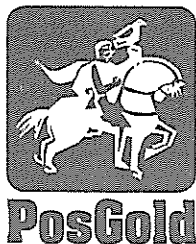


M1381/01

A 34348

Box 5365



GOLD MINES OF KALGOORLIE LIMITED

A.C.N. 004 293 565

A PosGold Company

PERTH OFFICE:
8 Kings Park Road
WEST PERTH, Western Australia

Telephone : (09) 480 3232
Facsimile : (09) 480 3230

PO Box 1143, West Perth, WA 6872

MINING LEASE 26/316

ANNUAL REPORT TO THE 22 JANUARY 1991

KALGOORLIE 1:250,000 SHEET SH51-9

Author:

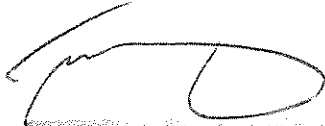
J G Maniw

Date:

August 1991

Accepted By:

Distribution:


WA Mines Department
Poseidon Limited - Perth
Poseidon Limited - Kalgoorlie
KCGM - Kalgoorlie

Reference No:

JGM:LH:3323

The contents of this report remain the property of Gold Mines of Kalgoorlie Limited and may not be published in whole or in part nor used in a company prospectus without the written consent of the company.

Report No. 91-062

CONTENTSPage No.

LIST OF PLANS

1.	INTRODUCTION	1
2.	HISTORY OF WESTERN LEASES	2
3.	LOCATION	3
4.	GEOLOGY	4
5.	WESTERN DEEPS JOINT VENTURE	6
5.1	Results	6
6.	WESTERN LEASES JOINT VENTURE	7
6.1	Percussion Drilling	7
6.2	Alluvial Leads	7
6.2.1	Ironside	7
6.2.2	Adeline Deep Lead	8
6.2.3	Golden Key	8
6.2.4	GMK Southeast End	8
6.2.5	Other Alluvials	8
6.3	Diamond Drilling	9
	REFERENCES	10

LIST OF PLANS

<u>Plan No.</u>	<u>Title</u>	<u>Scale</u>
Plan 1	Regional Geology	1:25000 ✓
Plan 2	Interpreted Geology and Drilling - Lease M26/316	1:10000 ✓

1. INTRODUCTION

Mining lease 26/316, held in the name of Gold Mines of Kalgoorlie (GMK), incorporates the areas of former leases 26/21, 26/31 and 26/99, collectively referred to as the "Western Leases".

For most of the past ten years the Western Leases have been explored by joint ventures, the purposes of which have been to locate both alluvial-supergene gold mineralisation as wells as the deeper extensions of the more usual Golden Mile lode type mineralisation. This exploration has been successful in defining an alluvial-supergene gold resource known as the Ironside Deep Lead, lying in part beneath the State Battery and occupied dwellings.

During the 1990-1991 report period lease M26/316 has been under exemption; consequently there was no active exploration of the lease.

Since Poseidon's acquisition of GMK, Poseidon Exploration has assumed technical responsibility for the exploration of Western Leases. Collection of the joint venture data and a review of the exploration programme and the results has commenced.

2. HISTORY OF WESTERN LEASES

Recent exploration on the Western Leases, under previous titles M26/21, M26/31 and M26/99 (and in some cases additional lease M26/55), was by two joint ventures: the Western Deeps JV (WDJV) and the Western Leases JV (WLJV).

The earlier of these two agreements, the WDJV, arose from an informal agreement among the Western Deeps Consortium comprising Gold Mines of Kalgoorlie, Australian Anglo American Searches Pty Ltd and Western Mining Corporation Limited.

The Western Deeps JV was signed on 25 January 1982. The parties to the agreement were Western Mining Corporation Limited (WMC), Gold Mines of Kalgoorlie (GMK), Australian Anglo American Searches Pty Ltd (AAA), Homestake Gold Limited (HGL), Poseidon Limited (PL) and Kalgoorlie Lake View Pty Ltd (KLV). This joint venture was formed to explore leases M26/21 (GMK), M26/31 (WMC), M26/55 (KLV) and M26/99 (GMK) below 1006 metres below sea level.

The WDJV terminated on 30 September 1988 and WMC sold M26/31 to the other two joint venture parties GMK and AAA.

The second agreement, the Western Leases JV, was signed on 16 April 1985 between WMC, GMK and AAA. This joint venture covered leases M26/21, M26/31 and M26/99 with the exception of GML's 26/6752 to 6754 (held by Great Boulder Mines) within M26/21. The WLJV explored the area of the leases above 1006 metres below sea level.

Western Mining Corporation was the exploration manager of the WLJV until the termination of the joint venture and sale of M26/31.

Since 1987 expenditure exemptions have been lodged on the various leases comprising the Western Leases. No active exploration has been undertaken since WMC ceased to be the joint venture managers.

Mining Lease 26/21, 26/31 and 26/99 were conditionally surrendered in favour of M26/316 which was applied for on 2 March 1989. M26/316 was subsequently granted on 22 January 1990.

3.

LOCATION

Mining Lease 26/316 lies within the limits of the City of Kalgoorlie-Boulder. The bulk of the lease area is covered by urban development.

4. GEOLOGY

Mining Lease M26/316 is located within the Kalgoorlie Syncline on the western sheared limb of the Kalgoorlie Anticline (Plan No 1). Except along the northeastern boundary of the lease, bedrock lithologies are not well exposed with much of the area of the lease being soil covered.

Regional mapping shows that the lease is underlain by the bottom units of the Archaean age supracrustal rocks within the Kalgoorlie-Boulder areas as recognised by Keats (1987). These units from east to west (stratigraphically highest to lowest) and their approximate thicknesses are as follows:

Rock Unit	Approximate Thickness (m)	Lithology
Paringa Basalt and massive, interflow sediments	400-800 1-3	Basalt, pillowed and highly magnesian affinity; pelitic, graphitic sediments.
Williamstown Dolerite	100-300	Layered ultramafic to mafic sill, peridotite to quartz gabbro, intruded at base of, or within Paringa Basalt.
Kapai Slate	1-3	Chert; silicified graphitic shale with or without exhalite.
Devon Consols Basalt	60-250	Basalt, pillowed and massive, highly magnesian affinity; in places includes basal dolerite.
Hannan Lake Serpentinite	>300	Ultramafic volcanics, peridotite to komatiite.

From Keats, 1987.

The Golden Mile Dolerite, the main host for the Kalgoorlie style of gold mineralisation, lies just to the northeast of the M26/316 lease boundary within adjoining lease M26/65.

Joint venture diamond drill holes within the townsite intersected diorite and diorite porphyry in the southwest corner of M26/316 (Plan No 2). The lithologies remain uncorrelated with other units in the Kalgoorlie-Boulder sequence.

WMC's interpretation of the geology within the lease (Plan No 2) indicate the Hannans Lake Serpentinite has been fragmented and dextrally displaced in a number of fault blocks formed by the northerly trending Maritana and the main southeasterly trending Boulder Fault.

The closely spaced, northerly trending Mystery, Charlotte, and Reward Faults lie just outside the northwestern extremity of M26/316. The northerly curving southeasterly trending Golden Dyke Fault cuts the extreme southeastern portion of lease M26/316.

The main Golden Mile Fault lies to the east of the lease boundary. The Golden Mile Fault which follows the axis of the subsidiary Kalgoorlie syncline separates the Eastern and Western Lode Systems. These lode systems were tested in deep drilling in the WDJV.

5. WESTERN DEEPS JOINT VENTURE

Two deep diamond drill holes were completed under the Western Deeps JV and its predecessor the Western Deeps Consortium . Drill Hole WD 1 (Plan No 1) was drilled from the 28th level at the Enterprise Shaft in 1966. WDD 3 was drilled from surface 500 metres further south in 1982. A third drill hole was proposed but was never drilled.

Both diamond drill holes were designed to test the Western Lode System on the southwestern side of the Golden Mile Fault.

Both drill holes were collared off the area of Mining Lease 26/316. Drill hole WD 1, collared on a southwesterly azimuth, on adjoining lease M55 passed into the old M26/31 portion of M26/316 at depth. Drill hole WDD 3 collared on a northeasterly azimuth remained within lease M55.

5.1 Results

Both drill holes were successful in testing the Western Lode System in the Golden Mile Dolerite on the southwestern side of the Golden Mile Fault. Drill hole WDD 3 continued through the Golden Mile Fault to test the Eastern Lode System within the Golden Mile Dolerite. At the depth of intersection, however, only the underlying Paringa Basalt was intersected on the northeastern side of the fault.

The drill holes demonstrated the continuity of the Golden Mile Dolerite on the west limb of the Kalgoorlie Syncline. The Golden Mile Dolerite units generally associated with mineralisation (Units 8 and 9) were found to be thinner and less altered than in the general mine areas.

Neither drill hole intersected a mineable ore intersection or major lode structure. WDD 3 was interpreted to be peripheral to a hydrothermal system on the basis of trace element geochemistry and the presence of a low Au and As halo.

6. WESTERN LEASES JOINT VENTURE

The bulk of the exploration under the Western Leases Joint Venture was percussion drilling directed mainly at alluvial deep lead gold mineralisation and secondarily at supergene gold mineralisation. Most drill holes were terminated just below the depth of oxidation/weathering. A further ten diamond holes were drilled to test for primary mineralisation in supergene? anomalous areas, to test magnetic anomalies, and for geological information.

6.1 Percussion Drilling

Most of the percussion drilling was confined to non urbanized areas along the northeastern boundary of M26/316 within that portion of the lease underlain by the Paringa Basalt and the Williamstown Dolerite (Plan No 2).

A total of approximately 180 drill holes comprising mainly RC with possibly 31 RAB convention percussion drilling were concentrated at the Ironside and Adeline Leads and in the Golden Key areas within the non GMK portion of the Western Leases area. A further 52 RC holes were completed within the GMK area. This latter drilling was concentrated in the area adjacent to the Golden Key and at the southeastern end of the GMK area. There was only limited drilling on the Ivanhoe Lead.

Of the 180 percussion holes within the main lease area, only 13 RC drill holes have been completed at other locations within the Kalgoorlie-Boulder townsite.

6.2 Alluvial Leads

Percussion drilling has been successful, to varying degrees, in locating both alluvial as well as supergene mineralisation within the areas drilled.

6.2.1 Ironside

RC drilling has outlined a resource of 110,000 tonnes consisting of an upper Eocene paleochannel hosting a probable resource of 45,000 tonnes at 5.4 g/t Au and a lower supergene zone comprising 66,600 tonnes at 5.3 g/t Au within oxidized Williamstown Dolerite. Ore widths vary from 2 to 10.5 metres but average 4.5 metres. Paleochannel mineralisation varies between 20-25 metres depth and the supergene mineralisation between 40 and 55 metres depths.

The Ironside alluvials lie between the State Battery on the eastern boundary and Federal Road some 200 metres away. The southwestern end of these leads is beneath a single row of residences on the east side of Federal road. Four RC holes west of the road failed to locate extensions of the alluvial or supergene mineralisation.

The Ironside Lead and supergene mineralisation lie partially beneath State Battery Reserve 22126. The surface rights to 30 metres depth in the reserve have been granted to a third party. This together with the fact that the mineralisation extends under occupied dwellings makes mining of the Ironside Lead uneconomic at the present time.

6.2.2 Adeline Deep Lead

Drilling results on the Adeline Deep Lead have generally been unencouraging. Results thus far suggest that the alluvial paleochannels contain little or no gold.

Some supergene gold mineralisation at depths of 60 to 70 metres with values of between 3 to 22 g/t over one to two metre widths have, however, been obtained. Drill results within the Kalgoorlie College ground suggested a possible continuity of values over a distance of at least 120 metres.

6.2.3 Golden Key

RC drilling in the Golden Key area has confirmed the presence of gold in both alluvial and in the supergene zone of the underlying Williamstown Dolerite. Results in the dolerite are considered to be related to a siliceous phase.

Golden Key values within GMK lease 26/5452 and lease M26/21 tend to be erratic with the better values showing a lack of continuity between drill holes. Values of up to 7.8 g/t over one metre in dolerite and to 3 g/t over a metre in alluvials were obtained in the drilling.

6.2.4 GMK Southeast End

As is the case in the Golden Key area, gold values at the southeastern end of the GMK leases tend to be sporadic in both the alluvials and the supergene zone.

In contrast, however higher gold results with values up to 5 to 10 g/t over one metre occur within wider intersections containing above background values.

6.2.5 Other Alluvials

Short traverses of RC holes were completed in three areas within the Kalgoorlie-Boulder townsite in: Dart Street, the Clancy Street-North Terrace area and Marmion Street.

In addition to testing for alluvial gold mineralisation, the Dart Street and Clancy Street traverses tested the area of the Boulder Fault. Hole JRC 133 just west of the Boulder Fault obtained a 4 metre intersection of 3.08 g/t gold within oxidized sediments interpreted to be the Black Flag Beds. A one metre intersection of 9.70 g/t gold was obtained in hole JRC 133 near the base of the alluvials. Neither of these two zones extend to adjacent holes in North Terrace or northeastwards to nearby RC holes in Clancy Street.

There are no anomalous gold values in the alluvials or the supergene zone in the Dart Street traverse.

6.3

DIAMOND DRILLING

Ten diamond drillholes WLD 1 to 10 varying in depth from 140 metres to 390 metres were completed by the joint venture within the Western Leases. The bulk of these drillholes (WLD, 1, 2, 3, 5, 6, 9 and 10) are within the Williamstown Dolerite. These holes were apparently intended to test for gold mineralisation associated with siliceous and granophyric zones.

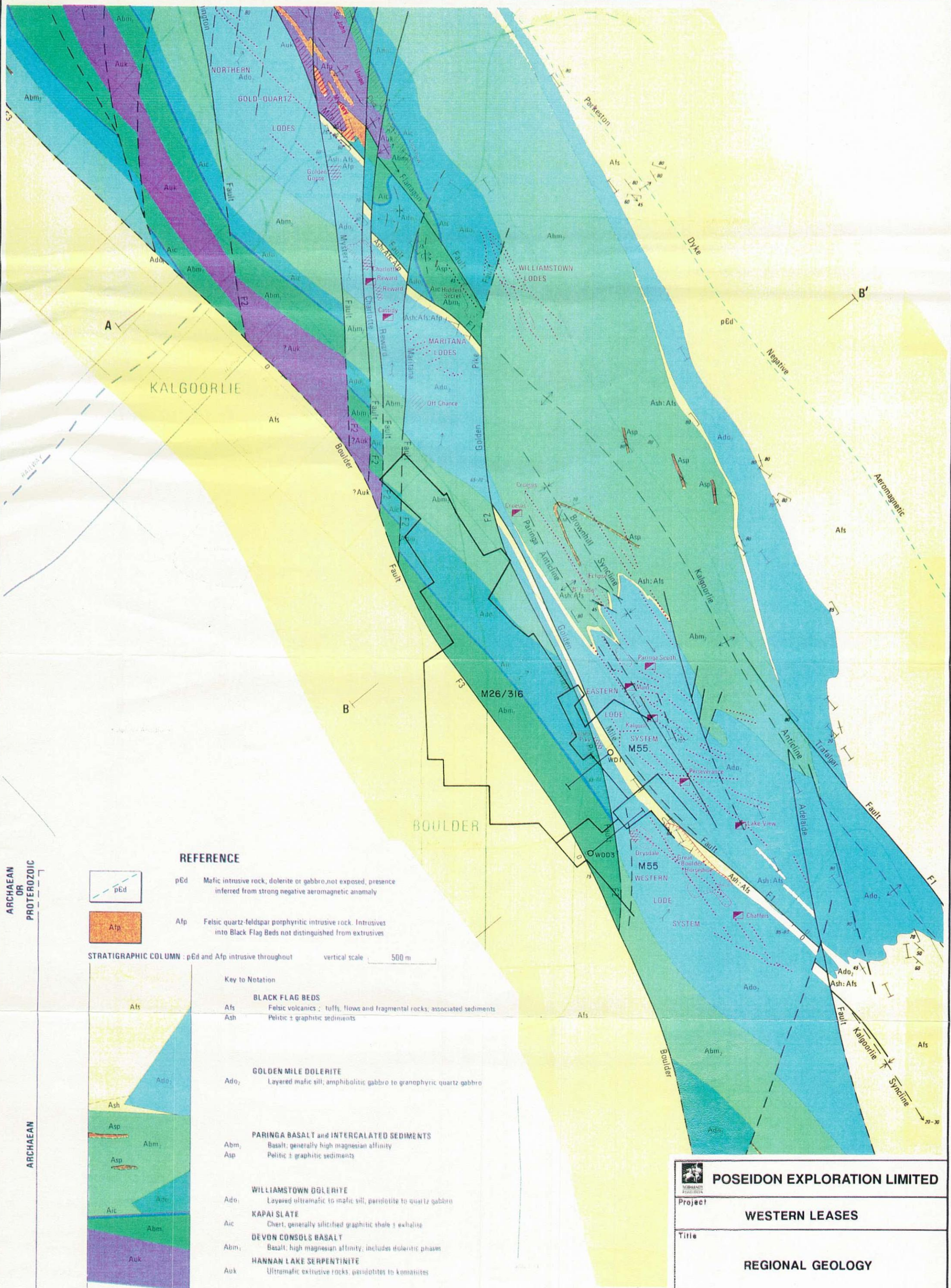
Three diamond drill holes (WLD 4, 7 and 8) were completed within the townsite area. Drill hole WLD 4 intersected a gold bearing quartz vein system. Drill hole WLD 8 was intended to determine the extent of the vein system while WLD 7 was intended to determine the extent of the diorite.

Drill holes WLD 2, 4, 7 and 8 were also targeted to test magnetic anomalies.

Only short intervals of gold mineralisation were intersected. Drill holes WLD 6 to 10 for example obtained isolated intervals of 0.5 metres to 1 metre of 1 to 2 g/t.

REFERENCES

Keats, W, 1987. Regional Geology of the Kalgoorlie-Boulder Gold Mining District, GSWA Report 21.



ARCHAEAN OR PROTEROZOIC

ARCHAEAN

REFERENCE

pEd Mafic intrusive rock, dolerite or gabbro, not exposed, presence inferred from strong negative aeromagnetic anomaly

Afp Felsic quartz-feldspar porphyritic intrusive rock. Intrusives into Black Flag Beds not distinguished from extrusives

STRATIGRAPHIC COLUMN : pEd and Afp intrusive throughout vertical scale 500 m

Key to Notation

BLACK FLAG BEDS
Afs Felsic volcanics: tuffs, flows and fragmental rocks; associated sediments
Ash Pelitic & graphitic sediments

GOLDEN MILE DOLERITE
Ado₂ Layered mafic sill; amphibolitic gabbro to granophyric quartz gabbro

PARINGA BASALT and INTERCALATED SEDIMENTS
Abm₂ Basalt; generally high magnesian affinity
Asp Pelitic & graphitic sediments

WILLIAMSTOWN DOLERITE
Ado₁ Layered ultramafic to mafic sill, peridotite to quartz gabbro

KAPAI SLATE
Aic Chert, generally silicified graphitic shale & exhalite

DEVON CONSOLS BASALT
Abm₁ Basalt; high magnesian affinity; includes doleritic phases

HANNAN LAKE SERPENTINITE
Auk Ultramafic extrusive rocks, peridotites to komatiites

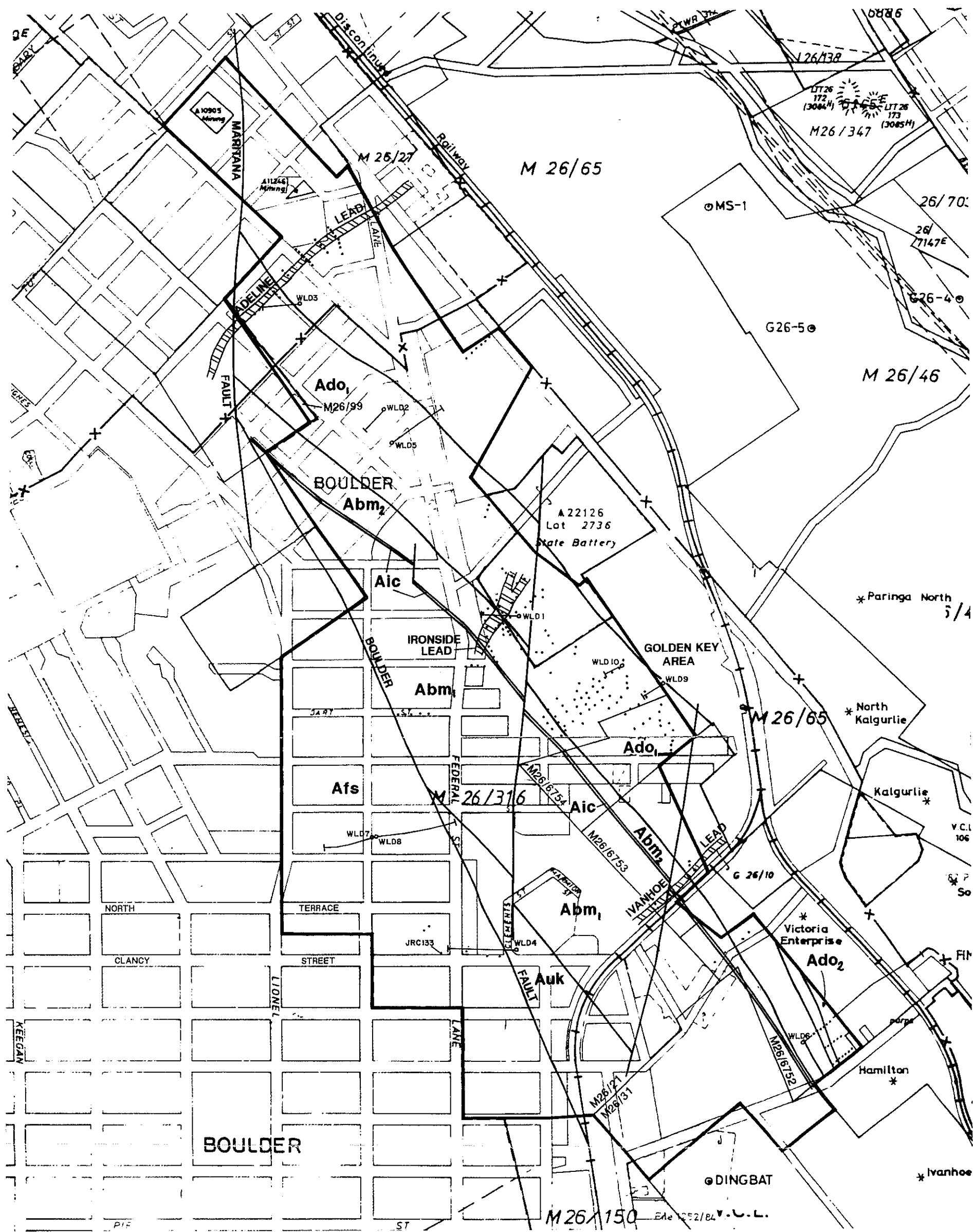
POSEIDON EXPLORATION LIMITED

Project **WESTERN LEASES**


Title **REGIONAL GEOLOGY**

Geology from Keats 1987

Author J.M.	Date 9/91	Scale 1:25 000
Drawn D.B.G.	Office PER	Revised Date
Drawing No. WST/2/08	Fig. No. PLAN 1	



- Ado₂ Golden Mile Dolerite
- Abm₁ Devon Consuls Basalt
- Abm₂ Paringa Basalt
- Ado₁ Williamstown Dolerite
- Afs Diorite
- Aic Kapai Slate
- Auk Hannans Lake Serpentinite
- Percussion (RC) drillhole
- Diamond drillhole

 POSEIDON EXPLORATION LIMITED			
Project			
WESTERN LEASES			
Title			
INTERPRETED GEOLOGY AND DRILLING			
Author	JM	Date	9/91
Drawn	D.B.G.	Office	PER
Drawing No.	WST/2/09		Fig.No
		PLAN 2	