ABMINCO N.L.
CLEVELAND MINE

CATEGORY 4/4 Exp

HOLE No.: C/303 REF No 18553

GENERAL DATA

Objective :

Area of Operation : 17 LEVEL Location : M section R.L. 150.

Collar R.L. : 148·6 Co-ordinates : 15479·417 N, 10935·446 E.

Bearing of Hole : 118° 23' 02" (118½) Angle of Hole : −44° 15' 37" (-46) Final Depth : 195

Drilling Commenced : 11/7/78. Completed : Logged by :

DRILLING DATA

Drilled by : A.D.D Non Coring :

Drilling Rig : F 30 Air Coring :

Driller(s) : G. Little, T. Matisons, J. Penna

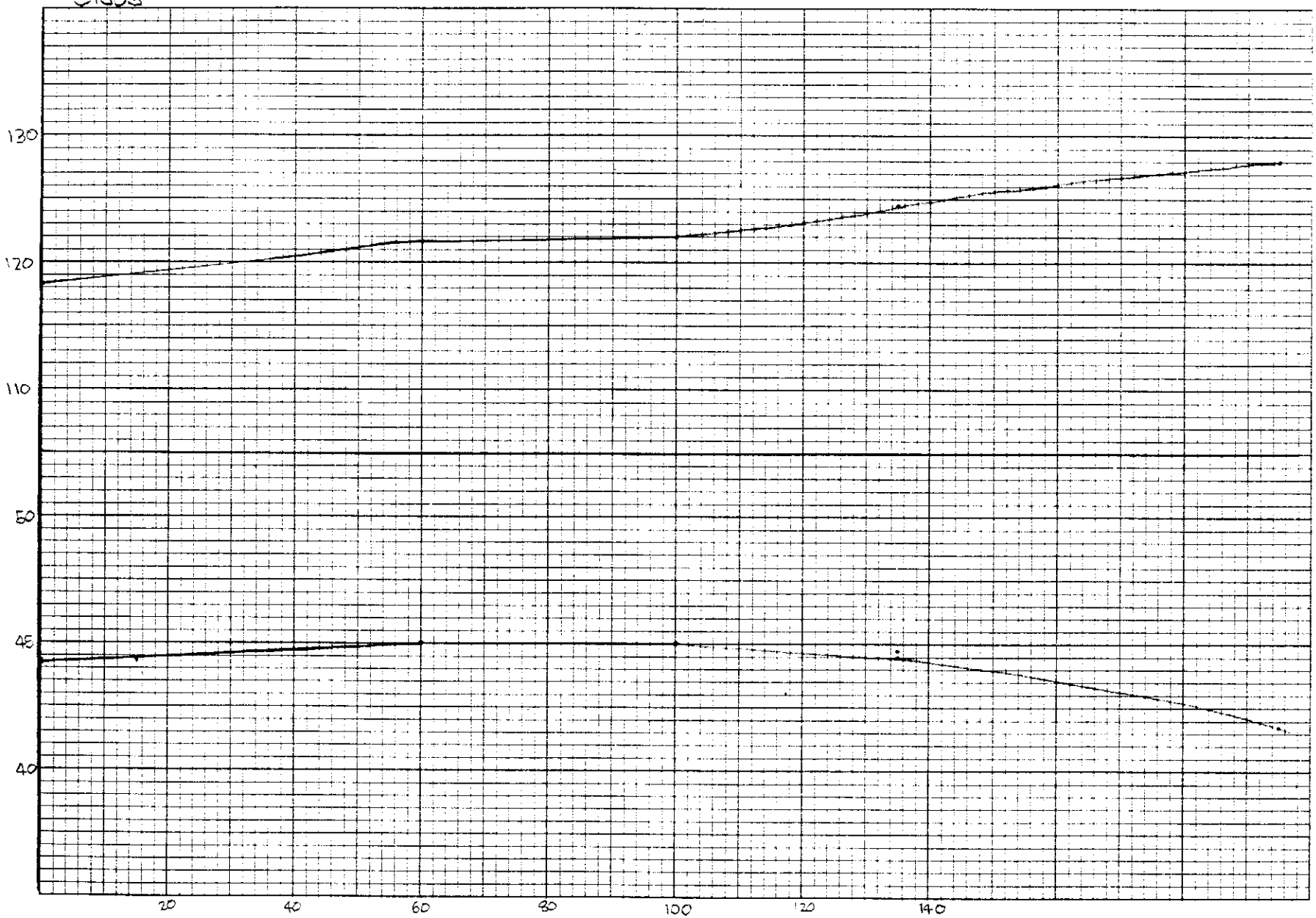
Core Recovery :

HOLE SURVEYS

HOLE No.: C/303

NWPS 24164

C1303



GORMACK GRAPH PAPERS - CHRISTCHURCH N.Z. 6101Y 10ths, ½ & 1 inch

ABMINCO N.L. - Cleveland Mine

Hole No. 1303

Sheet No.

DIAMOND DRILL HOLE DATA

PROGRAM DATA				SURVEY DATA				INTERPOLATED DATA		
				Instrument Type	Depth	Dip	Azimuth	Depth	Dip	Azimuth
1	Attitude	—	(+) (-)	Survey	∅	-44·25	118·33	12·5	44·33	119·25
2	Hole No.	1303		Camera	30	45	128 (132)	37·5	44·67	120·75
3	Down Hole Interval	25			60	45	121·5 (125·5)	62·5	45	121·67
4	Collar Co-ords.	15479·417	N		100	45	122 (126)	87·5	45	121·75
5		10935·446	E		135	44·5	124·5 (128·5)	112·5	44·75	122·67
6	Collar R.L.	148·6			195	41·75	128 (132)	137·5	44·33	124·5
7	Halls Sect. M	15549·204	N					162·5	43·33	126·25
8	Intersect Point	10867·808	E					187·5	42·25	127·5
9	Battery Sect. AH	15117·628	N							
10	Intersect. Point	107 0·98	E							
11	Start Plot (Depth)	∅	∅ = Collar							

DOWN HOLE PLOT

Hole No: 1303

Sheet No:

	PLAN			CROSS SECTION		LONG SECTION					PLAN			CROSS SECTION		LONG SECTION			
DEPTH	N	E	RL	Dist.from H.R.P.	Dist.from B.R.P.	Dist. from Halls	Sect M	Dist from Batt.	Sect AH	Depth	N	E	RL	Dist.from H.R.P.	Dist. from B.R.P.	Dist from Halls	Sect.	Dist from Batt	Sect
0	15479·42	10935·45	148·60	96·99	66·92	−6·14		410·62											
25	15470·68	10951·05	131·13	114·41	84·58	−2·11		407·83											
50	15461·59	10966·33	113·55	131·84	102·07	1·44		404·61											
75	15452·31	10981·37	95·88	149·21	119·40	4·70		401·13											
100	15443·01	10996·41	78·20	166·59	136·73	7·92		397·62											
125	15423·42	11011·35	60·60	184·10	154·07	10·89		393·82											
150	15423·29	11026·09	43·13	201·82	171·41	13·31		389·43											
175	15412·54	11040·75	25·97	219·90	188·89	15·21		384·44											
200	15401·28	11055·44	9·16	238·34	206·57	16·75		378·97											

1:200 Ha ✓
1:500 Ha ✓
Long ✓

HOLE No.: 1303

SAMPLE DATA

SHEET No.: 1

LENS	SAMPLE No.	ROCK TYPE	Σ	INTERVAL From	INTERVAL To	Length (L)	Assays (A) % Snt	% Sns	% Cu	% S	SPECIFIC GRAVITY P. Snt	P. Sns	P. Cu	S.G
	222584	LODE		39.85	40.78	0.93	0.93	0.06	0.08	6.20	590	397½		3.06
	5	LODE		40.78	42.15	1.37	2.70	0.10	0.22	16.40	1261	912		3.61
	6	LODE		42.15	43.50	1.35	3.00	0.14	0.19	15.70	1185	861		3.66
	7	LODE		43.50	44.47	0.97	1.84	0.13	0.21	15.00	933	667		3.51
	8	LODE		44.47	45.61	1.14	2.90	0.11	0.23	16.90	1018½	737		3.62
	9	LODE		45.61	46.67	1.06	0.98	0.08	0.24	19.10	990	717		3.63
	90	LODE		46.67	47.77	1.10	2.90	0.07	0.17	11.80	970	685		3.40
	1	SHALE		47.77	49.12	1.35	0.07	0.02	0.11	0.09	1001	657½		2.91
	2	CHERT/SHALE		49.12	50.41	1.29	0.12	0.01	0.05	0.67	858½	554		2.8
	3	LODE/MIN SHALE		50.41	51.06	0.65	0.43	0.06	0.09	7.60	887	609½		3.20
	4	LODE/MIN SHALE		51.06	52.34	1.28	0.42	0.07	0.09	9.70	719	502		3.3
	5	SHALE/CHERT		52.34	53.08	0.74	0.05	0.03	0.01	0.31	579	368		2.74
	6	LODE		53.08	54.08	1.00	2.30	0.03	0.18	15.90	940	673		3.52
	7	LODE		54.08	55.30	1.22	1.44	0.05	0.17	14.20	1025	740½		3.60
	8	LODE		55.30	56.74	1.44	2.10	0.04	0.15	9.80	1223	873		3.4
	9	LODE		56.74	58.18	1.44	0.66	0.02	0.20	9.20	1144	805½		3.38
	600	LODE/MIN SHALE		58.18	59.24	1.06	0.35	0.02	0.09	4.90	820½	551½		3.05
			Σ	39.85	59.24	19.39	1.42	0.06	0.15					

N.W.P.S.

HOLE No.: 1303

SAMPLE DATA

SHEET No.: 2

LENS	SAMPLE No.	ROCK TYPE	Σ	INTERVAL From	INTERVAL To	Length (L)	Assays (A) % Snt	% Sns	% Cu	% S	SPECIFIC GRAVITY ~~Product (A×L)~~ ~~P. Snt Dry~~	~~P. Sns Wet~~	~~P. Cu~~	S.G.
	222601	LODE *		89.40	89.65	0.25	3.80	0.02	0.22	3.80	236	160		3.11
	#													
	222602	LODE *		101.37	101.58	0.21	0.65	0.01	0.36	3.60	241	159		2.94
	222603	LODE *		104.00	104.18	0.18	0.62	0.01	0.36	2.40	239	159		2.99
A lens			Σ	101.37	104.18	2.81	0.09	0.00	0.05					
	222604	LODE		124.81	125.55	0.74	0.71	0.01	0.21	5.80	592.5	388		2.90
	5	LODE		125.55	126.72	1.17	0.49	0.02	0.12	5.80	673	447½		2.98
	6	LODE		126.72	127.72	1.00	2.10	0.02	0.15	9.20	838	575½		3.19
	7	MINSHAW		127.72	128.07	0.35	0.16	0.02	0.04	2.00	624.5	398		2.76
	8	LODE		128.07	129.65	1.58	3.00	0.03	0.15	8.50	1413	987		3.32
			Σ	124.81	129.65	4.84	1.65	0.02	0.14					
	222609	LODE		139.65	140.65	1.00	0.15	0.02	0.17		883	604		3.16
	10	LODE		140.65	141.72	1.07	0.37	0.02	0.19	8.80	949½	656½		3.24
	1	LODE		141.72	142.93	1.09	0.05	0.02	0.26	0.90	892	596		3.01
	2	LODE		142.83	143.70	0.87	0.12	0.03	0.04	0.45	658	427		2.85
	3	LODE		143.70	144.71	1.01	2.07	0.03	0.16	2.00	846	570		3.07
	4	LODE		144.71	145.68	0.97	2.70	0.04	0.12	4.70	795½	548		3.21

* NOT FOR METALLURGICAL TESTING.

N.W.P.S.

HOLE No.: 1303

SAMPLE DATA

SHEET No.: 3

LENS	SAMPLE No.	ROCK TYPE	Σ	INTERVAL From	INTERVAL To	Length (L)	Assays (A) % Snt	% Sns	% Cu	% S	Specific ~~Product (A x L)~~ Gravity Dry ~~P. Snt~~ Weight	Wet ~~P. Sns~~ Weight	~~P. Cu~~	S.G
	222615	CHERT		145.68	146.20	0.52	0.10	0.03	0.07	1.10	371	239		2.81
	6	LODE		146.20	147.24	1.04	1.84	0.03	0.12	7.10	1749	1188		3.12
	7	LODE/MINSHALE		147.24	148.25	1.01	0.67	0.03	0.05	2.40	815	543		3.00
	8	LODE/MINSHALE		148.25	149.80	1.55	2.60	0.03	0.06		469	311		2.97
	9	SHALE/CHERT		149.80	151.16	1.36	0.10	0.02	0.02		1095	722		2.94
	20	LODE		151.16	151.80 X	0.64	0.15	0.02	0.07		465	311½		3.03
	222621	* LODE		160.38	160.73	0.35	0.85	0.03	0.30		311½	207		2.98
	222622	MIN TUFF *		185.63	186.19	0.56	0.16	0.01	0.22		469	308		2.91
			Σ	139.65	151.80	12.15	0.85	0.03	0.11					
		* NOT FOR METALLURGY												

N.W.P.S.

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DIAMOND DRILL LOG

Hole Nº 1303 Page Nº 1

Feature: Bedding, Foliation, Fragment - size & shape, Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization: Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive <60%

CORE REC'D	DEPTH m	GEOLOGY	DEPTH m	MINERALIZATION
1.44		SANDSTONE		
		Monotonous sequence of massive medium grained sandstone, predominantly mid grey in colour.		
2.86		Coarse subrounded feldspar common over first 5 metres.	3.64	qtz, carb, chl vein
			3.74	qtz, carb, chl vein ē cpy.
			4.4 (?)	1cm wide qtz + minor carb vein
3.19		Rare thin shaly partings.		
3.07	10		9.60	qtz, carb chl vein ē cpy.
			10.65	qtz vein minor carb fl., chl.
			11.0 (?)	qtz vein ē minor tour, chl, fl, sph
			11.61	qtz vein ē carb, chl, fl, cass.
2.89		Bleaching common 13.50 – 15.56, due to presence of veins. – bleaching causes sst to be a pale tan colour.	14.05	qtz vein ē carb, vivianite (?)
3.03			14.55	" " " fluorite
		From 15.56 – 25.70 the sst is homogeneous medium grained with little variation, minor coarse grained variants. Tonal change from mid grey to greyish green.	17.05	qtz, carb, chl, vein.
3.01	20		19.21	vivianite, tourm, qtz, cass.
			19.36	qtz, carb, fluo.
3.00		Fine scale carbonate veining rare in occurrence – generally criss-cross in attitude.		
3.03	25.70	Contact 75° to c.a.	25.10	qtz carb vein ē chl, sph.
		SHALE – f.g. massive purple grey brown shale poorly bedded ē irregular blotchy dark dots		Contact 60°.
2.95	27.33	SST – Massive m.g. sst. mid grey, ē minor clastic shale.		Blebby cpy.
	29.34	SHALE. f.g. dark grey brown massive shale		
1.98	30	SST (Minor Shale).	29.73	
		Massive mid grey sst with minor shale interbeds. Sst is bleached from 33.35 – 34.70 to a pale tan colour.		
2.46		Shale 30.32 – 30.39, 31.71 – 31.88.		
0.31				
1.05	35.80	Contact 65° to c.a.		
	36.52	SHALE – dark purple brown f.g. poorly bedded		
1.86		SST (Mottly shale) ē m.g. massive mid grey sst ē mottly pale grey clastic shale		
	38.14	SHALE – f.g. purple brown shale ē minor cherty beds		
2.80	39.37	CHERT – cherty grey to grey white, fractured & chloritized		
	40	LODE.	39.85	80% of sulphides consists of massive to submassive fine grained aggregates of Po. Clots and irregular veins are common – rounded clots and blebby streaks.
2.77		70% sulphides in a predominantly tourmaline, carbonate, quartz host. The initial 0.43 cm is relatively sulphide deficient 20% occurring in an altered locally well bedded carbonate rich cherty/shale.		15% py occurs as subrounded clots and patches, irregular blebs, thin veinlets and disseminations. In some
2.78		From 40.60-47.51 the sulphides are quite massive. The interstitial or sulphide poor areas contain about equal proportions of carbonate and tourmaline [illegible] qtz veins.		

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DIAMOND DRILL LOG

Hole Nº 1303 Page Nº 2

Feature: Bedding, Foliation, Fragment - size & shape, Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization: Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive <60%

CORE REC'D	DEPTH m	GEOLOGY	DEPTH m	MINERALIZATION
	47.77	The tourmaline is fine grained and occurs as irregular veinlets, patchy aggregates engulfing sulphides and spotty on carbonate. The carbonate is a pale buff white fine tourmaline grained, occasionally present - generally occurs irregular clots and patches [illegible]. Lower 26cm is banded carb/tourm. Sulphides (10%)		Cass. closely associated with po. Chpy 9% as irregular blebby clots and patches. Cass. up to 1% as finely spotted trains, spotty disseminations.
3.08	49.20	SHALE Fine grained massive purple grey shale, fine carbonate spotting common. Minor carbonate veining & local silicification		
		CHERT - off white - whitish grey finely fractured		
	49.35 / 50 / 50.41	SHALE As above - massive, carbonate spotted f.g. shale.		
		MIN SHALE - [illegible]		1% finely dissem. sulphide
3.03	50.54	LODE 90% sulphides in a tourmaline carbonate matrix f.g. gangue.		patchy to banding f.g. 80%, chpy 2%, 90%
	51.11	MIN SHALE - bleached yellow locally chloritic off. shale		fine disseminated locally po.
	51.51 / 52.14	LODE - 50% sulphides in a banded, tourmaline carbonate host. 30% tour, 10% carb.		70% f.g. py, 29% f.g. po, 1% spl, 1% chpy
52.55		MIN SHALE - [illegible]		finely dissem. po, py
	52.74 / 53.00	SHALE - massive f.g. carbonate spotting in grey brown shale.		
	53.03	CHERT - off white		
2.42	55	LODE Down to 54.80 the gangue consists predominantly of carbonate, qtz and patchy tourmaline. The carbonate occurs as masses closely associated with qtz, or secondary alteration blebs and veinlets. Some patchy tourmaline. From 54.80 to 58.30 the gangue mineralogy becomes more tourmaline rich, as fine grained masses and clots and spotty dissem. on carbonate. Patchy siderite is common. From 56.50 chlorite becomes an integral part of tourmaline decreasing.		30% sulphides consisting of 60% po as fine clusters, local disseminations patchy aggregates. 50% py as irregular blebs, veins and disseminations. Up to 10% chpy, f.g. aggregates, irregular in shape. Up to 1% disseminated spotty visible cassiterite rounded to subrounded.
3.01	58.30			
	58.64	MIN SHALE - altered carbonate chlorite shale		Minor disseminated po.
	59.24	LODE - Chlorite, carbonate, minor qtz and tourmaline gangue. 30% sulphides.		95% po, 4% py, 1% chpy
	59.99	SHALE - well bedded 50° grey brown to off white		
	60	SHALE - Massive f.g. brown grey shale		
3.00	61.26	CHERT - off white to cream f.g. fractured chert	57.9	
	61.22	BASALT - Altered weakly mineralized pale green to brownish, blebby massive Vb. minor chl. clots.		Patchy and disseminated po, minor py, chpy.
61.55	61.64	SHALE - Massive dark brown f.g. shale.		Contact 50° to C.A.
3.11	63.54	BASALT. Massive blotchy green to brown altered Vb. Chlorite clots are common. Fine scale carb-rich veining and fractures. Contact 60° to C.A.		
	63.74	SHALE - f.g. massive brown coloured shale		
	65	BASALT Fine grained dark greenish grey mottled to brownish colour. Vb. - Contact [illegible]		Mineralized vein a section 64.95 - 65.33 may be altered tuff qtz, carb, tour, fluo, cass, f.g. [illegible]
3.00	68.43	SHALE f.g. massive dark grey brown shale. Rounded clots of cherty material with local chlorite altn. Contact [illegible] and wavy.		
2.40	69.17	BASALT - massive f.g. altered greenish mottled		qtz carb min'd zone c po, trace cass.
0.54	69.21	SHALE / BASALT - As above		FAULT
		SHALE fine g. massive dark brown chlorite shale. Contact not well defined	69.70	Core loss.
0.41	71.35			
2.41		BASALT. Initially altered pale green to brown grey, mottled with rounded clots. Then massive fine grained, slightly mottled greenish grey. Minor chlorite veining. [illegible] mottled [illegible] bands.		Thin carbonate veinlets criss cross core.
3.04	75			

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DIAMOND DRILL LOG

Hole No 1303 Page No 3

Feature : Bedding; Foliation; Fragment - size & shape; Shearing; Fault; Vein (c carbonate, q quartz)

Mineralization : Trace 1-5%; Common 5-15%; Abundant 15-60%; Massive <60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
	75.33	SHALE - As above.							
	77.80	BASALT Mottled greenish brown to green generally fine grained basalt. Fine shale fracturing?, contact 65° to C.A.						75.48	
2.95	78.18	SHALE - f.g. dark brown massive to shaly shale							Contact 85° to C.A.
0.32 1.28 1.63 2.44 1.83 1.74	85 90.08	SANDSTONE. Predominantly massive medium grained sst. Tonal variation from mid grey to light brown to pale mottled and grey and shaw coloured. Fine scale carbonate veining rare. Rare shaly partings. Altered sst + qtz, carb tourmaline lode type rock 87.40 - 87.65 c 40% sulphides. (formed by qtz vein (likely fault conduit into porous sst?)). Contact sharp 65°.						81.10 83.38 87.58 87.40	qtz, carb, fluorite vein 60° qtz, carb, fluorite vein 45° altered sst c cass. aspy. po. Sulphides include po, py, chpy cass.
2.93	92.20	SHALE Massive dark grey brown. locally spotted shale. Fine scale fractures common. Minor carbonate veining. Contact 65°	F(?)					91.33	qtz, fluorite, minor carb, [illegible]
	93.36	SST. M.g. massive mid grey sst. contact 70°							
2.44 0.50 2.67	95 97.72	SHALE. Dark grey black to grey fine grained poorly bedded massive shale. Minor local carbonate spotting. Minor carbonate veining, contact 85° to C.A.						94.70 95.33	po, chpy in qtz, carb, tour, chl vein po, chpy ...
	98.51	SST. mid grey medium grained massive.							Contact 80°
3.14	99.79	SHALE fine grained generally massive locally clastic grey brown shale, minor sst, local spotting							Contact 65°
	100.39	SST. - m.g. mottled mid grey sst.							Contact 45°
	101.37	SHALE. As above - more fractured and veined							
	101.58	LODE qtz, carb, chl, [illegible]			■				po, cass. chpy
3.15	102.43	SHALE/BRECCIA - clastic blebby sst and shale.							
	104.40	SHALE - fine g. locally well bedded grey shale, [illegible] and veined. LODE [illegible]			■				po, chpy, py, trace cass.
3.14	105 107.80	SHALE. Massive fine grained dark purple brown poorly bedded shale. Minor chert clasts (whitish to off white). Contact 55°.						107.72	qtz, carb vein c chpy.
2.40	110.07	SST/Shale. Predominantly medium grained mid grey sst c minor interbedded shale. Rare carbonate veins, contact 65°							
	110.62	SHALE - f.g. brown massive shale							
3.09	111.95	SST m.g. mid grey sst. tourmaline altered zone 111.41 - 111.73.							trace cass. in alt zone.
	112.20 112.35	SST grey brown massive, m.g. sst. Contact [illegible]						112.14	qtz, carb, chl vein
1.86 0.25 0.77 3.17	115 117.41	SHALE Massive fine grained purple brown shale. Minor micro veinlets, locally slightly silicified, minor alteration & fine carbonate spotting. contact 40°							
3.15	121.87	SANDSTONE. Structureless, massive medium grained generally mid grey in colour. Rare fine scale carbonate veining. Contact 35° to CA						119.68	Thin vein c carb, qtz, tourm chl, trace cass.
		SHALE - Massive fine g. dark grey brown shale - as above.						124.25	
3.06	124.51 125	Fly chert - [illegible] SHALE - grey [illegible] LODE						124.81	veins po, chpy.

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DIAMOND DRILL LOG

Hole No 1303 Page No 4

Feature : Bedding, Foliation, Fragment - size & shape, Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization : Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive <60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	DEPTH m	MINERALIZATION
3.02	127.72	40% sulphides in a cl carbonate to tourmaline host. 30% fine grained chlorite, closely associated c rounded patchy carbonate, locally spotty 25%. 5% patchy and irregular tourmaline, occasionally spotted c clasts of grains. Contact with barren section 45° to C.A.	Abundant		Of the sulphides 75% is fine grained aggregates of po, rare veins, 20% is irregular patchy and blebby, also disseminated py. 5% fine grained clasts of cpy. Rare, trace visible cass upto 0.5%
	128.01	SHALE - slightly altered chloritic shale	Trace		
2.98	129.65	LODE 55% sulphides in a dominantly fine grained chlorite 25%, carbonate 15% tourmaline 5% host rock. Occurrence is as above.	Abundant		Of the sulphides 80% is fg. po aggregates and veins. 15% patchy py 5% cpy and trace cass. (visible)
3.11	130	SHALE. Predominantly fine grained massive dark grey to grey brown shale. Locally well bedded 45°. Minor chert clasts and irregular interbeds around 135 m. Locally slightly silicified shales. 132.61 - 132.81 altered mineral lode/shale tourmaline chlorite carbonate. containing 20% sulphides.			patchy & disseminated po minor cpy/py and rare visible cassiterite.
2.40					
0.83		Final 15cm is an off white to grey chert. massive. Contact 45° to C.A.			
3.06	140	LODE 50% sulphides in a chlorite carbonate tourmaline host. The chlorite and carbonate are approximately in equal proportions. 30% each. The chlorite is generally fine grained and occurs as subrounded clots and patchy interstitial filling. The carbonate is usually off white in colour. Occurs closely associated c chlorite, as fine grained clots and aggregates. Also as irregular veins massive upto 1cm clots and stringers. 10% fine grained spotty aggregates of tourmaline. Minor qtz.	Abundant	139.65	Of the sulphides 85% consists of disseminated to massive clots of po. Thin irregular veins. Py. 10% occurs as patchy aggregates, at times intermingled with po, as veinlets and fine disseminations. Stringers of cpy and py. clots occur upto 5%. Cassiterite is rarely visible, occurs as fine subrounded to rounded pink/brown spots.
3.02					
2.98	145 / 145.13				
	146.20	CHERT Well bedded barren brown to grey chert			
	147.29	LODE 40% sulphides in a patchy carbonate 35%, chlorite 20% tourmaline 3%, qtz 2% host rock. distribution as previous lode sections.	Abundant		Predominantly po, 85% 10% py 2% cpy. Minor less 1% visible cass.
3.11	147.67	SILTSTONE - altered chloritic carbonate tourmaline. some bedding preserved	Trace		disseminated po, py.
	148.95	LODE - As above.		148.88	
	149.55	SHALE - fine grained massive shale c irregular chert bands. - sulphide deficient		148.95	
	149.89	LODE - As above - 20% sulphides	Abundant		po, cpy.
	150	SHALE/CHERT. Moderately well bedded fine grained grey brown shale and fine grained off white finely fractured chert.			Weakly mineralized. Small patchy sulphides, po/py lode inclusions upto 5 cm wide
3.03	151.16 / 151.80	LODE 20% sulphides in a carbonate 50% chlorite 28% tourmaline 2% gangue.	Abundant		Patchy & irregular po, 90% cpy 5%, py 5%.
	152.19	CHERT / CHERTY SHALE - [illegible] clastic chert c minor shale or cherty shale			Veining mineralization in chert.
	155	SHALE. Predominantly fine grained massive mid grey to grey, locally grey brown shale. Bedding developed locally 40° to C.A.			

Comaco

DIAMOND DRILL LOG

Hole Nº 1303 Page Nº 5

Feature: Bedding, Foliation, Fragment - size & shape, Shearing, Fault, Vein (c carbonate, q quartz)

Mineralization: Trace 1-5%, Common 5-15%, Abundant 15-60%, Massive <60%

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
2.17		Fine carbonate spotting occurs in some sections. Minor fine scale cm-scale carbonate veinlets.							
0.75 1.12	160.8	Lower 9cm is bleached and intensely spotted. Contact 45° to C.A.							
		LODE - carb. chert, qtz, tourmaline			■				15% sulphides, po, cpy, py, coss?
1.40 3.01	160.9 163.67	CHERT/SHALE. Fine grained mottled pinky brown chert locally silicified cherty shale & minor pink grey spotted shale.							
3.08 2.86 1.50 1.28 3.08	165 175	SHALE. Massive poorly bedded grey coloured fine grained shale. Minor local carbonate spotting. Slight local alteration to grey brown and mid grey. Local silicification. Minor fine scale carbonate veining. Contact 45° to C.A.						168.80 171.4	qtz. carb vein. 70° to C.A. qtz, carbonate.
1.00	175.23 177.25	SANDSTONE - medium grained to coarse grained mid grey to brown & grey green sst. Contact 40°.						177.25	qtz carb vein. 40° to C.A.
3.07 3.04		SHALE. Massive fine grained poorly bedded grey brown shale. Slight silicification towards base.							
	184.47	Fault - brecciated qtz carb. fluorite 35°	F						spl, cass?, galena, py
3.03	185 185.63	CHERTY SHALE - fragmented and sheared, chaotic, fine grained shale brown grey green in colour. Contact irregular							
	186.17	MIN TUFF - weakly bedded to cherty, grey/green			■				v. fine sulphides, cpy, po, sph. ? bleached grey mottled tuff, fault
1.19		CHERTY SHALE - massive to chaotic silicified cherty shale, finely fractured	F						
1.86	187.78	FAULT BRECCIA, qtz vein, fragments, shale							slickensides 35° to C.A.
	187.96	CHERTY SHALE - ? chaotic, purple brown mottled. Contact 35°.	F						
3.79	189.30 191.50	TUFF SST. fine to medium grained locally disrupted to chaotic greenish grey tuff. Contact not well defined							Fault 187.61 - qtz, carbonate, siderite. qtz vein - 190.00
	193.19	SHALE. Massive fine grained grey brown shale. Contact 40° to C.A.							
3.10	195	TUFF SHALE - fine grained greyish green to greenish brown tuff, moderately well bedded							
		E.O.H 195 logged A.Eadie 31/7/78							