PASMINCO EXPLORATION

DIAL RANGE EL 9/92

ANNUAL REPORT
JULY 1994 – JUNE 1995

FINAL REPORT
JULY 1992 – JUNE 1995

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SUBMITTED BY: NK McGunnigle

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June 1995

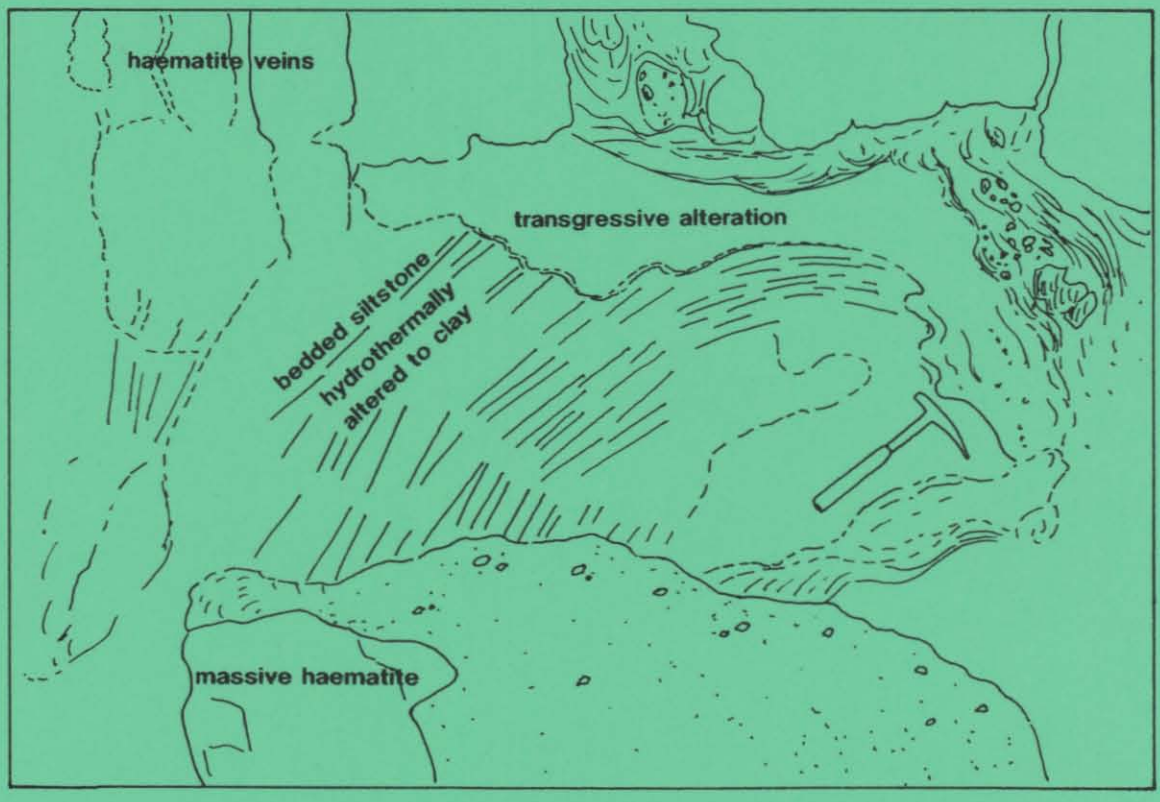

Plate 1 Haematite veins and transgressive hydrothermal alteration exposed in the Iron Cliffs, south of Penguin.

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1 SUMMARY

Exploration Licence 9/92 Dial Range was granted to Pasminco Australia Limited (Pasminco) on 25 July 1992. A relatively low key exploration program has been conducted since that time, primarily to identify polymetallic massive sulphide deposits and high grade copper–precious metal deposits.

Work undertaken on Dial Range EL 9/92 by Pasminco prior to the current licence year has included: a collective data review of all previous relevant exploration, reconnaissance and geological mapping, mineral prospecting, geochemistry, lithogeochemistry of the principal volcanic units, a high resolution helicopter–borne aeromagnetic and radiometric survey and investigation of new geological models for styles of economic mineralisation.

Work during the current period has included investigation of the Iron Cliffs haematitic "ironstones" which occur about the contact between Precambrian Burnie Formation and Ordovician Owen Conglomerate equivalents. The regional haematite appears to have precipitated from Cambrian granite–sourced fluids which could be of sufficient volume to form ore if reduced to sulphides. There appears to be no necessity to test the ferruginous zones, development of a reducing environment capable of converting the fluids to sulphide ores is not apparent in available mapping.

The Lobster Creek Volcanics are concluded to be geochemically similar to the main Mt Read Volcanic Groups in western Tasmania. A newly recognized basaltic intrusion in the Dial Mine area is the first high–K or shoshonitic volcanics recorded north and east of the Henty fault, and are analogous to the Suite III Mt Read Volcanic Suite of Crawford et al.,(1993).

The Tertiary basalt cover masks the subsurface geology of the area, proving to be a major limiting factor in the exploration of EL 9/92.

Total exploration expenditure on Dial Range EL 9/92 since its inception on 25 July 1992 is $198 895.

The disappointing results of these investigations and failure to locate any significant mineralisation do not warrant further exploration at this time and it is recommended that the licence to Pasminco for Dial Range EL 9/92 not be renewed beyond the current term, which is due to expire on 24 July 1995.

2 INTRODUCTION

This annual and final report for Dial Range EL 9/92 details work undertaken during the period July 1994 to June 1995, and summarizes all of the exploration activity undertaken since the grant of the licence on 25 July 1992. Notice of Pasminco's intention not to renew the licence was submitted to the Mines Department on 1 June 1995.

During the initial year of exploration, work in EL 9/92 involved:

- compilation and assessment of previous relevant exploration data;
- reconnaissance geological mapping;
- mineral prospecting;
- geochemistry;
- a high resolution helicopter-borne magnetic and radiometric survey.

Following a re-assessment of the exploration potential of the area based on these results, field activities since have been limited and include:

- low key mapping and sampling of the Iron Cliffs prospect;
- lithogeochemistry of the principal volcanic units;
- preliminary processing and interpretation of the airborne radiometric data;
- investigation of new geological models for styles of economic mineralisation.

Active exploration during the period of July 1994 to June 1995 has continued to be limited, focussing on further examination of the Penguin Creek-Iron Cliffs ferruginous deposits with assay sampling and magnetic susceptibility measurements.

The Dial Range tenement covers an area of 220km^2, located 10km SE of Burnie, and stretches south from Sulphur Creek and Penguin on the NW Coast of Tasmania to South Riana - Gunns Plains (Figure 1). The topography of the area is dominated by the north-trending Dial Range, a heavily timbered and rugged range of hills up to 681m in elevation, which occur through the central and eastern part of the licence. Away from the Dial Range, a Tertiary basalt plateau has been deeply dissected by several major north-trending drainages. The area is well served with access from a network of secondary roads and country lanes south of the Bass Highway.

Most of the land within the tenement is agricultural outside the Dial Range and incised valleys, primarily intensive cropping and grazing. Pasminco is sensitive to the commercial interest of the land holders and all exploration has been undertaken in close cooperation with them to minimise any disruption of their activities.

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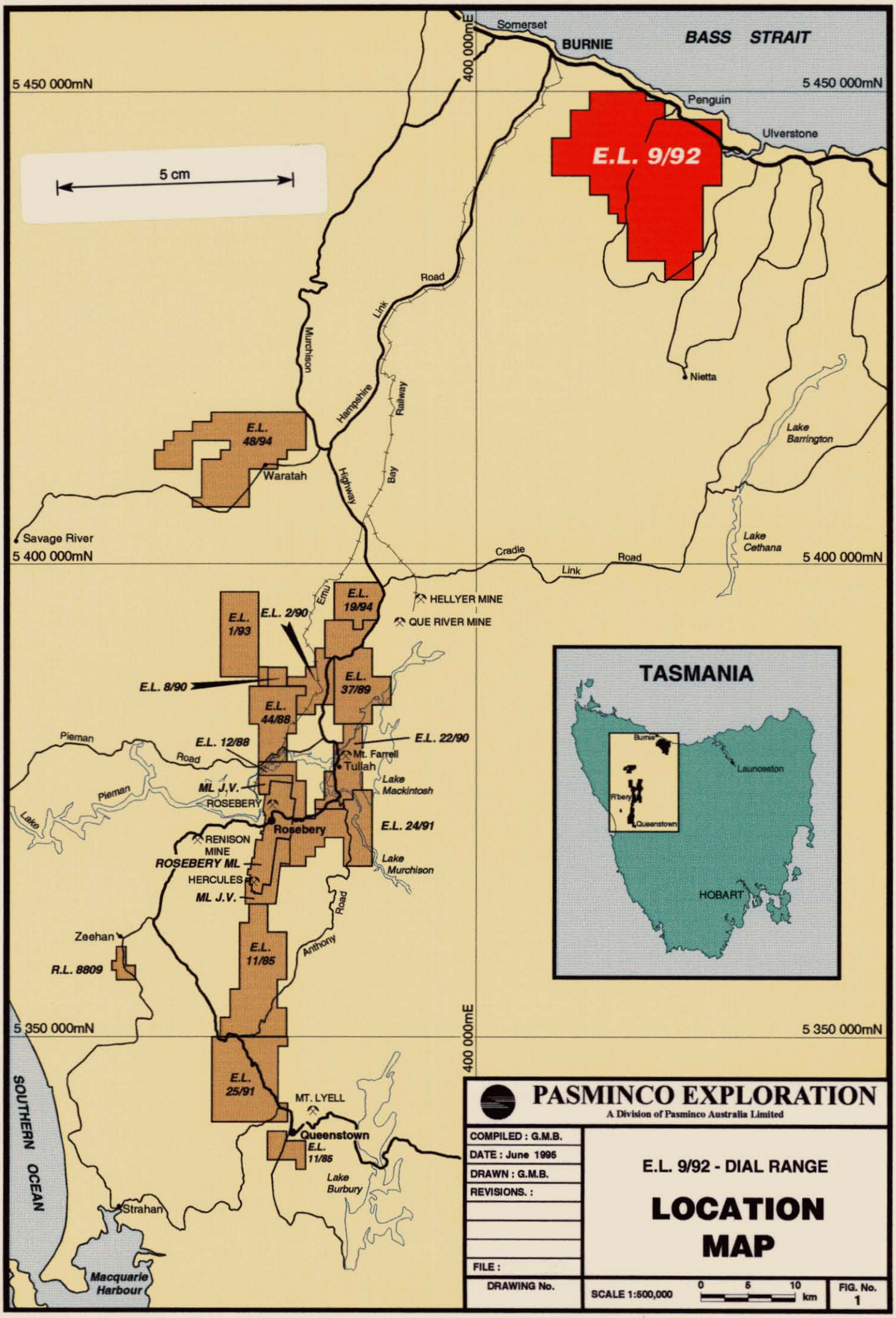

PASMINCO EXPLORATION
A Division of Pasminco Australia Limited

COMPILED : G.M.B.	E.L. 9/92 - DIAL RANGE
DATE : June 1995	**LOCATION MAP**
DRAWN : G.M.B.	
REVISIONS. :	
FILE :	
DRAWING No.	SCALE 1:500,000 (0 5 10 km) — FIG. No. 1

3 TENURE

Exploration Licence 9/92 was issued to Pasminco Australia Limited (Pasminco) on 25 July 1992 for a period of 12 months. The licence was renewed in 1993 for a further year, and again in 1994. The area of the tenement is 211km^2. The schedule of the licence area is given in AMG coordinates in Appendix A. Pasminco Exploration, a division of Pasminco Australia Limited manage all exploration undertaken on EL 9/92.

The licence area excludes the following Reserves and Leases (see Figure 2):

i) Mt Montgomery State Reserve – 229ha
ii) Ferndene State Reserve – 36ha
iii) Mining Leases – 200ha
iv) Crown Reserve – 3km2
v) Proposed Sith Cata Reserve – 0.8km^2

The land tenure of the area comprises predominantly Private Freehold Land and State Forest, as Multiple Use Forest and Recommended Area for protection (the Dial Range RAP) (see Figure 2). Small areas of Leased or Non–allocated Crown Land are also included in the tenement.

792011

410 000mE
420 000mE
430 000mE
5 450 000mN
5 440 000mN
5 430 000mN

BURNIE
BASS
BASS
STRAIT
Penguin
Ulverstone
Stowport
River
Emu
Natone
Camena
Rd.
Blythe
Road
River
Cuprona
Cuprona
Road
Stowport
Road
Pine
Riana
Mount Duncan
South Riana
Gunns Plains
Plains
Road
DIAL RANGE
RAP
DIAL
RANGE
River
Seven
Sunns
HIGHWAY
1263P/M
919P/M
1201P/M
703P/M
788P/M
66M/86
42M/85
1427P/M

KEY

- Multiple Use Forest
- RAP (Recommended Area for Protection)
- Private Freehold Land
- Leased or Non-Allocated Crown Land
- Council Reserve

EXLUSIONS FROM E.L.

- State Reserve
- Crown Reserve
- Mining Lease
- Proposed State Reserve

5 cm

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COMPILED : G.M.B.	E.L. 9/92 - DIAL RANGE
DATE June 1995	**LAND TENURE**
DRAWN : G.M.B.	
REF. :	
REVISIONS :	
DRAWING No. 314-GN-007	SCALE 1:100,000 0 2 km — FIG. No. 2

4 EXPLORATION PHILOSOPHY

The Dial Range project was generated by mineral potential evaluation studies of other areas within Tasmania, when it was recognized that the area appeared to have strong similarities in structural setting and mineralisation style with the Mt Read Volcanics base metal province of western Tasmania. The Cambrian Mt Read Volcanics host several world class polymetallic massive sulphide deposits, including the current operations at Rosebery, Hellyer and Mt Lyell.

The principal objective of the exploration program on the Dial Range tenement was to identify economically viable polymetallic base metal sulphides. Three major areas of interest include:

1) the potential for the Cambrian Lobster Creek Volcanics to host polymetallic, possibly gold–rich, massive sulphide mineralisation, similar to the Mt Read Volcanic ore deposits;
2) investigation of the Iron Cliffs "iron stone" prospect, as a potential gossanous cap to a base $\pm$ precious metal–rich massive sulphide deposit;
3) a study of the Devonian Housetop Granite in relation to its potential to produce base $\pm$ precious metal–rich skarn manto and replacement–style mineralisation.

It is also possible that copper–gold mineralisation occurs in the area and this style of deposit is an important secondary target.

5 REGIONAL GEOLOGY

The geology in the region of the Dial Range tenement spans a large part of the geological record of Tasmania (Figure 3). The published geology sheets (Sheffield, Devonport and Burnie) date from mapping in the late 1950's and 1960's by the Geological Survey of Tasmania (Jennings et al., 1959, Burns, 1963 and Gee, 1967). Although the map sheets and accompanying explanatory notes clearly need some revision, particularly with regard to the stratigraphy (FitzGerald, 1993), they still provide a useful framework to understand the geology of the region.

The oldest rocks exposed in the area are Proterozoic metasediments. They have been assigned to a younger and an older sequence, largely on the basis of metamorphic grade and intensity of structural deformation (eg. Burns, 1964). The latter, the Ulverstone Metamorphic Complex, is comprised of poly-deformed greenschist facies meta quartzite, mica schist and stretched pebble conglomerate. These structurally concordantly overlie the Forth Metamorphic Complex which are comprised of higher grade meta quartzite, garnet-albite-kyanite (?) schists and amphibolite. The inferred younger sequence, the Burnie Formation, is comprised of relatively unmetamorphosed poly-deformed turbiditic quartz wackes and mudstones, which structurally overlie the Ulverstone Metamorphic Complex. Turner (1989) has suggested that the two sequences may not necessarily be significantly different in age, since the shallow-dipping thrust which separates them may have juxtaposed rocks from different tectonic environments.

From the Eo-Cambrian to Early Ordovician a series of sediments, volcanics and intrusives were deposited or emplaced in a tectonically active belt, called the Dial Range Trough (Burns, 1964). Burns described the Trough as a meridional belt, approximately 5km wide on the north coast increasing in width to the south where it appears to be continuous with the Dundas and Fossey Mountain Troughs. The stratigraphic relationship between the different units is

complicated by inferred structural repetition along multiple thrust faults. In fact, the original architecture of the Dial Range Trough has been largely obscured by later deformations. Crawford (1993) suggests that the trough developed following uplift and collapse of a passive continental margin to form a foredeep during a mid-Cambrian tectonic collision event.

The Dial Range Trough fill comprises mixed sequences of orthoquartzites, volcaniclastic sandstones and mudstones, cherts, mudstones and carbonates, serpentinites, tholeiitic basalts, felsic to intermediate volcanics and intrusives (Figure 3). Previous workers have subdivided these into a number of groups and formations including the Motton Spilite, Barrington Chert, Cateena Group, Radfords Creek Group and Lobster Creek Volcanics (Burns, 1964). However, recent work (see FitzGerald, 1993) suggests that many of these subdivisions overlap.

These sequences have been correlated with, or inferred to be equivalent to, different parts of the Eo-Cambrian-Cambrian sedimentation and volcanism in western Tasmania, including the Success Creek Formation, Crimson Creek Formation, Dundas Group and Mt Read Volcanics. These relationships are summarised in Table 1.

These sequences are unconformably succeeded by a Late Cambrian to Early Ordovician sedimentary assemblage, correlated with the Denison Group. They include: basal mudstones, sandstones and minor chert conglomerate (Gnomon Mudstone); quartzite and vein quartz pebble to boulder conglomerate (Duncan Conglomerate) and marine quartzose sandstone, with minor conglomerate and shales (Moina Sandstone), at the top. Local angular unconformities occur throughout the Denison Group, indicative of continual uplift of the Precambrian basement, from which most of the detritus was derived.

During the ensuing marine transgression limestone, dolomite and mudstone (Gordon Group) was deposited during the Ordovician, succeeded by shallow marine quartz sandstone, mudstone and minor limestone of the Siluro–Devonian Eldon Group. This period of sedimentation ended with a major polyphase deformation (the Tabberabberan Orogeny) in the Middle–Late Devonian. Syn to post–kinematic granitiods were emplaced, intruding rocks from Precambrian to Early Devonian in age. The partially eroded Housetop Granite forms the largest such body in the Dial Range area. Recent geophysical interpretations suggest that much of the underlying stratigraphy in the area of EL 9/92 has been stopped–out by the granite (FitzGerald, 1993).

The last part of the geological record preserved in the Dial Range region consists of terrestrial sands, gravels, silts and clays, which are locally indurated and deposited in deep leads during the Tertiary (Burns, 1964). These are overlain by Tertiary olivine basalt lava flows, which forms an extensive cover of the prospective Paleozoic sequence in the area. The rich agricultural land is largely developed on soil derived from these basalts. Finally, widespread Quaternary talus and scree deposits, forming predominantly from the Denison Group siliciclastic rocks, and fluviatile alluvium complete the sequence.

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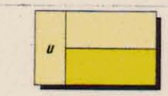
LEGEND

HOLOCENE
PLEISTOCENE

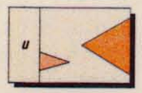


Alluvium, sand, gravel and talus.

Till, fluvioglacial, periglacial and associated deposits.

Errosional surface.

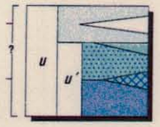
TERTIARY



Non–marine sequences (light); marine limestone (dark); basalt and related igneous rock types (orange).

Low angle unconformity.

TRIASSIC
PERMIAN
UPPER CARBONIFEROUS



Fluvio–lacustrine sequences of sandstone, siltstone, mudstone (light) with carbonaceous sequences indicated (dark). Fresh water sequence with some coal measures.

Upper glacio–marine sequence of pebbly mudstone, pebbly sandstone and limestone. Fresh water sequence with some coal measures.

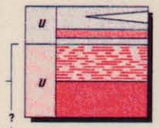
Lower glacio–marine sequence of pebbly mudstone, pebbly sandstone, minor limestone, Tasmanite oil shale and basal tillite.

UPPER — MIDDLE DEVONIAN

Terrestial cavern fillings.

Unconformity attributed to Tabberabberan Orogeny.

LOWER DEVONIAN — SILURIAN
ORDOVICIAN



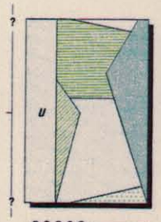
Some quartzwacke sequences (dark) and siltstone–shale sequences (light) indicated; Devonian limestone–siltstone (horizontally lined over–print).

Limestone sequence.

Siliceous terrestrial conglomerate, marine quartzwacke and siltstone.

Unconformity in northern Tasmania and parts of western Tasmania attributed to Cambrian movements; apparent conformity in Adamsfield region and parts of western Tasmania.

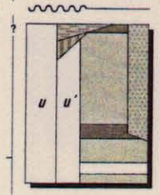
CAMBRIAN



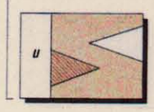
Middle–Upper Cambrian fossiliferous usually greywacke turbidite sequences (horizontally lined overprint); acid with intermediate volcanic and associated rocks dominant (dark), and horizon with fossiliferous Upper Cambrian shallow water deposits (vertically lined overprint); basic–intermediate volcanic and associated rocks dominant (diagonally lined overprint); probably Cambrian unfossiliferous usually qreywacke turbidite sequences (light); probably Cambrian unfossiliferous orthoquartzite sequence (dotted).

Usually unconformity attributed to Penguin Orogeny but apparent conformity at Smithton and Pieman River.

PRECAMBRIAN



Comparatively unmetamorphosed sequences. Mudstone–sandstone sequences (u') – dominantly mudstone (light), dominantly orthoquartzite (dark), quartzwacke turbidite successions (small dot over–print), conglomerate (large dot over–print); dolomite (horizontally lined over–print); basalt lava (vertically lined over–print).



Metamorphic rocks. Pelitic sequences (dark); metaquartzite sequences (light) with some platy quartzite units indicated (vertically lined over–print); amphibolite (diagonally lined over–print). Garnet bearing rocks are indicated (g).

IGNEOUS ROCKS

TERTIARY

Basalt and related rock types.

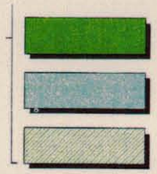
JURASSIC

Dolerite and related rock types.

LOWER CARBONIFEROUS — UPPER DEVONIAN

Dominantly adamellite–granite.

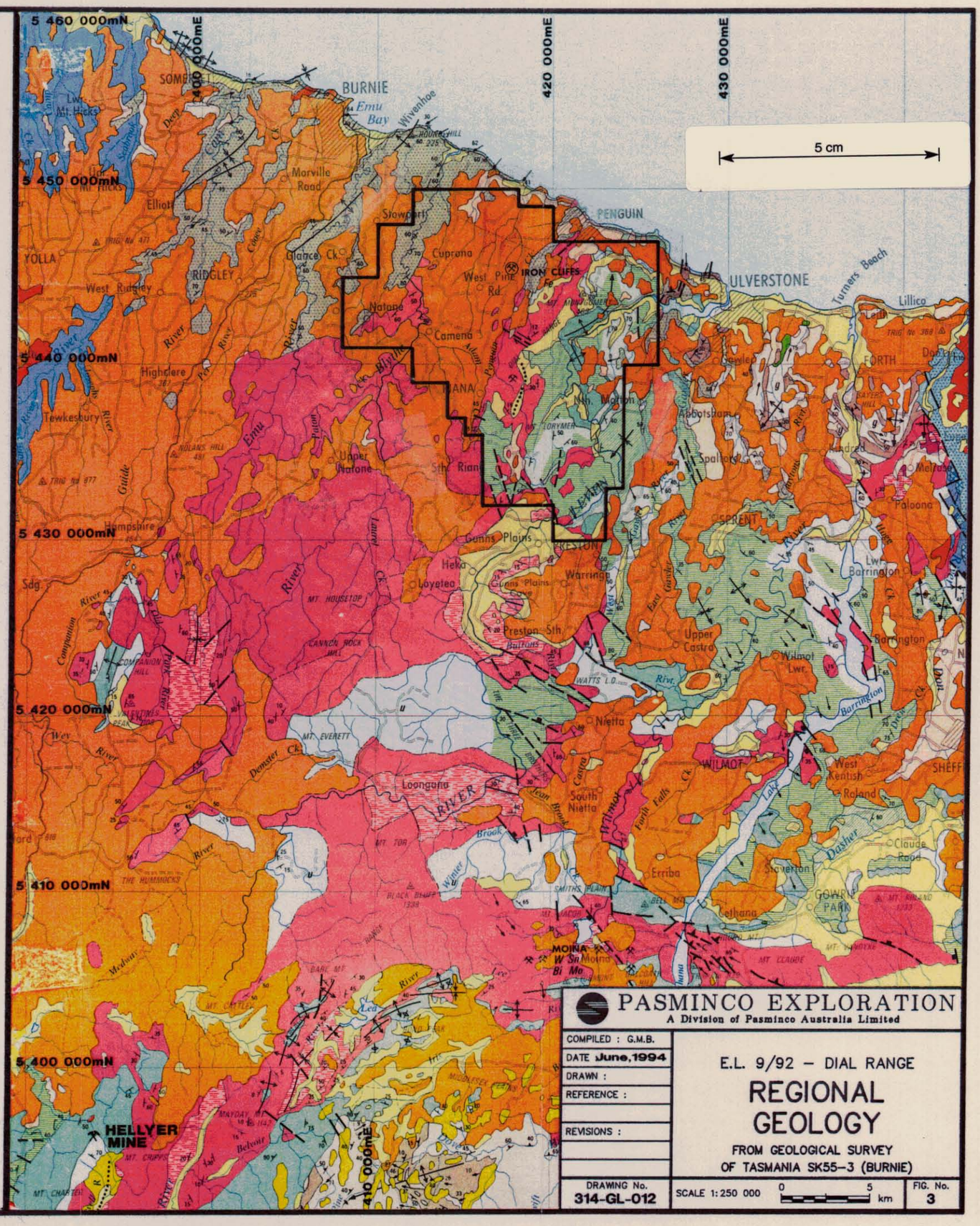
CAMBRIAN



Serpentinite, peridotite and associated rocks.

Acid with intermediate volcanic and associated rocks.

Basic–intermediate volcanic and associated rocks.



PASMINCO EXPLORATION
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COMPILED : G.M.B.	E.L. 9/92 — DIAL RANGE
DATE June,1994	**REGIONAL GEOLOGY**
DRAWN :	FROM GEOLOGICAL SURVEY OF TASMANIA SK55–3 (BURNIE)
REFERENCE :	
REVISIONS :	
DRAWING No. 314-GL-012	SCALE 1:250 000 0 5 km — FIG. No. 3

TABLE 1.

STRATIGRAPHIC RELATIONSHIPS DIAL RANGE AREA & WESTERN TASMANIA

AGE	DIAL RANGE AREA	WESTERN TASMANIA	REFERENCE
Early Ordovician –Late Cambrian	Moina Sandstone Duncan Conglomerate Gnomon Mudstone	Owen Conglomerate	Banks, 1989
Late Cambrian	Lobster Creek Volcanics	Mt Read Volcanics	Crawford, 1993
Late middle–early late Cambrian	Radfords Creek Croup including: Kerrison, Wilsonia, Applebee Volcanics	Tyndall Group– Southwell Subgroup Upper Dundas Group	Crawford, 1993 Brown, 1989
Late middle Cambrian	Cateena Group including Beecraft & Teatree Point Megabreccias	Lower Dundas Group	Brown, 1989
Eo–Cambrian	Motton Spilite	Crimson Creek Formation	Brown, 1989
Eo–Cambrian	Barrington Chert	Success Creek Croup	Jennings et al, 1959
Upper Proterozoic	Burnie Formation	Oonah Formation	Turner, 1989
Precambrian ?	Ulverstone Metamorphics Forth Metamorphics	?	

6 PREVIOUS EXPLORATION

A comprehensive account of the previous prospecting and mineral exploration activities over the area within the Dial Range tenement is in the Annual Report for the year ending June 1993 (FitzGerald, 1993). The area has been extensively prospected during the period from the middle of last Century to the early part of this Century, during which time numerous base metal and ferruginous occurrences were discovered (Figure 4). Very little production was recorded from any of these prospects, the most significant being 1331t of ore containing 16.7% Cu from the Copper King Mine at Cuprona (Gee, 1977) and approximately 40 000t of haematite from Penguin Creek (Hughes, 1953).

Modern exploration, which commenced in the late 1960's, has targeted a range of metals and styles of occurrence including volcanic hosted massive sulphides, skarns, iron ore, gold and platinoids. However, very little significant mineralisation has been discovered as a result of this activity. Geopeko–Pennzoil discovered sub–economic copper and tin mineralisation in the Dial Mine area, east of the Dial Range, of which the best drill intersection was 20m at 0.7% Cu. The area now covered by Dial Range EL 9/92 has been explored in two main regions, summarised in Table 2.

792019

410 000mE
420 000mE
430 000mE
5 450 000mN
5 440 000mN
5 430 000mN

BURNIE
BASS
STRAIT
SULPHUR CREEK Au Py
HIGHWAY
Penguin
SULLOCK'S Au Ag Cu
PENGUIN Ag Pb Au
WATCOMBE'S Cu Ag Au
NEPTUNE Ag Pb
HARDY'S Au Pb Ag
TASMANIAN IRON MINES Fe
LAW'S Fe
DEVON CONSOLS Cu Ag Au
MARSDEN HILL Fe
SULLOCK'S HILL Ba Pb
PENGUIN CREEK Fe
BARNE'S Fe
LING'S Fe
Ulverstone
LADY BRADDON Au Fe
BADGER'S Pb Zn
LADY BRADDON (IRON CLIFFS) Fe
Mount Montgomery
DIAL RANGE
Road
River
Stowport
Emu
Cuprona
COPPER KING Cu Fe
BLYTHE Fe
RUTHERFORD Cu
Natone
Camena
Rd.
Blythe
KEDDIE'S Cu Sn
GAWLER Au
REVELL'S Py
DAVIE'S ADIT Cu
BLACK'S Py
DIAL COPPER Cu
BLACK'S Fe Mn
Mount Duncan
Pine
Leven
DIAL IRON Fe
RUSSELL'S Cu Ag Au
Riana
Py
HEAZLEWOOD'S Pb Ag
KAINE'S Ba
HUTTON'S Pb Zn
South Riana
WOLLOA CREEK Cu Au Ag
DUNCAN McLARENS Py
GAWLER'S Py
HEBBLETHWAITE'S Py
RADFORD'S REEF Fe Cu
COLBURN'S Py
BROWN'S BLOW Fe
Gunns Plains

5 cm

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COMPILED : F.G.F.
DATE : June, 1994
DRAWN : G.M.B.
REF. :
REVISIONS :

E.L. 9/92 - DIAL RANGE

PROSPECT LOCATIONS

DRAWING No. 314-GN-003
SCALE 1:100,000 0 2 km
PRL No. 4

Table 2.

MINERAL EXPLORATION HISTORY EL 9/92 DIAL RANGE AREA

General

1860–1910 Early prospecting, discovery of numerous of small base metal shows, mostly small scale to no production apart from 1331t of copper ore from the Copper King Mine and 40 000t of haematite from Penguin Creek.

1910–1960 Intermittent prospecting, results in further minor discoveries

Dial–Leven Area

1960 Mines Department investigated Iron Cliffs occurrence; including drilling 2 short holes, total 123m, no significant mineralisation

1972–73 EL 9/72, 104km^2, Tasminex undertook reconnaissance investigations of old mineral showings with generally disappointing results.

1973–1985 EL 24/73, 106km^2, Pennzoil–Geopeko JV, extensive exploration including mapping, rock and soil geochemistry, VLF–EM, IP, MIP, Turam EM, SP, aeromagnetic surveys and drilling 10 holes, total 1506m. Most effort focussed in Dial Mine area, where encouraging but sub–economic Cu and Sn mineralisation found, best intersection: 20m at 0.7% Cu.

1986–1988 EL 46/86, 93km^2, Derwent Minerals reassessed previous exploration results and limited sampling of old workings, but proposed further investigations not undertaken.

Natone – Cuprona Area

1958–1962 BMR covered area with aeromagnetic surveys and ground follow–up.

1960 – 1965 Mines Department investigated Blythe River – Cuprona iron occurrences, including drilling 4 holes, total 286m, intersecting sub–economic mineralisation.

1968–1972 EL's 13/68, 14/68 Minops investigated the iron occurrences at Natone and Blythe River including magnetics, IP, auger drilling and 4 diamond drill holes, total 506m. Intersected low grade skarn mineralisation with minor Cu.

1969–1974 EL 1/69, Tasminex – ANZECO JV. Early base metal exploration within current EL 9/92 focussed on Natone ironstone and Rutherfords copper prospect, including soil and rock geochemistry, mapping, magnetics, costeaning and shallow percussion drilling 5 holes, total 106m, intersected Cu mineralisation in quartz vein: best assay 4.5m at 0.5% Cu. costean 1.5m at 6.0% Cu.

1977–1985 EL 8/77, 316km^2 Comalco–Shell–CRA JV. Extensive exploration including: mapping; stream, rock, soil geochemistry; aeromagnetic and airborne INPUT EM surveys; SP, IP max–min EM, SIROTEM, gravity; drilling 2 diamond and 1 percussion holes intersecting a "barren" skarn at Natone and "basalt hill" at Cuprona respectively.

1986–1989 EL 30/86, 43km^2 CW Davis undertook stream geochemistry, mapping, rock chip sampling and drilling 28 holes total 252m with an airtrack rig. Identified potential resource of 1.2mt haematite at Blythe River ironstones.

7 EXPLORATION COMPLETED July 1992 - June 1995

7.1 July 1992 - June 1993

During the initial year's exploration of EL 9/92 the emphasis was to compile and evaluate all the previous prospecting data and exploration data, to locate and undertake preliminary investigations of all the known mineral occurrences and to prepare a sound geological framework of the areas onto which subsequent studies may be built.

7.1.1 Geology

Pasminco acquired available open file and Mines Department records, and contract geologist Wally Herrmann undertook a three month program of data review and field mapping and sampling. This mainly involved location of old prospects, reconnaissance mapping to ascertain the geological setting and style of mineralisation, and the collection of rock samples for comprehensive "path-finder suite" and lithogeochemical analyses (Herrmann, 1993). A petrographic study of a suite of 35 rock and drill core samples collected by Herrmann was undertaken by Crawford (1993).

The local geology of EL 9/92 is based largely on the works of Burns (1964), Gee (1977), Herrmann (1993) and Crawford (1993). A geological interpretation map, based largely on mapping by the Geological Survey, is presented in Figure 5. The stratigraphy proposed for the Dial Range area (Table 1) is a revised interpretation based on observed structural relationships between many formations and the petrographic affinities of units and formations previously assigned to different groups.

Lobster Creek Volcanics

After initial work undertaken by Pasminco in 1992–1993 (Crawford, 1993; FitzGerald, 1993; Herrmann, 1993) it was concluded that the Lobster Creek Volcanics appear to be entirely Late Cambrian–Early Ordovician dioritic intrusives, which are associated with locally intense hydrothermal alteration of wall rocks and accompanying minor base metal mineralisation. The principal mineralisation within these intrusives is a Cu–Sn–As assemblage, indicative of a plutonic rather than a volcanic–exhalative style of mineralisation.

IronCliffs

The Iron Cliffs workings comprise a number of old adits and trenches developed last Century along a line of haemetite and goethite outcrops, which in places form prominent cliffs up to 15m high. Sampling and geochemistry of the "iron stone" deposits was included in the work by Herrmann (1993). FitzGerald (1993) concluded that while the haematitic ironstones do not appear to be associated with any significant base or precious metal mineralisation, the ironstones at the Iron Cliffs prospect do carry some Pb, Zn, As and Ba.

7.1.2 Mineral Prospects

Herrmann (1993) successfully relocated all the old significant mines and prospects in the Dial Range tenement (Figure 4), ascertained the current property ownership on which they occur and undertook preliminary mapping and sampling to help establish the geological setting and the potential of each occurrence to be associated with economically significant mineralisation (Figure 4). Metallic mineral occurrences within EL 9/92 are discussed in Herrmann (1993) and FitzGerald (1993) and consist of four main styles of mineralisation, summarised in Table 3.

Table 3.

PROSPECTS & STYLES OF MINERALISATION – DIAL RANGE AREA

STYLE OF MINERALISATION	PROSPECT/MINE NAME	PRINCIPAL COMMODITY(S)
Cambrian hydrothermal system associated with intrusive felsic magmatism (Lobster Creek Volcanics)	Penguin	Ag Pb Cu (Au)
	Neptune	Ag Pb
	Dial Mine	Cu Ag (Au)
	Keddie's	Cu Ag (Au) (Sn)
	Davie's Adit	Cu
Haematite–silica replacement uncertain age, structurally and/or stratigraphically controlled	Penguin Creek	Fe
	Iron Cliffs	Fe (py)–limonite
	Dial	Fe
	Blythe River	Fe
	Cuprona	Fe
Devonian Vein small, fault fissure fill	Copper King	Cu
	Rutherford's	Cu
	Kaine's	Ba (Cu)
	Badger's	Pb Zn (Ag) (Cu)
	Hutton's	Pb Zn
	Wolloa Creek	Cu Ag
	Devon Consols	Cu Ag (Au)
	Russell's	Cu Ag (Au)
Devonian Skarn Contact metasomatic mineralisation related to Housetop Granite	Natone	Fe

7.1.3 Geochemistry

A total of 81 samples were submitted to Analabs, Cooee, from rock and drill core samples collected during the course of Herrmann's mapping activities within the tenement (Figure 6), and analysed for a suite of "path-finder" elements which may be related to major base metal mineralisation (Herrmann, 1993). In general, very few significantly anomalous results were obtained.

7.1.4 Aeromagnetic and Radiometric Survey

The area included in EL 9/92 has been covered in part by several aeromagnetic surveys (FitzGerald, 1993). Pasminco acquired the data from the Shell, Mines Department and BMR (1985) survey and re-gridded the data in ER Mapper. The data sets were merged to produce a regional aeromagnetic image of the Dial Range area. A striking feature of this image is the presence of a large, magnetic high which dominates almost the entire area of EL 9/92. Leaman (1993) concluded that the high is due to a strongly magnetic phase of the Housetop Granite.

A high resolution helicopter-borne aeromagnetic and radiometric survey was flown in March 1993 by Geoterrex as part of a larger program in western Tasmania for Pasminco. The survey covers the whole licence area to enable a detailed analysis of the sub-surface geology, especially the sub-basalt geology since the Tertiary basalts cover almost two thirds of the tenement (Figure 5). A logistics report for the survey, which details all the survey specifications, has been lodged with the Mines Department.

Leaman (1993) submitted a preliminary interpretation of the new aeromagnetic data to Pasminco, in conjunction with the extant gravity data. A routine measurement of the magnetic susceptibility of all lithologies in outcrop is presented in Herrmann's report (1993), and are also considered in the conclusions presented by Leaman (1993; FitzGerald, 1993).

Leaman (1993) concluded from a study of the high resolution aeromagnetic data and the extant gravity data that the Devonian Housetop Granite, which outcrops in the south west part of EL 9/92, dominates the Dial Range region as it extends at relatively shallow depths (average 1km) below the surface.

7.2 July 1993 – June 1994

Field-based exploration during 1993–1994 was limited because of disappointing results from the first year's exploration and the major commitments by Pasminco to other exploration projects in Western Tasmania.

7.2.1 Geology and Mineral Prospects

Iron Cliffs Prospect

Ever since their discovery, the ironstone deposits have been the subject of strong debate regarding their origin. The Iron Cliffs prospect was briefly inspected and sampled during 1993–1994 (Figure 6), and on the basis of these observations, it appears that the ironstones are epigenetic in origin (FitzGerald, 1994).

The Housetop Granite

The Devonian Housetop Granite has been discussed in FitzGerald (1994) as possibly associated with a range of potentially economic mineralisation such as skarns, mantos and metasomatic replacement bodies. The Housetop Granite has produced several economic Fe±W±Sn skarn deposits, including Kara, Redwater, Hampshire, Highclere and Natone.

7.2.2 Lithogeochemistry

Crawford (1993) recommended certain samples from his petrographic study to be analysed for major and trace elements to assist in the interpretation of petrographic affinities and lithological correlation. A suite of 21 samples collected from Herrmann (1993) and Sproule (1994) were submitted for whole rock and trace element analysis, and results are presented in FitzGerald (1994) as three separate studies:

a) geochemical affinities of the Motton Spilite

b) geochemical correlations within the Cambrian volcanic suite

and, c) the extent of hydrothermal alteration of these volcanics.

7.3 July 1994 – June 1995

Minor field–based exploration of EL 9/92 was conducted during 1994–1995.

7.3.1 Geology

Lobster Creek Volcanics

Evaluation of the lithogeochemical results in July 1994 has confirmed earlier conclusions from field work that the Lobster Creek Volcanics are geochemically similar to the main Mt Read Volcanic Groups in western Tasmania ie. Suite 1 of Crawford et al.,(1992), including the CVC, Tyndall Group and Que–Hellyer footwall andesite.

IronCliffs

The ferruginous "iron stone" deposits straddle the contact between Precambrian Burnie Formation and Ordovician Owen Conglomerate equivalents. Haematite is regionally associated with the Owen Conglomerate equivalents. Work during the period of July 1994 – June 1995 has involved examination, sampling and magnetic susceptibility measurement of these mapped deposits in the Penguin Creek– Iron Cliffs area (see Appendix 2, Figure 6)

The hydrothermal alteration zone in the Penguin Creek–Iron Cliffs area includes foliated, friable red haematite with boulders of dense, blue hard haematite. The country rock is brecciated to a rubbly texture with alteration to haematite. There is also alteration to clays which is seen clearly in relict bedding of the country rock. Boundaries of the alteration "veins" are transgressive, and relict bands and boulders of country rock are incorporated in the friable haematite (Plate 1). The denser blue haematite (including botryoidal) is exposed in the cliff face and as boulders up to 5m diameter. An unusual alteration feature includes poddy rather than aligned distribution, which is spaced approximately 5–10m apart. A small fault, 310°/85 E shows slickenslides in the exposed face which dip 60° SW. The above observations are comparable to descriptions of the outcrop by Burns (1961). Haematite has also been observed in veins and replacing pebbles within the Owen Conglomerate and appears to be concentrated in Owen conglomerate equivalents in contact with the Burnie Formation.

The haematite alteration is a district wide feature of the Owen Conglomerate and marks deposition from oxidised Fe–rich fluids. The hydrothermal fluids appear to be related to intrusion of Cambrian granite, and hydrothermal systems driven by this intrusion granite. The regional scale of haematite mineralisation suggests that there may have been ample fluid with which to form ore if they could be reduced to sulphide. However, there appears to be

little scope for the development of suitable traps and reducing environments which would be capable of converting the fluids to sulphide ores.

Tertiary Basalts

Close examination of processed aeromagnetics for Dial Range EL 9/92 (Leaman, 1993) led to the conclusion that Tertiary Basalt signatures mask subsurface geology in the area.

7.3.2 Stratigraphy and Geochemistry

Mapping, petrographic and geochemical studies by Sproule (1994) failed to produce significant results, apart from recognition of a basaltic intrusion in the Dial Mine area which is anolagous to the Suite III Mt Read Volcanic Suite of Crawford et al., (1992), the Que–Hellyer hangingwall volcanics. This is the first time that high–K or shoshonitic volcanics have been recognized north and east of the Henty Fault.

In May 1995, seven samples from representative hydrothermally altered zones of the Iron Cliffs were taken for assay (Figure 6). These include massive haematite through transgressive hydrothermal alteration to lesser altered siltstone (of the Burnie Formation) (Plate 1). The samples were submitted to Analabs, Cooee, and analysed for the following elements: Cu, Pb, Zn, Ag, Au, Mn, As, Ba, Sn, W and Bi. Sample numbers, locations and assay results are presented in Appendix 2.

7.3.3 Magnetic susceptibility

Magnetic susceptibility readings were taken randomly in the IronCliffs outcrop and also to coincide with sampling of the Penguin Creek–Iron Cliffs ferruginous deposits. Readings ranged from 0.04 – 1.2 SI/1000 (Appendix 2). The "background" limonitic clays (hydrothermally altered siltstone of the Burnie Formation) averaged 0.2 – 0.4 SI/1000, while the haematitic boulders and veins have magnetic susceptibilities of 0.5 – 1.2 SI/1000, averaging 0.6 – 0.8 SI/1000. These results are comparable to observed magnetic susceptibilities in the Blythe River massive compact haematite (Herrmann, 1993) which also fall in the range of 0.6 to 1.2 SI/1000.

Two sites were selected over which the magnetic susceptibility was measured with increasing distance from a haematite vein (Appendix 2). The magnetic susceptibility generally decreases away from the veins, with minor increase relating to patchy zones of haematite and surface clays.

8 ENVIRONMENTAL DISTURBANCE AND REHABILITATION

Field activities within EL 9/92 have been relatively low key, restricted to 4WD vehicles using existing access tracks and traverses on foot to specific prospect locations to collect a few fist-sized rock samples. No environmental disturbance was associated with any of these activities and no rehabilitation of previous disturbances was undertaken. Permission to access private freehold land has been sought, where necessary.

The helicopter magnetic survey was based from Mr Trevor Walker's property at Riana. Public notices in the local newspaper advising all land occupiers of the proposed survey were followed up with discussions and site visits to concerned residents, and the contractors were made aware of property locations where disturbance of stock might be a problem. In the event, there were no problems with the air-borne survey.

9 EXPENDITURE

Expenditure for all exploration completed during the 12 months ending June 1995 on Dial Range EL 9/92 is $34 359. This brings the total expenditure on the tenement since its inception in 1992 to $198 895.

A summary of the 1994–95 expenditure statement is presented below.

Personnel & On costs	19 067
Travel & Accommodation	1 628
Geophysical Consultants & Surveys	225
Geochemical Consultants & Surveys	(2)
Drilling (including access & core processing/storage)	474
Other Contractors	367
Stores & Supplies	1 369
Vehicles & Equipment	1 665
Computing	1 002
Tenement Costs	5
Office Running Costs	5 435
Total Direct Costs	**31 235**
Management Fee	3 124
TOTAL EXPENDITURE	**34 359**

10 CONCLUSIONS AND RECOMMENDATIONS

Exploration undertaken to date within EL 9/92 Dial Range have failed to locate any significant mineralisation. However, the results of these investigations have helped to re-define the exploration potential of the area.

Important conclusions to come from the work ending the year of June 1995 are as follows:

1) The Lobster Creek Volcanics are geochemically similar to the main Mt Read Volcanic Groups in western Tasmania.
2) Ferruginous "iron stone" deposits straddle the contact between Precambrian Burnie Formation and Ordovician Owen Conglomerate equivalents, and haematite is regionally associated with Owen Conglomerate equivalents.
3) Fluids from which the regional haematite has formed appears to be Cambrian granite-sourced, and could be of sufficient volume to form ore if reduced to sulphides. The development of a reducing environment capable of converting the fluids to sulphide ores are not apparent in available mapping.
4) Unless a sulphide system is expected, there appears to be no necessity to drill or geophysically test the ferruginous zones.
5) A newly recognized basaltic intrusion in the Dial Mine area analogous to the Suite III Mt Read Volcanic Suite of Crawford et al.,(1992) is the first high-K or shoshonitic volcanics recorded north and east of the Henty Fault.
6) The Tertiary basalt cover is a major limiting factor in the exploration of the area masking the subsurface geology of the region.

It is recommended that the licence to Pasminco for Dial Range EL 9/92 not be renewed beyond the current term, which is due to expire on 24 July 1995.

11 REFERENCES

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12 KEYWORDS & LOCALITY

ACID VOLCANICS, BASIC VOLCANICS, GRANITE, BASALT, IRONSTONE, CONGLOMERATE, SULPHIDES, BASE METALS, IRON, THRUST, RIFT, UPPER PROTEROZOIC, CAMBRIAN, ORDOVICIAN, DEVONIAN, TERTIARY, DATA REVIEW, GEOLOGY, GEOCHEMISTRY, GEOPHYS MAGNETICS, ASSAYING

BURNIE SK5503, DIAL RANGE, DIAL RANGE TROUGH, IRON CLIFFS

Appendix 1

Schedule for EL 9/92 Dial Range.

E.L. 9/92

EXTENSION AND AMENDMENT OF DESCRIPTION
This licence is extended under the provisions of Section 15F(4) of the Mining Act, 1929, until 24 July 1994.

In accordance with Section 15E(4) of the Mining Act 1929, this licence shall now apply to an area of 211 skm (more or less) as described in the schedule hereunder:

Schedule:
Commencing at a northwest corner at grid co-ordinates 412 000 metres E. 5 450 000 metres N. thence grid east to 418 000 metres E. grid south to 5 449 000 metres N. again grid east to 420 000 metres E. again grid south to 5 447 000 metres N. again grid east to 426 000 metres E. again grid south to 5 440 000 metres N. grid west to 424 000 metres E. again grid south to 5 433 000 metres N. again grid west to 423 000 metres E. again grid south to 5 430 000 metres N. again grid west to 420 000 metres E. aforesaid grid north to 5 432 000 metres N. again grid west to 416 000 metres E. again grid north to 5 436 000 metres N. again grid west to 415 000 metres E. again grid north to 5 437 000 metres N. again grid west to 414 000 metres E. again grid north to 5 439 000 metres N. again grid west to 412 000 metres E. aforesaid again grid north to 5 441 000 metres N. again grid west to 408 000 metres E. again grid north to 5 445 000 metres N. again grid east to 410 000 metres E. again grid north to 5 448 000 metres N. again grid east to 412 000 metres E. aforesaid thence again grid north to the point of commencement.

The area excludes:	299 ha Mount Montgomery State Reserve
	36 ha Ferdene State Reserve
	200 ha Mining Leases
	3 skm Crown Reserves
	.8 skm Proposed Sith Cala State Reserve

Land Tenure

The area comprises:	Private Property
	State Forest - Multiple Use Forest Land
	Dial Range RAP - State Forest
	Crown Land
	Crown Land (Dept. of E & P Approval)

Note: This land tenure table is a guide only.

Exclusions:
As previously shown.

MINISTER FOR MINES

Date 15/6/93

792038

E.L. 9/92

EXTENSION

This licence is extended under the provisions of Section 15F(4) of the *Mining Act, 1929*, until 24 July 1995.

MINISTER FOR MINES

Date 28/9/94

Appendix 2

Assay Sample Locations and Magnetic Susceptibility Readings, IronCliffs – Penguin Creek Area

LIST OF SAMPLES

SAMPLE No.	DESCRIPTION	AMG COORDINATES		MAGNETIC SUSCEPTIBILITY
		E	N	SI/1000
36401	goethite on southern cliffs	419020	5445020	0.6
36402	botryoidal haematite (boulder)	419020	5445020	0.4
36403	haematite outcrop	419020	5445070	0.7–0.8
36404	patchy haematite	419050	5445090	0.3
36405	transgressive hydrothermal alteration	419050	5445090	0.56
36406	lesser altered siltstone	419050	5445090	0.69
36407	massive haematite	419050	5445090	0.73

MAGNETIC SUSCEPTIBILITY READINGS

LITHOLOGICAL OUTCROP	AMG COORDINATES		MAGNETIC SUSCEPTIBILITY
	E	N	(SI/1000)
massive haematite	419050	5445090	0.73
massive haematite	419050	5445090	0.6
massive haematite	419050	5445090	0.8
massive haematite	419050	5445090	1.2
transgressive alteration	419050	5445090	0.29–0.66
limonitic clay	419050	5445090	0.04–0.4

792041

Analabs

Analabs Pty. Ltd.
A.C.N. 004 591 664

Phone (004) 316837 | 14 Thirkell St. COOEE TAS 7320 | Fax (004) 318890

ANALYTICAL REPORT No. 111310.60.10950

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

INVOICE TO:

Pasminco Exploration
P.O. Box 386
BURNIE TAS 7320

ORDER No.	PROJECT
1494	3014

DATE RECEIVED	RESULTS REQUIRED
22/05/95	ASAP

No. OF PAGES OF RESULTS	DATE REPORTED	No. OF COPIES	TOTAL No. OF SAMPLES
2	08/06/95	1	7

SAMPLE NUMBERS	SAMPLE DESCRIPTION	ELEMENT/METHOD
36401-407	RD Prep : GP029 P4	Cu,Pb,Zn,Ag,Fe,Mn,Bi/GA140 As/HA140 As/GA140 Fe,Mn/GA104 Au,Au(S)/GG309 Ba,Sn,W/GX401

RESULTS TO

Ms N McGunnigle
Pasminco Exploration
P.O. Box 386
BURNIE TAS 7320

REMARKS

Fe/GA104 results >50% and Mn/GA104 result >5% are over the recommended analytical range and were obtained by dilution.

RESULTS TO

RESULTS TO

AUTHORISED OFFICER

Analabs

Analabs Pty. Ltd.
A.C.N. 004 591 664

792042

ANALYTICAL DATA

SAMPLE PREFIX	REPORT No.	REPORT DATE	CLIENT ORDER No.	PAGE
	111310.60.10950	08/06/95	1494	1 OF 2

	SAMPLE No.	Cu	Pb	Zn	Ag	Fe	Fe	Mn	Mn	Bi
METHOD		GA140	GA140	GA140	GA140	GA140	GA104	GA140	GA104	GA140
1	36401	185	<3	60	1	>5.00	19.91	>5000	31.40	<10
2	36402	47	<3	49	1	>5.00	50.30	>5000	6.40	11
3	36403	12	<3	11	1	>5.00	62.40	516	-	<10
4	36404	27	7	20	1	>5.00	40.90	>5000	1.55	21
5	36405	15	<3	9	1	>5.00	49.80	397	-	19
6	36406	17	<3	18	1	4.80	-	101	-	16
7	36407	7	<3	5	1	>5.00	56.00	197	-	<10
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24	DETECTION	2	3	2	1	0.01	0.01	3	0.01	10
25	UNITS	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm

Results in ppm unless otherwise specified
- = element not determined

IS = Insufficient sample
SNR = sample not received

AUTHORISED OFFICER

Analabs

Analabs Pty. Ltd.
A.C.N. 004 591 664

792013

ANALYTICAL DATA

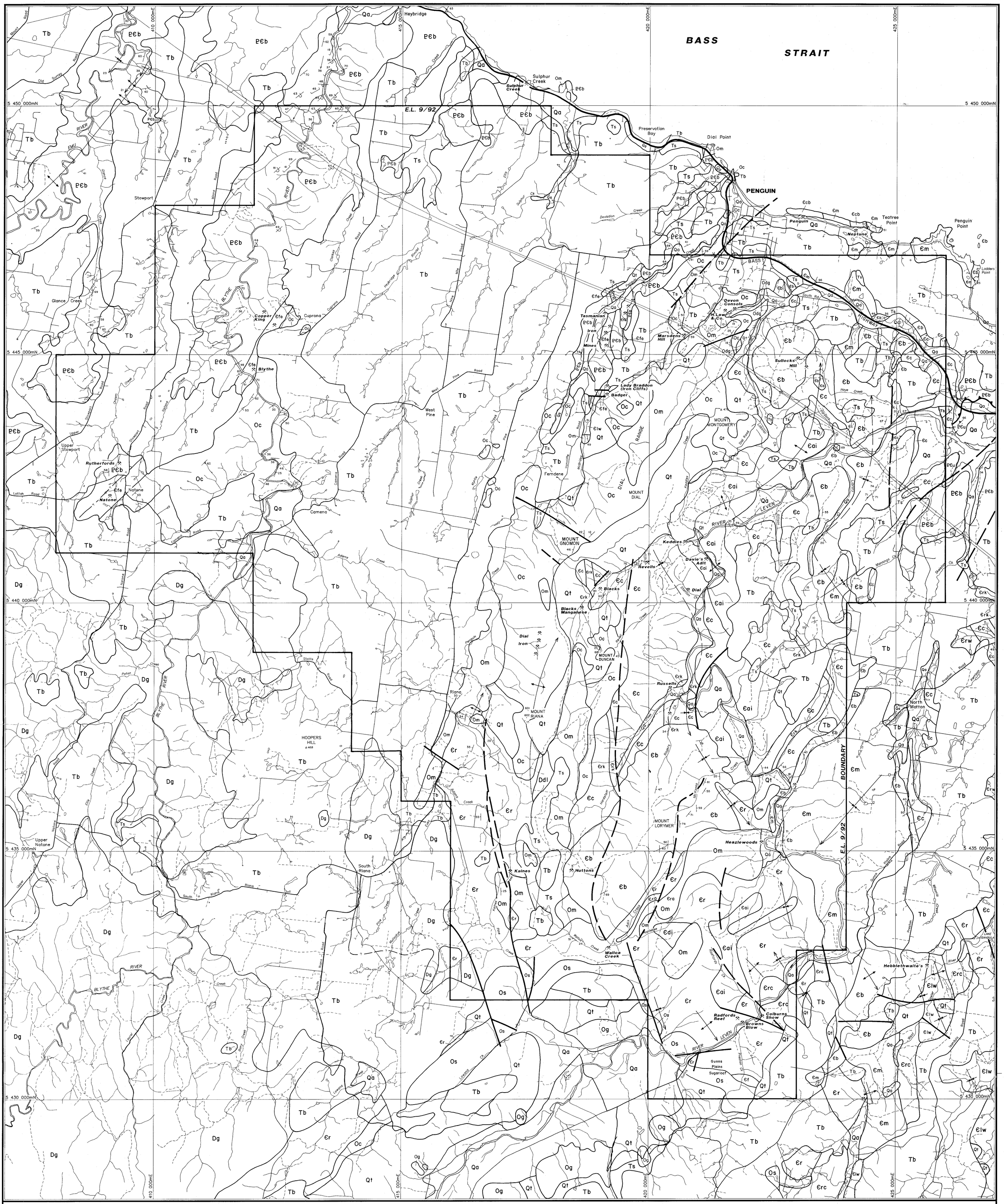
SAMPLE PREFIX	REPORT No.	REPORT DATE	CLIENT ORDER No.	PAGE
	111310.60.10950	08/06/95	1494	2 OF 2

	SAMPLE No.	Au	Au(S)	As	As	Ba	Ba	Sn	W	
METHOD		GG309	GG309	HA140	GA140	GX401	GX404	GX401	GX401	
1	36401	<0.008	-	6.6	-	>10000	4.30	<3	20	
2	36402	<0.008	-	5.4	-	6370	-	<3	<10	
3	36403	<0.008	-	>50.0	50	20	-	<3	15	
4	36404	<0.008	-	>50.0	50	5280	-	5	10	
5	36405	<0.008	-	36.0	-	<10	-	<3	20	
6	36406	0.014	0.010	13.0	-	216	-	<3	<10	
7	36407	<0.008	-	37.0	-	40	-	<3	<10	
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24	DETECTION	0.008	0.008	0.5	50	10	0.01	3	10	
25	UNITS	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	

Results in ppm unless otherwise specified
- = element not determined

IS = Insufficient sample
SNR = sample not received

AUTHORISED OFFICER



LEGEND

QUATERNARY
- Qa — Alluvium
- Qt — Talus and scree deposits

TERTIARY
- Tb — Basalt lava and pyroclastic rocks
- Ts — Terrestrial sand, gravel, silt and clay with rarer indurated equivalents

ORDOVICIAN
- Og — Limestone, dolomite, and mudstone (Gordon Group Correlate)

EARLY ORDOVICIAN - LATE CAMBRIAN
- Om — Marine quartzose sandstone, shale, minor conglomerate (Moina Sandstone)
- Oc — Dominantly quartzite and vein quartz pebble to boulder conglomerate (Duncan Conglomerate)
- Odg — Purple mudstone, sandstone, minor chert conglomerate (Gnomon Mudstone)
- Os — Undifferentiated sandstone–conglomerate (above)

CAMBRIAN
- Ecfe — Ferruginous deposits, heamatite and goethite
- Ecf — Felsic volcanic rocks (including Minnow Keratophyre)

Radfords Creek Group
- Ecr — Volcaniclastic sandstone and mudstone with horizons of lithicwacke and quartzose conglomerate
- Ecra — Plagioclase – phyric dacite and volcaniclastics (Applebee Volcanics)
- Ecrw — Feldspar–phyric felsic lava and volcaniclastics (Wilsonia Volcanics)
- Ecrk — Feldspar–phyric intermediate lava and volcaniclastics (Kerrison Volcanics)
- Ecrc — Conglomerate with clasts of chert and less common spilite in a lithicwacke matrix (Sprent Formation)

Cateena Group
- Ecc — Dominantly mudstone, sandstone, conglomerate, with minor chert
- Ecb — Megabreccia with blocks of chert, siltstone, dolomite in a lithicwacke–conglomerate matrix (Beecraft Megabreccia, Teatree Point Megabreccia)
- Eci — Conglomerate with mudstone clasts in feldspathic sandstone matrix (Isandula Conglomerate)

CAMBRIAN - Other
- Eclw — Lithicwacke, mudstone, minor conglomerate (Gog Range Greywacke)
- Ecb — Chert, minor mudstone (Barrington Chert)
- Ecm — Tholeiitic basalt, locally pillowed (Motton Spilite)

PRE-CAMBRIAN
- PEb — Quartzose turbidite sandstone and mudstone (Burnie Formation)
- PEu — Strongly deformed pebble conglomerate and schist (Ulverstone Metamorphics)

INTRUSIVE IGNEOUS ROCKS
DEVONIAN
- Dg — Biotite adamellite (Housetop Granite)
- Ddl — Tholeiitic dolerite

CAMBRIAN
- Ecai — Feldspar – hornblende–phyric diorite (Lobster Creek Volcanics)
- Ecdi — Dacitic feldspar porphyry

SYMBOLS
- Geological boundary – position approximate
- Geological boundary – position inferred
- Thrust or reverse fault
- Fault showing relative movement
- Fault unspecified inferred
- 40/ Strike and dip of bedding
- 69/ Overturned bedding
- 40/ Strike and dip of slatey clevage
- Syncline
- Anticline
- Mine or prospect

95-3739

DIAL RANGE EL 9/92 ANNUAL AND FINAL REPORT JUNE 1995 - PASMINCO - McGUNNIGLE N K

95-3739

792044

5 cm

Geology modified after :

I. B. Jennings et al (1959), K. L. Burns (1963), R. D. Gee et al (1967), P. W. Baillie et al (1986) A. L. Bamford and G. R. Green (1988)

PASMINCO EXPLORATION
A Division of Pasminco Australia Limited

COMPILED : F.G.F.	E.L. 9/94 - DIAL RANGE
DATE : May, 1993	GEOLOGY
DRAWN : G.M.B.	
REFERENCE :	
REVISIONS :	
DRAWING No. 314-GL-008	SCALE 1:25,000 (0 500 1000 METRES)
	FIG. No. 5

BASS STRAIT

E.L. 9/92 BOUNDARY

410 000mE | 415 000mE | 420 000mE | 425 000mE

5 450 000mN | 5 445 000mN | 5 440 000mN | 5 435 000mN | 5 430 000mN

Heybridge | Sulphur Creek | Preservation Bay | PENGUIN | Stowport | Glance Creek | Cuprona | West Pine | Ferndene | Camena | Upper Stowport | Natone | Lottah | Riana | South Riana | Upper Natone | North Motton | Gunns Plains Sugarloaf

MOUNT MONTGOMERY | MOUNT DIAL | MOUNT GNOMON | MOUNT DUNCAN | MOUNT RIANA | MOUNT LORYMER | HOOPERS HILL

DIAL RANGE

BASS HIGHWAY

RIVER EMU | BLYTHE RIVER | LEVEN RIVER

34506 34507 34573-34577 34508 34571-34572 | 34521-34522 34518 34519 34520 | 34617-34620 | 36404-36407 36403 36401-36402 | 34578-34584 34542-34543 34585-34586 | 34526 34524 34525 34527 34589P,L 34590P,L 34544-34548 | 34523 | 34535-34541 | 34562 | 34569 34611P 34598P 34565 34566 34610P 34563 34609P 34568 34570 34596P,L 34597P,L | 34624L | 34625L 34615P 34561 34614P | 34591P,L 34602P | 34592P | 34593P,L | 34512 34511P,L | 34603P 34616P,L 34564 | 34605P | 34514-34517 34513 | 34501 34504 34502 34503 | 34599P | 34604P | 34553 | 34567 | 34623L | 34552P | 34621L 34622L | 34528-34530 34536 34531P,L 34533P,L | 34608P 34607P 34559 34587-34588 34560 | 34594P | 34606P 34558 | 34612P,L 34613P,L 34595P,L

LEGEND

X34595 Geochemical Analysis Sample Location

X 34603P Petrography Sample Location

X 34589L Lithogeochem Sample Location

LEGEND

XP- 34570 - PETROGRAPHY SAMPLE LOCATION.

X - 34504 - GEOCHEMICAL ANALYSIS SAMPLE LOCATION.

95-3739

95-3739

DIAL RANGE EL 9/92 ANNUAL AND FINAL REPORT JUNE 1995 - PASMINCO - McGUNNIGLE N K

792045

5 cm

PASMINCO EXPLORATION
A Division of Pasminco Australia Limited

COMPILED :	E.L. 9/92 - DIAL RANGE
DATE : 8-6-'93	SAMPLE LOCATIONS
DRAWN : N.W.D.S.	
REFERENCE :	
REVISIONS : F.G.F.	
Updated - June '94	
N.K.M - June '95	
DRAWING No. 314-GC-009	SCALE 1:25,000 (0 500 1000 METRES) — FIG. No. 6