



BULGOBAC (Boco Siding) EL 4/2000

**ANNUAL REPORT
FOR THE PERIOD ENDING 29th JUNE 2005**

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1. SUMMARY

This report details exploration work undertaken on EL 4/2000 Bulgobac during the period 2 May 2004 to 29 June 2005, the fifth year of this tenement. Work on the licence has focussed on exploring the northeast striking contact between the Central Volcanic Complex and Southwell sub-group correlates, along a strike length of some 9.6 km, for Rosebery and Hellyer style VHMS deposits. The work completed comprised:

- partial leach (PL) soil sampling over the Hollway area and the central part of the tenement (404 samples);
- infill geological mapping on the Hollway grid and between the Hollway area and the Sawmill Creek anomaly;
- diamond drilling at Sawmill Creek and Hollway (1763m);
- a surface EM survey between the Hollway area and the Sawmill Creek anomaly and DHEM surveys at the Sawmill Creek anomaly;
- whole rock geochemistry on selected samples from current and historic drilling.

At the Hollway prospect, drillhole BOC3 intersected 4.1m @ 11.3% Zn, 4.5% Pb and 70 g/t Ag from 464.9m (including 1.0m @ 34.6% Zn, 14.8% Pb and 235 g/t Ag from 467.0m) associated with qtz-sericite-carbonate altered felsic volcanics.

Drilling at the Sawmill Creek anomaly intersected trace to minor base metal mineralisation associated with weakly altered qtz-lithic sandstones correlated with the Black Harry Beds.

Following the encouraging result from BOC3, an application for a one-year extension of the license was submitted in June 2005.

2. INTRODUCTION

This report details exploration work undertaken on the Bulgobac EL 4/2000 during the period 2nd May 2004 to 29th June 2005, the fifth year of this tenement.

Access to the tenement is via the Murchison highway and Emu Bay Railway, in the east, and on the Boco Road, cutting through the centre of the tenement. A network of 4WD tracks, developed for logging and mineral exploration, extend from these main access points and provide excellent access to the majority of the area of interest.

Zinifex's main target on EL 4/2000 is Cambrian Rosebery or Hellyer type Zn-Pb-Cu-Au-rich VHMS mineralisation hosted by the Mount Read Volcanics (MRV). The tenement covers a generally NE striking section of the MRV including the contact between the Central Volcanic Complex (CVC) and the overlying Southwell Subgroup (or lower Tyndall Group), separated in part by the Hollway Andesite (correlates of the Que-Hellyer Volcanics). Recent interpretations suggest that all economically significant VHMS Pb-Zn mineralisation in the Central Mt Read Belt occurs at this stratigraphic level and that as such the area of EL 4/2000 warrants detailed exploration. Despite a long exploration history (see Section 5) much of the prospective contact zone has not been adequately tested by modern deep search geophysical or geochemical techniques, a result of focussing on targets in the CVC (the Boco Alteration Zone) and the presence of thick glacial cover (to >100m in some areas). Zinifex are systematically exploring the EL using a combination of geological mapping, partial leach soil geochemistry and infill ground time-domain EM, where there is no existing coverage, or the work that has been done is considered to have been ineffective.

2.1 Attribution

The following personnel were responsible for the work carried out by Zinifex Rosebery Mine on the EL 4/2000 Bulgobac licence area during the reporting period:

Senior Geologist:	Andrew McNeill – Zinifex Rosebery Mine
Contract Geologist:	Mick Skirka – Skirka Geological Services
Contract Geophysicist	Jovan Silic – Jovan Silic and Associates

3. LAND TENURE

EL 4/2000 Bulgobac (24 sq km) was granted to Pasminco Australia Limited on 16 June 2000 for a period of 5 years. The location of the Tenement is shown on Figure 1. EL 4/2000 covers ground that fell vacant on the relinquishment of EL's 24/95 (Aberfoyle) in February 1998, EL 47/96 (RGC) in September 1998 and the partial relinquishment of Pasminco's EL 44/88 in November 1998. During 2001 Pasminco applied for two blocks of vacant ground adjoining EL 4/2000; ELA 9/2001 (5 sq km) and ELA 10/2001 (4 sq km). These areas were granted on 9th August 2001 and were immediately incorporated into an enlarged EL 4/2000 (33 sq km). On April 5th 2004 the name of Pasminco Australia Limited was changed to Zinifex Australia Limited as part of a float of some assets. An application for a one-year extension of the license was submitted in June 2005.

Land covered by EL 4/2000 is all crown land designated as State Forest, informal reserves, parts of the Sawmill Creek, Boco Creek, Burns Peak and Mackintosh Forest Reserves and some HEC land all of which are available for exploration under the Mineral Resources Development Act 1995.

4. REGIONAL GEOLOGY

Basement in western Tasmania is Precambrian age, comprising predominantly greenschist facies meta-sediments with minor basalts and dolerites. Higher-grade amphibolite and eclogite facies are also present within the Precambrian. This Precambrian basement is exposed to the east of the Bulgobac licence (Figure 2).

Cambrian volcanism and sedimentation developed on this Precambrian continental crust, and is subdivided into the Eco-Cambrian tholeiitic Crimson Creek Formation (CCF) and, the mid to late Cambrian predominantly calc-alkaline, Mt Read Volcanics (MRV).

The CCF was deposited in shallow but rapidly subsiding basins (Brown, 1986). The CCF consists of basaltic lavas and volcanoclastics, turbidites, carbonates, chert and minor evaporites. This formation is exposed west of the licence.

Ultramafic cumulates and volcanic equivalents were thrust onto the CCF in the mid Cambrian (Crawford and Berry 1992). These rocks generate strong magnetic anomalies and outcrop within the Huskisson Syncline, to the west of the licence. The ultramafics are interpreted at depth beneath the licence (Leaman, 1992).

The MRV form a 200km long by 20km wide north-south trending belt along the eastern side of the Dundas Trough, adjacent to and in some areas on lapping and intruding the Precambrian basement. The volcanics include intermediate to felsic lavas, sub-volcanic porphyries and granites, volcanoclastics and basement-derived sedimentary rocks. The

MRV host six economically significant volcanic hosted massive sulphide deposits.

Equivalents of the MRV underlie the entire Bulgobac licence, and vary from massive felsic lavas, volcanoclastics and subvolcanic intrusives of the Central Volcanic Complex (CVC) in the east and south. This package is overlain, in part, by a thin micaceous greywacke and shale sequence, correlated with the Animal Creek Greywacke, and the Hollway andesite, a package of feldspar-phyric dacitic to basaltic lavas and hyaloclastitic lava breccias with a geochemical signature suggesting a correlation with the Que-Hellyer Volcanics (Coutts, 1990).

Poorly mapped mixed provenance fine to coarse grained sediments (including volcanic quartz-rich volcanoclastics) with minor quartz-feldspar porphyry intrusives and lavas, probable correlates of the Southwell Subgroup (or lower Tyndall Group) overly the Hollway Andesite and define a synclinal structure in the north and west of the tenement (Reid, 1990; McKibben, 1993).

Regional structures that subdivide the MRV are the Rosebery Fault, west of the licence, and the Henty Fault, which is located 5km east of the licence.

Cambrian volcanism and sedimentation was followed by predominantly basement derived late Cambrian to Devonian age sedimentation, which includes siliciclastic conglomerate, sandstone and limestone. None of these sequences occur within the licence.

At least two phases of regional compression were associated with the mid Devonian Tabberabberan Orogeny (Keele, 1991). The development of folding, cleavage and regional thrusts in lower Palaeozoic rocks were associated with this event. Fold trends in the licence are N to NE.

Deformation was followed by the extensive intrusion of Devonian to Carboniferous granitoids. The Meredith Granite and associated hornfels aureole outcrop west of the licence area (Brown, 1986). The Devonian granites are associated with carbonate replacement Sn mineralisation at Renison Bell and Mount Bischoff, and the Pb Zn Ag vein deposits of Zeehan and, possibly, the Tullah Fields.

After substantial erosion of this terrane extensive Tertiary flood basalts and subvolcanic sediments were deposited. Remnants of the basalt flows are preserved to the north of the licence. In the Quaternary extensive unconsolidated glacial and fluvioglacial deposits up to >100m thick accumulated in the Boco Plain area and the Valley of Boco Creek to the west (Augustinius and Nichol, 1999). These deposits now obscure much of the Palaeozoic geology in the eastern and central part of the tenement.

No economically significant mineralisation is known from the licence area, however a large sericite-pyrite alteration zone has been located as isolated outcrops, and by drilling, on the glacially covered Boco Plain. This zone, the Boco Alteration Zone has been extensively explored, as discussed below.

5. PREVIOUS EXPLORATION

The area of EL 4/2000 Boco Siding (Bulgobac) has had a long history of modern exploration, most of which has been completed in two areas; the Boco Alteration Zone and the Hollway Andesite. In this report the term Hollway Andesite Prospect will be used for the Hollway andesite itself and the volcano-sedimentary sequence overlying the andesite and forming the syncline east of the Pinnacles Rhyolite. Outside these areas exploration has largely been restricted to geological mapping, at various scales, and stream sediment sampling. The tenement area has also been mapped at various scales by MRT (Barton et al., 1966; Collins, 1981; Corbett and McNeill, 1986). Tables 1 and 2 summarise the previous exploration over the Hollway Andesite (including the Summit Prospect) and the Boco Alteration Zone, respectively. Work on the Boco Alteration Zone has also been summarised in detail by Herrmann (in Elliston (1998a)) and Taylor (1987). Table 3 summarises work completed on EL 4/2000 by Zinifex/Pasminco.

Table 1 Previous exploration over the Hollway Andesite Prospect on EL 4/2000

Year & Reference	Activities
1975 Butt et al. (1975)	Completion of an Airborne EM survey (INPUT); no significant anomalies.
1977-1978 Hall (1978)	Establishment of the EAB grid (two lines of which extend onto the area of EL 4/2000); geological mapping, A0 soil sampling, SP and ground magnetics.
1978 Beamish (1978)	Orientation -80# stream sediment survey over the EAA grid area.
1978-1979 Hall (1979)	The EAA grid was cut (22.8km) north of the Boco Road. Mapping, rock-chip sampling, A0 horizon total digest soil sampling (1024 samples) and a ground magnetic survey were completed; no significant anomalies were located.
1980 Hall and Pigott (1980)	Extend EAB grid east by three lines; geological mapping, ground magnetics, SP and IP, A0 soil sampling (listed as planned work – can't find report of this work at MRT, but appears to have been completed).
1981-1982 Anderson (1982a)	EAB grid extended further to NW (ECE extension Grid), soil sampling (C Horizon), and geological mapping.
1983 Shaw (1983)	Drilling of DDH EAB4 (178.0m); results not reported in detail.
1983 Dvorak (1983)	Completion of DIGHEM III survey over area. No outstanding EM responses were located (Trussell, 1984)
1985-1986 Anon (1986)	Line cutting preparatory to UTEM survey, stream sediment sampling, minor rock-chip sampling.
1986-1987 Anon (1987)	Review of previous soil geochemical coverage; line cutting, UTEM III survey (no significant anomalies) and interpretation of stream sediment sampling (BCL & -80#).
1987-1988 Anon (1988)	Completion of UTEM III survey – no significant anomalies
1988-1989 Rosenhain and Mathison (1989)	“limited field observations”; re-logging DDH EAB4; description of geophysical and geochemical anomaly tested by EAB4.
1989-1990 Lorrigan (1990)	Regional aeromagnetic and gravity surveys and preliminary interpretation; collection of magnetic susceptibility data from drill core; rock-chip sampling along the Boco Road and other tracks; two lines of wacker sampling (and 65.5m of DDH) over glacials south of the Boco Road

Table 1 Previous exploration over the Hollway Andesite Prospect on EL 4/2000 cont..

Year & Reference	Activities
1990 Coutts (1990), Reid (1990)	BSc (Hons) theses completed on the Hollway Andesite (Coutts) and the Burns Peak – Boco Road areas (Reid). Work included geological mapping, petrography and whole-rock geochemistry; results indicate the Hollway andesite has geochemical affinities with the Hellyer Basalt.
1990-1991 Kirsner et al. (1991)	Photogrammetry and production of new base maps; re-processing of the 1990 aeromagnetic survey; digitisation of previous IP data; “brief” reconnaissance mapping.
1991-1992 Kirsner (1992)	Re-logging and sampling of DDH EAB4, geological mapping, compilation of soil data, construction of semi-regional cross sections, reprocessing of UTEM data.
1992-1993 Poltock et al. (1993)	Drilling BPD77 472.3m (collared just outside current EL); intersected volcanoclastic with massive sulphide clasts (to 36% Pb, 16.5% Zn); DHEM completed. Review of previous IP data.
1993-1994 Poltock and Saxon (1994)	Geological mapping, rock-chip sampling whole-rock geochemistry and petrology (largely outside the area of EL 4/2000). Drilling of BPD80 (469.7m) to test down-dip extension of sequence in BPD77; best intersection 6m @ 0.9% Zn, 0.2% Pb; DHEM completed. Review of UTEM and IP data.
1994-1995 Saxon (1995)	Geological mapping, rock-chip sampling and petrology (largely outside the area of EL 4/2000). Interpretation of regional gravity and magnetic data.
1995-1996 Quayle and Dibben (1996)	The EAB grid was refurbished and additional lines (1220E-1600E) cut to the east. Dipole-dipole IP and ground magnetic data collected. Compilation of existing mapping and further 1:5,000 scale mapping. A combined IP/soil target defined at the upper contact of the Hollway Andesite (Summit Prospect).
1996-1997 Weber et al. (1997)	Prospectivity Review; compilation of previous exploration data.
1997-1998 Murphy and Denwer (1998)	Diamond drilling (2xDDH for 410.2m) to test Pb-Zn soil (DDH BPD88; 199.8m) and IP (DDH BPD89; 210.3m) anomalies at the ‘Summit’ Prospect; weak Pb-Zn mineralisation was intersected.

Table 2 Previous exploration over the Boco Prospect on EL 4/2000

Year & Reference	Activities
1972-1977 Hanson (1977)	INPUT AEM survey (1975); gridding (57.5 line km), gradient array IP, ground magnetics, grid based mapping and regional mapping, soil sampling (no significant anomalies); diamond drilling (BBP207-209; 475m) to test IP anomalies; alteration and weak base metal mineralisation intersected.
1977-1978 Mill (1978)	New access track and cutting of the Boco Extension grid, regional 1:10,000 scale mapping, gradient array IP (no significant anomalies), ground magnetics.
1978-1979 Mill (1979)	Minor infill gridding and geological mapping, dipole-dipole IP, and soil sampling on the infill lines.
1979-1980	No work.
1980-1981 Mill (1981)	Review of geophysics and geology.
1981-1982 Sainty and McDonald (1982a, 1982b)	Boco extension grid pegged (35.76 line km), geologically mapped, soil sampled and covered with Dipole-Dipole IP and ground magnetics.
1982 Sainty (1982)	Geological mapping, trial percussion drilling program (7 holes for 226.0m).
1982-1983 Sainty (1983a)	Completion of three percussion holes (305.8m); petrology on samples from percussion drilling.
1983 Sainty (1983b)	Completion of four DDH (BBP242 and 246-248; 1899.7m) and two percussion holes (180.2m); core and chip geochemistry and some petrology; commencement of UTEM III survey.
1984 Sainty (1984a, 1984b)	Downhole SIROTEM completed – no anomalies; UTEM survey completed – 3 subtle anomalies; diamond drilling of four holes (BBP250-251, 253-254; 1689.5m) – two holes testing UTEM features – no significant mineralisation intersected.
1985 Williams (1985)	CSR farmed in to EL. Diamond Drilling (BBP278-280; 1601m) – no significant mineralisation intersected; petrology, drill core geochemistry and some sulphur Isotopes done; magnetic susceptibility data collected from drill core.
1986-1987 Taylor (1987)	CSR withdraw from JV; Pancontinental farm-in; review previous exploration and geology; petrological and geochemical study; UTEM survey over the extended Boco grid – no significant anomalies; Pancontinental withdraw from JV and tenement is relinquished.
1988-1989 Howland-Rose (1989)	Re-establish grid, RMIP and follow-up of 5 RMIP anomalies with gravity; no results warranting further follow-up. Tenement relinquished.
1990 Randell (1991)	Review of previous exploration, including stable isotopes and litho-geochemistry.
1990-1992 Kirsner (1992b)	Pasminco farm-in; Photogrammetry to produce base maps, high resolution helimagnetic survey, infill gravity survey and interpretation, regional scale geological mapping.
1997-1998 Elliston (1998a)	Review of previous exploration, re-interpretation of helimagnetic data, minor 1:5,000 scale geological mapping, rock-chip sampling and a detailed evaluation of the volcanic facies and hydrothermal alteration at the Boco Prospect. No significant targets worthy of follow-up and the tenement was relinquished (Elliston, 1998b).

Table 3 Previous exploration on EL 4/2000

Year & Reference	Activities
2000-2001 Simpson and McNeill (2001)	Previous exploration reviewed and digital data compiled. 20.8 line km of grid cut and(or) rehabilitated and surveyed with DGPS; 12 line km of this grid geologically mapped, 751 'B' and 'C' horizon soil samples collected and submitted for analysis (including duplicates and standards) and 7 rock chip samples analysed. This work has defined two partial leach soil anomalies, one on the glacially covered Boco Plains and the second at the base of the Hollway andesite, adjacent to a total digest soil anomaly located by previous explorers.
2001-2002 McNeill (2002)	The work completed comprised a review of previous UTEM data, 4.2 line km of grid cut and(or) rehabilitated and surveyed with DGPS; geological mapping of the grid, vehicular tracks and selected creeks and collection and analysis of 567 (including duplicates and standards) 'B' horizon soil samples. Work to date has identified three partial leach soil anomalies and a UTEM anomaly that are worthy of further follow-up.
2002-2003 McNeill (2003)	The work completed comprised a review of previous UTEM data and completion of a single loop ground EM survey. 4.1 line km of grid was cut, surveyed with DGPS and geologically mapped. These lines and 3.4 line km of uncut, DGPS located lines on Boco Plains were also partial leach (PL) soil sampled (322 samples including duplicates and standards submitted for analysis). 82 samples over the Sawmill Creek anomaly, previously analysed by PL methods, were re-submitted for total digest analysis to follow-up the PL soil anomaly.
2003-2004 McNeill (2004)	Work completed comprised 2.5 line km of gridding, surveying with DGPS and geologically mapping. These lines and 6.6 line km of uncut, DGPS located lines on Boco Plains were also partial leach (PL) soil sampled (373 samples including duplicates and standards submitted for analysis). Two anomalies worthy of further work remain on EL 4/2000 – The base of the Hollway andesite and at Sawmill Creek.

6. WORK COMPLETED 2004-2005 REPORTING PERIOD

Work carried out by Zinifex during this reporting period has included partial leach soil sampling over the Hollway area, infill geological mapping at Hollway and between the Hollway area and the Sawmill Creek anomaly, diamond drilling at Sawmill Creek and Hollway, surface and DHEM surveys and whole rock geochemistry on selected samples from current and historic drilling.

6.1 Partial Leach soil sampling

The Boco partial leach soil sampling program was designed to cover the northeast striking contact between the Central Volcanic Sequence and Southwell sub-group correlates, interpreted to be the time equivalent of the Rosebery host sequence, between Burns Peak, to the south west, and Animal Creek, to the north east, a strike length of some 9.6 km. Previous exploration over this area is summarised in detail in Section 5.

The 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 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 200

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, Ni, Pb, Ni, Y, Zn, Zr and the rare earth elements Ce, Eu, Gd, La and Sm. The pH of the leachate, after digestion, was also determined.

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.

The 404 samples (including duplicates and standards) from this program were analysed as part of four batches (SDS 4546, 4547, 4550 and 4551).

No samples are obviously contaminated, however 50 samples, 12% of the data set, have a low (pH<8.0) post-digest pH. At these 'low' pHs the speciation of reagents in DL42 may change and the resulting assays may be unreliable. Many of the low-pH samples had high Pb and Zn results that could be important in the interpretation of the dataset. However, Test work at Amdel indicated that decreasing the sample:liquid from 10:1 (method DL42) to 5:1 (method DL43) could buffer the solution to a higher, acceptable, final pH (for samples with a post-digest pH of >7.2) and not significantly affect the precision of the analysis. Accordingly, the 50 samples with low post-digest pH were re-assayed with the new protocol. Of the low pH samples, 28 samples had DL43 post-digest pH's of >8.0. In the preliminary interpretation discussed below the low (pH <8.0) samples from the original dataset have had their assay results replaced by the re-assayed data and the remaining 22 samples with pH <8 after re-assay have been excluded from the dataset.

Assay results are presented in Appendices 1 and 2 and sample locations are shown on Plan 1.

The entire Boco dataset (some 2304 samples, including duplicates) has been plotted as a series of images (Figures 3 to 10). The raw data has been used to prepare these figures, however, images were also prepared using response ratios (value/median for each element) levelling by colour-group and also by SDS (both using the median value for each element). These images did not show anything additional to the raw data and have not been included.

Interpretation of the data, particularly in the northern part of the license, is largely as per McNeill (2003). Results from samples collected during the current reporting period have confirmed the Hollway anomaly identified by Simpson and McNeill (2001).

6.2 Soil pH measurements

Recently published studies (e.g., Smee, 1999 and 2003) have shown that direct determinations of soil pH may be a useful indicator of buried sulphide mineralisation. Previous sampling had located a subtle anomaly over the Rosebery orebody and it was therefore decided to commence routine soil pH determination to further assess the usefulness of this method. To this end a teaspoon sized sub-sample of each soil sample collected during the current year was mixed with 50ml of distilled water for 2 minutes and the pH of this mixture determined using a pHscan WP2 meter calibrated at pH 4, 7 and 10 and with a resolution of 0.1 pH. Results are included in Appendix 1 and are shown on Figure 11. No significant pH lows are recorded.

6.3 Geological Mapping

Geological mapping was completed over the southwest extension of the Hollway grid and over additional infill lines in the area between Hollway and the Boco Plains. An outcrop geology map is presented as Plan 2 and an updated geological interpretation is included as Plan 3.

Although no significant alteration or mineralisation was located during the reporting period, traces of galena were observed within andesitic to basaltic lithologies in the Hollway area (near drillhole BPD84). No significant changes to structural or stratigraphic interpretations were required.

6.4 Diamond drilling

Three diamond drillholes were completed during the reporting period for a total of 1763m. Drillholes BOC1 and BOC2 targeted the Sawmill Creek Track anomaly and BOC3 targeted the Hollway anomaly. A fourth drillhole, BOC4, also targeting the Hollway anomaly was in progress as at the end of the reporting period. Details of BOC4 will be reported in the 2006 annual report.

Sawmill Creek Track Anomaly:

The Sawmill Creek Track soil anomaly, a 900-1200m long linear feature sub parallel to an un-named creek, is defined by elevated (generally >5 x background [bg] and up to 20 x bg) As, Ag, Bi, Cu, Pb and Zn in partial leach soil samples. Total digest analysis of samples from two lines over the anomaly indicated low-level anomalism of Pb, Zn and As and a ground EM survey failed to locate any significant conductors (McNeill, 2003). The lack of an EM response may be seen to downgrade this target, however, if any mineralisation is poorly electrically connected, or of Que River size and at depth of >150m then it may not have been detectable. The presence of a soil anomaly at the interpreted host position (top of the CVC) made the anomaly attractive enough to warrant drill testing.

Diamond Drillhole BOC1:

Diamond drillhole BOC1 was collared at 382440mE, 5387705mN (AGD66_55) on 03/08/2004 and completed at 551.5m on 22/09/2004. Drillhole collar and survey data are contained in Appendix 3, sampling and assay data are included in Appendix 4 and a detailed geological log is included in Appendix 5. A summary log of the drillhole is presented in Table 4 below:

Table 4: Summary Log, BOC1

From (m)	To (m)	Description	Interpreted Geological Unit
0	17.0	Fine-grained, massive, weathered sandstone.	
17.0	136.3	Feldspar-phyric, dacitic volcanics. Minor sandstone and siltstone intervals towards base. Trace to minor sph/ga associated with qtz veining from 85m.	
136.3	151.1	Fine-grained sandstone and pyritic siltstone. Trace to minor sph/ga associated with qtz veining.	Southwell Subgroup
151.1	172.7	Mixed interval of volcanoclastic sandstone/mass flows, siltstone and black pyritic shale. Minor sph associated with qtz veining from 167m.	
172.7	305.6	Fine to medium-grained qtz-mica-lithic sandstone. Variable cycles from massive to well-bedded. Trace to minor pyrite as blebs along So.	Animal Creek Greywacke
305.6	407.8	Massive to weakly bedded, fine-grained qtz-lithic sandstone. Minor medium-grained intervals. Trace pyrite and sph with minor sph from 381-386m associated with carbonate veining.	
407.8	427.7	Coarse to very coarse-grained volcanoclastic sandstone with minor mass flow beds and fine-grained sandstone intervals. Minor sph as blebs, disseminations and small veinlets.	Black Harry Beds
427.7	450.0	Fine-grained qtz-lithic sandstone. Trace sph veinlets.	
450.0	480.5	Coarse to very coarse-grained, felsic, volcanoclastic mass flow beds with minor intervals of fine-grained qtz-lithic sandstone. Minor sph as blebs, disseminations and small veinlets.	
480.5	551.5	Variable sequence of felsic volcanoclastic mass flow beds, volcanic breccia, rhyolite and dacitic volcanics. Minor intervals of bleaching and red-rock alteration. Minor sph/ga/py blebs and veinlets at the top of the sequence.	CVC

Trace to minor sphalerite and galena associated with quartz veining was intersected from 85 – 125m and minor sphalerite mineralisation was present from 360m as blebs and small veins within the Black Harry Beds.

One hundred and ten samples (including four standards) were analysed at Aminya for Cu, Pb, Zn, Ag, Fe, Mn, As and Sb (by ICP), Au (by ppb fire assay) and Ba (by XRF).

Better results included:

- 10.8m @ 0.18% Zn (110.9-121.7m)
- 4.8m @ 0.28% Zn, 0.17% Pb (404.0-408.8m)
- 3m @ 0.64% Zn (449.2-452.2; including 1.0m @ 1.26% Zn from 450.2m)
- 21.7m @ 0.11% Zn (465.8-487.5m)

An additional six samples were submitted for whole rock geochemical analysis (see Section 6.6)

Diamond Drillhole BOC2:

Diamond drillhole BOC2 was collared at 382638mE, 5388065mN (AGD66_55) on 09/02/2005 and completed at 667.2m on 05/04/2005. The drillhole targeted the Sawmill Creek multi-element partial leach soil anomaly 400m northeast of drillhole BOC1. Drillhole collar and survey data are contained in Appendix 3, sampling and assay data are included in Appendix 4 and a detailed geological log is included in Appendix 5. A summary log of the drillhole is presented in Table 5 below:

Table 5: Summary Log, BOC2

Interval	Description	Interpreted Geological Unit
0 – 75.8m	Interbedded crystal rich sandstone, dacitic mass flows, lithic sandstone and siltstone. Trace sphalerite (<0.5%) from 42.7m.	Southwell Subgroup
75.8m – 158.9m	Fine –medium grained qtz-lithic sandstone and pyritic siltstone. Rare trace disseminated sphalerite.	
158.9m – 177.9m	Qtz phyric and feldspar phyric rhyolite.	
177.9m – 314.2m	Mixed interval of volcanoclastic sandstone/mass flows, quartz-lithic sandstone. Lithic greywacke and siltstone.	
314.2m – 454.7m	Fine to medium-grained qtz-mica-lithic sandstone. Variable cycles from massive to well-bedded. Trace to minor pyrite as blebs along So.	Animal Creek Greywacke
454.7m – 546.7m	Massive to weakly bedded, fine-grained qtz-lithic sandstone. Minor medium-grained intervals. Trace sphalerite associated with qtz-carbonate veining.	Black Harry Beds
546.7m – 603.5m	Coarse to very coarse-grained volcanoclastic sandstone with minor mass flow beds and fine-grained sandstone intervals. Minor sphalerite (0.5% - 1%) as disseminations and small veinlets.	
603.5m – 667.2m	Mixed interval of very coarse grained volcanoclastic mass flows, rhyolitic breccia and minor fine grained qtz sandstone. Trace to minor sphalerite as disseminations, blebs and small veinlets.	Black Harry Beds (top of CVC?)

Trace to minor sphalerite and galena associated with quartz veining was intersected from 40 - 70m, 225 – 230m and minor sphalerite mineralisation was present from 550m to 630m as disseminations, blebs and small veins within the Black Harry Beds.

Sixty-eight samples (including one standard) were analysed at Aminya for Cu, Pb, Zn, Ag, Fe, Mn, As and Sb (by ICP), Au (by ppb fire assay) and Ba (by XRF).

Better results included:

- 3.6m @ 0.32% Zn (222.4-226.0m)
- 22.4m @ 0.31% Zn (564.4-586.8m)
- 4.9m @ 0.3% Zn (590.1-595.0m; including 0.45m @ 2.07% Zn from 590.5m)

The results from BOC1 and BOC2 indicate that the Sawmill Creek Track Anomaly is likely to be sourced from minor base metal mineralisation within the lower part of the Black Harry Beds. The mineralisation intersected in BOC2, although of low-grade, was generally of higher tenor than that from BOC1 and the Sawmill Creek Track Anomaly continues northeast from BOC2 to the Boco Plains where it is interpreted to be overprinted by contamination from the Emu Bay Railway line, used for hauling base metal concentrates. It is therefore recommended that an additional drillhole be drilled to target the Black Harry Beds / CVC to the northeast of BOC2, beneath the Boco Plains.

Hollway Anomaly:

The Hollway geochemical anomaly is a linear, 700m long, multi-element (Cu, Pb, Bi, As +/- Zn) partial leach soil anomaly described by Simpson and McNeill (2001). The anomaly appears to be offset to the north of a linear A0 and C horizon total digest soil geochemical anomaly (to 1800 ppm Pb, 3600 ppm Zn and 115 ppm Cu) coincident with an IP resistivity low at the base of the Hollway Andesite (Anderson, 1982b). The anomaly was tested by a 178m drillhole (EAB4), which intersected minor sphalerite and galena (<1% Pb + Zn) in veins. No downhole geophysics were completed on EAB4 and a UTEM survey completed across the area in 1998 (Anon, 1998) did not identify any significant conductors (Silic in McNeill, 2001). The anomaly is considered worthy of follow up as EAB4 tested the top of the CVC at only 80m below surface and this drillhole did not test beneath the centre of the partial leach soil anomaly.

Diamond Drillhole BOC3:

Drillhole BOC3 was collared at 379480mE, 5384413mN (AGD66_55) on 18/04/2005 and completed at 544.4m on 25/5/2005. Drillhole collar and survey data are contained in Appendix 3, sampling and assay data are included in Appendix 4 and a detailed geological log is included in Appendix 5. A summary log of the drillhole is presented in Table 6.

A wide zone of pervasively altered lithologies, comprising strong to intense carbonate-sericite alteration and silicification (450m-475m) contains minor sphalerite-galena mineralisation including a one-metre massive sulphide vein at 467.0m.

Table 6: Summary Log, BOC3

Interval	Description	Interpreted Geological Unit
0 – 171.2m	Intercalated feldspar phyric andesite and amygaloidal basalt lavas and breccias. Trace to minor pyrite.	Hollway Andesite
171.2m – 176.5m	Poorly sorted, fine to very coarse grained quartz-lithic sandstone and polymict volcanoclastic mass flow. Fine –medium grained qtz-lithic sandstone and pyritic siltstone. Rare trace disseminated sphalerite.	
176.5m-196.0m	Intercalated feldspar phyric andesite and amygaloidal basalt lavas and breccias. Weak albite alteration.	
196.0m-198.5m	Coarse grained, crystal rich volcanoclastic sandstone and andesite breccia.	
198.5m-300.9m	Intercalated feldspar phyric andesite and amygaloidal basalt lavas and breccias. Minor sph/ga mineralisation @ 245.4-245.3m. Rare trace cpy.	
300.9m-307.6m	Strongly altered qtz-ser-cb-alb rock/schist. Trace pyrite and galena.	CVC?
307.6m-309.2m	Fault Zone. Trace galena (<1%).	
309.2m-345.3m	Strongly altered qtz-ser-cb-alb rock/schist. Trace sph/galena.	
345.3m-386.3m	Massive, feldspar phyric andesite	
386.3m-400.9m	Strongly altered, undifferentiated volcanics. Silicified, qtz-ser-alb rock.	CVC
400.9m-448.7m	Pervasively silicified qtz-ser rock. Trace pyrite	
448.7m-475.0m	Pervasively altered and silicified qtz-cb-ser rock. Minor sphalerite and galena (~1%) including 1m massive sulphide vein @ 467.0m	
475.0m-544.4m	Strongly altered volcanics. Silicified, qtz-ser-alb alteration. Sporadic trace sph/galena	

Fifty-seven samples (including one standard) were analysed at Aminya for Cu, Pb, Zn, Ag, Fe, Mn, As and Sb (by ICP), Au (by ppb fire assay) and Ba (by XRF).

Better results included:

- 0.5m @ 2.39% Pb, 0.11% Zn and 206g/t Ag (136.1-136.6m)
- 0.9m @ 1.25% Zn, 0.34% Pb (448.7-449.6m)
- 1.9m @ 1.07% Zn, 0.31% Pb (451.4-453.3m)
- 4.1m @ 11.1% Zn, 4.5% Pb and 68 g/t Ag (464.9-469.0m; including 1.0m @ 4.6% Zn, 14.8% Pb and 235 g/t Ag from 467.0m)
- 4.8m @ 0.59% Zn, 0.15% Pb (469.0-473.8m)

An additional eight samples were collected for whole rock analysis. Results from this sampling will be reported in the 2006 annual report.

The results from BOC3 are highly encouraging and an additional drillhole (BOC4) has commenced to test the stratigraphy down dip from BOC3. Details of drillhole BOC4 will be included in the 2006 annual report.

6.5 Geophysics

6.5.1 Ground EM

In September 2004 Zonge Engineering completed an 11.475 line km Fixed Loop EM survey over the area between the Hollway area and the Boco Plains. The survey covered 22 lines with EM soundings every 50m along each line (a total of 256 EM soundings). The operations report and results of this survey are contained in Appendix 6.

The results were reviewed by consultant geophysicist Jovan Silic. No anomalies worthy of follow-up were identified.

6.5.2 DHEM

During September – October 2004 Zonge Engineering also completed a Down Hole EM survey on drillhole BOC1. A single transmitter loop was used and single component data was collected at 25m intervals over the entire length of the drillhole. The operations report and results of this survey are contained in Appendix 6.

In April 2005 a DHEM survey was completed on drillhole BOC2. A single transmitter loop was used and single component data was collected at 25m intervals from 50m to 650m downhole. The operations report and results of this survey are contained in Appendix 7.

The results from both surveys were reviewed by consultant geophysicist Jovan Silic. No anomalies worthy of follow-up were identified.

6.6 Whole rock geochemistry

Six samples from drillhole BOC1 and three samples from historic drillhole EAB4 were submitted to Analabs for whole rock geochemistry. Results are presented in Appendix 8. Eight samples from BOC3 were also collected and sent to Amdel, Adelaide for whole rock analysis. Results from these samples will be reported in the 2006 annual report.

Box plots for Ishikawa Alteration Index (AI) vs Na₂O, AI vs Chlorite-carbonate-pyrite Index (CCPI) and Zr vs TiO₂ were produced and are presented in Figure 12. Most samples displayed little evidence of significant VHMS-style hydrothermal alteration with several samples showing mild Na-depletion and weak alteration signatures.

7. CONCLUSIONS & RECOMMENDATIONS

A program of partial leach soil geochemistry, geological mapping, surface and Down Hole EM surveying and diamond drilling was completed during the fifth year of tenure of EL 4/2000. This work has focussed on exploring the northeast striking contact between the Central Volcanic Complex and Southwell sub-group correlates, along a strike length of some 9.6 km, for Rosebery and Hellyer style VHMS deposits. Partial leach soil geochemistry, geological mapping and surface EM coverage over the prospective stratigraphy is now complete. Two areas of interest remain on EL 4/2000.

Hollway Prospect

At the Hollway prospect, drillhole BOC3 intersected 4.1m @ 11.3% Zn, 4.5% Pb and 70 g/t Ag from 464.9m (including 1.0m @ 34.6% Zn, 14.8% Pb and 235 g/t Ag from 467.0m) associated with qtz-sericite-carbonate altered felsic volcanics. This mineralisation is located within a wide zone of pervasively altered lithologies, comprising strong to intense carbonate-sericite alteration and silicification.

The results from BOC3 are highly encouraging and an additional drillhole (BOC4) has commenced to test the stratigraphy down dip from BOC3. Additional work at the Hollway prospect will await the results from BOC4 and the results from subsequent DHEM surveys on BOC3 and BOC4.

Sawmill Creek Track Anomaly

Two diamond drillholes targeting the Sawmill Creek Track Anomaly both intersected wide intervals of minor base metal mineralisation associated with weakly altered qtz-lithic sandstones correlated with the Black Harry Beds. Drillhole BOC1 intersected 21.7m @ 0.11% Zn from 465.8m and drillhole BOC2 intersected 22.4m @ 0.31% Zn from 564.4m.

The results from BOC1 and BOC2 indicate that the Sawmill Creek Track Anomaly is likely to be sourced from minor base metal mineralisation within the lower part of the Black Harry Beds. The mineralisation intersected in BOC2, although of low-grade, was generally of higher tenor than that from BOC1 and the Sawmill Creek Track Anomaly continues northeast from BOC2 to the Boco Plains where it is interpreted to be overprinted by contamination from the railway line. It is therefore recommended that an additional drillhole be drilled to target the Black Harry Beds / CVC to the northeast of BOC2, beneath the Boco Plains.

8. ENVIRONMENT AND REHABILITATION

Surface disturbance activities undertaken during the reporting period comprised:

- One drill pad including two in ground sumps at the BOC1 site, immediately off the Sawmill Creek Track;
- One drill pad including one in ground sump at the BOC2 site and the excavation of approximately 130m of access track across button grass off the Sawmill Creek Track;
- One drill pad including two in ground sumps at the BOC3 site, reopening of approximately 600m of rehabilitated track and the excavation of approximately 100m of new access track.

The BOC1 and BOC2 drill sites and the BOC2 access track were rehabilitated during the reporting period (Plates 1-3). The BOC3 site and access track are currently still in use as of the end of the reporting period.



Plate 1: BOC1 Drill site. Immediately after rehabilitation with the Sawmill Creek Track in the foreground. September 2004.



Plate 2: BOC2 Drill site. Immediately after rehabilitation. April 2005



Plate 3: BOC2 Access track. Immediately after rehabilitation. April 2005.

9. EXPENDITURE

Total expenditure for all work undertaken by Zinifex Rosebery Mine within Bulgobac EL 4/2000, for the period ending 29th June 2005 was **\$482,138**. A detailed expenditure statement is given below.

Personnel	\$8,040
Travel & Accommodation	\$841
Geoscience Consultants	\$19,137
Geophysics	\$27,792
Geochemical/Assays	\$12,404
Diamond Drilling	\$264,634
Other Contractors	\$100,256
Stores & Supplies	\$1,175
Vehicles, Plant & Maintenance	\$783
Land & Environment	\$0
Computing	\$3,131
Depreciation, Office, Sundry	\$145
Administration Fee 10%	\$43,800
Total	\$482,138

10. KEYWORDS & LOCALITY

Keywords

Hollway Andesite, Boco Alteration Zone, geology, Partial Leach soil geochemistry, line cutting, geological mapping, diamond drilling, whole rock geochemistry, geophysics – DHEM, geophysics – EM, Sawmill Creek prospect

Locality

1:250,000 BURNIE SK55-3
1:100,000 SOPHIA 8014
1:25,000 PARSONS 3638; BLOCK 3838

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