ABMINCO N.L.
CLEVELAND MINE

CATEGORY

HOLE No.: C1352. REF No 18557

GENERAL DATA

Objective: M Section R.L. 25m

Area of Operation: 19 Level Escapeway drive Location: ,

Collar R.L.: 84.00 m Co-ordinates: 15464.074 N, 10909.820 E.

Bearing of Hole: 112° 47' 38" (111°) Angle of Hole: -29° 44' 14" (-29½) Final Depth: 182.90 m

Drilling Commenced: 17/10/78 Completed: 2/11/78. Logged by:

DRILLING DATA

Drilled by: A D D Non Coring:

Drilling Rig: E500 Coring: nil

Driller(s): J. Penna

Core Recovery:

HOLE SURVEYS

HOLE No.:

23 421

NWPS 24164

SHEET No.: 1

HOLE No.: C1352

SAMPLE DATA

LENS	SAMPLE No.	ROCK TYPE	±	INTERVAL From	INTERVAL To	Length (L)	Assays (A) % Snt	% Sns	% Cu	%S	SPECIFIC GRAVITY ~~P. Snt~~ DRY	~~P. Sns~~ WET	~~P. Cu~~	S.G.
	223245	Lode		48.50	48.80	0.30	0.43	.0	0.07		247½	167		3.07
	246	"		50.70	52.10	1.40	0.32	0	0.34		1202½	844		3.35
	247	Shale.		52.10	52.90	0.80	0.05		0.04		486	317½	247 2.5	2.88
	248	Lode.		52.90	54.10	1.20	0.45	04	0.09		954	645		3.09
	249	Lode.		74.70	74.95	0.25	0.19	03	0.12		217	145		3.01
	250	Lode		130.10	131.00	0.90	0.98	04	1.20		842	578		3.19
	251	"		131.00	132.00	1.00	2.28	03	0.23		753	515		3.16
	252	"		132.00	133.00	1.00	3.33	04	0.19		938	648		3.23
	253	"		133.00	134.00	1.00	1.21	04	0.15		793½	541		3.14
	254	"		134.00	134.50	0.50	1.50	04	0.12		434	294½		3.11
	255	Shale		134.50	135.50	1.00	2.27	02	054		719½	452		2.60
	256	Shale		135.50	136.30	0.80	0.04	03	0.03		463	297		2.7
	257	Lode.		136.50	137.00	0.70	0.55	02	0.18		657	439		3.0
	258	"		137.00	138.00	1.00	0.63	04	0.26		1047½	665		3.35
	259	"		138.00	139.00	1.00	0.81	04	0.14		785	548		3.3
	260	"		139.00	140.00	1.00	0.40	03	0.4		893	618½		3.25
	261	"		140.00	141.05	1.05	1.02	02	0.09		925	629		3.13

23 425

N.W.P.S.

HOLE No.: C1352

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 Product (A x L) ~~P. Snt~~	~~P. Sns~~	~~P. Cu~~	S.G
	223245	Lode	⊗	48.50	48.80	0.30	0.43	2	0.07		247½	167		3.07
	246	"		50.70	52.10	1.40	0.32	2	0.34		1202½	844		3.35
	247	Shale.		52.10	52.90	0.90	0.05	4	0.04		456	317½	2.7	2.88
	248	Lode.	⊗	52.90	54.10	1.20	0.45	4	0.09		~~954~~	645	4.3	3.09
	249	Lode.		74.70	74.95	0.25	0.19	3	0.12		217	145		3.01
*	250	Lode		130.10	131.00	0.90	0.98	4	1.20		842	578		3.19
↑	251	"		131.00	132.00	1.00	2.28	3	0.23		753	515		3.16
A	252	"		132.00	133.00	1.00	3.33	4	0.19		438	648		3.23
C	253	"		133.00	134.00	1.00	1.21	4	0.15		193½	541		3.14
I	254	"		134.00	134.50	0.50	1.50	4	0.12		434	294½		3.11
D	255	Shale		134.50	135.50	1.00	2.27	3	0.54		119½	432		2.69
	256	Shale		135.50	136.30	0.80	0.04	5	0.03		463	297		2.79
	257	Lode		136.50	137.00	0.70	0.55	2	0.18		457	459		3.01
	258	"		137.00	138.00	1.00	0.63	4	0.26		1147½	765		3.35
	259	"		138.00	139.00	1.00	0.81	4	0.14		785	548		3.31
	260	"		139.00	140.00	1.00	0.40	3	0.4		893	118½		3.25
*	261	"		140.00	141.05	1.05	1.02	2	0.09		925	609		3.13

HOLE No.: C1352

SAMPLE DATA

SHEET No.: 2

LENS	SAMPLE No.	ROCK TYPE	Σ	INTERVAL From	INTERVAL To	Length (L)	Assays (A) % Snt	% Sns	% Cu	o/S	SPECIFIC GRAVITY ~~P. Snt~~ DRY	~~P. Sns~~ WET	~~P. Cu~~	Sp. G.
	223262	Lode		161.10	161.40	0.30	0.35	2	0.08		213/2	206		2.92
									"					
	263	Lode		163.80	164.70	0.90	0.56	4	0.11		701	457		2.87
Henry's *			Σ	48.50	54.10	5.60	0.21		0.11					
			Σ	50.70	54.10	3.40	0.30		0.18					
Hallo B *			Σ	130.10	141.05	10.95	1.28		0.30					
C *			Σ	161.10	164.70	3.60	0.17		0.03					
Halls *				130.10	164.70	35.50	0.41		0.10					

N.W.P.S.

HOLE No.: C1352

SAMPLE DATA

SHEET No.: 2

LENS	SAMPLE No.	ROCK TYPE	Σ	INTERVAL From	INTERVAL To	Length (L)	Assays (A) % Snt	Assays (A) % Sns	Assays (A) % Cu	Assays (A) o/s	SPECIFIC Product (A x L) ~~P. Snt~~	~~P. Sns~~	~~P. Cu~~	GRAVITY S.G.
	223262	Lode		161.10	161.40	0.30	0.35	3	0.08		105	60		2.92
	263	Lode		163.30	164.70	0.90	0.56	4	0.11		504	360		2.87
Henry's *			Σ	48.50	54.10	5.60	0.21		0.11					
			Σ	50.70	54.10	3.40	0.30		0.18					
Halls. B *			Σ	130.10	141.05	10.95	1.28		0.30					
C *			Σ	161.10	164.70	3.60	0.17		0.03					
Halls *				130.10	164.70	35.50	0.41		0.10					

Hole No. 1352

Sheet No.

ABMINCO N.L. - Cleveland Mine

DIAMOND DRILL HOLE DATA

PROGRAM DATA

1	Attitude	—	(+) (-)
2	Hole No.	25	
3	Down Hole Interval	1352	
4	Collar Co-ords.	15464.074	N
5		10909.820	E
6	Collar R.L.	84.00	
7	Halls Sect. M Intersect Point	15549.204	N
8		10847.805	E
9	Battery Sect. FA Intersect. Point	15409.213	N
10		10838.117.	E
11	Start Plot (Depth)	4.	ϕ = Collar

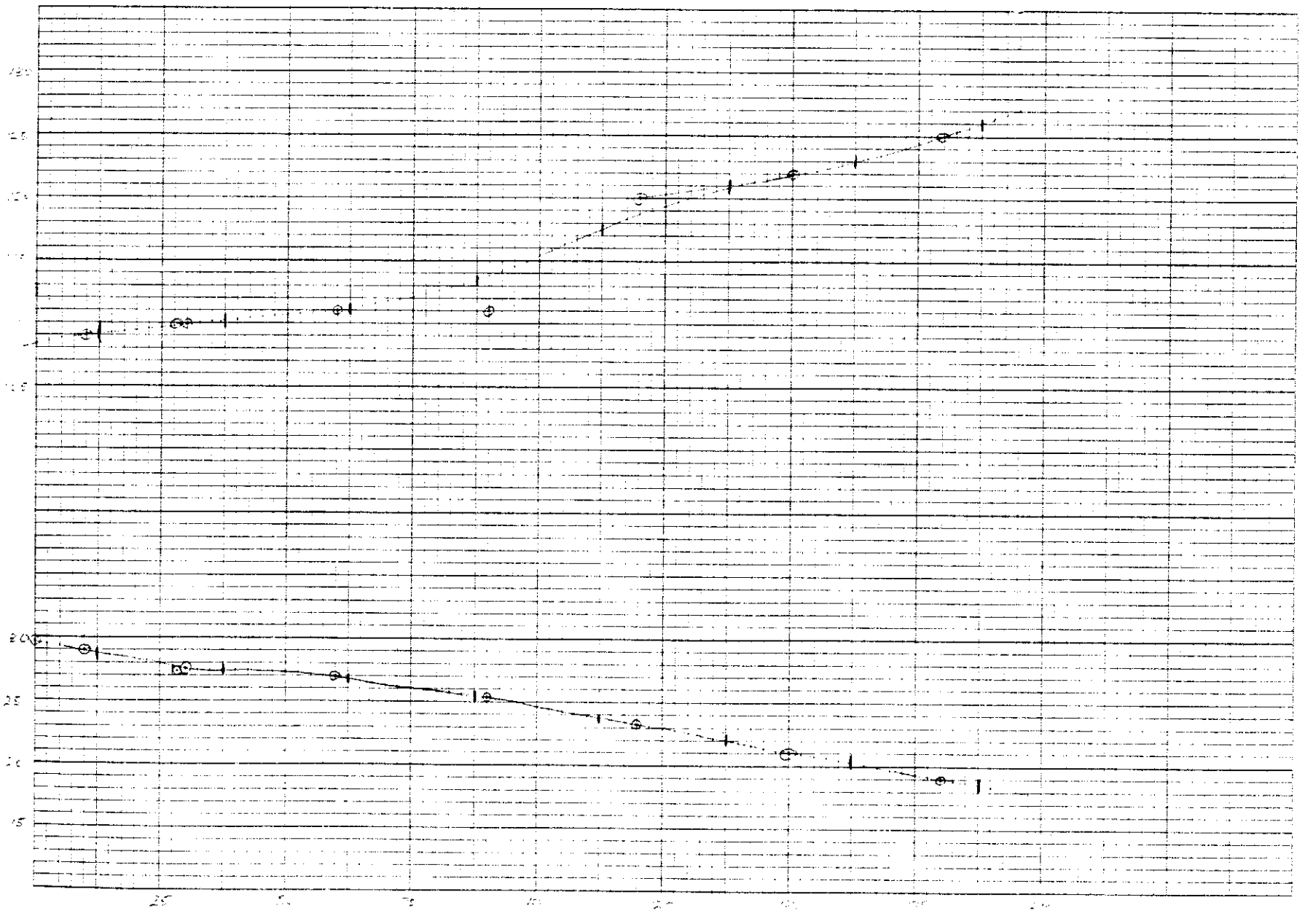
SURVEY DATA

Instrument Type	Depth	Dip	Azimuth
	4	-29 3/4	112 3/4
SURVEY CAMERA.	10	- 29	109 (113).
	28	- (27¼)	110 (114)
	30	- 27½	110 (114)
	60	- 27	111 (115)
	90	- 25¼	111 (115)
	120	- 23¼	120 (124)
	150	- 21	122 (126)
	180.	- 19	125 (129)

INTERPOLATED DATA

Depth	Dip	Azimuth
12½	29	109
37½	27½	110
62½	27	111
87½	25½	113½
112½	24	117½
137½	22	121
162½	20	123
+ 187½.	18½.	126

C1352



DOWN HOLE PLOT

Hole No: 1352

Sheet No:

DEPTH	PLAN N	PLAN E	PLAN RL	CROSS SECTION Dist.from H.R.P.	CROSS SECTION Dist.from B.R.P.	LONG SECTION Dist. from Halls	Sect. M	Dist from Batt.	Sect. FA	Depth	PLAN N	PLAN E	PLAN RL	CROSS SECTION Dist.from H.R.P.	CROSS SECTION Dist. from B.R.P.	LONG SECTION Dist from Halls	Sect.	Dist from Batt	Sect.
0	15464·074	10909·820	84·00	88·35	48·21	-34·73		76·33											
25	15456·96	10930·49	71·88	108·43	70·06	-26·09		L 76·83											
50	15449·37	10951·33	60·34	128·96	92·24	-17·69		76·95											
75	15441·39	10972·13	48·99	149·22	114·52	- 9·60		76·68											
100	15432·39	10992·82	38·22	171·08	137·05	- 2·34	M	75·42											
125	15421·84	11013·08	28·06	193·17	159·71	+ 3·48		72·56											
150	15409·91	11032·95	18·69	215·89	182·48	+ 8·02		68·26											
175	15397·11	11052·65	10·14	239·08	205·40	+ 11·80	M	63·09											
200	15383·18	11071·83	2·21	262·64	228·22	+ 14·39		56·69											

23 421

DIAMOND DRILL LOG

Hole No E1352 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%

19 LEVEL 111 Section

CORE REC'D	DEPTH m	GEOLOGY	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
0.00									
1.00		**Sandstone** Fine-grained light to mid brown quartz sandstone. Slight alteration evident near small veins which carry carbonate/fluorite and chlorite.							
1.70									
2.79									
4.70	5.10								
	5.01	Shale f.gr. dk brown massive shale							
3.02		**Sandstone** Fine grained mid-grey to greenish massive sandstone some disrupting evident about 10 m where there is a minor shaley component.							
7.80									
3.05									
10.85			9 5						Qtz-fluorite carb veins parallel to core axis
3.02	11.80								
15.--		**Shale** F.gr. massive dark brown shale and minor sandstone inclusions.	9 6						Qtz-fluorite veins 10 mm @ 70° to CA. 13.7-13.5 ; @ 14.5-14.6 35° to CA.
2.88	14.70	**Sandstone** Fine-grained shale grey brown massive sandstone	9 6						
16.85	16.80								
3.05		**Shale** Fine grained slumped + altered shale heavily altered and locally silicified.							
	19.90								
19.90		**Sandstone** Fine to med grained mid green brown massive sandstone. Local alteration close to veins. Minor shale veins							
2.93	22.00								
	22.95	**Shale**							
22.95		**Sandstone** Fine grained med-green to brown/pink quartz sandstone - massive. Minor thin quartz-fluorite & carbonate veins developed sheeting/joints. Locally thin shaley bands occur eg 42 m + 45m. Sandstone in places is slightly coarser grained eg at 41m.	9 5						
25.95									
2.97			96						
28.--									
2.97									
31.90									
	3.04								
35.00									
	3.02								
38.00			96						
	3.10		95						
41.05									
	3.00								
44.05									
	3.00								
47.05									
	3.05	48.50							
		1N 30 Veins: Qtz-carbonate-fluorite; Qtz + carb + fluor				96			Py = Pc 10-25 ; Cp = 40-60 ; minor Sp
		Sandstone Fine grained grey to mid brown massive sandstone							

23 432

ABERFOYLE

DIAMOND DRILL LOG

HOLE Nº C1352 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	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
50.10	50.70								
3.00	52.10	**Lode** pyrite - pyrrhotite lode quartz - chlorite							at₂ 40-60; chlor 20-30 py 10 py 10-20; fluor tr
53.10	52.90	Shale fine grained grey to brown bedded ch.							
	54.10	**Lode** quartz - chlorite - pyrrhotite - pyrite lode. Sulphides occur preferentially in veinlets							at₂ 50 - chlor 20-30; py 5-10 minor carbonate
5.00		**Sandstone** fine grained thin laminated grey brown massive sandstone - mod minor shale inclusions locally							
56.15	56.25								
	56.95	Shale: fine grained dark brown massive shale							Small 1-2 cm qtz veinlet @ 56.40
3.00		**Basalt** v. fine grained massive basalt with minor inclusions of shale. Rock possesses a meta-clastic texture locally. Rock varies from grey to dark green. Thin carbonate veins occur occasionally							
59.15	60.05								
3.10									
62.20	63.30	**Shale** fine grained slight to dark brown massive shale locally silicified. Slump breccia interval 62.50-62.60							
3.05		**Sandstone** fine grained grey green to brownish massive sandstone. Occasional quartz - carbonate veins filled with quartz carbonate + fluorite, chlorite, + locally epidote & py.							Tr. spl in these veinlets & some py
65.25									
3.04									
68.30			qc						
2.99									
71.35	71.45								
3.00	73.20	**Shale** fine grained mod-grey to dark brown massive shale. Occasional quartz - carbonate vein							
	74.00	**Fault zone** v. broken clayey sst + shale bright red colour altered	F						
74.30	74.70	**Shale / Sandstone** fine bedded lgy sst + br. sh.							
	74.85	**Lode**: quartz-chlorite-epy-po lode - chlorite vnt.	qc						81-82: chlor 30-35 pyrrhotite rich
2.98		**Sandstone & Shale** Alternating fine grained massive dark brown shale and fine grained massive sandstone							thin quartz - fluorite - carbonate - pyrite veinlets locally
	77.05								
77.35		**Sandstone** mod-grey to greenish massive sandstone with slight alteration in vicinity of thin							
3.07	80.20								
80.45		**Shale** Dark grey to brown massive shale with minor chert bands. Thin (1-2 mm) chlorite veinlets							
2.93									
83.50	83.80								
		Sandstone fine grained massive mod grey to greenish quartz sandstone - locally slightly micaceous. Slight alteration close to thin quartz-chlorite veinlets.							minor pyrrhotite vein @ 87.4 m
2.73									
86.55									
2.64									
89.55									
3.03									
92.60									
3.02									
95.60	95.90								
3.05		**Sandstone, shale and chert** Alternating massive sandstone and bedded shale with pale grey slumped cherts at 97.6 m.							
98.65	98.90								
		Sandstone: mod brownish-grey massive quartz sandstone with							

28 483

ABERFOYLE **DIAMOND DRILL LOG** **HOLE Nº** C1352 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
2.95		occasional shale band. Some local variation in grain size and colour							Chlorite vein 1 cm at 110.5 - weak irregular form-alteration of wallrock. chlorite-quartz alteration around 110-112
3.10									
2.91									
2.95									
3.05									
3.10	116.70								
3.02		Shale - Dark grey to brown massive shale with local thin sandy sections. Alteration evident in proximity							
3.15	123.10								
3.02	125.20	Sandstone med green to brown massive quartz sandstone							
3.03		Shale - Dark grey massive fine grained shale, locally slightly tuffaceous. Fine ams chert band at end of section							
2.99	130.10								
2.97	133.50	Lode: Quartz - chlorite - carbonate pyrrhotite lode with minor chalcopyrite. Texture is generally chaotic with local bedded zones. Trace cassiterite visible							Quartz 40-60% Chlor 20-30, Carb 10-20, Po 15-20 CPy 1-5 Tr Py Tr Cass
3.01	136.50	Shale, Mid grey bedded shale locally massive							
3.00	139.50	Lode: Quartz - chlorite - carbonate pyrrhotite lode with minor chalcopyrite. Texture chaotic - similar to above - except pyrrhotite content only ~10%							As above except pyrrhotite content ~10%
2.82	142.50	Shale. Dark grey massive fine grained shale - locally bedded & silicified at start of section							
3.00									

23 434

ABERFOYLE

DIAMOND DRILL LOG

HOLE Nº C1352 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	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
153.25		Shale as above.							
3.03									None. Thin (2-3mm) quartz vein.
156.30									
3.10	158.88								
159.35	159.90	Sandstone Mauve/grey-brown qtz sst.							
		Shale Pale brown to dark brown altered shale. Several quartz-carb-chlorite veins up to 5cm thick	1P						Fault @ 20°∧CA at 160.1 m; Fault @ 160.9 35°∧CA
3.10	161.10								
	161.40	Lithic Quartz-carb-chlorite breccia							
162.50		Shale Grey/brown and green/grey silicified bedded shales bedding @ 40°∧CA. Small volcanic component. 50mg chert at end							
3.00	164.70	Lithic Pale green chlorite-carb-qtz lithic wacke ~1% po + py. Weak mica.							Po 1-2% Py 1-2%
165.45		Shale Dark brown massive fine grained calcareous shale often mud stippled surface							
3.05	166.75								
168.45		Limestone Pale green finely bedded limestone - bedding 45° to C.A. Occasional quartz veins							
3.02	169.20								
	170.80	Shale Dark brown massive shale locally calcareous.							Qtz-c ± py ± po veins @ 60°∧CA
171.50		Basalt Mid green to brown basalt - fine grained and chilled for first three metres becoming coarse grained around 178-180 metres. Occasional quartz-carbonate veins locally with chalco-pyrite +/or pyrrhotite. Chlorite veinlets in irregular fractures developed locally.							
2.98									
174.50									
3.05									
177.55									
3.10			1F						Fault at 179.5 70°∧CA Slicks 20°∧L.A.
180.60									
2.50									
183.10									
1.26									
184.05	184.35		1F						Fault at 184m.
184.40									
		184.90 m = E.C.H.							
		Logged D SIMPSON							
		28 Nov 78.							

23 434