

803496

Drill Hole Record

COMINCO

Property: SNIP	District: Liard	Hole No.: DDH UG-5	Page 1 of 10
Commenced: 27/05/88	Location: Sect. 500, 300L	Tests at:	Horiz. Comp.:
Completed: 01/06/88	Core size: BQ	Corr. dip: -84°	Vert. Comp.:
Coordinates: 11,295.134 N	8,237.197 E	True Brq.: 030	Logged by: C. Downie
Objective:		Recovery: 97.8%	Date: June 1/88
		Elevation: 300.836	

Meters		Description			Au PPB	Ag PPM	Cu PF
From	To		From	To			
0.0	2.1	Coarse Grained Feldspathic Wacke - medium grey, coarse grained wacke with salt and pepper texture - < 5% quartz veining - slightly calcareous - minor pyrite on fracture surfaces					
2.1	10.6	Interbedded Fine and Medium Grained Feldspathic Wacke - 70% medium to light grey, fine grained wacke interbedded with 30% medium grey, medium grained wacke - locally fine grained zones may be moderately crackled - < 5% quartz veining; slightly calcareous - 1-2% disseminated pyrite; pyrite also may occur on fracture surfaces 6.2 to 6.3 - Preferential bleaching results in wispy bands aligned at approx. 50° to core axis 9.7 to 10.0 - Zone of minor shear/alteration - 25-30% replacement by slightly calcareous quartz; 10% biotite flooding/foliation; 3% disseminated sulphide-pyrite 10.4 - Pyrite veinlets at 50° to core axis					

Meters		Description	From	To	Au PPB	Ag PPM	Cu PF
From	To						
10.6	36.5	Interbedded Coarse, Medium and Fine Grained Feldspathic Wacke - 40% coarse grained medium grey wacke with salt and pepper texture interbedded with 20% medium grained, medium grey wacke interbedded with 20% fine grained, dark to light grey fine grained wacke - 5-7% quartz, occasionally calcite veining; veins are generally < 1/4cm width and are aligned from 40-50° to core axis; rock is locally calcareous - 1-3% pyrite overall; generally of disseminated variety, but locally pyrite occurs along fracture surfaces and veinlets 11.1 to 11.4 - Coarse grained zone with epidotic alteration 11.6 to 11.9 - Fine grained zone, lightly bleached, lightly brecciated 12.1 - 2 x 1cm slightly calcareous quartz veins with 10% chlorannite in one and 5-10% biotite in the other 13.7 - 2cm band of bleached/siliceous wacke with chlorannite foliation on contacts 14.4 - Distinct contact between h.w. coarse grained/f.w. fine grained wacke - bedding? - Contact is oriented at 45° to core axis 15.4 - 2cm quartz vein with biotite flooded contacts 18.3 to 19.6 - Fine grained wacke/siltstone with vague wispy/foliated texture - Slightly crackled with pyrite/calcite veinlet healing 21.2 to 22.0 - Medium to fine grained, medium grey, lightly bleached wacke; calcite flooded with 20% sparry calcite/quartz stubby veinlets 26.7 to 28.4 - Medium grey, 80% fine grained, 20% medium grained, lightly crackled zone - Fractures are healed with biotite/calcite/quartz/pyrite - At 27.3, 5cm zone of intensely fractured rock 30.7 - Zone of minor shear; 1.4cm vein of quartz/biotite foliation with thin pyrite stringers; oriented at 50° to core axis 32.0 - 1cm rodged quartz vein with 10% chlorannite at 70° to core axis 34.0 - 2cm quartz vein 34.4, 34.6, 35.2 - Pyrite stringers/veinlets					
36.5	55.9	Fine Grained Feldspathic Wacke - medium to light grey with subtle pink undertone - light to medium bleached - 5-7% quartz veining either in veins 1/8 - 1/4cm width in mm scale veinlets/microfractures; section is slightly calcareous; intensity of veining and calcareous content increases downhole from 47.5 - 49.9 - 3-4% pyrite in disseminated blebs, stringers, veinlets and on fracture surfaces 41.5 - 3cm biotite flooded zone 44.1 to 44.4 - Folded/sheared/biotite flooded zone - 10% calcareous quartz with 20% biotite flooding/foliation					

Meters		Description	From	To	Au PPB	Ag PPM	Cu
From	To						
55.9	63.1	<p>Banded Shear Zone</p> <ul style="list-style-type: none"> - alternating sections of sheared/replaced zones and medium to light grey moderately bleached feldspathic wacke 					
55.9	56.3	<p>Shear zone</p> <ul style="list-style-type: none"> - 50% pyrite, 20% calcite, 5% quartz, 15% biotite in distorted/ foliated bands 					
56.3	57.4	<p>Medium to light grey feldspathic wacke; moderately bleached;</p> <ul style="list-style-type: none"> 10-15% quartz/calcite veinlets - 2-3% pyrite - Biotite flooded from 57.0 - 57.2 					
57.4	57.8	<p>Elongate 1.5cm vein of calcite/biotite/quartz/pyrite at 10° to core axis</p>					
57.8	59.9	<p>Medium to light grey, moderately bleached, fine grained calcareous feldspathic wacke</p> <ul style="list-style-type: none"> - 10 calcite veinlets - 5% pyrite - 59.4 - 59.5 - interesting elongate (approx. 20° to core axis) pyrite-biotite fold structure 					
59.9	63.1	<p>Zone of moderate shear</p> <ul style="list-style-type: none"> - Fine grained, moderately bleached feldspathic wacke, usually lightly crackled with zones of shear type deformation throughout - Shear zones are biotite rich, flooded, foliated and are enriched in pyrite and chlorannite - Up to 30% calcite replacement over 4cm within shear zones - 5-8% pyrite in veins, shears, disseminated blebs 					
63.1	69.1	<p>Medium Grained Feldspathic Wacke</p> <ul style="list-style-type: none"> - medium grey, medium grained wacke - 5-7% calcite/quartz veining; over first 3m, calcite is dominant vein replacement mineral in veinlets and in veins 1/8-1/4cm width at 45° to core axis; rock is locally calcareous; over last 3m slightly calcareous quartz is dominant vein replacement mineral - 3% pyrite, mainly disseminated blebs and on fracture surfaces; at 63.4, 10% pyrite over 1cm in microfracture healing 					

Meters		Description						
From	To		From	To	Au PPB	Ag PPM	Cu P	
69.1	77.7	<p>Interbedded Fine Grained Feldspathic Wacke and Siltstone</p> <ul style="list-style-type: none"> - 50% fine grained, medium to dark grey wacke interbedded with 40% medium to light micritic siltstone and approx. 10% medium to coarse grained wacke - the rock is lightly bleached and has a faint pink blush, especially pronounced in the very fine grained siltstones - the siltstones are microfractured/brecciated with fractures tending to be aligned along the long axis of the core - 5% calcite/quartz/calcareous quartz veining; veins are generally mm scale veinlets; microfracture healing or 1/4-1/8cm veins; very rare larger (+1cm) veins - minor local biotite replacement/flooding - very rare epidotic alteration - 3-5% pyrite in veinlets/disseminated blebs; locally chalcopyrite and pyrite may occur at 10% over 5cm; rare arsenopyrite 						
77.7	85.4	<p>Interbedded Medium and Fine Grained Feldspathic Wacke</p> <ul style="list-style-type: none"> - 70% medium to dark grey, medium grained wacke interbedded with 30% medium to dark grey, fine grained wacke - 5% quartz/calcite/calcareous quartz veining; veining is generally 1/8-1/4cm veins of mm scale anastomosing veinlets; larger veins(+ 1cm) occur locally - mica content is increasing; chlorannite vein replacement and minor biotite flooding occur locally - sulphide content is increasing; 5% pyrite in veinlets/disseminated blebs/ fracture surfaces, locally pyrite occurs at 15% over 5cm, rare pyrrhotite <p>81.5 - 82.2, 82.8 - 83.1 - Lightly microfractures fine grained wacke; calcite/ quartz/pyrite fracture healing; at 81.5, calcite replacement mimics a small brecciated structure over 5cm - pseudo braccia</p> <p>80.7, 82.8, 83.1, 83.8 - 1 1.5cm quartz/calcite vein with up to 40% chlorannite replacement and minor pyrite and pyrrhotite</p> <p>82.1 - 1/4cm chlorannite vein</p>						
85.4	96.3	<p>Interbedded Fine, Medium and Coarse Grained Wacke</p> <ul style="list-style-type: none"> - alternating sections of medium to light grey fine, medium and coarse wacke - from 85.4 - 91.3, the rock is dominantly fine to medium grained with 5-8% calcite/quartz in gashes, 1/4-1/8cm veins and mm scale veinlets - from 91.3 - 96.3, the rock is mainly medium to coarse grained with less veining (5% max) than previous - fine grained intervals are generally microfractured with pyrite/calcite/ quartz healing - 5% pyrite over section 						
96.3	110.1	<p>Interbedded Fine to Medium Grained Feldspathic Wacke</p> <ul style="list-style-type: none"> - 60% medium to light grey, fine grained wacke interbedded with 20% medium to occasionally coarse grained, medium grey wacke and 10-15% light grey micritic siltstone 						

Meters		Description	From	To	Au PPB	Ag PPM	Cu PPM
From	To						
		- 5% calcite/calcareous quartz in 1/4-1/8cm veins, mm scale anastomosing veinlets and extension gashes					
		- biotite content is increased to approx. 5% over section; local biotite flooding occurs					
		- 5-8% sulphides; pyrite occurs on fracture surfaces, in disseminated blebs, and in veins/veinlets; locally pyrrhotite occurs at up to 5% over 2cm					
		98.3 to 98.6 - Shear/alteration Zone					
		- 50% replacement by white sparry calcite, 20% biotite, 10% chlorannite, 20% sulphides, mainly pyrite with pyrrhotite and rare arsenopyrite					
		102.2 to 105.2 - Zone of moderate bleaching					
		103.1 to 103.4 - Shear/alteration zone					
		- Tension fractured/shattered siltstone with 15cm section of 40% calcite/calcareous quartz replacement, 40% biotite flooding/ foliation and 20% pyrite/chalcopyrite					
110.1	112.1	Alteration Zone					
		- 30cm alteration zone followed by 1m of medium grey, fine grained wacke with 10% calcite healed extension gashes followed by 70cm alteration zone					
		- upper alteration has 40% biotite flooding, 30% calcite replacement in a fine grained, medium grey wacke; minor disseminated sulphide					
		- lower alteration has 60% white to bluish white sparry calcite replacement, 20% biotite foliation and 10% sulphide (mainly pyrrhotite with minor pyrite) in a fine grained, medium to light grey wacke					
112.1	117.8	Interbedded Fine and Medium Grained Feldspathic Wacke					
		- medium grey interbedded fine and medium wacke					
		- 8% calcite/calcareous quartz healed extension gashes					
		- 3-5% sulphides in fractures, veinlets and disseminated blebs; mainly pyrite/ chalcopyrite with minor pyrrhotite					

Meters		Description					
From	To		From	To	Au PPB	Ag PPM	Cu PPM
117.8	122.7	<p>Fine Grained Feldspathic Wacke with Siltstone Interbeds</p> <ul style="list-style-type: none"> - 60% light grey to light brown fine grained wacke interbedded with 40% light brown to yellow siltstone - siltstone fragments throughout section - overall, rock reflects dynamic tectonism - microfractures, extension gashes, calcite veinlet sheeting and general brecciated appearance occur throughout - 5% calcite healing in extension gashes and microfractures - section is overall sulphide poor with rare local sulphide occurrences in disseminated blebs along vein surfaces - 6-9% biotite 					
		<p>117.8 - 10cm zone of shear/replacement</p> <ul style="list-style-type: none"> - Calcite flooded with 30% biotitic foliation and minor pyrite 					
120.4	121.6	<p>Zone of hydrothermal alteration/intense bleaching</p> <ul style="list-style-type: none"> - Medium brown to creamy yellow siltstone with 10% calcite in extension gashes and 3% pyrite/chalcopyrite 					

Meters		Description	From	To	Au PPB	Ag PPM	Cu PPM
From	To						
122.7	129.7	Banded Shear Zone					
		- zones of shear/alteration alternating with sections of fine grained feldspathic wacke					
		- dark grey to light brown, fine grained wacke with distinct banded nature (preferential bleaching?); siltstone clasts throughout; + 10% calcite/calcareous quartz healing of extension gashes; + 10% biotite/chlorannite in fractures/veinlets; 3% sulphides - pyrite, chalcopyrite					
122.7	123.7	- Shear Zone					
		- 25% fine grained, medium to light grey feldspathic wacke, 30% biotite/ minor chlorannite, 10% calcite veining, 5% quartz, 30% sulphide with siltstone clasts throughout					
		- Zone is defined by tension gashes, distorted biotitic foliations					
		- Sulphides are mainly chalcopyrite/pyrite with rare arsenopyrite					
124.7	125.8	- Shear zone/alteration zone					
		- Calcite flooded, fine grained wacke with 20% biotite flooding/ foliation					
		- Foliations are at both steep angles to the core axis (70-80°) or are anastomosing/distorted					
		- Faint epidotic alteration					
		- 1-2% chlorannite					
		- 10% sulphide - pyrrhotite, pyrite, minor chalcopyrite/arsenopyrite; pyrite is locally folded/distorted with biotite foliation					
126.3	127.1	- Alteration zone/shear zone					
		- Calcite flooded/replaced fine grained wacke with 10-15% biotitic replacement/foliation					
		- Foliations are at high angles to core axis (+ 70°) or have					
		- Single 1cm wide quartz vein at 45° to core axis					
		- 10% sulphides - pyrite/pyrrhotite					
128.3	129.2	- Alteration zone/shear zone					
		- Calcite flooded/replaced fine grained wacke with 10-15% biotitic foliation					
		- Foliations are mainly anastomosing/squeezed looking; discrete linear foliations are at high angles to core axis (50-70°)					
		- 5-7% disseminated sulphides on fracture/foliation surfaces; mainly pyrite with rare arsenopyrite					

Meters		Description			
From	To		From	To	Au PPB Ag PPM Cu PP
129.7	173.6	Fine Grained Feldspathic Wacke			
		- medium to light grey fine grained wacke with siltstone intervals/clasts			
		- brecciated/microfractured throughout with variable intensity			
		- 5-10% calcite/calcareous quartz dominantly in tension gashes on mm - 1/8cm scale at high angles to core axis (70-90°); larger veins are rare			
		- < 5% sulphide; generally disseminated pyrite along microfractures/partings but locally pyrite/chalcopyrite occur at 5-10% over 3-8cm			
		- rock is definitely biotitic with biotite occurring along microfractures/foliations; local biotite flooding over 3cm occurs frequently			
		- variable bleaching intensity over section; bleaching gives the rock a faint pinkish brown blush and highlights more subtle textural features - clasts, microbrecciation, foliation, siltstone intervals			
	135.2	3cm replacement/shear zone			
		- 40% white, sparry calcite, 10% biotite, chlorannite foliation, 5% pyrite in fine grained wacke			
	135.9 to 136.8	Intensely microfractured siltstone			
	143.1 to 144.9	Bleached zone			
		- Medium brown to creamy brown bleached siltstone			
		- Rock is siliceous except at 143.5 where a 1cm calcite flooded/replacement zone with minor biotitic foliation suggests a small shear feature			
	152.0	20cm calcareous quartz flooded/replaced zone			
		- 30% replacement by blue-grey calcareous quartz with 5% biotite foliation and minor (< 1%) pyrite			
	153.8 to 154.2	Quartz replacement zone			
		- 70% replacement by opaque, white, locally calcareous quartz; 10% biotite foliations; 3% pyrite, arsenopyrite, pyrrhotite along fracture surfaces			
	161.1	30cm bleached/brecciated siltstone interval			
	161.1 to 169.0	Increase in siltstone content			
		- Rock has a discrete banded appearance reflecting siltstone/wacke interbeds			
		- Partings/foliations are often stylolitic in nature			
		- Rock is generally less calcareous			
	167.6 to 167.8	Medium bleached zone			
173.6	177.5	Coarse Grained Feldspathic Wacke			
		- medium grey, coarse grained calcareous wacke			
		- 5% calcareous quartz veining in 1/8-1/4cm veins generally at 45-50° to core axis and in tension gashes (mm scale)			
		- biotite speckled throughout			
		- < 3% disseminated sulphides-pyrite			

Meters		Description					
From	To		From	To	Au PPB	Ag PPM	Cu PPM
177.5	206.8	<p>Interbedded Fine, Medium and Coarse Grained Wacke</p> <ul style="list-style-type: none"> - 60% medium grained, 20% each fine and coarse grained wacke - rock is the same medium grey throughout - 5-8% calcite/lesser quartz veining; veins are < 1/4cm width and are evenly distributed both spatially through the core and in terms of 1/8-1/4cm discrete veins, anastomosing veinlets and tension gashes - 20% of section is microfractured - section is biotitic - 3% biotite both disseminated and along fractures; rare chlorite/chlorannite - 3-5% sulphide - disseminated pyrite, pyrite on fracture surface; rare pyrrhotite <p style="margin-left: 40px;">185.0 - 2cm silty parting with foliation at 45° to core axis - bedding?</p> <p style="margin-left: 40px;">194.6 - 8cm biotite/calcite flooded zone</p> <ul style="list-style-type: none"> - 5% chlorannite/1-2% disseminated pyrite blebs <p>197.6 to 198.8 - Light grey, bleached siltstone interval</p> <ul style="list-style-type: none"> - Lightly brecciated/microfractured - At 197.3, high angle contact between two fine grained wacke intervals; microfracture/brecciation along contact zone suggests a shear event; biotitic foliation, pyrite veinlets along shear surface; foliations align at 10-15° to core axis <p>200.1 to 200.6 - Calcite/calcareous quartz veinlet swarm in a fine grained wacke</p> <ul style="list-style-type: none"> - At 200.1, 3cm quartz vein with 20% ZnS and 1-2% disseminated pyrite blebs; vein at 45° to core axis - At 200.4, 2cm quartz vein at 45° to core axis <p>200.6 to 201.0 - More sulphide rich zone</p> <ul style="list-style-type: none"> - 8% disseminated pyrite and pyrite in veinlets associated with biotite <p style="margin-left: 40px;">203.6 - 2cm quartz vein with 10% chlorannite</p>					
206.8	216.7	<p>Interbedded Medium and Fine Grained Feldspathic Wacke</p> <ul style="list-style-type: none"> - 60% medium grey, fine grained wacke interbedded with 40% medium grained wacke - 5-8% calcite/calcareous quartz/quartz veining in veins 1/4-1/8cm width, mm scale veinlets and in tension gashes - 3-5% disseminated pyrite 					
216.7	221.9	<p>Shear Zone/Alteration Zone</p> <ul style="list-style-type: none"> - foliated/brecciated/shear zone - 40% replacement by calcite/40% replacement by biotite in fine grained feldspathic wacke - foliations tend to align subparallel to core axis, 5-20° to core axis - from 219.8 to 221.9, the rock is a bleached, coarse grained wacke with 5% calcite/quartz veining - < 5% visible sulphide over section 					

Meters		Description	From	To	Au PPB	Ag PPM	Cu PF
From	To						
221.9	236.2	Fine Grained Feldspathic Wacke					
		- medium grey, fine grained wacke with siltstone clasts/intervals; locally microfractured					
		- 5-10% calcite/quartz veining; tension gashes are common throughout					
	226.0 to 226.4	- 40cm replacement/shear zone					
		- 40-55% white, sparry calcite replacement with 5-8% biotitic foliation/replacement and 20% sulphides (chalcopyrite/pyrite)					
		- section is followed by 40cm of intense tension gashes					
	229.0 to 229.2	- Sulphide enriched zone					
		- 20% pyrite/chalcopyrite in disseminated blebs					
	233.7	- 4cm thick zone of siltstone with 20% biotitic foliation and 5% pyrite, foliations are aligned at 40° to core axis					
	234.9	- 30cm sulphide enriched zone					
		- 20% pyrite/pyrrhotite in semi-massive blebs					
	236.0	- 2cm zone of 20% biotite/chlorannite foliation in a bleached siltstone					
		- 3% pyrite on foliation surface					
236.2		END OF HOLE					