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E.L. 9/66 ANNUAL REPORT

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1. SUMMARY:

During 1987-88, encouraging drilling results on the Henty gold deposit were obtained from both a shallow drilling program designed to test the variability and continuity of the mineralisation, and a deep drilling program aimed at indicating the larger but deeper potential of the deposit.

In view of these results, it has been decided to spend \$3.8M during 1988-89 on the further exploration of the deposit by way of underground development of the shallow mineralisation and further testing of the deeper potential by core drilling from the surface.

In support of the underground program, extensive geomechanical, environmental, metallurgical and engineering studies have been completed.

Pending Government approvals, it is anticipated that both the underground work and surface drilling should commence in August-September.

Application has been lodged for the granting of a 100ha. Mining Lease over the central section of the deposit, thereby reducing the area of the E.L. to 14 sq. kms. It is proposed that the Exploration Licence be replaced by a Retention Licence of 10 sq.k.

2. INTRODUCTION:

E.L. 9/66 is a 15 sq. km. Exploration Licence held by the Mt. Lyell Mining & Railway Co. Ltd., covering the Henty gold deposit, 30 kms. North of Queenstown.

It is explored under a Joint Venture Agreement with the beneficial parties being Renison Goldfields Consolidated Limited (64.7%) and Little River (Resources) Limited (35.3%).

Since the initial discovery of gold in the area in 1983, major annual core drilling programs have been undertaken. These programs have succeeded in outlining a broad steeply dipping zone of mineralisation and alteration in the footwall of the Henty Fault. Within this broad zone which is characterised by low levels of base and precious metals, is an interval or intervals of high grade gold, which appears to be very variable in both thickness and grade.

In order to better determine the commercial viability of the deposit, it is proposed to further explore its upper sections from underground, whilst at the same time continuing to explore its larger potential by way of deep drilling from surface. The underground exploration program involves accessing the deposit approx. 130m. beneath surface by way of a 900m. long decline. A 200m. long drive in the mineralisation will facilitate the taking of bulk samples for metallurgical testing and allow the continuity of mineralisation and variability of gold grades to be more thoroughly assessed. A 4000m. program of infill core drilling is also planned from the decline.

Following completion of this program in early 1989-90, it is hoped that a decision on the future commercial development of the deposit can be made.

In order to enable this program of work to proceed, application has been lodged for a 100ha Mining Lease over the area. However, because firstly deep mineralisation is likely to extend outside of this MLA area, and secondly more area would be required should a full scale mining operation be established, it is proposed that the Exploration Licence be replaced by a 10 sq.k. Retention Licence as shown on Map 1.

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3. WORK COMPLETED 1987-88:3.1 Geological:3.1.1 Drilling

In March 1987 a major drilling program (6,500 m.) was begun to carry out close-spaced infill patterns around two previously obtained encouraging gold intersections and to test the gold system along strike and down-dip of the known mineralisation. At the time of the 1986/87 Annual Report (Cartwright, 1987) eight of the holes (HP14-HP21) had been completed, logged and assayed. This program of drilling has now been completed. A further eighteen holes were drilled with sixteen of these intersecting the mineralised zone between 2,600 RL and 2,300 RL (approx. surface to 300 m. below surface). Two deeper holes HP34 and HP42 were attempted. HP34 was unfortunately abandoned in the Henty Fault Zone, but HP42 intersected a wide high grade gold zone (10 m horizontal width at 55.8 g/t Au) at approx. 2,150 m RL. Eight holes were also drilled along the proposed route of the decline to study ground conditions. Results of all these holes are outlined below.

Two rigs were operating during most of the year at the Henty prospect. The shallow holes, intersecting mineralisation less than 200 m below surface, were drilled by East Coast Drilling using a Longyear 38. The deeper holes were drilled by Diamond Drilling (Tas) with a Longyear 44 rig. The series of relatively short (less than 200 m) holes along the proposed decline were also drilled by East Coast Drilling using the Longyear 38 rig.

All holes were surveyed at regular intervals using an Eastman single shot camera and their collar positions surveyed by Renison Limited. Details of the holes are summarised in Table 1. All holes have been logged and photographed, with sections of the mineralised zones being split and assayed. The core is routinely assayed for Au (fire assay), Ag, Cu, Pb, Zn, As, Bi.

TABLE 1

<u>Hole No.</u>	<u>Collar Coordinates</u>		<u>Collar</u>		<u>AMG</u>	<u>E.O.H.</u>
	<u>mN</u>	<u>mE</u>	<u>RL</u>	<u>Degrees</u>	<u>Bearing</u>	<u>Length m</u>
HP22	5364361.2	380096.4	2597.9	-59	096	232.7
HP23	5364011.4	379971.2	2600.8	-64	076	305.7
HP24	5364462.3	380189.6	2612.5	-60	090	167.2
HP25	5364059.3	379992.0	2588.7	-60	096	245.8
HP26	5364363.1	380162.8	2614.0	-54	105	313.4
HP27	5364156.6	380016.1	2586.8	-59	095	269.0
HP28	6364218.7	379961.4	2588.3	-65	090	379.8
HP29	5364486.0	380247.2	2624.9	-45	070	96.1
HP30	5364409.7	380232.4	2629.9	-40	101	61.0
HP31	5364152.6	379960.8	2589.7	-68	090	391.7
HP32	5364153.0	380050.0	2583.1	-53	090	206.6
HP33	5364103.1	380067.9	2581.2	-60	090	183.2
HP34	5364356.0	379949.1	2595.0	-66	090	284.0
HP34A	5364356.0	379949.1	2595.0	-63	091	227.3
HP35	5364051.9	380076.5	2579.1	-68	090	174.0
HP36	5364401.5	380177.5	2610.0	-56	090	173.4
HP37	5364774.4	380148.2	2618.9	-62	091	331.1
HP38	5363550	379900	2570	-54	090	286.5
HP39	5363902.9	380190.8	2598.6	-40	089	28.0
HP40	5363901.7	380207.1	2604.7	-44	072	58.4
HP41	5363955.1	380216.4	2606.7	-44	090	81.4
HP42	5363879.6	379675.1	2656.6	-66	103.5	692.5
HP43	5364045.4	380203.5	2606.8	-90	43	171.8
HP44	5364144.0	380194.5	2605.5	-48	090	178.3
HP45	5363901.7	380207.1	2604.7	-44	072	106.0
HP46	5364483.3	380247.0	2624.9	-45	112.0	217.4

3.1.2 Drilling Results:

Full logs including assays are included as Appendix 1. A summary of assay results from the holes is given in Table 2. The holes are plotted in plan view in Figure 2 and mineralised intersections and grades are plotted in longitudinal projection in Figure 3. Holes HP22, 24, 26, 29, 30 and 36 have been drilled into the northern part of the presently known mineralisation completing and stepping-out from the 50 m sq. pattern designed around HP9. Holes HP23, 25, 27, 28, 31, 32, 33, 35, were drilled further to the south completing the pattern of drill holes initially focused around the intersection in HP4. A recognizable mineralised zone is consistently intersected in the footwall of the Henty Fault, but assay results are quite variable as shown in Table 2.

HP37 was drilled 300 m to the north of the known mineralisation and although the footwall rocks were strongly altered it failed to intersect the mineralised zone. No core was assayed. HP38 was drilled well to the south of the present drilling (536 3550 m N-AMG) and although it intersected a weakly developed zone of mineralisation it failed to return an assay value of greater than 0.1 g/t Au.

HP34 was a step-out hole down-dip of the close-spaced drilling designed to intersect mineralisation at approximately 2,250 m RL. The initial HQ hole HP34 was abandoned because of excess flattening, and a NQ hole (HP34A was drilled off a casing wedge). Drilling difficulties were encountered drilling the Henty Fault which necessitated reduction to BQ and finally abandoning of the hole. A Hall Rowe wedge was positioned above the Henty Fault and a second NQ hole (HP34B) was drilled off the wedge. Unfortunately this hole also became bogged in the Henty Fault and had to be abandoned.

HP42 was designed to test mineralisation at 2150 RL (450 m below surface) and approximately 150 m to the south of HP12 which previously intersected 3 m at 22 g/t Au. Drilling difficulties were again encountered in the Henty Fault Zone necessitating a reduction to NQ size core, but the hole was able to be completed. Two broad zones of mineralisation were intersected in HP42, an upper zone from 591.4 to 620 m. (25.9 m horizontal width) and a lower zone from 637 to 651 m downhole (12.7 m horizontal width). Assay results are summarised below for a 4 g/t Au cut-off:

<u>Interval</u>	<u>Horizontal Width</u>	<u>Au (g/t)</u>	<u>Ag (g/t)</u>
597-608	10.0	55.8	22
638-639	0.9	18.1	32
645.9-649	2.8	12.5	32

TABLE 2

Hole No.	Intersections based on 0.5 g/t Au Cut-off				Intersections based on a 4 g/t Cut-off			
	From	To	Horizontal Width m	Au (g/t)	From	To	Horizontal Width m	Au g/t
HP22	181.2	187.5	5.7	1.0				
HP23	258.0	260.0	1.6	2.0				
HP24	117.2	126.3	6.9	13.9	117.2 125.3	119.6 126.3	1.8 0.8	44.9 17.0
HP25	216.7	218.4	1.4	18.4	217.7	218.4	0.6	40.1
HP26	111.0	115.0	3.6	2.5	111.0	112.0	0.9	5.8
HP27	226.6	228.6	1.7	2.6				
HP28	318.2	322.2	3.6	4.0	318.2	322.2	3.6	4.0
HP29	23.0	27.1	3.3	0.6				
HP30	24.3	25.3	1.0	0.5				
HP31	533.5	535.4	1.5	5.8	533.5	535.4	1.5	5.8
HP32	167.6	175.6	7.3	3.0	167.6	186.6	0.9	17.1
HP33	138.8	139.4	0.5	1.9				
HP34	Deep intersection abandoned in Fault							
HP35	108.5	109.5	0.8	1.2				
HP36	107.9	108.9	0.8	14.5	107.9	108.9	0.8	14.5
HP37	No mineralised intersection - Not Assayed							
HP38	Weakly mineralised intersection - No assay >0.5 g/t							
HP42	591.4	619	25.0	22.8	597 incl 603	608 608	10.0 4.5	55.8 110.0
	637	642	4.5	4.6	638	639	0.9	18.1
	645.9	650	3.7	9.7	645.9	649	2.8	12.5
	Holes 39, 40, 41, 43, 44, 45, 46 & 15 cont are geomechanical holes drilled along the proposed decline. These holes have not been assayed to date.							

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The upper interval includes 4.5 m (H.W.) averaging 110.0 g/t Au. Visible gold was seen in the core from 605 -607 m. Gold mineralisation occurs within intense silica-sericite alteration and is associated with quartz-base metal mineralisation. The best gold values including the main zone from 597 to 608 m are also associated with carbonate alteration occurring in late microfractures. Wide spread silica-sericite-pyrite alteration occurs throughout the footwall sequence and is still present in the end of the hole.

Eight geotechnical holes (HP39, 40, 41, 43, 44, 45, 46, & 15 cont.) were drilled along the route of the proposed decline. RQD measurements were taken on all these holes as well as previously drilled holes near to the decline position. Minor patches of mineralisation occur within these holes, which will be assayed once the core is no longer required for geotechnical purposes.

### 3.1.3 Geology:

A review of the geology in the drilling to date at the Henty prospect was carried out by G.O. Arnold (February, 1988). Most of the drilling has collared in the Central Sequence Volcanics of the Mt. Read Volcanics which form the hanging wall to the Henty Fault. These consist predominantly of pink to green feldspar-phyric volcanics and fine-grained mafic intervals. The hanging wall rocks become quite sheared as the fault zone is approached. The fault zone consists of mylonitic rocks and puggy crush zones. The crush zones typically occur close to the footwall of the Henty Fault. It is these crush zones which can be over 10 m wide that cause most of the drilling problems. Exotic blocks of black shale can occur in the fault sequence.

The footwall rocks consist of Tyndall Group Cambrian volcanics overlain to the east by Newton Creek Sandstone. Arnold proposes a two-fold division of the Tyndall Group:

Lower Tyndall Group - felsic volcanoclastics generally lacking epiclastic textures. They are probably of pyroclastic origin and may contain some lavas. Sparse quartz phenocrysts are typical.

Upper Tyndall Group - dominated by poorly sorted epiclastic textures and containing abundant sub-rounded clasts, which vary in grainsize from ash to blocky.

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The Newton Creek Sandstone is characterised by interbedded black slate and siliclastic conglomerate. The Upper Tyndall epiclastic units appear to be conformable with, and in places facies equivalents of, lower Newton Creek Sandstone.

Mineralisation to date is predominantly confined to the Lower Tyndall Group adjacent to the Henty Fault Zone. A mineralised zone is recognizable within the Tyndall Group which can be correlated from hole to hole, and broadly corresponds with a 0.1 g/t Au cut-off. This zone generally varies from 10-30 m wide within which higher grade (greater than 4 g/t Au cut-off) intersections occur. Four styles of mineralisation have been identified based on geology and geochemistry:

- (1) Massive pyrite; high Au, As, Ag, Bi values and low base metals, especially zinc.
- (2) Silica-carbonate-vein; high Au, Ag, Bi values and low base metals.
- (3) Base metal zone; Au with anomalous Pb and Zn.
- (4) Copper zone; anomalous Au and Cu.

The mineralised zones are typically surrounded by silica-sericite-pyrite alteration containing low levels of Au Ag and Bi. Intense silica alteration is also widespread in the footwall rocks both in the Lower and Upper Tyndall Volcanics.

Stratigraphic correlations in the footwall rocks are difficult because of the intense alteration, deformation, probable rapid facies variations, and the presence of subsidiary faults as recognized by Arnold.

3.1.4 Petrology:

CMS petrological reports for HP19 and HP20 are attached. (Appendix 2). The intersection in HP19 represented a mixture of massive pyritic lenses in a base metal style of mineralisation. The samples were characterised by an early silicification phase with siliceous-sericitic stringers containing sulphide assemblages. The massive pyrite lenses may be intermediate to this early silicification and late calcite veining. HP20 though relatively gold poor (1-2 g/t Au) was very similar to a massive pyrite gold-bearing (10-20 g/t Au) intersection obtained in HP17. Although mineralogically similar, HP20 was characterised by dolomite rather than calcite and was generally deficient in accessory chalcopyrite, bismuthinite and tetrahedrite compared with HP17. The possibility of a later auriferous calcite veining overprinting earlier dolomitic massive pyrite mineralisation was suggested.

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3.2 Metallurgical:

A limited amount of metallurgical work has been undertaken on mineralised drill core intersections. Test work to date has been restricted to cyanide and gravity studies by Fox Anamet in Sydney and selective flotation of sulphides by Mt. Lyell at Queenstown. The results of the former studies are attached as Appendix 3. The latter test work is at an early stage and not as yet reported upon.

Results so far available suggest that there are two major styles of mineralisation present and these have very different metallurgical performances, viz:

(a) Massive pyrite material in which the gold is fine and closely locked within the pyrite and along grain boundaries. Gravity, cyanide and selective (non-pyrite) flotation gold recoveries are variable but tend to be fairly poor.

(b) Quartz-carbonate-moderate sulphide material tends to give good recoveries (>85%) for both cyanide and selective sulphide flotation recovery routes.

Further metallurgical test work will be undertaken on both new drill core intersections obtained from surface and underground drilling programs, and the bulk sample to be obtained from the underground development. It is envisaged that a 2-3,000 tonne bulk sample will be obtained and that this will be adequate for a wide range of test work and trial milling studies.

3.3 Engineering:

Engineering studies associated with the proposed underground development and the supporting portal facilities are in progress and nearing completion.

Because of the nearby presence of the major Henty Fault and the anticipated existence of significant zones of fracturing and alteration in the vicinity of the mineralisation, a substantial effort has been directed to the design of the decline and associated development. Eight cored drill holes were completed specifically to test the ground conditions along the route of the decline. They indicated several structures, water bearing zones and rock formations all to be avoided if at all possible. The decline has been designed accordingly. Golder Associates are acting as consultants on this work.

**3.4 Environmental:**

In support of the proposed phase of underground exploration an "Environmental Impact-Mining" report has been completed in association with Natural Systems Research, and this report was recently submitted to the Department of Mines.

The Licence area has been the subject of significant logging operations, HEC development, and mineral exploration programs. However, regeneration of rain forest species is vigorous and extensive. A major project has been completed to reprofile and replace top soil and vegetation along exploration tracks no longer considered necessary to the on-going project. It is felt this work will eliminate erosion and permit the regeneration process to accelerate.

**4. WORK PROPOSED 1988-89:**

The following program, estimated to cost \$3.8M is proposed for 1988-89:

- (a) Development of portal facilities
- (b) Development of 900m. of decline and 200m. of driving in mineralisation;
- (c) Completion of 4,000m. of underground core drilling;
- (d) Completion of 3-4 surface cored holes, each 700-800m. long;
- (e) Test work and trial milling on a 3,000 tonne bulk sample;
- (f) Environmental monitoring of the impact of the underground program;

The details of this program are attached as Appendix 4.

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5. EXPENDITURE

Expenditure for the ten month period August 87 - May 88 was \$813,701, as summarised below. Expenditure for the twelve months to end July 88 is estimated at \$1,000,000.

	\$
August 87	93,403
September	111,136
October	46,236
November	33,941
December	85,125
Jan. 88	17,946
February	54,852
March	82,500
April	50,026
May	238,538
<u>Sub Total:</u>	<u>813,701</u>

Estimates for June 88	150,000
July	36,299
<u>Estimated Expenditure</u> <u>for 12 month Period</u>	<u>\$1,000,000</u>

6. REFERENCES:

- Cartwright, A.J., 1987 : "E.L. 9/66 - Part 1, Henty Area, Tasmania. Progress Report 1986-87" GFEL Report No. T/87/9, July 87.
- Roberts, P.A., 1987 : "Submission to the Tasmanian Mines Department E.L. 9/66 Tyndall Area. Application for Renewal of E.L. 9/66 over Henty Gold Project Area". GFEL Report No. T/87/5, June, 87.
- Arnold, G.O., 1988 : "The Henty Prospect. Geological Appraisal". RGCE Report No:CR 88/2/3, Feb. 88.

APPENDIX 1.



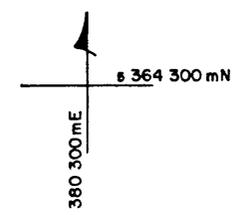
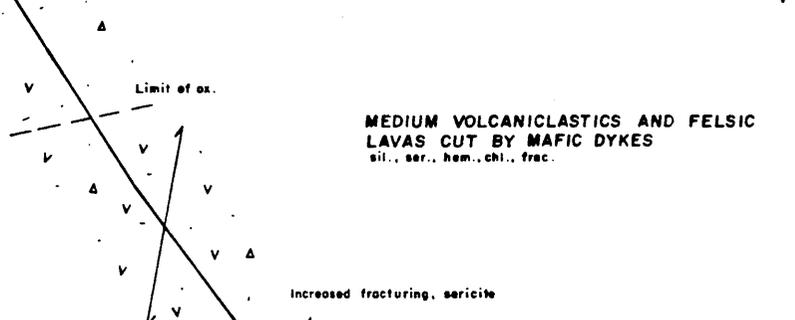
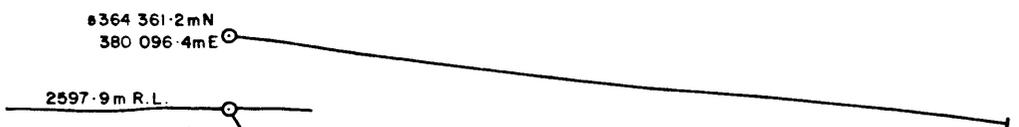
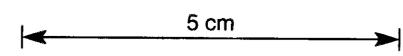
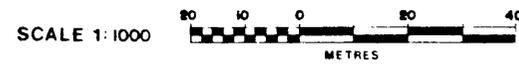
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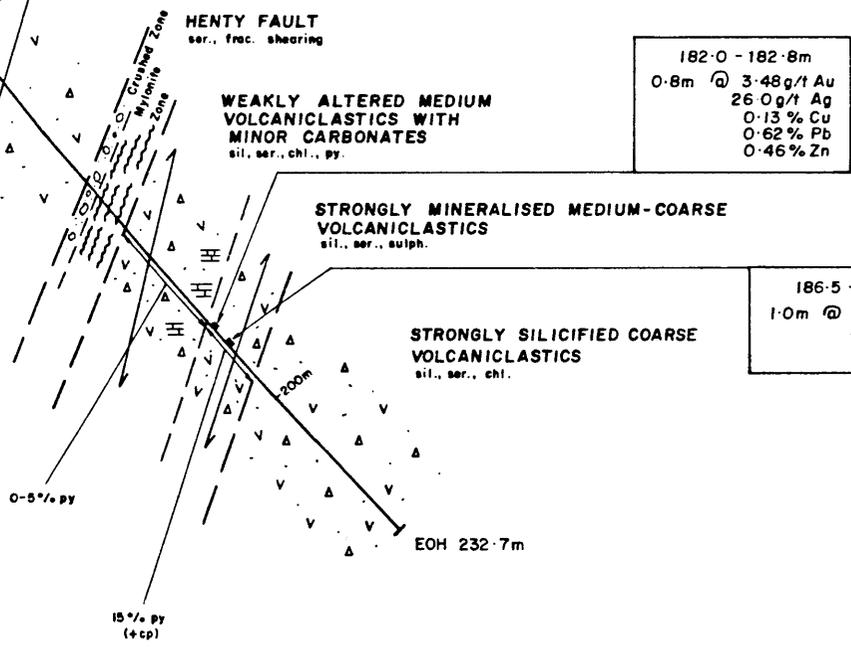
PROJECT: TYNDALL

HOLE NO: HP22

GOLD FIELDS EXPLORATION PTY. LIMITED  
DRILL HOLE PLOT



2470.3m R.L. (FFW)



2414.8m R.L. (EOH)



GOLD FIELDS EXPLORATION PTY. LIMITED  
 DRILL CORE LOG AND ASSAY DATA

PROJECT: TYNDALL

HOLE NUMBER: HP22

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INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (all ppm)										
From	To	m	%		Sample No	From	To	Rec. %	Au	Ag	As	Cu	Pb	Zn	Bi
				Numerous irregular metamorphic quartz veins cut the core which is weakly fractured and weakly foliated at 50°C.A. A few, rare, thin mafic dykes cut the sequence. At 59.0, the core becomes moderately fractured, increasing at 64.0 to a strongly fractured, pale coloured, sericitic sequence. This continues down to 79.7, where a 4.0m thick very strongly, fractured, chloritic mafic dyke occurs. The core returns to the weakly fractured and altered rock below 83.7.											
89.2	147.5	55.6	95	Strongly-moderately fractured, pale pink-green, sericitic/volcaniclastics cut by rare, thin, mafic dykes. The rock is strongly foliated at 55°C.A. Numerous, thin (0.2m) shattered zones are present. The sequence is irregularly veined and metamorphosed as above. The fracturing and sericite increase with depth below 140.0, becoming solid, soft pale green pervasively sericitised rock at 146.8.  147.5-158.6 HENTY FAULT. STRONGLY FRACTURED AND SHATTERED SERICITIC ROCK FRAGMENTS AND CLAY, WITH A MYLONITE ZONE.											
147.5	150.8	3.3	100	Pale green-black crushed zone. Highly sericitic rock and clay - all incompetent. Numerous puggy clay bands and zones, up to 20cm wide, are present. Between 149.1-149.3 and 149.7-150.8, highly shattered and fractured black shales occur.											
150.8	158.6	7.6	100	Pale pink-green, sericitic, highly foliated volcanoclastics. This unit is weakly mylonitic and contains numerous sericitic crushed zones with distinct green sericite. The cleavage/foliation developed is strongly crenulated, with the softer clayey matrix wrapping around the siliceous clasts in the rock.	T 7341	160.6	161.4	100	<0.008	0.5	19	15	45	60	1
				158.6-181.2 WEAKLY ALTERED AND SULPHIDIC MEDIUM VOLCANIC-CLASTICS WITH MINOR CARBONATE LENSES.	2		162.2	"	"	"	16	10	25	35	3
					3		163.2	"	"	<0.5	8	"	20	25	1
					4		164.2	"	"	"	16	60	"	65	"
158.6	181.2	22.6	100	Weakly altered and mineralised medium grained volcanoclastics. Grey and pink-green in colour, this unit is moderately to strongly sericitic and	5		165.2	"	"	"	36	40	25	55	3
					6		166.2	"	"	0.5	30	20	35	"	<1
					7		167.2	"	"	"	23	60	30	70	2

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 DRILL CORE LOG AND ASSAY DATA

PROJECT: TYNDALL

HOLE NUMBER: HP22

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INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (all ppm)										
From	To	m	%		Sample No	From	To	Rec %	Au	Ag	As	Cu	Pb	Zn	Bi
				chloritic. It is weakly fractured overall and is well foliated at 55°CA.	T7348	167.2	168.2	100	<0.008	<0.5	15	15	30	55	<1
				The rock consists of coarse siliceous, white-grey grit sized fragments in a	9		169.2	"	"	"	19	20	"	35	2
				fine clayey, green matrix. The sulphide content (pyrite) is very weak at	50		170.2	"	"	"	15	15	25	65	"
				first (0.1% by vol.), increasing to around 5% at 170.0m. Also below this	1		171.2	"	"	0.5	12	10	30	70	<1
				depth, carbonate alteration (weak) occurs; mainly as wispy irregular veins	2		172.2	"	"	<0.5	32	"	40	95	3
				and small disseminations. The pyrite occurs as very fine grained	3		173.2	"	"	0.5	18	"	35	55	2
				disseminations. In general, the sequence is poorly veined.	4		174.2	"	"	<0.5	20	15	30	65	1
				Between 160.6 and 162.2, the core is dark grey and strongly silicified	6		175.2	"	"	0.5	12	10	25	30	2
				(pervasively). It is also strongly network-veined by quartz and sericite.	7		176.2	"	"	<0.5	10	"	30	25	3
				Sulphides are rare.	8		177.2	"	"	"	7	"	"	"	1
				At 175.4, thick (3-4cm wide) lenses and bands of pale grey-white	9		178.2	"	"	0.5	5	5	"	"	<1
				carbonate become common with a corresponding decrease in sulphide	60		179.2	"	"	"	"	"	20	20	1
				content. A sharp broken contact occurs with the unit below.	1		180.2	"	"	<0.5	3	"	15	"	"
					T7362	180.2	181.2	"	"	0.5	2	15	10	25	<1
				181.2-194.5 STRONGLY SULPHIDIC AND STRONGLY ALTERED MEDIUM-											
				COARSE GRAINED VOLCANICLASTICS CUT BY A SILICIFIED ZONE.											
181.2	182.8	1.6	100	Strongly mineralised medium-coarse grained moderately fractured	T8930	181.2	182.0	100	0.470	4.0	33	235	1200	85	9
				volcaniclastics. This unit is foliated (at 60°CA) <sup>with</sup> silicified clasts up to	1	182.0	182.8	"	3.480	26.0	180	1300	6200	4600	41
				pebble size, angular, poorly sorted in a fine matrix of chlorite-sericite-											
				pyrite. Overall the sulphides which are disseminated are around 15-20%											
				by vol.											
				At 182.4, several thin (1-2cm wide) bands of massive pyrite occur. This											
				unit grades into the one below.											
182.8	185.5	2.7	100	Strongly silicified, pink-grey volcaniclastics. The silification in this unit	T8932	182.8	183.8	100	0.010	1.0	13	10	100	450	<1
				is developed as a strong flooding and as thick, irregular veins. The rock	3		184.8	"	<0.008	0.5	8	5	20	30	"
				is unsulphidic, unfoliated and moderately fractured.	T8934	184.8	185.5	"	"	<0.5	6	"	5	"	"
185.5	194.5	9.0	100	Strongly mineralised and silicified coarse volcaniclastics. Large to	T8935	185.5	186.5	100	0.170	2.0	42	770	110	60	7
				medium (1-10cm wide) sized clasts - siliceous, occur in a silica-sericite-	6		187.5	"	2.030	18.0	63	22500	300	390	7
				pyrite matrix. The core is weakly foliated and moderately fractured	8		188.5	"	0.090	2.5	34	295	285	240	16
				with several strongly developed crushed zones. Minor, irregular quartz	9		189.5	"	0.050	1.0	23	10	10	45	4
				veins are present. The overall sulphide content is around 10-15% in this	40		190.5	"	0.060	1.5	31	25	25	30	6
				unit, with disseminated pyrite well developed over the first 5.0m of this	1		191.5	"	0.020	0.5	9	5	5	25	1





PROJECT: TYNDALL

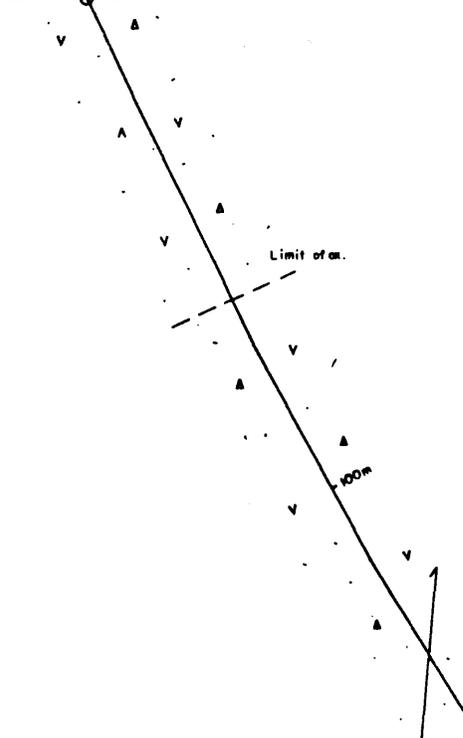
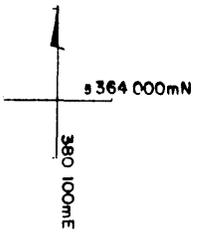
HOLE NO.: HP23

GOLD FIELDS EXPLORATION PTY. LIMITED  
DRILL HOLE PLOT

**PLAN VIEW**

364 011.4mN  
379 971.2mE

2600.8mR.L.

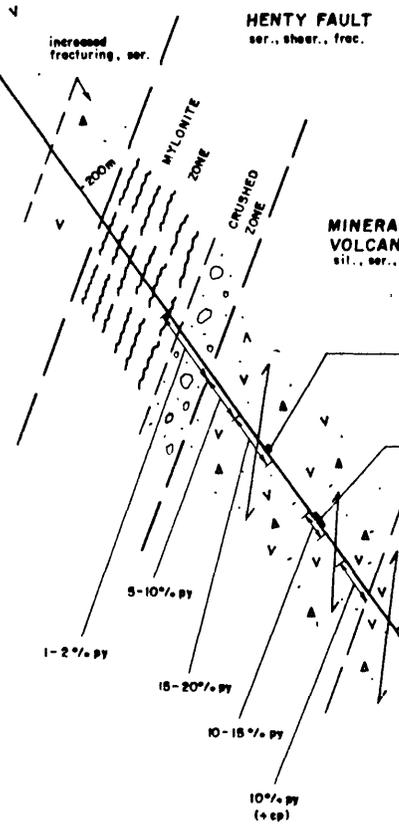


**MEDIUM GRAINED VOLCANICLASTICS AND LAVAS  
CUT BY MAFIC DYKES**  
sil., hem., chl., ser.

**DIP PROFILE**

2394.1m R.L. (FFW)

2342.4m R.L. (EOH)



**HENTY FAULT**  
ser., shear., frac.

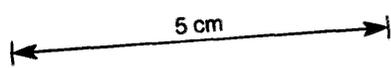
**MINERALISED COARSE  
VOLCANICLASTICS**  
sil., ser., chl., sulph.

259.0 - 260.0m  
1.0m @ 3.43g/t Au  
23.0g/t Ag  
0.39% Cu  
0.36% Pb  
0.41% Zn

274.0 - 277.0m  
3.0m @ 0.91g/t Au  
6.7g/t Ag  
0.29% Cu

**WEAKLY ALTERED COARSE  
VOLCANICLASTICS**  
sil., chl.

SCALE 1:1000



102024

03

STATE: TAS.  
HOLE NO.: HP23

GOLD FIELDS EXPLORATION PTY. LIMITED  
**DRILL CORE LOG AND ASSAY DATA**

102025

024

PROJECT: TYNDALL

HOLE NUMBER: HP23

Page: 1

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA																	
From	To	m	%		Sample No.	From	To	Rec. %														
				<b>SUMMARISED LOG</b>																		
0.0	207.0	203.3	98	MEDIUM GRAINED VOLCANICLASTICS WITH MINOR AUTOBRECCIATED FELSIC LAVAS, CUT BY A SERIES OF MAFIC DYKES. STRONGLY WEATHERED NEAR SURFACE AND STRONGLY FRACTURED AND SERICITIC AT DEPTH.		0.0	60.8	HWWK														
						60.8	207.0	HWWK														
207.0	241.6	34.6	100	HENTY FAULT. A WELL DEVELOPED MYLONITE ZONE IS UNDERLAIN BY A FRACTURED ZONE AND A THIN CLAY-CRUSHED ZONE OF SOFT PLUGGY CLAYS. VERY WEAK MINERALISATION OCCURS IN THE FAULT.		207.0	232.0	FTMY														
						232.0	241.6	FTCS														
241.6	291.5	49.9	100	VARIABLY BUT GENERALLY STRONGLY ALTERED AND MINERALISED COARSE MEDIUM GRAINED VOLCANICLASTICS. THIN FINE GRAINED MASSIVE PYRITE LENSES ARE DEVELOPED AT THE BASE OF AN UPPER MINERALISED ZONE WHICH IS SEPARATED FROM TWO LOWER STRONGLY MINERALISED ZONES BY VERY WEAKLY ALTERED VOLCANICLASTICS.		241.6	291.5	FWWZ														
291.5	305.7	14.2	100	WEAKLY ALTERED, UNMINERALISED, VERY COARSE VOLCANICLASTIC BRECCIA. WEAKLY SILICIFIED WITH A STRONGLY FRACTURED SERICITIC ZONE.		291.5	305.7	FWWZ														
				<b>DETAILED LOG</b>																		
				0.0-207.0 MEDIUM GRAINED VOLCANICLASTICS WITH MINOR LAVAS, CUT BY FINE GRAINED MAFIC DYKES.																		
0.0	9.0			Tricone, no core recovered.																		
9.0	19.0	8.6	86	Deep brown, strongly weathered volcaniclastics. Abundant limonite occurs pervasively through the rock and on joint surfaces. The rock is strongly fractured.																		
19.0	60.8	41.6	100	Brown-green-grey, moderately weathered, medium grained volcaniclastics.																		



GOLD FIELDS EXPLORATION PTY. LIMITED  
DRILL CORE LOG AND ASSAY DATA

102027

HOLE NUMBER: HP23

Page: 3

0000

PROJECT: TYNDALL

ULV. PRESS

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (all ppm)										
From	To	m	%		Sample No	From	To	Rec. %	Al	Ag	As	Cu	Pb	Zn	Bi
				small (0.1m) crushed zones.											
				At 215.2, a 0.8m thick solid quartz metamorphic vein is underlain by 0.4m of soft clay and silt with minor rock fragments.											
				At 225.0, the core is very strongly fractured into puggy clays and soft angular sericitic rock fragments over 1.0m.											
				At 227.5 a 0.8m thick strongly sheared and foliated mylonitic black shale occurs.											
				Below this shale, the core becomes slightly sulphidic ( 1%) increasing towards the unit below.											
232.0	239.0	7.6	100	Pale green moderately strongly altered and sheared volcanics. The unit is altered to a sericitic-quartz assemblage with minor pyrite finely disseminated (1-2% by vol.) The rock contains numerous sericite-filled fractures and overall is strongly fractured.											
				Below 236.6m, a few narrow (0.1-0.2m wide) silicified zones occur. Also below this depth, the sericite turns a bright lime green colour throughout the fractured zones.											
239.6	241.6	2.0	100	Bright green-grey-black completed fractured unconsolidated clays. Soft puggy clay and very fine fractured rock (sericitic) fragments occur. The original lithology appears to have been strongly altered, but it is impossible to determine. Sulphides are also indiscernable. A sharp, fractured contact occurs with the unit below.											
					T9000	232.0	233.0	100	<0.008	<0.5	30	<5	125	215	1
				241.6-291.5 VARIABLY ALTERED AND MINERALISED COARSE-MEDIUM GRAINED VOLCANICLASTICS.	T7304		234.0	"	"	"	17	15	195	645	3
					5		235.0	"	"	"	21	<5	100	370	1
					6		236.0	"	"	"	22	"	105	315	4
241.6	251.0	9.4	100	Moderately strong altered and mineralised grey-green volcanoclastics.	7		237.0	"	0.010	"	25	"	170	265	2
				The rocks are coarse grained with numerous, pinkish silicified clasts in a gritty matrix. The unit is poorly sorted, very weakly foliated and moderately fractured. The sequence is altered to silica-chlorite-sericite, and fine disseminated pyrite with rare coarser base metal sulphide blebs occurs as around 5-10% total sulphides. Veining is not developed and a few 0.1-0.2m wide, strongly silicified zones are present.	8		238.0	"	"	0.5	34	40	230	810	1
					9		239.0	"	0.020	1.0	32	50	540	1450	2
					10		240.0	"	0.010	"	31	"	640	1850	2
					1		241.0	"	<0.008	<0.5	45	30	290	1015	<1
					2		242.0	"	"	"	25	45	215	445	2
					3		243.0	"	0.060	0.5	20	50	45	75	5
				At 244.4, a 0.3m puggy clay zone, similar to the previous unit, occurs.	T7314		244.0	"	<0.008	<0.5	6	90	10	50	4

GOLD FIELDS EXPLORATION PTY. LIMITED  
DRILL CORE LOG AND ASSAY DATA

102028

027

PROJECT: TYNDALL

HOLE NUMBER: HP23

Page: 4

ULV. PRESS

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (all ppm)										
From	To	m	%		Sample No	From	To	Rec. %	Au	Ag	As	Cu	Pb	Zn	Bi
				Below 246.0, the core is more sulphidic. In general, the rock above this depth is around 1-5%, below it is about 10%.	T7315	244.0	245.0	100	0.090	0.5	19	175	125	35	3
					6		246.0	"	0.130	1.0	23	35	25	175	<1
					7		247.0	"	0.510	1.5	19	600	45	30	2
251.0	261.6	10.6	100	Dark grey, strongly mineralised and altered medium grained volcaniclastics. An abrupt contact occurs with unit above, into this strongly foliated (at 50°C), weakly fractured sequence. A few large pebble siliceous clasts occur in a very fine grained matrix. The unit is unveined apart from a few wispy, pale green sericite veinlets. Minor, weakly developed silicified zones (0.1-0.2m wide) also occur. The overall sulphide content is around 15-20%, as disseminated very fine grained pyrite with a few coarse pyrite blebs. The rock is altered to a pyrite-sericite-quartz assemblage. At 258.7 the core contains several narrow (0.1m wide) clayey, highly fractured zones over the next 1.0m.	8		248.0	"	0.660	2.0	18	625	195	45	9
					9		249.0	"	0.620	3.0	20	605	730	375	10
					21		250.0	"	0.200	3.5	21	105	885	665	5
					2		251.0	"	0.160	3.0	26	170	725	265	5
					3		252.0	"	0.280	2.5	41	35	110	80	16
					4		253.0	"	0.240	3.0	32	30	70	10	6
					5		254.0	"	0.070	0.5	29	"	50	"	3
					6		255.0	"	0.040	1.0	30	25	45	5	8
					7		256.0	"	0.090	1.5	41	205	80	65	"
					8		257.0	"	0.030	0.5	29	295	50	85	3
					9		258.0	"	0.070	"	44	140	60	30	4
				At 259.0 a 0.4m wide band of fine grained massive pyrite occurs. This also contains minor coarse chalcopyrite. Another lensoid massive pyrite zone, 0.1m thick, occurs at 260.8.	30		259.0	"	0.620	6.0	220	930	820	1025	11
				A sharp contact at 45°C occurs with the unit below.	1		260.0	"	3.430	23.0	400	3850	3625	4100	21
					2		261.0	"	0.320	8.0	310	695	520	365	31
					3		261.6	"	0.170	2.5	130	225	70	35	11
261.6	262.9	1.3	100	Bright pink intensely silicified coarse volcaniclastics. A very strongly developed silica-hematite alteration overprints and floods the rock, which is unfoliated and unfractured. A sharp, fractured contact occurs with the unit below.	T7335	261.6	262.6	"	<0.008	<0.5	10	50	<5	"	2
262.9	273.0	10.1	100	Medium-coarse grained pink-grey volcaniclastics. These rocks are weakly altered/metamorphosed to chlorite-quartz-hematite-sericite-carbonate, with the latter occurring mainly as irregular veinlets. The rock is a poorly sorted gritty breccia, and is very weakly foliated and unfractured. Pyrite occurs irregularly through the unit, averaging 1-2% by vol.											
273.0	277.8	4.8	100	Strongly mineralised and altered coarse grained volcaniclastics. Large angular lava (Felsic) fragments occur in a fine grained matrix. The sequence is strongly altered to a silica-sericite-carbonate-sulphide assemblage. The core is unfractured and moderately foliated at 40°C. Veining is rare, but silicified zones, up to 20cm wide are common. Coarse sulphides, often base metal sulphides, are associated with these	T7336	273.0	274.0	"	0.080	<0.5	20	45	75	175	1
					7		275.0	"	0.190	1.5	41	985	105	70	10
					8		276.0	"	0.930	15.0	29	7050	410	390	23
					9		277.0	"	1.620	3.5	12	685	285	75	6
					T7340	277.0	278.0	"	0.030	<0.5	33	325	65	80	4



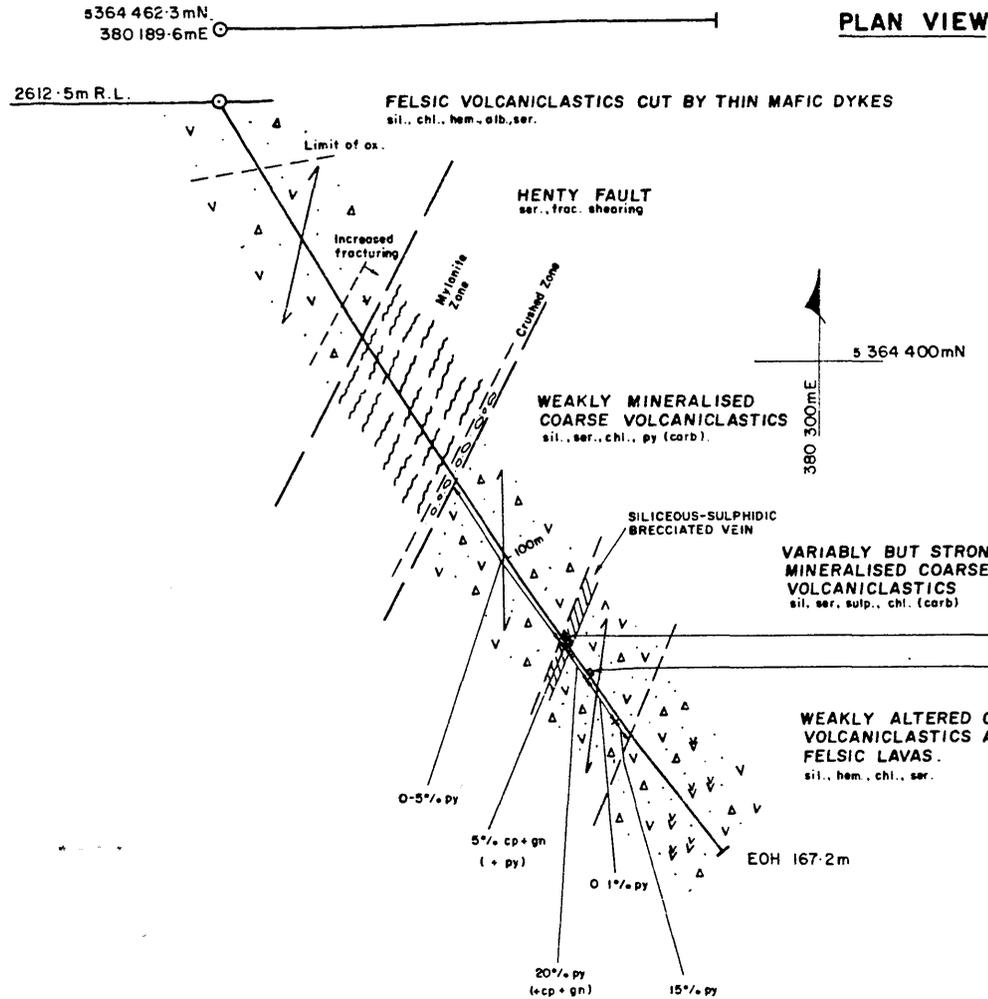
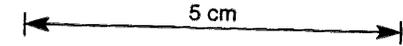
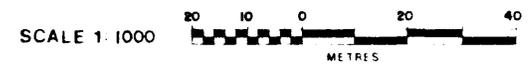


PROJECT: TYNDALL

HOLE NO.: HP24

GOLD FIELDS EXPLORATION PTY. LIMITED  
DRILL HOLE PLOT

102031



**DIP PROFILE**

117.2 - 119.6m
2.4m @ 44.9g/t Au
30.1g/t Ag
0.21% Pb

125.3 - 126.3m
1.0m @ 17.0g/t Au
29.0g/t Ag
0.12% Cu
0.10% Pb

STATE: TAS.

HOLE NO: HP24



GOLD FIELDS EXPLORATION PTY. LIMITED  
**DRILL CORE LOG AND ASSAY DATA**

102033

502

PROJECT: TYNDALL

HOLE NUMBER: HP24

Page: 2

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INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (all ppm)										
From	To	m	%		Sample No.	From	To	Rec. %	Au	Ag	As	Cu	Pb	Zn	Bi
				(particularly the mafic dykes). The core is foliated at 45°CA and is over-all moderately-strongly fractured.											
				A very strongly fractured zone occurs between 28.3 and 33.9m.											
				The core is also strongly fractured at 44.5m. down to the end of the unit.											
				Sericite development increases slightly over the lower 2.0m.											
				A sharp contact with the unit below occurs.											
				51.0-83.2 HENTY FAULT. A WELL DEVELOPED MYLONITE IS UNDERLAIN BY A THIN CRUSHED-PUGGY ZONE.											
51.0	81.2	29.6	98	Pale green strongly sericite mylonitic volcanoclastics. The original fine grained lithologies have been completely clay altered and strongly sheared/foliated. The soft rock is finely banded and this foliation is kink banded and folded. The foliation runs at 40°CA. The core is moderately fractured with a few, wide (1.0-0.5m) completed crushed and shattered zones. The sequence contains only rare quartz veins.											
				At 65.7 a 2.0m wide black shale horizon occurs. This is particularly strongly quartz and sericite veined.	T8957	92.2	93.2	100	<0.008	<0.5	10	20	<5	30	10
					8		94.2	"	"	"	14	"	"	75	"
					9		95.2	"	"	"	37	50	10	45	20
81.2	83.2	2.0	100	Pale green-grey completely sericitised rock and soft puggy clay. An unconsolidated crushed zone of completely altered rock. The sequence is highly fractured. A few, small siliceous rock fragments occur in a clay matrix.	60		96.2	"	"	0.5	51	30	20	60	<10
					1		97.2	"	"	"	18	40	30	185	"
					2		98.2	"	"	<0.5	16	20	35	120	"
					3		99.2	"	"	0.5	21	25	20	60	10
					4		100.2	"	"	"	22	55	"	50	<10
				83.2-117.2 WEAKLY MINERALISED AND ALTERED COARSE GRAINED VOLCANICLASTICS.	5		101.2	"	"	<0.5	18	30	"	70	30
					6		102.2	"	"	"	23	25	15	25	<10
					7		103.2	"	"	4.0	16	20	1400	60	10
83.2	117.2	34.0	100	Pink-pale green coarse grained volcanoclastics. Moderately altered to sericite-silica-chlorite and very weakly pyritic. The rock is un-weakly fractured and is very weakly foliated at 30°CA. The volcanoclastics contain poorly sorted, sub-angular, siliceous clasts up to 3-4cm across in a fine grained chlorite-sericite matrix.	8		104.2	"	"	<0.5	33	25	25	55	<10
					9		105.2	"	0.010	1.0	39	45	"	40	"
					10		106.2	"	<0.008	<0.5	32	25	"	"	"
					1		107.2	"	"	"	23	20	15	35	"
					2		108.2	"	"	"	20	"	"	40	"
					4		109.2	"	"	"	23	"	35	45	"
					5		110.2	"	"	"	"	"	40	75	"
					6		111.2	"	"	0.5	15	"	30	60	"
					7		112.2	"	"	<0.5	16	15	20	65	"
				Quartz veining is common in places as irregular network veinlets and pale green sub-parallel sericite veinlets are also common. Overall the core contains 0-5% pyrite as fine disseminations, although small silicified-sulphide zones, up to 0.7m wide, do contain pyrite up to 5-10%. The	T8978		113.2	"	"	"	17	20	5	55	"











GOLD FIELDS EXPLORATION PTY. LIMITED  
DRILL CORE LOG AND ASSAY DATA

102039

HOLE NUMBER: HP25

Page: 3

PROJECT: TYNDALL

ULV. PRESS

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INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (all ppm)										
From	To	m	%		Sample No.	From	To	Rec. %	Au	Ag	As	Cu	Pb	Zn	Bi
				occurs. This consists mainly of puggy clays, and between 199.1 and 199.6 is soft mud.											
				200.7-229.8 STRONGLY ALTERED AND MINERALISED COARSE VOLCANICLASTICS CUT BY A THIN SILICEOUS VEIN.	T7373	200.7	201.7	100	0.480	2.5	34	175	115	95	2
					4		202.7	"	3.510	17.0	14	715	5000	3000	31
200.7	218.4	17.7	100	Grey-pale grey strongly mineralised coarse-medium grained volcanoclastics. The rock consists of sub-rounded, white siliceous fragments in a fine matrix of sericite-pyrite. Overprinting this are pale green-sericitic veinlets (particularly strongly developed between 200.7 and 203.5) and narrow (0.1-0.2m) silicified zones. The core is very weakly fractured with a few sericitic, strongly fractured zones (0.1m wide), and is moderately foliated at 45°CA. In general, pyrite occurs as very fine disseminated grains and minor base metal sulphide blebs occur associated with some silicified zones. Overall content is 15-20%.	5		203.7	"	0.210	5.0	28	50	305	55	4
					6		204.7	"	0.110	3.0	61	280	85	50	5
					7		205.7	"	0.140	2.0	77	230	100	30	12
					8		206.7	"	0.140	1.5	53	40	60	25	8
					9		207.7	"	0.110	1.0	53	40	45	25	8
					80		208.7	"	0.130	1.0	38	30	60	35	8
					1		209.7	"	0.110	2.5	40	30	100	25	6
					2		210.7	"	0.080	1.5	38	60	60	30	2
					4		211.7	"	0.030	10.5	24	50	25	70	2
				At 202.2, a strongly developed 'splash' of galena-sphalerite occurs with sericite veins.	5		212.7	"	0.020	"	20	160	20	50	41
					6		213.7	"	0.090	1.0	52	375	100	40	3
				Below 210.0, the sulphide content decreases and becomes patchily developed - around 5-10% by vol.	7		214.7	"	0.170	2.5	34	170	200	30	7
					8		215.7	"	0.320	3.5	120	965	410	75	14
				Between 215.0 and 218.4, the end of the sequence, a number of thin (up to 5cm wide) massive pyrite lenses occur at 215.4, 217.5 (with associated chalcopryite) and semi-continuous from 218.0 to 218.4.	9		216.7	"	0.210	3.0	95	315	235	50	14
					90		217.7	"	3.204	15.0	290	2400	725	125	56
				At 216.0 a 0.4m thick, strongly silicified-pyritic zone is present. The mineralised sequence has a sharp irregular contact with the unit below.	T7391	217.7	218.4	"	40.072	71.0	490	3500	2200	85	118
218.4	219.4	1.0	100	Pale orange-pink strongly silicified rock-silica vein. A cryptocrystalline silica vein with very strongly silicified wall rock. Moderately-weakly fractured. A sharp contact below.	T7392	218.4	219.6	100	0.080	10.5	21	125	15	20	2
219.4	229.8	10.4	100	Strongly altered and mineralised, coarse grained volcanoclastics. A sequence similar to the previous volcanoclastics unit, with numerous siliceous clasts in a fine pyrite-sericite matrix. The overall sulphide content is lower, around 10% by vol, but base metal sulphides, particularly chalcopryite are more abundant. The unit is	T7393	219.6	220.6	100	0.220	3.0	56	1300	525	635	10
					5		221.6	"	0.170	1.0	34	440	175	550	8
					6		222.8	"	0.140	1.5	36	355	180	115	6
					7		223.5	"	0.030	10.5	15	370	30	150	41
					8		224.5	"	0.120	1.0	32	1005	270	165	4





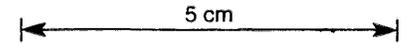
102047

PROJECT: TYNDALL

HOLE NO.: HP 26

GOLD FIELDS EXPLORATION PTY. LIMITED  
DRILL HOLE PLOT

SCALE 1:1000



PLAN VIEW

5364 363.1mN  
380 162.8mE

2614.0m R.L.

MEDIUM VOLCANICLASTICS  
chl., sil., hem., ser., frac.

Limit of ox.

HENTY FAULT  
ser., frac., shearing

strong frac.  
ser.

Mylonite Zone  
Crushed Zone

VARIABLY MINERALISED  
COARSE VOLCANICLASTICS  
sil., ser., sulph., chl.

5364 300mN

380 300mE

111.0 - 113.0m
2m @ 4.11 g/t Au
1.8 g/t Ag
0.62% Cu

WEAKLY ALTERED COARSE VOLCANICLASTICS  
WITH MINOR LAVAS AND EPICLASTICS  
sil., chl., ser.

JUKES BRECCIA - UNALTERED  
chl., hem.

GREAT LYELL FAULT  
thin frac.

UNALTERED QUARTZ  
PHYRIC PORPHYRY  
sil.

EUN 010.4m

DIP PROFILE

1-2% py

15-20% py  
(+qn -sil)

0-5% py  
(+cp)

10-15% py  
(+cp)

1-2% py

200m

2549.6m R.L. (FFW)

2397.2m R.L. (EOH)

STATE: TAS.

HOLE NO HP26



GOLD FIELDS EXPLORATION PTY. LIMITED  
DRILL CORE LOG AND ASSAY DATA

102044  
HOLE NUMBER: HP26

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PROJECT: TYNDALL

ULV. PRESS

030

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (all ppm)										
From	To	m	%		Sample No	From	To	Rec %	Au	Ag	As	Cu	Pb	Zn	Bi
44.0	71.0	25.7	95	Pale pink-green medium-fine grained volcaniclastics. The core is strongly fractured and moderately sericitic. No mafic dykes are present. The rock is metamorphosed to a quartz-hematic-chlorite assemblance and is foliated at 45°C.A. Several strongly sericitic, fine grained epiclastic bands and lenses are present. Numerous, soft sericitic crush zones occur.											
				71.0-81.5 HENTY FAULT. A MYLONITIC VOLCANICS ZONE IS UNDERLAIN BY A CRUSHED ZONE.											
71.0	77.0	6.0	100	Pale green strongly sheared mylonitic volcanics. Completely clay altered rock strongly foliated and fractured with many kink bands distorting the original cleavage. Small (0.1m) sericitic crushed zones are present. Two strongly mylonitised black shale bands occur; at 74.5 (0.8m wide) and 76.4 (0.2m wide).											
77.0	81.5	4.5	100	Crushed zone, contains numerous strongly silicified cobble and pebble sized fragments in a dark grey fine grained sericitic clay matrix. The unit is poorly sorted, the fragments are angular and overall the rock is unconsolidated and highly fractured. The core is slightly sulphidic, with fine disseminated pyrite making about 1-2% by vol.	T7697	79.5	80.5	100	0.310	<0.5	11	25	35	100	<10
					8		81.5	"	0.040	"	20	50	270	290	20
				81.5-121.0 MINERALISED, STRONGLY ALTERED COARSE VOLCANICLASTICS, WITH ZONES OF UNALTERED ROCK.											
81.5	88.5	7.0	100	Medium-dark grey, coarse grained volcaniclastics. The unit is strongly altered and mineralised. Originally a coarse, poorly sorted breccia-conglomerate with white-grey silicified clasts up to 5cm across in a weakly foliated fine grained sericite-silica-pyrite matrix. The core is unfractured apart from the upper 1.8m, which is moderately fractured and contains several small (5-10cm wide) clayey zones. The overall sulphide content is around 20% by vol; mainly as disseminated pyrite with a few small blebs of massive pyrite and very small stringers of base metal sulphides. The sulphide content is lower ~ 15-20% below 87.0m. The weakly developed foliation runs at 50°C.A. The base metal sulphides are	T7699	81.5	82.5	100	0.290	13.0	32	2150	6900	15200	10
					700		83.5	"	1.680	12.0	44	800	4500	4700	"
					T9501		84.5	"	0.280	7.0	72	1750	4400	3300	20
					2		85.5	"	0.320	9.0	77	345	1400	300	10
					3		86.5	"	0.950	8.5	52	350	705	170	20
					4		87.5	"	<0.008	0.5	20	115	70	125	"
					5		88.5	"	"	<0.5	31	30	45	115	10

102045

C2A

GOLD FIELDS EXPLORATION PTY. LIMITED  
 DRILL CORE LOG AND ASSAY DATA

PROJECT: TYNDALL

HOLE NUMBER: HP26

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ULV. PRESS

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (all ppm)										
From	To	m	%		Sample No.	From	To	Rec. %	Au	Ag	As	Cu	Zn	Pb	Bi
				associated with narrow (5-10cm wide) silicified zones. A sharp irregular contact occurs with the vein below.											
88.5	89.8	1.3	100	Pale grey intensely silicified volcaniclastics/quartz vein. Massive cryptocrystalline quartz floods the original rock obliterating all the previous textures. Numerous, thin quartz veinlets occur later, cutting the sequence. Tiny flecks of green sericite and sulphide are present. Overall sulphide content is low, around 0-1% by vol. A sharp irregular basal contact occurs.	T9506	88.5	89.8	100	<0.008	1.0	16	80	165	40	<10
					8				"	<0.5	12	15	150	"	"
					9				"	"	13	15	105	35	"
					10				"	"	16	10	90	30	"
89.8	95.0	5.2	100	Pale green-grey strongly silicified coarse volcaniclastics. This unit is strongly altered but weakly mineralised with very weakly disseminated pyrite and a few rare coarse blebs of pyrite making up about 3-5% by vol. The unit is a coarse breccia-conglomerate as before, with moderately pervasive silica developed. Sericite is also abundant. The core is unfractured, contains a few rare quartz veinlets and is very weakly foliated at 50°CA.	1				"	"	"	15	115	40	"
					2				"	"	"	10	90	35	"
					T9513	95.0	96.0	"	"	"	19	40	60	15	"
95.0	111.0	16.0	100	Pink-grey, coarse volcaniclastics. <sup>altered</sup> Weakly and generally unmineralised. The rock is a coarse grained breccia-conglomerate with poorly sorted, pink, hematitic, siliceous, felsic lava clasts, elongated parallel to foliation in a fine chlorite-sericite matrix. The foliation runs at 50° and the core is unfractured. Irregular white quartz veinlets are commonly developed. Within this unit two 0.2-0.5m wide zones of increased silicification, lack of hematite and strong sulphide development occur. These contain coarse chalcopyrite and semi-massive pyrite - around 20% of the rock. The 0.5m zone occurs at 100.3, the 0.2m at 108.5.	T9514	100.2	100.9	100	0.270	3.0	74	1850	305	135	<10
					T9515	108.4	108.9	100	0.480	1.5	27	1250	140	115	30
111.0	121.0	10.0	100	Grey-pink coarse volcaniclastics. Strongly altered and mineralised. This unit is identical to the one above except that the unmineralised section of core are minor and the mineralised section make up about three quarters of the rock. The overall sulphide content is 10-15%. The mineralised and unmineralised sections of the unit are irregularly mixed. Visible, coarse chalcopyrite mineralisation occurs at 111.1m, 111.7m, 111.9m, 112.9m, 117.4m, 117.7m, 118.3m and 120.2m. Gradational	T9516	111.0	112.0	100	5.830	2.5	82	9350	335	155	<10
					7				2.390	1.0	29	3050	140	35	"
					8				0.450	<0.5	31	1450	65	"	20
					9				1.130	"	22	735	40	"	10
					20				0.060	"	17	45	"	25	"
					1				0.070	"	14	50	"	"	<10
					2				0.350	1.0	21	1350	30	30	10
					3				0.430	"	20	1850	40	55	20

GOLD FIELDS EXPLORATION PTY. LIMITED  
DRILL CORE LOG AND ASSAY DATA

102046  
HOLE NUMBER: HP26

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PROJECT: TYNDALL

ULV. PRESS

020

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (all ppm)											
From	To	m	%		Sample No	From	To	Rec. %	Au	Ag	As	Cu	Pb	Zn	Bi	
				contacts occur on both ends of this unit.	T9524	119.0	120.0	100	0.550	1.5	22	1750	80	60	<10	
					5		121.0	"	0.730	<0.5	"	3100	"	85	<10	
				121.0- 217.7 WEAKLY ALTERED COARSE VOLCANICLASTIC BRECCIA.	7		122.0	"	0.150	0.5	17	40	35	95	"	
					T9528	122.0	123.0	"	0.450	2.0	11	290	45	175	20	
121.0	154.2	33.2	100	Pink-grey, very coarse grained volcaniclastic breccia. Weakly to moderately altered with rare, very fine grained disseminated pyrite found in patches throughout the unit. The overall sulphide content is >1% by vol. The rock contains large pale pink siliceous lava fragments, poorly sorted in a chloritic matrix. In places, the rock is an autobrecciated lava. the core is unfractured and foliated, at 53°C. Patchy but where developed, strong silicification overprints the weak alteration. These zones are generally 0.4 to 3.0m wide and are accompanied by irregular quartz veins.												
				Between 137.0 and 140.0, fine pyrite occurs abundantly in the fine grained chloritic matrix of this clast-rich breccia; locally increasing the pyrite content to ~ 5% by vol.	T9535	137.0	138.0	100	0.050	1.5	52	35	305	440	<10	
					6		139.0	"	0.010	1.0	26	20	40	175	20	
					T9537	139.0	140.0	"	0.130	"	25	30	60	125	<10	
				Below 142.6, the rock becomes an autobrecciated lava with numerous grit-sized fragments in the matrix. The core is more hematitic (pinker) also. This lasts to 151.0m.												
154.2	159.1	4.9	100	Pale grey, very strongly silicified coarse grained volcaniclastic breccia. This unit is the same as above, except the silicification is stronger and continuous; also hematite is not developed.												
159.1	167.4	5.2	63	Strongly altered, weakly silicified (in patches) pale grey-green coarse grained volcaniclastics. These rocks are altered to a silica-sericite assemblage, with traces of sulphide, up to 1-2% by vol. The rock is unfoliated and moderately fractured. Weakly developed quartz veins irregularly cut the sequence.	T9538	159.1	160.1	76	<0.008	1.0	14	20	20	205	20	
					9		161.1	"	"	0.5	17	25	20	105	10	
					40		163.1	37	"	"	16	55	40	130	<10	
					1		164.1	76	"	"	14	135	20	70	10	
					2		165.1	"	"	"	12	705	15	85	<10	
					3		165.9	"	"	<0.5	49	90	15	65	"	
				(161.1- 162.4, 0.2m recovered) At 160.4, a 2.2m wide fault/fractured zone occurs. This consists of small fragments of siliceous rock in a semi-consolidated sericitic matrix. A few fractured lengths of intact rock are present.	4		167.4	"	"	"	4	25	5	60	10	
					5		168.4	"	"	2.0	19	1300	10	90	"	
				At 164.2, a few flecks of base metal sulphide occur. Very small grains of base metal sulphides are present, scattered irregularly throughout this	T9536	168.4	169.4	"	"	0.5	4	35	10	45	<10	







PROJECT: TYNDALL

HOLE NO.: HP 27

GOLD FIELDS EXPLORATION PTY. LIMITED  
DRILL HOLE PLOT

SCALE 1:1000



5 cm

5364 156.6mN  
380 016.1mE

2586.8m R.L.

PLAN VIEW

COARSE VOLCANICLASTICS, FELSIC LAVAS, EPICLASTICS  
AND FINE GRAINED MAFIC DYKES.  
sil., ser., hem., chl.

5364 000mN

380 200mE

DIP PROFILE

HENTY FAULT  
ser., frac., shearing

Increased  
fracturing

Mylonite Zone

Crushed Zone

WEAKLY ALTERED COARSE  
VOLCANICLASTICS  
sil., chl., ser.

VARIABLY MINERALISED COARSE  
VOLCANICLASTICS  
sil., ser., chl., sulph.

WEAKLY ALTERED COARSE  
GRITTY VOLCANICLASTICS  
sil., chl., hem., ser., (py.)

226.6 - 228.6m  
2m @ 2.57 g/t Au  
6.0 g/t Ag  
0.33% Cu

1-2 % py

1-3 % py

10 % py  
(+cp)

0-1 % py

10-15 % py

15-20 % py  
(+cp)

5-10 % py

EOH 269.0 m

2431.2 m R.L. (FFW)

2368.9 m R.L. (EOH)

STATE: TAS.

HOLE NO. HP27





GOLD FIELDS EXPLORATION PTY. LIMITED  
**DRILL CORE LOG AND ASSAY DATA**

PROJECT: TYNDALL

HOLE NUMBER: HP 27

Page: 3.

ULV PRESS

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (all ppm)										
From	To	m	%		Sample No.	From	To	Rec. %	Au	Ag	As	Cu	Pb	Zn	Bi
176.0	189.8	13.8	100	Intensely fractured, semi-consolidated green-grey crushed rock. Strongly sericitic with numerous poorly sorted siliceous-sericitic coarse rock fragments in a semi-consolidated sericitic matrix. In places the sericite is bright green in colour.  This sequence develops at 182.0, into a series of longer silicic fragments (up to 0.5m wide) between zones of puggy, fine, unconsolidated clay (up to 1.0m wide).  At 187.4, to the end of the unit, the crushed core is weakly sulphidic, with fine disseminated pyrite in the siliceous clasts. Overall sulphide content is 1-2% by vol.	T9549	188.6	189.8	100	0.030	0.5	39	135	135	160	6
				<b>189.8-190.7 WEAKLY MINERALISED AND ALTERED COARSE VOLCANICLASTICS.</b>											
189.8	190.7	0.9	100	Pale green-grey moderately altered but weakly mineralised coarse grained volcaniclastics. Fine disseminated pyrite up to 2% by volume is found in this unit which is altered to a quartz-sericite-chlorite assemblage. A few quartz veinlets occur, and the core is weakly fractured.	T9550	189.8	190.7	100	0.010	0.5	6	40	490	915	41
				<b>190.7-227.6. VARIABLY MINERALISED, SILICIFIED AND FRACTURED, COARSE GRAINED VOLCANICLASTICS.</b>											
190.7	199.7	9.0	100	Grey-green-pink, variably but strongly mineralised coarse grained volcaniclastics. The core is altered to a quartz-sericite-pyrite assemblage, with elongate siliceous lava fragments in a sericite-pyrite matrix. The rock is strongly foliated at 50°C and is moderately fractured, although several highly fractured and puggy zones are present. A few minor quartz veinlets and thin silicified zones occur. The sulphides occur as fine disseminated pyrite scattered throughout with a few small blebs of base metal sulphides, mainly chalcopyrite. The overall sulphide content is 10-15% by vol.  At 192.2m a 1.2m lens of weakly silicified, unmineralised moderately altered rock occurs.	T9551	190.7	191.7	100	0.210	5.0	35	60	335	553	1
					2		192.7		0.100	1.0	19	30	80	65	3
					3		193.7		0.050	40.5	13	95	35	35	41
					4		194.7		0.180	1.0	42	145	105	40	5
					5	194.7	195.7		0.970	5.5		175	240	65	6
					6		196.7		0.230	4.0	66	250	140	115	11
					7		197.7		0.240	5.5	42	90		192	5
					8		198.7		0.040	0.5	31	45	100	90	10
					T9559	198.7	199.7		0.510	21.0	44	40	125	60	5

GOLD FIELDS EXPLORATION PTY. LIMITED  
DRILL CORE LOG AND ASSAY DATA

102054

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PROJECT: TYNDALL

HOLE NUMBER: HP 27

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INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (all ppm)										
From	To	m	%		Sample No.	From	To	Rec. %	Au	Ag	As	Cu	Pb	Zn	Bi
199.7	203.6	3.9	100	Very strongly silicified, coarse volcaniclastics. The core is moderately sericitic in a few places, otherwise the only alteration is silicification. Minor hematite causes the core to have a pink colour. The core is weakly sulphidic over the top 1.5m, which is more sericitic, more fractured and white in colour. Overall the core is moderately fractured.	T9560	199.7	200.7	100	<0.008	<0.5	10	10	30	150	3
					T9562	203.5	204.5	100	<0.008	<0.5	16	30	80	175	3
203.6	213.5	9.9	100	Pink-grey very coarse grained volcaniclastics consisting of quartz porphyritic felsic lava fragments - siliceous and hematitic in a fine chlorite-silica matrix. Overall the core is weakly altered, weakly fractured. Unfoliated and contains irregular quartz veinlets. The overall sulphide content is low, around 2-3% occurring as disseminated fine grained pyrite.	3		205.5	*	"	0.5	17	25	45	160	"
					4		206.5	*	0.010	<0.5	42	15	40	180	2
					5		207.5	*	<0.008	0.5	19	30	20	100	3
					6		208.5	*	0.020	<0.5	16	15	30	75	<1
					7		209.5	"	0.010	"	15	20	25	70	2
					8		210.5	"	0.130	2.5	16	25	40	60	<1
				Below 211.5 to the end of the unit, the sulphide level increases, grading into the unit below.	9		211.5	"	0.030	0.5	17	15	"	75	5
					0		212.5	"	"	<0.5	"	25	"	60	<1
					T9571	212.5	213.5	"	0.040	0.5	16	30	35	70	3
213.5	215.5	2.0	100	Strongly mineralised coarse grained volcaniclastics. The same original rock type as in the previous units, is here strongly altered to a quartz-sericite-sulphide assemblage. Minor blebs of coarse pyrite and chalcopyrite occur rarely in an overall sulphide content of around 10% by vol. The core is weakly fractured and foliated.	T9572	213.5	214.5	100	0.400	4.0	45	330	120	175	5
					3	214.5	215.5	"	0.360	1.0	23	70	80	65	3
215.5	217.5	2.0	100	Very strongly fractured, strongly sericitic volcaniclastics with a few blocks of highly silicified rock. A fractured zone of highly shattered and sheared material. Weakly mineralised.	T9574	215.5	216.5	100	0.020	<0.5	11	325	35	85	<1
					5	216.5	217.5	"	0.030	"	12	200	40	30	"
217.5	220.6	3.1	100	Pink-green-grey, highly silicified and sericitic coarse volcaniclastics. Weakly-moderately fractured and strongly foliated at 45°CA, with several strongly fractured zones. The rock is a very coarse volcanic breccia with numerous siliceous fragments in a pale green sericitic matrix. The top 1.0m of this unit is particularly silicified and between 218.6 and 219.6, small (5cm) lenses of silicified rock contains blebs of chalcopyrite.	T9576	218.6	219.6	100	0.540	1.5	12	830	30	30	9

GOLD FIELDS EXPLORATION PTY. LIMITED  
DRILL CORE LOG AND ASSAY DATA

PROJECT: TYNDALL

HOLE NUMBER: HP 27

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INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (all ppm)										
From	To	m	%		Sample No.	From	To	Rec. %	Au	Ag	As	Cu	Pb	Zn	Bi
220.6	227.6	7.0	100	Strongly mineralised, grey, coarse grained volcanoclastics. A coarse grained volcanic breccia containing siliceous felsic lava fragments in a fine grained matrix now altered to a silica-sericite-sulphide assemblage. The core is moderately fractured with a few highly fractured zones and is weakly foliated at 45°C. Quartz veins are rare. Most of the 15-20% sulphide occurs as fine grained disseminated pyrite, but small massive pyrite blebs are common throughout the unit. Coarse chalcopyrite blebs are also developed, at 22.8, 223.3, 225.6 and 227.5.	T9577	220.6	221.6	100	0.300	1.5	27	245	125	110	13
					8		222.6	"	0.080	<0.5	34	760	220	160	3
					9		223.6	"	0.120	1.5	40	1300	550	185	9
					80		224.6	"	0.190	4.0	74	2700	955	560	12
					2		225.6	"	0.210	2.5	97	2080	510	350	10
					3		226.6	"	0.390	4.0	230	3700	1700	1150	15
					T9584	226.6	227.6	"	3.880	7.0	63	2300	335	230	17
				Between 223.5 and 224.7, a sericitic, highly fractured zone of completely shattered and sheared rock occurs.											
				<b>227.6-269.0 WEAKLY ALTERED COARSE GRAINED GRITTY VOLCANICLASTICS.</b>											
227.6	230.5	2.9	100	Strongly fractured, pale pink-grey coarse grained volcanoclastic breccia. This unit is moderately altered and very weakly mineralised with a chlorite-sericite-silica assemblage developed. A strong foliation is developed and the core is strongly fractured to a series of crumbly unconsolidated zones with minor unfractured sections up to 0.4m long. Around 1-2% pyrite occurs as fine disseminations in the breccia groundmass.	T9585	227.6	228.6	100	1.250	8.0	19	4300	130	165	13
					6		229.6	"	0.020	<0.5	12	40	30	75	41
					T9587	229.6	230.6	"	<0.008	"	"	24	40	50	6
230.5	245.7	15.2	100	Weakly mineralised and altered coarse grained volcanoclastics. The core consists of coarse pink and white elongate felsic lava fragments, silicified in a fine dark green chloritic matrix. The unit is unfractured and moderately foliated at 45°C. Minor irregular quartz veins occur, and the rock is overall weakly altered and contains minor patches where disseminated pyrite up to 1% by vol. is present.	T9588	230.6	231.6	100	<0.008	<0.5	19	25	25	65	<1
					T9589	237.0	238.0	100	0.150	3.5	16	20	20	110	<1
					90		239.0	"	0.050	1.0	"	15	"	95	"
					1		240.0	"	0.030	<0.5	7	<5	10	65	"
					2		241.0	"	0.070	"	12	20	5	60	"
					3		242.0	"	0.020	"	7	10	<5	80	"
					4		243.0	"	0.050	"	12	15	10	75	2
					5		244.0	"	0.020	"	9	20	<5	90	<1
					6		245.0	"	<0.008	"	3	115	"	65	"
				Between 237.0 and the end of the sequence, silicified zones of increased alteration with associated increased sulphide development (up to 5-10%) occur, usually about 0.3m wide.	T9597	245.0	246.0	"	"	"	1	15	"	100	"









GOLD FIELDS EXPLORATION PTY. LIMITED  
**DRILL CORE LOG AND ASSAY DATA**

102060

5130

PROJECT: TYNDALL

HOLE NUMBER: HP 28

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INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (all ppm)										
From	To	m	%		Sample No.	From	To	Rec %	Au	Ag	As	Cu	Pb	Zn	Bi
				The core is harder than above, being altered to quartz-sericite-assemblage with minor pyrite (0-1%) developed in places. Irregular quartz veins are common.											
				287.3-318.2 WEAKLY ALTERED COARSE GRAINED VOLCANICLASTICS WITH MINOR CARBONATE ALTERATION AT DEPTH.											
287.3	318.2	30.9	100	Pale pink-grey, weakly altered coarse grained volcaniclastics. Elongate, pink, siliceous fragments from grit to large pebble sized, occur poorly sorted in a fine grained matrix. The sequence is weakly altered to a quartz-chlorite-sericite-hematite assemblage and is weakly fractured. In places the rock is fine grained (epiclastics) and overall is strongly foliated at 50°C.A. A few, sericitic-fractured zones are present. Very rare pyrite occurs as very fine disseminations in the matrix. At 310.5, wispy carbonate veinlets begin to appear in the core, and below 313.5, these increase in volume and density to become large coarse intergrowths and lenses. A few sericitic (green) bands also occur in this carbonate-rich rock, which ends on an abrupt, broken contact with the unit below.	T9638	317.2	318.2	100	0.070	0.5	83	70	55	185	2
				318.2-322.8 A QUARTZ-SERICITIC-SULPHIDE VEIN IS UNDERLAIN BY STRONGLY ALTERED AND MINERALISED VOLCANICLASTICS.											
318.2	322.2	4.0	100	Pale green-grey quartz-sericite-sulphide vein. Pale green intergrowths of pale brown quartz and green sericite stringers occur with lenses (0.1-0.3m) of white quartz containing network veinlets of base metal sulphides, particularly galena and sphalerite. The sericite veinlets are foliated at 50°C.A, otherwise the core is unfoliated. Overall the vein complex is moderately strongly fractured with several very strongly fractured zones. The overall sulphide content is 5-10%, most as base metal sulphides.	T9611	318.2	318.9	100	2.030	2.0	11	130	175	65	3
					2		319.9	"	5.030	25.0	37	940	4100	4200	10
					3		320.4	"	0.330	11.0	190	1400	1600	155	7
					4		321.3	"	2.430	4.5	25	553	348	128	6
					T9616	321.3	322.2	"	8.160	25.0	46	1080	5500	10000	18
322.2	323.0	0.8	100	Dark grey, strongly sulphidic fine grained volcaniclastics. No coarse fragments are visible in this unit which is a quartz-chlorite-sericite-sulphide assemblage. Thin (1-2mm) bands of massive pyrite occur along the length of the core, and are folded through axial planes perpendicular to the core. The rock is weakly fractured and the overall sulphide content (all pyrite) is 15-20%.	T9617	322.2	323.0	100	0.290	3.5	190	990	260	85	7







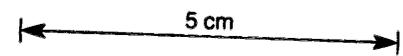
102004

PROJECT: TYNDALL

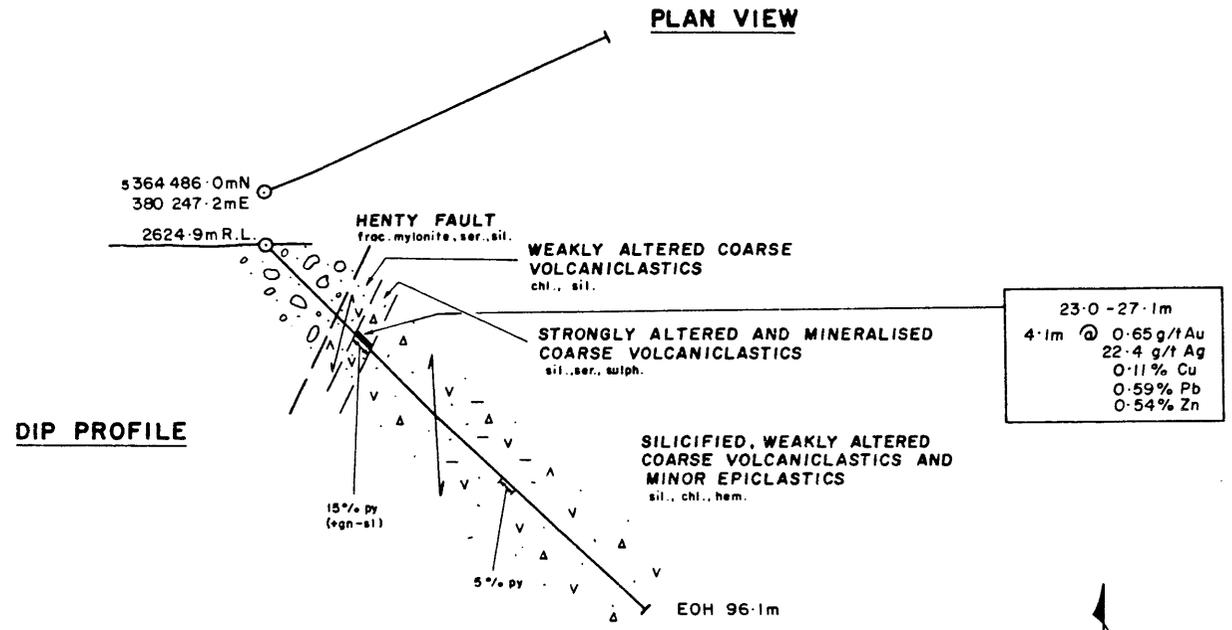
HOLE NO.: HP29

GOLD FIELDS EXPLORATION PTY. LIMITED  
DRILL HOLE PLOT

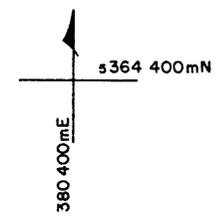
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PLAN VIEW



DIP PROFILE





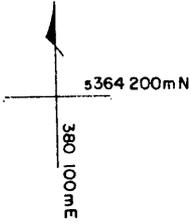




**PLAN VIEW**

s364 218.7 mN  
379 961.4 mE

2588.3 mR.L.



Limit of ex.

COARSE GRAINED VOLCANICLASTICS AND LAVAS  
AND EPICLASTICS CUT BY THIN MAFIC DYKES  
sil., chl., hem., ser.

**DIP PROFILE**

2346.2 mR.L. (FFW)

2276.9 mR.L. (EOH)

5 CM

Increased fracturing, ser.

**HENTY FAULT**  
sil., ser., frac., shearing

MYLONITE ZONE

CRUSHED ZONE

WEAKLY ALTERED COARSE  
VOLCANICLASTICS WITH A  
BASAL CARBONATE  
ALTERATION ZONE  
sil., ser., chl., hem., carb

318.2 - 322.2m
4.0m @ 4.04g/t Au
14.6g/t Ag
0.24% Pb
0.34% Zn

QUARTZ - SERICITE - SULPHIDE VEIN  
STRONGLY ALTERED + MINERALISED  
FINE-MEDIUM VOLCANICLASTICS

WEAKLY ALTERED  
COARSE VOLCANICLASTICS  
AND MINOR BLACK  
SHALES.

5-10% py+cp  
1gn+st

1-10%

1-2% py

EOH 379.8

SCALE 1:1000



STATE: TAS.  
HOLE NO: HP28

1:2000

07

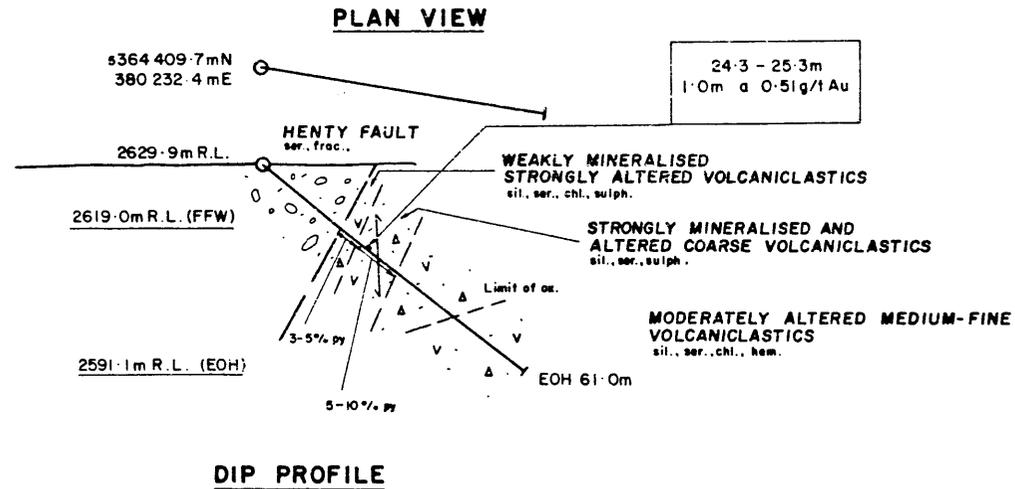
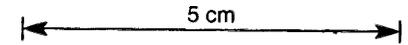


PROJECT: TYNDALL

HOLE NO: HP 30

GOLD FIELDS EXPLORATION PTY. LIMITED  
DRILL HOLE PLOT

SCALE 1: 1000



STATE: TAS.

HOLE NO HP30

102000

GOLD FIELDS EXPLORATION PTY. LIMITED  
**DRILL CORE LOG AND ASSAY DATA**

102071

HOLE NUMBER: HP30

Page: 1

PROJECT: TYNDALL

020

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (all ppm)										
From	To	m	%		Sample No	From	To	Rec %	Au	Ag	As	Cu	Pb	Zn	Bi
<b>SUMMARISED LOG</b>															
0.0	18.7	3.7	20	HENTY FAULT. MODERATELY WEATHERED, STRONGLY FRACTURED AND CRUSHED, SERICITIC VOLCANICS.		0.0	18.7	FTCS							
18.7	22.6	3.2	82	STRONGLY ALTERED, WEAKLY MINERALISED, STRONGLY FRACTURED COARSE GRAINED VOLCANICLASTICS. VERY WEAKLY WEATHERED.		18.7	22.6	FWAS							
22.6	31.8	9.2	100	MODERATELY STRONGLY MINERALISED AND ALTERED COARSE VOLCANICLASTICS. STILL VERY WEAKLY WEATHERED.		22.6	31.8	FWMZ							
31.8	61.0	28.1	96	MODERATELY TO UNALTERED MEDIUM-FINE GRAINED VOLCANICLASTICS. STRONGLY WEATHERED AND FRACTURED IN PLACES AND WEAKLY SILICIFIED AT DEPTH.		31.8	61.0	FWAW							
<b>DETAILED LOG</b>															
0.0-18.7 HENTY FAULT. WEATHERED, FRACTURED AND CRUSHED, SERICITIC VOLCANICS.															
0.0	6.0			Tricone, no core recovered.											
6.0	18.7	2.6	20	Moderately weathered, strongly fractured silicified volcanics. Highly fractured fragments of core-unconsolidated, with several soft, soil-like muddy, clay zones (0.1m wide). A crushed zone, containing moderately-strongly altered volcanics.											
18.7-22.6 STRONGLY ALTERED, WEAKLY MINERALISED COARSE VOLCANICLASTICS.															
18.7	22.6	3.2	82	Pale green-grey strongly altered medium-coarse grained volcanoclastics. The core is strongly fractured and still slightly weathered. The rock is altered to a quartz-sericite-pyrite assemblage. The overall sulphide content is 3-5% by vol., and the core is weakly foliated.	T9639	18.7	19.7	100	0.050	<0.5	16	20	60	70	5
					40		20.7	80	0.040	"	26	15	30	90	<1
					1		21.7	60	0.020	"	19	"	15	45	5
				A very strongly fractured zone occurs between 21.8 and 22.6.	T9642	21.7	22.6	89	0.140	0.5	37	380	60	110	4











GOLD FIELDS EXPLORATION PTY. LIMITED  
 DRILL CORE LOG AND ASSAY DATA

PROJECT: TYNDALL

HOLE NUMBER: HP31

Page: 4

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (all ppm)										
From	To	m	%		Sample No.	From	To	Rec. %	Au	Ag	As	Cu	Pb	Zn	Bi
				quartz-hematite-chlorite-sericite assemblage.											
315.0	331.2	16.2	100	Dark pink-greenish-grey, fine grained-medium grained, volcaniclastics. Weakly foliated pale pink hematitic felsic lava fragments in a grey siliceous-sericitic-chloritic fine matrix. The core is weakly fractured and rarely quartz veined. Several, thin (0.1-0.2m) puggy, unconsolidated clay zones cut the sequence. Overall the core is moderately altered and is very weakly sulphidic with fine disseminated pyrite up to 1% by vol.	T9706	322.0	323.0	100	0.030	<0.5	15	160	20	60	<1
				Below 322.0, the rock becomes slightly more altered and is also more sulphidic with fine pyrite occurring in the matrix of the volcaniclastics - (up to 2-3% by vol.)	7		324.0	"	"	"	12	95	25	115	7
					8		325.0	"	0.410	"	9	450	15	85	4
					9		326.0	"	0.030	"	"	20	20	100	<1
					10		327.0	"	0.010	"	8	"	10	90	1
				At 329.0, the core is strongly sericitic, soft and in places, strongly fractured. This continues to the end of the unit.	1		328.0	"	"	"	7	10	35	160	3
					2		329.0	"	<0.008	"	11	15	25	85	2
					3		330.0	"	0.080	1.0	13	"	10	50	3
					T9714	330.0	331.2	"	0.230	1.5	"	36	50	205	<1
				331.2-363.1 STRONGLY ALTERED AND MINERALISED COARSE VOLCANICLASTICS WITH ZONES OF STRONGLY DEVELOPED SULPHIDES.											
331.2	333.5	1.9	83	Pale orange-grey intensely silicified volcaniclastics with a strong siliceous overprint - obscuring original textures in places. Streaky lenses of fine pyrite are present, sulphides making around 3-4% of the rock. A weak foliation is developed and the core is moderately fractured. Carbonate veins (irregular) cross-cut the siliceous (+ hematitic) sequence. No base-metal sulphides are present.	T9715	331.2	332.3	83	0.160	0.5	18	160	195	280	<1
					T9716	332.3	333.5	"	0.120	"	95	225	75	205	"
333.5	335.4	1.9	100	Fine grained massive pyrite with very minor intergrown fine carbonate and quartz. A massive structureless unit, that is moderately-strongly fractured and contains several (0.1-0.2m thick) sericitic puggy zones	T9717	333.5	334.5	100	5.100	81.0	1500	2750	6900	1075	290
					T9718	334.5	335.4	"	6.600	83.0	1700	2600	5900	525	190



GOLD FIELDS EXPLORATION PTY. LIMITED  
**DRILL CORE LOG AND ASSAY DATA**

PROJECT: TYNDALL

HOLE NUMBER: HP31

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INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (all ppm)										
From	To	m	%		Sample No.	From	To	Rec %	Au	Ag	As	Cu	Pb	Zn	Bi
367.0	377.0	10.0	100	Pale green, moderately sericitic but otherwise weakly altered felsic lava or a weakly porphyritic (quartz) intrusive. Several quartz veins (metamorphic-thick) and sericite veinlets cut the rock which contains very small quartz crystals up to 1mm across. Minor base metal sulphides and coarse pyrite grains are present, usually with the quartz veins. The overall sulphide content is low, >1%. The core is unfractured and unfoliated. A sharp contact at 25° CA below.	T9750	367.0	368.0	100	<0.008	<0.5	4	290	25	360	<1
					1		369.0	"	"	"	5	135	20	80	"
					2		370.0	"	"	"	16	715	15	80	1
					3		371.0	"	"	"	23	635	<5	45	2
					4		372.0	"	"	"	20	260	15	65	<1
					5		373.0	"	"	1.0	2	20	<5	55	"
					6		374.0	"	"	<0.5	5	45	10	40	8
					7		375.0	"	"	"	2	25	"	20	13
					8		376.0	"	0.010	"	7	40	20	45	<1
377.0	391.0	14.7	100	Pale pink-dark green/grey interbedded coarse volcaniclastics with large (0.2-0.3m wide) cobbles of felsic lava, and fine grained epiclastics. This sequence is altered to a silica-chlorite-sericite-hematite assemblage, is moderately foliated at 50°CA and is weakly fractured.  Between - 382.4 and 383.7 the core is pale grey and intensely silicified.  END OF HOLE 391.7m.	T9759	376.0	377.0	"	<0.008	"	"	90	10	15	"





GOLD FIELDS EXPLORATION PTY. LIMITED  
**DRILL CORE LOG AND ASSAY DATA**

102082

100

PROJECT: TYNDALL

HOLE NUMBER: HP32

Page: 2

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (all ppm)										
From	To	m	%		Sample No.	From	To	Rec. %	Au	Ag	As	Cu	Pb	Zn	Bi
				is metamorphosed to a silica-hematite-chlorite assemblage, with the lavas being more silica-hematite rich and the epiclastics chloritic. The rock is also cut by thin, mafic, chloritic, fine grained dykes. The core is weakly fractured and very weakly foliated at 55°C.A. A few thick, quartz metamorphic veins also occur irregularly. The epiclastics and dykes are often veined by irregular, thin, wispy quartz veinlets. Between 69.0 and 83.0, the core is lava rich, with pink felsic lavas containing only minor lenses of volcaniclastics. At 87.0, down to 108.0 the core is still rich in felsic lavas (although not as strong as above), however the rock is strongly fractured. An abrupt contact occurs with the unit below.											
				122.0-137.0 HENTY FAULT. A STRONGLY FRACTURED MYLONITE IS UNDERLAIN BY A WELL DEVELOPED CRUSHED ZONE.											
122.0	128.0	4.4	73	Pale green-brown, strongly fractured, highly sheared mylonitic, sericitic volcanics. This unit is strongly fractured into small wedge-shaped fragments of soft-clay rich rock. A few quartz (metamorphic) veins are present.											
128.0	137.0	7.4	82	Pale green, completely fractured, puggy clays and rock. A few lenses of hard silicified rock (0.1-0.2m wide) occur in a matrix of coarse rock fragments and unconsolidated clays. Pale green sericite becomes abundant at depth and between 135.2 and 136.4 the core is completely shattered and fractured.	19673	136.4	137.0	82	40.008	0.5	17	15	45	165	2
				137.0-139.5 STRONGLY MINERALISED VOLCANICS WITHIN THE HENTY FAULT. A SEMI-CONSOLIDATED CRUSHED ZONE.											
137.0	139.5	2.5	100	Dark grey-green, strongly altered and mineralised crushed fault rock. Silicified-sericitic, rounded rock fragments up to 3cm across occur in a fine matrix of soft sericitic clays and pyrite. The overall sulphide content is around 10-15%. The rock is semi-consolidated, being the faulted part of the unit below.	19674	137.0	139.3	100	0.210	1.5	67	80	45	285	3
					5	139.5	*	0.350	8.0	81	335	215	60	10	

GOLD FIELDS EXPLORATION PTY. LIMITED  
**DRILL CORE LOG AND ASSAY DATA**

PROJECT: **TYNDALL**

HOLE NUMBER: **HP32**

Page: **3**

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (all ppm)											
From	To	m	%		Sample No.	From	To	Rec. %	Au	Ag	As	Cu	Pb	Zn	Bi	
				139.5-176.8 TWO STRONGLY MINERALISED VOLCANICLASTIC LENSES SEPARATED BY AN UNMINERALISED, MODERATELY ALTERED SEQUENCE.												
139.5	141.9	2.4	100	Dark grey strong altered and mineralised medium grained volcanoclastics. A strongly fractured unit altered to a pyrite-sericite-silica assemblage, the overall sulphide content being 20%. A few flecks of chalcopyrite are present and narrow (0.1m), irregular lenses of massive fine pyrite occur at 139.6, 139.8-140.2, 141.3 and 141.8. The original rock consisted of coarse-medium, poorly sorted, sub-rounded siliceous clasts, up to 1cm is strongly sericitised in places. A sharp contact occurs with the unit below.	T9676	139.5	140.4	100	13.400	75.0	730	2275	3800	625	73	
					7	141.2	"	"	0.290	5.0	200	550	240	100	29	
					T9678	141.2	141.9	"	"	0.720	9.0	330	805	670	1150	44
141.9	144.2	2.3	100	A massive quartz vein. Completely replaced/altered rock, now all cryptocrystalline silica. Thin, brown silica veinlets occur cross-cutting the unit which has rare traces of sulphide. The core is unfractured apart from a strongly fractured zone, developed between 142.3 and 142.6.	T9679	141.9	143.0	100	0.010	2.0	100	350	160	470	4	
					80	144.2	"	"	"	1.0	14	20	10	95	<1	
144.2	165.6	22.4	100	Strongly altered but unmineralised pale grey medium-coarse grained volcanoclastics. Elongate-siliceous clasts up to 4.5cm across and down to grit size occur in a fine grained matrix. The rock is altered to a silica-chlorite-sericite assemblage, with some coarse siliceous clasts being hematitic and lenses of rare disseminated pyrite (up to 1-2%) occurring also. The core is foliated at 55°CA and is moderately fractured. A few zones (0.1-0.2m) of increased fracturing and sericite development are present. Rare quartz veins irregularly cut the core. Overall sulphide content is >1%. Below 162.6, to the end of the unit, the sulphide content increases, with disseminated pyrite and blebs of pyrite occurring in the matrix. This grades into the unit below.	T9681	144.2	145.2	100	<0.008	1.0	20	35	5	40	<1	
					2	146.2	"	"	"	"	20	35	100	4		
					3	147.2	"	"	"	19	"	15	70	<1		
					4	148.2	"	"	"	28	"	20	55	5		
					5	149.2	"	"	"	19	15	25	80	4		
					T9686	149.2	150.2	"	"	0.5	21	20	15	60	2	
					T9687	160.6	161.6	100	<0.008	1.0	20	15	15	55	<1	
					8	162.6	"	"	"	1.5	31	"	"	60	5	
					9	163.6	"	"	"	"	23	30	20	50	<1	
					91	164.6	"	"	0.070	2.0	28	35	"	55	2	
					T9692	164.6	165.6	"	"	0.130	2.5	29	280	30	80	4
165.6	176.8	11.2	100	Medium grey, strongly altered and mineralised medium coarse grained volcanoclastics. The same original rock as above has been altered to a silica-sulphide-sericite assemblage. The core is weakly foliated and fractured. In general the rock is moderately silicified and blebs of chalcopyrite are common. The overall sulphide content is around 15%, mostly as disseminated fine grained pyrite.	T9693	165.6	166.6	100	0.270	2.0	120	1750	260	230	5	
					4	167.6	"	"	0.380	1.5	54	1350	190	175	"	
					5	168.6	"	"	17.130	4.0	19	1150	50	80	10	
					6	169.6	"	"	1.570	2.0	22	2000	60	165	3	
					7	170.6	"	"	1.010	1.0	18	365	20	50	6	
					8	171.6	"	"	0.160	"	61	985	65	70	4	
					T9699	172.6	"	"	"	0.390	2.0	21	1400	25	45	<1







GOLD FIELDS EXPLORATION PTY. LIMITED  
**DRILL CORE LOG AND ASSAY DATA**

PROJECT: TYNDALL

HOLE NUMBER: HP33

Page: 2

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (all ppm)										
From	To	m	%		Sample No.	From	To	Rec. %	Au	Ag	As	Cu	Pb	Zn	Bi
				of pink felsic lava (up to 0-3m wide). This sequence is metamorphosed to a chlorite-silica-hematite assemblage and contains a few rare quartz veins. A series of thin (up to 1.5m wide) fine grained mafic dykes intrudes the volcanoclastics and are weakly altered to chlorite-sericite-quartz. The rock is weakly fractured and foliated at 45°CA. Below 55.0, the felsic lavas become thicker and more abundant, making up the majority of the sequence. Between 84.0 and 85.8 a zone of strongly fractured bright green sericitic fine grained epiclastics occur. At 102.0, the core is strongly fractured down to the end of this sequence.											
				106.5-124.2 HENTY FAULT. HIGHLY FRACTURED VOLCANICS WITH MINOR MYLONITES AND PUGGY CLAY ZONES.											
106.5	124.2	17.7	100	Pale green-cream coloured semi-consolidated rock fragments and clays. Overall a very strongly altered sequence (quartz-sericite-sulphide ? alteration) that has been strongly fractured and deformed into a crushed zone. In places the core is semi-consolidated rock fragments in a clay matrix and in others it is unconsolidated pug. Minor fine grained sulphides (pyrite) appear to occur, particularly below 112.0. At 109.8 a 30cm band of soft mylonitic volcanics occurs, later deformed by kink bands. Overall the sulphide content is low, around 1-2% by vol above 112.0, and around 4-5% below, increasing into the unit below.	T9770	112.0	113.0	100	0.020	<0.5	26	55	180	210	3
					1				<0.008	0.5	34	30	475	975	1
					2				"	<0.5	51	45	290	840	<1
					3				"	0.5	49	"	220	465	"
					4				"	<0.5	30	40	110	270	7
					5				0.040	"	28	75	25	140	<1
					6				0.050	"	30	"	120	"	"
					7				0.060	"	37	375	235	230	"
					8				0.570	5.5	300	450	1250	1780	17
					9				0.050	<0.5	37	45	40	155	<1
				124.2-126.0 MINERALISED VOLCANICLASTICS WITHIN THE HENTY FAULT.	80				<0.008	"	21	70	20	105	"
					T9781	123.0	124.2	"	0.940	2.5	22	420	240	75	"
124.2	126.0	1.8	100	Strongly fractured, sheared and semi-consolidated volcanics as above; but here are strongly mineralised. Siliceous-sulphidic clasts occur poorly sorted in a weakly consolidated sulphidic-sericitic clay matrix. The sulphide content is high (15-20%) with a 5cm wide massive pyrite-lens at 125.7. The core also contains several puggy completely shattered clay zones. Minor chalcopyrite also occurs.	T9782	124.2	125.0	100	0.880	7.5	46	420	80	100	4
					3	125.0	126.0	"	0.370	3.5	160	1850	345	320	24



























GOLD FIELDS EXPLORATION PTY. LIMITED  
DRILL CORE LOG AND ASSAY DATA

PROJECT:

HOLE NUMBER: HP35

Page: 2

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (all ppm)										
From	To	m	%		Sample No.	From	To	Rec. %	Au	Ag	As	Cu	Pb	Zn	Bi
				also often cut by the irregular quartz veinlets. The felsic lavas (usually the thicker lenses) often contain thick, white-metamorphic quartz veins. The core is moderately foliated at 50°CA and is very weakly fractured, with a few sericitic, highly fractured zones.											
				At 95.6, the rock is more altered, being sericitic and siliceous as well as being strongly fractured. This continues down into the unit below.											
				100.0-108.5 HENTY FAULT. A CRUSHED ZONE OF SERICITIC CLAYS AND ROCK CHIPS. STRONGLY ALTERED.	T4948	100.5	101.5	100	<0.008	0.5	17	30	100	170	<1
					9		102.5	"	"	<0.5	29	40	510	1400	2
100.0	108.5	8.5	100	Grey-lime green, semi-consolidated clays and fractured rock fragments.	50		103.5	"	0.010	2.0	43	30	2200	1260	10
				A large crushed zone with grit sized siliceous rock chips in a grey sericitic (unconsolidated) clay matrix. Small patches (0.1-0.2m thick, 1-2m apart) of sulphidic clays are also present; the overall sulphide content is around 0-1%.	1		104.5	"	<0.008	1.5	"	20	300	180	<1
					2		105.5	"	0.070	1.0	28	110	10	140	5
					3		106.5	"	0.030	3.0	23	50	<5	135	3
					4		107.5	"	<0.008	2.5	33	25	20	180	2
				At 104.2 down to 108.5, the clay is a bright green batcheloritic sericite.	T4955	107.5	108.5	"	"	2.0	42	65	65	300	<1
				108.5-120.5 STRONGLY ALTERED AND SULPHIDIC VOLCANICS WITHIN THE HENTY FAULT.	T4956	108.5	109.5	100	1.180	9.0	99	750	620	255	<1
					7		110.5	"	0.030	2.0	46	80	110	50	21
108.5	120.5	12.0	100	Dark grey strongly sulphidic, strongly fractured and foliated semi-consolidated sericitic volcanics. This unit is part of the fault zone above, but is considerably more sulphidic, around 20% by vol.	8		111.5	"	"	6.0	69	140	560	90	12
					9		112.5	"	0.055	7.0	240	1050	13700	15700	10
				Short (0.1-0.2m) lengths of core are basically unfractured apart from sericitic veinlets, between narrow (5-10cm) zones of unconsolidated sericitic clays and rock chips. Fine pyrite is disseminated thickly through the clayey matrix.	60		113.5	"	0.030	2.0	120	405	1800	2080	6
					1		114.5	"	<0.008	"	88	155	165	140	10
					2		115.5	"	0.060	5.0	82	900	225	120	6
					3		116.5	"	0.030	"	98	170	75	45	21
					4		117.5	"	<0.008	2.0	38	120	15	70	6
				A number of wider, completely fractured zones also occur at 109.3, 117.0 and 120.0. Below 117.5 the core is only weakly sulphidic.	5		118.5	"	"	2.5	35	70	<5	65	5
					6		119.5	"	0.030	4.5	45	60	5	"	4
					T4967	119.5	120.5	"	<0.008	<0.5	23	100	<5	85	1
				120.5-143.8 VARIABLY BUT GENERALLY STRONGLY MINERALISED AND ALTERED MEDIUM GRAINED VOLCANICLASTICS.	T4968	120.5	121.5	100	<0.008	2.5	18	15	<5	40	2
					9		122.5	"	"	1.0	12	25	"	45	<1
					T4971		123.5	"	"	1.5	15	40	"	65	2







GOLD FIELDS EXPLORATION PTY. LIMITED  
**DRILL CORE LOG AND ASSAY DATA**

102105

HOLE NUMBER: HP36

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PROJECT:

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INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (all ppm)										
From	To	m	%		Sample No.	From	To	Rec. %	Au	Ag	As	Cu	Pb	Zn	Bi
				moderately fractured at 50°C, and is strongly fractured. The rock is metamorphosed to a quartz-chlorite-hematite assemblage with minor sericite also present in patches. The dykes are strongly chloritic and often contain irregular quartz veinlets. Below 46.0, the core is very strongly fractured.											
				50.4-77.7. HENTY FAULT. A WIDE MYLONITIC VOLCANIC ZONE IS UNDERLAIN BY A NARROW CRUSHED ZONE.											
50.4	74.5	23.5	98	Pale brown-grey, strongly sericitic mylonitic volcanics. Strongly fractured soft rock with numerous irregular quartz veins in places. Patches of gritty volcanoclastics (as above) occur within the mylonites, which are kink banded by later deformation. Two black/dark grey shale units, highly sheared and fractured, occur at 71.0-72.4 and 73.8-74.5.											
74.5	77.7	2.0	63	Strongly fractured crushed zone. Highly fractured clay and rock fragments - unconsolidated. Sericite is well developed throughout.											
				77.7-107.9 UNMINERALISED, STRONGLY ALTERED MEDIUM GRAINED VOLCANICLASTICS.	T4993	78.9	79.9	100	0.020	4.0	21	20	35	130	<1
					4		80.9	"	0.010	"	20	"	40	225	"
					5		81.9	"	<0.008	2.5	19	15	35	45	3
77.7	107.9	30.2	100	Pale green-grey, weakly mineralised, strongly altered medium grained volcanoclastics. The core consists of pinkish, siliceous clasts, around pebble size, poorly sorted in a fine silica-sericite-pyrite matrix. Minor irregular sericite and quartz veinlets cut the sequence, which is weakly fractured. The overall sulphide content is around 3-4% by vol. With depth, the volcanoclastics become coarser grained, with fragments up to 5cm across. In places the core is moderately fractured, usually associated with increased pale green sericite development and weak silicification.	6		82.9	"	"	1.0	17	20	45	50	2
					7		83.9	"	"	6.0	19	30	15	25	5
					8		84.9	"	0.010	5.5	13	20	35	60	<1
					9		85.9	"	0.010	3.5	5	10	45	15	"
					T5000		86.9	"	0.040	4.0	14	15	50	45	"
					T10401		87.9	"	0.010	2.0	21	"	45	55	3
					2		88.9	"	0.030	1.5	15	"	35	85	<1
					3		90.9	"	"	2.0	17	"	70	175	"
					4		91.9	"	0.010	1.0	13	"	25	75	"
					5		92.9	"	<0.008	0.5	10	10	20	45	"
					6		93.9	"	"	"	12	15	30	80	"











GOLD FIELDS EXPLORATION PTY. LIMITED  
**DRILL CORE LOG AND ASSAY DATA**

102111

PROJECT: TYNDALL

HOLE NUMBER: HP37

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INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA			
From	To	m	%		Sample No.	From	To	Rec. %
				232.6-278.0 MODERATELY ALTERED, MEDIUM GRAINED VOLCANICLASTICS.				
232.6	278.0	45.4	100	Pale green-grey-pink medium grained, moderately strongly altered volcaniclastics. The core consists of minor coarse siliceous fragments in a fine grained, matrix and a majority of finer grained banded volcaniclastics. This is altered to a silica-sericite-carbonate assemblage. The core is dominantly sericitic pervasively developed with bright green sericite occurring on fracture surfaces. Minor silicification occurs in patches and a network of irregular quartz and carbonate veins cuts the sequence. The rock is moderately-strongly fractured overall and very weakly foliated. In patches, very weak pyrite is developed, less than 1-2% by vol. overall. This unit grades into the ore below.				
				278.0-331.1 WEAKLY-UNALTERED COARSE GRAINED QUARTZ PHYRIC VOLCANICLASTICS.				
278.0	331.1	53.1	100	Coarse grained quartz phyric volcaniclastics. Weakly to unaltered pink-grey volcaniclastics. A weak sericite-hematite-chlorite-silica metamorphism/alteration overprints the rock which is weakly fractured and very weakly foliated. Between 278.0 and 290.4 the core is very strongly fractured.				
				END OF HOLE 331.1m.				











GOLD FIELDS EXPLORATION PTY. LIMITED  
**DRILL CORE LOG AND ASSAY DATA**

102117

PROJECT: TYNDALL-HENTY

HOLE NUMBER: HP38

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INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA															
From	To	m	%		Sample No.	From	To	Rec. %												
198.2	282.1	83.9	100%	<b>VOLCANICLASTIC BRECCIA - JUKES BRECCIA</b> Predominantly volcaniclastic breccia with lapilli-and block-sized fragments. Characterised by the presence of sub-rounded pink quartz porphyry fragments. Minor bands of fine-grained grey volcaniclastic.																
198.2	199.8	1.6	100	Grey fine-grained volcaniclastic. Possible bedding in patches 198.2-198.4: Coarse fragmental																
199.8	205.3	5.5	100	Coarse-grained volcaniclastic breccia 199.8-200.2: Transitional mixture of fine and coarse-grained volcaniclastic material. 201-203.4: Strongly silicified. 202.8-204: Quartz-chlorite veins.																
205.3	212.2	6.9	100	Fine-grained grey volcaniclastic chlorite veining and pink silicified lenses. 212.2: Contact/CA = 58°																
212.2	229.7	17.5	100	Volcaniclastic breccia - typically lapilli-sized fragments. Gritty medium-grained texture of quartz, feldspar and felsic fragments. Larger lapilli-sized chloritic feldspar-phyric fragments and pink quartz-phyric fragments. Occasional pyrite slugs. 217.7-221.8: Patchy silicification 222.5-224: Blocks (greater than 10cm) of quartz-feldspar porphyry 224-229.7: Fine-to medium-grained volcaniclastic. 228.4: Quartz vein.																
229.7	233.9	4.2	100	Chloritic-veined fine-grained volcaniclastic.																
233.9	282.1	48.2	100	Volcaniclastic breccia Medium-grained gritty matrix with large felsic (greater than 5cm) fragments. Quartz porphyry fragments, hematitic fragments and chlorite-rich fragments. 232.9-235.3: Broken core																
282.1	286.2	4.1	100	<b>BLACK SHALE/SILTSTONE - NEWTON CREEK SANDSTONE</b> Sequence of foliated shales and siltstone 283.2 Foliation (Bedding)/CA = 64°																
286.2	286.5	0.3	100	<b>VOLCANICLASTIC BRECCIA - JUKES BRECCIA</b>																

END OF HOLE

INTERVAL		RECOVERY		COMMENTS	INTERVAL		RECOVERY		COMMENTS	INTERVAL		RECOVERY		COMMENTS
From	To	m	%		From	To	m	%		From	To	m	%	
?	9.0	0.7	?		73.1	73.5	0.4	100		133.4	134.0	0.6	100	
9.0	11.8	1.2	43		73.5	76.5	2	100		134.0	136.0	2	100	
11.8	13.5	0.2	12		76.5	79.5	3	100		136.0	136.5	0.5	100	
13.5	16.5	1	33		79.5	82.5	3	100		136.5	137.8	1.3	100	
16.5	19.5	2.1	70		82.5	85.4	2.9	100		137.8	139.2	1.4	100	
19.5	22.5	1	33		85.4	88.5	3.1	100		139.2	141.0	1.8	100	
22.5	25.5	0.8	27		88.5	91.5	3	100		141.0	141.8	0.7	87	
25.5	28.0	0.5	20		91.5	94.5	3	100		141.8	142.8	0.7	70	
28.0	29.6	1.6	100		94.5	95.1	0.6	100		142.8	143.1	0.15	50	
29.6	31.5	1.9	100		95.1	96.3	1.2	100		143.1	144.1	1	100	
31.5	33.2	1.7	100		96.3	99.4	3.1	100		144.1	144.7	0.6	100	
33.2	35.2	3	100		99.4	100.5	1.1	100		144.7	145.5	0.8	100	
35.2	37.5	2.3	100		100.5	103.5	3	100		145.5	145.9	0.4	100	
37.5	39.0	1.5	100	Core tray size changes from HQ to NQ @ 39.0m	103.5	105.5	2	100		145.9	148.3	2.4	100	
39.0	40.5	0.6	40		105.5	106.5	1	100		148.3	149.2	0.7	78	
40.5	41.8	1.3	100		106.5	109.5	3	100		149.2	149.9	0.7	100	
41.8	42.7	0.9	100		109.5	112.5	3	100		149.9	150.8	0.9	100	
42.7	44.0	1.3	100		112.5	115.2	2.7	100		150.8	152.7	0.9	100	
44.0	44.6	0.6	100		115.2	117.9	2.7	100		152.7	153.3	0.4	67	
44.6	44.8	0.2	100		117.9	118.5	0.6	100		153.3	153.7	0.4	100	
44.8	45.3	0.5	100		118.5	120.7	2.2	100		153.7	154.5	0.8	100	
45.3	46.5	1.0	83		120.7	121.5	0.8	100		154.5	155.9	1.4	100	
46.5	47.4	0.9	100		121.5	122.2	0.3	43		155.9	156.8	0.9	100	
47.4	48.3	0.9	100		122.2	123.1	0.15	17		156.8	158.3	1.3	87	
48.3	49.5	1.2	100		123.1	124.3	0.8	67		158.3	160.6	2.3	100	
49.5	49.7	0.2	100		124.3	124.8	0.5	100		160.6	161.1	0.5	100	
49.7	52.5	2.8	100		124.8	125.5	0.4	57		161.1	162.9	0.5	28	
52.5	55.5	3	100		125.5	126.8	1.3	100		162.9	163.7	0.8	100	
55.5	58.5	3	100		126.8	127.6	0.8	100		162.7	164.4	1.7	100	
58.5	61.3	2.8	100		127.6	129.0	0.9	64		164.4	166.5	0.6	29	
61.3	64.5	3.2	100		129.0	129.6	0.6	100		166.5	167.0	0.3	60	
64.5	66.1	1.6	100		129.6	130.1	0.5	100		167.0	169.5	0.4	16	
66.1	68.3	2.2	100		130.1	130.9	0.8	100		169.5	170	0.5	100	
68.3	69.4	1.1	100		130.9	131.8	0.6	67		170	171.7	1.7	100	
69.4	70.0	0.3	50		131.8	132.6	0.6	75		171.7	172.5	0.8	100	
70.0	73.1	3.1	100		132.6	133.4	0.8	100		172.5	175	2.5	100	





























GOLD FIELDS EXPLORATION PTY. LIMITED  
DRILL CORE LOG AND ASSAY DATA

PROJECT: HENTY

HOLE NUMBER: HP42

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INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (ALL PPM)										
From	To	m	%		Sample No.	From	To	Rec. %	A <sub>u</sub>	A <sub>g</sub>	C <sub>u</sub>	Pb	Z <sub>n</sub>	A <sub>s</sub>	Bi
341	344	2.9	97	Fold axis/CA = 48°											
344	347	2.95	98												
347	350	3.00	100	591.4-603.2 STRONGLY MINERALISED ZONE	710463	591.4	592		4.48	<2	5000	2850	1950	11	33
350	353	2.80	94	Quartz-base metal mineralisation occurs as blue-grey	64	592	593		0.71	2	925	975	2975	11	11
353	356	3.00	100	siliceous lenses and veins within intense silica-sericite	65	593	594		0.18	<2	800	375	700	3	3
356	359	2.90	97	-pyrite alteration. Coarse-grained base-metal sulphides	66	594	595		0.20	4	725	450	500	5	4
359	362	2.95	98	occur within the siliceous lenses.	67	595	596		1.55	15	50	50	275	8	2
362	365	3.20	106		68	596	597		0.44	<2	850	350	275	8	12
365	368	2.80	94	591.4-592.8: Grey silica-sericite-pyrite alteration with lenses	69	597	598		8.87	30	2500	8300	17000	8	45
368	371	2.95	98	of blue-grey silica containing sulphides (2-3%). Mainly	70	598	599		28.30	22	4750	3175	850	10	66
371	374	2.75	91	pyrite with minor chalcopyrite and galena.	71	599	600		24.20	18	1525	2350	400	11	61
374	377	2.75	91	592.8-597.8: Intense silica-sericite alteration with lenses of pyrite	72	600	601		0.37	<2	250	525	450	15	10
377	380	2.75	91	and quartz-base metal min.	73	601	602		2.22	2	650	375	250	13	7
380	383	2.90	97	592.8-594.7: Pale-green sericitic alteration in	74	602	603		0.26	<2	1375	950	225	16	9
383	386	2.8	94	silicified volcanic.	75	603	604		38.3	25	1850	9100	325	17	33
386	389	2.80	94	594.7-596.3: Silica-sericite-pyrite alteration.	76	604	605		7.50	5	1500	2350	225	11	15
389	392	3.00	100	Py:2-10% and minor chalcopyrite.	77	605	606		130.0	72	5700	11900	2150	26	119
392	395	2.90	97	596.3-597.8: Pale-green silica-sericite alteration with	78	606	607		370.0	65	6300	6100	800	9	109
395	398	2.90	97	lenses of quartz-base metal min. Sulphides (1-2%)	79	607	608		4.43	<2	1475	8900	9900	6	5
398	401	2.85	95	consisting of pyrite, galena, sphalerite and chalcopyrite.	81	608	609.7		1.61	<2	1475	6900	1875	6	5
401	404	2.80	94	597.8-600: Silica-sericite alteration with extensive quartz-base	82	608.7	609.2		0.22	<2	400	500	225	42	3
404	407	2.90	97	metal min. (10-20% of rock). Sulphides (galena,	83	609.2	610		0.07	<2	300	<25	300	4	<1
407	410	2.90	97	sphalerite, chalcopyrite): 1-3%	84	610	610.9		0.16	<2	250	125	300	11	<1
410	413	2.60	88	597.8-597.9: Galena-sphalerite-minor chalcopyrite band.	85	610.9	611.9		0.99	<2	1450	3400	1400	33	7
413	416	2.85	95	597.9: N.B. VISIBLE GRAIN OF GOLD.	86	611.9	612.9		0.81	18	2550	17200	15200	45	6
416	419	3.00	100	600-600.2: Fault Pug.	87	612.9	613.9		0.24	<2	575	3625	3250	39	7
419	422	2.8	94	600.2-603.2: Strong silica-sericite-pyrite alteration (10% fine-grained	88	613.9	615		0.10	<2	250	1225	5400	20	1
422	425	2.9	97	pyrite) with quartz-base metal min. (5-10% of rock)	89	615	616		0.11	2	125	1525	1375	19	2
425	428	2.7	90	containing minor pyrite, galena, chalcopyrite.	90	616	617		1.25	<2	1250	2725	550	16	5
428	431	2.8	94	602.3: Fol/CA = 45°	91	617	618		1.17	4	7100	8400	1075	29	18
431	434	2.6	88		92	618	619		3.71	25	3100	6100	4000	64	9
434	437	2.8	94	603.2-608.7: MAJOR ZONE OF MINERALISATION	93	619	620		0.17	2	725	1175	175	62	7
437	440	2.8	94	Intense pervasive silica-sericite-pyrite alteration with	94	620	621		0.05	<2	350	550	200	55	8
440	443	2.5	83	quartz-base-metal min. (10-15%). Associated CO <sub>2</sub>	95	621	622		0.04	<2	100	100	150	39	1
443	446	2.8	94	alteration occurs in fractures and veinlets (CO <sub>2</sub> content	96	622	623		0.04	6	400	350	200	63	8
446	449	2.9	97	5-10%). The CO <sub>2</sub> alteration appears to be later than	97	623	624		0.05	<2	375	400	175	65	10

















































APPENDIX 2.

APPENDIX 3.

APPENDIX 4.

APPENDIX 1.

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**APPENDIX 2.**

## Central Mineralogical Services



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15th July, 1987

<sup>20</sup>  
HP # + 19

DATE: 16 JUL 1987
FILE No.:
INITIALS:

REPORT CMS 87/6/23

YOUR REFERENCE:	Letter dated 18.6.1987
DATE RECEIVED:	22nd June, 1987
SAMPLE NOS.:	T 8945 - T 8952
SUBMITTED BY:	P.A. Roberts
WORK REQUESTED:	Petrology/Mineralogy

*H.W. Fander*

H.W. Fander, M. Sc.

REPORT CMS 87/6/23

Eight slabs of Henty drill core were received for petrological examination, with emphasis on gold mineralisation.

Representative thin-sections were prepared from seven samples and polished sections from the complete suite of eight samples. These were examined in oblique incident, transmitted and reflected light respectively, with related offcuts subjected to carbonate stain tests. Attached composite descriptions summarise the microscopic data, with some samples described in relative detail and others partly by analogy.

*Gold seen 3 out of 18 slides.*

Summary

This suite may be subdivided into two groups comprising samples T 8945 - T 8948 (Group 1) and T 8949 - T 8952 (Group 2).

*HP20* Group 1 rocks are characterised by semi- to near-massive pyritic sulphide aggregates with a dolomitic carbonate-quartz-sericite gangue assemblage, complexed by calcite-quartz veining and locally (T 8946) calcite-healed brecciation.

These rocks are essentially similar to a previous suite of Au-mineralised massive pyrite rocks (CMS 87/6/3). In comparison, however, this group is characterised by dolomitic carbonate assemblages (contrasting with calcite in T 8946, and in thin-sections subsequently prepared from samples T 8819 and 8824), and a general deficiency of accessory sulphide components, notably chalcopryrite, bismuth-bismuthinite, and tetrahedrite. Apparently related is the assay data-manifest deficiency in gold previously noted, as generally related to pyrite-intergranular chalcopryrite disseminations.

Sample T 8946 exhibits a calcitic carbonate vein, replacement and breccia-healing phase. In common with the previously noted calcitic massive pyrite aggregates, this carries relatively conspicuous chalcopryrite and associated traces of gold. A likely inference is that auriferous calcite veining and alteration is overprinted on previously dolomitic massive pyrite facies. Relatively chalcopryritic-calcitic rocks tend to exhibit enhanced proportions of tetrahedrite. Bismuth may be similarly introduced, but to date has not been noted in the calcitic veins and replacements.

*HP19* Group 2 rocks are characterised by silicification as the major alteration phase.

Relict features are consistent with silicified sedimentary breccias. These rocks exhibit disseminated and siliceous-sericitic stringer-concentrated pyritic sulphide assemblages, typically with relatively abundant sphalerite and galena and generally minor but variable proportions of chalcopryrite. A few rocks include dolomite-quartz-sericite-gangued "massive" pyritic sulphide aggregates, which appear temporally intermediate between the early silicification and late calcite vein/replacement phases.

Gold appears in association with the variably pyritic silicification phase as pyrite-included and intergranular particles. There is a generally poor correlation with Au assay data, however, suggesting a few micron-sized particles detected are partly representative of a spotty and relatively coarse-grained distributional mode in comparison with the assay data-compatible gold disseminations noted in the previous suite.

This factor of speculation aside, observed gold mineralisation in this suite is analogous to that previously noted with an inferred similar metallurgical response. Adequate liberation and cyanide leach recovery will be similarly dependent on a fine grind. The pyritic silicified rocks (Group 2) represent a relatively hard matrix, this being the only significant contrast with the generally carbonate-gangued massive pyritic assemblages.

D. Cowan, B. Sc.

REPORT CMS 87/6/23Petrological/Mineragraphic DescriptionsHP20 T 8945

143.8 - 3.9

(P.S. 58198A, B)

Exhibits semi- to near-massive, fine-grained (mean 30-50  $\mu$ ) pyrite aggregates, variably banded, carbonate-quartz-gangued, with minor fine mica, and variably microfractured to locally granulated in irregular zones ranging to a few millimetres diameter.

Minor accessory to trace proportions of chalcopyrite are present as microscopic pyrite-intergranular blebs and films. This sample also exhibits trace proportions of galena, minor traces of sphalerite and rare microscopic blebs of tetrahedrite and bismuthinite, of similar distribution to, but only rarely in composite with, chalcopyrite. Close examination revealed ~~no detectable~~ gold.

T 8946

144.2 - 4.3

(T.S., P.S. 58199)

This rock comprises disseminated clots, discontinuous stringers and millimetric to centimetric scale aggregates of fine-grained pyrite in a matrix of carbonate and approximate to a carbonate-matrixed breccia.

Carbonate is fine-grained to microcrystalline, locally stained with carbonaceous matter and is an impure calcite on the basis of optical characteristics and stain tests. This phase appears metasomatic in part, in irregular areas ranging to a few millimetres diameter, and the rock could be interpreted as a brecciated, calcitised and calcite-matrixed impure (pyritic, carbonaceous) dolomite. Calcite aggregates include minor clots of ultrafinely carbonate-stained microcrystalline quartz. Late discontinuous veinlets of optically clear calcite occur sporadically. These predate mild but pervasive stress and microfracturing effects.

The polished section represents a semi- to near-massive pyrite aggregate and interspersed carbonate veinlets with accessory quartz.

Pyrite aggregates are analogous to those in T 8945, similarly fractured and fine-grained. Accessory intergranular chalcopyrite is present, along with very minor traces of galena and sphalerite. Tetrahedrite and bismuthinite appear absent, at least from the pyrite aggregate sectioned.

Carbonate veins exhibit disseminations of fine pyrite (mean 20  $\mu$ ) and relatively conspicuous chalcopyrite in irregular spongy aggregates with included pyrite, subordinate to minor sphalerite, and traces of tetrahedrite as inclusions in chalcopyrite. Rare micron-sized (2-10  $\mu$ , mode 3-5  $\mu$ ) particles of pale gold were detected variously included in (vein) chalcopyrite or intergranular to the minor fine-grained vein-quartz component.

HP20 T 8947

145-1 - 5-2

(T.S., P.S. 58200)

This rock consists of semi- to near-massive, fine-grained pyrite in banded aggregates with a fine-grained to microcrystalline carbonate-quartz gangue including sporadic lenses of sericitic white mica.

In contrast to T 8946, the carbonate is dolomitic. Gangue is compositionally banded with relatively abundant quartz and sericite in semi-massive pyritic zones (or bands, ranging to a few millimetres in width). This rock exhibits mild shearing effects, with quartz developing as pressure shadow fringes on pyrite grains and aggregates, and sericite exhibiting a weak banding-conformable slaty cleavage. Minor high-angle discordant carbonate (dolomite) healed fractures are present.

The pyrite aggregates carry relatively conspicuous intergranular chalcopryrite in comparison with T 8945 and T 8946. Very minor traces of pyrite-intergranular sphalerite and tetrahedrite are present. No bismuthinite was observed, and close inspection revealed no detectable gold.

HP20 T 8948

145-4 - 5-5

(T.S., P.S. 58201)

This rock is similar to T 8947, comprising essentially carbonate (dolomitic)-quartz-gangued, banded, semi- to near-massive, fine-grained pyrite aggregates. The main contrast lies in the presence of sporadic sub- to millimetric scale sericitic bands. These exhibit slaty micro-textures, but represent pelite-matrixed, gritty to pebbly clastic units with a relict framework of lithic clasts reflecting quartz-sericite alteration.

Altered clasts are largely indeterminate. A few, however, exhibit vague relict porphyritic lava-like textures, and on this basis the rock is interpreted as volcanoclastic in part. These features are supplemented by occasional quartz aggregates interpreted as silicified clastic feldspar grains and discrete overgrown clastic sand-sized quartz grains. The sericite matrix is variably pyritic, and altered lithic clasts are similarly but relatively weakly pyrite-impregnated.

The "massive" pyrite aggregates include occasional microscale lenses of spongy dolomitic carbonate carrying interspersed blebs of pale sphalerite ranging to a few hundred microns in diameter. These units exhibit stress effects analogous to those in T 8947, but relatively mild in comparison.

The polished section represents the massive pyrite aggregates, sericitic/altered interbeds and interspersed lensoid-discontinuous carbonate (calcite)-quartz veinlets.

Pyrite aggregates are analogous to those in T 8947, carrying relatively abundant intergranular chalcopryrite supplemented by minor traces of galena and the dolomite lens-associated pale sphalerite blebs.

Sericitic units include traces of chalcopyrite and sphalerite, supplementing the fine-grained pyrite disseminations. Associated silicified lithic clasts exhibit relatively abundant chalcopyrite impregnations.

The discontinuous carbonate veinlets carry a chalcopyrite-rich disseminated sulphide assemblage, with subordinate pyrite and sphalerite and traces of blue-grey tetrahedrite.

Close examination revealed no detectable gold.

HP19 T 8949

280.6 - 0.7

(T.S., P.S. 58202)

This rock may be broadly categorised as a silicified breccia. It exhibits a vague relict framework of semi-dimensionally orientated/crudely bedded, sand- to pebble-sized, subangular to subround lithic clasts pervasively replaced and represented by microcrystalline quartz. Minor silicified shaly partings are evident, and in common with T 8948 angular sand-sized quartz grains are an accessory detrital component. Altered lithic clasts are similarly poorly determinate, but include recognisable volcanic types.

Sericite and thinly dispersed rhombs of ankeritic carbonate are accessory alteration phases. The rock is weakly pyritic and includes sporadic spongy, irregular, stringer-like clots of galena and sphalerite. Discontinuous veinlets and irregular vugs of quartz with minor associated carbonate are randomly distributed throughout and exhibit incipient stress effects.

Polished section examination confirms the disseminated pyrite/subordinate galena-sphalerite assemblage. Only very minor traces of chalcopyrite are present. Pyrite exhibits extremely rare micron-sized inclusions of gold (2-8  $\mu$  diameter). These are supplemented by subordinate coarser (5-15  $\mu$ ) pyrite-intergranular gold particles.

HP19 T 8950

280.9 - 1.0

(T.S., P.S. 58203)

This rock is similar to T 8949 and is similarly interpreted as a silicified, partly volcanomict or volcanoclastic, sedimentary breccia.

General features require little special comment reflecting the similarities with the previous sample. In comparison, this rock is relatively pyritic, with sulphide variously randomly disseminated or, more typically, concentrated in irregular fine-grained vugs of quartz and spongy quartzose/weakly sericitic stringers.

As previously (T 8949), carbonate is an accessory alteration phase. Sporadic sericitic and quartz-carbonate-healed microfractures are present.

Mineragraphic examination confirms a sulphide assemblage analogous to that in T 8949, dominated by disseminations and stringers of pyrite with relatively minor sphalerite and galena, minor traces of chalcopryrite, and occasional pyrite-intergranular blebs and discontinuous films of tetrahedrite. Rare particles of pale gold occur within the pyritic stringers. Habit is variously pyrite-included to pyrite-intergranular. Sizing ranges from 2-10  $\mu$  (inclusions) to an observed maximum of 12x20  $\mu$  for the intergranular particles.

HP19

T 8951

(T.S., P.S. 58204)

This rock may be categorised as a mineralised breccia.

282-3 - 2-4

General features are similar to T 8949 and T 8950, with the bulk of the area thin-sectioned represented by a silicified and (dolomitic) carbonate-impregnated lithic breccia, carrying varying proportions of fine to ultrafine pyrite as random to stringer-concentrated disseminations.

Interspersed irregular to crudely vein-like concentrations of semi- to near-massive pyrite carry conspicuous pale sphalerite and locally conspicuous galena. These aggregates are quartz-gangued with accessory fine to semi-sericitic white mica, microcrystalline dolomitic carbonate and traces of apatite.

Sporadic irregular crosscutting discontinuous veinlets consist of calcite and quartz, with varying proportions of pyrite, and darker (brown) sphalerite. These features predate mild stress effects.

Pyrite in the irregular "massive" aggregates is relatively coarse- (to 750  $\mu$ ) and uneven-grained. Associated sphalerite is pervasively exsolution chalcopryrite-stained, and galena includes thinly dispersed very fine arsenopyrite euhedra and microscopic laths of an indeterminate Pb-sulphosalt. These aggregates include disseminated pale rutile and accessory spongy blebs of chalcopryrite.

The crosscutting sphaleritic veinlets include subordinate chalcopryrite and minor galena. In this context, sphalerite is relatively weakly chalcopryrite-stained and galena free of micro-inclusions.

Close examination of the various sulphide aggregates revealed no detectable gold.

HP19

T 8952

(T.S., P.S. 58205)

282-7 - 2-8

This sample represents a silicified breccia analogous to T 8949, T 8950 and T 8951. In comparison (notably with T 8951), the late carbonate veining phase is relatively marked with an irregular but essentially pervasive network of mildly stressed veinlets and interspersed sub- to millimetric scale vugs. These features exhibit mutual to crosscutting relationships with sporadic discontinuous films and stringers of quartz and quartz-calcite-gangued sulphide with temporally early-pyritic grading into sphalerite-rich assemblages.

The temporally intermediate, semi-massive pyritic quartz-sericite-dolomite alteration/veining phase noted in T 8951 is developed locally. Mineragraphic relationships are very similar to those noted in T 8951.

APPENDIX 3.



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**RESEARCH & DEVELOPMENT DIVISION REPORT**

SFR:sh  
87/1916

Report 87/002057

Gravity/Cyanide Gold Extraction  
from Mineralised Intersections from  
HP4, HP9 and HP17

for

Renison Goldfields Consolidated Ltd

S.F. Rayner  
C.J. McDowell

August 5, 1987

SUMMARY

Additional to Warman report 87/00094 another six intersections of Henty gold ore have been tested for gold extraction via a gravity/cyanidation process route.

Results were;

hole interval-- metres sample	HP4		HP9		HP17	
	235-7	256-60	128-9	129-30	157.8-8.6	158.6-9.4
	-	-	8955	8956	8953	8954
g/t Au	30.3	7.07	29.9	15.8	20.7	10.4
gravity recov %	ND	ND	6	9	1	7
leach recov %	81	95	90	88	77	62
total recov %	81	95	96	97	78	69
tailing g/t Au	5.7	0.35	1.1	0.43	4.5	3.2
<u>reagent consumpt</u>						
hyd lime kg/t	19.6	0.3	0.3	0.2	0.3	0.2
NaCN kg/t	4.8	1.4	0.5	0.5	1.5	1.2

For HP4 ore limited sample prevented a gravity step being carried out.  
HP17 ore comprised mainly sulphides hence the lower gold extraction.  
For HP4, 235-237 m, high lime and cyanide demand was obtained.

1. INTRODUCTION

Mineralised ore samples from the Henty prospect near Queenstown have undergone testing before by Warman\* responding with near 90% gold extraction to a combination of gravity and cyanide leaching. Further samples were submitted for testing during July 1987 and are reported on below.

2. SAMPLES TESTED

HP4	235-237 m	-	~30 g/t Au
HP4	256-260 m	-	~7 g/t Au
HP17	157.8-158.6 m	8953	~11 g/t Au
HP17	158.6-159.4 m	8954	~23 g/t Au
HP9	128-129 m	8955	~33 g/t Au
HP9	129-130 m	8956	~19 g/t Au

3. HP4 INTERSECTIONS

Only small pulverised assay rejects were available for these two samples so testing was limited to a single leach with the gravity gold recovery step (which had previously recovered some 30% of the contained gold) omitted. However some analytical data was supplied as reproduced below on the meterage intersections making up the test composites;

		<u>g/t Au</u>	<u>g/t Ag</u>
HP 4	235-236	30.8	88
	236-237	21.4	133
HP4	256-257	11.7	4.2
	257-258	1.7	2.4
	258-259	1.1	3.4
	259-260	29.2	6.9

\* Warman report 87/00094 April, 1987 HP12 ore

Leach results are shown in Table 1 and were assessed only at 24 hours in response to the limited sample. They indicate similar response to those previously obtained with 81% and 95% gold extraction. The reason for the lower 81% response is not immediately clear, though the indicators are there, i.e.,

sample	<u>235-237</u>	<u>256-260</u>
calc g/t Au	30.3	7.07
hyd lime kg/t	19.6	0.3
NaCN kg/t	4.8	1.4
tails g/t Au	5.66	0.35
% Au extraction	81	95

#### 4. HP17 INTERSECTIONS

More sample was available for the two intersections from this hole plus analysis levels as reproduced below;

	<u>metres</u>	<u>sample</u>	<u>g/t Au</u>	<u>ppm Cu</u>	<u>ppm Pb</u>	<u>ppm Zn</u>
HP17	157.8-158.6	8953	20.6	4875	7600	165
	158.6-159.4	8954	7.1	3350	4125	530

Significantly these two intersections comprised massive sulphides which were quantified by sulphur assays of 28 and 24% respectively. When amalgamated with mercury the sulphides interfered, coating the mercury, and thus explaining the potentially false free gold levels of less than 10% indicated in Table 2. The high sulphide content also perhaps explains the low 70-80% gold leach extraction if the gold is locked into impervious mineral grains. Both these samples were high grade, used only moderate amounts of lime and cyanide and despite the 3-4 g/t Au tailing grades still allowed good gold recovery..

5. HP9 INTERSECTIONS

These two intersections of HP9 ore between 128 and 130 m each comprised about 1700 g and were said to contain no arsenic, a lot of copper, 1% lead and 5% sulphides total. They were milled and amalgamated as in Table 3, this time with no noticeable interference with the amalgam from the sulphides, yet yielded less than 10% as free gold. The head grades were 36 and 17 g/t Au respectively and both leached over 95% of the contained gold in 24 hours, with only low cyanide and lime consumption.

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TABLE 1

Cyanidation of pulverised assay rejects - HP4

sample	235-237			256-260		
	int	g/t Au	g/t Ag	int	g/t Au	g/t Ag
given assays						
	235-36	30.8	88	256-57	11.7	42
	236-37	21.4	135	257-58	1.7	2.4
				258-59	1.1	3.4
				259-60	29.2	6.9
sample weight g		177			359	
% solids		50			50	
initial pH		3.1			7.9	
hydrated lime kg/t		19.6			0.3	
leach pH		11.0			10.7	
<u>NaCN</u>						
total addition kg/t		5.5			3.5	
residual %		0.070			0.21	
consumption kg/t		4.8			1.4	
<u>24 hr liquor</u>						
mg/l Au		24.6			6.72	
mg/l Ag		42.2			1.11	
<u>24 hr residue</u>						
g/t Au		5.84	5.66		0.28	0.35
		5.49			0.42	
g/t Ag		47.9			3.9	
<u>calc head</u>						
g/t Au		30.3			7.07	
g/t Ag		90			5	
<u>% dissolution</u>						
Au		81			95	
Ag		47			22	

TABLE 2

Cyanidation of HP17 ore

sample	8953		8954	
assays g/t Au	23.0	} 23.4	11.1	} 11.1
	23.9		11.2	
g/t Ag	165		56	
S	27.9		23.9	
sample weight	878 g		708 g	
grind % passing 75 µm	94		91	
amalgam gold <sup>1</sup>	0.204 mg		0.495 mg	
% solids	50		50	
initial pH	8.1		8.9	
hydrated lime	0.3 kg/t		0.2 kg/t	
leach pH	10.2		10.3	
<u>NaCN</u>				
addition	1.7 kg/t		1.5 kg/t	
residual	0.020%		0.026%	
consumption	1.5 kg/t		1.2 kg/t	
<u>solution assays (mg/l)</u>				
3 hr - Au, Ag	14.8	49.6	5.85	23.3
6 hr - Au, Ag	15.5	50.5	6.0	23.7
24 hr - Au, Ag	16.0	63.2	6.5	29.7
- Cu	302		152	
- Pb	0.23		0.33	
- Zn	11.1		8.6	
<u>residue assays</u>				
24 hr g/t Au, Ag	4.20	} 4.49, 92	3.01	} 3.22, 49
	4.78		3.43	
calc head g/t Au	20.7		10.4	
<u>% gold extraction <sup>2</sup></u>				
amalgam	1		7	
3 hr	72		63	
6 hr	76		64	
24 hr	78		69	

Note: 1. High sulphide content interfered with the amalgamation

2. Extraction percent includes amalgam component.

TABLE 3

Cyanidation of HP9 ore

sample	T8955	T8956
interval	128-129 m	129-130 m
g/t Au assay	36.2 } 35.5 } 35.8	16.8 } 16.4 } 16.6
sample weight	987 g	1004 g
% passing 75 µm	90	82
amalgam gold	2.533 mg	1.443 mg
% solids	50	50
initial pH	8.3	8.2
hydrated lime	0.3 kg/t	0.2 kg/t
leach pH	10.3	10.4
<u>NaCN</u>		
addition	1.0 kg/t	1.0 kg/t
residual	0.050%	0.052%
consumption	0.5 kg/t	0.5 kg/t
<u>solution assays (mg/l)</u>		
3 hr - Au, Ag	22.1 33.3	12.9 -
6 hr - Au, Ag	23.7 35.2	13.0 -
24 hr - Au, Ag	26.2 39.0	13.9 21.5
- Cu	21.2	20.4
- Pb	0.4	0.6
- Zn	22.7	7.4
<u>residue assays</u>		
24 hr g/t Au	1.13 } 1.06 } 1.10	0.43 } 0.44 } 0.43
calc head g/t Au	29.9	15.8
<u>% gold extraction</u>		
amalgam	6	9
3 hr	82	91
6 hr	88	92
24 hr	96	97

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Laboratories: 6-8 McLachlan Avenue, Artarmon, Sydney, N.S.W. Phone (02) 436 6789 Telex: AA20711**RESEARCH & DEVELOPMENT DIVISION REPORT**

SFR:sh

87/692

Report 87/00094

Preliminary Metallurgical Testing of

Henty Gold Ore

HP 12

for

Renison Goldfields Consolidated Ltd

S.F. Rayner

C.J. McDowell

April 14, 1987

C O N T E N T S

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SUMMARY

Five ore samples from the Henty project have been tested for gold extraction via a gravity/cyanidation process route.

Results were;

sample	T3843	T3844	T3845	T3846	T3847
g/t Au	0.8	33	4.5	50	11.6
gravity recovery %	30	44	36	22	55
leach recovery %	61	46	52	69	39
total recovery %	91	90	88	91	94
tailing g/t Au	0.08	3.50	0.53	4.53	0.67
<u>reagent consumption</u>					
hydrated lime kg/t	0.5	0.4	0.3	0.3	0.6
NaCN kg/t	0.6	0.6	0.5	0.7	0.6

1. INTRODUCTION

Five samples of drill core from the Henty project near Queenstown were submitted on March 9, 1987 for metallurgical evaluation. Apart from some copper, lead and zinc mineralisation the samples also were said to contain appreciable gold levels of the order of 30 g/t with significant amounts of coarse, potentially gravity recoverable gold.

In the first instance testing was kept small scale to conserve sample, the initial tests looking at the recovery of liberated gold via amalgamation with mercury, followed by cyanide leaching to extract residual gold.

An additional larger scale test consuming all of the sample provided was carried out on one sample when anomolous gold contents were encountered.

2. SAMPLE IDENTIFICATION/ANALYSIS

Each of the samples consisting of approximately 3 kg of drill core were crushed to minus 2 mm, blended and riffle sampled to produce assay and test portions.

The identification data and assay results appear in Table 1. In deference to the visible gold contents reported, we did not assay for gold but rather have quoted back calculated gold grades from the 1 kg scale laboratory tests. Indicated grades supplied by Goldfields on matching core sections are also shown. Differences were expected in gold grades but the variation in sample T3843 is exceptional and is discussed later in the report.

Sample data

identification HP 12	indicated grades ex Goldfields		Warman assays						
	g/t Au	g/t Ag	g/t Au	g/t Ag	ppm Cu	ppm Pb	ppm Zn	ppm As	% S
T3843 552 -552.7	30.3	9.5	0.86	9.0	304	954	95	<5	0.89
T3844 552.7-553.4	31.2	11.5	33.7	11.1	618	931	90	<5	0.12
T3845 553.4-554.3	5.5	9.0	4.55	9.5	3670	1617	76	<5	0.46
T3846 554.3-555	35.8	21.0	49.8	27.7	3570	2.35%	1.88%	29	3.50
T3847 555 -555.7	11.7	3.0	11.6	5.3	503	3092	4117	24	1.47

- Notes: 1. Warman gold assays are back calculated values from the tests in Table 2.
2. Indicated metal grades on T3846 by Goldfields  
Cu = 3500 ppm, Pb = 29,500 ppm, Zn = 22,000 ppm

TABLE 1

3. AMALGAMATION/CYANIDATION TESTING

3.1 Initial Tests

Portions of each ore sample were wet ground in the laboratory rod mill to give a grind finer than 75% passing 75 µm before being amalgamated with mercury in a panning dish. The amalgam was recovered and assayed for gold with ore slurry allowed to thicken to 50% solids before being leached in 0.1% NaCN solution at a lime adjusted pH 10<sup>+</sup> level. Liquor samples were taken to chart the progress of gold dissolution with the final leach residue washed and assayed.

The data collected is summarised in Table 2 producing mixed results, i.e.,

sample	grade g/t Au	gold distribution			tailing g/t Au
		gravity %	cyanide %	total %	
T3843	0.9	30	61	91	0.08
T3844	33.7	44	46	90	3.50
T3845	4.5	36	52	88	0.53
T3846	49.8	22	69	91	4.53
T3847	11.6	55	39	94	0.67

First there is a significant gravity recoverable gold component in the ore which is only confirmation of mineralogical examination. On a percentage basis the gold extraction is good averaging 91% with low time and cyanide reagent use. The levels of other metal ions Cu, Pb and Zn are not present in prohibitive amounts. The only negative aspect is the high tailings grades for T3844 and T3846. Discarding 3 to 5 g/t Au seems extravagant, even if it is from 30 to 40 g/t Au ore. Usually we would expect a correlation between these samples and sulphides (sulphur assays) but in this instance the low assay of 0.12% S for T3844 does not hold, although the 3.50% S assay for T3846 is consistent.

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### 3.2 Repeat Test on T3843

The discrepancy between the back calculated gold assay in Table 2 and the indicated gold grade from Goldfields in Table 1 for sample T3843 was thought to relate to sampling as the bulk of the gold was reported in a narrow band in the core. To overcome this the total remaining sample (2.27 kg) was milled and treated in similar manner to the samples in Section 3.1. The results are presented in Table 3 but failed to locate any additional gold. Allowing for variation between samples the results are considered as confirmation with the first test.

TABLE 2

Amalgamation/cyanidation data

sample	T3843	T3844	T3845	T3846	T3847
nominal g/t Au	30.3	31.2	5.5	35.8	11.8
weight g	779	656	789	617	633
grind (mins @ 50%)	20	20	20	20	20
% passing 75 µm	80	88	74	90	88
leach % solids	50	50	50	50	50
initial pH	7.9	7.9	8.0	8.2	7.7
hyd lime kg/t	0.5	0.4	0.3	0.3	0.6
leach pH	10.3	10.3	10.3	10.4	10.5
<u>NaCN</u>					
addition kg/t	1.0	1.0	1.0	1.0	1.0
residual %	0.044	0.044	0.048	0.034	0.044
consumption kg/t	0.6	0.6	0.5	0.7	0.6
<u>liquor assays</u>					
mg/l Au 3 hr	0.51	13.2	1.53	24.4	4.46
6 hr	0.52	13.8	1.77	25.0	4.27
24 hr	0.53	15.2	1.93	27.4	4.50
Cu 24 hr	54.8	44.7	52.6	43.2	25.6
Pb 24 hr	0.14	0.16	0.30	1.24	0.51
Zn 24 hr	5.2	4.8	5.6	38.0	21.8
<u>leach residue</u>					
g/t Au @ 24 hr	0.12 } 0.05 } 0.08	3.81 } 3.18 } 3.50	0.68 } 0.38 } 0.53	4.62 } 4.44 } 4.53	0.89 } 0.45 } 0.67
<u>gold balance @ 24 hr</u>					
mg amalgam	0.20	9.84	1.65	11.00	4.07
mg solution	0.41	9.97	1.52	16.90	2.85
mg residue	0.06	2.30	0.42	2.80	0.42
total mg	0.67	22.11	3.59	30.70	7.34
calc head g/t Au	0.86	33.7	4.55	49.8	11.6
<u>gold dissolution %*</u>					
3 hr	90	84	80	85	94
6 hr	90	85	85	86	92
24 hr	91	90	88	91	94
% free gold	(30)	(44)	(36)	(22)	(55)

\* includes the (free) amalgam gold component

TABLE 3

Repeat amalgamation/cyanidation of sample T3843

indicated grade	30.3 g/t Au
weight kg	2.267
grind % passing 75 $\mu$ m	80
leach % solids	50
initial pH	8.3
hydrated lime kg/t	0.2
leach pH	10.6
<u>NaCN</u>	
addition kg/t	1.0
residual %	0.062
consumption kg/t	0.6
<u>liquor assays</u>	
mg/l Au @ 3 hr	0.40
6 hr	0.41
24 hr	0.45
<u>leach residue</u>	
g/t Au @ 24 hr	0.12 } 0.12
	0.13 }
<u>gold balance</u>	
mg amalgam	0.25
mg solution	1.02
mg residue	0.27
mg total	1.54
calc head g/t Au	0.68
<u>% gold dissolution *</u>	
3 hr	75
6 hr	77
24 hr	82
% free gold	(16)

Note: \* calculation of gold dissolution includes the free (amalgam) gold component and is based on the calculated head assay

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Report 87/002233

Amalgamation/Cyanidation of Henty Ore  
Drill Hole HP19

Altered Volcaniclastics Carrying Pyrite  
and Base Metal Sulphide Stringers

for

Renison Goldfields Consolidated Ltd

S.F. Rayner  
C.J. McDowell

September 24, 1987

SUMMARY

A gold extraction test incorporating amalgamation/cyanidation at a grind of 80% passing 75 µm was carried out on four mineralised intersections from hole HP19 giving an average 86% gold extraction similar to previous samples with only moderate reagent consumptions.

<u>interval</u> <u>(m)</u>	<u>grade</u> <u>g/t Au</u>	<u>amalgam</u> <u>%</u>	<u>total</u> <u>extraction %</u>	<u>tails</u> <u>g/t Au</u>
280.1-281.1	9.9	14	93	0.7
281.1-282.1	5.9	17	89	0.7
282.1-283.1	27.6	15	87	3.5
283.1-284.1	10.6	5	75	2.7

1. INTRODUCTION

Four samples of drill core numbered T8858 to 61 inclusive from drill hole PH19 were received on August 13 for metallurgical evaluation comprising amalgamation to recover liberated gold and cyanidation to recover contained gold from ore milled to approximately 80% passing 75  $\mu$ m.

The ore was said to represent the fourth style of mineralisation identified at Henty described as silicified and sericitized volcanic-lastics carrying abundant disseminated and vein style pyrite and base metal sulphides.

Sample details supplied were;

<u>sample</u>	<u>interval (m)</u>	<u>grade g/t Au</u>
T8858	280.1-281.1	10.2
T8859	281.1-282.1	4.0
T8860	282.1-283.1	19.9
T8861	283.1-284.1	5.7

Previous reports and the mineral types examined are;

87/00094*	carbonate-sericite vein (HP12)
87/002057*	massive pyrite lenses (HP17)
87/002057*	brecciated quartz vein carrying base metal stringers (HP9)

\* Warman reports

2. SAMPLE PREPARATION/ANALYSIS

Each of the sample comprised about 2 kg of core which was jaw and roll crushed to pass a 2 mm screen, blended and riffle divided with head samples assayed as follows;

<u>sample</u>	<u>g/t Au</u>	<u>g/t Ag</u>
T8858	9.87, 9.93 = 9.90	17.6
T8859	5.58, 4.38 = 4.98	17.4
T8860	25.1, 31.3 = 28.2	144
T8861	8.80, 11.4 = 10.1	104

3. AMALGAMATION/CYANIDATION

The samples were treated in the same manner as previous Henty samples by rod mill grinding 1 kg to approximately 80% passing 75 µm and amalgamating the milled ore prior to leaching. The leach was a standard screening type test at 50% solids, pH 10<sup>+</sup> with hydrated lime and initial 0.1% NaCN solution strength checked and re-established at 1, 3 and 6 hours.

Solution samples were taken for analysis at 3, 6 and 24 hours with the final tailing washed free of soluble gold and dried before being sampled for analysis.

Free or amalgamable gold averaged 13% as shown in Table 1 while total gold extraction ranged 75-93%, averaging 86%. The result is similar to those previously reported, though free gold component is lower. Reagent consumption was not excessive so that treatment would appear straightforward, though the tailings are still reasonably high grade as experienced with previous samples.

TABLE 1

Amalgamation/cyanidation data

sample	8858	8859	8860	8861
g/t Au	9.90	4.98	28.2	10.1
g/t Ag	17.6	17.4	144	104
weight g	1002	1004	1002	1004
grind (mins @ 60% solids)	40	45	40	45
% passing 75 µm	81	76	88	76
leach % solids	50	50	50	50
initial pH	8.5	8.4	8.5	8.3
hydrated lime (kg/t)	0.2	0.2	0.2	0.3
leach pH	10.1	10.1	10.2	10.2
<u>NaCN (kg/t)</u>				
addition t = 0	1.0	1.0	1.0	1.0
t = 6 hr	0.5	0.5	0.5	0.5
total	1.5	1.5	1.5	1.5
residual %	0.104	0.092	0.092	0.092
consumption	0.5	0.6	0.6	0.6
<u>solution assays</u>				
mg/l Au @ 3 hr	6.55	3.65	16.40	6.30
6 hr	6.65	3.46	17.00	6.50
24 hr	7.80	4.21	20.10	7.50
mg/l Ag @ 24 hr	16.0	14.0	140.8	104.2
<u>amalgam mg Au</u>	1.371	1.004	4.083	0.503
residue g/t Au	0.70	0.69		
	<u>0.79</u>	<u>0.64</u>		
	0.74	0.66	3.46	2.68
g/t Ag	6.7	9.3	39.7	41.4
calc head g/t Au	9.91	5.87	27.6	10.6
g/t Ag	22.7	23.3	179	146
<u>% gold extraction</u>				
amalgam	14	17	15	5
cum 3 hr	80	79	74	64
" 6 hr	81	76	76	66
" 24 hr	93	89	87	75
% silver extraction	~70	~60	~70	~70

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# FOX ANAMET

(Labde\* Pty Ltd incorporated in NSW)

DGM:sh  
88/2722

102193

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Report 88/002704

Cyanide Gold Extraction from Henty Ore  
Drill Holes HP24, HP25, HP28, HP31, HP32 and HP36

for

Renison Goldfields Consolidated Ltd

D.G. Munro

May 13, 1988

C O N T E N T S

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2. SAMPLE PREPARATION/ANALYSIS	5
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SUMMARY

Pursuant with previous work another sixteen mineralised intersections of Hentry ore have been cyanide leached to determine gold extraction characteristics as summarised below.

hole/interval	grade g/t Au	cyanide leach		reagents	
		tailing g/t Au	% gold extraction	kg/t lime	kg/t NaCN
HP24 117-118	3.64	0.43	88	0.4	0.5
HP24 118-120	50.0	1.93	96	0.3	0.4
HP24 125-126	18.0	1.34	89	0.3	0.7
HP25 217-218	4.36	0.65	85	0.4	0.8
HP25 218-219	52.7	4.61	91	0.4	0.7
HP28 318-319	2.32	0.28	88	0.2	0.4
HP28 319-320	4.69	0.42	91	0.2	0.5
HP28 320-320.4	0.46	0.14	70	0.2	0.7
HP28 320.4-321	1.64	0.24	85	0.4	0.6
HP28 321-322	7.67	0.52	92	0.3	0.7
HP31 333-334	5.74	2.96	48	0.4	1.3
HP31 334-335	6.14	3.22	48	0.4	1.4
HP32 167-168	20.3	3.11	85	0.5	0.8
HP32 168-169	2.58	0.34	87	1.3	0.8
HP32 169-170	0.57	0.11	81	0.7	0.5
HP36 108-109	27.4	8.63	71	0.3	0.5

## 1. INTRODUCTION

Sixteen samples of mineralised drill core intersections from exploratory drilling on the Henty project from holes HP24, 25, 28, 31, 32 and 36 were submitted on April 15, 1988 for a set of cyanide leach tests to determine conformity with previously established response.

The previous work had identified a free gold component though it varied between 5 and 40% and together with cyanidation produced gold extraction levels ranging 75 to 97% from feedstock grading up to 30 g/t Au. Grind used was normally finer than 75% minus 75  $\mu\text{m}$  and reagent consumptions were low to moderate.

The tests carried out in this study were similar in scope to the above work with the exception that the gravity (amalgamation) step was omitted.

Previous report listing is;

- 87/00094 \* carbonate sericite vein (HP12)
- 87/002057 \* massive pyrite lenses (HP17)
- 87/002057 \* brecciated quartz vein carrying base metal stringers (HP4, 9)
- 87/002233 silicified and sericitized volcanoclastics carrying abundant disseminated and vein style pyrite and base metal sulphides (HP19)

\* Warman reports

2. SAMPLE PREPARATION/ANALYSIS

Each core section listed in Table 1 was crushed to pass a 2 mm screen, blended and then riffle divided into 1 kg test portions plus a head assay portion which was fire assayed for gold and silver. The results appear in Table 1 where they are compared with expected grades provided by Goldfields. They show general agreement, bearing in mind that they are portions of the core section, the largest variation occurring with high grade sections from HP32 and HP36.

TABLE 1

## HENTY ORE IDENTIFICATION / ANALYSIS

HOLE	DEPTH	RGC GRADE g/t Au	EQUIVALENT HOLE (previous)	FOX ANAMET	
				g/t Au	g/t Ag
HP24	117.2-118.1	4.56	9	3.23,3.08=3.16	12
HP24	118.1-119.6	69.15	9	44.5,41.1=42.8	35
HP24	125.3-126.3	16.95	17	18.3,18.2=18.2	29
HP25	216.7-217.7	3.20	17	5.12,5.18=5.15	24
HP25	217.7-218.4	40.07	17	58.0,50.2=54.1	60
HP28	318.2-318.9	2.03	19	2.32,2.30=2.31	9
HP28	318.9-319.9	5.03	19	4.66,4.66=4.66	17
HP28	319.9-320.4	0.33	19	0.38,0.36=0.37	11
HP28	320.4-321.3	2.43	19	1.69,1.64=1.66	5
HP28	321.3-322.2	8.16	19	8.73,8.04=8.38	35
HP31	333.5-334.5	5.10	17	6.00,6.19=6.09	79
HP31	334.5-335.4	6.60	17	6.85,6.68=6.76	80
HP32	167.6-168.6	17.13	19	26.4,27.9=27.1	6
HP32	168.6-169.6	1.57	19	1.98,1.86=1.92	5
HP32	169.6-170.6	1.01	19	0.55,0.43=0.49	3
HP36	107.9-108.9	14.53	9	30.0,30.4=30.2	58

### 3. CYANIDATION RESPONSE

One kilogram portions of each core section were milled by eye to give a grind in excess of 75% passing 75  $\mu\text{m}$  and leached at 50% solids at a lime adjusted pH of 10-11. Cyanide at 1 kg/t (0.1% NaCN initial strength) was added with residual levels measured at 3 and 6 hours and readjusted back to 0.1% if the level had dropped below 0.05%. Solution samples were assayed for gold at 3, 6 and 24 hours with the final leach residue washed, dried and sampled for duplicate fire assay. Silver assays were carried out on the 24 hour products. The results are presented in Tables 2 to 4.

The HP24 sections which ranged 3 to 44 g/t Au all leached well with between 88 to 96% extraction, the majority occurring in the first 6 hours. HP25 with a similar grade range gave identical response. Hydrated lime demand was low and cyanide consumption less than 1 kg/t.

Five intersecitons of HP28 are reported in Table 3 again giving between 85 and 92% gold extraction with the exception of one low grade inter-section giving 70% extraction with tails of 0.14 g/t Au. Lime demand was low and cyanide consumption less than 1 kg/t.

HP31 proved the exception to the general trend of high gold extraction with only 48% of gold dissolving from ore grading 6-7 g/t Au. The material was said to be from a similar zone as HP17 ore (see Table 1) which previously gave low extractions, i.e. 78 and 69%, our only comment at this stage being that the sections appeared darker in colour and had a high sulphide content. The tailings at around 3 g/t Au compare with those in report 87/002057. Cyanide consumption from these samples was 1.4 kg/t, copper last time accouting for about 0.9 kg/t of the cyanide.

The HP32 sections ranged 0.6 to 20 g/t Au and all reponded similarly with low reagent consumption and 80-90% gold dissolution. HP36 with a 27 g/t gold grade produced the highest tails at 8.6 g/t with 71% dissolution. It equated to HP9 ore which previously leached to 96%.

TABLE 2

## HENTY ORE-CYANIDE LEACH TESTS 1-5

TEST No.	1	2	3	4	5
sample I.D. - hole	HP 24	HP 24	HP 24	HP 25	HP 25
-meters	117.2-118.1	118.1-119.6	125.3-126.3	216.7-217.7	217.7-218.4
sample wt.(kg)	1.005	1.006	1.002	1.000	1.005
<u>HEAD ASSAY</u>					
g/Au	3.15	44.3	18.2	5.15	54.1
g/Ag	12	35	29	24	60
<u>ROD MILL GRIND</u>					
% solids	60	60	60	60	60
minutes	40	40	40	30	40
% passing 75 $\mu$	55.3	58.6	78.8	81.5	81.3
<u>LEACH DATA</u>					
% solids	50	50	50	50	50
initial pH	8.5	8.0	8.4	8.1	8.3
hydrated lime (kg/t)	0.40	0.31	0.30	0.41	0.36
test pH	10.5	10.5	10.5	10.5	10.5
<u>NACN (kg/t)</u>					
addition	1.0	1.0	1.0	1.0	1.0
residual %	0.053	0.060	0.032	0.016	0.026
consumption	0.47	0.40	0.68	0.84	0.74
<u>LIQUOR ASSAYS</u>					
mg/l Au 3hr	2.47	37.9	16.2	3.55	43.5
6hr	2.67	42.2	13.8	3.46	42.6
24hr	3.21	48.1	16.7	3.71	48.1
mg/l Ag 24hr	8.15	29.6	20.2	8.44	41.8
<u>RESIDUE ASSAY</u>					
g/t Au	0.42	1.92	1.40	0.64	5.04
	0.43	1.94	1.28	0.66	4.18
ave.	0.43	1.93	1.34	0.65	4.61
g/t Ag	6	16	14	22	30
<u>BACK CALC. HEAD</u>					
g/l Au	3.64	50.0	18.0	4.36	52.7
g/l Ag	14.2	45.6	34.2	30.4	71.8
<u>% DISSOLUTION</u>					
Au @ 3hr	68	76	90	81	83
6hr	73	84	77	79	81
24hr	88	96	89	85	91
Ag @ 24hr	58	65	59	28	58

NOTE: For HP24 125-126m we suspect the 3 & 6hr gold solution assays may be reversed

TABLE 3

## HENTY ORE-CYANIDE LEACH TESTS 6-10

TEST No.	6	7	8	9	10
sample i.D. - hole	HP 28				
-meters	318.2-318.9	318.9-319.9	319.9-320.4	320.4-321.3	321.3-322.2
sample wt. (kg)	0.990	1.006	0.995	1.000	0.991
<u>HEAD ASSAY</u>					
g/t Au	2.31	4.66	0.37	1.66	8.37
g/t Ag	9	17	11	5	35
<u>ROD MILL GRIND</u>					
% solids	60	60	65	65	65
minutes	40	40	35	40	40
% passing 75µ	77.8	87.4	79.0	67.5	79.3
<u>LEACH DATA</u>					
% solids	48.5	50	45	50	49.6
initial pH	8.2	8.8	8.2	8.0	8.1
hydrated lime (kg/t)	0.18	0.16	0.25	0.37	0.30
test pH	10.9	10.8	10.8	10.7	10.7
<u>NACN (kg/t)</u>					
addition	1.0	1.0	1.0	1.0	1.0
residual %	0.058	0.052	0.034	0.038	0.030
consumption	0.42	0.48	0.66	0.62	0.70
<u>LIQUOR ASSAYS</u>					
mg/l Au 3hr	1.71	3.58	0.20	1.30	6.14
6hr	1.77	3.77	0.22	1.32	6.20
24hr	1.92	4.27	0.26	1.40	7.04
mg/l Ag 24hr	3.00	11.15	4.00	2.10	25.15
<u>RESIDUE ASSAY</u>					
g/t Au	0.29	0.40	0.14	0.23	0.52
	0.27	0.43	0.15	0.26	0.53
ave.	0.28	0.42	0.14	0.24	0.52
g/t Ag	4	8	4	2	28
<u>BACK CALC. HEAD</u>					
g/t Au	2.32	4.69	0.46	1.64	7.67
g/t Ag	7.2	19.2	8.9	4.1	53.5
<u>% DISSOLUTION</u>					
Au @ 3hr	78	76	54	79	80
6hr	81	80	59	80	81
24hr	88	91	70	85	92
Ag @ 24hr	44	58	55	51	48

TABLE 4

## HENTY ORE-CYANIDE LEACH TESTS 11-16

TEST No.	11	12	13	14	15	16
sample i.D. - hole	HP 31	HP 31	HP 32	HP 32	HP 32	HP 36
-meters	333.5-334.5	334.5-335.4	167.6-168.6	168.6-169.6	169.6-170.6	107.9-108.9
sample wt.(kg)	0.995	1.006	1.000	0.999	1.003	1.008
<b>HEAD ASSAY</b>						
g/tAu	6.10	6.76	27.1	1.92	0.49	30.2
g/tAg	79	80	6	5	3	58
<b>ROD MILL GRIND</b>						
% solids	60	60	60	60	60	60
minutes	35	35	40	35	45	40
% passing 75µ	80.2	92.4	79.4	78.1	86.0	66.8
<b>LEACH DATA</b>						
% solids	50	50	50	50	50	50
initial pH	7.9	7.7	8.0	8.0	8.2	8.4
hydrated lime (kg/t)	0.42	0.43	0.49	1.29	0.67	0.34
test pH	10.4	10.4	10.4	10.5	10.6	10.7
<b>NACN (kg/t)</b>						
addition	1.50	1.50	1.0	1.0	1.0	1.0
residual %	0.020	0.014	0.024	0.018	0.048	0.050
consumption	1.30	1.36	0.76	0.82	0.52	0.50
<b>LIQUOR ASSAYS</b>						
mg/l Au 3hr	3.02	3.36	16.40	1.56	0.38	16.18
6hr	2.86	3.42	17.22	1.54	0.40	17.98
24hr	2.78	2.92	13.32*	2.24	0.46	19.58
mg/l Ag 24hr	31.90	31.25	2.80	1.25	0.95	50.75
<b>RESIDUE ASSAY</b>						
g/t Au	2.92	3.21	2.97	0.34	0.13	8.31
	3.01	3.24	3.24	0.34	0.09	8.95
ave.	2.96	3.22	3.11	0.34	0.11	8.63
g/t Ag	47	49	3	2	3	16
<b>BACK CALC HEAD</b>						
g/t Au	5.74	6.14	20.33	2.58	0.57	27.45
g/t Ag	78.9	80.3	5.8	3.3	4.0	66.8
<b>% DISSOLUTION</b>						
Au @ 3hr	53	55	81	60	67	59
6hr	50	56	85	60	70	66
24hr	48	48	85*	87	81	71
Ag @ 24hr	40	39	48	38	24	76

NOTE: For HP32 167-168m we suspect the 24hr gold solution assay to be in error and have used the 6hr result to determine % dissolution

APPENDIX 4.

## MEMORANDUM

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To JOINT VENTURE PARTNERS  
L.A. NEWNHAM

From

Subject HENTY PROJECT - BUDGET ESTIMATES 1988-89

Date 27th June, 1988.

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Estimated expenditure on the Henty Project in 1988-89 falls into two budget viz:

Development Budget, which includes all expenditure involved in the underground exploration phase

Exploration Budget, which includes all expenditure associated with surface exploration

Details of these two budgets follow, and they are summarised below. The development budget assumes the decline, bulk sampling and underground core drilling and will be finished by June 30th. This target date is critically dependent on Government approvals to proceed.

Budget Summary:

Development Budget:	\$ 3,550,000
Exploration Budget:	230,770
Total:	3,780,770
RGC Share (64.7%):	2,446,158
LRR Share (35.3%):	1,334,612 plus 6.5%
-	1,421,352

*L.A. Newnham*  
L.A. NEWNHAM.

HENTY DEVELOPMENT BUDGET

1988-89.

This budget is designed to allow for the further exploration of the Henty gold deposit by completion of the following:

- 830m. of decline and cross-cut development
- 200m. of driving in mineralization
- core drilling of 50 holes totalling 4,000m.
- crushing, sampling and possible trial milling of approx. 2-3,000 tonnes of mineralization.

The total budget is \$3.550 of which RGC's 64.7% is \$2.297M. The program is critically dependent on the granting of a Mining Lease by the end of July 88, and the availability of a suitable contract mine developer by August 88.

An unfortunate aspect of the program is that most of the surface work around the portal area will have to be undertaken in Winter.

Brief notes on each of the budget subsections appear below:

D701 MINE DEVELOPMENT DRILLING:           \$360,000

It is proposed to core drill 50 holes totalling 4,000m. of 56TT sized core, from 8 drill cuddies. This work would be done by a local contractor who would use a bar mounted air rig requiring 350 cfm at 90-100psi.

The drilling to commence in November, would be supervised by Ray Roberts, assisted by one field assistant. Ray would be based in Queenstown, and split and store all core in Queenstown. Core for analysis would be prepared and assayed in Burnie.

**RGC EXPLORATION PTY. LIMITED**

102201

2.

D701.1	Salaries and Wages:	
	R.R (80%)	\$
	F.A. (100%)	55,000
D701.2	Travel and Accommodation:	
	House rent in Queenstown, Motels, travel	10,000
D701.3	Service Contractors:	5,000
	Core Shed operation, petrology	
D701.4	Assay Charges;	
	Drill core, bulk and face samples	20,000
D701.5	Drilling Contractors:	
	4000m. of 56 TT core approx. \$60/m.	250,000
D701.6	Stores and Supplies:	10,000
	Trays, Racks, Blades, bags etc.	
D701.7	Vehicles:	10,000
	Operating Costs of Toyota + 50% Subaru	
	<b><u>SUB-TOTAL:</u></b>	<b>360,000</b>

3.

D702 PROJECT EVALUATION: \$35,000

All major geotechnical and environmental studies will be completed by the start of 88-89.

The major evaluation task during 88-89 will involve the mapping, sampling and metallurgical assessment aspects of the 200m. drive in mineralisation.

It is proposed that this drive is mapped and face sampled each round, and that each round be contract crushed and further sampled on surface, and that following receipt of assays from these samples, that each round be designated "waste" or "ore". The latter rounds would be removed from the area for further metallurgical work (eg) trial milling at Mt. Lyell.

D702.1	Surveying and Mapping: Surveying of the decline, drill sites and in-ore development	\$  10,000
D702.2	Mine planning:	1,000
D702.3	Metallurgy: Drill core test work; crushing, sampling and trucking in-ore development	  15,000
D702.4	Geotechnical: Progress visits by Consultant	 5,000
D702.5	Ore plant layout:	Nil
D702.6	Water:	1,000
D702.7	Tailings:	Nil
D702.8	Sundry environmental: Water sampling, rehabilitation	 3,000
D702.9	Government Approvals:	Nil

SUB-TOTAL \$35,000

4.

D703 UNDERGROUND EXPLORATION AND DEVELOPMENT: \$2,602,000

It is proposed that a contractor be engaged to drive the decline, develop a drive in mineralisation, and provide adequate cuddies for core drilling. This work should commence in August.

D703.1	Sub-Contract Mining:	\$
	800m. of 4 x 4m. 1:8 decline at \$2620/m = \$2,100,000	
	Development of 30m cross-cut \$80,000 Driving in lode, 200m. at \$500/m = \$200,000	
	Cuddies 8 for drilling, 2 for sumps \$10,000 each, \$100,000	2,480,000
D703.2	Site Establishment: Clearing area around portal, gates, fences, magazines	75,000
D703.3	Lease Expenses:	2,000
D703.4	Site supervision - Salaries: Portion of LAN's salary	45,000
D703.5	Site supervision - Operating:	Nil
D703.5	Mine development:	Nil
	SUB-TOTAL	<u>\$2,602,000</u>

5.

D704 MOBILE EQUIPMENT: \$30,000

Because all major work will be contract, the only capital item required will be a diesel toyota equipped for use underground.

D704.1 Motor Vehicles: \$30,000

SUB-TOTAL \$30,000

D705 ORE TREATMENT PLANT: Nil

Crushing of samples from the drive in mineralisation will be contract crushed. Hence nil expenditure for this section.

D706 SERVICES: \$170,000

The main access road will be completed in 87-88. The main services required for installation in 88-89 will be power and phone.

D706.1 Road: \$  
Maintenance 5,000

D706.2 Housing/Accommodation: Nil

D706.3 Office and Office Equipment: 5,000

D706.4 Power:  
Supply 22KV, \$58,000  
Substation, transformer:  
60,000 Usage: 30,000 148,000

D706.5 Tailings Disposal: Nil

D706.6 Telecommunications:  
(Line installation) 5,000

**RGC EXPLORATION PTY. LIMITED**

6.

D706.7	Water	Nil
D706.8	Workshop/Store	Nil
D706.9	Mine Services:	
	Purchase of core-saw	7,000
	<u>SUB-TOTAL</u>	<u>\$170,000</u>

D707 PROJECT MANAGEMENT \$30,000

This amount is designed to cover head-office costs.

D707.1	Design/procurement	2,000
D707.2	Construction	Nil
D707.3	RGC Salaries	18,000
D707.4	RGC Travel & Accommodation:	5,000
D707.5	RGC Sundry	5,000
	<u>SUB-TOTAL</u>	<u>\$30,000</u>

D708 CONTINGENCY 10% \$323,000

7.

SUMMARY

	Total	RGC
D701 Mine Development Drilling	360,000	232,920
D702 Project Evaluation	35,000	22,645
D703 Underground Exploraiton and Development	2,602,000	1,683,494
D704 Mobile Equipment	30,000	19,410
D705 Ore Treatment Plant	-	-
D706 Services	170,000	109,990
D707 Project Management	30,000	19,410
D708 Contingency 10%	323,000	208,981
TOTALS	<u>\$3,550,000</u>	<u>\$2,296,850</u>

HENTY EXPLORATION BUDGET 1988-89

Substantial potential exists for the drill indicated resource to continue and expand at depth (greater than 400m. beneath surface.) The two best intersections to date on this property viz. DDH HP 12 with 3m. of 22 g/t Au and DDH HP 42 with 10m. of 56 g/t and 3m of 12 g/t Au, both lie approx. 450m. beneath surface.

During 88-89, it is proposed to further test this encouraging deeper potential by completing from surface three (3) cored holes, each 700-800m. in length.

Together with wedging, this program of 2300m. is expected to cost \$230,770, and will commence about September.

102210

Item	Period Cost Centre	Period												TOTALS
		1	2	3	4	5	6	7	8	9	10	11	12	
Mine Development Drilling	D701	5	5	5	10	40	40	40	40	45	45	45	40	360
Project Evaluation	D702	-	2	2	-	2	2	2	2	2	6	7	8	35
Underground Exploration & Development	D703	50	200	202	250	250	200	200	250	250	250	250	250	2,602
Mobile Equipment	D704	-	30	-	-	-	-	-	-	-	-	-	-	30
Ore Treatment Plant	D705	-	-	-	-	-	-	-	-	-	-	-	-	-
Services	D706	58	60	4	4	10	5	4	5	5	5	5	5	170
Project Management	D707	5	5	4	-	2	-	-	2	-	2	5	5	30
Contingency (10%)	D708	50	40	21	50	10	10	10	10	10	12	50	50	323
TOTALS		168	342	238	314	314	257	256	309	312	320	362	358	3,550
RC Share (64.7)		108.7	221.2	154.0	203.2	203.2	166.3	165.6	199.9	201.9	207.0	234.3	231.6	2,296.9
LRG Share (35.3)		59.3	120.8	84.0	110.8	110.8	90.7	90.4	109.1	110.1	113.0	127.7	126.4	1,253.1
<i>Plus 6.5%</i>														

SUMMARY: HENTY DEVELOPMENT BUDGET (\$'000)

1988-89

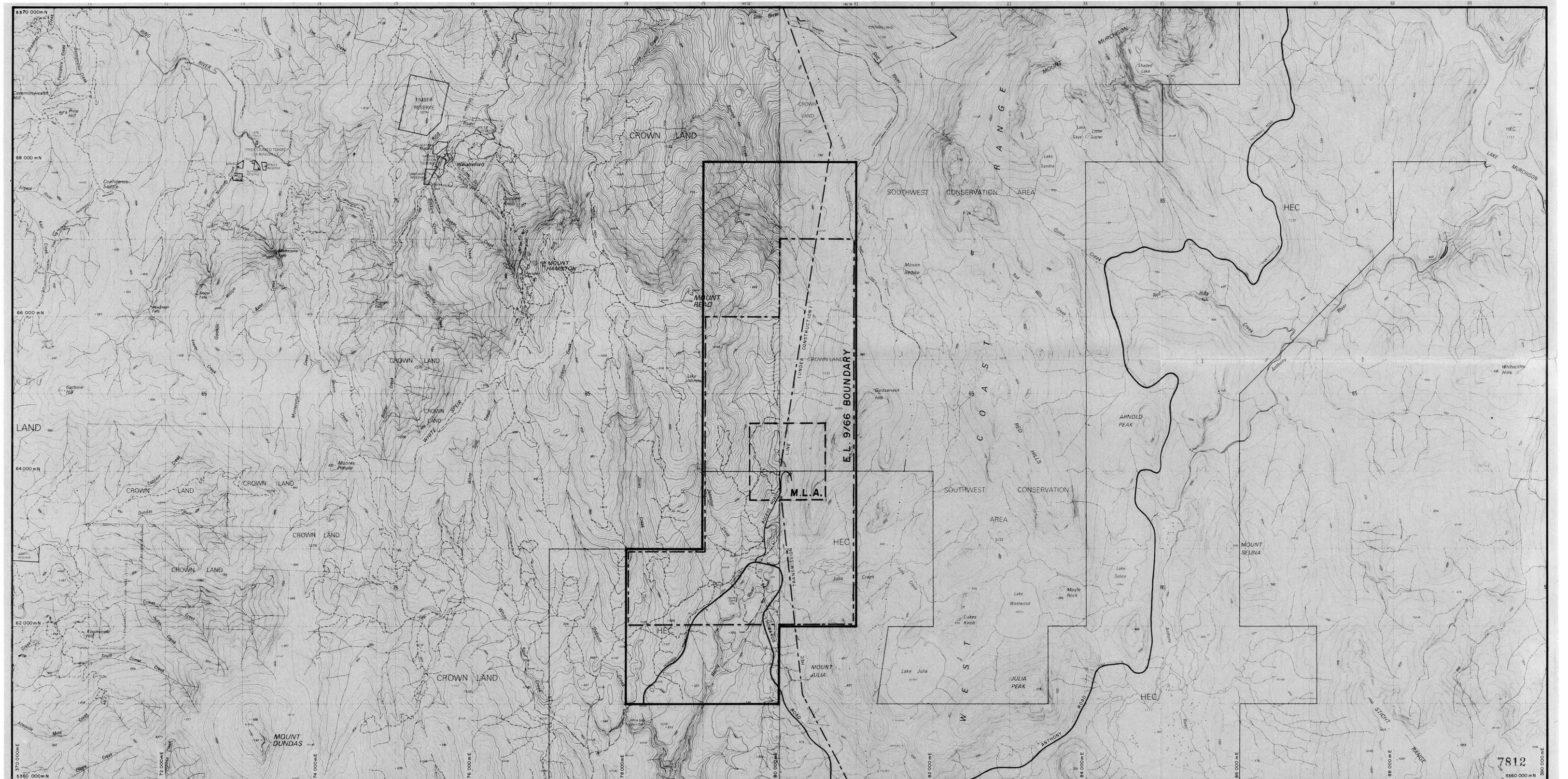
COST NUMBER	PERIOD ITEM	12												TOTAL
		1	2	3	4	5	6	7	8	9	10	11	12	
01	Personnel Costs	900	900	900	900	800	800	800	800	800	800	800	800	10,000
11	Travel & Accommodation	125	125	125	125	125	125	125	125	125	125	125	-	1,375
21	Consultants, Contractors	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	-	11,000
32	Sample Prep/ Analysis	250	250	300	300	300	300	300	300	300	300	300	300	3,500
41	Drilling			22000	22000	24000	22000	20000	23000	22000	22000	23000		200,000
44	Stores, Supplies	60	60	60	60	60	100	60	60	60	60	60	100	800
46	Vehicles Plant Equipment	80	80	80	80	80	100	80	80	80	80	80	100	1000
51	Land Acquisition	-	-	-	-	-	-	700	-	-	-	-	-	700
55	Computing	100	100	80	80	80	80	80	80	80	80	80	80	1000
61	Office Costs	125	125	125	125	125	125	125	125	125	125	125	20	1395
	TOTALS	2,640	2,640	24,670	24,670	26,570	24,630	23,270	25,570	24,570	24,570	25,570	1,400	230,770
	RGC Share 65%	1,716	1,716	16,036	16,036	17,271	16,009	15,125	16,620	15,970	15,971	16,620	910	190,000

PROJECT: HENTY (E.L. 9/66)

COST CENTRE: 5510

1988-89 BUDGET (EXPLORATION)

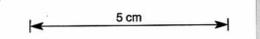




812

**LEGEND**

- |   |  |  |   |
|---|--|--|---|
| <ul style="list-style-type: none"> <li>Residential area, Commercial buildings</li> <li>Roads maintained for continuous public use</li> <li>Roads of restricted use or access</li> <li>Walking track or horse trail (approximate position) with bridge</li> <li>Railway with station; Places entered in National Estate Register</li> <li>Power transmission line and pylon positions</li> <li>Building; Feature of historic or special interest; Ruin; Mine</li> <li>Post office; Police station; Fire station; School</li> </ul> | <ul style="list-style-type: none"> <li>Primary road with route number</li> <li>Secondary road with route number</li> <li>Minor road with route number</li> <li>Other road</li> <li>Other roads with bridge</li> <li>Vehicular track with gate</li> <li>Walking track or horse trail (approximate position) with bridge</li> <li>Railway with station; Places entered in National Estate Register</li> <li>Power transmission line and pylon positions</li> <li>Building; Feature of historic or special interest; Ruin; Mine</li> <li>Post office; Police station; Fire station; School</li> </ul> | <ul style="list-style-type: none"> <li>Common park; Camping ground; Public toilets</li> <li>Disposal area; Information centre; Cemetery</li> <li>Picnic area; Trig station beacon; Spot elevation</li> <li>Contour with value; Depression contour</li> <li>Quarry; pit or open cut mine</li> <li>Rock scree; Broken rocky surface</li> <li>Dense forest; Medium forest</li> <li>Low dense vegetation; Distinctive grass</li> <li>Orchard; Pine plantation</li> <li>Eucalypt plantation; Submerged trees</li> </ul> | <ul style="list-style-type: none"> <li>Swamp</li> <li>Windbreak</li> <li>Wier area; Subject to flooding</li> <li>Waterfall; Rapids</li> <li>Indefinite shoreline or foreshore; Looche</li> <li>Tidal rocks or ledge; Offshore rock</li> <li>Navigation light or lighthouse; Exposed wreck</li> <li>Sand; Tidal reef</li> <li>Saline coastal flat; Tidal flats</li> <li>Jetty; Launching ramp</li> </ul> |
|---|--|--|---|



- Existing E.L. 9/66 boundary
- - - Proposed Retention Licence boundary
- - - M.L.A. boundary

88-2833

BOUNDARIES shown on this map are NOT authoritative. For full particulars please consult the Registrar-General's Division, Law Department, or the Survey Division, Lands Department. Areas within proclaimed towns or less than two hectares may not be depicted. Boundaries of Crown Land (including Reserves) extend to low water mark. To give a land parcel reference, quote parcel number with municipal number. To use this number to gain title or survey information please consult the Mapping Division. Property and parcel boundaries are shown as at February 1986.

Municipality name and number  
Municipality name  
Ward name  
Town boundary. Other administrative boundaries  
Reserve boundary. Viniculum or pairing symbol  
Property boundary. Land parcel boundary and number  
Boundary location uncertain or indefinite

102215

**RGC EXPLORATION PTY. LIMITED**

TYNDALL - E.L. 9/66  
**HENTY PROJECT**  
**LOCATION MAP**  
**SHOWING PROPOSED**  
**RETENTION LICENCE**

DRAWN BY : L.A.N.  
 DRAFTSMAN : G.B.  
 DATE : MAY 1988  
 REVISIONS :  
 FILE NO.

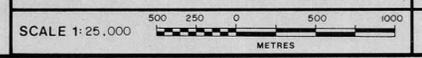
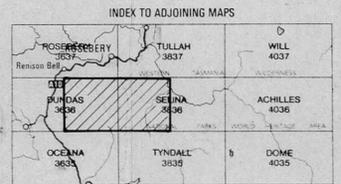
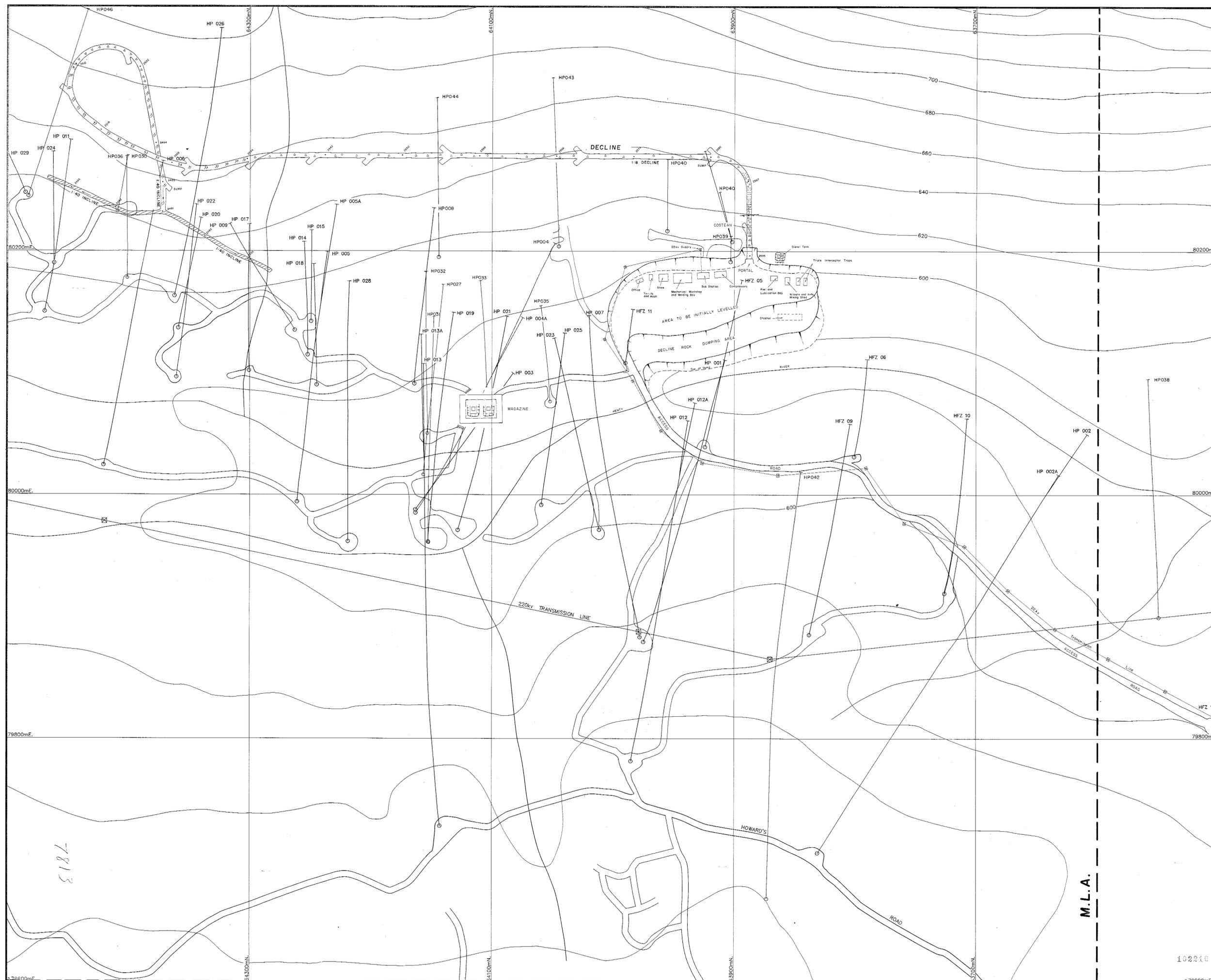
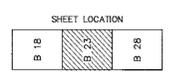
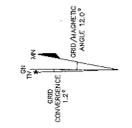


FIG. 1





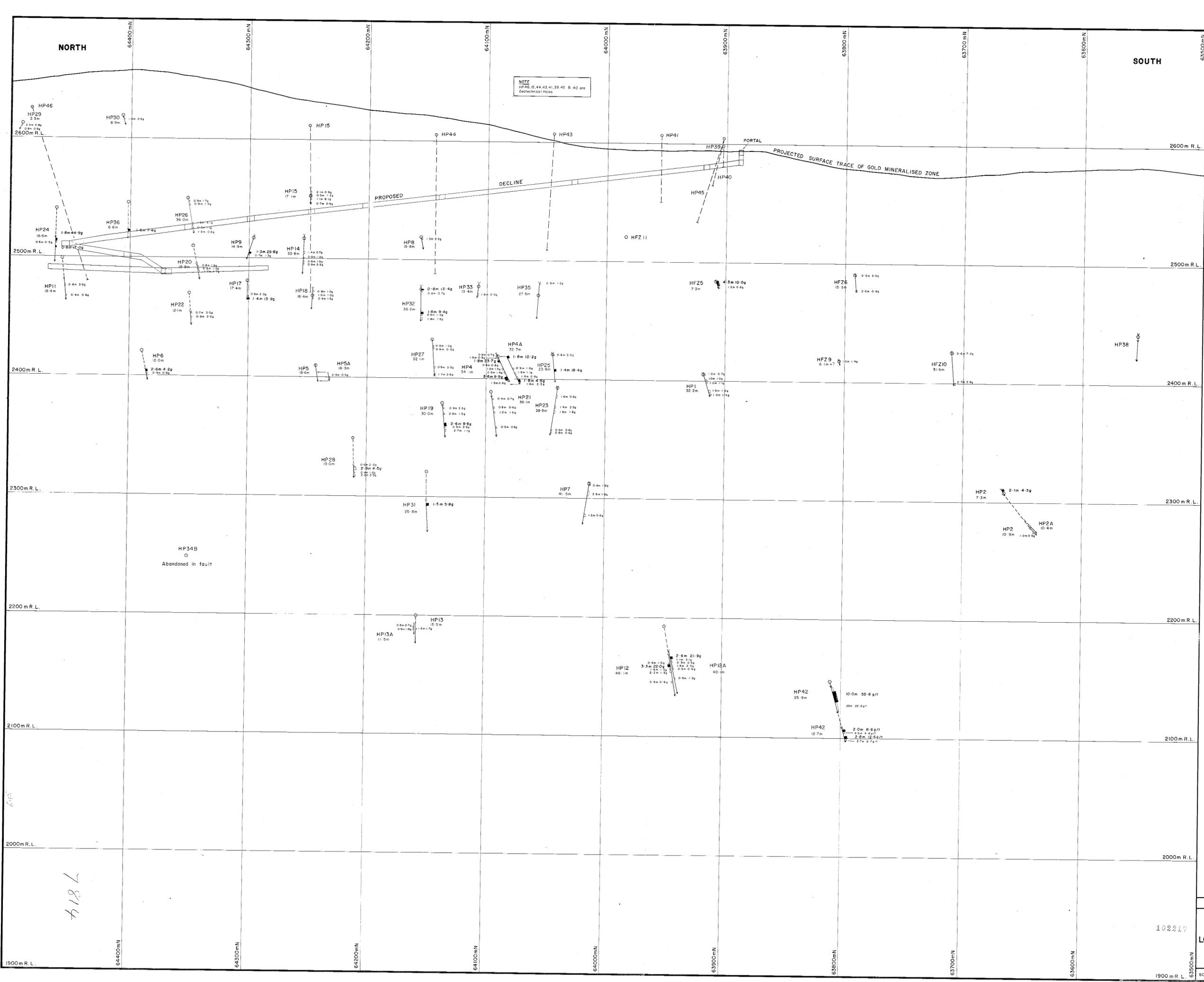
- LEGEND**
- NEWTON CREEK GROUP
    - Dark grey, unmineralised shales.
    - Unmineralised quartz conglomerates
    - Unmineralised, weakly altered Tyndall Group volcanics
  - TYNDALL GROUP
    - Variably silicified, weakly to moderately altered, weakly mineralised Tyndall Group volcanics
  - Possible fault
  - Mineralised Rock - bulk sample
  - Proposed Power Lines
  - Existing Roads



5cm

7813

GOLDFIELDS EXPLORATION PTY. LIMITED	
TYNDALL - E.L. 9/66	DRAWN BY:
HENTY PROSPECT - SHEET B23	DRAFTSMAN: T.G.D.S.
	DATE: June 68
	REVISIONS:
	FILE NO.:
<b>PROPOSED DEVELOPMENT</b>	
SCALE 1:1000	FIG. 2

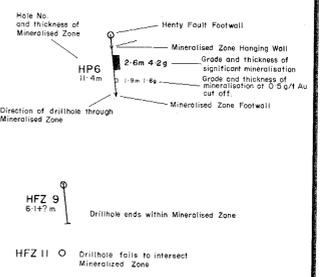


NOTE  
HP 46, 15, 44, 23, 41, 39, 45 & 40 are  
Geotechnical Holes

**LEGEND**

**THE MINERALISED ZONE**  
A zone of mineralised, generally coarse grained volcanoclastics with a total visible sulphide content greater than or equal to 5% by volume. Siliceous (± calcareous) veins are also included.

**SIGNIFICANT GOLD MINERALISATION**  
Calculated using a minimum average grade of 4.0g/t and a grade thickness cut off of 8g/t metres



- NOTES**
1. All thicknesses are horizontal
  2. Projection line is 380400mE
  3. 2000m has been added to the true R.L.'s
  4. Projected surface of the Mineralised Zone is approximate only. Taken from 1:1000 and 1:2000 geology plans. A 5.0m height adjustment has been assumed for the tree-top-ground difference.



88-2833

RGX EXPLORATION PTY. LIMITED	
TYNDALL E.L. 9/66	DRAWN BY A.J.C.
HENTY PROSPECT SHEET B 23	DRAFTSMAN G.M.B.
LONGITUDINAL PROJECTION	DATE June '88
	REVISIONS
	FILE NO.
SCALE 1:1000	FIG. 3

418 L

102217