samples were despatched to Assaycorp Pine Creek for Au analysis by low-level fire assay techniques (detection limit 1ppb).

Results from this program were positive with peak values of 305, 154, 144 and 136ppb Au and broad +10ppb anomalies.

Sample location and assay results for this program are shown on *Figure 5* with full assay results listed in *Appendix 1*.

### 4.9 Second Renewal Period – Year Two

#### 4.9.1 GIS and Remote Sensing Studies

Continuation of the GIS compilation program was undertaken with the generation of 5m contours for the tenement area, addition of 1997-98 Pegasus exploration data and the initial input of CAD geological mapping. Interpretation of the various datasets was initiated during the year.

#### 4.9.2 Geological Mapping

Geological reconnaissance mapping was undertaken at several of the prospects delineated by previous explorers, geophysical anomalies and areas within the western blocks which are devoid of previous activity.

No exploration activities were undertaken within the areas retained under tenure.

### 5. REHABILITATION

No exploration activities were undertaken during the year that required rehabilitation. Previous exploration conducted during the term of the licence, eg. RC drilling, was rehabilitated during the corresponding anniversary year.

6. **CONCLUSIONS**

Exploration during the term of the licence generated anomalous surface geochemistry that has undergone geological reconnaissance and minor RAB/RC drill testing.

Results from the soil, rock chip and drill programs in the western blocks were disappointing and, with the poor results from RC drill testing, there appears little potential for economic mineralisation.

Encouraging soil and rock chip assay results within the southern portion of the eastern block warranted retention under mineral claim application.



**General Gold Operations Pty Ltd**

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**GENERAL GOLD OPERATIONS PTY LTD**

**EL 6800 BLACK MOUNTAIN  
MT TODD DISTRICT, NT**

**FINAL REPORT FOR EXPLORATION  
29 MAY 1990 – 28 MAY 1999**

**APPENDIX 1**

**DIGITAL DATA**

## Files

File	Content
EL6800rockretain.prn	Rock Chip Geochemistry
EL6800streamretain.prn	Stream Geochemistry
EL6800soilretain.prn	Soil Geochemistry
6800retain.dxf	Airborne Magnetic Contours
68RABass.asc	RAB drilling assay file
68RABcol.asc	RAB drilling collar file
68RABgeo.asc	RAB drilling geology file
68RABsur.asc	RAB drilling survey file

## RC / RAB LOGGING CODES

# Z

Zapopan

Mt Todd  
Gold Mine

### GRAIN SIZE

- V ■ Very Fine
- F ■ Fine
- M ■ Medium
- C ■ Coarse
- X ■ Cryptocrystalline

### COLOUR

- L ■ Light
- M ■ Medium
- D ■ Dark
- N ■ Black
- E ■ Blue
- B ■ Brown
- U ■ Buff
- V ■ Green
- G ■ Grey
- O ■ Orange
- K ■ Pink
- P ■ Purple
- R ■ Red
- W ■ White
- Y ■ Yellow

### ROCK CODES

- Qh ■ Soil
- Qg ■ Gravel
- Qs ■ Sand
- Qa ■ Alluvium
- Qr ■ Scree
- Co ■ Conglomerate
- Sa ■ Sandstone
- Si ■ Siltstone
- Sh ■ Shale
- Lw ■ Lithic Wacke
- Fw ■ Feldspathic Wacke
- Gw ■ Greywacke
- Ch ■ Chert
- Ir ■ Ironstone

### ROCK CODES (cont'd)

- Vo ■ Volcanics
- Gr ■ Granite
- Hf ■ Horfels
- Ve ■ Vein
- Qz ■ Quartz
- Tu ■ Tuff
- Do ■ Dolerite
- Po ■ Porphyry
- Fb ■ Fault Breccia
- Md ■ Mudstone
- In ■ Intrusive

### FABRIC

- Br ■ Breccia
- 0 ■ Nil
- 1 ■ Weak
- 2 ■ Weak / Medium
- 3 ■ Medium
- 4 ■ Medium / Strong
- 5 ■ Strong

### WATER

- D ■ Dry
- M ■ Moist
- W ■ Wet

### WEATHERING

- C ■ Complete
- W ■ Weathered
- T ■ Transition
- F ■ Fresh

### SULPHIDES / MINERALS

- Py ■ Pyrite
- Ph ■ Pyrrhotite
- Cp ■ Chalcopyrite
- Ap ■ Arsenopyrite
- Ga ■ Galena
- Sp ■ Sphalerite
- Qz ■ Quartz
- Cc ■ Carbonate
- Tm ■ Tourmaline

### SULPHIDE / QUARTZ / FEOX

- 0 ■ Blank
- 0.5, 1, 2, 3 . . .

### ALTERATION HEADING

- Si ■ Silicification
- Cc ■ Carbonate
- Cl ■ Chloritic
- Se ■ Sericitic
- Cy ■ Clay

### ALTERATION CODES

- W ■ Weak
- M ■ Moderate
- S ■ Strong

### RECOVERY

- H ■ High
- M ■ Moderate
- P ■ Poor
- O ■ Nil

### GRAIN SIZE

