

01

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1. SUMMARY

Minops Pty.Ltd. have offered to CRAE all the properties they currently hold in Tasmania.

The most important of these properties is the Razorback tin mine near Zeehan in western Tasmania, where Minops conducted a small open-cut mining operation from September 1975 to February 1978. Current reserves are 200,000 tonnes at a grade of 0.84% tin.

Three visits were made to the Razorback mine, recent drillcore was relogged in detail and all available data was examined.

This report details the results of the examination and recommends that CRAE enters into an agreement with Minops in order to carry out further exploration at Razorback.

2. CONCLUSIONS

1. The pyrrhotite-cassiterite mineralisation at Razorback is syngenetic. It is present in dolomite, basic tuff and conglomerate units either side of a major unconformity. The age of the sequence is approximately Upper Adelaidean to Middle Cambrian.
2. The mineralisation occurs as massive beds, disseminations, 'sweat-outs' and stringers.
3. The style of mineralisation at Razorback is essentially the same as at Renison mine, 8km along strike to the north. There are important similarities in the immediate geological environment, and it is

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highly probable that the rock sequences at both mines are the same age.

4. Thus the outstanding potential of the Razorback lies in its similarity and proximity to Renison, and the possibility that the two deposits formed contemporaneously (Renison is also considered a syngenetic deposit). *! by a few!*
5. The mineralisation presently outlined at Razorback is not of economic interest by itself but provides a foundation for further work. Deep drilling could add substantially to the current 200,000 tonne reserves.

3. RECOMMENDATIONS

1. That CRAE obtain the exploration rights over the Razorback mine by entering into an agreement with Minops.
2. That initially a thorough review of all available data be undertaken, as well as relogging and complete sampling of all drillcore (including that which can be salvaged from Placer's programme).
3. Following the review a programme of diamond drilling be undertaken.

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4. INTRODUCTION

The Razorback tin mine is situated near the old township of Dundas, 7km ENE of Zeehan in western Tasmania. Access is by a good metalled road from the main west coast highway.

The mine is held by Minops under several Mineral Leases totalling 159ha (see plan). There is less than 150 metres between the outcropping mineralisation and the northern lease boundary. The Mineral Leases are surrounded by EL 15/76 of CSR Ltd.

Tin mineralisation was discovered at Razorback in 1909.

The first serious exploration was carried out by Placer Prospecting Ltd. in 1964-65. They drove several exploratory adits, and did 2690m of surface drilling and 1024m of underground drilling in a series of 40 holes.

Placer withdrew after outlining reserves of 195,000 tonnes of oxide ore at 0.83% tin, and 394,000 tonnes of sulphide ore at 0.86% tin.

From 1965 until Minops Pty.Ltd. took over in 1972, the Razorback was briefly evaluated by Gippsland Minerals, Newmont, Anaconda and Tenneco.

Minops remapped and sampled the Placer underground workings but did no drilling. They redefined the ore reserves as 250,000 tonnes of oxide ore at 0.7% tin and 120,000 tonnes of sulphide ore at 0.9% tin.

Minops commenced a 180tpd opencut mining operation in the oxide ore in September 1975. This ceased in February 1978 after mining 180,000 tonnes at a grade of 0.6% tin. Recoveries in the mill averaged only

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35% and the operation incurred a loss.

In March 1978 Minops started a nine-hole drilling programme to test the southern and depth extensions of the ore zone. This programme has been halted after completing seven holes.

Minops estimate the current ore reserves at 80,000 tonnes of oxide ore at 0.75% tin and 120,000 tonnes of sulphide ore at 0.9% tin.

Metallurgy is reported as "very similar to Penison"
i.e. 70% recovery on 1% ore

Tonnage potential

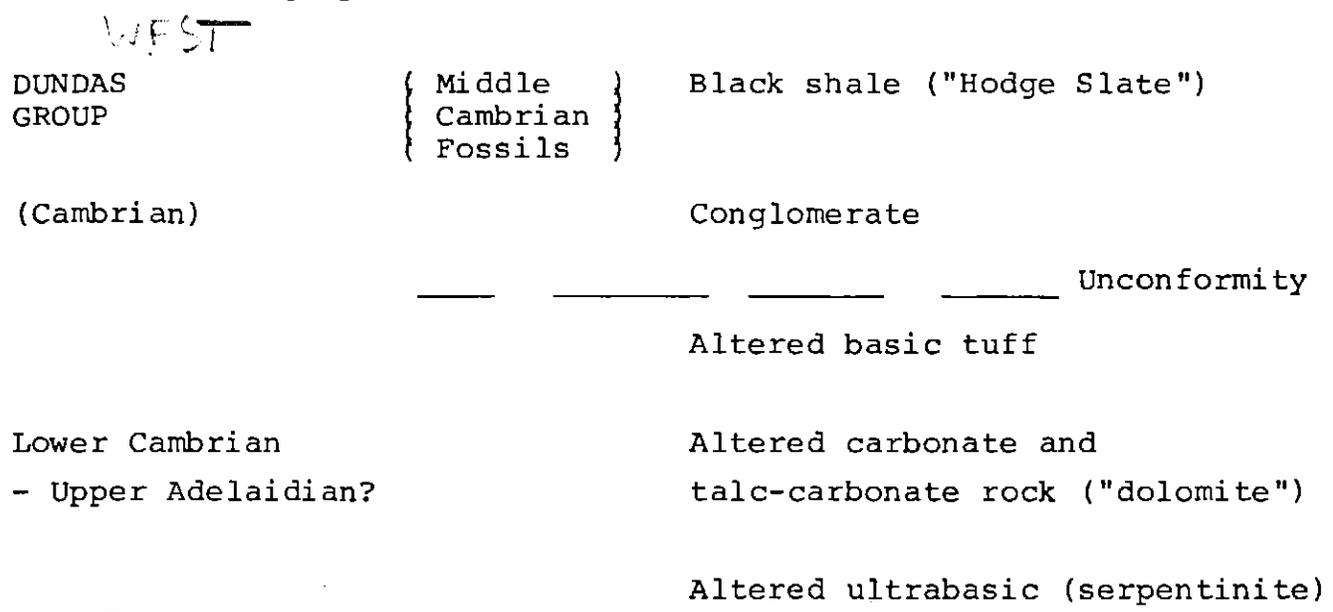
600 m	strike	} 14,000,000 tonnes x 1% tin
600 m	dip (94)	
10 m	width	

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5 GEOLOGY

5.1 Stratigraphic Rock Types

A stratigraphic column for the mine area is:



~~EAST~~

(See Cross section of hole RZS 1)

The rock sequence and unconformity are all near-vertical. Traditionally, the unconformity has been described as a major fault- the Razorback Shear. However, in the drillcore it appears as an unconformity with some limited slip movement on it - now represented by thin old annealed shears.

Blisset and Gulline (1960) describe the ultrabasic as an intrusive pyroxenite sill of Upper Cambrian age. It is broadly conformable with the adjacent sedimentary units (a *thin fault*)

Thin section work on Minops' drillcore (appendix I sample 297469) suggest that there are clastic ultrabasics present immediately overlying the main serpentinite. These are either ultrabasic pyroclastics or detritus eroded off ultrabasic flows. ✓

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This evidence contradicts an intrusive origin for the ultrabasic and suggests it is the oldest unit in the sequence and of Upper Adelaiddian or Lower Cambrian age. ✓

The dolomite unit comprises variable, multi-coloured altered carbonate and talc carbonate rocks. In places near the upper margin sedimentary structures are visible. Elsewhere, thin section work has shown possible corals and clastic textures not visible in hand specimen (appendix I - samples 297468-470).

In the mine area the dolomite is approximately 40 metres thick. A few hundred metres south of the mine the dolomite undergoes a facies change to chert.

Overlying the dolomite is a thin unit of altered basic tuff. In hole RZS 1 this unit was 3 m thick, and in hole RZS 6 only 15 cm thick.

Above the unconformity is a chloritised soft pebble greywacke conglomerate, containing clasts of tuffaceous greywacke, chert and quartz in a matrix of chlorite and carbonate. The conglomerate also contains rare clasts of the underlying dolomite and serpentinite. ✓

Conformably overlying the conglomerate is a black dolomitic carbonaceous shale with syngenetic pyrite. It is finely bedded and contains lenses of conglomerate. ✓

5.2 Mineralisation

The pyrrhotite-cassiterite mineralisation occurs in the dolomite and basic tuff units below the unconformity and the conglomerate unit above it. In places, the dolomite contains bands of mineralisation above and

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625009

below the unconformity. Approximate outlines of mineralisation above and below the unconformity are shown on the longitudinal section.

In the drillholes examined, there was no mineralisation on the unconformity itself or in the annealed shears associated with it. (Traditionally the mineralisation is described as having been introduced up the Razorback shear - the unconformity).

Placer and Minops defined four ore-shoots plunging south at 45° from dispositions of the ore noted in the upper exploratory adits. However, the downward extensions of the 'ore-shoots' as defined by Minops and Placer are not continuous bodies, as they embrace mineralisation of varying styles widely separated on either side of the unconformity. The validity of the 'ore-shoots' is extremely doubtful.

The preoccupation with the 45° southerly plunge has influenced the siting of drillholes. Consequently, there has been little drilling beneath the northern portion of the main outcropping mineralisation (see longitudinal section).

Within the dolomite the mineralisation occurs as massive conformable bands sometimes in excess of 2 m thick, as disseminations and small, blind 'sweat out' stringers.

In the basic tuff the mineralisation occurs as heavy disseminations.

Generally, mineralisation in the conglomerate is concentrated in the matrix and along the margins of clasts. It also occurs as disseminations within clasts, as 'sweat-outs' and cross-cutting stringers. In many cases the sulphides are concentrated along the margins of otherwise - barren quartz-carbonate veins, as though remobilised from the matrix.

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Overall, the style of mineralisation suggests the pyrrhotite-cassiterite is syngenetic although subsequently remobilised on a local scale. ✓

Besides cassiterite, minor stannite is also present.

Ubiquitous accessory minerals are chromite, magnetiferous chromite, sphalerite, chalcopyrite and galena. In thin sections of the dolomite the sphalerite appears to be syngenetic (appendix I samples 297468,70).

Probable scheelite was noted in the drillcore under UV light. Tungsten has never been reported from the Razorback but it has not been assayed for by either Minops or Placer.

Osmiridium is not uncommon within the ultrabasic and it may be of interest to have the pyrrhotite - cassiterite mineralisation analysed for the platinoids.

6 GEOPHYSICS

Most geophysical exploration methods have been tried at Razorback. These include Turam EM, ground magnetics, SP, IP and downhole IP.

The main mine area shows up as anomalous on all methods.

To the south of the mine there are moderate coincident anomalies for IP, EM and SP. Minops drilled holes RZS 2, 3 and 5 into these anomalies (see surface plan and drillings). The holes intersected massive, partly-weathered pyrite carrying minor tin values, in chert. It appears that the geophysical responses are coming from very shallow depths.

No data is available on the several magnetic surveys carried

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out over the mine area. However, magnetic results are reportedly complicated by the widespread occurrence of magnetite in the ultrabasic and the dolomite.

LOCATION

Queenstown 1:250,000 sheet SK 55-5

KEYWORDS

Tin, pyrrhotite, unconformity, dolomite, conglomerate, ultrabasic

LIST OF APPENDICES

- Appendix I Petrological Reports on Samples of Minops Pty. Ltd. Drillcore at Razorback Mine
- Appendix II Minops Pty. Ltd. Drill logs for holes RZS 1-7 at Razorback Mine
- Appendix III Budget for Initial Review of Data - Razorback

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LIST OF PLANS

<u>Plan No.</u>	<u>Title</u>	<u>Scale</u>
Tc 126	Geological Sketch Plan - Razorback Mine - Western Tasmania.	1:2400
Tc 127	Cross Section RZS-1-Razorback Mine Western Tasmania.	1:500
Tc 128	Longitudinal Sect.-Razorback Mine Western Tasmania.	1:500
Tc 129	Mining Tenements - Mt. Razorback Area Western Tasmania.	1:15840

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Mineralised Conglomerate above the unconformity - Hole RZ54, Razorback
Note Pyrrhotite is in the matrix of the conglomerate and in some clasts

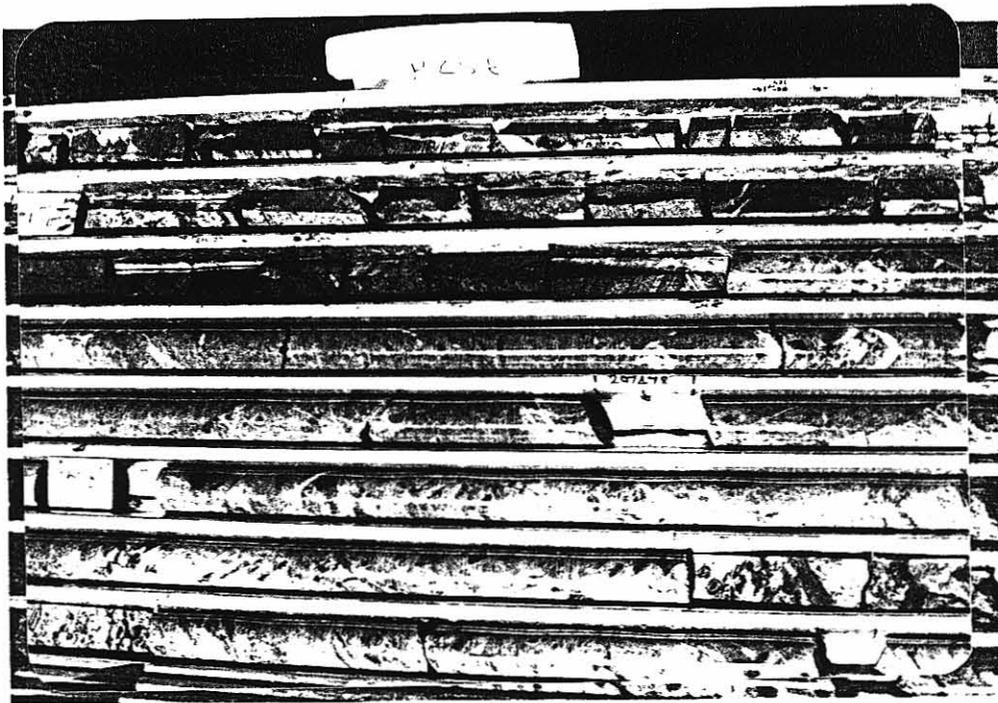


"Dolomite" in Hole RZ54 at Razorback. Serpentinite in top of trays
above 54m.



Handwritten notes:
 11 min
 local
 the
 RZ54

Mineralised Conglomerate - Hole RZ54, - Razorback



Massive pyrrhotite - Cassiterite Mineralisation (cut) in Dolomite.
 Hole RZ56 - Razorback



Close-up of massive mineralisation in Hole RZ56 at Razorback -
Showing Sharp Contact to Barren Dolomite with some re-crystallisation
of Carbonate on Contact.



Top Open Cut Razorback Mine Looking North



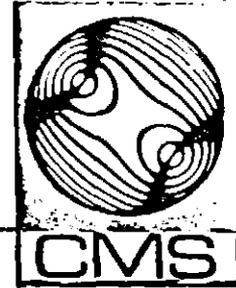
Bottom Open-Cut - Razorback Mine Looking North "Razorback Sheer" on left.

APPENDIX I

PETROLOGICAL REPORTS ON SAMPLES OF MINOPS

PTY. LTD. DRILL CORE AT RAZORBACK MINE

625018

231 Magill Road
Maylands, S.A. 5069
Telephone 42 5659

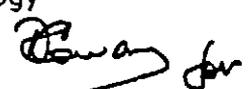
17
Central Mineralogical Services

10th August 1978

Mr. J.G. Purvis,
Senior Geologist,
C.R.A. Exploration Pty. Ltd.,
P.O. Box 138,
BURNIE. TAS. 7320

REPORT CMS 78/7/39

YOUR REFERENCE: O/No. 00181
DATE RECEIVED: 31st July 1978
SAMPLE NOS.: 297462, 466, 468-470,
472-473 and 475
SUBMITTED BY: Mr. J.G. Purvis
WORK REQUESTED: Petrology


H.W. Fander, M.Sc.

Copy to :
The Chief Geologist,
C.R.A. Exploration Pty. Ltd.,
G.P.O. Box 384D,
MELBOURNE. VIC. 3001

Copy and Invoice to :
The Chief Geologist,
C.R.A. Exploration Pty. Ltd.,
P.O. Box 656,
FYSHWICK. A.C.T. 2609

NOTES:

00' 18

This is a rather problematical suite of rocks comprising heavily carbonated and/or chloritised tuffaceous clastic sediments with subordinate talc-carbonate rocks representing both an altered impure carbonate facies and thoroughly altered ultramafics.

The latter types are rather featureless and not easily resolved. Three rocks (297462, 469 and 475) carry relict chromite which identifies them as altered ultramafics (in the complete absence of diagnostic fabrics). Others, however, carry traces of sphalerite. Optical distinction between these two phases in thin section is tenuous (due to near identical R.I., color, cleavage pattern, isotropism) especially where they occur included in carbonate. Thus the altered ultramafics may be more predominant than is apparent at this stage. Elucidation of this problem would require resort to XRD. A viable (and cheaper) alternative would be chemical assays for Cr and Ni in addition to Zn etc.

Lithologies are broadly similar to the host rocks for e.g. at Renison. In this context most of the rocks would be suitable hosts for Sn-mineralisation by virtue of the high carbonate contents. Indeed the locally complex pattern of carbonation may represent a marginal facies of contact metasomatic alteration. However, the more typical silicate metamorphic/metasomatic assemblages are absent and at this stage there are no positive indications of potential Sn-mineralisation.

D. Cowan, B.Sc.

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

Job No. CMS 78/7/39 Date Received: 31.7.78Reference DPQ No. 00181Sample No. 297462Nature of Sample: D.D. Core - RZ51 57.3mDESCRIPTION SECTION No. 24824

a. Hand Specimen:

Green grey carbonate rock, K stain negative weakly magnetic.

b. Microscopic:

This is a talc-carbonate-magnetite rock of altered ultramafic affinities.

The rock consists essentially of ultrafine semi-massive incipiently orientated talc aggregates studded throughout with granular aggregates of carbonate and with fine grained ($< 10 - 50\mu$) an- to euhedral magnetite. The carbonate appears to be magnesite although this was not confirmed by XRD, and is progressively replaced in some areas by a relatively clear dolomite-ankerite introduced in part along semi-continuous veinlets (to 350μ). Magnetite is more or less evenly distributed, although incipiently clustered in the carbonate aggregates, and comprises around 5% of the rock overall.

The dark crystals (to 1.5 mm) outlined on the drill core are "chromite" (an impure weakly magnetic, red translucent variety). Similar features are thinly disseminated throughout the thin section and, in the absence of definite textural evidence, these confirm the altered ultramafic origin of the rock.

The rock probably represents a completely steatitised and carbonated serpentinite with the fine grained magnetite "exsolved" during alteration of the primary ferromagnesian silicates.

D. Cowan, B.Sc.

625020

IDENTIFICATION
297462
TALC-CARBONATE-MAGNETITE ROCK (ALTERED ULTRAMAFIC)

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

Job No. CMS 78/7/39 Date Received: 31.7.78Reference DPO No. 00181Sample No. 297466Nature of Sample: D.D. Core RZS 1 97.1mDESCRIPTION SECTION No. 24825

a. Hand Specimen:

Green ?chloritic schist, K stain negative.

b. Microscopic:

This rock is a fine-grained chlorite schist with a vague relict clastic fabric and interpreted as a thoroughly altered basic tuff.

The rock consists largely of semi-orientated very fine grained pale green magnesian chlorite. Accessory microgranular quartz is present and a few areas are impregnated with cloudy ankeritic carbonate. Leucoxenic semi-opaques (< 50 - 150 μ) are common throughout and there are thinly dispersed aggregates of pale green ?illite.

Vague platy to angular relict clastic fabrics (to 500 μ) are outlined in the near-massive chlorite. Some of these features include illitic semi-pseudomorphs of feldspar laths and microphenocrysts but the majority are featureless. Leucoxenic material can be identified as degraded ilmenite flakes and titaniferous ?magnetite on the basis of shape. These features are weakly layered in their distribution and were primarily clastic in origin. The rock is devoid of tangible detrital features and this tends to confirm the altered pyroclastic interpretation.

Minor accessory fine grained pyrrhotite occurs in spongy aggregates (to 3.5 mm) associated with the carbonate aggregates. Rare discrete particles of galena (to 250 μ) occur elsewhere in the rock enclosed in chlorite with microscopic selvages of cherty quartz.

D. Cowan, B.Sc.

625021

IDENTIFICATION:

297466

CHLORITE SCHIST
(ALTERED SHEARED ?BASIC
TUFF)

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

Job No. CMS 78/7/39 Date Received: 31.7.78

Reference DPD No. 00181

Sample No. 297468

Nature of Sample: D.D. Core Rzs 2

DESCRIPTION SECTION No. 24826

a. Hand Specimen:

Grey carbonate rock, K stain negative.

b. Microscopic:

This is a carbonaceous carbonate-sericite rock with sparsely disseminated sulphides.

The rock consists largely of microcrystalline carbonate with irregular areas and sporadic crude bands of random to incipiently orientated sericite. The carbonate is a dolomite-ankerite and generally cloudy. The rock shows evidence of brecciation and in these areas the primary carbonate tends to be replaced by a finer porcellanous variety or elsewhere by granular to lustre mottled dolomite.

The rock is weakly but semi-pervasively stained with carbonaceous material which is partly concentrated into discontinuous incipiently stylolitic microscopic films. Spongy aggregates of red sphalerite (to 1.2 mm) and fine to ultrafine particles of Fe-sulphide are sparsely disseminated throughout and predate the brecciation.

Carbonate-rich areas show relict clastic fabrics. Shapes are splintery to angular with sizing in the silt to fine sand range. This material is indeterminate being completely carbonated (or elsewhere sericitised) but the relict fabric is reminiscent of a vitric tuff with subordinate to minor crystal- and lithic pyroclastic components.

D. Cowan, B.Sc.

625022

IDENTIFICATION
297468
CARBONACEOUS CARBONATE-SERICITE ROCK WITH DISSEMINATED SULPHIDES

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

Job No. cms 78/7/39 Date Received: 31.7.78

Reference 297469 DPO No. 00181

Sample No. D.D. Core 297469

Nature of Sample: D.D. Core Dolomite

DESCRIPTION SECTION No. 24827

a. Hand Specimen:

Dark grey/grey white carbonate rock, K stain negative weakly magnetic.

b. Microscopic:

This is a hematitic quartz-carbonate rock with some affinities to 297462 and 297468.

The rock consists largely of microcrystalline to porcellanous carbonate with irregular patches and crude veins of microgranular quartz and dolomite introduced in part in areas showing evidence of brecciation (sim. 297468). Irregular fractures are represented by quartz-carbonate veinlets or occasionally cloudy films of clay.

The rock is more or less pervasively stained with very fine grained hematite as single particles and spongy to near-massive irregular microscopic films. This phase, on relict and microtextural evidence represents martitised magnetite. Thinly dispersed single grains (to 300 μ) and small clusters of chromite and chromiferous magnetite are also present with thin marginal overgrowths of martite.

This rock has a vague relict clastic fabric analogous to that in 297468. Thus textural and compositional evidence indicates that it represents an ultramafic pyroclastic that has been thoroughly carbonated and subsequently deformed and partly silicified. The martitised ultrafine magnetite may have persisted from an earlier phase of serpentinisation.

D. Cowan, B.Sc.

625023

IDENTIFICATION
297469
HEMATITIC QUARTZ-CARBONATE ROCKS (ALTERED ULTRAMAFIC ?TUFF)

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

023
Job No. CHS 78/7/39 Date Received: 31.7.78

Reference DPO No. 00181

Sample No. 297470

Nature of Sample: D.D. Core Dolomite

DESCRIPTION SECTION No. 24828

a. Hand Specimen:

Grey microcrystalline carbonate rock, K stain negative.

b. Microscopic:

This is an extremely fine grained talc-carbonate rock with sparsely disseminated sphalerite.

The rock consists essentially of microcrystalline dolomitic carbonate (mean 10 μ) and closely intergrown random talc which are extensively replaced along a microscale network of fractures by cloudy porcellanous carbonate. Semi-continuous veins of weakly stressed optically clear carbonate occur sporadically and postdate microscale talc veinlets and the porcellanous carbonate phase. The alteration trend is similar to that in the previous carbonate rocks. In contrast, however, this rock is devoid of tangible clastic features and best interpreted as an altered impure carbonate facies.

Sphalerite is sparsely disseminated throughout in angular patches up to 750 μ diameter and is a reddish variety (moderate Fe). Several of the sphalerite aggregates are mantled with thin selvages of carbonate with a radial microtexture enhanced by accessory carbonaceous material. Cross- and longitudinal sectional shapes of these intergrowths are strongly reminiscent of rugose corals.

D. Cowan, B.Sc.

625024

IDENTIFICATION
297470
TALC CARBONATE ROCK WITH DISSEMINATED SPHALERITE

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

Job No. CMS 787739 ^{2A} Date Received: 31.7.78Reference DPO No. 00181Sample No. 297472Nature of Sample: D.D. Core ConglomerateDESCRIPTION SECTION No. 24829

a. Hand Specimen:

Green grey chloritic breccia, K stain negative.

b. Microscopic:

This is an altered slump breccia with disseminated pyrrhotite. The rock contains frequent randomly sized (100 μ - 5 mm +) and shaped rock fragments partly "moulded" onto one another and with a faint dimensional preferred orientation defining bedding. The majority of the clasts are fine grained silty labile psammites with a reworked tuffaceous framework of splintery to angular shard-like features accompanied by subordinate to minor quartz grains, altered feldspar, chert fragments, clay pellets, leucoxenised clastic opaques and rare particles of chromite and tourmaline. These are accompanied by finer pelitic types a few of which are weakly carbonaceous and by thinly dispersed discrete chert particles and quartz grains.

The fabric is typical of an intraformational breccia (or soft pebble conglomerate). Cement consists of fine grained Mg-chlorite interspersed with irregular aggregates of granular carbonate (dolomite-ankerite). Clasts are pervasively chloritised with development of secondary microcrystalline quartz and accessory sericite. On the basis of relict textures however, the original sediment can be identified as a bedded "tuffaceous greywacke" or reworked tuff.

Fine grained pyrrhotite is sparsely disseminated throughout the rock largely restricted to the chloritic matrix but also as marginal impregnations in some of the chloritised clasts.

D. Cowan, B.Sc.

625025

IDENTIFICATION
297472
ALTERED SLUMP BRECCIA WITH DISSEMINATED PYRRHOTITE

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

Job No. CMS-78/7/39 Date Received: 31.7.78

Reference DEP No. 00181

Sample No. 297473

Nature of Sample: D.D. Core ('Hodge Shale')

DESCRIPTION SECTION No. 24830

IDENTIFICATION
297473
DOLOMITIC CARBONACEOUS PELITE WITH SYNGENETIC PYRITE

a. Hand Specimen:

Dark grey laminated carbonaceous pelite, K stain negative.

b. Microscopic:

This is a turbidite-like carbonaceous pelite weakly pyritic and stained throughout with chlorite and dolomite of diagenetic character.

The rock is laminated on a sub- to millimetric scale with planar to locally lenticular bedding reflected in a rather subtle weakly graded intercalation of silty shale and argillaceous siltstone. Detrital components comprise splintery to subangular silt-sized feldspar (completely replaced by chlorite and carbonate with accessory sericite) with subordinate quartz, thinly disseminated muscovite flakes, and leucoxenitic semi-opaques. The shale fraction consists of incipiently orientated sericite pervasively stained with chlorite and microcrystalline cloudy carbonate. Ultrafine carbonaceous material is pervasive throughout and partly re-organised into microscopic films and flakes of graphite in response to incipient metamorphism.

Bedding is locally displaced by semi-planar microfaults healed with chlorite and films of carbonaceous material. Fine grained pyrite comprises ≤ 1 to around 3% of the rock and is weakly bedded in its distribution with a tendency to concentration in the coarser (siltstone) bands.

Pyrite is of widely variable grain size with microscopic particles (typically $< 5\mu$) and frequent framboids (to 20μ) accompanied by sub- to euhedral crystals up to 75μ diameter. The crystals show zonally arranged inclusions & in part at least represent recrystallised/overgrown framboids. These features show extremely rare marginal & often partial inclusions (mean 10μ) of sphalerite & are locally concentrated into a planar microfracture. Here they are accompanied by rare microscopic particles of chalcopyrite ($< 10-25\mu$) & thinly dispersed microscopic intergranular films (typically $< 10\mu$ in width) of chalcopyrite

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REPORT CMS 78/7/39

and galena.

²⁶ Microtextural relationships are typical of (partly recrystallised) syngenetic sulphides.

D. Cowan, B.Sc.

625027

SAMPLE REPORT (Mineralogy, Petrology, Ore Microscopy)

C 27
Job No. CMS 78/7/39 Date Received: 31.7.78

Reference DPO No. 00181

Sample No. 297475

Nature of Sample: D.D. Core 'Dolomite'

DESCRIPTION SECTION No. 24831

IDENTIFICATION
297475
TALC-CARBONATE ROCK (ALTERED ULTRAMAFIC)

a. Hand Specimen:

Pale grey fine grained ?talc-carbonate rock with isolated chromite crystals, K stain negative.

b. Microscopic:

This is a talc carbonate rock of similar paragenesis to 297462.

The rock is vaguely banded and consists essentially of fine grained random talc in semi-massive aggregates heavily impregnated with microgranular carbonate (calcite-dolomite). Crosscutting veinlets of quartz talc and carbonate occur sporadically and these grade into irregular quartz-carbonate aggregates (to 1 cm) which are locally displaced by late stage microfractures.

Microscopic particles of Fe-sulphide are thinly dispersed throughout the rock and partly concentrated in the veinlets.

This rock is featureless in terms of origin apart from thinly disseminated partly granulated and marginally corroded crystals of "chromite" (to 350 μ , clusters to 1 mm), This is an impure weakly magnetic red translucent variety optically very similar to that in 297462 and in the absence of relict textural features indicates an altered ultramafic origin for the rock.

D. Cowan, B.Sc.

625028



amdel

The Australian Mineral Development Laboratories

Flemington Street, Frewville, South Australia 5063
Phone Adelaide 79 1662, telex AA 82520

Pilot Plant Osman Place, Thebarton, Sth Aust
Phone Adelaide 43 8053
Branch Offices Perth and Sydney
Associated with Professional Consultants Australia Pty Ltd

Please address all correspondence to Frewville.
In reply quote: **GS 3/1/6/0**

10 August 1978

C.R.A. Exploration Pty. Limited,
PO Box 138,
BURNIE, TAS. 7320.

Attention: Mr G. Purvis

REPORT GS 454/79

YOUR REFERENCE: D.P.O. 00182
MATERIAL: 3 drill core samples
LOCALITY: Western Tasmania
IDENTIFICATION: 297464, 297467, 297476
DATE RECEIVED: 1 August 1978
WORK REQUIRED: MA1.3, MA2.2(2) and MB1

Investigation and Report by: Dr Brian Steveson
Manager, Geological Services Division: Dr Keith J. Henley

Keith Henley

for Norton Jackson
Managing Director

c.c. C.R.A. Exploration Pty. Limited,
GPO Box 384D,
MELBOURNE, Vic. 3001.

PO Box 656,
FYSHWICK, ACT 2609.

jd/3

625029

EXAMINATION OF ALTERED ULTRABASIC AND PYRRHOTITIC ROCKS

29

Sample: 297464; TSC20119 - 76m RZS 1

Rock Name:

Altered ultramafic rock

Hand Specimen:

The core is a pale grey massive rock speckled by aggregates of a black mineral.

Thin Section:

An optical estimate of the constituents gives the following:

	<u>%</u>
Talc	60-65
Magnesite	30
Opaques	3
Serpentine	2

This rock has a fairly simple mineral assemblage and the rock is clearly derived from an ultrabasic, magnesium-rich rock. The texture of the sample is such, however, that no original textures have been preserved and it is not possible to indicate the nature of the original material more specifically. The rock contains a stable metamorphic assemblage not likely to have resulted from weathering.

The bulk of the sample consists of an extremely fine-grained aggregate of talc. This mineral shows no preferred orientation and appears to consist of an essentially granular mosaic with an average crystal size which is probably considerably less than 0.01 mm. Within this material the magnesite (identified by X-ray diffraction analysis) forms a considerable variety of crystals. The most distinctive are those which show some rational crystal faces and typical rhombic outlines. These appear to be later than the talc and have grown by replacement within it. Elsewhere the carbonate forms fine-grained aggregates which are rather dark and turbid in the thin section. In many places there are rather heterogeneous mosaics of the magnesite including both relatively large (up to 0.2 mm) subhedral crystals and finer-grained material. There is some tendency for the rock to show a layering caused by variations in the relative proportions of talc and carbonate. Particularly distinctive are some monomineralic bands of talc which are about 0.5 mm in width. Elsewhere the rock is massive.

Serpentine is not randomly distributed throughout the area of the thin section and it is possible that the rock does, in fact, contain a little more serpentine than is indicated in the list above. The mineral is invariably fine-grained and was identified partly on the basis of its optical properties and partly by consideration of the overall mineral assemblage. Patches of serpentine are commonly less than 0.05 mm in size and consist of fine-grained material. The serpentine patches are irregular in shape and closely intergrown with talc and they do not have any distinctive pseudomorphous shapes. Opaques are widely and randomly distributed and do not form aggregates more than about 0.1 mm in size.

The dark mineral on the surface of the drill core was identified by X-ray diffraction analysis as a spinel with a cell-edge of 8.3Å. This mineral is probably chromite.

625030

30
Sample: 297467; PSD5162

Rock Name:
Pyrrhotite-rich rock 175m RZ5 6

Hand Specimen:
The sample is a massive and compact rock containing large aggregates of pyrrhotite and pyrite-rich narrow veinlets.

Polished Section:
An optical estimate of the constituents gives the following:

	<u>%</u>
Pyrrhotite	65
Non-opaques	20
Pyrite	10
Marcasite	2
Chalcopyrite	<1
?Chromite	trace

The bulk of the polished section consists of an aggregate of non-opaques and pyrrhotite and pyrite is confined to a prominent veinlet. There is little intergrowth between the pyrrhotite and the pyrite and it is difficult to give specific paragenetic relationships. In one or two places the pyrite appears to vein pyrrhotite at the periphery of the major vein in the polished section and this probably indicates that the pyrite is somewhat later than the pyrrhotite.

In the bulk of the rock pyrrhotite forms a contiguous aggregate although it is fairly closely intergrown with the non-opaques on a scale of about 0.1 mm. In some places there are specks and small aggregates of pyrrhotite which are less than 0.02 mm in size. Chalcopyrite occurs with the pyrrhotite, mostly as small irregular crystals not more than 0.05 mm in size.

Pyrite occurs entirely in a vein system which transects the polished section. Aggregates of pyrite are commonly 2 to 3 mm in width and are generally massive and essentially monomineralic. There is a border of non-opaque minerals (probably carbonate) between the pyrite vein and the pyrrhotite-rich parts of the rock. In one or two places the pyrite is present as subhedral crystals within non-opaques and there are a few thin veinlets of pyrite which appear to transect more massive aggregates of pyrrhotite adjacent to the vein system. In one or two places marcasite is intergrown with pyrite and crystals are exceptionally up to about 0.1 mm in size.

A grey reflective mineral which is probably chromite occurs in irregular veins with non-opaques generally within the pyrrhotite. Individual crystals of the chromite are not more than 0.1 mm in size and many appear to have been broken and now consist of much smaller fragments.

31

Sample: 297476; PSD5163

184 m. LZS L.

Rock Name:

Pyrrhotite-rich rock

Hand Specimen:

This is a dense, massive and compact rock which clearly consists very largely of pyrrhotite.

Polished Section:

An optical estimate of the constituents gives the following:

	<u>%</u>
Pyrrhotite	70-75
Non-opaques	25
Arsenopyrite	1
Chalcopyrite	<1
?Chromite	<1

The bulk of this polished section consists of a contiguous aggregate of pyrrhotite in which individual crystals range in size from about 0.1 mm to more than 1 mm. The mosaic of pyrrhotite crystals is homogenous and equigranular. In one or two places there appear to be euhedral crystals of non-opaques enclosed within the pyrrhotite and some of these have characteristic six-sided outlines (possibly olivine). Elsewhere non-opaques form patches within the pyrrhotite and these are up to 2 or 3 mm in size. Other sulphide minerals are widely distributed throughout the polished section but occur in only very small amounts. Both arsenopyrite and chalcopyrite are commonly enclosed within the pyrrhotite and form crystals less than 0.05 mm in size. In one or two places there are small arsenopyrite crystals enclosed within non-opaques and some of these have distinctive rhomb-like shapes. Chromite has been identified only tentatively but there is a weakly reflective grey mineral which is isotropic and this is probably magnetite, chromite or possibly some other kind of spinel. It forms small, apparently broken crystals not more than 0.04 mm in size. These occur in somewhat more fractured parts of the rock and show no particular spatital association with either the pyrrhotite or the non-opaques.

The sample therefore consists very largely of a massive aggregate of pyrrhotite with small amounts of fine-grained chalcopyrite and arsenopyrite.

625032

00 32

APPENDIX II

MINOPS PTY. LTD. DRILL LOGS FOR HOLES

RZS 1-7 RAZORBACK MINE

625033

625024

63

GEOLOGICAL DESCRIPTION		DRILLING			SAMPLING				
		From	To	Rec.	Sample No.	From	To	Length	Rec.
00									
	SERPENTINITE Dark olive green serpentinite with occasional bandings of calcite and threads of magnetite.								
	0.00 - 16.00 Core very fractured due to surface weathering - much core loss.								
	17.00 Minor shear plane with asbestos at 30° T.C.A.*								
	19.75 Fine carbonate threads orientated at 22° T.C.A.								
	20.00 Minor shear with asbestos at 12° T.C.A.								
	21.55 Minor shear with asbestos at 31° T.C.A.								
	22.45 Minor shear with asbestos at 18° T.C.A.								
	23.00 - 23.65 Core very broken.								
	24.40 - 26.25 Numerous minor slip, shear with asbestos generally orientated 30° - 47° T.C.A.								
	28.35 Slip plane with asbestos at 61° T.C.A.								
	28.85 Slip plane with asbestos at 15° T.C.A.								
	29.05 Slip plane with asbestos at 16° T.C.A.								
	29.53 Slip plane with asbestos at 25° T.C.A.								
	32.15 Lamination in serpentinite at 52° T.C.A.								

DRILL HOLE RECORD PROPERTY *RANDOLPH* DRILLED BY *A. D. D* COMMENCED *13-7-78* COMPLETED *26-7-78* DEPTH *205 meters* RECOVERY

LOGGED BY *C. C. LYDEN* CO-ORDINATES *4528.19N 290252E* COLLAR R.L. *25-7-64* BEARING *275°40' GRAD* DIP *-46°*
254°30' MAG.

HOLE No. *RZ5-7*

625035

34

GEOLOGICAL DESCRIPTION		DRILLING			SAMPLING				
From	To	From	To	Rec.	Sample No.	From	To	Length	Rec.
	(34.45 - 34.80 Core very broken - core lost)								
	35.54 Asbestos lamination at 38° T.C.A.								
	43.90 100 m. Sheared serpentinite with asbestos at 49° T.C.A.								
	47.32 - 47.57 Sheared serpentinite with minor asbestos and magnetite threads at 43° T.C.A.								
	(54.80 - 55.00 Core very broken)								
	56.47 - 56.60 Sheared serpentinite with minor asbestos and magnetite threads at 32° T.C.A.								
	(62.60 - 62.90 Core broken)								
	71.55 Slip plane with asbestos at 19° T.C.A.								
	(72.60 - 73.10 Core broken)								
	85.25 Minor shear with asbestos at 26° T.C.A.								
	85.56 Minor shear with asbestos at 25° T.C.A.								
	86.50 Minor shear with asbestos at 25° T.C.A.								
	90.15 Lamination in serpentinite at 36° T.C.A.								
	97.00 Minor shear with asbestos and magnetite at 56° T.C.A.								
	97.90 Minor shear with asbestos and magnetite at 20° T.C.A.								
	98.45 Minor shear with asbestos and magnetite at 21° T.C.A.								

DRILL HOLE RECORD

PROPERTY

DRILLED BY

COMMENCED

COMPLETED

DEPTH

RECOVERY

LOGGED BY

CO-ORDINATES

COLLAR R.L.

BEARING

DIP

HOLE No. R25-7

625036

GEOLOGICAL DESCRIPTION		DRILLING			SAMPLING				
		From	To	Rec.	Sample No.	From	To	Length	Rec.
From	To								
	(96.20 - 96.40 Case broken)								
	(97.10 - 97.20 Case broken)								
	(97.60 - 97.80 Case broken)								
	99.91 Minor shear with asbestos and mica galeud at 78° T.C.A.								
	100.86 Minor shear with asbestos at 39° T.C.A.								
	105.40 limestone in serpentinite at 38° T.C.A.								
	107.35 Minor shear with asbestos at 45° T.C.A.								
	108.46 Minor shear with asbestos at 72° T.C.A.								
	110.25 Minor shear with asbestos at 42° T.C.A.								
	112.80 limestone in serpentinite with mica asbestos at 72° T.C.A.								
	115.50 limestone in serpentinite at 30° T.C.A.								
	116.00 Minor shear with asbestos at 53° T.C.A.								
	≈ 118.50 Dark olive green serpentinite becomes lighter green at ≈ 119.00 to 121.80 serpentinite light cream-green with local clay bands.								
121.80	121.80 Dolomite At 121.80 serpentinite rapidly grades to dark blue-black dense dolomite with occasional flecks of flame-pink calcite.								

DRILL HOLE RECORD PROPERTY DRILLED BY COMMENCED COMPLETED DEPTH RECOVERY
 LOGGED BY CO-ORDINATES COLLAR R.L. BEARING DIP HOLE No. *R25-7*

625037

36

GEOLOGICAL DESCRIPTION		DRILLING			SAMPLING				
From	To	From	To	Rec.	Sample No.	From	To	Length	Rec.
	131.53								
	134.23								
	136.22								
	139.54								
	144.55 - 147.40								
	155.61 →								
	155.68								
	162.00 →								
	166.47								

DRILL HOLE RECORD	PROPERTY	DRILLED BY	COMMENCED	COMPLETED	DEPTH	RECOVERY
LOGGED BY	CO-ORDINATES	COLLAR R.L.	BEARING	DIP	HOLE No. R25-7.	

GEOLOGICAL DESCRIPTION		DRILLING			SAMPLING				
From	To	From	To	Rec.	Sample No.	From	To	Length	Rec.
168.95	<p>GREYWACKE CONGLOMERATE.</p> <p>168.95 - 169.47 Pebble conglomerate with a dolomite matrix with threads of calcite.</p> <p>169.07 - 169.15 50mm true width quartz-calcite vein at 53° T.C.A. at approx 1/2 to bedding.</p> <p>169.47 - 169.65 Fine bedded black shale at 51° T.C.A.</p> <p>169.65 - Greywacke Conglomerate composed of grey siltstone, and grey-pink chert pebbles ≤ 20mm within a fine pebble and greywacke matrix.</p> <p>169.85 Bedding at 56° T.C.A.</p> <p>170.28 26mm Calcite-quartz vein at 45° T.C.A. and</p>								

DRILL HOLE RECORD PROPERTY DRILLED BY COMMENCED COMPLETED DEPTH RECOVERY
 LOGGED BY CO-ORDINATES COLLAR R.L. BEARING DIP HOLE No. *R25-7*

625041

APPENDIX

II

of

GEOLOGICAL DESCRIPTION		DRILLING			SAMPLING				
From	To	From	To	Rec.	Sample No.	From	To	Length	Rec.
	176.05 - 177.59								
	Predominantly fine bedded black shale with conglomerate inclusions - bedding at 43° T.C.A.								
	176.40 - 176.64								
	Conglomerate lens 260 mm true width at 22° T.C.A.								
	176.45								
	22 mm Calcite-quartz vein at 35° T.C.A. approx ^{ly} to bedding - vein margins display clean breaks through conglomerate pebbles.								
	176.88 - 177.03								
	Conglomerate lens - 90 mm true width with minor lenses of interstitial pyrobitite (~1%) - bedding at 50° T.C.A. - pebble distribution suggests that up hole is lower in sequence.								
	177.49								
	14 mm Calcite quartz vein at 28° T.C.A. - fragments of shale suspended in calcite - minor pyrite (~5%) present - vein margins display clean breaks through local conglomerate lens.								
	177.52								
	Bedding at 59° T.C.A.								
	177.59 - 182.02								
	Grey wash conglomerate.								
	178.43								
	Irregular fracture enriched with minor pyrite.								
	178.54								
	Calcite-quartz vein at 38° T.C.A.								

DRILL HOLE RECORD

PROPERTY

DRILLED BY

COMMENCED

COMPLETED

DEPTH

RECOVERY

LOGGED BY

CO-ORDINATES

COLLAR R.L.

BEARING

DIP

HOLE No. RZS-7.

GEOLOGICAL DESCRIPTION		DRILLING			SAMPLING				
		From	To	Rec.	Sample No.	From	To	Length	Rec.
	178.86	6m.m.	Calcite vein at 63° T.C.A.						
	179.45	8m.m.	Calcite vein at 41° T.C.A.						
182.07	181.62	6m.m.	Calcite vein at 44° T.C.A.						
07	BLACK SHALE (Horse Slack) Predominantly fine bedded black shale with included conglomerate lenses and local bedded pyrite - shale-conglomerate contact displays stichocidus with minor encrusted pyrite.								
	181.07	10mm.	irregular calcite vein at 60° T.C.A.						
	182.20		Bedding at 74° T.C.A.						
	182.37 - 182.42		Conglomerate lens at 59° T.C.A.						
	182.54 - 182.92		Conglomerate lens at 59° T.C.A.						
	182.52	14 m.m.	Calcite vein at 54° T.C.A. and approx ^y to bedding at 61° T.C.A.						
	183.70 - 183.98		Conglomerate lens.						
	182.85	6mm.	calcite vein at 52° T.C.A.						
	184.20		Bedding at 53° T.C.A.						
	184.30 - 184.64		Conglomerate lens						
	184.77		Fine bedded pyrite at 50° T.C.A.						

DRILL HOLE RECORD	PROPERTY	DRILLED BY	COMMENCED	COMPLETED	DEPTH	RECOVERY
DRILLED BY	CO-ORDINATES	COLLAR R.L.	BEARING	DIP	HOLE No. RZS-7.	

625043

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APPENDIX II

of

GEOLOGICAL DESCRIPTION		DRILLING			SAMPLING				
From	To	From	To	Rec.	Sample No.	From	To	Length	Rec.
	185.20								
	185.30								
	185.26 - 186.04								
	186.50								
	187.22								
	188.00								
	189.06								
	189.24								
	189.67								
	190.27								
	190.50								
	191.03								
	192.66								
	193.60								
	194.33 - 194.66								

DRILL HOLE RECORD

PROPERTY

DRILLED BY

COMMENCED

COMPLETED

DEPTH

RECOVERY

LOGGED BY

CO-ORDINATES

COLLAR R.L.

BEARING

DIP

HOLE No. R25-7

625044

GEOLOGICAL DESCRIPTION		DRILLING			SAMPLING				
		From	To	Rec.	Sample No.	From	To	Length	Rec.
From	To								
	194.80 - 195.01	Conglomerate lens with minor (41%) pyrite.							
	195.57	Bedding with pyrite at 48°.							
	196.00	Fine bedded pyrite at 30°.							
	196.82	3mm. irregular calcite-quartz veinlet with 60% pyrochroite at 35° T.C.A.; oblique to bedding							
	197.11	Fine bedded pyrite at 53°.							
	197.22	1mm calcite veinlet with ~50% pyrochroite-pyrite at 43° T.C.A.; oblique to bedding							
	197.40	1mm calcite veinlet with 40% pyrochroite-pyrite at 55° T.C.A.; oblique to bedding							
	198.55 - 198.62	Conglomerate lens with minor pyrite							
	198.80	3mm. distorted calcite veinlet with 30% pyrochroite at 46° T.C.A. oblique to bedding							
	199.13 - 199.40	Several fine (1-10mm) calcite veins with 40% pyrochroite at 39° to 59° T.C.A. oblique to bedding at 39° T.C.A.							
	200.35	Fine bedded pyrite at 39° T.C.A.							

DRILL HOLE RECORD

PROPERTY DRILLED BY COMMENCED COMPLETED DEPTH RECOVERY

LOGGED BY CO-ORDINATES COLLAR R.L. BEARING DIP HOLE No. *RZS-7*

625045

GEOLOGICAL DESCRIPTION		DRILLING			SAMPLING				
From	To	From	To	Rec.	Sample No.	From	To	Length	Rec.
	201.20								
	202.00								
	202.61								
	202.66-202.72								
	203.00								
	HOLE TERMINATED AT 203 METERS.								
	DRILL HOLE SURVEY (REVISION LEAD BEARING CORRECTED)								
	DEPTH	DIP	BEARING						
	90 m	-44.5°	In Casing						
	150 m	-44°	239° Mag	260°	G.M. Interval				
	201 m	-40°	234.5° Mag	260°30'	G.M. Interval				
	* E.C.P. deviates to core axis.								

DRILL HOLE RECORD

PROPERTY *KHAWASACK*
6M/71

DRILLED BY *A.D.D.* COMMENCED

COMPLETED *19-7-78* DEPTH *203 m.*

RECOVERY

LOGGED BY *C.E. LAYDEN* CO-ORDINATES *A52819N*
2502.32E

COLLAR R.L. *25764* BEARING *275°40'*
6A10

DIP *-46°*

HOLE No. *R25-7.*

625046

GEOLOGICAL DESCRIPTION		DRILLING			SAMPLE 45				
		From	To	Rec.	Sample No.	From	To	Length	Rec.
To									
	SERPENTINITE								
	Fresh dark olive green serpentinite - moderately magnetic - magnetite as fine grains ($\frac{1}{2}$ mm) and threads - abundant calcite veinlets and threads with a dominant orientation at 33° to core axis.								
	0.00 - 6.00 core very broken due to surface weathering.								
	17.50 - 19.00 Serpentinite soft and crumbly resulting in 10% core loss.								
	70.50 - 70.70 Blue stone.								
	71.00 - 71.14 Disheveled in serpentinite texture - muscovite?								
	92.00 - 93.36 Serpentinite a light olive green with 10% sub spherical grey calcite splashes.								
	94.47 12 mm Calcite veinlet at 62° to core axis								
	95.11 10 mm Calcite veinlet at 38° to core axis								
	95.52 15 mm Calcite veinlet at 50° to core axis								
	95.56 12 mm Calcite veinlet at 59° to core axis								
	96.37 8 mm Calcite veinlet at 58° to core axis								
	96.82 8 mm Calcite veinlet at 58° to core axis								

DRILL HOLE RECORD

PROPERTY *RANSON* DRILLED BY *A.D.D.* COMMENCED *22-6-78* COMPLETED *12-7-78* DEPTH *287 meters* RECOVERY *6M71.*

LOCED BY *E. L. VIGN* CO-ORDINATES *4529.19N 2902.32E* COLLAR R.I. *257.64* BEARING *293°30'* DIP *-68°*

HOLE No. *RZ5-C.*

625047

00

APPENDIX II

GEOLOGICAL DESCRIPTION		DRILLING			SAMPLING				
		From	To	Rec.	Sample No.	From	To	Length	Rec.
To									
	97.29 8 m.m. Calcite veinlet at ° to core axis.								
	97.66 8 m.m. Calcite veinlet at ° to core axis								
	101.38 - 107.87 Numerous calcite veinlets with matrix associated magnetite with attitudes 35°-50° to core axis								
	107.77 - 107.87 Calcite - magnetite veinlet at 35° to core axis								
	111.00 - 113.50 Fine (≤ 100 μm) veinlets of calcite at 20°-25° to core axis - intensity increasing with depth.								
	113.50 - 115.80 Serpentine grades to dolomite by increasing carbonate content. Transitional serpentine - dolomite is grey-green, sub-translucent with serpentine textures.								
115.80									
	DOLomite								
	Blue-grey-green medium to fine grained dolomite with remnant serpentine textures. Numerous irregular calcite veinlets and splashes. Calcite veinlets occasionally display fine magnetite stringers.								
117.50									
117.50	SERPENTINE Hardened olive green serpentine								

DRILL HOLE RECORD

PROPERTY

DRILLED BY

COMMENCED

COMPLETED

DEPTH

RECOVERY

LOGGED BY

CO-ORDINATES

COLLAR R.L.

BEARING

DIP

HOLE No. RZS-6

625048

00 APPENDIX

47

From To		GEOLOGICAL DESCRIPTION	DRILLING			SAMPLING				
			From	To	Rec.	Sample No.	From	To	Length	Rec.
142		DOLOMITE Grey to cream fine grained dolomite with local pinkish hue - numerous irregular carbonate veins. (137.65 Core fractured) (138.60 Core fractured - 20% water return loss) 141.74 - 144.13 Intense irregular calcite veining with some vein staining - probably calcite infilled crush zone. 144.13 - 149.00 Grey dolomite with clear fine calcite veining orientated at 40° to core axis. 152.63 8 mm. Quartz vein at 73° to core axis 154.67 - 155.64 Very minor (2.1%) interstitial pyrite grains & minor dolomite. 157.71 Dolomite limestones at 38° to core axis. 163.50 - 164.65 Dolomite with pinkish hue - limestones at 40° to core axis. 169.90 Calcite limestones at 16° to core axis. 169.91 - 172.95 Minor patches (2.1%) of pyrite (grains < 4mm)								

DRILL HOLE RECORD

PROPERTY

DRILLED BY

COMMENCED

COMPLETED

DEPTH

RECOVERY

LOGGED BY

CO-ORDINATES

COLLAR R.L.

BEARING

DIP

HOLE No. R25-6

625049

0.0
APPENDIX II

GEOLOGICAL DESCRIPTION		DRILLING			SAMPLING					
From	To	From	To	Rec.	Sample No.	From	To	Length	Rec.	So. %
	within grey dolomite.									Mines Dept. assays
172.95	- 173.06									
	10 mm. fine white Quartz - Calcite - Pyrochloite vein at 38° to core axis - 10% sulphides.									
173.87	- 177.20				R25-24	173.87	174.57	1.00		0.27
	Pyrochloite - upper selvedge 24 mm									
	5 mm. carbonate with irregular (3-4%) contact with dolomite. Pyrochloite flecked with carbonate and quartz granules \leq 2 mm.				R25-25	174.87	175.87	1.00		0.17
	5 mm. irregular veinlet of sphalerite at approx. 35° to core axis.				R25-26	175.87	176.87	1.00		0.61
175.58	- 176.04				R25-27	176.87	177.24			0.13
	15 mm. galena veinlet at 55° to core axis.									
177.24	- 177.36									
	Irregular coarse carbonate selvedge with approx. 30° contact with dolomite.									
177.36	- 182.59									
	Grey dolomite with very minor pyrite at grain \leq 3 mm.									
182.59	- 184.22				R25-28	182.59	183.60			0.28
	Pyrochloite - massive with 10% carbonate at grain and splashes. Upper contact @ 26° to core axis - lower grading to discontinuous contact at approx. 35° to core axis.				R25-29	183.60	184.27			0.28

DRILL HOLE RECORD PROPERTY DRILLED BY COMMENCED COMPLETED DEPTH RECOVERY

LOGGED BY CO-ORDINATES COLLAR R.L. BEARING DIP HOLE No. R25-6

50

To	GEOLOGICAL DESCRIPTION	DRILLING			SAMPLING				
		From	To	Rec.	Sample No.	From	To	Length	Rec.
	184.30 Calcite lamination within dolomite at 35° to core axis.								
	185.75 20 mm. pyrrhotite vein at 60° to core axis.								
	187.50 Dolomite lamination at 36° to core axis								
	188.29 10 mm. quartz veinlet at 56° to core axis.								
	196.60 Dolomite lamination at 46° to core axis								
	198.80 Dolomite lamination at 34° to core axis								
	200.52 laminated calcite at 40° to core axis parallel to dolomite lamination.								
	206.13 - 206.32 laminated calcite at 50° to core axis								
	206.23 ≈ 10 mm. irregular sphalerite								
	206.24 - 206.29 minor pyrrhotite on dolomite lamination								
207.30	207.30 - 207.31 Lamination								
207.34	207.34 - 207.54 selenite laminated with calcite at 52° to core axis with slickensides indicating shear at 72° to core axis.								
	207.54 - 207.55 Crayonite of conglomerate composed of rounded								

DRILL HOLE RECORD	PROPERTY	DRILLED BY	COMMENCED	COMPLETED	DEPTH	RECOVERY
OPERATED BY	CO-ORDINATES	COLLAR R.L.	BEARING	DIP	HOLE No. R25-5	

625052

APPENDIX II P

GEOLOGICAL DESCRIPTION		DRILLING			SAMPLING				
From	To	From	To	Rec.	Sample No.	From	To	Length	Rec.
	262.48								
	283.33								
287 +	286.50								
HOLE COMPLETED AT 287 METERS									
DRILL HOLE SURVEYS (RETRORADAR BEARING CAMERA)									
	Depth	Dip	Bearing						
	96 m.	-69.5°	255° Mag. (Serpentine)						
	150 m.	-69.5°	260° Mag. (Dolomite)						
	179 m.	-62°	298° Mag. (near Sulphides)						
	233 m.	-69°	257° Mag. (Conglomerate)						
	286 m.	-68.7°	255° Mag. (Conglomerate)						

DRILL HOLE RECORD

PROPERTY

DRILLED BY

COMMENCED

COMPLETED

DEPTH

RECOVERY

LOGGED BY

CO-ORDINATES

COLLAR R.L.

BEARING

DIP

HOLE No. R25-6.

625053

00
APPENDIX II
SAMPLING

GEOLOGICAL DESCRIPTION		DRILLING			SAMPLING				
From	To	From	To	Rec.	Sample No.	From	To	Length	Rec.
	<i>SERPENTINITE</i> Fresh fine textured olive-green serpentinite -	0.0	3.6	0.86					
	moderately magnetic; magnetite as fine threads and	3.6	3.9	0.30					
	grains - occasional threads of calcite	3.9	5.4	1.38					
	19.32 5 mm asbestos vein at 45° T.C.A. *	5.4	6.9	1.20					
	26.24 Minor asbestos.	6.9	8.4	1.50					
	35.37 - 35.49 Fibres at 28° T.C.A.	8.4	9.9	1.50					
	45.57 8 mm asbestos at 40° T.C.A.	9.9	11.4	1.50					
	46.94 - 47.09 Minor slip planes with asbestos at 30° T.C.A.	11.4	12.9	1.45					
	50.57 - 50.64 40 mm calcite-magnetite lamination at 37° T.C.A.	12.9	14.4	1.50					
	77.12 10 mm magnetite vein at 39° T.C.A.	14.4	15.9	1.48					
	86.50 - 88.13 Serpentinite color changes from olive to apple	15.9	17.4	1.48					
	green.	17.4	18.9	1.50					
88.13	88.13 Serpentinite grades to talc carbonate.	18.9	20.4	1.42					
	<i>TALC CARBONATE</i> Grey-black, fine textured, non magnetic	20.4	21.9	1.50					
	talc carbonate with local dolomite development -	21.9	23.4	1.50					
	occasional veils of calcite and pink carbonate	23.4	24.9	1.50					
	flakes - local minor disseminated pyrite.	24.9	26.4	1.50					
	104.00 Grey talc carbonate matrix with white calcite -	26.4	27.9	1.50					

DRILL HOLE RECORD

PROPERTY *Lawrence*DRILLED BY *A.D.D.*COMMENCED *4-78* COMPLETED5-78 DEPTH *135.40 m.* RECOVERY *5*LOGGED BY *L.E. LINDEN* CO-ORDINATES *4354.51N 2860.22E* COLLAR R.L. *253.7*BEARING *270° GRID* DIP *-62°*HOLE No. *R25-5*

625054

APPENDIX

03
151

GEOLOGICAL DESCRIPTION		DRILLING			SAMPLING				
		From	To	Rec.	Sample No.	From	To	Length	Rec.
	- occasional veinlets of calcite and minor quartz.	27.9	29.1	1.10					
	Hardness gradually increasing with depth.	29.1	30.3	1.20					
	110.25 Minor pyrite on calcite concentration.	30.3	30.5	0.58					
	111.03 - 111.60 Minor irregular pyrite veinlets.	30.9	32.4	1.50					
	~ 121.50 - 122.50 Talc content reduces and rock grades	32.4	33.9	1.50					
177.50	to predominantly dolomite.	33.9	35.4	1.50					
178.00	DOLomite Dark grey dolomite with white calcite	35.4	36.9	1.48					
	blotches - medium to fine textured and non magnetic	36.9	38.4	1.50					
	- best talc rich developments.	38.4	39.9	1.47					
	122.60 Minor irregular pyrite.	39.9	42.9	2.00					
	123.20 Dolomite grades to 'siliceous rock' by increase in	42.9	44.4	1.50					
	silica content. - compositional change is gradual and	44.4	45.9	1.50					
123.20	usually not obvious.	45.9	47.4	1.50					
124.00	'Succinea Rock' Dark grey cherty quartz, dull lustre	47.4	48.9	1.50					
	hard and non magnetic - occasional calcite veinling	48.9	50.4	1.50					
	and blotching.	50.4	51.9	1.38					
	125.4 Minor fracture marking moderate water pressure.	51.9	53.4	1.50					
	129.20 - 129.49 Minor pyrite.	53.4	54.9	1.50					

DRILL HOLE RECORD

PROPERTY

DRILLED BY

COMMENCED

COMPLETED

DEPTH

RECOVERY

LOGGED BY

CO-ORDINATES

COLLAR R.L.

BEARING

DIP

HOLE No. R25-5

625055

APPENDIX II

From		To	GEOLOGICAL DESCRIPTION	DRILLING			SAMPLING				
				From	To	Rec.	Sample No.	From	To	Length	Rec.
		134.30	Minor pyrite.	54.9	56.4	1.50					
		135.32 - 136.16	Minor pyrite.	56.4	57.9	1.50					
136.16		135.90 - 136.16	Moderate brecciation.	57.9	59.4	1.50					
136.16		HODGESLATE	Black fine grained well bedded slate	59.4	60.9	1.50					
			with occasional minor lenses of conglomerate -	60.9	62.4	1.17					
			occasional veinlets of quartz and calcite.	62.4	63.9	1.50					
		136.69 - 136.89	Conglomerate lenses - pebbles average diameter	63.9	65.4	1.48					
			and extent up to 10cm diameter - minor	65.4	66.9	1.37					
			pyrite.	66.9	68.4	1.50					
		139.52 - 139.31	Conglomerate lenses at $\approx 54^\circ$ T.C.A.		155.4	100%					
			Pebble orientation within lenses is irregular.			Core Rec.					
		144.78 - 145.24	Conglomerate lenses - pebble orientation								
			irregular - included slate's bedding is sub parallel								
			to core axis	0	3.6	HQ.					
		148.35	Bedding at 8° T.C.A.	3.6	84.0	NQ.					
		151.51	Bedding at 16° T.C.A.	84.0	155.4	3Q.					
		154.52	Bedding at 10° T.C.A.								
			HOLE COMPLETED AT 155.40 metres.								

DRILL HOLE RECORD

PROPERTY

DRILLED BY

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COMPLETED

DEPTH

RECOVERY

625057

APPENDIX II
of

No.	To	GEOLOGICAL DESCRIPTION	DRILLING			SAMPLING				
			From	To	Rec.	Sample No.	From	To	Length	Rec.
11		SERPENTINITE Olive green serpentine mainly decomposed	0.00	8.2	0.68					
		to olive green clays - moderately magnetic	8.0	9.8	1.50					
		Near surface is between 4.00 - 7.50 19cm	9.8	11.3	0.30					
		of ferruginous laterite recovered.	11.3	12.8	0.90					
		(core recovery very poor due to presence of clays	12.8	13.4	0.34					
		- drilling very difficult - triple tube system	13.4	14.9	0.26					
		attempted but unsuccessful due to swelling of	14.9	15.8	0.69					
		clays and blocking of water circulation -	15.8	17.3	0.27					
		normal wire-line drilling results in clays being	17.3	18.3	0.28					
		flushed from hole with consequent (see recovery)	18.8	19.4	0.44					
		(0.00 - 8.00 4.0 8.00 - NR)	19.4	20.6	0.14					
		24.00 - 41.00 Serpentine fresher as whole - ground broken	20.6	21.0	0.28					
		with layers of clays	21.0	21.3	-					
		41.00 Serpentine more consolidated with consequent	21.8	22.4	-					
		water recovery - serpentine olive to yellow green	22.4	23.0	0.14					
		with waxy texture - moderately magnetic - magnetic	23.0	23.6	0.22					
		as threads, in 1950 and 1951 grades.	23.6	24.8	0.57					
		(Note At 27.00 NR well was drilled down from	24.8	25.2	0.30					

DRILL HOLE RECORD

PROPERTY RIZOR.S.S. INC

DRILLED BY A.D.D. COMMENCED

COMPLETED 27-4-78 DEPTH 11630m.

RECOVERY 3

SITED BY C. F. LINDEN CO-ORDINATES AS 95.5°N 2837.4°E COLLAR R.L. 273.5 BEARING 280° CIRCU DIP - 60°

HOLE No. RZS-4

625058

APPENDIX II

To	GEOLOGICAL DESCRIPTION	DRILLING			SAMPLING				
		From	To	Rec.	Sample No.	From	To	Length	Rec.
	hole to replace bit; on re-entering hole casing	25.2	26.0	0.48					
	recommenced at approximately 35.00 with full recovery	26.0	27.8	0.12					
	retained at 37.50. A flushed cavity must exist	27.8	29.0	2.30					
	at approximately 35.00 causing deflection of hole.	29.0	30.8	0.17					
	(Geological and core recovery logging recommenced	30.8	32.0	1.08					
	at 37.50m.)	32.0	32.6	0.20					
37.50 -	Relatively fresh olive green serpentinite with	32.6	33.8	0.20					
	numerous threads of calcite on minor shear planes.	33.8	34.4	0.20					
39.60	10mm wedged veinlet of calcite at 13° T.C.D.*	34.4	35.0	0.28					
46.12	3mm calcite veinlet at 25° T.C.D.	35.0	35.6	0.24					
47.14	5mm calcite veinlet at 32° T.C.D.	35.6	36.2	0.15					
47.50	15mm calcite veinlet with abundant magnetite	36.2	36.8	0.23					
	at 37° T.C.D.	36.8	37.4	0.57					
47.95	5mm calcite veinlet at 31° T.C.D.	37.4	38.0	0.58					
48.67	5mm calcite veinlet at 30° T.C.D.	38.0	39.3	1.30					
49.23	500mm magnetite concentration with 8mm of central	39.3	40.4	1.10					
	calcite at 12° T.C.D.	40.4	41.0	0.44					
49.50 - 54.50	Numerous threads of calcite-magnetite	41.0	42.0	0.96					

DRILL HOLE RECORD

PROPERTY

DRILLED BY

COMMENCED

COMPLETED

DEPTH

RECOVERY

LOGGED BY

CO-ORDINATES

COLLAR R.L.

BEARING

DIP

HOLE No. R25-A

5g SAMPLING

GEOLOGICAL DESCRIPTION		DRILLING			5g SAMPLING				
From	To	From	To	Rec.	Sample No.	From	To	Length	Rec.
	52.57-52.67								
	Lowest concentration of magnetite	42.0	42.8	0.76					
54.47	Bounded by magnetite veinlets.	42.8	44.0	1.20					
54.7	Dolomite Transition from serpentinite to dolomite	44.0	45.2	1.10					
	by increased calcite veining between 54.20-55.20	45.2	45.8	0.39					
	At 54.47 predominantly dolomite with	45.8	46.4	0.16					
	laminations at 44° T.C.A.	46.4	47.0	0.50					
54.89-55.02	Dolomite softer with iron staining - laminations	37.5	39.2	1.70					
	at 38° T.C.A.	39.2	39.9	0.60					
55.21	Dolomite blue grey with pink splashes -	39.8	41.3	1.50					
	laminations at 35° T.C.A.	41.3	42.8	1.40					
	Magnetite abundant to ≈ 56.50 but reduces	42.8	44.3	1.50					
	in abundance below. Chert abundant	44.3	45.8	1.30					
	usually at cores of pink and grey splashes.	45.8	47.3	1.50					
	Dolomite mottled with texture after serpentinite	47.3	48.8	1.46					
55.34	8mm Calcite vein at 76° T.C.A.	48.8	50.3	1.50					
55.35	10mm Calcite vein at 51° T.C.A.	50.3	51.8	1.50					
55.62	100mm Calcite vein at 75° T.C.A.	51.8	53.3	1.50					
55.70	8mm Calcite vein at 75° T.C.A.	53.3	54.8	1.50					

DRILL HOLE RECORD

PROPERTY

DRILLED BY

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COMPLETED

DEPTH

RECOVERY

LOGGED BY

CO-ORDINATES

COLLAR R.L.

BEARING

DIP

HOLE No.

625060

APPENDIX II

GEOLOGICAL DESCRIPTION		DRILLING			SAMPLING					
		From	To	Rec.	Sample No.	From	To	Length	Rec.	SA%
To										
	55-88 - 55-97 Calcite infilling of minor shear - several small masses of dolomite within calcite at 60° T.C.A.	54-8	56-3	1-50						
	57-51 31 mm magnetite veinlet at 81° T.C.A.	57-8	59-3	1-50						
	59-20 End No. Cumacea B.G. core size.	59-3	61-3	3-00						
	70-34 - Dolomite grades to grey-black talc-carbonate limestone at 60° T.C.A. - numerous fine irregular crenulated carbonate veinlets - no magnetic	62-3	65-3	3-00						
		65-3	68-3	3-00						
		68-3	71-3	3-00						
		71-3	74-3	3-00						
		74-3	77-3	3-00						
		77-3	80-3	3-00						
	Iron approximately 75-00 talc carbonate because lighter in color with more frequent carbonate veining and grades to dolomite - correspondingly hardness increases.									
	Fl approximately 78-00 the color and texture of the dolomite is similar to that above 70-34 but has a higher talc content and is consequently softer.									
	78-55 - 81-00 ≈ 10% Pyrobitite finely disseminated within talc with dolomite				R25-19	78-55	79-40	-	-	0-11
81-00										

DRILL HOLE RECORD

PROPERTY

DRILLED BY

COMMENCED

COMPLETED

DEPTH

RECOVERY

USED BY

CO-ORDINATES

COLLAR R.L.

BEARING

DIP

HOLE No. R25-4

625061

APPENDIX

6
of

To	GEOLOGICAL DESCRIPTION	DRILLING			SAMPLING					
		From	To	Rec.	Sample No.	From	To	Length	Rec.	Sn. %
	BRECCIA Zone of brecciation with recognizable conglomerate pebbles.	80.3	83.3	3.00	R25-20	79.40	80.40	1.00		1.60
		83.3	86.3	3.00	R25-21	80.40	81.40	1.00		0.82
81.72	81.00 - 81.32 20% Pyrochloite as irregular lenticles at 34° T.C.A.	86.3	89.3	3.00	R25-22	81.40	82.20			0.05
	GREYWACKE CONGLOMERATE Blue-grey conglomerate composed of silldane, quartzite and chert pebbles & occurs set within a fine pebble and graywacke matrix. Pebbles are sub angular and poorly sorted - quartz and calcite veining common.	89.3	92.3	3.00						
	82.19 Blue pyrite = pyrochloite as lenticles at 66° T.C.A.									
	82.17 Brecciation? at 39° T.C.A.									
	84.01 Small calcite-pyrochloite veinlet at 31° T.C.A.									
	85.48 - 86.84 ≈ 15% Pyrochloite with minor pyrite infilling fractures.				R25-23	85.46	86.84			0.25
	86.84 Small calcite veinlet at 17° T.C.A.									
	87.57 - 89.21 ≈ 2% Pyrochloite disseminated in conglomerate.									
	89.30 - 90.51 ≈ 1% Pyrochloite disseminated in conglomerate.									
	90.35 Small pyrite = pyrochloite veinlet at 33° T.C.A.									
	90.75 Pebble brecciation at 52° T.C.A.									

DRILL HOLE RECORD

PROPERTY

DRILLED BY

COMMENCED

COMPLETED

DEPTH

RECOVERY

USED BY

CO-ORDINATES

COLLAR R.L.

BEARING

DIP

HOLE No. R25-A.

625062

APPENDIX II

To	GEOLOGICAL DESCRIPTION	DRILLING			SAMPLING				
		From	To	Rec.	Sample No.	From	To	Length	Rec.
91.54 - 92.49	~ 2% Pyrobitite disseminated and as threads in conglomerate	92.3	95.3	3.00					
		95.3	98.3	3.00					
92.17	Irregular minor pyrobitite - pyrite veinlet at 29° T.C.D.	98.3	101.3	3.00					
93.12 - 93.32	~ 1% Pyrobitite disseminated in conglomerate.	101.3	104.3	3.00					
95.60 - 95.67	~ 1% Pyrobitite disseminated in conglomerate with pebble orientation at 50° T.C.D.	104.3	107.3	3.00					
95.82	30mm drusy quartz vein at 65° T.C.D.								
95.92 - 96.01	Minor disseminated pyrobitite.								
96.31 96.35	Pebble orientation at 41° T.C.D.								
	HOUSE STATE Conglomerate passes conformably to shale. Slate is black, fine grained and well bedded. Conformity at 48° T.C.D.								
99.20	Bedding at 49° T.C.D.								
100.40 - 100.57	Conglomerate lens at 40° T.C.D.								
103.00	Bedding at 27° T.C.D.								
104.00	Bedding at 25° T.C.D.								
104.15	15mm quartz vein at 77° T.C.D.								
107.20	Bedding at 30° T.C.D.								

DRILL HOLE RECORD

PROPERTY

DRILLED BY

COMMENCED

COMPLETED

DEPTH

RECOVERY

LOGGED BY

CO-ORDINATES

COLLAR R.I.

BEARING

DIP

HOLE No. R25-A

625063

APPENDIX II

GEOLOGICAL DESCRIPTION		DRILLING			SAMPLING				
		From	To	Rec.	Sample No.	From	To	Length	Rec.
To	110.00	Bedding at 27° T.C.A.	107.3	110.3	3.00				
	111.05 - 111.32	Numerous quartz threads - no dominant attitude	110.3	113.3	3.00				
	111.62	10mm wedge lens of conglomerate with minor disseminated pyrite.	113.3	116.3	3.00				
	117.35 - 112.50	Conglomerate lens with minor disseminated pyrite							
	113.02	Bedding at 35° T.C.A.							
	114.35 - 114.59	Irregular wedge lenses of fine grained conglomerate (uff?)							
	116.00	Bedding at 26° T.C.A.							
	HOLE COMPLETED AT 116.30m.				9848				
	Drill Hole Survey (Revision 1151 Base Hole Camera)								
	Depth.	Dip	Bearing						
	40	-57°	- (in casing)						
	80	-57°	255° Magnetic - local pyroclastic						
	110	-51.5°	215.5° Magnetic - shale. (257.5 Grid)						
	* T.C.A. denotes - to core axis								

DRILL HOLE RECORD

PROPERTY

DRILLED BY

COMMENCED

COMPLETED

DEPTH

RECOVERY

LOGGED BY

CO-ORDINATES

COLLAR R.L.

BEARING

DIP

HOLE No. *AZS-4*

625064

APPENDIX 7

		GEOLOGICAL DESCRIPTION	DRILLING			SAMPLING					
From	To		From	To	Rec.	Sample No.	From	To	Length	Rec.	%
		SERPENTINITE. Olive green fine textured serpentine with	0.0	3.0	1.25						
		numerous threads of magnetite	3.0	3.4	0.32						
		(Core Size 0.00-3.00 HQ; 3.00-NC)	3.4	4.9	1.46						
	4.90 - 5.40	Abundant ribbon fibres at $\approx 25^\circ$ T.C.A.	4.9	6.4	1.50						
	6.17 - 7.15	Lamination of serpentine at 47° T.C.A.	6.4	7.9	1.50						
	7.15 - 8.15	Serpentine becoming increasingly steeply bedded.	7.9	9.4	1.36						
	8.15 - 10.40	Soft olive green serpentine clay.	9.4	10.9	1.38						
	10.95 - 12.20	Abundant magnetite as threads and grains.	10.9	12.4	1.27						
	12.20 - 13.20	Brown clay after serpentine	12.4	13.9	1.50						
	13.20 - 15.00	Black grey talc carbonate - weakly magnetic -	13.9	15.4	1.50						
		- very broken with clay bands - hard setting	15.4	16.9	1.50						
	16.00 - 16.60	Brown clay.	16.9	18.4	1.05	R25-14	70.0	70.6	0.60	0.32	0.35
	16.60 - 17.20	No Core - brown clay being flushed from hole	18.4	19.9	1.50						
		by water return.	19.9	21.4	1.02						
	21.20 - 21.70	Brown-black Fe green with minor quartz.	21.4	22.9	1.50	R25-15	71.70	72.40	0.70		
	21.70 - 22.50	Less stained talc carbonate with green (H ₂ O) s.	22.9	24.4	1.50	R25-16	72.40	73.20	0.80		
22.50	22.52 - 24.30	'Chert' or quartzite with abundant pyrochlore	24.4	25.9	1.50	R25-17	73.00	73.70	0.70		
		pyrite and minor chloropyrite - sulphides variable	25.9	27.4	1.50	R25-18	73.70	74.30	0.60		

DRILL HOLE RECORD

PROPERTY *Razorenok* DRILLED BY A.D.D. COMMENCED 29-3-78 COMPLETED 8-4-78 DEPTH 120.20m. RECOVERY 85

DIP BY C.E. LAYDEN CO-ORDINATES 4360.23N. 2840.42E COLLAR R.I. 260.32 BEARING 270° GRID DIP -50°

HOLE No. R25-3

To	GEOLOGICAL DESCRIPTION	DRILLING			SAMPLING				
		From	To	Rec.	Sample No.	From	To	Length	Rec.
	approximately 60% by volume - laminar at 40° F.C.D.	27.4	28.9	1.50					
52	'CHERT' - QUARTZITE Highly siliceous blue-grey coarse textured	28.9	30.4	1.50					
	quartzite - massive variety of quartz - non-magnetic -	30.4	31.9	1.50					
	- very hard; drilling rate approx. 0.65m per hour - rock	31.9	33.4	1.16					
	quite equivalent to Blissville chert as exposed on	33.4	34.9	1.50					
	Lewis Ridge, Duxton Rivulet and hole R25-2	34.9	36.4	1.40					
75.75	Low angle bedded sulphide vein at 70° F.C.D.	36.4	37.9	0.73					
77.50 - 79.00	Quartzite broken with suggestion of shearing.	37.9	39.4	0.96					
79.00 -	Quartzite in broken - very hard - fine grained	39.4	40.0	0.58					
	than above with a blocky texture - no suggestion	40.0	40.6	0.46					
	of bedding but laminations at $\approx 26^\circ$ T.C.A. -	40.6	41.2	0.60					
	- minor pyrite as fractures.	41.2	42.4	0.76					
83.57	Low angle vein at 38° T.C.D.	42.4	43.0	0.55					
88.35 - 89.10	Minor pyrite as fractures.	43.0	43.6	0.53					
89.25	Blade of pyrite.	43.6	44.2	0.48					
92.13	Minor pyrite as fractures.	44.2	44.8	0.22					
	SILICEOUS Hardly siliceous. Blue fine grained well bedded shale	44.8	45.4	0.43					
	with lenses of fine grained conglomerate.	45.4	46.0	0.37					

DRILL HOLE RECORD

PROPERTY

DRILLED BY

COMMENCED

COMPLETED

DEPTH

RECOVERY

OPERATED BY

CO-ORDINATES

COLLAR R.L.

BEARING

DIP

HOLE No. R25-3

625066

APPENDIX II

GEOLOGICAL DESCRIPTION		DRILLING			SAMPLING				
		From	To	Rec.	Sample No.	From	To	Length	Rec.
To									
	Boundary between quartzite and shale concoidal	46.0	46.6	0.37					
	with 30mm of finely-laminated quartzite - maybe	46.6	47.2	0.59					
	achern.	47.2	47.8	0.43					
	Shale is much distorted with fine fracture displacement	47.8	48.4	0.20					
	of \leq 5mm.	48.4	49.0	0.40					
	91.13- 92.27 Irregular lenses of greywacke with pyrit. blebs	49.0	49.2	0.20					
	within shale.	49.2	49.8	0.60					
	94.36 80mm calcite-quartz vein with included shale	49.8	50.8	1.00					
	fragments infilling a minor shear at 42° T.C.P.	50.8	51.4	0.49					
	94.85 - 94.89 10mm width irregular lens of conglomerate	51.4	52.6	0.93					
	at 10° T.C.P.	52.6	53.2	0.50					
	95.15 Bending at 30° T.C.P.	53.2	53.8	0.20					
	95.39 - 25.53 Irregular lenses of fine grained conglomerate at	53.8	54.4	0.06					
	$\approx 27^\circ$ T.C.P.	54.4	55.0	0.08					
	96.12 15mm of irregular conglomerate lens	55.0	55.6	0.34					
	96.75 10mm conglomerate lens at 20° T.C.P.	55.6	56.2	0.46					
	98.98 - 99.18 Irregular lenses of fine grained well sorted	56.2	56.8	0.15					
	conglomerate	56.8	57.4	0.60					

DRILL HOLE RECORD

PROPERTY

DRILLED BY

COMMENCED

COMPLETED

DEPTH

RECOVERY

USED BY

CO-ORDINATES

COLLAR R.L.

BEARING

DIP

HOLE No.

R25-3

GEOLOGICAL DESCRIPTION			DRILLING			SAMPLING			
			From	To	Rec.	Sample No.	From	To	Length
To	59.34	Bedding at 33° T.C.A.	57.4	58.0	0.60				
	101.00	Bedding at 38° T.C.A.	58.0	58.6	0.60				
	102.45	Bedding at 12° T.C.A.	58.6	59.6	0.67				
	103.00 - 105.50	Bedding at 5° T.C.A.	59.6	60.4	0.30				
	106.00	Bedding at 7° T.C.A. with gradual steepening to:	60.4	61.0	0.52				
	108.00	Bedding at 36° T.C.A. with rapid flattening to:	61.0	61.6	0.38				
	108.20 - 110.00	Bedding sub-parallel to core axis	61.6	62.2	0.32				
	109.61	Mixed bedded pyrite.	62.2	62.8	0.10				
	109.67 - 109.86	Irregular fracture infilling with quartz-calcite-shale fragments with mixed pyrite.	62.8	62.9	0.10				
	111.00	Bedding at 9° T.C.A.	62.9	63.4	0.40				
	112.50	Bedding at 9° T.C.A.	63.4	64.0	0.10				
	113.00	Bedding at 9° T.C.A.	64.0	64.6	0.26				
	112.50	Bedding at 9° T.C.A.	64.6	65.2	0.18				
	113.00	Bedding at 11° T.C.A.	65.2	65.8	0.10				
	115.00	Bedding at 5° T.C.A.	65.8	66.4	0.30				
	117.4	2mm calcite-quartz vein with mixed pyrite at 30° T.C.A. parallel to bedding.	66.4	67.0	0.17				
	118.00	Bedding wavy-irregular	67.0	67.6	0.20				
			67.6	68.2	0.23				

DRILL HOLE RECORD

PROPERTY

DRILLED BY

COMMENCED

COMPLETED

DEPTH

RECOVERY

BORED BY

CO-ORDINATES

COLLAR R.L.

BEARING

DIP

HOLE No. R25-3

GEOLOGICAL DESCRIPTION			DRILLING			SAMPLING			
			From	To	Rec.	Sample No.	From	To	Length
To	118.98	Sum. outside - quartz mica at 65° T.C.A.	68.2	68.3	0.20				
	119.00	Bedding at 46° T.C.A.	68.8	69.4	0.25				
	120.00	Bedding at 25° T.C.A.	69.4	70.0	0.50				
			70.0	70.6	0.32				
		Hole TERMINATED AT 120.20 m.	70.6	71.2	-				
			71.2	71.8	0.36				
		Diast. Hole Surveys (Revised Hole Hole Camera)	71.8	72.4	0.38				
	Depth	Dip	Bedding						
	31	-49.5°	- (In casing)	72.4	73.0	0.6			
	1.3	-51°	- (In casing)	73.0	73.7	0.7			
	9.8	-51°	244° Mag. (269° true)	73.7	74.3	0.09			
				74.3	75.0	0.25			
				75.0	75.3	0.50			
				75.3	76.3	0.72			
		* T.C.A. denotes: to core exit.		76.3	77.5	1.20			
				77.5	78.4	0.62			
				78.4	79.0	0.18			
				79.0	79.2	0.20			
				79.2	80.1	0.20			

DRILL HOLE RECORD

PROPERTY _____ DRILLED BY _____ COMMENCED _____ COMPLETED _____ DEPTH _____ RECOVERY _____

OPERATED BY _____ CO-ORDINATES _____ COLLAR R.L. _____ BEARING _____ DIP _____ HOLE No. *A25-3*

625069

APPENDIX II

69

GEOLOGICAL DESCRIPTION		DRILLING			SAMPLING				
		From	To	Rec.	Sample No.	From	To	Length	Rec.
		80.1	83.0	2.90					
		83.0	86.0	3.00					
		86.0	89.0	3.00					
		89.0	92.0	3.00					
		92.0	95.0	3.00					
		95.0	98.0	3.00					
		98.0	101.0	3.00					
		101.0	104.0	3.00					
		104.0	107.0	3.00					
		107.0	110.0	3.00					
		110.0	113.0	3.00					
		113.0	116.0	3.00					
		116.0	119.0	3.00					
		119.0	122.0	3.00					
				122.56					

DRILL HOLE RECORD

PROPERTY DRILLED BY COMMENCED COMPLETED DEPTH RECOVERY

LOGGED BY CO-ORDINATES COLLAR R.L. BEARING DIP HOLE No. *R25-3*

625070

APPENDIX II

309

GEOLOGICAL DESCRIPTION		DRILLING			SAMPLING				
		From	To	Rec.	Sample No.	From	To	Length	Rec.
0									
	SERPENTINITE Weathered yellow-olive green in color - locally decomposed to clays - abundant magnetite grains and threads.	0.0	3.0	2.00					
		3.0	6.0	1.62					
		6.0	9.0	1.73					
	19.05 Irregular fracture with iron staining at $\approx 20^\circ$ T.C.A. *	9.0	12.0	1.60					
	22.30 Irregular fracture with iron staining at $\approx 20^\circ$ T.C.A.	12.0	15.0	1.71					
	25.22-27.00 Serpentine decomposed to light-green clay -	15.0	18.0	2.79					
	- poor recovery.	18.0	21.0	1.69					
	27.00 - Serpentine fracture - olive green with moderate magnetite	21.0	24.0	1.62					
		24.0	27.0	1.61					
	27.00 - 51.50 Serpentine very broken with clay bands -	27.0	30.0	3.00					
	- poor recovery - Magnetite abundant at ≈ 5 mm grain and splinters.	30.0	33.0	2.00					
		33.0	36.0	3.00					
	52.00 - Serpentine light olive-green in color - soft with decomposition to clays - poor recovery.	36.0	39.0	3.00					
		39.0	42.0	2.85					
	49.00-81.00 Abundant bands and threads of magnetite (probable cause of L.P. downing)	42.0	45.0	1.86					
		45.0	48.0	0.51					
		48.0	51.0	1.01					
		51.0	54.0	0.40					

DRILL HOLE RECORD

PROPERTY *RZS-2*
61177

DRILLED BY A. D. D.

COMMENCED 14-3-78

COMPLETED 22-2-78

DEPTH 121.40 m.

RECOVERY 55

LOGGED BY *E. E. LARSEN* CO-ORDINATES *4172-82N. 209S-33E*. COLLAR R.L. 225-82 BEARING *270°* GRD. DIP *-34°*HOLE No. *RZS-2*

GEOLOGICAL DESCRIPTION		DRILLING			SAMPLING						
		From	To	Rec.	Sample No.	From	To	Length	Rec.	S ₁	P ₂
To											
	81.00 - 90.00	Fine-brown sericitic clays with alterations to talc - very poor recovery due to clays.	54.0	57.0	0.61						
			57.0	60.0	0.80						
	84.00 - 87.00	No core recovered - hole advanced by weight of drill rods - clays?	60.0	63.0	1.37						
			63.0	66.0	1.12						
	90.00	110 mm quartz - cellular texture with talc and iron staining.	66.0	69.0	1.54						
			69.0	72.0	1.28						
	101.86 - 103.00	Gossan? vuggy quartz with pyrite (Blissell 'chart' as reported on Lewis Ridge and back of Dundas Rivulet)	72.0	75.0	1.73	R25-9	101.86	103.00	1.14	0.05	0.0
			75.0	78.0	1.87	R25-10	103.00	104.00	1.00	0.52	0.2
			78.0	81.0	1.32	R25-11	104.00	105.00	1.00	0.01	0.0
	102.00 - 103.71	Massive pyrite.	81.0	84.0	0.71	R25-12	105.00	106.00	1.00	1.00	0.0
	103.71 - 106.90	Cellular quartz with pyrite.	84.0	87.0	0.00	R25-13	106.00	106.90	0.90	1.00	0.1
104.50	106.30	75 mm pyrite fracture infilling.	87.0	90.0	0.42						
	SHALE (Hedge Slate)	Black fine grained well bedded shale	90.0	93.0	0.49						
	107.00	Bedding at 58° T.C.H.	93.0	96.0	0.32						
	109.40	Bedding at 70° T.C.H.	96.0	99.0	0.10						
	113.00	Bedding at 88° T.C.H.	99.0	102.0	0.28						
	115.00	Bedding at 20° T.C.H.	102.0	105.0	0.89						
	116.50	Bedding at 37° T.C.H.	103.0	106.4	2.19						

DRILL HOLE RECORD

PROPERTY

DRILLED BY

COMMENCED

COMPLETED

DEPTH

RECOVERY

DIP BY

CO-ORDINATES

COLLAR R.L.

BEARING

DIP

HOLE No. R25-2

625072

APPENDIX V

To		GEOLOGICAL DESCRIPTION	DRILLING			SAMPLING				
			From	To	Rec.	Sample No.	From	To	Length	Rec.
	119.00	Bedding at 18° T.C.A.	106.4	109.4	2.81					
121.40	121.00	Bedding at 16° T.C.A.	109.4	112.4	3.00					
			112.4	115.4	3.00					
		HOLE COMPLETED AT 121.40 metres.	115.4	118.4	3.00					
			118.4	121.4	3.00					
		Drill Hole Surveys (Revised Lodi Borehole Camera)			66.99					
		Depth Dip Bearing								
		40 -35.5° - (to Collar)								
		80 -37° - (to Collar)								
		121 -37° 243° Magnetic (267° Grid)								
		* T.C.A. elevates to core axis.								

DRILL HOLE RECORD PROPERTY DRILLED BY COMMENCED COMPLETED DEPTH RECOVERY
 LOGGED BY CO-ORDINATES COLLAR R.L. BEARING DIP HOLE No. **AZS-3**

625073

00173

APPENDIX II

		GEOLOGICAL DESCRIPTION	DRILLING			SAMPLING						
From	To		From	To	Rec.	Sample No.	From	To	Length	Rec.	Ln	l
00	2.50	Dolomite rubble (bulldozed overburden)	0.00	2.50	0.21							
		Serpentine Olive green partially decomposed to clays. -	2.50	4.00	0.72							
		- fracturing and presence of clays account for poor recovery.	4.00	7.00	2.70							
		46.00 - 49.00 No core recovered - advance by weight of rods - mud?	7.00	10.00	0.49							
		52.00 - Serpentine becoming less weathered with local cellular	10.00	13.00	0.90							
		lensed textures - occasional fractures with minor sericite.	13.00	16.00	0.46							
		59.56 - Serpentine relatively fresh - fine texture with < 1mm	16.00	19.00	0.16							
		grains and threads of magnetite - minor calcite veining.	19.00	22.00	0.52							
		57.00 NB core off - commenced RZ.	22.00	25.00	1.02							
		57.76 - 57.92 Serpentine lensed with cellular texture.	25.00	25.00	1.60	R25-1	57.76	57.92	0.16		19.01	10
		58.66 - 60.71 Serpentine lensed with cellular texture - gessen-like but	28.00	31.00	0.18	R25-2	58.66	59.40	0.74		10.01	10
		no evidence of calcite - moderately magnetitic magnetite.	31.00	34.00	0.39	R25-3	59.40	60.71	1.31		10.01	10
		59.30 300 mm lensed serpentine.	34.00	37.00	0.40							
		58.59 - 59.03 Lensed serpentine.	37.00	40.00	0.63							
		59.03 Serpentine grades to dolomite - a gradual compositional	43.00	43.00	0.92							
		change over a few centimeters without evidence of structural break.	43.00	46.00	0.52							
		Dolomite Grey-green to brown color with local pink lenses -	46.00	49.00	0.00							
		- mottled texture similar to serpentine immediately above -	49.00	52.00	0.87							

DRILL HOLE RECORD PROPERTY *Kinzack 6N177.* DRILLED BY *A.D.D.* COMMENCED *7-3-78* COMPLETED *13-3-78* DEPTH *128.40m* RECOVERY *66*

LOGGED BY *C.E. Lippert* CO-ORDINATES *460128N. 283612E.* COLLAR R.L. *272.59* BEARING *287°GR10* DIP *-70°* HOLE No. *RZ5-1*

70

GEOLOGICAL DESCRIPTION		DRILLING			SAMPLING				
		From	To	Rec.	Sample No.	From	To	Length	Rec.
	- marbled texture is well developed at 71.00 - magnetite content rapidly reduces with depth - fine grained chromite moderately abundant with minor pyrite associated with chromite grains - irregular splashes and veinlets of calcite common.	52.00	55.0	1.53					
		55.0	57.0	1.90					
		57.0	59.4	1.96					
		59.4	62.4	2.59					
72.74 - 72.81	Splashes of cream calcite	62.4	65.4	2.65					
76.50 - 77.40	Dolomite laminated at 30° T.C.A. *	65.4	68.4	2.87					
80.11	15mm calcite vein at 58° T.C.A.	68.4	71.4	2.41					
81.11	5mm calcite vein at 61° T.C.A.	71.4	74.4	3.00					
81.67	Irregular splashes of calcite at ≈ 60° T.C.A.	74.4	77.4	2.97					
82.31	Irregular 5mm vein of calcite with minor pyrrhotite and chromite at ≈ 52° T.C.A.	77.4	80.4	2.96					
		80.4	83.4	3.09					
82.45	Irregular patchy 30mm pyrrhotite vein bounded by calcite at ≈ 30° T.C.A.	83.4	86.4	3.00					
		86.4	89.4	3.00					
83.50	Irregular calcite.	89.4	92.4	3.00					
83.85	Irregular 5mm calcite vein with 25% pyrrhotite at ≈ 42° T.C.A.	92.4	95.4	3.00					
83.97	25mm patchy pyrrhotite with calcite at ≈ 50° T.C.A.								
89.78	5mm fracture with calcite and pyrite infilling at 12° T.C.A.								
92.78	90.09 Calcite veinlets at 48° T.C.A.								

DRILL HOLE RECORD PROPERTY DRILLED BY COMMENCED COMPLETED DEPTH RECOVERY
 LOGGED BY CO-ORDINATES COLLAR R.L. BEARING DIP HOLE No. **R25-1**

01
5

To	GEOLOGICAL DESCRIPTION	DRILLING			SAMPLING						
		From	To	Rec.	Sample No.	From	To	Length	Rec.	Sn	P
	<i>BRECCIA</i> with quartz and calcite cementing with occasional recognizable sediment, pebbles - Baraback Street - limestone at $\approx 40^\circ$ T.C.A. with pyrochlore streaking										
93.29	12 mm pyrochlore vein with very minor pyrite at 38° T.C.A.				R25-4	93.29	94.50	1.21		0.14	0.4
93.39	3 mm irregular pyrochlore vein at $\approx 32^\circ$ T.C.A.				R25-5	94.5	95.5	1.0		0.53	0.2
93.65	25 mm pyrochlore vein with minor pyrite and calcite at 40° T.C.A.				R25-6	95.5	96.5	1.0		2.30	0.3
		95.4	98.4	3.00	R25-7	96.5	97.5	1.0		0.01	1.0
95.61 - 96.10	Succession intense with calcite, quartz, pyrochlore and minor pyrite.				R25-8	97.5	98.54	1.04		0.17	0.1
	<i>CONGLOMERATE</i>										
96.12 - 99.25	Fine grained grey-green gypsiferous with $\approx 1\%$ finely disseminated pyrite and local narrow irregular bands of conglomerate pebbles	99.4	101.4	3.00							
99.25 -	Predominantly conglomerate - pebbles range to 5 mm diameter with a fine gypsiferous matrix - pebbles primarily siliceous, quartzite and chert - well rounded - locally sorted - occasional bands of gypsiferous at 62° T.C.A. - local fine quartz and pyrite on fracture planes										

* Revision check assays:

R25-5 0.60
R25-6 2.79

DRILL HOLE RECORD	PROPERTY	DRILLED BY	COMMENCED	COMPLETED	DEPTH	RECOVERY
LOGGED BY	CO-ORDINATES	COLLAR R.L.	BEARING	DIP	HOLE No. R25-1.	

To	GEOLOGICAL DESCRIPTION	DRILLING			SAMPLING				
		From	To	Rec.	Sample No.	From	To	Length	Rec.
104.71	83 mm calcite vein at 74° T.C.A.	101.4	107.4	3.0					
104.80	73 mm calcite vein at 81° T.C.A.								
106.38	Irregular 10mm quartz vein at ≈ 70° T.C.A.								
106.55	5mm quartz vein at 71° T.C.A.								
107.09	8mm quartz vein at 57° T.C.A.								
107.20	30mm irregular quartz at ≈ 72° T.C.A.								
107.31	20mm irregular quartz at ≈ 70° T.C.A.	107.4	110.4	3.0					
108.52	45mm quartz vein at 50° T.C.A.								
108.82	8mm quartz vein at 77° T.C.A.								
109.07	3mm quartz vein at 59° T.C.A.								
109.88 - 109.94	Irregular quartz.								
110.02 - 110.10	Irregular quartz								
112.22 - 113.21	Veinlets and fracture infillings of <u>pyrrhotite</u>	110.4	113.4	3.00					
112.32	10mm quartz- <u>pyrrhotite</u> vein at 59° T.C.A.								
112.74	15mm quartz- <u>pyrrhotite</u> vein at 57° T.C.A. - minor <u>pyrite</u>								
112.87	Pebble orientation at 49° T.C.A.								
111.17	10mm <u>pyrrhotite</u> vein at 57° T.C.A.								
111.30	10mm <u>pyrrhotite</u> vein at 62° T.C.A.								

DRILL HOLE RECORD

PROPERTY

DRILLED BY

COMMENCED

COMPLETED

DEPTH

RECOVERY

OPERATED BY

CO-ORDINATES

COLLAR R.L.

BEARING

DIP

HOLE No. R25-1

GEOLOGICAL DESCRIPTION		DRILLING			SAMPLING				
		From	To	Rec.	Sample No.	From	To	Length	Rec.
To									
	11.47 17mm quartz-pyroxenite vein at 60° T.C.A.								
	11.67 4mm pyroxenite vein at 53° T.C.A.								
	112.65 Pebble orientation at 11° T.C.A.								
	Note: Mineralization orientation is perpendicular to bedding	115.4	116.4	3.00					
	113.75 100mm pyroxenite vein with irregular boundaries - minor pyrite and arsenopyrite at 33° T.C.A.								
	114.00 - 114.03 Irregular wedges of pyroxenite at fracture infillings								
	114.25 2cm pyroxenite vein at 74° T.C.A.								
	114.52 6mm pyroxenite vein at 63° T.C.A.								
	115.91 3mm quartz vein at 68° T.C.A.	116.4	119.4	3.00					
	117.61 10mm quartz vein at 68° T.C.A.								
	117.70 Pebble orientation at 50° T.C.A.	119.4	122.4	3.00					
	120.72 Conglomerate passes conformably to black shale -								
	120.73 conglomerate slightly coarser above shale								
13	SHALE (HORSE SHOE) - fine grained - well bedded black shale with finely disseminated heated pyrite								
	121.10 - 121.74 Numerous threads of quartz at ≈ 72° T.C.A.								
	121.10 Bedding at 65° T.C.A.								

DRILL HOLE RECORD	PROPERTY	DRILLED BY	COMMENCED	COMPLETED	DEPTH	RECOVERY
LOGGED BY	CO-ORDINATES	COLLAR R.L.	BEARING	DIP	HOLE No.	RZS-1.

625078

APPENDIX II

180

GEOLOGICAL DESCRIPTION			DRILLING			SAMPLING			
			From	To	Rec.	Sample No.	From	To	Length
To									
	122.40	Bedding at 27° T.C.A.							
	122.70	Bedding at 42° T.C.A.							
	124.00	Bedding at 65° T.C.A.							
	125.00	Bedding at 66° T.C.A.							
	127.00	Bedding at 75° T.C.A.							
	128.00	Bedding at 66° T.C.A.							
122.40	128.31	13 mm quartz vein at 68° T.C.A.							
Hole Completed at 128.40 m.									
Drill Hole Surveys: (Reischoldi Reuschle Camera)									
	DEPTH.	DIP	BEARINGS.						
	32	-73°	- (In Collar)						
	79	-74.2°	268° mag.						
	127	-70.2°	289° mag., 306° Grid.						
* T.C.A. = to core axis									

DRILL HOLE RECORD

PROPERTY

DRILLED BY

COMMENCED

COMPLETED

DEPTH

RECOVERY

LOCATED BY

CO-ORDINATES

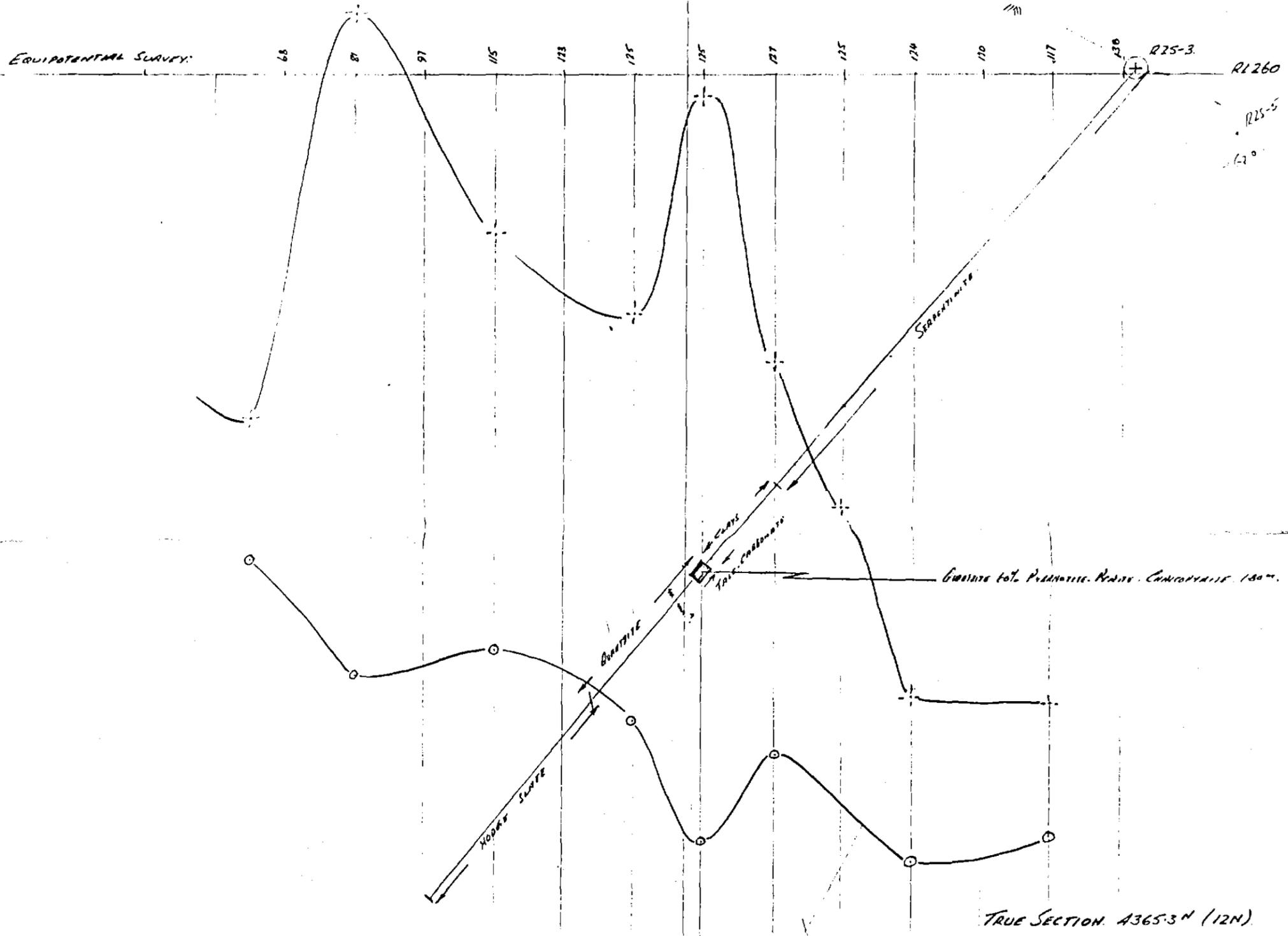
COLLAR K.L.

BEARING

DIP

HOLE No.

RZS-1



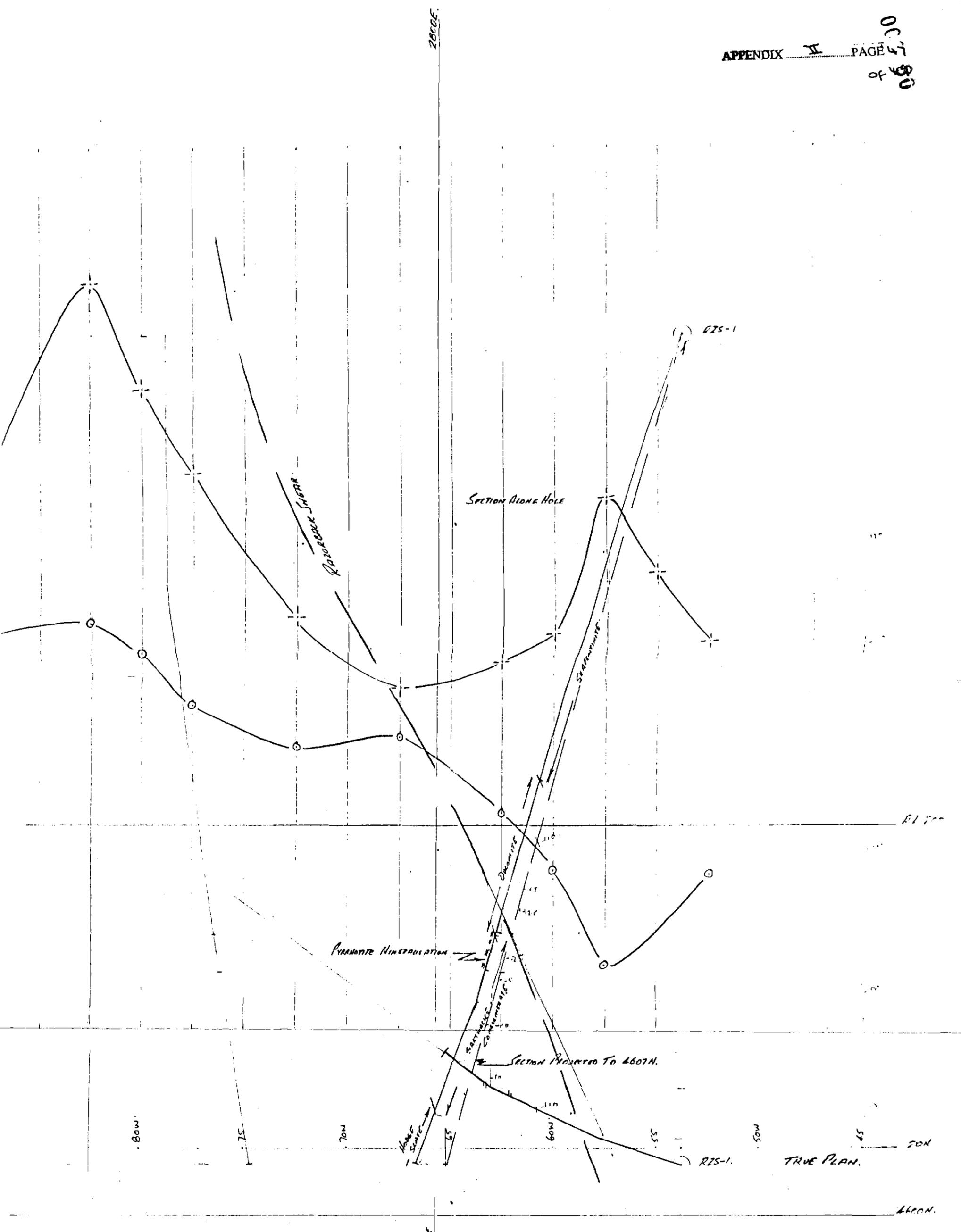
ELECTRIC INDUCED POLARIZATION SURVEY. (March 1974)

- ✕ CONDUCTIVITY.
- RESISTIVITY.

5 cm

DIAMOND DRILL HOLE R25-3.
 4365.3N 2848.9E -50° 270° GRID. RL 2603.
 Scale 1:500.

625079



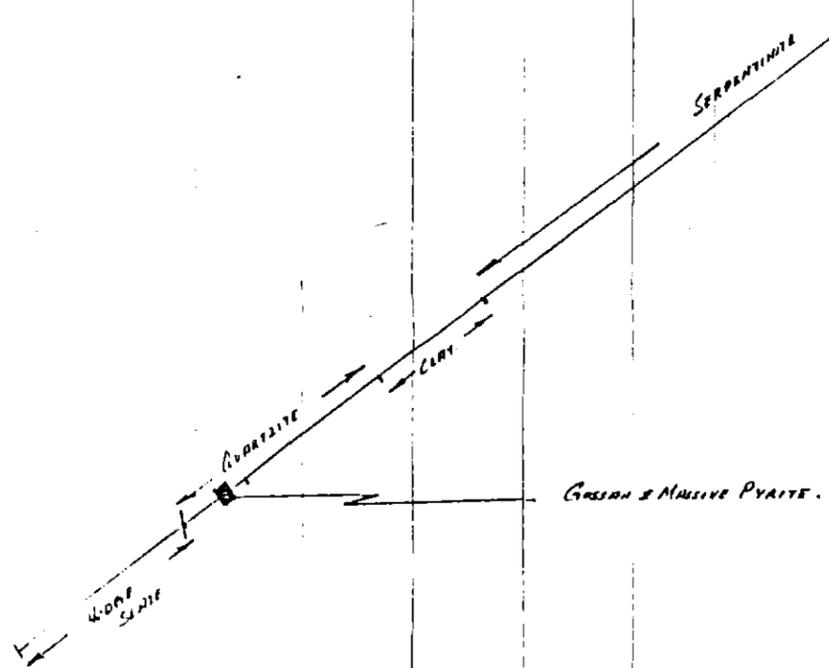
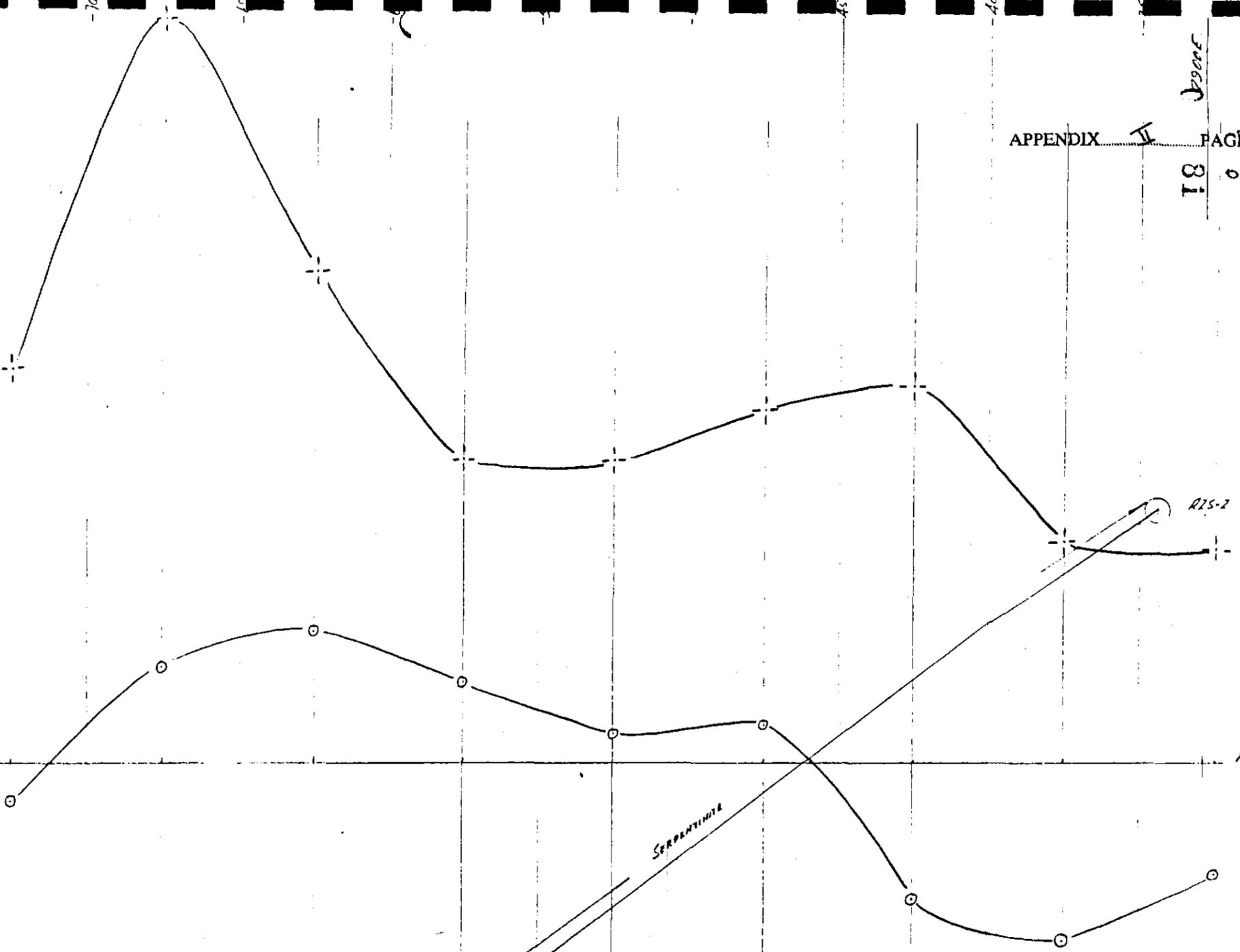
ELECTRICAL INDUCED POLARIZATION SURVEY (March 1972)

+ CHARGEABILITY
o RESISTIVITY

DIAMOND DRILL HOLE RZ5-1.
4607-3N 2836-1E -70° 288° GRID RL 772.0

Scale 1:50

625080

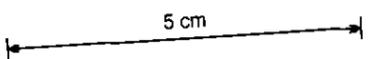


TRUE SECTION A1228N (4N)

ELECTRICAL INDUCED POLARIZATION SURVEY (MARCH 1974).

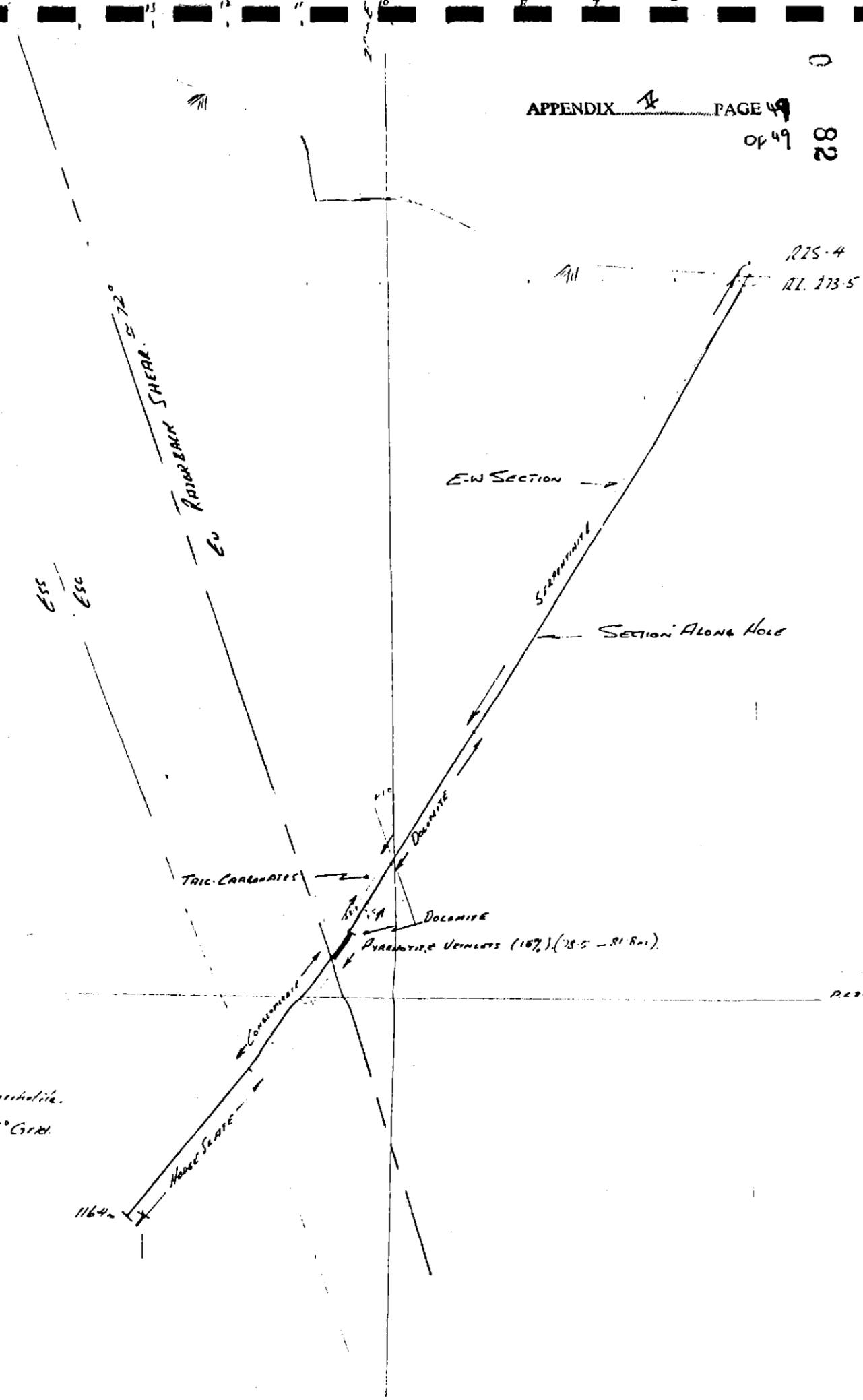
⊕ CHARGEABILITY.

○ RESISTIVITY.



DIAMOND DRILL HOLE R25-2.
 A1228N 28953E -34° 270° GRAD. RL 2253
 Scale 1:500.

625081



Drill Hole Surveys:

Depth	Dip	Bearing
40	-51°	(in casing)
80	-57°	55° Mag - local Pyroclitic.
110	-51.5°	265.5° Mag ie 282.5° Grd.

5 cm

DIAMOND DRILL HOLE RZS-A
 4595.5N 2837.5E - 60° 2800m
 RL 273.5
 Scale 1:500

025082

0. 83

APPENDIX III

BUDGET FOR INITIAL REVIEW OF DATA - RAZORBACK

(INCORPORATED IN NEW SOUTH WALES)

TELEGRAMS:

HEAD OFFICE: 95 COLLINS STREET, MELBOURNE, 3000

TELEPHONE

EXPLORE

BRANCH OFFICE P.O. Box 656, Fyshwick A.C.T.
2609

805665

29th August, 1978

Memorandum to : R.J. Rebek
From : J.G. Purvis

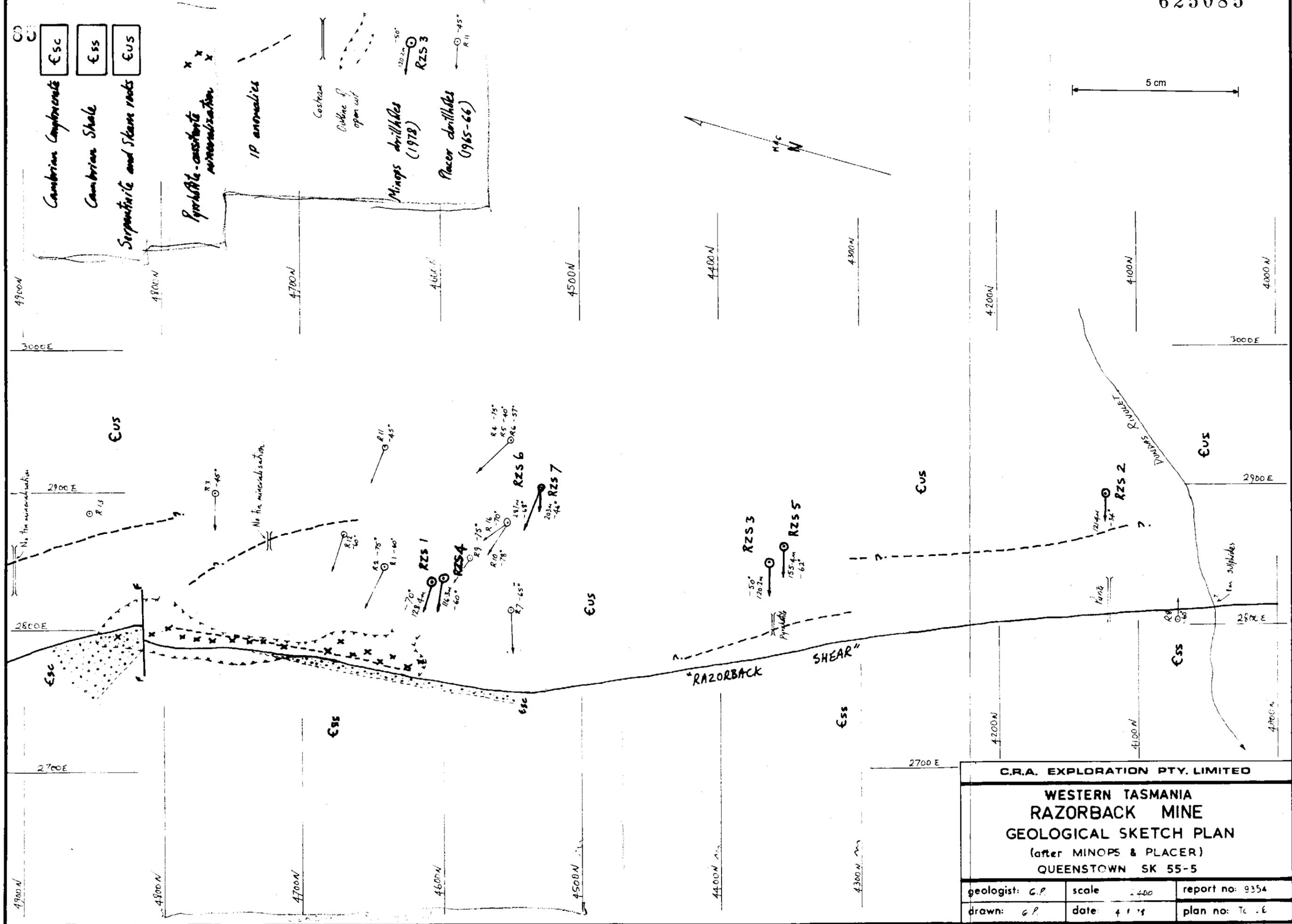
BUDGET FOR INITIAL REVIEW OF DATA - RAZORBACK

The initial review of Minops and Placer data on the Razorback tin mine, including reboxing, relogging and complete sampling of the drillcore, is estimated to take two months for a geologist and field assistant.

A breakdown of costs is as follows:-

Rent of old house and shed in Zeehan for office and core shed, at \$35/wk. for 1 year.	\$1800
Electricity	\$ 100
Extras to set base up	\$ 300
Core racks for Placer drillcore	\$ 600
Trays for Placer drillcore	\$ 400
Saw blades, grinder wheel, sample bags, etc.	\$ 500
Assaying - 500 samples @ \$5 plus extras (e.g. platinoids)	\$3000
Vehicle - 44 days @ \$12/day	\$ 530
Geologist - 44 days @ \$100/day	\$4400
Field Assistant - 50 days @ \$50/day	\$2500
Overheads (6% local + 6% central)	\$1760
Food and Extras	\$ 500
	<u>\$16,400</u>



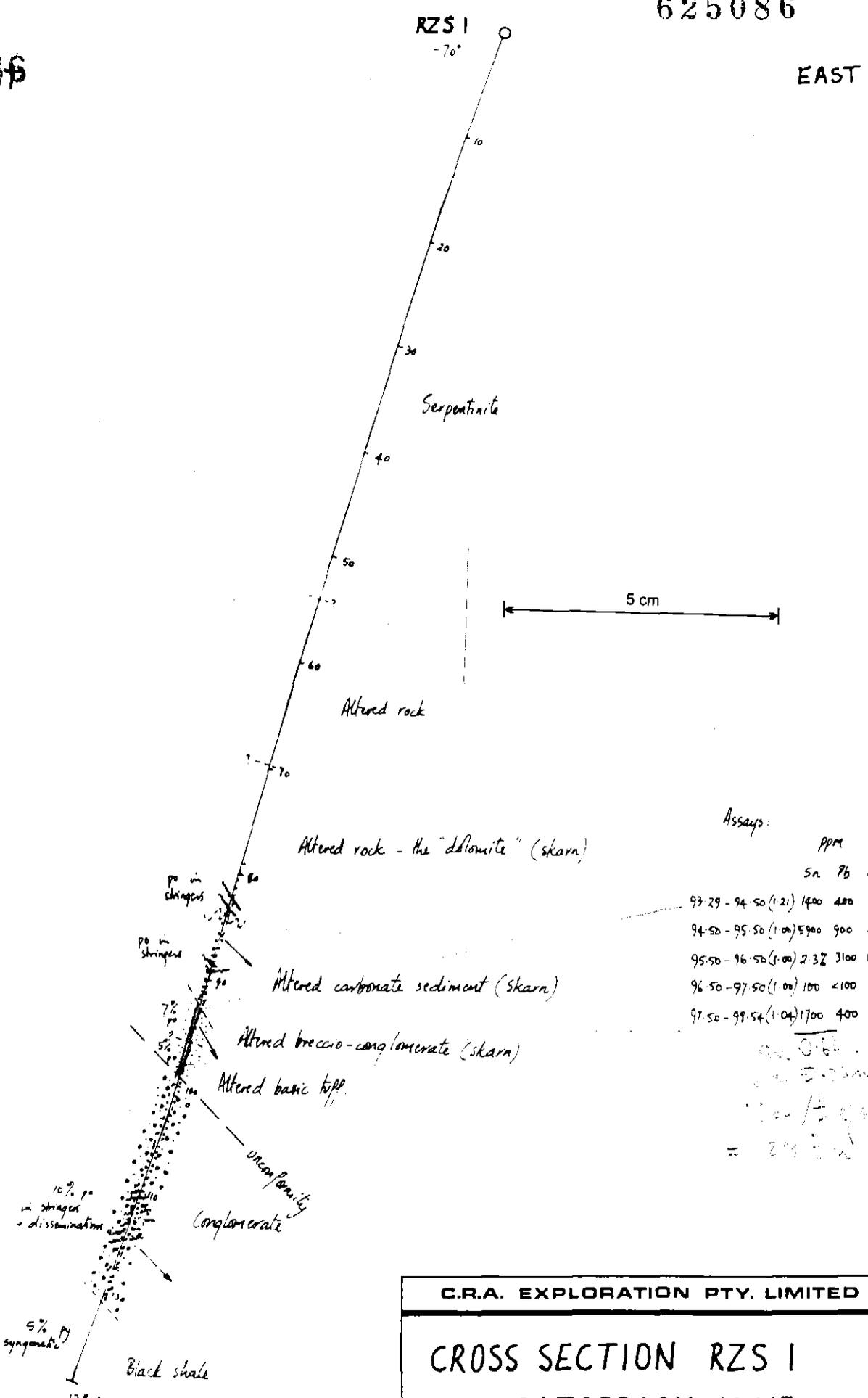


C.R.A. EXPLORATION PTY. LIMITED		
WESTERN TASMANIA RAZORBACK MINE GEOLOGICAL SKETCH PLAN (after MINOPS & PLACER) QUEENSTOWN SK 55-5		
geologist: G.P.	scale: 1:400	report no: 9354
drawn: G.P.	date: 4/1/79	plan no: Tc. 6

WEST

EAST

RZS 1
-70°



Assays:

	ppm	Sn	Pb	Cu
93.29 - 94.50 (1.21)	1400	400	400	
94.50 - 95.50 (1.00)	5900	900	400	
95.50 - 96.50 (1.00)	232	3100	1300	
96.50 - 97.50 (1.00)	100	<100	100	
97.50 - 99.54 (1.04)	1700	400	700	

0.06%
2.5%
100/1000
= 2%

C.R.A. EXPLORATION PTY. LIMITED

CROSS SECTION RZS 1
RAZORBACK MINE
TASMANIA

geologist: GP	scale: 1:500	report no: 9354
drawn: GP	date: Aug 1978	plan no: Tc 127

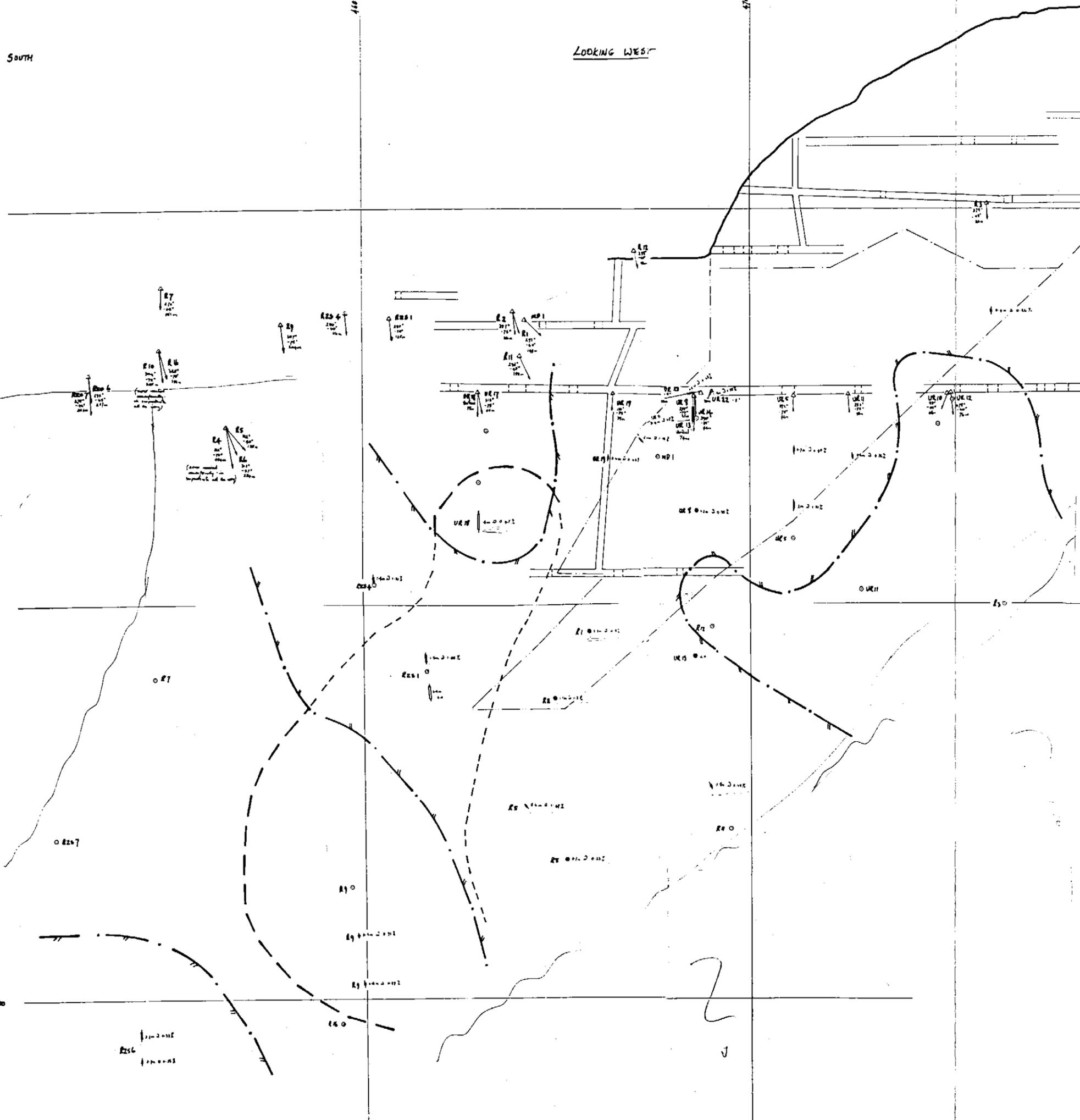
South

LOOKING WEST

EL 300

EL 200

EL 100



5 cm

- outline of large rock on surface 20,000 tons 200 ft in diameter - used as
- outline of large rock on surface 100,000 tons 200 ft in diameter
- approximate boundary of mineralization in diorite
- approximate boundary of mineralization in gneiss
- - location of baffle in uncertainty
- in diorite - approximate position and the width of the mineralization in diorite in uncertainty
- - in gneiss - approximate position and the width of the mineralization in gneiss in uncertainty
- in gneiss - approximate position and the width of the mineralization in gneiss in uncertainty
- UE10-UE12 - see also with section in diorite, gneiss and that depth in meters UE - underground level 2 - surface level

CRA EXPLORATION '64
RAZORBACK MINE
 LONGITUDINAL SECTION
 TASMANIA

Drawn and compiled by: [Name] from data after [Date] 1964
 Scale 1:500

