CASAK EXPLORATION LTD.
DIAMOND DRILL RECORD

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| Length | 60.96 m | Contractor | Kluane Drilling Ltd. | Hole No. | HA-89-5 |
| Bearing | VERTICAL | Core Size | BQ Casing | Project | Hop-Acme Claims |
| Dip | -90° | Started | 08:00 am, Oct.04'89 | | |
| Lat. | 3200 N. | Completed | 06:00 pm, Oct.05'89 | NTS Map | 115 H/7 |
| Dep. | 2698 E. | Logged by | S. Peulgen, J.C. Stephen | Claim | |
| Elev. | 1166 | Stored | Geoff Lattin WHITEHORSE | # Pages | 5 |
| O.B. Thickness | 2.58 m | | | Purpose | to test geophysical anomaly |

| Footage (m) From | To | DESCRIPTION |
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| 0.00 | 2.58 | overburden; no remnants in core box |
| 2.58 | 9.45 | dark grey to black, thinly bedded schist, primarily micaceous, some quartz veins, beds of calc silicate skarn, minor pyrite coating on some fracture planes, bedding 70° to core; (2.58-3.48) lightly fragmented and oxidized; (2.84-2.94) actinolite-rich calc silicate skarn/schist, disseminated specks of sulphide; (3.33-3.35) speckled calc silicate skarn, lightly mineralized; (5.49-6.94, 7.11-7.31, 8.69-9.12) oxidized and fragmented |
| 9.45 | 14.23 | dark grey green , fine grained dyke (andesite?), contact parallel to bedding, small calcite vein on contact, small phenocrysts (like specks) white to grey in colour; (11.23-11.69) large oxidized fairly indistinct fragments or elliptical amygdules, lighter in colour than groundmass; (11.69-12.01) gradual change of dyke into fine grained light grey porphyritic dyke with black phenocrysts (highly oxidized section); (at 11.71) large fragments of schist in dyke, gradually increasing in number; (at 11.98) abrupt contact with schist along the length of the core, gradual decrease in the amount of dyke material (fracture pinches out?); (12.09-12.20) mica schist, contact with dyke perpendicular to the length of the core; (12.60-12.69) dyke appears to finger into schist, larger fragments in this part of the dyke; (12.69-12.90) mica schist; (12.90-13.40) mica schist and dark grey-green porphyritic dyke, contact very definite, running approximately parallel to the length of the core, fragments of schist? in dyke along contact, section oxidized; (13.40-13.60) mica schist; (13.60-14.06) dyke and mica schist, contact parallel to the length of the core, mica schist components appear swirly, some calc silicate skarn intermixed, contact sharp but appears to interfinger |
| 14.23 | 18.08 | mica schist; (14.23-14.58) garnet tick; (15.27-15.57) schist interbedded |

| Sample# | From | To | Length(m) | Assays Au(g/t) | Ag(g/t) | Cu(%) | $MoS_2$(%) |
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| | | with very siliceous calc silicate skarn; (15.32-15.33) sea green coloured vein with garnet, schist garnetiferous | | | | | | | | |
| 18.08 | 18.94 | dark black-green, fine grained (andesite?) dyke with very faint phenocrysts (whitish), at upper contact with schist, 2cm oxidized alteration? zone with tiny fragments of schist, lower contact quartz veined at $45^0$ to core; (18.23-18.39) broken, oxidized fragments | | | | | | | | |
| 18.94 | 20.20 | quartzite interbedded with mica schist; (18.94-18.98) alteration? zone between dyke and schist, contact sharp at $50^0$ to the length of the core, oxidized; (18.99-20.20) schist lightly fractured and oxidized, some garnet; (19.94-20.02) dyke appears to fill pocket? from fracture, dark grey to black in colour, some tiny fragments of schist? along borders of sharp contact | | | | | | | | |
| 20.20 | 20.73 | highly oxidized, fragmented aplitic dyke?, fine grained with tiny black phenocrysts (sulphides?), contact with schist sharp abut jagged, lower contact shows gradiation into quartzite | | | | | | | | |
| 20.73 | 21.36 | dirty grey quartzite with some calc silicate skarn bedding and mica schist; (20.75-21.05) quite siliceous; (21.05-21.12) dark grey-black material (calc silicate skarn?) with minute specks of pyrrhotite and chalcopyrite | | | | | | | | |
| 21.36 | 22.02 | pale green calc silicate skarn with bands and blebs of dark green actinolite giving a speckled appearance, some zones have a pinkish tinge (garnet?), disseminated pyrite and chalcopyrite (combined <1%) throughout section, minor splashes of pyrrhotite | 30054 | 21.36 | 22.02 | 0.66 | 0.069 | 2.40 | 0.23 | |
| 22.02 | 22.65 | predominantly dark green skarn with zone of pinkish tinge (salmon pink, garnet-rich?), intermixing of different skarn minerals gives speckled texture, pyrite, chalcopyrite, and pyrrhotite (1% combined) disseminated throughout section, (22.18-22.43) quite pinkish, minute flecks of white material; (22.34-22.37) fragment of green calc silicate skarn observed apparently perpendicular to bedding planes; (22.43-22.65) dark greenish black (very little pink); (at 22.53) evidence of banded silicates (small zones), evidence of epithermal event?; (at 22.63) brecciated | 30055 | 22.02 | 22.62 | 0.60 | 0.034 | 1.71 | 0.20 | |
| 22.65 | 22.97 | pale green, lightly speckled calc silicate skarn, minor splashes of pyrite, pyrrhotite, and chalcopyrite?, seemingly concentrated in dark green actinolite-rich blebs | 30056 | 22.62 | 22.97 | 0.35 | 0.034 | 0.34 | 0.03 | |
| 22.97 | 23.94 | garnet-rich actinolite skarn, very mottled mixture,sporadic splashes of chalcopyrite and primarily pyrite (1% combined) throughout the section, small zones where large garnet crystals seen, some zones more heavily mineralized than others (these appear to be less garnet-rich), minor white to blueish-grey stringer or eyes with delicate epithermal banding observed; (23.30-23.40) very pink in colour; (at 23.47) minor $MoS_2$ | 30057 | 22.97 | 23.94 | 0.97 | 0.171 | 2.06 | 0.31 | 0.001 |

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| 23.94 | 24.22 | dark green, fine grained actinolite skarn, lightly fractured with black material (chlorite?) infilling fractures and tiny branches, chalcopyrite (primarily) and pyrite mineralization (4% combined | 30058 | 23.94 | 24.23 | 0.29 | 0.813 | 19.55 | 2.06 |
| 24.22 | 25.06 | medium to light green, fine grained diopside? skarn, texture fibrous at time giving pitted appearance, chalcopyrite and pyrite (2% combined) lightly disseminated or in splashes throughout section; (24.47-24.53) mottled appearance; (24.75-24.83) dark black, fine grained material (chlorite?); (24.95-25.05) garnet-rich skarn | 30059 | 24.23 | 25.08 | 0.85 | 0.103 | 2.74 | 0.29 |
| 25.06 | 29.15 | pale green to medium green skarn, some light fracturing, minor garnet-rich zones; (25.86-26.13) calc silicate skarn lightly enriched in actinolite, some light banding; (27.35-27.50) frequent thin fractures, usually parallel to bedding, calc silicate skarn appears swirly, some light blue-white serpentine family minerals, minor chalcopyrite mineralization; (27.50-27.60) magnetite-pyrrhotite skarn (fracture filling? or fragment?), minor chalcopyrite, contact at $75^0$ to core length, appears to be sharp to gradational; (27.60-27.74) pinkish-green (garnetiferous), minor chalcopyrite mineralization; (27.74-28.70) light pale green, more siliceous calc silicate skarn, fine grained; (27.88-27.96) calc silicate skarn appears very pure in composition; (28.70-28.90) creamy white quartz carbonate veining within calc silicate skarn; (28.90-29.15) speckled calc silicate skarn intermixed with marble | 30060 | 28.70 | 29.44 | 0.74 | 0.034 | 0.34 | 0.04 |
| 29.15 | 29.44 | grey-green creamy marble, quite fractured, heavily oxidized on main fractures, pyrite mineralization along fractures, at upper contact with calc silicate skarn, section brecciated and highly oxidized, angle of contact sharp, $30^0$ to the length of the core | | | | | | | |
| 29.44 | 31.10 | fine grained, dark green actinolite-rich skarn, minor specks and splashes of disseminated sulphides, minor fractures some of which are oxidized, some fractures are infilled with calcite minerals | 30061 | 29.44 | 31.10 | 1.66 | 0.034 | 1.03 | 0.09 |
| 31.10 | 32.31 | fine grained, medium green actinolite-rich skarn, chalcopyrite and pyrite (1% combined) finely disseminated throughout section; (31.23-31.33) speckled section of black material (chlorite?) and calc silicate skarn, appears pitted, lightly fractured, pyrite seen as coating on fracture planes | 30062 | 31.10 | 32.34 | 1.24 | 0.034 | 0.69 | 0.08 |
| 32.31 | 32.84 | pale green, fine grained diopside-rich skarn, minor pyrite and chalcopyrite; (32.45-32.51) blueish-grey band with pyrrhotite mineralization | 30063 | 32.34 | 32.84 | 0.50 | 0.034 | 0.34 | 0.07 |
| 32.84 | 33.39 | medium green skarn with mixture of beds (actinolite-rich, tremolite-rich, white marble) and thin carbonate veins, texture varies from swirly to mottled to pure, chalcopyrite (1%) and pyrite disseminated or as splashes throughout section, seem to be more often in | 30064 | 32.84 | 33.37 | 0.53 | 0.514 | 4.80 | 0.50 |

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| | | association with dark black (chlorite?) or actinolite beds | | | | | | | |
| 33.39 | 34.52 | magnetite-pyrite skarn, in less heavily mineralized sections diopside calc silicate skarn evident, magnetite (5%) present as bands and in globular specks throughout section, some quartz carbonate filled fractures, minor pyrrhotite (2%) and chalcopyrite (1%) present as disseminated particles; (34.31-34.41) fine grained, black porphyry dyke with white phenocrysts | 30065 | 33.37 | 34.52 | 1.15 | 0.103 | 1.03 | 0.03 |
| 34.52 | 34.89 | lightly banded, greenish-grey quartz carbonate, bedding $80^0$ to core; (34.52-34.62) somewhat mottled | | | | | | | |
| 34.89 | 35.97 | heavily banded, light grey-green calc silicate skarn; (35.06-35.27) pale light grey calc silicate skarn with black speckles (sulphides?) enclosing 2cm actinolite-rich band; (35.75-35.82) dark grey-black to blue-green banded calc silicate skarn, minor sulphide mineralization; (at 35.90) oxidation of rock begins | | | | | | | |
| 35.97 | 36.88 | heavily banded, dark grey to light grey quartzite with some schistose beds, oxidized; (36.64-36.84) fragmented, heavily oxidized, some fractures contain quartz carbonate | | | | | | | |
| 36.88 | 37.07 | dark black altered rock (silicified argillite?) with many fine fractures and some large veins ($20^0$ to core) filled with quartz carbonate, upper contact sharp at $20^0$, lower contact irregular along quartz carbonate veinlet | | | | | | | |
| 37.07 | 39.66 | calc silicate skarn?, very heavily oxidized and fragmented (fault zone), banded, somewhat schistose? (very difficult to see due to heavy oxidation) | | | | | | | |
| 39.66 | 40.33 | light green-grey, fine grained aphlitic dyke with small black-dark green phenocrysts, section very heavily oxidized and finely fractured; (39.96-40.11) quartz carbonate vein? running the length of the core, appears to divide coarse grained porphyry dyke (dark grey with white phenocrysts) from fine grained aphlitic dyke | | | | | | | |
| 40.33 | 47.81 | dark grey, fine grained K-feldspar porphyry dyke with several subtle changes in appearance throughout the section, white-grey-green-dark phenocrysts, appears to be the end of the fault zone; (40.70-40.90) mottled texture, phenocryst boundaries faint; (41.43-42.16) large white crystals (0.5-1.0cm in size) within groundmass; (42.21-42.66) calc silicate breccia skarn, shards and distinct fragments of foreign material; (at 42.65) gradual change ($45^0$ to core length) to a medium green turning grey porphyry dyke with large white phenocrysts within equigranular groundmass; (at 43.52) dyke becoming more granitic in appearance; (43.99-44.02) fine grained fragment of foreign material (black with large white phenocrysts-material from another dyke?); (47.63-47.75) granitic dyke grading into dark grey to black porphyritic dyke (fine grained, white phenocrysts); (47.75-47.81) fragmented schist | | | | | | | |

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| | | or dyke |
| 47.81 | 49.50 | mica schist interbedded with calc silicate skarn, some quartzite and actinolite beds, mica schist appears garnet-rich, some zones with nodules |
| 49.50 | 50.35 | dark grey green, mottled, somewhat granitic feldspar porphyry dyke, contact with schist is sharp and parallel to bedding, lower contact is at $65^0$ to core length (not quite in line with bedding) |
| 50.35 | 50.93 | dark, thinly bedded mica schist with some beds of calc silicate skarn and quartzite, some zones with garnet nodules |
| 50.93 | 59.60 | light grey to creamy white, lightly banded marble, light fracturing, fractures infilled with epidote? (seaweed green) or chlorite; (51.53-51.67) zone of garnet-rich mica schist; (51.87-51.88) mica schist; (52.07-52.10) micaceous, serpentinized alteration band; (52.18-52.21) fragmented, convoluted bed of garnet-rich mica schist; (52.44-52.52) greenish-blue calc silicate skarn zone; (53.16-53.20) altered, fragmented, oxidized mica schist; (at 53.40) vein of medium green calc silicate skarn surrounded by mica schist (garnetiferous); (58.50-59.15) lightly fractured and oxidized |
| 59.60 | 60.96 | heavily banded, light grey to dark grey-green calc silicate skarn, some traces of garnet; (60.42-60.80) more siliceous (light grey to white); (60.80-60.87) mottled grey green calc silicate skarn; (60.87-60.96) speckled light grey, dark grey, black, dark green calc silicate skarn |
| | | END OF HOLE |