



DRILL LOG

Project: Haldane	Collar Elevation (m): 1237.0
Hole HLD10-1B	Azimuth (°): 90.0
Location: 7082492 m North 456864 m East	Dip (°): -55.0
Logged by: T. Branson	Length (m): 258.00
Drilled by: Dorado Drilling	Horizontal Projection:
Assayed by: ALS Chemex	Vertical Projection:
Core Size: NQ	Objective To drill through steep dipping veins and structures of the Johnson Zone to better understand stratigraphy and structure.
Date Started: 2010/06/09 Date Completed: 2010/06/13	
Dip Tests By: Reflex tool	

Summary Log:

0 - 19.8 m Overburden
 19.8 - 53.30 m Grey quartzite commonly hosting phyllitic zones
 42.00 - 50.87 m Vein fault structural zone with strongly weathered, oxidized and bleached quartzite
 53.30 - 113.00 m Quartzite and phyllite interbedded units
 104.35 - 108.00 m Broken and faulted ground interpreted as the Johnson Zone Vein system
 113.00 - 136.97 m Quartzite with minor phyllite zones
 136.97 - 177.85 m Quartzite and phyllite interbedded units
 177.85 - 215.80 m Quartzite with minor phyllite zones
 215.80 - 232.35 m Quartzite and phyllite interbedded units
 232.35 - 234.20 m Clay-altered felsic dyke
 234.20 - 258.00 m Quartzite with minor phyllite zones
 258.00 m - End of Hole



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Downhole surveys:

Depth	Dip	Azimuth
25.00	56.20	90.05
75.00	57.40	91.05
116.00	59.40	91.05
176.00	60.50	93.05
258.00	61.20	96.75

Hole ID: HLD10-1B

Project: HALDANE

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From	To	Rocktype & Description	0	4	0	4	0	4	0	4	0	4	0	4	From	To	Width	Sample	Ag ppm	Pb ppm	Zn ppm
0.00	19.80	OVBN	0																		
HQ Core																					
Mainly composed of unoxidized to oxidized quartzite rubble, and clay seams.																					
19.80	53.30	QRZT	20												20.00	21.60	1.60	475075	2.4	213	490
Quartzite																					
Grey, fine grained, generally dirty texture due to micas and possibly PY.																					
Commonly hosts phyllitic interbeds of schistose character. Further down section grades into and out of phyllitic beds.																					
Minor alteration (CL, LI) zones present. Weakly schistose along bedding plane, visible where fractures cut across bedding.																					
Moderately to strongly fractured with LI, MN coatings or QZ fracture-fill.																					
Generally erratic orientation. When not completely weathered, fractures are commonly filled with silvery to purplish-blue metallic mineral with metallic lustre, and light brown streak (MN oxides or galena?). A dull silvery dendritic textured metallic mineral rarely coats these fractures.																					
Veining is common with two prominent, commonly perpendicular orientations: parallel to bedding plane (55-75 deg) and, cross-cutting bedding (25-40 deg).																					
Veins are primarily quartz and host metallic mineralization, though commonly weathered out. Mineralization primarily hosted in veins cross-cutting bedding																					
															21.60	23.00	1.40	475051	2.1	161	471
															23.00	24.50	1.50	475052	0.5	20	205
															24.50	27.50	3.00	475053	2.2	86	233
															27.50	29.45	1.95	475054	4.7	386	257
															29.45	32.10	2.65	475055	2.1	144	76
															32.10	32.85	0.75	475056	1.3	129	175
															32.85	33.35	0.50	475057	2.5	147	461
															33.35	34.15	0.80	475058	7.1	780	680
															34.15	36.00	1.85	475059	4.1	447	464
															36.00	37.55	1.55	475060	1.8	180	245
															37.55	38.30	0.75	475061	1.2	99	69
															38.30	39.35	1.05	475062	1.6	138	218
															39.35	41.70	2.35	475063	2.1	165	129
															41.70	42.00	0.30	475064	0.7	11	1605
															42.00	42.20	0.20	475065	2.8	324	2430
															42.20	43.35	1.15	475066	8.7	1455	3190
															43.35	45.43	2.08	475067	2.5	216	915
															45.43	46.10	0.67	475068	2.4	46	839
															46.10	46.70	0.60	475069	1.9	291	555

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From	To	Rocktype	& Description	0	4	0	4	0	4	0	4	0	4	From	To	Width	Sample	Ag ppm	Pb ppm	Zn ppm
53.30	54.00	PHYL	Phyllite																	
Black to light grey, nearly shistose character with thinly (<1 mm to 1 cm) bedded dark and light bands, QZ veins and boudinage, simple to S folds and QRTZ interbeds.																				
QZ boudinage at 53.35 m and 53.75 m.																				
@ 53.60 m Hosts an S fold with fold axis at 45 deg tca nearly parallel to bedding. Up section bedding is 50 deg, below it is 45 deg.																				
Lower contact is sheared up and indistinct.																				
54.00	56.75	QRZT	Quartzite											54.00	54.00	0.00	475076	0.0	3	21
Typical QRTZ as above.														55.80	56.70	0.90	475077	1.8	145	1220
Upper contact core piece hosts an indistict fold that doesn't fit with the next piece of core.																				
1-10cm pyrite selvage bands parallel to bedding of 60 deg hosted at 54.10 m, 54.13 m, 54.45 m, 54.65 m, 55.25 m, 55.55 m, 55.70 m and 56.05 m.																				
Phyllitic bands for 8-10 cm at 54.20 m, 55.70 m, and 56.30 m.																				
Minor 1-2 mm calcite veins cross-cutt bedding at 50 deg tca at 55.00 m over 15 cm.																				
@ 56.50 two 2cm pyrite selvage bands with strong weathering cross-cut bedding at 30 deg tca.																				
Lower contact is sharp with phyllite, parallel to bedding at 60 deg tca.																				
56.75	57.35	PHYL	Phyllite																	
Typical phyllite. Bedding at 40 tca . Minor QZ boudinages. Wavy beds with a wide crenulation appearance at 56.95 m.																				

45°

60°

30°

40°

55

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From	To	Rocktype	& Description	CB	CL	MM	MS	SY	From	To	Width	Sample	Ag ppm	Pb ppm	Zn ppm
			Lower contact grades into QRTZ along beds at 40 deg.	0	4	0	4	0							
57.35	59.70	QRZT	Quartzite												
			Typical quartzite.												
			Fold visible in beds at 57.55 m with an axial trace of 40 deg.												
			@ 57.70 m A 10 cm QV cuts through in a phyllitic zone hosted in the QRTZ. Lower contact is parallel to bedding at 40 deg tca, though upper contact is moreorless parallel to bedding at 60 deg but difficult to tell because of fold.												
			Minor 1-2 mm calcite veins, 50 deg parallel to bedding at 58.00 m, and cross-cutting bedding at 30 deg tca at 58.10 m.												
			@ 59.20 m A 10 cm QV with w CL cuts across bedding in a phyllitic band of beds at 50 deg tca.												
			@59.40 m An S fold with 45 deg tca fold axis folds QRTZ over 20 cm. Below fold beds are oriented at 60 deg tca and grades into a 5 cm phyllitic section before being cut by a 2 cm QV at 85 deg tca.												
			From 59.57 m to 59.70 m QRTZ is weakly altered by CB and has 1cm PY selvage bands.												
			Lower contact is undulatory with phyllites below at approx. 70 deg tca.												
59.70	63.60	PHYL	Phyllite						60.30	62.60	2.30	475078	0.4	9	267
			Less shistose than typical phyllite section. Mainly shaly with very thin (1-3 mm) bands of quartz interbeds. Hosts several QV boudinage, pyritic selvage bands and high strain zones.						62.60	63.60	1.00	475079	0.3	9	123
			QV boudinage parallel to bedding at 60.60 m (2 cm), 60.66 m (1.5 cm), 60.69 m (1 cm), 60.81 m (3 cm) hosting 1% <1mm PY xtals and wCL alteration of phyllite, 61.40 m (1 cm), and 63.45 m (5 mm)												

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From	To	Rocktype	& Description	CB	CL	MM	MS	SK	From	To	Width	Sample	Ag ppm	Pb ppm	Zn ppm
Pyritic selvage bands parallel bedding (50 deg) at 60.30 m (2 cm), 61.15 m (3 cm) and 62.70 m (1.5 cm).															
Strain zones with weakened gougey phyllite at 60.00 m, 60.75 m, and 62.05 m.															
Sulphidic cross-cutting veins at 61.20 m (50 deg tca, 2 mm), 61.75 m (60 deg tca, 2 mm), 62.80 m (55 deg tca, 4 mm), 63.00 m (55 deg tca, 2 mm), 63.50 m (50 deg tca, 2 mm), and 63.53 m (50 deg tca, 2 mm).															
Lower contact grades into QRTZ along bedding.															
63.60	67.15	QRZT							65.35	66.45	1.10	475080	0.5	16	139
Quartzite															
Mainly typical QRTZ with phyllitic interbedded sections, minor <1 mm LI weathered fractures cross-cut bedding, weak CB alteration in places, and quartz veining in phyllitic zones.															
Phyllitic sections at 64.25 m (over 45 cm), 65.60 m (over 20 cm with a QV+3% PY forming along beds).															
QV with mod LI weathering and wCL alteration at 63.90 m and 65.60 m (3 cm, 50deg parallel to bedding, with 1% PY), 65.85 m (3 cm, 50 deg), and 66.10 m (30 cm within phyllitic beds spaced out 0.5 to 5 cm).															
PY selvage zone @ 66.65 m for 1.5 cm parallel to bedding at 50 deg.															
Lower contact is broken phyllite at approx. 60 deg.															
67.25	71.55	PHYL							71.00	71.75	0.75	475081	0.0	4	72
Phyllite															
Mainly typical schistose phyllite with QRTZ sections and interbeds, highly sheared and strained zones, QV and boudinage and minor LI weathering on fractures and PY selvage bands.															
Highly sheared and deformed but cohesive at 67.40 m for 20 cm with dominate strain at approx. 45 deg tca, 69.20 m to 69.35 m strongly deformed and less coherent but still intact.															

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From	To	Rocktype & Description									From	To	Width	Sample	Ag ppm	Pb ppm	Zn ppm
		QRTZ band at 69.35 m (25 cm) gradually grading back into PHYL.															
		PY selvage bands at 67.70 m (2.5 cm at 50 deg and parallel to bedding), 68.95 m (1 cm), 71.15 m (2 cm).															
		QV with weak chloritized phyllite fragments and trace PY at 67.28 m (boundinage? appears to pinch slightly, 1-2.5 cm parallel to bedding at 40 deg tca), 68.50 m (3.5 cm), 68.85 m (2.5 cm, orangish in colour), 69.07 m (6 mm boudinage with mod LI weathering), 69.11 m (7-9 cm) 69.48 m and 69.55 m (Boudinage QZ , 1 cm parallel to bedding), 69.91 m (Boudinage QZ, 3 cm), 71.05 m, 71.25 m and 71.50 m (Boudinage, 1-2 cm).															
		PY fracture fill at 71.22 m and 71.55 m (1 mm) PY veinlet cross-cuts bedding at 71.35 m (1 mm).															
		Lower contact has a strained appearance with QZ/phyllite melange before quickly grading to QRTZ.															
71.55	72.90	QRZT									72.70	72.90	0.20	475082	1.3	11	147
		Quartzite															
		Typical grey QRTZ with QVs parallel to bedding and cross-cutting beds, PY selvages, minor fracturing across beds at 30 deg tca and an S fold. Bedding at 60 deg tca.															
		@ 71.60 m A series of 1-2 mm QV parallel to bedding over 10 cm, QV cutting beds at 71.80 m (3 cm at 40 deg), 72.12 m (12 cm, cutting through beds at 60 deg tca). Below here, quartz forms pinching and swelling veins with random swirling orientations, 1-2 cm wide, likely due to S fold at 72.39 m with fold axis at 80 deg. Bottom of unit has a QV partially incorporating PHYL just above the contact.															
		PY selvage bands at 72.00 m (4 cm) and 72.10 m (2 cm).															
		Lower contact is formed by 2.5 cm boudinage QV separating the QRTZ and PHYL.															

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From	To	Rocktype	& Description	0	4	0	4	0	4	0	4	0	4	0	4	From	To	Width	Sample	Ag ppm	Pb ppm	Zn ppm
			From 79.85 m to 79.92 m, orange tinted QZ swirls with 0.5-1% PY cut beds and appears strained.																			
			Lower contact is sharp with QRTZ at 40 deg.																			
79.95	81.05	QRZT	Quartzite													80.20	80.50	0.30	475084	0.4	3	52
			Typical grey quartzite with two pyllitic zones on either side of a quartz vein, a fold and minor fracturing. Bedding at 40 deg tca.													80.20	80.50	0.30	475085	0.4	2	47
			Phyllitic zone @ 80.15 m over 8 cm, hosts a 2 mm PY vein at 45 deg tca cross-cutting beds. Bottom transition is sharp and undulatory. 12 cm QV @ 80.33 m with minor CL, trace PY and cross-cuts beds at 40 deg tca. Phyllitic zone at base of QV for 3 cm.																			
			1.5 cm boudinage QV at 80.55 m above hinge of fold with fold axis at 50 deg tca.																			
			Lower contact is sharp at 50 deg tca PHYL.																			
81.05	84.78	PHYL	Phyllite													81.50	82.25	0.75	475086	0.2	4	31
			Typical PHYL with QRTZ zones, overprinting QVs, commonly boudinaged, PY veins x-cutting beds and a PY-rich zone. Bedding is ~40 deg.													82.25	83.50	1.25	475087	0.9	77	116
			QRTZ zones are at 81.38 m (5 cm), 81.76 m (35 cm) with bedding parallel (2 cm @ 81.77 m, 6 cm @ 81.95 m) and overprinting QVs (82.05 m, 50 deg tca cross-cutting beds),													83.50	84.78	1.28	475088	0.9	31	120
			Boudinaged at 82.09 m (1.5 cm), 82.30 m (1 cm vein, offset 5 mm, by cross-cutting 2 mm PY vein), 82.80 m (20 cm QV with mod LI staining/weathering and mod CL alteration, bottom of vein in phyllite has parasitic folding-like appearance), 83.03 m, QV boudinaged (2-5 cm).																			
			84.00 m, a 2 cm vein at 30 deg tca cross-cuts bedding intersects with a 2.5 cm vein parallel to bedding at 60 deg tca. A smaller version of this x-cutting relationship is found at 84.19 m.																			

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From	To	Rocktype & Description	CB	Q	W	MS	Sy	From	To	Width	Sample	Ag ppm	Pb ppm	Zn ppm
		common QZ boudinage, w-mod LI weathering, along fractires and QVing, rare blebs of PY, commonly disseminated, and zones hosting bladed xtals within and cross-cutting beds. Bedding varies between 30-55 deg tca.	0	4	0	4	0	4	0	4	0			
		QRTZ zones located at 88.35 m (10 cm), 91.25 m (25 cm), 93.17 m (15 cm) and 96.25 m (50 cm).												
		Intense QV, swirling and/or bedding parallel located at 88.20 m (20 cm), 89.28 m (50 cm), 90.10 m (25 cm), 95.45 m (22 cm), 96.30 m (30 cm), 97.95 m (10 cm), 98.20 m (35 cm) and 98.65 m (20 cm).												
		Cross-cutting veins at 90.30 m (3-5 mm over 5 cm with 1% PY at 30 deg).												
		Blebbly PY at 88.45 m (up to 2.5 cm wide) hosted in quartz of deformed zone with a semi-brecciated appearance.												
		Pyrite selvage zones at 96.60 m (1.5 cm) and 96.80 m (4 cm), and 97.20 m (3 cm).												
		Bladed xtals (1-2 cm) with light grey colour elongated along bedding from 90.45 m to 94.80 m in mainly shaly sections of the core. Commonly with 1% disseminated PY along bedding planes.												
		@ 93.96 m a tight almost recumbent S fold with fold axis at 55 deg tca.												
		Lower contact is marked by a 2.5 cm QV cutting along PHYL beds then 0.5 cm of PHYL before quickly grading to QRTZ..												
98.84	101.50	QRTZ												
		Quartzite												
		Typical section QRTZ unit with zones of wCB alteration and minor associated bleaching, minor x-cutting fractures, QVs near parallel to bedding and swirling QV approaching the lower contact. No PHYL bands. Bedding at 50 deg tca.												
		QVs vary in wide from 2.5-6 mm, most have organish tint. Vein density about 6/m. From 101.25 m, beds are dissoluted by QZ with wCL and orangish tint .												
		Lower contact is sharp with PHYL at 60 deg, parallel to beds.												

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From	To	Rocktype	& Description	CB	CL	MM	MS	SK	From	To	Width	Sample	Ag ppm	Pb ppm	Zn ppm
				0	4	0	4	0	4						
101.50	103.00	PHYL													
Phyllite															
Typical PHYL with a QRTZ section, common QZ boudinage, bladed xtals sections and minor LI weathering. Beds at 50 deg tca.															
QRTZ section at 101.55 m (6 cm). QV's parallel to bedding at 101.75 m (7 cm, with wCL) and parasitic folding oriented at 70 deg tca of PHYL 1cm below vein and 102.35 m (15 cm, mCL and 1% weathered PY) with bladed xtal zone the 6 cm before the vein. A 2 mm PY vein cuts through lower QV at 45 deg tca.															
Lower contact is sharp with QRTZ at 40 deg tca.															
103.00	110.92	QRZT													
Quartzite															
Top part of unit is typical QRTZ with weak bleaching though at 104.35 m becomes highly oxidized and mineralized with poor recovery to 108.00 m. Drilling encounter problems through this zone when reaming. Some PHYL zones just above, in amongst mineralization and towards lower contact. 1-2 mm calcite veins cross-cut beds at end of unit. Bedding at ~40 deg tca, but through mineralized zone up to 85 deg and at 60 deg by lower contact.															
QZ bands, 1-2 mm wide form along beds for first 80 cm before becoming mainly interbeds of PY selvage, LI weathered PHYL.															
@ 104.35 m, 20 cm of strongly weathered, brittle, mainly metallic zone with xtal structure unidentifiable is encountered. Short bands of thin (2-5 mm) sulphide mineralization form along fractures and within QVing past this zone until 108.00 m. Phyllite interbeds common through this zone, as is QVing, alteration selvage around fractures, strong CL alteration and LI weathering, PY bands and fault gouge.															
From 108.00-109.00 m, sulphide mineralization is less prevelant, forming in veins, but only about 1%. Veining generally cross-cuts beds at 30 deg tca with															
						</									

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From	To	Rocktype & Description	CB	CL	ML	MS	SY	From	To	Width	Sample	Ag ppm	Pb ppm	Zn ppm
		veins 2-10 mm wide. Alteration halos common around fractures.	0	4	0	4	0							
		109.00 m to end of section has several 1-2 mm calcite veinlets cross-cutting beds at 30 deg tca and a 10 cm QZ+/-CA vein with wCL cutting along PHYL beds at 110.40 m. Beds are 50 deg tca above vein and 40 deg below. PHYL section is from 110.25-110.75 m with a boudinaged QV at 110.65 m (2.5 cm wide).												
		Lower contact is sharp at 35 deg with PHYL												
110.92	113.20	PHYL												
		Phyllite												
		This unit is similar to typical PHYL, though with more common QRTZ interbeds, CB altered zones, minor LI weathering, parasitic folding, QZ+CA veining and QZ boudinage. Bedding at 50-60 deg tca.												
		QV at 110.95 m with boudinaged appearance (6-8 cm in width)												
		QZ+CA veins located at 111.01m (12 cm, bedding parallel), 111.19 m and 111.38 m (2 mm, x-cutting beds at 45 deg), and 112.25 m (2 cm, bedding parallel)												
		Parasitic folding @ 111.90 m with axis at 45 deg, parallel to bedding with associated wCB beds 1 cm wide below for 15 cm.												
		Lower contact is quickly grades in to QRTZ at 65 deg tca.												
113.20	136.97	QRZT												
		Quartzite												
		Mainly typical grey QRTZ with PHYL sections, QVing with rare boudinage, minor LI weathering, CB alteration in places and rare CA veins and trace PY. Beds predominately at 65 deg tca.												
		PHYL sections at 113.70 m (20 cm), 113.95 m (15 cm), 114.58 m(7cm), 116.00 m (15 cm), 117.45 m (5 cm), 120.63 m (7 cm), 122.60 m (4 cm), 125.05 m (5 cm), 126.37 m (32 cm), 126.83 m (12 cm) 130.72 m (3 cm), 131.70 m (13 cm, with 3% PY hosted along bedding), 131.97 m (25 cm, 3% PY along bedding), 132.44 m (7 cm), 132.69 (4 cm), 132.86 (6 cm), 133.45 (43 cm, with 2 x 5 cm QZ+CA veins @ 133.50 m and 133.57m) and 136.50 m (15 cm). QV (0.5-2 cm) and boudinage common within PHYL beds.												

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From	To	Rocktype	& Description	CB	CL	ML	MS	SY	From	To	Width	Sample	Ag ppm	Pb ppm	Zn ppm
			QVing, bedding parallel, at 114.80 m (3 cm) 115.15 m (4 cm), 115.35 m (13 cm), 117.30 m (3 x 1 cm over 4 cm), 134.25 m (4 cm). Cross-cutting at 118.50 m (40 deg, 2 cm), 129.35 m (30 deg, 1 cm). 130.55 m (30 deg, 8 mm), 134.10 m (30 deg, 1.1 cm), 135.00 m (30 deg, 7 mm).												
			Open fold located at 132.32 m with fold axis oriented at 50 deg tca.												
			Lower contact is at 55 deg and quickly grades into PHYL .												
136.97	139.20	PHYL	Phyllite						137.15	137.90	0.75	475103	0.4	9	55
			Mainly typical PHYL with QRTZ sections, abundant (upt to 5%) PY hosted along beds, within cross-cutting CA+PY veins, hosted within bedding parallel QVs and boudinage (trace-1%) and as fracture fill. Also, wCB altered beds hosted within PHYL. Bedding is predominately 60 deg tca.												
			QRTZ located at 137.86 m (50 cm, with several 1-3 cm QVs parallel to bedding, one boudinaged at 138.10 m), 138.67 m (20 cm).												
			Weakened zone of PHYL at 137.45 m for 5 cm.												
			CA+PY veins x-cutting beds at 137.37 (45 deg, 2 mm), 137.48 (45 deg, 2 mm), and 138.60 m (45 deg, 2 mm).												
			QVs +/-CA with wCL alteration at 137.05 m (Boudinaged, 3 cm), 137.17 m (4cm), 138.60 m (5cm).												
			Lower contact grades quickly into QRTZ at 80 deg.												
139.20	148.50	QRTZ	Quartzite						143.10	145.25	2.15	475104	0.3	7	32
			Typical grey QRTZ with PHYL interbedded QRTZ, PHYL sections hosting PY+/-PO veins and fracture-fill, large QZ+/-CA veins with wCL and trace-1% PY, mainly bedding parallel, and rarely cross-cutting, rare disseminated PY in small, <1mm xtals, and w-sCB alteration in places. Bedding at 55-60 deg tca.						143.10	145.25	2.15	475105	0.3	10	36
			PHYL zones located at 139.60 m (5 cm), 140.05 m (20 cm, hosting a fold with fold axis at 70 deg), 141.75 m (10 cm), 142.05 m (22 cm), 143.10 m (10 cm).												

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From	To	Rocktype	& Description	Ca	Cl	Mn	Ms	Sy	From	To	Width	Sample	Ag ppm	Pb ppm	Zn ppm
			@ 173.52 m is a 1cm QZ+CA+PY vein cross-cutting bedding at 45 deg tca with 10% PY down the center of the vein. Half in PHYL zone beginning at 173.50 m (10 cm).												
			Lower contact with phyllitic quartzite grades quickly at 60 deg.												
175.05	177.85	PQTZ	175						175.05	177.00	1.95	475109	0.2	14	76
		Phyllitic quartzite													
			This unit is mainly interbedded quartzite and phyllitic beds, giving a schistose appearance to most of the unit. Difficult to break unit out into seperate units. Several QZ+/-CA veins parallel beds generally 3-7 cm, commonly boudinaged. 1-3 mm CA+/-PY veinlets x-cut beds at 45 tca and are very common through slightly more phyllitic zones. PY also more common in slightly more phyllitic zones up to 3%. w-mCB alteration of beds common. Folding within beds visible in places. Patchy wCL alteration. Bedding at 60 deg tca.												
			Lower contact is formed by QV at 60 deg and parallel to bedding.												
177.85	215.80	QRZT							183.58	184.76	1.18	475110	0.0	6	54
		Quartzite							192.00	193.33	1.33	475111	0.0	2	18
			Typical QRTZ with PHYL zones, w-SCB alteration of select beds, w-sMS+/-CL alteration of select beds and fractures, PY common as fracture fill and within veins and beds of PHYL zones, trace disseminations within QRTZ sections. 1-20 cm QZ+/-CA veins parallel to bedding common, 1-2 mm veinlets cross-cut bedding at 30-45 deg tca and boudinage associated with PHYL zones less common. Rare PO hosted within QVs. Bedding mainly at 50-55 deg tca.						201.00	202.85	1.85	475112	0.0	2	23
			PHYL zones generally hosting bedding parallel and cross-cutting veins and boudinage, w-mCL alteration and 1-5% PY at 180.15 m (15 cm), 180.90 m (10 cm), 183.57 m (24 cm), 184.15 m (24 cm), 184.51 m (20 cm), 185.55 m (10 cm), 186.67 m (5 cm), 188.15 m (5 cm), 188.85 m (8 cm), 190.05 m (6 cm), 190.40 m (20 cm), 191.41 m (2 cm), 191.48 m (5 cm), 191.58 m (2 cm), 191.80 m (15 cm), 192.25 m (17 cm, with a 9 cm QV parallel to beds), 199.14 m (28 cm), 201.25 m (8 cm), 201.45 m (11 cm, with 1 cm boudinage QV), 202.12 m (9 cm), 202.51 m (14 cm hosting boudinaged 1-3 cm QVs x 4), 203.62 m (10 cm) and 208.55 m (26 cm hosting several QZ bands and boudinage).						213.30	213.85	0.55	475113	1.3	210	675

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*graphic log not to scale

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From	To	Rocktype	& Description	CB	CL	ML	MS	PY	From	To	Width	Sample	Ag ppm	Pb ppm	Zn ppm			
<p>Bedding parallel QZ+CA veining +/-wCL and PY located at 178.65 m (3 x 0.5-1 cm over 4 cm), 179.20 m (4 cm), 179.44 m (6 cm), 179.55 m (1.5 cm boudinage), 179.6 m (3 cm boudinage), 180.10 m (5 x 0.5-1 cm boudinage over 17 cm), 180.42 m (1 cm boudinage), 180.97 m (3 cm), 181.15 m (9 veins from 0.2-10 cm wide over 50 cm). 181.85 m (1 cm), 182.00 m (10 cm), 182.23 m (5 cm), 183.68 m (10 cm), 185.67 m (2 cm), 185.80 m (10 cm), 186.00 m (0.5 cm, 30%PO), 186.50 m (2.5 cm), 187.97 m (2.5cm), 188.25 m (19 cm), 191.84 m (4 cm), 192.18 m (7 cm), 192.32 m (9 cm), 193.66 m (1 cm), 193.78 m (3 cm), 194.05 m (6 x 0.3-1 cm over 15 cm), 194.37 m (3 cm), 202.06 m (6 cm), 202.65 m (19 cm), 203.63 m (7 cm), 205.60 m (1 cm), 205.85 m (2 cm), 306.35 m (2 cm), 206.50 m (3 x 0.5-2 cm over 15 cm), 207.25 m (60 cm with regular 5 cm spaced 3-10 mm veins), 208.88 m (9 cm), 209.28 m (2 cm), 209.90 m (25 cm of ten 3-15 mm QVs), 210.62 m (11 cm), 211.55 m (Regularly spaced 2-5 cm veins ,10 cm apart for 70 cm), 213.15 m (1 cm cross-cutting at 30 deg tca), 214.05 m (1 cm), 214.30 m (8 cm), 214.50 m (7 cm).</p> <p>At 213.30 m, a moderately weathered xtallized metallic mineral PY? GL? forms on fracture surfaces, as does a shiny bluish-purple metallic mineral with a residue appearance and a silver streak only found over a 55cm interval.</p> <p>Lower contact quickly grades into PHYL at 55 deg.</p>				0	4	0	4	0	4	0	4	0						
215.80	218.75	PHYL							216.00	217.65	1.65	475114	0.4	6	87			
<p>Phyllite</p> <p>Typical PHYL unit, highly deformed in places with abundant bedding parallel QZ+/-CA+/-PY veining throughout, rarely boudinaged, 1-3% PY, trace PO, w-mCL and mMS along fractures and veins, wCB altered interbeds and hosts a zone of fault gouge just above the lower contact. Beds at 45-60 deg tca.</p> <p>Fault gouge is at 218.70 m over 2 cm.</p> <p>Lower contact is sharp at 70 deg with QRTZ.</p>									217.65	217.65	0.00	475115	0.0	28	20			
218.75	221.50	QRZT																
<p>Quartzite</p> <p>Typical QRTZ with PHYL sections, w-mMS alteration on fractures and along some beds, trace PY disseminated throughout QRTZ zones, veins of PY forming within PHYL sections, and only minor veining mainly parallel to bedding. Bedding at 60</p>																		

Project: HALDANE

Hole Number: HLD10-1B

From	To	Rocktype	& Description	From	To	Width	Sample	Ag ppm	Pb ppm	Zn ppm
			deg tca.							
			PHYL sections at 219.30 m (2.5 cm), 219.35 m (4 cm), 219.43 m (2 cm), 219.57 m (4 cm), 219.68 m (2 cm), 221.20 m (4 cm), and 221.30 m (3 cm).							
			Lower contact is broken up but appears to be at 60 deg.							
221.50	224.05	PHYL		221.80	223.50	1.70	475116	0.2	8	59
		Phyllite								
			Typical PHYL, with QRTZ sections hosting mMS alteration of beds, QVing bedding parallel common with several boudinages, and 1-3 mm PY veins x-cut beds at 45 deg.							
			QRTZ sections at 221.65 m (10 cm) and 223.30 m (10 cm, hosting 2 cm boudinage QV).							
			QVing at 221.52 m (2 cm), 221.60 m (3 x 1 cm boudiange), 222.70 m (2 cm), 222.74 m (4 cm), 223.00 m (2 cm boudinage), 223.05 m (3 cm), 223.10 m (2 cm) and 223.15 m (3 x 0.5-2 cm boudiange over 9 cm).							
			Lower contact is sharp with QRTZ at 40 deg.							
224.05	232.35	QRZT		230.75	232.35	1.60	475117	0.2	5	44
		Quartzite								
			Typical QRTZ with wCL altered PHYL sections, QVing common and mainly parallel to bedding, rarely x-cutting and boudinaged, trace PY disseminate through QRTZ zones, minor w-mMS alteration of bedding in places, three folds visible, brecciated in one interval and hosts a zone of fault gouge. Bedding is at 60 deg.							
			PHYL section at 224.30 m (18 cm, ending above a 5 cm fault gouge with QZ grains and PHYL fragments), 228.40 m (10 cm), 228.60 m (12 cm), 228.92 m (8 cm), 229.30 m (4 cm), 230.46 (3.5 cm), 231.17 m (4 cm), 231.58 m (40 cm, hosting four 1-2 cm cross-cutting PY veins), and 232.15 m (20 cm, hosting two 4-5 cm boudinage QVs).							
			Breccia zone is between 226.25 m and 226.65 m. Breccia is nearly entirely clast supported with angular fragments and only 5% QZ matrix.							

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From	To	Rocktype	& Description	Ch	Cl	Mm	Ms	Sx	From	To	Width	Sample	Ag ppm	Pb ppm	Zn ppm
			QVing cross-cuts beds located at 224.85 m (30 deg tca, 1 cm), 225.50 m (30 deg, 2 mm). Parallel to bedding at 226.65 m (2 cm), 229.45 m (4 cm), 229.79 m (17 cm), 231.10 m (boudinaged, 1 cm), 231.50 m (4 cm)	0	4	0	4	0	4	0	4				
			Folds located at 228.35 m (60 deg, tight), 228.60 m (60 deg, tight) and 229.15 m (60 deg, tight).												
			Lower contact is indirectly measured at 60 deg with a piece of core from the dyke.												
232.35	234.20	DYKE							232.35	234.20	1.85	475118	1.2	32	118
		Clay-altered Dyke													
			Pale green from strong clay and moderate CL alteration, aphanitic groundmass with short (1 mm) bladed xtals and xenocrysts of QRTZ hosted near contact. Not uniform throughout with bladed xtals dissipating toward end of unit. Unit hosts abundant PY in veinlets, along fractures, and within a QV oriented at 30 deg tca.												
			Lower contact is rubbly on both sides, though the rubble distinctly grades into phyllitic QRTZ.												
234.20	258.00	QRZT							241.30	242.40	1.10	475119	0.2	9	59
		Quartzite													
			Typical QRTZ hosting PHYL sections, QVing with wCL +/- PY (rare PO), mainly parallel to beds, w-mMS beds and along fractures, Trace PY disseminated, common as fracture-fill and as veins x-cut bedding. Bedding at 60 deg, though a wide open fold is developed within beds.												
			PHYL sections at 236.62 m (5 cm), 236.99 m (3 cm), 237.65 m (7 cm), 241.30 m (110 cm, hosting a 18 cm QV with 1% blebby PO and PY and a several QZ boudinage ranging from 0.5-4 cm), 244.00 m (38 cm hosting a 3.5 cm QZ boudinage vein), 244.75 m (7 cm), 246.51 m (50 cm, hosting 4 boudinage QV ranging from 1-4 cm and one 6 cm QV), 247.78 m (38 cm, hosting a 1 cm and 3 cm as well as a 4 cm QZ boudinage), 248.80 m (55 cm, hosting an 18 cm QV), 251.04 m (4 cm), 251.40 m (6 cm), 252.10 (39 cm, hosting several boudinage QV for 0.5-3 cm), 252.76 m (7 cm), 255.52 m (15 cm, hosting a 8 cm boudinage), and 256.78 m (8 cm).												

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Hole Number: HLD10-1B

From	To	Rocktype	& Description	Ch	Cl	Mn	Mg	Sy	From	To	Width	Sample	Ag ppm	Pb ppm	Zn ppm
			QVing mainly parallel to bedding at 234.66 m (10 cm), 236.85 (5 cm), 237.00 m (53 cm of several veins approx. every 5 cm varying from 0.5 cm to 3 cm, some boudinaged), 239.32 m (2 cm erratic veins forming beneath fold), 239.55 m (20 cm), 242.53 m (15 cm), 243.26 m (75 cm), 244.25 m (4 cm), 244.71 m (4 cm), 245.70 m (32 cm), 246.27 m (4 cm), 247.12 m (65 cm with two 3 cm beds in amongst QZ), 248.17 m (33 cm QV with six 1-2 cm interbeds of QRTZ), 249.52 m (12 cm), 250.72 m (4 x 1-4 cm veins over 22 cm), 251.47 m (40 cm of zebra appearance with several QVs 2-12 mm wide over the interval), 254.38 m (7 cm), 254.67 m (3 cm), 254.84 m (6 cm), 255.12 m (8 cm), 255.39 m (13 cm) and 257.72 m (11 cm).	0	4	0	4	0	4	0	4				
				</											

Drill Log Legend



DYKE
OVBN
PHYL
PQTZ



QRZT
S-fold
bedding
fault



fold
foliation
vein