

X Mining Report Area  
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023001

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**ATION AND MINING SERVICES**

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**E.L. 1/92 - MATHINNA AREA  
NORTH-EAST TASMANIA  
ANNUAL REPORT 1992-93**

AMG REFERENCE POINTS ADDED

93-3425.

93-3425.

: Montroyal Mining N.L.  
P.O. Box 1073  
West Perth

prepared by: L.A. Newnham,  
B.Sc. F.A.I.M.M.  
Box 1002  
Devonport 7310

Ph: (004) 282 289  
Fax: (004) 282 781

**REPORT STATEMENT:**

E.L. 1/92 held by Montroyal Mining N.L., covers a 19 square kilometre area of the major Lyndhurst-Mangana gold belt, traditionally known as the Dans Rivulet Goldfield.

A small mining lease 5IM/72 of four hectares held by Cuttack Mining and Exploration N.L. occurs within E.L. 1/92.

Both tenements are subject to an agreement between Cuttack and Montroyal, with the latter as managers.

The area is considered to have potential to host steeply dipping, narrow, high grade vein gold deposits, suitable for underground mining utilising modern mechanised equipment.

If several such veins could be located in close proximity, it might be feasible to collectively mine them as one operation, feeding a centralised mill.

As an initial test of this exploration concept, a four hole core drilling program costing \$48,000 was completed on the O'Briens Mine during 1991-92. These holes, supplemented by previously completed Department of Mines holes, suggest a number of west plunging gold bearing lodes or shoots occur within a substantial 3-8 metre wide east-west structure known as O'Briens No. 1 Reef.

A detailed report on the drilling program follows below.

Drilling to date on this structure has been sparse and shallow and a further program of drilling to test the structure down plunge has been recommended.

The Havelock Mine lies 800 metres north of O'Briens in a similar geological setting.

The Havelock workings are more extensive than O'Briens, suggesting a more persistent reef structure.

No drilling has ever been completed at Havelock.

It is therefore recommended that when further drilling is undertaken at O'Briens, a couple of holes should be completed beneath the Havelock workings.

Expenditure on E.L. 1/92 during the first year of tenure (91-92) was \$5,510 as follows:

Consultants' fees:	4,500
General office expenses:	425
Rents:	<u>585</u>
	<u>\$5,510</u>

  
L.A. Newnham

023003

NEWNHAM EXPLORATION  
AND MINING SERVICES

**O'BRIENS GOLD MINE  
MATHINNA  
NORTH-EAST TASMANIA**

**REPORT ON DRILLING PROGRAM  
COMPLETED APRIL-MAY 1992**

Prepared For: Montroyal  
Mining N.L.,  
24 Outram Street  
West Perth 6872

By: L.A. Newnham, B.Sc.,  
F.A.I.M.M.  
Box 1002  
Devonport, 7310

Date: July 1992

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## 1. SUMMARY:

A four hole core drilling program totalling 433m. and costing \$48,000 was completed on the O'Briens Mine, North of Mathinna during April-May, 1992.

The purpose of the program was to test for extensions of mineralisation beneath existing shallow adits developed on the No. 1 and No. 2 gold bearing quartz reefs.

Three holes were drilled into the No. 1 Reef, and one hole into the No. 2 Reef.

The single hole into the No. 2 Reef intersected only very minor quartz veins in a sandstone-shale sequence and no further testing of this reef structure is recommended at this stage.

Drilling on the No. 1 Reef confirmed the presence of a significant structure 3-8m. wide, containing quartz-arsenopyrite-pyrite veins which carry coarse erratic gold. The reef dips steeply South and plunges West. Gold values obtained in the current drilling program were generally low, the best intersection being 3m. (true thickness) of 3.26g/t gold in hole GS2.

Interpretation of the limited existing drilling data on the No. 1 Reef suggests the reef may be displaced by a bedding plane fault. Potential remains for the structure to extend further West and down plunge of the 50m. deep zone already tested beneath the workings.

This potential can be most effectively assessed by way of a further drilling program of four holes, totalling 500m. and costing approximately \$55,000.

Further work on the No. 2 and No. 3 Reef structures is not warranted at this stage.

If a further drilling program is undertaken on the No. 1 Reef, consideration should also be given to drilling a hole beneath the Havelock Mine, 800m. North of O'Briens, where a reef structure very similar to the O'Briens No. 1 Reef was developed to a depth of 60 metres.

## 2. LOCATION AND TENURE: (Figs. 1, 2)

The Principal O'Briens Mine workings lie within Mining Lease 51M/72 of four hectares held by Cuttack Mining and Exploration N.L.

This Lease is surrounded by Mining Lease 1237 P/M of 96 hectares, also held by Cuttack.

Both these leases lie within Exploration Licence Application 1/92 of 19 square kilometres held by Montroyal Mining N.L.

All three tenements are subject to a Joint Venture Agreement between Cuttack Mining and Exploration N.L., and Montroyal Mining N.L. and its associated companies.

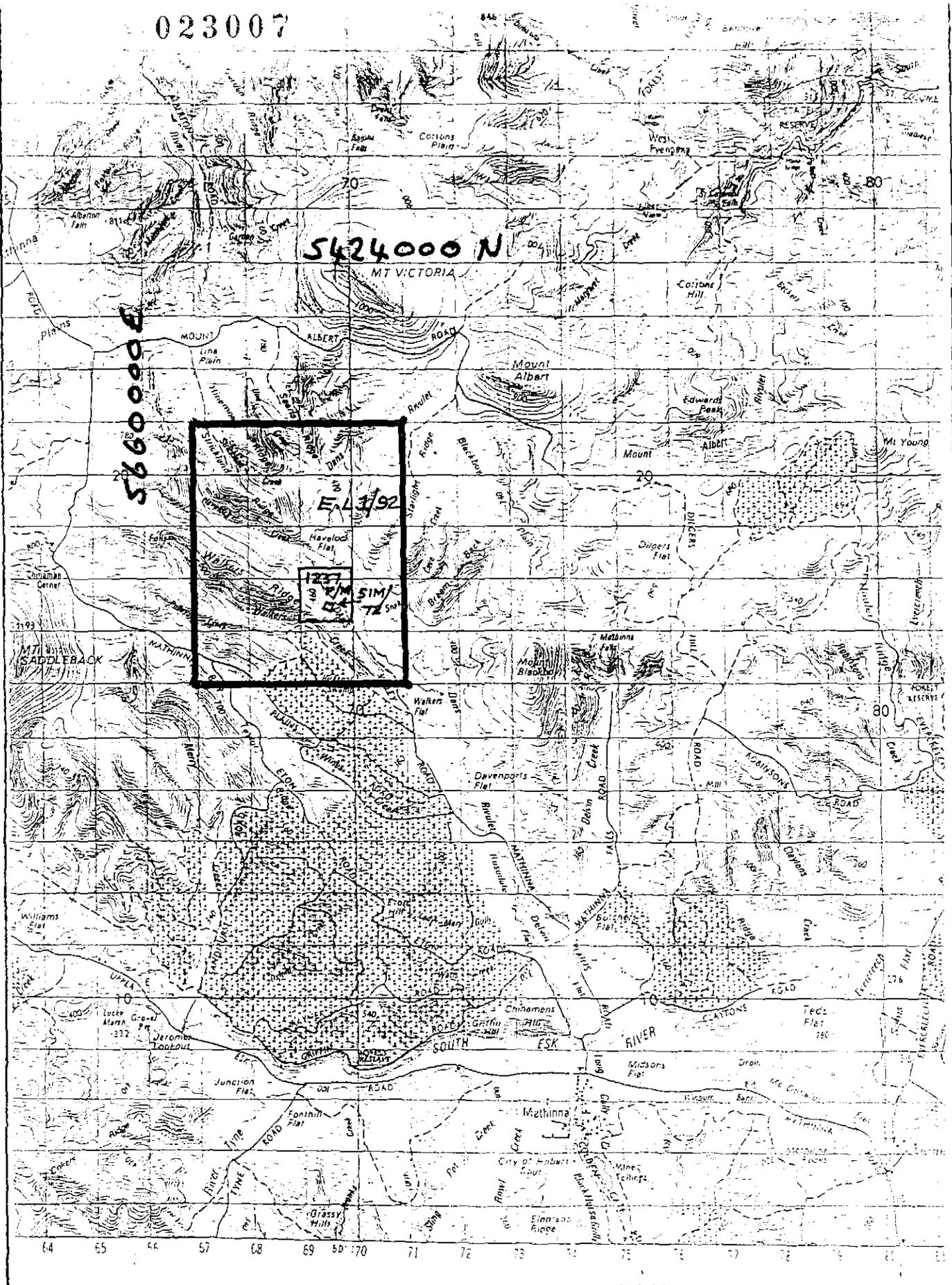
M.L. 51M/72 lies entirely within State Forest.

M.L. 1237P/M lies equally in State Forest and over private land owned by Mr H. and Mrs J. Rayner of Mathinna.

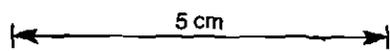
Similarly ELA 1/92 covers both State Forest and private property.

The O'Briens Mine lies approximately 10kms by sealed and all weather unsealed road North of Mathinna.

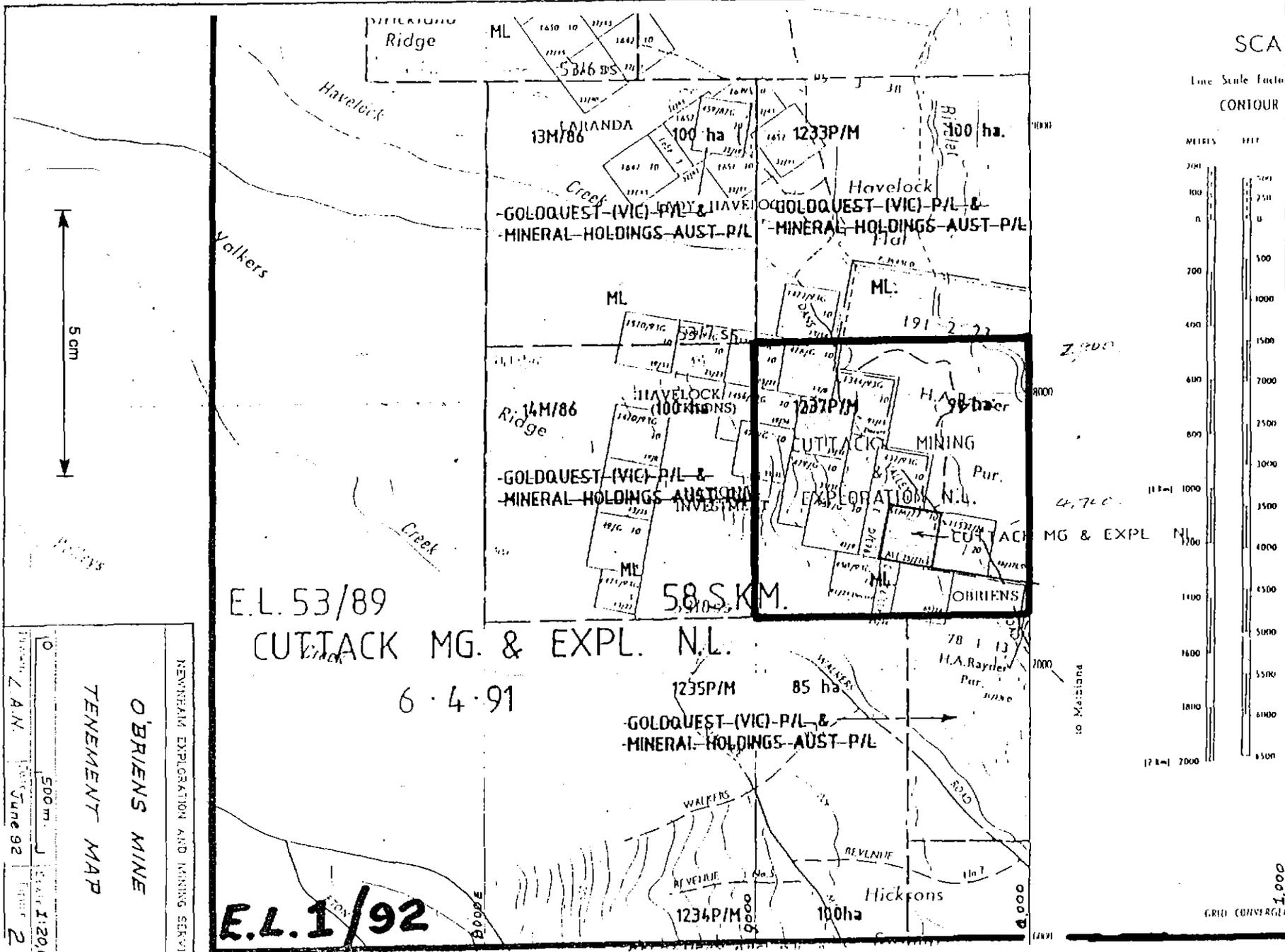
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AMG REFERENCE POINTS ADDED

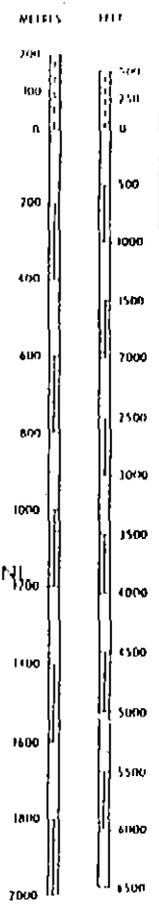


NEWNHAM EXPLORATION AND MINING SERVICES	
<b>O'BRIENS MINE</b>	
<b>LOCATION MAP</b>	
0 Km.	1:100,000
Drawn L.A.N.	June 92 Figure 1



SCALE 1:20 000

Line Scale Factor 1:20 000 for this sheet  
 CONTOUR INTERVAL 20 METRES



CONVERSION TABLE

METRES	FEET
1	3.2808
2	6.5616
3	9.8424
4	13.1232
5	16.4040
6	19.6848
7	22.9656
8	26.2464
9	29.5272
10	32.8080
100	328.08
1000	3280.8



METRIC MAP

KILOMETRES TO METRES

1	1000
2	2000
3	3000
4	4000
5	5000
6	6000
7	7000
8	8000
9	9000
10	10000

023008

MINERAL EXPLORATION AND MINING SERVICES  
**O'BRIENS MINE**  
**TENEMENT MAP**  
 Scale 1:20,000  
 Date June 92  
 Sheet 2

### 3. HISTORICAL BACKGROUND:

Primary gold was discovered at O'Briens in the 1870's. The deposit occurs within the North South trending Waterhouse-Mathinna-Mangana gold field.

Between 1889-1900, adits were developed on four reefs, and a shaft sunk to 48m. on the No. 1 Reef. The reefs as mined were typically narrow 0.5-1.0m. wide quartz-arsenopyrite veins carrying coarse gold. The major veins dipped steeply South along a strike close to AMG East-West, within a shale sandstone sequence which had a strike approximately 170° AMG and a 60° West dip.

Approximately 35,000gms of gold were produced from ore averaging 30-35g/t gold.

A more detailed description of the regional geology, historical background and mine workings is contained in:

"O'Briens Gold Mine, Eastern Tasmania  
Proposed Exploration Program"  
by L.A. Newnham, 22 January 1991.

In 1954-55, the Mines Department completed five shallow cored holes beneath the No. 1 Reef workings.

The first of these holes, MD1, intersected workings and thus failed to intersect reef.

The collars of the remaining four holes MD2, MD3, MD4 and MD5, were located during the current drilling program and were tape and compass surveyed relative to the workings and other drill holes. Collar dips and bearings on MD2, MD3 and MD4 were re-estimated.

These holes were drilled AX (30mm.) and were not down hole surveyed. Hole deviation may have been severe with AX equipment and external stepped, diamond set bits. Hence the locations of hole traces on the accompanying plans **must be regarded as approximate only.**

Results of these holes are summarised below:

Hole	Length (m)	Results
MD1	57	Hit workings
MD2	83.5	No significant intersection
MD3	49.4	Two quartz-arsenopyrite veins within a 4.5m true width reef structure: H.W. vein 0.5m 47g/t F.W. vein 2.5m 11.4g/t Reef structure 4.5m 9.9g/t
MD4	81.7	Minor quartz veins; not assayed
MD5	78.6	Three quartz-arsenopyrite veins within a 3m true width reef structure H.W. vein: 0.3m Nil (looked good) Middle vein: 0.35m 6.4g/t F.W. vein: 0.3m 4.0g/t

In 1989, Cuttack drilled three shallow holes into the No. 1 Reef. During the current program, the collar of the first of these holes was located near MD3 and the collar dip and bearing checked. The collars of the other two holes were not located. The second hole reportedly collared near MD5 and the third hole approximately midway between MD3 and MD5.

The upper sections of these holes were percussion drilled and the lower sections HQ-NQ cored. No down hole surveys were taken and because rods were breaking in-hole, it must be assumed that the holes suffered major deviation. Core recoveries were poor, and the data from these holes was not incorporated on the plans accompanying this report.

## 4. CURRENT DRILLING PROGRAM

### 4.1 Objectives

The overall exploration strategy in the general O'Briens Mine area is to locate sufficient narrow, high grade gold reefs which could collectively be mined using modern mechanised equipment, and which would form the basis of a medium sized commercial gold mining operation.

This current drilling program was designed, as part of that strategy, to test the down plunge extensions of the No. 1 and No. 2 Reefs approximately 50m beneath the existing workings.

Previous knowledge of the region suggested the No. 1 and No. 2 Reefs were single vein structures, striking approximately East West and dipping steeply (70-80°) to the South. The sandstone-shale host sequence was thought to strike 160-170° AMG and dip 60° to the West. Shoots of mineralisation within the reef structure were considered to be controlled by the intersection of the structure with specific stratigraphic units (ie) they would plunge West at approximately 60°.

The four drill holes were designed on the basis of these assumptions. Three holes tested the No. 1 Reef and one hole tested the No. 2.

### 4.2 Program Specifications:

Previous drilling in this region indicated major problems with core loss due to the soft, weathered nature of the rocks at shallow depths, and hole deviation due to the geometrical relationship between the reefs and stratigraphy.

Special attention was therefore directed to the design of the program to eliminate these problems.

The contractor engaged was owner-operator F.L. and D.L. Ortner Pty Limited, operating an extensively modified Mindrill F49J skid mounted rig with a 6m mast.

All sites were positioned on existing roads to minimise expense and environmental disturbance.

Because of the need to accurately position hole collars, the area was plane table and tape and compass surveyed prior to drilling.

Holes were fully cored (ie) there was no percussion or non-core drilling.

A short length (2-3m.) of H.W. casing was placed at each collar. The holes were then drilled HQ until reasonably competent ground was encountered, and then completed with NQ-2 barrels and chromed tubes.

Down-hole surveys were completed at approximately 40m. intervals using a single shot Eastman camera.

Holes remained quite straight with a slight tendency to steepen and swing West.

Bit life was excellent, being in excess of 200m. for both HQ and NQ-2.

Production rates of 30-50m./shift were achieved.

Core recoveries, particularly through the zones of maximum interest were generally 100%.

All core was logged and photographed and is currently stored at the office of this writer.

Core for assay was split on a diamond saw and assayed by Analabs in Burnie. Complete samples were fine pulverised to  $-75\mu$  and assayed for gold by fire assay fusion with AAS finish, and arsenic using a perchloric acid digestion with AAS finish.

#### 4.3 Results:

Complete drill logs and assay results appear as Appendices 1 and 2 respectively.

Results are plotted on attached Maps 1 and 2.

Following is a brief summary of each hole:

GS1: Designed to test the No. 1 Reef approximately 75m. vertically beneath the adit and 50m. beneath MD3.

It intersected a sequence of sandstones and minor shales. Between 69-100m., this sequence was extensively cut by narrow quartz veins carrying pyrite and occasional minor arsenopyrite. Gold values in these veins was very low, with the exception of a 30cm. (20cm. estimated true thickness) quartz-pyrite-arsenopyrite vein at the start of the interval which ran 2.58g/t Au and 1.35% As.

GS2: Collared on the same site as GS1.

Designed to test the No. 1 Reef between MD3 and GS1 approximately 40m. beneath the adit.

Intersected sequence of sandstones and minor shales. Between 77-85.4m. intersected a strongly fractured and quartz veined zone interpreted as the No. 1 Reef structure. Within this 5m. (true width) zone was 3m. (true width) 3.26g/t Au, 0.98% As, including a major vein (0.6m. true width) assaying 9 g/t Au, 2.9% As.

GS4: Designed to test the No. 1 Reef down plunge of MD3, close to MD5 and 45m. beneath tunnel level. Intersected sequence of sandstones and minor shales. From 71-84.6m., intersected a strongly fractured and quartz veined zone interpreted as the No. 1 Reef structure. Within this 8m. (true width) zone were three major quartz-pyrite-arsenopyrite veins:

71.9-72.8 (0.6m.) : 0.14g/t Au, 0.5% As  
77.4-78.4 (0.6m.) : 1.45 Au, 1.00 As  
83.0-85.0 (1.2m.) : 1.65 Au, 0.35 As.

GS3: Designed to test the No. 2 Reef approximately 50m. beneath the adit.

Intersected a sequence of sandstones and shales, cut by occasional thin quartz veins carrying minor pyrite. No significant reef structure was intersected and no core was split for assay.

#### 4.4 Interpretation of Results:

It is probable that the configuration of any gold bearing reefs at O'Briens will be strongly influenced by the geometrical relationship between the reef structures and the adjacent stratigraphy.

Prior to this drilling program, some confusion existed as to the attitude of stratigraphy. No outcrop from which bedding can be determined exists in the vicinity of No. 1 and No. 2 Reefs.

Bedding in core suggests stratigraphy dips West between 50-60° and strikes 160° AMG. This broadly agrees with outcrop observations above the No. 3 workings and at the Havelock Mine 800m. along strike to the North.

Traditional thinking on the No. 1 Reef was that it represented a single structure striking East West, dipping 70-80° to the South and plunging West with the stratigraphy.

However, the reef intersections in GS1, GS2 and GS4 do not support the concept of a single unbroken structure.

The reef in GS2 is reasonably close to the intersection in MD3, remembering that MD3 was unsurveyed. Yet the GS2 intersection lies significantly North of MD3 intersection. MD3 intersected two distinct quartz-veins whilst GS2 intersected only one.

Several explanations are possible:

- a) MD3 shallowed severely, and the reef between the adit-MD3-GS3 is near vertical, thereby making the intersection in GS2 correlate with MD3.
- b) the reef was displaced by a fault between GS2 and MD3.

- c) GS2 and MD3 intersected two different reefs. If this was so, then the reef in GS2 should exist in GS1, which it does not, and the reef in MD3 should be present higher up in GS1 which it is not. This possibility is therefore rejected.
- d) the collar survey of GS2 is inaccurate.

It is interesting to note that in the adit above MD3, the workings divided, suggesting that they may have attempted to follow both the HW and FW veins intersected in MD3.

In GS1, the narrow gold intersection at 70m. does not align with the No. 1 Reef structure. It may represent either a random narrow vein or the top of a new shoot developed at depth and South of No. 1 Reef.

Multiple en-echelon reefs of this type were a feature of the nearby Golden Gate Mine at Mathinna, where most had thin stringer tops not unlike that at 70m in GS1.

GS4 intersected a significant reef structure close to, and of a very similar nature to MD5 (ie) a 5-8m. true width reef structure carrying three major quartz-pyrite-arsenopyrite veins with significant gold. MD5 was unsurveyed, but its similarity to GS4 suggests it may have shallowed and swung West to some extent.

It is difficult to equate the reef structure intersections in GS4 and MD5 with the intersection in GS2.

To do so would require a dramatic flattening or a severe strike swing to the South-West. Neither of these trends is reflected in the workings—if anything, the western end of the workings indicates the reef to be swinging WNW.

However, the intersection in MD3 does align quite well with MD5 and GS4.

It is reasonable to assume that the 3-8m. wide reef intersections in MD3, GS2, MD5, GS4 are all in the main No. 1 Reef structure, but for structural (or survey?) reasons, it is difficult to align GS2 with the other three holes.

GS1 and MD2 would appear to have passed beneath the main No. 1 Reef structure.

MD4 to the West appears to have missed the structure. Three possible explanations are:

- (i) the reef structure rapidly dies out to the West. It is however difficult to accept that the strong 5-8m. wide structure in the adjacent MD5 and GS4 would diminish so rapidly.
- (ii) the hole shallowed and deviated West, thereby passing over the top of the main structure.
- (iii) the hole steepened significantly and did not reach the structure.

Although seven holes have now been completed into the upper part of the No. 1 Reef structure a reliable interpretation is hindered by the fact that four of these holes were unsurveyed down hole. However, a tentative summary interpretation follows:

The No. 1 Reef is a 3-8m. wide structure striking EW and dipping 70-80° South. Multiple quartz-pyrite-arsenopyrite veins are developed in this structure and these carry erratic quantities of coarse gold, closely associated with the arsenopyrite. The structure may have been disrupted by a bedding parallel fault which displaced the section of the reef beneath the fault to the North.

Holes GS4, MD5, MD3 all intersected the structure above this bedding plane fault. GS2 intersected the structure below the fault. MD2 may either not have reached the reef or passed beneath the mineralised structure.

Hole GS1 passed beneath the mineralised structure but may have clipped the top of a parallel reef 20m. to the South of the No. 1 Reef.

Hole MD4 may have passed over the top of the reef above the bedding plane fault or alternatively not reached the reef beneath the fault.

Drilling to date indicates the reef may have a strike length of 50m. at the elevations tested, but this is determined by the drilling pattern rather than by geological factors. The structure shows no signs of thinning down plunge.

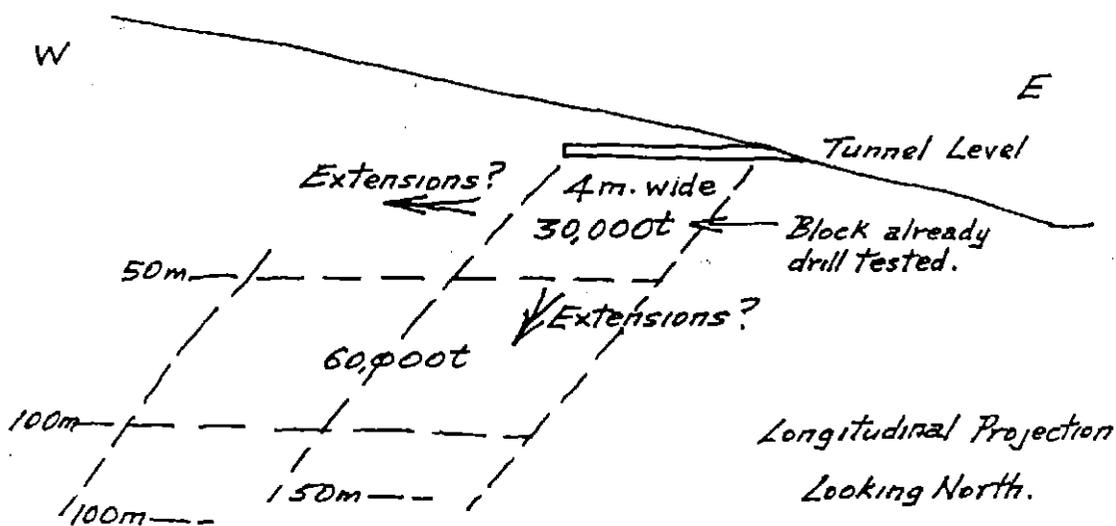
## 5. RECOMMENDATIONS:

Limited shallow drilling to a depth of 50m. beneath former workings suggests the O'Briens No. 1 Reef is a major 3-8m. wide structure carrying erratic coarse gold associated with quartz-pyrite-arsenopyrite veins.

Gold grades and tonnages indicated to date are unlikely to support a commercial underground narrow vein operations.

Scope exists for the reef to persist West and at depth, down plunge of the existing drilling. To be commercially attractive, grades would need to improve significantly in one or both of these directions.

The sketch below illustrates the order of tonnage potential on this style of structure.



There are no known geological factors for or against the reef continuing West or at depth and increasing in grade in either of these directions.

This strike and depth potential will only be realised by additional core drilling.

A four hole program totalling 500m. to further test this potential is shown on the attached plans.

Such a program would cost approximately \$55,000 to complete, and should include an accurate AMG survey of all surface features associated with the No. 1 Reef.

No further work on other reefs at O'Briens is recommended at this stage.



**COMPANY:** Goldstream Mining N.L.  
**PROJECT:** O'Briens Mine, Mathinna  
**HOLE NUMBER:** GS 1

Commenced	28 April 1992
Completed	04 May 1992
Logged By	L.A. Newnham
Drilled By	F. Ortner

Purpose
To test the O'Briens No.1 Reef beneath the No.1 tunnel workings.

Comments on Completion
Hole intersected a sequence of sandstones and minor shales. Between 69-100m., this sequence was extensively cut by narrow quartz veins carrying pyrite. Gold values in these veins was very low. The hole appears to have passed beneath the West plunging main shoot.

Collar Details

Northing	Easting	Elevation	Dip	Bearing	Grid
45m/223AMG from Main Shaft			60	352	AMG

Length
129.1m.

Collar between 5,417,00N - 5,417,600N and 569,500E - 569,700E

Down Hole Surveys		
Depth	Dip	Bearing
46.0	61.5	353
79.0	62.0	351

Core Size	
Interval	Size
0 - 3.0	HW
3.0 - 39.0	HQ
39.0-129.1	NQ-2

Significant Core Loss Zones	
Interval	% Recovered

Summary

Depth		Elevation		Recovery	Description	Assays				
From	To	From	To	%		Length	Au g/t	As%		
69.5	69.8			100	Quartz-arsenopyrite veins	0.3m.	2.58	1.35		



COMPANY: Goldstream Mining N.L.  
 PROJECT: O'BRIENS MINE  
 HOLE NUMBER: GS 1

Core Recovery				Description				Assays							
From	To	m.	%	From	To	Lithology and Mineralisation	Structure	From	To	Au(g/t)	As %	Au(Rep)			
				69.8	100.0	(continued) veins with coarse euhedral pyrite and rare arsenopyrite; unusual black sacchroidal sandstone 74.5-75.0; shales 76.6-80.6, qtz. veins in shales parallel bedding and poor in sulfides. Tension gash veins common adjacent to thicker quartz veins in sandstone;	BCA's generally 35' Broken quartz vein zone 81.6-82; Several joint directions, main 70' CA and bedding parallel	82.6	83.6	0.015	0.026				
								83.6	84.6	0.009	<0.01				
								88.7	89.7	0.014	<0.01				
								91.2	92.2	0.009	<0.01				
								100.0	100.8	0.016	<0.01				
								100.8	101.8	0.032	0.023	0.077			
								101.8	102.8	0.009	<0.01				
				100.0	101.9	Zone of more abundant quartz veining in light gray sandstones; veins vary in thickness from hairline to 20 cm. All veins contain pyrite and fine arsenopyrite	Main quartz vein 101.2-101.9 broken, remainder of unit competent; main joint direction 70' CA								
				101.9	129.1	Sandstone, massive, gray; with minor shale bands, occasional thin quartz veins, 10mm veins at 123.9, 125.1m. at 60' CA; veins generally unmineralised.	Sandstone competent with main jointing 65' CA; shales strongly fractured along bedding planes often with graphitic surfaces; BCA's 20-30'								
						END OF HOLE									

023020

**COMPANY:** GOLDSTREAM MINING N.L.  
**PROJECT:** O'BRIENS MINE  
**HOLE NUMBER:** GS 2

Commenced	05 May 1992
Completed	07 May 1992
Logged By	L.A. Newnham
Drilled By	F. Ortnier

Purpose
To test the O'Briens Reef midway between GS 1 and the Ho.1 Tunnel, close to the former intersection MD3

Comments on Completion
O'Briens Reef was represented by a 5m (true width) zone of intensely fractured and quartz veined sandstones, of which 3m, assayed 3.26g/tAu. The principal quartz-pyrite-arsenopyrite vein within this interval assayed 9.0g/t over 0.6m. The reef zone was of similar width but lower grade compared with MD3.

Collar Details

Northing	Easting	Elevation	Dip	Bearing	Grid
45m /223	AMG from Main Shaft		45	353	AMG

Length
87.5m

Collar between 5,417,400N - 5,417,600N and 569,500E - 569,700E

Down Hole Surveys		
Depth	Dip	Bearing
46.0	46.5	353
67.0	46.5	354

Core Size	
Interval	Size
0 - 2.0	HW
2.0 - 30.0	HQ
3.0 - 87.5	NQ - 2

Significant Core Loss Zones	
Interval	% Recovered

Summary

Depth		Elevation		Recovery	Description	Assays					
From	To	From	To	%		Length	Au g/t	As %			Au (File Assay)
77.7	82.7			100.0	Abundant quartz veins in strongly fractured sandstones,	5.0	3.26	0.98	(3m. true)		3.27
78.7	79.7				Major quartz-pyrite-arsenopyrite vein	1.0	9.00	2.90	(0.6m true)		

COMPANY: Goldstream Mining N.L.

Page No. 1

PROJECT: O'Briens Mine

HOLE NUMBER: GS 2

Core Recovery						Description		Assays							
From	To	m.	%	From	To	Lithology and Mineralisation	Structure	From	To	Au g/t	As %				
SUMMARY LOG:															
				0.0	2.0	No Core									
				2.0	63.5	Weathered sandstones with minor shale bands and occasional thin quartz veins.									
				63.5	66.9	Fractured sandstones with abundant quartz veins									
				66.9	77.0	Sandstones with minor shales and abundant thin quartz veins.									
				77.0	85.4	Zone of fractured sandstones and quartz veins with pyrite and arsenopyrite ( O'Briens Reef)									
				85.4	87.5	Sandstones and shales.									
DETAILED LOG															
0.0	2.0	0	0	0.0	2.0	No core - HW casing									
2.0	12.5	4.0	38	2.0	63.5	Sandstones with minor shale bands; Sandstones weathered, light brown. ironstained; shales soft and dark gray.	Soft, weathered and broken; numerous clay bands; jointing common at 30', 60' and bedding parallel at 40'	49.7	50.7	0.009	<0.01				
12.5	15.0	1.8	72			Minor qtz veins 2-5mm., throughout, widely spaced but increasing in abundance towards base of unit. No sulfides in veins.		54.1	55.1	0.008	0.015				
15.0	16.1	0.3	27			Veins at random orientations from 10-80° CA; 49-53m. zone of more intense veining, with fractured veins to 20mm.	BCA's throughout 40'	62.7	63.8	0.021	0.024				
16.1	18.1	1.2	60												
18.1	19.1	0.4	40												
19.1	21.0	1.5	79												
21.0	23.1	1.7	81												
23.1	25.1	1.8	90												
25.1	26.7	1.4	87												
26.7	28.0	0.7	54	63.5	66.9	Sandstone, strongly fractured with abundant qtz. veins throughout; no sulfides in veins.	Very broken core; all fracture surfaces iron stained; several brown clay zones	63.8	64.8	0.013	0.021				
28.0	29.5	1.4	93					64.8	65.8	0.008	0.020				
29.5	31.1	1.5	94					65.8	66.8	0.046	0.085				
31.1	32.9	1.7	94												
32.9	35.3	2.3	96	66.9	77.0	Sandstones and minor shale beds; Ssts. light gray brown, weathered and iron stained; shales dark gray, bedded and fissile, abundant thin (2-10mm) qtz.veins fractured, 70', 20'CA; coarse euhedral pyrite in all qtz. veins in fresher units.	Ssts. becoming competent and less weathered -fresh after 73m. Shale beds very broken. BCA's 40'	73.2	74.2	0.044	0.019				
35.3	36.9	1.2	75					74.2	75.2	0.095	0.010				
36.9	39.6	1.5	56												
39.6	41.1	1.4	93												
41.1	43.1	2.0	100												
43.1	43.8	0.5	71												
43.8	46.1	2.3	100												

023022

COMPANY: Goldstream Mining N.L.

PROJECT: O'Briens Mine

HOLE NUMBER: 6S2

Core Recovery				Description				Assays				
From	To	m.	%	From	To	Lithology and Mineralisation	Structure	From	To	Au g/t	As %	Au (Fire Assay)
46.1	48.4	1.8	78	77.0	85.4	Zone of major qtz. veining in highly fractured sandstones, (O'Briens Reef); ssts. strongly iron stained ? leached sulfides; 78.6-79.6m milky white qtz. vein with abundant arsenopyrite and pyrite; asp. gives vein a bluish-gray color in places; Qtz veins in remainder of unit contain abundant arsenopy. and pyrite.	Sandstones sheared and very broken; shearing 20' CA; major qtz. veins are more competent.	77.7	78.7	1.72	0.291	2.05
48.4	81.3	32.9	100					78.7	79.7	9.00	2.90	8.68
81.3	81.6	0.2	66					79.7	80.7	1.49	0.168	1.70
81.6	81.9	0.2	66					80.7	81.7	2.60	0.438	1.61
81.9	87.5	5.6	100					81.7	82.7	1.50	1.10	2.31
				82.7	83.7	0.008	0.012					
				83.7	84.7	0.016	0.037					
				85.4	87.5	Shales and sandstones; shales dark gray, ssts. light gray, occasional thin qtz. veins with coarse euhedral pyrite.	Ssts. fresh and competent; shales fissile and broken; jointing at 25' and 45' CA; BCA 25'					
						END OF HOLE						

023023

**COMPANY:** Goldstream Mining N.L.  
**PROJECT:** O'Briens Mine, Mathinna  
**HOLE NUMBER:** GS 3

Commenced	10 May 1992
Completed	13 May 1992
Logged By	L.A Newnham
Drilled By	F.Ortner

Purpose
To test the No. 2 Reef at O'Briens 50m. directly beneath the former workings.

Comments on Completion
Hole intersected only occasional thin quartz veins, carrying minor pyrite in a sequence of sandstones and shales. No significant reef structure was intersected and no core was therefore assayed.

Collar Details

Northing	Easting	Elevation	Dip	Bearing	Grid
80m./214AMG from No 2 portal		2	55	353	AMG

Length
100.2m.

Collar between 5,417,400N - 5,417,600N and 569,500E - 569,700E

Down Hole Surveys		
Depth	Dip	Bearing
39.0	56	350
81.0	57	356

Core Size	
Interval	Size
0.0 - 1.0	HW
1.0 - 24.0	HQ
24.0 - 100.2	NO-2

Significant Core Loss Zones	
Interval	% Recovered

Summary

Depth		Elevation		Recovery	Description	Assays							
From	To	From	To	%		Length							

COMPANY: Goldstream Mining N.L.  
 PROJECT: O'Briens Mine, Mathinna  
 HOLE NUMBER: GS 3

Core Recovery				Description				Assays							
From	To	m.	%	From	To	Lithology and Mineralisation	Structure	From	To						
				0.0	2.5	SUMMARY LOG: No core									
				2.5	53.3	Weathered sandstones with minor thin quartz veins after 40m.									
				53.3	100.2	Fresh sandstones with minor shale beds and several generations of thin quartz veins with minor pyrite, diminishing in abundance towards bottom of hole.									
						Detailed LOG:									
0.0	2.5	0	0	0.0	2.5	No core, HW casing.									
2.5	4.2	1.7	100	2.5	53.3	Sandstone with minor shale bands; ssts. light brown, weathered; shales reddish and gray, partially weathered; Minor thin (<10mm) quartz veins, widely spaced, at 20' and 60' CA;	Unit strongly weathered and leached; generally soft but competent with narrow broken shaley zones throughout. BCA's 40-50' throughout; Dominant joint directions 20', 30', 60', 70' CA.								
4.2	7.2	2.9	97			At 52.0m., 25mm quartz vein at 25' CA, and at 53.3m., 25mm vein at 15' CA: this marks sudden change to fresh ssts. and shales.									
7.2	10.2	2.8	93												
10.2	12.1	1.8	95												
12.1	14.7	2.0	77												
14.7	16.2	1.5	100												
16.2	19.2	2.8	93												
19.2	22.2	3.0	100												
22.2	24.0	1.5	83												
24.0	28.2	3.8	90												
28.2	28.8	0.6	100	53.3	100.2	Sandstones with narrow shale bands; ssts. fresh and dark gray, shales dark gray and black;	Generally fresh and very competent; shale bands are typically severely broken eg. 56.8-58.1m.								
28.8	31.2	2.3	96			Unit is cut by network of 1-10mm. quartz veins which are abundant 53.0-68.0m. but steadily diminish in abundance below that	Dominant jointing 30' and 60' BCA's generally 35'-45' throughout.								
31.2	34.2	3.0	100			Veins typically leached and iron stained and most carry minor coarse euhedral pyrite;									
34.2	36.4	2.1	95			Veins at wide variety of angles to CA: 10-80'; veins in shale bands usually parallel bedding; at 58.2m and 99.6m., 20mm veins terminate abruptly against shale beds;									
36.4	43.2	6.8	100												
43.2	46.1	2.8	96												
46.1	100.2	54.1	100												
						END OF HOLE									

023025

**COMPANY:** Goldstream Mining N.L.  
**PROJECT:** O'Briens Mine, Mathinna  
**HOLE NUMBER:** GS 4

Commenced	19 May 1992
Completed	20 May 1992
Logged By	L.A. Newnham
Drilled By	F. Ortner

Purpose
To test the O'Briens Reef down plunge (West) of previous intersections GS 2 and MD 3, in the general vicinity of MD 5.

Comments on Completion
GS 4 intersected a 13m wide reef structure, (8m true width). There were 3 major quartz-pyrite-arsenopyrite veins on the HW, FW, and centre of the zone. The HW and centre veins were approx. 0.7m wide; the FW vein 1.5m; gold values were low, thus this intersection is similar to the nearby MD 4- that is, wide strong

structure, but low gold

Collar Details

Northing	Easting	Elevation	Dip	Bearing	Grid
62m/241AMG	from Main Shaft		55	357	AMG

Length
115.0m

Collar between 5,417,400N-5,417,600N and 569,500E-569,700E

Down Hole Surveys		
Depth	Dip	Bearing
40	56.5	355
79	58	360
115	57	003

Core Size	
Interval	Size
0 - 3.0	HW
3 - 21.0	HQ
21 - 115.0	NQ-2

Significant Core Loss Zones	
Interval	% Recovered

Summary

Depth		Elevation		Recovery %	Description	Assays					
From	To	From	To			Length	Au g/t	As %			
71.9	72.8			100	Quartz, arsenopyrite, pyrite vein	1.0 (0.7)	0.143	0.503			
77.4	78.4			100	Quartz, arsenopyrite, pyrite vein	1.0 (0.7)	1.45	1.00			
83.0	85.0			100	Quartz, arsenopyrite, pyrite vein	2.0 (1.5)	1.65	0.346			

COMPANY: Goldstream Mining N.L.  
 PROJECT: O'Briens Mine, Mathinna  
 HOLE NUMBER: GS 4

Core Recovery				Description		Assays									
From	To	m.	%	From	To	Lithology and Mineralisation	Structure	From	To						
						<b>SUMMARY LOG</b>									
				0.0	3.0	No core									
				3.0	71.0	Sandstones with minor shale bands and occasional thin quartz veins.									
				71.0	84.6	Zone of abundant quartz veining in sheared and brecciated sandstones; three major veins carry several percent pyrite and arsenopyrite. (O'Briens Reef formation)									
				84.6	115.0	Sandstones with minor shale bands cut by numerous thin quartz veins containing pyrite and arsenopyrite.									
						<b>DETAILED LOG</b>									
0.0	3.0	0	0	0.0	3.0	No core, HW casing									
3.0	4.0	1.0	100	3.0	71.0	Sandstone with minor shale bands and occasional thin qtz. veins. Ssts. light brown, weathered, becoming light gray, fresh, towards base of unit; shale units generally < 20cm. thick, light brown and clayey near top of hole, becoming dark gray and fresh near base of interval; peculiar mottled dendritic pattern in weathered sandstones, possibly due to leached iron sulfides redepositing in fractured ssts. Qtz. veining commences below 25m: veins generally thin 3-5mm. but occasionally up to 20mm; orientation of veins variable but dominately 30' CA; No sulfides observed in veins which are strongly leached and iron stained. Veins in ssts. typically cut across bedding but follow bedding in shale units,	Soft and broken near top but becoming increasingly competent with depth; Dominant joint directions 10', 70' and bedding parallel in shales; BCA's 30-40' throughout unit.								
4.0	6.4	1.4	58												
6.4	8.8	1.8	75												
8.8	10.0	1.2	100												
10.0	11.8	1.5	83												
11.8	13.0	1.0	83												
13.0	15.7	2.2	81												
15.7	18.1	2.2	92												
18.1	19.6	1.4	93												
19.6	21.0	1.0	71												
21.0	115.0	94.0	100	71.0	84.6	Interval of intense quartz veining within a sheared and brecciated sandstone;									

023027

COMPANY: Goldstream Mining N.L.  
 PROJECT: O'Briens Mine, Mathinna  
 HOLE NUMBER: GS 4

Core Recovery				Description				Assays						
From	To	m.	%	From	To	Lithology and Mineralisation	Structure	From	To	Au g/t	As %	Au (Fire Assay)		
				71.0	84.6	...continued: Major Qtz-Arsenopyrite-Pyrite veins from 71.9-72.8m. 77.4-78.4m 83.0-85.0m Arsenopyrite is dominant sulfide in these veins with lesser pyrite, often coarsely euhedral; Orientation of major veins difficult to determine, possibly about 55° CA Ssts. between the major veins is brecciated and sheared and cut by narrow qtz.veins, suggesting the whole interval is a substantial fault zone.	Core reasonably competent but some qtz. veins intensively fractured, leached and limonitic. Jointing variable from 20-70'.	70.9	71.9	0.089	0.034			
								71.9	72.8	0.143	0.503			
								72.8	73.8	0.008	0.010			
								73.8	74.8	0.010	0.017			
								74.8	76.5	0.011	0.017			
								76.5	77.4	0.065	0.059			
								77.4	78.4	1.450	1.00		1.46	
								78.4	79.4	0.087	0.063			
								79.4	80.4	0.103	0.043			
								80.4	82.0	0.012	<0.01			
								82.0	83.0	0.162	0.045			
								83.0	84.0	0.727	0.243		1.17	
								84.0	85.0	2.580	0.449		2.10	
								85.0	86.5	0.175	0.123			
				84.6	115.0	Sandstones, with minor shale bands, cut by abundant thin mineralised qtz.veins; Sst. light gray, fresh; shale units dark gray-black, 20-30cm. wide; Qtz. veins vary in width from narrow 2-5mm. up to 35mm., and their anastomosing nature indicates several periods of veining; all veins carry some sulfides, generally coarse striated euhedral pyrite, often deposited in vugs; Intensity of veining diminishes down hole; Small spec gold(?) in thin qtz-asp-pyr. vein at 114.5m.	Ssts. fresh, generally competent; shales typically soft and broken, BCA's constant 35-40' throughout; Jointing directions at 30°, 50°, 70° plus bedding parallel joints at 40°. High angled joints often limonite stained;	87.0	88.0	0.019	0.013			
								89.5	91.0	0.012	0.013			
								91.0	92.5	0.104	0.038			
								92.5	93.2	0.021	<0.01			
								99.7	100.9	0.033	<0.01			
								103.0	104.0	0.060	<0.01			
								114.4	115.0	0.091	<0.01			
						END OF HOLE								

023028

023029



Phone (004) 316837

14 Thirkell St. DOOEE TAS 7520

Fax (004) 713390

## ANALYTICAL REPORT No.

104743.60.00018

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

INVOICE TO:

Goldstream Mining NL  
P.O. Box 1073  
WEST PERTH WA 6872

ORDER No.

PROJECT

L. NEWNHAM

DATE RECEIVED

RESULTS REQUIRED

27/05/92

ASAP

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OF RESULTS

DATE  
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OF COPIES

TOTAL No.  
OF SAMPLES

3

12/06/92

1

45

SAMPLE NUMBERS

SAMPLE DESCRIPTION

ELEMENT/METHOD

88 1 88.5-89.5/88 4 114.4-115.0

90 Free : 8P006, 8P009, 8P012

Au, Au(R), Au(B)/33309

45/BA101

RESULTS

TO

Goldstream Mining NL  
P.O. Box 1073  
WEST PERTH WA 6872

RESULTS

TO

Mr Lindsay Newnham  
Newnham Exploration & Mining Services  
P.O. Box 1002  
DEVONPORT TAS 7310

RESULTS

TO

REMARKS

  
AUTHORISED OFFICER

## ANALABS

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## ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

CLIENT ORDER No:

PAGE

106743.60.08818

12/06/92

L. NEWNHAM

1 OF 3

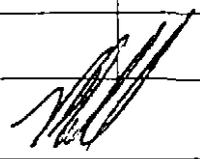
TEST No.	SAMPLE No.	Au	Au(R)	Au(S)	As				
	GS 1 68.5-69.5	0.013	-	-	200				
2	GS 1 69.5-69.8	2.580	-	-	13500				
3	GS 1 73.0-73.6	<0.008	-	-	<100				
4	GS 1 75.1-75.6	0.017	-	-	<100				
5	GS 1 80.6-81.6	0.025	-	-	<100				
6	GS 1 81.6-82.6	0.037	-	-	1410				
7	GS 1 82.6-83.6	0.015	-	-	260				
8	GS 1 83.6-84.6	0.009	-	-	<100				
9	GS 1 88.7-89.7	0.014	-	-	<100				
10	GS 1 91.2-92.2	0.009	-	<0.008	<100				
11	GS 1 100.0-100.8	0.016	-	-	<100				
12	GS 1 100.8-101.8	0.032	0.077	-	230				
13	GS 1 101.8-102.8	0.009	-	-	<100				
14	GS 2 49.7-50.7	0.009	-	-	<100				
15	GS 2 54.1-55.1	<0.008	-	-	150				
16	GS 2 62.7-63.8	0.021	-	-	240				
17	GS 2 63.8-64.8	0.013	-	-	210				
18	GS 2 64.8-65.8	0.008	-	-	200				
19	GS 2 65.8-66.8	0.046	-	-	850				
20	GS 2 73.2-74.2	0.044	-	-	190				
21	GS 2 74.2-75.2	0.095	-	0.043	100				
22	GS 2 77.7-78.7	1.720	1.790	-	2910				
23	GS 2 78.7-79.7	9.000	-	-	29000				
24	GS 2 79.7-80.7	1.490	-	-	1680				
25	GS 2 80.7-81.7	2.600	-	-	4380				

Results in ppm unless otherwise specified

T = element present but concentration too low to measure

X = element concentration is below detection limit

- = element not determined

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023032

## ANALABS

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## ANALYTICAL DATA

SAMPLE PREFIX

REPORT NUMBER

REPORT DATE

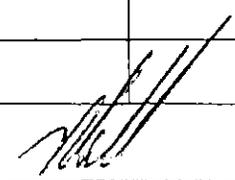
CLIENT ORDER No.

PAGE

		106743.60.08818				12/06/92		L. NEWNHAM		2 OF 3	
TUBE No.	SAMPLE No.		Au	Au(R)	Au(S)	As					
1	GS 2 81.7-82.7		1.500	-	-	11000					
2	GS 2 82.7-83.7		<0.008	-	-	120					
3	GS 2 83.7-84.7		0.016	-	-	370					
4	GS 4 70.9-71.9		0.089	-	-	340					
5	GS 4 71.9-72.8		0.143	-	-	5030					
6	GS 4 72.8-73.8		0.008	-	-	100					
7	GS 4 73.8-74.8		0.010	-	-	170					
8	GS 4 74.8-76.5		0.011	-	-	170					
9	GS 4 76.5-77.4		0.065	-	-	590					
10	GS 4 77.4-78.4		1.450	-	-	10000					
11	GS 4 78.4-79.4		0.087	-	-	630					
12	GS 4 79.4-80.4		0.103	0.113	-	430					
13	GS 4 80.4-82.0		0.012	-	-	<100					
14	GS 4 82.0-83.0		0.162	-	-	450					
15	GS 4 83.0-84.0		0.727	-	-	2430					
16	GS 4 84.0-85.0		2.580	-	-	4490					
17	GS 4 85.0-86.5		0.175	-	-	1230					
18	GS 4 87.0-88.0		0.019	-	-	130					
19	GS 4 89.5-91.0		0.012	-	-	130					
20	GS 4 91.0-92.5		0.104	-	-	380					
21	GS 4 92.5-93.2		0.021	-	-	<100					
22	GS 4 99.7-100.9		0.033	0.014	-	<100					
23	GS 4 103.0-104.0		0.060	-	-	<100					
24	GS 4 114.4-115.0		0.091	-	-	<100					
25											

Results in ppm unless otherwise specified  
 T = element present, but concentration too low to measure  
 X = element concentration is below detection limit  
 - = element not determined

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 12/06/92



# ANALABS

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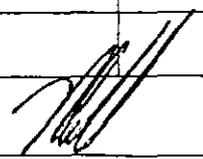
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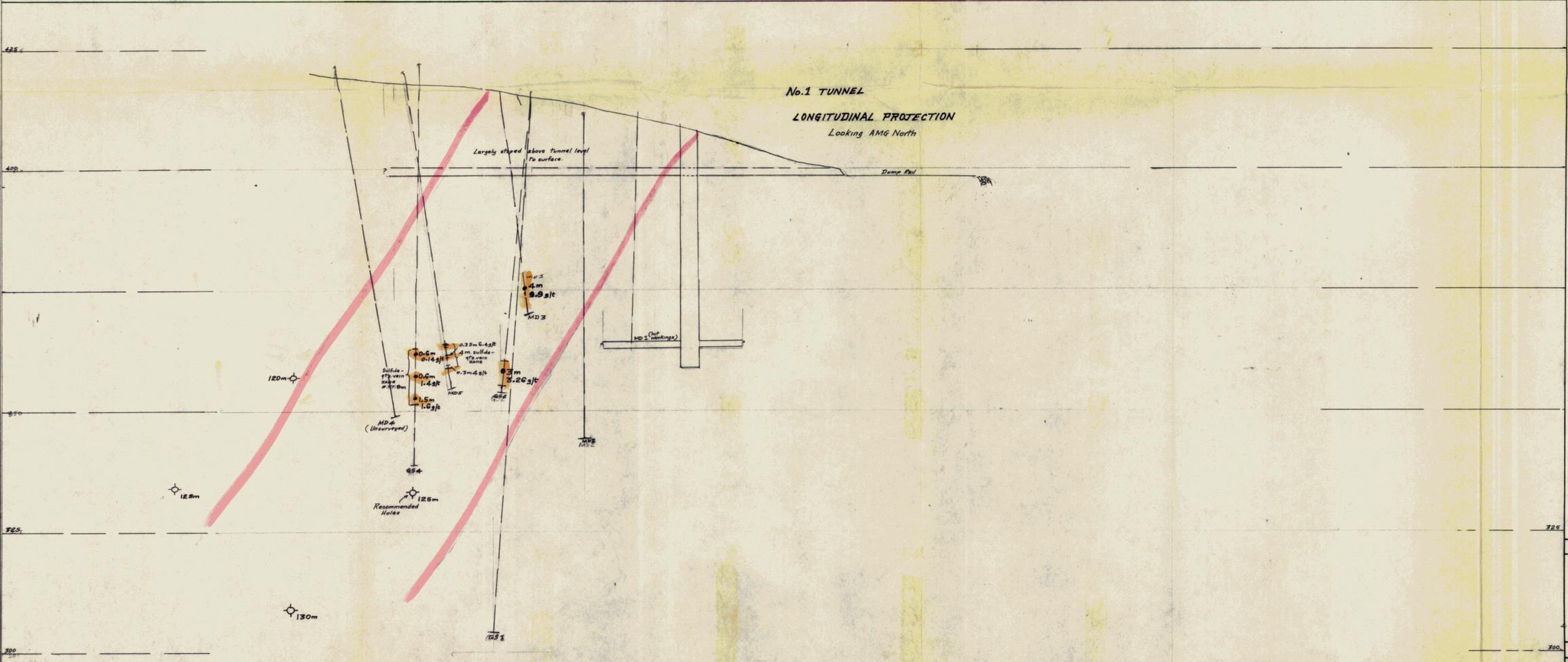
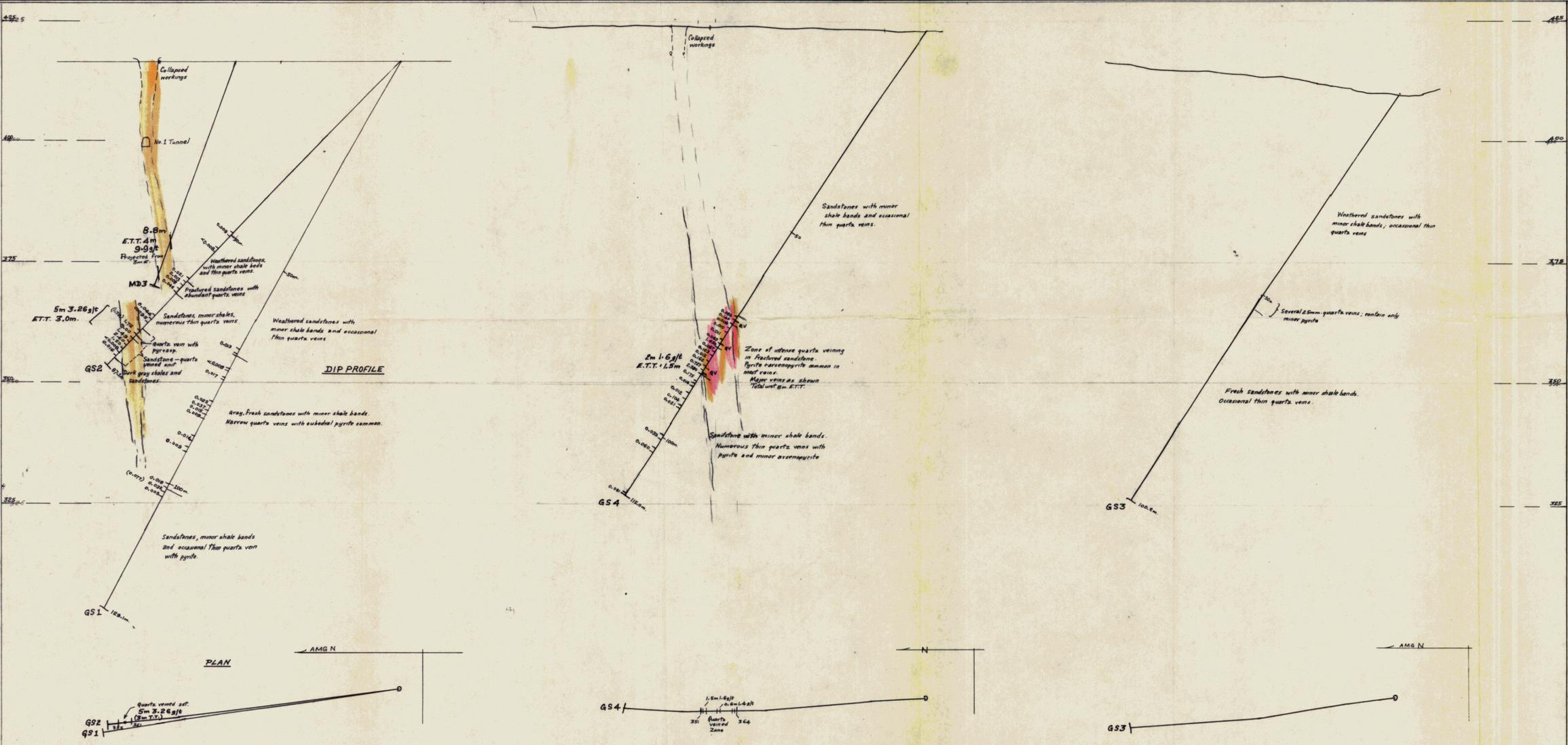
SAMPLE PREFIX      REPORT NUMBER      REPORT DATE      CLIENT ORDER No.      PAGE

SAMPLE PREFIX		REPORT NUMBER	REPORT DATE	CLIENT ORDER No.	PAGE
		106743.60.06818	12/06/92	L. NEWNHAM	3 OF 3
TUBE No.	SAMPLE No.	Au	Au(R)	Au(S)	As
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20	N.B. RESULTS INDICATE Au EXISTS IN REASONABLE COARSE PARTICLES.				
21	As RESULTS GREATER THAN 1% EXCEED THE UPPER RANGE FOR METHOD				
22	GA101. XRF IS RECOMMENDED AS A MORE ACCOURATE METHOD OF ANALYSIS				
23	DETECTION	0.008	0.008	0.008	100
24	UNITS	ppm	ppm	ppm	ppm
25	METHOD	GG309	GG309	GG309	GA101

Results in ppm unless otherwise specified  
 - Element present but concentration too low to measure  
 X - Element concentration is below detection limit  
 - Element not determined

AUTHORISED OFFICER





023034

5cm

NEWHAM EXPLORATION AND MINING SERVICES

O'BRIENS MINE

DRILLING PROGRAM 1992

DRILL HOLE SECTIONS AND LONGITUDINAL PROJECTION

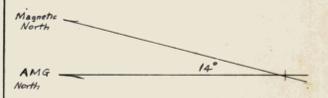
Scale: 1:500

Drawn: L.A. Newham Date: June 1992 Figure:



569700

569600



Grid: The grid lines on this plan are approximately AMG parallel, but they do not correspond to specific AMG lines. (a) The grid is not co-ordinated.

Survey Data: The location of underground workings was taken from 1890 and 1884 Mines Department Maps. Locations of surface workings, roads, drill reefs were obtained by a combination of plane table surveying and tape and compass measurements. Spot elevations calculated from plane table surveying and are relative to Sta L, near Main Shaft. Drill holes were surveyed down hole approx 40m with single shot camera (no series sets). Mines Department drill holes (no series) have not surveyed down hole.

023035

NEWHAM EXPLORATION AND MINING SERVICES

**O'BRIENS MINE  
WORKINGS, ACCESS AND  
DRILL HOLE INFORMATION**

Scale 1:500  
Drawn: Z. A. Newham Date: June 92 Figure:

5417, 600

5417, 500

5417, 400

569500