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AUSTRALIAN CONSOLIDATED INDUSTRIES LTD.

MINERAL RESOURCES DIVISION

TASMANIAN EXPLORATION E.L.16/68, BALFOUR — 16th March, 1972.

REPORT ON D.D.H.24 - MURRAYS REWARD PROSPECT — M.H. McIntyre

SUMMARY

D.D.H.24, drilled below and approximately parallel to D.D.H.16, at Murrays Reward Prospect was successfully completed at a depth of 236.57 metres.

A thick zone of discontinuous, anomalous but sub-economic copper mineralization was intersected between about 187.00 and 232.35 metres, this interval containing an average of about 1240 ppm Cu, over an estimated true thickness of about 38.0 metres. Rare galena and sphalerite were also recorded, notably between 198.32 and 199.00 metres, this interval assaying 980 ppm Pb and ~~[illegible]~~ 14250 ppm Zn.

Within this thick zone of anomalous copper values is a thinner zone of more continuous and higher grade chalcopyrite mineralization occurring between 206.70 and 223.68 metres, this interval averaging about 2800 ppm Cu, 110 ppm Pb and 90 ppm Zn over an estimated true thickness of 14.8 metres. The sulphide minerals within this sub-zone appear to occur exclusively within, or intimately associated with, quartz or quartz-dolomite veins, segregations or bands which, in turn, occur within chloritic slaty sediments.

Comparison of D.D.H.24 and D.D.H.16 assay results suggests a decrease in copper mineralization with increasing depth.

Drilling costs for D.D.H.24 were approximately $6240 (average $26.4 per metre) excluding the cost of mud and additives.
Final cost = $6197, average $26.40/metre.

D.D.H. 24 - MURRAYS REWARD PROSPECT

Grid Reference	435 358 N 319 098 E
Elevation	198.4 metres
Angle	65°
Bearing	N 54° E true
Date Drilled	27.1.72 to 5.2.72
Drilling Rate	18.2 metres per drilling shift

1. OPERATIONAL DETAILS:

1.1 Drilling Details

Drilling of D.D.H.24 was commenced on January 27, 1972.

NW casing was seated at 1.5 metres and the hole advanced without incident to 48.77 metres with the airmast attachment.

The hole was cased with 48.8 metres of NW casing and drilling continued with NQWL diamond coring equipment with a triple tube core barrel.

Diamond drilling advanced satisfactorily to about 183 metres at which depth several teeth on the drilling rig transmission gear were stripped and drilling ceased. Temporary repairs were effected with welding equipment and a file and drilling continued.

At about 225 metres the drilling gearbox seized and drilling was suspended for two shifts while replacement parts were flown in from Adelaide.

Drilling recommenced on February 3, 1972 and continued slowly to 236.75 metres at which depth the rods became bogged and could not be returned to bottom.

The hole was then reduced but the BW casing could not be reamed or washed down below about 213 metres. Mud was used in an unsuccessful attempt to lift the sludge from the bottom of the hole.

Theoretically, it is possible to hammer the casing to the bottom of the hole but neither the runners nor the foreman had any experience at this technique which, even if successful, would have resulted in the almost certain loss of the BW casing and casing shoe valued at greater than $2000.

As the major part of the mineralized zone had apparently been intersected further attempts at casing were abandoned and the hole was stopped at a depth of 236.57 metres on February 5, 1972.

All casing was recovered.

1.2 Drilling Conditions

Drill runs and core recovery are given in Appendix A.

Air drilling progress was satisfactory but the drilling rate slowed with increasing depth and the hole was reduced at 48.77 metres.

NQWL diamond drilling advanced rapidly (average about 21 metres per shift) to about 213 metres, but below this depth hard and broken ground slowed progress considerably and frequent bit changes became necessary.

The frequent pulling and running of the drill string apparently reduced the stability of the hole below about 198 metres and below this depth it was necessary to ream the rods to bottom through sludge and caved material.

Core recovery was generally satisfactory throughout (see Appendix A) although a series of minor core losses occurred between about 225.0 and 231.8 metres.

1.3 Drillhole Deviation

The results of the drillhole surveys were as follows:

Collar 65° at N 42° E magnetic

30.5	metres	65°	acid-tube;
61.0	"	65°	" "
91.4	"	63°	" " ; 63° at N 66° E magnetic-Tropari
121.9	"	57.5°	" "
152.4	"	48.5°	" " ; 46° at N 65° E magnetic-Tropari
182.9	"	42.5°	" "
213.4	"	37°	" " ; 36° at N 79° E magnetic-Tropari

Note that, in addition to a marked shallowing or flattening below about 100 metres, the drillhole also made a significant deviation towards the south.

2. GEOLOGY

The complete drill log is given in Appendix B and may be summarized as follows:-

AIR DRILLING

0 to 48.77 Metres

Carbonaceous and chloritic slaty sediments.

DIAMOND DRILLING

48.77 to 150.84 Metres

Pale to medium green and grey-green chloritic slate and siltstone. Few quartz-pyrite veins and segregations. Rare chalcopyrite in a 5mm pyritic quartz vein at 132.85 metres.

150.84 to 182.11 Metres

Slaty carbonaceous and graphitic siltstone and shale. Few quartz veins and segregations. Leucoxene porphyroblasts become more common towards base of the unit. Chalcopyrite occurs in a 1cm pyritic quartz vein at 160.9 metres.

182.11 to 187.00 Metres

Similar to the interval 150.84 to 182.11 metres but is complexly deformed and contains numerous leucoxene porphyroblasts. Common pyritic quartz veins and segregations.

187.00 to 188.95 Metres

Mineralized Quartz and Quartz-Dolomite

White quartz and mottled (pale yellow-brown and white) quartz-dolomite containing a few bands ($\leq$ 30 cm) of grey and grey-green chloritic carbonaceous siltstone. Minor pyrite, chalcopyrite and galena occur in the quartz and quartz-dolomite.

188.95 to 198.32 Metres

Dark grey to black heavily porphyroblastic (leucoxene), deformed carbonaceous and graphitic slaty siltstone. Common pyritic and chloritic quartz veins. Minor chalcopyrite occurs in a pyritic quartz vein ($\leq$ 6 cm) at 192.2 metres. Rare fine grained galena occurs at the base of the unit.

198.32 to 199.00 Metres

Sulphide Zone

Dark grey-brown sediment (carbonate?) containing minor fine grained pyrite and sphalerite. At about 198.5 metres an irregular quartz-dolomite mass contains common pyrite and sphalerite and minor galena and chalcopyrite.

199.00 to 204.24 Metres

Slightly chloritic slaty carbonaceous siltstone containing a few quartz and quartz-dolomite veins and segregations. Rare chalcopyrite in vein material.

204.24 to 209.02 Metres

Pyritic, chloritic and slightly talcose, phyllitic and slaty siltstone containing common irregular pyritic quartz veins and segregations. Few quartz-dolomite segregations contain rare chalcopyrite and galena.

209.02 to 216.28 Metres

Heterogeneous zone consisting of medium to dark green talcose chlorite, talcose chloritic sediments and bands of white quartz. Minor chalcopyrite occurs in the quartz and is associated with irregular pyritic quartz veins and segregations in the chloritic material.

216.28 to 218.32 Metres

Mineralized Quartz-Carbonate

Hard, mottled (white and pale brown) quartz-dolomite containing minor chalcopyrite.

218.32 to 223.68 Metres

White quartz with common incipient fractures. Minor yellow-brown dolomite. Minor chalcopyrite occurs as disseminated blebs within the quartz and as short irregular stringers and blebs along the fracture planes.

223.68 to 224.75 Metres

Chloritic siltstone with few recrystallized quartzose bands.

224.75 to 228.10 Metres

Very hard pale to medium grey and grey-green heavily silicified and quartzitic fine grained sediment (siltstone?) containing irregular quartz segregations. Rare chalcopyrite occurs in the quartz.

228.10 to 231.38 Metres

Hard, medium green recrystallized and slightly silicified chloritic sediment containing common white quartz veins and segregations.

231.38 to 232.35 Metres

Mineralized Quartz

White quartz with numerous irregular incipient fractures. The basal 20 cm consists of pyritic dolomite with common quartz veins and segregations. A 2 cm band of chalcopyritic pyrite occurs at 231.4 metres.

232.35 to 235.45 Metres

Similar to the interval 228.10 to 231.38 metres.

235.45 to 236.57 Metres

Hard recrystallized and silicified chloritic sediment with few quartz veins and segregations.

3. SAMPLE AND ASSAY RESULTS

A total of 23 core samples were collected from the interval 182.11 to 236.57 metres. The samples were assayed for copper, lead and zinc with the following results:

Intersection (Metres)	Interval (Metres)	Sample No. BAL	Assay Value ppm		
			Cu	Pb	Zn
182.11 to 184.43	2.32	1703	28	47	71
184.43 to 187.00	2.57	1704	15	26	24
187.00 to 188.95	1.95	1705	1225	720	87
188.95 to 191.74	2.79	1706	70	24	21
191.74 to 194.50	2.76	1707	125	29	21
194.50 to 198.32	3.82	1708	28	66	173
198.32 to 199.00	0.68	1709	2300	980	24250
199.00 to 201.79	2.79	1710	75	250	99
201.79 to 204.24	2.45	1711	55	145	350
204.24 to 206.70	2.46	1712	15	81	85
206.70 to 209.02	2.32	1713	1070	300	98
209.02 to 211.23	2.21	1714	2150	80	106
211.23 to 213.70	2.47	1715	5600	41	108
213.70 to 216.28	2.58	1716	795	23	83
216.28 to 218.32	2.04	1717	0.89	80	141
218.32 to 221.02	2.70	1718	825	39	38
221.02 to 223.68	2.66	1719	1600	272	84
223.68 to 224.75	1.07	1720	40	128	120
224.75 to 228.10	3.35	1721	530	22	29
228.10 to 231.38	3.28	1722	45	127	71
231.38 to 232.35	0.97	1723	1725	50	52
232.35 to 235.45	3.10	1724	125	54	67
235.45 to 236.57	1.12	1725	110	42	44

(a) Copper assay values

A thick zone of discontinuous, sub-economic but anomalous copper mineralization occurs between 187.00 and 232.35 metres. This interval, which is an assay defined interval and does not coincide with any particular lithology, containing an average of about 1240 ppm Cu over an estimated true thickness of about 39.0 metres.

Within this thick zone, between 206.70 and 223.68 metres, is an interval which may be considered the mineralized copper zone proper. This interval contains an average of 2800 ppm Cu, 110 ppm Pb and 90 ppm Zn over an estimated true thickness of about 14.3 metres.

The copper is apparently present exclusively as chalcopyrite which occurs within, or is intimately associated with, quartz or quartz-dolomite. The quartz and quartz-dolomite occur as veins, segregations and thicker bands within chloritic and talcose slaty sediments.

The mineralized zone proper dips about 80° to 85° towards the west and appears to lie between a carbonaceous and graphitic slaty siltstone and shale hanging wall and a chloritic slate and siltstone footwall.

(b) Lead assay values

Minor traces of galena were noted in three intervals which subsequently returned anomalous lead assay values. The three intervals and associated lead assay values are; 187.00 to 188.95 metres (720 ppm Pb), 198.32 to 199.00 metres (980 ppm Pb) and 206.74 to 209.02 metres (300 ppm Pb).

The galena, as for the chalcopyrite, appears to be intimately associated with quartz and/or quartz-dolomite.

(c) Zinc assay values

Sphalerite crystals were observed between 198.32 and 199.00 metres and a zinc assay value of 24250 ppm Zn was subsequently reported from this interval.

This is the first occurrence of sphalerite observed in core from the A.O.I. drilling programme at Balfour.

4. CONCLUSION

D.D.H.24, which was sited so as to pass beneath, and approximately parallel to, D.D.H. 16, proved a down dip continuation of the mineralized zone first intersected by D.D.H.16.

On the evidence of the D.D.H.24 results it would appear that the grade of this mineralized zone decreases with increasing depth.

Although the main mineralized zone intersected by D.D.H.24 has an estimated true thickness greater than that intersected by D.D.H.16, the average grade is an order of magnitude lower. Furthermore, the overall mineralized zone intersected by D.D.H.16 is more continuous and of significantly higher grade than that intersected by D.D.H.24 which is characterised by a few anomalous but low grade copper values separated by intervals of background copper values only.

APPENDIX A

DDH.24 DRILL RUNS AND CORE RECOVERY

INTERSECTION (METRES)			INTERVAL (METRES)	CORE RECOVERY	
				METRES	PER CENT
48.77	to	49.99	1.22	1.22	100
49.99	"	50.90	0.91	0.91	100
50.90	"	51.05	0.15	0.15	100
51.05	"	51.97	0.92	0.92	100
51.97	"	52.43	0.45	0.45	100
52.43	"	53.19	0.76	0.76	100
53.19	"	53.65	0.46	0.46	100
53.65	"	54.87	1.22	0.99	81
54.87	"	55.63	0.76	0.76	100
55.63	"	55.78	0.15	0.15	100
55.78	"	56.08	0.30	0.30	100
56.08	"	56.99	0.91	0.91	100
56.99	"	57.61	0.62	0.62	100
57.61	"	59.13	1.52	1.52	100
59.13	"	60.66	1.53	1.53	100
60.66	"	61.57	0.91	0.91	100
61.57	"	62.26	0.69	0.30	43
62.26	"	63.78	1.52	1.52	100
63.78	"	64.46	0.68	0.68	100
64.46	"	65.98	1.52	1.52	100
65.98	"	66.59	0.61	0.46	75
66.59	"	67.97	1.38	1.38	100
67.97	"	69.03	1.06	1.06	100
69.03	"	70.40	1.37	1.37	100
70.40	"	71.16	0.76	0.76	100
71.16	"	72.68	1.52	1.52	100
72.68	"	73.75	1.07	1.07	100
73.75	"	75.28	1.53	1.53	100
75.28	"	76.34	1.06	1.06	100
76.34	"	77.86	1.52	1.52	100
77.86	"	78.32	0.46	0.15	33
78.32	"	79.83	1.51	1.51	100
79.83	"	80.21	0.38	0.30	79
80.21	"	80.67	0.46	0.46	100
80.67	"	81.77	1.10	1.10	100
81.77	"	82.00	0.23	0.02	9
82.00	"	82.30	0.30	0.30	100
82.30	"	82.91	0.61	0.61	100
82.91	"	83.44	0.53	0.53	100
83.44	"	83.90	0.46	0.46	100
83.90	"	84.43	0.53	0.53	100
84.43	"	84.89	0.46	0.46	100
84.89	"	85.65	0.76	0.76	100
85.65	"	86.56	0.91	0.91	100
86.56	"	87.17	0.61	0.61	100
87.17	"	88.69	1.52	1.52	100
88.69	"	90.21	1.52	1.52	100
90.21	"	91.28	1.07	1.07	100
91.28	"	92.35	1.07	1.07	100
92.35	"	93.87	1.52	1.52	100
93.87	"	94.40	0.53	0.53	100
94.40	"	96.01	1.61	1.61	100
96.01	"	96.92	0.91	0.91	100
96.92	"	98.14	1.22	1.22	100
98.14	"	99.67	1.53	1.53	100
99.67	"	101.19	1.52	1.52	100
101.19	"	102.10	0.91	0.91	100
102.10	"	103.63	1.53	1.53	100
103.63	"	105.15	1.52	1.52	100
105.15	"	106.67	1.52	1.52	100
106.67	"	107.89	1.22	1.22	100

INTERSECTION (METRES)			INTERVAL (METRES)	CORE RECOVERY	
				METRES	PER CENT
107.89	to	108.50	0.61	0.61	100
108.50	"	109.57	1.07	1.07	100
109.57	"	110.48	0.91	0.91	100
110.48	"	111.10	0.62	0.62	100
111.10	"	112.16	1.06	1.06	100
112.16	"	113.38	1.22	1.22	100
113.38	"	114.45	1.07	1.07	100
114.45	"	114.91	0.46	0.46	100
114.91	"	116.28	1.37	1.37	100
116.28	"	117.42	1.14	1.14	100
117.42	"	118.94	1.52	1.52	100
118.94	"	120.46	1.52	1.52	100
120.46	"	121.31	0.85	0.85	100
121.31	"	121.69	0.38	0.38	100
121.69	"	122.13	0.44	0.44	100
122.13	"	122.59	0.46	0.46	100
122.59	"	123.81	1.22	1.22	100
123.81	"	124.34	0.53	0.53	100
124.34	"	125.25	0.91	0.91	100
125.25	"	125.56	0.31	0.31	100
125.56	"	126.78	1.22	1.22	100
126.78	"	127.39	0.61	0.61	100
127.39	"	128.30	0.91	0.91	100
128.30	"	128.60	0.30	0.30	100
128.60	"	129.36	0.76	0.76	100
129.36	"	130.58	1.22	1.22	100
130.58	"	132.10	1.52	1.52	100
132.10	"	133.63	1.53	1.53	100
133.63	"	134.62	0.99	0.99	100
134.62	"	136.14	1.52	1.52	100
136.14	"	136.60	0.46	0.46	100
136.60	"	137.06	0.46	0.46	100
137.06	"	137.44	0.38	0.38	100
137.44	"	137.90	0.46	0.46	100
137.90	"	138.20	0.30	0.30	100
138.20	"	139.73	1.53	1.53	100
139.73	"	140.79	1.06	1.06	100
140.79	"	142.32	1.53	1.53	100
142.32	"	143.23	0.91	0.91	100
143.23	"	144.15	0.92	0.92	100
144.15	"	145.67	1.52	1.52	100
145.67	"	146.74	1.07	1.07	100
146.74	"	147.50	0.76	0.76	100
147.50	"	149.02	1.52	1.52	100
149.02	"	149.93	0.91	0.91	100
149.93	"	151.46	1.53	1.53	100
151.46	"	152.40	0.94	0.94	100
152.40	"	153.31	0.91	0.91	100
153.31	"	154.23	0.92	0.92	100
154.23	"	155.75	1.52	1.52	100
155.75	"	156.82	1.07	1.07	100
156.82	"	158.34	1.52	1.52	100
158.34	"	159.10	0.76	0.76	100
159.10	"	160.02	0.92	0.92	100
160.02	"	161.54	1.52	1.52	100
161.54	"	163.07	1.53	1.53	100
163.07	"	164.29	1.22	1.22	100
164.29	"	165.05	0.76	0.76	100
165.05	"	165.65	0.60	0.60	100
165.65	"	166.27	0.62	0.62	100
166.27	"	166.88	0.61	0.61	100
166.88	"	167.18	0.30	0.30	100
167.18	"	167.79	0.61	0.61	100
167.79	"	168.55	0.76	0.76	100
168.55	"	170.07	1.52	1.52	100

INTERSECTION (METRES)			INTERVAL (METRES)	CORE RECOVERY	
				METRES	PER CENT
170.07	to	171.29	1.22	1.22	100
171.29	"	172.06	0.77	0.77	100
172.06	"	172.97	0.93	0.93	100
172.97	"	173.88	0.91	0.91	100
173.88	"	174.58	0.70	0.70	100
174.58	"	175.11	0.53	0.53	100
175.11	"	175.72	0.61	0.61	100
175.72	"	176.33	0.61	0.61	100
176.33	"	177.39	1.06	1.06	100
177.39	"	178.45	1.06	1.06	100
178.45	"	178.99	0.54	0.54	100
178.99	"	179.83	0.84	0.84	100
179.83	"	180.59	0.76	0.76	100
180.59	"	182.11	1.52	1.52	100
182.11	"	183.51	1.40	1.40	100
183.51	"	185.03	1.52	1.52	100
185.03	"	186.56	1.53	1.53	100
186.56	"	187.78	1.22	1.22	100
187.78	"	188.54	0.76	0.76	100
188.54	"	189.08	0.54	0.54	100
189.08	"	189.77	0.69	0.69	100
189.77	"	191.13	1.36	1.36	100
191.13	"	191.74	0.61	0.61	100
191.74	"	192.65	0.91	0.91	100
192.65	"	194.18	1.53	1.53	100
194.18	"	195.70	1.52	1.52	100
195.70	"	197.22	1.52	1.52	100
197.22	"	198.75	1.53	1.53	100
198.75	"	200.27	1.52	1.52	100
200.27	"	201.79	1.52	1.52	100
201.79	"	203.32	1.53	1.53	100
203.32	"	204.24	0.92	0.92	100
204.24	"	205.30	1.06	1.06	100
205.30	"	206.37	1.07	1.07	100
206.37	"	207.44	1.07	1.07	100
207.44	"	208.80	1.36	1.36	100
208.80	"	210.32	1.52	1.52	100
210.32	"	211.85	1.53	1.53	100
211.85	"	212.76	0.91	0.91	100
212.76	"	214.01	1.25	1.25	100
214.01	"	214.92	0.91	0.91	100
214.92	"	216.14	1.22	1.22	100
216.14	"	217.51	1.37	1.37	100
217.51	"	218.42	0.91	0.91	100
218.42	"	219.03	0.61	0.61	100
219.03	"	220.11	1.08	1.08	100
220.11	"	220.26	0.15	0.15	100
220.26	"	221.02	0.76	0.76	100
221.02	"	222.02	1.00	1.00	100
222.02	"	223.15	1.13	1.13	100
223.15	"	224.06	0.91	0.91	100
224.06	"	224.98	0.92	0.92	100
224.98	"	225.59	0.61	0.53	87
225.59	"	225.67	0.08	0.08	100
225.67	"	226.20	0.53	0.53	100
226.20	"	226.50	0.30	0.30	100
226.50	"	226.81	0.31	0.23	74
226.81	"	227.42	0.61	0.15	25
227.42	"	228.03	0.61	0.15	25
228.03	"	229.48	1.45	0.84	58
229.48	"	230.17	0.69	0.69	100
230.17	"	231.08	0.91	0.47	52
231.08	"	231.84	0.76	0.66	87
231.84	"	233.21	1.37	1.37	100

37 051

INTERSECTION (METRES)			INTERVAL (METRES)	CORE RECOVERY	
				METRES	PER CENT
233.21	to	233.97	0.76	0.76	100
233.97	"	234.58	0.61	0.61	100
234.58	"	235.95	1.37	1.37	100
235.95	"	236.57	0.62	0.62	100

APPENDIX B

37 052

DDH. 2¼ MERRAYS REWARD PROSPECT

DRILL LOG

GRID REFERENCE	435358N, 319098E	approx.
ELEVATION	198.4 metres	
ANGLE	65°	
DIRECTION	N 54° E true	
DATE DRILLED	27.1.72 to 5.1.72	
DRILLING RATE	18.2 metres per shift	

INTERSECTION (METRES)	DESCRIPTION
0 to 48.77	AIR DRILLING Carbonaceous and chloritic slaty sediments containing traces of chalcopyrite and wolframite (?) in parts.
48.77 to approx. 150.84	DIAMOND DRILLING Pale to medium green and grey-green chloritic slate and chloritic siltstone. Common chlorite porphyroblasts The original bedding is commonly preserved. Few quartz-pyrite blebs and discontinuous segregations. Minor amounts of carbonate occur in a few laminae. Rare quartz-carbonate-chlorite-pyrite (and wolframite?) veins. Rare thin irregular quartzose veins and veinlets. Very fragmentary in parts (effects of drilling?). Microfaults common in parts. Generally relatively soft and friable. Slightly porous in parts. The rock is fissile parting readily parallel to S_o (S_1 parallel S_o?). At about 93.0 metres is a 13cm. band of quartz-carbonate parallel to enclosing slate. The quartz-carbonate dips 30°. At about 101.2 metres is a 25cm. band of pale brown-green tuff (?). At about 131.0 metres is a thin ($\leq$ 1cm.) quartz-carbonate-pyrite veins (or veins?) extending about 1 metre along long axis of core. At about 132.85 metres is pyritic quartz vein (5mm.) containing rare chalcopyrite. Bedding (S_o and cleavage (S_1) dips; S_o = 0 to 5° (variable) at 48.8m, S_o = 0° at 50.0m, S_o = 5° to 10°, S_1 = 35° at 53.4m, S_o = 15° at 55.1m, S_o = 25° at 57.8m, S_o = 10°, S_1 = 30° at 58.5m, S_o = S_1 = 15° to 20° at 60.2m, S_o = S_1 = 20° at 63.1m, S_o = 0, S_1 = 15° to 20° at 67.6m, S_o = 0 to 5° at 69.8m, S_o = 0° at 72.5m, S_o (and S_1?) = 15° at 74.7m, S_o (and S_1?) = 10° to 15° at 76.4m, S_o = S_1 = 25° at 78.2m, S_o = 0 to 5°

INTERSECTION (METRES)	DESCRIPTION
	at 79.00m, S_o = 35° at 81.2m, S_o (and S_1?) = 30° at 82.7m, S_o = S_1 = 20° to 25° at 83.9m, S_o (and S_1?) = 25° at 86.6m, S_o (and S_1?) = 30° to 35° ay 88.7m, S_o = 25° to 30°, S_1 = 50° at 91.4m, S_o = S_1 = 40° to 45° at 100.7m, S_o = S_1 = 40° at 104.0m, S_o = 20°, S_1 = 40° at 105.9m, S_o = 15°, S_1 = 35° at 108.00m, S_o = 30°, S_1 = 45° at 111.6m, S_o = 30° at 113.8 S_o = 0/to 5°, S_1 = 40° at 116.6m, S_o = 20°, S_1 = 40° at 118.5m, S_o = 20° at 121.0m, S_o = S_1 = 30° at 124.4m, S_o (and S_1?) = 40° at 127.3m, S_o (?) = 40°, S_1(?) = 45° at 129.7m, S_o = S_1 = 30° at 132.4m, S_o (and S_1?) = 40° to 45° at 133.1m, S_o = 35° to 40° at 134.8m, S_o (and S_1?) = 50° at 136.35m, S_1 = 40° at 138.3m, S_1 = 40° to 45° at 141.1m, S_o (and S_1?) = 50° at 143.1m, S_o (and S_1?) = 40° to 45° at 144.8m, S_o = 40°, S_1 = 50° at 147.9m, S_o (and S_1?) = 35° at 150.3m.
150.84 to approx. 182.11	Medium grey, grey-green and dark grey to black slaty carbonaceous siltstone and shale. Graded bedding occurs in parts. Sporadic graphitic bedding planes. Few irregular and discontinuous pyritic quartz blebs and segregations. Few irregular quartz veins. Small (≤ 1mm.) white, elongate to acicular leucoxene (?) porphyroblasts become more common towards the base of the unit. The few paler grey beds (fine quartz sandstone and coarse siltstone) are slightly chloritic. Bedding planes are generally flat and regular. At about 160.9m, a thin (≤ 1cm.) pyritic quartz vein contains common chalcopyrite. Rare coarse pyrite blebs (≤ 5cm.) occur parallel to S_1 (?) at about 170.4metres. Bedding (S_o) and cleavage (S_1) dips; S_o = 35° at at 152.9m, S_o = 35° at 154.9m, S_o = 25°, S_1 = 60° at 157.4m, S_o = 20° to 25°, $\frac{1}{4}S_1$ = 40° to 45° at 160.8m, S_o = 35° to 40°, S_1 = 55° at 163.75m, S_o (and S_1?) = 40° at 165.6m, S_o = 45° at 167.0m, S_o = 35° to 40° at 170.6m, S_o = 30° to 35° at 171.1m, S_o = 30° to 35° at 173.1m, S_o = 45° at 175.3m, S_o = 40° at 176.0m, S_o = 40° at 177.8m, S_o = 40° at 180.0m.
182.11 to approx, 187.00	Similar to the interval 150.84 to 182.11 metres but is complexly deformed and dark grey to black, contains numerous leucoxene porphyroblasts, original bedding planes are commonly obliterated or poorly preserved.

37 053

INTERSECTION (METRES)	DESCRIPTION
81-054	
	Irregular and discontinuous quartz veins, veinlets and segregations, pyritic in parts, are common. Few quartz-pyrite blebs.
	Bedding planes are irregular and dips vary considerably even over distances of a few cms.
	A complex dragfold (axial plane dip = 55°) occurs at 185.1metres.
	S_1 dips 70° at 185.6 metres.
187.00 to approx. 188.95	MINERALIZED QUARTZ AND QUARTZ-CARBONATE ZONE
	White quartz and mottled pale yellow-brown and white quartz-carbonate containing a few bands ($\lesssim$ 30cm.) of medium grey and medium to dark grey-green, hard, recrystallixed, chloritic carbonaceous siltstone.
	Minor pyrite, chalcopyrite and fine grained galena occur in the quartz and quartz-carbonate. The galena appears to be concentrated in a pyritic quartz-carbonate band at about 187.4 metres.
	The mineralized quartz and quartz-carbonate is sub-parallel to cleavage (?) and contains rare irregular fragments of chloritic sediment.
	A few thin ($\lesssim$ 1cm.) quartz-carbonate veins or segregations occur in the sediments.
188.95 to approx. 198.32	Similar to the interval 182.11 to 187.00 metres. Dark grey to black, heavily porphyroblastic deformed carbonaceous and graphitic slaty siltstone. The leucoxene porphyroblasts are relatively coarse ($\lesssim$ 2mm).
	Pyritic and chloritic quartz veins ($\lesssim$ 1cm.) are common and commonly occur parallel to the cleavage.
	A few quartz-carbonate blebs occur in the upper 1 metre of this unit.
	Original bedding is rarely preserved.
	Minor amounts of chalcopyrite occurs in a pyritic and slightly chloritic quartz vein ($\lesssim$ 6 cm.) at about 192.2 metres. This vein also contains a few fragments of black graphitic sediment.
	Rare fine grained (< 1mm.) glaena occurs at the base of the unit S_1 = 50° to 55° at 190.7 metres, S_1 = 30°, S_1 = 60° at 194.2m, S_o = 5° to 10°, S_1 = 68° at 197.9m.
198.32 to 199.00	SULPHIDE ZONE
	Dark grey-brown sediment (?) with minor fine grained sulphides (pyrite and sphalerite) containing common blebs and short discontinuous segregations of pyrite, quartz-pyrite and quartz-carbonate. These segregations are concentrated about 198.47 metres where a large quartz-carbonate mass contains common pyrite, large blebs ($\lesssim$ 15mm.) of sphalerite with minor fine grained chalcopyrite and galena.

INTERSECTION (METRES)	DESCRIPTION
	A thin ($\lesssim$ 1cm.) white pyritic quartz vein at about 198.9 metres contains common galena.
	The main concentration of sulphides appears to coincide with a thin breccia zone.
	Numerous quartz, pyritic quartz and quartz-carbonate veins, rarely with sulphides (chalcopyrite, galena) occur parallel to cleavage.
	S_o = 0 to 10°, S_1 = 60°.
199.00 to approx. 204.24	Medium to dark grey-green, slightly chloritic slaty carbonaceous siltstone containing a few quartz and quartz-carbonate veins and segregations. Rare chalcopyrite occurs in vein material.
	Original bedding rarely well preserved.
	Sporadic disseminated pyrite. Pyrite also occurs in rare disrupted bands ($\lesssim$ 3mm.) parallel to S_o.
	S_o = 30° to 35°, S_1 = 60°.
204.24 to approx. 209.02	Very pale to medium green, pyritic and slightly talcose chloritic phyllitic and slaty siltstone containing common irregular and discontinuous pyritic quartz veins, blebs and segregations. Few quartz-carbonate blebs and segregations.
	Rare chalcopyrite and galena associated with quartz and quartz-carbonate.
	Pyrite is common in quartzose material and also occurs as disseminated blebs and euhedra commonly aligned parallel to cleavage.
	Thin ($\lesssim$ 2mm.) irregular, medium to dark green chloritic veinlets in parts.
209.02 to approx. 216.28	Complex zone consisting of medium to dark green talcose chlorite and talcose chloritic sediments with a few bands ($\lesssim$ 75cm.) of white quartz.
	The talc occurs as thin partings on cleavage planes and as thin ($\lesssim$ 5cm.) white bands.
	Sporadic chalcopyrite occurs in the quartz bands and is associated with irregular pyritic quartz veins and segregations in the chloritic material.
	This zone 209.02 to 216.28 metres may be subdivided into three sub-zones;
	(i) 209.02 to 211.23 metres; consists dominantly of slightly talcose chloritic sediments with sporadic chalcopyrite associated with quartz veins or blebs S_1 dips 50°.

INTERSECTION (METRES)	DESCRIPTION
37.06	
	(ii) 211.23 to 213.70 metres; consists dominantly of white quartz containing minor carbonate (≤10 percent) and white talc (≤10 percent). This unit also includes a few bands (≤10 cm.) of white talc and green-white talcose and quartzose chlorite and sporadic blebs of chalcopyrite and pyrite-chalcopyrite (≤2cm.). At about 212.8 metres is a 15cm. band of sheared green chlorite or chloritic sediment.
	(iii) 213.70 to 216.28 metres; dark green chlorite, chloritic sediments, white talc and chloritic talc with a 35cm. band of white pyritic talcose quartz containing rare chalcopyrite blebs. Few other quartzose veins and/or segregations (≤5cm.) containing minor chalcopyrite. S_1 dips 50°.
216.3 to 218.32	MINERALIZED QUARTZ-CARBONATE ZONE Hard, massive, mottled (white and pale brown), quartz-carbonate containing sporadic chalcopyrite which occurs as disseminated blebs and irregular and discontinuous stringers concentrated along incipient fractures or as vague disrupted bands (≤5cm.) dipping about 50°. Pyrite is commonly associated with the chalcopyrite. Carbonate ≤75 percent, quartz ≤25percent. A 5cm. band of green pyritic and slightly chalcopyritic chloritic tuff (?) occurs at about 218.2 metres.
218.32 to approx. 223.68	White quartz with common short, irregular and discontinuous incipient fractures many of which are defined by thin green chloritic infillings. Minor amounts of yellow-brown carbonate occurs as irregular blebs or segregations and becomes more common in the basal 2.7 metres (sample BAL 1719). Sporadic chalcopyrite occurs as disseminated blebs within the quartz and as short irregular blebs and stringers along incipient fracture planes. The chalcopyrite is commonly associated with carbonate and/or pyrite. Pyrite is common, particularly between about 221.0 and 221.4 metres, and occurs as disseminated euhedra, thin stringers along incipient fractures, as aggregates (≤12mm.) of fine crystals and as irregular bands (≤15mm.) which dip about 35° to 40°. Red hematitic quartz occurs in parts particularly between 221.0 and 221.4 metres.
223.68 to approx. 224.75	Fine grained chloritic sediment containing a few deformed recrystallized quartzose bands. A thin (≤7cm.) band of silicified sediments and quartz at 224.3 metres contains common euhedral pyrite. Dragfold axial plane dips 60°.

INTERSECTION (METRES)	DESCRIPTION
224.75 to 228.10	Pale to medium grey and grey-green heavily silicified and quartzitic fine grained sediment with irregular white quartz segregation ($\leq$ 20 cms.) with diffuse boundaries at about 225.5 metres. Very hard. Few thinner ($\leq$ 2cm.) quartzose veins and segregations also with diffuse boundaries. Minor disseminated pyrite, rare disseminated chalcopyrite in quartz. Rare irregular quartz-carbonate veins and segregations ($\leq$ 3mm.), rarely slightly cavernous.
228.10 to approx. 231.38	Hard, medium green recrystallized and slightly silicified chloritic sediment containing common white quartz veins and segregations ($\leq$ 2cm.) commonly with diffuse boundaries. Minor disseminated pyrite. Few pyritic quartz veins and rare discontinuous vein-like pyrite segregations. An extremely fragmented quartzose band occurs between about 230.8 and 231.0 metres. The basal section (230.8 to 231.38 metres) is also extremely fragmented and the basal 10cm. consists of pale to medium grey-green friable talcose fine grained chloritic sediment S_1 (?) and veins commonly dip 45° to 50°.
231.38 to approx. 232.35	MINERALIZED QUARTZ ZONE White quartz with numerous irregular incipient fractures lined with medium to dark green chlorite or chloritic sediment. At 231.43 is a 2cm. disrupted band of chalcopyritic pyrite dipping about 45°. The basal 20cm. consists of cream and pale brown pyritic carbonate containing common thin ($\leq$ 5mm.) white and slightly translucent quartz veins and segregations. A thin (7cm.) band of medium green deformed chloritic slate at about 232.1 metres contains common fine grained pyrite. Rare, small ($\leq$ 15mm.), pale to medium brown, irregular carbonate blebs and stringers (slightly cavernous in parts) occur in the quartz.
232.35 to 235.45	Similar to the interval 228.10 to 231.38 metres. A 5cm. quartz band at 233.65 metres contains a thin ($\leq$ 1cm.) disrupted pale brown carbonate band.

INTERSECTION (METRES)	DESCRIPTION
	This unit is relatively soft but contains a few harder recrystallized bands.
	Common chlorite porphyroblasts in parts.
	Few thin (generally $\leq$ 1cm.) darker carbonaceous beds.
	Common white quartz veins and segregations.
	At about 233.2 metres the original bedding and disrupted trains of pyrite dip 45°.
	Bedding (S_o) and cleavage (S_1) dips: S_1 (and $_oS_o$?) = 45° at 233.45m, S_o = 55° at 234.7m.
235.5 to 236.57	Hard, mottled (white and pale to medium green) recrystallized and silicified chloritic sediment with few quartz veins and segregations.

DDH.24 COMPLETED AT 236.57 METRES