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PASMINCO EXPLORATION
DUNDAS EL 21/96
ANNUAL REPORT
FOR THE PERIOD ENDING OCTOBER 1998

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Appendix One

Digital Copy of Report

1. SUMMARY

During the 1997-98 reporting period, work undertaken in the licence area has focused on minor reconnaissance work, compiling the database developed in the previous reporting period, reviewing the regional geology and developing a future work program for the licence area

2. INTRODUCTION

This report details exploration undertaken on the Dundas EL 21/96 during the period October 1997 to October 1998. The central portion of the licence area is located 10km SW of the township of Rosebery (Figure 1).

The EL lies in a mountainous, heavily forested area north of Mount Dundas to Rosebery.

The area has undergone prolonged exploration for base metals, tin and more recently, gold, and it is estimated that well over 100 drill holes have been completed on a variety of geological, geochemical and/or geophysical targets.

3. LAND TENURE

EL 21/96 was granted in October 1996 over an area of 90 sq km with a mining lease of 1.5km² excised from the title in the vicinity of the Razorback Mine by an ML, and the Rosebery mine lease, which covers approximately 6km² along the north eastern margin of the licence.

The area is subjected to claims for National Estate and RAP areas. These areas have been highlighted in Figure 2.

During the reporting period a small block of ground has been given over to M & E Phelan, who have applied for a Mining Lease covering an area of 5 hectares or less on Stichtite Hill. This is for Category 3 minerals as described within Schedule 4 of the Mineral Resources Regulations 1996, being semi-precious stones which includes stichtite. The Mining Lease is limited to a depth of 20 metres from the natural surface of the land contained within the Mining Lease. Pasminco retains an exclusive right to explore and mine Category 1 Minerals within the Mining Lease area.

4. GEOLOGY & STRUCTURE

The Dundas area is geologically very complicated, with most Groups and Formations appearing to be faulted against each other. The geological maps of the Mount Read Project area have divided the Mount Read Volcanics into three provinces. The Dundas title is essentially underlain by the Western Succession of the Mount Read Volcanic Belt, on the western side of the Rosebery Fault. The synopsis of the geology within EL 21/96 Dundas has been taken from Crossing (1990), with modifications.

4.1 Oonah Formation

The oldest basal rocks known in the area are the Eocambrian - Oonah Formation. These rocks outcrop in a fault bounded area north west of Mount Dundas. The lower most unit is a poorly sorted matrix supported carbonate-rich conglomerate and has been the target for tin exploration. This unit is overlain by micaceous quartzites, grey to black graphitic siltstones and shales which in some places have been heavily sheared. These units have been sometimes called the Concert Schist.

The preservation of these rocks is thought to have occurred in a down-faulted graben and thus the contact with overlying groups is either faulted on an unconformity. A recent PhD Thesis by Selley over this area has indicated that the Oonah horst block was acting as a basement high during the Cambrian period.

4.2 Success Creek Group

This unit is missing from the Dundas area. It's type area west of Renison Bell consists of a package of metasedimentary rocks of shallow water laminated siltstones and shales with interbedded sandstone and conglomerates. At Renison Bell, this sequence contains three persistent dolomite horizons which between them host virtually all the stratabound tin orebodies at Renison Bell.

The relationship between the Success Creek Formation and the Oonah Formation is not well understood. Some workers think they are conformable (Blissett 1962) and therefore part of the Oonah Formation, but others (Taylor 1954) have recognised an unconformity between the two and thus are considered to be separate identities (Crossing 1990).

4.3 Crimson Creek Formation

This Formation was defined near the Renison Bell Mine where it consists of 3500m of turbiditic volcanoclastic lithic wackes derived from the erosion of mafic volcanoclastics, massive siltstones and mudstones and basaltic lava flows. Numerous gabbros intrude this sequence in the vicinity of Renison Bell and occasional impure dolomitic horizons have been recorded.

This formation outcrops in a north-south trending unit at Colebrook Hill. There is some dispute whether this area is Crimson Creek Formation as the sediments

contain acid to intermediate volcanic detritus rather than the basaltic detritus of the Renison Bell type section.

4.4 Dundas Group

This unit occupies a trough in the central portion of the licence area and consists of epiclastic and volcanoclastic sediments. It is comprised of turbiditic to shallow water sediments containing immature sorted conglomerates, monotonous siltstones and shales containing some sandstone and grit interbeds. Towards the top of the sequence acid to intermediate tuffs and related volcanoclastic sediments and minor lava flows occur. These units within this group generally show marked variations in thickness over short distances and units often interfinger one with another making correlations very difficult.

In general, the Dundas Group is in fault contact with the underlying Crimson Creek Formation and so their strict relationships have not been established. The Dundas Group in turn is faulted against the Cambrian ultramafic complexes. However, RGC noted that the Montezuma Grid drill hole MZ 005 passed from an immature polymict conglomerate through a gradational contact into a gabbroic conglomerate and finally into a gabbroic unit of the Serpentine Hill complex, indicating a conformable relationship. Furthermore, in drill holes MZ 001 and MZ 003, drilled at Greens Prospect - Montezuma shows that relatively unfolded Dundas Group sediments overlie a Cambrian ultramafic complex. This mafic unit was apparently a topographic high at the time of deposition of the Dundas Group Sediments, which make age relationships between these units very difficult to sort out.

There is also evidence in the southern portion of the Montezuma Grid of a pseudo-conformable contact between the Dundas Group sediments and the older Oonah Formation, indicating an erosional unconformity which represents an absence of approximately 1000m of Success Creek Formation and 2500m of Crimson Creek Group.

As further detailed mapping has occurred, the Dundas Group has been divided up into formation such as the Stitt Quartzite which outcrops east of Colebrook Hill, in the vicinity of Westcott Hill.

As can be seen from the above, age relationships and stratigraphy are still poorly understood in this area.

4.5 Ultramafic Complexes

These occur at a number of locations throughout the licence area including bodies located by drilling at depth. They typically exhibit a high degree of internal deformation which would be expected from their original mineralogy. The only exception to this is the Serpentine Hill area which includes core areas of unserpentinised dunite and pyroxenite which have been intruded by gabbros.

Current tectonic theory has these ultramafic complexes emplaced as allochthonous thrust sheets emplaced during the mid Cambrian (Berry and Crawford, 1988).

4.6 Gabbroic Bodies

These units occur as irregular intrusions throughout the Crimson Creek Formation and Dundas Group sediments. Their age relationships and period of intrusions have yet to be accurately determined.

4.7 Devonian Pine Hill Granite

The south-eastern 'tail' of this intrusion occurs on the mid-western side of the Dundas title. The intrusion is described as a porphyritic adamellite and is thought to consist of a series of intrusions. It has been involved with early alteration of silicification and sericitisation followed by boron metasomatism. It has extensively altered units it comes into contact with and is responsible for the metasomatic replacement of the three dolomitic units of the Success Creek Group which host the Renison Bell tin lodes. As such, areas surrounding this intrusive body have been extensively explored for replacement tin lodes.

4.8 Quaternary

Glacial gravels occupy a N-S zone in the NE quadrant of the licence area.

4.9 Structure

The Dundas licence area is one of complex structural relationships making age relationships between the various units difficult. Shearing and faulting is often preferentially taken up by the more mafic units, thereby masking stratigraphic relationships.

The Oonah Formation is isoclinally folded which is absent from the younger Palaeozoic rocks. This deformation may have occurred in the Precambrian Penguin Orogeny.

The main structural and stratigraphic features of the Dundas Trough are:

- 1) The thick Mount Read felsic volcanic belt occurs along the eastern margin of the trough with no obvious correlates on the western side. Such felsic successions have modern analogues in Andean style subduction zones (Crossing 1990).
- 2) Early shallow water deposits (Success Creek Group), followed by greywackes and tholeiitic lavas (Crimson Creek Formation) and finally a series of epiclastic and volcanoclastic sediments (Dundas Group) infill the basin. The sediment-volcanic deposition rates were rapid which is supported by modern dating techniques which show the basin filled in about 5 million years (Perkins *et al*, 1995).

- 3) Mafic and ultramafic complexes with characteristics of ophiolites are present as fault bounded slices. Modern analogues to this occur in mid-oceanic ridge and oceanic island arc settings.
- 4) The Dundas Group metasediments are partially derived from the Mount Read Volcanic Belt, partly from the Precambrian and partly from intra trough sources including basement highs of ultramafic and gabbroic material.

This shows the structural history to be very complicated and difficulty is experienced fitting the Mount Read Volcanic Province into a modern analogue. Rifting is not particularly evident, but thrusting is thought to have occurred especially associated with the ultramafic bodies (most of which are strongly deformed and dismembered). The Dundas Group may post-date the thrusting because of conformable relationships observed at Green Prospect where sheared ultramafics are unconformably but not shear controlled east dipping Dundas Group metasediments.

It is believed the Rosebery Fault represents a major Cambrian thrust not associated with mafic-ultramafic complexes (Crossing, 1990).

In the Devonian, the Tabberabberan Orogeny produced most of the observable folding and faulting that has been mapped in the Dundas area. This Orogeny may have influenced a degree of control on the shape of Devonian granite intrusions.

The main folds generated include the Huskisson Syncline north west of the Dundas title. The Renison Anticline (to the west of the Dundas title) and the Dundas Anticline where the Oonah has been structurally deformed NW of Mount Dundas.

The faulting appears to be associated with most mineralised systems and generally shows a NNW trending group of steeply dipping faults with limited dip slip to oblique slip movement and a NE set of steeply dipping faults having larger displacements.

The amount of displacement is difficult to quantify because of the lack of recognisable marker beds. Whereas the NNW faults are generally confined, the NE faults often occur along margins of the mafic-ultramafic complexes. These faults and the Cambrian thrusts (Rosebery Fault) later acted as zones of structural weakness in Devonian times which resulted in a secondary mineralising epoch of remobilised ore.

5. PREVIOUS EXPLORATION

The Dundas area has been the focus of extensive exploration activity since the 1930's, when modern exploration commenced. Weber & Murphy (1997) provide a comprehensive summary of previous exploration of the tenement area. Table 1 gives an overview of previous work by other companies.

Figure 4 shows the known mines within the Dundas title area.

Pasminco has held the Dundas licence since October 1996. In the reporting year 1996-97 the main work conducted by Pasminco on EL 21/96 consisted of reconnaissance mapping, a review, and subsequent compilation of historical data (GIS format).

6. WORK COMPLETED 1997-98 REPORTING PERIOD

Work completed during the reporting year has been of a reconnaissance nature. The area is one where there has been intensive previous exploration and, as reported last year, significant effort was directed towards capturing historic exploration data. This year's work has involved taking stock of the database and has also been directed towards both understanding the regional geological setting and developing work programs for the licence area.

A number of field visits were made to prospects in the SW part of the licence, particularly in the Kosminsky area.

The mapping undertaken in the district by Dave Selley, as part of his 1997 PhD thesis (Figure 3), has provided scope for interpreting the geological history, in particular the role of the Precambrian Oonagh Formation as forming a horst block during Dundas Group deposition. In addition, the interpretation of the Ring River Melange as representing deformation during sedimentation and burial diagenesis indicates tectonic instability proximal to the horst. The nature of the boundaries with the Precambrian need to be considered for their potential as growth faults and potential mineralising structures. This geometry impacts on modelling fluid flow regimes associated with mineralisation.

7. WORK PROGRAM

The work program scheduled for the coming year involves commissioning an Airborne EM survey for the licence area, estimated in excess of \$70,000. This should provide a more comprehensive assessment of the geology in context with historic data sets. A follow up program of testing highly ranked anomalies and prospects will be undertaken utilising grid-based soil sampling and mapping followed by drill testing defined targets. The entire program has been budgeted at \$140,000.

8. EXPENDITURE

The limited scope of direct exploration activities on the ground in the current year reflected tight budgetary constraints, although meeting expenditure commitments over the two year period of the current licence. The total expenditure for all work undertaken within Dundas EL 21/96 for the twelve month period to 30th September 1998 was \$11,310. A detailed expenditure statement is given below.

Personnel	2,131
Travel & Accommodation	10
Consultants & Contractors	2,250
Drilling	0
Stores & Supplies	0
Vehicles Plant & Equipment	0
Land	2,489
Computing	0
Office	3,402
Administration Fee	1,028
Total Tenement Expenditure	\$11,310

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10. KEYWORDS & LOCALITY

ZINC, LEAD, COPPER, SILVER, TIN, ARSENOPYRITE, TENNANTITE,
DUNDAS, OONAH FORMATION, SUCCESS CREEK, ROSEBERY FAULT, PINE
HILL GRANITE.

QUEENSTOWN SK 55-5

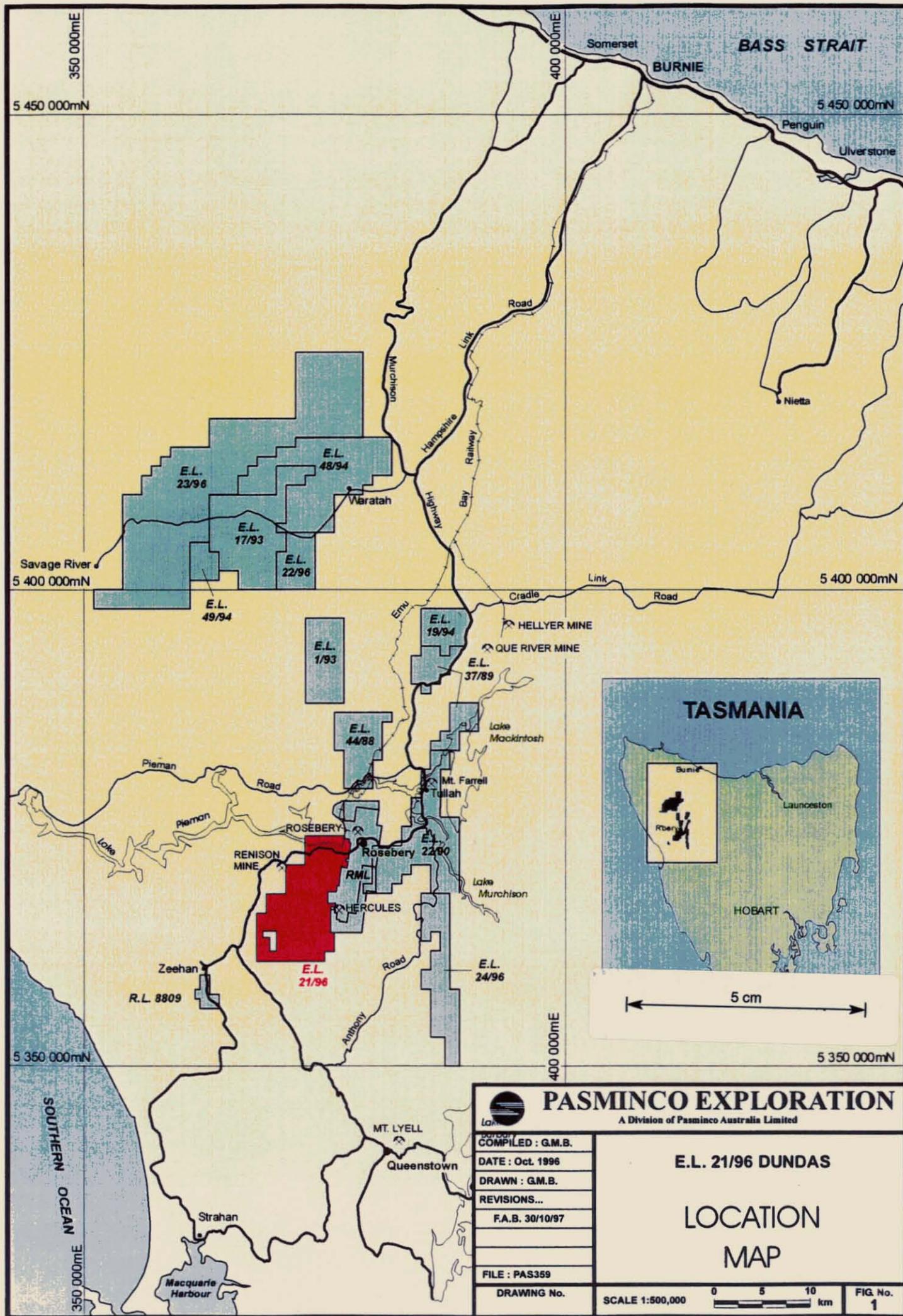
Mount Dundas, Rosebery, Montezuma, Renison Bell.

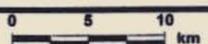
TABLE 1: Previous Work in EL 21/96 Dundas Area (partially after Crossing 1990)

COMPANY	PERIOD	PROSPECT(S)	COMMODITIES	METHODS	RESULTS
BHR	1959/60	Razorback Grand Prize	Sn	Turam, Sp Magnetics	Inconclusive except over known mineralisation.
PLACER	1964/66	Razorback Grand Prize	Sn	Underground Drill Mining	No new orebodies found. The prospects are not connected.
NCGF	1966/71	N Dundas (Montezuma)	Sn	Magnetics, VHEM Mapping Geochem	Coincident Magnetic and Tin-in-Soil anomaly on Montezuma Fault. Not considered worth drilling
GEOPHOTO	1968/74	Dundas	Pb Zn Ag	IP, REM, SP, Mag Mapping Geochem 79 Drill Holes	Intensive drilling located Pb Zn Ag in several thin fissure veins separated by barren host rocks. Didn't meet corporate objectives.
COMSTAFF	1970/85	E Renison Godkin	Sn	IP, Input, Mag Mapping 58 Drill Holes	Intensive drilling defined: Fenton's Tin Vein; 0.43Mt x 1% Sn, 0.2% Cu Salmon Vein; 0.83Mt x 3% Pb, 2% Zn Godkin; 0.3Mt x 0.9% Sn
CSR	1976/87	Nevada Razorback Montezuma Carbine Hill	Sn Cu Pb Zn Au	Em, Mag, IP Dighem, Input Mapping Stream Geochem. Soil Geochem 7 Drill holes	Several geochem anomalies identified and followed up but more were drilled. Airborne geophysical anomalies were followed up by 7 unsuccessful holes.
EZ/GETTY EZ/CSR	1978/86	Colebrook Hill Ring River Mt Dundas Montezuma	Sn Cu	Input, Dighem Turam, IP Mapping Geochem. 28 Drill holes	Several encouraging Sn and/or Cu intersections as Colebrook Hill (23 holes). Only minor Sn, Pb intersections on Montezuma Fault (5 holes). Deep hole proposed - not completed.
MINOPS P/L	1979/84	Godkin Prospect	Sn	Gridding, soil, geophysics, drilling	Comstaff and Paringa JV into Godkin area outlined inferred resource 300,000t @ 0.9% Sn.

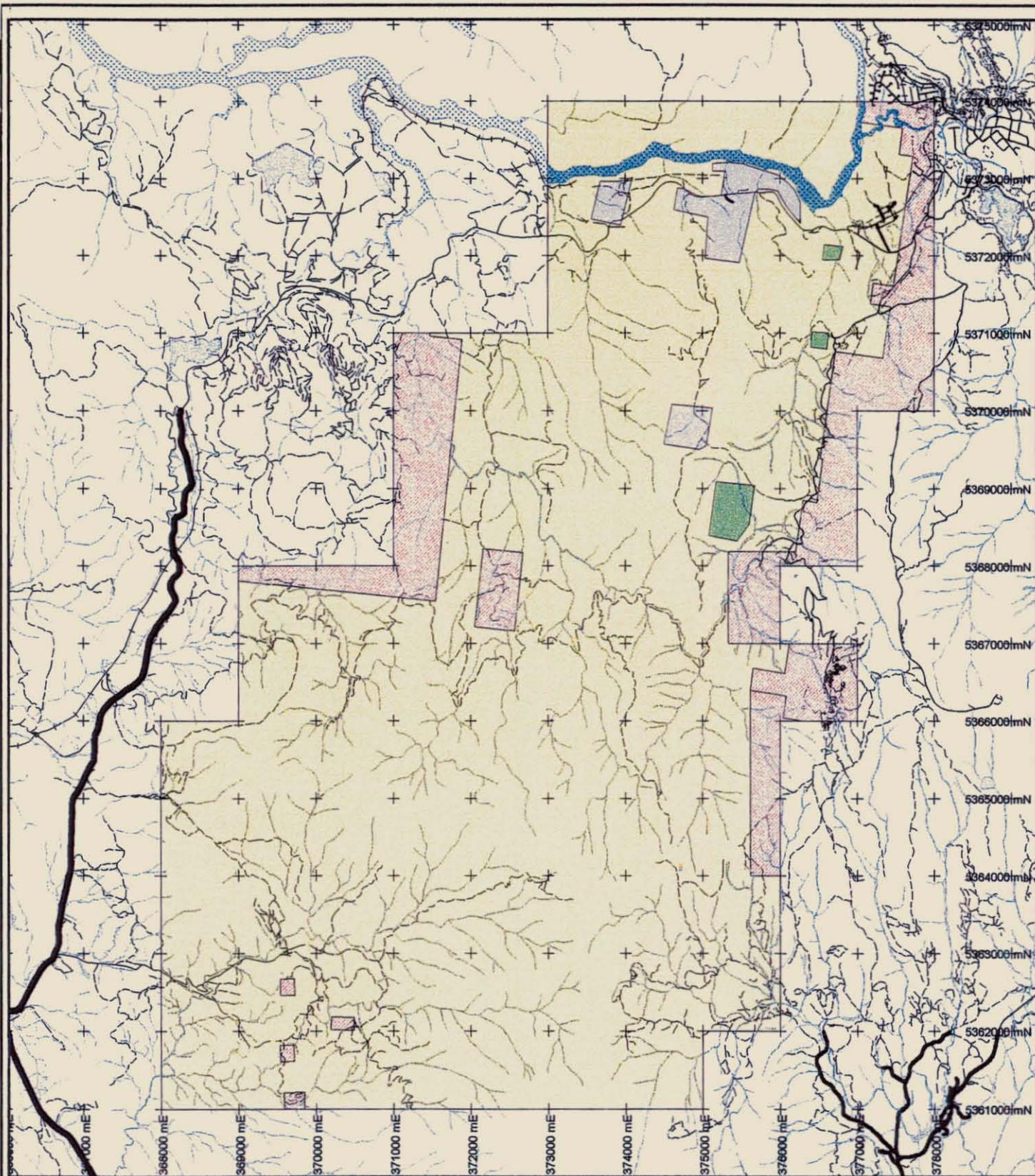
TABLE 1: Previous Work in EL 21/96 Dundas Area (partially after Crossing 1990)

COMPANY	PERIOD	PROSPECT(S)	COMMODITIES	METHODS	RESULTS
RENISON LTD	1971/87	Grand Prize (Fault) North Dundas Grid Commonwealth Hill Razorback Grid Kapi Carbine Hill Serpentine Hill	Sn Cu Asbestos, PGM	Gridding, mapping, Airborne EM, drilling. Soil/rock geochem. IP, Dighem.	Extremely deep diamond drilling on the Kapi Fault returned in S 652, 313.4-313.9m 0.5m @ 2.14% Cu. Grand Prize Fault: S 947A @ 534.8m tourmaline alteration zone. S 969: 406.8-409.8 - 3m @ 5.21% Sn, 0.23% Cu, 13 g/t Ag 408.4-409.8 - 1.4m @ 10.93% Sn
ROGER POLTOCK GEOLOGICAL P/L	1986/88	Colebrook Hill	Au Cu W	SS	Concluded Colebrook Hill was a thin skarn alteration system.
RGC EXPLORATION P/L	1987/95 1988/95 (Dundas & Moore's Pimple)	Montezuma Grid Ring River Wallace Prospect Greens Prospect	Sn Au	Gridding, prospect mapping, rock chip sampling, IP	MZ 004 182.1-183.7 1.6m @ 19.25% As, 725ppm Sb and 0.54 g/t Au.



 PASMINCO EXPLORATION A Division of Pasma Australia Limited	
COMPILED : G.M.B. DATE : Oct. 1996 DRAWN : G.M.B. REVISIONS... F.A.B. 30/10/97	E.L. 21/96 DUNDAS LOCATION MAP
FILE : PAS359 DRAWING No.	SCALE 1:500,000 
	FIG. No. 1

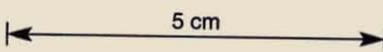
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PAMINCO EXPLORATION

**Figure 2:
EL21/96 - Dundas,
Land Tenure Map.**

Scale = 1:70,000



Land Tenure	
	Crown Land / State Forest
	Crown Reserve
	Mining Lease
	Private Property
	Vested in HEC

536023

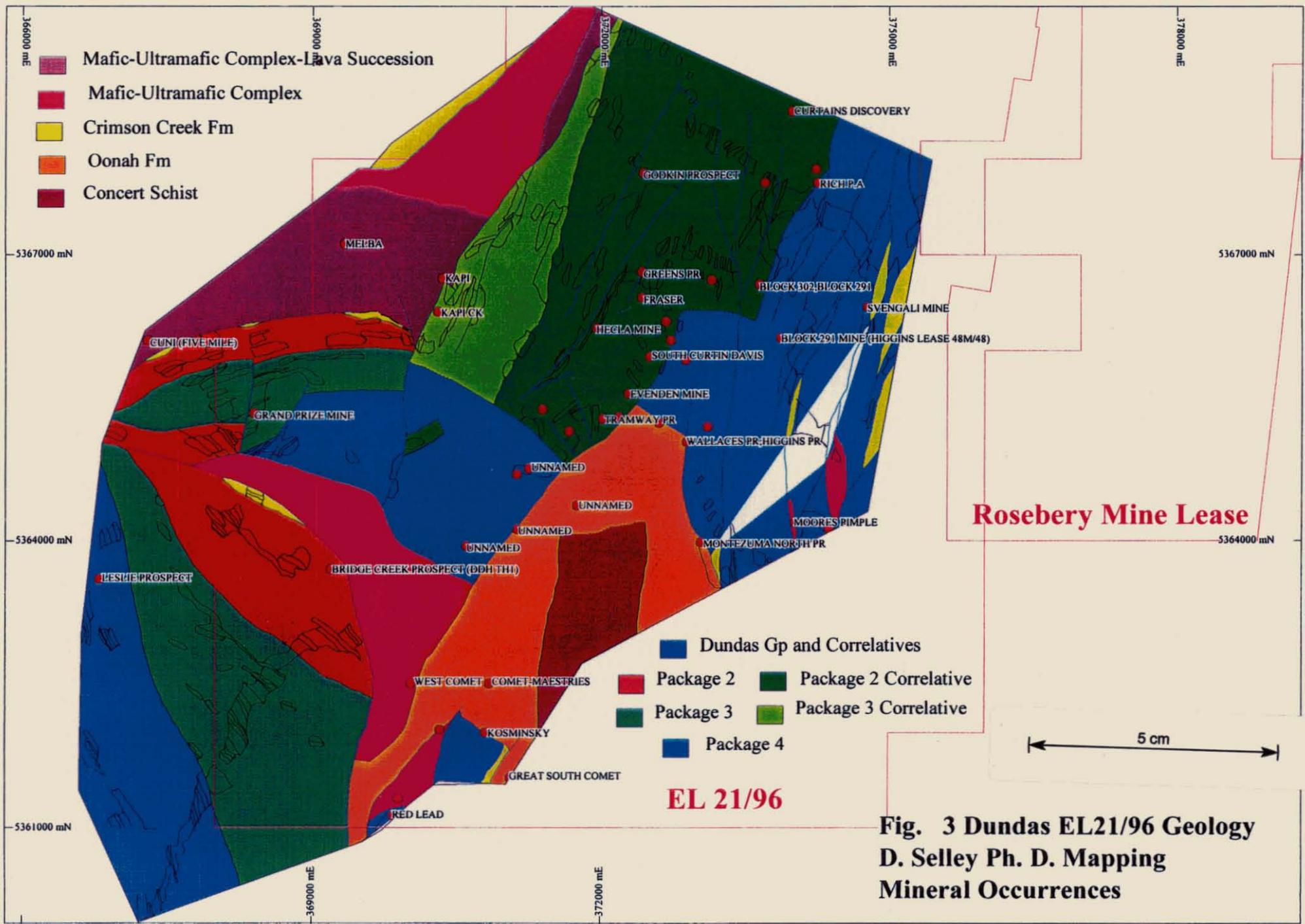


Fig. 3 Dundas EL21/96 Geology
 D. Selley Ph. D. Mapping
 Mineral Occurrences

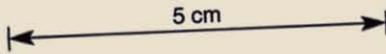
Pasminco Exploration

Dundas EL 21/96
1:25k Geology
Mineral Occurrences

21/10/1997
FCM
Map
4
1:80000
Projection: AMG Zone 56 (AGD 84)



372000 mE 374000 mE 376000 mE 378000 mE



- Zn Min Occ
- ◇ Pb Min Occ
- Cu Min Occ

5372000 mN

5370000 mN

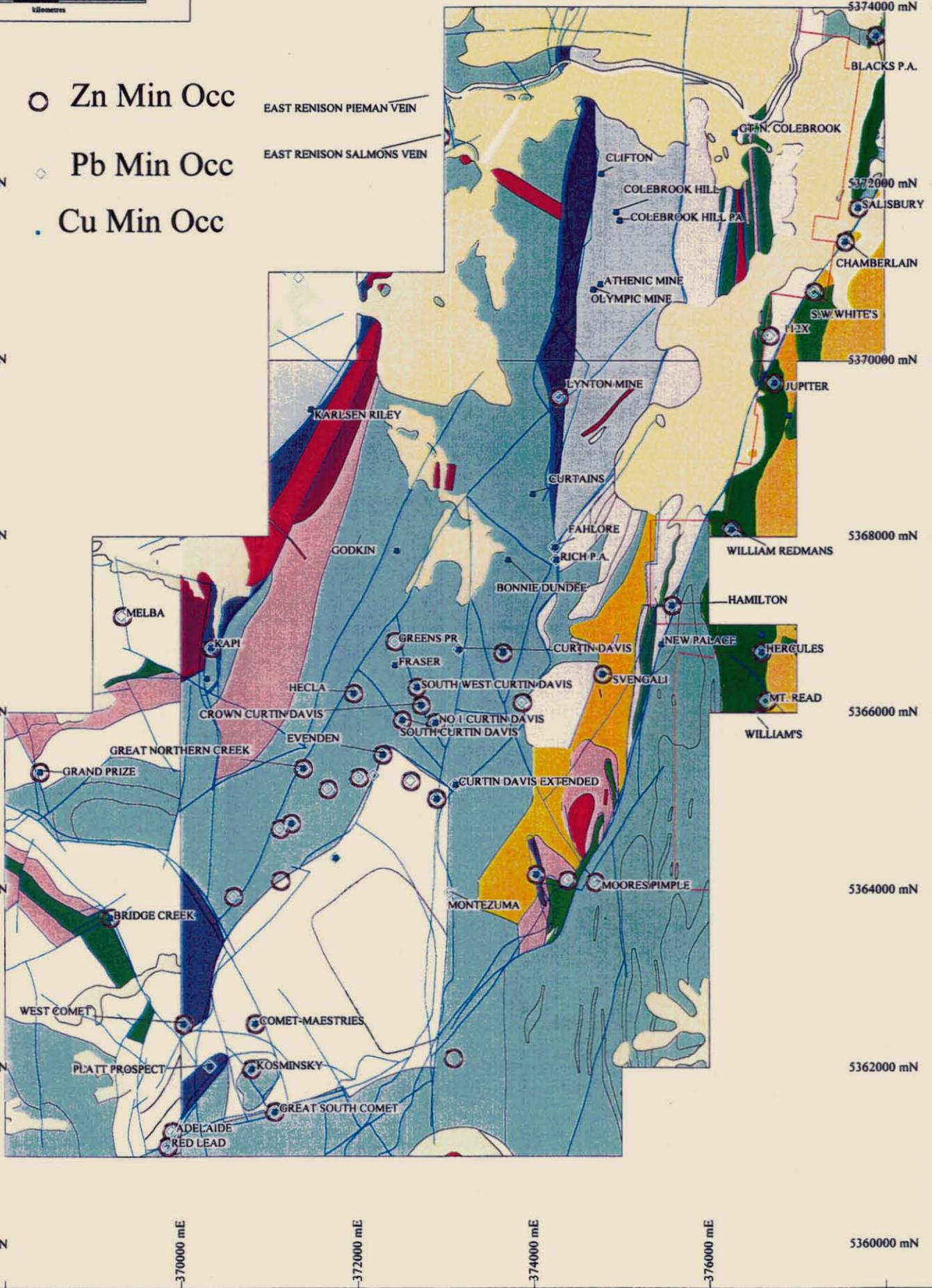
5368000 mN

5366000 mN

5364000 mN

5362000 mN

5360000 mN



5374000 mN

5372000 mN

5370000 mN

5368000 mN

5366000 mN

5364000 mN

5362000 mN

5360000 mN

370000 mE

372000 mE

374000 mE

376000 mE