





DIAMOND DRILL RECORD

HOLE NUMBER : SD 17

LOGGED BY : P. Roberts

NWPS

INTERVAL (m)		RECOVERY		DESCRIPTION	FORM	% Sn												
FROM	TO	m	%			FROM	TO	TOTAL	ACID SOL.	% Cu.	% Al.	% S.	% Pb.	% Zn.	% Bi.	g/l Ag	% WO <sub>3</sub>	
0.0	25.9	13.0	50	<p>FINE GRAINED SANDSTONE</p> <p>Very pale brown, bedded, generally soft and friable. Minor grey siltstone. Down to 14.7m, includes patchy minor fine grained sulfides, disseminated and in veinlets, with patchy tourmalinised zones - brown black tourmaline in veins - quartz and in blebs (1-5mm diameter) with fine muscovite. Below 14.7m, very minor pyrite generally in veinlets, only trace patchy muscovite. BCA'S (below 15m) 30-35°. Very badly broken on bedding and joints. 12.9m core loss.</p>														
25.9	59.6	17.7	53	<p>SILTSTONE</p> <p>Cream, pale grey, laminated, soft and friable (weathered) at top, becoming harder with depth and darker grey. Very minor pyrite in veinlets. BCA'S 35-40°. Very badly broken on bedding and joints. 16.0m core loss.</p>														
59.6	71.8	10.8	89	<p>ALTERED QUARTZITE</p> <p>White to mottled, very pale brown; including fine grained mica and minor brown tourmaline in streaks and blebs, and minor patchy pyrite, finely disseminated and in thin veins. Banded (bedding?), BCA'S 25-40°, average 30°. Broken on bedding and rough joints. 1.6m core loss.</p> <p>62.6-63.0m Andalusite-bearing hornfels, dark grey, laminated, with disseminated andalusite throughout. Minor veinlet pyrite.</p> <p>66.5-66.65m Andalusite-bearing hornfels as above, but with abundant fine grained disseminated muscovite.</p>														
71.8	89.8	15.7	87	<p>ANDALUSITE HORNFELS</p> <p>Dark grey, weakly bedded or unbedded, comprising dark grey hornfelsed shale. Abundant disseminated andalusite (?) laths averaging 0.5x3.0m. Some of core has a sheen due to very fine grained mica (?). Minor coarse grained pyrite in pod-like veins + quartz up to 1cm thick. B.C.A'S 20-35°, averaging ~30°. Broken to badly broken on joints. 2.3m core loss.</p>														
89.8	154.6	59.8	92	<p>HORNFELS</p> <p>Dark grey, hornfelsed siltstone, largely bedded, non-calcareous. Numerous quartz veins 0.5-1.0cm thick, some near-parallel bedding commonly irregular (ptygmatically folded?), lesser thinner veins</p>														

032

07-084

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003

INTERVAL (m)		RECOVERY		DESCRIPTION	FORM	% SA											
FROM	TO	m	%			FROM	TO	TOTAL	ACID SOL.	% Cu.	% Al.	% S.	% Pb.	% Zn.	% Bi.	µg Ag	% WO.
				of pyrite. From 119.0m downwards, patchy disseminated flecks and laths - soft dark green-black, mostly <math>\le 1\text{mm}</math> long - associated with a slight increase in quartz and pyrite veining. BGA'S 90-98.5m (bedding?), 40-70°, average 50°; 98.3-101.3m, 35-45°, 102.5-106.5m, 20-25°, 106.5-107.1m, contorted; 107.6-108.7m (bedding?), 30° average; 112.4-113.8m, 20-30°, 114.2-123.0m, 20-30°; 124.9-132.5m, 30° average; 132.5-145.1m, 35-40°; 145.1-145.8m, 30°; 145.8-148.0m, bedding not very clear, at least partly contorted. Broken to badly broken mostly on irregular joints, some coated by clay, quartz, rarely serpentine; rare bedding breaks. 5.0m core loss.													
				97.1-98.1m Calc-silicate, pale coloured, includes fine mica, flecks of green serpentine, spots of tourmaline (?), interbedded with hornfels at lower contact.													
				108.8m Quartz vein, 2cm thick, with brown flecks of tourmaline, or possibly cassiterite (?), 1mm diameter.													
				134.8-135.2m Pale grey quartzite (?)													
				141.8-142.7m Pale grey quartzite (?), bedded, with very fine grained muscovite. Colour boundary (marking contact) near parallel to bedding.													
				148.0-154.6m Very badly broken zone, includes 2.9m core loss. Broken on irregular joints. At 149.0-149.5m, altered quartzite (?), very fine micaceous (muscovite(?), small (5mm) grains of slightly pinkish brown tourmaline (?). From 151.4m downwards, includes some clayey material and calc-silicate e.g. soft yellow-brown and micaceous at 152.5m, white tremolite (?) veining in hornfels at 154.0m.													
																(p.p.m.)	
154.6	157.0	2.2	92	ULTRABASIC OR SEARNY (?) Dark green, hard, ultrabasic-like rock - serpentine with abundant disseminated and veinlet pyrite interspersed with minor, pale coloured hornfels-quartzite. The serpentine rock contains 10-20% sulfide, is weakly to moderately magnetic, and includes thin veins (0.5cm thickness average) of chrysotile asbestos. Includes patches of moderately soft mauve-brown mineral. Chaotic texture particularly 155.7-157.0m.		154.6	155.6	0.004	<0.01	440	<20	<50	2500	<100	2	15	
						156.6	157.0	0.003	0.02	100	<20	<50	1000	<100	1	<10	

04-1785

DIAMOND DRILL RECORD

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004

INTERVAL (m)		RECOVERY		DESCRIPTION	FORM	% Sn.										
FROM	TO	m	%			FROM	TO	TOTAL	ACID SOL	% Cu	% Al	% S	% Pb	% Zn	% Bi	gr Ag
157.0	169.4	11.1	97	<p><u>ALTERED HORNFELSED SHALE</u>                      Dark grey, bedded(?) Abundant fine grained (0.5mm) mica (muscovite?). Cross-cut by numerous veinlets of white carbonate (partly calcite) and very soft talcose clay, both commonly parallel bedding. Lesser veins and blebs of serpentine. Minor serpentinous/talcose clay and pale grey to clear, moderately hard mineral with radiating acicular habit. Minor vein quartz lower 1.5m, associated with harder and less broken core. BCA'S 20-45°, average 40°. Numerous breaks, generally on talcose clay-coated surfaces, predominantly parallel to bedding.</p>												
168.4	174.0	4.7	84	<p><u>HORNFELS</u>                      Dark grey, hard. Comprises alternating patches of massive, hard and brittle, dark grey hornfels cross-cut by pyrite veinlets, and medium grey bedded (?) hornfels containing abundant white to pale grey, lath-like and equant grains ranging from 0.5mm to up to 1cm. The latter rock is similar to "graphitic skarn" described in SD14 (252.4m). Minor vein quartz. Very minor serpentine associated with the thicker pyrite veinlets. BCA'S(?) 35°. Broken along pyrite-coated joints and few other irregular breaks. 0.9m core loss</p>												
174.0	180.3	5.7	90	<p><u>SKARN</u>                      Grey-green, hard crudely banded. Finely granular texture—"grainy" 0.5mm. Boundaries between bands commonly marked by stylolite-like features filled with black, soft, shining non-magnetic mineral (graphite?). Non-magnetic. Partly weakly calcareous and cut by numerous calcite veinlets. Green colour may be derived from fine grained diopside. Banding at 30-40° to c.a. Few irregular breaks.                      179.5m Includes abundant, large (0.5cm) crystals of grey, vitreous mineral.</p>	174.0	175.0	0.056	0.01	120	10	450	260	1100	41	15	
						176.0	0.060	20			120			410		
						177.0	0.050	20			70			10		
						178.0	0.012	60			480			15		
						179.0	0.045	20			120		2	20		
						180.0	0.024	20			160			100		
						181.0	0.013	80			2300		41	410		
180.3	182.5	2.1	95	<p><u>GRAPHITIC SKARN (?)</u>                      Medium grey with numerous, small, pale grey lath-like grains and larger, more equant grains (cf. 179.5m) set in a grey or green-grey matrix. Similar to "graphitic skarn" described in SD14 (252.4m). Includes rare, small (0.5-1mm), bright green grains and trace pyrite. Black mineral (graphite?) as above in thin veinlets (VCA'S average 40°).</p>												

(P.A.M.)

004

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035

INTERVAL (m)		RECOVERY		DESCRIPTION	FORM	% Sn											
FROM	TO	m	%			FROM	TO	TOTAL	ACID SOL	% Cu	% As	% S	% Pb	% Zn	% Bi	g Ag	% WO <sub>3</sub>
182.5	190.7	5.4	66	<b>HORNFELS</b> Dark grey, hard; weakly bedded (BCA'S 40-45°), weakly calcareous top 2.0m, unbedded, non-calcareous and extremely badly broken below that point. Minor pyrite on joint facings and disseminated. Some core break surfaces are slickensided and graphitic 2.8m core loss.													
190.7	194.9	3.1	74	<b>SILICIFIED CALC-SILICATE(?)</b> Dark to pale grey, hard, banded (bedding?). Very minor pyrite and serpentine in thin veinlets. Non-calcareous. Down to 193.2m hard, smooth surfaced core, few breaks; below that point, comprises a network of friable white quartz and carbonate (?) veins with interstices filled with soft, grey-green material, and is very badly broken. Some slickensided fracture surfaces. BCA'S(?) 35° 1.1m core loss.			(ppm)									(ppm)	
						192.0	193.0	50	280	>0	<50	16	<100	3	<10		
							194.0	65	950	<10	450	3800	100	3	10		
							195.0	8	260	-	50	180	<100	1	<10		
							196.0	10	120	-	50	100	<100	2	10		
194.9	201.0	4.6	75	<b>ALTERED HORNFELS</b> Grey, hard, mostly unbedded (banding, where seen, 10-25° to c.a.), possible breccia texture. Minor pyrite in veinlets and blebs, some with serpentine. Non-calcareous. Minor vein quartz. Very badly broken. 1.5m core loss. <u>195.2-196.8m</u> Calc-silicate(?), pale greenish white hard, buff coloured fragments (?), 1-2cm across, set in a pale green matrix. 1.0m core loss.													
201.0	210.8	8.4	86	<b>WEATHERED/ALTERED CARBONATE(?), MINOR HORNFELS</b> Pale yellow and black. Pale yellow material varies from having granular texture (grainsize < 0.5mm) and being moderately hard to a soft and sandy textured material (more weathered?). Includes rounded black fragments of hornfels (?) < 4cm across. Numerous white and green-grey milky quartz veins. Non-calcareous. Possible breccia textures in places. Hornfels crossed by numerous pyrite & serpentine veinlets, and also includes veins of soft, puggy serpentinous (?) material. Below 207.7m, no hornfels. Extremely badly broken. 1.4m core loss. <u>201.9-202.0m</u> Veined by muscovite, flakes up to 2mm across. <u>201.4-208.6m</u> Hard, pale yellow-brown-grey, brecciated, finely pitted. Veined by white and green-grey chalcedony.													
						202.0	203.0	4	40	<10	450	80	<100	<1	25		
							204.0	<4	20	<10	450	60	<100	<1	40		
							206.0	<4	20	<10	450	60	<100	2	15		
210.8	214.2	2.7	79	<b>PARTLY WEATHERED CARBONATE</b> Buff and pale grey, calcareous. Where weathered, soft, crumbly and sandy textured, veined by chalcedony or quartz. Badly broken. 0.7m core loss.													

035

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036

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FROM	TO	m	%			FROM	TO	TOTAL	ACID SOL.	% Cu.	% Al.	% S.	% Pb.	% Zn.	% Bi.	gr Ag	% WO.
212.2	254.7	37.8	93	<p><b>CARBONATE</b></p> <p>Grey, hard, calcareous. Not bedded but some irregular banding and stylolites. Commonly has granular or spotted texture, dark spots 4mm in paler groundmass; some of darker spots may contain Mg-silicates (e.g. forsterite). Minor apple green serpentinous carbonate in patches or veins. Traces of pyrrhotite in small, short veins, usually enclosed in small elongate patches of non-calcareous, soft green-black material, which is often mantled, in turn, by white carbonate. Broken on irregular fractures and infrequent joints coated with silica + lesser soft, white, calcareous material.</p> <p><u>219.8-220.4m</u> Badly broken zone, including soft, silty white material and white quartz.</p> <p><u>220.4-222.4m</u> White quartz, crossed by numerous white fractures (similar to siliceous zone in SD15, 317.0-326.2m)</p> <p><u>222.4-222.9m</u> Badly broken zone, similar to 219.8-220.4m, including serpentine.</p> <p><u>227.5-236.1m</u> Includes patches of relatively coarsely crystalline dolomite, 1-2mm grainsize, also vein/alterd zone. 20-40cm thick comprising white, soft, calcareous material enclosing small, pale brown, soft lath-like grains 0.5x3.0cm (average), and white carbonate "eyes" 1-3mm across. VCA ~ 10<sup>0</sup>.</p> <p><u>245.2-246.8m</u> Weathered carbonate. Sandy texture, includes dark spots of Mg-silicates, partly serpentinized. 1.4m core loss.</p> <p><u>247.3-248.6m</u> Includes patches of crystalline dolomite (cf. 227.5-236.1m).</p>													
254.7	263.7	6.7	74	<p><b>PARTLY WEATHERED CARBONATE</b></p> <p>Partly fresh carbonate as above. Where weathered, sandy textured green (serpentinous) and crumbly. Calcareous. From 256.2m, veined with increasing intensity, downwards by white and greenish black chalcocopyrite; these appear to have filled open fractures.</p>													
263.7	283.0	12.7	65	<p><b>MINERALIZED FAULT ZONE?</b></p> <p>Complex assemblage of magnetite, serpentine, fibrous, pale green</p>	263.0	264.0	0.043	0.06	40	<70	<50	7500	<100	1	20		
						265.0	0.105	0.14	40	"	<50	3500	"	1	<10		
						266.0	0.048	0.05	20	"	<50	500	"	1	15		
						267.0	0.013	0.01	50	"	<50	2200	"	1	25		

(91-)

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037

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FROM	TO	m	%			FROM	TO	TOTAL	ACID SOL.	% Cu.	% Al.	% S.	% Pb.	% Zn.	% Bi.	g/t Ag	PPM WO.
				tremolite-actinolite, soft, pale green silty material (weathered serpentine?). No banding or bedding visible. Magnetite is patchy, little below 280.6m. Extensively veined by quartz and chalcedony (open-space filling). Broken on irregular fractures. 6.9m core loss.		267.0	269.0	0.170	0.17	200	<20		50	1300	<100	3	75
				276.8-277.6m Quartz-rich zone.			269.0	0.400	0.42	100		50	900	300	<1	170	
				Contact appears to be at shallow angle to c.a., but difficult to be sure because of broken core.			270.0	0.072	0.07	20		50	300	100	<1	50	
							271.0	0.068	0.08	20		50	3200	<100	<1	70	
							272.0	0.140	0.16	20		50	500	40	<1	25	
							274.0	0.019	0.02	<20		50	100	<100	<1	15	
							276.0	0.072	0.08	20		50	200	<100	<1	35	
							278.0	0.001	<0.01	40			100		<1	10	
							280.0	0.120	0.25	180			1700		2	70	
							281.0	0.190	0.19	40	<20		400		<1	75	
283.0	299.7	14.1	84	GRANITE			282.0	0.100	0.09	80		90	1200	1900	<1	70	
				Pale yellow, comprising quartz, feldspars, minor, disseminated tourmaline, trace fluorite coating some joints. Fine grained (0.5-1.0mm) at top with rare quartz and feldspar phenocrysts (<6mm). Phenocryst abundance increasing with depth until 295.9m, where gradational change to medium to coarse grained granite with minor pale green-grey (chloritized?) mica. Very badly broken throughout, particularly top 3.0m which consists of all rounded core pieces. 2.6m core loss, mostly in medium to coarse grained granite.			283.0	0.130	0.10	40	50		50	1400	300		100
							284.0	0.001	<0.01	<20	<20			20	<100		15
				End of Hole 299.7m													

04-089