ABERFOYLE RESOURCES LIMITED
ACN 004 664 108
Exploration Division

IMAGED

EXPLORATION LICENCES 9494, 9495 and 9496
(Bauhinia Downs & Walhallow 1:250,000 sheet)

ANNUAL EXPLORATION REPORT

to October 10, 1998

and FINAL REPORT

Title holder: ABERFOYLE RESOURCES LIMITED

Distribution:

1. NT DME
2. Aberfoyle Resources Ltd, Melbourne
3. Aberfoyle Resources Ltd, Townsville
4. Noranda Mining & Exploration, Inc. (Toronto)

Report No. NT0039 -8/98

Compiled by:

R. L. HENRY

Issued by:

A. M. HESPE
August 1998
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1. SUMMARY

Exploration Licences 9494, 9495 and 9496 were granted to Aberfoyle Resources Ltd on October 11, 1996. The tenements were pegged to explore for Zn-Pb-Cu mineralisation in the Middle Proterozoic lithologies of the McArthur Basin. The proximity to other exploration licences, similar geological setting and proposed program has led to these tenement and others in the district being explored as one block.

Areas targeted in the exploration licences lie in the middle of the exposed southern McArthur Basin. Aeromagnetic (public domain data) interpretations suggest regionally important structures occur in this area. Where these structures come into contact with favourable lithologies, such as sediments of the McArthur Group, the main ingredients for a SEDEX style base metal deposit are present. Aberfoyle’s strategy has been to explore high priority areas areas, both exposed and under cover where these ingredients are thought to occur by airborne EM. Consequently, key portions of ELs 9494, 9495 and 9496 have been included in an extensive airborne EM program.

Work completed on the tenements in the two years to October 10, 1998 has centred around this major airborne EM survey. Selected areas within the ELs were covered with EL 9494 having a total of 222 line kilometres, EL 9495 having a total of 147 line kilometres, and EL 9496 having a total of 754 line kilometres. Several highly ranked features were detected in the data. Ground follow-up was carried out on one target in EL 9494, and three targets in EL 9496, work being prohibited on a fourth target due to its coincidence with an Aboriginal site identified during an AAPA survey.

Ground-EM, soil sampling and mapping over these four targets did not produce any features worthy of further work. Assays were generally low, and EM conductors were found to be shallow surficial features.
2. **INTRODUCTION**

2.1 **Location and Access:**

ELs 9494, 9495 and 9496 are located approximately 350-375 kilometres northeast of Tennant Creek and 100-150 kilometres southwest of Booraloola in the Northern Territory (see Figure 1). Access to the tenements is by sealed road (Barkly or Carpentaria Highways then the Tablelands Highway) then by station dirt roads through Balbirini, Carpentaria Downs, McArthur River and Mallapunyah Springs Stations. Wet weather prevents access once off the bitumen.

2.2 **Tenure**

Exploration Licences 9494, 9495 and 9496 were granted to Aberfoyle Resources Ltd on October 11, 1996 for a period of six years. Sub-block details are shown on Figures 2, 3 and 4. Noranda Mining & Exploration Inc entered into an exploration joint venture with Aberfoyle Resources Limited which included ELs 9494, 9495 and 9496 on July 1st, 1997. All three licences were recommended for surrender in August, 1998.

2.3 **Regional Geology**

The tenements lie on reasonable exposure of portions of the southern McArthur Basin adjacent to the Abner Range. Mapped geology suggests Proterozoic lithologies of the McArthur Group are dominant, with some cover of Upper Proterozoic Nathan and Roper Groups and Cambrian Bukalarca Sandstone. A small portion of the EL 9496 (southwest corner) contains outcropping Tawallah Group volcanics and minor alluvial sediment cover. Parts of EL 9494 also contain Cretaceous cover.
EL9494

Three Knobs - EXTENTS

SUB-BLOCKS

Three Knobs - RETAINED SUB-BLOCKS

OTHER TENEMENTS

- Aberfoyle
  - Other companies

Aberfoyle Resources Limited
EXPLORATION DIVISION

Northern Territory
McArthur Project
EL9494 "Three Knobs"
Current Tenure - October 1997

Compiled: RHL
Printed: DJ-1200C
Office: TSV
Date: 20/10/97
Plate No. MCA-057

Workspace: THALI2 \GIS\AUWITEOMAIN\MICA\PLATES\MICA-057.WOR
EL9495

Dingo Creek - EXTENTS

Dingo Creek - RETAINED SUB-BLOCKS

OTHER TENEMENTS

Aberfoyle
Other companies

Aberfoyle Resources Limited
EXPLORATION DIVISION

Northern Territory
McArthur Project
EL9495 "Dingo Creek"
Current Tenure - October 1997

Compiled: RHL
Printed: DJ-1200C
Office: TSV
Date: 20/10/97

Plate No: MCA-058
2.4 Mineralisation

The McArthur Basin is host to numerous mineral occurrences both large and small. These range in style from replacement copper to vein-style lead-zinc to SEDEX style stratiform mineralisation. The best example of this latter style is the HYC deposit, situated approximately 75 kilometres north northeast of EL 9496.

A number of papers have been published describing all aspects of HYC geology, genesis, mineralisation, sedimentology and so on, but the most pertinent reference for exploration in Els 9494, 9495 and 9496 is by Shalley and Harvey (1992). This paper deals with the geophysical response of the HYC deposit, providing useful data to compare to what is expected to be generated from the delayed geophysically driven exploration program for these three tenements. A general reference to the HYC deposit is given in Logan, et al. (1990) and a more detailed reference on current thinking for ore genesis can be found in Hinman, et. al. (1994).
3. WORK COMPLETED

3.1 Airborne EM:

A 3333 line-kilometre airborne EM survey was completed over Aberfoyle's tenement package in the McArthur Basin in 1996. Approximately 1123 line kilometres of data was collected over Els 9494, 9495, and 9496. Full details of the survey are included in the previous Annual Reports (Hicks, 1997A-C).

One highly ranked anomaly was recognised in EL 9494. No significant anomalies were noted in EL 9495. Four anomalies were recommended for follow up in EL 9496 but one of these was found to coincide with an Aboriginal Site.

3.2 Ground Follow-up

Four highly ranked features from the airborne EM data for Els 9494 and 9496 were followed up with ground EM, soil sampling and mapping in 1997. Full details of this work are included in the previous Annual Reports (Hicks, 1997A-C).

3.3 Current Tenure Year

No field work was carried out in the current tenure year (11/10/97 - 10/10/98).
5. **CONCLUSIONS**

Exploration completed in ELs 9494, 9495 and 9496 has centred around the Geotem survey as discussed above. Five features of interest were identified in the ELs. Four of these airborne EM anomalies were followed up with ground EM surveys and soil sampling. In all cases, a shallow conductor was detected believed to be located in post Proterozoic cover. Total and partial digest soil geochemistry did not detect indications of exposed or buried stratiform Pb/Zn mineralisation.

In the light of these results and in the absence of additional bedrock conductors no further work is recommended.
6. ENVIRONMENTAL AUDIT

Field work in ELs 9494 and 9496 was limited to gridding, soil sampling and ground EM surveying. Soil sample holes were backfilled. All materials were removed at the completion of the ground EM surveys, with the exception of wooden survey pegs. Existing station tracks were used for access. No ground follow up was carried out in EL 9495.
7. **REFERENCES:**


APPENDIX 1:

Expenditure Statements for ELs 9494, 9495 and 9496
EXPENDITURE STATEMENT

Mallapunyah - EL9496

to 31/07/98

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EXPENDITURE STATEMENT

EL9495

to 31/07/98

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EXPENDITURE STATEMENT

EL9494

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