McKIMMIE CREEK EL 34/2004

ANNUAL REPORT
FOR THE PERIOD ENDING 30th JUNE 2006

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1. SUMMARY

This report details exploration work undertaken during the second year of EL 34/2004, McKimmie Creek.

Work comprised gridding, geological mapping and partial leach soil sampling across the D2 anomaly. No significant alteration or mineralisation was identified across this area. Results from the soil sampling program had not been received at the time of writing.

2. INTRODUCTION

This report details exploration work undertaken on McKimmie Creek EL 34/2004 during the second year of this tenement.

Zinifex's main target on EL 34/2004 is Devonian Pb-Zn vein mineralisation, with Cambrian VHMS systems as a more 'speculative' target, of sufficient tonnage and grade that can be used as mill feed to supplement current underground resources at the Rosebery Mine.

Zinifex plans to systematically explore the EL using a combination of geological mapping (where possible), partial leach soil geochemistry and infill time-domain ground EM, where there is no existing coverage, or the work that has been done is considered to have been ineffective.

Although close to the town of Rosebery, access to the tenement is difficult due to the Pieman River. The sole vehicular access to the tenement is an 8.1 km long 4WD track (opened –up by Comstaff in the late 1970's) that runs roughly through the centre of the tenement and originates from the Pieman Road (and associated High Voltage powerline access tracks) west of the Bastyan Dam. Several Grids were established by Comstaff between 1973 and 1985 but are now too overgrown to be of any practical use.

2.1 Attribution

The following personnel were responsible for the work carried out by Zinifex Rosebery Mine on the EL 34/2004 McKimmie Creek licence area during the reporting period:

Senior Geologist:	Andrew McNeill – Zinifex Rosebery Mine
Contract Geologist	Mick Skirka – Skirka Geological Services
Senior Field Officer	Craig Archer – CM Archer

3. LAND TENURE

EL 34/2004 McKimmie Creek (17 sq km) was granted to Zinifex on 30 July 2004 for a period of 5 years. The location of the tenement is shown on Figure 1. EL 34/2004 covers ground that fell vacant on the relinquishment of EL 21/96 (Pasminco) in February 2001, EL 29/91 (Golden Reef Enterprises) in 1996 and EL 12/194 (Bruce Resources NL) in 1995.

Land covered by EL 34/2004 is a mixture of crown land designated as Multiple Use State Forest, Unallocated Crown Land, private property, part of the Mt Kershaw Regional Reserve, MDC informal reserve and some HEC land all of which are available for exploration under the Mineral Resources Development Act 1995. The licence area excludes approximately 3.5 sq km of ML 28M/1993, which impinges on the eastern boundary of McKimmie Creek.

4. GEOLOGY

The regional geology of the tenement area is shown on Figure 2, which is largely derived from Corbett and McNeill (1986 and 1987) and Corbett (2002).

Much of the bedrock geology of EL 34/2004 McKimmie Creek is obscured by a variable thickness of Quaternary glacial cover (approximately 75% of the area of the licence). The bedrock geology of the area can be divided into three domains, separated by major north-south regional faults:

1. The Mount Read Volcanics (MRV)
2. The "Rosebery Group" or Dundas Group correlates (as defined by Corbett and Lees, 1987)
3. Correlates of the Crimson Creek Formation or the 'Cleveland-Waratah association'

The Mount Read Volcanics, pumice breccias and intrusives forming part of the CVC, occur in the far southeastern part of the licence area, lying above of the Rosebery fault, a moderately east dipping thrust. The MRV fall in the excluded part of the licence, within the Rosebery Mine Lease ML 28M/93.

West of the Rosebery Fault lies a predominantly sedimentary sequence that has been termed the 'Rosebery Group'. The understanding and correlation of the 'Rosebery Group' has undergone considerable re-interpretation since the early work by Hills in 1914 and this evolution is summarised in Green (1983) and Corbett and Lees (1987).

It is now generally agreed that the Chamberlain shale, largely outcropping in the eastward bulge of the Rosebery Fault, immediately west of the Rosebery ore body, is a west facing correlate of the White Spur Formation (i.e., the Rosebery Hangingwall sequence). The Chamberlain shale is conformably overlain by the Stitt Quartzite (including the Munro Creek formation of Green [1983]), a prominent marker unit that has fossils indicating correlation with the Cambro-Ordovician Owen Group (Corbett, 2003). The Stitt Quartzite is in turn overlain by the Westcott Argillite, a more carbonate-rich unit. Several other units, in particular the Natone Volcanics, calc-

alkaline 'Mount Read'-type volcanics, the Salisbury Conglomerate and gabbroic bodies, have unclear stratigraphic relations to the units described above; Corbett (2002, 2003) concludes that they may be older than the Owen Group correlates (Westcott Argillite, Stitt Quartzite) due to 'structural complexities', whilst Parfrey (1993) argues that the Salisbury Conglomerate is part of the Westcott Argillite and that as the Salisbury Conglomerate over lies and interfingers with the Natone Volcanics (in drill hole Rosebery 1) they are also equivalent to the Westcott Argillite (implying a Owen Group age if Corbett's correlations are correct).

The 'Rosebery Group' is bounded to the west by a major north-south fault, the 'Marionoak Fault'. To the west of this structure is a sequence of mafic greywacke and siltstone with minor tholeiitic basalt lavas that extend from south of Colebrook Hill north to the Huskisson River. These rocks were mapped, following previous workers, as Crimson Creek Formation by Corbett and McNeill (1986), however, these lithologies are now correlated with the allocthonous early-Cambrian Cleveland-Waratah Association (Corbett, 2002 and 2004).

Two mineralised zones are known from the licence area; Salmons Lode, described by A. McIntosh Reid (1918), and minor vein style Pb-Zn mineralisation at Shell's Bastyan Dam grid (Smyth, 1983), both of which occur in lithologies mapped as Westcott Argillite by MRT (a third mineral occurrence is recorded by Green and Bamford (1986), in the Pieman River downstream of the Bastyan Dam, but little information is available on this prospect).

5. PREVIOUS EXPLORATION

The area of EL 34/2004 McKimmie Creek has a long history of 'modern' exploration commencing in the 1970s, as part of EL 5/1963. In the first year of tenure previous exploration over airborne EM anomalies D1 and D2, located by Pasminco (Briggs and McNeill, 2001), has been reviewed and is summarised in Tables 1 and 2, respectively.

Table 1 Previous exploration over the area of Airborne EM anomaly D1

Reporting Period	Work Completed
1972 (Piggott, 1972)	Area covered by –80# and panned concentrate stream sediment sampling and geological mapping of creeks. Work established a geological framework for the area and located low-order stream sediment anomalies.
1973-1974 (Orr, 1974)	Stream sediment sampling was considered to have been 'inadequate' and soil sampling on a large grid was completed; Anomaly D1 lies just east of the sampled area. Recommend an airborne EM survey as the best way to test the area.
1975 (Butt, et al., 1975)	An Input EM survey was completed. Data was interpreted and several anomalies located, including anomaly CS10 a 'fair' bedrock conductor that is roughly coincident with the Pasminco D1 anomaly. No follow-up work appears to have been completed.
1983 (Dvorak, Z.)	A DIGHEM III survey was flown over the entire area of interest. Anomaly 190H was located in the area of interest and was recommended for ground follow-up.
1984 (Trussell, 1984)	The DIGHEM data were further reviewed and the 190H area recommended for ground EM follow-up, as it appeared to be a 'thick conductor'. This work does not appear to have been done.

Table 1 Previous exploration over the area of Airborne EM anomaly D1, cont..

Reporting Period	Work Completed
1998-1999 Parfrey and Simpson (1999)	Identification of priority prospect areas through the completion of an airborne EM Survey. Several discrete anomalous responses, including anomaly D1 were identified - these were considered worthy of further investigation.
2000-2001 Briggs and McNeill (2001)	Detailed interpretation of 1999 Airborne EM survey; – 6 anomalies, including D1 were recommended for follow-up, however this work was not completed.

Table 2 Previous exploration over the area of airborne EM anomaly D2

Reporting Period	Work Completed
1972 (Piggott, 1972)	Area covered by –80# and panned concentrate stream sediment sampling and geological mapping of creeks. Work established a geological framework for the area and located low-order stream sediment anomalies.
1973-1974 (Orr, 1974)	Stream sediment sampling was considered to have been 'inadequate' and soil sampling on a large grid was completed; this grid did not cover the 'marshy' area overlying anomaly D2. Recommend an airborne EM survey as the best way to test the area.
1975 (Butt, et al., 1975)	An Input EM survey was completed over the entire East Renison Block. Data was interpreted and several anomalies located, including the GAO anomaly that is roughly coincident with the Pasminco D2 anomaly.
1979 (Hall, 1979)	The GAO anomaly area was gridded (3.97km), geologically mapped, soil sampled and ground magnetic and EM (Crone shootback) surveys completed. It was concluded that there were no positive results and no further work was warranted.
1983 (Dvorak, Z.)	A DIGHEM III survey was flown over the entire area of interest. Anomalies 170F-180H and 190K were located in the area of interest and were recommended for ground follow-up.
1984 (Trussell, 1984)	The DIGHEM data were further reviewed and the 170F-180H, 190K area (Pasminco anomaly D2) recommended for ground EM follow-up.
1984-1985 (Shaw and Everett, 1985; Everett, 1985)	A 5 line km grid was established, soil sampled on the southern two lines (as most grid overlaps GAO), ground magnetic and GENIE EM surveys completed and two diamond drill holes (180H/1 and 180H/2) completed for a total of 218.5m. Both holes intersected black carbonaceous shales with little geochemical encouragement and no further work was recommended.
1998-1999 Parfrey and Simpson (1999)	Identification of priority prospect areas through the completion of an airborne EM Survey. Several discrete anomalous responses, including anomaly D1 were identified - these were considered worthy of further investigation.
2000-2001 Briggs and McNeill (2001)	Detailed interpretation of 1999 Airborne EM survey; – 6 anomalies, were recommended for follow-up. Anomaly D2 was not recommended for follow-up on the basis of the lack of geochemical response in DDH 180H/1 & 2.

Table 3 Previous exploration on EL 34/2004

Reporting period	Work Completed
2004-2005 McNeill (2005)	Previous exploration reviewed and digital data compiled.

6. WORK COMPLETED 2005-2006 REPORTING PERIOD

Work completed in the current reporting period comprised grid cutting, geological mapping and partial leach soil sampling across the D2 anomaly.

6.1 Partial leach Soil Survey

A total of 3.7 line km of new grid was cut and surveyed with GPS. The entire grid was soil sampled for partial leach geochemistry in order to test for geochemical anomalism across the D2 EM anomaly.

Randomised sample numbers were used in partial leach sampling to reduce the effect of analytical variations. The partial leach soil samples were collected at 25m intervals, at or near a grid peg, and involved digging a hole with a pick, removing the organic rich A-horizon and collecting approximately 500g of sample from the nominal B horizon. The samples were then placed in ziplock plastic bags and, once returned to the field office, the bags were stored open to prevent anaerobic reactions. When a batch of 400 samples was collected, the sample bags were sealed and the samples despatched to Amdel in South Australia for analysis by partial leach technique DL42. Elements determined were Ag, As, Au, Ba, Bi, Cd, Cu, Co, Mo, Pb, Ni, Y, Zn and the rare earth elements Ce, Eu, Gd, La and Sm. The pH of the leachate, after digestion, was also determined. Results are included as Appendices 1 and 2 and sample locations are shown on Plan 1.

Three duplicate and two standard samples were collected per 100 samples. The field duplicates were also analysed in duplicate to allow assessment of both the sample and laboratory variance. Additionally at each sample site a small amount of soil was collected and stored in a chip tray for reference and to allow soil colour to be recorded. Soil colour was assigned from a Munsell Colour chart with 19 colours and was then assigned to one of six colour groups.

The 155 samples (including duplicates and standards) collected for this program were analysed as part of batch SDS 4559.

Results from batch SDS 4559 had not been received by the time of writing and will be fully reported in next year's annual report.

6.2 Geological Mapping

Geological mapping during the reporting period comprised 3.7 line km of traverses on the D2 anomaly grid and limited mapping of creeks that cross cut the grid.

Outcrop on the grid is poor averaging <5% and bedrock is locally obscured by fluvioglacials. Outcrop geology is presented as Plan 2.

Interpreted Cambrian lithologies are restricted to the southern part of the grid and comprise two main lithological units.

Laminated Black Shale:

The western part of line 3200N is underlain by a bluish grey, laminated to very thinly bedded, siliceous siltstone to black shale. This unit is in part graphitic / carbonaceous with minor carbonate veining and rare qtz-sulphide (pyrite?) veins. This unit also contains minor interbedded, very fine grained, micaceous sandstone with weak fe-oxide staining. This unit is interpreted to correlate with carbonaceous 'pelites' reported by Everitt (1985) in drillholes 180H/1 and 180H/2.

Fossiliferous Dolomitic Sandstone/Limestone:

Located to the immediate east of the black shale unit is a light greenish grey to bluish grey, fine grained to medium grained, fossiliferous, calcareous or dolomitic sandstone/limestone. This unit has a distinct nodular (ooidal?) crystalline texture with sporadic unidentified fossils. The relationship between this unit and the black shale unit to the west is unknown.

7. CONCLUSIONS & RECOMMENDATIONS

Limited geological mapping across the D2 anomaly area suggests that the EM anomaly is likely to be sourced by carbonaceous to graphitic black shale. Further work in this area is dependant upon results from the partial leach soil sampling program.

During the third year of the licence it is recommended that:

- Data compilation, particularly from the northern part of the tenement, be completed.
- Small grids across Pasminco's D1 AEM anomaly and the Bastyan Dam grid be established. These grids should be partial leach soil sampled, and, should there be sufficient encouragement, be covered by ground EM.

8. EXPENDITURE

Expenditure on EL 34/2004 McKimmie Creek during the 11 month period ending 30 June 2006 was **$17,068.72**. A detailed breakdown of this expenditure is presented below.

Personnel	$ 2,614.27
Travel & Accommodation	$
Consultants & Contractors	$ 4,714.81
Geological Consultants	$ 440.00
Geochemical Consultants & Assays	$
Geophysical Surveys & Contractors	$
Drilling	$
Stores & Supplies	$ 1,146.13
Vehicles Plant & Equipment	$ 3,561.41
Land	$ 2,239.40
Computing	$
Office	$ 801.00
Administration Fee	$ 1,551.70
Total Tenement Expenditure	**$17,068.72**

9. KEYWORDS & LOCALITY

Keywords

Previous Exploration, GAO grid, 180H grid, geophysics – Airborne EM, Partial Leach Geochemistry, Geological Mapping, Renison East, D2 EM Anomaly.

Locality

1:250,000	QUEENSTOWN SK55-5
1:100,000	SOPHIA 8014; PIEMAN 7914
1:25,000	ROSEBERY 3637

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