ABERFOYLE **DIAMOND DRILL LOG** **HOLE Nº** 973 Page Nº 1

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

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

CORE REC'D	DEPTH m	GEOLOGY
·1	≈3	No core - swamp.
·1	5	Interbedded l. grey green f.g. volc. arenite & tuffaceous mudstone w. rare grey shale interbeds. Interval is approx 50/50 tuffaceous greywacke & mudstone. The tuffaceous mudstone is generally extremely well bedded whilst the volc. arenite is gen. massive. Although fine interlaminations do occur interbed of each are gen. 10cm to 1m. thick. Bedding is constant around 20 to 35° to c.A. Soft sed. deformation is not common although s. sed faulting does occur. Diagenetic ? carbonate veins are common ranging from 1mm to 2-3cm at all angles & (stockwork). Core is extremely broken and weathered down to ≈26m.
·25		
·3	10	
·3		
·4		
·2		
·8		
·3		
2·0	15	
·7		
1·5		
1·3	20	
1·2		
2·5		
	25	

VISUAL LOG: TRACE | COMMON | ABUNDANT | MASSIVE

DEPTH m: 5, 10, 11·8, 15, 20, 25

sid

DEPTH m	MINERALIZATION
11·8	10cm Sp1-2, sid. vein 40° to c.A.

Feature Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein, F, 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
2.5	26m	APPROX. BASE OF OXIDATION							
		Lithology - as above - Interbedded lt grey green f.g. volc. arenite & tuffaceous mudstone w. rare grey shale beds.							
.9		Bedding 25m - 20° c.A							
2.8		30m - 30°							Py rare
	30	35m - 30°						30	
1.2		40m - 30°							
1.4		45m - 25°							
1.1		50m - 25°							
3.0	35							35	
3.0	40							40	
3.0	42.2 / 42.5	FAULT ZONE - Broken core & pug. 25°? to c.A.	F					43.7	
2.0	43.9 / 44.2	FAULT - Pug - 25° to c.A. FAULT ZONE c. healed fault breccia 30° to c.A.							
	45							45	
1.8		FAULT - Broken core - ?° to c.A.	F					46.5	
		FAULT? - Broken core - 45° c.A.	F					47.3	
1.6	48.5	FAULT ZONE Broken core & (pug) ?° to c.A.							
3.0	49.0 / 50							50	

Feature Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein, F, 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
		FAULT - 25° to c.A. - Pug.	F					51.0	
		Lithology - as above - Interbedded lt. grey green f.g. vole. arenite & tuffaceous mud stone w. rare grey shale.							
1.5									
1.7	55							55	py rare
3.0		younging common from grading: younging uphole.							
3.0	60							60	
3.0									
		FAULT - pug & broken core - ?° to c.A	F					64.1	
3.0	65	FAULT - c healed breccia 30° c.A.	F					65 65.5	
		FAULT?- c. healed breccia 30° c.A.	F?					67.2	
3.0									
	70 70.2							70	
3.0		Interbedded med to dk grey shale & lt. grey green f.g. vole. arenite shale & tuffaceous sed. are interbedded on all scales w. soft sed slumping & rafting of shales locally present. Rare thin intraformational conglomerate, (fragments of tuff.).							
	73.3								
1.5		Intra formational sed. breccia - massive irregular angular to rounded tuffaceous and shale frag. 1mm to 3cm. Matrix of f.g. frag.							
	74.5 75							75	

ABERFOYLE **DIAMOND DRILL LOG** **HOLE Nº** 973 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
1.5		Interbedded lt. grey green f.g. volc. arenite & tuffaceous mudstone w. (grey shale).							
2.0		Description as for 3-74.5m but grey shale slightly more common in interbeds to 50cm. (av 3-10cm)							
		Volc. arenite is (conglomeratic) w. shale & mudstone clasts to 2-3cm.							
	78.3								
.8		FAULT ZONE Broken core & pug. 30° to c.A.							
.5	80							80	
1.3			Sh					81.0	10cm sp. 40 cn 10 sid ver 30° c.A
	82.0								
3.1									
		FAULT - Pug - 30° to c.A.	F					84.0	
		FAULT - Pug - 25° to c.A. (11 bedding)	F					84.4	
	85							85	
2.5		FAULT - Pug & broken core 35°? c.A.	F					86.6	
	87.3								
		FAULT ZONE Broken core & pug 35° to c.A.							
1.4	89.0								
		Bedding 75m - 35° to c.A.							
2.0	90	80m - 35°						90	
		85m - 30°							
		90m - 45°							
		95m - 35°							
2.8		100m - 45°							
	93.5								
	93.8	FAULT ZONE - Broken core & pug. 35°? to c.A.							
	95							95	
3.0									
	96.7	Extraformational conglomerate - tuffaceous mudstone clasts 1mm to 2cm in fine ground mass.							
	97.3								
		lt. grey green f.g. volc. arenite w. interbeds (slumped), rafts & clasts of dk. grey shale.							
3.0		Bulk of interval is tuffaceous sed. Well bedded shale as frag. & (slumped) interbeds to 15cm. Transitional to unit below.							
	100							100	

Feature Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein, F, 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
3.0	102.7	Lithology - as above FAULT - c. healed breccia - 25° c.A. FAULT - c. healed breccia - 25° c.A. FAULT - c. healed breccia - ?° c.A FAULT ZONE c. healed breccia & (pug) 30-35° c.A.	F F F					101.7 101.9 102.2	
2.0	103.2 104.5	Dk. grey to black (tuffaceous) shale w. rare lt. grey f.g volc. arenite interbeds							
.9	105	FAULT ZONE A large zone of very broken core & pug. Only evidence for orientation are individual fractures which indicate low angle to c.A.						105	
1.6		Within this zone it is difficult to differentiate lithology due to the puggy nature of the core & core loss. However the bulk appears to be a dk. grey to black (carbonaceous) gen. well bedded shale.							
.4		Bedding varies from 35° to 80° to c.A.							
1.0	110	105m - 35° c.A. 110 m - pug 115 m - 40° c.A. 120 m - 35° c.A. 125 m - 30° c.A.						110	
.3		Cleavage is // to bedding.							
.4									
.3		Uncommon lt. grey f.g. volc. arenite interbeds to 20cm.							
.4									
1.4	115							115	
.4									
.4									
.5									
.1									
.8	120							120	
.3									
.1									
1.4									
.6	125							125	

Feature Bedding, Foliation, Fragment (size & shape), Shearing, Fault, F, 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
		Lithology - as above - Dk. grey to black (tuffaceous) shale w. rare lt. grey f.g. volc. arenite interbeds.							
.7		FAULT ZONE AS ABOVE							
1.0	130							130	Py rare
1.0									
1.8	135							135	
1.0									
.9									
1.2	140							140	
.9									
.9									
	143.5								
	143.8	Interbedded dk. grey to black (carbonaceous) shale & lt. grey f.g. volc. arenite							
2.2	145	A well bedded interval of interbedded shale & tuffaceous sed. Shale is dominant ~70% by vol. Slumping & rafting are locally common. The shales may be locally conglomeratic containing clasts of shale & tuffaceous sed to 5cm. These are gen rounded. Bedding - 20° to CA - 145m, 15° to CA - 150m. Diagenetic ? c. veins to 1cm wo p.o. are common						145	Py rare
3.0									
	150							150	

Feature Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein, F, 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
3.0		Lithology - as above - Interbedded dk. grey to black (carbonaceous) shale & lt. grey f.g. volc. arenite.			
1.4				153.2	
1.3					Py 1-2 (5) v.f.g. dissem. & local m.g. to c.g. & blebs
	155			155	
1.0	155.5	FAULT ZONE Pug, broken core and much core loss. Single fracture indicates orientation of about 30° to c.A.			
1.0					
	160			160	
.3					
.4					
	165			165	
.6					
	166.9				
2.4		FAULT - Pug 40° to c.A.	F	169.4	
	170			170	
				170.4	Py 1-2 veinlet
2.5				171.0	4cm py 90 sid vein 35° to c.A. Py 10 / veinlet.
	171.4	FAULT ZONE Broken core, pug & py lode. 35-40° c.A.		171.4	3cm Py 95 sid vein Py 5 / veinlet.
			Py	171.8	
	172.3			172.3	Py 85 sid, ser, qtz vein. Tr Aspy. Tr Cp. 45° to c.A.
				172.7	Py 25 f.g. to c.g. & vein.
3.1					Py 1-2 v.f.g. & veinlet.
	175	FAULT - Broken core - ?° c.A.	F	175.0	

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
3.1		Lithology - as above - Interbedded dk. grey to black (carbonaceous) shale & lt. grey f.g. volc. arenite. Bedding 45-60° (av 50°) to C.A.				Py 1-2 v.f.g. & veinlet.
3.0	180	FAULT - Pug 45° to c.A.	F		179.5 / 180	
		FAULT - Broken core ?° c.A.	F		180.5	
		FAULT - Broken core ?° c.A.	F		181.5	Py 5-7 f.g. & vein // to c.A.
3.0					182.4	
		FAULT - Pug // c.A.	F		183.2	Py 1-2 vf.g. & blebs & vein.
		FAULT - Pug - 30° to c.A.	F		184.0 / 184.3 / 184.6	Py 20 as veins to 10cm assoc. w. sid veins, 35° to c.A.
2.2	185				185	Py 1-2 (5-10) v.f.g. to m.g. & veinlet.
3.0						
	189.6	FAULT - Broken core 30° to c.A.	F Py/k		189.6 / 189.7 / 189.9	15cm py 1-2 qtz/c vein 45° to c.A. Py rare
3.1	190	Lt. grey green f.g. volc. arenite w. irregular interbeds of med to dk. grey mudstone (slumped, rafted and conglomeratic)			190	3cm Py 25, qtz vein 60° to c.A. Py rare
		A tuffaceous sed. interval w. much S. sed def. Bulk of interval is massive to well bedded f.g. volc. arenite locally as clasts to 3cm in intraformational cong. Mudstone is gen. well bedded but usually slumped w. ang. contacts to tuff.	Py / c / Py		192.0 / 192.4 / 192.8 / 193.8	5cm py 80, qtz vein 40° c.A. Py 5, veinlet & blebs. Py rare 1cm py 10, qtz vein 40° c.A. Py 1-2 f.g. to blebs & veinlet 1cm py 95, qtz vein 25° c.A. Py rare
3.0	194.4	FAULT ZONE Broken core, pug & py veining 25-30° to c.A.			194.4 / 195 / 195.3	Py 15-20 veins 25-30° to c.A. Aspy 2-3 veinlets assoc. w. py. Py rare
		Toward base of interval clasts of volc. arenite to 5cm rounded, in a grey mudstone matrix, is the most common lithology.	Py / c		196.0 / 196.5 / 197.0	Py 1-2. f.g. to bleb & veinlet. 2cm py 40, c. vein 20° to c.A. 20cm. Py. 1/c. vein 35° to c.A.
3.0						Py rare.
	198.9	FAULT - Pug 55° to c.A.	F		198.8 / 198.9	Py 5-7 veins assoc w. sid. at low angle to c.A.
	200	Dk. grey shale w. frag., wisps & interbeds of lt. grey to grey green f.g. volc. arenite & tuffaceous mudstone.			200	

Feature Bedding, Foliation, Fragment (size & shape), Shearing, Fault, Vein, F, 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
2.1	200.6	FAULT ZONE Broken core, pug & much core loss. Unknown angle to c.A.		201.0	Py as above 5-7 veins assoc. w. sid.
.4					
.5	205			205	Py 1-2 f.g. to c.g. & (bleb) rare veinlet. syngenetic py.? (text.)
.6					
.7	208.1	Bulk of interval is dk. grey shale, cleavage // bedding. A tuffaceous sed. component is present as irregular interbeds to 40 cm locally slumped and rafted, as fragments 1mm to 2cm in shale & as local intraformational breccias. Tuffaceous greywacke to mudstone. Bedding is 30-50° to c.A. Diagenetic c. veins locally common.			
2.6	210	FAULT - Pug ?° to c.A. FAULT - Pug 35°? to c.A.	F F	209.9 210.0	
		FAULT - Pug 20-40°? to c.A.	F	211.1	
3.1					
		FAULT - Pug 20° to c.A.	F	214.3	
3.1	215	FAULT - Pug 25° to c.A.	F	215 216.5	
	217.3	Interbedded lt. grey to lt. grey green f.g. vole. arenite to tuffaceous mudstone & local dk. grey green (tuffaceous?) shale. A highly tuffaceous interval with roughly equal vol. of vole. arenite & mudstone. Mudstone is well bedded & vole. arenite varies from massive to bedded. Shales are associated with slumping & local rafting of tuffaceous sed. Bedding is constant around 35-40° to c.A.		217.3	Py rare
3.1	220			220	
3.0					
3.0	225			223.5 223.8 225	Py 10-12 bleb & vein. 30° to c.A. Py 2-3 f.g. dissem. & veinlets at low angle to c.A. assoc. w. sid.

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
3·0	227·8	Lithology - as above - Interbedded lt. grey to lt. grey green f.g. volc. arenite to tuffaceous mudstone & local dk. grey green shale.	Py		225·8 226·3 226·45 227·7	Py 2-3 as above Py 35 veinlet stockwork 0-30° c.A. & f.g. to blebs. Py 3 f.g. to blebs assoc. w. sid vnlts. Py rare 1cm py 90, sid vein.
3·0	230	Off-white to lt. grey limestone to dolomite? A massive locally brecciated carbonate. Fragments in local breccia zones (to 30cm) are angular (cuspate) and 2mm to 5cm in size. They are off white and sit in a grey matrix. No bedding. Rock is locally sidéritised? Irregular contact above & below. 25cm dk. grey cong. shale.			230 232·1	Py rare.
3·0	233·5 235	Lt. to dk. grey slumped & (cong.) shale. A finely laminated pelite. Soft sed slumping is common & locally intense. Local conglomerate w. clasts of carbonate to 5cm w. a band of 50cm at 235·0			233·5 235	Py 1 v.f.g. dissem. & rare blebs. (syngenetic?)
3·0	237·5 238·3	FAULT ZONE c. healed fault breccia			238·3	
3·0	240	QS Interbedded dk. grey to black slate & lt. grey f.g. (micaceous) quartzite. A very well bedded interval of finely interlaminated pelite & arenite. Interlaminations on mm & cm scale. Grading is common w. younging uphole. Bedding is parallel to strong cleavage 35-55° to c.A. typically 45°.			240 243·1	Py 1-2 (10) v.f.g. dissem. Py 1 veinlet (stockwork) rare v.f.g. dissem.
3·0	245				245	
3·0	247·0	Finely interlaminated lt. grey to black slate w.(lt. grey siltstone). Extremely well laminated pelite w. strong layer // cleavage. Si/So constant at 35° to c.A. Younging from grading uphole is common!			247·2	Py rare.
1·5						
1·0	250				250	

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
3.1		Lithology - as above - finely interlaminated lt. grey to black slate (lt. grey siltstone) lt. grey siltstone more common toward base.			
3.2	255			255	Py rare.
3.1	258.9			258.9	
3.1	260	Dk. grey to black slate w. interbeds, rafts & fragments of lt. grey f.g. (micaceous) quartzite. Bulk of interval is very dk slate w. q/zite occurring as fine interbeds at the top of the interval but becoming rafted & conq. in the middle & less dominant toward the base.		260	Py 1 v.f.g. & rare veinlet
3.0	265			265	
3.0	268.4			268.4	
3.0	269.1	FAULT ZONE sheared shale & breccia 30° ? to c.A.		269.1 269.2 269.7	Py 10 f.g. & veinlet.
	269.5				
	270.0	FAULT ZONE? Zone of sheared (puggy) slate 40° to c.A.		270	Py 1-2 f.g. & veinlet.
	270.7			270.7	
	271.1				Py rare.
		FAULT? - Sheared slate, 35°.	F	271.7 271.9	2cm py 15
3.0		Lt. to med. grey siltstone w. minor interbedded lt. grey f.g. (micaceous) quartzite. Bulk of interval is massive to weakly bedded lt. grey silt w. a gen. well developed cleavage // to bedding.			Py rare.
	275			275	

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
1.5	275.4	FAULT ZONE - Rug 30-35° ? to c.A.			
	275.7	Interbeds to 50cm av 1-10cm of lt. grey to off white f.g. (micaceous) quartzite occur making about 10-15% of rock. S1/S0 is constant around 40-50° to c.A.			
1.5					Py rare
.5					
2.5	280			280	
				280.2	Py 3 f.g. to blebs & vein
				280.8	Stn 2 bleb in py vein.
3.0					
					Py rare
3.0	285			285	
	286.4				
1.3		Lt. grey f.g. (micaceous) quartzite			
		A massive to well bedded unit of weakly to highly siliceous quartzite. Local thin wispy interbeds, gen. <1cm, of med to dk. grey shale occur.	Py	288.3	5cm py 90 sid vein 20° to c.A.
2.0		Bedding varies from 0 to 50° to c.A but is typically 40°.			Py 1-2 f.g. to bleb & veinlet
	290			290	
2.0				292.2	
3.0				294.0	Py rare 1cm py 20, Stn 10., c. vein. 20° c.A
	294.4			294.5	10cm qtz/c vein 45° to c.A.
	295	Dk. grey massive shale		295	
		A very poorly bedded interval of pelitic rock of fine silt size.			
3.0		A band of med grey shale at base shows bedding as 0-20° to c.A.			Py rare
		At top S0 | S1 25-30° to c.A.			
	298.7			298.9	10cm py 15 flecks in silic. qtzite
3.0		Interbedded lt. to dk. grey shale & lt. grey f.g. quartzite			Py rare
	300			300	

ABERFOYLE

DIAMOND DRILL LOG

HOLE Nº 973

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
		An interval of irregularly interbedded gen. slumped (rafted) shale & quartzite. Interbedding is on the scale of cm's.						300.3	Py 7-10 (4%) f.g. to fleck & blebs; gen "spotted" in silicified shale & qtzite.
		FAULT - Broken core - ?° to c.A	q					301.4	
3.0		Bedding varies between 0 & 60° but is gen. low to moderate to c.A. The quartzite is locally highly silicified.						301.7	
								301.9	
		FAULT - fug & qtz vein - 30° to c.A.	F q/c					303.9	Py rare.
	304.7							304.3	
	305							305	
3.0		2cm qtz vein 35° to c.A.	q						
	306.7	Lt. grey f.g. quartzite. 1cm qtz vein 20° to c.A.						306.5	
		A highly silicified interval of massive f.g. quartzite. 1cm qtz vein 40° to c.A.	q					307.3	
	308.3		q					308.1	
3.0		Lt. grey shale w. (lt. grey f.g. quartzite interbeds,) S_1 / Bedding 0-10° to c.A.							
	310							310	
		END OF HOLE							
	310.5								
	315							315	
	320							320	
	325							325	