CASA EXPLORATION LTD.
DIAMOND DRILL RECORD

Length	72.54 m	Contractor	Kluane Drilling Ltd.	Hole No.	HA-89-2
Bearing	GRID WEST	Core Size	BQ Casing	Project	Hop-Acme Claims
Dip	-70°	Started	01:00 pm, Sept.27'89		
Lat.	3100 N	Completed	09:00 am, Sept.29'89	NTS Map	115 H/7
Dep.	2796.5 E.	Logged by	S. Feulgen, J.C. Stephen	Claim	
Elev.	1139.5	Stored	Geoff Lattin	# Page	5
O.B. Thickness	23.09 m		WHITEHORSE	Purpose	-to test geophysical anomaly

Footage (m) From	To	DESCRIPTION	Sample#	From	To	Assays Length(m)	Au(g/t)	Ag(g/t)	Cu(%)	MoS_2(%)
0.00	23.09	overburden; (0.00-20.83) no record; (20.83-23.09) core box contains fragments of material (schist, feldspar, porphyry dyke, basalt dyke, calc silicate skarn), oxidized in places								
23.09	25.27	(carbonaceous?) magnetite skarn (black and white motley appearance), carbonaceous? material seen throughout section infilling veins and fractures, appears to be branching or slumping into thin fractures in calc silicate skarn, heavy magnetite mineralization (50% in some sections), magnetite present as bands of disseminated particles as well as globular groups, minor pyrrhotite and chalcopyrite (primarily in thin fractures); (23.09-24.55) fragmented and oxidized (some alteration); (24.55-24.81) less carbonaceous, more siliceous calc silicate skarn, less magnetite (10%), small splashes of chalcopyrite	30014	23.09	24.55	1.46	1.132	8.23	1.25	
			30015	24.55	25.27	0.72	0.412	3.42	0.38	
25.27	26.12	more siliceous, light green tremolite-rich skarn, much less magnetite, much more chalcopyrite (3%) and pyrrhotite (3%), very little black (carbonaceous?) material, some alteration minerals on contact between magnetite-rich skarn and calc silicate skarn (soft); (25.27-25.42) well banded, some altered breccia fragments; (26.08-26.11) band of globular magnetite grains	30016	25.27	26.04	0.77	1.749	18.86	2.66	
26.12	26.67	chalcopyrite-rich skarn, heavy chalcopyrite (30%) and pyrrhotite (20%) mineralization, increase in carbonaceous material (appears as needle-like crystals crisscrossing)	30017	26.04	26.71	0.67	1.646	78.20	11.36	
26.67	27.98	magnetite skarn with irregular calc silicate skarn zones (predominantly black with white splashes), magnetite present in globular form (grape like bunches-very heavy mineralization) which is aligned in bands, minor splashes of chalcopyrite, primarily in siliceous portions; (26.92-26.98) seemingly unmineralized band of creamy, light green calc silicate skarn; (at 27.32) increasing amount of black mineral beds, initially parallel	30018	26.71	27.99	1.28	0.034	0.69	0.04	

		to bedding planes, then appears to be seeping into beds via fractures parallel to core length; (27.43-27.62) light green calc silicate skarn breccia, appears unmineralized								
27.98	30.88	light green to dark green, fine grained calc silicate skarn, chalcopyrite, pyrrhotite, and magnetite mineralization; (27.98-28.02) highly altered material, light green-creamy white mineralization (some soft); (28.02-28.20) convoluted bedding zone of light grey, steel grey, creamy white bands with pyrrhotite mineralization, one large fragment of calc silicate skarn appears to be caught up in bedding (ie. breccia?); (28.20-30.89) medium green (epidote?) calc silicate skarn with heavy pyrrhotite and slight chalcopyrite mineralization, at times; (28.24-28.30) heavy pyrrhotite mineralization; (at 28.36) oxidized frattures; (28.50-28.52) heavy pyrrhotite mineralization; (28.61-28.65) light green-yellow-brown non carbonate mineral, no mineralization; (28.65-28.77) convoluted beds of light blueish-grey calc silicate skarn; (28.82-29.02) light magnetite mineralization; (29.02-29.20) heavy magnetite (5-8%) mineralization, globular form; (29.26-29.46) darker coloured calc silicate skarn with pyrrhotite (5%) and chalcopyrite (2%) mineralization, section fractured and infilled with black mineral; (30.58-30.86) heavy pyrrhotite (8%) and chalcopyrite (4%) mineralization, minor pyrite, calc silicate skarn darker green in colour (actinolite); (30.75-30.82) molybdenite mineralization in fractures	30019	27.99	29.57	1.58	0.412	11.66	1.68	
			30020	29.57	30.45	0.86	0.034	2.06	0.20	
			30021	30.45	30.88	0.43	0.343	22.29	2.26	0.015
30.88	32.85	metallic green, fine grained, calc silicate skarn with no observable mineralization except for a very few splashes of occasional chalcopyrite; (31.26-31.61) altered zone, greenish-yellow soft friable minerals, zone enclosed by bands of black-dark green calc silicate skarn, fractured (fault?); (31.90-32.00) yellowish-green fractured, altered zone (gouge? fault?); (32.81-32.85) oxidized								
32.85	34.08	actinolite skarn (dark green), some areas of oxidized fractures parallel to bedding plane; (33.66-33.96) pyrrhotite (4-5%), chalcopyrite (1-2%), molybdenite (0.3%) mineralization; (33.23-33.28) banded schist, followed by convoluted black mineral band with oxidized fractures	30022	32.78	34.08	1.30	0.274	6.52	0.70	0.195
34.08	35.40	light grey porphyry feldspar dyke with chilled margins, green (dark and light) and white phenocrysts, snarp contact with calc silicate skarn with 2cm silicified band separating the two rock types (70 to 80 to core), fractures frequent and oxidized, some containing pyrite as a coating on fracture planes, some fractures are quartz filled, alteration seen in zones of fracturing								
35.40	36.19	dark grey, fine grained porphyry feldspar dyke, phenocrysts dark black to green, core broken on fractures throughout section (oxidized), more siliceous phenocrysts towards then end of the section								

[illegible]	37.70	more siliceous, fine grained light grey porphyry feldspar dyke, phenocrysts larger than in previous dykes (34.08-36.19), 2mm in size ranging in colour from white, reddish-brown, light and dark green, contact with previous dyke fairly sharp with alteration zone (fractured and oxidized at contact); (at 37.08) quartz vein running length of core (2-5cm in width) containing fragments of dyke material, after this dyke becomes quite oxidized with yellowish tinge predominant towards the end of the section							
37.70	38.18	dark grey feldspar porphyry dyke, similar to dyke described at (35.40-36.19); (37.93-38.03) much more siliceous zone (altered on boundaries)							
38.18	40.39	more siliceous, light greenish-grey porphyry dyke, fairly equigranular, phenocrysts black, dark green, white, core breaking on oxidized fractures; (38.54-39.54) occasional 1cm shapeless white phenocrysts, larger than the others; (39.89-40.39) dark grey green in colour with predominantly white phenocrysts							
40.39	41.26	thinly bedded, light grey, fine grained quartzite with interbedded mica schist (biotite-rich), contact with dyke fairly sharp with intermediary quartz; (40.83-40.98) light fracturing and alteration							
41.26	41.75	light grey, fine grained quartzite; (41.26-41.39) altered, oxidized small fractures; (41.67-41.75) altered, oxidized fractures							
41.75	41.96	biotite-rich mica schist							
41.96	42.30	grass green (diopside?) - skarn, fine grained, chalcopyrite (1%) seen as finely disseminated particles in splashes throughout	30023	41.96	42.95	0.99	0.240	4.12	0.54
42.30	42.95	mixed skarn and black (carbonaceous?) material (breccia?), chalcopyrite (2%), pyrrhotite (5-7%), and magnetite (7-10%) mineralization, pyrrhotite and chalcopyrite observed intergrown primarily, magnetite seen as particles in globular groups, some serpentinized slips and talc seams at contacts; (42.46-42.95) heaviest zone of mineralization, material appears very mixed							
42.95	50.05	mica schist (clean contact with calc silicate skarn), varies from black-dark brown-red to more siliceous beds, bands of pale to medium green calc silicate skarn and occasional veins of quartz (parallel to bedding), pyrite as coating on fracture planes, also some disseminated pyrrhotite occasionally ; (42.95-44.45) disseminated chalcopyrite as small specks; (43.23-43.48) medium green (epidote?) calc silicate skarn mixed with mica schist and quartz beds; (43.63-43.77) light-medium green (diopside) calc silicate skarn mixed with mica schist beds, a little more chalcopyrite present; (43.82-44.02) light grey with brownish tinges alteration zone (skarnified), diopside? stringers running through core carrying chalcopyrite and pyrrhotite as small splashes; (44.21-44.56) mica schist containing occasional round nodules (1-3mm in diameter) which appear to have parted the mica beds, ie. grown out of solution							

		(possibly garnet?); (44.32-44.35) alteration zone, yellowish-green-black with speckled appearance, contains disseminated chalcopyrite and pyrrhotite; (44.60-44.86) diopside calc silicate skarn, no apparent mineralization; (44.86-45.29) mica schist with nodules; (45.29-45.45) oxidized, lightly fractured (some fragments), yellowish-green calc silicate skarn; (45.45-46.35) lightly oxidized; (45.72-45.90) alteration zone?, mottled yellowish-grey, more siliceous calc silicate skarn; (45.90-45.95) dark grey feldspar porphyry dyke; (46.15-46.33) quartzite; (46,47-46.57) dark grey feldspar porphyry dyke, phenocrysts white and dark green; (46.95-48.05) mica schist with nodules, slight oxidation along fractures; (at 47.11) minor chalcopyrite and pyrrhotite in quartzite band; (48.15-50.05) oxidized along more frequent fractures, minor chalcopyrite seen in small veins, pyrite on fracture planes as a coating, nodules of garnet seen occasionally throughout section; (49.92-49.95) altered calc silicate skarn zone, green-white-black speckled appearance
50.05	50.45	light green (tremolite) calc silicate skarn with a band (5cm) of light grey-white marble and some actinolite beds and soft serpentine minerals, minor splashes of chalcopyrite and pyrrhotite (appear to be primarily observed in dark black carbonaceous? material)
50.45	51.32	light grey to almost white limestone with thin bands of black mica schist parallel to bedding plane and also intermixed with limestone (infilling small fractures)
51.32	51.76	tremolite calc silicate skarn with thin fractures parallel to bedding planes infilled with mica schist, some serpentine minerals at contact between calc silicate skarn and limestone; (51.56-51.59) oxidized zone, light orange, tinge carried to end of section (51.76); (51.59-51.64) band of limestone
51.76	53.91	light grey to yellowish-white limestone with calc silicate minerals and mica schist infilling fractures; (51.76-51.96) lightly oxidized
53.91	54.61	lightly banded white marble
54.61	54.93	light green diopside calc silicate skarn with minor dark green actinolite banding and mottled sections of limestone and calc silicate skarn mixtures
54.93	56.07	dirty light grey limestone; (55.15-55.45) mixture of limestone, primarily actinolite-rich calc silicate skarn, and black material, minor pyrrhotite and even less chalcopyrite within calc silicate skarn material; (55.57-56.07) dirty grey limestone with minor light green silicate mineral and black material infilling fractures and as minor flecks on bedding planes
56.07	56.55	white to light grey, lightly banded marble
56.55	56.65	altered, mottled light green to yellowish-white calc silicate skarn

56.65	57.94	dirty grey to white, banded limestone; (56.90-56.97) altered zone, greenish-yellow, mottled calc silicate skarn; (57.34-57.70) lightly fractured zone with fractures infilled with black material (carbonaceous?), thin bands of mica schist and actinolite-rich calc silicate skarn parallel to bedding
57.94	67.02	calc silicate skarn, varies from white to light green to dark green in colour, some areas containing thinly bedded dark schists, minor serpentine beds, some light fracturing; (58.07-58.20) thinly bedded red-brown-black mica schist; (58.20-58.26) actinolite-rich calc silicate skarn; (58.26-58.44) thinly interbedded actinolite-rich calc silicate skarn, quartzite, and mica schist; (58.44-58.80) thinly interbedded tremolite calc silicate skarn, quartzite, marble (very siliceous); (58.80-58.90) actinolite-rich calc silicate skarn; (58.90-59.86) speckled light greenish-white calc silicate skarn, lightly banded; (59.86-59.94) actinolite-rich calc silicate skarn bounded by white bands of serpentine minerals (2-3cm thick) on each side; (61.31-61.62) light green calc silicate skarn with heavy mica schist banding; (62.45-62.80) actinolite-rich calc silicate skarn speckled with white, very minor splashes of disseminated chalcopyrite; (66.47-66.63) speckled black, green, white calc silicate skarn
67.02	67.29	alteration zone, mixture of light green calc silicate skarn and dark mica schist, fractured, minor pyrrhotite, small specks of sulphide minerals along fractures; (67.19-67.29) primarily schist
67.29	72.54	light grey to light green feldspar dyke, phenocrysts quartz and hornblende; (67.29-67.39) mottled green contact zone with large fragment of schist and some small phenocrysts of quartz and black hornblende; (67.57-67.72) mottled, small fractures, alteration?; (68.32-69.46) light green smudged appearance; (69.70-72.54) dyke becoming more granitic in appearance; (at 69.98, 71.84, 72.33) areas having splashes of green (calc silicate minerals?), appear less quartz-rich and show abrupt contacts with the dyke at times

END OF HOLE