



MT KERSHAW EL 48/2004

**ANNUAL REPORT
FOR THE PERIOD ENDING 23rd NOVEMBER 2007**

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Date: 4th November 2007

Submitted To: Exploration Manager – Mine Districts

Copies To: Mineral Resources Tasmania, Hobart
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Rosebery Report No: BP122

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1. SUMMARY:

This report details exploration work undertaken on EL 48/2004 Mt Kershaw during the period 23 November 2006 to 23 November 2007, the second year of this tenement. Work on the licence has again focussed on the northern part of the licence area near Burns Peak and has comprised:

- A continuation of the geological compilation of the Burns Peak area in the northern part of the licence involving relogging of additional historic drillcore and reviewing existing geological mapping to produce a series of cross sections. This compilation has been presented as a new report;
- Partial leach soil sampling across new and refurbished gridlines in the Southern Trenches – Burns Peak area (564 samples, completed in the previous reporting year but assays not received at the time of reporting). All data has now been received and interpreted, and is presented herein.

The geological compilation has highlighted the prolonged and complex structural history of the area, which may be a major factor in any potential mining operation. Resource estimates at Browns Tunnel may therefore be over-optimistic. The host unit appears to be limited at depth across the area studied by the Rosebery Fault, and to the south by facies change to pumice breccia, while to the north the waning mineralising system has effectively been drilled out. Some exploration opportunities may exist in the Hollway Rivulet area.

Results from soil sampling program indicate several multi-elements responses, but these are all located over known mineralisation or structures. There are three main anomalies - a Cd & Zn anomaly outside EL 48/2004 Mt Kershaw (this anomaly seems to sit over the upper CVC between two small alteration zones, the Hollway pyrite zone and the eastern pyrite zone); an Ag, Au & Ba anomaly in the north east of EL 48/2004 (at the Summit Prospect where there is known alteration and anomalous Au in rock-chips associated with a shear zone (McNeill, 2001; Vicary, 2003)), and a multi-element anomaly at the southern trenches, in the western part of the area (where there is known VHMS mineralization). There are no high priority targets for immediate follow-up, however there is a single point As, Ag and Pb anomaly on line 5383000mN, which might overly the southern extension of the Burns Peak shear. Given that there is a gap of >350m to the next sampled line north of line 5383000mN, a line of follow-up sampling at 5383200mN may be warranted.

Work planned for the third year of the tenement will involve gridding, mapping and partial leach soil sampling the southern half of the tenement to complete existing coverage for all the tenement and to shed some light on the ambiguous stratigraphy from the Cone Hill to Chester region. A re-assessment of historic geophysical data is also planned, with some infill and new work likely if warranted. Drill targets may be generated quickly from this existing data, or in combination with the new soil sample data.

2. INTRODUCTION:

This report details exploration work undertaken on the Mt Kershaw EL 48/2004 during the period 23rd November 2006 to 23rd November 2007, the second year of this tenement.

Access to the tenement is via the Boco Road off the Murchison highway in the north and via the Chester Mine Track off the Bastyan Dam Rd in the south. A small network of 4WD tracks, developed for logging and mineral exploration, extend from these main access points and provide moderate access to the majority of the area of interest.

Zinifex's main target on EL 48/2004 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 N-S 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.

Exploration activities during the current year have focussed on the northern part of the license and has consisted of a geological compilation of the Burns Peak area, and the interpretation of 564 soil samples collected in the previous reporting period.

2.1 Attribution

The following personnel were responsible for the work carried out by Zinifex Rosebery Mine on the EL 48/2004 Mt Kershaw licence area during the reporting period:

Senior Exploration Geologist:	Mick Skirka – Zinifex Exploration
	Darren Hicks – Zinifex Exploration
Consultant Geologist:	Keith Corbett – Corbettas Enterprises
	Dr Andrew McNeill - University of Tasmania

3. LAND TENURE:

EL 48/2004 Mt Kershaw (15 sq km) was granted to Zinifex Australia Limited on 23 November 2005 for a period of 5 years. The location of the Tenement is shown on Figure 1. EL 48/2004 covers ground that fell vacant on the relinquishment of EL 35/2000 and EL 20/2001 (AurionGold) in 2003. The initial license area surrounded ML 20M/2000, held by Hercules Resources, which has subsequently been surrendered.

Land covered by EL 48/2004 is all crown land designated as State Forest, informal reserves, parts of the Burns Peak and Mt Kershaw Forest Reserves and some HEC land all of which are available for exploration under the Mineral Resources Development Act 1995.

4. REGIONAL GEOLOGY:

The basement lithologies in western Tasmania are Precambrian in age, comprising predominantly greenschist facies meta-sediments with minor basalt and dolerite. Higher-grade amphibolite and eclogite facies are also present within the Precambrian. This Precambrian basement is exposed approximately 15km to the east of the Mt Kershaw license (Figure 2).

Cambrian volcanism and sedimentation developed on this Precambrian continental crust, and is subdivided into the Eo-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 area.

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 MRV form a 200km long by 20km wide broadly north-south trending belt 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. Regional structures that subdivide the MRV are the Rosebery Fault, which transects the western part of the license, and the Henty Fault, which is located 10km east of the licence.

The Mt Kershaw license is located at a regionally significant point within the central part of the MRV, where the main trend changes from north-south to northeast-southwest. The area also coincides with a regional lithological change where lithologies correlated with the Rosebery-Hercules sequence are juxtaposed with lithologies broadly correlated to the Sock Creek and Que-Hellyer sequences.

The major components of the MRV within the Mt Kershaw license area are massive felsic lavas, lava breccias and pumice breccias of the Central Volcanic Complex (CVC) and mixed felsic lavas, andesite and volcanoclastic sediments of the Burns Peak subgroup (see Appendix 1).

The MRV are overlain by a late Cambrian – early Ordovician marine and fluvial sequence of quartzwacke, polymict sandstones, siltstones, shales and polymict conglomerates (Rosebery Group/Stitt Quartzite to the west of the MRV and Owen Group to the east; Corbett, 2002). Correlates of the Stitt Quartzite underlie the western part of the license, west of the Rosebery Fault.

Cambrian volcanism and sedimentation was followed by predominantly basement derived Ordovician to Devonian age sedimentation, which includes 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.

In the Quaternary extensive unconsolidated glacial and fluvioglacial deposits up to >100m thick accumulated (Augustinius and Nichol, 1999). These deposits now obscure parts of the Palaeozoic geology in the central part of the tenement.

Significant mineralisation known from the licence area comprises the Southern Trenches – Browns Tunnel base metal massive sulphide lenses in the northern part of the license and the historic Chester pyrite mine in the southern part of the license.

5. PREVIOUS EXPLORATION:

Historic Exploration

1896 - 1958

The earliest recorded exploration of the license area was the discovery of alluvial gold in the Marionoak River by Tom Strong in 1896 and the discovery of the Pinnacles Lodes by the McGuinness Brothers in the same year. Around the same time F. Kershaw and H. Sanderson discovered the Chester Mine, initially known as Kershaw's Iron Blow, which was worked for copper but was soon abandoned (Reid, 1918). By 1899, development of the Pinnacles Mine area had commenced with the excavation of the Southern Trenches (estimated production 55t @ +10% Zn, +8% Pb, 8g/t Au and 38 g/t Ag), Browns Tunnel (est. prod. 300t @ 2% Zn, 2g/t Au and 44 g/t Ag), and Thomas's Tunnel (est. prod. 50t @ 4% Zn, 7% Pb, 1g/t Au and 240g/t Ag). Difficulties with ore treatment and high water inflow resulted in the Pinnacles area being abandoned by 1918 (Reid 1918).

Between 1908 and 1913 the Mt Lyell Company secured the leases over Chester and an exploration and development program was completed resulting in the mining of 36,000t of pyritic ore at a grade of 37%S (Reid, 1918). A small amount of additional production occurred from 1918-1920 by Cuming Smith and Co (estimated 700t at >25%S).

In 1947, EZ Co. commenced an exploration program across the Pinnacles area comprising 14 shallow diamond drillholes (PP31 – PP59; 1150m) and trial geophysical surveys (SP, ground magnetics and resistivity). EZ concluded that the Pinnacles mineralisation was small in size and low in grade and that no additional work was warranted (Hall, 1947; Cottle, 1949; Cottle, 1950).

EL 4/1959.

Rio Tinto Australia Exploration

1958-1960

Geochemical and geophysical surveys were completed across the Pinnacles and Chester areas. No details of geochemical techniques were documented however two anomalous areas were defined at both the Pinnacles and Chester. Geophysical techniques included Turam and vertical loop EM, gravity and magnetics. No conductive response was observed over the mineralisation at either Chester or the Pinnacles however a clear gravity anomaly was defined at Chester along with a second anomaly to the west of the main Chester mineralisation (Muceniekas; 1959; Boniwell 1959).

EL 5/1963.

Comstaff Pty Ltd; Preussag Aust.

1968-1979

Comstaff explored the Chester – Pinnacles area in two phases. Phase 1 (1968 – 1972) comprised regional stream sediment sampling, grid based soil sampling at the Pinnacles and Chester area (1590 samples), costeaning at Shale Basin, and I.P and ground magnetic surveys at both the Pinnacles and Chester. Two diamond drillholes were completed at the Pinnacles (CP1 – CP2) and one drillhole was completed at Chester (CP3). Best result was from CP3 which returned 2.4m @ 22.3% Zn, 5.2% Pb (Anon, 1969; Anon, 1970; Everett, 1971, Orr and Smith, 1975).

Phase 2 (1974-1976) commenced with the establishment of metric grids at the Pinnacles (EAA grid), Chester (EAD grid) and at East Chester (EAB grid, extending east of EL48/2004). At Chester exploration comprised detailed mapping of the new grid, dipole-dipole I.P, S.P and EM surveys, soil sampling (Ao –A1 horizon, 1735 samples) and eleven diamond drillholes (CP4 (not assayed), CP5-CP6, CP11 and

CP16-CP22). No significant mineralisation was intersected. Soil sampling and costeaning was also completed at East Chester. In the Pinnacles area, detailed mapping of the new EAA grid was followed by a gradient array I.P survey, soil sampling (Ao – A1 horizon, 971 samples) and eight diamond drillholes (CP7-10, CP12-15) from south of Southern Trenches to Thomas's Tunnel. Best result was 8m @ 3% Zn in CP7 and CP9 at Thomas's Tunnel (Orr and Smith, 1975).

An honours thesis on the geology and mineralisation of the Chester-Pinnacles area was completed in 1974 by Stevens.

Preussag Aust. entered into a J.V with Comstaff in 1976 and commenced a program at the Pinnacles comprising geological mapping, costeaning, trial EM and two diamond drillholes at Southern Trenches (PIN1 – PIN2; 409m). Best result was 3.3m @ 2.7% Pb+Zn in PIN2 (Krummei, 1977). At Chester, Preussag completed additional geological mapping and drilled three diamond drillholes (CH1-CH3, 445m). No significant mineralisation was intersected (Perkin, 1977).

Comstaff resumed management of the license in 1977 and completed additional mapping, A horizon soil sampling (937 samples), auger sampling (128 samples) and S.P surveys across the EAA, EAB and EAD grids. Costeans were excavated and ground magnetic surveys were completed on the EAB and EAD grids with I.P surveys completed on the EAA and EAB grids. A Crone EM survey was completed on the EAB grid. On the East Chester grid (EAB) a weakly mineralised zone of siliceous (cherty) tuffs, containing up to 4.55% Zn, 33% Ba and 19.8g/t Ag with minor Pb and Cu was exposed in an access track, and was traced southwards by costeaning. No major sulphide zone was exposed (Hall, 1978). The EAA grid was extended to the north and additional soil sampling and ground magnetic traverses were completed. This work was largely north of EL48/2004 (Hall, 1979).

An honours thesis on the geochemical dispersion patterns in the Pinnacles-Boco area was completed in 1978 by Beamish.

EL 5/1963. Comstaff Pty Ltd; BHP Ltd. 1980-1988

Work during this period initially focused on the east Chester (EAB) area, where additional gridding, mapping, C horizon soil sampling and geophysical surveys (ground magnetics, I.P, S.P) were completed (Hall and Pigott, 1980; Anderson, 1982). This work was followed up with the drilling of four diamond drillholes (EAB1 – EAB4) with the best result from EAB3: 6.2m @ 1.5% Zn from 36.8m (Shaw, 1983). A Dighem III survey was flown over all except the most southern part of EL48/2004 during 1983 (Dvorak, 1983) with no significant anomalies identified.

In 1984 a new grid was established across the Southern Trenches to Browns Tunnel area (EAF grid) and a program of geological mapping, C horizon auger sampling (including Au assays) and a UTEM survey was completed. Fifteen drillholes were drilled in the Browns Tunnel area (ESB1, EAF1-EAF14) to follow up elevated gold values returned from soil and channel sampling. A preliminary resource of 110,000t @ 18.8% Zn, 6.6% Pb, 1.3% Cu, 122 g/t Ag and 4.1g/t Au was calculated, based on intersections from five drillholes (Shaw and Roberts, 1985). An additional four drillholes were completed in the Thomas's Tunnel (EAF15-EAF16) and Southern Trenches areas (EAF17-EAF18). Narrow bands of massive sulphide were intersected in EAF15, EAF16 and EAF18 (Mroczek, 1985).

BHP Minerals entered into a JV with Comstaff and Preussag in 1985 and a program of regional BLEG drainage sampling was completed. Several historic drillholes at the Pinnacles area were surveyed with downhole Sirotem. No significant anomalies were identified however BHP reported difficulties with the Sirotem surveys due to self-response effects (Anon, 1986).

During 1986 - 1988, a significant program of mapping, relogging and data compilation was completed and an extensive UTEM survey across the entire area covered by EL 48/2004 commenced (173 line km). This survey concluded in late 1987 and several weak UTEM responses were identified. These anomalies along with several additional geological targets including the Hollway Pyrite Zone, Chester and West Mt Kershaw areas were followed up with a program of power auger geochemical sampling (811 auger holes for 1127m). No significant anomalies were reported (Anon, 1987). A program of Lead and Sulphur isotope analyses was completed from mineralisation from the Pinnacles, Chester, East Chester and Hollway areas (Anon, 1988).

EL 44/1988. *Pasminco Ltd, Noranda Ltd, Plutonic Ltd.* 1989-2001

The license area initially covered the entire area of EL48/2004 and was explored as the Burns Peak Joint Venture. Initial exploration comprised a compilation and review of all Comstaff/BHP geophysical surveys and open file geophysical data, relogging of historic drillcore, 1:1000 scale mapping at Southern Trenches to Leo's Find, compilation of historic geochemistry and the drilling of four diamond drillholes at Southern Trenches – Browns Tunnel (BPD 62 – BPD 65). DHEM surveys were completed on BPD62 – BPD65 and historic drillholes EAF 9, EAF 11 and EAF14 and trial Mise a la Masse and CSAMT surveys were completed (Rosenhain and Mathison, 1989).

In August 1990, Pasminco commenced management of the JV and collected new aeromagnetic and gravity data across the license area. Three additional drillholes were drilled north of Browns Tunnel (BPD66, BPD69 and BPD70), two drillholes north of Leo's Find (BPD71, BPD72) and four drillholes at Mt Kershaw - Chester (BPD67, BPD68, BPD73 and BPD74). Best result was 6m @ 3% Zn+Pb, 0.55g/t Au from BPD66. Petrographic and litho-geochemical data was obtained from selected drillcore samples (including some oxygen isotope data) and minor wacker and rockchip sampling was completed to the east of the Leo's Find area, to the northeast of Chester and in the Mt Kershaw area (Kirsner et al 1991; Lorrigan, 1990). Honours theses were produced by Coutts (1990) on the Hollway Andesite, Reid (1990) on the geology of the Burns Peak – Boco Rd area and Boda (1991) on the geology and structure of the Chester deposit.

During 1992-1993 two diamond drillholes were drilled at the Summit prospect, east of Leo's Find (BPD76, BPD77) and an additional two diamond drillholes were completed at Browns Tunnel (BPD78, BPD79). Best result was 9.0m @ 2.5% Cu in a stringer sulphide zone from BPD78. High grade sulphide clasts were reportedly intersected in BPD77. DHEM surveys were completed on BPD66, BPD69, BPD71-74 and BPD76-77 and litho-geochemistry was conducted, primarily from andesites from the Hollway and Browns Tunnel area in addition to felsic volcanics from Chester. Dipole-dipole IP data was collected at Hollway-Cone Hill and South Kershaw (largely south of EL 48/2004), which identified chargeability anomalies at both areas (Kirsner, 1992; Poltock et al, 1993).

A follow-up hole was drilled at the Summit prospect (BPD80) down dip from BPD77. Three additional diamond drillholes were completed at Browns Tunnel (BPD81, BPD82 and BPD85) and historic drillholes EAF2 and CP7 were extended. Best result was 0.5m @ 17.8% Zn, 8.3% Pb, 2.7% Cu and 15.5 g/t Au from BPD85. Drillhole BPD83 was drilled into the Hollway pyrite zone, which intersected a wide interval of intense silica-pyrite alteration. A Mise-a-la-Masse survey was completed on BPD78 at Browns Tunnel, ground magnetic traverses were completed on the Southern Trenches – Browns Tunnel area and DHEM surveys were completed on BPD78-85. Additional mapping was undertaken at the Cone Hill – Hollway area and MMI soil geochemistry was trialled in the Brown Tunnel to Shale Basin area. No significant anomalies were identified (Poltock and Saxon, 1994; Saxon, 1995).

In 1996, work at Browns Tunnel focused on assessing the potential for a near surface, open pitable resource and five shallow diamond drillholes were completed (BT1 – BT5). Relogging of historic drill core and additional petrography lead to a new geological interpretation and a provisional inferred resource for Lens 1 was calculated (190,000t @ 7.7% Zn, 2.8% Pb, 0.7% Cu, 0.98g/t Au and 48g/t Ag). Regridding of the Brown's Tunnel to Southern Trenches area was followed by ground magnetic traverses, soil sampling (583 samples) and mapping. At Southern Trenches rockchip sampling, trenching (seven trenches ST1 – ST7) and RC drilling (STRC1 – STRC7) was completed (Quayle and Dibben, 1996; Weber et al, 1997). Best result was 13m @ 11.7% Zn, 7.9% Pb, 9g/t Au and 0.6% Cu from STRC5. Additional mapping and rockchip sampling was undertaken at Cone Hill and IP and ground magnetic surveys were completed at Hollway (mainly east of EL48/2004; Quayle and Dibben, 1996). A review of previous data included digitizing previous open file and Pasminco geochemistry datasets (Weber et al, 1997).

The Brown's Tunnel resource was refined by an additional 11 diamond drillholes (001B – 008B, 011B – 013B) which resulted in an inferred resource of 90,000t @ 7.4% Zn, 1.9% Pb, 0.9g/t Au, 49g/t Au (Edwards et al, 1998). At Southern Trenches an additional four diamond drillholes (009B, 010B, 014B and 015B) resulted in an inferred resource of 10,000t @ 23.4% Zn, 18.3% Pb, 2.1% Cu, 12.1g/t Au and 96g/t Ag (Edwards et al, 1998). Metallurgical testwork indicated that the Southern Trenches and Browns Tunnel mineralisation was suitable for the Rosebery mill. An orientation partial leach soil survey line was completed across Southern Trenches and five additional lines of soil samples were collected for partial leach analysis south of the Southern Trenches / Cone Hill area. Dipole-dipole IP data was also collected from these five lines.

Following a pre-feasibility review, Pasminco concluded that the Browns Tunnel deposit was un-economic and Hercules Resources entered into an arrangement with Pasminco. An additional five shallow diamond drillholes were completed at Southern Trenches (STM1 – STM5, also referred to as 016B – 020B), which confirmed the earlier Pasminco resource. The Southern Trenches to Leo's Find area was then incorporated into ML 20M/2000 (Edwards and Parfrey, 1999; Edwards and Denver, 2000).

The southern part of the license was relinquished and additional partial leach soil sampling was completed to the immediate south of Southern Trenches (538 samples). Several anomalies were identified and a shallow diamond drillhole (STD1) was drilled to test a partial leach anomaly, intersecting minor base metal mineralisation (1.0m @ 2.0% Zn from 76m). An honours thesis on the isotopic systematics of the Southern

Trenches area was submitted (Woolford, 2000). A small program of partial leach soil sampling in the Leo's Find – Summit area (163 samples) was completed during 2001 following which the license was relinquished (McNeill 2001).

EL 21/1998. Pasmaenco Exploration. 1998-1999

The license comprised part of the relinquished part of EL44/1988, predominantly west of the Rosebery Fault in the southwestern part of EL48/2004. Exploration on EL21/1998 was contiguous with exploration on the neighboring EL44/1988 and comprised a dipole-dipole IP survey and limited partial leach soil sampling (35 samples). No significant anomalies were identified and the license was subsequently relinquished (Parfrey and Simpson, 1999).

EL 35/2000. AurionGold Exploration Pty Ltd. 2001-2003

This license covered the southern part of EL48/2004, south of Cone Hill and west of Chester. Exploration conducted by AurionGold comprised relogging of historic drillholes from the Chester area, compilation of drilling, soil and rockchip data and reprocessing of Pasmaenco IP data. A program of PIMA, XRD and lithogeochemistry of drillcore samples was also completed (Vicary, 2002). Several recommendations were made however the license was relinquished after AurionGold was taken over by Placer Dome.

EL 20/2001. AurionGold Exploration Pty Ltd. 2001-2003

EL20/2001 covered the northern part of EL48/2004, surrounding ML 20M/2000. Exploration work by AurionGold comprised reprocessing of Pasmaenco IP data (in conjunction with EL35/2000) and the collection of C horizon soil samples in the northeastern part of the license (35 samples). Similarly to EL35/2000, the license was relinquished following a corporate takeover of AurionGold (Vicary, 2003).

6. WORK COMPLETED 2006-2007 REPORTING PERIOD:

Work carried out by Zinifex during this reporting period has focussed on the northern part of the license and has comprised a geological compilation involving relogging of drill core and additional geological mapping; and interpretation of a partial leach soil sampling program across the Burns Peak area.

6.1 Geological Compilation

A geological compilation of the northern part of the license was conducted by consultant geologist Keith Corbett in 2005. The aim of the compilation was to produce a coherent geological interpretation of the Burns Peak area and comprised the relogging of core from 55 drillholes and geological mapping of key sections/areas (see Skirka, 2006)

Whilst this work has clarified several aspects of the Browns Tunnel and Hollway areas, the geological relationship between these two geological domains remains to be adequately clarified, particularly in the Cone Hill area. Consequently, Dr Corbett was contracted to extend his initial report to cover this Cone Hill area and has produced a second report, presented in Appendix 1.

6.2 Partial Leach soil sampling

The 2006 Burns Peak – Mt Kershaw partial leach soil sampling program was designed to cover the area east of the Rosebery Fault from Chester in the south to the Pinnacles Rhyolite north of Boco Road in the north. During the first year of tenure, this soil sampling program comprised infill coverage across the northern part of the license, with results reported during the current reporting year.

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 ziploc 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 Adelaide for analysis by partial leach technique DL42. Randomised sample numbers were used in partial leach sampling to reduce the effect of analytical variations. 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 564 samples (including duplicates and standards) from this program were analysed as part of three batches (SDS 4565, 4566 and 4569). Sample locations for all samples are shown on Plan 1 and assay results are in App. 2 and 3.

No samples are obviously contaminated, however 59 samples, 11% of the data set, have a low (pH<8.0) post-digest pH. At these 'low' pH's 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, 45 of samples with low post-digest pH were re-assayed with the new protocol (the additional 14 samples were also re-analysed but the laboratory have lost the results and the sample residues have been destroyed). Of the low pH samples, the laboratory failed to report the DL43 post digest pH for 9 samples, and of the remaining, 32 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. For interpretation this new data was combined with results from previous surveys by Pasminco/Zinifex on EL's 44/1988 Burns Peak, 4/2000 Boco and EL 23/2000 Silver Falls to produce gridded images of raw assay results (Figures 3-12). Several features are obvious:

- The southernmost block of 5 lines on AMG (historic data) have a much more subdued signature than the rest of the area. This block of data was analysed using DL40 and the low values may be a result of using this older analytical method, however, the southern end of line 3750E also has a fairly muted signature and this might suggest low background geochemistry in this area.
- There appears to be some "striping" on several lines of the new data for Ag, As, and Bi – the "striped" data is all from SDS 4566 and this suggests there are some analytical problems with this batch.
- There are three main anomalies;
 1. A Cd & Zn anomaly outside EL 48/2004 Mt Kershaw. This anomaly seems to sit over the upper CVC between two small alteration zones (the Hollway pyrite zone and the eastern pyrite zone).
 2. An Ag, Au & Ba anomaly in the north east of EL 48/2004 at the Summit Prospect where there is known alteration and anomalous Au in rock-chips associated with a shear zone (McNeill, 2001; Vicary, 2003).
 3. A multi-element anomaly at the southern trenches, in the western part of the area, where there is known VHMS mineralization.

There are no high priority targets for immediate follow-up, however there is a single point As, Ag and Pb anomaly on line 5383000mN, which might overly the southern extension of the Burns Peak shear. Given that there is a gap of >350m to the next sampled line north of line 5383000mN, a line of follow-up sampling at 5383200mN may be warranted.

7. CONCLUSIONS:

Exploration conducted on EL48/2004 during the second year of tenure has focussed on the northern part of the license area near Burns Peak and has comprised a geological compilation of the Burns Peak area involving relogging of historic drillcore and additional geological mapping; and the interpretation of partial leach soil sampling across new gridlines in the Southern Trenches – Burns Peak area collected in the previous reporting year.

The geological compilation has clarified several issues in the Browns Tunnel, Thomas' Tunnel and Southern Trenches areas, and the following is drawn directly from the report by Corbett in Appendix 1:

- The intensive drilling carried out in the Browns Tunnel area appears to have sufficiently delineated the economic sulfide mineralisation to indicate that it is highly unlikely to constitute a viable resource. Consideration of the structural characteristics of the area, particularly the multiplicity of small faults and shear zones, suggests that even the conservative previous estimates of Edwards et al (1999), based on 40m spaced drill holes, may have been optimistic.
- Extensions of the host sedimentary sequence appear to be limited at depth by the Rosebery Fault, and to the south by the facies change to pumice breccias. Drilling has indicated the northern limits of the waning system.
- The unique features of the Browns Tunnel basin include the small size of the depositional area, the abundance of pumice breccias, and the apparent importance of quartz-feldspar porphyry intrusives as likely generators of hydrothermal activity. The large Hollway andesite complex just to the east, with its associated hydrothermal activity, does not seem to have been an influence here.
- A feature of the geology, which remains unclear, is the nature and extent of the Burns Peak Shear Zone. This structure forms a major dividing line, with many significant changes and breaks across it, e.g. the disappearance of the Hollway andesite and Que River Shale, the increase in abundance of pumice breccias and porphyry intrusives to the west, yet we are still uncertain about the direction and amount of displacement, its structural history, and what happens at either end of its mapped length. Detailed structural studies of the few exposures of the fault would be beneficial, as would a structural study of the overall area.
- The nature and age of the felsic rocks intercalated with the Hollway Andesite on its SW arm, and of the felsic rocks in the Cone Hill area (are they Boco Road dacite equivalents or CVC?) and the nature of the andesite-CVC contact (which has clear indications of hydrothermal activity just to the NE) in the Hollway Rivulet further to the SW, are other questions which remain unanswered (as noted also by Skirka, 2007), but which would repay further

work. The latter point will have implications for defining the potential host position south from Hollway towards Chester. Reconciling the relationship between the Hollway, Browns Tunnel and Chester geological domains is the main aim of the year 3 work program.

Results from the 2006 soil sampling program have been received and interpreted., with three main anomalies recognised:

- A Cd & Zn anomaly outside EL 48/2004 Mt Kershaw. This anomaly seems to sit over the upper CVC between two small alteration zones.
- An Ag, Au & Ba anomaly in the north east of EL 48/2004 at the Summit Prospect where there is known alteration and anomalous Au in rock-chips associated with a shear zone.
- A multi-element anomaly at the southern trenches, in the western part of the area, where there is known VHMS mineralization.

There are no high priority targets for immediate follow-up, however there is a single point As, Ag and Pb anomaly on line 5383000mN, which might overly the southern extension of the Burns Peak shear. A line of follow-up sampling at 5383200mN may be warranted.

An additional 18 line km of gridding, partial leach soil sampling and mapping is scheduled for the third year of tenure, completing coverage across the bulk of the tenement. A reinterpretation of existing IP data will also be completed to assess the southern portion of the tenement for target mineralisation.

8. ENVIRONMENT AND REHABILITATION:

- Nothing to report

9. EXPENDITURE:

Total expenditure for all work undertaken by Zinifex Australia (Exploration) within Mt Kershaw EL 48/2004, for the period ending 30th November 2007 was **\$51,728.51**

A detailed expenditure statement is given below.

Personnel	\$9,099.45
Travel & Accommodation	
Geoscience Consultants	\$18,756.94
Geophysics	
Geochemical/Assays	\$12,535.95
Diamond Drilling	
Other Contractors	\$5,050.00
Stores & Supplies	\$156.00
Vehicles, Plant & Maintenance	
Land & Environment	\$279.58
Computing	
Depreciation, Office, Sundry	\$1,148.00
Administration Fee 10%	\$4,702.59
Total	\$51,728.51

10. KEYWORDS & LOCALITY:

Keywords

Hollway Andesite, Chester, Browns Tunnel, Southern Trenches, geology, Partial Leach soil geochemistry, line cutting, geological mapping, Burns Peak, Rosebery Fault

Locality

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

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