



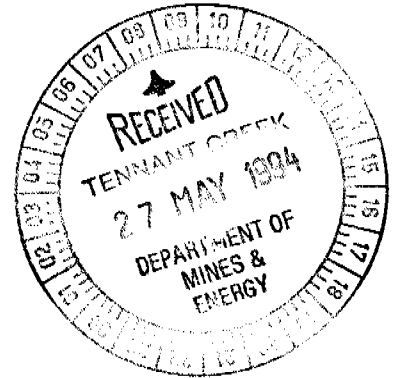
# POSEIDON GOLD LIMITED

A.C.N. 007 511 006

A PosGold Company

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Northern Territory 0861

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## ANNUAL REPORT

FOR EXPLORATION LICENCE 8080

FOR THE PERIOD 28/4/93 TO 27/4/94

TENNANT CREEK DISTRICT, NORTHERN TERRITORY

## MARS PROSPECT

TENNANT CREEK 1:250,000 SHEET SE 53-14

VOLUME 1 OF 1

**AUTHOR:** T J HUNTER  
EXPLORATION GEOLOGIST

**DATE:** MAY 1994

**AUTHORISED BY:**

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Report No. 13162

CR 94/355  
Vol 1 of 1

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COMMODITIES: Gold, Copper

# OPEN FILE

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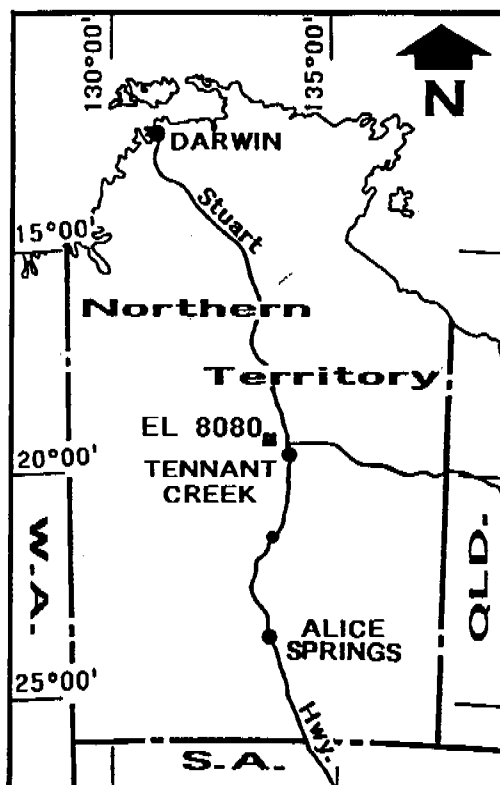
### LIST OF PLANS

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1	EL 8080 - Mars Vacuum Drillhole Data
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REPORT NO: 13162  
TITLE: ANNUAL REPORT FOR EXPLORATION LICENCE 8080 FOR THE PERIOD 28/4/93 TO 27/4/94, TENNANT CREEK DISTRICT, NORTHERN TERRITORY, MARS PROSPECT  
AUTHOR: T J HUNTER  
DATE: MAY 1994



## 1. SUMMARY

This report details the work conducted by Poseidon Gold Limited (PosGold) within EL 8080 during the period 28/4/93 to 27/4/94.

Exploration Licence 8080 consists of four graticular blocks and is located approximately 12 km NNW of Warrego Mine Site in the Tennant Creek District, Northern Territory. Work completed by PosGold during this period included.

- The completion of a geochemical vacuum drilling programme on a 250 x 50 metre grid.
- 514 metres of drilling was undertaken in 95 holes.

The return of assay results is still awaited and further work will involve geochemical data interpretation with future work programmes depending on favourable results.

## **2. INTRODUCTION**

### **2.1 Location and Access**

Exploration Licence 8080 is located approximately 12 km NNW of Warrego Mine Site. Access is limited to the drier months and may be gained via the sealed Warrego Road to the Warrego Mine Site, thence north along a well formed dirt road to the Darwin-Amadeus gas pipeline, thence north along the pipeline access track.

### **2.2 Climate and Physiography**

The climate of the Tennant Creek district is mild to warm and dry throughout autumn, winter and spring with cool to cold winds in winter. High temperatures (in excess of 35°C) occur in summer with seasonal rainfall expected in December to March.

The physiography of EL 8080 is mainly flat alluvial and colluvial plains draining north.

### **2.3 Tenure**

Exploration Licence 8080 consists of four graticular blocks and was granted to PosGold on 28 April 1993 for a period of four years, refer Figure 1.

## **3. REGIONAL GEOLOGY**

The rocks within the northern portion of EL 8080 belong to the Flynn Sub-Group which is dominated by shallow water marine sediments represented by variably haematised sandstone, siltstone and pebble beds. The Warrego Granite is represented in the southern portion of EL 8080. Outcrop is sparse, making the contact between the granite and sediments difficult to locate in the field.

## **4. EXPLORATION UNDERTAKEN DURING THE PERIOD 28/4/93 TO 27/4/94**

### **4.1 Airborne Magnetic Survey**

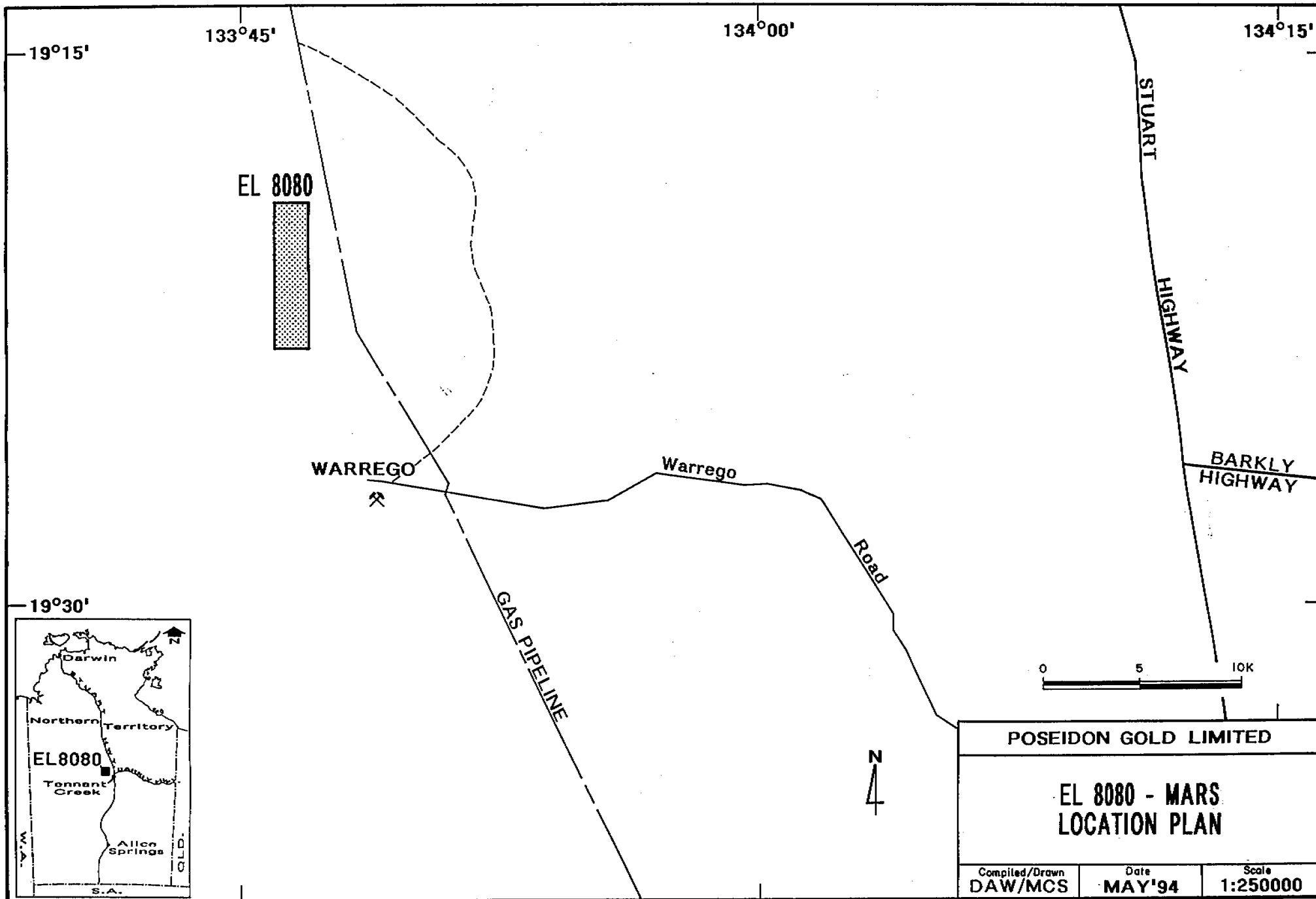
Regional airborne magnetic surveys were flown over the Tennant Creek District in 1984 and 1989 by Aerodata and Austirex respectively. The data from both surveys have been processed and merged to provide contour and image processed plans at 1:50,000 scale.

Exploration Licence 8080 covers a zone of more active magnetics to the north representing the Flynn Sub-Group. In contrast, to the south the low order magnetic character is interpreted to represent rocks comprising the Warrego Granite suite.

Figure 2 presents a total field magnetic contour plan for EL 8080.

### **4.2 Photogeological Mapping**

During 1992, PosGold contracted the services of Australian Photogeological Consultants Pty Ltd (APC) to undertake a detailed photogeological mapping exercise in the Tennant Creek district. This was achieved using a combination of 1:25,000 scale colour aerial photography, airborne magnetic data and field traverses.



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**EL 8080 - MARS  
LOCATION PLAN**

Compiled/Drawn DAW/MCS	Date MAY '94	Scale 1:250000
---------------------------	-----------------	-------------------

FIGURE NO. 1

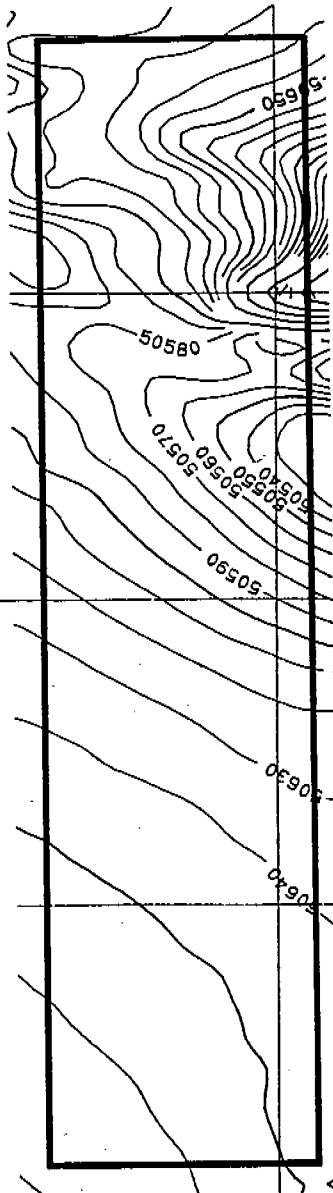
7865000N

370000E

375000E

7860000N

7855000N



**DATA COLLECTION**

Operator : Aerodata 1984  
 : Austirex 1989  
 Magnetometer : Proton Precession 30m SI  
 : Cesium 14m Sampl. Intrv.  
 Navigation : Radio Positioning  
 Survey Height : 60 meters  
 Line Direction : North-South/East-West  
 Line Spacing : 200 meters  
 Tie Line Spacing : 4000 meters/1000 meters

Note - 256 channel gammaray spectrometer data was also collected.



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**EL 8080 - MARS  
 TOTAL FIELD MAGNETIC  
 CONTOUR PLAN**

Compiled/Drawn  
**TJH/MCS**

Date  
**MAY'94**

Scale  
**1:50000**

On EL 8080 the photogeological interpretation suggests that the Flynn Sub-Group covers the northern portion of the tenement. The majority of the tenement is covered by a granite suite comprising of the Warrego Granite, with a separate phase interpreted near the contact.

Figure 3 presents the photogeological interpretation for EL 8080.

#### **4.3 Regional Vacuum Drilling**

In April 1994 a programme of broadly spaced vacuum drilling was planned and implemented over an area in the northern portion of the tenement. A total of 514 metres was drilled in 95 holes over the exploration licence. The drilling was planned to cover a magnetic anomaly.

Vacuum drilling was undertaken by Tracey's Drilling of Tennant Creek using a tractor mounted rig. Holes were drilled along 250 metre spaced lines at 50 metre spaced centres (refer Plan 1).

A local AMG survey grid was established over the area using an east-west surveyed baseline. The drillholes were pegged using chain and compass from the baselines.

Most drillholes reached an average depth of 5 metres into weathered bedrock and lithologies were logged. Downhole geochemical sampling involved the collection of a 5 kg overburden sample and a 2 kg bottom-of-hole bedrock sample. All bedrock lithologies have been mapped and results plotted on Plan 3.

The overburden samples were submitted to Analabs (Perth) for heavy mineral concentrating (HMC) and analysed for Au, Cu, Bi, Pb, Zn, Ag, Fe, Mn, Mo and Cd. Results are outstanding at time of reporting. Once received the results will be entered into the exploration database for plotting and interpretation.

The bottom-of-hole bedrock samples have been placed in storage pending requirements for selective assaying.

Bedrock lithologies intersected were dominantly siltstones and sandstones, variably bleached and haematized, and appear to be broadly representative of the Flynn Sub-Group.

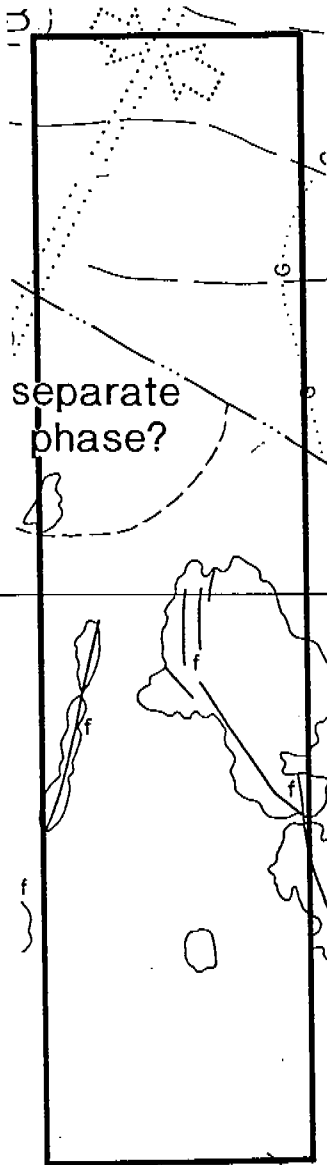


7865000N

370000E

375000E

7860000N



Legend Overleaf

7855000N



1k



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EL 8080 - MARS  
PHOTOGEOLOGICAL  
INTERPRETATION

Compiled/Drawn  
TJH/MCS

Date  
MAY'94

Scale  
1:50000

FIGURE NO. 3

# LITHOLOGY

## SEDIMENTARY ROCKS

CAMBRIAN	Arthur Creek Formation	€	Sandstone, chert, siltstone
	Helen Springs Volcanics		Weathered and ferruginized basalt
CAMBRIAN TO ADELAIDEAN	Rising Sun Conglomerate	Pur	Polymictic conglomerate, sandstone and quartzite
	Tomkinson Creek Subgroup/Hayward Creek Formation		Pth
CARPENTARIAN	Flynn Subgroup	Pn	
			Felsic volcanic and volcanoclastic rock with interbedded sandstone and siltstone (symbol)
CARPENTARIAN TO LOWER PROTEROZOIC	Warramunga Group	Pw	Volcanic arenite, siltstone and ferruginous mudstone including BIF; chert and jasper (hornfelsed shown by symbol)
	Basement Rocks		A
LOWER PROTEROZOIC TO ? ARCHAEOAN			

## INTRUSIVE ROCKS

Warrego Granite Red Bluff Granite	G1	G1: Weakly magnetically foliated porphyritic adamellite and granophyric granite
	G2	G2: Smooth textured non-magnetic muscovite granite and aplitic phases
		Coarse-grained porphyritic gabbro, diorite, and dolerite
Younger porphyries	Pox	Quartz-feldspar porphyry and sheared equivalents
Older porphyries	Po	Felsic porphyry
Tennant Creek Granite Cabbage Gum Granite Channingum Granite Mumbilla Granodiorite	G3	G3, G4: Strongly magnetically foliated porphyritic biotite granite to granodiorite Several phases outlined by aeromagnetic images
	G4	

# LEGEND

	Photogeologically mapped fault and inferred sense of movement indicated
	Magnetically mapped major dislocation and inferred sense of movement indicated (teeth on overriding plate)
	Magnetically mapped minor break
	Zone of shearing
	Photogeological boundary
	Boundary interpreted from aeromagnetism
	Trends (photogeological and magnetic)
	Generalised dip and strike
	Small mine
	Major mine
	Anticline, syncline (mapped)
	Anticline, syncline (inferred, interpreted)
	Dyke, vein
	Aeromagnetic dipole anomaly
	Fault interpreted from gravity data
	Boundary of granite interpreted from gravity data
	Axis of gravity high
	Axis of gravity low
	Circular gravity high

Adapted from drg by Australian Photogeological Consultants Pty Ltd

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## LEGEND FOR PHOTOLOGICAL INTERPRETATION

Compiled/Drawn

Date

Scale

**5. EXPENDITURE STATEMENT FOR THE PERIOD 28/4/93 TO 27/4/94**

During the first year of tenure, PosGold incurred an expenditure of \$9,308 on EL 8080.

A breakdown of this expenditure is detailed below:

<b>EXPENSE</b>	<b>COST</b>
Employee Costs	\$ 3,045
Overhead	\$ 272
Drilling	\$ 2,185
Assays*	\$ 2,755
Operating	\$ 866
Specialist Services	\$ 85
Tenement Costs	\$ 40
Research	\$ 60
	<hr/>
	\$ 9,308
	<hr/>

\* The assay cost is an estimate as the invoice was outstanding at time of reporting.

This figure (\$9,308) compares favourably with the set covenant of \$8,000.

**6. PROPOSED EXPLORATION PROGRAMME FOR THE PERIOD 28/4/94 TO 27/4/95**

**6.1 Proposed Exploration from 28/4/94 to 27/4/95**

Future work programmes will involve additional regional geochemical vacuum drilling and infill drilling. Assuming receipt of encouraging geochemical results it is expected that these anomalies will be tested with RAB drilling. The total expenditure on EL 8080 during 1994/95 is expected to exceed \$14,600 as per the following activity and expenditure breakdown. An application has been lodged to include EL 8080 in a Substitute Exploration Licence. This exploration work will therefore form part of a larger programme over the area.

**6.2 Proposed Expenditure from 28/4/94 to 27/4/95**

To complete the exploration programme for EL 8080 detailed in section 6.1, the expenditure in year two of tenure is budgeted as follows:

<b>EXPENSE</b>	<b>COST</b>
Employee Costs	\$ 4,000
Overhead	\$ 500
Drilling	\$ 4,000
Assays	\$ 4,500
Operating	\$ 1,500
Specialist Services	\$ 400
Tenement Costs	\$ 40
Research	\$ 60
	<hr/>
	\$ 15,000
	<hr/>

## 7. CONCLUSIONS

Exploration conducted on EL 8080 during the first year of tenure forms part of a broad regional exploration strategy involving a multi-disciplinary approach using geochemical, geophysical and structural exploration techniques. This combined approach has proved successful in identifying several targets worthy of follow-up vacuum drilling.

As the assay results of the vacuum drilling programme are still awaited no conclusions can yet be drawn on the prospectivity area.

**APPENDIX ONE**

**EL 8080 MARS - VACUUM DRILLHOLE DATA**

EL 8080 - MARS  
 VACUUM DRILLHOLE DATA

BHID	E	N	SNN	LITHO
MRV-001	371000.0	7863000.0	363001.0	SS
MRV-002	371000.0	7862950.0	363002.0	DOL
MRV-003	371000.0	7862900.0	363003.0	SL/hq
MRV-004	371000.0	7862850.0	363004.0	SL/Si/q
MRV-005	371000.0	7862800.0	363005.0	SS/Si
MRV-006	371000.0	7862750.0	363006.0	SS/Si/q
MRV-007	371000.0	7862700.0	363007.0	SS/Si
MRV-008	371000.0	7862650.0	363008.0	SS/Si
MRV-009	371000.0	7862600.0	363009.0	SS/Si
MRV-010	371000.0	7862550.0	363010.0	SL/Si
MRV-011	371000.0	7862500.0	363011.0	SL/Si/q
MRV-012	371250.0	7862500.0	363012.0	SL/Si
MRV-013	371250.0	7862550.0	363013.0	SL/Si/h
MRV-014	371250.0	7862600.0	363014.0	SL/Si
MRV-015	371250.0	7862650.0	363015.0	SL
MRV-016	371250.0	7862700.0	363016.0	SL/Si
MRV-017	371250.0	7862750.0	363017.0	SL/Si
MRV-018	371250.0	7862800.0	363018.0	SL/Si
MRV-019	371250.0	7862850.0	363019.0	SL/Si
MRV-020	371250.0	7862900.0	363020.0	SL/SS/Si
MRV-021	371250.0	7862950.0	363021.0	SL/SS/Si
MRV-022	371250.0	7863000.0	363022.0	SS
MRV-023	371250.0	7863050.0	363023.0	SS/q
MRV-024	371250.0	7863100.0	363024.0	?NBR
MRV-025	371250.0	7863150.0	363025.0	SL
MRV-026	371250.0	7863200.0	363026.0	SL
MRV-027	371250.0	7863250.0	363027.0	?NBR
MRV-028	371250.0	7863300.0	363028.0	SL/SS/Si
MRV-029	371250.0	7863350.0	363029.0	SS/Si
MRV-030	371250.0	7863400.0	363030.0	SL
MRV-031	371000.0	7863400.0	363031.0	SL/Si
MRV-032	371000.0	7863350.0	363032.0	SL
MRV-033	371000.0	7863300.0	363033.0	SS/Si
MRV-034	371000.0	7863250.0	363034.0	SS/Si
MRV-035	371000.0	7863200.0	363035.0	SS/Si
MRV-036	371000.0	7863150.0	363036.0	SS/Si
MRV-037	371000.0	7863100.0	363037.0	SS/Si
MRV-038	371000.0	7863050.0	363038.0	SL/Si
MRV-039	371500.0	7863000.0	363039.0	SL/Si
MRV-040	371500.0	7862950.0	363040.0	SL/Si
MRV-041	371500.0	7862900.0	363042.0	SL/Si
MRV-044	371500.0	7862750.0	363045.0	SL/Si
MRV-045	371500.0	7862700.0	363046.0	SS/Si
MRV-046	371500.0	7862650.0	363047.0	SL
MRV-047	371500.0	7862600.0	363048.0	SL/q
MRV-048	371500.0	7862550.0	363049.0	SL/q
MRV-049	371500.0	7862500.0	363050.0	SS/q
MRV-050	371750.0	7862500.0	363051.0	SS/Si/q
MRV-051	371750.0	7862550.0	363052.0	SL

EL 8080 - MARS  
 VACUUM DRILLHOLE DATA

BHID	E	N	SNN	LITHO
MRV-052	371750.0	7862600.0	363053.0	SL
MRV-053	371750.0	7862650.0	363054.0	SL/Si
MRV-054	371750.0	7862700.0	363055.0	SS/Si
MRV-055	371750.0	7862750.0	363056.0	SL/Si
MRV-056	371750.0	7862800.0	363057.0	SL/Si
MRV-057	371750.0	7862850.0	363058.0	SL/SS
MRV-058	371750.0	7862900.0	363059.0	SL
MRV-059	371750.0	7862950.0	363060.0	SL
MRV-060	371750.0	7863000.0	363061.0	SL/Si
MRV-061	371750.0	7863050.0	363062.0	SL/Si
MRV-062	371750.0	7863100.0	363063.0	SL/SS/Si
MRV-063	371750.0	7863150.0	363064.0	SL/Si
MRV-064	371750.0	7863200.0	363065.0	SL/Si/q
MRV-065	371750.0	7863250.0	363066.0	SL/Si/q
MRV-066	371750.0	7863300.0	363067.0	SL/Si
MRV-067	371750.0	7863350.0	363068.0	SL
MRV-068	371750.0	7863400.0	363069.0	SL/Si
MRV-069	371500.0	7863400.0	363070.0	SL/Si
MRV-070	371500.0	7863350.0	363071.0	SL/Fe
MRV-071	371500.0	7863300.0	363072.0	SL
MRV-072	371500.0	7863250.0	363073.0	SL/Fe
MRV-073	371500.0	7863200.0	363074.0	SL/Fe
MRV-074	371500.0	7863150.0	363075.0	SL
MRV-075	371500.0	7863100.0	363076.0	SL/Si
MRV-076	371500.0	7863050.0	363077.0	SL/SS/Si
MRV-077	372000.0	7863000.0	363078.0	SS/Si
MRV-078	372000.0	7862950.0	363079.0	SS/Si
MRV-079	372000.0	7862900.0	363080.0	SS/Si
MRV-080	372000.0	7862850.0	363081.0	SS/SL/Si
MRV-081	372000.0	7862800.0	363082.0	SL
MRV-082	372000.0	7862750.0	363084.0	SL/Si
MRV-083	372000.0	7862700.0	363085.0	SL/Si
MRV-084	372000.0	7862650.0	363086.0	SL/Si
MRV-085	372000.0	7862600.0	363087.0	SL/Si
MRV-086	372000.0	7862550.0	363088.0	SL
MRV-087	372000.0	7862500.0	363089.0	SL/Si
MRV-088	372000.0	7863050.0	363090.0	SS/Si
MRV-089	372000.0	7863100.0	363091.0	SS/Si/SL
MRV-090	372000.0	7863150.0	363092.0	SS/SL/Si
MRV-091	372000.0	7863200.0	363093.0	SL
MRV-092	372000.0	7863250.0	363094.0	SL
MRV-093	372000.0	7863300.0	363095.0	SL/Si
MRV-094	372000.0	7863350.0	363096.0	SL
MRV-095	372000.0	7863400.0	363097.0	SL/trfe
MRV-042	371500.0	7862850.0	363043.0	?NBR
MRV-043	371500.0	7862800.0	363044.0	?NBR

LITHOLOGICAL LEGEND

ROCK TYPE / mineralogy / Alteration  
Structure  
Texture

ROCK TYPE

AS	-	ALTERED SEDIMENTS
CHT	-	CHERT
CG	-	CONGLOMERATE
DOL	-	DOLERITE
D	-	DOLOMITE ROCK
EX	-	EXCARBONATE
FER	-	FERRICRETE
GR	-	GRANITE
GW	-	GREYWACKE
H	-	HAEMATITE ROCK
HSL	-	HAEMATITE SILTSTONE
HS	-	HAEMATITE SHALE
LAMP	-	LAMPROPHYRE
M	-	MAGNETITE ROCK
PEG	-	PEGMATITE
QFP	-	QUARTZ - FELDSPAR PORPHYRY
QP	-	QUARTZ PORPHYRY
SS	-	SANDSTONE
SIL	-	SILCRETE
SL	-	SILSTONE
SH	-	SHALE
TF	-	TUFF

MINERALOGY

bi	-	bismuthinite	bn	-	bornite
cc	-	chalcocite	cp	-	chalcopyrite
c	-	chlorite	cv	-	covellite
d	-	dolomite	gn	-	galena
au	-	gold	h	-	haematite
j	-	jasper	k	-	kaolin
li	-	limonite	m	-	magnetite
ml	-	malachite	py	-	pyrite
po	-	pyrrhotite	q	-	quartz
s	-	sericite	sp	-	specularite
sl	-	sphalarite	t	-	tuff

Structure, Alteration + Texture

B	-	Bleaching	B	-	Breccia
Ds	-	Disseminated	F	-	Fault
Lm	-	Laminated	Si	-	Silicification
Sz	-	Shear Zone	V	-	Vein (prefix mineral eg qV
)	-	Stringer mineral in core	\	-	Interbedded

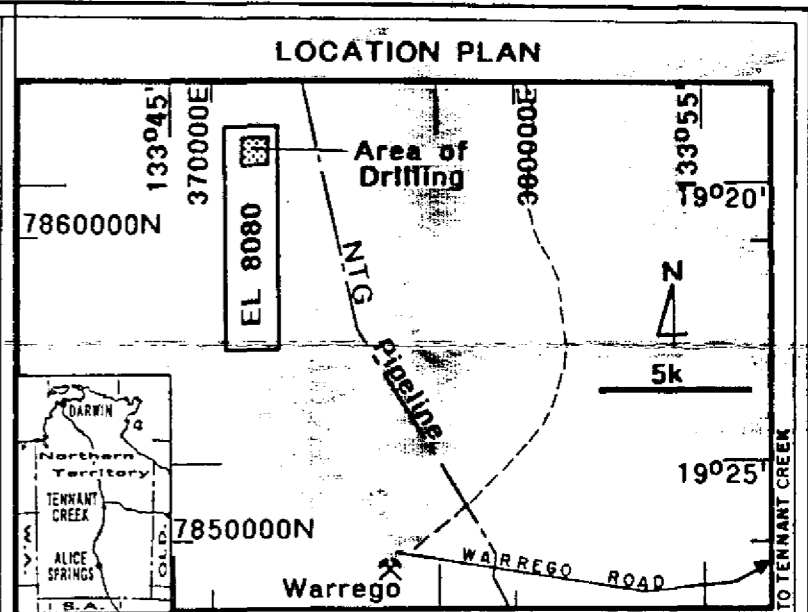
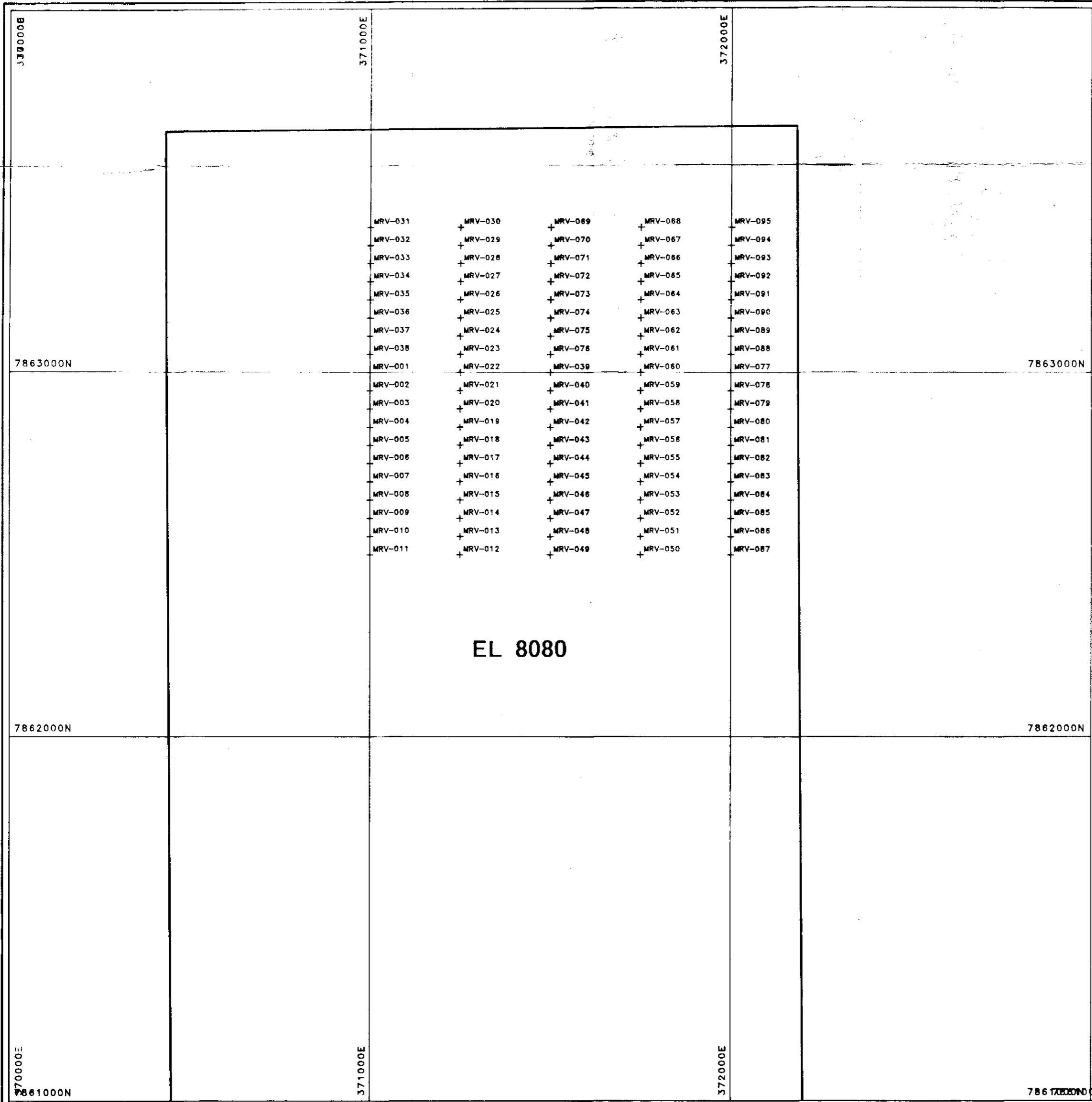


**APPENDIX TWO**

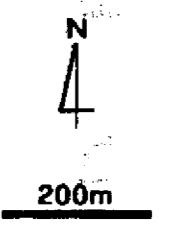
**BIBLIOGRAPHIC DATA SHEET**

**BIBLIOGRAPHIC DATA-SHEET**

REPORT NUMBER	13162
REPORT NAME	ANNUAL REPORT FOR EXPLORATION LICENCE 8080 FOR THE PERIOD 28/4/93 TO 27/4/94, TENNANT CREEK DISTRICT, NORTHERN TERRITORY, MARS PROSPECT
PROSPECT NAME(S)	EL 8080 MARS PROSPECT
OWNER/JV PARTNERS	POSEIDON GOLD LIMITED
KEYWORDS	EL 8080 MARS VACUUM DRILLING GEOCHEMISTRY FLYNN SUB-GROUP WARREGO GRANITE
COMMODITIES	GOLD, COPPER
TECTONIC UNIT	FLYNN SUB-GROUP
1:250,000 MAP SHEET	TENNANT CREEK SE 53-14
1:100,000 MAP SHEET	SHORT RANGE 52-1

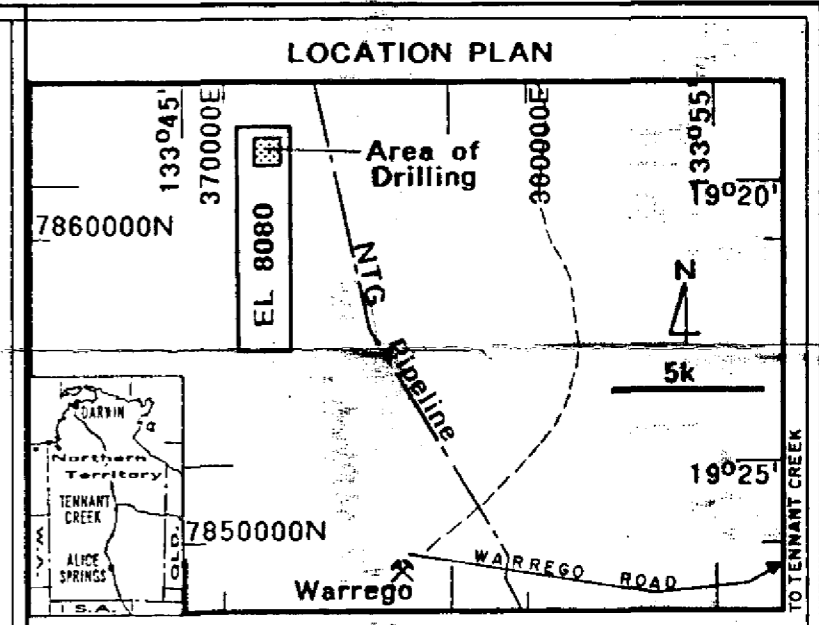
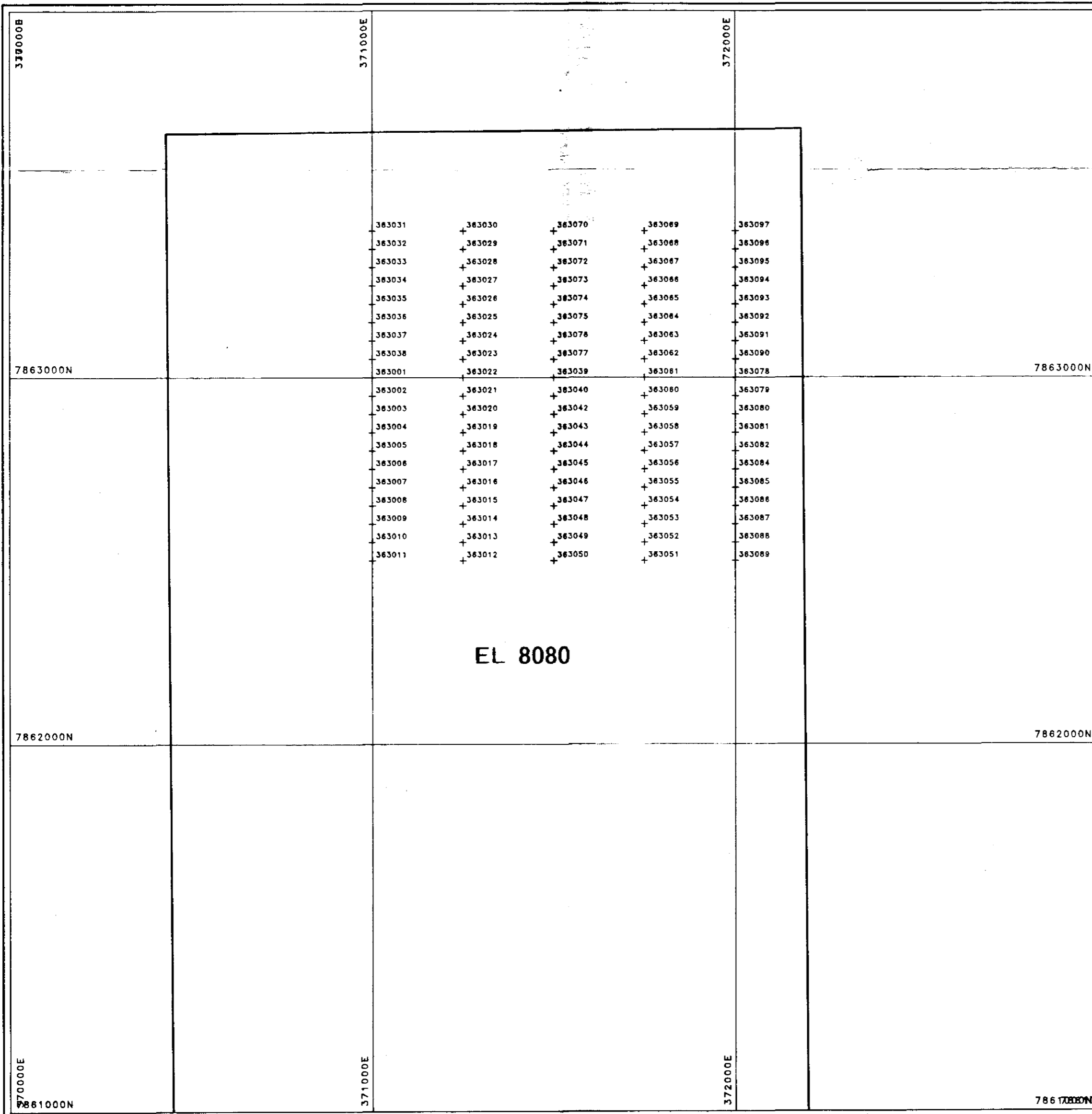


CR94/355

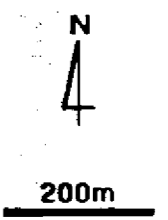


PLAN NO. 1

POSEIDON GOLD LIMITED			
EL 8080 - MARS			
DRILLHOLE LOCATION			
SCALE	DRAWN	DATE	CHECKED
1:10000	DATAMINE	24 MAY 94	TJH



CR 94 / 355

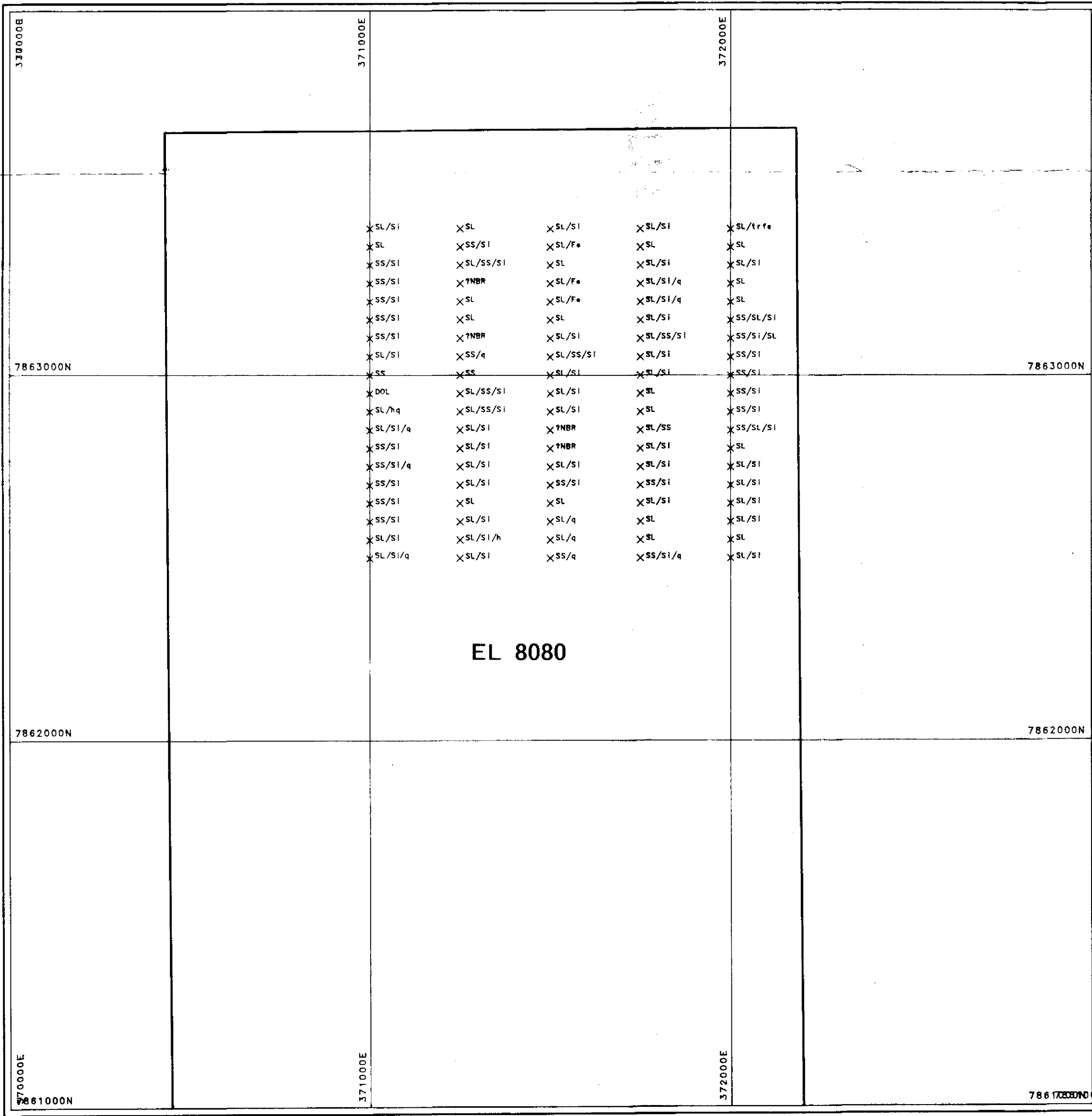


PLAN NO. 2

POSEIDON GOLD LIMITED

EL 8080 - MARS  
SAMPLE NUMBER LOCATION

SCALE	DRAWN	DATE	CHECKED
1:10000	DATAMINE	24 MAY 94	TJH



**LOCATION PLAN**

See APPENDIX ONE for LEGEND

**CR 94 / 355**

N  
4  
200m

PLAN NO. 3

POSEIDON GOLD LIMITED			
EL 8080 - MARS BEDROCK LITHOLOGY			
SCALE 1:10000	DRAWN DATAMINE	DATE 24 MAY 94	CHECKED TJH

786100000