WHITE SPUR EL 5/1996

PROGRESS REPORT
FOR THE PERIOD ENDING 5th MARCH 2005

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1. SUMMARY

This report details work undertaken on exploration licence 5/1996 White Spur between 5th March 2004 and 5th March 2005, year 9 of the licence. The principal exploration targets sought within the licence area are Hellyer- or Rosebery-type volcanogenic Pb-Zn-Cu-Ag-Au massive sulphide deposits.

Work completed during the reporting period included:

- A follow-up ground time-domain EM survey to detail the anomaly located by DHEM surveys in YWS1 and WSP6 and resolve problems in the January 2004 survey data.
- Drilling of DDH WSP13 (547.0m) testing the doubly plunging syncline at the southern end of PL Anomaly 1.
- Re-processing and interpretation of the 1997 Goldfield's CSAMT survey.
- Further geological mapping in the northern part of the tenement.
- Commencing an Honours project to assess the volcanic stratigraphy of the tenement.

This work has downgraded the YWS1/WSP6 EM anomaly, but has confirmed that the top of the CVC, equivalents of the Rosebery-Hercules host rocks, are present in the core of the doubly plunging syncline in the northern part of the tenement and that further drilling is warranted.

2. INTRODUCTION

This report details work undertaken on exploration licence 5/1996 White Spur (Figure 1), between 5 March 2004 and 5 March 2005, year 9 of the licence.

The White Spur licence covers a portion of the Cambrian Mount Read Volcanics to the south of the Rosebery and Hercules Mines and to the west of the Henty Mine in Western Tasmania (Figure 2). The principal exploration targets sought within the licence area are Hellyer- or Rosebery-type volcanogenic Pb-Zn-Cu-Ag-Au massive sulphide deposits. A 5 km strike length of the contact between the White Spur Formation (WSF) and the Central Volcanic Complex (CVC), a stratigraphic position that is a direct correlate of the Rosebery and Hercules ore positions; although not recognised as such until the mid-1990's, runs through the centre of the tenement and has been the main target of recent exploration. A second and less well understood target is the Jones Creek package, in the NE part of the tenement. This sequence of shales and fine volcanogenic sediments associated with rhyolitic intrusives, is thought to correlate with the Rosebery host position, but, correlations are not as clear as for the base of the White Spur Formation due to structural complications.

Access into the tenement is via Howards Rd. (off the Anthony Rd) or on 4WD tracks (in particular the Moores Pimple track) heading south from Mt Read and the Hercules Mine. Within the EL access is via a series of old logging tracks and a new HEC road, which follows a major canal.

Attribution

The following personnel were responsible for the work carried out within the White Spur licence area during the reporting period:

Senior Geologist:	Andrew McNeill - Pasminco Rosebery Mine
Consultant Geophysicist:	Jovan Silic – Jovan Silic and Associates

3. LAND TENURE

White Spur EL 5/1996, 20 sq km, was granted to RGC exploration on 5 April 1996 after a successful bid on ETA 401 (resulting from the relinquishment of EL 11/85 by a Pasminco/North Ltd./Australian Resources JV). In June 1998 RGC merged with Westralian Sands to form a new company, Iluka Resources, whose core activity was mineral sand mining. As a result RGC's gold and base metal interests were to be divested. Goldfields Exploration commenced negotiations with Iluka for the transfer of all RGC's Tasmanian tenements to Goldfields in 1998 and these negotiations were concluded in July 2000. However, by this time Goldfields were focussed almost exclusively on gold exploration and they decided to seek a joint venture partner for the base metal prospective White Spur tenement.

In August 2000 Goldfields approached Pasminco Exploration with the proposal for a direct swap of EL 5/96 for Pasminco's EL 6/98 Queenstown. An agreement was signed in May 2001, and the tenement was transferred to Pasminco Australia Limited on 2nd August 2002. Due to the ongoing negotiations between Goldfields and Pasminco the statutory 50% relinquishment of EL 5/96 White Spur, due on 5th April 2001, has been deferred until April 2003.

Land covered by EL 5/96 comprises land vested in the HEC (105 ha) with the remainder being Crown Land designated as Deferred Forests. The EL is almost entirely within the Mt Dundas Regional Reserve (exploration allowed, but, programs must be approved by the MEWG).

4. GEOLOGY

The regional geology of EL 5/96 White Spur is described on MRVP Map 3 (Corbett, 1986) and in Vicary (1997, 1998). Some areas have been mapped in more detail as Honours (Dugdale, 1992; Nunn, 1995) and M Econ. Geol. (Poltock, 1992) theses.

The regional geological framework of the Mt Read Belt (MRB) is subdivided, from an exploration perspective, into three elements. The central MRB covering the area of outcrop from south of Queenstown to north of Hellyer, the northern MRB covering the area from Black Bluff eastwards through Gowrie Park and Mole Creek, and the Southern MRB comprising areas west and south of Macquarie Harbour. EL 5/96 is in the central part of the central MRB.

Basement in the Central and Northern MRB is of 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 termed the Tyennan Block, lies to the east of the White Spur licence.

Cambrian volcanism and sedimentation developed on the Precambrian continental crust and, in the Central MRB, is subdivided into the Eo-Cambrian Tholeiitic Crimson Creek Formation (CCF), the mid to late Cambrian Dundas Group and the predominantly calc-alkaline, Mt Read Volcanics (MRV).

The CCF was deposited in shallow but rapidly subsiding basins comprising basaltic lavas and volcaniclastics, turbidites, carbonates, chert and minor evaporites. Ultramafic cumulates and volcanic equivalents were thrust onto the CCF in the mid Cambrian. They are absent from the licence area.

The MRV in the area of EL 5/96 can be subdivided into three main units; the WSF, CVC and Henty Fault Wedge Sequence. Of these only the first two are part of the VHMS prospective sequence.

The White Spur Formation was formally defined by Corbett and Lees (1987) as a west facing sequence of felsic tuff, siltstone, greywacke and slate that unconformably overlies the Central Volcanic Complex between the North Henty Fault and Williamsford. It is conformably overlain by Dundas Group type conglomerates, quartzwacke, mudstone and lithicwacke on the western end of Howards Road. The abundance of quartz-phyric detritus in the White Spur Formation may suggest derivation from Tyndall Group rocks located to the east of the Henty Fault Zone.

The WSF can be divided into eight mappable sedimentary lithofacies in the White Spur area (Vicary 1997, 1998). These are:

A Black pyritic siltstones
B Micaceous volcaniclastic sediments
C Ashy volcaniclastic siltstones
D Medium – fine grained volcaniclastic sandstones
E Crystal-rich volcaniclastic sandstones
F Coarse lithic rich volcaniclastic conglomerate

The internal stratigraphy of the WSF is complex, but, in general in the northern part of EL 5/96 the CVC are directly overlain by coarse mass flow deposits (Facies F), whereas to the south finer grained lithologies (particularly Facies A and B) predominate. In addition there are intrusive feldspar-quartz-phyric rhyolite and quartz-feldspar porphyry bodies at different levels in the sequence. Clasts of sulphide have been identified in the basal mass flow deposits of the WSF to the north of 5362200mN. These clasts are considered to have been derived from the erosion of the sulphide deposits by down-slope mass flow movements.

The CVC comprises largely feldspar-phyric dacitic pumiceous sandstone and breccia, with lesser intrusive Quartz-feldspar porphyry and minor feldspar-phyric rhyodacitic lava. In addition to these typical CVC lithologies, feldspar-pyroxene-hornblende-phyric pumice breccia and rhyolitic sills are present in some drill holes (e.g., WSP7; Allen, 1998).

In the Jones Creek area, typical CVC-"type" pumice breccia and lava hosts a package of up to 400m of shale, sandstones and crystal-rich (feldspar>quartz) volcaniclastic sandstones (Corbett, 1986; Corbett in Vicary and Dauth, 1999). It is possible that this "Jones Creek Shale Sequence" is a correlate of the Rosebery-Hercules hangingwall shale sequence. Parts of the Jones Creek Sequence are strongly sericite altered (but, without the pyrite typical of VHMS alteration) and mineralisation comprises disseminated and vein pyrite-pyrrhotite-sphalerite-galena, generally best developed in shale/sandstone units. The best overall intersection was 32m @ 0.22% Zn, 0.09% Pb in DDH JCP211 (drilled to the north of the current EL 5/1996).

Base-metal poor massive pyrite lenses are hosted in intensely sericite altered CVC close to the WSF contact, and the North Henty Fault, in the south of the licence (the Annaliese Prospect). This mineralisation has a possible Cambrian age, based on Pb isotopes (Vicary, 1997), but has extremely light S isotopes (-10 to -17‰), dissimilar to any known Cambrian mineralisation from western Tasmania. No other significant mineralisation or alteration has been located in the CVC on the licence area.

Thin mafic dykes/sills (generally <5m, but up to 80m wide) are common within the Central Volcanic Complex in the eastern part of the EL and are correlated with the tholeiitic Henty Dyke swarm.

In the South eastern corner of the tenement the CVC is separated from the Henty Fault Wedge Sequence by the North Henty Fault (Figure 2). The Henty Fault Wedge Sequence (or Henty Valley Sequence; Poltock, 1992) comprises a west facing sequence of quartz sandstone, chert, hematitic greywacke/sandstone and minor tholeiitic basaltic andesite. These lithologies are considered to correlate with units in age from the Eo-Cambrian Crimson Creek Formation to the mid-Cambrian Mount Read Volcanics (Poltock, 1992). This sequence is not considered to be VHMS prospective.

Pleistocene glacial deposits, consisting predominantly of Cambrian volcanic, Cambro-Ordovician Owen Conglomerate and Jurassic dolerite (on the eastern slopes of Mt Dundas) derived clasts, are common throughout the tenement.

5. PREVIOUS EXPLORATION

The area of EL 5/96 White Spur has a long history of 'modern' exploration, commencing in the 1950's, that has been reviewed in detail by several authors (Purvis et al., 1983; Poltock and Fitzgerald, 1991; Fitzgerald, 1987; Vicary, 1997 and Corbett, in Vicary and Dauth, 1999). All previous exploration is summarised on Tables 1 and 2.

In the period 1957-1962 the area was explored by Rio Tinto Australia Exploration as part of SPL320 and ELs 4/1959 and 6/1959. From 1962 onwards the area has a complicated tenement history, dominated by ELs 9/66 (RGC), to the south, and 1/62 (EZ Co.) to the north.

EL 1/62 was initially granted to the EZ Company, but after 1978 was subject to a joint venture with the Getty Oil Development Company (GODC). EZ managed the JV from 1978-1983 at which point GODC assumed management (thus permitting exploration in conjunction with that on EL 9/66 to the south). However, in 1985 GODC's share of the JV was sold to Little River Goldfields NL and in October 1985 a new agreement was entered into between Shell Company of Australia, Little River Resources and the EZ Company, with Shell managing and operating the tenement. In January 1988 EL 1/62 was relinquished, with the northern part of the tenement being incorporated into the "Rosebery Extension leases" (MLs 10M/88, 11M/88 and 15M/88) and the remainder being incorporated into EL 11/85 (see below).

EL 9/66 was granted in August 1966 and in the period to 1980 was gradually amalgamated with other tenements to reach a maximum area of 637 sq. km. The tenement area was then progressively reduced through voluntary (in 1983 and 1984) and statutory (in 1985) reductions with complete relinquishment, apart from that area retained as the Henty Mine leases, in 1987. The tenement was explored by Renison Goldfields Consolidated Ltd. until 1976 when a Joint venture agreement was signed with GODC, who maintained an interest in the area until 1985 at which time their interest was sold to Little River Goldfields, later Little River Resources.

Following the statutory partial relinquishment of EL 9/66 in 1985 the vacant areas were picked up by Amoco Minerals Australia as EL 11/85. Title was then transferred to Cyprus Minerals (1985), Cyprus Gold (1988), Hudspeth and Company (1990) and finally to Arimco (1991). In this period the tenement was subject to two joint ventures, the second of which between Hudspeth and Co., Norgold and Pasminco commenced on 4 December 1990 and continued until relinquishment in 1995, with Pasminco as operators and managers of the JV.

Table 1: Exploration on the area of EL 5/96 prior to 1996

Reporting Period	Work Completed
1957-60 (King, 1960; McCarthy et al., 1960)	Helicopter borne EM in 1957 failed to locate any conductors. In 1960 the area was grided, geologically mapped and a TURAM survey completed; the 3 significant anomalies located by this survey were followed-up by Vertical EM, gravity, SP and magnetics; costeaning and drilling was recommended.
1961? (Campana, 1962)	Drilling of DDH WSP103.
1969-70 (Newnham, 1970)	Grid cut in upper part of White Spur Creek.
1971-72 (McKibben, 1972)	White Spur Area: Re-open RTAE grids, mapping and limited rock-chip sampling.
1971-72 (Reinhardt, 1972)	Turair survey, line cutting mapping and soil sampling (Dalwitz and White Spur Grids).
1973-74 (Williams, 1974)	Geological mapping, grid extensions and soil sampling on the White Spur and Dalwitz grids.
1974-75 Stevens-Hoare, 1975)	Re-clear and extend grid, Re-log DDH WSP103, C horizon soil and rock-chip sampling and detailed mapping.
1974-75 (Williams, 1975)	Mapping and soil geochemistry on the White Spur and Dalwitz grids.
1975-76 (Stevens-Hoare, 1976)	Limited track cutting, further soil sampling (incomplete at the time of reporting) and mapping, which located a massive pyrite boulder (low base and precious metal assays).
1976-77 (Walter and Brophy, 1977)	Extended existing grid, gradient array IP and ground magnetics completed; defined 13 main IP anomalies. Soil sampling indicated black shale units have high base metals (to 1500 ppm Pb) and correspond to IP anomalies.
1977-78 (Walter, 1978)	White Spur Area: Infill griding and EIP to follow-up anomalies; costeaning and soil sampling. Jones Creek Area: griding, gradient array and dipole-dipole IP, ground magnetics, costeaning and associated rock-chip sampling, C horizon soil sampling and geological mapping; recommended that 2 x DDH test EIP anomalies.
1978-79 (Reid et al., 1979)	White Spur Area: Additional mapping, soil and rock-chip sampling, ground magnetics and EIP. Jones Creek Area: DDH WSP1 completed (hole drilled outside area of current EL); hole intersected weakly mineralised and altered volcanics. IP explained by zones of up to 2% pyrite.
1979-80 (Meares et al., 1980)	White Spur Area (EL 9/66): IP, Rock-chip and soil sampling to evaluate drill target on line 37.5N; DDH WSP2 tested this anomaly intersecting weak mineralisation in a black shale.
1979-80 (Mill et al., 1980)	Dobsons Creek Area (EL 1/62): Re-peg and infill previous EZ grid, gradient array IP, C Horizon soil sampling of new lines and over IP anomalies, limited geological mapping.
1980-81 (McDonald, 1981)	Dobsons Creek Area (EL 1/62): Mapping of grid and access tracks. Recommend drill testing combined IP/soil geochem target.

Table 1: **Exploration on the area of EL 5/96 prior to 1996 cont….**

Reporting Period	Work Completed
1981-1982 (Mathison and McDonald, 1982a; McDonald and Mathison, 1982; Mathison and McDonald, 1982b)	Dobsons Creek Area (EL 1/62): Access track completed and DDH DCP235 (161.6m) drilled to test IP/geochem. target; downhole IP survey failed due to blocked hole. Best assay 0.7m @ 1.45% Pb, 2.2% Zn, 11 g/t Ag from a fault. Concluded that there was insufficient alteration to warrant further work.
1983 (Purvis et al., 1983)	Review of prospectivity of EL 9/66; reviewed previous work and did not recommend any further follow-up on the White Spur area.
1983-1984 (Fitzgerald et al., 1984)	Jones Creek Area: Jones and Dobsons Creek cut open for mapping and sampling, roads and creeks mapped and rock-chip sampled
1983-84 (Roberts and Cartwright, 1984; Fitzgerald and Pease, 1984)	White Spur Area: Exploration managed by Getty; reviewed previous exploration; concluded that further work warranted. Completed geological mapping, rock-chip sampling and a single loop UTEM survey. Some coverage by DIGHEM survey flown in December 1983.
1984 (Fitzgerald and McNaught, 1985)	Jones Creek Area: geological mapping, re-opening of the EZ imperial grid, UTEM survey and VLF-EM; a low amplitude EM response located in Jones Creek.
1985 (Purvis, 1985)	Jones Creek Area: Drilling of DDH JC1, which failed to intersect any significant mineralisation.
1985 (Corbett, 1985)	Tasmania Department of Mines drilled a 108.7m DDH (MR1) to determine the nature and attitude of the WSF/CVC contact.
1989 (Wyatt, 1990)	Helimag survey flown over EL 9/66 and vacant ground west of EL 9/66 by RGC; several anomalies and lineaments identified in the area of EL 5/96.
1990-1991 (Poltock and Fitzgerald, 1991)	Reconnaissance geological mapping, rock geochemistry and a review of previous exploration. Mapping located additional sulphide clasts in the WSF.
1991-92 (Poltock, 1992)	Regional geological mapping (located a significant zone of Se-Fd-py alteration), lithogeochemical sampling, interpretation of gravity and magnetic data.
1992 (Dugdale, 1992)	Honours study on "Lithostratigraphy of the White Spur area, western Tasmania".
1992-93 (Quayle, 1993)	Geological mapping, collection of mag. Susc. data from outcrops, lithogeochemical sampling, interpretation of airmagnetic and radiometric data and a review of old geochemistry and IP surveys.
1993-94 (Quayle, 1994)	The WSF/CVC contact was tested by a single 430.5m DDH (YWS1); no significant mineralisation was intersected. S.G. and Mag. Susc. data collected from drill core, further lithogeochemical assaying of rock-chips and core.
1994-95 (Quayle, 1995)	Surface rock chip sampling of CVC/WSF contact in the area of DDH MR1; high AI values were recorded in some samples, however, it is unclear whether this indicates alteration or is a function of weathering.
1995 (Nunn, 1995)	Honours study on "The sedimentology, volcanology and structure of the lower Dundas Group, Hall Rivulet Canal, western Tasmania".

Table 2: Exploration on EL 5/96 from 1996 to present

Reporting Period	Work Completed
1996-1997 (Vicary, 1997)	Relogging of old drill core; Location of a pyrite occurrence at the top of the CVC (Annaliese prospect) followed up by griding (7.1 line km), soil and rock chip sampling, mapping, S and Pb Isotope analysis, ground magnetics, IP, VLF-EM and a 306.6m DDH (ANNE001) with DHEM; no significant anomalies worthy of follow-up. Roads and tracks on remainder of tenement mapped at 1:5,000 scale.
1997-98 (Vicary 1998)	20.7 line km of griding (400m spaced lines covering the tenement) followed by mapping, rock-chip sampling, CSAMT, ground mag. and VLF-EM surveys. Historical IP data digitally compiled. 3759.3m of diamond drilling (9 holes) completed with DHEM in two holes; best result 17m @ 0.77% Zn and 0.4% Pb in WSP5. S, O and Pb isotopes on surface and drill samples; reviews of stratigraphy and alteration completed.
1998-99 (Vicary and Dauth, 1999)	DHEM results for 4 holes presented; Review of Jones Creek area completed; core from Jones Creek area relogged.
1999-2000 (Vicary, 2000)	No field work completed – a review of exploration by Goldfields was presented.
2000-2002 McNeill (2002)	Partial leach soil sampling (881 samples collected) and surveying (with DGPS) of the existing 400m spaced Goldfields grid over the CVC/White Spur Formation contact located 2 anomalous zones worthy of follow-up. Minor extensions (2.6 line km) to the existing grid were cut preparatory to partial leach soil sampling.
2002-2003 McNeill (2003)	Partial leach soil sampling (559 samples) and geological mapping of infill grid (9.5 line km cut) and extensions to the Goldfields grid over the CVC/White Spur Formation contact. This work was designed to follow-up the Central [Anomaly 2] and Northern [Anomaly 1] soil anomalies. Re-assaying of soils, from areas with anomalous partial leach results, by total digest methods (145 samples analysed). Completion of DHEM surveys in DDH YWS1, WSP6 and WSP10/10A.
2003-2004 McNeill (2004)	A two loop (2.275 line km) ground EM survey was completed to follow-up the DHEM responses in YWS1 and WSP6. As a result of problems with data quality no final interpretation could be made. Some geological mapping was completed in the north of the tenement. No significant changes to the structural or stratigraphic interpretation were made and no significant alteration or mineralisation was located. The 1997 RGC CSAMT survey of the tenement was re-processed and was being re-interpreted at the time the report was compiled.

6. WORK COMPLETED 2004-2005 REPORTING PERIOD

6.1 Geology

To aid in interpreting the partial leach soil surveys, and to resolve some discrepancies in existing mapping and interpretations, a program of geological mapping and compilation of existing data continued during the reporting period (in combination with work on the adjacent EL 11/2002 Dundas). Results are shown on Plans 1 and 2. No significant changes to the structural or stratigraphic interpretation were made and no significant alteration or mineralisation has been located by mapping completed during the reporting period.

Work on the remainder of the tenement is in progress and will be presented in the next annual report.

At the time of writing a CODES, University of Tasmania, Honours project, with student Corey Jago, had commenced with the aims of:

- Defining the position of the internal stratigraphic boundary (the WSF-CVC contact) between South Hercules and the Halls Rivulet canal.
- Establishing the textural and compositional characteristics of the volcanic and sedimentary facies at the top of the Central Volcanic Complex immediately below the boundary and of the overlying units (White Spur Formation or equivalent).
- Determining the lateral and vertical variations in the facies adjacent to the boundary and represent the changes on long- and cross-sections.
- Assessing potential vectors to mineralisation/alteration by examining the lateral geochemical variations of the top of the CVC.

A copy of Corey's thesis will be included in the next annual report.

6.2 Diamond Drilling

Geological mapping has defined a regionally anomalous doubly plunging syncline structure in the northern part of EL 5/1996. Four holes (DCP235, WSP2, 11 and 12) have been drilled into this structure, but none have tested the axis of the syncline and three of the holes (DCP235, WSP2 and 12) had not been read with DHEM. The area of the syncline has not been covered with ground EM, but a CSAMT survey has been completed (however, interpretation by Consultant J. Silic indicates it is of little value in target location, see section 6.3.2 below). Additionally a partial leach soil sampling survey located a significant multi-element anomaly over the northern part of the syncline. It was therefore decided to drill a single, approximately 500m deep hole to test the WSF/CVC contact in the axis of the syncline at its southern end.

Diamond Drill hole WSP13 was collared at 376524E, 5362534N, 623m ASL (coordinates in AGD66, zone 55; see Plan 2) on 25/9/04 and completed at 547.0m on 7/11/04. A detailed log, down hole survey details and other data are included as Appendix 1 and assay results are included as Appendix 2. A summary log is as follows:

From	To	Lithology
0.0m	180.9m	Interbedded greywacke, lithicwacke and siltstone/shale – WSF.
180.9m	219.7m	Black shale with minor, thin (<10cm) lithicwacke interbeds – WSF.
219.7m	296.1m	WSF- Upward fining Mass flow unit comprising: 219.7-256.8m Volcaniclastic shard-rich? Siltstone; gradational contact to: 256.8-272.8m Volcaniclastic sandstone, feldspar>quartz-phyric, scattered black shale clasts; gradational contact to: 272.8-296.1m Volcaniclastic breccia; shale and volcanogenic clasts to 20-40cm diameter; faulted contact to:
296.1m	433.2m	WSF- Upward fining Mass flow unit comprising: 296.1-365.0m Volcaniclastic shard-rich? Siltstone and minor black shale; gradational contact to: 365.0-422.9m Volcaniclastic sandstone, feldspar>quartz-phyric, pumiceous with black shale and volcanogenic clasts; gradational contact to: 422.9-433.2m Volcaniclastic breccia Polymict (including limestone and at 424.25m BMS clasts); abrupt ?conformable contact to:
433.2m	451.5m	Black Shale – WSF.
451.5m	547.0m	CVC- overall upwardly fining feldspar-phyric mass flow unit comprising: 451.5-470.3m Pumiceous volcaniclastic sandstone to siltstone with rare volcanogenic lithics. 470.3-547.0m Pumice-rich volcaniclastic sandstone to breccia; pyritic 525.5-538.4m with a thin (10cm) banded Py-?Ba interval at 530.7m.

Although the stratigraphy above 433.2m was largely as expected (based on mapping and the intersections in WSP2 and 12) the upper black shale unit was intersected shallower than expected. This coupled with changes in bedding to long-core axis measurements across the shale unit suggest that the hole passed through the axis of the syncline further east than interpreted from previous drilling.

The black shale unit from 433.2-451.5m was also unexpected – the base of the WSF in holes to the east (MR1 and WSP12) had been a base-metal sulphide clast bearing mass flow unit, which was intersected at 422.9-433.2m in WSP13. The black shale and the underlying fine grained pumiceous rocks appear to be equivalents of the Hercules and Rosebery 'Host rocks' which were ?eroded out by the WSF mass flow units to the east.

Although it is encouraging that the 'Host rocks' are present the upper CVC did not appear to be strongly altered or mineralised, although there was a zone of increased pyrite (with minor barite) content deeper in the CVC pumice breccias, at 525.5-538.4m.

This is confirmed by assays of the host rocks, which indicate that base and precious metals are all low, maximum 290 ppm Zn and 0.006 ppm Au, and lower than those in the overlying shales and mass-flow units which contain assayed up to 2.0m @ 0.16% Zn with elevated Pb, to 920 ppm and Ba, to 0.5% (note that the massive sulphide clast at 424.25m was not sampled). Sb also appear to be elevated in the WSF and top of the CVC (2-16 ppm) but drops to 0.8-4.0 ppm lower in the CVC.

A DHEM survey is planned for WSP13 and will be completed in the next reporting period.

6.3 Geophysics

6.3.1 Ground EM

DHEM responses in DDH YWS1 and WSP6 have been interpreted to result from a conductor between the two holes (Silic in McNeill, 2003). The conductor was poorly defined, neither hole traversed across the response, and a fixed-loop ground EM survey was completed in January 2004, with lines over the interpreted position of the conductor (McNeill, 2004). As a result of possible equipment problem no definitive interpretation of the fixed-loop ground data could be made and it was concluded that further data was required to complete the interpretation. Therefore a second survey was completed by Zonge Engineering in October 2004 using Loop 1 and reading on two lines (a total of 1.4 line km of data collected). The operations report and results of this survey are presented as Appendix 3. The new data confirmed that there were instrumental problems with the January survey and that the anomaly resulted from an unusual, in Tasmania, IP effect and did not warrant any further follow-up.

6.3.2 CSAMT

In May 1997 Zonge Engineering completed a 23.5 line km controlled source audio-magnetotelluric (CSAMT) survey over the CVC/WSF contact on the tenement. An initial report was presented (Dauth in Vicary, 1998) and several interpreted features were followed-up. However, it was recommended that given the lack of ground EM coverage over the CVC/WSF contact that the CSAMT survey be reprocessed and re-interpreted (C Dauth, pers. Comm., 2001). The data were reviewed by J. Silic and results are presented in Appendix 4. It is concluded that: "the CSAMT data can only be interpreted in a qualitative sense which gives the target location by not necessarily its conductivity thickness product or intrinsic resistivity (conductivity). Considering that the 1998 CSAMT data was only collected in 'E perpendicular' mode of operation leads to the conclusion that a number of potentially interesting conductive targets whose width (thickness) is less than it's depth to top would not have been detected by the survey".

6.4 Whole-rock Geochemistry

To assess any regional alteration signature in the top of the CVC, a set of samples from DDH WSP13, 11 and 12 were submitted to Analabs for whole-rock assay. Results are presented as Appendix 5. Results were disappointing, with little sign of the Na-depletion that would be expected from a VHMS footwall alteration zone. During the next reporting period this dataset will be expanded, with RGC results and additional sampling to give a more regional overview of the chemical variations of the top of the CVC.

7. CONCLUSIONS & RECOMMENDATIONS

Work completed during the reporting period included:

- Follow-up of the YWS1/WSP6 DHEM anomaly by further fixed-loop time-domain ground EM. This work indicated that the previously reported January 2004 data was affected by instrumented problems and that the DHEM anomaly resulted from an unusual, in Tasmania, IP effect and did not warrant any further follow-up.
- Additional geological mapping in the north of the tenement. No significant changes to the structural or stratigraphic interpretation were made and no significant alteration or mineralisation was located.
- Drilling of DDH WSP13 (547.0m), which intersected potential Rosebery – Hercules host rock equivalents and a Zn-rich massive sulphide clast (at 424.25m) in a WSF mass flow unit.
- A program of whole-rock analysis of the top of the CVC was commenced – results from WSP11,12 and 13 were not particularly encouraging, with no sign of the expected Na-depletion that would indicate proximity to a VHMS footwall alteration zone.
- Review of the 1997 RGC CSAMT survey.

Based on the results summarised above it is recommended that in the next 12 months:

- Geological mapping be completed over the remainder of the tenement.
- Data from White Spur and surrounding tenements be compiled and a regional interpretation completed of the partial leach soil geochemical data.
- DHEM be completed in those holes not previously read (WSP12 and 13).
- The Whole rock geochemical study be expanded to allow a more regional interpretation.
- Commence exploration (gridding, mapping and soil sampling) of the Jones Creek Prospect (in combination with work on the adjacent ML 28M/93).
- An Honours study be commenced to assess the nature of the WSF/CVC contact throughout the area, with the aim of determining where the top of the CVC (i.e., Rosebery and Hercules host rock equivalents) is preserved and where it has been eroded away.
- PL anomaly 1 be tested by a helicopter supported, approximately 500m deep drill hole.
- The un-drilled 1.2 km strike length of CVC/WSF contact between WSP6 and ANNE01 be tested by drilling at least one approximately 500m deep hole.

8. EXPENDITURE

Total expenditure for all work undertaken by Zinifex Rosebery Mine within White Spur EL 5/1996, for the period ending 28/02/05 was $105,113. A detailed expenditure statement is given below.

Computing	$3,074
Drilling	$59,899
Geochemical Assays	$3,393
Geoscience Consultants	$5,640
Geophysics	$7,368
Land Environment	$666
Depreciation, Office, Sundry	$204
Other Contractors	$7,032
Personnel Costs	$7,314
Stores & Supplies	$476
Travel & Accommodation	$200
Vehicles, Plant & Maintenance	$347
Administration Fee 10%	$9,500
Total	**$105,113**

9. KEYWORDS & LOCALITY

Keywords

WHITE SPUR, GEOPHYSICS – EM, GEOPHYSICS – CSAMT, GEOLOGY, WHITE SPUR FORMATION, CENTRAL VOLCANIC COMPLEX, MOUNT READ VOLCANICS

Locality

1:250,000 QUEENSTOWN SK55-5

1:100,000 SOPHIA 8014, PIEMAN 7914

1:25,000 OCEANA 3635, DUNDAS 3636

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