ABERFOYLE **DIAMOND DRILL LOG** **HOLE Nº** 957 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	VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
0		Dark grey to black shale interbedded with grey f.g. micaceous quartzite beds. Most distinctive feature of the rock is the locally extremely contorted nature which is associated with the fracturing of the quartzite beds. The grey quartzite ranges from thin laminae <1mm thick to beds >30cm thick; av. .5-1cm. The quartzite also occurs as angular to subrounded fragments, possibly the result of rafting of beds during soft sed. def. Although s.sed. def. may have affected the rock, tectonic folding is present as tight often angular folds. The rock has a well developed layer // foliation (S_1/S_0) defined by the prefered orientation of f.g. sericite + graphite // to the primary layering. S_1/S_0 varies considerably in orientation; av. 30° to c.A.							
2.0	5							5	
2.5									
3.0	10							10	
	13.0								
	13.2	FAULT ZONE - Broken core & pug							
3.1	15							15	
		Fault - broken core							
2.0	16.0							16.0	
		FAULT - fault running // to c.A. - pug on fault plane.							
1.3	17.0								
3.0	20							20	
		Fault - broken core - 60° rock						20.4	
3.0									
	25							25.0	
		Fault - pug - 30° to c.A.							

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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		Lithology – as above.			
		28·6 – 1cm c. vein.		28·6	
2·6	30			30	29·9 – 5cm Py & f.g. syn py. clasts?
3·0	33·65				
	34·0	Lt. grey f.g. quartzite – same lithology as fragslam.			
	34·4				
		mid. grey uniform siltstone			
	35			35	
	35·45				
	35·7				
3·0		FAULT ZONE Broken core in several small faults.			
	36·4				
2·7					
	39·8				
	40	FAULT ZONE		40	
	40·4	Broken core and pug			
	41·7				
3·0	·1	FAULT ZONE – Broken core.			
	·5				
	42·8	FAULT ZONE – Broken core			
				43·9	Py vein 1cm. v. early as is def.
3·0	44·9				
	45	FAULT ZONE – Broken core		45	
	45·15				
	45·9				
	46·1	FAULT ZONE – Broken core & pug ~20° ? to C.A.			
3·0	47·95				
	48·3	mid. grey f.g. quartzite			
	50			50	

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	51.9	Lithology - as above - interbedded black shale and grey f.g. quartzite - locally contorted.							
3.0	53.4	Med. grey siltstone - interval lacks grey quartzite							
3.0	55	54.8 - Fault - broken core						55	
2.2	60							60	
.7	60.4	FAULT ZONE - Broken core & pug							
	60.8								
3.0									
3.0	65							65	
3.0									
3.0	70							70	
3.0									
2.7	75	73.6 - Fault - broken core 74.6 - Fault - broken core - q/c vein 2cm						73.6 74.6 75	Py 5 - q/c vein 2cm.

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DIAMOND DRILL LOG

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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
		Lithology - as above - dk. grey to black shale & siltstone with med. grey f.g. quartzite interbeds & fragments. Often contorted. Si/So av. 30-40° to c.A.
1.0		
1.9		
3.0	80	
	80.9	FAULT ZONE - Broken core
	81.7	
3.0		
	85	
	85.4	FAULT ZONE - Broken core
	85.6	
2.7	86.9	FAULT ZONE - Broken core & pug
	87.2	
3.0	89.9	
	90	lt. grey f.g. micaceous quartzite - same lithology as qtzite interbeds. Occ. thin siltstone beds to 2cm., 30° to c.A.
	91.7	
3.0		Black contorted carbonaceous shale w. grey quartzite fragments. - The interval below the quartzite is notable for the carbonaceous nature of the shale. Also notable is the fact that beds of f.g. grey quartzite are not present; rather the quartzite occurs as tectonically flattened angular to rounded fragments from <1 mm to >4cm.
	95	
3.0		
1.8		
VQ		
BQ		
1.4	100	

VISUAL LOG | TRACE | COMMON | ABUNDANT | MASSIVE

DEPTH m: 80, 85, 89.5, 90, 95, 100

MINERALIZATION: 89.5m - 2cm py to c vein

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DIAMOND DRILL LOG

HOLE Nº 957 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
3·0		Lithology - as above - black carbonaceous shale w. grey qtzite. fragments. - contorted
1·5	104·4 104·7	FAULT ZONE - Broken core & pug
	105	
1·3	105·55 105·8	FAULT ZONE - Broken core & pug - Logd & to c.A?
3·0		
	108·75	
		lt. grey f.g. micaceous quartzite - minor thin black shale band. 10cm.
	109·55	
	110	Dark grey to black locally carbonaceous siltstone and shale with lt. grey micaceous qtzite interbeds ad fragments
3·0		
3·0		
	115	
3·0		
3·0	120	119·6 - 3cm q/c vein 20° to c.A. 120·5 - 1cm q/c vein 25° to c.A. 121·15 - 2cm q/c vei 40° to c.A
2·7		
	123·6 124·1	FAULT ZONE - Broken core & pug at low angle to C.A
	125	

VISUAL LOG	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
					102·9	1cm py. 10 c.g. assoc. w. q. vein.
					105	
					110	
					115	115·5 - 2cm py 10 - veinlets
					116·3	1cm Py 40, c vein
					119·6	
					120	
					120·5	
					121·15	
					125	

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DIAMOND DRILL LOG

HOLE Nº 957

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
3.1		Fault - broken core	F	126.0	126.0 - 1cm py 10 ; q/c vein. 126.1-126.2 - py 15 veins.
		Lithology - as above - dk. grey to black siltstone ½ shale with thin interbedded quartzite.			
1.2	128.2	FAULT ZONE - Broken core & pug		127.9 128.3	py 1-3 f.g. in qtzite & minor vein
	128.7			128.8	1cm py 5 ; c vein
1.5	129.3 129.6	FAULT ZONE - Broken core			
	130			130	
2.4					py <1 venlets.
		Fault - low & to c.A. Broken core.	F	133.3	
3.0	135			133.7 134.9 135 135.2	1cm py 15 ; c vein py 1-3 f.g. assoc w. qtz veins, early.
2.2		Fault - broken core	F	138.0	
.35	138.85 139.1	FAULT ZONE - Pug. 5cm py vein in middle		138.85 139.1	139.0 - 5cm py vein.
3.0	140 140.1 140.45	Sulphide Rock. Py 80-90. as c.g. vein? mat. in silicic. matrix Qs. as above		140	py 80-90 vein? py 1 - venlets.
	141.15	Grey f.g. micaceous quartzite. 30° to c.A. Qs as above	c	141.6	
		25° to c.A.	c	142.6	
2.9	143.25 143.6	FAULT ZONE - Pug & broken core.			
	145	Fault - broken core	F	145 145.1	
3.0					
3.0	150			150	

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
		Lithology – as above – Dk. grey to black siltstone & shale w. thin grey f.g. micaceous quartzite interbeds & fragments – may be locally contorted.							
3·0								152·9	1cm py 10, c vein
2·0	155 155·1 155·4	FAULT ZONE – Broken core & soln cavities						155	
		$S_1 \mid S_0$ – 20° to c.A.							
	156·4 156·6	FAULT ZONE – Broken core							
1·0									
	158·0 158·3	FAULT ZONE – Broken core							
		$S_1 \mid S_0$ 5° to c.A.							
	158·9	FAULT ZONE – Broken core & pug							
1·8	159·4								
	160	Fault – pug.	F					159·9 160	
	161	FAULT ZONE – Broken core and pug – core loss.							
1·0									
1·2	164·2	qv-veins to 164·8						164·15 164·6	Py 1-2 – vein (assoc w. qtz veins)
	165							165	
1·3									
1·3								166·45	5cm py 5, f.g. syn py. bed – rafted
1·2									
	170							170	
3·0			py 1cm					170·5	1cm Py vein
3·0								173·2	8cm Py 2 c.g. in qtz vein
	175							175	

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	DEPTH m	MINERALIZATION
2·5	177·6	lithology - as above - dk. grey to black siltstone & shale w. thin grey f.g. quartzite interbeds.			
		FAULT ZONE - Broken core & pug			
·5					
·5				179·3	5cm Py vein
	180				
1·0					
·25					
	181·8				
·35		FAULT ZONE - Broken core & pug.			
·3	182·9				
1·5	183·7				
		VT			
·2					
		Fault - broken core	F	184·65	
	185				
		Lt. grey green sericitic lithic tuff - agglomerate			
2·6		70-80% of the rock is composed of irregular often elongate vesicular lava fragments between 1mm and 1cm. Fragments are highly sericitic, vesicles being filled with siderite, or dk. green sericite / chlorite. Blebs, veinlets etc of siderite are common.			
		The other component is blocks of grey green ves. lava to 30 cm. thick. Cusps ⇒ blocks rather than flows.			
·3					
2·7	189·3				
		FAULT ZONE - Broken core.			
	189·7				
	190				
3·0	191·4	From 191·4m the volcanics become darker green in colour due to a dramatic increase in chlorite? content.			
		Fault - broken core	F	193·9	
3·0	195				
3·0	197·95	FAULT ZONE - Broken core			
	198·25				
	200				

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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
3.0		Fault - broken core
	202.3	Fault - broken core, pug
		Grey green sericitic lithic tuff and interbedded f.g. to c.g. tuff.
		Fault - broken core - 15° c.A.
3.0		Agglomerate component no longer present. weakly vesicular lithic component as above
	204.3	
	204.6	FAULT ZONE - broken core
	205	
	205.1	FAULT ZONE - Broken core - Low ∠ to c.A.
	205.4	
3.0		The proportion of f.g. to c.g. tuff increases down the hole, ie there is a macro-grading down the unit, from agglomerate
		Fault - 11 to c.A.
		to f.g. tuff down the hole.
3.0	210	
	210.1	FAULT ZONE - broken core - fractures at low angle to c.A.
	211.1	
3.0	213.4	← LOST DRILLING WATER.
3.0	215	
3.0	220	
3.0	223.0	
	223.2	FAULT ZONE - Poss. Low ∠ F.
		223.7 - 15cm sid vein, 40° CA
3.0	225	

VISUAL LOG	DEPTH m	MINERALIZATION
	201.5	
	202.25	
	203.2	
	205	
	207.0	
	209.9	
	210	3cm Py 60 q/c vein 35° to c.A.
	213.4	
	213.55	15cm Py 80, c vein.
	215	
	220	
1cm sid	221.0	
	221.3	Py 1 - f.g. blebs & veinlets
	221.55	1cm, Py 70 c. vein.
	221.7	
	221.9	Py 2-3 f.g. & blebs. Tr sp., Ga.
	223.7	
	223.8	Py 2-3 f.g. & assoc. w. c. veins
	223.95	
	224.4	Py 10-12 (15) veinlets
	224.75	
	225	

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DIAMOND DRILL LOG

HOLE Nº G57 Page No 10

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		226.1 c vein 1cm 15° to c.A. Fault - broken core - 30° c.A.						226.1 226.3 226.7 227.4	Py ≈ 1 f.g. flecks & blebs in sid. rich vole.
3.0	230							230	
2.1		233.5 - 1cm c vein 10° c.A.							
	233.95 234.25	Black siltstone - Si/So 35° to c.A.							
	234.75								
3.1	235	Grey green vesicular lava agglomerate in a black siltstone to grey f.g. quartzite matrix. Blocks to 30cm (av 3-5 cm) of coarsely vesicular lava in a massive to bedded black siltstone of grey quartzite matrix. Blocks & fragments show excellent cusps.						235 235.8	
.6									
2.8	240	239.4 1cm c vein 30° to c.A. 239.7 2cm c vei 40° to c.A.						239.4 239.7 240	
	241.9	241.9 2cm c vei 60° to c.A.						241.9	
	242.55	Med. grey bedded f.g. to m.g. micaceous quartzite Si/So - 5-10° to c.A.							Py as below
3.0		QS Interbedded black siltstone & grey f.g. micaceous quartzite - often contorted and fractured						244.25 244.4	Py 3-5 vinlets av 2-3mm. unoriented. Py 40 c.g. in sid-q/q Fault breccia.
	245	245.25 - 1cm c vein 30° 245.45 - 10cm c vei 30°						245 245.3 245.45	Py 1-2 unoriented vinlets av 2 mm 8cm Py vein
2.8	245.85	Quartz siderite sulphide rock. Contains agate form open space silica fillings. C.g. cream sid. to 20-30.						245.85 246.05	Py 95 - q/le vein. 40° to C.A. Py 20-40 (60) c.g. assoc. w. c.g. sid & qtz.
	246.95	Fault Breccia? Fault - pug - 60 to c.A.						246.8 246.95	
3.0		Black Siltstone. - contains approx 5% subrounded to rounded siltstone & syn. py. fragments 1mm to 3cm. Si/So? - 35° to c.A. 247.9 - 5cm c vei 60°						247.9	Py 1-2 v.f.g. diss. & py. frag.
	249.6								
	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	DEPTH m	MINERALIZATION
.7	250.5	Grey brown pyritic siltstone - w. ≈ 5-10% siltstone clasts to 3cm av 1cm. S1/S0 20° to c.A.	TRACE	250.5	Py 15-20% f.g. syn. py. in bedded py. silst
	251.0	Lt. grey dolomite - weakly brecciated - diagentic?	COMMON	251.0	Py v. rare
2.3		Grey locally pyritic dolomitic siltstone. - Dolomitic interval containing subrounded to rounded siltstone clasts av .5cm (1mm to 3cm) Bedded 30-45° to c.A.	ABUNDANT		Py 2-3 v.f.g. syn. py. diss & clasts. tr. vein.
	252.6			252.6	Py 10-15 - v.f.g. syn py diss in py dol.
	253.35			252.95	
2.9		Lt. grey weakly brecciated dolomitic siltstone The interval is distinguished by the early? brecciation of the rock with stylolitic features traversing the rock. Silt is a lge. component of the interval.	MASSIVE		252.95 - 263.75 - Py v rare
	255			255	
	255.4	FAULT ZONE - Broken core			
	255.8				
3.0	256.75	Silicified grey dolomite - pervassive silica flooding assoc. w. minor brecciation			
	257.35				
	257.6	Lt. grey dol. as above.			
		Med. grey massive dolomite - weakly to moderately veined by white sil? veins av 2mm thick. These are unoriented and stock-work in nature.			
	260			260	
3.0	260.45				
	260.6	FAULT ZONE - Heated Fault breccia.			
		Fault breccia - 60° to c.A.		261.5	
1.8	263.5				
	263.75	Vein of cream grey sil. 80% & grey qtz 30 - 30 - 45° c.A		263.75	263.75 - 273.1 - Py 2-3 v.f.g. diss and thin veinlets.
1.2		Weakly to extensively silicified dolomite? grading downwards to carbonate rich f.g. tuff			
	265	Silicified grey dolomites appear to grade downwards to weakly silicified more granular often carbonate rich fine grained tuffs? The first definite volcanic material is vesicular fragments at 271.8m.		265	
3.0					
3.0	270	← Silicification decreases.		270	
	270.1	FAULT ZONE - Broken core - shallow ∠?			
	270.3				
		Fault - broke core - // c.A.		271.2	
3.0	273.1	Fault - 20°? to c.A.		273	Py 3-5(10)% v.f.g. py. diss in carb. rich tuff
		Lt. grey green sericitic locally extremely carbonate rich lithic tuff - agglomerate		273.1	
	275	Fault - // to c.A - broken core		274.9 275	

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	TRACE	COMMON	ABUNDANT	MASSIVE	DEPTH m	MINERALIZATION
3·0		Lithology – as above – lt. grey green sericitic locally carbonate rich lithic tuff – agglomerate.							273·1 – 281·4 (approx) Py 2-3 (10) v.f.g. py diss & as v.f.g. rimming (replacing) lithic fragments.
			Sid Wi					277·1	
		1cm c. vein – 60° c.A.	Sid					277·4	
		1cm c vein – 30° c.A.	Sid					277·8	
								278·4	
3·0		10cm c. vein – 40° c.A.	Sid					279·35	
	280							280	
3·0		3 – 1cm c veins 70° to c.A.						281·0	
		Fault – broken core – 40° c.A.	F					281·3	
								281·4	281·4 – 307·4 · py trace (1-2) as v.f.g. py. rimming lithic fragments.
3·0	285							285	
3·0									
3·0	290							290	
3·0		Fault – broken core.	F					293·2	
3·0	295							295	
3·0									
3·0	300							300	

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
		Lithology – as above – Lt. grey green sericitic & carbonate rich lithic tuff.- agglomerate.							
		1cm c. vein // to c.A.						301.6	
3.0									
	305							305	
3.0									
	307.4	END OF HOLE							
	310							310	
	315							315	
	320							320	
	325							325	