DRILL HOLE RECORD

COMINCO LTD.

R. V. KIRKHAM

Property:	KITSAULT	District:	Western District	Hole No.	K88-7		
Commenced:	August 24, 1988	Location:		Tests at:	76.0, 152.4 m	Hor. Comp:	K88-7
Completed:	August 26, 1988	Core Size:	BQ thin wall	Corr. Dip:	-70°	Vert. Comp:	Page 1
Co-ordinates:	0+18W 7+50N	Claim:	Sault 4	True Brg:	160°	Logged by:	P.A. MacRobbie
Objective:	to test down dip of the west end of the west end showing	Collar Dip:	-70°	% Recov:	90-95%	Date:	August 30, 1988
		Length:	152.4 m				

FOOTAGE FROM	TO	DESCRIPTION
0	1.5	Casing.
1.5	27.7	BASALTIC LAPILLI-ASH TUFF Heterolithic, poorly sorted and matrix supported tuff containing 40-60%, subangular-rounded fragments up to 3.5 cm. Fragments include medium-dark green, aphyric and pyroxene/feldspar phyric flow as well as medium-dark maroon, hematite altered flow. The fine to medium-grained matrix is weakly-moderately magnetic and moderately-strongly hematite and calcite altered. No internal stratification was noted. Fine-grained, disseminated pyrite, 0-2% is present. Occasional 1-10 mm wide, calcite, quartz, chlorite vein/breccia vein with bleached halos occur.
27.7	28.0	Broken core and quartz, calcite veins - FAULT.
28.0	30.0	BASALTIC LAPILLI-ASH/ASH TUFF Consists of normally graded lapilli-ash --> ash tuff cycles between 10-60 cm thick. These dark green tuffs have a weakly-moderately calcareous matrix and contain 5-30% lapilli from 2-85 mm. Tops of cycles often consist of well laminated ash and cherty ash <1-8 mm thick. 29.0 m - laminations at 63° to core axis. 29.2-29.4 m - laminations at 68° and 70° to core axis. 29.9 m - laminations at 74° to core axis.
30.0	32.0	BASALTIC ASH TUFF (MINOR LAPILLI TUFF) Dark green, moderate-strong carbonate alteration; no internal stratification. 30.4-30.6 - lapilli tuff.
32.0	36.9	BASALTIC LAPILLI-ASH TUFF As above.
36.9	40.1	BASALTIC ASH TUFF Upper contact at 60° to core axis. Unit is massive and non-descript. Grades into the

SAMPLE	FROM	TO	ANALYSIS (ppm) Ag	Pb	Zn	Cu

FOOTAGE FROM	TO	DESCRIPTION
36.9	40.1 continued	underlying unit.
40.1	43.5	BASALTIC LAPILLI-ASH TUFF Dark green. Weakly calcareous matrix with 15-40%, poorly sorted fragments up to 21 cm. Mafic fragments are fine to medium-grained, amygdaloidal (calcite ± chlorite infilled) and pyroxene ± feldspar phyric. 40.8 m - internal discontinuous laminations, 1-3 mm at 73° to core axis. 38.6 m, 41.3-41.4 m - quartz, chlorite, calcite vein at 30° to core axis.
43.5	63.2	BASALTIC LAPILLI-ASH/ASH TUFF As above. Contains 10-30% subangular-irregular fragments 2 mm - 11.5 cm and abundant calcite veins with 1-2%, associated, fine-grained pyrite and locally bleached halos. 50.8 m - pyritic veinlets, ≤ 2mm. 51.1 m - quartz, calcite, strontianite, pyrite veinlets with bleached halos containing patchy pyrite alteration. Vein appears vuggy due to calcite dissolution. 52.1-55.0 m - pyrite veinlets. 57.9-60.5 m - bleached rock with andesite appearance (light-medium green) with abundant pyrite veinlets and vuggy quartz, epidote, chlorite veins at 33° to core axis. 67.1-67.2, 61.4, 61.7, 62.3 m - calcite, quartz, pyrite, chlorite veins.
63.2	63.9	BASALTIC ASH TUFF Upper contact at 45° to core axis. Massive, medium-dark green with a slight maroon cast containing occasional lapilli up to 7 mm. Grades into underlying unit.
63.9	72.5	BASALTIC LAPILLI-ASH TUFF Massive lapilli-ash tuff, maroon in colour containing lapilli up to 54 cm locally. 65.8 m - 4.5 cm ash interbed at 75° to core axis.
72.5	73.6	Sheared rock - FAULT - 30° to core axis.

			ANALYSIS (ppm)				
SAMPLE	FROM	TO	Ag	Pb	Zn	Cu	

FOOTAGE FROM	TO	DESCRIPTION
73.6	74.5	ANDESITIC ASH TUFF Medium grey green with a slight bluish cast; weakly calcareous with fragments generally ≤ 2mm but up to 5 mm. Impression is one of an altered coarse ash tuff - possibly crystal rich.
74.5	75.2	INTERBEDDED-INTERLAMINATED, FINE TO COARSE-GRAINED ANDESITIC ASH TUFF Consists of 1-13 mm laminated, very fine-grained ash, fine-grained ash and chert, dark green to grey and interbedded 7 mm - 16.4 cm, thick, medium green, fine-coarse ash beds. The fine-coarse ash beds are crystal rich and weakly calcareous. Very fine-grained ash and chert laminations show flame and pillow structures indicating top is uphole. bedding: 82°, 80°, 75°, 70°, 77°, 78°, 72° to core axis.
75.2	75.5	ANDESITIC ASH TUFF WITH BLACK MUDSTONE (?) FRAGMENTS Contains 10-15% black, angular-flattened fragments <2-18 mm of mudstone or very fine-grained black sulphide (possibly graphite?).
75.5	77.7	ANDESITIC LAPILLI-ASH TUFF Contains 25-30% andesitic flow fragments, 2 mm - 20 cm.
77.7	78.1	ANDESITIC COARSE ASH TUFF Massive unit with no internal stratification as above but contains abundant feldspar crystal fragments locally contains 1-2% disseminated pyrite and pyrite veinlets. Basal contact at 70° to core axis.
78.1	83.5	ANDESITIC LAPILLI-ASH TUFF Medium grey green with diffuse, generally subrounded, feldspar and pyroxene phyric flow fragments. Rare chert fragments up to 2.5 cm occur. 78.8, 79.3, 80.0 m - strongly bleached areas containing 2-5% pyrite veinlets and patches up to 2.5 cm occur associated with strontianite (soft, milk white mineral) veinlets. Pyrite appears to alter matrix and feldspar crystals within the bleached area. 82.5-83.4 m - quartz, calcite, pyrite breccia vein about 3 cm wide.

			ANALYSIS (ppm)				
SAMPLE	FROM	TO	Ag	Pb	Zn	Cu	

FOOTAGE FROM - TO	DESCRIPTION
83.5 - 85.4	ANDESITIC ASH TUFF As above.
85.4 - 87.7	ANDESITIC LAPILLI-ASH TUFF As above. Contains 30-40% lapilli up to 8.5 cm.
87.7 - 87.8	CHERTY ASH TUFF Medium grey green, aphyric and well laminated at base; 65° to core axis.
87.8 - 108.6	ANDESITIC LAPILLI-ASH TUFF Medium green. The moderately calcareous matrix contains 30-40% matrix supported, subangular-subrounded andesitic flow fragments. 89.5, 91.3 m - abundant quartz, calcite, chlorite, pyrite veinlets and locally developed pyritic patches. Up to 5% pyrite. 95.6-97.2 m - lapilli-ash tuff with a crystal rich matrix. 100.8-101.4 m - 25-30% fragments generally about 7.5 cm almost a tuff-breccia. 105.5, 105.7, 105.8 m - pyritic patches up to 2.5 cm.
108.6 - 109.1	ANDESITIC ASH TUFF WITH MUDSTONE FRAGMENTS Weakly calcareous, fine-grained ash matrix contains subrounded-angular, <1-5 mm mudstone and andesitic flow fragments. Sharp basal contact at 48° to core axis.
109.1 - 131.5	INTERBEDDED ANDESITIC ASH/LAPILLI-ASH TUFF AND CHERTY ASH CHARACTERIZED BY ACCRETIONARY LAPILLI AND ABUNDANT, SEDIMENTARY CLASTS Light to medium grey colour and weakly-moderately calcareous. 109.1-111.8 m - interbedded very fine to fine-grained siliceous ash tuff containing few andesitic fragments. Locally up to 40% accretionary lapilli, 2-18 mm occur in siliceous/cherty layers up to 16 cm thick. Accretionary lapilli are subrounded-rounded and consist of a calcareous ash core rimmed by silica. Unit contains 2-5% black mudstone fragments 1-4 mm and locally up to 20% subangular volcanic fragments up to 5mm. 110.7 m - bedding at 45° to core axis.

ANALYSIS (ppm)

SAMPLE	FROM	TO	Ag	Pb	Zn	Cu	

FOOTAGE FROM - TO	DESCRIPTION
109.1 - 131.5 continued	111.8-112.5 m - interbedded fine-coarse ash/lapilli-ash tuff. Unit contains 3 lapilli ash beds, 2 cm, 3 cm and 7 cm thick (40°, 47°, 42°, 38° to core axis) containing 70-90% fragments (60% andesite, 1-3 mm, 40% sedimentary, 1-9 mm). The matrix appears light green and siliceous. The basal bed is reverse graded. Fine-grained ash beds are light-medium grey, siliceous and contain accretionary lapilli. 112.5-117.6 m - lapilli-ash/ash tuff near top containing 60-80% matrix supported fragments consisting of light-dark green volcanics, 1-48 mm and mudstone and chert fragments up to 12 mm. Two 3 cmthick ash beds with accretionary lapilli occur (46° to core axis). Towards the unit's base the ash tuff becomes finer-grained and contains abundant accretionary lapilli. 117.6-119.4 m - very fine-grained ash with interbedded lapilli-ash tuff. Normal grading defines the internal stratification. 119.4-121.1 m - fine-grained lapilli-ash tuff interbedded with contorted and slumped dark grey ash and very fine-grained medium-light grey ash tuff. Good contacts at 54°, 55° to core axis. 121.4-122.4 m - slumped and contorted, very fine-grained ash tuff. 122.4-122.5 m - <1-4 mm laminated chert/cherty tuff with interlaminated 5-12 mm ash at 50° to core axis. 122.5-122.8 m - medium green, andesitic lapilli tuff containing 80% flow fragments, 2-40 mm. Exhibits no sedimentary fragments or structures. 122.8-123.0 m - laminated chert/ash tuff. 123.0-123.1 m - quartz, calcite vein. 123.1-124.6 m - coarse to fine-grained lapilli-ash tuff with interbeds of very fine-grained ash. 124.6-128.9 m - interbedded accretionary ash tuff with fine-coarse lapilli-ash tuff. Ash tuff beds are 8-45 cm thick and contain up to 60% accretionary lapilli, 2-8 mm and ovoid. A total of 7 beds occur, 52°-70° to core axis. Interbedded lapilli-ash tuff is as above, both normally and reverse graded locally. 128.9-129.0 m - quartz, calcite, chlorite vein with 1-2 mm chloritic halo. 129.0-129.5 m - interbedded/laminated very fine-grained ash and cherty ash tuff characterized by contorted and slumped, 1-26 mm, dark-light grey ash laminations 43°, 52° to core axis.

ANALYSIS (ppm)

SAMPLE	FROM	TO	Ag	Pb	Zn	Cu	

FOOTAGE FROM	TO	DESCRIPTION
109.1 - 131.5 continued		129.5-130.8 m - medium grey reverse graded ash tuff containing zones of increased fragment content and size defining a wide stratification. Tuff contains 60-80% fragments (80-85% volcanic, 15-20% sedimentary, occasional massive pyrite 2-5 mm). 40° to core axis lower contact. 130.8-131.2 m - laminated-bedded, light-medium grey chert and fine to coarse-grained ash tuff. 1-10 mm laminations, 40° to core axis. 131.2-131.5 m - calcite, quartz, chlorite veins + sheared rock.
131.5 - 133.5		ANDESITIC LAPILLI-ASH TUFF Medium green and contains 30-40% poorly sorted, heterolithic, matrix supported, angular to subangular andesite lapilli up to 26 mm and rare sedimentary fragments.
133.5 - 133.7		LIMESTONE BRECCIA Medium-dark grey containing subrounded-rounded limestone fragments up to 4.5 cm in a limey matrix. Appears to be soft sediment deformation i.e. fragments represent ball and pillow structures.
133.7 - 135.2		LIMESTONE WITH MINOR CHERT INTERBEDS Cherty intervals up to 4 cm thick, 75° to core axis; grades downwards into underlying unit.
135.2 - 135.6		LIMESTONE WITH CHERT FRAGMENTS Contains <3-47 mm chert fragments of irregular shape due to slumping.
135.6 - 136.2		CHERT Dark bluish grey, massive, recrystallized chert with minor limey interbeds.
136.2 - 138.9		ANDESITIC ASH TUFF Medium grey green, massive, homogeneous, containing few lapilli and is locally well laminated 60°, 63° to core axis.
138.9 - 144.0		LIMESTONE Black-dark grey, locally appears laminated (contorted) and brecciated. Contains abundant

			ANALYSIS (ppm)				
SAMPLE	FROM	TO	Ag	Pb	Zn	Cu	

FOOTAGE FROM	TO	DESCRIPTION
138.9	144.0 continued	calcite-graphite shears.
144.0	144.2	Strong calcite, graphite shear - FAULT - 60°, 43° to core axis.
144.2	146.1	ANDESITIC LAPILLI-ASH/ASH TUFF Matrix is weakly calcareous, dark green-dark grey. Contains 65-75% feldspar rich andesitic fragments, angular-subangular, matrix supported, poorly sorted, <2-34 mm. Tuff grades downwards into a medium-grained massive feldspar rich ash tuff (144.8-145.3 m) and back into lapilli-ash tuff. 145.0 m - quartz, calcite, graphite shear 45° to core axis.
146.1	148.6	INTERLAMINATED/INTERBEDDED SILICEOUS ASH/ASH TUFF (WATERLAIN TUFF) 1-4 mm laminated siliceous ash occur in 1-2.5 cm thick beds. Ash tuff is 5-40 cm thick locally normally graded beds, and is medium green-green grey. 136.1-146.4 m - bedding 53° to core axis. 146.5 m - bedding 45°, 40° to core axis. 147.3 m - bedding 50° to core axis. 147.4 m - bedding 40° to core axis.
148.6	151.2	ANDESITIC ASH/LAPILLI-ASH TUFF Medium green, poorly sorted, matrix supported feldspar-rich fragments, as above. No internal stratification.
151.2	151.3	Graphitic shear, 75° to core axis.
151.3	152.4	ANDESITIC LAPILLI-ASH/LAPILLI TUFF Medium-dark green. Contains 60-80%, <1-75 m, angular-subrounded feldspar phyric fragments and larger clasts of lapilli-ash tuff. About 1-2% fine-grained disseminated pyrite is present.
152.4		END OF HOLE

			ANALYSIS (ppm)				
SAMPLE	FROM	TO	Ag	Pb	Zn	Cu	

DRILL HOLE RECORD

COMINCO LTD.

Property:	KITSAULT	District:	Western District	Hole No.	K88-7 SUMMARY		K88-7
Commenced:	August 24, 1988	Location:		Tests at:	76.0, 152.4 m	Hor. Comp:	SUMMARY
Completed:	August 26, 1988	Core Size:	BQ thin wall	Corr. Dip:	-70°	Vert. Comp:	Page 1
Co-ordinates:	0+18W 7+50N	Claim:	Sault 4	True Brg:	160°	Logged by:	P.A. MacRobbie
Objective:	to test down dip of the west end of the west end showing	Collar Dip:	-70°	% Recov:	90-95%	Date:	August 30, 1988
		Length:	152.4 m				

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION
0	1.5	Casing.
1.5	73.6	BASALTIC LAPILLI-ASH TUFF With minor interbedded ash tuff - dark green to maroon colour. Locally contains pyritic veinlets within zones of bleached rock.
73.6	75.5	ANDESITIC ASH TUFF WITH INTERBEDDED-INTERLAMINATED FINE-COARSE GRAINED ASH TUFF AND CHERT Medium grey green to grey. Fine ash beds and chert laminations show soft sediment deformational features. Unit also contains epiclastic(?) fragments near its base. Impression is one of a distally derived volcanic debris deposited by epiclastic mechanisms.
75.5	108.6	ANDESITIC ASH/LAPILLI-ASH TUFF Medium green. Contains a locally feldspar crystal rich matrix, matrix supported flow fragments and shows no internal stratification. Appears derived from a more proximal volcanic source.
108.6	131.5	INTERBEDDED ANDESITIC ASH/LAPILLI-ASH TUFF AND CHERTY ASH CHARACTERIZED BY ACCRETIONARY LAPILLI AND ABUNDANT SEDIMENTARY CLASTS Light-medium grey and weakly-moderately calcareous.
131.5	133.5	ANDESITIC LAPILLI-ASH TUFF Medium green with rare sedimentary fragments.
133.5	135.6	LIMESTONE Medium to dark grey limestone with increasing component of laminated and fragmented chert downwards.
135.6	136.2	CHERT

			ANALYSIS (ppm)				
SAMPLE	FROM	TO	Ag	Pb	Zn	Cu	

DRILL HOLE RECORD

COMINCO LTD.

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SUMMARY
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Property: KIT

FOOTAGE FROM	TO	DESCRIPTION
136.2	138.9	ANDESITIC ASH TUFF
138.9	144.0	LIMESTONE
144.0	144.2	FAULT
144.2	146.1	ANDESITIC LAPILLI-ASH/ASH TUFF (FOOTWALL VOLCANICS) Contains 65-75°, matrix supported, poorly sorted, volcanic fragments up to 34 mm. Interpreted as footwall due to the abundance of feldspar crystals.
146.1	148.6	INTERBEDDED/INTERLAMINATED ASH/SILICEOUS ASH TUFF Well bedded and locally normally graded.
148.6	151.2	ANDESITIC ASH/LAPILLI-ASH TUFF
151.2	151.3	Graphitic shear.
151.3	152.4	ANDESITIC LAPILLI-ASH/LAPILLI TUFF
152.4		END OF HOLE

			ANALYSIS (ppm)				
SAMPLE	FROM	TO	Ag	Pb	Zn	Cu	