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WHEAL LUTWYCHE PTY. LTD.

EXPLORATION LICENCE 59/83

ANNUAL REPORT FOR THE YEAR ENDING

5TH JUNE 1986.

DATE	A.O.	BY	NO.	CLASS
DATE	28 MAY 1986			CLASS
	DEPT. OF MINES			
FILE NO.	5239/86			

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DIAMOND DRILLING REPORT: R.M. Vivian
DATE: 19th May 1986.

UNCLASSIFIED

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SUMMARY:

Previous investigation into grades and quartz volume combined with underground mapping (as outlined in this report) of quartz veins allows the estimation of an indicated ore reserve.

No allowance has been made for mullock filled stopes. Communication with P.J. McGuishon, a previous mine manager indicates that mineable ore exists in these stopes. It is estimated that one half of the stopes are mullock filled.

Diamond drilling results are not included in the underground mapping programme. However, they show that the mineralised vein swarm continues south of the western fault. This is outlined in this report.

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1. INTRODUCTION:

During May 1985, several days were spent mapping quartz veins in the upper four levels of the abandoned Aberfoyle Mine.

Access to these levels was via the 4 Level adit from Aberfoyle Rivulet, and the work was done in the company of a retired local miner, Mr. J. Brown of Rossarden.

The primary objective of this work was to obtain more reliable data on the combined quartz volumes of the minor (stringer) veins and the unmined major quartz veins.

Full details on the significance of quartz veins in the assessment of the Aberfoyle Prospect are given in earlier work by the author. (Summons 1983 (a), 1983 (b), 1985).

2. PREVIOUS WORK:

Recent studies of the Aberfoyle vein system have been directed at appraising it as a tin-tungsten resource suitable for mining by open pit methods.

The essential premise on which this work has been based is that the in situ ore grade (OG) is a function of the quartz grade (QG) and quartz volume (QV) i.e. $OG = QG \times QV$.

The quartz grade is the undiluted in situ grade of $Sn+WO_3\%$ in a quartz vein; dilution of the QG by waste rock constitutes the ore (head) grade.

Detailed studies into the distribution of quartz grades in the vein swarm at Aberfoyle, were assisted by the well documented production data of the old mine.

Quartz grades of the major veins ($\geq 0.30m$ wide) were originally considered to be approx. 5 - 6%cm above 4 Level, and subsequent work has shown the likely modal value to be in the 5 - 7%CM.

This phase of work concluded that the minor stringer quartz veins ($\leq 0.30m$ thick) should have similar quartz grades to the major veins.

Accordingly, because of the problems involved in grade assessment (from mine exposures, drill core etc.), of the "nugget type mineralisation", it was assumed that the average value for the quartz grades in the upper four levels of the deposit are in the range of 5 - 7% Sn + WO_3 .

Thus the corollary emerging from this assumption was that the quartz volumes should be studied in detail.

3. CURRENT WORK:

3.1. The underground mapping exercise involved approx. 25% of the original crosscuts, the balance being inaccessible. The method used was a simple measurement of vein widths over specified intervals, then to calculate the quartz volume.

3.2. Comparison of these results with earlier Aberfoyle Tin Ltd. (ATL) Data on level plans showed a wide variance, with the current QV values generally higher than the "original" values.

However, as this variation was not always consistent, it was not considered appropriate to adjust the early data in the areas currently inaccessible.

3.3. Accordingly, the data presented in the attached figure is based on the combined new (current work) and old (ATL work) QV values.

Although local instances may be still in error, the interpretation made of the QV distributions is regarded as a fair average portrayal of the minor quartz vein volumes.

3.4. An inadvertent bias is present in the interpretation of QV values, due to the status (age) and intensity of subsurface information on the Aberfoyle vein swarm.

For example, very little exploration was carried out from the 1 and 2 levels, but increased from 3 to 4 level.

Thus the simplicity of the QV distribution on 1 level is probably apparent, and the type of detail seen on 4 level would be more realistic.

3.5. For practical purposes, the interpreted QV values represent the in situ stringer quartz veins, with the minor high values being due in certain cases to the remnant major veins.

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4. RESULTS:

4.1. The current work has enabled the recognition of several features of significance, and reference should be made to the attached level plans with contoured QV data.

4.2. The Western Fault (at the southern end of the old mine), has clearly played a part in the channelling of ore fluids into the fractured host Mathinna Beds.

High QV areas abut this fault to the north, particularly on 1 and 2 levels.

Although post mineralisation movement has occurred on the Western Fault, attempts to 'unfault' the QV values either side of it suggest an original heterogeneity of quartz distribution.

4.3. Hanging wall (with respect to the main and mined swarm) mineralization occurs on 2 level between 5600 - 6000N centred on 1450E, but was not exposed on 3 level and appears to have faded by 4 level (5400 - 5600N, and centred on 1300E).

However, significant mineralisation (i.e. high QV values) occur further west on 4 level between 5400N and 5700N centred on 1100E, and this has not been tested on the upper 3 levels. ✓

4.4. Ore Reserves - Aberfoyle Mine Area4.4.1. 3%QV Cut off Value

Use of a 3% QV cut off shows the vein swarm to range as follows:

- 1 Level - 40m wide, 300m long (5000 - 6000N)
- 2 Level - 40m wide, 400m long (5000 - 6300N)
- 3 Level - 20m wide, 430m long (4800 - 6200N)
- 4 Level - 50m wide, 490m long (4500 - 6100N)

Averaging these widths and lengths between levels at depths of -15m (base of overburden), -45m, -75m, -105m and -120m (4 level), and using an SG of 2.56 t/m³, gave the following results:

Block 1 (-15 to -45m)	=	Length x	width x	depth x	SG	=	TONNES x 10 ⁶
		325 x	40 x	30 x	2.56	=	0.9984
Block 2 (-45 to -75m)	=	382.5 x	35 x	30 x	"	=	1.0282
Block 3 (-75 to -105m)	=	437.5 x	32.5 x	30 x	"	=	1.0920
Block 4 (-105to -120m)	=	475 x	42.5 x	15 x	"	=	0.7752
					TOTAL:		<u>3.8938</u>

Allowing for previous mining of 0.25 x 10⁶ tonnes, the net indicated ore reserve = 3.6438 x 10⁶ tonnes.

4.4.2. 2% QV Cut off Value

Use of a 2% QV cut off shows the vein swarm to range as follows:

- 1 Level - 50m wide, 300m long, (5000 - 6000N)
- 2 Level - 50m wide, 520m long, (4600 - 6300N)
- 3 Level - 55m wide, 430m long, (4800 - 6200N)
- 4 Level - 70m wide, 490m long, (4500 - 6100N)

Averaging these widths and lengths between levels (as for 4.4.1. above), and using the same SG of 2.56t/m³, gave the following results:

	Length	x	width	x	depth	x	SG	=	TONNES x 10 ⁶
Block 1 (-15 to -45m)	= 355	x	50	x	30	x	2.56	=	1.3632
Block 2 (-45 to -75m)	= 442.5	x	51	x	30	x	"	=	1.7332
Block 3 (-75 to -105m)	= 467.5	x	57.5	x	30	x	"	=	2.0645
Block 4 (-105 to -120m)	= 475	x	66	x	15	x	"	=	1.2038
							TOTAL:		<u>6.3647</u>

Allowing for previous mining of 0.25×10^6 tonnes, the net indicated ore reserve = 6.1147×10^6 tonnes.

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5. DISCUSSION:

5.1. The earlier estimate of inferred ore of 13.9×10^6 tonnes was based on a strike extent of 1000m, a vein swarm width of 60m, down to a depth of 120m (4 level).

The present study has focussed only on the cassiterite - wolframite bearing quartz stringer veins in the immediate vicinity of the old Aberfoyle mine workings.

Thus the indicated reserve figures of 3.6×10^6 tonnes and 6.1×10^6 tonnes relate to the northern 400m of the vein swarm strike extent, which ranges in average width from 37m (3% QV cut off) to 56m (2% QV cut off). The vein swarm does extend for 1000m, but the reliability of the QV data in the southern 600m is not known in the same detail as the northern portion.

5.2. Previous work has identified the regional significance of the NW trending faults in the area, namely that they appear syntectonic with granite emplacement.

These NW faults appear to predate the NNE to NE faults, and in addition the aplite cupola (beneath the Aberfoyle vein swarm) trends NW within a NE trending topographic high in the Ben Lomond Granite at that locality.

5.3. Further exploration should be directed at two main areas as follows:

5.3.1. To the west of the Aberfoyle vein swarm to follow up earlier quartz vein intersections by A.T.L. in surface drill holes S1, S3 and S5.

In addition, the hanging wall mineralisation located on 2 and 4 levels (refer point 4.3), should be further evaluated.

5.3.2. To the south of the old mine workings, to follow up earlier vein intersections by A.T.L. in surface drill holes S6, S7, S8 and S15.

References:

- SUMMONS, T.G. 1983 (a): Proposed Aberfoyle Open Pit; Unpub. Rep.
Wheal Lutwyche Pty. Ltd.
- SUMMONS, T.G. 1983 (b); Aberfoyle Deposit Quartz Grades: Unpub. Rep.
Wheal Lutwyche Pty. Ltd.
- SUMMONS, T.G. 1985 : Annual Report for year ended 5/6/1985 for
EL 59/83: Unpub. Rep.
Wheal Lutwyche Pty. Ltd.

1. Drilling

A three diamond drill hole programme commenced in May 1985 with the objective of evaluating the extent of quartz veining and cassiterite/wolframite mineralisation within the mine workings above 4 level at Rossarden.

All three holes were collared on the western side of the known mine working so as to intersect at acute angles the Aberfoyle vein swarm that grossly dip at 60 - 70° W. Hole 85 - 1 was targeted to test the eastern boundary of the vein swarm between 2 and 3 levels. Hole 85 - 2 was positioned to investigate the southerly extension of the swarm at depth to 4 level as well as test for further quartz veins known from previous drilling to occur in the hanging wall to the west of the main swarm. Hole 85 - 3 sited near Hole 85 - 1, but with different orientation, was drilled to provide comparisons of strength and variability of veining, and mineralisation between the holes as well as test the hanging wall between 1 and 2 levels.

1.1 Drill Hole Statistics:

1.1.1 Collar Co-ordinates:

<u>Drill Hole</u>	<u>AMG Co-ords.</u> (M)	<u>Mine Grid Co-ords.</u> (Ft.)
ROC 85 - 1	5387804N 562427E	5000N 1217E
ROC 85 - 2	5387724N 562363E	4699N 4900 1025E
ROC 85 - 3	5387804N 562427E	5000N 1218E

1.1.2 Orientation/Elevation/Depth:

<u>Drill Hole</u>	<u>Azimuth</u>	<u>Declination</u>	<u>Collar Elevation*</u> (M)	<u>Drilled Depth</u> (M)
ROC 85 - 1	53°	115°	687.5	134.2
ROC 85 - 2	55°	111°	689.0	156.0
ROC 85 - 3	55°	79°	687.5	130.0

* Datum S100 (670.18M)

1.1.3 Mine Level Intersections:

ROC 85 - 1	-	1 Level	4969N/1344E	(mine grid)
	-	2 Level	4953N/1418E ✓	(mine grid)
		terminated	7772N/2509E	(AMG)
ROC 85 - 2	-	1 Level	4666N/1156E	(mine grid)
	-	2 Level	4656N/1229E ✓	(mine grid)
	-	3 Level	4648N/1290E	(mine grid)
		terminated	7691N/2449E	(AMG)
ROC 85 - 3	-	1 Level	5014N/1356E	(mine grid)
		terminated	5027N/1425E	(mine grid)

Are these right?

1.2 Drill Hole Interpretation:

Host rock type to veining and mineralisation encountered in all drill holes is a light grey to dark grey, fine to medium grained sandstone of the Lower Palaeozoic Mathinna Beds. It is variable in composition ranging from a siliceous and often massive rock to one containing a high silt component. Dark grey to black planar laminations. Mudstone interbeds are common. Thin dull white, granular quartz 'tension' veins are also common and are particularly associated with and located near the bedding margins of mudstone interbeds. These are barren of sulphide and Sn/W mineralisation.

Detailed drill log descriptions are given in Appendix 1.

1.2.1. ROC 85 - 1:

Weakly mineralised quartz veins were encountered in the hanging wall to the Aberfoyle vein swarm between 34.4 and 38.4M drill interval.

Strong quartz veining and Sn/WO₃ mineralisation consistent with the Aberfoyle swarm occurs between 56.9 and 134.2M drill depth. It is characterised by a distinct sheared or well fractured hanging wall margin which is indeed a feature found in all drill holes. Best quartz vein density occurs between 56.9 and 122.0M and corresponds to a 6.1% total quartz volume (i.e. total vein widths/interval width). Best mineralised quartz volume occurs between 74.0 and 122.0M and is 4.7%. Intersection in the drilling of the western most stoped drive, good similarity of vein widths and mineral contents of veins with that evident from 2 level mine plans suggests good grade ground exists east of this stoped drive between 1 and 2 levels. Similarly, the lack of intersection of a stoped floor to the eastern most 2 level drive suggests intact ground carrying good mineralisation extending eastwards up to 60 metres beyond the working on 2 and 3 levels.

1.2.2. ROC 85 - 2:

Two discrete zones of mineralised quartz veins were intersected in this hole. These comprise a hanging wall zone occurring between approximately 46.3 and 77.4M and the Aberfoyle vein swarm between 97.2 and 156.1M drill depth. Twenty four metres of barren sandstone separate the two zones.

The hanging wall zone is characterised by 29 quartz veins, 13 of which are Sn/WO₃ mineralised. Width of quartz veins are narrow (≤ 24 mm) and in general mineralisation is weak. These veins were also identified in earlier drilling (hole DDS - 8 at section 4500N) located 60M to the south.

The Aberfoyle vein swarm is characterised by approximately 0.5M mineralised brecciated quartz vein material on its hanging wall margin at 97.2M, and the hole terminated whilst still in the swarm at 156.1M drill depth.

why?

Sixty eight quartz veins exist of which 17 are Sn/WO₂ mineralised giving 181mm of mineralised quartz material over a true total width of mineralisation of 51.8M. This equates to 3.5% mineralised quartz volume. Total quartz volume is 4.4%.

The drill intersected veining and associated mineralisation between 2 and 4 levels indicates good grade ground exists between these levels which was not developed by working on 3 level. As well it suggests an eastward extension of mineralisation of about 28M from the eastern most drive on 4 level. The 175mm wide mineralised quartz vein at 128.2M appears to project upwards into the eastern most drive developed on 2 level. Here 5½ - 7½" veins were worked. This might suggest that the drill intersected mineralisation below 128.2M may also project up and occur to the east of this drive i.e. in the foot wall. The drill hole is located too far below 2 level to but only tentatively suggest this situation may be present.

1.2.3. ROC 85 - 3:

Drill intersection 42.6 to 47.0M has encountered the same shallow hanging wall vein zone strongly evident in ROC 85 - 2 and to a lesser extent in ROC 85 - 1.

The Aberfoyle vein swarm was intersected between 83.4 and 103.0M; the hole terminated whilst still in the swarm. On its hanging wall margin it is characterised by a 20cm wide clay filled shear and on its foot wall margin by well fractured broken and chalcopyrite, pyrite rich rock probably part of the Western Fault.

The drilling has indicated mineralised quartz veins occur between 1 and 2 levels. Percent total quartz vein volume intersected is 2.5%, while for solely mineralised quartz vein material is 5.8%.

why?

} wrong?

DIAMOND DRILL LOG

GEOLOGY SHEET

Project..... Rossarden Co-ordinates 5387804N/562427E Declination 115° Mag..... Drilled by.....
 Location..... Rossarden Mine Elevation..... Bearing 53° Drill B40.....
 Date commenced 10-5-1985 Date completed 24-5-1985 Logged by R.M. Vivian.....

Depth (m)		Core Size	Core (m) Recovered	% Recovery	DESCRIPTION
From	To				
33.80	35.80	HQ	2.0	100	Grey sandstone 33.8 - 34.16M barren quartz vein; irregular, no orientation @ 34.44M sericite vein, 1cm wide, with abundant cassiterate crystals. 34.6 - 35.24M quartz vein, irregular; quartz is fractured. Barren. @ 35.60 - 35.8M Anastomizing barren quartz vein, 2 - 3 cm wide.
35.80	36.50		0.70	100	D. grey sandstone
36.50	38.00		1.50	100	36.56 - 37.09M Anastomizing barren quartz veins; to 7 cm width. @ 37.8M Pyrite vein, 1 cm, sericite selvages.
38.00	39.90				Light grey sandstone @ 38.4M Quartz vein, 15mm, coarse cassiterite, with minor wolframite and pyrite.
39.90	42.20		2.30	100	Grey sandstone with minor mudstone interbeds.
42.20	45.30		3.10	100	Grey sandstone with 1cm - 4mm width range 'sweat' quartz veins. Barren.

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DIAMOND DRILL LOG

031015

GEOLOGY SHEET

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Project..... Co-ordinates..... Declination..... Drilled by.....
 Location..... Elevation..... Bearing..... Drill.....
 Date commenced..... Date completed..... Logged by.....

Depth (m)		Core Size	Core (m) Recovered	% Recovery	DESCRIPTION
From	To				
45.30	48.40		3.1	100	Grey sandstone with faint mudstone laminae and clasts.
48.40	51.50		3.1	100	Grey sandstone with mudstone interbeds.
51.50	54.60		3.1	100	Grey - dark grey sandstone with mudstone interbeds.
54.60	57.70		3.1	100	Grey sandstone with minor mudstone laminations. @ 56.91M quartz vein, 9 cm wide, abundant wolframite and cassiterite as crystals and grains to 5mm diameter dispersed throughout; minor pyrite, 35 ⁰ /core.
57.70	60.40		2.7	100	Grey sandstone with minor mudstone laminations.
60.40	63.50				Grey sandstone, massive. @ 63.34M quartz vein, 48mm wide, common wolframite and pyrite.
63.50	64.90				Grey sandstone, massive.
64.90	65.60				Grey sandstone, massive. @ 65.25 to 65.60M, quartz vein, 27cm wide, pink brown cassiterite grains plus

DIAMOND DRILL LOG

GEOLOGY SHEET

031016 Hole No. ROC 85 - 1

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Project..... Co-ordinates..... Declination..... Drilled by.....
 Location..... Elevation..... Bearing..... Drill.....
 Date commenced..... Date completed..... Logged by.....

Depth (m) From	To	Core Size	Core (m) Recovered	% Recovery	DESCRIPTION
					pyrite blebs in wolframite in quartz bordered by sericite selvages.
65.60	67.00		1.40	100	Grey sandstone.
67.00	69.20				Grey sandstone/siltstone. @ 67.5M Fe oxide coated fracture. @ 68.5M high angled shear.
69.20	69.70		0.50	100	Sandstone
69.70	71.30				Grey - dark grey sandstone massive.
71.30	73.00		1.70	100	L. Grey sandstone/siltstone. Intensely crackled / fractured; surfaces of which lined by Fe carbonate?
73.00	76.00		3.00	100	73.00 - 73.80M intensely crackled/fractured sandstone open or infilled by yellow brown prisms Fe carbonate (siderite?). 74.00 - 74.27M quartz vein, 26 cm wide, wolframite blades plus lesser cassiterite grains, plus coarse pyrite in vughs.

DIAMOND DRILL LOG

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Hole No. ROC. 85 - 1.

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GEOLOGY SHEET

Project..... Co-ordinates..... Declination..... Drilled by.....
 Location..... Elevation..... Bearing..... Drill.....
 Date commenced..... Date completed..... Logged by.....

Depth (m)		Core Size	Core (m) Recovered	% Recovery	DESCRIPTION
From	To				
76.00	78.20		2.20	100	Grey sandstone/siltstone. 76.36 - 76.65M Two quartz veins, 2.5cm and 7 cm wide, barren; anastomizing and brecciating textures.
78.20	80.10				Stope
80.10	81.50		1.40	100	Grey sandstone. 80.10 - 80.78M broken, fragmented core; limonite stained. 80.4 - 80.78M. Quartz vein fragments with wolframite infilling 2 cm wide vugh plus discrete cassiterite grains (1 - 2mm).
81.50	82.00		0.32	64	Fragments siltstone/sandstone core.
82.00	85.00				D. Grey mudstone from 84.10 - 85.00M; light grey sandstone from 82.00 - 84.10M.
85.00	88.10		3.10	100	L. Grey sandstone massive.
88.10	91.00		2.90	100	Dark grey sandstone, high mudstone content. @ 88.43M, quartz vein, 12.5cm wide, common wolframite as crystals and disseminations

DIAMOND DRILL LOG

GEOLOGY SHEET

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Hole No ROC.85.-1.

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Project..... Co-ordinates..... Declination..... Drilled by.....
 Location..... Elevation..... Bearing..... Drill.....
 Date commenced..... Date completed..... Logged by.....

Depth (m)		Core Size	Core (m) Recovered	% Recovery	DESCRIPTION
From	To				
					through quartz plus rare fine cassiterite.
					@ 90.15M rare wolframite crystals (to 14mm length) in occasionally vughy massive quartz.
91.00	94.00		3.00	100	Grey sandstone with mudstone interbeds plus rare clasts.
					@ 92.77M quartz vein, 9.7cm wide, coarse cassiterite (grains to 5mm) on one selvadge with weaker development on the other selvadge; plus minor wolrfamite plus pyrite.
					@ 93.30M quartz vein ≤ 2cm wide, pyrite filled at narrowest width; uncommon wolframite plus trace cassiterite, fluorite present.
94.00	97.00		3.10	103	Grey sandstone
					@ 94.40M quartz vein, 2 cm wide, coarse cassiterite, plus minor wolframite and pyrite blebs, 51 ⁰ /core..
					@ 94.50M 4 cm barren quartz vein.
					@ 94.54M, 94.61, 94.66, 94.35, 94.97, 95.70, 96.02, 96.13, 96.35, 96.42, 96.47, 96.52, 96.58, 96.72, all barren quartz vein, 5 - 10mm wide.
97.00	100.00		2.86	95	Light grey sandstone, massive to 99.27M, then D. grey laminated with mudstone.

DIAMOND DRILL LOG

GEOLOGY SHEET

Hole No...ROC 85.-1
031019

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Project..... Co-ordinates..... Declination..... Drilled by.....
Location..... Elevation..... Bearing..... Drill.....
Date commenced..... Date completed..... Logged by.....

Depth (m) From	To	Core Size	Core (m) Recovered	% Recovery	DESCRIPTION
100.00	102.00		2.00	100	Grey sandstone with mudstone interbeds. @ 100.48M quartz vein, 2cm wide, coarse bladed wolframite, plus pyrite plus cassiterite 45°/ core.
102.00	102.60				Grey sandstone. @ 102.00 - 102.48M, broken limonite stained core. @ 102.43 - 102.48M quartz fragments; large cassiterite lumps (to 1cm diam.); sericite plus fluorite borders above.
102.60	104.00		1.40	100	Grey sandstone @ 102.60M quartz vein, 3-4mm plus moderate cassiterite as grains (\leq 1mm) @ 102.9M , 3 quartz veins, ramifying 9cm wide, coarse bladed wolframite and also as sooty crystals plus pyrite plus minor cassiterite. @ 103.3M 2 barren quartz veinlets, 5mm wide. 103.4 - 103.6M. Limonite stained broken core. @ 103.80M quartz vein, 2 cm wide, coarse wolframite (\leq 2mm) plus pyrite blebs. @ 104.00M quartz vein with common wolframite.

DIAMOND DRILL LOG

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GEOLOGY SHEET

Project..... Co-ordinates..... Declination..... Drilled by.....
 Location..... Elevation..... Bearing..... Drill.....
 Date commenced..... Date completed..... Logged by.....

Depth (m)		Core Size	Core (m) Recovered	% Recovery	DESCRIPTION
From	To				
104.00	107.00		3.00	100	L. grey sandstone massive. @ 104.20M quartz vein, 8cm wide, abundant large wolframite grains plus minor cassiterite associated pyrite and yellow brown powdery encrustation and apatite grains. @ 106.55M aplite vein, 20cm wide. @ 106.89M aplite vein, 1 cm wide; 42°/core.
107.00	110.00		3.00	100	Light grey sandstone @ 107.15M quartz vein plus pyrite. @ 107.44M quartz vein, 41cm wide, trace cassiterite in sericite lined vugh plus trace arsenopyrite. @ 107.97M quartz plus sericite vein, 6mm wide, with massive cassiterite slug. @ 108.19M quartz vein, 5cm wide, trace pyrite in stringers; 44°/core. @ 108.45M quartz vein, 17cm wide, clay (pug) on 'top vein' wall and FE Oxide stained lower vein wall contains 5mm vein with good wolframite blades plus fine pyrite; associated large pyrite clots. 0°/core; bedding 28°/core. @ 109.9M quartz vein, 5mm wide, Barren. @ 109.95M quartz vein, 5mm wide, Barren. @ 109.53M quartz vein with sericite selvage, 4 cm wide, moderate wolframite @ 109.77M quartz vein, 6cm wide, with sericite and fluorite and lime green waxy mineral;

DIAMOND DRILL LOG

GEOLOGY SHEET

Project..... Co-ordinates..... Declination..... Drilled by.....
 Location..... Elevation..... Bearing..... Drill.....
 Date commenced..... Date completed..... Logged by.....

Depth (m)		Core Size	Core (m) Recovered	% Recovery	DESCRIPTION
From	To				
					coarse cassiterite towards vein centre.
110.00	113.00	NQ	3.00	100	Grey sandstone with mudstone interbeds. @ 110.70 - 111.02M Aplite dyke, very fine grain, chloritized matrix. @ 111.41M quartz vein 20mm wide, pyrite as blebs common; rare cassiterite (1 grain 4mm diameter); fresh arsenopyrite. @ 111.60 - 113.0M numerous 'tear' quartz veins (5mm wide) sub parallel to bedding @ 112.54M Quartz vein, 21cm wide, rare cassiterite and pyrite.
113.00	114.00		1.00	100	Grey sandstone with mudstone laminations. @ 113.00M quartz vein, 12mm wide; rare wolframite with minor arsenopyrite crystals and rare disseminated pyrite.
114.00	116.00		2.00	100	Grey sandstone @ 114.81M quartz vein, 7cm wide, large (2-3cm) pyrite blebs with associated wolframite (3mm grains) plus muscovite flakes. @ 116.00M barren quartz vein, 1cm wide.

DIAMOND DRILL LOG

GEOLOGY SHEET

031022 Hole No. ROC.85.1
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Project..... Co-ordinates..... Declination..... Drilled by.....
 Location..... Elevation..... Bearing..... Drill.....
 Date commenced..... Date completed..... Logged by.....

Depth (m)		Core Size	Core (m) Recovered	% Recovery	DESCRIPTION
From	To				
116.00	119.00		3.00	100	L. Grey sandstone with prominent mudstone interbeds between 117.35 to 119.00M. Numerous 'sweat' / tension quartz veins, to 5mm wide, parallel to bedding.
119.00	122.00		2.55	98	Grey - D. grey sandstone with minor mudstone interbeds. 119.86 - 120.8M 35 barren quartz veinlets (\leq 5mm wide). @ 121.47M quartz vein, 7cm wide, plus cassiterite @ 121.50M quartz vein 5mm wide plus abundant cassiterite grains. @ 122.00M vuggy quartz vein, 10mm wide, infilled by bladed, sooty black wolframite plus minor cassiterite and pyrite blebs.
122.00	125.00		3.00	100	Grey sandstone 122.0 - 125.0M 45 barren quartz veins (\leq 4mm wide). @ 122.66M quartz vein, 6mm, minor pyrite @ 123.16M quartz vein, 1cm, trace pyrite @ 124.9M quartz vein, 35cm wide, barren 123.80 - 123.90M numerous quartz fracture veins on average 2mm wide; maximum 5mm wide.

WHEAL LUTWYCHE PTY. LTD.

DIAMOND DRILL LOG

GEOLOGY SHEET

031023

Hole No. ROC 85 .1.

Page...10.....

022

Project..... Co-ordinates..... Declination..... Drilled by.....
 Location..... Elevation..... Bearing..... Drill.....
 Date commenced..... Date completed..... Logged by.....

Depth (m)		Core Size	Core (m) Recovered	% Recovery	DESCRIPTION
From	To				
125.00	128.00		3.00	100	Grey - D. grey sandstone with mudstone interbeds. @ 125.1M quartz vein, 6cm wide, barren @ 125.94M quartz plus muscovite flakes in 18cm stringer zone. @ 126.4M quartz plus muscovite flakes in 36cm stringer zone. Both above zones confined to black mudstone lenses. ² @ 127.60M quartz vein, irregular margin, 25cm wide; associated muscovite plus pyrite as dustings on fractures plus rare fluorite. @ 127.90M quartz vein, 2cm wide, with minor pyrite as blebs.
128.00	131.00				Lithology as above, also 'tear' quartz veins, 2mm wide on average; maximum 10mm wide; associated pyrite mineralisation; 45°/core.
131.00	133.80				Grey sandstone, massive, with occasional mudstone laminations. Minor fractures coated with fine pyrite and calcite. @ 132.60M quartz vein, 10mm wide, moderate wolframite and minor cassiterite confined to vein margins. 45°/core.
133.80	134.20		0.40	100	Grey sandstone with minor D. Grey - black mudstone laminae. 134.20M end of hole.

DIAMOND DRILL LOG

031024

GEOLOGY SHEET

Project: Rossarden..... Co-ordinates 5387724N/562363E.... Declination 111° MAG..... Drilled by.....
 Location: Rossarden Mine..... Elevation..... Bearing..... 55°..... Drill...B40.....
 Date commenced..28-5-1985..... Date completed...6-8-1985.....
 Logged by..R.M..Vivian.....

Please Note: All widths are true widths

Depth (m)		Core Size	Core (m) Recovered	% Recovery	DESCRIPTION
From	To				
34.30	35.10	HQ	0.80	100	Permian conglomerate with abundant rounded clasts.
35.10	38.10		3.00	100	Dark grey laminated siltstone (ordovician Mathinna beds), bedding dips 15°/core.
38.10	44.20		6.10	100	Dark grey siltstone/mudstone with minor sandstone units.
44.20	48.50		4.30	100	As above @ 46.20M arsenopyrite/ ? pyrrhotite lining plane. @ 46.25M and at 46.51M; 3 - 5mm wide quartz + cassiterite pyrite vein. @ 48.16M 3mm wide quartz vein + trace cassiterite] @ 48.20M 5mm wide quartz vein + minor cassiterite] angled 20°/core.
48.50	49.20		0.67	96	Light grey sandstone, siliceous. @ 48.2M quartz vein - barren; 3mm wide; 15° dip/core. @ 48.65M quartz vein - barren; 4mm wide; 35° dip/core. @ 48.74M quartz vein - a few cassiterite grains; 4mm wide; 42° dip/core.
49.2	50.2	NQ	0.95	95	Siltstone/mudstone interbedded with minor sandstone. @ 49.44M quartz vein - barren; 5mm wide; 20° dip/core.

DIAMOND DRILL LOG

GEOLOGY SHEET

025

Project..... Co-ordinates..... Declination..... Drilled by.....
 Location..... Elevation..... Bearing..... Drill.....
 Date commenced..... Date completed..... Logged by.....

Depth (m)		Core Size	Core (m) Recovered	Recovery %	DESCRIPTION
From	To				
50.20	53.20		3.00	100	Siltstone/mudstone interbeds between 50.2 to 51.30M and grey sandstone from 51.30 to 53.20M. @ 51.73M quartz vein 3mm wide, + kaolinite; barren. @ 51.81M quartz vein 3mm wide, pyrite infilled + trace cassiterite. @ 51.60M quartz vein, 4 - 5mm wide; diffuse margins, barren; 45° dip/core. @ 52.15M quartz vein, 3mm wide, + kaolinite; barren; 15° dip/core @ 52.57M quartz vein, 2mm wide, minor pyrite; barren.
53.20	55.80		2.58	97	Light grey sandstone with faint wispy mudstone lenses. @ 53.37M quartz vein, 10mm wide, minor wolframite crystals; 20° dip/core @ 53.53M quartz vein, 8mm wide, coarse abundant wolframite filling full vein width; 18° dip/core @ 55.23M quartz vein, vughy; 24mm wide, with coarse wolframite blades and lesser coarse cassiterite grains; associated with kaolinite and epidote. @ 55.49M quartz vein, 5 - 10mm; drusy cavities encrusted with light yellow material and trace powdery pyrite; barren; 20° dip/core.
55.80	58.90		3.10	100	Light grey sandstone @ 56.67M quartz vein; 3mm wide, pyrite infilled; barren. @ 56.92M pyrite vein; 1 cm wide; weathered; 25° dip/core.

DIAMOND DRILL LOG

025

GEOLOGY SHEET

Project..... Co-ordinates..... Declination..... Drilled by.....
 Location..... Elevation..... Bearing..... Drill.....
 Date commenced..... Date completed..... Logged by.....

Depth (m) from	To	Core Size	Core (m) Recovered	% Recovery	DESCRIPTION
					@ 57.40M Quartz vein, 9mm wide, coarse cassiterite + kaolinite; 15° dip/core.
					57.50 to 58.90M moderately crackle fractured at oblique angle to core.
					@ 57.80M quartz vein; 28mm wide; abundant pyrite and coarse wolframite. 8mm alteration selvage to vein.
					@ 58.47M arsenopyrite filled shear; 8mm wide; a cream - brown botryoid - al encrustation also occurs.
					58.74M to 58.90M broken sheared core.
58.90	60.20		1.26	97	Grey sandstone with weak crackle fractures. @ 59.0 - 59.07 shears at 45 - 70°/core.
60.20	62.40		2.20	100	L. grey sandstone from 60.20 to 61.88M; D. grey mudstone to 62.40M @ 61.57M crackle fractures terminate.
62.40	65.40		3.00	100	Mudstone/siltstone interbeds with minor sandstone.
65.40	68.40		3.00	100	Mudstone/siltstone to 65.56M; sandstone to 66.9M; then sandstone with minor siltstone interbeds to 68.40M

DIAMOND DRILL LOG

GEOLOGY SHEET

026

Project..... Co-ordinates..... Declination..... Drilled by.....
 Location..... Elevation..... Bearing..... Drill.....
 Date commenced..... Date completed..... Logged by.....

Depth (m)		Core Size	Core (m) Recovered	% Recovery	DESCRIPTION
From	To				
					@ 66.80M abundant cassiterite grains in vein quartz; 1 - 2mm wide; 30° dip/core.
					@ 66.94M pyrite lined parting plane.
					@ 67.59M quartz vein; 2 cm wide, + sericite/feldspar infilling with trace cassiterite; 45° dip/core.
					@ 67.95M quartz vein; 5mm wide; barren.
68.40	71.40		3.00	100	Grey sandstone with minor mudstone lens at 68.93 - 69.30M.
					@ 68.50 and 68.54M quartz vein, 3mm wide; barren.
					@ 68.93M 5 x quartz veins 1 cm - 2 mm wide; one vein trace cassiterite + sericite/feldspar.
					@ 69.16M quartz vein, 2-3mm wide, abundant wolframite as grains dispersed throughout quartz.
					@ 69.28M quartz vein, 6mm wide; barren.
					@ 69.50 - 71.40M numerous faint quartz veins, barren; 1 - 6 mm wide.
71.40	74.40		3.00	100	L. grey - grey sandstone with minor mudstone interbeds.
					@ 71.40 - 71.54M faint veining.
					@ 71.73M pyrite and clay filled vein, 3mm wide, 90°/core.
					72.64 - 72.90M minor quartz veining in shaley unit; barren

DIAMOND DRILL LOG

GEOLOGY SHEET

Project..... Co-ordinates..... Declination..... Drilled by.....
 Location..... Elevation..... Bearing..... Drill.....
 Date commenced..... Date completed..... Logged by.....

Depth (m) From	To	Core Size	Core (m) Recovered	% Recovery	DESCRIPTION
					73.48 - 73.90M Diffuse quartz veining; barren.
74.40	77.40		3.00	100	Dark grey sandstone with minor mudstone interbeds.
77.40	80.40		3.00	100	Grey sandstone with very minor mudstone interbeds
80.40	83.40		3.00	100	Grey sandstone with minor mudstone interbeds; minor irregular quartz 'sweat' veins
83.40	86.40		3.00	100	Dark grey fine siltstone/sandstone with minor mudstone interbeds and minor quartz veins (barren) associated with interbeds.
86.40	89.40		3.00	100	As above.
89.40	92.40		3.00	100	Dark grey siltstone/sandstone with minor mudstone interbeds. @ 93.12M quartz vein + sericite; 5mm wide, minor pyrite blebs.
92.40	95.40		3.00	100	Dark grey sandstone fine grained
95.40	97.20		1.80	100	As above.

DIAMOND DRILL LOG

031029 Hole No. RQC 85.-2.

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028

GEOLOGY SHEET

Project..... Co-ordinates..... Declination..... Drilled by.....
 Location..... Elevation..... Bearing..... Drill.....
 Date commenced..... Date completed..... Logged by.....

Depth (m) From	To	Core Size	Core (m) Recovered	% Recovery	DESCRIPTION
97.20	100.10				As above; unmineralised quartz brecciation between 97.30 - 97.76M @ 98.94M quartz vein; 34mm wide; coarse cassiterite @ 99.44M quartz vein; 10mm wide; barren @ 99.68M clay lined fracture; 45°/core @ 99.83M clay lined fracture; 45°/core
100.10	103.20		3.10	100	Grey sandstone with minor mudstone interbeds. 100.64 - 101.54M interval: 43 quartz veinlets (2 - 6mm wide); barren and orientated at 35 - 40°/ core. @ 101.54M vughy quartz vein sericite lined; 23cm wide; one large vugh is infilled with bladed, fawn crystals (Fe carbonates?) and white leaves of calcite. Fine cassiterite grains and dustings is associated.
103.20	106.20		3.00	100	Grey sandstone @ 103.60M quartz vein; 24mm wide; common wolframite in intimate association with pyrite clots; lesser cassiterite grains (max. 2mm diameter). @ 104.47M two quartz veins each 10mm wide; abundant wolframite as irregular crystals to 4mm max. size. Minor pyrite. Second vein has a well developed selvadge; and as well contains trace cassiterite.

DIAMOND DRILL LOG

GEOLOGY SHEET

031030 Hole No. ROC 85 - 2
Page 7.

029

Project..... Co-ordinates..... Declination..... Drilled by.....
Location..... Elevation..... Bearing..... Drill.....
Date commenced..... Date completed..... Logged by.....

Depth (m)		Core Size	Core (m) Recovered	Recovery %	DESCRIPTION
From	To				
					@ 105.89M quartz vein; barren; 5mm wide; 40°/core.
106.2	109.10		1.86	64	Grey sandstone with mudstone interbeds Stope occurs between 106.34 and 107.38M.
109.10	112.20		3.10	100	Dark grey - grey sandstone with mudstone interbeds. @ 109.33M quartz vein; 95cm wide; abundant cassiterite and wolframite with associated minor pyrite. Individual cassiterite grains to 1cm diam. @ 110.60M shear gouge; 15cm wide; 35°/core. @ 111.46M vughy quartz vein; 25mm wide; pyrite infilled with trace wolframite in vein quartz @ 111.54M quartz vein; 15mm wide; pyrite centrally infilling, trace wolframite. @ 112.00M 5mm quartz vein and 1 - 2 sericite vein; both barren; 40°/core.
112.20	115.20		3.00	100	L. grey - grey sandstone @ 113.03M quartz vein; 30mm wide; vughy; barren. @ 114.51M vughy quartz vein; 123mm wide; good cassiterite and wolframite associated with coarse muscovite mica and clear quartz. Pyrite is common.

DIAMOND DRILL LOG

031031

Hole No...ROC 85.: 2

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GEOLOGY SHEET

030

Project..... Co-ordinates..... Declination..... Drilled by.....
 Location..... Elevation..... Bearing..... Drill.....
 Date commenced..... Date completed..... Logged by.....

Depth (m) From	To	Core Size	Core (m) Recovered	% Recovery	DESCRIPTION
115.20	118.20		3.00	100	L. grey - grey sandstone. @ 115.63M pyrite vein; 35mm wide. 116.45 - 117.90M interval; characterised by weak quartz veinlets, hair fractures and some stock workings; no mineralisation evident.
118.20	121.20		3.00	100	L. grey sandstone. @ 119.14M vughy quartz vein; 64mm wide; abundant coarse red brown cassiterite; 45°/core.
121.20	124.20		3.00	100	L. grey sandstone to 121.7M; grey - d. grey sandstone with mudstone interbeds from 121.70M to 124.20M. @ 121.83M quartz vein; 75mm wide; highly mineralised in coarse wolframite (crystals to 8mm long) + pyrite + trace cassiterite. Mineralisation is confined in general to vein margins. @ 123.57M quartz vein; 40mm wide; cassiterite + wolframite + minor pyrite irregularly distributed throughout vein quartz; 20°/core.
124.20	127.20		3.00	100	L. grey sandstone with very minor mudstone interbeds

DIAMOND DRILL LOG

031032

Hole No. ROC.85..2

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031

GEOLOGY SHEET

Project..... Co-ordinates..... Declination..... Drilled by.....
 Location..... Elevation..... Bearing..... Drill.....
 Date commenced..... Date completed..... Logged by.....

Depth (m) From	To	Core Size	Core (m) Recovered	% Recovery	DESCRIPTION
127.20	130.20		3.00	100	Grey sandstone with mudstone interbeds. Minor 'sweat' quartz veins are confined in general to bedding of these interbeds. @ 128.24M quartz vein; 175mm wide; abundant wolframite blades in quartz to maximum size of 25mm. Minor pyrite and sericite lined vughs also are present.
130.20	133.00		2.80	100	Grey sandstone with mudstone interbeds @ 130.51M quartz vein, 2 - 3mm wide; fresh arsenopyrite grains dispersed throughout. @ 130.95M quartz vein, 4mm wide; fine cassiterite grains; 30°/core. @ 131.84M quartz vein, 12cm wide; abundant red brown cassiterite seen as fine grains and large crystals; abundant wolframite. Total mineralisation occupies 2 - 3% by volume of the vein material. @ 132.24M quartz vein; 6mm wide; pyrite + minor wolframite 0°/core.
133.00	136.00		2.97	99	Grey sandstone @ 133.74M quartz vein, 1 - 7cm; minor pyrite + trace wolframite; 45°/core @ 134.21M shear, clay filled. @ 135.14M arsenopyrite vein, 4cm wide; 'rotten'; with coarse mica selvadge.

DIAMOND DRILL LOG

031033

Hole No. ROC.85.-.2

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032

GEOLOGY SHEET

Project..... Co-ordinates..... Declination..... Drilled by.....
 Location..... Elevation..... Bearing..... Drill.....
 Date commenced..... Date completed..... Logged by.....

Depth (m)		Core Size	Core (m) Recovered	% Recovery	DESCRIPTION
From	To				
136.00	139.00		2.96	99	Light grey sandstone @ 137.18M quartz vein, 53mm wide, coarse to fine wolframite crystals dispersed throughout; 42°/core. @ 139.00M quartz vein, 30mm wide; V. coarse cassiterite aggregate (1cm diam.) with moderate wolfram + minor pyrite in quartz near vein margins; 45°/core.
139.00	142.00		3.00	100	Light grey sandstone to 140.50M, then D. grey, fine sandstone with minor mudstone interbeds to 142.00M. @ 139.77M quartz vein, 30mm; barren.
142.00	145.00		3.00	100	D. grey sandstone with mudstone interbeds. @ 142.93M quartz vein, 11.5cm wide; large irregular pyrite stringers and associated coarse-medium wolframite crystals introduced along fractures in the vein; 25°/core. @ 143.69M quartz vein, 41mm wide; minor coarse wolframite + trace pyrite.

DIAMOND DRILL LOG

031034

Hole No. ROC.85.-.2

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033

GEOLOGY SHEET

Project..... Co-ordinates..... Declination..... Drilled by.....
 Location..... Elevation..... Bearing..... Drill.....
 Date commenced..... Date completed..... Logged by.....

Depth (m)		Core Size	Core (m) Recovered	% Recovery	DESCRIPTION
From	To				
145.00	148.00		3.00	100	Grey sandstone with v. minor mudstone interbeds. @ 146.16M quartz vein, 15mm wide; medium size wolframite and cassiterite in equal proportions throughout vuggy quartz. @ 146.21M quartz vein, 60mm wide; massive to fractured quartz with v. coarse wolframite and arsenopyrite in stringers, as fracture linings and adjacent to vein margins. @ 146.60M quartz vein, 60mm wide; wolframite + pyrite infilling central fractures, and discrete coarse cassiterite grains and lesser fine wolframite along vein margins. @ 147.77M quartz vein, anastomising; abundant coarse wolframite and coarse cassiterite with minor pyrite. Commonly cassiterite contains embedded fine wolframite blades which can reach a max. 2cm length.
148.00	151.00		3.00	100	D. grey siltstone/sandstone to 150.5M; then L. grey sandstone to 151.00M. 148.6 - 152.7M interval: characterised by weak fractures (open or clay lined) @ 150.79M quartz vein, 5.5cm wide; minor wolframite.
151.00	154.00		3.00	100	L. grey sandstone. @ 152.12M quartz vein, 4cm wide; arsenopyrite confined to fractures and wolframite located along vein margins; 40°/core.

DIAMOND DRILL LOG

GEOLOGY SHEET

031036

Hole No. ROC 85 - 3

Page 1

035

Project Rossarden Co-ordinates 5387804N/562427E Declination 79° Drilled by
 Location Rossarden Mine Elevation Bearing 55° Drill Longyear 38
 Date commenced 26-8-1985 Date completed 5-9-1985
 Logged by R.M. Vivian

Please Note: All widths are true widths.

Depth (m)		Core Size	Core (m) Recovered	% Recovery	DESCRIPTION
From	To				
32.29	34.08		1.79	100	D. grey mudstone, conglomerate; containing poorly sorted grits and rounded sandstone clasts.
34.08	37.00		2.92	100	L. grey sandstone; featureless.
37.00	40.00		3.00	100	L. grey sandstone to 37.70M; then much convoluted mudstone sequence with microfaults on more sandstone lenses.
40.00	43.00		3.00	100	As above to 42.12M; then grey sandstone with siltstone component to give planar laminations. @ 42.59M quartz vein, 12mm wide; moderate wolframite as crystals to 3mm wide 40°/core. @ 44.83M quartz vein, 3mm wide; with minor cassiterite; 22°/core.
43.00	46.00		3.00	100	Light grey sandstone @ 44.06M quartz vein, 14mm wide; white, translucent; pyrite as irregular stringers + wolframite + clay; 45°/core. @ 44.41M pyrite vein, 2 - 3mm wide; cut by several 'thread' veinlets of arsenopyrite.

DIAMOND DRILL LOG

030

GEOLOGY SHEET

Project..... Co-ordinates..... Declination..... Drilled by.....
 Location..... Elevation..... Bearing..... Drill.....
 Date commenced..... Date completed..... Logged by.....

Depth (m)		Core Size	Core (m) Recovered	% Recovery	DESCRIPTION
From	To				
					@ 44.64M quartz vein, 6mm wide; partly vuggy, contains pyrite, minor arsenopyrite blebs, moderate wolframite, and v. minor disseminated cassiterite. 15 - 20°/core.
					@ 44.81M quartz vein, 15mm wide, 4 to 5 coarse wolframite crystals scattered through quartz; 35°/core.
					@44.94M - 45.47M scarce high angled (> 60°/core) white granular quartz (barren) veins confined mudstone interbeds. From 45.47M on sandstone.
					@ 45.65M 2 parallel quartz veins, 3mm and 8mm wide, good wolframite with arsenopyrite blebs generally central to the vein.
					@ 45.88M quartz vein, 4mm wide, common wolframite with pyrite and subordinate arsenopyrite and cream alteration mineral.
					Core between veins at 45.65M and 45.88M cut by scarce cross-cutting pyrite hair veinlets.
46.00	49.00		3.00	100	Grey sandstone with minor mudstone interbeds.
					@ 46.98M quartz vein, 10mm wide, minor wolframite and pyrite + cream mineral (carbonate?) 12°/core.

DIAMOND DRILL LOG

GEOLOGY SHEET

Project..... Co-ordinates..... Declination..... Drilled by.....
 Location..... Elevation..... Bearing..... Drill.....
 Date commenced..... Date completed..... Logged by.....

Depth (m)		Core Size	Core (m) Recovered	% Recovery	DESCRIPTION
From	To				
49.00	52.00		3.00	100	D. grey - black mudstone/siltstone from 49.30 - 51.02M; much broken core and numerous sweat quartz veins parallel to bedding. L. Grey sandstone from 51.02 - 52.00M.
52.00	55.00		3.00	100	Light grey sandstone.
55.00	58.00		3.00	100	Light grey sandstone. @ 57.58M 30mm interval of shattered quartz core representing a vein. Associated is rotten arsenopyrite + minor fine grained red-brown cassiterite.
58.00	61.00		3.00	100	Grey siltstone/sandstone, much crackle fractured and broken, with variously Fe oxide stained; crystal and powder encrusted (siderite & gypsum?) fracture planes @ 60.50M and 60.20M broken quartz indicate minor veins of unknown width.
61.00	64.00		3.00	100	Siltstone/sandstone Crackle fractured as above.
64.00	67.00		3.00	100	64.0 - 64.22M broken sandstone core; 64.22 - 64.92M Stope?? 64.92 - 67.00M grey siltstone/sandstone.

031

DIAMOND DRILL LOG

031039

038

GEOLOGY SHEET

Project..... Co-ordinates..... Declination..... Drilled by.....
 Location..... Elevation..... Bearing..... Drill.....
 Date commenced..... Date completed..... Logged by.....

Depth (m)		Core Size	Core (m) Recovered	% Recovery	DESCRIPTION
From	To				
67.00	70.00		3.00	100	Grey sandstone to 67.84M, then dark grey - black mudstone with sandy interbeds.
70.00	73.00		3.00	100	Light to dark grey siltstone/sandstone, minor mudstone interbeds.
73.00	76.00		3.00	100	Grey sandstone with black mudstone interbeds and minor 'sweat' quartz veins (average \leq 5mm wide); barren. @ 75.14M sericite selvage to 3 - 6mm vein pyrite infilled. 14 - 20°/core. @ 75.20M shear, 20cm wide, grey pugy clay infilled.
76.00	77.42		1.42	100	Grey sandstone with minor white granular quartz veins, \leq 1cm wide, barren. @ 76.40M quartz vein, 100mm wide, very irregular with many offshoots, barren.
77.42	79.00		1.58	100	L. grey sandstone. @ 78.88M quartz vein, 55mm wide, opaque, granular, white, pyrite with minor arsenopyrite blebs in stringers; 45°/core.
79.00	81.00		2.00	100	Grey sandstone with mudstone interbeds. @ 79.65M felsic dyke, 18cm wide cream coloured with igneous texture; 60°/core.

DIAMOND DRILL LOG

GEOLOGY SHEET

031040 Hole No ROC.85.-.3.

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Project..... Co-ordinates..... Declination..... Drilled by.....
 Location..... Elevation..... Bearing..... Drill.....
 Date commenced..... Date completed..... Logged by.....

Depth (m)		Core Size	Core (m) Recovered	% Recovery	DESCRIPTION
From	To				
					@ 81.0M mark is peg "82.0 stope".
82.00	85.00		3.00	100	Grey sandstone. 82.0 - 83.40M is a stope. 83.40 - 84.22M interval: broken core dominated by discontinuous quartz veinlets. Marginal to quartz lode of stope: trace cassiterite present in 1 veinlet only.
85.00	88.00		3.00	100	Grey sandstone with interbedded mudstone; bedding of latter 45°/core. @ 85.94M quartz vein, 13mm wide, cuts bedding, sericite lined vein infilled with good wolframite as crystals: 45°/core. @ 86.24M 1mm sericite vein with possible trace wolframite. This interval characterised by tensional (sweat) veining parallel or at low angle to bedding and closely associated with mudstone interbeds.
88.0	91.0		3.00	100	Grey sandstone with common mudstone interbeds. @ 89.72M quartz vein, 90mm, white opaque to translucent vughy quartz, with coarse cassiterite + associated sericite. 50°/core. @ 90.76M vughy quartz vein, 70mm wide, abundant coarse wolframite and minor cassiterite located predominantly along vein margins but also are isolated crystals in vein quartz.

DIAMOND DRILL LOG

GEOLOGY SHEET

Project..... Co-ordinates..... Declination..... Drilled by.....
 Location..... Elevation..... Bearing..... Drill.....
 Date commenced..... Date completed..... Logged by.....

Depth (m)		Core Size	Core (m) Recovered	% Recovery	DESCRIPTION
From	To				
					20°/core.
91.00	94.00		3.00	100	Grey sandstone with siltstone/mudstone interbeds. @ 91.32M quartz vein, 20mm wide, granular, conformable to bedding; 42°/core. @ 93.5M irregular drusy quartz fracture with prisms fluorite and apatite.
94.00	97.00		3.00	100	Grey sandstone with mudstone interbeds. @ 94.0 - 94.16M crackle fractured. @ 94.16M quartz vein, 11cm coarsely vuggy, coarse muscovite with minor cassiterite, rare pyrite. @ 94.57M quartz vein, 21mm wide, diffuse margins; coarse muscovite books with minor red brown cassiterite grains (to 5mm diameter) + v. minor pyrite between veins at 94.16 and 94.57M, 3 x quartz veins, 2 - 6mm wide, barren. 94.57 - 97.0M, 40 quartz veinlets, 1 - 2mm wide, irregular, barren.
97.00	100.00		3.00	100	Dark grey sandstone with black mudstone; increasing silt/mud content. @ 99.61M pyrite vein, 5mm; and brecciated and annealed veinlet.

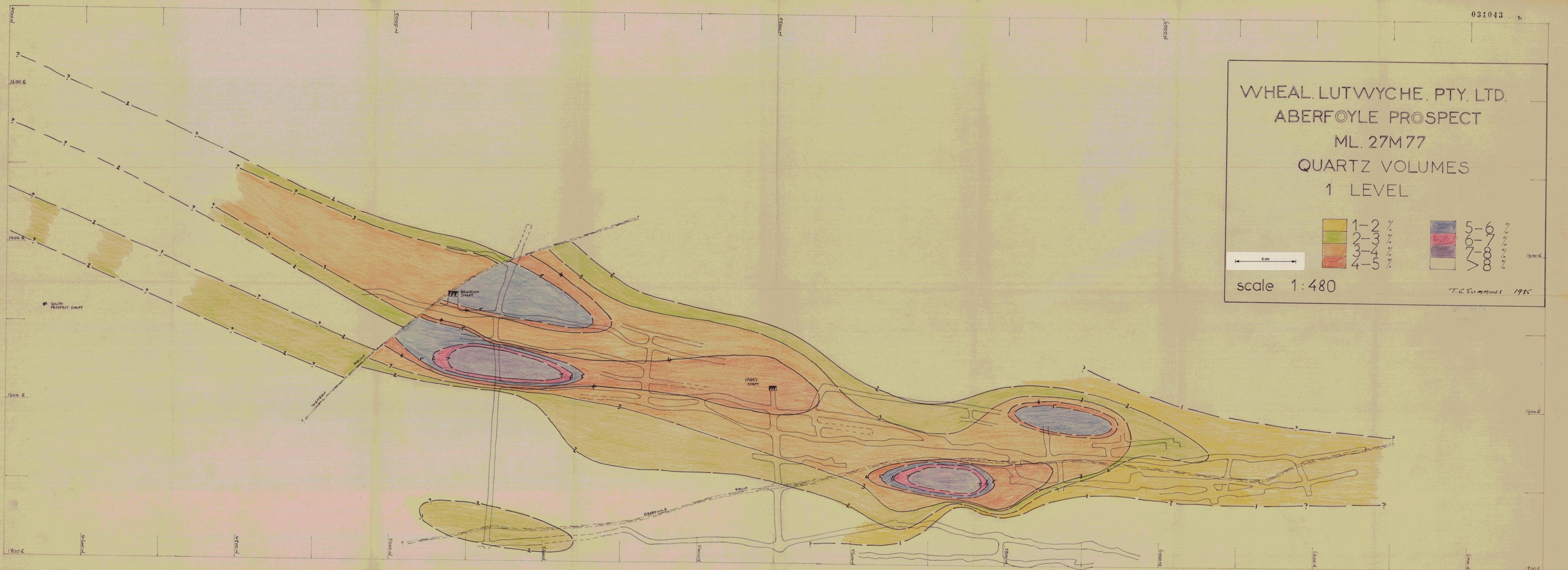
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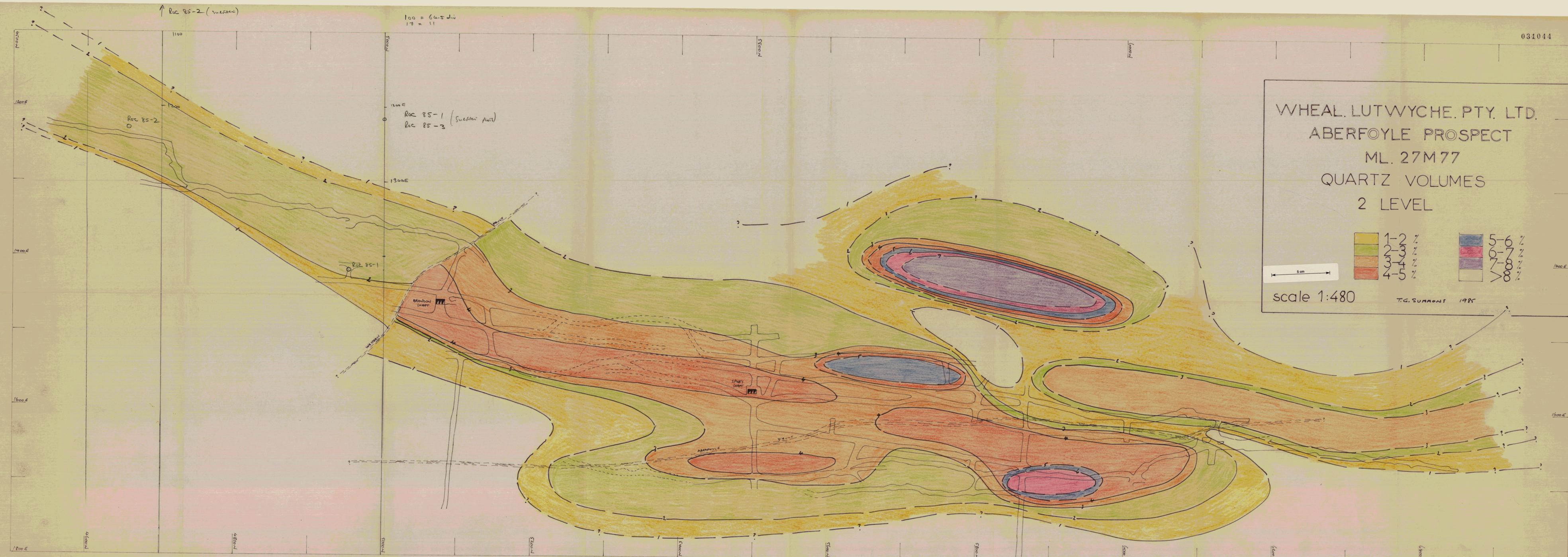
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2-3 %	6-7 %
3-4 %	7-8 %
4-5 %	> 8 %

5 cm

scale 1:480

T.G. SUMMONS 1985

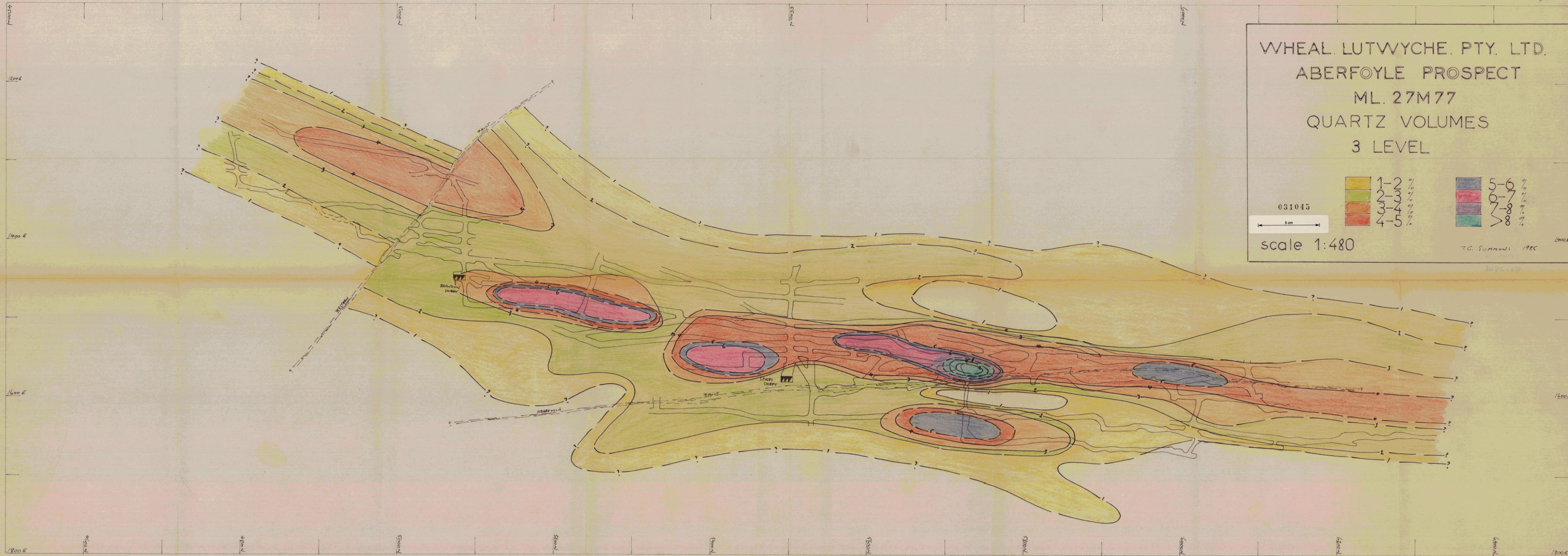




WHEAL LUTWYCHE, PTY. LTD.
 ABERFOYLE PROSPECT
 ML. 27M77
 QUARTZ VOLUMES
 2 LEVEL

 1-2 %	 5-6 %
 2-3 %	 6-7 %
 3-4 %	 7-8 %
 4-5 %	 >8 %

5 cm
 scale 1:480
 T.G. SUMMERS 1985



WHEAL LUTWYCHE. PTY. LTD.
 ABERFOYLE PROSPECT
 ML. 27M77
 QUARTZ VOLUMES
 3 LEVEL

Yellow	1-2 %	Blue	5-6 %
Light Green	2-3 %	Pink	6-7 %
Orange	3-4 %	Purple	7-8 %
Dark Orange	4-5 %	Teal	>8 %

031045
 50m
 scale 1:480
 T.G. SUMMONS 1985

WHEAL LUTWYCHE, PTY. LTD.
 ABERFOYLE PROSPECT
 ML. 27M 77
 QUARTZ VOLUMES
 4 LEVEL

5cm

<p>1-2 %</p> <p>2-3 %</p> <p>3-4 %</p> <p>4-5 %</p>	<p>5-6 %</p> <p>6-7 %</p> <p>7-8 %</p> <p>>8 %</p>
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scale 1:480

T. G. SUMMONS 1985

