

SCAMANDER MINING CORPORATION N.L.

SUMMARY REPORT - SPECIAL
PROSPECTING LICENCE 72,
SCAMANDER, TASMANIA

HALL, RELPH & ASSOCIATES PTY. LTD.,

CONTENTS

	Page
I <u>INTRODUCTION</u>	1
1. Period and Scope of Examination	1
2. Location	1
3. Access	1
4. Topography	1
II <u>GEOLOGY</u>	1
1. Previous Investigation	1
2. Regional Geology	2
3. Detail Geology	2
4. Mineralization	3
4.1 General	3
4.2 Wolframite	4
4.3 Cassiterite	4
4.4 Base Metal Sulphides	5
4.4.1 General	5
4.4.2 Dunn's Prospect	5
4.4.3 Ringarooma Prospect	6
4.4.4 North Ringarooma Prospect	6
4.4.5 Orieco Lode system	6
4.4.6 Orieco Mine.	7
5. Drilling	9
6. Geochemistry	10
7. Geophysics	10
III <u>SUMMARY</u>	
1. General Summary	11
2. Conclusion	13

III SUMMARY (cont'd)

3. Recommendations

13

BIBLIOGRAPHY

APPENDIX 1. Diamond Drill Logs and Assays

2. Rockchip Sample Descriptions

3. Rockchip Sample Assays

4. Rockchip Sample Assay Sheets

ENCLOSURES

Figure 1. Regional Geology and Mineralization

2. Total Magnetic Intensity Map

3. Detailed Geology with Prospects, Old
Workings and Location of Gossans

4. Geochemical Sample Locations and
Assays

5. Plan of Orieco Mine showing Assays
and Longitudinal Section

6. Underground Survey of Orieco Mine and
Diamond Drill Hole Locations and
Horizontal Intervals.

HALL, RELPH & ASSOCIATES PTY. LTD.
GEOLOGICAL & EXPLORATION CONSULTANTS

9TH FLOOR
36-38 CLARENCE STREET,
SYDNEY, 2000, AUSTRALIA

TELEPHONE: 29-5631
CABLE: HALLRELP, SYDNEY
TELEX: 21840

December 11, 1970

I. INTRODUCTION

1. Period and Scope of Examination

Work on the Special Prospecting Licence (SPL) has comprised drilling, geological examination, geochemical sampling and compilation of all available geological data. This work was carried out from June 1969 to April 1970. Some difficulties were encountered in compiling the final maps and collecting reports.

2. Location

The SPL is located 4 miles northwest of Scamander in eastern Tasmania.

3. Access

The area is accessible by an all weather road from the Tasman Highway at Beaumoris; 3 miles north of Scamander.

4. Topography

SPL 72 is located on a series of ridges forming the eastern foothills of Mt. Ben Lomond. The area has a uniform coverage of open eucalypt forest. Permanent water is available from the main drainage in the area, Eastern Creek.

II GEOLOGY

1. Previous Investigation

The area has been investigated principally by G.A. Waller (1901), Q.J. Henderson (1941), K.R. Walker

(1957) and R.I. Ford et al (1970). In addition to work on the Orieco Mine by various companies the area has been investigated by Austminex Pty. Ltd. and Broken Hill Proprietary Ltd. The area has been flown with an aeromagnetic survey by Electrolytic Zinc Pty. Ltd.

2. Regional Geology

Mathinna Beds outcrop over the whole of the SPL (see Fig. 1). The beds are of Silurian age and consist of a moderately folded sequence of sandstones, siltstones and mudstones. Faulting has developed as two complementary sets - a NW-SE set and a NE-SW set. The faulting and folding is related to orogenesis and granite intrusion during the Upper Devonian. Two miles north of the SPL a biotite - adamellite intrudes the Mathinna Beds and one mile to the east a wide dyke of porphyritic quartz monzonite also intrudes the Mathinna Beds forming a prominent ridge parallel to the coastline. The Mathinna Beds are an unmetamorphosed sequence, except for a narrow aureole of hornfelses developed adjacent to the intrusives. The mineralization is probably related to the biotite-adamellite and is usually emplaced in the northwest trending faults transecting the sediments. The known occurrences of mineralization in the eastern portion of the SPL are probably associated with a subsurface extension of the biotite-adamellite at an unknown depth.

3. Detail Geology

Due to the lack of suitable marker beds, folding and faulting, no detailed mapping of the area was attempted. Known shears, faults and gossans are marked on Fig. 3. Rocktypes included sandstones, green, grey and yellow siltstones and mudstones and minor conglomerates. Some sandstones are altered to quartzites. Irregular and discontinuous quartz veins and blows occur throughout the area.

A number of gossans and pseudogossans are recorded. The gossans are derived from dominantly pyritic assemblages developed along the major fault zones. Pseudogossans are developed as limonite concretions of alluvial material, and outcrop as residuals from Tertiary or younger deposits. Silicification and the development of limonite along fractures is the most common surface alteration noted in the sediments.

The most prominent shear system trends 320° . A less well-developed shear and joint set, cuts and off-sets the main shear trend at 20° . Folding is developed to varying degrees. In areas of faulting the beds are tightly folded and disrupted. Elsewhere folding is moderate with development of broad similar and asymmetric folds. Shallow to moderate plunges are developed in some folds and occasional overturning has occurred.

A number of minor intrusives are recorded within the SPL. At Dunn's Adit a narrow sulphide bearing diabase dyke intrudes the sediments and trends 300° approximately. This dyke carries abundant pyrite and arsenopyrite. At the Great Pyramid Mine (excluded from the SPL) a lamprophyre dyke up to 25 feet wide was noted in the No. 1 South low-level adit. The dyke did not outcrop. It carries abundant magnetite and nests of pyrite. The dyke may be a near surface expression of the source causing a moderate northeast trending aeromagnetic high (See Fig. 2) which occurs at the Great Pyramid Mine. In the Pinnacles area in the western half of the SPL a number of narrow discontinuous apophyses of acid porphyry are recorded and suggest a granitic intrusive at shallow depth.

4. Mineralization

4.1 General

A varied mineral assemblage occurs within the SPL. Wolframite bearing quartz veins occur in the western half of the area. Towards the east the

mineralization grades through cassiterite quartz and cassiterite acid porphyry deposits to shear zones carrying mixed sulphides along the eastern margin. The mineralization appears to be derived from the biotite-adamellite intrusive to the northwest and exhibits an apparent hydrothermal zoning from the northwest to the southeast.

4.2 Wolframite

Wolframite has been noted in discontinuous quartz veins in the western half of the area. Traces of molybdenite have also been recorded.

4.3 Cassiterite

Tin is recorded in a number of areas within the SPL. At the head of Fitzgeralds Creek narrow quartz veinlets carrying cassiterite and subordinate sulphides strike east-north-east at right angles to slaty siltstones and quartzites which strike 325° - 340° . A seam of chalcopyrite was recorded in this area. These deposits were recorded as uneconomic. Small quantities of alluvial tin have been sluiced along the lower reaches of Fitzgeralds Creek.

Tin is recorded in the area of the Western Pinnacles. Abundant cassiterite is recorded in narrow irregular porphyry apophyses and in irregular quartz veins. The cassiterite in quartz veins is associated with arsenopyrite. The tin veins have been opened in shallow pits. Two adits were driven to test some of the veins subsurface, apparently without success. The ridge joining the West Pinnacles trigonometrical station and the Great Pyramid Mine no doubt carries sporadic cassiterite bearing quartz veins, however no economic deposits are recorded. This ridge has been drilled on a reconnaissance basis by Broken Hill Proprietary with unencouraging results. The most important tin occurrence is at the Great Pyramid Mine which is excluded from the SPL. This mine has been extensively sampled and tested over a number of years.

Recent testing by Paringa Mining and Exploration Ltd., has indicated the possibility of a large low grade tin deposit suitable for open cut extraction.

The cassiterite quartz veins which occur in the above areas are generally irregular and of limited extent. This is probably due to the incompetent nature of the siltstones and mudstones which comprise the bulk of the sediments. The veins should be more common and have greater persistence in the quartzites. The possibility of a large open cut type low-grade tin orebody requires testing. This type of deposit would consist of a large bulk of sediments carrying countless small tin-bearing veins of a cupola deposit in greisenised granite.

4.4 Base Metal Sulphides

4.4.1 General

Mixed sulphide assemblages occur predominantly in the eastern half of the SPL. The sulphides are located in north-northwest trending shear systems which dip steeply to the west. No significant sulphide concentrations are recorded in the northeast trending system although it is likely that high grade shoots may occur at points where these two systems intersect. Minor sulphide mineralization occurs in one of the northeast trending shears at Cramps Prospect which lies just to the north of the SPL boundary near Cramps Creek.

Two main lode systems have been recognised - the Orieco Lode and Dunn's Lode. A series of discontinuous gossans outcrop along the length of these lode systems. A number of other gossans are recorded that apparently do not lie on major shears. The gossans have been opened up with pits, trenches, shafts and adits in a number of prospects - the most important being the Orieco Mine. For the various prospect names refer to Fig.3.

4.4.2 Dunn's Prospect

Dunn's lode is marked by a series of discontinuous gossans and quartz blows over a length of

50 chains within the SPL. The main development consists of an adit driven 90 feet along a narrow siliceous arsenopyrite lode trending 320° . Approximately 400 feet northwest of the adit a deep trench has exposed a 10 inch diabase dyke concordant with the shear system. The dyke carries abundant pyrite, arsenopyrite and secondary copper salts. Further northwest of the adit a number of pits have been sunk on gossan-quartz outcrops. At the entrance to Dunn's Adit a shaft has been sunk just above creek level but is inaccessible. On the southern extension of Dunn's lode south of the forestry road a number of pits and shafts have exposed gossanous outcrops with abundant quartz, minor pyrite and copper staining. Chip sampling of the face of Dunn's adit has given assays of up to 0.15% copper. The evidence of mineralization exposed in the surface and underground developments on this lode system is not encouraging.

4.4.3 Ringarooma Prospect

A number of large gossanous outcrops occur on the northern fall of the hill above the forestry road. The gossans have been opened with a number of pits and a siliceous gossanous zone 6 feet wide has been exposed. Rockchip sampling of these gossans gave background values. Two reconnaissance lines of self potential surveying over the gossans gave no response. This prospect is not encouraging.

4.4.4 North Ringarooma Prospect

Two well developed gossans trending east-west occur on a small ridge above the forestry road. Rockchip samples of these gossans yielded anomalous lead and zinc values suggesting a mixed low grade pyrite-sphalerite-galena assemblage below the surface outcrops.

4.4.5 Orieco Lode System

Gossans occurring sporadically over a distance of two miles indicate the presence of mineralization in this northwest trending lode system (See Fig.3).

North Orieco Prospect

A number of well developed gossans occur along the crest of the main ridge and appear to be localised where northeast trending shears intersect the main lode system. Five hundred feet northwest of the Orieco Mine air shaft a large well developed gossan gave strongly anomalous copper, lead and zinc values suggesting a shoot of mineralization at depth. Self potential lines over this gossan gave a significant negative response.

South Orieco Prospect

Twenty four chains southeast of the Orieco Mine an adit has been driven 43 feet at 55° on a level 15 feet above a semi-permanent creek. The adit has followed a lode formation which outcrops in the creek, and is driven into the oxidised zone. Minerals recorded include arsenopyrite, sphalerite, chalcopyrite and secondary arsenic and copper salts. Ten feet north of the adit portal and just above creek level a shaft has been sunk on the lode; however this is now inaccessible. Further south from the adit on the northern fall of the ridge recent trenching on gossans? has failed to reveal any definite trace of mineralization. North of the above shaft and adit on a ridge between these workings and Eastern Creek a series of prominent gossans marks the trace of the main Orieco lode system. These gossans continue across the ridge northwards to the forestry road south of Eastern Creek.

4.4.6 Orieco Mine (See Figs. 5 & 6)

The mine is located on the southern flank of a steep ridge rising from the bank of Eastern Creek and has produced secondary copper ores intermittently over a 60 year period. The position of the ridge is probably related to silicification associated with the Orieco lode system. The main development at the mine is an adit which has been driven 900 feet northwest along the hanging wall of the lode in a puggy formation.

The adit is driven into the oxidised zone. Two shafts have been sunk on the main shear, one is 35 feet southeast of the adit portal and another; 2 chains further to the south. The shafts appear to be located on a cross fault which strikes 10° and dips 70° east. The mineralized zone is deeply leached above the adit where leaching has in places extended to 200 feet below the ridge surface.

Primary sulphides recorded in the mine are pyrite, arsenopyrite, sphalerite and chalcopyrite with minor galena, marcasite, pyrrhotite, cubanite, bornite and tetrahedrite. Supergene sulphides are predominantly chalcocite with minor covellite and pyrite. Supergene oxides include limonite, hematite, cuprite and rarely tenorite; and supergene carbonates are malachite and azurite.

Post mining oxidation minerals include complex sulphates and arsenates.

Several ore shoots were intersected in the adit however only two were of suitably high grade to warrant extraction. The first shoot was intersected at 130 feet from the portal and was approximately 60 feet in length. The second shoot was located 450 feet from the adit portal and provided most of the ore. Much of the available ore in these two shoots was stoped out and further driving failed to locate additional shoots. Development from the adit included numerous cross-cuts, winzes and an air-shaft to the surface in the vicinity of the main ore shoot at the 450 foot mark. The ore shoots are confined to crush zones developed in thinly bedded siltstones and the mineralization has been located in multiple small fractures. The hanging wall consists mainly of quartzites, with siltstones usually forming the foot-wall. Although channel sampling carried out by Henderson (1941) yielded generally good copper values it is pointed out that the sampled material was supergene enriched and that this material is of restricted extent.

Two small gossans outcrop on the surface above the mine and appear to be coincident with the two main

ore shoots located in the adit. If this is the case it appears that the gossans are a surface expression of the ore shoots and that shoots pitch south at 80-83°.

The condition of the adit indicates that considerable expenditure on repairs would be required before extraction of any available material could be attempted.

5. Drilling

Broken Hill Proprietary Ltd. drilled 6 holes in the West Pinnacles area of the SPL exploring for tin. They confined their drilling to the crest of the ridge - using a Halco Stenwick Percussion Drill. The results of this drilling were very poor, the highest value over a 6 foot section being 0.15% Sn.

Two programmes of diamond drilling have been carried out at the Orieco Mine. In 1941/42 at least two A size diamond holes were drilled by the Department of Mines. The core from this drilling was destroyed and the results are not recorded. One of these holes was drilled on the South Orieco Prospect approximately 400 feet east of the present core shed. The hole had an azimuth of 270° and dip approximately 45°. Another hole was drilled on the western side of the main ridge approximately 600 feet northwest of the air-shaft.

Two AX size diamond drill holes were drilled in October/November 1969. Both of these holes intersected primary pyritic sulphides below the zone of secondary enrichment. The grades obtained in the intersections were uneconomic. Hole 1A was drilled to intersect possible mineralization in the cross fault which passes to the south of the adit portal. This hole intersected the cross fault encountering uneconomic sulphides, but failed to intersect the main northwest trending mineralized shoot which dips to the west. Hole 2B was drilled to intersect the possible down dip extension of

the main south pitching ore shoot. This hole also intersected uneconomic pyritic sulphides. For the drill hole locations refer to Fig. 6 and for drill logs and assays see Appendix 1.

6. Geochemistry (See Fig.4)

Forty-four rockchip samples were collected from gossanous outcrops within a one mile radius of the Orieco Mine. A subsequent survey of the SPL boundaries showed that 5 of the samples had been collected outside of the area. These samples were No's 1,2 and 5 at Cramp's Prospect and 24 and 25 at the Paul Beahr adit. The descriptions and assays for these 5 samples have been included in the appendices; however the samples are not recorded on Fig.4. The samples were assayed by semi-quantitative spectrographic analysis for 29 elements, by the AMDEL laboratory. Only 18 elements were detected; these were: Cu, Pb, Zn, Sn, Cd, Bi, Ag, Ga, Ge, As, Sb, Co, Ni, Cr, V, Mo, Mn and Be.

No definite trends of zonation are recognisable from the results as plotted. The most significant result is for sample 14 which appears to indicate a possible ore shoot at depth. The results of this sampling, should help in interpretation of any further detailed work on the gossans. Generally the assay values obtained were low.

7. Geophysics

The area has been flown with a total magnetic intensity survey at a mean terrain clearance of 500 feet by Electrolytic Zinc Pty. Ltd. Flight line spacing is $\frac{1}{4}$ mile. Two weak magnetic lows and a weak high occur within the SPL, however no cause for these lows is indicated. The lows may represent areas of hydrothermal alterations within the granites. The high near the Great Pyramid Mine may be caused by a subsurface rock mass with a high magnetite content similar to the lamprophyre dyke exposed in the Great Pyramid Mine workings.

A reconnaissance self potential survey has been carried out over the Orieco Mine. The large gossan northwest of the air-shaft gave a negative response indicating a conducting body at depth.

III SUMMARY

1. General Summary

Tin mineralization occurs within the SPL on the ridge immediately northwest of the Great Pyramid Tin Mine and along that ridge to the old Pinnacles tin prospect. Broken Hill Proprietary Ltd. has tested this area without success. Their drilling was inconclusive. Two possibilities for economic tin mineralization exist:

- 1) as tin in greisenised granite cupolas at shallow depth below the Pinnacles or other areas or
- 2) as tin in quartz vein stockworks developed in sediments above the granites.

Surface evidence indicates that no economic lode tin occurs within the area. Exploration for and proving of an orebody similar to the possibilities mentioned above in 1) and 2) would require an expensive programme of deep percussion drilling with followup diamond drilling. Initial exploration before this drilling may require surveying of a grid, geophysics and geochemistry.

Surface indications that economic base metal mineralization exists on the SPL are not promising. The mineralization appears to be derived from a subsurface biotite-adamellite (at unknown depth) and is dominantly pyritic. The mineralization is located in a number of shear zones in sediments which are stable and unlikely to undergo the alteration and replacement necessary for the formation of 'replacement' type massive sulphide deposits. It is very likely then, that any primary sulphides at depth are confined to the shear zones. These zones are relatively narrow. Surface indications are that the Dunns lode system is located in a narrow shear of uneconomic width. The main prospects for an economic sulphide orebody are along the Orieco lode system. Rockchip sampling results from gossans along this lode (See Fig.4) indicate that the copper (chalcopyrite) was accompanied by abundant pyrite. The acidic

environment due to this pyrite would cause heavy leaching and removal of surface copper. The copper values obtained were at least 1000 ppm lower than values expected had economic concentrations of chalcopyrite existed in the primary sulphides. DDH 2B intersected disseminated uneconomic primary sulphides 100 feet below the mine adit and along the projected downward extension of the main ore shoot.

The above suggests that the primary mineralization along the Orieco shear system is dominantly pyrite with minor chalcopyrite, sphalerite, galena and arsenopyrite and is uneconomic.

Previous production from the Orieco Mine was from pods of high grade secondary ore localised in two ore shoots which apparently failed to continue at depth. These high grade secondarily enriched copper ores formed by long continued oxidation, leaching and redeposition above the water table of copper from originally low grade pyritic ores. In general, as in the Orieco Mine these secondary ores are irregular and patchy and although further high grade secondary ores possibly occur along the Orieco lode system and elsewhere within the SPL - the cost of discovering, proving and underground extraction of these pods would render them uneconomic. The secondary ores available are considered uneconomic.

Results from the rockchip sampling suggest that economic concentrations of gold, lead, silver and zinc do not occur within the SPL.

Although the prospects are not encouraging the success of the area as a profitable copper producer depends on the exploration and discovery of primary copper mineralization. To test the possibility of this mineralization at depth relatively deep drilling is required with diamond drill holes of the order of 800 feet in length. These holes would cost an average of \$8,000 each and they require defined targets before drilling.

To define these targets at depth geophysical investigation is required using the induced polarisation method. The most promising assays obtained from gossan sampling were obtained from a large gossan outcrop approximately 500 feet north of the Orieco mine air-shaft.

If after testing, underground development from the Orieco mine adit is considered unwarranted, the advice of a mining engineer could be sought with a view to flooding the workings and carrying on a cost - recovery copper leaching operation. If testing of the main lode system for copper was successful further areas in the SPL could be tested.

2. Conclusion

1. It is considered that the exploration, development and extraction of the known and possible further secondary copper ores within the SPL would be uneconomic.

It is considered unlikely that economically extractable concentrations of primary copper ore occur within the SPL. If further exploration for copper is intended within the SPL a recommended programme is outlined under III 3.1.

2. It is considered that a large tonnage low grade tin orebody may occur within the SPL in the Great Pyramid Pinnacles area. The exploration for this type of orebody will be expensive and require systematic geophysical, geochemical and drilling investigations. The chances of success for this exploration are considered reasonable and preliminary work would be relatively inexpensive.

3. Recommendations

It is recommended that:

1. If further exploration for copper within the SPL is intended the following programme should be followed:

- i) A pilot induced polarisation survey with 400 foot line spacings over a strike length of 3600 feet should be made to cover the general area of the Orieco mine and South Orieco prospect.
- ii) Drill 2 or 3 diamond holes to intersect the zone of primary sulphides. These holes being sited dependent on the induced polarisation results. Although this drilling would only test a restricted section of the Orieco lode system the results obtained should be indicative of the potential of the surrounding areas.

2. If no further exploration for copper is intended a mining engineer should determine the feasibility of flooding the old workings for a copper leaching operation.

3. Any tin exploration programme over the SPL should be as follows:

- i) Detailed stream sediment sampling. Samples being assayed for Cu, Sn, Zn and Bi.
- ii) Surveying a 400 foot grid with stations levelled to 1/10 feet over an area of 2 square miles covering the western half of the SPL.
- iii) Detailed ground magnetic surveying over the above grid.
- iv) Detailed gravity surveying over the grid.
- v) Soil geochemistry over the grid depending on results from iii) and iv).
- vi) Percussion and possibly diamond drilling dependent on results from iii), iv) and v).

We await the advice of your board on the above conclusions and recommendations.

HALL, RELPH & ASSOCIATES PTY LTD.,

B. L. Wood, D.Sc.

PFK:sp

BIBLIOGRAPHY

- | | | |
|-------------------|-------|---|
| FORD, R.J. et al | 1970 | Oxidation at the Orieco
Copper Mine, eastern
Tasmania.
<u>Proc. A.I.M.M. No. 235</u> |
| HENDERSON, Q.J. | 1941 | Scamander Copper Field.
<u>Dept. Mines Tas. Rept.</u>
(Unpub.) |
| JACK, R. | 1963 | Great Pyramid Tin Mine
Upper Scamander.
<u>Geol. Surv. Tech. Rept.</u>
No. 8. |
| NYE, P.B. | 1940? | Southern portion of West
Pinnacle. Upper Scamander
<u>Dept. Mines Tas. Rept.</u>
(Unpub.) |
| REID, | 1927 | West Pinnacle Prospect.
<u>Dept. Mines Tas. Rept.</u>
(Unpub) |
| SCOTT, J.B. | 1928 | Western Pinnacle Mine
Section 10221/N.
<u>Dept. Mines Tas. Rept.</u>
(Unpub.) |
| SCOTT, J.B. | 1928 | Great Pyramid Mine
Upper Scamander.
<u>Dept. Mines Tas. Rept.</u>
(Unpub.) |
| TWELVETREES, W.H. | 1911 | The Scamander Mineral
District.
<u>Geol. Surv. Bulletin No.9.</u> |
| WALKER, K.R. | 1957 | Geology of the St. Helens -
Scamander area, Tasmania.
<u>Pap. Roy. Soc. Tas.</u>
91 pp 23-39 |
| WALKER, G.A. | 1901 | Report on the mining
districts of Scamander River
and St. Helens. |

APPENDIX 1

DIAMOND DRILL LOGS AND ASSAYS

DDH 1A and 2B

APPENDIX 2

ROCKCHIP SAMPLE DESCRIPTIONS

Sample Numbers 1 - 44.

Sample Number.

- 1.* Gossan. Composite chip from three gossanous outcrops.
- 2.* Dump material. Composite gossan and quartz material from dump at Cramps prospect.
3. Gossan. Chip composite from gossanous outcrop.
4. Gossan. Chip composite from gossanous outcrop.
- 5.* Gossan. Chip composite of outcrop and float.
6. Gossan with quartz gangue. Chip composite over 40 feet along outcrop.
7. Gossan. Chip composite of brecciated gossanous outcrop. May be limonitic conglomerate.
8. Gossan. Chip composite at eastern end of above outcrop. May be limonitic conglomerate.
9. Gossan. Chip composite from 3 points along outcrop.
10. Gossan. Chip composite from full length of outcrop.
11. Gossan. Chip composite from full length of outcrop.
12. Gossan. Chip composite from full length of outcrop.

Rockchip Sample Descriptions

Sample Number

13. Gossan. Chip composite from northern end of above outcrop.
14. Gossan. Chip composite from northern end of gossanous outcrop.
15. Gossan in quartz gangue. Chip composite from two locations.
16. Sulphides. Mainly arsenopyrite from stack next to trench 150 feet above Dunn's Adit.
17. Gossan. Gossan material from dumps next to pit on south extension of Dunn's lode.
18. Gossan quartz. Composite chip sample of dump material from pit sunk on quartz 'blow'.
19. Gossan. Chip composite from gossan outcrop. May be a limonitic conglomerate.
20. Gossan. Chip composite from gossan outcrop. May be a limonitic conglomerate.
21. Gossan. Chip sample from two sites on gossan outcrop.
22. Gossan. Chip sample from two sites on gossan outcrop.
23. Gossan. Chip composite sample from several sites along outcrop.
- 24.* Dump sample. Assorted sulphide material from dump at Paul Beahr adit.
- 25.* Gossan. Composite sample from gossan outcrop on hillside above the adit.
26. Gossan. Composite ship sample from several sites.

Rockchip Sample Descriptions

Sample Number

27. Gossan. Composite chip sample from two sites.
28. Gossan. Composite chip sample from several sites.
29. Gossan. Composite chip sample from several sites.
30. Gossan. Composite chip sample from several sites. Orieco South area.
31. Gossan. Weakly gossanous composite sample above old drill site.
32. Gossan. Weakly gossanous material from outcrop over 200 feet along hillside. Composite chip sample from length of outcrop.
33. Gossan. Chip composite along outcrop - several sites.
34. Gossan. Chip composite along outcrop - several sites.
35. Gossan. Chip composite - several sites.
36. Gossan. Chip composite - several sites.
37. Gossan. Composite sample from trench.
38. Gossan. Composite sample from bottom of trench.
39. Gossan. Composite sample from bottom of trench.
40. Diabase with arsenopyrite, pyrite and secondary copper minerals. Composite from dyke exposed in trench north of Dunn's adit.

Rockchip Sample Descriptions

Sample Number

- 41. Hematite and some chalcocite. Composite from dump next to South Orieco adit.
- 42. Gossan - goethite. Chip composite from trench.
- 43. Gossan - goethite. Chip composite from trench.
- 44. Chip sample across adit face - Dunn's adit.

* Collected outside SPL 72.

APPENDIX 3.

ROCKCHIP SAMPLE ASSAYS

Sample Numbers 1 - 44

These Assays are represented on Fig. 4.

Sample Number	Cu	Pb	Zn	Assay (p.p.m.)			Ga	Be	Sn
				As	Ag	Bi			
1*	50	100	300	100	0.1	1	3	10	30
2*	200	500	100	1000	100	300	8	5	300
3	150	3000	200	1000	80	30	30	3	500
4	100	200	300	100	8	1	30	5	50
5*	200	200	800	1000	0.5	10	10	10	3
6	8	200	300	50	0.5	X	8	10	3
7	50	200	200	100	0.5	1	10	1	10
8	10	100	200	100	0.5	X	10	1	10
9	500	300	300	500	1	30	30	3	1000
10	100	300	300	100	1	1	15	5	80
11	300	800	500	X	5	30	10	10	100
12	30	300	800	X	0.5	10	10	3	50
13	50	200	800	100	0.5	1	20	1	300
14	300	3000	1000	100	100	10	20	6	3000
15	200	200	100	500	8	5	20	6	100
16	500	100	100	>10000	50	30	3	X	200
17	300	2000	200	1000	3	30	10	1	800

Sample Number	Cu	Pb	Zn	As	Ag	Bi	Ga	Be	Sn
18	200	1000	200	X	0.5	30	10	1	300
19	50	100	500	500	0.1	X	10	10	3
20	50	200	1000	100	0.5	X	30	10	10
21	200	800	300	500	0.1	300	10	3	1000
22	100	200	1200	X	0.1	X	3	10	30
23	100	300	500	100	0.1	1	20	1	50
24*	150	800	300	1000	10	10	20	1	200
25*	200	500	300	100	8	10	10	3	800
26	100	300	500	100	X	1	8	5	10
27	150	3000	1000	100	0.5	X	8	10	50
28	100	300	300	X	0.5	1	10	3	3
29	300	800	800	100	0.5	200	10	10	1000
30	200	300	100	5000	3	10	20	3	30
31	200	300	100	100	1	30	30	3	200
32	30	100	200	X	0.1	1	3	7	100
33	30	200	1000	100	0.1	1	3	5	30
34	50	200	300	X	1	X	30	2	30
35	100	800	200	X	1	1	10	3	30

Sample Number	Cu	Pb	Zn	As	Ag	Bi	Ga	Be	Sn
36	150	1000	500	X	1	1	10	6	10
37	100	200	1500	300	0.5	X	1	8	1
38	100	250	800	150	0.2	X	1	3	2
39	100	300	1500	100	0.1	X	1	3	3
40	5000	30	200	>10000	50	300	X	X	1500
41	2000	50	>10000	10000	8	20	10	X	1000
42	100	800	1500	200	0.1	X	X	5	X
43	150	200	1500	100	0.5	X	X	5	X
44	10000	300	50	»10000	150	600	10	X	3000

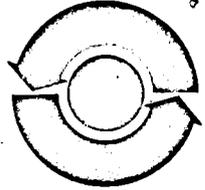
* Collected outside SPL 72.

Elements detected which are not tabulated above are:-
Cd, Ge, Sb, Co, Ni, Cr, V, Mo and Mn. For these
assays see Appendix 4.

APPENDIX 4

ROCKCHIP SAMPLE ASSAY SHEETS

THE AUSTRALIAN MINERAL DEVELOPMENT LABORATORIES



PLEASE ADDRESS ALL CORRESPONDENCE TO THE DIRECTOR.

OUR REFERENCE: AN3/414/0

2443/70

YOUR REFERENCE:

4th February, 1970.

The Manager,
Hall, Relph and Associates Pty Ltd,
Ninth Floor,
36-38 Clarence Street,
SYDNEY NSW 2000.
Attention: Mr P. Kelso.

REPORT AN2443/70

YOUR REFERENCE:	Letter dated 5.1.70
MATERIAL:	Gossan sample
IDENTIFICATION:	As listed
DATE RECEIVED:	7.1.70

Enquiries quoting AN2443/70 to Officer in Charge please.

Spectrographic analysis by: R.R. Robinson

Officer in Charge, Analytical Section: A.B. Timms


for N. Draper
Director.

pkm

JOB 2.443
Form. 23

AMDEL ANALYTICAL SERVICE

SAMPLES 1-36

Semi-Quantitative Spectrographic Analysis Scheme A2

BATCH

Results in ppm unless otherwise stated. Detection limits in brackets.

Sample No.	Cu (0.5)	Pb (1)	Zn (20)	Sn (1)	Ca (3)	Bi (1)	Ag (0.1)	Au (3)	Ga (1)	Ge (1)	As (50)	Sb (30)
1	50	100	300	30	X	1	0.1	X	3	X	100	X
2	200	500	100	300	"	300	100	"	8	1	1000	"
3	150	3000	200	500	"	30	80	"	30	2	1000	"
4	100	200	200	50	"	1	8	"	30	X	100	"
5	200	200	800	3	"	10	0.5	"	10	"	1000	"
6	8	200	300	3	"	X	0.5	"	8	"	50	"
7	50	200	200	10	"	1	0.5	"	10	"	100	"
8	10	100	200	10	"	X	0.5	"	10	"	100	"
9	500	300	300	500	"	30	1	"	30	"	500	"
10	100	300	300	80	"	1	1	"	15	"	100	"
11	300	300	500	100	"	30	5	"	10	"	X	"
12	30	300	800	50	"	10	0.5	"	10	"	"	"
13	50	200	800	300	"	1	0.5	"	20	"	100	"
14	300	3000	1000	3000	"	10	100	"	20	"	100	"
15	200	200	100	100	"	5	8	"	20	"	500	"
16	500	100	100	200	"	30	50	"	3	"	210,000	50
17	300	2000	200	800	"	30	3	"	10	"	1000	X
18	200	1000	200	300	"	30	0.5	"	10	"	X	"
19	50	100	500	3	"	X	0.1	"	10	"	500	"
20	50	200	1000	10	"	"	0.5	"	30	"	100	"

Results are semi-quantitative. Elements apparently present in concentrations of economic interest should be redetermined by an appropriate accurate analytical technique. X = Not detected

Results in ppm unless otherwise stated, Detection limits in brackets.

Co (5)	Ni (5)	Cr (20)	V (10)	W (50)	Mo (3)	Mn (10)	Ta (100)	Nb (20)	Be (1)	Th (100)
S	30	20	30	X	X	150	X	X	10	X
150	20	200	50	"	"	200	"	"	5	"
X	10	100	10	"	"	30	"	"	3	"
X	30	70	30	"	"	30	"	"	5	"
20	100	30	30	"	"	100	"	"	10	"
X	70	30	50	"	"	100	"	"	10	"
"	10	100	30	"	"	100	"	"	1	"
"	10	100	30	"	"	100	"	"	1	"
"	30	100	30	"	"	100	"	"	3	"
"	30	100	50	"	"	150	"	"	5	"
"	60	30	30	"	"	200	"	"	10	"
"	40	100	30	"	"	100	"	"	3	"
"	30	100	50	"	"	200	"	"	1	"
"	30	30	50	"	10	150	"	"	6	"
"	20	200	50	"	X	100	"	"	6	"
80	30	30	10	"	"	30	"	"	X	"
X	10	100	10	"	"	150	"	"	1	"
X	5	100	30	"	"	150	"	"	1	"
X	30	30	30	"	"	150	"	"	10	"
X	100	30	30	"	"	200	"	"	10	"

ni-quantitative. Elements apparently present in concentrations of economic interest should be redetermined by an appropriate accurate analytical technique. X = Not detected at limit quoted.

Form 23 2443

AMDEL ANALYTICAL SERVICE

Semi-Quantitative Spectrographic Analysis Scheme A2

BATCH 2

Results in ppm unless otherwise stated. Detection limits in brackets.

Sample No.	Cu (0.5)	Pb (1)	Zn (20)	Sn (1)	Pd (3)	Bi (1)	Ag (0.1)	Au (3)	Ga (1)	Ge (1)	As (50)	Sb (30)
21	200	800	300	1000	X	300	0.1	X	10	X	500	X
22	100	200	1200	30	"	X	0.1	"	3	"	X	"
23	100	300	500	50	"	1	0.1	"	20	"	100	"
24	150	800	300	200	"	10	10	"	20	2	1000	"
25	200	500	300	800	"	10	8	"	10	2	100	"
26	100	300	500	12	"	1	X	"	8	2	100	"
27	150	3000	1000	50	"	X	0.5	"	8	1	100	"
28	100	300	300	3	"	1	0.5	"	10	X	X	"
29	300	800	800	1000	"	200	0.5	"	10	"	100	"
30	200	300	100	30	"	10	3	"	20	"	5,000	"
31	200	300	100	200	"	30	1	"	30	"	100	"
32	30	100	200	100	"	1	0.1	"	3	"	X	"
33	30	200	1000	30	"	1	0.1	"	3	"	100	"
34	50	200	300	30	"	X	1	"	30	"	X	"
35	100	800	200	30	"	1	1	"	10	"	"	"
36	150	1000	500	12	"	1	1	"	10	"	"	"
17							45.94					
18									13.94			
19	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
20												

Results are semi-quantitative. Elements apparently present in concentrations of economic interest should be redetermined by an appropriate accurate analytical technique. X = Not detected at limit quoted.

AMDEL ANALYTICAL SERVICE

Semi-Quantitative Spectrographic Analysis Scheme A1

BATCH 27

Results in ppm unless otherwise stated. Detection limits in brackets.

Co (5)	Ni (5)	Cr (20)	V (10)	W (50)	Mo (3)	Mn (10)	Ta (100)	Nb (20)	Be (1)	Th (100)
X	10	30	30	X	20	150	X	X	3	X
10	150	50	10	"	10	300	"	"	10	"
X	20	50	30	"	X	150	"	"	1	"
20	30	50	50	"	"	5,000	"	"	1	"
10	10	100	30	"	"	8,000	"	"	3	"
X	30	100	50	"	"	300	"	"	5	"
X	50	100	30	"	"	150	"	"	10	"
X	30	30	30	"	"	100	"	"	3	"
X	20	30	30	"	"	100	"	"	10	"
X	10	30	50	"	"	100	"	"	3	"
X	20	100	100	"	"	100	"	"	3	"
X	100	100	50	"	"	150	"	"	7	"
10	100	100	30	"	"	200	"	"	5	"
X	60	30	30	"	"	150	"	"	2	"
X	30	50	50	"	"	150	"	"	3	"
X	30	100	30	"	"	150	"	"	6	"
			3583							
									6.88	
	✓	✓	✓			✓			✓	

mi-quantitative. Elements apparently present in concentrations of economic interest should be redetermined by an appropriate accurate analytical technique. X = Not detected at limit quoted.

Results in p.p.m. unless otherwise stated. Detection limits in brackets

Sample No.	Pt (10)	Pd (10)	Os (10)	Ir (2)	Rh (2)	Ru (2)							
1	X	X	X	X	X	X							
2	"	"	"	"	"	"							
3	"	"	"	"	"	"							
4	"	"	"	"	"	"							
5	"	"	"	"	"	"							
6	"	"	"	"	"	"							
7	"	"	"	"	"	"							
8	"	"	"	"	"	"							
9	"	"	"	"	"	"							
10	"	"	"	"	"	"							
11	"	"	"	"	"	"							
12	"	"	"	"	"	"							
13	"	"	"	"	"	"							
14	"	"	"	"	"	"							
15	"	"	"	"	"	"							
16	"	"	"	"	"	"							
17	"	"	"	"	"	"							
18	"	"	"	"	"	"							
19	"	"	"	"	"	"							
20	"	"	"	"	"	"							

Results are semi-quantitative. Elements apparently present in concentrations of economic interest should be redetermined by an appropriate accurate analytical technique. X = Not detected at limit quoted.

JOB. 2443

AMDEL ANALYTICAL SERVICE
Semi-Quantitative Spectrographic Analysis Scheme A1

BATCH... 23...

Results in p.p.m. unless otherwise stated. Detection limits in brackets

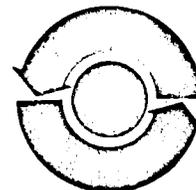
Sample No.	Pt (10)	Pd (10)	Os (10)	Ir (2)	Rh (2)	Ru (2)						
21	X	X	X	X	X	X						
22	"	"	"	"	"	"						
23	"	"	"	"	"	"						
24	"	"	"	"	"	"						
25	"	"	"	"	"	"						
26	"	"	"	"	"	"						
27	"	"	"	"	"	"						
28	"	"	"	"	"	"						
29	"	"	"	"	"	"						
30	"	"	"	"	"	"						
31	"	"	"	"	"	"						
32	"	"	"	"	"	"						
33	"	"	"	"	"	"						
34	"	"	"	"	"	"						
35	"	"	"	"	"	"						
36	"	"	"	"	"	"						
17												
18												
19												
20												

370

Results are semi-quantitative. Elements apparently present in concentrations of economic interest should be redetermined by an appropriate accurate analytical technique. X = Not detected at limit quoted.

Chem. $A_1 + A_2$ 36x29. 1044

THE AUSTRALIAN MINERAL DEVELOPMENT LABORATORIES



PLEASE ADDRESS ALL CORRESPONDENCE TO THE DIRECTOR.
Part Report 1.

OUR REFERENCE: AN3/414/0
YOUR REFERENCE:

3107/70

13th March, 1970.

The Manager,
Hall Relph and Associates Pty Limited,
36-33 Clarence Street,
SYDNEY NSW 2000.

Attention: Mr P.F. Kelso.

REPORT AN3107/70

YOUR REFERENCE:	Letter dated 27/2/70
MATERIAL:	Rock chip
IDENTIFICATION:	As listed
DATE RECEIVED:	27.2.70
NOTE:	Zn is being redetermined accurately on Sample No. 4 and As similarly on Samples 4 and 5.

Enquiries quoting AN3107/70 to Officer in Charge, please.

Analysis by: R.R. Robinson - Spectrographic

Officer in Charge, Analytical Section: A.B. Timms

A. B. Timms
for N. Draper
Director,
A.P. 10/3

pkm

SAMPLES 37-43

AMDEL ANALYTICAL SERVICE

JOB: ...3/07/70

Semi-Quantitative Spectrographic Analysis Schemes A1, A2, A3, A4, A5 & A6 BATCH

Results in ppm unless otherwise stated. Detection limits in brackets

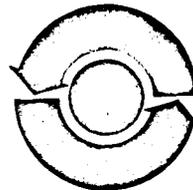
Sample No.	37	38	39	40	41	42	43	Sample No.							
Al	1	2	3	4	5	6	7	A2 Contd.	1	2	3	4	5	6	7
Co (5)	15	10	20	20	20	5	10	Ge (1)	X	X	X	1	X	X	X
Ni (5)	30	20	30	10	30	30	50	As (50)	300	150	100	712,000	10,000	200	1500
Cr (20)	20	30	30	20	100	20	20	Sb (30)	X	X	X	50	X	X	X
V (10)	10	10	30	X	30	X	50	A3							
W (50)	X	X	X	X	X	X	X	Te (20)							
Mo (3)	3	3	3	X	3	X	X	Tl (1)							
Mn (10)	300	150	300	X	1000	300	300	P (100)							
Ta (100)	X	X	X	X	X	X	X	A4							
Nb (20)	X	X	X	X	X	X	X	Na (50)							
Be (1)	2	3	3	X	X	5	5	Li (1)							
Th (100)	X	X	X	X	X	X	X	A5							
Pt (10)	X	X	X	X	X	X	X	K (5)							
Pd (10)	X	X	X	X	X	X	X	Rb (10)							
Os (10)	X	X	X	X	X	X	X	Cs (30)							
Ir (2)	X	X	X	X	X	X	X	A6							
Rh (2)	X	X	X	X	X	X	X	Ba (50)							
Ru (2)	X	X	X	X	X	X	X	Sr (10)							
A2								Y (10)							
Cu (0.5)	100	100	100	5000	2000	100	150	La (100)							
Pb (1)	200	250	300	30	50	800	200	Ce (300)							
Zn (20)	1500	800	1500	200	10,000	1500	1500	Nd (300)							
Sn (1)	1	2	3	1500	1000	X	X	Pr (100)							
Cd (3)	X	X	X	10	300	X	X	Ti (100)							
Bi (1)	X	X	X	300	20	X	X	Er (100)							
Ag (0.1)	0.5	0.2	0.1	50	8	0.1	0.5	Sc (50)							
Au (3)	X	X	X	X	X	X	X	Eu (50)							
Ga (1)	1	1	1	X	10	X	X								

Results are semi-quantitative. Elements apparently present in concentrations of economic interest should be redetermined

Geo. A1+A2 7x20 = 203 by an appropriate accurate analytical technique.

X = Not detected at limit quoted.

THE AUSTRALIAN MINERAL DEVELOPMENT LABORATORIES



PLEASE ADDRESS ALL CORRESPONDENCE TO THE DIRECTOR.

OUR REFERENCE: AN3/414/0
YOUR REFERENCE:

2034/70

9th December, 1969.

The Manager,
Hall, Relph and Associates Pty Ltd,
36-38 Clarence Street,
SYDNEY 2000.

REPORT AN2034/70

YOUR REFERENCE: Letter dated 20th November, 1969.
IDENTIFICATION: No. 305
DATE RECEIVED: 28.11.69

Enquiries quoting AN2034/70 to Officer in Charge please.

Spectrographic analysis by: R.R. Robinson

Officer in Charge, Analytical Section: A.B. Timms


for N. Draper
Director.

pkm

SAMPLE 44

AMDEL ANALYTICAL SERVICE

JOB: 2034/70

Semi-Quantitative Spectrographic Analysis Schemes A1, A2, A3, A4, A5 & A6

BATCH 1

Results in ppm unless otherwise stated. Detection limits in brackets

444

444

Sample No.	305							Sample No.	305								
A1								A2 Contd.									
Co (5)	150							Ge (1)	X								
Ni (5)	20							As (50)	> 10,000 ←								
Cr (20)	100							Sb (30)	30								
V (10)	40							A3									
W (50)	X							Te (20)									
Mo (3)	X							Tl (1)									
Mn (10)	X							P (100)									
Ta (100)	X							A4									
Nb (20)	X							Na (50)									
Be (1)	X ✓							Li (1)									
Th (100)	X							A5									
Pt (10)	X							K (5)									
Pd (10)	X							Rb (10)									
Os (10)	X							Cs (30)									
Ir (2)	X							A6									
Rh (2)	X							Ba (50)									
Ru (2)	X							Sr (10)									
A2								Y (10)									
Cu (0.5)	10,000 ←							La (100)									
Pb (1)	300 ✓							Ce (300)									
Zn (20)	50 ✓							Nd (300)									
Sn (1)	3,000 ←							Pr (100)									
Cd (3)	X ✓							Ti (100)									
Bi (1)	600 ✓							Er (100)									
Ag (0.1)	150 ✓							Sc (50)									
Au (3)	X ✓							Eu (50)									
Ga (1)	10 ✓																

Results are semi-quantitative. Elements apparently present in concentrations of economic interest should be redetermined by an appropriate accurate analytical technique. X = Not detected at limit quoted.

Geo A1-A2 1 x 29 7/12 8 12-67

DIAMOND DRILL HOLE RECORD
SCAMANDER MINING CORPORATION N.L.

Co-ordinates of Collar

N.....E.....
 Started...10.69.....
 Finished 8.11.69.....

Location ORLEOO MINE TASMANIA

Direction 337° Inclinat. 38° 48'
 Depth 333' Vert. Depth.....

Logged by Margaret Long Hole No 2

Elevation Collar RL 285.9 Size AX.

Casing Drill: E1000 Mindrill
 Wireline

DDF

REC.	SECTION		DESCRIPTION	NO.	SAMPLE					ASSAY
	From FT	To FT			From FT	To FT				
		17.67	NO RECOVERY							
88	17.67	19.00	SANDSTONE leached buff; joints and small quartz veins; iron stained							
100	19.00	21.00	AS ABOVE but with patches of siltstone							
88	21.00	23.00	AS ABOVE							
66	23.00	26.00	SILTSTONE to SANDSTONE buff as above							
100	26.00	27.50	SANDSTONE as above with some grey unleached in patches							
78	27.50	29.00	AS ABOVE							
100	29.00	31.25	SANDSTONE becoming SILTSTONE, iron stains as before.							
62	31.25	33.00	AS ABOVE							
92	33.00	35.00	AS ABOVE							
79	35.00	37.00	AS ABOVE							
30	37.00	42.00	SILTSTONE buff with haematitic streaks following fracture lines. cba 50°							

REC.	SECTION		NO.	SAMPLE		ASSAY						
	From FT	To FT		From FT	To FT	Dwt/ton		%				
						Au	Ag	Cu	Pb	Zn	As	
87	182.50	202.00										
91	202.00	204.25										
88	204.25	208.75										
58	208.75	209.75										
74	209.75	212.00		11	209.33	212.00	<0.1	2.8	.005	.011	.018	.07
99	212.00	225.50										
90	225.50	232.50		12	225.50	232.50	<0.1	1.4	.005	.015	.011	.07
84	232.50	235.25		13	232.50	235.25	<0.1	1.2	.002	.012	.008	.07
100	235.25	242.50		14	235.25	242.50	<0.1	1.6	.011	.003	.013	.06
80	242.50	251.00		15	242.50	251.00	<0.1	2.4	.017	.019	.007	.06
95	251.00	256.00		16	251.00	256.00	<0.1	1.4	.058	.006	.011	.06
68	256.00	262.75		17	256.00	262.75	<0.1	1.2	.014	.008	.008	.06

DIAMOND DRILL HOLE RECORD

SCAMANDER MINING CORPORATION N.L.

Co-ordinates of Collar

N.....E.....

Location. ORIECO. MINE., TASMANIA

Logged by. Margaret. Long....

DDH
Hole No. LA

Started...9-10-69.....

Direction...189°..... Inclination..49°15!.....

Elevation Collar. RL. 164.9..

Size. AX..

Finished. 21-10-69.....

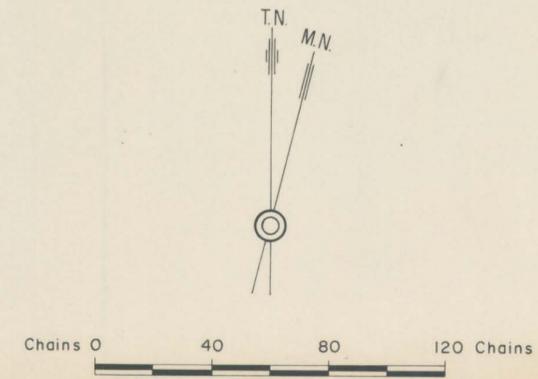
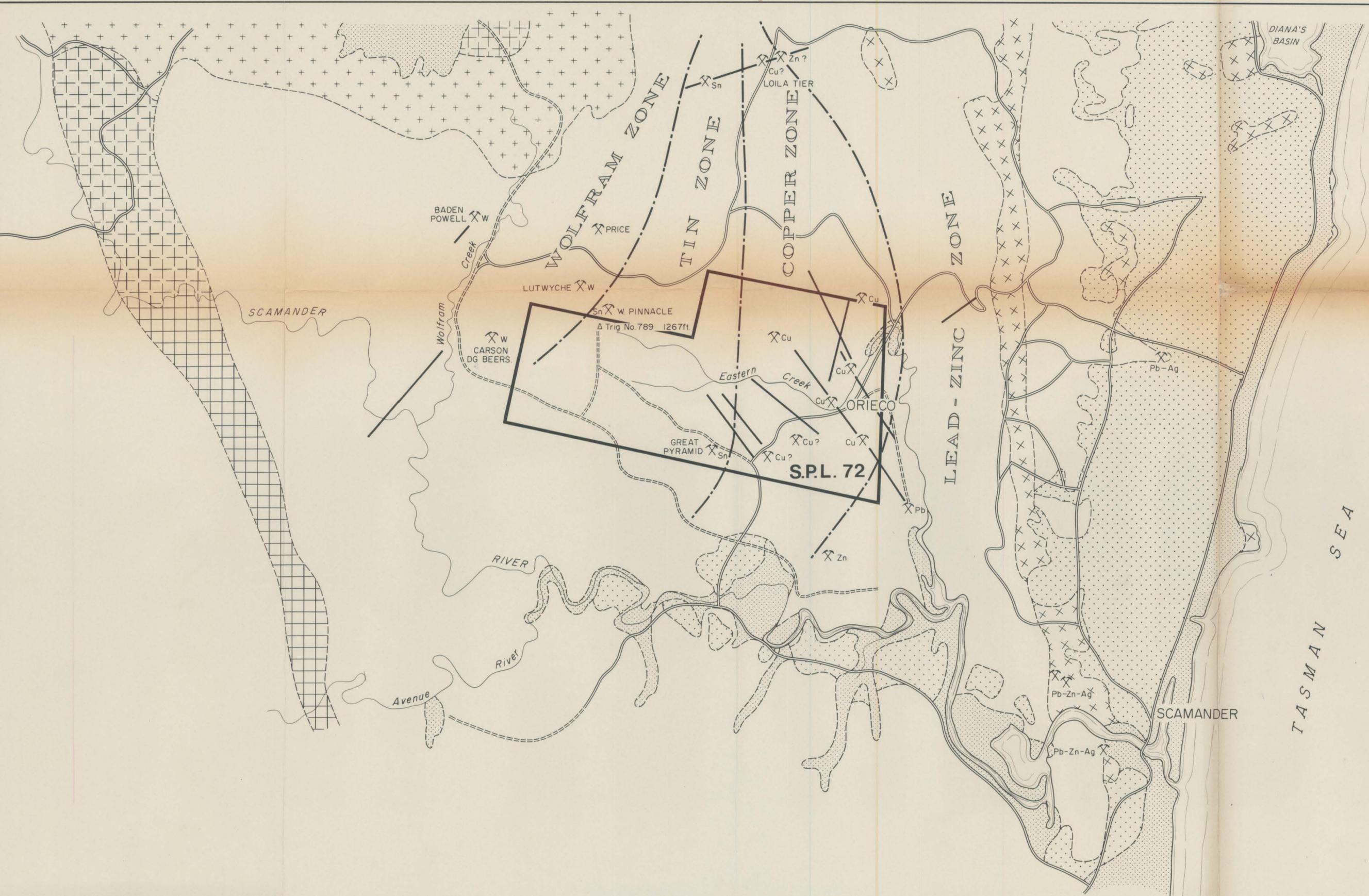
Depth. 300'..... Vert. Depth.....

Casing. Drill. El000. Mindrill
Wireline

REC.	SECTION		DESCRIPTION	NO.	SAMPLE		Dwt/ton		ASSAY		%	
	From FT	To FT			From FT	To FT	Au	Ag	Cu	Pb	Zn	As
26.5		14.00	SANDSTONE, SILTSTONE fine grained, pale grey iron stained fractures									
66	14.00	18.00	SILTSTONE to SANDSTONE grey, appears graded, slight mineralisation in 2 mm quartz vein.									
100	18.00	19.00	SANDSTONE darker grey with some quartz veins 1-2 mm in width.									
79	19.00	23.00	SANDSTONE medium grained grey with some leached mineralisation. Core broken in this region. Py, Aspy, c.c.									
100	23.00	25.50	SANDSTONE grey fine - iron stained joints.									
66	25.50	25.75	SANDSTONE fine grey with 2 mm quartz veins									
93	25.75	31.75	SILTSTONE buff grey with many minute fractures limonite or quartz filled; 30'6" - 31'0" highly frd. and recemented.									
83	31.75	32.75	SANDSTONE grey fine with filled fractures.									
25	32.75	34.75	Grey SILTSTONE and fine SANDSTONE with quartz veins; some leached mineralisation. Sulphides and 5% sapy, py, cC, cpy, th.									
75	34.75	36.75	SANDSTONE grey mineralised; arsenopyrite, pyrite	1	34.75 - 36.75	<0.1	5.6	.02	.22	.11	>1.0	

REC.	SECTION		NO.	SAMPLE		ASSAY
	From FT	To FT		From FT	To FT	
99+	65.50	75.50				
68	75.50	85.50				
97	85.50	88.50				
94	88.50	92.00				
86	92.00	95.00				
100+	95.00	102.00				
100	102.00	110.00				
100+	110.00	111.50				

REC.	SECTION		NO.	SAMPLE		Dwt/ton		ASSAY			%	
	From FT	To FT		From FT	To FT	Au	Ag	Cu	Pb	Zn	As	
90	202.00	203.75										
100	203.75	206.50										
84	206.50	211.25		4			<0.1	2.0	.02	.07	.34	.04
100	211.25	215.00										
96	215.00	219.25										
92	219.25	220.25										
82	220.25	222.50										
100	222.50	223.25										
84	223.25	225.75										
88	225.75	227.75										
100+	227.75	229.25										
87	229.25	234.25										
100+	234.25	235.33										
100+	235.33	236.58		5			<0.1	0.6	0.4	.01	>1.0	.04



REFERENCE

- QUATERNARY Alluvium and beach sands
- TERTIARY Sand and gravel
- SILURO-DEVONIAN Mathinna Group
- Igneous Rocks
 - Fine-grained biotite adamellite and associated acid dykes
 - Coarse-grained porphyritic biotite adamellite
 - Undifferentiated biotite adamellite
 - Hornblende - biotite adamellite
- DEVONIAN
 - Hornblende - biotite adamellite
- Fault zone
- Approximate geological boundary
- Suggested zonal boundary
- Road
- Track
- Creek
- Mine or prospect
- Wolfram lodes
- Tin-bearing lodes
- Copper-bearing lodes
- Lead-bearing lodes
- Zinc-bearing lodes
- Silver-bearing lodes

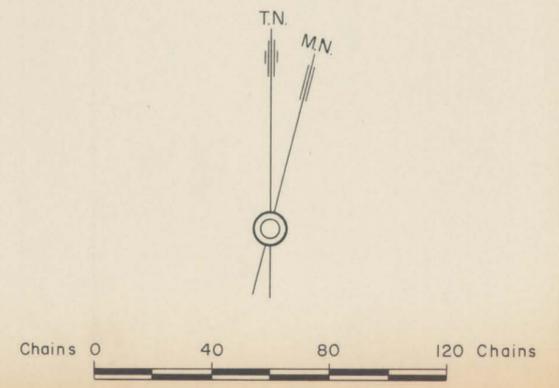
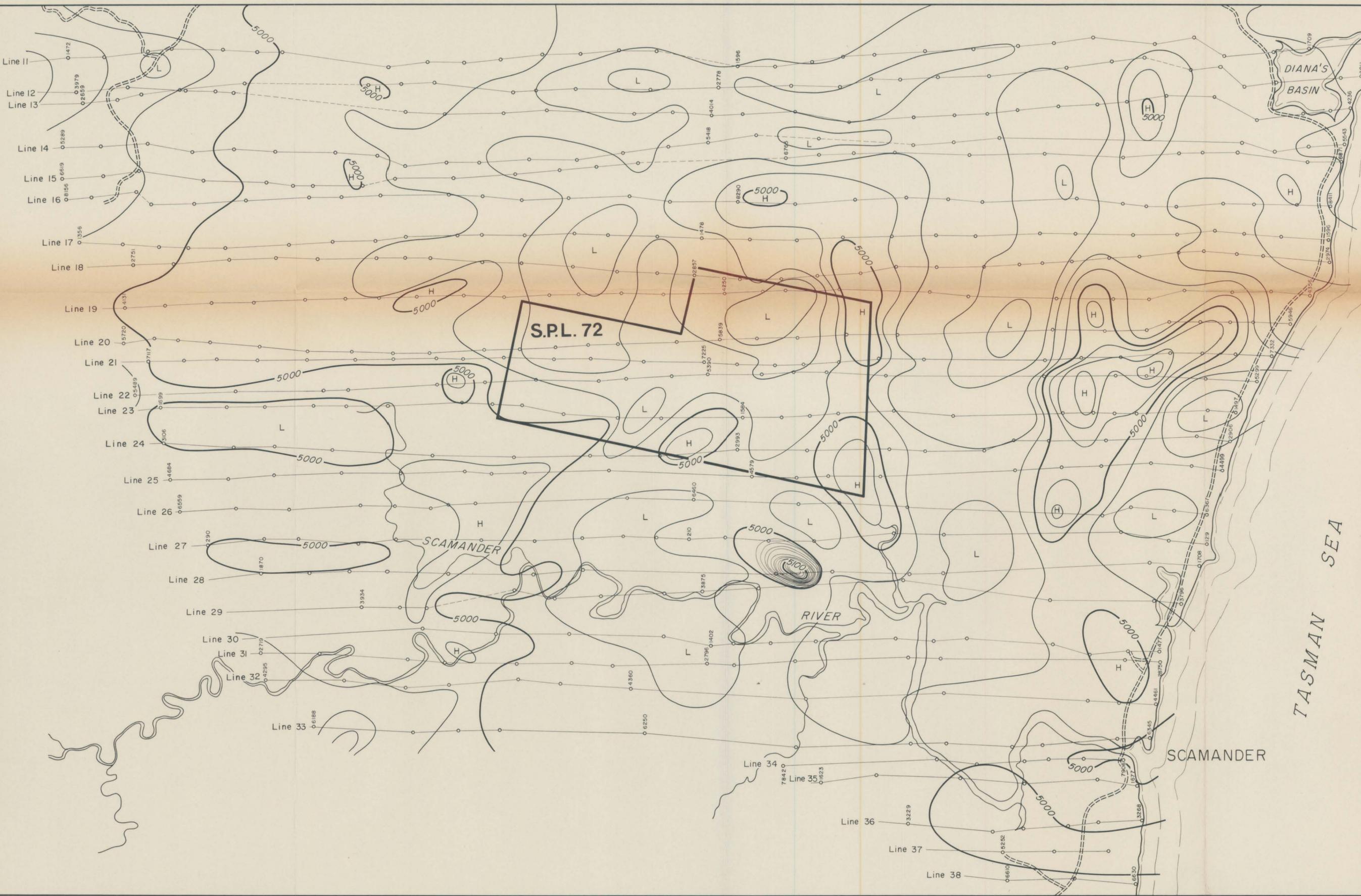
SCAMANDER MINING CORPORATION N. L.

SPECIAL PROSPECTING LICENCE
72

REGIONAL GEOLOGY
AND MINERALISATION
SCAMANDER-TASMANIA

SCALE : 1 INCH = 40 CHAINS | **FIGURE 1**

HALL, RELPH & ASSOCIATES PTY. LTD.



REFERENCE

- 500 FEET Mean Height Above Ground Level
- 10 GAMMA Minimum Contour Interval
- ○ Flight Lines
- 1/4 Mean Flight Line Spacing
- H High
- L Low
- 5839 Principal Point
- ~ Rivers
- Road

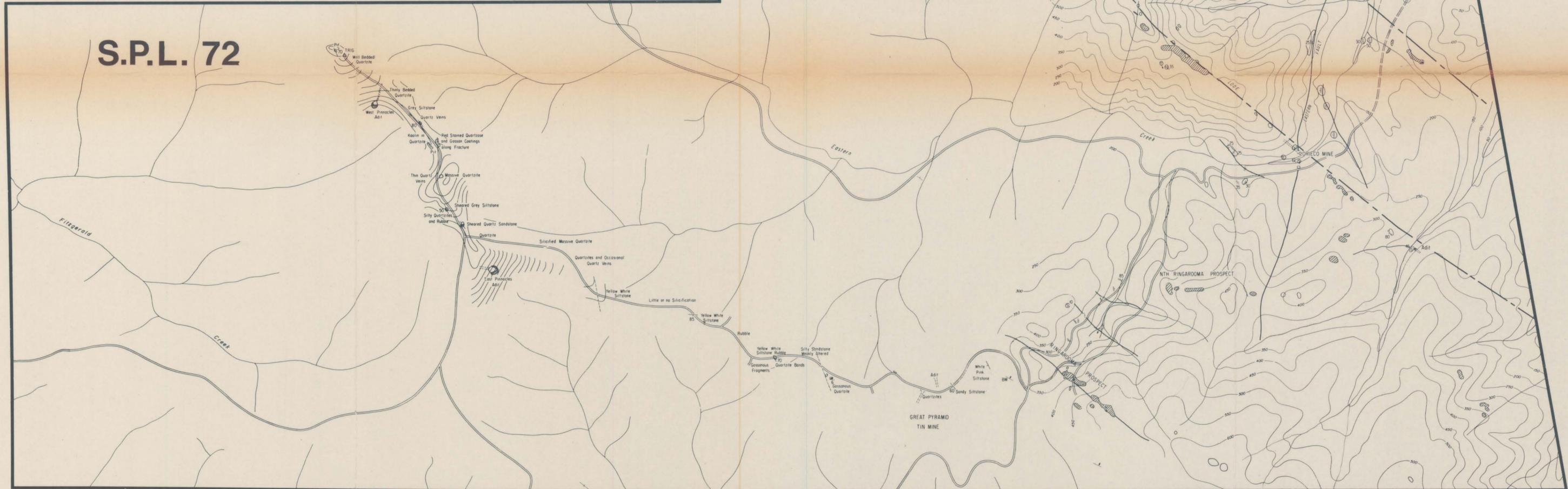
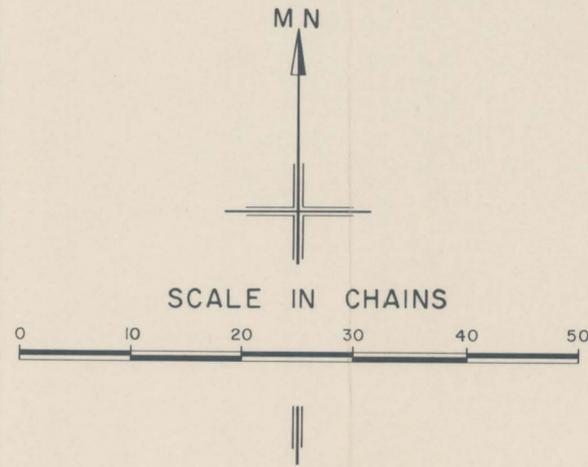
SCAMANDER MINING CORPORATION N.L.

SPECIAL PROSPECTING LICENCE
72

TOTAL MAGNETIC INTENSITY MAP
SCAMANDER - TASMANIA

SCALE : 1 INCH = 40 CHAINS **FIGURE 2**

HALL, RELPH & ASSOCIATES PTY. LTD.



REFERENCE

- | | | |
|---------------------------------------|----------------|-------------------|
| Road | Strike and dip | Lode |
| River | Cleavage | Gossanous outcrop |
| Topographical contours - 50' interval | Pitch of folds | Adit |
| Fault | Shaft | |

SCAMANDER MINING CORPORATION N.L.

SPECIAL PROSPECTING LICENCE

72

DETAILED GEOLOGY
WITH PROSPECTS, OLD WORKINGS
AND LOCATION OF GOSSANS
(TOPOGRAPHIC CONTOURS WHERE AVAILABLE)

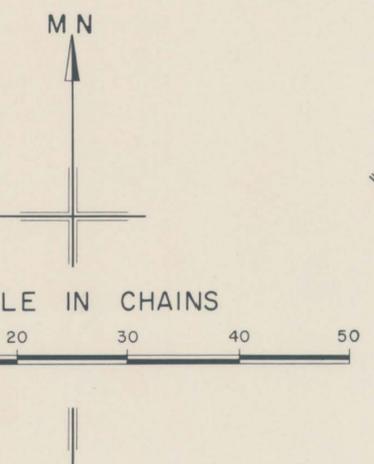
SCALE : 1 INCH = 10 CHAINS

FIGURE 3

HALL, RELPH & ASSOCIATES PTY. LTD.



S.P.L. 72



REFERENCE

- 10 GAMMAS Minimum contour interval
- H High
- L Low
- River
- Road
- x 23 Sample Location
- Scamander Rock Samples (with element symbols: Pb, Cu, Zn, Al, Ag, Sn, Bi, Be, Ga)

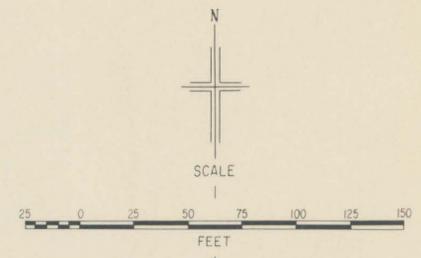
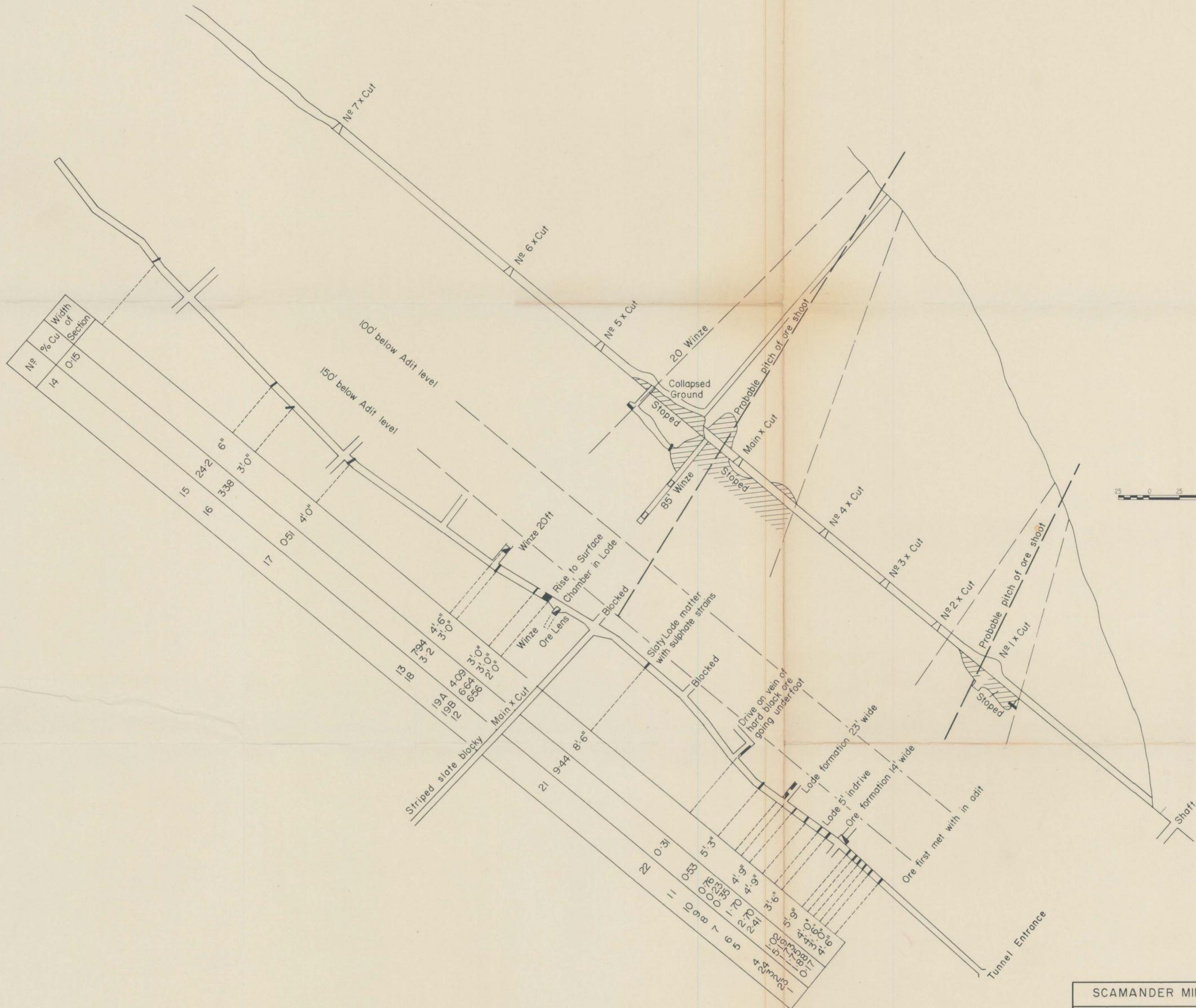
ASSAYS (p.p.m.)

	Cu	Pb	Zn	As	Ag	Bi	Ga	Be	Sn
0-100	0-200	0-200	0-200	0-200	0-10	0-100	0-10	0-3	0-100
101-200	201-300	201-400	201-400	11-50	101-200	11-15	4-6	4-6	101-300
201-300	301-800	401-800	401-1000	51-80	201-300	16-25	6-8	6-8	301-500
>300	>800	>800	>1000	>80	>300	>25	>8	>8	501-800
									>800

SCAMANDER MINING CORPORATION N.L.
 SPECIAL PROSPECTING LICENCE
 72
 GEOCHEMICAL SAMPLE LOCATIONS
 AND ASSAYS
 TOTAL MAGNETIC INTENSITY
 CONTOURS SUPERIMPOSED

SCALE : 1 INCH = 10 CHAINS **FIGURE 4**

HALL, RELPH & ASSOCIATES PTY. LTD.

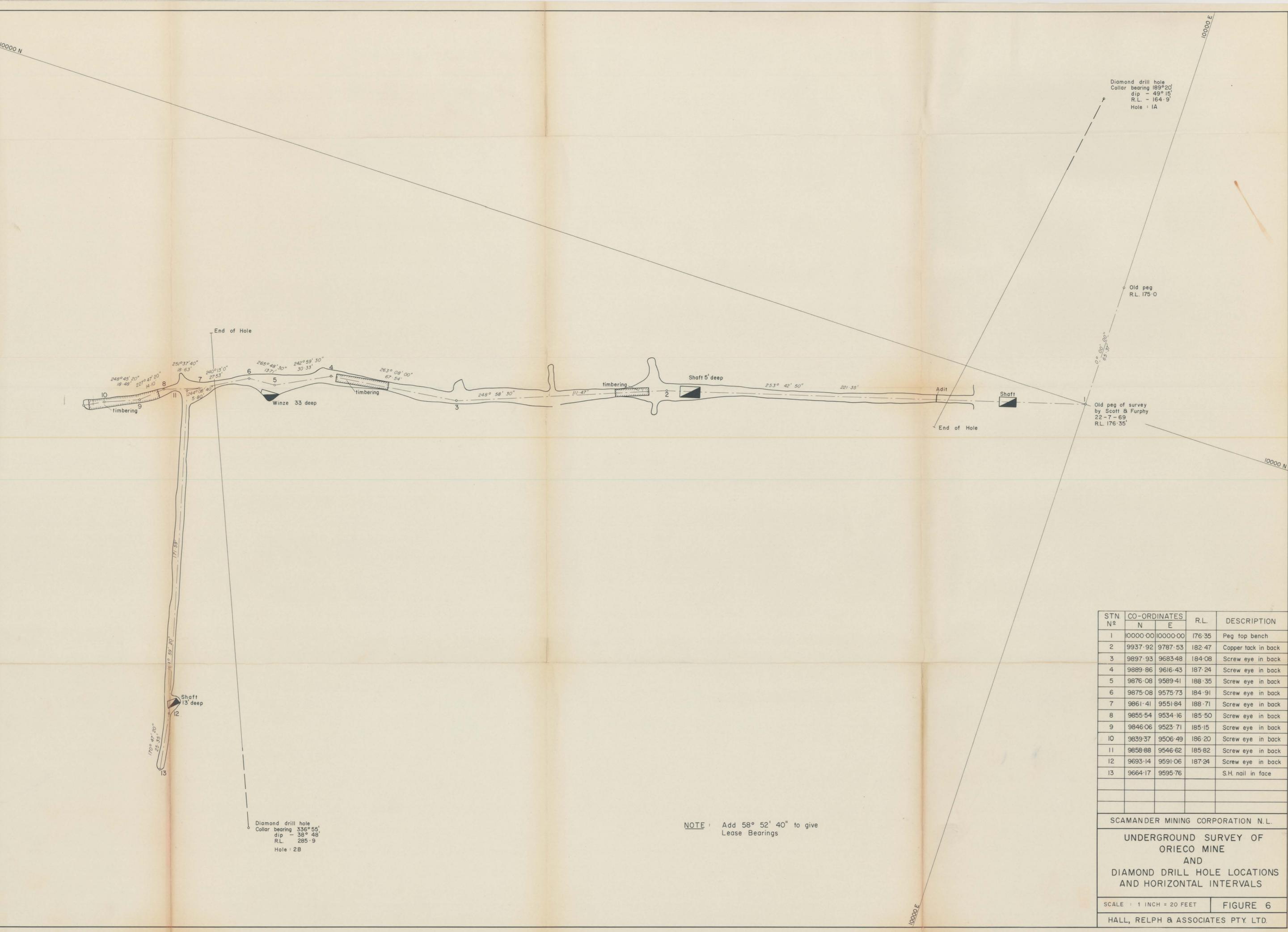


SCAMANDER MINING CORPORATION N. L.

PLAN OF ORIECO MINE
SHOWING
ASSAYS AND
LONGITUDINAL SECTION

SCALE : 1 INCH = 50 FEET FIGURE 5

HALL, RELPH & ASSOCIATES PTY. LTD.



STN N ^o	CO-ORDINATES		R.L.	DESCRIPTION
	N	E		
1	10000.00	10000.00	176.35	Peg top bench
2	9937.92	9787.53	182.47	Copper tack in back
3	9897.93	9683.48	184.08	Screw eye in back
4	9889.86	9616.43	187.24	Screw eye in back
5	9876.08	9589.41	188.35	Screw eye in back
6	9875.08	9575.73	184.91	Screw eye in back
7	9861.41	9551.84	188.71	Screw eye in back
8	9855.54	9534.16	185.50	Screw eye in back
9	9846.06	9523.71	185.15	Screw eye in back
10	9839.37	9506.49	186.20	Screw eye in back
11	9858.88	9546.62	185.82	Screw eye in back
12	9693.14	9591.06	187.24	Screw eye in back
13	9664.17	9595.76		S.H. nail in face

NOTE : Add 58° 52' 40" to give Lease Bearings

SCAMANDER MINING CORPORATION N.L.

UNDERGROUND SURVEY OF
ORIECO MINE
AND
DIAMOND DRILL HOLE LOCATIONS
AND HORIZONTAL INTERVALS

SCALE : 1 INCH = 20 FEET FIGURE 6

HALL, RELPH & ASSOCIATES PTY. LTD.