

DIAMOND DRILLING, MARANBOY TINFIELD, 1970 - 1971

by

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C O N T E N T S

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SUMMARY

In 1970-1971, Mines Branch, Northern Territory Administration, put down four diamond drill holes, totalling 1818 feet (554 metres) on the Ray Lease (ML 123D), Maranboy Tinfield. Two of the holes intersected tin bearing quartz-tourmaline rock at approximately 300 feet (90 metres) depth. The other holes intersected brecciated sedimentary rocks with traces of tin, at similar depths.

As ore shoots in this area appear to have an erratic distribution, any estimates of tonnages and grades would have to be based on underground development and bulk sampling rather than diamond drilling.

INTRODUCTION

The Maranboy tinfield is situated 40 miles (60 kilometres) east of the town of Katherine, N.T. and is within the area covered by the Katherine (SD 53-9) 1:250,000 geological series sheet. Access to the field is gained by 14 miles (23 kilometres) of all-weather gravel road from the Stuart Highway which runs alongside the North Australian Railway at this point.

Under agreement with W.J. Fisher and N. Royal, who were holding an option over a group of mineral leases along the Main Lode, Mines Branch put down four diamond drill holes totalling 1818 feet (554 metres) on the Ray Lease (ML 123 D).

The holes were put down to determine whether the known ore shoot extends or repeats in depth, below the Tiger Shaft. The drilling took place between September 1970 and June 1971.

Core from the holes was geologically logged, and selected intervals of core were split for analysis.

PREVIOUS INVESTIGATIONS

The geology of the field is described by Walpole (1958) in Bulletin 37 of the Bureau of Mineral Resources. The greywacke-type sandstone and siltstone at Maranboy form part of the Lower Proterozoic Burrell Creek Formation. The tin lodes are fine grained quartz-tourmaline fissure lodes, which are infillings of a conjugate system of shear fractures. The Main Lode (partially contained in ML 123D) ranges in width from about 8 to 25 feet (2.4 to 7.6 metres) and has been dislocated by quartz-filled cross faults. The cassiterite bearing ore shoots "consist of lenticular bulges up to 400 feet in length within the lode. Within these shoots the higher-grade ore occurs mainly in small individual en echelon lenses, few of which are more than 1 foot wide". The ore shoots repeat irregularly along strike, and Walpole concluded that they probably have a similar pattern downdip.

During 1958-59, the Bureau of Mineral Resources drilled eleven diamond drill holes in the Anaconda and Osman Mineral Leases (Mackay, 1960). At the Anaconda Lease (ML 267), eight holes were drilled, all of which intersected the quartz-tourmaline lode rock. The known ore shoots were found to extend to less than 250 feet (75 metres) depth, but a possible repetition between 300 - 600 feet (90 and 180 metres) depth was indicated. This repetition corresponds to the pattern suggested by Walpole (1958). At the Osman Lease (ML 217), two of three holes penetrated the quartz tourmaline lode rock but only traces of cassiterite were present. The third passed through a fault zone.

The Maranboy tinfield was also examined by Hare and Morton (1963) for Mineral Resources Australia Pty Ltd who recommended diamond drilling followed by "a critical amount of underground development". There is no record of follow-up work.

1970-71 DIAMOND DRILLING PROGRAMME.

Plate 2 shows the position of the four drill hole collars, and the surface geology (after Walpole, 1958, Plate 8). The location and reduced level of each collar were determined using a plane table and telescopic alidade. D.D.H.1, D.D.H.2 and D.D.H.3 were depressed 60° southwards to intersect the main lode at about 350 feet (105 metres) vertical depth. D.D.H.4 was depressed 55° to lessen the possibility of drilling into the Ray Fault, if the fault flattened with depth. The depression of each hole was measured using acid-tube surveys at 100 foot (30 metre) intervals.

Appendix I contains the detailed geological logs of each hole. These logs are summarised in the drill hole sections on Plate 3.

The sedimentary rocks drilled are grey to brown coloured, indurated and range from siltstone to granule conglomerate. Graded bedding (grading coarse to fine both up- and down-hole), minor brecciation, micro faulting and slurring all indicate preconsolidation movement.

In thin section, the sandstones contain subrounded fragments of quartz (20%-30%, unstrained single crystals and composite grains) and sericite-microquartz (10%-50%, siltstone fragments and altered feldspars) in a hematite-stained sericite-microquartz matrix; there is some accessory detrital tourmaline and minor quartz veining. These rocks can be classified as fine to very fine sandstones (immature subgreywacke of Folk, 1965). One thin section of siltstone contains quartz grains (20%-30%, 0.05 - 1.0 mm diameter, angular, unstrained) in a hematite-stained sericite-microquartz matrix. This rock can be classified as a medium to coarse siltstone (immature greywacke of Folk, 1965).

The quartz-tourmaline lode rock is black, indurated, and aphanitic. Some lode rock is brecciated. In thin section, it contains quartz (approx. 50%, unstrained, 0.6 - 0.01 mm diameter), tourmaline (approx. 50%, subhedral, 0.4 - 0.02 mm diameter, pleochroic dark blue and brown to light pink), and minor hematite (up to 5%, some pseudomorphs ? after pyrite); the texture is granoblastic.

The quartz-tourmaline lode was recognised with certainty in D.D.H.2 and D.D.H.3 only, though some dark coloured breccia at 360 feet (110 metres) depth in D.D.H.4 may be lode rock. The absence of lode rock in D.D.H.1 and possibly D.D.H.4 is surprising, because Walpole (1958) showed that the lode rock is practically continuous between ore-shoots in surface workings on this lease, and Mackay (1960) concluded that it extends at least to 600 feet (180 metres) depth on the Anaconda Lease (ML 263).

Brecciated sandstone and siltstone overlie the quartz-tourmaline rock in D.D.H.3, and similar breccias occur near target depth in D.D.H.1 and D.D.H.4. The breccias are possibly due to movement on the shear fracture containing the lode, either during formation of the shear or later, when the quartz-tourmaline lode rock was brecciated. If the breccias are in fact related to the lode shear, then this shear was intersected in all four holes, and its position relative to the surface outcrop indicates a dip of 70° - 80° , corresponding to the lode dip of 75° - 80° measured in surface workings by Walpole (1958).

ASSAY RESULTS

Core from zones of brecciated sedimentary rocks and black quartz-tourmaline rocks was split and sampled in 2.5 foot (76 cm) lengths, and assay results are listed in Appendix 2. The assays were carried out at the East Point Laboratory, using an atomic absorption spectrometer.

Tin concentrations were mostly below the detection limit. However, although no cassiterite was visible in the core, concentrations rose to significant values in the following sections:

D.D.H.2	383.5 - 386.0 feet	350 ppm Sn	
	386.0 - 388.5 feet	41000 ppm Sn	(1.1% Sn over 6.4 feet)
	388.5 - 391.0 feet	3250 ppm Sn	(true width or 2.2% Sn)
	391.0 - 393.5 feet	550 ppm Sn	(over 3.2 feet true width)
D.D.H.3	393.0 - 395.5 feet	28000 ppm Sn	
	395.5 - 398.0 feet	9250 ppm Sn	(1.0% Sn over 6.4 feet)
	398.0 - 400.5 feet	1500 ppm Sn	(true width or 1.9% Sn)
	400.5 - 403.0 feet	1200 ppm Sn	(over 3.2 feet true width)

These tin concentrations lie wholly or partly within quartz-tourmaline lode rock.

In addition, traces of tin mineralisation were found, mainly in brecciated sedimentary rocks in the following sections:

D.D.H.4	376.0 - 380.0 feet	100 ppm Sn
	382.5 - 385.0 feet	100 ppm Sn
D.D.H.4	375.0 - 377.5 feet	595 ppm Sn
	377.5 - 380.0 feet	240 ppm Sn

The high tin values closely parallel the observed occurrences of lode rock. A brief analysis of the frequency distribution of tin concentrations indicates that the distribution is complex. It may possibly be a combination of two lognormally - distributed populations; a large "background" population of low tin concentrations, with a smaller population of higher tin concentrations, related to the quartz-tourmaline rock.

Some samples were also tested for lead, zinc, tungsten and molybdenum. Concentrations of tungsten and molybdenum were all below the detection limits (W 25 ppm; Mo 20 ppm). Lead and zinc concentrations were rarely above average background levels for sandstone and siltstone and showed no correlation with tin values.

CONCLUSIONS AND RECOMMENDATIONS

The diamond drilling programme carried out indicates the presence of tin-bearing quartz-tourmaline lode rock at depths of 300 - 320 feet (90 - 98 metres), located 50 - 150 feet (15 - 45 metres) east of the Tiger Shaft. Further drilling or underground development would be necessary to determine whether or not this ore shoot is a downward extension of the one worked in the Tiger Shaft or the No. 2 open cut. Brecciated sedimentary rocks to the east and west may correspond to extensions of the lode shear, but contain only traces of tin mineralisation.

Diamond drilling does not provide a reliable guide to the overall grade of the ore shoots because of their irregular, patchy nature. The grade of the ore shoots could perhaps be assessed by closely spaced percussion drilling, but shaft sinking and driving development is considered the most satisfactory method for testing ore shoots in this area.

REFERENCES

- | | | |
|---------------------------|------|--|
| Folk, R.L. | 1965 | Petrology of sedimentary rocks. Hemphill's, Austin. |
| Hare, R. and Morton, J.L. | 1963 | Preliminary summary report of Maranboy tin prospect, Maranboy, N.T., Australia. <u>Mineral Resources Australia Pty Ltd, Comp. Rep. (unpubl.)</u> |
| Mackay, N.J. | 1960 | Diamond drilling at Maranboy tinfield, Northern Territory, 1958-1959. <u>Bur. Miner. Resour. Aust. Rec. 1960/3. (unpubl.)</u> |
| Walpole, B.P. | 1958 | The Maranboy tin-field, Northern Territory. <u>Bur. Miner. Resour. Aust. Bull. 37.</u> |

A P P E N D I X 1 - DRILL LOGS

DESCRIPTION OF CORE	R L	DEPTH	LOG	LIFT OR CORE RECOVERY %	SAMPLES	REMARKS	ASSAYS
	CASING	SIZE OF CORE					
NO CORE							
20 SANDSTONE: brown: indurated: medium grained: fragments of whitish? felspar: ?quartzite		75				fractures 10°-20° tea quartz veinlets	
SILTSTONE: dark brown-green grey: indurated: some sandstone interbeds		75 55 40 100				tourmaline-quartz veining 20° tea bedding 60° tea	
SANDSTONE: indurated: patchy to colour: very fine - medium grained: greywacke		100 85 85 100				clay and iron oxides on fractures	
		55	NX				
		100				joints 60° tea, with Fe ox. bedding 50° tea	
		75				fractures 50°-70° tea, leached with siliceous clays	
		70					
		100					
60 SANDSTONE/SILTSTONE INTERBEDS: red brown-grey brown:		70				micaceous hematite - quartz veinlets	
		70				contact 20° tea joints 30° tea	
		90					
		70				joints 45° tea, leached	
		65					
		35				joints 60°, 70° tea, leached	
		70					
SANDSTONE: red brown-grey 80 brown speckled: fine grained: greywacke		65				bedding 70° tea	
		80					
		85					
AS ABOVE: weathered, clayey section		100					
		65					
SILTSTONE: brown-grey mottled colour		55				fractures bear Fe ox., green-white clay on joints	
		100					
100 feet		100					

DRILLING TYPE	CASING IN HOLE DURING DRILLING	EXPLANATION: tea = to core axis	HEAD OFFICE
DRILLER	Sandstone Siltstone	REFERENCES: Combined where interbeds are too small to show	LOGGED BY: G. L. DRAWN BY: G. L. CHECKED BY: SHEET 1 OF 5 DRAWING NO.

GEOLOGICAL LOG OF DRILL HOLE

PROJECT **MARANBOY - RAY LEASE**
 HOLE NO. **004 1**
 CO-ORDINATES

REMARKS
 R.L. SURROUND
 ANGLE FROM HORIZONTAL **61° - 100**

DESCRIPTION OF CORE	R.L.	DEPTH	LOG	LIFT & CORE RECOVERY %	SAMPLES	REMARKS	ASSAYS	
	CASING	SIZE OF CORE						
100 SILTSTONE: mottled red brown				95		green talcose clay on joints, some quartz veinlets 10° tea		
				95				
				100				
SILTSTONE red brown - gray brown				100			discontinuous quartz veins, aggregates of mica flakes	
				100				
BRECCIA [50-60 52mm dia angular fragments gray micaceous siltstone matrix [40-50, red brown haematitic quartz]				100			thin irregular quartz veinlets with drusy growth mosaic	
120 breccia bounded by grey, sheared siltstone				95				
				100			bedding 75° tea, grading fine & coarse down hole	
				100				
				95				
SANDSTONE/SILTSTONE: red brown: INTERBEDS indicated: bedding shown by variation in grain size and colour banding: most beds 10cm - 20cm wide.				100			bedding 70° tea	
140				95				
				100			bedding 70° tea, grading fine & coarse down hole	
				100			veinlets of quartz and haematite, some clay or haematite on fractures	
siltstone brown, banded				100			bedding 55° tea	
SILTSTONE BRECCIA: brown, angular fragments av. 0.5cm: open spaces partially infilled with drusy quartz						bedding 60° tea		
						graded bedding fine & coarse down hole		
						bedding 60° tea		
160 siltstone brecciated by veins of quartz and haematite						TS greywacke		
						5-10 iron oxides [disseminated through matrix]		
						10-20 sericite/illite matrix		
						bedding 60° tea		
						10-15 quartz grains anhedral, ang. subang., av 0.1mm, straight extinction		
						? 50 microquartz floculin		
SANDSTONE: brown, mottled: fine-coarse grained: shale rock fragments visible: greywacke composition						: very fine sandstone: immature greywacke		
180								
						veinlets contain		
						• sericite - quartz - iron oxides		
						• iron ox. - green talcose clay		
						• black Mn? oxides		

200 feet

DRILL NO.	CASING IN HOLE DURING DRILLING 	EXPLANATION MS = hand specimen TS = thin section cut from MS	HEAD OFFICE
TYPE		REFERENCES	ISSUED BY G. L. DRAWN BY GL CHECKED BY
DRILLER			SHEET 2 OF 5
COMMENTS			DRAWING NO.

GEOLOGICAL LOG OF DRILL HOLE

PROJECT: **MARANBOY - RAY LEASE** REMARKS: _____
 HOLE NO: **0041** CO-ORDINATES: _____ R.L. GROUND: _____
 LOCATION: _____ ANGLE FROM HORIZONTAL: **61° at 200** DIRECTION: _____

DESCRIPTION OF CORE	R.L.	DEPTH	LOG	LIFT & CORE RECOVERY %	SAMPLES	REMARKS	ASSAYS ~
	CASING	SIZE OF CORE					
200 SILTSTONE: light gray; indurated						bedding 50° to 60° tea some talcose joints bedding 50° tea microfaulting plane contemporaneous with sedimentation bedding 50° tea	
220						quartz veining and drusy growth green talcose clay on fractures quartz veining and drusy growth TS siltstone 5-10 iron oxides 20-30 quartz grains 60-70 microquartz/sericite matrix medium-coarse siltstone: immature subgraywacke bedding 40°-75° tea	
INTERBEDS SANDSTONE and SILTSTONE: brown, often mottled; 240 Siltstone shows banding bedding; sandstone generally medium grained but shows some graded bedding; composition probably graywacke clay						Sandstone Siltstone ⇒ face downhole bedding 60° tea Sandstone grading ⇒ face downhole bedding 40° tea Sandstone Siltstone ⇒ face down hole bedding 40°-50° tea quartz, clay, Fe ox. on fractures	
260						bedding 45° tea irregular, discontinuous quartz veinlets	
280						siltstone Sandstone ⇒ face uphole, bedding 45° tea quartz veins and iron oxide veinlets bedding 40°-50° tea	
BRCCIA: siltstone and sandstone 300 - brecciated by thin quartz veinlets						green talcose clay and hematite	

DRILL NO. _____	EXPLANATION	HEAD OFFICE
TYPE _____	CASING IN HOLE DURING DRILLING H	LOGGED BY G. Low
DRILLER _____	REFERENCES	DRAWN BY GL
COMMENCED _____	⇒ implies, suggests	CHECKED BY _____
COMPLETED _____		SHEET 3 OF 5
		DRAWING NO. _____

GEOLOGICAL LOG OF DRILL HOLE

PROJECT: **MARANBOY - RAY LEASE**
 HOLE No: **00H1** CO-ORDINATES: _____ REMARKS: _____
 LOCATION: _____ R.L. GROUND: _____
 ANGLE FROM HORIZONTAL: **61° of 300** DIRECTION: _____

DESCRIPTION OF CORE	R.L.	DEPTH	LOG	LIFT & CORE RECOVERY %	SAMPLES	REMARKS	ASSAYS
	CASING	SIZE OF CORE					
<p>300</p> <p>INTERBEDDED SANDSTONE / SILTSTONE: brown: Sandstone fine-coarse, av. medium grained: bedding and grading visible</p>						<p>HSTS TS sandstone! 10-20 siltstone fragments 30 quartz grains 50-60 matrix iron oxide - 10-20 sericite - 40 microquartz minor tourmaline: fine-very fine sandstone: immature greywacke - subgreywacke graded bedding → face uphole</p>	
<p>320</p>							
<p>340</p> <p>BRECCIATED SILTSTONE: brown: hematite-quartz matrix</p>						<p>HSTS TS breccia: texture hard to see in TS: 30 fragments [≤ 0.1mm - 20mm dia; angular, now microquartz]</p>	
<p>brecciated as above: soft, green-brown fragments of ? siltstone bed with drusy quartz veins first hard, black ? hornfels fragments</p>			NX			<p>HSTS SPLIT 70 matrix [disseminated iron oxides - microquartz, minor tourmaline]</p>	
<p>360</p> <p>HORNFELS BRECCIA: dark grey-black: quartz veining</p>						<p>veining opaque clay - iron oxide - tourmaline - quartz</p>	
<p>breccia: green and brown fragments</p>						<p>some hematite, green clay</p>	
<p>SEDIMENT: brown: some brecciation</p>						<p>abundant green to coarse clay</p>	
<p>380</p>						<p>quartz, green clay, hematite veins</p>	
<p>BRECCIATED SILTSTONE: red brown, with some black ? hornfels fragments: brecciated and sheared</p>						<p>CORE</p>	
<p>400</p> <p>SEDIMENT: as above</p>						<p>dark, hornfelsic material</p>	

DRILL NO. _____ TYPE _____	CASING IN HOLE DURING DRILLING _____	EXPLANATION _____	HEAD OFFICE _____
DRILLER _____ COMMENCED _____ COMPLETED _____	REFERENCES _____	LOGGED BY: GL DRAWN BY: GL CHECKED BY: _____	SHEET: 4 OF 5 DRAWING NO. _____

DESCRIPTION OF CORE	R L	DEPTH	LOG	1 FT CORRECTION COVERED BY %	SAMPLES	REMARKS	ASSAYS
	CASING	SIZE OF CORE					
<p>400</p> <p>INTERBEDDED SANDSTONE and SILTSTONE: brown: siltstone not well bedded: sandstone fine - coarse grained, graded: gray cracks composition</p>						<p>abundant, closely spaced, iron oxide veinlets</p> <p>graded bedding - face up hole bedding 35° - 50° face</p>	
<p>420</p> <p>BRECCIATED SILTSTONE: gray gray. Slump breccia: fragments constitute most of rock, and are little rotated or displaced</p> <p>SEDIMENT: brown: mostly siltstone with sandstone streaks</p> <p>440 feet</p>		NX				<p>microfaulting and brecciation</p>	

DRILL NO. _____ TYPE _____	EXPLANATION CASING IN HOLE DURING DRILLING <input checked="" type="checkbox"/>	HEAD OFFICE LOGGED BY: Glan DRAWN BY: GL CHECKED BY: _____
DRILLER _____ COMMENCED _____ COMPLETED _____	REFERENCES _____	SHEET 5 OF 5 DRAWING NO. _____

DESCRIPTION OF CORE	R.L.	DEPTH	LOG	CORRECTION	SAMPLES	REMARKS	ASSAYS
	CASING	SIZE OF CORE					
0-100 SEDIMENT: brown, indurated; grain size variation Silt - coarse sand; probably gray rock composition						core very broken bd 30° tea	
BRECCIA: Sediment brecciated by large, compound quartz 40 veins; some dark gray Thomsonite or tourmaline rock						iron oxide on joints poorly recovered	
						2cm haematite - quartz vein	
60-100 SEDIMENT: as above						5cm green clay - haematite - quartz vein	
						graded bedding \Rightarrow face uphole bedding 25° tea haematite - quartz veining	
						quartz vein	
						haematite - quartz veins numerous quartz veinlets	
						4cm haematite - quartz vein probably graded bedding	
						bedding c. 30° tea	
						} Core very broken	
						bedding 30° tea iron oxide veinlets	
						graded bedding \Rightarrow face uphole	

DRILL NO.	EXPLANATION	HEAD OFFICE
TYPE	CASING IN HOLE DURING DRILLING \parallel	LOGGED BY: <i>GL</i>
DRILLER	REFERENCES	DRAWN BY: <i>GL</i>
COMMENCED	Sandstone \forall Very fine f fine m medium c coarse vc Very coarse	CHECKED BY:
COMPLETED	===== Siltstone & & Breccia	SHEET 1 OF 5
		DRAWING NO.

GEOLOGICAL LOG OF DRILL HOLE

PROJECT: **MARANBOY - RAY LEASE** REMARKS: _____
 HOLE No: **0042** CO-ORDINATES: _____ R L GROUND: _____
 LOCATION: _____ ANGLE FROM HORIZONTAL: **58° at 100** DIRECTION: _____

DESCRIPTION OF CORE	R.L.	DEPTH	LOG	L-FT & CORE RECOVERY %	SAMPLES	REMARKS	ASSAYS
	CASING	SIZE OF CORE					
100 SEDIMENTS 100-200 : as above							
brown sandstone and siltstone			mic	75			
				100			
				85			
				70	80		
grey, mottled siltstone, some f-vf sandstone			m	100			
				100			
				100			
				80		bedding and small white bed 30° tea	
			vf	100		bedding 30° tea	
120 grey colour			f-m	100	80	red brown Fe oxide staining	
				85		bedding 35° tea	
			c	100		grading => face down hole	
				100			
Sandstone: clayey groundmass, few distinguishable quartz veins			vc	85			
			m	100			
				100		Some quartz, Fe oxide veining	
			m-f	100			
			vf	95			
				90			
				80		1cm quartz vein	
			m-f	100		small soft Fe oxide veinlets	
				100		bedding 30° tea	
140				100			
				100			
grey brown - red brown colour mottled, with leaching of Fe oxides around veinlets				100			
				100			
160 brown colour				100		bedding 40° tea	hematite-quartz veins and veinlets
				100			
core badly disrupted, so lithology - depth relationship uncertain				100			
				100			
brown siltstone; some f-vf sandstone				100		bedding 40° tea	
				100			
180				100			
grey-brown sediments (siltstone - c sandstone): individual position of beds not shown because of core disruption				100		bedding 30° - 50° tea	
				100			
siltstone and vf sandstone				100		bedding 50° tea	Small ? graded sequences => face up hole
				100			
200 feet				100			

DRILL NO.	EXPLANATION	HEAD OFFICE	
TYPE		CASING IN HOLE DURING DRILLING	LOGGED BY <i>glw</i>
DRILLER	REFERENCES	CHECKED BY	SHEET 2 OF 5
COMMENCED			DRAWING NO.
COMPLETED			

DESCRIPTION OF CORE	R.L.	DEPTH	LOG	LIFT & CORE RECOVERY %	SAMPLES	REMARKS	ASSAYS
	CASING	SIZE OF CORE					
200 200-300 SEDIMENTS: as above banded siltstone: Fe oxide staining along fractures and bedding: Some f. v. sandstone finely banded siltstone			AX core			bedding 45° tea Fe oxides on fractures Some haematite-quartz veins and blobs grading to face uphole bedding 60°-65° tea Fe oxide veinlets, some haematite-quartz veins and patches	
banded grey siltstone			M-C			bedding 45° tea	
220 grey-brown colour			C	100		clay-haematite-quartz vein bedding 45° tea thin, dark, soft Fe oxide veinlets in siltstone	
brown sandstone			M-C			haematite-tourmaline-quartz vein clayey section	
			M-C			haematite veining and brecciation haematite-quartz vein	
240 brown-greenish, mottled colour			C-VC	100		mica-quartz? greisen vein quartz vein clay on fractures	
			C-VC	100			
			SC				
			C-VC				
260 brown colour			f-m	100		small haematite-clay-quartz veins	
			SC			green clay and Fe oxide on joints	
			M-C	100		haematite-quartz veinlets	
banded siltstone				95		bedding 40° tea Fe oxide vein	
280 BRECCIA: angular sandstone and siltstone fragments in matrix haematite-quartz, some open spaces			A A		SPLIT CORE	haematite-quartz veinlets green talcose clay on joints	
brown sandstone			M-C			bedding 50°-60° tea mica quartz patches and veinlets	
grey siltstone: bedding slightly contorted by slumping				100		bedding 50°+60° tea	
BRECCIA: transitional margins; fragments: grey sediment as above 300 matrix: quartz and open spaces			v.f				

DRILL NO.	CASING IN HOLE DURING DRILLING	EXPLANATION	HEAD OFFICE	
TYPE		REFERENCES	LOGGED BY	DRAWN BY
DRILLER			CHECKED BY	
COMMENCED			SHEET 3 OF 5	
COMPLETED			DRAWING NO.	

GEOLOGICAL LOG OF DRILL HOLE

PROJECT: **MARANBOY - RAY LEASE** REMARKS: _____
 HOLE No: **0042** CO-ORDINATES: _____ R.L. GROUND: _____
 LOCATION: _____ ANGLE FROM HORIZONTAL: **57.5° at 300** DIRECTION: _____

DESCRIPTION OF CORE	R.L.	DEPTH	LOG	LIFT & CORE RECOVERY %	SAMPLES	REMARKS	ASSAYS
	CASING	SIZE OF CORE					
300 grey, mottled siltstone						Fe oxide veinlets	
300 - 355 SEDIMENT: as above						micro - quartz vein	
brown sandstone						Fe oxide - quartz veinlets	
siltstone: some very fine						bedding 35° - 40° to	
320 sandstone: no banding						greenish quartz vein? shear	
brecciated siltstone some hard block? tourmaline rock						some Fe oxide and quartz veining	
obrk grey? hornfels zone							
BRECCIA: brown-green sediment brecciated and veined by quartz and haematite - quartz veins							
? SEDIMENT: red brown; micaceous: coarse sand size: 340 could be altered gneiss?							
SANDSTONE: grey: veined and brecciated in part by red brown Fe oxides						green talcose clay on some joints	
? HORNFELS: dark grey - black; often with blebs haematite: veined by white quartz; whitish quartz rich patches						some haematite, green clay	
lighter coloured brown-green ? sediment or gneiss						green clay, Fe oxide staining	
380							
lighter grey section: ? more quartz						Some quartz veining	
400 lighter grey						blebs of dark ? tourmaline	

DRILL NO. _____	EXPLANATION	HEAD OFFICE
TYPE _____	CASING IN HOLE DURING DRILLING	LOGGED BY: <i>Glenn</i>
DRILLER _____	REFERENCES	DRAWN BY: <i>GL</i>
COMMENCED _____	<i>h = dark grey ? hornfels</i>	CHECKED BY: _____
COMPLETED _____		SHEET <i>4</i> OF <i>5</i>
		DRAWING NO. _____

GEOLOGICAL LOG OF DRILL HOLE

PROJECT: **MARANBOY - RAY LEASE** REMARKS: R L GROUND **57° at**
 HOLE No: **D042** CO-ORDINATES: ANGLE FROM HORIZONTAL: **400, 450, 500** DIRECTION

DESCRIPTION OF CORE	R.L.	DEPTH	LOG	LIFT & CORE RECOVERY %	SAMPLES	REMARKS	ASSAYS
	CASING	SIZE OF CORE					
400 green-brown; micaceous; ? sediment or gneiss? brown sandstone						quartz veining Some quartz veinlets	
dark grey ? hornfels blobs grey siltstone, not banded brecciated siltstone →						Fe oxide - quartz veinlets heavy iron oxide - quartz veining	
breccia: quartz in haematite matrix							
420 brown sandstone							
brown-grey siltstone; some v.f sandstone						Fe oxide - quartz veinlets leaching around fractures	
brown sandstone						Fe oxide - quartz veinlets	
		100					
						Fe oxide - quartz veinlets	
		100					
440. SEDIMENT: brown; indurated; ? grey wacke composition							
red brown haematite - quartz rock bed with quartz veins			BX			green clay, red brown haematite	
						drusy quartz veinlets	
BRECCIA: slurrized and brecciated brown-green sediment; matrix and veins white quartz, vugs common						green clay, haematite heavily quartz veined	
460 sandstone and hornfels (hard, dark grey)							
brown-grey mottled colour: siltstone, some f-vf sandstone						dark green grey	
? tight folding outlined by Fe oxide staining; irregular folding ⇒ slumping at 472.5						dark green grey axial plane 30° to bedding 25° to	
		100					
480							
		100					
						grading ⇒ face uphole bedding 80° to grading ⇒ face uphole	
mica visible in sandstone; greenish coloured sediment							
		100					
						grading } ⇒ face uphole	
		100					
						Fe oxide - quartz and quartz veinlets	
500 feet							

DRILL NO.	CASING IN HOLE DURING DRILLING	EXPLANATION	HEAD OFFICE	
TYPE		REFERENCES	LOGGED BY	Glan
DRILLER	wshcar		DRAWN BY	CL
COMMENCED			CHECKED BY	
COMPLETED			SHEET 5 OF 5	
GDI30		DRAWING NO.		

GEOLOGICAL LOG OF DRILL HOLE

PROJECT **MARANBOY - RAY LEASE**
 HOLE No **0043**
 LOCATION

REMARKS
 R L GROUND
 ANGLE FROM HORIZONTAL **58° at 150'** DIRECTION

DESCRIPTION OF CORE	R/L	DEPTH	LOG	LIFT & CORE RECOVERY %	SAMPLES	REMARKS	ASSAYS
	CASING	SIZE OF CORE					
100 SEDIMENTS : as above colour brown - grey		95	M-c c vc			haematite + quartz veins bedding 65° tea grading of grain size - face uphole bedding 60° tea	
		90	vc m-c vc			grading - face downhole bedding 65° tea	
		100	vc c-m			grading - face uphole	
120		95	vc			bedding 35° tea	
		95	vc			quartz veins, minor brecciation	
colour brown and green grey		100	m-c			bedding 25° tea, thin iron oxide veinlets	
		100	m-c			bedding 25° tea	
140		95	m-c			bedding 35° tea, haematite veins	
		95	m-c			bedding 30° tea haematite - quartz vein grading - face downhole	
<div style="border: 1px solid black; padding: 5px;"> QUARTZ: minor green clay and haematite: some at 153.5' also BRECCIA: brecciated greenish sediment in red-brown haematitic sediment matrix: some haematite and quartz veining </div>			m-c c-vc		SPLIT CORE		
160 siltstone green grey - brown		100	c-f			bedding 45° tea bedding 35° tea	
		95	f			occasional iron oxide veinlets and green clay on joints	
colour brown - grey		100	c-vc m				
Some feldite fables in sandstone		95	vc m vc			grading - face uphole bedding 65° tea	
180		95	vc m vc				
green clay and ? minor shear		95	m-vc			quartz veining	
Mottle colour, minor brecciation associated with quartz veining		95	vc m-c				
		95	vc				
		95	m				
SILTSTONE: red brown - grey: 200 bedding and ? slumping feet		near	f o			bedding 45° tea	

DRILL NO.	EXPLANATION	HEAD OFFICE	
TYPE	CASING IN HOLE DURING DRILLING	LOGGED BY <i>Glan</i>	
DRILLER	REFERENCES	DRAWN BY <i>96</i>	
COMMENCED		CHECKED BY	
COMPLETED		SHEET 2 OF 5	
		DRAWING NO.	

GEOLOGICAL LOG OF DRILL HOLE

PROJECT **MARANGOY - RAY LEASE** REMARKS
 HOLE NO. **0043** CO-ORDINATES R.L. GROUND
 LOCATION ANGLE FROM HORIZONTAL DIRECTION

DESCRIPTION OF CORE	R.L.	DEPTH	LOG	LIFT B CORE RE COVERY %	SAMPLES	REMARKS	ASSAYS
	CASING	SIZE OF CORE					
250 GRADED BEDDING: 3 sequences of shale/silt - coarse siltstone		100	[diagram]			graded bedding coarse - fine uphole: 45° too	
SANDSTONE: brown: indurated: fine grained: greywacke composition: thin clay-quartz veinlets		95	[diagram]			veinlets 20° too	
SILTSTONE: dark brown: numerous thin, dark, soft clay-Fe ox. veinlets		100	[diagram]				
220 SANDSTONE: brown: very fine sandstone - siltstone: some thin quartz veinlets: clay and iron oxides on fractures		100	[diagram]			discontinuous quartz vein 15° too	
		95	[diagram]			core broken, difficult to log	
		100	[diagram]			dark, hornfels-like borders on some fractures	
SANDSTONE: mottled brown: 240 medium grained		100	[diagram]				
SANDSTONE/SILTSTONE INTERBEDS: brown fine - coarse sandstone: red brown - brown siltstone: thin veinlets of Fe ox and ? tourmaline - quartz		95	[diagram]			suggestion of fine - coarse grading about bedding 45° - 50° too	
		100	[diagram]			? bedding 50° too	
260 [siltstone mottled green grey - red brown]		100	[diagram]			bedding 60° - 65° too	
		100	[diagram]			? bedding 45° too	
[siltstone well colour banded] parallel to bedding		100	[diagram]			bedding 55° - 60° too	
		80	[diagram]			bedding 50° - 55° too	
280		100	[diagram]			bedding 60° too	
veinlets often hematitic - greenish clay - quartz (dusky growth mosaic)		100	[diagram]			bedding 55° - 60° too	
		100	[diagram]				
300 feet							

DRILL NO. TYPE	CASING IN HOLE DURING DRILLING	EXPLANATION	HEAD OFFICE
DRILLER COMMENCED COMPLETED		REFERENCES	LOGGED BY <i>Glan</i> DRAWN BY <i>Gl.</i> CHECKED BY SHEET 3 OF 5 DRAWING NO.

GEOLOGICAL LOG OF DRILL HOLE

PROJECT: **MARANBOY - RAY LEASE**
 HOLE NO: **00H 3**
 CO-ORDINATES: _____
 REMARKS: _____
 R.L. GROUND: _____
 ANGLE FROM HORIZONTAL: **58° at 300'** DIRECTION

DESCRIPTION OF CORE	R.L.	DEPTH	LOG	LIFT P. CORE # OF COUVER %	SAMPLES	REMARKS	ASSAYS
	CASING	SIZE OF CORE					
300 SANDSTONE: as above: brown, med-coarse: grey wacke composition: minor, thin Feoxide-quartz veinlets and clay-quartz veinlets		100				5cm Feox. - clay-quartz vein	
		100				2cm quartz vein	
320		100				4cm quartz vein	
		100					
HAEMATITE-QUARTZ ROCK: red brown: massive, earthy haematite and white quartz, some fragments of medium-coarse sandstone		100				[Sandstone and siltstone grey wacke] as above	
340 BRECCIA: ov. 2mm fragments of grey quartzite (silicified ss stone) in red brown Feox. - quartz matrix: breccia texture defined by colour only		100					
? BRECCIA: CLAY-QUARTZ: crumbly greenish clay - quartz rock			BX				
BRECCIA: angular indurated greenish-pinkish quartzite (shale and sandstone) fragments, rimmed with Feox.: white quartz matrix					CORE		
360 BRECCIA: as above						red brown: bedding 40° to	
SEDIMENT: red brown: foliated till bedding: Feox. in spots and along foliation planes					SPLIT IN	? bedding 35° to	
BRECCIA: angular green quartzite frags and black (? tourmaline) frags in brown Feox. - quartz matrix					2.5 ft		
BRECCIA: very dark, almost black: vuggy appearance					100 lengths		
! HOENFELS: dark grey: ? tourmaline - quartz rock: some colour banding 300 with variation in quartz content						for banding 40° - 60° to	
AS ABOVE: colour lighter due to greenish clay on fractures					assay		
HAEMATITE-QUARTZ: as above but black - red brown haematite							
SANDSTONE: brown, mottled: med-coarse grained							
? TOURMALINE-QUARTZ: dark grey: spotty appearance							
SEDIMENT: sandstone and siltstone: grey wacke composition: 400 breccias are sediment in quartz matrix						[medium grained sandstone]	

DRILL NO. _____	EXPLANATION	HEAD OFFICE
TYPE _____	CASING IN HOLE DURING DRILLING	LOGGED BY: <i>Glan</i>
DRILLER _____	REFERENCES	DRAWN BY: <i>GL</i>
COMMENCED _____		CHECKED BY: _____
COMPLETED _____		SHEET 4 OF 5
		DRAWING NO. _____

GEOLOGICAL LOG OF DRILL HOLE

PROJECT: **MARANBSY - RAY LEASE**
 SECTION: **0044**
 COORDINATES: _____
 LOCATION: _____

REMARKS: _____
 DIVE FROM HORIZONTAL: **55-5° at 100'**
 DIRECTION: _____

DEPTH (FEET)	DESCRIPTION OF CORE	REMARKS	ASSAYS
100	SEDIMENT: siltstone and sandstone (? graywacke) continued brown, iron stained	thin iron oxide fracture coatings, minor quartz-iron oxide veinlets	
100	gray-brown BRECCIATED SILTSTONE; brecciated by quartz and iron oxide veinlets brown, patchy colour brown, with quartz-haematite concentrated at base	Some thin iron oxide and quartz veinlets	
120	brown, with massive quartz-haematite at base brown	? graded sequence	
100	brown, some porous, leached bands	banding 50°	
140	brown	banding 45°-50°, thin haematite fracture coatings	
100	graded sequences, generally ranging from siltstone to sandstone; some concentration of quartz-haematite in coarser sandstones	grading coarse to fine downhole	
160	brown, some porous, leached bands brown	banding 50°-55° thin iron oxide fracture coatings	
100	brown, some interbeds of vf sandstone and siltstone		
180	brown gray brown-gray	Some iron oxide-quartz veins and veinlets banding 45° Some haematite and quartz veinlets banding 55° iron oxide and some clay on fractures banding 55°	
200 feet	brown		

DRILL NO. _____	EXPLANATION _____	HEAD OFFICE _____
TYPE _____	REFERENCES _____	DRAWN BY GL
DRILLER _____		CHECKED BY _____
COMMENCED _____		SHEET 2 OF 5
COMPLETED _____		TOTAL NO. _____

GEOLOGICAL LOG OF DRILL HOLE

PROJECT **MARANBOY - RAY LEASE**
 HOLE NO. **0044**
 CO-ORDINATES

REMARKS
 DIRECTION FROM HORIZONTAL **54.7° at 200'**

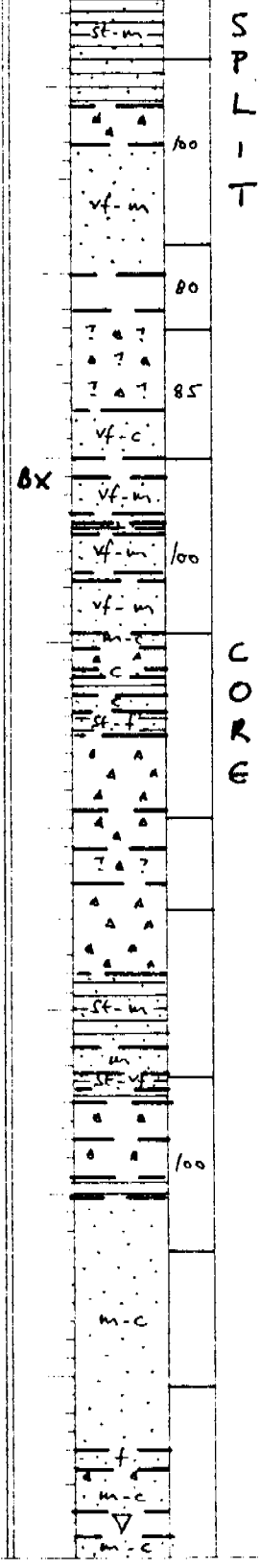
DESCRIPTION OF CORE	R.L.	DEPTH	LOG	% OF CORE RECOVERED	SAMPLES	REMARKS	ASSAYS
	CASING	SIZE OF CORE					
200 SEDIMENT: siltstone and sandstone (? gray wacke) continued brown		100	f-m			quartz veins (2-4 cm thick) with minor hematite and ? tourmaline	
gray sandstone, some siltstone		100	in				bedding 45° - 55°
gray, with brown iron oxide staining around fractures		100	f-m			thin iron oxide fracture coatings	
210		100	vt-st			bedding ? 50°	
		100	in				
		100	f-vf			quartz vein	
		100	in				
		100	vt-in				
		100	f-c			some irregular quartz veinlets	
some vc ? ARKOSE in sandstone gray, some brown iron staining		100	f-m				
240		100	△			? grading coarse to fine ? up hole and ? down hole	
Some sh. varying ? graded sandstones, ranging from f to c c - grit size ARKOSE: quartz and kaolinitized feldspar in a matrix of red brown iron stained silica and greenish chlorite		100	m-c			bedding 60°	
spotted, gray brown		100	vt-ark				
		100	f-m				
260 some thin iron oxide - clay BRECCIATED ZONES		100	• •			thin irregular fractures, some with coatings of greenish clay	
spotted, gray brown		100	f-m				
		100					
dark gray, chlorite ? SHEAR ZONE		100					
280 patchy brown colour		100	f-m			chlorite - iron oxide quartz vein	
		100					
patchy brown colour, in places indicating ? BRECCIATION		100	vt-f			microfractured quartz veinlets throughout, in places numerous	
		100	vt-f				
whole section 205' - 300.5' appears sheared and deformed		100	vt-f				
300 feet		100					

DRILL NO.	CASING IN HOLE DURING DRILLING	EXPLANATION	HEAD OFFICE	
TYPE		REFERENCES	LOGGED BY: Glan	DRAWN BY: GL
DRILLER			CHECKED BY:	
COMMENCED			SHEET 3 OF 5	
COMPLETED			DRAWING NO.	

GEOLOGICAL LOG OF DRILL HOLE

PROJECT: **MARANBOY - RAY LEASE**
 HOLE NO: **0044**
 LOCATION: _____
 PL. GROUND: _____
 ANGLE FROM HORIZONTAL: **3.5° at 300'** DIRECTION: _____

DESCRIPTION OF CORE	CASING	DEPTH OF CORE	LOG	SAMPLES	REMARKS	ASSAYS
<p>300 light coloured BRECCIA with greenish brown angular sediment particles in quartz matrix</p> <p>grey BRECCIA</p> <p>brown, patchy colour</p>					<p>numerous irregular quartz veinlets veined by white quartz</p> <p>Some irregular quartz veinlets, some iron oxide and clay fracture coatings</p>	
<p>SEDIMENT continued: dominantly siltstone and sandstone, some sections slurred and brecciated</p> <p>320 brown sediment as above, but BRECCIATED by quartz veins</p> <p>brown? slurred or? slurred sediment</p>					<p>numerous quartz blebs and veins, some brown mica</p> <p>Some iron oxide and quartz veinlets</p>	
<p>greenish, aphanitic, ? foliated rock: ? clayey or ? chloritic sediment</p> <p>dark grey slurred or BRECCIATED rock: blebs and rounded ? fragments of whitish quartz in grey ? chloritic or ? tourmaline rock</p>						
<p>340 greenish, chloritic sandstone</p> <p>green-brown sandstone, with darker grey sections of ? more chloritic rock</p>						
<p>BRECCIA: light grey-pink patches 1-5cm dia in darker grey matrix</p> <p>red brown-greenish sandstone and siltstone</p>					<p>Some iron oxide-quartz veining with associated minor brecciation</p>	
<p>dark greenish grey BRECCIA: irregular patchy mixture of whitish quartz</p> <p>360 fragments in dark grey matrix with ? tourmaline or ? chlorite</p>						
<p>dark grey BRECCIA: whitish quartz and dark grey ? fragments in medium grey matrix with ? tourmaline</p> <p>grey, banded (? = bedded) sediment</p>					<p>irregular quartz-iron oxide veins, one haematite-tourmaline vein</p> <p>banding 50°</p> <p>banding 60°</p> <p>occasional vuggy quartz veins < 5mm wide</p> <p>2-3cm irregular vuggy quartz vein</p>	
<p>red brown-grey sandstone</p> <p>grey ? slurred siltstone</p> <p>white-grey BRECCIATED SILTSTONE: banded siltstone, slurred, microfossiliferous and brecciated</p> <p>380 red brown-greenish: ? gneiss or subgneiss</p>					<p>1-2cm quartz-haematite vein</p> <p>numerous microfossils and ? crossbeds</p> <p>banding 60°</p> <p>banding 45°</p> <p>banding 45°</p> <p>iron stained and quartz veined quartz-iron oxide veinlets</p> <p>1cm quartz vein</p> <p>drusy and vuggy quartz veinlets</p> <p>vuggy quartz veinlets</p>	
<p>brown</p> <p>brown</p> <p>graded sequence, m to vc size</p> <p>400 feet</p>					<p>numerous irregular quartz veinlets</p> <p>grading coarse to fine up hole</p>	



DRILL NO. _____	EXPLANATION _____	HEAD OFFICE _____
TYPE _____	REFERENCES _____	LOGGED BY 96
DRAWER _____		DRAWN BY 4
COMMENCED _____		CHECKED BY _____
COMPLETED _____		SHEET 4 OF 5
		DRAWING NO. _____

GEOLOGICAL LOG OF DRILL HOLE

PROJECT
HOLE NO.
LOCATION

MARANBOY - RAY LEASE
0044

CO-ORDINATES

REMARKS

REL. SURFACE
ANGLE FROM HORIZONTAL **51° at 900'**
52.5° at 920' DIRECTION

DESCRIPTION OF CORE	RL	DEPTH	LOG	LIT. G. CORE NO. COVERED	SAMPLES	REMARKS	ASSAYS
	CASING	SIZE OF CORE					
<p>400 brown: graded sequences m to vc size</p> <p>brown SANDSTONE - SILTSTONE continued</p> <p>graded sequence st to c size brown, finely banded brown, illuvated brown, banded Some interfingering siltstone/sandstone 420 feet</p>			<p>▽</p> <p>▽</p> <p>▽</p> <p>st-f</p> <p>st-vf</p> <p>▽</p> <p>f.m.</p> <p>f.m.</p>	95		<p>grading coarse to fine uphole</p> <p>occasional quartz-iron oxide veinlets</p> <p>bedding 30°</p> <p>1-2cm vuggy, drusy hematite - quartz veins</p> <p>grading coarse to fine uphole</p> <p>bedding 55°</p> <p>quartz veins with minor talc and iron oxide</p> <p>bedding 55°, minor quartz veins</p>	

DRILL NO.
TYPE

DRILLER

COMMENCED

COMPLETED

EXPLANATION
CASING IN HOLE DURING DRILLING

REFERENCES

HEAD OFFICE

DESIGNED BY **gln**

DRAWN BY **gc**

CHECKED BY

SHEET **5** OF **5**

DRAWING NO.

A P P E N D I X 2 - ASSAY RESULTS

D.D.H. 1

Sample Number	Depth Interval (downhole depth, in feet)	Assay Result Sn in p.p.m. - detection limit 50 p.p.m.
70/DN/2598	332.0 - 334.25	-50 *
2599	334.25 - 336.75	-50
2600	336.75 - 339.25	100
2601	339.25 - 341.75	50
2602	341.75 - 344.25	50
2603	344.25 - 346.75	-50
2604	346.75 - 349.25	-50
2605	349.25 - 351.75	-50
2606	351.75 - 353.5	-50
2607	353.5 - 356.0	-50
2608	356.0 - 358.5	-50
2609	358.5 - 361.0	-50
2610	361.0 - 363.5	-50
2611	363.5 - 366.0	-50
2612	366.0 - 368.5	-50
2613	368.5 - 371.0	-50
2614	371.0 - 373.5	-50
2615	373.5 - 376.0	75
2616	376.0 - 380.0	100
2617	380.0 - 382.5	-50
2618	382.5 - 385.0	100
2619	385.0 - 387.5	-50
2620	387.5 - 390.0	50
2621	390.0 - 392.5	-50
2622	392.5 - 395.0	-50
2623	395.0 - 397.5	-50
70/DN/2624	397.5 - 400.0	-50

* For '-50', read 'less than 50'.

D.D.H. 2

Sample Number	Depth Interval (downhole depth, in feet)	Assay Result Sn in p.p.m. - detection limit 50 p.p.m.
70/DN/2748	250.0 - 251.0	50
2749	263.0 - 264.5	-50
2750	277.5 - 280.0	-50
2751	280.0 - 282.5	-50
2752	282.5 - 285.0	-50
2753	285.0 - 287.5	-50
2754	287.5 - 290.0	-50
2755	324.0 - 325.0	-50
2756	326.0 - 328.5	-50
2757	328.5 - 331.0	-50
2758	331.0 - 333.5	-50
2759	333.5 - 336.0	-50
2760	336.0 - 338.5	-50
2761	338.5 - 341.0	-50
2762	341.0 - 343.5	-50
2763	343.5 - 346.0	-50
2764	346.0 - 348.5	-50
2765	348.5 - 351.0	-50
2766	351.0 - 353.5	-50
2767	353.5 - 356.0	-50
2768	356.0 - 358.5	-50
2769	358.5 - 361.0	-50
2770	361.0 - 363.5	-50
2771	363.5 - 366.0	-50
2772	366.0 - 368.5	-50
2773	368.5 - 371.0	550
2774	371.0 - 373.5	200
2775	373.5 - 376.0	50
2776	376.0 - 378.5	550
2777	378.5 - 381.0	-50
2778	381.0 - 383.5	-50
2779	383.5 - 386.0	350
2780	386.0 - 388.5	41000
70/DN/2781	388.5 - 391.0	3250

D.D.H. 2 (Continued)

70/DN/2782	391.0 - 393.5	550
2783	393.5 - 396.0	100
2784	396.0 - 398.5	300
2785	398.5 - 401.0	-50
2786	401.0 - 403.5	-50
2787	403.5 - 406.0	-50
2788	406.0 - 408.5	-50
2789	408.5 - 411.0	-50
2790	411.0 - 413.5	-50
2791	413.5 - 416.0	-50
2792	416.0 - 418.5	-50
2793	418.5 - 421.0	-50
2794	421.0 - 423.5	-50
2795	423.5 - 425.0	-50
2796	445.0 - 447.5	-50
70/DN/2797	447.5 - 450.0	-50

D.D.H. 3

Sample Number	Depth Interval (downhole depth, in feet)	Assay Result Sn in p.p.m. - detection limit 50 p.p.m.
71/DN/4056	149.0 - 150.0	200
4057	150.0 - 151.0	-50
4058	151.0 - 152.0	-50
4059	152.0 - 153.0	70
4060	153.0 - 154.0	50
4020	353.0 - 355.5	-50
4021	355.5 - 358.0	-50
4022	358.0 - 360.5	-50
4023	360.5 - 363.0	-50
4024	363.0 - 365.5	50
4025	365.5 - 368.0	100
4026	368.0 - 370.5	250
71/DN/4027	370.5 - 373.0	150

D.D.H. 3 (Continued)

71/DN/4028	373.0 - 375.5	125
4029	375.5 - 378.0	1200
4030	378.0 - 380.5	650
4031	380.5 - 383.0	700
4032	383.0 - 385.5	60
4033	385.5 - 388.0	-50
4034	388.0 - 390.5	-50
4035	390.5 - 393.0	85
4036	393.0 - 395.5	28000
4037	395.5 - 398.0	9250
4038	398.0 - 400.5	1500
4039	400.5 - 403.0	1200
4040	403.0 - 405.5	-50
4041	405.5 - 408.0	150
4042	408.0 - 410.5	850
4043	410.5 - 413.0	-50
4044	413.0 - 415.5	1900
4045	415.5 - 418.0	6300
4046	418.0 - 420.0	850
4061	420.0 - 422.5	-50
71/DN/4062	422.5 - 425.0	200

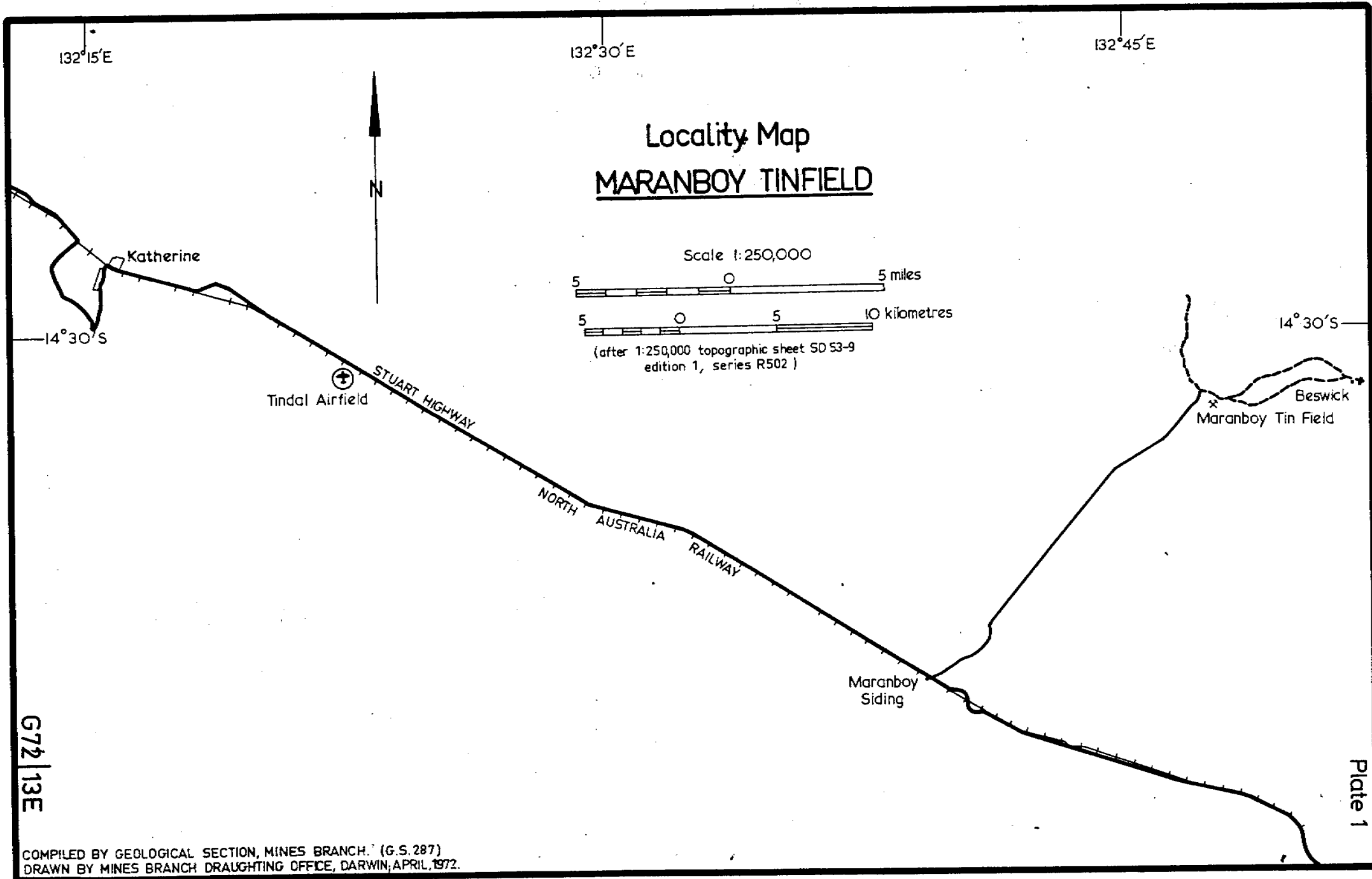
Sample Number	Depth (downhole depth, in feet)	Assay Results				
		Element: Sn	Pb	Zn	W	Mo
		Detection Limit:				
		50	10	2	25	20
		(all results in p.p.m.)				
71/DN/4055	230	-50	20	12	-25	-20
4054	270	-50	25	34	-25	-20
4053	300	70	25	39	-25	-20
4052	320	170	20	21	-25	-20
4051	330	130	85	44	-25	-20
4050	340	100	85	45	-25	-20
4049	345	-50	25	24	-25	-20
4048	350	120	40	23	-25	-20
71/DN/4047	352	-50	20	28	-25	-20

D.D.H. 4

Sample Number	Depth Interval (downhole depth, in feet)	Assay Results			
		Element: Detection Limit:	Sn 50	Pb 10	Zn 2
71/DN/4144	300.0 - 302.5		150	40	18
4145	302.5 - 305.0		-50	20	19
4146	305.0 - 307.5		-50	20	17
4147	307.5 - 310.0		-50	20	19
4148	310.0 - 312.5		-50	40	22
4149	312.5 - 315.0		-50	20	24
4150	315.0 - 317.5		-50	30	38
4151	317.5 - 320.0		50	30	35
4152	320.0 - 322.5		50	20	25
4153	322.5 - 325.0		-50	30	33
4154	325.0 - 327.5		-50	30	29
4155	327.5 - 330.0		50	20	22
4156	330.0 - 332.5		-50	20	19
4157	332.5 - 335.0		350	10	13
4158	335.0 - 337.5		150	20	12
4159	337.5 - 340.0		50	30	18
4160	340.0 - 342.5		50	-10	20
4161	342.5 - 345.0		50	-10	30
4162	345.0 - 347.5		50	40	27
4163	347.5 - 350.0		50	30	31
4116	350.0 - 352.5		-50	20	14
4117	352.5 - 355.0		-50	10	14
4118	355.0 - 357.5		-50	10	7
4119	357.5 - 360.0		110	20	9
4120	360.0 - 362.5		-50	20	10
4121	362.5 - 365.0		-50	20	12
4122	365.0 - 367.5		-50	-10	23
4123	367.5 - 370.0		-50	-10	14
4124	370.0 - 372.5		-50	10	16
4125	372.5 - 375.0		-50	20	26
4126	375.0 - 377.5		595	20	8
4127	377.5 - 380.0		240	20	38
71/DN/4128	380.0 - 382.5		-50	20	11

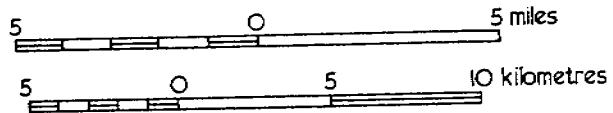
D.D.H. 4 (Continued)

71/DN/4129	382.5 - 385.0	-50	20	14
4130	385.0 - 387.5	-50	10	12
4131	387.5 - 390.0	-50	10	15
4132	390.0 - 392.5	-50	10	16
4133	392.5 - 395.0	-50	50	23
4134	395.0 - 397.5	-50	70	22
4135	397.5 - 400.0	-50	20	23
4136	400.0 - 402.5	-50	-10	14
4137	402.5 - 405.0	-50	10	16
4138	405.0 - 407.5	-50	10	11
4139	407.5 - 410.0	-50	10	64
4140	410.0 - 412.5	-50	10	30
4141	412.5 - 415.0	-50	10	11
4142	415.0 - 417.5	-50	20	34
71/DN/4143	417.5 - 420.0	-50	10	24



Locality Map MARANBOY TINFIELD

Scale 1:250,000

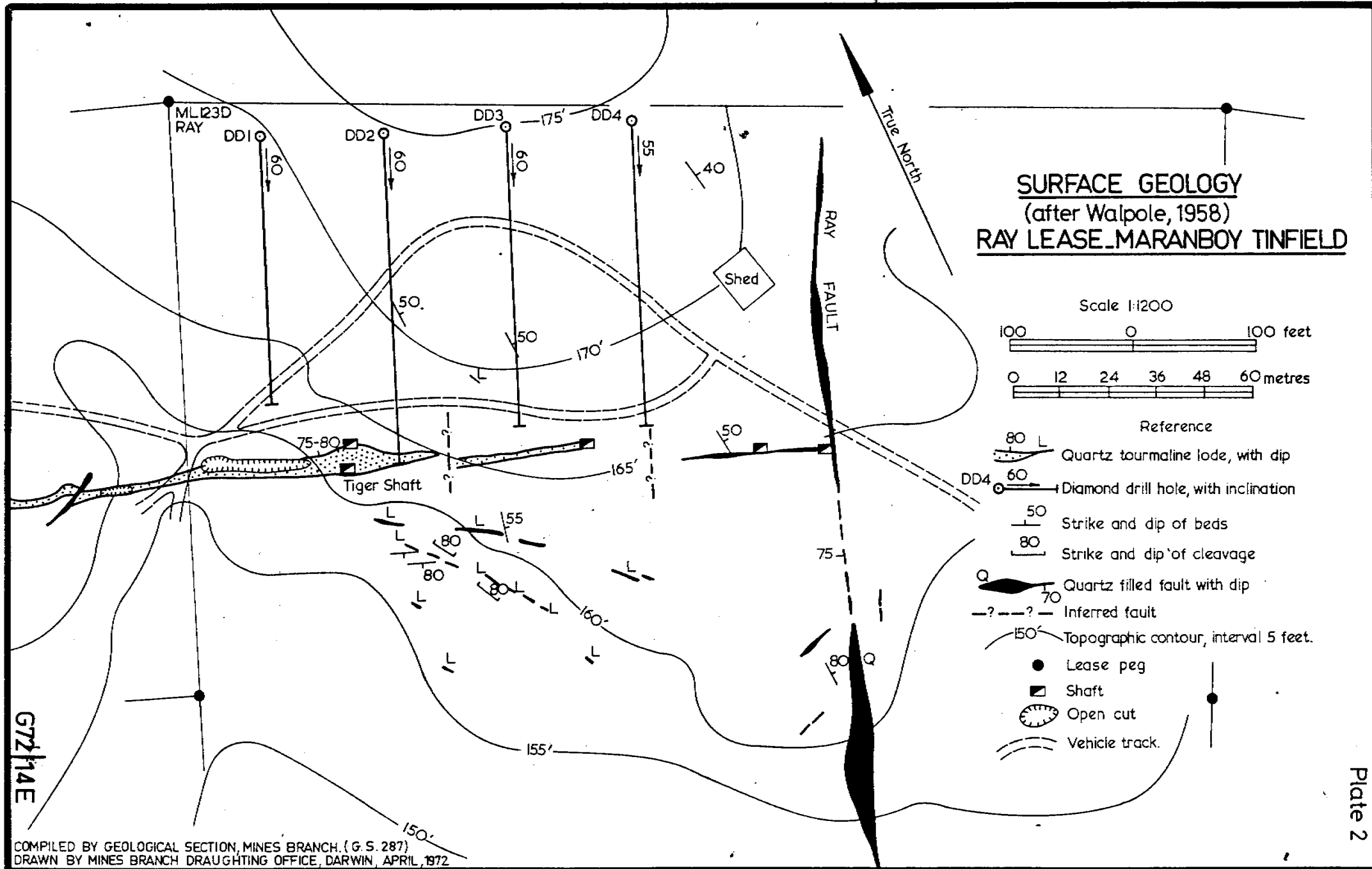


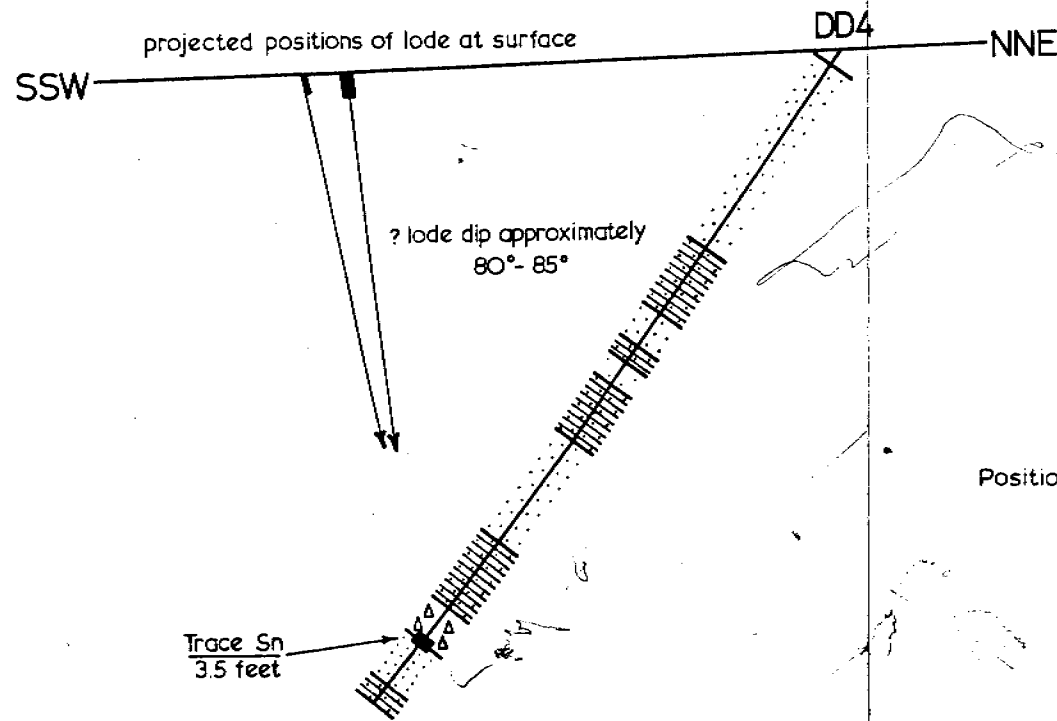
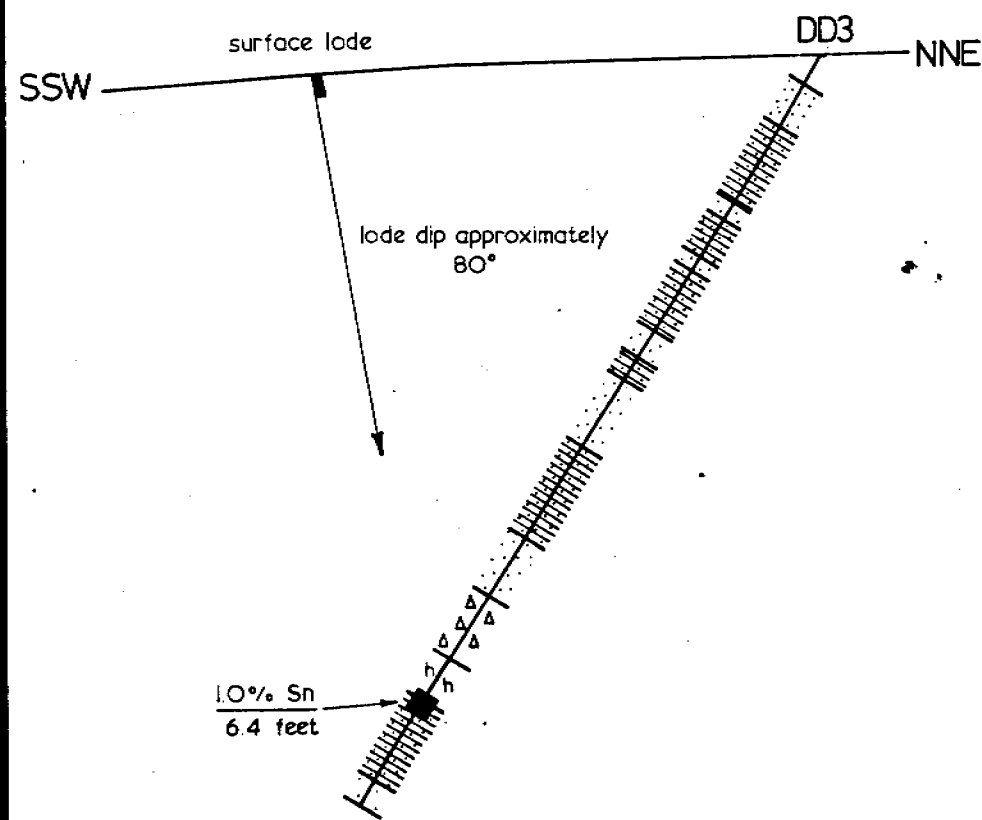
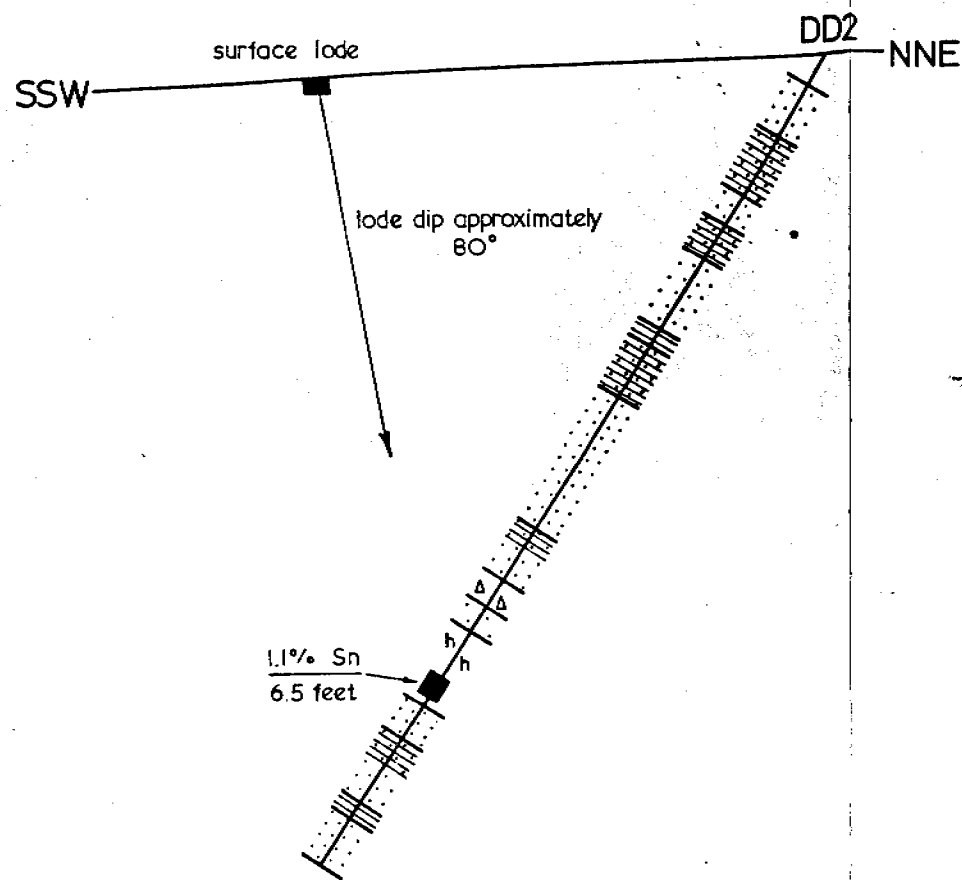
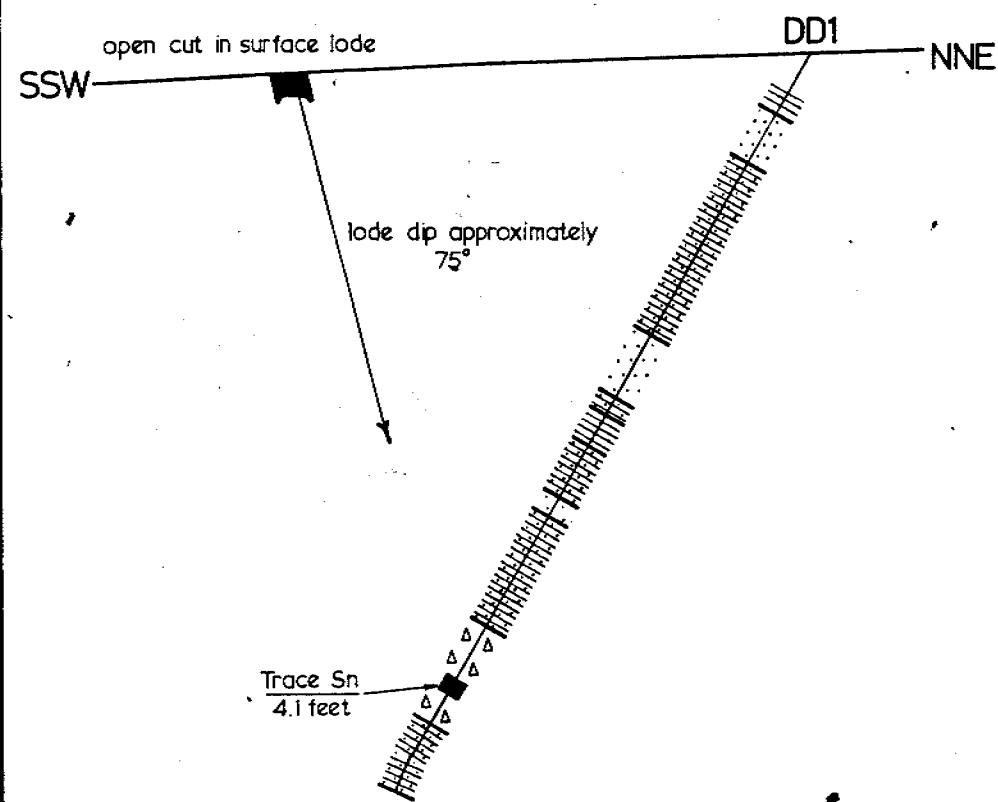
(after 1:250,000 topographic sheet 50 53-9
edition 1, series R502)

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DRAWN BY MINES BRANCH DRAUGHTING OFFICE, DARWIN, APRIL, 1972.

G72 13E

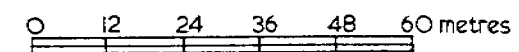
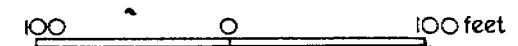
Plate 1





DRILL HOLE SECTIONS RAY LEASE-MARANBOY TINFIELD

Scale 1:1200



- Reference
- Mostly sandstone
 - Mostly siltstone
 - Interbedded sandstone and siltstone, individual beds not shown.
 - Brecciated sandstone or siltstone.
 - ? Hornfels' rock.

Tin percentage
— True width
(assuming lode dip of 80°)

Positions of lode at surface are from Walpole, 1958.