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AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY

REPORT
ON THE
RESULTS OF EXPLORATION
ON
EXPLORATION LICENCE NO. 17/68
TASMANIA
OCTOBER 1971 - JANUARY 1973

By
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Burnie, Tasmania
July 13, 1973

CONTENTS

	Page
Summary	1
Geology of the Kara Prospects	3
Petrography and Mineralization of the Skarn	5
Diamond Drilling	6
Trenching	7
Surveying	7
Bulk Sampling	7
Geological Exploration and Geochemical Sampling	7

ILLUSTRATIONS

	In Box
Geological Plan - Kara South	"
Geological Plan - Kara No.1	"
Geological Plan - Kara North	"
Drillhole Section 101	"
Drillhole Section 104	"
Drillhole Section 107	"
Drillhole Section 108	"
Drillhole Section 109	"
Drillhole Section 114	"
Drillhole Section 115	"
Drillhole Section 117	"
Drillhole Section 126	"

APPENDICES

A Drillhole Summary	Following Page 8
B Interim Report by Robertson Research (Australia) January 27, 1972	" "
C Progress Report by Robertson Research (Australia) April 10, 1972	" "
D Final Report by Robertson Research (Australia) July 28, 1972	" "
E Drillhole Logs	In Box

SUMMARY

Under the terms of the Joint Venture Option Agreement of October 1971, in respect of Exploration Licences 17/68 and 44/71 (now amalgamated with 17/68), field work in these areas by Australia and New Zealand Exploration Company commenced on 15th October, 1971. This report deals with the work accomplished up to and including January, 1973.

The initial programme, based on the work done previously by Tasminex N.L., called for the drilling of a minimum of three diamond holes at the Kara No.1 Tungsten Prospect in E.L. 17/68. These drill-holes were completed by the end of November 1971, with results sufficiently encouraging to justify an indefinite continuation of the programme. Exploratory drilling at Kara No.1 continued until early June 1972, a total of 31 holes being completed. At the same time a considerable amount of trenching, line cutting, surveying and local geological mapping was accomplished.

One of the most important features brought to light by the exploratory work was the deeply weathered state of most of the tungsten-bearing skarn rock, much of the primary scheelite having decomposed to secondary products not amenable to the same metallurgical treatment as fresh scheelite ore. Bulk samples of weathered tungsten-bearing material from trenches were sent to laboratories in Sydney and the U.S.A. for beneficiation and extraction tests. The problem of treatment of the weathered material is still under investigation.

From February to May 1972, a programme of regional geological reconnaissance and geochemical sampling was undertaken and covered the greater part of E.L. 17/68 on a broad reconnaissance scale. Though the results were largely negative, the work served as a useful guide to later, more detailed, regional work.

From June to late August 1972, field work was temporarily suspended due to the weather. The time was used for a review of results, preparation of maps and sections, and a mineralogical study of the drill-hole sample residues, some of which were sent to the U.S.A. for metallurgical tests.

Some further trenching and sampling near the Kara Prospects, to fill in gaps in information, was done in late August and September, 1972. Exploratory drilling at the Kara North Prospect commenced in late September and three holes were completed by early November 1972.

At this point it was decided that sufficient drilling had been done at the Kara Prospects for a preliminary evaluation of the deposits pending the results of the metallurgical testwork, the deciding factor being the amenability, or otherwise, of the weathered material to beneficiation. Priority was now given to regional work and the assessment of the tungsten potential of the E.L. as a whole, particularly the geologically favourable belt extending northwards from the Kara Prospects.

503

From November 1972 through January 1973, exploration work was concentrated in the area north and east of the Kara Prospects and consisted of intensive geochemical sampling and geological mapping with the object of delineating targets for future drilling. This work is continuing.

The average numbers of personnel employed on the above work throughout the period under review were as follows :

	<u>Geologists</u>	<u>Field Assistants</u>	<u>Contract Drillers</u>
Oct. 1971 to Jan. 1972	2	2	2
Feb. to May 1972	4	4	4
June 1972	2	2	-
July & Aug. 1972	1	1	-
September 1972	1	1	2
October 1972	2	1	2
Nov. 1972 to Jan. 1973	2	1	-

GEOLOGY OF THE KARA PROSPECTS

The geology of the Kara Prospects, as presently known, is illustrated in the three accompanying maps entitled "Kara North", "Kara No.1" and "Kara South". The overall geological picture of the area indicates a number of narrow synclinal infolds or pendants of sedimentary rocks, believed to be of Ordovician age, engulfed in an underlying mass of Devonian granite. Large areas of the granite and intruded sediments are concealed under a cover of Tertiary basalt.

At the Kara No.1 Prospect, where the geology is best known, an asymmetrical northward-plunging synclinal structure has been identified, with its apex just west of the Kara No.1 trig. beacon and its axis plunging northwards at approximately 16° . The structure is well illustrated in the accompanying drill-hole sections, which show the steep, slightly over-turned, western limb and the more gently dipping eastern limb. Both are underlain by granite which, at this point, has roughly conformable relations with the sediments.

The local Ordovician Succession at Kara No.1 comprises a basal sandstone unit, with some local quartzite and conglomerate, of thickness from a few feet to more than 50 feet, overlain by skarn of unknown thickness. In some places the sandstone unit is absent and skarn is found in direct contact with the granite. The skarn is mostly a diopside-garnet-amphibole rock containing considerable amounts of magnetite locally. Tungsten mineralization, in the form of scheelite or its weathering products, is restricted to a certain well-defined layer in the skarn, up to 70 feet thick and between 10 and 50 feet above the basal sandstone contact. Tungsten is irregularly distributed within this layer, generally, though not invariably, in association with magnetite. The overall stratigraphic control of the mineralization is clear, but its distribution in detail is determined by some other factor, probably micro-fracturing associated with the folding of the rocks. It has been established that the richest and thickest scheelite concentrations occur near the nose of the syncline, where the beds are most closely folded, and further north on the limbs of the structure the mineralization is much weaker and thinner.

Immediately to the east and south-east of the Kara No.1 Syncline there is evidence of a second and less well-defined syncline structure in which the succession is more complex and includes at least two skarn horizons separated by sandstone. This has been called the Eastern Ridge area. Its junction with the Kara No.1 syncline is concealed under basalt, but its eastern limb has been defined by trenching across the outcrop and by drilling on sections 114 and 117. The structure could possibly be a southerly extension of the Kara No.1 syncline faulted off to the east, but no concrete evidence of a fault has been found. On sections 114 and 117 scheelite occurs over a narrow width in the upper skarn horizon and in this instance is not associated with any abundance of magnetite. Drill-holes 119 and 122, on the same syncline limb, did not intersect any significant scheelite mineralization.

505

Southwards from Kara No.1 a granite-sandstone contact has been traced as far as the Kara South trig. beacon, but there is little or no skarn except at Kara South and the south-eastern locality known as Lohrie's Pits. Tungsten values in the Kara South skarn are very poor, but one trench at Lohrie's Pits showed significant values up to 4000 ppm W. Investigations have not yet been carried southwards from these points.

North of Kara No.1, in the valley of the Emu River, much of the country is very difficult of access and geological information is scarce. Tungsten-bearing skarn is exposed at the Kara North Prospect, east of the trig. beacon, but its structural relationship to the skarn at Kara No.1 is not yet known. One trench at Kara North revealed high grade scheelite, but drill-holes put down at this locality intersected only thin and poorly mineralized scheelite horizons at depth.

The Kara North skarn is bordered by sandstone on the west and granite on the east. Basalt covers the adjoining country to the east and north. On the eastern side there is a prominent magnetic anomaly which suggests the possibility of more magnetite-skarn being present under the basalt. On the northern side, drill hole No.132 penetrated skarn under a thick cover of basalt.

To the east of the Kara Prospects the older rocks are mostly concealed under Tertiary basalt, but detailed geological mapping has revealed a number of places where deeply incised streams have cut downwards through the basalt and exposed areas of underlying granite or sandstone. Very little skarn has been seen in these exposures, but stream sediment sampling at close intervals has shown much of the area to be highly anomalous in tungsten. Much work remains to be done before the structure of the area is understood, but the existence of some kind of repetition of the Kara situation under the basalt is a possibility.

To sum up, the Kara succession of Ordovician sandstone and skarns intruded by granite has been traced over a strike length of approximately 10,000 feet in a north-south direction. There are indications that it continues northwards under basalt and possibly southwards also, and there is a possibility of parallel structures involving the same rocks existing to the east, under a basalt cover. Economically significant tungsten mineralization has as yet been discovered only at Kara No.1 and the Eastern Ridge, where nearly all the exploratory drilling has been concentrated to date. Current investigations are oriented towards the discovery of other similar geological situations with a tungsten potential sufficient to justify drilling.

PETROGRAPHY AND MINERALIZATION OF THE SKARN

To assist in an understanding of the occurrence and distribution of tungsten in the skarn, a number of specimens from the Kara drill cores were sent for petrographic examination. This showed that the skarn was formed by intense calcium-iron metasomatism of original host rocks of unknown composition, hardly any of the original minerals remaining. The chief mineral constituents of the skarn are diopside, garnet and magnetite, or their supergene alteration products which are mainly clay minerals and limonite. Subordinate constituents include epidote, vesuvianite, biotite, tremolite, ferrohastingsite, chlorite, quartz, orthoclase, sphene, apatite, fluorite, scheelite and occasional chalcopyrite. The skarn minerals appear to have been formed in a fairly definite paragenetic sequence in which magnetite was a late-stage development, and most of the scheelite was introduced later than the magnetite. There is evidence of a final stage of minor fracturing and veining in which small amounts of ferrohastingsite, fluorite, apatite, carbonates, scheelite and sulphides were formed as the latest products of metasomatism. It is inferred that though scheelite may occur throughout the paragenetic sequence, it was formed dominantly during the late or final stages of the process.

This conclusion tends to confirm the field observation that some of the richest concentrations of scheelite are associated with zones of minor fracturing in the skarn. Consequently the state of fracturing of the rocks may be one of the most important controls of primary tungsten distribution.

DIAMOND DRILLING

The first three diamond drill-holes at Kara No.1, Nos. 101-103, were sited with a view to confirming the high tungsten values shown by percussion drill-hole No.6 and Trench No.1, put in by Tasminex N.L. The drill-hole intersections demonstrated the stratiform character of the mineralization and the synclinal structure of the beds, which was confirmed by trenching across the limbs of the syncline and by the drilling of holes 104-106 in the axial region.

Hole No.107 was sited 900 feet to the north along the projected synclinal axis. This hole penetrated the succession and reached granite at approximately the depth expected, but failed to intersect any significant tungsten mineralization, thus showing that the skarn was not uniformly mineralized.

The next two holes were rotary test holes, drilled as an experiment to test the effectiveness of roller drilling and sludge collection in weathered friable ground in which good core recovery was not possible. RTH 1 was sited next to hole 102 and RTH 2 next to hole 107. The agreement between the assay results obtained by roller drilling and coring in the same ground was satisfactory, so all subsequent holes were roller drilled to the depth at which the ground became solid enough for satisfactory coring.

A second drilling machine was then obtained and drilling proceeded on cross-section lines spaced 200 and 400 feet apart, mostly on the western limb of the main syncline where the best ore-grade intersections had been obtained. Trenching indicated a diminution of tungsten values northwards along this limb and the drilling confirmed this. The most northerly drill-hole, No.129, penetrated over 300 feet of magnetite skarn, but with a very small and sporadic content of scheelite. On the eastern limb of the main syncline and on the Eastern Ridge, some promising exposures of scheelite were revealed in trenches, but drilling showed the mineralized horizons to be thin.

Drilling at the Kara North Prospect commenced with hole No.130, which was sited near a good trench exposure of scheelite to test its depth extension, but failed to intersect any significant thickness or grade of scheelite at depth. Hole No.131, 300 feet to the north, furnished a slightly better intersection and demonstrated that the scheelite had some continuity. Hole No.132, 550 feet further north, intersected practically no tungsten mineralization but penetrated 186 feet of highly altered garnetiferous skarn under a cover of 159 feet of Tertiary basalt. The bottom of the skarn was not reached as the hole had to be abandoned due to drilling difficulties.

The drilling programme revealed, among other things, the highly localized nature of high grade tungsten mineralization in the skarn, with the inference that any workable orebodies are likely to be small, pocket-like and discontinuous.

During the period October 1971 to November 1972, 6,098 feet of drilling was accomplished in 34 drill-holes and 1,355 core and sludge samples were sent for analysis. A summary of the ore-grade intersections is given in Appendix A.

TRENCHING

Trenching by bulldozer or backhoe, to obtain geological information and expose bedrock for sampling, was carried out extensively at Kara No.1 and also at Kara South and North and Lohrie's Pits. Trenches were dug in advance of the drilling to elucidate the geological structure and facilitate the siting of drill-holes. Trench exposures of skarn were channel-sampled, normally in 5-foot lengths. Fifty-eight trenches were dug, totalling 15,307 feet in length, and 3,128 channel samples were sent for analysis.

SURVEYING

The area from Kara North to Kara South was surveyed by theodolite and plane table and the surveys were tied in to three triangulation beacons set up by a contract surveyor and coordinated on the State grid. Geological maps on scales of 1:600 and 1:2400 have been prepared and are revised and/or supplemented as new information becomes available.

BULK SAMPLING

For metallurgical testing purposes, bulk samples of weathered mineralized material from trenches and samples of composited drill core residues were sent to laboratories in the U.S.A. and in Sydney. The results of beneficiation and extraction tests are still inconclusive and further work on these lines is to be carried out.

GEOLOGICAL EXPLORATION AND GEOCHEMICAL SAMPLING

From February to May 1972 a regional geological reconnaissance covering the greater part of E.L. 17/68 was carried out by one geologist with one field assistant. Panned stream sediment samples were collected from a number of widely spaced localities in order to furnish a broad picture of the regional distribution of tungsten and the existence or otherwise of geological environments favourable for mineralization. Though the results were largely in the negative sense, i.e. large parts of the E.L. were found to be apparently lacking in any tungsten potential, a few

positive results were obtained and served as useful pointers for future exploration work.

During late 1972 and early 1973, geological and geochemical work was concentrated in the area north and east of the Kara Prospects. A prominent magnetic anomaly discovered by Tasminex N.L. in basalt country immediately east of the Kara North Prospect was re-located, surveyed and sampled by hand augur, 259 soil samples being taken. The results were negative due to the universal covering of basalt and further investigation of this prominent anomaly will necessarily involve drilling through the basalt.

Geological mapping on both sides of the Emu River has been carried out as far as conditions permit, but owing to the thick soil and vegetation cover, only very limited information can be obtained without the aid of a bulldozer to cut access tracks and dig trenches. About 2 miles of access tracks have been put in and more will be required. Close stream sediment sampling has shown the highly anomalous character of much of the area. The problem remaining is to track down the sources of these anomalies. The accompanying maps show the geology as known at present and the results of stream sediment sampling.

APPENDIX A

<u>Hole No.</u>	<u>Total Depth</u> (ft)	<u>Ore Intersection</u>	
		<u>Depth</u> (ft)	<u>Grade %WO₃</u>
101	170	55-80	0.47
102	108	0-70	0.88
103	170	55-95	0.49
104	88	0-45	0.63
105	105	0-55	1.01
106	90	5-15	0.33
107	114	-	-
RTH1	104	0-76	0.83
RTH2	64	-	-
108	148	64-80	0.40
109	155	56-80	0.87
110	144	22-95	1.01
111	124	36-85	0.47
112	190	6-116	0.74
113	297	200-220	0.64
114	153	-	-
115	147	12-124	0.87
116	135	24-84	0.45
117	133	58-70	1.05
118	93	18-68	0.92
119	188	-	-
120	133	15-102	0.42
121	366	42-208	0.65
122	192	-	-
123	184	18-30	0.79
124	115	30-36.5	0.51
125	288	160.7-190.2	0.52
126	123	96-105.5	0.29
127	296	220-240	0.29
128	399	-	-

APPENDIX A CONT.

<u>Hole No.</u>	<u>Total Depth</u> (ft)	<u>Ore Intersection</u>	
		<u>Depth</u> (ft)	<u>Grade %WO₃</u>
129	303	-	-
130	259	-	-
131	175	152.7-160	0.84
132	345	-	-
	<u>6,098</u>		
<u>Total</u>	<u>6,098</u>		

ROBERTSON RESEARCH (AUSTRALIA) PTY. LIMITED

REPORT NO. 181

PROJECT NUMBER 712/6629

INTERIM REPORT ON INVESTIGATIONS OF
TUNGSTEN ORE SAMPLES SUBMITTED BY
AUSTRALIA AND NEW ZEALAND EXPLORATION
COMPANY

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C O N T E N T S

	<u>Page No.</u>
1. INTRODUCTION	1
2. SAMPLES RECEIVED	2
3. PRELIMINARY INVESTIGATION	4
3.1 Procedure	4
3.2 Results: Sample M101/A	5
3.3 Results: Sample M101/H	8
3.4 Conclusions	9
4. EXAMINATION OF SAMPLE M101/D	11
4.1 Preliminary Investigation with Mineral Acid Removal of Iron	11
4.2 Investigation with Oxalic-acid Attack	13
4.3 Distribution of WO_3 in Clay Fraction	15
4.4 Further Investigation of Oxalic-acid Leaching	16
5. PROCESSING INVESTIGATIONS	18
5.1 Magnetic Separation, Leaching of M101/A	18
5.2 Flotation Test on Sample M101/E	19
5.3 Acid, followed by Alkali Leaching, M101/D	20
5.4 Comments	21
6. WORK IN PROGRESS	23
7. GENERAL CONCLUSIONS	24

1. INTRODUCTION

Eight samples of very-weathered material from a single drill hole were submitted for preliminary mineralogical and mineral-processing investigations. Earlier investigations had failed to identify the nature of the tungsten mineralisation. The first objective of test work was, therefore, to undertake a thorough mineralogical examination to determine the form in which tungsten occurred.

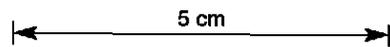
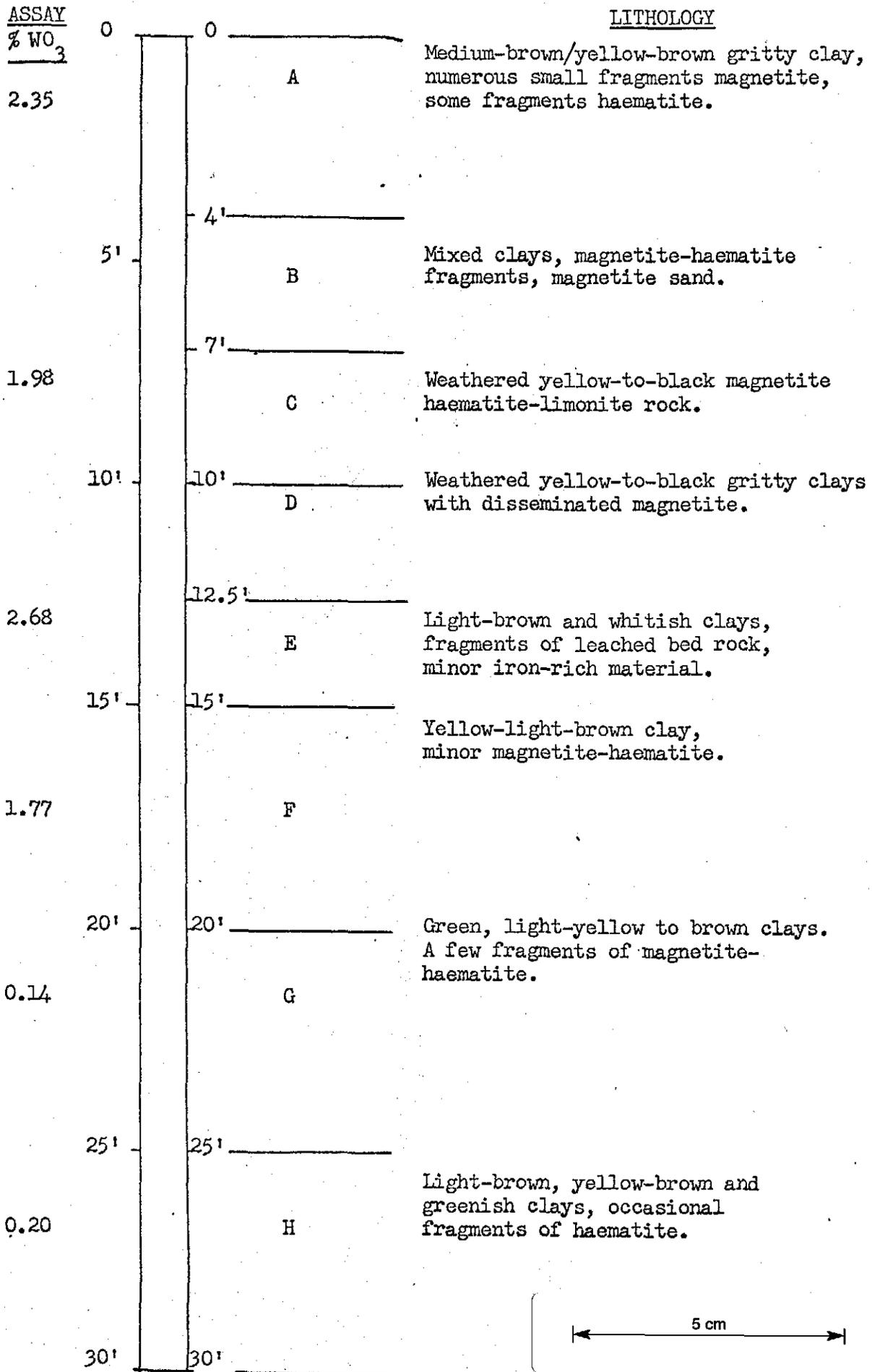
Following on from this, a preliminary evaluation of processing requirements was to be made.

2. SAMPLES RECEIVED

The eight samples were marked M101/A - M101/H and represented successive mineralised sections in one drill hole. They had been selected on a lithological basis and did not coincide with fractions assayed during the drilling programme. The details are shown in Table I.

16

TABLE I



3. PRELIMINARY INVESTIGATION

Samples M101/A and M101/H were selected for investigation as representing the two extremities of the section. Because of the failure of a conventional mineralogical approach, it was decided to make a simple physical separation of the components with the objective of concentrating the tungsten mineral in one or more of the fractions.

3.1 PROCEDURE

- (a) The samples were first pulped in water containing sodium hexa-metaphosphate as a dispersant for the unbonded clay fines. The clay suspension was decanted off after standing and then acidified to allow flocculation and filtration of the clay fraction. The settled coarse fraction was re-pulped several times to ensure thorough removal of the clay content.
- (b) A heavy-liquid separation was then carried out on the de-slimed fraction, using bromoform as the medium.
- (c) The heavy-mineral fraction was separated into magnetic and non-magnetic fractions, using a laboratory hand magnet.

(d) The non-magnetic heavy fraction was treated with hot hydrochloric acid. The objective of this procedure was to remove iron coating which was masking the mineral content. The process liberated material with a density of less than 2.9 and hence a second bromoform separation was carried out.

(e) The original sample and the various fractions were analysed by X-ray fluorescence for WO_3 .

3.2 RESULTS: SAMPLE M101/A

The results of the physical separation and the chemical analyses carried out are summarised in Table II.

TABLE II: SEPARATION OF SAMPLE M101/A (TEST 1)

	<u>% Weight</u>	<u>% WO_3</u>	<u>% Distribution of WO_3</u>
Clay:	13.8	3.49	23.1
Light fraction:	11.5	2.27	12.6
Non-magnetic heavy fraction:	39.7	3.06	57.6
Magnetic heavy fraction:	35.0	0.40	6.7

Calculated head analysis: 2.08% WO_3

Experimental head analysis: 2.42% WO_3

These results indicate a slight concentration of tungsten in the clay and non-magnetic heavy-mineral fractions.

The non-magnetic heavy-mineral fraction was then selected for further study. This fraction was leached with concentrated hydrochloric acid to remove all the iron oxides present. This process dissolved over 80% of the sample and released a large proportion of light material that had been cemented by the iron oxides. A second separation using bromoform was carried out to remove this new light fraction. The results are summarised in Table III.

TABLE III

	<u>Weight %</u> <u>(of original)</u>	<u>Weight %</u> <u>(of fraction)</u>	<u>% WO₃</u>
Light fraction:	4.7	11.8	13.7
Heavy fraction:	0.7	1.7	*

* insufficient for analysis.

The small heavy-mineral fraction was examined under the petrological microscope and is composed almost entirely of green ferromagnesian minerals.

The light fraction was examined by X-ray powder diffraction techniques which indicated the presence of the mineral tungstite (WO₃, H₂O). No other tungsten mineral was detected. The diffraction scan also indicated the

presence of minor quartz and traces of a poorly-ordered 7 Angstrom phyllosilicate mineral, probably chlorite or kaolinite. Subsequently, an X.R.D. examination of a sample of the unleached non-magnetic heavies (3.06% WO_3) was carried out. It did not reveal the presence of any tungsten mineralisation, probably due to the low concentration (<5% WO_3) and the very high iron content.

An X-ray fluorescence scan of the light fraction revealed the presence of trace quantities of tin, molybdenum and zinc.

A check material balance indicated a considerable loss (almost 50%) of the tungsten values occurred in the acid leaching of the non-magnetic heavies. Analysis of the acid leach liquor indicated the presence of only 2 - 3 p.p.m. WO_3 in solution and it is believed that much of this loss must have occurred as ultra-fine colloidal material passing through the filter paper during filtration and washing.

Tungstite is a relatively common but poorly-described mineral that occurs in an earthy form, but is occasionally found as microscopic platy crystals. Its true formula, density and crystal form are still unknown. However, its possible earthy form is compatible with the concentration of tungsten in the lighter fractions of this separation.

Naturally-occurring tungstite is indistinguishable from meta-tungstic acid formed artificially by the strong acid decomposition of scheelite or other tungsten minerals. Thus the tungstite detected by X.R.D. may be present as naturally-occurring tungstite or may be derived by decomposition from tungstate minerals.

A check by U.V. lamp on the original sample did not indicate the presence of scheelite.

3.3 RESULTS: SAMPLE M101/H

The method used to study Sample M101/H was the same as that used for Sample M101/A. However, owing to the lower concentration of tungsten present in this sample, further detailed determinative work was not carried out. The results of the physical separations and the chemical analyses carried out on the resulting samples are summarised in Table IV.

TABLE IV: SEPARATION OF SAMPLE M101/H (TEST 2)

	<u>% Weight</u>	<u>% WO₃</u>	<u>% Distribution</u>
Clay:	19.3	0.275	51.8
Light fraction:	48.8	<0.005	-
Non-magnetic heavy fraction:	16.4	0.18	28.8
Magnetic heavy fraction:	15.1	0.13	19.15

Analysis of the total sample indicated a WO_3 content of 0.1%. Re-calculation of the results for the different fractions indicated a WO_3 content for the total sample of 0.102%.

Following acid leaching of the non-magnetic heavy fraction and a heavy-liquid separation, investigation of the resulting heavy fraction indicated the presence of a very small amount of a low birefringent, uniaxial positive mineral that may be scheelite. However, if this mineral is indeed scheelite, it is present in too small a quantity to account for tungsten assays. The majority of the tungsten is probably present as tungstite. The remaining heavy material is composed of green ferromagnesian minerals.

3.4 CONCLUSIONS

At this stage, the following provisional conclusions were reached:

- (a) The tungsten mineralisation is predominantly associated with the lighter, finer material in the sample.
- (b) It seems likely that the tungsten is present as tungstite.

(c) The possible presence of scheelite in the sample M101/H from the lowest section of the hole suggests that scheelite may be the primary source of the secondary tungstite.

(d) The non-magnetic heavy-mineral fraction in the sample is composed of ferro-magnesian minerals.

4. EXAMINATION OF SAMPLE M101/D

4.1 PRELIMINARY INVESTIGATION WITH MINERAL ACID REMOVAL OF IRON

For the second stage of the test programme, work was commenced on Sample "D". Drill-core assays and the lithological description indicated that this fraction would have the highest tungsten content.

A portion of the sample was screened on 20 mesh and the two fractions separated as described in the previous section (Section 3.1).

The results achieved are detailed in the following table:

TABLE V: SEPARATION OF SAMPLE M101/D (TEST 3)

	<u>Weight %</u>	<u>WO₃</u>	
		<u>%</u>	<u>Distribution</u>
+ 20 mesh:			
Clay fraction:	6.0	6.3	8.0
Light fraction:	1.8	4.2	1.6
Heavy fraction:	17.9	1.65	6.2
-20 mesh:			
Clay fraction:	32.0	8.15	55.4
Light fraction:	0.7	N.D.	-
Heavy magnetics:	32.8	1.3	9.0
Heavy non-magnetics:	8.8	<u>10.5</u>	19.8
<u>CALCULATED HEAD ASSAY:</u>		<u>4.71</u>	.

The results again show a concentration of tungsten with the clay and non-magnetic fractions. It seems likely that the coarse non-magnetic fraction is largely fine material cemented with iron oxides.

The heavy fraction (+20 mesh) and the heavy non-magnetic fraction (-20 mesh) were subjected to attack by 10% sulphuric acid which dissolved 94.7% and 87.6% respectively of the sample.

Work was discontinued on this sample at this stage

as it was apparent that any tungstate mineral would have been converted to the "tungstite" form by the mineral-acid attack.

4.2 INVESTIGATION WITH OXALIC-ACID ATTACK

As a follow-up to the previous work, it was planned to repeat the procedure using an organic acid for removing the iron-oxide coating and cementing the clay fines. Oxalic acid was selected for this purpose as it was known to dissolve iron oxide and it was believed to have no attack on scheelite. Available references did not indicate any reaction with tungstic acid although citric and tartaric acid were reported to form complexes with tungstate in solution.

A further sample of M101/D was separated using the following modified procedure:

- (a) A 500-gm. fraction, pulverised to minus 1/16", was wet-ground for two minutes (previous samples had merely been pulverised to 1/16" size).
- (b) The sample was de-slimed by decantation. The procedure was repeated several times. The clay fraction settled and was filtered.

(c) The laboratory hand magnet was used to separate a magnetic fraction. The results of this separation are recorded in Table VI.

TABLE VI: SEPARATION OF SAMPLE M101/D (TEST 4)

	<u>Weight %</u>	<u>WO₃</u>	
		<u>%</u>	<u>% Distribution</u>
Clay fraction:	38.5	7.56	64.2
Magnetic fraction:	50.8	1.13	12.7
Non-magnetics:	10.7	<u>9.84</u>	23.2
<u>CALCULATED HEAD</u>			
<u>ASSAY:</u>		<u>4.54</u>	

In the next stage, portions of the clay fraction and the non-magnetic fraction were leached with hot (90 degrees C) 10% oxalic acid, in two stages, with the following results:

TABLE VII: EFFECT OF OXALIC-ACID LEACH

	<u>% Weight</u>	<u>% WO₃</u>		<u>Tungsten Distribution</u>		
		<u>Loss</u>	<u>Before</u>	<u>After</u>	<u>Residue</u>	<u>Liquor</u>
Clay fraction:	41.4	7.56	1.64	13.1	78.7	8.2
Non-magnetics:	41.1	9.84	1.13	6.9	75.4	17.7

Distribution of WO_3 Overall

Clay-fraction residues:	8.4%
Magnetic-fraction residues:	12.7%
Non-magnetic fraction residues:	1.6%
Oxalic acid leach liquor:	68.0%
Unaccounted loss:	9.4%

Comments:

It should be pointed out again that the purpose of the oxalic-acid leach procedure had been to remove iron in order to concentrate tungsten in the residue for analysis and identification. The oxalic-acid solution was not expected to contain any significant amount of tungsten and it therefore came as something of a surprise to find the residue reduced in tungsten content! In fact, over 80% of the tungsten contained in the samples leached went into solution.

4.3 DISTRIBUTION OF WO_3 IN CLAY FRACTION

In order to determine the sizing of the tungsten-bearing minerals in the clay fraction, a portion of the clay fraction separated in Test 4 (unleached) was sub-sieve-sized using a Cyclosizer. The distribution of sizes

and analyses are tabulated in Table VIII.

TABLE VIII: SAMPLE M101/D - CLAY FRACTION

<u>Size</u>	<u>% Weight</u>	<u>% WO₃</u>	<u>% Distribution</u>
> 39.3 micron	20.2	4.95	13.2
39.3 - 29.9 micron	7.9	4.4	4.6
29.9 - 20.9 micron	9.6	4.8	6.1
20.9 - 14.5 micron	9.4	5.3	6.6
14.5 - 10.9 micron	5.9	5.75	4.5
< 10.9 micron	47.0	10.4	65.0

The trend of these figures suggests that much of the tungsten may be present as ultra-fine particles of the order of one micron in size. They confirm that conventional gravity and flotation processing methods could not be applied efficiently to concentrating this material (except possibly as a means of removing much coarser gangue material).

4.4

FURTHER INVESTIGATION OF OXALIC-ACID LEACHING

Some further work was carried out on portions of the clay fines from Test 4 to confirm the dissolution of tungsten mineral by oxalic acid and to determine whether other organic acids might similarly dissolve the tungsten. It was also thought possible that the extremely-fine tungstite might be going into a colloidal solution form

on boiling.

In each case, the sample, weighing approximately 20 gms., was heated at 90 - 100 degrees C for four hours with 100 ml. of 10% solution. The resulting solution was filtered and assayed and the residue dried and set aside for further leaching or analysis.

The results of this test were:

TABLE IX: LEACHING OF CLAY FINES (TEST 8)

	<u>Weight Loss</u>	<u>WO₃ g/l</u>	<u>% of WO₃ leached</u>
Boiling water:	Nil	0.03	0.2
Tartaric acid:	small	0.13	0.9
Citric acid:	underway		
Acetic acid:	underway		
Oxalic acid - 1:	20%	3.91 *	25.8)
- 2:	25%	4.96	32.9) 73.3
- 3:	20%	2.2	14.6)
- 4:	underway		

* also contained 12 g/l Fe.

5. PROCESSING INVESTIGATIONS

Concurrently with the mineralogical work detailed in the previous sections, some preliminary mineral-process work was undertaken.

5.1 MAGNETIC SEPARATION, LEACHING OF MLOL/A

A 500-gm. sample was ground for two minutes in the laboratory rod mill. The pulp was de-slimes by decantation and the coarse fraction subjected to magnetic separation with a laboratory hand magnet. The clay fraction was split into two fractions, one fraction being leached over a 24-hour period with cold 10% caustic-soda solution, the other fraction being leached with 10% sulphuric acid. The results are:

TABLE X: MAGNETIC SEPARATION + LEACHING, M101/A (TEST 5)

	<u>Weight %</u>	<u>WO₃</u>	
		<u>%</u>	<u>Distribution</u>
Magnetics:	24.5	0.40	3.9
Non-magnetics:	31.1	2.95	36.1
Clay fines:	44.4	<u>3.4</u>	60.0
<u>CALCULATED HEAD:</u>		<u>2.54</u>	
Caustic leach:		0.15 g/l	1.05 .
Acid leach:		Nil	

5.2 FLOTATION TEST ON SAMPLE M101/E

A 500-gm. sample was treated by a standard flotation procedure suitable for floating scheelite. Conditions were as follows:

- (a) The ore was ground for two minutes (all mineral minus 36 mesh).
- (b) Reagent additions were:

Soda ash - to pH 10

Sodium silicate - 0.2 lb./ton
(as depressant for silicates)

Quebracho - 1.0 lb./ton
(as depressant for carbonates)

Oleic acid - 0.2 lb./ton
(scheelite collector - added in three stages)

Methyl Isobutyl Carbinol - frother.

- (c) Conditioning - 10 minutes
Flotation - 15 minutes

(d) The concentrate was cleaned by re-flotation.

TABLE XI: FLOTATION (TEST 6)

	<u>Weight %</u>	<u>WO₃</u>	
		<u>%</u>	<u>Distribution</u>
Concentrate:	1.31	2.35	1.7
Cleaner tails:	29.7	2.30	37.0
Final tails:	69.0	1.65	61.3

5.3

ACID, FOLLOWED BY ALKALI LEACHING, MLO1/D

Following the failure of the previous alkaline leaching test, it was decided to undertake a two-stage leach:

- hot hydrochloric acid, to remove iron-oxide coating and to break down tungstate minerals (30% HCl, 90 degrees C).
- hot caustic-soda leach to dissolve meta-tungstic acid (10% NaOH 60 degrees C).

A 100-gm. ground sample was treated successively with 200-ml. batches of each solution. The magnetite content was not removed. The following results were achieved:

TABLE XII: HOT ACID/ALKALI LEACH, MG/L/D (TEST 7)

	<u>Weight %</u>	<u>WO₃</u>	
		<u>%</u>	<u>Distribution</u>
Residue:	77.8	3.0	62.7
Alkaline leach:		<u>5.35</u> g/l	37.4
<u>CALCULATED HEAD:</u>		<u>3.73</u>	

5.4 COMMENTS

- (1) Cold caustic-soda solution leached very little tungsten from clay fines. Tungstite would be expected to be soluble. The tungstate minerals (scheelite, ferberite, etc.) would not be attacked. The final solution was an olive-green colouration and the sample lost about 20% in weight, suggesting that iron was passing into solution. Perhaps there was insufficient alkali present to leach the tungsten.
- (2) Hot caustic soda dissolved about 40% of the tungsten content after acid attack which removed a considerable quantity of iron oxides.

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(3) Flotation was not successful.

6. WORK IN PROGRESS

Investigation of the drill-core samples, presently underway, has the objective of determining the mineralisation of the fractions separated in Test 4 (see Table VI). This involves X.R.D. investigation of the fines (7.6% WO_3) and the non-magnetics (9.8% WO_3) and polished-section microscopy on the magnetic fraction. Infra-red analysis may also be used.

Further leaching tests are underway as indicated in Table IX.

Work has commenced on a batch of six costeamed samples. Each sample is being dried, examined thoroughly and specimens selected for mineralogical examination. Each sample will then be crushed to $-3/8"$ and a split taken for WO_3 and Fe analysis.

7. GENERAL CONCLUSIONS

- (a) In the samples examined, tungsten is concentrated in the ultra-fine clay fraction. It largely appears to be present as the secondary mineral tungstite.
- (b) A magnetite fraction in the ore carries a relatively-low tungsten concentration which may be, in part, entrained fines.
- (c) Because of the ultra-fine particle size, the ore is not amenable to conventional gravity or flotation processing. It may be feasible to up-grade it by magnetic separation to remove the relatively-low tungsten magnetite fraction.
- (d) Leaching with hot caustic soda does not appear particularly promising at this stage with fairly-low extraction of tungsten and possibly dissolution of other elements.
- (e) Oxalic acid has been found to dissolve both iron and tungsten from the ore.
- (f) At this stage, leaching would appear to be the most promising prospect of recovery. Further information is being sought on the reaction of oxalic acid. Additional work on this approach, and on

leaching with alkali, carbonate or ammonia, is
warranted.

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ROBERTSON RESEARCH (AUSTRALIA) PTY. LIMITEDMINERAL-PROCESSING SECTIONPROGRESS REPORT

10th April, 1972.

N O T E: The purpose of this report is to keep clients informed of the progress being made on their projects. Caution should be exercised in interpreting interim results which are given solely to indicate the general trend of our investigation.

CLIENT: Australia and New Zealand Exploration Company

PROJECT NO.: 712/6629 - Tasmanian Tungsten Ore

INTRODUCTION: Work is being carried out on a heavily-weathered residual soil derived from a magnetite-garnet skarn. The samples assay 1 - 2% WO_3 .

Test work reported previously has confirmed that the major portion of the tungsten is located within the lattice of goethite and haematite. These two iron minerals, together with magnetite, make up over 90% of the samples examined. The magnetite is free of tungsten. A minor amount of unweathered scheelite is present in some samples.

Mineral-processing investigations have indicated that:

- (a) the bulk of material to be processed can be reduced by 50% by removal of a magnetite concentrate.
- (b) flotation of the scheelite content is hampered by excessive fines.
- (c) recovery of the tungsten content will necessitate a chemical attack on the goethite/haematite.
- (d) a soda-ash roasting technique appears promising with an 86% extraction in preliminary tests.

Test work during the past month has concentrated on further soda-ash roasting investigations. Work on acid leaching has been abandoned due to low leaching rates (except under strong acid and high-temperature conditions) and the problem of handling extreme fines.

In addition, this report includes a brief study and costing on the soda-ash roasting technique in order to

indicate the economic prospects of the procedure.

ROASTING
INVESTIGATION:

(1) Roasting tests have been undertaken on a composite sample of ore from the costeans after removal of a magnetite concentrate. The sample was prepared in the following manner:

- (a) Crush to -16 mesh (B.S.S.).
- (b) Screen at 200 mesh (B.S.S.).
- (c) Magnetic separation on +200 mesh.
- (d) Grind +200 mesh non-magnetics to pass 200 mesh screen.

The composite assayed 1.15% WO_3 .

Magnetic separation removed 58% of the weight. The non-magnetic fraction assayed 2.75% WO_3 .

(2) All roasting tests were carried out in a thermostatically-controlled muffle furnace using iron crucibles. The calcine was leached with warm water and the residue filtered and washed.

SODA-ASH

ROASTING RESULTS: Twelve tests were run at varying temperatures, times and reagent additions to indicate most suitable operating conditions. The results are detailed in the following table:

	<u>Residue</u> <u>% WO_3</u>	<u>% Recovery</u> <u>(in liquor)</u>
25% soda-ash addition:		
950 degrees C roasting temperature:		
4 hours roast:	1.10	59
850 degrees C roasting temperature:		
4 hours roast:*	0.38	86
4 hours roast:	0.50	82
700 degrees C roasting temperature:		
4 hours roast:	0.90	69
21 hours roast:	0.85	71

	<u>Residue</u> <u>% WO₃</u>	<u>% Recovery</u> <u>(in liquor)</u>
11% soda-ash addition:		
850 degrees C roasting temperature:		
4 hour roast:	1.05	61
8 hour roast:	1.05	61
700 degrees C roasting temperature:		
4 hour roast:	1.65	36
21 hour roast:	1.45	42
5% soda-ash addition:		
850 degrees C roasting temperature:		
4 hour roast:	2.70	3
8 hour roast:	2.60	4
700 degrees C roasting temperature:		
21 hour roast:	2.35	14

* N.B.: This test was stirred during the roasting period.

SALT ROASTING RESULTS:

The use of a salt roast was considered as a possible alternative to soda-ash leaching. Two tests were carried out. The first, using salt only, showed some unaccounted loss, possibly due to volatilisation. The second test used a mixture of salt and carbon. Neither test produced significant extraction.

	<u>Residue</u> <u>% WO₃</u>	<u>% Recovery</u> <u>(in liquor)</u>
20% salt/4 hours/850 degrees C:	2.30	1
10% salt - 10% carbon/ 4 hours/850 degrees C:	-	<1

The apparent loss in the first test was of the order of 15 - 20%.

ROASTING AND LEACHING:

To investigate the possibility that the mechanism of tungsten release was a migration followed by segregation of a separate tungsten phase, a sample was roasted without reagent addition for 4 hours at 1,030 degrees C. The sample was then leached with 10% caustic soda. There was no significant extraction of tungsten values.

SODA-ASH
ROASTING OF
SCHEELITE:

The possibility of tungsten losses arising from non-attack of the scheelite present was considered. A portion of scheelite concentrate assaying 8.24% WO_3 was subjected to standard conditions of 20% Na_2CO_3 /850 degrees C/4 hours roast.

	<u>Residue</u>	<u>% Recovery</u>
Scheelite concentrate:	1.35% WO_3	84

ROASTING
REACTIONS:

The composition of the non-magnetic concentrate is approximately:

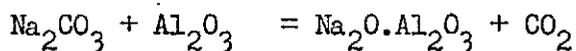
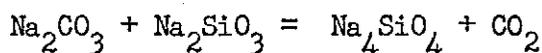
29% Goethite
63% Haematite
8% (Quartz
(Halloysite
(Gibbsite
(Scheelite

giving an approximate chemical analysis:

82% Fe_2O_3
6% H_2O
5% SiO_2
3% Al_2O_3
2.7% WO_3
0.3% CaO
1% K_2O, Na_2O

The roasting reactions are believed to involve:

- (a) the evolution of moisture from the goethite structure.
- (b) the liberation of carbon dioxide from the soda ash.
- (c) reaction between soda ash and the SiO_2 , Al_2O_3 and WO_3 content to produce soluble salts, sodium silicate, sodium aluminate and sodium tungstate.



- (d) on a stoichiometric basis, the above reactions would require a soda-ash addition exceeding 20% for complete reaction. The major consumer of soda ash is the silica which combines with 3.6 times its own weight (to produce the orthosilicate).
- (e) the diffusion of tungsten out of the goethite-haematite lattice to a site accessible to the reaction with soda ash.
- (f) the iron minerals take no part in the reaction with soda ash.

DISCUSSION OF RESULTS:

Tungsten is successfully extracted from solid solution within goethite-haematite and from scheelite by roasting with soda ash at 850 degrees C and leaching the residue.

Reagent consumption is high and may be the major factor in deciding the economics of the process. The high consumption largely results from unwanted reactions with quartz and clay present in the feed. The possibility of using a lime-soda sinter process is currently under investigation. Lime preferentially reacts with silica to form dicalcium silicate.

Further work is also required to optimise roasting time and temperature conditions.

BRIEF ECONOMIC APPRAISAL:

In order to assess whether the current line of investigation warrants more thorough assessment, the following very rough assessment has been made:

(1) INTRINSIC VALUE OF TUNGSTEN CONTENT

- Assume 1% WO_3 is recoverable.
- Market price (Metal Bulletin, March, 1972) is £16.50 per long ton with $\text{WO}_3 = \$35.00$ Australian.
- Intrinsic value is \$35.00 per ton at current prices.
- The following table indicates value at varying prices:

<u>Market Price</u> <u>£ per l.t.u.</u>	<u>Intrinsic Value</u> <u>\$ Aust. per Ton</u>
16.50	35.00
20.00	43.00
25.00	54.00
30.00	64.00

(2) POSSIBLE OPERATING COST

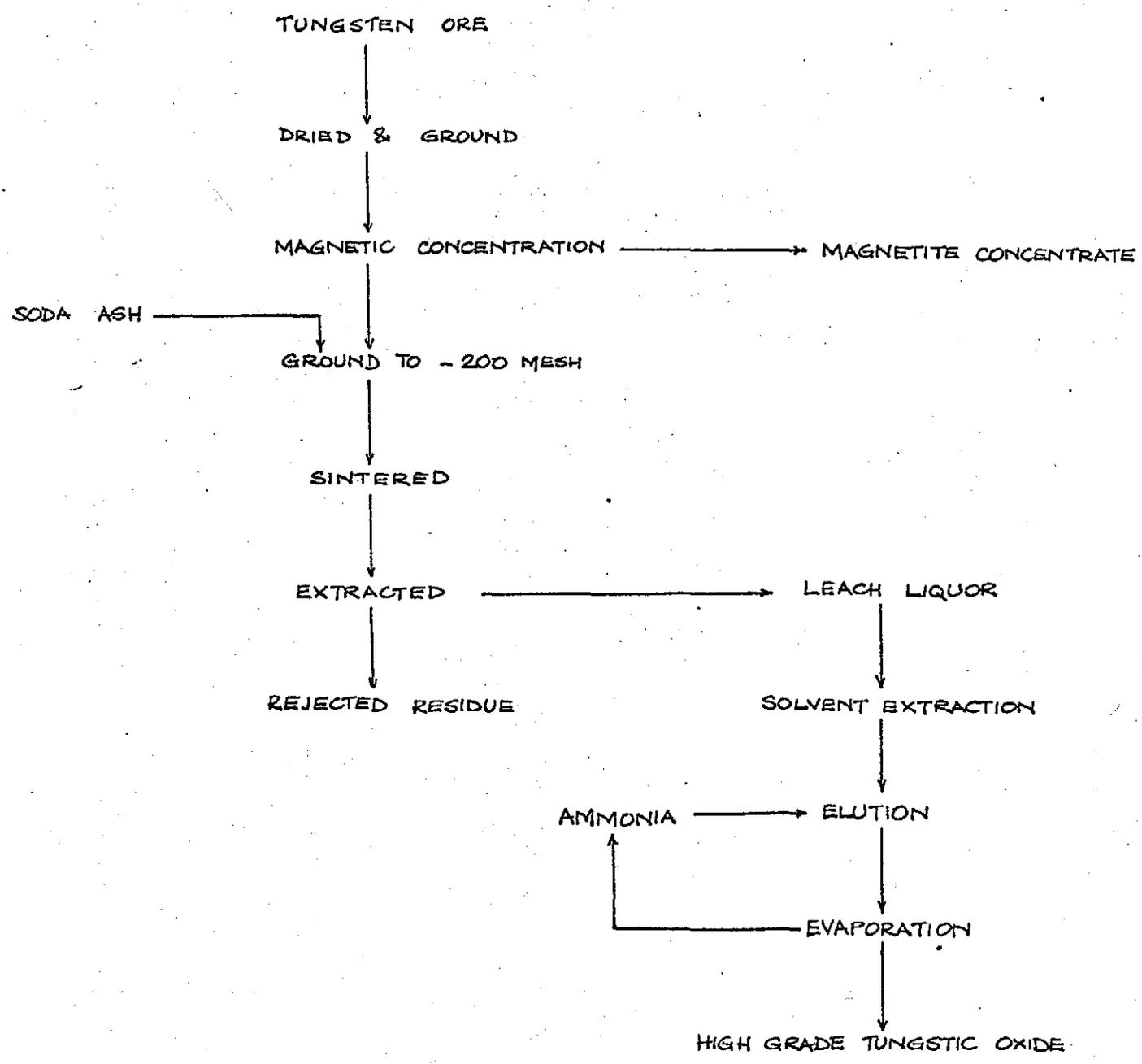
- Assume 500 t.p.d. mined by simple open-cut method.
- Flow sheet as indicated.
- Plant operating on three shifts.
- 50% of ore is rejected by magnetic separation.
- 25% addition of soda ash to non-magnetic concentrate.
- Low-cost hydropower available at \$0.01 per kWh.
Furnace oil available at \$0.15/gallon.
Soda ash available at \$71.00 per ton.
- Capital cost of \$15 million amortised over 10 years.

	<u>Operating Cost</u> <u>\$Aust. per Ton</u>
Mining:	2.00
Processing:	
Labour (30 men):	1.50
Fuel: 50 gal./ton @ \$0.15:	7.50
Power: 200 kWh/ton @ \$0.01:	2.00
Supplies: Soda ash, 1/8 ton @ \$71.00	9.00
Other supplies:	2.00
Water:	0.10
Maintenance and spares:	2.00
Supervision:	1.00
Miscellaneous expenses:	<u>0.90</u>
	28.00
Capital amortisation, say:	<u>10.00</u>
	<u>38.00</u>

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SCHEMATIC FLOWSHEET : SODA-ASH SINTER PROCESS



(3) DISCUSSION

- (a) On the assumed tonnage and grade basis, the process would appear to be a marginal proposition at current tungsten market-price levels.
- (b) There is considerable scope for reducing these costs. If the lime/soda process is effective, a saving of about \$4.50 would be achieved with further cost reduction if limestone is used.
- (c) The economics would also be improved if the reserves warranted exploitation at a more rapid rate.
- (d) The possibility of marketing as a by-product, magnetite concentrate from this ore should be investigated. The magnetite appears to be relatively-free of haematite and has a low titanium content, which factors indicate a possible outlet for use as coal washing heavy medium. Heavy-medium magnetite sells at \$40.00 - \$50.00 per ton. Other lower-price outlets may be available (such as Savage River Mines magnetite processing facility).

(4) CONCLUSIONS

Further work appears warranted. The overall economics are very dependent on tonnage of ore available, average grade and the ore's content of silica and alumina. These factors must be assessed by the client.

RDB:hms

24. 4.72.

ROBERTSON RESEARCH (AUSTRALIA) PTY. LTD.MINERAL PROCESSING SECTIONFINAL MEMORANDUM NO. 229

28th July 1972

CLIENT: Australia and New Zealand Exploration CompanyPROJECT NO: 712/6629 - Tasmanian Tungsten Ore

INTRODUCTION: Anzex has been prospecting a tungsten deposit in Northern Tasmania. The mineralization occurs in a heavily-weathered residual soil derived from a magnetite-garnet skarn, with assays averaging 1-2% WO_3 .

The tungsten occurs largely within the lattice of goethite and haematite, which, together with magnetite, constitute over 90% of the samples examined. The magnetite, which is of primary origin, is free of tungsten. A minor amount of scheelite is present in some less-weathered samples.

Because of the location of the tungsten within the lattice of the iron oxide minerals, its recovery can only be by means of a chemical attack which destroys the iron mineral lattice. Various approaches have been considered with a roasting technique using soda-ash or lime/soda-ash showing the greatest promise. Over 85% of the lattice-borne tungsten could be recovered by this method.

A brief economic appraisal indicated that the deposit would have to contain something over 1.5-2.0 million tons with a recoverable grade of 1% WO_3 for soda-ash roasting to be practicable.

Previous reports on this project were issued on 31.12.71, 27.1.72, (Report No. 181), 7.3.72 and 10.4.72. Work was halted towards the end of April 1972 pending a full appraisal. This report covers testwork undertaken during April and not previously reported. Most of this work has concentrated on the possibility of a cheaper roasting technique using a combination of lime and soda-ash.

LIME-SODA
ROASTING:

Previous testwork had shown that tungsten can be successfully extracted from solid-solution within goethite-haematite by roasting with soda-ash at 850°C and leaching the residue.

Reagent consumption is high, largely as a result of unwanted side reactions with quartz and clay present in the ore. As lime preferentially reacts with silica to form dicalcium silicate, and is a much cheaper base than soda-ash, the possibility of achieving a satisfactory roast-leach with a combination of both reagents was investigated, and encouraging results obtained.

The roasting tests were conducted on a composite sample after removal of the magnetite concentrate. The average assay was as follows:

2.20%	WO ₃
30.0 %	Fe
14.0 %	SiO ₂
9.1 %	Al ₂ O ₃
9.5 %	Loss on ignition
0.23%	Mg
0.4 %	Ca

Roasting was carried out in a thermostatically controlled muffle furnace using iron crucibles. The calcine was leached with warm water and the residue filtered and washed.

The results are tabulated in Table I.

DISCUSSION
OF RESULTS:

Previous testwork had achieved an 86% recovery after roasting with a 25% soda-ash addition. Similar results were achieved with an addition of 10% soda-ash and 15% lime. This programme of tests has indicated that:

- 1) A combination of soda-ash and lime is effective in the solubilizing roast of this tungsten-bearing one.
- 2) A temperature of 850°C is effective for soda-ash alone, but 1050-1100°C is necessary when lime is present.
- 3) Insufficient testwork was completed to establish an optimum reagent requirement. The 10% soda-ash - 15% lime combination was effective but excessive. An 80% recovery was achieved with a 7%-12% combination. On a stoichiometric basis, only 1-2% soda-ash is required to react with the tungsten.
- 4) Reaction is complete in under 60 minutes.

OTHER TESTWORK: Some tests were undertaken on residues from earlier tests in order to determine the cause of high residue losses in some cases.

- 1) High residues in the case of soda-ash roasting tests done at 950°C were believed due to sintering of the sample. Soda-ash melts at 851°C. Where sintering had taken place, the samples were broken up in a mortar and pestle before leaching, but low recoveries resulted.

One residue, assaying 1.10% WO_3 after a 950°C roast and leach, was finely ground and leached with warm dilute soda-ash solution (pH 10.0-10.5). No appreciable additional extraction took place.

- 2) The effect of leaching high residues with caustic soda solution or ammonia was also investigated. Only minor additional leaching was achieved.

CONCLUSIONS:

These results indicate that reagent costs can be considerably reduced by using lime. Further work would be required to establish optimum conditions for processing, if the exploration programme indicated the size of the deposit to be commensurate with this type of processing.

TABLE I: ROAST-LEACH TESTS

NO.	REAGENT - %		CONDITIONS		RESIDUE	RECOVERY
	Soda-Ash	Lime	Temperature	Time	% WO ₃	%
1.	25	-	700°C	4 hrs	0.90	69
2.	25	-	850 "	4 "	0.38	86
3.	25	-	950 "	4 "	1.10	59
4.	11	-	700 "	4 "	1.65	36
5.	11	-	850 "	4 "	1.05	61
6.	20	-	850 "	4 "	0.46	78
7.	10	10	850 "	4 "	1.92	4
8.	7	12	1100 "	1 "	0.81	58
9.	7	12	850 "	1 "	1.90	0
10.	28	-	850 "	1 "	0.27	87
11.	10	12	1100"	1 "	0.69	71
12.	7	12	1100 "	1 "	0.50	80
13.	10	15	1100 "	1 "	0.64	73
14.	7	15	1100 "	1 "	0.72	69
15.	10	15	1100 "	4 "	0.25	83
16.	7	12	1100 "	4 "	1.05	54
17.	10	15	1050 "	1 "	0.30	88
18.	10	15	1150 "	1 "	0.34	86

APPENDIX E

DRILLHOLE LOGS

AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY

DRILLING LOG

(DRILL HOLE NO. RTH 1)

(ROTARY TEST HOLE)

LOGGED BY ADG

LOCATION E.L. 17/68

DATE STARTED JANUARY, 1972

PROJECT KARA ONE PROSPECT

DATE COMPLETED JANUARY, 1972

DATE JANUARY, 1972

COORDINATES As per plane-table plan; coordinate system in process of revision. 10 ft NE of DDH 101/102

DRILLED BY ASSOCIATED DIAMOND DRILLERS

SURVEYED BY ASSUMED NO DEVIATION

INCLINATION VERTICAL BEARING _____

TOTAL DEPTH 104'

DATE _____

COLLAR ELEVATION _____

CASING UNCASED

SHEET NO. 1 OF 4

FOOTAGE (ft)			Sludge Est. perc. recov.	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S						
From	To	Interval					FOOTAGE (ft)			ppm or % W			
							From	To	Interval				
0	3.0	3.0	100%	(0-76': <u>Sludge return</u> (76-104': <u>Cored</u>)		Sample Number RTH1/1	0	3.0	3.0	7680			
				(0-7': <u>Very minor scheelite noted</u> (7-102.5': <u>Scheelite noted throughout though proportion variable.</u>)									
				<u>0-17.0': Magnetite Skarn Sludge:</u>									
				<u>0-3.0': Red-brown and black sludge magnetite content approx. 40-50%.</u>									
3.0	5.0	2.0	100%	<u>3.0-7.0': Black magnetite sludge Magnetite content approx. 70-80%.</u>		2	3.0	5.0	2.0	5610			
5.0	7.0	2.0	100%	<u>One fragment of magnetite at 3.5' contains ? tungstite as well as minor scheelite.</u>		3	5.0	7.0	2.0	6800			
				<u>7.0-17.0': Grey-brown sludge Magnetite content 20-30%</u>		4	7.0	12.0	5.0	1.33%			
12.0	15.0	3.0	100%			5	12.0	15.0	3.0	1.96%			
15.0	18.0	3.0	100%			6	15.0	18.0	3.0	2.02%			
18.0	20.0	2.0	100%			7	18.0	20.0	2.0	1.27%			
20.0	23.0	3.0	100%	<u>17.0-33.0': Yellowish-brown & grey brown Gritty Sludge.</u>		8	20.0	23.0	3.0	1.18%			
23.0	25.0	2.0	100%	<u>Magnetite content 5-10%</u>		9	23.0	25.0	2.0	1.01%			
25.0	28.0	3.0	100%			10	25.0	28.0	3.0	4350			
28.0	30.0	2.0	100%			11	28.0	30.0	2.0	4640			
30.0	32.0	2.0	100%			12	30.0	32.0	2.0	1.01%			

FOOTAGE (ft)			Sludge Estim. Perc. Recov.	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S								
From	To	Interval					FOOTAGE(ft)			ppm or % W					
				From	To	Interval									
32.0	35.0	3.0	100%	<u>33.0-56.0': Brownish-green Greenish-black Sludge</u> Brownish-green sludge at 33' becoming increasingly greenish-black towards 56' as magnetite and actinolite content increases Magnetite content at 33' Approx 15-20% increasing to approx 50-60% at 56'.		RTH1/13	32.0	35.0	3.0	7470					
35.0	40.0	5.0	100%			14	35.0	40.0	5.0	7140					
40.0	44.0	4.0	100%			15	40.0	44.0	4.0	9530					
44.0	46.0	2.0	100%			16	44.0	46.0	2.0	1.56%					
46.0	51.0	5.0	100%			17	46.0	51.0	5.0	1.23%					
51.0	56.0	5.0	100%			18	51.0	56.0	4.0	5760					
56.0	61.0	5.0	100%	<u>56.0-76.0': Magnetite-Actinolite Sludge:</u> Greenish-black Magnetite content approx 75-80%		19	56.0	61.0	5.0	2240					
61.0	66.0	5.0	100%			20	61.0	66.0	5.0	4630					
66.0	70.0	4.0	100%			21	66.0	70.0	4.0	3230					
70.0	73.0	3.0	100%	<u>Core: 76.0-102.5': Magnetite-Actinolite Skarn Rock:</u> Green & black; magnetite content about 65-70%. Minor occasional pyrite <u>Foliation:</u> At 78' at 20°; at 92' at 35°; at 100.5' at 50° <u>102.5-104.0': Granitized Sandstone:</u>		22	70.0	73.0	3.0	3600					
73.0	76.0	3.0	100%			23	73.0	76.0	3.0	4380					
76.0	78.5	2.5	2.5 Core			24	76.0	80.0	4.0						
78.5	86.5	8.0	8.0			25	80.0	85.0	5.0						
86.5	101.0	14.5	14.0			26	85.0	90.0	5.0						
101.0	104.0	3.0	3.0			27	90.0	95.0	5.0						
						28	95.0	100.0	5.0						
						29	100.0	102.5	2.5						
						30	102.5	104.0	1.5						

Rotary Test Hole 1 was sited in order to test particularly the quality and quantity of sludge return in ground of this nature by penetration with a roller bit as opposed to coring.

The reasons for concern to try out this technique were principally:

1. The difficulties previously encountered in obtaining core in any case over intervals of mineralized magnetite skarn by single and

FOOTAGE			DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S						
From	To	Interval				FOOTAGE						
						From	To	Interval				
			<p>double-tube diamond drilling.</p> <p>2. The quality of return as sludge by "diamond drilling" with a water circulation only.</p> <p>3. The economic concern of paying for a sludge return at the same cost per foot as core, once the initial diamond drill-holes had established that in many instances this was the only type of sample obtained.</p> <p>In DDH 101, no return of core or sludge was obtained over a significant interval in possibly mineralized ground. In DDH's 102-105, samples were obtained variably of core or sludge and variable in quantity. Such samples of sludge as were recovered inevitably also raised the question of their quality. In this particular regard it was by no means obvious whether a water circulation was adequate to recover the heavier mineral constituents of the rock especially, in their due proportion.</p> <p>In consequence it was considered that mud should be circulated for the particular reason of obtaining the best or better recovery of the heavier minerals. Furthermore it would assist in support of the hole and maintenance of circulation, and perhaps also by 'sealing' the hole reduce chances of adulteration of material from lower horizons passing through upper mineralized zones. The question of whether "protective" casing from this point of view should be employed may well also require consideration.</p> <p>As would be expected, it is certainly apparent that the mud assisted maintenance of circulation and sludge return since in direct contrast to holes such as DDH 101 & 102, when the water circulation was constantly being lost necessitating reaming down of casing for its restoration, in RTH 1 the return was maintained throughout from 0-76' and on two occasions only was it slightly reduced (but quickly</p>									

054

AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY

DRILLING LOG

LOCATION E.L. 17/68
 PROJECT KARA 1 PROSPECT
 COORDINATES As per plane-table plan; coordinate system in process of revision. Same collar as DDH 107
 INCLINATION 80° BEARING 90°
 COLLAR ELEVATION _____

DATE STARTED JANUARY, 1972
 DATE COMPLETED JANUARY, 1972
 DRILLED BY ASSOCIATED DIAMOND DRILLERS
 TOTAL DEPTH 64'
 CASING UNCASED

(DRILL HOLE NO. RTH 2
 (ROTARY TEST HOLE
 LOGGED BY ADG
 DATE JANUARY, 1972
 SURVEYED BY _____
 DATE _____
 SHEET NO. 1 OF 2

FOOTAGE			Est. perc. recov. of Sludge	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S								
From	To	Interval					FOOTAGE			W					
						Sample Number	From	To	Interval	ppm.					
0	5.0	5.0	60%	Rotary Test Hole 2 was designed primarily to test the behavior of a roller bit in an extremely puggy wet clay. Emphasis was to be placed upon the ability of such a method to penetrate it without excessive difficulty, rather than in this instance on the quality and quantity of material recovered. These clays, probably weathered unreplaced thinly-bedded argillaceous limestones or calcareous siltstones, exposed within a boggy creek area, would, it was thought, offer considerable problems to any percussion method. Recovery of representative magnetite skarn samples beneath this zone would also, it was felt be dangerously hampered by the amount of water which would be encountered. Further, problems of access and mobility are, or can be, difficult enough irrespective of, not uncommonly, poor weather conditions, that moving truck or crawler-mounted percussion machinery and probably at least one auxiliary compressor from site to site would hardly be economic or feasible.											
5.0	10.0	5.0	35%			RTH2/1	0	5.0	5.0		640				
10.0	15.0	5.0	60%				2	5.0	10.0	5.0	420				
15.0	20.0	5.0	60%				3	10.0	15.0	5.0	260				
20.0	25.0	5.0	60%				4	15.0	20.0	5.0	200				
25.0	30.0	5.0	60%				5	20.0	25.0	5.0	220				
30.0	35.0	5.0	60%				6	25.0	30.0	5.0	150				
35.0	40.0	5.0	60%				7	30.0	35.0	5.0	100				
40.0	45.0	5.0	65%				8	35.0	40.0	5.0	190				
45.0	49.0	4.0	80%				9	40.0	45.0	5.0	440				
49.0	53.0	4.0	80%				10	45.0	49.0	4.0	380				
53.0	56.0	3.0	95%				11	49.0	53.0	4.0	270				
56.0	59.0	3.0	95%				12	53.0	56.0	3.0	90				
59.0	61.0	2.0	100%				13	56.0	59.0	3.0	140				
61.0	64.0	3.0	95%				14	59.0	61.0	2.0	95				
						15	61.0	64.0	3.0	160					

FOOTAGE			DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S						
From	To	Interval				FOOTAGE						
						From	To	Interval				
			<p>It seems from this test that this material can be handled both quickly and efficiently by use of a roller bit. Penetration by this method was to 64', just into magnetite skarn at this locality and took 5-6 hours, a rate of approx. 10-12 ft. per hour. A water circulation was in this instance used (as opposed to RTH 1). At 64', the roller bit would no longer advance, the rock (cf. DDH 107) being virtually fresh.</p> <p>In summary, no problems were encountered. The material recovered has been sampled for comparison with the highly weathered zone of DDH 107.</p> <p>Due to the disposition of machinery, RTH 2 was in fact drilled prior to RTH 1. Water circulation was used merely because mud was not immediately available on site and to delay was not considered appropriate since ability to penetrate as opposed to sludge recovery was the uppermost consideration in this particular test.</p> <p>A few very minor specks of scheelite occur in the sludge from 56 - 64'.</p>		<p>0-61': Medium-brown gritty clay sludge 53-59': 15-20% magnetite 59-61': 5% magnetite 61-64': 40-50% magnetite.</p>							

7057

AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY

DRILLING LOG

DRILL HOLE NO. 101

LOCATION Hampshire, Tasmania
 PROJECT Kara No. 1 Tungsten Prospect
 COORDINATES 64 feet north, 206 feet west
 INCLINATION 45° BEARING 49°
 COLLAR ELEVATION 1790 feet

DATE STARTED 21/10/71
 DATE COMPLETED 2/11/71
 DRILLED BY Associated Diamond Drilling
 TOTAL DEPTH 170 feet
 CASING _____

LOGGED BY R.T. Brandt
 DATE _____
 SURVEYED BY _____
 DATE _____
 SHEET NO. 1 OF 3

FOOTAGE			DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S						
From	To	Interval				FOOTAGE			%W			
						From	To	Interval				
0	4	4	Brown clay soil with small magnetite fragments.		100	0	5	5	1.87			
4	5	1	Powdery magnetite, limonite and clay.		100	5	10	5	1.57			
5	7	2	Brown and white streaky clay with magnetite.		100	10	15	5	2.13			
7	10	3	Mainly brown and black magnetite - limonite with clay. Some mottled red and white clay with lumps of magnetite.		100	15	20	5	1.41			
10	12.5	2.5	Mottled black, brown and red clay with conspicuous magnetite.		100	20	25	5	0.11			
12.5	15	2.5	As above more clayey with less magnetite. Some fine laminations visible. Greenish clay material at 13 feet.		100	25	30	5	0.16			
15	20	5	Mainly brown and reddish clay with occasional lumps of magnetite and limonite.		94	35	40	5	0.22			
20	25	5	Mottled clay with scattered lumps of magnetite - limonite.		62	40	45	5	0.01			
25	30		As above.		58	45	50	5	0.01			
30	35		Mottled brown, yellow and greenish clay with little magnetite at 30-31 feet.		56	50	55	5	0.16			
						55	60	5	0.58			
							60	65	5	0.38		
									Sludge			
									0.35			
									Sludge			
35	40	5	As above but with little or no magnetite. Greenish clay at 37-39 feet. Brown and bluish limonite "sandstone" at 39-40 feet.		64	65	70	5	0.29			
									core			
									0.50			
									Sludge			
40	45	5	Greenish clay with brown mottling. No magnetite. Limonitized pyrite crystals in small vug.		28	70	75	5	0.23			
									core			
									0.29			
									Sludge			

673061

DRILL HOLE NO. 101SHEET NO. 2 OF 3

FOOTAGE			DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S								
From	To	Interval				FOOTAGE			%W					
						From	To	Interval						
45	50	5	Mottled clay mixed with granular sandy magnetite.			75	80	5	0.19					
					44				core					
									0.29					
									Sludge					
50	55	5	As above clay with loose sandy magnetite. Poor recovery of core and sludge.		15	100	104	4	0.05					
55	60	5	Loose black magnetite sand. Good scheelite fluorescence. No core recovered. Sludge only.		NIL	110	115	5	0.01					
						115	120	5	0.01					
60	65	5	Mottled clay with magnetite and loose magnetite sand, little core recovered. Mostly sludge.			120	125	5	0.01					
						125	130	5	0.01					
						130	135	5	0.01					
						135	140	5	0.01					
65	70	5	As above, some solid magnetite and clay. Mostly loose and sandy.		52	140	145	5	0.01					
						145	150	5	0.01					
70	75	5	As above.		36	150	155	5	0.01					
75	80	5	As above.		18	155	160	5	0.01					
80	100	20	No core or sludge recovered.			160	165	5	0.01					
						165	170	5	0.01					
100	104	4	Clay with little magnetite.		47									
104	110	6	No core or sludge recovered		NIL									
110	115	5	Brown mottled "claystone" with a little magnetite becoming greenish and harder.		80									
115	120	5	Greenish "claystone" solid and cohesive with conspicuous banding at 40° to core axis. Represents contact - metamorphosed sedimentary rock.		100									
120	125	5	As above.		78									
125	127	2	As above.		88									
127	130	3	Greenish conglomeratic sandstone and quartzite with pink mottling. Partially granitized.		88									
130	135	5	Greenish streaky conglomerate and breccia, felspathic and partially granitized.		96									

059

AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY
DRILLING LOG

LOCATION HAMPSHIRE, TASMANIA
PROJECT KARA NO: 1
COORDINATES 64 FEET NORTH, 206 FEET WEST
INCLINATION 75° BEARING 49°
COLLAR ELEVATION 1,790 FEET

DATE STARTED NOVEMBER 3, 1971
DATE COMPLETED NOVEMBER 12, 1971
DRILLED BY ASSOCIATED DIAMOND DRILLERS
TOTAL DEPTH 108 FEET
CASING -

DRILL HOLE NO. 102
LOGGED BY R.T. BRANDT
DATE -
SURVEYED BY -
DATE -
SHEET NO. 1 OF 2

FOOTAGE			DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S			% W	% W03		
From	To	Interval				From	To	Interval				
0	1	1	Brown clay soil with a few magnetite fragments		100%	0	3	3	0.40	0.50		
1	3	2	Brown clay with encrustations of a white clayey mineral		90%	3	5	2	1.23	1.55		
3	5	2	Dark brown and black clay with white encrustations and much dusty magnetite		70%	5	10	5	0.87	1.09		
5	10	5	As above, passing into friable magnetite and limonite		70%	10	15	5	0.41	0.52		
10	15	5	Friable magnetite partly altered to limonite		-	15	20	5	0.72	0.91		
15	20	5	Sludge of loose sandy magnetite and limonite. No core recovered.		-	20	25	5	0.83	1.05		
20	25	5	Sludge as above		-							
25	27	2	Core of weathered tactite, grey to greenish mottled pink, with some magnetite and limonite		26%	25	30	5	0.58	0.73		
27	30	3	Sludge of sandy magnetite and limonite. No core recovered		-	30	35	5	0.61	0.77		
30	35	5	Sludge as above. No core.		-	35	40	5	0.73	0.92		
35	40	5	Sludge as above.		-	40	45	5	1.34	1.69		
40	45	5	Sludge, very black and fine grained, chiefly fresh magnetite.		-							
45	46	1	Sludge as above		100%	45	50	5	0.83	1.05		
46	47	1	Core of weathered grey tactite with small magnetite inclusions		-							
47	50	3	Sludge of black fine grained magnetite		-							
50	55	5	Core of tactite, greenish-black and soft, consisting of magnetite, actinolite (?) and clayey material. Passes into finely granular friable magnetite		90%	50	55	5	0.45	0.57		
55	60	5	Magnetite, harder, finely-granular, with actinolite and other silicate minerals. Fluorescent scheelite visible.		84%	55	60	5	0.67	0.84		
60	65	5	As above, but more coarsely crystalline. Fibrous actinolite conspicuous		90%	60	65	5	0.20	0.25		
65	70	5	As above.		86%	65	70	5	0.85	1.07		

FOOTAGE			DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S						
From	To	Interval				FOOTAGE			% W	% W03		
						From	To	Interval				
70	75	5	Magnetite, massive and coarsely crystalline, mainly solid but friable in places		56%	70	75	5	<0.01	<0.01		
75	80	5	As above		84%	75	80	5	<0.01	<0.01		
80	85	5	As above, but becoming more friable		90%	80	85	5	0.05	0.06		
85	87.5	2.5	Core of friable crystalline magnetite. Sludge of magnetite sand.		45%	85	87.5	2.5	0.10	0.13		
87.5	90	2.5	Greenish siliceous skarn or quartz-granulite. Contains much epidote? Fragments of core only		16%	87.5	90	2.5	<0.01	<0.01		
90	92	2	Sludge of magnetite sand. No core.		-	90	92	2	0.18	0.23		
92	95	3	Sludge, sandy, becoming light-coloured with decreasing percentage of magnetite		-	92	95	3	0.13	0.16		
95	100	5	Feldspathic quartzite, pink and grey, irregularly banded. Little magnetite at 95' - 96'		100%	95	100	5	<0.01	<0.01		
100	105	5	As above, passing into granite at 104'		100%	100	105	5	<0.01	<0.01		
105	108	3	Medium to coarse grained pink granite		100%	105	108	3	<0.01	<0.01		
END OF HOLE 108 FEET												

AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY

DRILLING LOG

DRILL HOLE NO. 103.

LOCATION KARA No. 1 HAMPSHIRE, TASMANIA. DATE STARTED NOVEMBER 11, 1971. LOGGED BY R.T. BRANDT.

PROJECT KARA No. 1 TUNGSTEN PROSPECT. DATE COMPLETED NOVEMBER 26, 1971. DATE

COORDINATES (IN RELATION TO ZERO PEG.) 147' NORTH, 112 WEST DRILLED BY ASSOCIATED DIAMOND DRILLERS. SURVEYED BY

INCLINATION 45° BEARING 49° TOTAL DEPTH 170'. DATE

COLLAR ELEVATION CASING SHEET NO. 1 OF 3

FOOTAGE			DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S			
From	To	Interval				FOOTAGE			%W.
						From	To	Interval	
0	1.5	1.5	Brown clay soil.		100%	0	5	5	0.05
1.5	5	3.5	Light brown clay with white stains and encrustations.						
5	10	5	As above, with some small hard inclusions of limonitized magnetite.		90%	5	10	5	0.03
10	15	5	As above, with some black staining and a little dusty magnetite in places.		68%	10	15	5	0.04
15	20	5	As above, becoming darker, with higher percentage of friable magnetite and limonite.		86%	15	20	5	0.10
20	25	5	Light and dark brown clays with friable magnetite and limonite.		88%	20	25	5	0.20
25	30	5	Friable magnetite and limonite with some clay. No core recovery 28'-30'		60%	25	30	5	0.16
30	35	5	Sludge of fine magnetite with much limonite. No core.		-	30	35	5	0.19
35	40	5	Sludge as above. Some core of solid limonitized magnetite recovered 36'-37'.		20	35	40	5	0.09

064

FOOTAGE			DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S							
From	To	Interval				FOOTAGE			W%				
						From	To	Interval					
40	45	5	Sludge as above. No. core.		-	40	45	5	0.11				
45	50	5	Sludge as above but darker, with higher percentage of unoxidized magnetite.		-	45	50	5	0.11				
50	55	5	Sludge as above, with a little solid magnetite-goethite recovered as core.		10%	50	55	5	0.10				
55	60	5	Sludge, mainly fine magnetite sand. No core.		-	55	60	5	0.73				
60	63	3	Sludge as above.		-	60	63	3	0.72				
63	65	2	Core of hard solid magnetite, partly limonitized		100%	63	65	2	0.02				
65	70	5	Sludge of fine magnetite sand with a little limonite		-	65	70	5	0.44				
70	75	5	Sludge as above. Core of solid magnetite recovered 72'-74'.		30%	70	75	5	0.24				
75	80	5	Sludge as above. No core.		-	75	80	5	0.26				
80	85	5	Sludge as above.		-	80	85	5	0.37				
85	88	3	Sludge as above.		-	85	88	3	0.52				
88	90	2	Core of tactite, greenish-black, rather soft, containing fibrous amphibole (?) and some fine magnetite.		100%	88	90	2	0.18				
90	95	5	Tactite, as above, becoming brownish, mottled red, yellow and white, and banded at 50°-60° to core axis. Contains some magnetite.		70%	90	95	5	0.24				
95	100	5	Tactite as above, becoming lighter coloured, with black staining but little magnetite. No core after 99'.		64%	95	100	5	0.01				

DRILL HOLE NO. 103
 SHEET NO. 3 OF 3

FOOTAGE			DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S							
From	To	Interval				FOOTAGE			%W				
						From	To	Interval					
100	105	5	Sludge, light brown, sandy, with subordinate percentage of magnetite.		-	100	105	5	0.08				
105	110	5	Sludge as above, with core of light brownish black-spotted tactite recovered at 106'-108'.		20%	105	110	5	0.04				
110	115	5	Sludge as above, with very little magnetite		-	110	115	5	0.04				
115	120	5	Sludge as above, slightly darker, with more magnetite		-	115	120	5	0.04				
120	125	5	Core of tactite, light brownish, rather friable, with inclusion of magnetite. No core after 124'. Sludge as above.		52%	120	125	5	0.01				
125	130	5	Core of greenish tactite with a little solid magnetite, recovered 126'-129'.		60%	125	130	5	0.06				
130	135	5	Sludge only to 133', then core of greenish irregularly-banded tactite with some magnetite.		30%	130	135	5	0.01				
135	138	3	Core of greenish siliceous tactite with quartz content increasing downwards. Passes into feldspathic quartzite at 138'.										
138	140	2	Feldspathic quartzite, fresh, pink and grey, banded at 45° to core axis. Contains soft fine grained bands rich in epidote (?)		80%	135	140	5	0.01				
140	155	15	Feldspathic quartzite as above, with locally soft greenish bands and much red staining. Becomes increasingly feldspathic downwards and passes into granite at about 155'.		90%	140	155	15	-				
155	170	15	Granite, pink, medium to coarse grained, occasionally banded.		90%	155	170	15	-				
			<u>END OF HOLE.</u>										

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673068

**AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY
DRILLING LOG**

DRILL HOLE NO. 104

LOCATION KARA No. 1. HAMPSHIRE, TASMANIA.

DATE STARTED NOVEMBER 30, 1971

LOGGED BY R.T. BRANDT.

PROJECT KARA No. 1. TUNGSTEN PROJECT.

DATE COMPLETED DECEMBER 10, 1971.

DATE _____

COORDINATES (IN RELATION TO ZERO PEG) 50' SOUTH, 103' WEST

DRILLED BY ASSOCIATED DIAMOND DRILLERS.

SURVEYED BY _____

INCLINATION 45° BEARING 49°

TOTAL DEPTH 88'

DATE _____

COLLAR ELEVATION _____

CASING _____

SHEET NO. 1 OF 2

FOOTAGE			DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S							
From	To	Interval				FOOTAGE			W%				
0	5	5	Brown earthy limonite and clay with some fragments of hard magnetite.		100%	0	5	5	1.11				
5	10	5	As above, with more magnetite.		74%	5	10	5	0.33				
10	15	5	Loose friable magnetite mixed with yellow-brown limonite. Sludge only, no core.		-	10	15	5	0.26				
15	20	5	Sludge as above		-	15	20	5	0.48				
20	25	5	Some core of solid magnetite with interstitial limonite and clay, between 20' and 24' sludge of loose granular magnetite with some limonite.		18%	20	25	5	0.42				
25	27	2	Sludge as above.		-	25	27	2	0.35				
27	30	3	Sludge with admixture of white clayey matter.		-	27	30	3	0.86				
30	35	5	Sludge of mixed granular magnetite and limonite.		-	30	35	5	0.58				
35	40	5	Sludge as above.		-	35	40	5	0.40				
40	45	5	Sludge as above.		-	40	45	5	0.23				
45	49	4	Sludge as above.		-	45	49	4	0.08				

73-961
673070

068
AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY
DRILLING LOG

DRILL HOLE NO. 105

LOCATION KARA No. 1. HAMPSHIRE, TASMANIA.

DATE STARTED DECEMBER 12, 1971.

LOGGED BY R.T. BRAMDT.

PROJECT KARA No. 1. TUNGSTEN PROJECT.

DATE COMPLETED DECEMBER 21, 1971.

DATE _____

COORDINATES (IN RELATION TO ZERO PEG) 13' SOUTH, 63' WEST.

DRILLED BY ASSOCIATED DIAMOND DRILLERS

SURVEYED BY _____

INCLINATION 45° BEARING 49°

TOTAL DEPTH _____

DATE _____

COLLAR ELEVATION _____

CASING _____

SHEET NO. 1 OF 2

FOOTAGE			DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S						
From	To	Interval				FOOTAGE			W%			
						From	To	Interval				
0	5	5	Massive and earthy limonite with inclusions of hard massive magnetite.		100	0	5	5	0.79			
5	10	5	As above, with more magnetite and less limonite.		88	5	10	5	1.14			
10	15	5	Magnetite, massive, mostly solid, some rather friable. Some earthy limonite in earities.		70	10	15	5	0.66			
15	20	5	As above, with some white encrustation on the magneite.		82	15	20	5	0.78			
20	25	5	Friable magnetite and some limonite. Some solid core recovered 20'-22'. Sample mostly sludge.		20	20	25	5	0.88			
25	30	5	Sludge of loose granular magnetite and some limonite.		-	25	30	5	0.69			
30	33	3	Core of massive magnetite with limonite and white encrustation		83	30	33	3	0.65			
33	35	2	Sludge of granular magnetite and some limonite.		-	33	35	2	1.06			
35	40	5	Sludge as above		-	35	40	5	1.04			
40	44	4	Sludge as above		-	40	44	4	0.91			
44	45	1	Core of solid magnetite with limonite.		100	44	45	1	0.57			

069

673071

DRILL HOLE NO. 105

SHEET NO. 2 OF 2

FOOTAGE			DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S							
From	To	Interval				FOOTAGE			W%				
						From	To	Interval					
45	48	3	Sludge as above.		-	45	48	3	0.72				
48	50	2	No recovery.		-	48	50	2	-				
50	55	5	Sludge, magnetite with admixture of white material.		-	50	55	5	0.21				
55	59	4	Sludge as above.		-	55	59	4	0.19				
59	60	1	Core of brownish limonite-stained tactite with disseminated magnetite.		100	59	60	1	0.10				
60	65	5	Tactite, as above.		100	60	65	5	0.03				
65	67	2	Tactite, as above.		100	65	67	2	0.04				
67	70	3	Tactite, rather soft, consisting mostly of a very fine grained greenish mineral, loosely aggregated. No magnetite.		90	67	70	3	0.03				
70	75	5	Tactite, as above, but harder and with inclusions of quartz.		78	70	75	5	0.02				
75	81	6	Tactite, greenish and mottled, with much coarsely crystalline quartz. Presses into quartzite at about 81'		90	75	81	6	-				
81	98	17	Quartzite, coarse, with interstitial epidote and much red and black staining. Contains bands of friable green tactite. Becomes granitized and feldspathic at 98'		85	81	98	17	-				
98	105	7	'Granite". Probably granitized quartzite.		77	98	105	7	-				
			<u>END OF HOLE.</u>										

FOOTAGE			Rec	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S								
From	To	Interval					FOOTAGE			Rec	W ppm				
							From	To	Interval						
62.5	64.0	1.5	1.3	62.5 - 137.0': Magnetite-actinolite-diopside skarn: 62.5 - 88.5': Green-black, magnetite dominant, approx. 60% but also strongly actinolitic coarser-grained magnetite appears to be associated with fractures, finer-grained magnetite to be within 'matrix' of rock. Core over several zones quite broken due to fracturing; these zones are also more weathered. At 67.0': scheelite associated with magnetite in fracture approx. 1/2" wide; intersection angle of fracture 30° approx. to long core axis - foliation in rock about 60° to long core axis.		D108/18	64.0	68.0	4.0	3.8	9770				
64.0	66.0	2.0	1.8			19	68.0	70.0	2.0	2.0	330				
66.0	68.0	2.0	2.0			20	70.0	75.0	5.0	5.0	890				
68.0	71.0	3.0	3.0			21	75.0	80.0	5.0	4.7	1360				
71.0	78.0	7.0	7.0			22	80.0	85.0	5.0	4.3	230				
78.0	84.0	6.0	5.0			23	85.0	90.0	5.0	4.5	170				
84.0	85.5	1.5	1.5												
85.5	92.0	6.5	6.0												
92.0	102.0	10.0	10.0		88.5 - 137.0': Magnetite-actinolite-diopside skarn, cominantly magnetite, fresh commonly quite well foliated at 55-65° intersection angle. Magnetite coarser and rock somewhat less actinolitic than interval above. Also, rock significantly less fractured. Occasional minor pyrite. Some zones with magnetite content up to 80%. Intervals from 62.5-88.5 & 88.5-137.0 are overall fairly similar in mineral constituents and their proportion. The major distinction which is thought to be of importance is the degree of fracturing and disturbance from 62.5-88.5'. This is also possible the reason why the rock remains moderately weathered to 88.5'. Secondly zones of foliation are well developed and undisturbed in the magnetite skarn below 88.5'. This foliation perhaps represents original thinly-bedded sediments. From 62.5-88.5', recognizable foliated zones are very occasional, in one instance at 79', banding is quite			24	90.0	95.0	5.0	5.0	320		
102.0	112.0	10.0	10.0				25	95.0	100.0	5.0	5.0	280			
112.0	122.0	10.0	10.0			26	100.0	105.0	5.0	5.0	90				
122.0	132.0	10.0	10.0			27	105.0	110.0	5.0	5.0	130				
132.0	138.0	6.0	5.5			28	110.0	115.0	5.0	5.0	30				
138.0	142.0	1.0	1.0			29	115.0	120.0	5.0	5.0	20				
142.0	148.0	6.0	4.0			30	120.0	125.0	5.0	5.0	45				
						31	125.0	130.0	5.0	5.0	170				
						32	130.0	135.0	5.0	5.0	20				
						33	135.0	137.0	2.0	1.5	20				
					34	137.0	142.0	5.0	5.0	25					

AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY

DRILLING LOG

DRILL HOLE NO. 109

LOCATION E.L. 17/68, TASMANIADATE STARTED 9th February, 1972.LOGGED BY ADGPROJECT KARA 1 PROSPECTDATE COMPLETED 15th February, 1972.DATE 18th February 1972.COORDINATES As per survey base-plan ; coordinates system in process of revision.DRILLED BY ASSOCIATED DIAMOND DRILLERSSURVEYED BY Assumed no deviationINCLINATION Vertical BEARING _____TOTAL DEPTH 115 feet.

DATE _____

COLLAR ELEVATION _____

CASING N: 0 - 40' B: 0 - 46'SHEET NO. 1 OF 2

FOOTAGE			Sludge Estimated percentage recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S							
From	To	Interval					From	To	Interval	Recov.	W ppm/%	WO ₃ (calc.)		
0	3.0	3.0	100%	<u>Summary:</u> 0-120.0': Skarn 120.0-149.0': Sandstone 149.0-155.0': Granite <u>Weathering:</u> 47': Main depth of weathering 47-120': Some weathering (minor clay) but predominantly magnetite sludge which appears virtually fresh. 120-149': Some weathering of sandstone. <u>Mineralization:</u> (Scheelite fluorescence) 'Major': 56 - 68' 'Minor' or very minor: 68-100' & 114-120' <u>Sludge return:</u> 0-129' (0-46': NX roller bit; BX roller) <u>Core:</u> BQ/WL: 129 - 155' <u>0-47.0': Soil & Limonitic Clay Sludge:</u> 0-8.0': Medium red-brown clay soil with										
3.0	6.0	3.0	100%			Sample Number								
6.0	8.0	2.0	100%			D109/1	0	3.0	3.0	100%	1160			
8.0	11.0	3.0	100%				2	3.0	6.0	3.0	100%	1170		
11.0	14.0	3.0	65%				3	6.0	8.0	2.0	100%	1080		
14.0	17.0	3.0	100%				4	8.0	11.0	3.0	100%	1000		
17.0	20.0	3.0	75%				5	11.0	14.0	3.0	65%	520		
20.0	23.0	3.0	50%				6	14.0	17.0	3.0	100%	640		
23.0	26.0	3.0	40%				7	17.0	20.0	3.0	75%	280		
26.0	29.0	3.0	50%				8	20.0	23.0	3.0	50%	710		
29.0	32.0	3.0	30%				9	23.0	29.0	6.0	45%	360		
32.0	35.0	3.0	60%				10	29.0	32.0	3.0	30%	1320		
35.0	38.0	3.0	60%				11	32.0	35.0	3.0	60%	1530		
38.0	41.0	3.0	50%			12	35.0	38.0	3.0	60%	1260			
41.0	44.0	3.0	30%			13	38.0	41.0	3.0	50%	1660			
44.0	47.0	3.0	35%			14	41.0	44.0	3.0	30%	1000			
47.0	50.0	3.0	75%			15	44.0	47.0	3.0	35%	900			
50.0	53.0	3.0	90%			16	47.0	50.0	3.0	75%	690			
53.0	56.0	3.0	50%			17	50.0	53.0	3.0	90%	510			
56.0	59.0	3.0	75%			18	53.0	56.0	3.0	50%	520			
59.0	62.0	3.0	100%			19	56.0	59.0	3.0	75%	1.73%	2.32%		
62.0	65.0	3.0	100%			20	59.0	62.0	3.0	100%	1.20%	1.61%		
65.0	68.0	3.0	100%			21	62.0	65.0	3.0	100%	1.05%	1.41%		

082

673084

DRILL HOLE NO. 110

SHEET NO. 2 OF 3

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S								
From	To	Interval					FOOTAGE			Rec.		W ppm or %			
0	6.0	6.0	5.4	0-11.5':		Sample No: D110/1									
6.0	10.0	4.0	3.0			2	0	5.0	5.0	4.4			860		
10.0	13.0	3.0	2.0				5.0	10.0	5.0	4.0			2,300		
13.0	16.0	3.0	1.0	11.5-25.0':		3	10.0	15.0	5.0	2.4			1,170		
16.0	19.0	3.0	1.2			4	15.0	22.0	7.0	2.2			930		
19.0	22.0	3.0	0.4			5	22.0	26.0	4.0	1.6			1.10%		
22.0	27.0	5.0	1.0			1A	26.0	30.0	4.0	60%	Sludge		1.42%		
27.0	30.0	3.0	0.6	25.0-96.0':		6	30.0	35.0	5.0	1.7			9,610		
30.0	35.0	5.0	1.7			2A	30.0	32.0	2.0	75%	Sludge		3.30%		
35.0	42.0	7.0	2.8			3A	32.0	35.0	3.0	90%	Sludge		2.01%		
42.0	45.0	3.0	1.3			4A	35.0	38.0	3.0	100%	Sludge		8,380		
45.0	46.0	1.0	0.5			7	38.0	40.0	2.0	2.0			5,050		
46.0	50.0	4.0	2.2			8	40.0	45.0	5.0	2.1			1.05%		
50.0	54.0	4.0	1.3	25.0-52.0':		9	45.0	50.0	5.0	2.7			7,980		
						10	50.0	54.0	4.0	1.4			5,550		
54.0	56.0	2.0	0.3	52.0-68.0':		5A	54.0	56.0	2.0	100%	Sludge		8,020		
56.0	58.0	2.0	0.8			11	56.0	60.0	4.0	1.9			9,220		
58.0	61.0	3.0	1.7			12 (i)	60.0	61.0	1.0	0.4			2,730		
61.0	63.5	2.5	0.2			6A	61.0	63.5	2.5	55%	Sludge		7,690		
63.5	68.0	4.5	0.2			12 (ii)	63.5	65.5	2.0	0.8			2,730		
68.0	72.0	4.0	1.0	68.0-96.0':		7A	65.5	68.0	2.5	45%	Sludge		2,820		
72.0	81.0	9.0	2.8			8A	68.0	72.0	4.0	70%	Sludge		4,960		
81.0	85.0	4.0	3.2			13	68.0	72.0	4.0	1.0			1,730		
85.0	88.0	3.0	0.8			9A	72.0	78.0	6.0	70%	Sludge		4,330		
88.0	91.0	3.0	2.6			14	78.0	80.0	2.0	2.0			620		
91.0	96.0	5.0	2.7			15	80.0	85.0	5.0	4.0			1,340		
						16	85.0	90.0	5.0	2.2			1.47%		
						17	90.0	95.0	5.0	2.9			1,420		

085'

673087

DRILL HOLE NO. 111
SHEET NO. 2 OF 2

FOOTAGE			Recov.	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S							
From	To	Interval					FOOTAGE			Recov.	W ppm.			
						Sample Number								
54.0	56.0	2.0	90%	65.0-76.0' : Light grey and yellow-brown clay and magnetite (approx. 30-40%)		D111/22	54.0	56.0	2.0	90%	5,520			
56.0	58.0	2.0	100%			23	56.0	58.0	2.0	100%	3,680			
58.0	60.0	2.0	80%	76.0-85.0' : Light brown clay, magnetite content varies from about 5-20%.		24	58.0	60.0	2.0	80%	2,570			
60.0	63.0	3.0	90%			25	60.0	63.0	3.0	90%	4,470			
63.0	65.0	2.0	75%			26	63.0	65.0	2.0	75%	3,890			
65.0	68.0	3.0	100%	85.0-96.0' : Weathered yellow-brown limonitic rock, magnetite content minor except 92-94, where approx 70%. Foliation intersected at 65°.		27	65.0	68.0	3.0	100%	5,820			
68.0	70.0	2.0	100%			28	68.0	70.0	2.0	100%	5,830			
70.0	73.0	3.0	70%			29	70.0	73.0	3.0	70%	2,730			
73.0	76.0	3.0	35%	96.0-109.0' : Magnetite-actinolite skarn. Magnetite content quite variable from 15-75%, on average about 45%. Some foliation at 60° intersected some minor irregular fracturing.		30	73.0	76.0	3.0	35%	4,040			
76.0	79.0	3.0	45%			31	76.0	79.0	3.0	45%	2,750			
79.0	82.0	3.0	50%			32	79.0	82.0	3.0	50%	2,940			
82.0	85.0	3.0	60%			33	82.0	85.0	3.0	60%	2,520			
Core:						34	85.0	90.0	5.0	4.5	190			
85.0	94.0	9.0	7.5	109.0-120.0' : Contact Zone: Fine-grained siliceous rock, some actinolite. Minor magnetite except 118.5-120' where 60-70% appears moderately fractured, core quite broken.		35	90.0	95.0	5.0	4.4	150			
94.0	96.0	2.0	2.0			36	95.0	100.0	5.0	4.9	45			
96.0	103.0	7.0	6.7			37	100.0	105.0	5.0	4.7	25			
103.0	110.0	7.0	6.6			38	105.0	110.0	5.0	4.7	60			
110.0	114.5	4.5	3.8			39	110.0	115.0	5.0	4.4	110			
114.5	118.5	4.0	3.0			40	115.0	120.0	5.0	3.5	85			
118.5	124.0	5.5	4.5	120.0-124.0' : Pink Granite		41	120.0	124.0	4.0	3.0	240			
0-85'	N roller bit													
85-124'	NZ/WA													

AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY

DRILLING LOG

DRILL HOLE NO. 112

LOCATION E.L. 17/68 TASMANIA

DATE STARTED 24.2.72

LOGGED BY A.D.G., D.A.B.

PROJECT KARA 1 PROSPECT

DATE COMPLETED 7.3.72

DATE 10.3.70

COORDINATES As per plane-table plan; coordinate system in process of revision

DRILLED BY Associated Diamond Drillers Ltd.

SURVEYED BY Assumed no deviation

INCLINATION 50° BEARING due East (Grid)

TOTAL DEPTH 190 feet

DATE _____

COLLAR ELEVATION _____

CASING N: 0-18 feet

SHEET NO. 1 OF 4

FOOTAGE			DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S						
From	To	Interval				FOOTAGE						
						From	To	Interval				
			<p>Summary:</p> <p><u>0-158.0'</u>: Skarn <u>158.0-162.0'</u>: Contact Zone <u>162.0-187.3'</u>: Sandstone <u>187.3-190.0'</u>: Granite</p> <p>Weathering:</p> <p><u>0. 97.0'</u>: Weathered but magnetite appears fresh <u>97.0-116.0'</u>: Relatively unweathered <u>116.0-187.3'</u>: Moderately to much weathered but magnetite fresh</p> <p>Scheelite Mineralization:</p> <p><u>0- 19.0'</u>: No fluorescence noted <u>19.0- 22.0'</u>: Minor <u>22.0- 43.0'</u>: Moderate to major <u>43.0-78.0'</u>: Minor, a few moderate zones <u>78.0-116.0'</u>: Moderate to major (core from 97-116' is well-mineralized with coarse scheelite crystals).</p>									

980

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S								
From	To	Interval					FOOTAGE			Rec.	W ppm or %				
Sludge						Sample No:									
0	3.0	3.0	70%	0-6.0':	Orange-brown clay sludge	D112/1	0	3.0	3.0	70%	420				
3.0	6.0	3.0	75%			/2	3.0	6.0	3.0	75%	490				
6.0	9.0	3.0	85%	6.0-16.0':	Red-brown clay, minor to very minor magnetite content, mainly from 6-9'.	/3	6.0	9.0	3.0	85%	1,780				
9.0	12.0	3.0	85%			/4	9.0	12.0	3.0	85%	6,120				
12.0	16.0	4.0	100%			/5	12.0	16.0	4.0	100%	4,330				
16.0	19.0	3.0	75%	16.0-43.0':	Yellow-brown clay and magnetite sludge. Magnetite content approx. 20-30%, though somewhat variable.	/6	16.0	19.0	3.0	75%	7,370				
19.0	22.0	3.0	65%			/7	19.0	22.0	3.0	65%	7,080				
22.0	25.0	3.0	55%			/8	22.0	25.0	3.0	55%	1.47%				
25.0	28.0	3.0	55%			/9	25.0	28.0	3.0	55%	3,300				
28.0	31.0	3.0	70%			/10	28.0	31.0	3.0	70%	6,810				
31.0	34.0	3.0	55%			/11	31.0	34.0	3.0	55%	8,710				
34.0	37.0	3.0	60%			/12	34.0	37.0	3.0	60%	8,580				
37.0	40.0	3.0	55%			/13	37.0	40.0	3.0	55%	5,920				
40.0	43.0	3.0	60%			/14	40.0	43.0	3.0	60%	5,020				
CORE:															
43.0	45.5	2.5	2.0	43.0-50.0':	Light yellow-brown limonitized rock, very minor magnetite (recovered as core).	D112/33	43.0	45.5	2.5	2.0	810				
45.5	49.0	3.5	2.7			/34	45.5	50.0	4.5	3.7	1,810				
49.0	50.0	1.0	1.0												
Sludge															
50.0	52.0	2.0	100%	50.0-54.0':	Yellow-brown clay and magnetite sludge, magnetite content about 40%.	D112/15	50.0	52.0	2.0	100%	3,140				
52.0	54.0	2.0	100%			/16	52.0	54.0	2.0	100%	3,050				
54.0	56.0	2.0	100%	54.0-62.0':	Yellow-brown clay sludge no magnetite except 54-56', where approx. 5-10%.	/17	54.0	56.0	2.0	100%	3,660				
56.0	58.0	2.0	100%			/18	56.0	58.0	2.0	100%	3,270				
58.0	60.0	2.0	100%			/19	58.0	60.0	2.0	100%	3,250				
60.0	62.0	2.0	100%			/20	60.0	62.0	2.0	100%	3,290				
62.0	64.0	2.0	100%	62.0-68.0':	Yellow-brown clay and magnetite sludge, magnetite content approx. 35-40%.	/21	62.0	64.0	2.0	100%	4,110				
64.0	66.0	2.0	100%			/22	64.0	66.0	2.0	100%	3,980				
66.0	68.0	2.0	100%			/23	66.0	68.0	2.0	100%	4,100				

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S										
From	To	Interval					FOOTAGE			Rec.	W ppm or %						
68.0	70.0	2.0	100%	68.0-93.0': Black and brown-black sludge. Approx. 65-70% magnetite on average. (87-89': magnetite core).		Sample No:											
70.0	73.0	3.0	80%		D112/24	68.0	70.0	2.0	100%	7,110							
73.0	75.0	2.0	65%		/25	70.0	73.0	3.0	80%	5,910							
75.0	78.0	3.0	60%		/26	73.0	75.0	2.0	65%	5,110							
78.0	81.0	3.0	70%		/27	75.0	78.0	3.0	60%	4,490							
81.0	84.0	3.0	60%		/28	78.0	81.0	3.0	70%	7,200							
84.0	87.0	3.0	60%		/29	81.0	84.0	3.0	60%	8,810							
Core:					/30	84.0	87.0	3.0	60%	8,100							
87.0	89.0	2.0	1.8		D112/35	87.0	89.0	2.0	1.8	5,210							
Sludge					D112/31	89.0	91.0	2.0	70%	6,460							
89.0	91.0	2.0	70%	93.0-97.0': Weathered limonitic yellow-brown material with approx. 20% magnetite.	/32	91.0	93.0	2.0	70%	6,930							
91.0	93.0	2.0	70%														
Core:																	
93.0	100.0	7.0	6.5	97.0-116.0': Dominantly magnetite, about 85%. Well-mineralized, particularly as coarse scheelite crystals. Core rather broken and magnetite surface somewhat pitted. Minor yellow-brown clay. Overall relatively unweathered.	/36	93.0	97.0	4.0	3.5	1.22%							
100.0	103.0	3.0	2.5		/37	97.0	100.0	3.0	3.0	1.39%							
103.0	106.5	3.5	2.8		/38	100.0	103.0	3.0	2.5	2,670							
106.5	107.0	0.5	0.5		/39	103.0	107.0	4.0	3.3	1,110							
107.0	110.0	3.0	3.0		/40	107.0	111.5	4.5	3.7	7,850							
110.0	111.5	1.5	0.7		/41	111.5	114.5	3.0	2.7	7,780							
111.5	114.5	3.0	2.7		/42	114.5	116.5	2.0	2.0	3,980							
114.5	116.5	2.0	2.0														
116.5	119.0	2.5	1.7		116.0-158.0': Magnetite and weathered brown limonitic and green weathered skarn. Magnetite content approx. 35%, much less than interval above. Irregularly distribute through rock.	/43	116.5	121.0	4.5	2.9	940						
119.0	121.0	2.0	1.8			/44	121.0	124.0	3.0	2.5	420						
121.0	123.0	2.0	1.5	/45		124.0	128.0	4.0	3.5	90							
123.0	124.0	1.0	1.0	/46		128.0	132.0	4.0	3.2	240							
124.0	131.5	7.5	7.2	/47		132.0	136.0	4.0	3.4	190							
131.5	134.0	2.5	2.5	151.5-158': Magnetite content greater, about 60%; certain zones well foliated at 65° intersection. Interval moderately to much weathered but magnetite remains fresh.	/48	136.0	140.0	4.0	3.2	70							
134.0	143.0	9.0	7.6		/49	140.0	144.0	4.0	3.0	55							
143.0	146.5	3.5	3.0		/50	144.0	148.0	4.0	3.1	110							
146.5	149.0	2.5	1.7		/51	148.0	152.0	4.0	3.4	50							
149.0	150.0	1.0	1.0		/52	152.0	156.0	4.0	2.9	<20							
150.0	155.0	5.0	3.9		/53	156.0	158.0	2.0	1.8	35							
155.0	156.5	1.5	1.5														

088

180

FOOTAGE			Recovery.	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S								
From	To	Interval					FOOTAGE			Recov.	W ppm				
				280.0-289.5':	Moderate to minor (fracture zone in sst.) mainly 284.5-289'. Otherwise very occasional and sporadic.	Sample Number.									
Sludge:				0-66.0':	Granitic Soil (sludge	D113/1	0	6.0	6.0	22%	190				
0	3.0	3.0	20%			2	6.0	13.0	7.0	75%	90				
3.0	6.0	3.0	25%			3	13.0	19.0	6.0	100%	75				
6.0	10.0	4.0	60%			4	19.0	25.0	6.0	100%	90				
10.0	13.0	3.0	100%			5	25.0	31.0	6.0	100%	50				
13.0	16.0	3.0	100%			6	31.0	37.0	6.0	100%	50				
16.0	19.0	3.0	100%			7	37.0	43.0	6.0	100%	140				
19.0	22.0	3.0	100%			8	43.0	49.0	6.0	95%	200				
22.0	25.0	3.0	100%			9	49.0	55.0	6.0	55%	180				
25.0	28.0	3.0	100%			10	55.0	60.0	5.0	55%	210				
28.0	31.0	3.0	100%			11	60.0	63.0	3.0	40%	470				
31.0	34.0	3.0	100%			12	63.0	66.0	3.0	65%	450				
34.0	37.0	3.0	100%												
37.0	40.0	3.0	100%												
40.0	43.0	3.0	100%												
43.0	46.0	3.0	100%												
46.0	49.0	3.0	90%												
49.0	52.0	3.0	75%												
52.0	55.0	3.0	35%												
55.0	58.0	3.0	75%												
58.0	60.0	2.0	30%												
60.0	63.0	3.0	40%												
63.0	66.0	3.0	65%												
66.0	69.0	3.0	40%	66.0-77.0':	Light brown sandy clay sludge (after sandstone?)	13	66.0	69.0	3.0	40%	940				
69.0	72.0	3.0	65%			14	69.0	72.0	3.0	65%	760				
72.0	75.0	3.0	15%			15	72.0	75.0	3.0	15%	1,920				
75.0	77.0	2.0	30%			16	75.0	77.0	2.0	30%	1,440				
77.0	80.0	3.0	45%	77.0-80.0':	Black magnetite sludge, approx. 75-80% magnetite.	17	77.0	80.0	3.0	45%	1,620				

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S						
From	To	Interval					FOOTAGE			Recov.	W ppm		
80.0	83.0	3.0	25%	<u>80.0-83.0'</u> : Light brown sandy clay and magnetite (about 45%)		Sample Number. D113/18	80.0	83.0	3.0	25%	1,160		
83.0	86.0	3.0	25%	<u>83.0-86.0'</u> : Light brown clay and some magnetite (about 30%)		19	83.0	86.0	3.0	25%	1,480		
86.0	89.0	3.0	55%	<u>86.0-89.0'</u> : Light brown clay		20	86.0	89.0	3.0	50%	1,030		
89.0	92.0	3.0	70%	<u>89.0-92.0'</u> : Light brown sandy clay with 20-25% magnetite.		21	89.0	92.0	3.0	70%	740		
92.0	95.0	3.0	65%	<u>92.0-95.0'</u> : Light brown clayey sand with 10-15% magnetite		22	92.0	95.0	3.0	65%	890		
95.0	98.0	3.0	90%	<u>95.0-119.0'</u> : Greenish-black Magnetite Sludge		23	95.0	98.0	3.0	90%	1,410		
98.0	101.0	3.0	95%	About 70-75% magnetite on average		24	98.0	101.0	3.0	95%	6,400		
101.0	104.0	3.0	90%	Some granular quartz.		25	101.0	104.0	3.0	90%	2,130		
104.0	107.0	3.0	100%	<u>107-113'</u> : Approx. 85% magnetite.		26	104.0	107.0	3.0	100%	4,960		
107.0	110.0	3.0	100%			27	107.0	110.0	3.0	100%	1,060		
110.0	113.0	3.0	90%			28	110.0	113.0	3.0	90%	1,200		
113.0	116.0	3.0	70%			29	113.0	116.0	3.0	70%	1,410		
116.0	119.0	3.0	75%			30	116.0	119.0	3.0	75%	1,100		
Core:													
119.0	122.0	3.0	2.7'	<u>119.0-261.0'</u> : Dominantly Magnetite Skarn.		31	119.0	125.0	6.0	5.7'	1,030		
122.0	129.0	7.0	6.2	Magnetite-actinolite-diopside skarn rock, magnetite content somewhat variable but on average about 60-65%. Certain narrow zones of the order of 2-3ft where magnetite content 10%. Slight weathering to 150'.		32	125.0	130.0	5.0	4.2	20		
129.0	140.5	11.5	10.3	Foliation well developed at 50-55° intersected over certain fairly restricted zones apart from, particularly, 199-215', which also coincides with or is related to greater portion of lower mineralized zone. Foliation occasionally contorted. Some irregular fracturing but comparatively minor.		33	130.0	135.0	5.0	4.2	600		
140.5	141.0	0.5	0.3			34	135.0	140.0	5.0	4.5	35		
141.0	143.5	2.5	2.2			35	140.0	145.0	5.0	4.8	60		
143.5	151.0	7.5	7.5			36	145.0	150.0	5.0	5.0	20		
151.0	161.0	10.0	10.0			37	150.0	155.0	5.0	5.0	30		
161.0	171.0	10.0	10.0			38	155.0	160.0	5.0	5.0	20		
171.0	176.5	5.5	5.5			39	160.0	165.0	5.0	5.0	20		
176.5	178.5	2.0	2.0			40	165.0	170.0	5.0	5.0	35		
178.5	182.5	4.0	3.5			41	170.0	175.0	5.0	5.0	80		
182.5	192.5	10.0	9.7			42	175.0	180.0	5.0	4.7	30		
192.5	202.5	10.0	9.8			43	180.0	185.0	5.0	4.9	20		
202.5	213.0	10.5	10.2			44	185.0	190.0	5.0	5.0	20		

092

673097

DRILL HOLE NO. 114
SHEET NO. 2 OF 4

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S							
From	To	Interval					FOOTAGE			Rec.	W ppm or %	Mo ppm		
Sludge						Sample No:								
				<u>Summary Cont'd:</u>										
				117.5-123.0': A very few specks										
				126.0-133.5': Some coarse and fine disseminated scheelite. Grade possibly 0.2%W?										
0	3.0	3.0	75%	0-22.0':	Greenish-brown sludge after basalt	D114/1	0	3.0	3.0	75%	320			
3.0	6.0	3.0	60%			/2	3.0	6.0	3.0	60%	480			
6.0	9.0	3.0	85%			/3	6.0	9.0	3.0	85%	270			
9.0	13.0	4.0	85%			/4	9.0	13.0	4.0	85%	240			
13.0	16.0	3.0	85%			/5	13.0	16.0	3.0	85%	140			
16.0	19.0	3.0	85%			/6	16.0	19.0	3.0	85%	150			
19.0	22.0	3.0	85%			/7	19.0	22.0	3.0	85%	150			
22.0	25.0	3.0	85%	22.0-47.0':	Light brown and yellow-brown clay	/8	22.0	25.0	3.0	85%	90			
25.0	28.0	3.0	75%			/9	25.0	28.0	3.0	75%	130			
28.0	31.0	3.0	85%			/10	28.0	31.0	3.0	85%	490			
31.0	34.0	3.0	85%			/11	31.0	34.0	3.0	85%	400			
34.0	37.0	3.0	75%			/12	34.0	37.0	3.0	75%	190			
37.0	41.0	4.0	85%			/13	37.0	41.0	4.0	85%	80			
41.0	44.0	3.0	85%			/14	41.0	44.0	3.0	85%	1,640			
44.0	47.0	3.0	85%			/15	44.0	47.0	3.0	85%	510			
47.0	50.0	3.0	70%	47.0-50.0':	Medium brown clay, 20-25% magnetite	/16	47.0	50.0	3.0	70%	1,330			
50.0	53.0	3.0	85%	50.0-53.0':	Magnetite, about 60% and brown clay	/17	50.0	53.0	3.0	85%	870			
53.0	56.0	3.0	70%	53.0-62.0':	Mainly brown 'gritty' clay	/18	53.0	56.0	3.0	70%	640			
56.0	59.0	3.0	70%			/19	56.0	59.0	3.0	70%	580			
59.0	62.0	3.0	60%			/20	59.0	62.0	3.0	60%	1,210			
62.0	66.0	4.0	85%	62.0-66.0':	Magnetite, approx. 50-60%, and brown clay	/21	62.0	66.0	4.0	85%	1,910			
CORE: NQ/WL														
66.0	68.5	2.5	1.3			/22	66.0	68.5	2.5	1.3	210			

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S									
From	To	Interval					FOOTAGE			Recov.	W ppm	%				
				<p>Thus, the depth of weathering in the sense of the actual beginning of fresh rock does not generally apply to the magnetite content but rather to the other rock-forming minerals including in the upper portions of the holes, should it occur or have occurred, variably all, most or some of the scheelite content. It is not clear why this varies so much.</p> <p>Nevertheless, it does seem, speaking broadly, that it is the circumstance that the scheelite occurs principally in a dominantly stable magnetite-rock, under these conditions, to which it owes its preservation above the depths to which weathering extends.</p> <p><u>Scheelite Mineralization:</u></p> <p>0-24.0': No fluorescence noted</p> <p>24.0-48.0': Overall only minor except 36-42', where moderate.</p> <p>48.0-63.0': Minor</p> <p>63.0-77.0': Moderate</p> <p>77.0-124.0': Major, appears very well mineralized (grades of the order of 1.5%W ?)</p> <p>124.0-136.0': Minor to moderate.</p> <p><u>Log</u></p> <p>0-15.0': Brown gritty clay sludge; abundant granular quartz.</p>												
0	3.0	3.0	80%			D115/1	0	3.0	3.0	80%	800					
3.0	6.0	3.0	80%				2	3.0	6.0	3.0	80%	470				
6.0	9.0	3.0	80%				3	6.0	9.0	3.0	80%	640				
9.0	12.0	3.0	70%				4	9.0	12.0	3.0	70%	770				
12.0	15.0	3.0	60%				5	12.0	15.0	3.0	60%	4,670				

DRILL HOLE NO. 115SHEET NO. 3 OF 4

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S							
From	To	Interval					From	To	Interval	Recov	W ppm or %			
15.0	18.0	3.0	60%	15.0-77.0': Light yellow-brown clay and finely fragmented weathered rock minerals; 25-35% magnetite		Sample Number								
18.0	21.0	3.0	60%			D115/6	15.0	18.0	3.0	60%	5,700			
21.0	24.0	3.0	60%			7	18.0	21.0	3.0	60%	7,360			
24.0	27.0	3.0	60%			8	21.0	24.0	3.0	60%	1.61%			
27.0	30.0	3.0	60%	27.0-77.0': Light brown clay, 25-35% magnetite on average, somewhat variable.		9	24.0	27.0	3.0	60%	1.14%			
30.0	33.0	3.0	65%			10	27.0	30.0	3.0	60%	9,370			
33.0	36.0	3.0	65%			11	30.0	33.0	3.0	65%	6,440			
36.0	39.0	3.0	65%			12	33.0	36.0	3.0	65%	4,260			
39.0	42.0	3.0	70%			13	36.0	39.0	3.0	65%	5,140			
42.0	45.0	3.0	65%			14	39.0	42.0	3.0	70%	7,040			
45.0	48.0	3.0	65%			15	42.0	45.0	3.0	65%	8,070			
48.0	51.0	3.0	70%			16	45.0	48.0	3.0	65%	8,790			
51.0	54.0	3.0	70%			17	48.0	51.0	3.0	70%	7,330			
54.0	57.0	3.0	70%			18	51.0	54.0	3.0	70%	7,220			
57.0	60.0	3.0	70%			19	54.0	57.0	3.0	70%	4,850			
60.0	63.0	3.0	70%			20	57.0	60.0	3.0	70%	5,370			
63.0	66.0	3.0	60%			21	60.0	63.0	3.0	70%	4,930			
66.0	69.0	3.0	90%			22	63.0	66.0	3.0	60%	4,660			
69.0	72.0	3.0	90%		23	66.0	69.0	3.0	90%	5,520				
72.0	75.0	3.0	90%		24	69.0	72.0	3.0	90%	6,810				
75.0	77.0	2.0	100%		25	72.0	75.0	3.0	90%	6,800				
77.0	79.0	2.0	100%	77.0-81.0': Black Magnetite Sludge. Appears virtually fresh, 80-85% magnetite.	26	75.0	77.0	2.0	100%	6,330				
79.0	81.0	2.0	100%			27	77.0	79.0	2.0	100%	4,680			
Core						28	79.0	81.0	2.0	100%	6,670			
81.0	82.0	1.0	1.0	81.0-132.5': <u>Principally Magnetite-actinolite skarn</u> . On average 65-70% magnetite, coarsely crystallized. Rock quite strongly fractured, core for the most part very broken and extremely friable (progressively disintergrated on exposure and virtually impossible to split accurately- as a result all of		29	81.0	84.0	3.0	3.0	2,180			
82.0	90.0	8.0	8.0			30	84.0	87.0	3.0	3.0	7,610			
90.0	96.0	6.0	5.0			31	87.0	90.0	3.0	3.0	9,070			
96.0	98.0	2.0	1.7			32	90.0	93.0	3.0	2.5	2,450			
98.0	99.0	1.0	0.8			33	93.0	96.0	3.0	2.5	2,700			
99.0	103.0	4.0	2.5			34	96.0	99.0	3.0	2.5	1.23%			
103.0	106.0	3.0	2.5			35	99.0	102.0	3.0	1.9	3.13%			
106.0	108.0	2.0	1.8			36	102.0	105.0	3.0	2.3	4,230			

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S							
From	To	Interval					FOOTAGE			Rec.	W ppm or %	Mo ppm		
CORE:	NQ/WL					Sample No:								
75.0	77.0	2.0	1.7	75.0-84.5': Magnetite-actinolite rock, dark green and black, magnetite content about 60%. Rock extremely friable, irregularly fractured and progressively disintegrating on exposure. Some, but minor, yellow-brown limonitic weathered material. At 78.5': strongly slickensided shear plane at 45.-50° intersection angle.		D116/25	72.0	75.0	3.0	100%	3,830			
77.0	78.5	1.5	1.5			/26	75.0	78.0	3.0	2.7'	3,380			
78.5	84.5	6.0	5.1			/27	78.0	81.0	3.0	3.0	1,950			
						/28	81.0	84.0	3.0	2.1	2,460			
84.5	90.0	5.5	5.5	84.5-96.0': Strongly weathered light yellowish-brown limonitic rock, also some light green weathered material. Minor magnetite, about 5%. Some fine irregular fracturing.		/29	84.0	85.5	1.5	1.5	1,210			
90.0	92.0	2.0	2.0			/30	85.5	88.0	2.5	2.5	470			
92.0	95.0	3.0	2.7			/31	88.0	91.0	3.0	3.0	110			
						/32	91.0	94.0	3.0	3.0	60			
95.0	98.0	3.0	2.6	96.0-98.5': Dominantly magnetite rock, other minerals quite weathered. Magnetite content approx. 65-70%. Some foliation at 80° intersection angle. Occasionally some slickensiding on foliation planes. Core rather broken.		/33	94.0	97.0	3.0	2.7	50			
98.0	99.0	1.0	0.8		98.5-103.5': ?Actinolite rock with 10-15% magnetite		/34	97.0	100.0	3.0	2.1	80		
99.0	100.5	1.5	1.1			/35	100.0	103.0	3.0	2.3	55			
100.5	102.0	1.5	0.9											
102.0	103.0	1.0	1.0											
103.0	109.0	6.0	4.8	103.5-110.0': Dominantly magnetite, about 75%, some actinolite. Magnetite somewhat irregularly distributed. Minor slickensiding on occasional planes of foliation intersected at 80-85°.			/36	103.0	106.0	3.0	2.4	80		
109.0	110.0	1.0	1.0			/37	106.0	109.0	3.0	2.4	40			

107

673109

DRILL HOLE NO. 117
SHEET NO. 2 OF 4

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S							
From	To	Interval					FOOTAGE			Rec.	W ppm or %	Mo ppm		
Sludge						Sample No:								
0	3.0	3.0	50%	0-9.0': Red brown clay sludge (soil)		D117/1	0	3.0	3.0	50%	340			
3.0	6.0	3.0	65%			/2	3.0	6.0	3.0	65%	370			
5.0	9.0	3.0	90%			/3	6.0	9.0	3.0	90%	310			
9.0	12.0	3.0	35%	9.0-26.0': Light yellow-brown limonitic clay (but remaining in suspension of bentonite).		/4	9.0	12.0	3.0	35%	220			
12.0	15.0	3.0	40%			/5	12.0	15.0	3.0	40%	140			
15.0	18.0	3.0	35%			/6	15.0	18.0	3.0	35%	200			
18.0	20.0	2.0	35%			/7	18.0	20.0	2.0	35%	930			
20.0	23.0	3.0	35%			/8	20.0	23.0	3.0	35%	420			
23.0	26.0	3.0	40%			/9	23.0	26.0	3.0	40%	160			
26.0	28.0	2.0	30%	26.0-28.0': Gritty sludge, some coarse granular quartz; pulverized ?skarn		/10	26.0	28.0	2.0	30%	110			
28.0	30.0	2.0	Core 90%	28.0-33.0': Core-diopside-garnet-quartz rock, some weathering, particularly 30-33'. Sludge from 30-33': light grey-brown gritty sludge, minor clay; pulverized skarn		D117/20	28.0	30.0	2.0	1.8'	120			
30.0	33.0	3.0	Core 50%			D117/12	30.0	33.0	3.0	50%	190			
						D117/21	30.0	33.0	3.0	1.7'	100			
33.0	36.0	3.0	50%	33.0-39.0': Medium-brown gritty clay sludge		D117/13	33.0	36.0	3.0	50%	210			
36.0	39.0	3.0	30%			/14	36.0	39.0	3.0	30%	410			
39.0	42.0	3.0	90%	39.0-42.0' Gritty sludge with approximately 10% magnetite		/15	39.0	42.0	3.0	90%	390			
42.0	45.0	3.0	60%	42.0-51.0': Medium-brown gritty sludge		/16	42.0	45.0	3.0	60%	450			
45.0	48.0	3.0	85%			/17	45.0	48.0	3.0	85%	440			
48.0	51.0	3.0	90%			/18	48.0	51.0	3.0	90%	1,100			
51.0	53.0	2.0	50%	51.0-53.0': Light grey-brown sandy sludge, pulverized quartz-garnet-diopside skarn		/19	51.0	53.0	2.0	50%	810			
				(Difficulties and poor sludge recoveries in this hole relate to a change of mud-mix from 'Romud' to 'Supercol' - much sludge passed away in suspension, a mix produced by a similar quantity of the latter as commonly used with the former, being extremely thick. 'Romud' only is now being used. This										

DRILL HOLE NO. 117
 SHEET NO. 3 OF 4

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S							
From	To	Interval					FOOTAGE			Rec.	W ppm or %	Mo ppm		
Sludge				hole has led to consideration of whether we do or could have any major settlement problem, since it had been noticed that sludge recoveries of magnetite were always or at least very frequently, better than those of, for example, limonitic clays and non-or minor-magnetite weathered skarn. The scheelite has commonly been associated with a dominantly magnetite rock, but it is possible that non-recovery of the lighter, usually weathered, minerals in due proportion might have biased assays high. Modifications have been made by introducing additional sludge traps and a delay period prior to its being collected.) Concerning the sludge in 117, it is considered that 28.0-53.0' is essentially a weathered and finely fragmented diopside-garnet-quartz skarn.		Sample No:								
CORE: NQ/WL				53.0-70.5': Diopside-garnet-quartz skarn, occasional irregular patches of magnetite; rock has a rather "brecciated" appearance; some irregular fine fractioning.		D117/22	53.0	56.0	3.0	3.0	480			
53.0	55.0	2.0	2.0			/23	56.0	58.0	2.0	2.0	120			
55.0	62.5	7.5	7.5			/24	58.0	61.0	3.0	3.0	8,870	215		
62.5	65.0	2.5	2.1			/25	61.0	64.0	3.0	3.0	1.77%	480		
65.0	70.0	5.0	4.8			/26	64.0	66.1	2.1	1.7	7,960	210		
						/27	66.1	68.0	1.9	1.9	1,460			
70.0	74.5	4.5	4.2	70.5-77.5': Actinolite-epidote skarn?, medium-grained, many irregular narrow carbonate veins, some weathering.		/28	68.0	70.2	2.2	2.0	1,150			
74.5	79.5	5.0	4.7			/29	70.2	73.0	2.8	2.6	65			
79.5	81.5	2.0	1.6	77.5-88.5': Magnetite-diopside skarn, moderately but irregularly fractured.		/30	73.0	76.0	3.0	2.9	60			
81.5	86.0	4.5	4.4	77.5-84.0': Magnetite content approx. 30-35%.		/31	76.0	79.0	3.0	2.7	70			
				84.0-88.5': Magnetite content approx. 65%		D117/33	79.0	82.0	3.0	2.6	1,830			
						/34	82.0	85.0	3.0	2.9	250			
						/35	85.0	88.2	3.2	3.2	1,260			

DRILL HOLE NO. 117
 SHEET NO. 4 OF 4

FOOTAGE			RECOVERY	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S						
From	To	Interval					FOOTAGE			Rec.	W ppm or %	Mo ppm	
86.0	90.0	4.0	4.0	88.5-94.5': White medium-grained rock with less than 5% magnetite at 88.5' increasing to approximately 30% magnetite at 94.5' - dominantly a wollastonite rock? Magnetite has a tendency to occur in bands but also somewhat irregularly distributed.		Sample No: D117/36 /37	88.2	91.2	3.0	3.0	120		
90.0	93.5	3.5	3.1				91.2	94.0	2.8	2.4	170		
93.5	98.5	5.0	5.0	94.5-103.5': Dominantly magnetite, about 70-75% on average, 25-30% wollastonite? Minor pyrite. Some foliation intersected at approximately 60°; also some fracturing.		/38 /39 /40	94.0	97.0	3.0	3.0	230		
98.5	101.5	3.0	3.0				97.0	100.0	3.0	3.0	<20		
101.5	105.0	3.5	3.3				100.0	103.2	3.2	3.0	<20		
105.0	111.5	6.5	6.5	103.5-125.5': Massive quartzite, dark grey, fine-grained, minor disseminated pyrite, black dendritic structures.		/41	103.2	106.0	2.8	2.8	65		
111.5	114.5	3.0	3.0										
114.5	117.0	2.5	2.5										
117.0	118.0	1.0	1.0										
118.0	122.0	4.0	4.0										
122.0	125.5	3.5	3.0										
125.5	127.5	2.0	2.0	125.5-133.0': Biotite granite, significantly mafic in comparison with type of granite commonly intersected in localities to immediate west									
127.5	133.0	5.5	5.5										

AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY

DRILLING LOG

DRILL HOLE NO. 118

LOCATION E.L. 17/68 TASMANIA

DATE STARTED 20.3.73

LOGGED BY ADG. DAB

PROJECT KARA 1 PROSPECT

DATE COMPLETED 23.3.72

DATE 28.3.72

COORDINATES As per plane-table plan

DRILLED BY Associated Diamond Drillers Ltd.

SURVEYED BY Assumed no deviation

INCLINATION Vertical BEARING _____

TOTAL DEPTH 93 feet

DATE _____

COLLAR ELEVATION Pending

CASING N: 0 - 13 feet

SHEET NO. 1 OF 3

FOOTAGE			DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S						
From	To	Interval				FOOTAGE						
						From	To	Interval				
			<p>Summary:</p> <p><u>0-82.5'</u>: Skarn</p> <p><u>82.5-85.5'</u>: Contact zone, skarn and sandstone.</p> <p><u>85.5-93.0'</u>: Granite</p> <p>Weathering:</p> <p><u>85.5'</u>: Weathering extends to this depth, though magnetite appears to be fairly fresh.</p> <p>Scheelite Mineralization:</p> <p><u>15.0-18.0, 25.0-27.0, 38.0-47.0'</u>: Minor to very minor scheelite fluorescence.</p> <p><u>47.0-50.0'</u>: Minor to moderate fluorescence, possibly 0.3%W.</p> <p><u>50.0-57.0'</u>: Major to very well mineralized, possibly 1% grades.</p> <p><u>57.0-67.5'</u>: In core, some disseminated scheelite, a few small areas of coarser mineralization, grade 0.3-0.4%W?</p>									

110

673113

DRILL HOLE NO. 118

SHEET NO. 2 OF 3

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S							
From	To	Interval					FOOTAGE			Rec.	W ppm or %	Mo ppm		
Sludge						Sample No:								
0	3.0	3.0	90%	0-9.0': Red brown clay sludge with some rubble fragments of magnetite. 6.0-9.0': also approximately 10% granular magnetite. Probably soil horizon from 0-8.0'.		D118/1	0	3.0	3.0	90%	1,460			
3.0	6.0	3.0	90%			/2	3.0	6.0	3.0	90%	1,210			
6.0	9.0	3.0	90%			/3	6.0	9.0	3.0	90%	950			
9.0	12.0	3.0	90%	9.0-15.0': Yellow-brown and purplish clay with 15-20% magnetite.		/4	9.0	12.0	3.0	90%	490			
12.0	15.0	3.0	90%			/5	12.0	15.0	3.0	90%	770			
15.0	18.0	3.0	80%	15.0-23.0': Magnetite, yellow-brown clay and fragmented limonitized weathered rock material. Magnetite content about 50-55%.		/6	15.0	18.0	3.0	80%	830			
18.0	21.0	3.0	80%			/7	18.0	21.0	3.0	80%	4,470			
21.0	23.0	2.0	90%			/8	21.0	23.0	2.0	90%	4,680			
23.0	25.0	2.0	100%		23.0-44.0': Dominantly black magnetite sludge, magnetite on average approx. 75-85%, minor brown clay. 29.0-44.0': Magnetite much coarser 41.0-44.0': Brown clay increasing, about 25-30%.		/9	23.0	25.0	2.0	100%	3,200		
25.0	27.0	2.0	100%			/10	25.0	27.0	2.0	100%	5,990	140		
27.0	29.0	2.0	100%			/11	27.0	29.0	2.0	100%	4,760			
29.0	32.0	3.0	100%			/12	29.0	32.0	3.0	100%	5,300	15		
32.0	35.0	3.0	100%			/13	32.0	35.0	3.0	100%	7,210	35		
35.0	38.0	3.0	100%			/14	35.0	38.0	3.0	100%	5,530	90		
38.0	41.0	3.0	100%			/15	38.0	41.0	3.0	100%	1,150			
41.0	44.0	3.0	100%			/16	41.0	44.0	3.0	100%	1.28%	180		
44.0	47.0	3.0	100%	44.0-50.0': Light yellow-brown clay and some magnetite, but much less coarse. Magnetite content about 5-10% from 44-47' and 30-35% from 47-50'.		/17	44.0	47.0	3.0	100%	1.07%	140		
47.0	50.0	3.0	100%			/18	47.0	50.0	3.0	100%	9,230	180		
50.0	53.0	3.0	100%	50.0-57.0': Dominantly black magnetite sludge, magnetite approx. 90-95%.		/19	50.0	53.0	3.0	100%	5,930	180		
53.0	55.0	2.0	100%			/20	53.0	55.0	2.0	100%	5,040	140		
55.0	57.0	2.0	100%			/21	55.0	57.0	2.0	100%	1.39%	660		

AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY

DRILLING LOG

DRILL HOLE NO. 120

LOCATION E.L. 17/68 TASMANIA

DATE STARTED 24.3.72

LOGGED BY A.D.G., D.A.B.

PROJECT KARA 1 PROSPECT

DATE COMPLETED 30.3.72

DATE 5.4.72

COORDINATES As per plane-table survey

DRILLED BY Associated Diamond Drillers Limited SURVEYED BY Assumed no deviation

INCLINATION 45° BEARING due East (old grid)

TOTAL DEPTH 138½ feet

DATE _____

COLLAR ELEVATION _____

CASING N: 0-13 feet

SHEET NO. 1 OF 3

FOOTAGE			DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S						
From	To	Interval				FOOTAGE						
						From	To	Interval				
			<p><u>Summary:</u></p> <p><u>0- 5.0'</u>: Soil</p> <p><u>5.0-121.0'</u>: Skarn</p> <p><u>121.0-132.5'</u>: Sandstone</p> <p><u>132.5-138.5'</u>: Granite</p> <p><u>Weathering:</u></p> <p><u>54.0'</u>: probably main depth of weathering</p> <p><u>122.5'</u>: some weathering would continue to this depth.</p> <p><u>Scheelite Mineralization:</u></p> <p><u>0- 54.0'</u>: Only a very occasional speck indeed noted.</p> <p><u>54.0- 69.0'</u>: 'Major' fluorescence in sludge, 0.7-0.8%W?</p> <p><u>69.0- 72.0'</u>: 'Minor', 0.1-0.2%W?</p> <p><u>72.0- 87.0'</u>: 'Moderate', approx. 0.4%W?</p> <p><u>87.0-119.0'</u>: 'Minor', 0.1-0.2%W?</p>									

116

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S						
From	To	Interval					FOOTAGE			Rec.	W ppm or %	Mo ppm	
Sludge						From	To	Interval					
0	3.0	3.0	60%	0-6.0': Mainly violet-brown soil with some subtle fragments of magnetite.		Sample No: D120/1	0	3.0	3.0	60%	1,260		
3.0	6.0	3.0	60%				/2	3.0	6.0	3.0	60%	1,630	
6.0	9.0	3.0	90%	6.0-36.0': Medium-brown clay and pulverised weathered limonitic skarn material. 6.0-12.0': 5-10% specularite.		/3	6.0	9.0	3.0	90%	1,720		
9.0	12.0	3.0	90%			/4	9.0	12.0	3.0	90%	1,740		
12.0	15.0	3.0	90%			/5	12.0	15.0	3.0	90%	1,990		
15.0	18.0	3.0	90%			/6	15.0	18.0	3.0	90%	2,120		
18.0	21.0	3.0	90%			/7	18.0	21.0	3.0	90%	2,000		
21.0	24.0	3.0	90%			/8	21.0	24.0	3.0	90%	1,670		
24.0	27.0	3.0	90%			/9	24.0	27.0	3.0	90%	3,080		
27.0	30.0	3.0	90%			/10	27.0	30.0	3.0	90%	3,100		
30.0	33.0	3.0	90%			/11	30.0	33.0	3.0	90%	3,190		
33.0	36.0	3.0	100%			/12	33.0	36.0	3.0	100%	4,260		
36.0	39.0	3.0	100%	36.0-45.0': As above but some magnetite; from 36-39', about 5-10% magnetite, 39-42', about 10-15% and 42-45', 30-35%.		/13	36.0	39.0	3.0	100%	4,650		
39.0	42.0	3.0	100%			/14	39.0	42.0	3.0	100%	4,630		
42.0	45.0	3.0	100%			/15	42.0	45.0	3.0	100%	3,200		
45.0	48.0	3.0	75%	45.0-48.0': Medium-brown clay		/16	45.0	48.0	3.0	75%	3,130		
48.0	51.0	3.0	100%	48.0-54.0': Medium reddish-brown clay		/17	48.0	51.0	3.0	100%	5,020	190	
51.0	54.0	3.0	100%			/18	51.0	54.0	3.0	100%	5,230	160	
54.0	57.0	3.0	75%	54.0-75.0': Medium to dark brown clay and magnetite; from 54-63', some 40% magnetite on average; 63-72', about 25-30% and 72-75', 65-70%.		/19	54.0	57.0	3.0	75%	4,000		
57.0	60.0	3.0	90%			/20	57.0	60.0	3.0	90%	4,110		
60.0	63.0	3.0	70%			/21	60.0	63.0	3.0	70%	3,840		
63.0	66.0	3.0	85%			/22	63.0	66.0	3.0	85%	5,040	100	
66.0	69.0	3.0	90%			/23	66.0	69.0	3.0	90%	5,400	110	
69.0	72.0	3.0	90%			/24	69.0	72.0	3.0	90%	4,250		
72.0	75.0	3.0	90%			/25	72.0	75.0	3.0	90%	2,780		

119

73-961

673121

AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY

DRILLING LOG

DRILL HOLE NO. 121LOCATION E.L. 17/68 TASMANIADATE STARTED 5.4.72LOGGED BY A.D.G., D.A.B.PROJECT KARA 1 PROSPECTDATE COMPLETED 27.4.72DATE Whilst in progress 8, 3.5.72COORDINATES As per plane-table surveyDRILLED BY Associated Diamond Drillers Limited SURVEYED BY Assumed no deviationINCLINATION 45° BEARING due West (old grid)TOTAL DEPTH 366 feet

DATE _____

COLLAR ELEVATION _____

CASING B: 0-320 feet N:0-55 feetSHEET NO. 1 OF 7

FOOTAGE			DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S						
From	To	Interval				FOOTAGE						
						From	To	Interval				
			<p><u>Summary:</u></p> <p><u>0-214.0'</u>: Skarn <u>214.0-264.1'</u>: 'Contact' Zone, Quartzite and Skarn. <u>264.1-284.7'</u>: Quartzite <u>284.7-358.0'</u>: Mainly green weathered sandy clay, some quartzite. <u>358.0-366.0'</u>: Granite</p> <p><u>Weathering:</u></p> <p><u>113.0'</u>: Main depth of weathering <u>191.0'</u>: Some weathering to this depth. <u>284.7-365.8'</u>: Strong weathering</p> <p><u>Scheelite Mineralization:</u></p> <p><u>63.0-75.0'</u>: Minor fluorescence only in sludge, 0.1-0.2%W? <u>75.0-109.0'</u>: Moderate, improving; mainly coarse crystalline scheelite, but also some finely disseminated, around 0.4%W? <u>109.0-126.5'</u>: Well mineralized, coarse crystalline and fine disseminated, 1%W type grades? <u>126.5-187.0'</u>: Good but some moderate zones only mainly zones of coarse crystalline scheelite but from 171.3-187', as cut-off approached, mainly fine disseminated scheelite, only occasional coarser crystals. 0.7-0.8%W on average?</p>									

DRILL HOLE NO. 121
 SHEET NO. 2 OF 7

FOOTAGE			DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S						
From	To	Interval				FOOTAGE			Rec.	W ppm or %		
						From	To	Interval				
			Summary Cont'd.....									
			187.0-207.0': Minor to moderate disseminated scheelite, 0.3%W on average.									
			207.0-260.7': Sporadic scheelite, as specks and occasionally better disseminations particularly in actinolite-magnetite zones 'within' quartzite from 214'. Minor disseminated scheelite only from 207-214'. Former zones possibly represent fractures expanded by granitic intrusion and available as 'channel-ways' for solutions to penetrate the quartzite to limestones above.									
Sludge			Recovery		Sample No:							
0	3.0	3.0	75%	0-6.0': Red-brown clay sludge	D121/1	0	3.0	3.0	75%	1,350		
3.0	6.0	3.0	75%		/2	3.0	6.0	3.0	75%	1,320		
6.0	9.0	3.0	90%	6.0-9.0': Yellow-brown clay sludge	/3	6.0	9.0	3.0	90%	1,790		
9.0	12.0	3.0	75%	9.0-12.0': Yellow-brown and blackish finely fragmented skarn sludge. Minor magnetite, approx. 10%, and some specularite?	/4	9.0	12.0	3.0	75%	940		
12.0	15.0	3.0	70%	12.0-15.0': Yellow-brown clay sludge	/5	12.0	15.0	3.0	70%	1,310		
15.0	18.0	3.0	70%	15.0-23.0': Red-brown clay sludge, minor magnetite, approx. 10%, and some specularite?	/6	15.0	18.0	3.0	70%	1,200		
18.0	21.0	3.0	70%		/7	18.0	21.0	3.0	70%	890		
21.0	24.0	3.0	60%	23.0-30.0': Light yellow-brown clay sludge	/8	21.0	24.0	3.0	60%	630		
24.0	27.0	3.0	60%		/9	24.0	27.0	3.0	60%	360		
27.0	30.0	3.0	60%		/10	27.0	30.0	3.0	60%	830		
30.0	36.0	3.0	70%	30.0-36.0': Light brown clay sludge	/11	30.0	33.0	3.0	35%	900		
33.0	36.0	3.0	70%		/12	33.0	36.0	3.0	70%	1,190		
36.0	39.0	3.0	70%	36.0-48.0': Medium-green brown clay sludge	/13	36.0	39.0	3.0	70%	1,450		
39.0	42.0	3.0	70%		/14	39.0	42.0	3.0	70%	1,840		
42.0	45.0	3.0	70%		/15	42.0	45.0	3.0	70%	2,480		
45.0	48.0	3.0	70%		/16	45.0	48.0	3.0	70%	2,150		

DRILL HOLE NO. 121
 SHEET NO. 4 OF 7

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S									
From	To	Interval					From	To	Interval	Rec.	W ppm or %	Mo ppm				
113.0	116.0	3.0	2.2'	113.0-144.0': Magnetite-actinolite rock, back to approx. 80-85% magnetite. Rock very friable and disintegrating on exposure due to irregular fracturing. Magnetite here is coarser and better crystallized than that from 75-104.5'.		Sample No:										
						D121/39	113.0	116.0	3.0	2.2	9,350	160				
116.0	119.0	3.0	2.3			/40	116.0	119.0	3.0	2.3	4,770					
119.0	125.0	6.0	6.0			/41	119.0	122.0	3.0	3.0	1.57%	170				
125.0	127.0	2.0	2.0			/42	122.0	125.0	3.0	3.0	1.31%	210				
127.0	132.0	5.0	4.2			/43	125.0	126.5	1.5	1.5	2,900					
132.0	135.0	3.0	2.5			/44	126.5	128.0	1.5	1.5	4,060					
135.0	142.1	7.1	6.7			/45	128.0	132.0	4.0	3.2	1.26%	220				
						/46	132.0	135.0	3.0	2.5	9,440	260				
						/47	135.0	138.0	3.0	2.8	3,080					
142.1	149.1	7.0	6.6	144.0-171.3': Moderately to heavily fractured magnetite-rock, approx. 75% magnetite. Other main constituent mineral possibly actinolite, but some weathering occurs again over this interval giving rise to green clay areas, occasionally with a fibrous structure remaining, amongst the magnetite. In contradistinction to 113-144', where magnetite and actinolite appear intimately mixed, from 144-171.3' there appears to have been more irregular replacement, magnetite and 'actinolitic clay' occupying discrete areas. Fracturing at 30-35°, 50-60°, and 20-25° intersection angles; probably also reason why this interval somewhat weathered.		/48	138.0	141.0	3.0	2.8	1.32%	400				
149.1	151.1	2.0	1.2			/49	141.0	144.0	3.0	2.9	2,170					
151.1	153.7	2.6	1.9			/50	144.0	147.0	3.0	2.8	1,370					
153.7	155.0	1.3	0.9			/51	147.0	150.0	3.0	2.6	8,780	130				
155.0	159.0	4.0	3.7			/52	150.0	153.0	3.0	2.0	1.40%	340				
159.0	161.0	2.0	1.8			/53	153.0	156.0	3.0	2.3	1.97%	380				
161.0	165.0	4.0	0.6			/54	156.0	159.0	3.0	2.8	4,220					
165.0	166.1	1.1	0.8			/55	159.0	162.0	3.0	2.4	1.04%	130				
166.1	169.1	3.0	1.4			/56	162.0	165.0	3.0	NIL	NO SAMPLE					
169.1	171.3	2.2	2.2			/57	165.0	168.0	3.0	1.6	3,130					
					/58	168.0	171.3	3.3	2.8	9,350	130					

AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY

DRILLING LOG

DRILL HOLE NO. 122LOCATION E.L. 17/68 TASMANIADATE STARTED 5.4.72LOGGED BY A.D.G., D.A.B.PROJECT KARA 1 PROSPECTDATE COMPLETED 19.4.72 (breakdown)DATE 21.4.72COORDINATES As per plane-table surveyDRILLED BY Associated Diamond Drillers Limited SURVEYED BY Assumed no deviationINCLINATION 45° BEARING due East (old grid)TOTAL DEPTH 192 feet DATE _____

COLLAR ELEVATION _____

CASING N: 0-20 feet SHEET NO. 1 OF 4

FOOTAGE			DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S						
From	To	Interval				FOOTAGE						
						From	To	Interval				
			<p><u>Summary:</u></p> <p><u>0-116.5'</u>: Skarn <u>116.5-185.0'</u>: Dolomite and Quartzite <u>185.0-192.0'</u>: Granite</p> <p><u>Weathering:</u></p> <p><u>112.0'</u>: Main depth of weathering.</p> <p><u>Scheelite Mineralization:</u></p> <p><u>24.0-57.0'</u>: Minor to very minor fluorescence in sludge, a little better from 30-33' & 42-45' (0.2-0.3%W?)</p> <p><u>66.0-82.0'</u>: Very minor fluorescence in sludge, occasional specks only.</p> <p><u>82.0-116.5'</u>: Only very occasional specks in skarn except narrow band from 103-103.5', where some coarse crystals of scheelite occur. At 114.5', a few blebs.</p> <p><u>116.5-184.3'</u>: Some minor disseminated in actinolite-chlorite zone at 126'; otherwise very sporadic and occasional indeed, occurring within narrow fractures, sometimes with minor adjacent disseminations in green actinolite-chlorite zones within the siliceous dolomite horizon, for example at 123', 126', 127', 131', 135', 141', 144', 166-5' and 169' (but only a few grains in and adjacent to such fractures).</p>									

DRILL HOLE NO. 122

SHEET NO. 2 OF 4

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S								
From	To	Interval					From	To	Interval	Rec.	W ppm				
Sludge						Sample No:									
				Summary Cont'd.....											
				184.3-185.0': Moderate dissemination adjacent to granite contact but a very narrow and restricted zone.											
0	3.0	3.0	40%	0-18.0': Orange-brown limonitic weathered skarn sludge, dominantly clay.		D122/1	0	3.0	3.0	40%	1,730				
3.0	6.0	3.0	50%			/2	3.0	6.0	3.0	50%	550				
6.0	9.0	3.0	45%			/3	6.0	9.0	3.0	45%	210				
9.0	12.0	3.0	70%			/4	9.0	12.0	3.0	70%	780				
12.0	15.0	3.0	75%			/5	12.0	15.0	3.0	75%	2,850				
15.0	18.0	3.0	65%			/6	15.0	18.0	3.0	65%	720				
18.0	21.0	3.0	35%		18.0-30.0': Light yellow-brown clay and finely fragmented weathered skarn. 24.0-27.0': Approx. 10% magnetite.		/7	18.0	21.0	3.0	35%	350			
21.0	24.0	3.0	60%				/8	21.0	24.0	3.0	60%	310			
24.0	27.0	3.0	70%				/9	24.0	27.0	3.0	70%	160			
27.0	30.0	3.0	60%				/10	27.0	30.0	3.0	60%	840			
30.0	33.0	3.0	50%	30.0-54.0': Light yellow-brown and grey-brown 'gritty' sludge, after quartz-diopside skarn?		/11	30.0	33.0	3.0	50%	1,960				
33.0	36.0	3.0	65%			/12	33.0	36.0	3.0	65%	620				
36.0	39.0	3.0	65%			/13	36.0	39.0	3.0	65%	400				
39.0	42.0	3.0	60%			/14	39.0	42.0	3.0	60%	800				
42.0	45.0	3.0	60%			/15	42.0	45.0	3.0	60%	1,320				
45.0	48.0	3.0	95%			/16	45.0	48.0	3.0	95%	490				
48.0	51.0	3.0	60%			/17	48.0	51.0	3.0	60%	95				
51.0	54.0	3.0	60%			/18	51.0	54.0	3.0	60%	270				
54.0	57.0	3.0	50%	54.0-69.0': Yellow-brown finely 'sandy' clay.		/19	54.0	57.0	3.0	50%	770				
57.0	60.0	3.0	30%			/20	57.0	60.0	3.0	30%	680				
60.0	63.0	3.0	35%			/21	60.0	63.0	3.0	35%	720				
63.0	66.0	3.0	50%			/22	63.0	66.0	3.0	50%	360				
66.0	69.0	3.0	50%			/23	66.0	69.0	3.0	50%	480				
69.0	72.0	3.0	60%	69.0-72.0': Yellowish sand sludge		/24	69.0	72.0	3.0	60%	280				
72.0	75.0	3.0	45%	72.0-75.0': Yellow-brown finely 'sandy' clay sludge.		/25	72.0	75.0	3.0	45%	390				
75.0	78.0	3.0	65%	75.0-82.0': Light-brown clayey sand sludge. (54-82': sludge possibly represents a weathered calcareous or dolomitic sandstone.)		/26	75.0	78.0	3.0	65%	190				
78.0	82.0	4.0	30%			/27	78.0	82.0	4.0	30%	320				

AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY

DRILLING LOG

DRILL HOLE NO. 123

LOCATION E.L. 17/68 TASMANIA

DATE STARTED 21.4.72

LOGGED BY ADG, DAB

PROJECT KARA I PROSPECT

DATE COMPLETED 27.4.72

DATE 28.4.72

COORDINATES As per Plane-table survey

DRILLED BY ASSOCIATED DIAMOND DRILLERS LTD SURVEYED BY ASSUMED NO DEVIATION

INCLINATION VERTICAL BEARING _____

TOTAL DEPTH 184ft

DATE _____

COLLAR ELEVATION _____

CASING N: 0-10ft

SHEET NO. 1 OF 4

FOOTAGE			DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S						
From	To	Interval				FOOTAGE						
						From	To	Interval				
			<p><u>Summary:</u> 0-88.0' : Skarn 88.0-121.0' : Limestone & Quartzite 121.0-174.5' : Dominantly Skarn 174.5-176.5' : Sandstone 176.5-184.0' : Granite</p> <p><u>Weathering:</u> 48.0' : Probably main depth of weathering 48.0-77.0' : Some weathering predominantly related to fracturing.</p> <p><u>Scheelite Mineralization</u> 18.0-24.0' : Minor fluorescence in sludge, 0.1-0.2% W? 24.0-27.0' : Major, 1% W type? 27.0-30.0' : Moderate, 0.5-0.6% W? 30.0-39.0' : Minor fluorescence. Otherwise, in sludge, only very occasional speck noted. 105.5-110.5' : A few specks in fine fractures, very intermittent. 121.0-140.0' : Similar to above. 140.0-143.0' : Some coarse crystalline scheelite associated with and commonly surrounded by magnetite. 148.0-150.0' : A few coarse scheelite crystals 160.0' : Scheelite on fracture plane. Otherwise in core, only sporadic specks.</p>									

130

131

673133

DRILL HOLE NO. 123

SHEET NO. 2 OF 4

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S								
From	To	Interval					FOOTAGE			Recov.	W				
<u>SLUDGE:</u>				0-48.0': Medium brown and yellow brown limonitic clay sludge and finely fragmented weathered skarn. 0-3': a few larger fragments of limonitic skarn; 30-33': greenish brown in colour; 36-39': finely sandy; 45-48': darker brown, approx. 10% magnetite.		<u>SAMPLE NUMBER</u>									
					D123/1	0	3.0	3.0	60%	8290					
0	3.0	3.0	60%			2	3.0	6.0	3.0	60%	1410				
3.0	6.0	3.0	60%			3	6.0	9.0	3.0	60%	1450				
6.0	9.0	3.0	60%			4	9.0	12.0	3.0	60%	2440				
9.0	12.0	3.0	60%			5	12.0	15.0	3.0	60%	1290				
12.0	15.0	3.0	60%			6	15.0	18.0	3.0	60%	1500				
15.0	18.0	3.0	60%			7	18.0	21.0	3.0	60%	3790				
18.0	21.0	3.0	60%			8	21.0	24.0	3.0	60%	3410				
21.0	24.0	3.0	60%			9	24.0	27.0	3.0	60%	1.46%				
24.0	27.0	3.0	60%			10	27.0	30.0	3.0	60%	3240				
27.0	30.0	3.0	60%			11	30.0	33.0	3.0	75%	550				
30.0	33.0	3.0	75%			12	33.0	36.0	3.0	50%	980				
33.0	36.0	3.0	50%			13	36.0	39.0	3.0	75%	1140				
36.0	39.0	3.0	75%			14	39.0	42.0	3.0	50%	880				
39.0	42.0	3.0	50%			15	42.0	45.0	3.0	50%	1990				
42.0	45.0	3.0	50%			16	45.0	48.0	3.0	40%	1470				
45.0	48.0	3.0	40%			17	48.0	50.5	2.5	2.2'	30				
<u>CORE:</u>				48.0-88.0': <u>Magnetite skarn.</u> 48.0-65.5': Magnetite-diopside skarn, strongly fractured, core very broken; the dominant fracture plane is vertical, other fracture planes intersected at 25-30°, and 40°. Some weathering to 77'. 48.0-52.5': approx. 90% magnetite; 52.5-65.5': about 35% magnetite. 65.5-82.0': Magnetite-dolomite rock, some greenish material, actinolite-chlorite? 65.5-74.0': approx 50% magnetite, 74.0-82.0': about 85% magnetite. 71.5-73.0, however, is dolomitic limestone with virtually no magnetite.											
	<u>NQ/WL</u>				18	50.5	52.5	2.0	1.0	230					
48.0	50.5	2.5	2.2'		19	52.5	55.5	3.0	2.0	55					
50.5	52.5	2.0	1.0		20	55.5	57.0	1.5	1.1	80					
52.5	55.5	3.0	2.0		21	57.0	60.0	3.0	1.5	65					
55.5	57.0	1.5	1.1		22	60.0	62.0	2.0	1.0	100					
57.0	60.0	3.0	1.5		23	62.0	65.0	3.0	3.0	25					
60.0	62.0	2.0	1.0												
62.0	65.0	3.0	3.0												
65.0	67.0	2.0	2.0			24	65.0	67.0	2.0	2.0	20				
67.0	71.0	4.0	2.7		25	67.0	71.0	4.0	2.7	20					
71.0	73.5	2.5	1.9		26	71.0	73.5	2.5	1.9	55					
73.5	77.0	3.5	3.5		27	73.5	77.0	3.5	3.5	20					

135

673137

DRILL HOLE NO. 124

SHEET NO. 2 OF 3

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S						
From	To	Interval					From	To	Interval	Rec.	W ppm	Mo ppm	
0	3.0	3.0	60%	0-3.0': Yellow-brown clay sludge.		Sample Number: D124/1							
3.0	6.0	3.0	60%	3.0-12.0': Light brown and grey-brown clay sludge with 5-10% magnetite		/2	0	3.0	3.0	60%	760		
6.0	9.0	3.0	60%			/3	3.0	6.0	3.0	60%	1,070		
9.0	12.0	3.0	60%			/4	6.0	9.0	3.0	60%	1,660		
12.0	14.0	2.0	60%	12.0-17.0': Medium brown and yellowish clay sludge		/5	9.0	12.0	3.0	60%	990		
14.0	17.0	3.0	60%			/6	12.0	14.0	2.0	60%	1,600		
17.0	20.0	3.0	70%	17.0-28.9': Blackish-brown clay sludge with 50-55% magnetite.		/7	14.0	17.0	3.0	60%	1,330		
20.0	23.0	3.0	75%			/8	17.0	20.0	3.0	70%	410		
23.0	26.0	3.0	75%			/9	20.0	23.0	3.0	75%	700		
26.0	28.0	2.0	70%			/10	23.0	26.0	3.0	75%	440		
CORE: NQ/WL							26.0	28.0	2.0	70%	340		
28.0	36.0	8.0	6.9'	28.0-103.0': Magnetite-diopside-actinolite-carbonate skarn, dominantly green and black in colour, tendency to be banded, albeit on occasion somewhat irregularly, at approx. 70° intersected. Some, but fairly minor carbonate except for narrow zone 78-79' & 90-92' where dominantly a dull green actinolite-chlorite-carbonate rock-other similar zones are only of the order of 1-3" across. Magnetite content of rock about 55% on average but variable; stretches where approx. 75% of rock, for example 71-83' (excluding 78-79'); others, for example 60.5-71' & 83-89' where about 45% & 40% magnetite respectively. From 92-96.5', magnetite content decreasing to approx. 30-35%, and from 96.5-103' to of the order of 10% only. Comparatively minor fracturing from 57' but fracturing moderate from		/11	28.0	30.0	2.0	1.6'	90		
36.0	41.0	5.0	4.4'			/12	30.0	33.5	3.5	2.9'	6,540	75	
41.0	46.0	5.0	4.4'			/13	33.5	36.5	3.0	2.9'	1,090		
46.0	50.0	4.0	3.5'			/14	36.5	39.5	3.0	3.0'	430		
50.0	54.5	4.5	4.5'			/15	39.5	42.5	3.0	2.8'	340		
54.5	57.0	2.5	1.9'			/16	42.5	46.0	3.5	2.7'	1,780		
57.0	64.0	7.0	6.7'			/17	46.0	49.0	3.0	2.6'	990		
64.0	74.0	10.0	10.0'			/18	49.0	52.0	3.0	2.9'	260		
74.0	84.0	10.0	10.0'			/19	52.0	54.5	2.5	2.5	160		
84.0	94.0	10.0	10.0'			/20	54.5	57.0	2.5	1.9'	270		
94.0	104.0	10.0	9.4'			/21	57.0	60.0	3.0	3.0'	1,700		
						/22	60.0	64.0	4.0	3.7'	<20		
						/23	64.0	69.0	5.0	5.0	<20		
						/24	69.0	74.0	5.0	5.0'	220		
						/25	74.0	79.0	5.0	5.0'	<20		
						/26	79.0	84.0	5.0	5.0'	330		
						/27	84.0	89.0	5.0	5.0'	220		
						/28	89.0	94.0	5.0	5.0'	130		
						/29	94.0	99.0	5.0	5.0'	90		
						/30	99.0	103.0	4.0	3.7'	290		

DRILL HOLE NO. 124

SHEET NO. 3 OF 3

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S			W ppm				
From	To	Interval					FOOTAGE							
							From	To	Interval					
104.0	105.5	1.5	1.5'	103-105.7':										
				28-57' with some polished slickensided shear planes, for example at 34', 36', 37', 38.5' and 43', the two latter although somewhat irregular, intersected at 10-15° and almost parallel to long core axis, respectively. Zone from 28-57' also appears to be more strongly actinolitic.										
105.5	115.0	9.5	9.0'	105.7-115':										
						Composite Sludge Samples								
						D124/C1	28.0	46.0	18.0				2,270	
						/C2	46.0	58.0	12.0				1,060	
						/C3	58.0	74.0	16.0				270	

AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY

DRILLING LOG

DRILL HOLE NO. 125

LOCATION E.L. 17/68 TASMANIA

DATE STARTED 2.5.72

LOGGED BY A.D.G.

PROJECT KARA 1 PROSPECT

DATE COMPLETED 10.5.72

DATE 14.5.72

COORDINATES As per plane-table survey

DRILLED BY Associated Diamond Drillers Limited SURVEYED BY Assumed no deviation

INCLINATION 45° BEARING due West (old grid)

TOTAL DEPTH 288 ft.

DATE _____

COLLAR ELEVATION _____

CASING N: 0-12 ft.

SHEET NO. 1 OF 4

FOOTAGE			DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S						
From	To	Interval				FOOTAGE						
						From	To	Interval				
			<p><u>SUMMARY:</u></p> <p><u>0-215.0'</u>: Skarn <u>215.0-223.0'</u>: 'Contact Zone', quartzite and skarn <u>223.0-281.3'</u>: Quartzite <u>218.3-288.0'</u>: Granite</p> <p><u>WEATHERING:</u></p> <p><u>89.0'</u>: Main depth of weathering <u>115.5'</u>: Some weathering extends to this depth.</p> <p><u>SCHEELITE MINERALIZATION:</u></p> <p><u>102.5-103.0'</u>: Some coarse crystals. <u>120.5'</u>: A few crystals <u>158.0-169.7'</u>: Fine disseminated and coarse crystalline scheelite improving towards 169.7', would average 0.4%W? <u>169.7-172.2'</u>: Very well mineralized, contains three zones where numerous coarse crystalline aggregates. <u>172.2-197.0'</u>: Fine disseminated and some coarse crystals decreasing towards 197', would average 0.5-0.6%W? <u>221.0-232.5'</u>: Some fine disseminated but rather patchy, 0.1-0.2%W?</p>									

137

DRILL HOLE NO. 125

SHEET NO. 2 OF 4

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S							
From	To	Interval					From	To	Interval	Rec.	W ppm			
0	4.0	4.0	80%	0- 18.0': Yellow-brown clay sludge.		Sample Number:								
4.0	8.0	4.0	80%			D125/1	0	4.0	4.0	80%	530			
8.0	12.0	4.0	80%			/2	4.0	8.0	4.0	80%	810			
12.0	15.0	3.0	70%	18.0- 78.0': Yellow-brown clay sludge.		/3	8.0	12.0	4.0	80%	1,050			
15.0	18.0	3.0	70%			/4	12.0	15.0	3.0	70%	870			
18.0	21.0	3.0	70%			/5	15.0	18.0	3.0	70%	1,840			
21.0	24.0	3.0	60%			/6	18.0	21.0	3.0	70%	2,080			
24.0	27.0	3.0	60%			/7	21.0	24.0	3.0	60%	1,990			
27.0	30.0	3.0	60%			/8	24.0	27.0	3.0	60%	1,970			
30.0	33.0	3.0	60%			/9	27.0	30.0	3.0	60%	1,570			
33.0	36.0	3.0	60%			/10	30.0	33.0	3.0	60%	1,460			
36.0	39.0	3.0	60%			/11	33.0	36.0	3.0	60%	1,490			
39.0	42.0	3.0	50%			/12	36.0	39.0	3.0	60%	1,580			
42.0	45.0	3.0	25%			/13	39.0	42.0	3.0	50%	1,040			
45.0	48.0	3.0	35%			/14	42.0	45.0	3.0	25%	950			
48.0	51.0	3.0	40%			/15	45.0	48.0	3.0	35%	1,110			
51.0	54.0	3.0	40%			/16	48.0	51.0	3.0	40%	1,110			
54.0	57.0	3.0	45%			/17	51.0	54.0	3.0	40%	1,760			
57.0	60.0	3.0	45%			/18	54.0	57.0	3.0	45%	1,810			
60.0	63.0	3.0	25%			/19	57.0	60.0	3.0	45%	1,800			
63.0	66.0	3.0	45%		/20	60.0	63.0	3.0	25%	3,480				
66.0	69.0	3.0	50%		/21	63.0	66.0	3.0	45%	3,460				
69.0	72.0	3.0	50%		/22	66.0	69.0	3.0	50%	3,570				
72.0	75.0	3.0	45%		/23	69.0	72.0	3.0	50%	1,570				
75.0	78.0	3.0	30%		/24	72.0	75.0	3.0	45%	1,670				
78.0	81.0	3.0	30%	78.0- 87.0': Magnetite and brown clay sludge, magnetite content approx. 70%.		/25	75.0	78.0	3.0	30%	1,860			
81.0	84.0	3.0	60%			/26	78.0	81.0	3.0	30%	1,530			
84.0	87.0	3.0	65%			/27	81.0	84.0	3.0	60%	480			
CORE: NQ/WL				87.0-119.5': Magnetite Skarn: Dominantly magnetite, approx. 85% of rock with some diopside and minor actinolite. Some rather irregular		/28	84.0	87.0	3.0	65%	480			
87.0	90.0	3.0	3.0'			/29	87.0	92.0	5.0	4.7'	75			
90.0	92.0	2.0	1.7'			/30	92.0	97.0	5.0	4.1'	30			
92.0	93.0	1.0	0.9'			/31	97.0	103.5	6.5	5.4'	630			

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S							
From	To	Interval					FOOTAGE			Rec.	W ppm			
93.0	97.0	4.0	3.3'	119.5-142.7': Diopside-garnet skarn: Minor magnetite only, for the most part approx. 5%, except interval 124-130' where about 55-60%. Rock mainly light green in colour; also some tremolite/actinolite, carbonate and ? serpentine.		Sample Number:								
97.0	103.5	6.5	5.4'			D125/32	103.5	109.0	5.5	5.2'	30			
103.5	109.0	5.5	5.2'			/33	109.0	114.0	5.0	2.4'	30			
109.0	114.0	5.0	2.4'											
114.0	124.0	10.0	10.0'			/34	114.0	119.0	5.0	5.0'	40			
124.0	133.0	9.0	9.0'			/35	119.0	124.0	5.0	5.0'	110			
133.0	139.7	6.7	6.7'			/36	124.0	129.0	5.0	5.0	<20			
						/37	129.0	134.0	5.0	5.0'	30			
						/38	134.0	139.0	5.0	5.0	30			
139.7	148.7	9.0	9.0'	142.7-215.0': Magnetite skarn: Dominantly magnetite, approx. 80-85% of rock, with some actinolite and minor diopside. Fracturing quite minor.		/39	139.0	144.0	5.0	5.0'	<20			
148.7	158.3	9.6	9.6'			/40	144.0	149.0	5.0	5.0'	<20			
158.3	168.3	10.0	10.0'			/41	149.0	152.0	3.0	3.0'	<20			
168.3	177.8	9.5	9.5'			/42	152.0	155.3	3.3	3.3'	20			
177.8	187.8	10.0	10.0'			/43	155.3	158.3	3.0	3.0'	>20			
187.8	197.5	9.7	9.7'			/44	158.3	160.7	2.4	2.4'	610			
197.5	207.5	10.0	10.0'			/45	160.7	163.7	3.0	3.0'	3,740			
207.5	217.5	10.0	10.0'			/46	163.7	166.7	3.0	3.0'	5,830			
						/47	166.7	169.7	3.0	3.0'	2,200			
						/48	169.7	172.2	2.5	2.5'	1.86%			
					/49	172.2	175.2	3.0	3.0'	1,320				
					/50	175.2	178.2	3.0	3.0'	1,170				
					/51	178.2	181.2	3.0	3.0'	3,390				
					/52	181.2	184.2	3.0	3.0	4,360				
					/53	184.2	187.2	3.0	3.0'	1,820				
					/54	187.2	190.2	3.0	3.0'	1,430				
					/55	190.2	193.2	3.0	3.0'	640				
					/56	193.2	196.2	3.0	3.0'	400				
					/57	196.2	197.2	1.0	1.0'	260				
					/58	197.2	200.2	3.0	3.0'	60				
					/59	200.2	205.2	5.0	5.0'	140				

AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY

DRILLING LOG

DRILL HOLE NO. 126

LOCATION E.L. 17/68 TASMANIADATE STARTED 7.5.72LOGGED BY A.D.G.PROJECT KARA 1 PROSPECTDATE COMPLETED 11.5.72DATE 14.5.72COORDINATES As per plane-table surveyDRILLED BY Associated Diamond Drillers Limited SURVEYED BY Assumed no deviationINCLINATION 50° BEARING due East (old grid).TOTAL DEPTH 123 ft.

DATE _____

COLLAR ELEVATION _____

CASING N: 0-12 feetSHEET NO. 1 OF 3

FOOTAGE			DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S						
From	To	Interval				FOOTAGE						
						From	To	Interval				
			<p><u>SUMMARY:</u></p> <p><u>0-115.9'</u>: Skarn <u>115.9-123.0'</u>: Granite</p> <p><u>WEATHERING:</u></p> <p><u>57.0'</u>: Main depth of weathering. Otherwise weathering confined to fracture planes and their immediate vicinity.</p> <p><u>SCHEELITE MINERALIZATION:</u></p> <p><u>28.0- 31.0'</u>: Minor to moderate fluorescence in sludge, 0.3%W? <u>31.0-34.0'</u>: Minor 0.1%W? <u>40.0-52.0'</u>: Minor, 0.1%W? <u>52.0-53.0'</u>: Minor to moderate, 0.3%W? <u>53.0-57.0'</u>: Moderate disseminated scheelite in core, 0.3-0.4%W? <u>57.0-93.0'</u>: Only very occasional specks. <u>93.0-105.5'</u>: Moderate coarse scheelite, 0.6-0.7%W? <u>105.5-115.9'</u>: Minor, mainly sporadic disseminations, 0.2-0.3%W? <u>115.9-123.0'</u>: Minor scheelite on occasional fracture planes.</p>									

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S							
From	To	Interval					From	To	Interval	Rec.	W ppm			
Sludge						Sample Number:								
0	3.0	3.0	40%	0- 13.0':	Light brown clay sludge and finely fragmented weathered skarn	D126/1	0	3.0	3.0	40%	250			
3.0	6.0	3.0	30%			/2	3.0	6.0	3.0	30%	200			
6.0	10.0	4.0	55%	13.0-19.0':	Light brown and yellow brown clay sludge with approx. 30-35% magnetite.	/3	6.0	10.0	4.0	55%	260			
10.0	13.0	3.0	60%			/4	10.0	13.0	3.0	60%	300			
13.0	16.0	3.0	60%	19.0-31.0':	Yellow and red brown clay sludge.	/5	13.0	16.0	3.0	60%	130			
16.0	19.0	3.0	75%			/6	16.0	19.0	3.0	75%	140			
19.0	22.0	3.0	60%	31.0-37.0':	Brown clay and magnetite; about 50% magnetite.	/7	19.0	22.0	3.0	60%	200			
22.0	25.0	3.0	50%			/8	22.0	25.0	3.0	50%	490			
25.0	28.0	3.0	40%	37.0-53.0':	Black magnetite sludge, only minor brown clay.	/9	25.0	28.0	3.0	40%	380			
28.0	31.0	3.0	70%			/10	28.0	31.0	3.0	70%	450			
31.0	34.0	3.0	70%	53.0-115.0':	Magnetite-actinolite skarn: Black and green, magnetite very dominant, approx. 70-75% of rock. Some diopside and minor carbonate. Some narrow zones with irregular banding or foliation. Fracturing on the whole minor. Garnetiferous diopside zone from 68.3-69.5', also with rosettes of actinolite.	/11	31.0	34.0	3.0	70%	60			
34.0	37.0	3.0	70%			/12	34.0	37.0	3.0	70%	85			
37.0	40.0	3.0	65%	CORE: NQ/WL		/13	37.0	40.0	3.0	65%	70			
40.0	43.0	3.0	75%			/14	40.0	43.0	3.0	75%	60			
43.0	46.0	3.0	75%			/15	43.0	46.0	3.0	75%	25			
46.0	49.0	3.0	75%			/16	46.0	49.0	3.0	75%	95			
49.0	52.0	3.0	75%			/17	49.0	52.0	3.0	75%	50			
52.0	53.0	1.0	100%			/18	52.0	53.0	1.0	100%	240			
53.0	55.5	2.5	2.4'			/19	53.0	57.0	4.0	3.7'	260			
55.5	57.0	1.5	1.3'			/20	57.0	62.0	5.0	5.0'	<20			
57.0	65.5	8.5	8.5'			/21	62.0	67.0	5.0	5.0'	<20			
65.5	75.5	10.0	10.0'			/22	67.0	72.0	5.0	5.0'	<20			
75.5	85.5	10.0	9.3'			/23	72.0	77.0	5.0	5.0'	<20			
85.5	95.5	10.0	10.0'			/24	77.0	82.0	5.0	4.6'	<20			
95.5	105.5	10.0	10.0'			/25	82.0	87.0	5.0	4.7'	<20			
105.5	115.0	9.5	9.3'			/26	87.0	91.0	4.0	4.0'	<20			
115.0	116.5	1.5	1.2'			/27	91.0	93.0	2.0	2.0'	<20			
						/28	93.0	96.0	3.0	3.0'	580			
						/29	96.0	99.0	3.0	3.0'	1,090			
						/30	99.0	102.0	3.0	3.0'	740			
						/31	102.0	105.5	3.5	3.5'	4,690			

143

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S						
From	To	Interval					From	To	Interval	Rec.	W ppm		
116.5	120.5	4.0	3.5'	115.9-123.0': Pink Granite: No mafic minerals, less coarse than usual.		Sample Number: D126/32	105.5	110.5	5.0	4.8'	160		
120.5	123.0	2.5	1.8'				/33	110.5	115.9	5.4	5.1'	260	
						/34	115.9	119.0	3.1	2.6'	<20		
						/35	119.0	123.0	4.0	3.3'	<20		
						Composite Sludge Samples							
						D126/C1	53.0	75.0	22.0		100		
						/C2	75.0	85.0	10.0		80		

AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY

DRILLING LOG

DRILL HOLE NO. 127

LOCATION E.L. 17/68 TASMANIA

DATE STARTED 15.5.72

LOGGED BY A.D.G.

PROJECT KARA 1 PROSPECT

DATE COMPLETED 25.5.72

DATE 26.5.72

COORDINATES As per plane-table survey

DRILLED BY Associated Diamond Drillers Limited SURVEYED BY Assumed no deviation

INCLINATION 45° BEARING due West (old grid).

TOTAL DEPTH 296.5 ft.

DATE _____

COLLAR ELEVATION _____

CASING N: 0-14 ft.

SHEET NO. 1 OF 4

FOOTAGE			DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S						
From	To	Interval				FOOTAGE						
						From	To	Interval				
			<p><u>SUMMARY:</u></p> <p><u>0-285.5'</u>: Skarn <u>285.5-293.5'</u>: 'Contact' zone, quartzite and skarn <u>293.5-296.5'</u>: Granite</p> <p><u>WEATHERING:</u></p> <p><u>95.0'</u>: Main depth of weathering</p> <p><u>SCHEELITE MINERALIZATION:</u></p> <p><u>211.0-240.3'</u>: Moderate scheelite mineralization, the best section from 220.5-226'-possibly latter around 1% grade. Perhaps interval from 211-240.3' would average approx. 0.5%W.</p> <p><u>240.3-252.0'</u>: Some intermittent disseminated scheelite. <u>265.0'</u>: A few irregular aggregates. <u>287.0-288.5'</u>: Minor disseminated scheelite in brecciated quartzite and actinolite skarn zone.</p> <p>(Also 181.4': narrow zone, approximately 2" wide, where some scheelite crystals and 186.0"; minor disseminated over 1-2").</p>									

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S							
From	To	Interval					FOOTAGE			Rec.	W			
Sludge						Sample Number:								
0	4.0	4.0	50%	0- 4.0':	Medium brown gritty clay sludge	D127/1	0	4.0	4.0	50%	90			
4.0	8.0	4.0	60%	4.0- 8.0':	Magnetite and brown clay, approx. 50% magnetite.	/2	4.0	8.0	4.0	60%	450			
8.0	12.0	4.0	50%	8.0- 27.0':	Brown clay and magnetite, approx. 40% magnetite on average. 21.0-24.0': includes about 1/2 ft. of massive magnetite core.	/3	8.0	12.0	4.0	50%	210			
12.0	15.0	3.0	65%			/4	12.0	15.0	3.0	65%	370			
15.0	18.0	3.0	65%			/5	15.0	18.0	3.0	65%	360			
18.0	21.0	3.0	55%			/6	18.0	21.0	3.0	55%	320			
21.0	24.0	3.0	75%			/7	21.0	24.0	3.0	75%	190			
24.0	27.0	3.0	65%			/8	24.0	27.0	3.0	65%	280			
27.0	30.0	3.0	65%	27.0- 30.0':	Brown clay with 10-15% magnetite.	/9	27.0	30.0	3.0	65%	250			
30.0	33.0	3.0	65%	30.0- 60.0':	Brown clay	/10	30.0	33.0	3.0	65%	200			
33.0	36.0	3.0	70%			/11	33.0	36.0	3.0	70%	210			
36.0	39.0	3.0	60%			/12	36.0	39.0	3.0	60%	230			
39.0	42.0	3.0	80%			/13	39.0	42.0	3.0	80%	280			
42.0	45.0	3.0	75%			/14	42.0	45.0	3.0	75%	260			
45.0	48.0	3.0	70%			/15	45.0	48.0	3.0	70%	250			
48.0	51.0	3.0	80%			/16	48.0	51.0	3.0	80%	330			
51.0	54.0	3.0	75%			/17	51.0	54.0	3.0	75%	290			
54.0	57.0	3.0	60%			/18	54.0	57.0	3.0	60%	300			
57.0	60.0	3.0	80%			/19	57.0	60.0	3.0	80%	300			
CORE: NQ/WL														
60.0	62.5	2.5	2.1'	60.0- 92.0':	Garnet-diopside skarn: Somewhat weathered, ruggy, leached, limonitic, core quite broken, rock irregularly fractured.									
62.5	72.5	10.0	8.6'											
72.5	74.5	2.0	1.5'											
74.5	77.5	3.0	3.0											
77.5	80.0	2.5	1.0'											
80.0	83.0	3.0	2.8'											
83.0	84.0	1.0	1.0'											
84.0	86.0	2.0	0.8'											
86.0	88.5	2.5	0.7'											
88.5	89.5	1.0	1.0'											
89.5	92.0	2.5	1.3'											

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S							
From	To	Interval					FOOTAGE							
							From	To	Interval					
92.0	94.0	2.0	1.0'	92.0-119.5': Diopside-garnet-actinolite rock with some magnetite and carbonate. Rock mainly dull green in colour. Magnetite content minor from 92-10.4.5' but approx. 25-30% on average from 104.5-119.5' as disseminated coarse blebs and irregularly streaked out areas. Some fracturing and some crude foliation at 20-25° intersection angle.										
94.0	95.5	1.5	1.3'											
95.5	97.2	1.7	1.5'											
97.2	106.2	9.0	8.8'											
106.2	116.2	10.0	9.0											
116.2	117.2	1.0	1.0'											
117.2	127.2	10.0	9.8'	119.5-136.7': Diopside-actinolite-carbonate rock, dull green and whitish in colour; interval distinctive due to near absence of magnetite, only very minor disseminated.										
127.2	137.0	9.8	8.8'											
137.0	147.0	10.0	9.7'	136.7-214.0': Magnetite-diopside-actinolite skarn, approx. 50% magnetite on average but increasing in amount more or less gradationally from 209' to about 65-70% at 214'. Minor fracturing only. The magnetite and diopside-actinolite occur as discrete though irregular areas and a generally crude foliation gives the rock a streaked out coarsely mottled appearance. The crude foliation is nearly parallel to the long core axis, of the order of 10-15° intersection angle. Although there is approximately 50% magnetite on average, variation does occur. From 136.7-145', there is about 70-75% and the rock unfoliated (also some fiery red fluorescent carbonate occurs in this zone). The crude foliation begins at approx. 145'. Narrow zone from 167.5-										
147.0	157.7	10.7	10.2'											
157.7	167.7	10.0	9.8'											
167.7	177.7	10.0	9.6'											
177.7	187.7	10.0	10.0'											
187.7	194.7	7.0	5.4'											
194.7	199.2	4.5	4.4'											
199.2	209.2	10.0	5.2'											

DRILL HOLE NO. 128

SHEET NO. 2 OF 4

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S							
From	To	Interval					FOOTAGE			Rec.	W ppm			
Sludge						Sample Number:								
0	3.0	3.0	40%	0-30.0':	Red-brown clay sludge	D128/1	0	3.0	3.0	40%	790			
3.0	6.0	3.0	35%			/2	3.0	6.0	3.0	35%	310			
6.0	9.0	3.0	35%			/3	6.0	9.0	3.0	35%	300			
9.0	12.0	3.0	90%			/4	9.0	12.0	3.0	90%	460			
12.0	15.0	3.0	75%			/5	12.0	15.0	3.0	75%	130			
15.0	18.0	3.0	60%			/6	15.0	18.0	3.0	60%	160			
18.0	21.0	3.0	65%			/7	18.0	21.0	3.0	65%	100			
21.0	24.0	3.0	50%			/8	21.0	24.0	3.0	50%	140			
24.0	27.0	3.0	50%			/9	24.0	27.0	3.0	50%	180			
27.0	30.0	3.0	75%			/10	27.0	30.0	3.0	75%	360			
30.0	33.0	3.0	70%	30.0-33.0':	Brown clay with 40%? specularite.	/11	30.0	33.0	3.0	70%	630			
33.0	36.0	3.0	75%	33.0-36.0':	Brown clay sludge with 10%? specularite.	/12	33.0	36.0	3.0	75%	560			
36.0	39.0	3.0	70%	36.0-54.0':	Brown gritty clay sludge; 42-48': minor ? specularite, 10-15%.	/13	36.0	39.0	3.0	70%	410			
39.0	42.0	3.0	50%			/14	39.0	42.0	3.0	50%	450			
42.0	45.0	3.0	60%			/15	42.0	45.0	3.0	60%	420			
45.0	48.0	3.0	65%			/16	45.0	48.0	3.0	65%	310			
48.0	51.0	3.0	65%			/17	48.0	51.0	3.0	65%	290			
51.0	54.0	3.0	60%			/18	51.0	54.0	3.0	60%	420			
54.0	57.0	3.0	60%	54.0-117.0':	Brown clay sludge	/19	54.0	57.0	3.0	60%	80			
57.0	60.0	3.0	60%			/20	57.0	60.0	3.0	60%	130			
60.0	63.0	3.0	50%			/21	60.0	63.0	3.0	50%	90			
63.0	66.0	3.0	45%			/22	63.0	66.0	3.0	45%	130			
66.0	69.0	3.0	35%			/23	66.0	69.0	3.0	35%	180			
69.0	72.0	3.0	60%			/24	69.0	72.0	3.0	60%	160			
72.0	75.0	3.0	50%			/25	72.0	75.0	3.0	50%	120			
75.0	78.0	3.0	45%			/26	75.0	78.0	3.0	45%	110			
78.0	81.0	3.0	40%			/27	78.0	81.0	3.0	40%	130			
81.0	84.0	3.0	35%			/28	81.0	84.0	3.0	35%	170			
84.0	87.0	3.0	35%			/29	84.0	87.0	3.0	35%	190			
87.0	90.0	3.0	10%			/30	87.0	90.0	3.0	10%	170			
90.0	93.0	3.0	10%			/31	90.0	93.0	3.0	10%	120			

DRILL HOLE NO. 129
 SHEET NO. 2 OF 4

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S							
From	To	Interval					From	To	Interval	Rec.	W ppm			
Sludge						Sample Number:								
0	4.0	4.0	75%	0-12.0':	Red-brown clay sludge	D129/1	0	4.0	4.0	75%	550			
4.0	8.0	4.0	75%			/2	4.0	8.0	4.0	75%	590			
8.0	12.0	4.0	85%			/3	8.0	12.0	4.0	85%	410			
12.0	15.0	3.0	75%	12.0-15.0':	Brown and yellow-brown clay sludge	/4	12.0	15.0	3.0	75%	420			
15.0	18.0	3.0	65%	15.0-48.0':	Light yellow-brown clay sludge	/5	15.0	18.0	3.0	65%	240			
18.0	21.0	3.0	65%			/6	18.0	21.0	3.0	65%	200			
21.0	24.0	3.0	65%			/7	21.0	24.0	3.0	65%	240			
24.0	27.0	3.0	65%			/8	24.0	27.0	3.0	65%	300			
27.0	30.0	3.0	65%			/9	27.0	30.0	3.0	65%	220			
30.0	33.0	3.0	65%			/10	30.0	33.0	3.0	65%	240			
33.0	36.0	3.0	75%			/11	33.0	36.0	3.0	75%	150			
36.0	39.0	3.0	75%			/12	36.0	39.0	3.0	75%	120			
39.0	42.0	3.0	75%			/13	39.0	42.0	3.0	75%	230			
42.0	45.0	3.0	75%			/14	42.0	45.0	3.0	75%	170			
45.0	48.0	3.0	75%			/15	45.0	48.0	3.0	75%	180			
48.0	51.0	3.0	75%	48.0-54.0':	Yellow-brown clay sludge with 10-15% magnetite	/16	48.0	51.0	3.0	75%	150			
51.0	54.0	3.0	70%			/17	51.0	54.0	3.0	70%	160			
54.0	57.0	3.0	70%	54.0-64.0':	Brown clay sludge with 30-35% magnetite.	/18	54.0	57.0	3.0	70%	180			
57.0	60.0	3.0	70%			/19	57.0	60.0	3.0	70%	170			
60.0	64.0	4.0	80%			/20	60.0	64.0	4.0	80%	200			
64.0	67.0	3.0	65%	64.0-96.0':	Yellow-brown clay sludge	/21	64.0	67.0	3.0	65%	230			
67.0	70.0	3.0	60%			/22	67.0	70.0	3.0	60%	230			
70.0	73.0	3.0	85%			/23	70.0	73.0	3.0	85%	200			
73.0	76.0	3.0	85%			/24	73.0	76.0	3.0	85%	190			
76.0	79.0	3.0	80%			/25	76.0	79.0	3.0	80%	200			
79.0	82.0	3.0	75%			/26	79.0	82.0	3.0	75%	190			
82.0	85.0	3.0	70%			/27	82.0	85.0	3.0	70%	190			
85.0	88.0	3.0	70%			/28	85.0	88.0	3.0	70%	200			
88.0	91.0	3.0	70%			/29	88.0	91.0	3.0	70%	420			
91.0	94.0	3.0	70%			/30	91.0	94.0	3.0	70%	480			
94.0	97.0	3.0	70%			/31	94.0	97.0	3.0	70%	500			

DRILL HOLE NO. 130
SHEET NO. 2 OF 4

FOOTAGE			DESCRIPTION	ANALYSIS	CORE RECOVERY	A S S A Y S								
From	To	Interval				FOOTAGE			W ppm					
						From	To	Interval						
			Scheelite Fluorescence (continued). 228-259': Scattered specks only. Strong carbonate fluorescence noted at 102', 111', 117' and 128'. <u>Descriptive Log:</u>	Sample Number:										
0'	25'	25'	Dark brown clayey sludge consisting of limonite-coated magnetite grains in a matrix of limonitic clay. Occasional grains of altered garnet are recognisable.	Sludge: D130/ 1 100% / 2 100% / 3 100% / 4 100% / 5 100%	0'	5'	5'	710						
25'	29'	4'	Weathered magnetite skarn. About 70% magnetite, with much limonite and some white clay material. A little interstitial secondary quartz.	Core: D130/ 6 4.7'	25'	30'	5'	820						
29'	38'	9'	Weathered garnet-magnetite skarn. About 30% magnetite. Some diopside included in the garnet. Limonite, clay, and a little secondary quartz.	/ 7 4.8' / 8 4.4'	30'	35'	5'	290						
38'	54'	16'	Magnetite-garnet skarn. About 60% relatively fresh magnetite. Partly weathered garnet, including a little fresh diopside, occurs as veins, aggregates and discrete grains within the magnetite. Some limonite.	/ 9 4.3' /10 4.5' /11 3.3'	40'	45'	5'	180						
54'	62'	8'	Diopside-garnet-magnetite skarn with about 40% magnetite and about equal amounts of fresh diopside and partially weathered garnet. Some limonite x clay.	/12 2.5' /13 4.3'	55'	60'	5'	60						
62'	85'	23'	Diopside-magnetite-garnet skarn. Diopside predominant and garnet subordinate, becoming more abundant from 74' to 85'. Magnetite about 30%, distributed in rough bands at 40' - 60' to core axis. A little limonite staining down to 84'.	/14 4.9' /15 4.9' /16 5.0' /17 4.8'	60'	65'	5'	330						
					65'	70'	5'	220						
					70'	75'	5'	1360						
					75'	80'	5'	200						
					80'	85'	5'	200						

FOOTAGE			DESCRIPTION	XGRAPHX XRX	CORE RECOVERY	A S S A Y S			W ppm				
From	To	Interval				From	To	Interval					
			Descriptive Log (Continued).	Sample Number:									
85'	101'	16'	Amphibole-magnetite-diopside skarn. Dark green and massive, consisting of fine grained magnetite intergrown with diopside and a dark green fibrous amphibole. Scattered bands and inclusions of aggregated garnet and diopside. Diopside and garnet increasingly abundant from 95' to 101'.	D130/18	5.0'	85'	90'	5'	790				
				/19	5.0'	90'	95'	5'	360				
				/20	5.0'	95'	100'	5'	25				
101'	131'	30'	Garnet-diopside skarn with little magnetite. Both minerals crystalline and more or less segregated into monomineralic bands and patches. A little magnetite occurs in narrow fracture-veinlets with a green amphibole (?). Scheelite is associated with these fractures.	/21	5.0'	100'	105'	5'	1210				
				/22	5.0'	105'	110'	5'	3680				
				/23	4.8'	110'	115'	5'	600				
				/24	4.5'	115'	120'	5'	810				
				/25	5.0'	120'	125'	5'	1200				
				/26	5.0'	125'	130'	5'	1020				
131'	150'	19'	Diopside-amphibole-magnetite skarn with about 50% magnetite and subordinate garnet. Strongly banded in places, with bands of magnetite and amphibole at 30° - 40° to core axis.	/27	5.0'	130'	135'	5'	560				
				/28	4.8'	135'	140'	5'	1550				
				/29	4.7'	140'	145'	5'	360				
				/30	4.6'	145'	150'	5'	500				
150'	156'	6'	Garnet-diopside skarn with subordinate magnetite and a few veins of green amphibole (?).	/31	4.6'	150'	155'	5'	150				
156'	159'	3'	Garnet rock, coarse grained and rather friable.	/32	4.5'	155'	160'	5'	350				
159'	167'	8'	Diopside skarn, mostly light greenish massive fine grained diopside, with subordinate magnetite and possibly some amphibole. Banded in places at 30°-40° to core axis.	/33	4.8'	160'	165'	5'	40				
				/34	4.2'	165'	170'	5'	2180				
167'	173'	6'	Magnetite skarn, with about 90% magnetite, subordinate diopside and possibly amphibole.	/35	4.5'	170'	175'	5'	110				
173'	190'	17'	Diopside-magnetite skarn. Both minerals closely intergrown. Magnetite about 40%. Some very irregular banding.	/36	5.0'	175'	180'	5'	1280				
				/37	5.0'	180'	185'	5'	490				
				/38	5.0'	185'	190'	5'	70				
190'	193'	3'	Diopside rock. Massive, fine grained, greenish-white. Very little magnetite.	/39	5.0'	190'	195'	5'	210				
193'	199'	6'	Magnetite skarn, with irregular bands of massive diopside and some garnet.	/40	5.0'	195'	200'	5'	280				

162

673164

DRILL HOLE NO. 131

SHEET NO. 3 OF 4

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S							
From	To	Interval					FOOTAGE			W ppm	Mo ppm			
					Sample Number		From	To	Interval					
86.5	88.0	1.5	1.3	86.5-160.0': Skarn:										
				86.5-88.0': Diopside skarn, dark blackish-green, weathered and soft. Possibly with amphibole? No magnetite.	D131/18	3.8	85.0	90.0	5.0	380				
88.0	89.0	1.0	0.5	88.0-89.0': Magnetite skarn, with much limonite and clay. Silicates completely weathered. Magnetite partly fresh.										
89.0	95.0	6.0	4.3	89.0-95.0': Garnet skarn, weathered, with limonite, clay and inclusions of black goethite. Very little fresh magnetite.	D131/19	3.5	90.0	95.0	5.0	210				
95.0	95.3	0.3	0.3	95.0-95.3': White quartzite, finely granular and pitted, as from 85-85.5'.	D131/20	3.4	95.0	100.0	5.0	60				
95.3	97.0	1.7	1.0	95.3-97.0': Diopside skarn, dark blackish-green, soft and weathered, very little magnetite.										
97.0	107.0	10.0	7.4	97.0-107.0': Diopside skarn, fairly fresh, with a little garnet. Dark greyish-green, massive, fine-grained. Finely banded in places at 45-50° to core axis. Hardly any magnetite, but occasional veinlets of specularite (or wolframite ??). Some veins of carbonate. Amphibole possibly present.	D131/21	3.8	100.0	105.0	5.0	20				
107.0	116.5	9.5	9.5	107.0-116.5': Diopside skarn, fairly fresh, as above, with amphibole?, some irregular patches of garnet, veins of carbonate and a little specularite (or wolframite??). Banding sporadic and very irregular.	D131/22	4.5	105.0	110.0	5.0	45				
					D131/23	5.0	110.0	115.0	5.0	<20				
116.5	134.0	17.5	10.2	116.5-134.0': Garnet rock, massive crystalline, with some veins of diopside and a little magnetite. Fresh in places, weathered and friable in others. Very friable from 128-134.'	D131/24	3.5	115.0	120.0	5.0	60				
					/25	3.0	120.0	125.0	5.0	380				
					/26	3.0	125.0	130.0	5.0	280				
					/27	2.8	130.0	135.0	5.0	250				

DRILL HOLE NO. 131

SHEET NO. 4 OF 4

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S						
From	To	Interval					FOOTAGE			W ppm	Mo ppm		
							From	To	Interval				
134.0	138.5	4.5	2.6	134.0-138.5': Similar to above but extremely friable.	Sample Number D131/28	2.0	135.0	138.5	3.5	300			
138.5	147.0	8.5	1.4	138.5-160.0': Diopside-garnet skarn, green, partially weathered, minor magnetite intermittent in occurrence, principally over intervals 151-152' (15-20%), 153-154' (30%), and 157.2-157.8' (55-60%). Some fracturing. Some foliation from 157.2-158.5' at 45° intersected angle. Minor carbonate veining. (138.5-145.6': no core recovered).	/29	1.4	145.6	147.0	1.4	90			
147.0	149.8	2.8	2.8		/30	5.7	147.0	152.7	5.7	1100			
149.8	154.7	4.9	4.9		/31	3.0	152.7	156.1	3.4	8550	210		
154.7	156.1	1.4	1.0		/32	2.4	156.1	160.0	3.9	2560			
156.1	162.0	5.9	3.5										
162.0	165.0	3.0	0.1	160.0-175.0': Granite:	/33	1.9	160.0	170.0	10.0	100			
165.0	170.0	5.0	0.7	Partially weathered, fractured, core very broken; narrow magnetite skarn zone from 169.5-170'.									
170.0	173.0	3.0	1.5										
173.0	175.0	2.0	1.8										
					Samples from sludge return whilst coring over following intervals:								
					D131/C1		156.0	162.0	6.0	6350	260		
					/C2		162.0	165.0	3.0	4960	210		
					/C3		165.0	173.0	8.0	690			

673166

AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY

DRILLING LOG

DRILL HOLE NO. 132

LOCATION TASMANIA: E.L. 17/68
 PROJECT Kara North
 COORDINATES 11,736N; 9,761.5E (metres)
 INCLINATION 60° BEARING due east (grid)
 COLLAR ELEVATION 489.2 (metres)

DATE STARTED 23/10/72
 DATE COMPLETED 6/11/72
 DRILLED BY Associated Diamond Drillers Ltd
 TOTAL DEPTH 345 ft.
 CASING B casing (NQ rods used) to 110 ft.

LOGGED BY A.D. Gibbs
 DATE 29/11/72
 SURVEYED BY Assumed no deviation
 DATE November, 1972
 SHEET NO. 1 OF 10

FOOTAGE			DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S						
From	To	Interval				FOOTAGE						
						From	To	Interval				
			<p><u>SUMMARY:</u></p> <p>0-35.0': Sand sludge 35.0-114.0: Basalt sludge 114.0-159.1: Basalt/dolerite core 159.1-196.5: Garnetiferous skarn sludge 196.5-202.0: Altered garnetiferous skarn core. 202.0-272.0: Garnetiferous skarn sludge 272.0-345.0: Altered garnetiferous skarn core</p> <p><u>WEATHERING:</u></p> <p>Depth of weathering or extreme alteration: 345.0'.</p> <p><u>SCHEELITE FLUORESCENCE:</u></p> <p>None noted</p>									

Most of the material recovered as sludge or core in DDH 132 was weathered, highly altered and very nondescript in hand specimen. In consequence, samples were submitted to Central Mineralogical Services, Adelaide, for more positive identification by microscopic examinations.

DRILL HOLE NO. 132
 SHEET NO. 2 OF 10

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S						
From	To	Interval					From	To	Interval	W PPM			
SLUDGE:				<u>DESCRIPTIVE LOG:</u>	<u>SAMPLE NUMBER</u>	<u>GEOCHEMICAL SAMPLES</u>							
0	5.0	5.0	100%	0-15.0' : White sand (sludge)	D132/1	100%	0	15.0	15.0		<20		
5.0	10.0	5.0	100%	15.0-35.0' : White and limonitic yellow-brown Sand (sludge), very minor black iron oxide.	D132/2	85%	15.0	30.0	15.0		40		
10.0	15.0	5.0	100%	(Material from 0-35.0' considered to be derived essentially from slumped sandy soil and sandstone float from sandstone/quartzite outcrops and sub-outcrops nearby, to the immediate west of the drill-site)									
15.0	20.0	5.0	85%										
20.0	25.0	5.0	85%										
25.0	30.0	5.0	85%										
30.0	35.0	5.0	85%										
35.0	40.0	5.0	85%										
40.0	45.0	5.0	85%	35.0-114.0' : Basaltic sludge:	D132/3	85%	30.0	45.0	15.0		50		
45.0	50.0	5.0	65%	Limonitic yellow-brown sludge which still	D132/4	~ 65%	45.0	60.0	15.0		40		
50.0	55.0	5.0	60%	contains abundant to moderate quantities of	D132/5	70%	60.0	75.0	15.0		<20		
55.0	60.0	5.0	65%	quartz grains; this, however, is thought to be	D132/6	~75%	75.0	90.0	15.0		<20		
60.0	65.0	5.0	70%	essentially adulteration from the zone 0-35.0	D132/7	60%	90.0	105.0	15.0		30		
65.0	70.0	5.0	70%	as the circulation return passed through it.	D132/8	~ 70%	105.0	114.0	9.0		30		
70.0	75.0	5.0	70%	Apart from quartz, the sludge contains									
75.0	80.0	5.0	80%	moderate amounts of black oxide iron grains									
80.0	85.0	5.0	75%	and what could well be weathered felspar. By									
85.0	90.0	5.0	75%	comparison with sludge taken from 114-118;									
90.0	95.0	5.0	60%	124-129'; 129-134'; 144-148'; 148.5-155.7'									
95.0	100.0	5.0	60%	(where basalt was also cored) and as a									
100.0	105.0	5.0	60%	result of detailed mineralogical examination by									
105.0	110.0	5.0	60%	Central Mineralogical Services, Adelaide (CMS)									
110.0	114.0	4.0	90%	of sludge from 105-110ft, the sludge from 35-114ft appears also to be derived essentially from basalt.									

DRILL HOLE NO. 132

SHEET NO. 3 OF 10

FOOTAGE			Recovery	DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S													
From	To	Interval					From	To	Interval	W ppm										
CORE:	BQ/WI																			
114.0	118.0	4.0	1.2	<u>CMS Reports:</u>																
118.0	123.0	5.0	4.1	<u>105-110ft. Sludge:</u> The sample consists of fine																
123.0	129.0	6.0	1.1	fragments of quartz and iron oxides, with altered																
129.0	130.0	1.0	1.0	felspar, altered olivine (iddingsite) and minor																
130.0	134.0	4.0	0.5	pyroxene. The sample is partly derived from a																
134.0	135.0	1.0	0.7	dolerite/basalt.																
135.0	136.0	1.0	1.0	<u>(144-148.5ft. Sludge:</u> Fragments of olivine -																
136.0	137.0	1.0	0.8	basalt or dolerite; grain-size (i.e. of the original rock)																
137.0	139.0	2.0	1.7	cannot be determined. This rock is very similar to																
139.0	140.7	1.7	1.3	the core at 138ft, but is fresher and contains																
140.7	141.5	0.8	0.6	unaltered labradorite fragments. In addition, there																
141.5	143.0	1.5	1.2	are quartz and iron-oxide grains (cf105-110ft) of																
143.0	144.5	1.5	1.0	unknown derivation.)																
144.5	148.0	3.5	2.2	<u>114-159.1'. Basalt/Dolerite core:</u>	D132/9	1.2	114.0	118.0	4.0	25										
148.0	148.5	0.5	0.4	<u>114-122.5':</u> Altered basalt/dolerite, moderately	10	4.1	118.0	123.0	5.0	<20										
148.5	152.0	3.5	3.3	fractured, more medium than fine-grained,	11*	1.1	123.0	129.0	6.0	<20										
152.0	155.0	3.0	2.4	felspar laths are clearly visible.	12*	1.5	129.0	134.0	5.0	<20										
155.0	155.7	0.7	0.7	<u>122.5-148.5':</u> Fresher basalt/dolerite, quite	13	2.5	134.0	137.0	3.0	<20										
155.7	159.1	3.4	3.0	fractured, core very broken.	14	3.6	137.0	141.5	4.5	<20										

*and sludge from intervals sampled

DRILL HOLE NO. 132
 SHEET NO. 6 OF 10

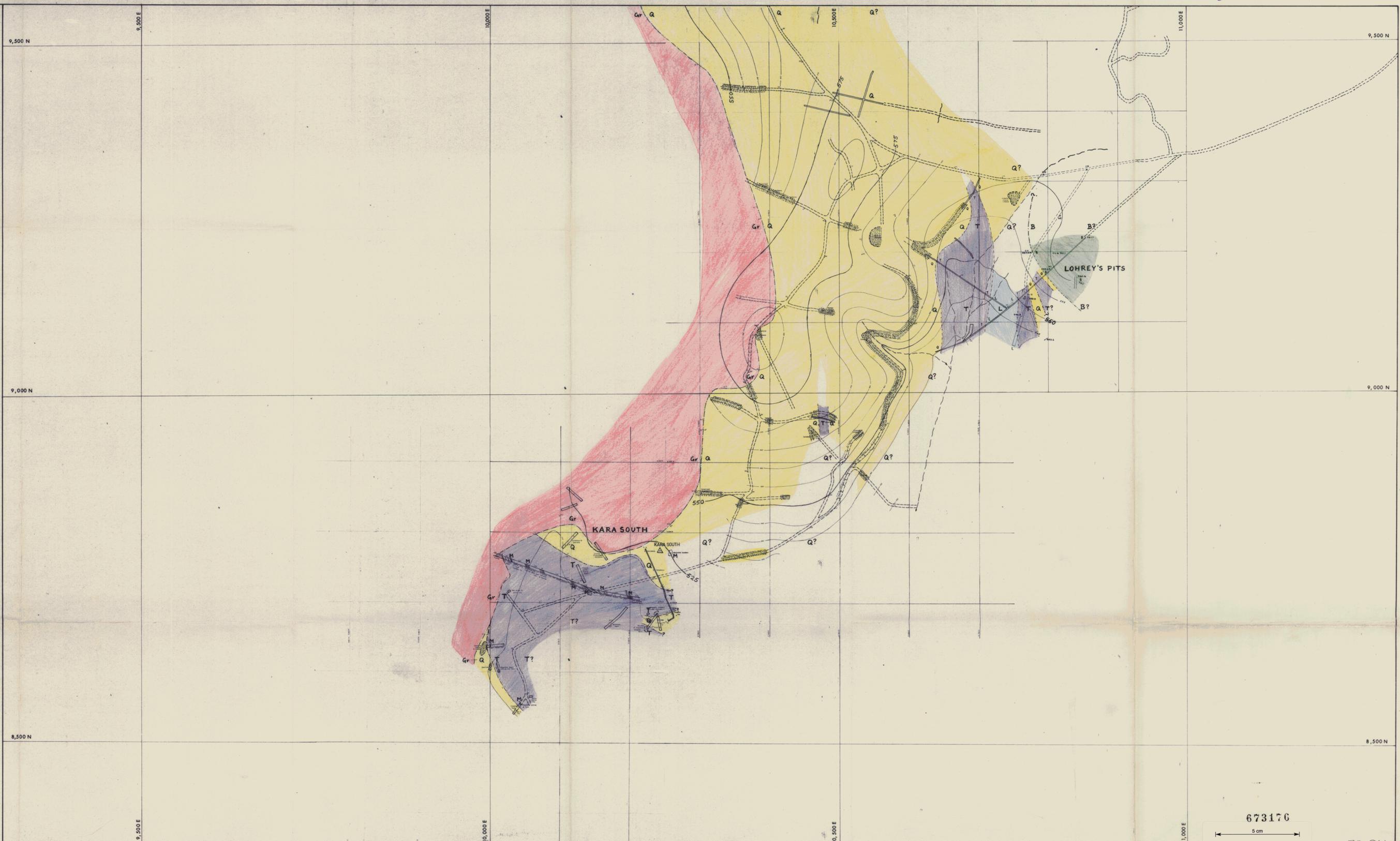
FOOTAGE			DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S						
From	To	Interval				FOOTAGE						
						From	To	Interval				
			<p>195-196.5', further samples were submitted of sludge from 174-179' and 187-192', also some core from 187' (approx. 1ft of core was recovered from 186-187', material which by chance did not grind up when rolling). These three samples were all reported as being essentially skarn material. It seems probable that, as in the description of sludge from 164-169', there will be, immediately below 159.1', some adulteration from basaltic material as the circulation return passes through it. Also the geochemical "break" in the hole, albeit comparatively minor, definitely occurs at 159.1' from 20 ppm (155.7-159.1') to 110 ppm W (159.1-164').</p> <p>Concerning the vesicular basalt at 195-196.5' this is thought to be caved material - it is extremely broken and one or two fragments have the distinct appearance of ones which have been loose around the diamond bit and abraded on several surfaces. Presumably some basaltic material from around 159' caved, probably when lowering the rods to renew coring at 195' after only sludge had been recovered from 159-195'. A piece of definite cave, approx. 1" long of basaltic material also occurs above the one foot of core which was recovered from 186-187'. Consequently it is thought that the skarn must begin at 159.1 or within a foot or so of such depth.</p>									

FOOTAGE			DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S						
From	To	Interval				FOOTAGE						
						From	To	Interval				
			<p><u>CMS Reports</u> 174-179ft and 187-192ft. Sludge; This material was too fine to be effectively thin-sectioned; in any case it would consist of single-mineral grains. In fact both samples are quite similar in composition. They are quite "sandy" with virtually no "slime" and no coarser fragments. The main constituent is garnet, as splintery grains, quite colourless and presumably with a composition close to grossularite. The other main mineral is quartz, also as splinters. Oxide opaques occur; some are magnetic, but most are not. Sample 187-192' also contains small flakes of talc, sericite and ferruginous (oxidized) chlorite. There is little doubt that both sludges have originated from the skarn; this poses a problem with the vesicular basalt at 195ft; especially in view of the core at 187ft.</p> <p><u>187ft. Core:</u> This strongly kaolinitic rock is undoubtedly intensely weathered or even hydrothermally altered. It consists dominantly of very fine kaolinitic aggregates, often with outlines suggesting that the rock is a breccia. The kaolinite is generally structureless, but occasional coarser patches may be pseudomorphs after a fibrous-prismatic mineral (?tremolite). Opaques occur throughout; these are goethite patches, sometimes with a micaceous texture which probably indicates a heavily iron-stained mica (?weathered biotite). Small, irregular garnet grains are fairly common, and small</p>									

FOOTAGE			DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S								
From	To	Interval				FOOTAGE			W ppm					
						From	To	Interval						
			prismatic colourless tourmaline (elbaite) is present. There are many individual flakes and clusters of fresh muscovite-hydromuscovite throughout. It is believed that this rock was probably a skarn type, and has been severely altered, with the introduction of ?elbaite and muscovite. There is a possibility that the mica (and the tourmaline) is a lithium-bearing variety.											
			<u>196.5-202.0'</u> : Altered garnetiferous Skarn Core: Soft, whitish, banded material with a rather soapy feel; very nondescript in hand specimen. <u>CMS Report, 199 ft, Core</u> ; Highly-altered garnetiferous rock, banded or gneissose. It is composed mainly of decussate aggregates and streaks of a type of fibrous chlorite (?amesite), which may represent hydrothermally altered fibrous amphibole (possible tremolite-actinolite). Fine garnet is reasonably common, poorly defined and perhaps even fractured. Goethite is present, and fine sphene occurs in traces.	D232/28	75%	197.0	202.0	5.0	45					
			<u>202.0-272.0'</u> : Garnetiferous Skarn Sludge <u>CMS Reports</u>	D132/29	75%	202.0	207.0	5.0	40					
			<u>202-207ft.Sludge</u> : Garnet is abundant in this sample (due to winnowing of soft material), and asbestiform or fibrous chlorite also occurs. Goethite is abundant, but quartz scarce. Traces of vesuvianite and ?scheelite are also present. The sample was derived from a rock such as that from 199ft. and represents a type of skarn (tactite)	30	75%	207.0	212.0	5.0	55					
				31	75%	212.0	217.0	5.0	35					
				32	75%	217.0	222.0	5.0	45					
				33	70%	222.0	227.0	5.0	20					
				34	70%	227.0	232.0	5.0	45					
				35	70%	232.0	237.0	5.0	40					

172

FOOTAGE			DESCRIPTION	GRAPHIC LOG	CORE RECOVERY	A S S A Y S							
From	To	Interval				FOOTAGE			W ppm				
						From	To	Interval					
			<p><u>267=272ft. Sludge:</u> This is very similar in mineralogy to the sample from 202-207ft. and contains traces of epidote and? diopside in addition. These are typical of skarn assemblages.</p> <p><u>272.0-345.0':</u> Altered Garnetiferous Skarn: White, light yellow-brown limonitic, and medium brown manganiferous, highly altered friable material identified as garnet-clay rocks after skarn by CMS. Occasional foliation or banding as at 285' at approx. 25° and at 289.5' at 55-60° intersected. Many talcose slickensided shear-planes and narrow zones. CMS Reports</p> <p><u>279ft. Core:</u> The dominant constituent is finely-fibrous chloritic materials (?amesite) probably derived from amphibole. Minor, finely-granular sphene is present, and ultrafine garnet occurs, apparently as splinters and angular fragments. This may represent portions of altered, fragmented, originally larger crystals.</p> <p><u>291ft. Core:</u> Banded or gneissose garnet-clay rock with minor vesuvianite and ultrafine sphene. Most probably an altered skarn. Secondary MnO₂-staining is present.</p>	<p>Sample Number</p> <p>D132/36</p> <p>37</p> <p>38</p> <p>39</p> <p>40</p> <p>41</p> <p>42</p> <p>D132/43</p> <p>44</p> <p>45</p> <p>46</p> <p>47</p> <p>48</p> <p>49</p> <p>50</p> <p>51</p> <p>52</p> <p>53</p> <p>54</p> <p>55</p>	<p>70%</p> <p>75%</p> <p>75%</p> <p>70%</p> <p>75%</p> <p>75%</p> <p>70%</p> <p>3.0</p> <p>1.8</p> <p>2.6</p> <p>1.3</p> <p>1.9</p> <p>1.1</p> <p>2.3</p> <p>4.6</p> <p>3.4</p> <p>2.0</p> <p>4.1</p> <p>2.2</p> <p>1.7</p>	<p>237.0</p> <p>242.0</p> <p>247.0</p> <p>252.0</p> <p>257.0</p> <p>262.0</p> <p>267.0</p> <p>272.0</p> <p>275.0</p> <p>279.0</p> <p>287.0</p> <p>289.0</p> <p>292.0</p> <p>299.0</p> <p>308.0</p> <p>318.0</p> <p>323.0</p> <p>329.0</p> <p>336.5</p> <p>339.0</p>	<p>242.0</p> <p>247.0</p> <p>252.0</p> <p>257.0</p> <p>262.0</p> <p>267.0</p> <p>272.0</p> <p>275.0</p> <p>279.0</p> <p>287.0</p> <p>289.0</p> <p>292.0</p> <p>299.0</p> <p>308.0</p> <p>318.0</p> <p>323.0</p> <p>329.0</p> <p>336.5</p> <p>339.0</p>	<p>5.0</p> <p>5.0</p> <p>5.0</p> <p>5.0</p> <p>5.0</p> <p>5.0</p> <p>5.0</p> <p>3.0</p> <p>4.0</p> <p>8.0</p> <p>2.0</p> <p>3.0</p> <p>7.0</p> <p>9.0</p> <p>10.0</p> <p>5.0</p> <p>6.0</p> <p>7.5</p> <p>2.5</p> <p>6.0</p>	<p>35</p> <p><20</p> <p><20</p> <p>25</p> <p>25</p> <p>20</p> <p>30</p> <p><20</p> <p>30</p> <p><20</p> <p><20</p> <p><20</p> <p><20</p> <p><20</p> <p><20</p> <p>20</p> <p><20</p> <p>20</p>				



673176
5 cm

73-961

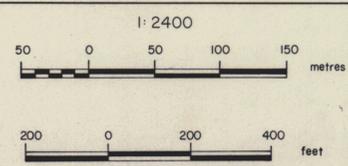
GEOLOGY

- | | |
|---|----------------------------------|
| Basalt | Tactite with visible scheelite |
| Granite | Magnetite over 50% |
| Quartzite, sandstone, siltstone, conglomerate | Clay |
| Limestone, dolomite | Clay with disseminated magnetite |
| Argillaceous rocks | |
| Tactite (skarn) | |
| Tactite with disseminated magnetite | |
| Foliation or banding | |

REFERENCE

- | | |
|---|---------------------|
| Trig Beacon | Geological Boundary |
| Percussion drillhole | |
| Diamond-rotary drillhole | |
| Bulldozed cut | |
| Backhoed trench | |
| Dirt road or track | |
| Creek | |
| 500 Topographic contour in metres above sea level datum | |

SCALE

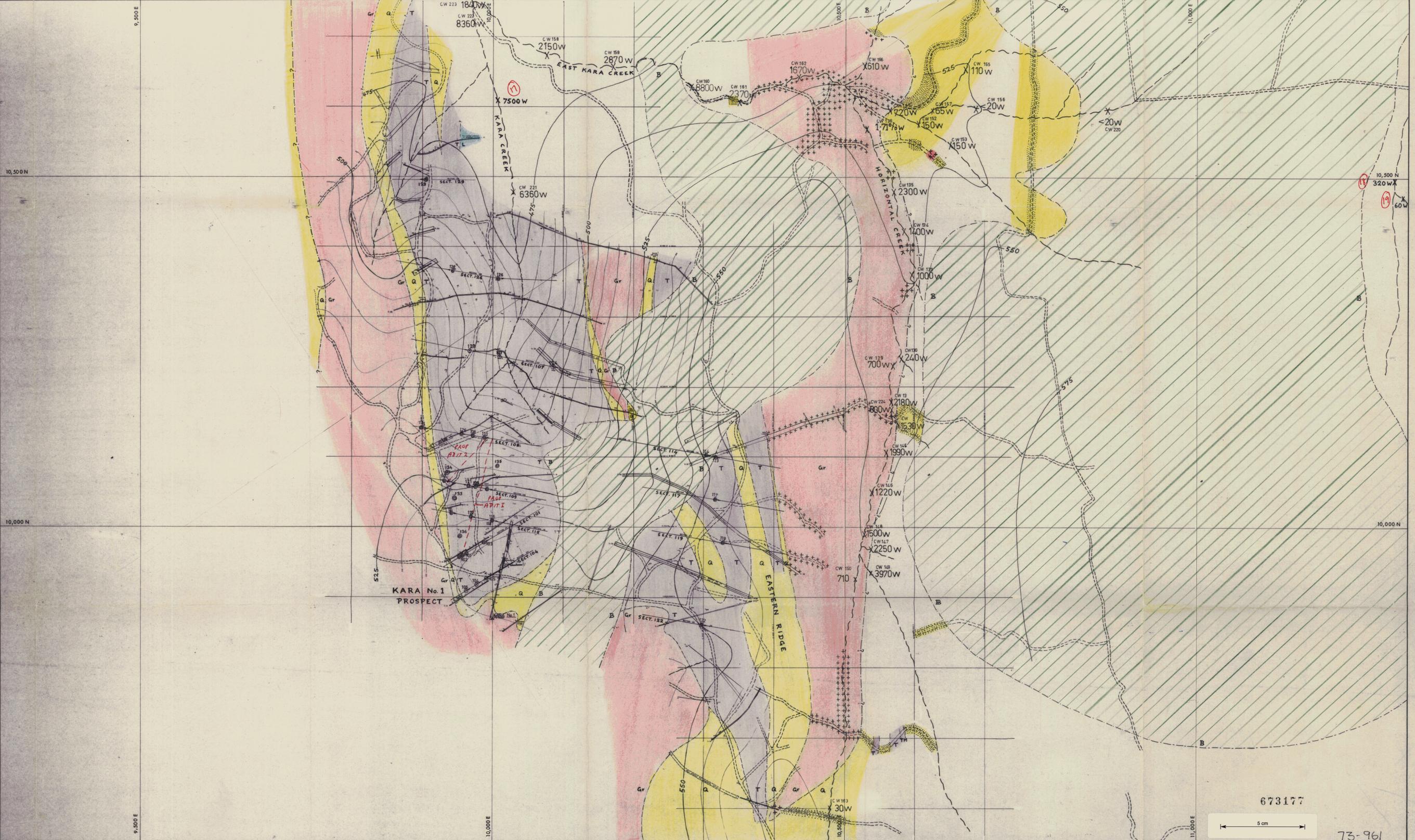


AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY

KARA TUNGSTEN PROJECT
BURNIE, TASMANIA
GEOLOGICAL PLAN
KARA SOUTH

2129

Prepared by: R.T.B., A.D.G.	Drawn by: R.T.B. et al.
Scale: 1" = 200 feet	Date: 17-7-73
Drawing No:	Proj. No. X827-003
Report No:	Lib. No:



673177



73-961

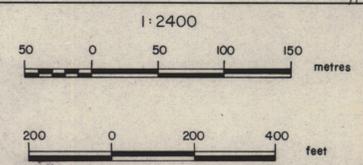
GEOLOGY

- Basalt
- Granite
- Quartzite, sandstone siltstone, conglomerate
- Limestone, dolomite
- Argillaceous rocks
- Tactite (skarn)
- Tactite with disseminated magnetite
- Foliation or banding
- Tactite with visible scheelite
- Magnetite over 50%
- Clay
- Clay with disseminated magnetite

REFERENCE

- Trig. Beacon
- Percussion drillhole
- Diamond-rotary drillhole
- Bulldozed cut
- Backhoed trench
- Dirt road or track
- Creek
- Topographic contour in metres above sea level datum
- Geological Boundary.
- Panned Stream Sediment Sample, Assay in ppm W.

SCALE

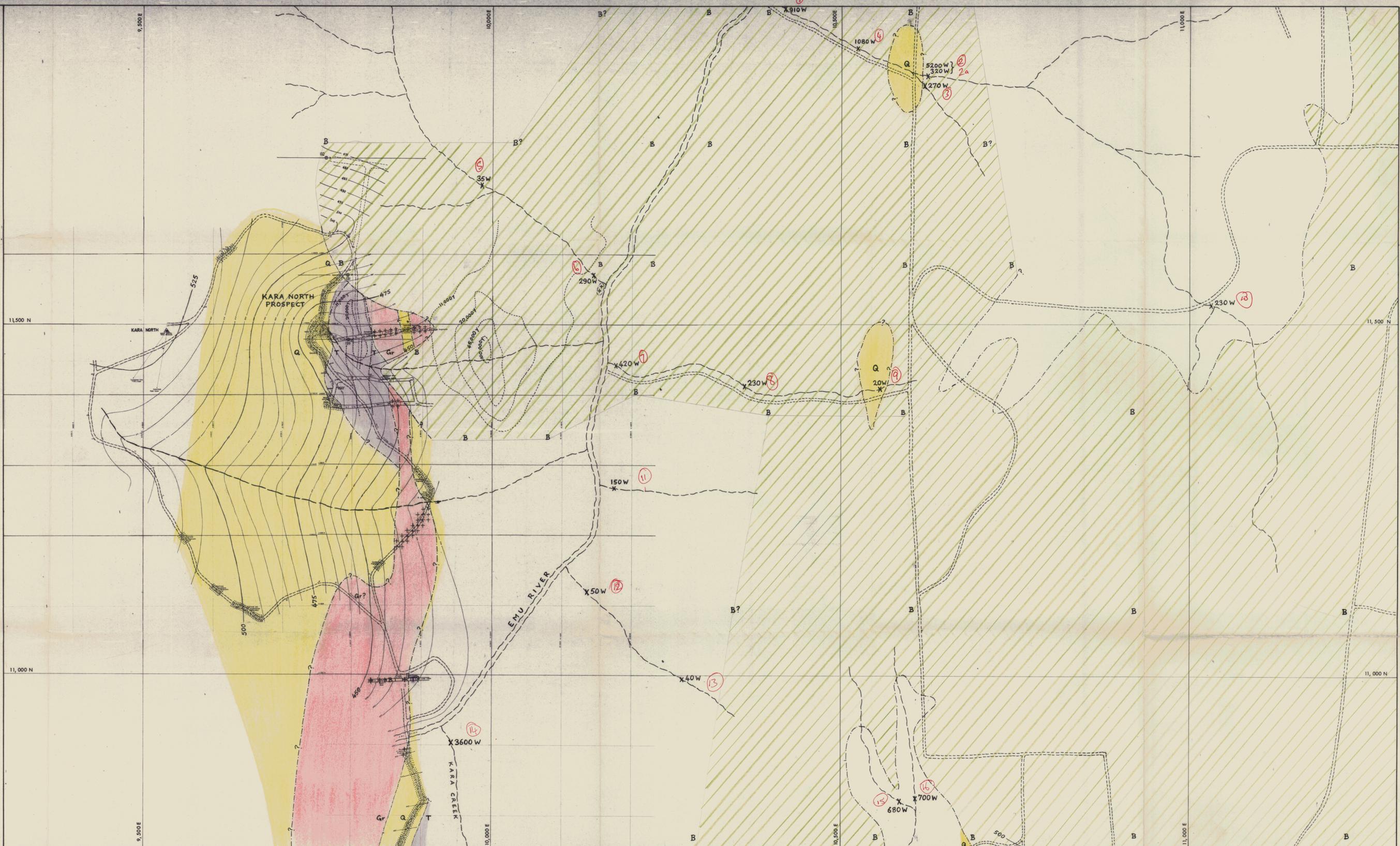


AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY

KARA TUNGSTEN PROJECT
 BURNIE, TASMANIA
GEOLOGICAL PLAN
KARA NO. 1

2130

Prepared by: R.T.B., A.D.G., C.H.W. Drawn by: R.T.B. et al.
 Scale: 1" = 200 feet Date: 17-7-73 Proj. No. X827-003
 Drawing No: Report No: Lib. No:



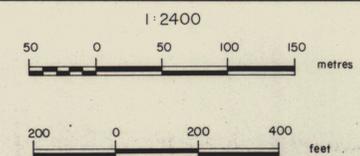
GEOLOGY

- | | |
|--|----------------------------------|
| Basalt | Tactite with visible scheelite |
| Granite | Magnetite over 50% |
| Quartzite, sandstone siltstone, conglomerate | Clay |
| Limestone, dolomite | Clay with disseminated magnetite |
| Argillaceous rocks | |
| Tactite (skarn) | |
| Tactite with disseminated magnetite | |
| Foliation or banding | |

REFERENCE

- | | |
|---|--|
| Trig. Beacon | Geological Boundary |
| Percussion drillhole | Panned Stream Sediment Sample, Assay in ppm W. |
| Diamond-rotary drillhole | Magnetic Anomaly, contour in gammas. |
| Bulldozed cut | |
| Backhoed trench | |
| Dirt road or track | |
| Creek | |
| Topographic contour in metres above sea level datum | |

SCALE



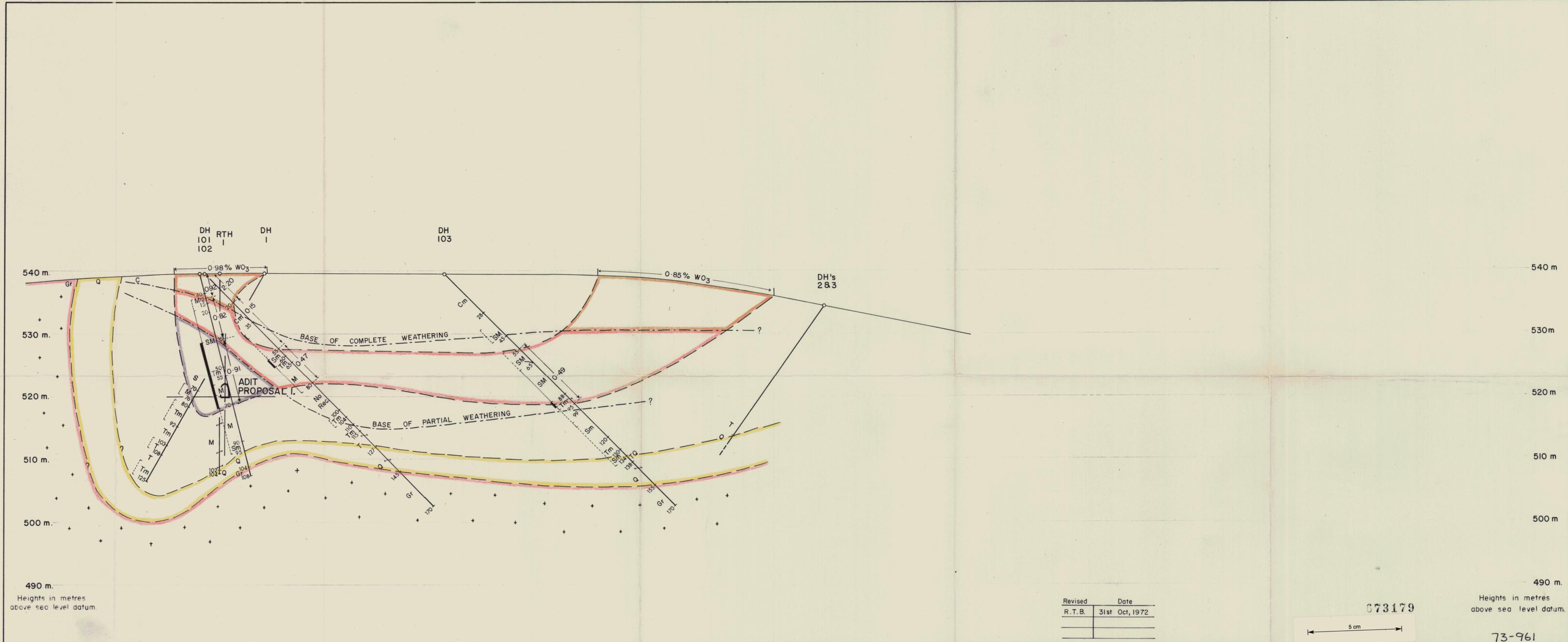
AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY

73-961

KARA TUNGSTEN PROJECT
BURNIE, TASMANIA

GEOLOGICAL PLAN
KARA NORTH
673178 2131

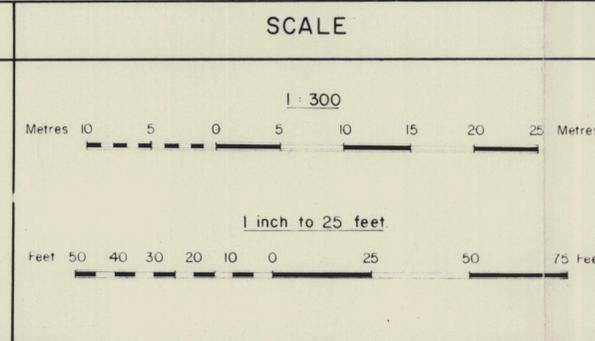
Prepared by: R.T.B., A.D.G., C.H.W.	Drawn by: R.T.B. et al.
Scale: 1" = 200 feet	Date: 17-7-73
Drawing No:	Proj. No. X827-003
Report No:	Lib. No:



ADDITIONS & NOTES				
ORE CATEGORY	DENSITY (cubic feet per short ton)	AREA (sq. feet)	STRIKE LENGTH (feet)	TONNAGE REPRESENTED (short tons)
NON - SCHEELITE	12	2790	125	29,062
TRANSITIONAL	10.5	6470	125	77,024
SCHEELITE	9	1360	165	24,933

GEOLOGY	
C	Clay
Cm	Clay with disseminated magnetite
M	Magnetite over 50%
T	Tactite
Tm	Tactite with disseminated magnetite
Q	Sandstone, quartzite, conglomerate, partly granitized
Gr	Granite
S	Sludge samples only no core
Sm	Sludge with subordinate magnetite
SM	Sludge with over 50% magnetite
[Red box]	Non-scheelite ore
[Purple box]	Transitional ore
[Blue box]	Scheelite ore
[Dashed line]	Foliation or banding
[027]	Assay in %WO ₃
[270]	Value in ppm W

REFERENCE		
DRILLHOLE AND TRENCH SAMPLE ASSAYS IN %WO ₃ OR PPM W		
Mo COLOUR CODE	WO ₃ COLOUR CODE	SCHEELITE NOTATION
0.25-0.50% Mo	[] 0.25-0.50% WO ₃	Estimated concentration of visible fluorescent scheelite
0.50-0.75% Mo	[] 0.50-0.75% WO ₃	Scattered specks only
0.75-1.00% Mo	[] 0.75-1.00% WO ₃	Weak to moderate, < 0.5% WO ₃
Over 1.00% Mo	[] Over 1.00% WO ₃	Moderate to strong, 0.5-1.0% WO ₃
		Strong, over 1.0% WO ₃



073179

Revised R.T.B. Date 31st Oct, 1972

5 cm

Heights in metres above sea level datum.

73-961

AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY

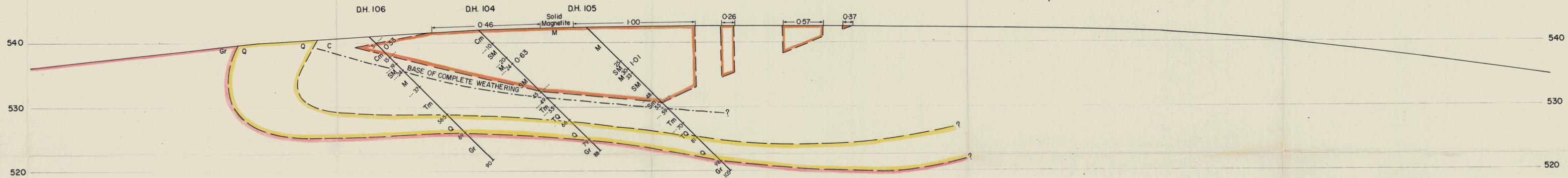
KARA TUNGSTEN PROJECT
BURNIE, TASMANIA
DRILLHOLE SECTION 101

2132

Prepared by R.T. Brandt. Drawn by P.R.W.

Scale 1:300 (1 inch to 25 ft) Date 14.4.1972. Proj. N° X827-003.

Drawing N° Report N° Lib N°



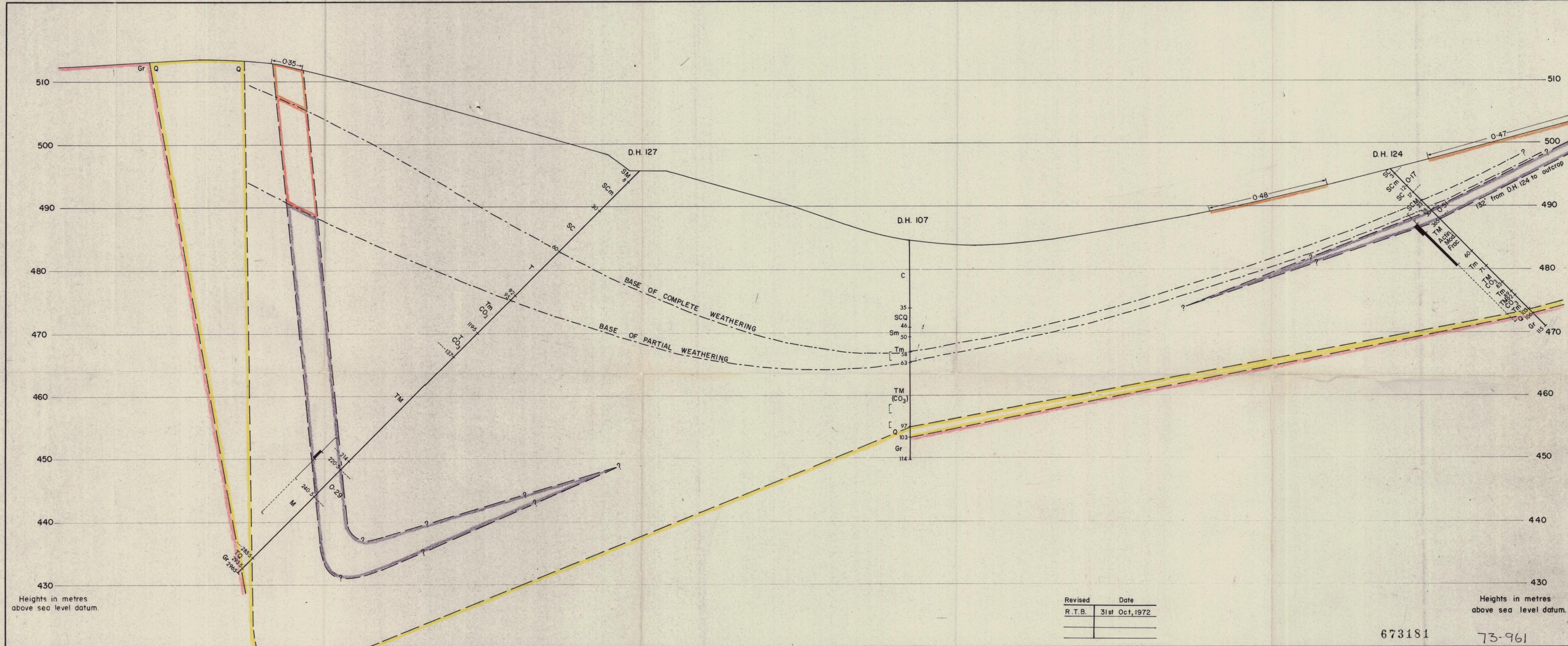
Heights in metres above sea level datum.

Revised	Date
R. T. B.	31st Oct, 1972

Heights in metres above sea level datum.

673180 73-961

ADDITIONS & NOTES					GEOLOGY		REFERENCE			SCALE		AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY		
NON-SCHEELITE ORE DENSITY (cubic feet per short ton) 12 AREA (sq. feet) 4880 STRIKE LENGTH (feet) 130 TONNAGE REPRESENTED (short tons) 52,867 AV. GRADE (% WO ₃) 0.79					C Clay Cm Clay with disseminated magnetite M Magnetite over 50% T Tactite Tm Tactite with disseminated magnetite Q Sandstone, quartzite, conglomerate, partly granitized Gr Granite	S Sludge samples only no core. Sm Sludge with subordinate magnetite. SM Sludge with over 50% magnetite. Non-scheelite ore Foliation or banding 0.27 Assay in %WO ₃ 2710 Value in p.p.m. W	DRILLHOLE AND TRENCH SAMPLE ASSAYS IN %WO₃ OR P.P.M. W Mo COLOUR CODE [0.25-0.50% Mo [0.50-0.75% Mo [0.75-1.00% Mo [Over 1.00% Mo WO ₃ COLOUR CODE [0.25-0.50% WO ₃ [0.50-0.75% WO ₃ [0.75-1.00% WO ₃ [Over 1.00% WO ₃	SCHEELITE NOTATION Estimated concentration of visible fluorescent scheelite. Scattered specks only. Weak to moderate, < 0.5% WO ₃ Moderate to strong, 0.5-1.0% WO ₃ Strong, over 1.0% WO ₃	1:300 Metres 10 5 0 5 10 15 20 25 Metres 1 inch to 25 feet Feet 50 40 30 20 10 0 25 50 75 Feet	KARA TUNGSTEN PROJECT BURNIE, TASMANIA DRILLHOLE SECTION 104 2133				
Prepared by: R.T. Brandt			Drawn by: P.R.W.											
Scale 1:300 1 inch to 25 ft.		Date: 10th Aug. 1972		Proj. N° X827-003										
Drawing N°		Report N°		Lib. N°										



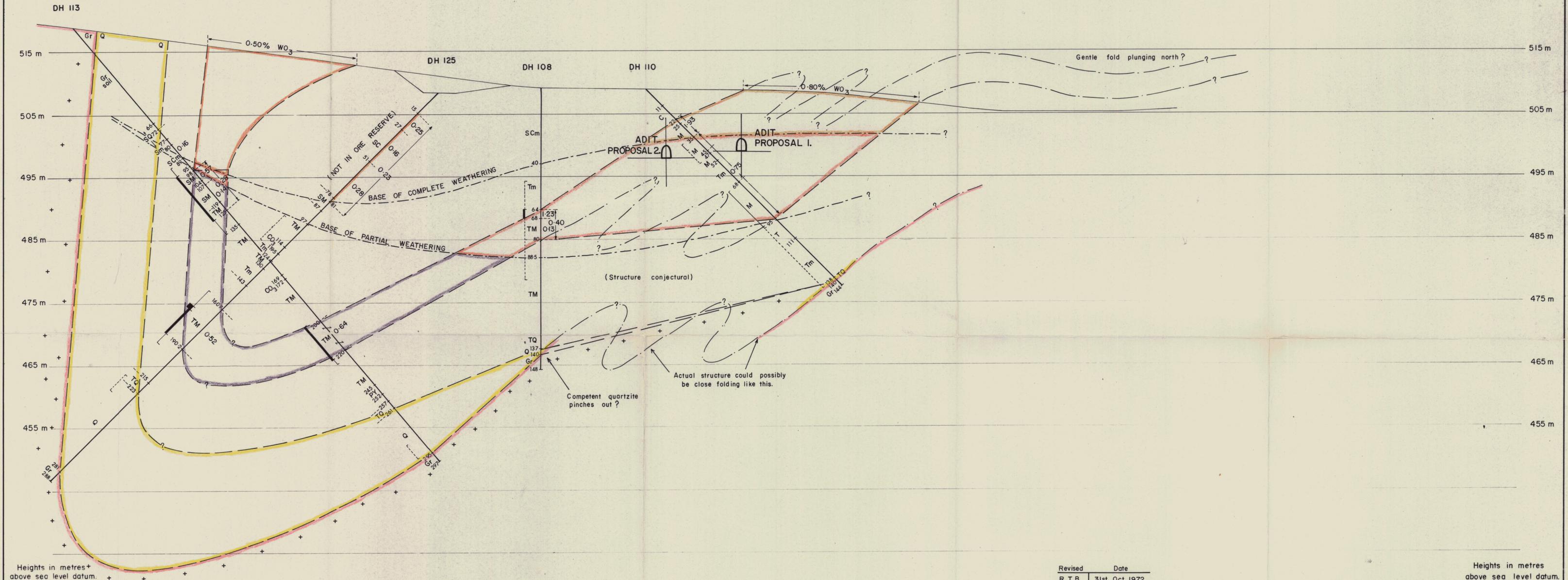
Heights in metres above sea level datum.

Heights in metres above sea level datum.

Revised	Date
R.T.B.	31st Oct, 1972

673181 73-961

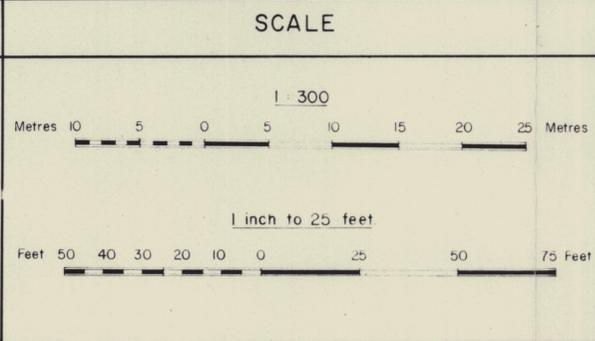
ADDITIONS & NOTES						GEOLOGY		REFERENCE			SCALE		AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY		
ORE CATEGORY	DENSITY (cubic feet per short ton)	AREA (sq. feet)	STRIKE LENGTH (feet)	TONNAGE REPRESENTED (short tons)	AV. GRADE (% WO ₃)	C Clay	S Sludge samples only no core	DRILLHOLE AND TRENCH SAMPLE ASSAYS IN %WO₃ OR P.P.M. W			SCALE		KARA TUNGSTEN PROJECT		
NON-SHEELITE	12	340	375	10,625	0.35	Cm Clay with disseminated magnetite	Sm Sludge with subordinate magnetite	Mo COLOUR CODE	WO₃ COLOUR CODE	SCHEELITE NOTATION	1:300		BURNIE, TASMANIA		
TRANSITIONAL	10.5	880	375	31,429	0.35	M Magnetite over 50%	SM Sludge with over 50% magnetite	[0.25-0.50% Mo	[0.25-0.50% WO ₃	Estimated concentration of visible fluorescent scheelite.	1 inch to 25 feet.		DRILLHOLE SECTION 107		
SCHEELITE	9	5730	375	238,750	0.34	T Tactite	Non-scheelite ore	[0.50-0.75% Mo	[0.50-0.75% WO ₃	Scattered specks only.	5 cm		2134		
						Tm Tactite with disseminated magnetite	Transitional ore	[0.75-1.00% Mo	[0.75-1.00% WO ₃	Weak to moderate, < 0.5% WO ₃	Feet 50 40 30 20 10 0 25 50 75 Feet		Prepared by: R. T. Brandt		
						Q Sandstone, quartzite, conglomerate, partly granitized	Scheelite ore	[Over 1.00% Mo	[Over 1.00% WO ₃	Moderate to strong, 0.5-1.0% WO ₃			Date: 10th Aug. 1972		
						Gr Granite	Foliation or banding			Strong, over 1.0% WO ₃			Proj. N°: X827-003		
							0.27 Assay in %WO ₃						Drawing N°: Report N°: Lib. N°:		
							2710 Value in p.p.m. W								



ADDITIONS & NOTES				
ORE CATEGORY	DENSITY (cubic feet per short ton)	AREA (sq. feet)	STRIKE LENGTH (feet)	TONNAGE REPRESENTED (short tons)
NON - SCHEELITE	12	4990	312	129,740
TRANSITIONAL	10.5	6740	312	200,274
SCHEELITE	9	4980	312	172,640

GEOLOGY	
C	Clay
Cm	Clay with disseminated magnetite
M	Magnetite over 50%
T	Tactite
Tm	Tactite with disseminated magnetite
Q	Sandstone, quartzite, conglomerate, partly granitized
Gr	Granite
S	Sludge samples only no core
Sm	Sludge with subordinate magnetite
SM	Sludge with over 50% magnetite
(Orange box)	Non-scheelite ore
(Red box)	Transitional ore
(Purple box)	Scheelite ore
(Dashed line)	Foliation or banding
0.27	Assay in %WO ₃
2710	Value in p.p.m W

REFERENCE		
DRILLHOLE AND TRENCH SAMPLE ASSAYS IN %WO ₃ OR P.P.M. W		
Mo COLOUR CODE	WO₃ COLOUR CODE	SCHEELITE NOTATION
[] 0.25 - 0.50 % Mo	[] 0.25 - 0.50 % WO ₃	Estimated concentration of visible fluorescent scheelite.
[] 0.50 - 0.75 % Mo	[] 0.50 - 0.75 % WO ₃	Scattered specks only.
[] 0.75 - 1.00 % Mo	[] 0.75 - 1.00 % WO ₃	Weak to moderate, < 0.5% WO ₃
[] Over 1.00 % Mo	[] Over 1.00 % WO ₃	Moderate to strong, 0.5 - 1.0% WO ₃
		Strong, over 1.0% WO ₃



Heights in metres above sea level datum.

673182 73-961

Revised R.T.B. Date 31st Oct, 1972

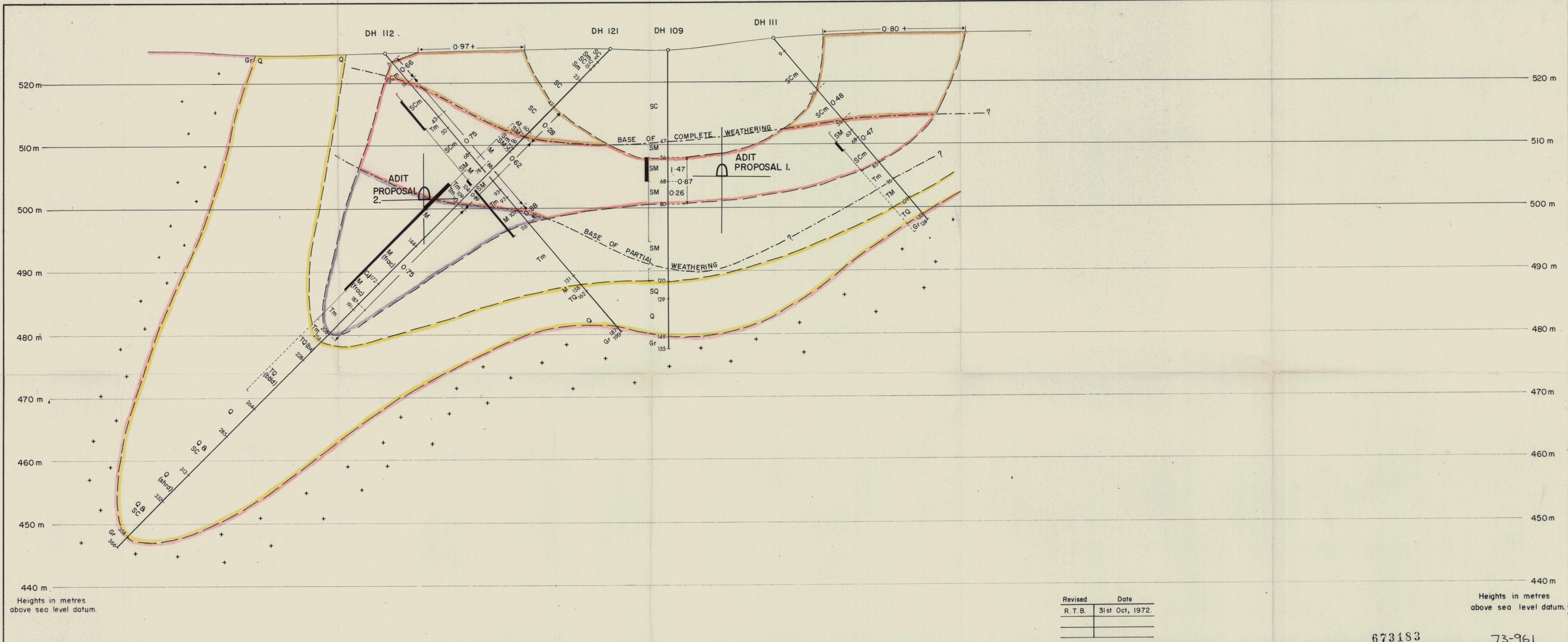
Heights in metres above sea level datum.

AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY

KARA TUNGSTEN PROJECT
BURNIE, TASMANIA
DRILLHOLE SECTION 108

2135

Prepared by: R. T. Brandt	Drawn by: L. Armour
Scale 1:300 (1 inch to 25 ft)	Date: 17th Apr. 1972
Drawing N°	Report N°
	Lib. N°



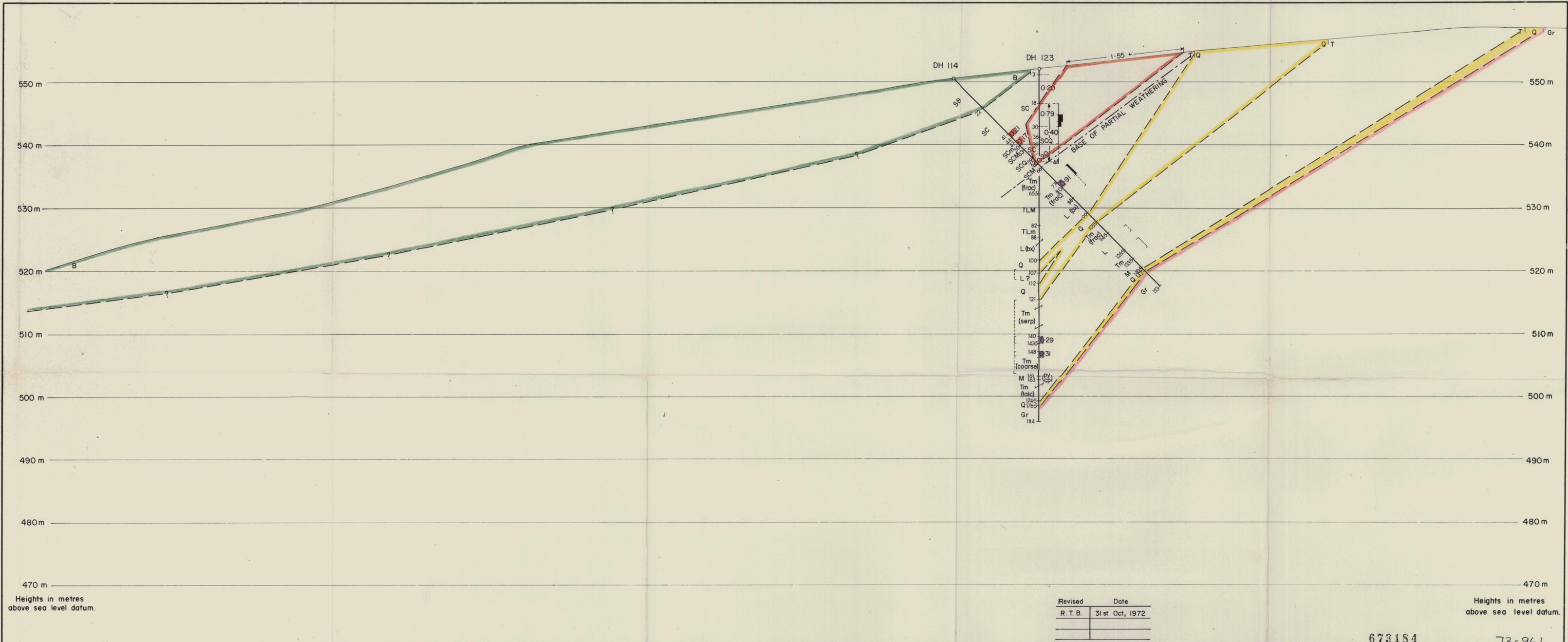
Heights in metres above sea level datum.

Heights in metres above sea level datum.

Revised	Date
R.T.B.	31st Oct, 1972.

673183 73-961

ADDITIONS & NOTES						GEOLOGY		REFERENCE			SCALE		AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY		
ORE CATEGORY	DENSITY (cubic feet per short ton)	AREA (sq. feet)	STRIKE LENGTH (feet)	TONNAGE REPRESENTED (short tons)	AV. GRADE (% WO ₃)	C Clay	S Sludge samples only no core.	DRILLHOLE AND TRENCH SAMPLE ASSAYS IN %WO₃ OR P.P.M. W			SCALE		KARA TUNGSTEN PROJECT BURNIE, TASMANIA DRILLHOLE SECTION 109 2136 Prepared by R.T. Brandt. Drawn by P.R. Walker. Scale 1/300 1 inch to 25 ft. Date 22.5.1972. Proj. No X 827-003 Drawing No. Report No. Lib. No.		
NON-SCHEELITE	12	5980	188	93,687	0.74	Cm Clay with disseminated magnetite.	Sm Sludge with subordinate magnetite.	Mo COLOUR CODE	WO₃ COLOUR CODE	SCHEELITE NOTATION	1:300	Metres 10 5 0 5 10 15 20 25			
TRANSITIONAL	10.5	9920	188	177,615	0.69	M Magnetite over 50%	SM Sludge with over 50% magnetite.	[0.25-0.50% Mo	[0.25-0.50% WO ₃	Estimated concentration of visible fluorescent scheelite.	1 inch to 25 feet.	Feet 50 40 30 20 10 0 25 50 75			
SCHEELITE	9	4250	188	88,778	0.76	T Tactite	Non-scheelite ore	[0.50-0.75% Mo	[0.50-0.75% WO ₃	Scattered specks only.					
						Tm Tactite with disseminated magnetite	Transitional ore	[0.75-1.00% Mo	[0.75-1.00% WO ₃	Weak to moderate, < 0.5% WO ₃					
						Q Sandstone, quartzite, conglomerate, partly granitized granite	Scheelite ore	[Over 1.00% Mo	[Over 1.00% WO ₃	Moderate to strong, 0.5-1.0% WO ₃					
						Gr+	Foliation or banding			Strong, over 1.0% WO ₃					
							0.27 Assay in %WO ₃								
							2710 Value in p.p.m. W								

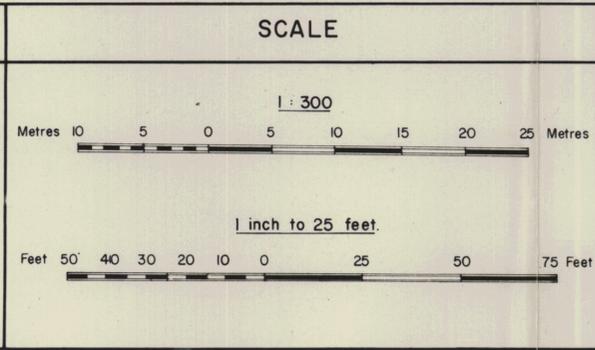


Revised	Date
R. T. B.	31st Oct, 1972

ADDITIONS & NOTES					
ORE CATEGORY	DENSITY (cubic feet per short ton)	AREA (sq. feet)	STRIKE LENGTH (feet)	TONNAGE REPRESENTED (short tons)	AV. GRADE (% WO ₃)
NON - SCHEELITE	12	-	-	-	-
TRANSITIONAL	10.5	1890	200	36,000	1.10
SCHEELITE	9	-	-	-	-

GEOLOGY			
C	Clay	S	Sludge samples only no core.
Cm	Clay with disseminated magnetite.	Sm	Sludge with Subordinate magnetite.
M	Magnetite over 50%	SM	Sludge with over 50% magnetite.
T	Tactite		Non-scheelite ore
Tm	Tactite with disseminated magnetite		Transitional ore
Q	Sandstone, quartzite, conglomerate, partly granitized		Scheelite ore
Gr	Granite		Foliation or banding
B	Basalt	Q27	Assay in %WO ₃
L	Limestone dolomite	Q210	Value in p.p.m. W

REFERENCE		
DRILLHOLE AND TRENCH SAMPLE ASSAYS IN %WO ₃ OR P.P.M. W		
Mo COLOUR CODE	WO₃ COLOUR CODE	SCHEELITE NOTATION
[0.25 - 0.50 % Mo	[0.25 - 0.50 % WO ₃	Estimated concentration of visible fluorescent scheelite.
[0.50 - 0.75 % Mo	[0.50 - 0.75 % WO ₃	Scattered specks only.
[0.75 - 1.00 % Mo	[0.75 - 1.00 % WO ₃	Weak to moderate, < 0.5% WO ₃
[Over 1.00 % Mo	[Over 1.00 % WO ₃	Moderate to strong, 0.5 - 1.0 % WO ₃
		Strong, over 1.0 % WO ₃



673184 73-961

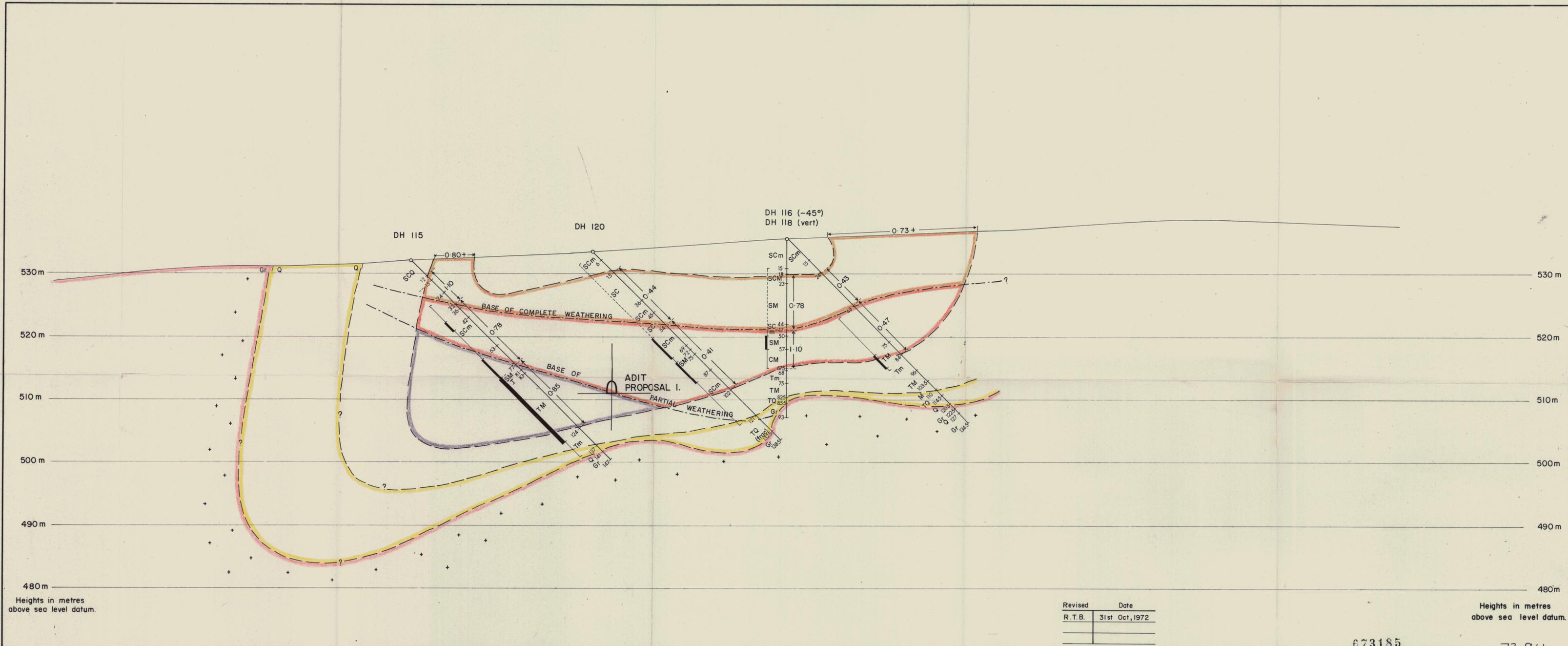
Heights in metres above sea level datum.

AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY

KARA TUNGSTEN PROJECT
BURNIE, TASMANIA
DRILLHOLE SECTION I14

2137

Prepared by R.T. Brandt	Drawn by P.R. Walker
Scale 1 : 300 1 inch to 25 ft.	Date 23.5.1972.
Drawing N ^o	Report N ^o
	Lib. N ^o

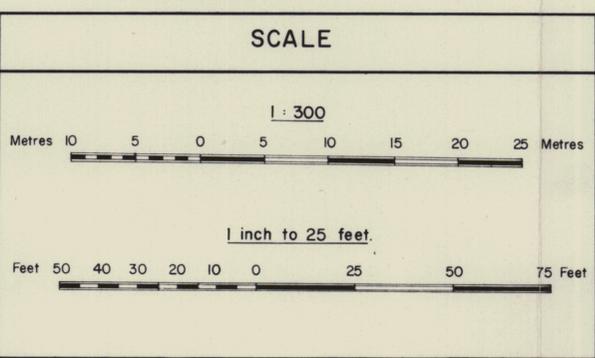


Revised _____ Date _____
 R.T.B. 31st Oct, 1972

ADDITIONS & NOTES					
ORE CATEGORY	DENSITY (cubic feet per short ton)	AREA (sq. feet)	STRIKE LENGTH (feet)	TONNAGE REPRESENTED (short tons)	AV. GRADE (% WO ₃)
NON-SCHEELITE	12	7220	120	72,200	0.69
TRANSITIONAL	10.5	8230	120	94,057	0.63
SCHEELITE	9	4140	160	73,600	0.85

GEOLOGY	
C	Clay
Cm	Clay with disseminated magnetite.
M	Magnetite over 50%
T	Tactite
Tm	Tactite with disseminated magnetite
Q	Sandstone, quartzite, conglomerate, partly granitized
Gr+	Granite
S	Sludge samples only no core.
Sm	Sludge with subordinate magnetite.
SM	Sludge with over 50% magnetite.
[Orange]	Non-scheelite ore
[Red]	Transitional ore
[Purple]	Scheelite ore
[Arrow]	Foliation or banding
O27	Assay in %WO ₃
2710	Value in p.p.m. W

REFERENCE		
DRILLHOLE AND TRENCH SAMPLE ASSAYS IN %WO ₃ OR P.P.M. W		
Mo COLOUR CODE	WO ₃ COLOUR CODE	SCHEELITE NOTATION
[] 0.25-0.50 % Mo	[] 0.25-0.50 % WO ₃	Estimated concentration of visible fluorescent scheelite.
[] 0.50-0.75 % Mo	[] 0.50-0.75 % WO ₃	Scattered specks only.
[] 0.75-1.00 % Mo	[] 0.75-1.00 % WO ₃	Weak to moderate, < 0.5% WO ₃
[] Over 1.00 % Mo	[] Over 1.00 % WO ₃	Moderate to strong, 0.5-1.0 % WO ₃
		Strong, over 1.0 % WO ₃



673185 73-961

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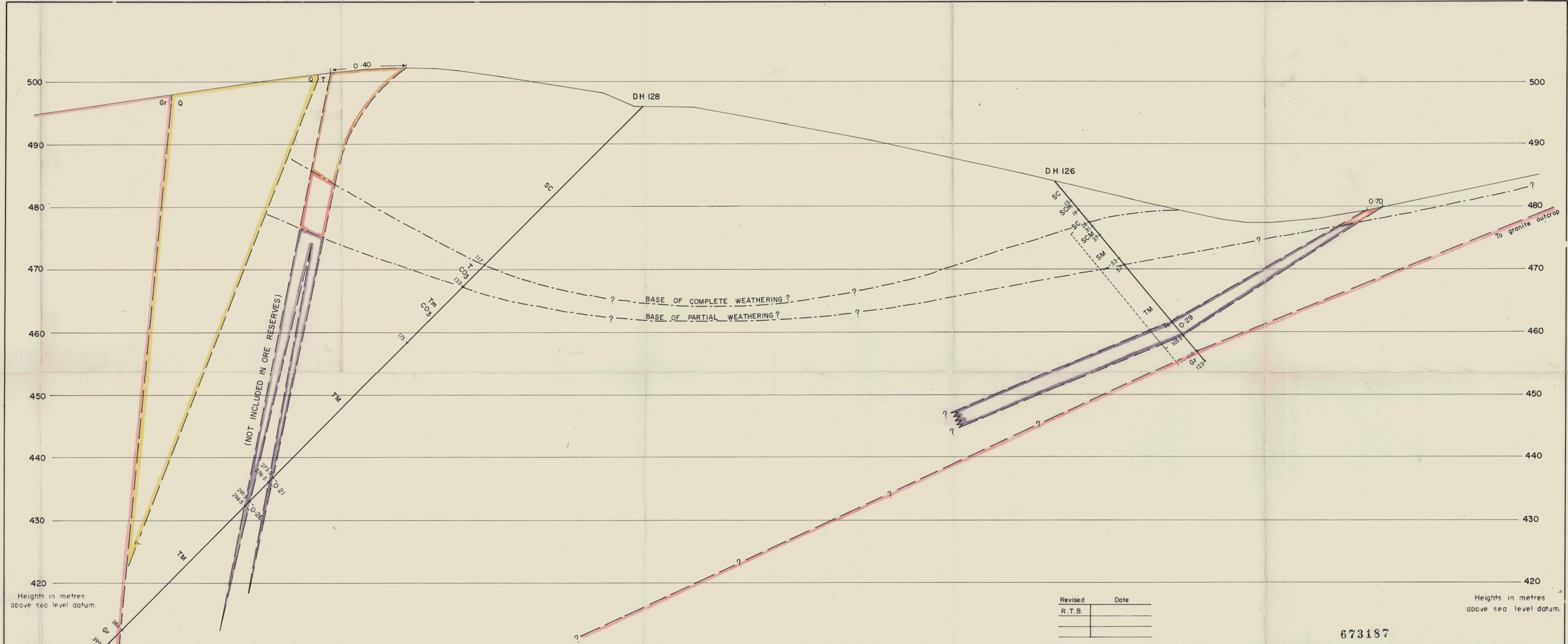
**KARA TUNGSTEN PROJECT
 BURNIE, TASMANIA
 DRILLHOLE SECTION 115**

2138

Prepared by R.T. Brandt.	Drawn by P.R. Walker
Scale 1:300 1 inch to 25 ft.	Date 18.5.1972
Drawing N°	Proj. N° X827-003
Report N°	Lib. N°

Heights in metres above sea level datum.

Heights in metres above sea level datum.

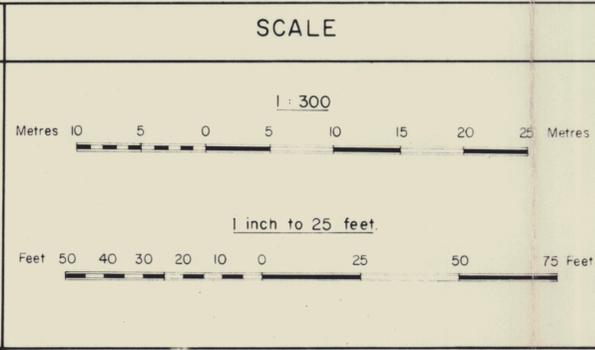


Revised	Date
R.T.B.	

ADDITIONS & NOTES					
ORE CATEGORY	DENSITY (cubic feet per short ton)	AREA (sq. feet)	STRIKE LENGTH (feet)	TONNAGE REPRESENTED (short tons)	AV. GRADE (% WO ₃)
NON-SHEELITE	12	1210	375	37,810	0.40
TRANSITIONAL	10.5	450	375	16,071	0.40
SHEELITE	9	1870	375	77,917	0.29

GEOLOGY	
C	Clay
Cm	Clay with disseminated magnetite
M	Magnetite over 50%
T	Tactite
Tm	Tactite with disseminated magnetite
Q	Sandstone, quartzite, conglomerate, partly granitized
Gr	Granite
S	Sludge samples only no core
Sm	Sludge with subordinate magnetite
SM	Sludge with over 50% magnetite
[Orange Box]	Non-scheelite ore
[Red Box]	Transitional ore
[Purple Box]	Scheelite ore
[Dashed Line]	Foliation or banding
0.27	Assay in % WO ₃
2710	Value in p.p.m. W

REFERENCE		
DRILLHOLE AND TRENCH SAMPLE ASSAYS IN % WO ₃ OR P.P.M. W		
Mo COLOUR CODE	WO ₃ COLOUR CODE	SHEELITE NOTATION
[] 0.25-0.50% Mo	[] 0.25-0.50% WO ₃	Estimated concentration of visible fluorescent scheelite.
[] 0.50-0.75% Mo	[] 0.50-0.75% WO ₃	Scattered specks only.
[] 0.75-1.00% Mo	[] 0.75-1.00% WO ₃	Weak to moderate, < 0.5% WO ₃
[] Over 1.00% Mo	[] Over 1.00% WO ₃	Moderate to strong, 0.5-1.0% WO ₃
		Strong, over 1.0% WO ₃



673187

AUSTRALIA AND NEW ZEALAND EXPLORATION COMPANY 73-961.

KARA TUNGSTEN PROJECT
BURNIE, TASMANIA
DRILLHOLE SECTION 126

2140

Prepared by: R.T. BRANDT	Drawn by: L. ARMOUR
Scale: 1:300 1 inch to 25 ft.	Date: 31st Oct, 1972
Drawing N°:	Report N°:
	Lib. N°: