EL7038 "PLATEAU POINT"
MT. SHOOBRIDGE AREA, NT
ANNUAL AND FINAL REPORT
YEAR ENDING 12 NOVEMBER 1991

Distribution:

NTDME, Darwin
Dominion Mining Ltd, Darwin
Dominion Mining Ltd, Perth

DD/AD52/08/570/143

EL7038
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1. SUMMARY

This report details the 1990/91 exploration activities completed on EL7038 in Year 1 of tenure, ending 12 November 1991.

The licence, comprising six (6) blocks was granted to Dominion Gold Operations Pty Ltd on 13 November 1990 for a period of four (4) years. Following consolidation of tenements by Dominion EL7038 is now held under SEL7564, granted 8 November 1991 for a period ending 12 November 1994.

Exploration activities during Year 1 consisted of literature review, airborne geophysical interpretation of Government commissioned survey, acquisition of new geophysical data, aerial photography interpretation, stream sediment sampling and regional mapping at 1:25,000 scale.

Airesearch Pty Ltd, under contract to Dominion Gold, completed an aerial photography programme (at 1:25,000 scale) in April 1991 which covers this licence.

Exploration within EL7038, now held under SEL7564, has indicated the presence of:

(i) a complex magnetic signature within the SE corner tenement

(ii) favourable structural settings and

(iii) above background Au and base metal stream sediment anomalies
2. LOCATION AND TENURE

EL7038 is located 170km south of Darwin, approx. 10km southwest of the Cosmo Howley Mine and is located on the Fenton 1:50,000 (14/5-1) sheet. The tenement lies between latitudes 13°35'S and 13°38'S and longitudes 131°14'E and 131°16'E. See Figs. 1 and 2.

Access is via the Stuart Highway, sealed Dorat and Ooloo roads and Douglas Station tracks. Climatically Plateau Point experiences a wet season (November to April) and a dry season (May to October). Average annual rainfall is 1249mm and the mean temperature is approximately 28°C.

Local relief is generally rugged, ranging from 110 to 280m above sea level, with Plateau Point (256m) approximately 500m to the east.

The licence was granted to Dominion Gold Operations Pty Ltd on 13 November 1990 for four (4) years. Consolidation of Dominion tenements in 1991 resulted in EL7038 now forming part of SEL7564 granted on 8 November 1991. Cessation of EL7038 was effective 9 November 1991.
3. **GEOLOGY**

3.1 **Regional Geology**

The geology of the Pine Creek Basin has been well documented by the BMR [Wallace et al (1985) Needham, et al (1980)].

The Early Proterozoic sequence was deposited by alternating shallow marine and continental environments in an intracratonic basin setting. Following intrusion by conformable sills, a major period of deformation and regional metamorphism, related to granite intrusion, produced a series of tight, upright folds.

*Early Proterozoic stratigraphy of the Pine Creek/Adelaide River area is listed in Table 1.*

3.2 **Local Geology**

Regional mapping of the Shoobridge–Fenton tenements at 1:25,000 scale is in progress with preliminary data indicating a series of N-NW trending fold axes within Burrell Creek Formation sediments with a strong axial planar slaty to phyllitic cleavage. On the eastern edge of the tenement this package is fault bounded with a thin sliver of South Alligator Group sediments and minor Wildman Siltstone to the east of this major fault.

Sediments to the west of the fault have undergone albite–epidote hornfels contact metamorphism while to the east, increased hornblende hornfels and sillimanite hornfels contact metamorphism adjacent to the Fenton Granite contact has been identified.

*Near flatlying Palaeozoic and Mesozoic strata, the latter forming remnant cappings and mesas on older Proterozoic strata occurs in the NW corner of the tenement. See Fig. 3 for geology.*
STRATIGRAPHIC COLUMN

UNDIFFERENTIATED LATERITISED SEDIMENTS

CRETAEOUS

CAMBRIAN-ORDOVICIAN

MIDDLE PROTEROZOIC

Daly River Group
- Oollo Dolostone
- Jinduckin Formation
- Tindal Limestone
- Jindare Formation

Tolmer Group
- Hinde Dolomite
- Stray Creek Sandstone
- Depot Creek Sandstone

Cullen Granitoids
Composite I-type Batholith (1840-1780 Ma)
- McMinns Bluff Granite
- Fenton Granite
- Shoobridge Granite

Zamu Dolerite (? Mauda)

Finniss River Group
- Burrell Creek Formation

- Mt. Bonnie Formation
- Gerowie Tuff
- Koolpin Formation

- Wildman Siltstone
- Mundogie Sandstone

Namoona Group
- Masson Formation

South Alligator Group

Early Proterozoic

Mt. Partridge Group

Cullen Mineral Field
Stratigraphic Relations

PROJECT
STATE N.T.

Dominion Mining Limited

ORIGINATOR F.F. Date 5/91 DRAWN R.L. Date 5/91

SCALE

No: TABLE 2 PLAN NO. 2A - G100
4. 1990/1991 WORK PROGRAM

4.1 Aerial Photography

During April 1991, Airesearch Mapping Pty Ltd of Darwin flew the Shoobridge–Fenton tenements held by Dominion and produced sets of 1:25,000 scale air photos. The relevant air photo runs are AM529, Runs 7 (063–66) and 8 (075–80) at 1:25,000 scale.

4.2 Geophysics

Interpretation of magnetic and radiometric data for the Tipperary (5170) 1:10,000 Geological Sheet indicates strong magnetic highs trending NW, representative of steeply dipping Proterozoic sediments. EL7038 lies on the edge of this feature with the broad magnetic low to the east representing the Fenton Granite.

4.3 Field Work

A regional stream sediment sampling programme was conducted over the Shoobridge–Fenton tenements held by Dominion.

Stream sediment samples were collected from selected sites within drainages averaging 4km$^2$. Two sample sizes were collected;

i) -20# silt fraction, 2–3kg, sieved to -200 # in the laboratory.

ii) pan concentrate, approx. 100g.

Samples were despatched to Classics, Darwin where they were analysed by the following methods;

Au: solvent extraction, graphite furnace AAS
Cu, Pb, Zn, As, Ag, Ni, Mn, Fe: low detection flame AAS
U, Th: ICP-MS

Sample location and assay results are shown in Fig. 4.

Compilation of 1:25,000 scale regional mapping is in progress with initial data concurring with previous NTGS/BMR mapping.
5. CONCLUSIONS AND RECOMMENDATIONS

During 1990/91, review of literature and government geophysical data, regional mapping at 1:25,000 scale and stream sediment sampling has indicated the presence of favourable structural targets and above background Au and base metal anomalies.

Follow up field exploration of these anomalies, now held within SEL7564, is required.
6. **EXPENDITURE**

Expenditure covenant for Year 1 was $20,000.

Expenditure for EL7038, recorded for the 12 months ending 31 October 1991 as given below, is $26,629.

The Year 1 Exploration expenditure exceeds the covenant of $20,000 reflecting the relatively high cost of acquiring airborne geophysical data, its subsequent interpretation by consultants and computerization and drafting of this data.

**EL7038 EXPENDITURE YEAR 1 TO 31 OCTOBER 1991**

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<td><strong>TOTAL</strong></td>
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7. REFERENCES

KRUSE, P D, WHITEHEAD, B R and MULDER, C A (1990)
"Tipperary 5170. 1:100,000 Geological Map Series Explanatory Notes."
Northern Territory Geological Survey

"Regional Geology of the Pine Creek Geosyncline" in proceedings of the
p1–22.

"The Geology of the McKinlay River Area, Northern Territory, Australia". Bureau of
Mineral Resources. 1:100,000 Geological Sheet 5271.
GEOLOGY

Pfb  Barrel Creek Formation
Pso  Mt. Bonnie Formation
Pag  Garowie Tuff
Psk  Koelpin Formation
Pdz  Zamu Dolerite
Ppw  Widman Sillstone