CORE AT 1989 CAMPSITE



| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Hole No: | NS89-4 | Azimuth: | 140.0 | Core Size: | NQWL | BOREHOLE TESTS: | | | | | |
| | | | | | | Depth | Azimuth | Dip | Depth | Azimuth | Dip |
| Project: | NORTH STAR | Dip: | -74.0 | Contractor: | J.T. THOMAS | 0 | 140.0 | -74.0 | | | |
| | | | | | | 185.0 | 137.0 | -75.0 | 947.0 | 152.0 | -74.0 |
| Property: | DOLLY VARDEN | Length (ft): | 1147.00 | Started: | SEPTEMBER 27 1989 | 547.0 | 150.0 | -75.0 | 1147.0 | 158.0 | -74.0 |
| | | | | | | 747.0 | 152.0 | -75.0 | | | |
| Claim: | SPORTSMAN | Elevation (ft) | 1744.70 | Completed: | SEPTEMBER 30 1989 | | | | | | |
| Co-ords: N: | 6877.80 | | | Logged By: | T DROWN | | | | | | |
| E: | 6239.80 | Comments: | SITE #2 | Date Logged: | SEPTEMBER 28-30 1989 | | | | | | |

| INTERVAL (ft): From: | To: | DESCRIPTION | Sample No. | From (ft) | To (ft) | Inter-val (ft) | Au ppb | Cu % | Pb % | Zn % | Ag Oz/T |
|---|---|---|---|---|---|---|---|---|---|---|---|
| .0 | 13.0 | CASING | | | | | | | | | |
| 13.0 | 71.2 | ANDESITE AUGITE PORPHYRY LAPILLI TUFF<br>Dark green-maroon andesite with 1-3mm black augite phenocrysts in clast supported tuff. 20% of clasts composed of ANDESITE PLAGIOCLASE PORPHYRY LAPILLI TUFF, rest ANDESITE AUGITE PORPHYRY LAPILLI TUFF. Variable hematite alteration. Frequent 3-8mm calcite veinlets at 20 and 35 deg to CA. Imbrication of lapilli at 26 deg to CA.<br>23.0 23.5 FAULT 10 deg to CA. | | | | | | | | | |
| 71.2 | 247.4 | ANDESITE PLAGIOCLASE PORPHYRY LAPILLI TUFF<br>Deep maroon, green mottled plagioclase porphyry with 75% of clasts plagioclase porphyry, others mixed types. Rocks clast supported. Foliation after clasts at 44 deg to CA; Axial plane of crenulated calcite stringers at 52 deg to CA. Where matrix evident, totally flooded with hematite, from 120' to bottom becoming more matrix supported, occasional section with light green albitized rock with ragged alteration rims to hematitic clasts (matrix mostly altered only) particularly near calcite stringers. Frequent jointing at 5-7 deg to CA. Gradational contact at base of unit.<br>178.5 182.0 FAULT 5 deg to CA, mullious at 15 deg to CA. Core broken over 50% of interval<br>201.0 231.0 Medium green rock now; All hematite alteration gone, rocks same composition as before. Foliation at 35-38 deg to CA.<br>218.6 Possible fold closure after distorted | | | | | | | | | |

R. V. KIRKHAM

| INTERVAL (ft): From: | To: | DESCRIPTION | Sample No. | From (ft) | To (ft) | Inter-val (ft) | Au ppb | Cu % | Pb % | Zn % | Ag Oz/T |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | lapilli and foliation. Axial plane at 68 deg to CA, dipping downhole. | | | | | | | | | |
| 247.4 | 276.2 | ANDESITE AUGITE PORPHYRY LAPILLI TUFF<br>Medium green, fine grained augite rich andesitic matrix supported lapilli tuff. Lapilli mostly same rock types, frequently little darker green. Foliation of lapilli at 28-32 deg to CA. Frequent calcite veinlets to 15mm wide at various angles. | | | | | | | | | |
| 276.2 | 326.5 | ANDESITE LAPILLI TUFF<br>Hematitic - Deep maroon, Andesitic? lapilli tuff. Matrix supported, with clasts 5-40mm size, mostly flattened and aligned at 39-43 deg to CA. Frequent patches 2-3' wide where matrix is rich in fine grained hematite and clasts have 2-3mm rims of hematite on their interiors; many andesitic clasts partially hematitized. Lower contact sharp at 20 deg to CA.<br>276.2 FAULT Bleached and brecciated margins at 58 deg to CA, makes lower contact with underlying hematitic unit.<br>321.4 FAULT 60 deg to CA with medium green ANDESITE AUGITE PORPHYRY LAPILLI TUFF on footwall of fault down to 323.2' where ANDESITE AUGITE PORPHYRY LAPILLI TUFF grades back into hematitic ANDESITE LAPILLI TUFF. | | | | | | | | | |
| 326.5 | 341.4 | ANDESITE AUGITE PORPHYRY LAPILLI TUFF<br>Medium green, fine grained augite andesite with lapilli of same composition. Same unit as from 247.4-276.2'. Section badly broken by fault zone over half of section.<br>336.0 341.4 FAULT At 37 and 67 deg to CA, strongest shears at 37-40 deg. | | | | | | | | | |
| 341.4 | 478.0 | ANDESITE PLAGIOCLASE PORPHYRY LAPILLI TUFF<br>Deep maroon plagioclase porphyry lapilli tuff, with 60% of rock in clasts. Matrix and clasts mostly same composition. Occasional 10%, clasts of fine grained black andesite tuffs. Frequent calcite veinlets to 3cm, mostly <8mm. Not well foliated as clasts larger and not flattened.. Clasts average 2-4 c in size, often up to 15cm across. Mostly subrounded and randomly oriented. | | | | | | | | | |

| INTERVAL (ft): From: | To: | DESCRIPTION | Sample No. | From (ft) | To (ft) | Inter-val (ft) | Au ppb | Cu % | Pb % | Zn % | Ag Oz/T |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Frequent medium green ANDESITE AUGITE PORPHYRY clasts with depth. 270'-400'; 3-5% of rock volume. Weak sporadic penetration cleavage at 38-40 deg to CA. Lower contact gradational. | | | | | | | | | |
| 478.0 | 484.0 | ANDESITE AUGITE TUFF<br>Medium green, medium grained andesite crystal tuff with abondant dark green 2-3mm long augites in matrix of finer plagioclase phenocrysts. Frequent 3-8mm calcite veinlets at 70-75 deg to CA. Lower contact sharp (sheared) at 53 deg to CA. | | | | | | | | | |
| 484.0 | 494.5 | ANDESITE PLAGIOCLASE PORPHYRY LAPILLI TUFF<br>Deep maroon, same as 341'-478'. Bleached to light green-maroon mottled 492-494.5', Lower contact gradational. | | | | | | | | | |
| 494.5 | 504.6 | ANDESITE AUGITE TUFF<br>Medium green-grey andesite tuff with numerous broken and whole augite phenocrysts and dark green-black broken rock fragments in plagioclase phyric matrix. Augites mostly chlorite altered. Occasional ANDESITE AUGITE PORPHYRY TUFF clast to 8cm long. Lower contact sharp with calcite filling at 28 deg to CA. | | | | | | | | | |
| 504.6 | 521.4 | ANDESITE PLAGIOCLASE PORPHYRY LAPILLI TUFF<br>Deep maroon, medium grained matrix supported lapilli tuff with obvious white 2-3mm euhedral, zoned plagioclase phenocrysts. Occasional green patches where hematite alteration absent (albitized?). Abundant calcite as 3-5mm stringers and after plagioclase in clasts and matrix. Mafics altered to chlorite-calcite. Lower contact at 24 deg to CA and parallel to foliation of lower unit. | | | | | | | | | |
| 521.4 | 527.8 | ANDESITE AUGITE PORPHYRY LAPILLI TUFF<br>Medium green with darker green rounded clasts of fine grained andesite, otherwise same rock as unit from 494.5-504.6 Lower contact at 22 deg to CA and parallel to foliation of finer clasts and mafics. | | | | | | | | | |
| 527.8 | 538.1 | ANDESITE PLAGIOCLASE PORPHYRY LAPILLI TUFF | | | | | | | | | |

| INTERVAL (ft): From: | To: | DESCRIPTION | Sample No. | From (ft) | To (ft) | Inter-val (ft) | Au ppb | Cu % | Pb % | Zn % | Ag Oz/T |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Same as 504.6'-521.4', last 2.7' totally plagioclase crystal tuff, with lower contact at 38 deg to CA. | | | | | | | | | |
| 538.1 | 566.7 | ANDESITE AUGITE BRECCIA<br>Light green, phyric matrix with 1-2mm broken and euhedral augite phenocryts. Other dark green-black fragments not augite but dacite fragments. Largely clasts supported with mixed ANDESITE FELDSPAR PORPHYRY, ANDESITE AUGITE PORPHYRY breccia blocks to 20cm diameter. Penetrative crenulation cleavage aften axial plane at 14 deg to CA, lower contact at 28 deg to CA, well defined.<br>554.0 555.7 Grey dacite tuff section at 28 deg to CA, welded lapilli tuff. | | | | | | | | | |
| 566.7 | 580.0 | DACITE LAPILLI TUFF<br>Dark grey, green mottled lapilli tuff with dark grey matrix support and light green ANDESITE AUGITE PORPHYRY, ANDESITE AUGITE PORPHYRY LAPILLI TUFF, ANDESITE FELDSPAR PORPHYRY, ANDESITE AUGITE PORPHYRY LAPILLI TUFF clasts of variable sizes and shapes, <1cm t0 12cm. Foliation of smaller clasts at 25 deg to CA. Black-grey matrix carbonaceous, sooty on fracture surfaces with shearing. Minor calcite veining at 10 deg to CA. Lower contact at 25 deg to CA. | | | | | | | | | |
| 580.0 | 583.2 | DACITE LAPILLI TUFF<br>Light green tuffs with clasts <2cm diameter. Clasts of same composition and color as matrix. Only occasional hematite altered andesite clasts. Lower contact gradational. | | | | | | | | | |
| 583.2 | 590.0 | DACITE BRECCIA<br>Mixed light-green and grey-black DACITE LAPILLI TUFF blocks up to 90mm diameter. Matrix <30% composed of grey dacite and black lithic dust (carbonaceous) Clasts mostly of light green DACITE TUFF DACITE LAPILLI TUFF and some black DACITE TUFF. Imbrication of blocks at 30 deg to CA. Frequent calcite stringers to 3cm wide, occasionally banded at 25 and 60 deg to CA. Lower contact irregular. | | | | | | | | | |

| INTERVAL (ft): From: | To: | DESCRIPTION | Sample No. | From (ft) | To (ft) | Inter-val (ft) | Au ppb | Cu % | Pb % | Zn % | Ag Oz/T |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 590.0 | 619.5 | DACITE LAPILLI TUFF<br>Mixed light green, grey, and black dacite lapilli tuff. Matrix mostly grey - black very fine grained with clasts of all sizes and shapes of DACITE LAPILLI TUFF (green), ANDESITE FELDSPAR PORPHYRY (green), and DACITE LAPILLI TUFF (black). Interbeds of light green DACITE LAPILLI TUFF to grey DACITE TUFF in part appear to grade from coarse tuff to fine grained ash tuff down the hole. Foliation marked at 55 deg to CA. Core badly broken to 50% pieces < 3 inches.<br>606.2.0 FAULT Fault zone breaking core into < 2 inch pieces @ 28, 10, and 60 degrees to core axis. Sooty black carbonaceous debris on fault surfaces.<br>606.2 609.0 Solid core.<br>609.0 615.0 FAULT Fault zone continues @ 20, 25, 50 degrees to core axis. | | | | | | | | | |
| 619.5 | 622.0 | DACITE BRECCIA<br>Black and light green, same as 583.2-590'. Lower contact sheared at 45 deg to CA. | | | | | | | | | |
| 622.0 | 646.3 | DACITE LAPILLI TUFF<br>Black dacite tuff with carbonaceous matrix and frequent angular to rounded light green DACITE TUFF, DACITE LAPILLI TUFF clasts. Occasional andesite porphyry and tuff clasts (minor). Occasional thinly laminated tuff lamellae ranging from 22 deg to 42 deg to CA. Occasional light green DACITE TUFF block to 12cm long. Overall about 15-20% of clasts >15mm; rest range from <1mm to 5mm in size. Matrix becoming plagioclase porphyry with depth 630' onward although still with black-dark grey matrix. Lower contact faulted at 45 deg to CA with underlying unit with 8 inches crushed rock and gouge. | | | | | | | | | |
| 646.3 | 656.9 | DACITE FELDSPAR PORPHYRY<br>Light green-grey matrix with 2-4mm long plagioclase phenocrysts. Occasional ghostly outlines of relic clasts after weak-moderate alteration (albitization?). Abundant calcite in matrix of rocks, possibly after plagioclase. Lower contact irregular. | | | | | | | | | |

| INTERVAL (ft): From: | To: | DESCRIPTION | Sample No. | From (ft) | To (ft) | Inter-val (ft) | Au ppb | Cu % | Pb % | Zn % | Ag Oz/T |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 656.9 | 673.0 | DACITE LAPILLI TUFF<br>Green grey lapilli tuff with matrix supported clasts to 10cm long. Mostly 2-4cm. Occasional sections 5-20cm of DACITE FELDSPAR PORPHYRY (clast?). Frequent dark and light green DACITE TUFF clasts angular to subrounded. Fault at 672' at 60 deg to CA. Rock below fault becoming coarser, grading into underlying unit, lower contact about 58 deg to CA. | | | | | | | | | |
| 673.0 | 717.2 | ANDESITE LAPILLI TUFF<br>Breccia - Maroon and dark green, mixed andesite plagioclase porphyry and andesite augite tuffs with fragments of all rock types observed. May be similar enit to above so called DACITE LAPILLI TUFF unit with less intense alteration, only hematite flooding 673'-692.5' then sporadically throughout interval. Lower contact gradational. Medium green phyric matrix, with abundant 2-3% broken and enhedral augites (chloritized) to 3mm; in conjunction with numerous broken, angular 2-8mm shards of a dark green-black chloritized mafic tuff, (which could be mistaken for augites when fine grained.) This unit has very little of the plagioclase porphyry clasts seen in the preceeding unit making it quite distinct. | | | | | | | | | |
| 717.2 | 732.0 | ANDESITE AUGITE PORPHYRY LAPILLI TUFF<br>Medium green phyritic matrix, with abundant 2-3% broken and euhedral augites (chloritized) to 3mm; in conjunction with numerous broken, angular 2-8mm shards of a dark green - black chloritized matrix tuff, (which could be mistaken for augites when fine grained). This unit has very little of the plagioclase porphyry clasts seen in the preceeding unit making it quit distinct. | | | | | | | | | |
| 732.0 | 766.4 | ANDESITE LAPILLI TUFF<br>Maroon, same as unit 673'-717.2' with 2' segment of above DACITE LAPILLI TUFF at 42 deg to CA (possibly large boulder?) Unit contact gradational. | | | | | | | | | |
| 766.4 | 778.3 | ANDESITE AUGITE PORPHYRY LAPILLI TUFF<br>Medium green, same as 717'-732'. Contacts gradational. Occasional 2-3mm calcite veinlets at | | | | | | | | | |

| INTERVAL (ft): From: | To: | DESCRIPTION | Sample No. | From (ft) | To (ft) | Inter-val (ft) | Au ppb | Cu % | Pb % | Zn % | Ag Oz/T |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 30 deg to CA. | | | | | | | | | |
| 778.3 | 807.0 | ANDESITE BRECCIA<br>Maroon, lithic fine grained hematitic matrix with dark green-black often maroon plagioclase porphyry blocks to 3' diameter. Abundant calcite in matrix and clasts after plagioclase. Mafics, augites?? altered to apple green mix of chlorite-calcite. | | | | | | | | | |
| 807.0 | 864.0 | ANDESITE AUGITE PORPHYRY LAPILLI TUFF<br>Dark-medium green fine grained tuffaceous matrix with darker green andesitic porphyries and tuff clasts to 12cm diameter. Augites in matrix angular to euhedral, some dark fine grained chloritic fragments which could be mistaken for mafics. Abundant 4-5% calcite in matrix and plagioclase phenocrysts. Minor calcite in altered mafics ie; chlorite-calcite. Calcite veinlets at 30 and 60 deg to CA in opposing fashion. Occasional patches of hematite alteration.<br>852.0 FAULT 73 deg to CA. | | | | | | | | | |
| 864.0 | 956.6 | ANDESITE AUGITE PORPHYRY LAPILLI TUFF<br>Same as unit above 807'-864' but becoming increasingly sericite-pyrite altered with depth. Outlines of clasts just visible. Rocks light green-grey overall with chloritized augites and sericitized-pyritized feldspars and felsic matrix. Maroon clasts have become bleached, salmon hued clasts now. Foliation after altered mafics at 32 deg to CA. Numerous calcite stringers from 864'-887'. Calcite stringers becoming calcite-quartz stringers then mostly quartz-calcite stringers. | | | | | | | | | |
| | | 902.0 FAULT 30 deg to CA. | 39812 | 902.0 | 908.4 | 6.4 | 11 | n/a | .01 | .02 | .01 |
| | | 902.0 908.4 Intense silicification; after severe crackling of host rocks. Stockworked now with white quartz. Differential silicification caused by differences in original clast composition and textures. | 39813 | 908.4 | 917.0 | 8.6 | 6 | n/a | .01 | .02 | .01 |
| | | 910.0 937.0 Silicification patchy now with 18-30 inch sections at 10 inch intervals with intense to moderate silicification and stockworks. Any pyrite present totally in volcanic | 39814 | 917.0 | 922.0 | 5.0 | 3 | n/a | .01 | .02 | .01 |
| | | | 39815 | 922.0 | 927.0 | 5.0 | 1 | n/a | .01 | .02 | .01 |

| INTERVAL (ft): From: | To: | DESCRIPTION | Sample No. | From (ft) | To (ft) | Inter-val (ft) | Au ppb | Cu % | Pb % | Zn % | Ag Oz/T |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | rocks not in quartz stringers. | | | | | | | | | |
| | 926.4 | FAULT 3cm sheared rocks at 43 deg to CA, slickensides at 45 deg to CA. | 39816 | 927.0 | 932.0 | 5.0 | 1 | n/a | .01 | .02 | .01 |
| | | | 39817 | 932.0 | 937.0 | 5.0 | 1 | n/a | .01 | .02 | .03 |
| | | | 39818 | 937.0 | 942.0 | 5.0 | 1 | n/a | .01 | .02 | .03 |
| | 942.0 944.0 | Shattered zone with quartz cement; angular-subangular breccia fragments to 4cm grades into 70% quartz below, to 949.6'. | 39819 | 942.0 | 944.0 | 2.0 | 1 | n/a | .01 | .02 | .01 |
| | 944.0 949.6 | Intensely silicified to 70% quartz. | 39820 | 944.0 | 949.6 | 5.6 | 1 | n/a | .01 | .01 | .01 |
| | 944.0.0 | FAULT @ 35 degrees into crackled and silicified volcanic tuff, 4 cm gouge. | | | | | | | | | |
| | 949.6 950.9 | DEBRIS FLOW Volcanic debris flow section with tuff clasts located below this section from 964.7'-968.4'. | 39821 | 949.6 | 957.0 | 7.4 | 1 | n/a | .01 | .02 | .01 |
| 956.6 | 971.0 | ANDESITE LAPILLI TUFF | | | | | | | | | |
| | | Crystal lapilli tuff - Light green to cream well foliated augite/plagioclase crystal tuff. Dark green augite and creamy, altered plagioclase are both aligned producing a distinctive foliation at 30-35 deg to CA. Much dark green chlorite both as alteration of mafics and along fractures and stringers. In some places foliation swirled around coarse clasts. Frequent calcite stringers and 1-2cm quartz clots. Lower contact at 30 deg to CA. | 39822 | 957.0 | 962.0 | 5.0 | 1 | n/a | .01 | .02 | .01 |
| | | | 39823 | 962.0 | 967.0 | 5.0 | 1 | n/a | .01 | .02 | .03 |
| | | | 39824 | 967.0 | 971.0 | 4.0 | 1 | n/a | .01 | .03 | .04 |
| | 969.5 971.0 | Same rock type but not strongly altered, more chlorite than eericite?? alteration giving rock darker green color. Lacks strong foliation. | | | | | | | | | |
| 971.0 | 977.5 | ANDESITE LAPILLI TUFF | | | | | | | | | |
| | | Dark green phyric tuff with distorted and flattened lapilli. 8-15mm thick imparting lamellae type texture. Much dark green-black chlorite throughout as alteration to mafics but mostly as whisps and stringers. 10-15% chlorite overall. Numerous calcite patches and stringers to 10mm wide. Foliation strong at 35 deg to CA. Becoming silicified 976-977.5'. Lower contact at 44 deg to CA, sheared, slickensides at 8 deg. | 39825 | 971.0 | 977.5 | 6.5 | 1 | n/a | .01 | .03 | .03 |
| 977.5 | 986.3 | LAMPROPHYRE DYKE | | | | | | | | | |
| | | Black, fine grained with very fine grained (chilled) margins on upper and lower contacts. Strongly magnetic. Lower contact has 1 inch clay gouge at 51 deg to CA. | 39826 | 977.5 | 986.3 | 8.8 | 1 | n/a | .01 | .02 | .03 |

| INTERVAL (ft): From: | To: | DESCRIPTION | Sample No. | From (ft) | To (ft) | Inter-val (ft) | Au ppb | Cu % | Pb % | Zn % | Ag Oz/T |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 986.3 | 989.0 | DACITE LAPILLI TUFF<br>Grey, pyritic, well foliated tuff. Strong silicification from upper contact to 987.5'; 1-3% pyrite overall, up to 5-6% over last 6 inches of interval. Lower contact with exhalite at 25 deg to CA. | 39827 | 986.3 | 989.0 | 2.7 | 3 | n/a | .04 | 1.40 | .67 |
| 989.0 | 1002.3 | QUARTZ BRECCIA EXHALITE<br>Grey-white mottled quartz with numerous 1-5cm angular breccia fragments, cemented by quartz. Some fragments themselves brecciated prior to final deposition. Frequent barite blades intergrown with 5-8mm diameter hexagonal quartz crystals. Calcite common as final fracture filling. Sulfides of galena, pyrite, sphalerite, trace galena. | | | | | | | | | |
| | 989.0 992.5 | Whisps galena, knots of honey colored sphalerite and irregnlar blebs/patehes fine grained pyrite; 8% sulfides. | 39828 | 989.0 | 992.5 | 3.5 | 31 | .06 | .09 | 2.93 | .54 |
| | 992.5 997.0 | Sulfide poor section, 3% total with 1% galena, 0.5% sphalerite, 1-2% pyrite. | 39829 | 992.5 | 997.0 | 4.5 | 55 | .08 | .01 | .44 | .36 |
| | 997.0 1002.3 | Greater % of barite, 5%, with frequent black quartz patches. Knots ofsphalerite to 1cm with thin rim of galena. Frequent irregular blebs of pyrite. Minor light green chlorite. | 39830 | 997.0 | 1002.3 | 5.3 | 80 | .08 | .31 | 4.52 | .77 |
| 1002.3 | 1005.5 | EXHALATIVE CALCITE-QUARTZ<br>Grey-white mottled, soft rocks, massive calcite with quartz fragments. 70:30 respectively. Numerous sphalerite-galena patches to 2cm with sphalerite core, galena rims (<1mm); where chalcopyrite present, occupies center of sphalerite-galena patch. Locally 15-20% sphalerite, 40% galena. 5-6% sphalerite overall, 2% galena overall; Patchy mineralization; Alternating events of sulfides vs silica-carbonate exhalations. Foliation at 25 deg to CA where present, occasional band of sphalerite-galena at 25 deg to CA. | 39831 | 1002.3 | 1005.5 | 3.2 | 108 | .14 | 2.52 | 10.19 | 4.10 |
| 1005.5 | 1018.2 | QUARTZ BRECCIA EXHALITE<br>Variably colored quartz rich breccia with frequent quartz-breccia fragments to 5cm diameter often angular, mostly subangular to subrounded. | 39832 | 1005.5 | 1012.0 | 6.5 | 300 | .11 | 3.27 | 12.31 | 7.50 |
| | | | 39833 | 1012.0 | 1018.2 | 6.2 | 190 | .15 | 2.78 | 4.76 | 6.05 |

| INTERVAL (ft): From: | To: | DESCRIPTION | Sample No. | From (ft) | To (ft) | Inter-val (ft) | Au ppb | Cu % | Pb % | Zn % | Ag Oz/T |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Alternating bands of sulfide rich and sulfide poor quartz at 8-16 inch intervals. Occasional volcanic tuff band ie at 1017.2' and 1017.8' showing flow banding with included sulfides fragments (pyrite, galena-sphalerite). Frequent white calcite patches and veinlets also as angular clasts. This section overall 5-7% sphalerite, 3-4% galena, 1% chalcopyrite, 3-4% fine grained pyrite; local patches 25% galena, 30% sphalerite. Barite minor in this section, only occasional coarse grained blades. Alternating bands of sulfide rich/sulfide poor rockat 25 deg to CA. Many fragments are themselves fragmented and mineralized. Lower contact somewhat irregular at 28-32 deg to CA. | | | | | | | | | |
| 1018.2 | 1023.6 | CARBONATE EXHALITE | | | | | | | | | |
| | | Grey with white patches after euhedral barite crystals to 25mm long. Calcite 70% of rocks with 1-2cm grey breccia fragments of calcite cemented by white calcite and barite. 15% barite throughout; quartz fragments 10%. Very fine grained dusting of probable galena-pyrite throughout as patches and rims of breccia fragments. Overall sulfides <3% and very fine grained. Lower contact at 38-40 deg to CA. | 39834 | 1018.2 | 1023.6 | 5.4 | 51 | .02 | .01 | .06 | .63 |
| 1023.6 | 1038.0 | QUARTZ BRECCIA EXHALITE | | | | | | | | | |
| | | Grey, white, green mottled quartz zone wiht 2-5cm angular breccia fragments of quartz and quartz-calcite. Quite obscure clast outlines as fragments cemented and further silicified by quartz matrix. Frequent irregular shaped fragments and/or lapilli of altered volcanic rocks. (largely sericite-quartz altered), frequently rimmed with dark green chlorite. Blebs and disseminations of chalcopyrite (up to 15mm). Pyrite stringers to 3mm comon. 1-2% chalcopyrite overall. Minor barite blades within quartz fragments and quartz matrix. Fine quartz breccia dykes up to 25cm wide from 1027' to base of unit, these appear to be degassing channelways or the like; shattering and mobilizing all in its path, finally silicifying broken remnants with white cryptocrystalline quartz. Six evident over last 12' of interval. | 39835 | 1023.6 | 1031.0 | 7.4 | 51 | .56 | .01 | .23 | 2.61 |
| | | 1031.0 1038.0 Sphalerite - galena present intermittently as irregular patches | 39836 | 1031.0 | 1038.0 | 7.0 | 132 | .19 | .01 | 2.22 | .51 |

| INTERVAL (ft): From: | To: | DESCRIPTION | Sample No. | From (ft) | To (ft) | Inter-val (ft) | Au ppb | Cu % | Pb % | Zn % | Ag Oz/T |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | or bands 2-10cm with galena rimming sphalerite (always) at 40cm intervals; giving 2-3% sphalerite, 1-2% galena overall in last 7'. | | | | | | | | | |
| 1038.0 | 1042.3 | EXHALATIVE QUARTZ-CALCITE BRECCIA | | | | | | | | | |
| | | White, grey mottled,mixed quartz-calcite breccia. Rock composed of 60% calcite, 25-30% quartz as 8-20cm blocks with dominantly calcitic cement. Calcite fragments both white and grey, grey fragments have very fine grained dusting of galena-sphalerite. Some calcite fragments almost cryptocrystalline, chemical precipitate, others are somewhat granular with this grey cryptocrystalline calcite as 2-4mm rims. Not anticipated to assay high for base metals. Quartz mostly as fragments. Lower contact gradational. | 39837 | 1038.0 | 1042.3 | 4.3 | 84 | .14 | .05 | .09 | .39 |
| 1042.3 | 1060.7 | QUARTZ BRECCIA EXHALITE | | | | | | | | | |
| | | White-grey highly siliceous exhalite breccia with breccia fragments of quartz (70%), calcite (20%), cherty tuff (5%) and frequent later white calcite veinlets to 12mm wide mostly at 60 deg to CA, all with a white, light beige colored quartz cement; Minor barite blades. Some calcite blocks to 15cm. Minor sulfides, mostly in occasional whisps and stringers at 35 deg to CA, to 2cm wide at 18-20 inch intervals. Light dusting of fine grained galena throughout, particularly along fragment boundaries. | 39838 | 1042.3 | 1047.0 | 4.7 | 240 | .35 | .09 | .06 | .57 |
| | | | 39839 | 1047.0 | 1052.0 | 5.0 | 130 | .10 | .02 | .10 | .44 |
| | | | 39840 | 1052.0 | 1057.0 | 5.0 | 123 | .09 | .04 | .23 | .57 |
| | | 1057.0 1060.7 Increased fine grained galena and dark green chlorite whisps. Occasional jasperoid clast to 2cm diameter with pyrite-chalcopyrite. (section similar to 1005.5-1018.2'. | 39841 | 1057.0 | 1060.7 | 3.7 | 161 | n/a | .14 | .12 | .82 |
| 1060.7 | 1092.0 | EXHALATIVE CALCITE TUFF | | | | | | | | | |
| | | Light grey-white speckled calcite rock composed of 5-15mm rounded-subrounded calcite clasts cemented by lighter colored calcite. Earlier clasts clouded with fine grained pyrite? galena? Very minor quartz fragments; <1% sulfides overall, although locally galena up to 1-2% over 8-10 inches. Lower contact with underlying barite at 38-40 deg to CA. | 39842 | 1060.7 | 1067.0 | 6.3 | 200 | n/a | .35 | .03 | 1.79 |
| | | | 39843 | 1067.0 | 1072.0 | 5.0 | 41 | n/a | .09 | .03 | .85 |
| | | | 39844 | 1072.0 | 1077.0 | 5.0 | 117 | n/a | .02 | 1.07 | .54 |
| | | 1075.0 Silicified zone 4 inches wide with jasperoid? clasts. Fragments of coarse honey colored sphalerite to | | | | | | | | | |

| INTERVAL (ft): From: | To: | DESCRIPTION | Sample No. | From (ft) | To (ft) | Inter-val (ft) | Au ppb | Cu % | Pb % | Zn % | Ag Oz/T |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2cm diameter. | | | | | | | | | |
| | 1077.0 1092.0 | Occasional 5-10mm blebs of chalcopyrite; 1-2% chalcopyrite overall in this interval. | 39845 | 1077.0 | 1082.0 | 5.0 | 31 | n/a | .01 | .01 | .36 |
| | | | 39846 | 1082.0 | 1087.0 | 5.0 | 82 | n/a | .04 | .01 | .13 |
| | | | 39847 | 1087.0 | 1092.0 | 5.0 | 60 | n/a | .05 | .04 | .39 |
| 1092.0 | 1099.8 | EXHALATIVE BARITE | | | | | | | | | |
| | | White massive barite; in part fragmental and cemented by barite. Patches of very fine grained black sphalerite or galena. <0.55 chalcopyrite throughout as occasional 1-5mm blebs. Lower contact gradational and brecciated with next unit. | 39848 | 1092.0 | 1097.0 | 5.0 | 77 | n/a | .04 | .03 | .45 |
| | | | 39849 | 1097.0 | 1099.8 | 2.8 | 88 | n/a | .12 | .03 | 1.08 |
| 1099.8 | 1107.9 | ANDESITE LAPILLI TUFF | | | | | | | | | |
| | | Variably altered andesite lapilli tuff. Light grey over first 4', then dark green. Lapilli clasts make up 25% of rocks, rest phyric tuff with moderate sericite-pyrite alteration. Rock grey over first 4'. 1-2% very fine grained pyrite. Lower contact brecciated and irregular. | 39850 | 1099.8 | 1103.8 | 4.0 | 38 | n/a | .04 | .06 | .44 |
| | 1103.8 1107.9 | Dark green, chlorite altered tuff with numerous calcite patches and veinlets, brecciated locally, cemented by calcite. Grey chert fragments at 1107'; 5cm diameter occasional jasperoid fragments. 2-3% fine grained pyrite in this interval. | 39851 | 1103.8 | 1107.9 | 4.1 | 24 | n/a | .13 | .12 | .77 |
| 1107.9 | 1116.3 | DEBRIS FLOW | | | | | | | | | |
| | 1107.9 1111.3 | Exhalite tuff with clasts of quartz, barite, calcite, ANDESITE LAPILLI TUFF, ANDESITE TUFF, chert in grey fine grained siliceous (quartz-carbonate) matrix. Clasts in jumbled array, not sorted or aligned. Jasperoid altered 3 inch wide zone with 15% red jasper alteration and blebs of chalcopyrite (5% in altered areas). Possible clast or possibly injected via brecciated conduit nearby. Occasional 10mm calcite stringers with chalcopyrite blebs. Lower contact at 42 deg to CA. | 39852 | 1107.9 | 1111.3 | 3.4 | 178 | n/a | .09 | .07 | 1.04 |
| | 1111.3 1116.3 | Carbonate-quartz exhalite tuff, debris flow. Finer grained clasts (up to 2cm) Matrix 70% calcite, | 39853 | 1111.3 | 1116.3 | 5.0 | 179 | n/a | .03 | .07 | .41 |

| INTERVAL (ft): From: | To: | DESCRIPTION | Sample No. | From (ft) | To (ft) | Inter-val (ft) | Au ppb | Cu % | Pb % | Zn % | Ag Oz/T |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | with numerous (20%) angular white quartz fragments. Volcanic debris comprises remaining 8-10% of rock. Lower contact brecciated. Only minor pyrite throughout <1%. | | | | | | | | | |
| 1116.3 | 1147.0 | ANDESITE LAPILLI TUFF | | | | | | | | | |
| | | Dark green to grey sericite-pyrite altered lapilli tuff; only ghostly outlines of clasts visible. Occasional pinkish hue after hematitic clasts. Rocks cut by numerous 1cm quartz-calcite stringers at 40 deg to CA at 3-5cm intervals plus further cut by larger 4-15cm quartz-barite and quartz-calcite veins at 45 deg to CA at 30-40cm intervals. Later veins occasionally with disseminations of 1-3mm patches of galena and/or sphalerite. Rock overall is moderately sericite altered. Locally chlorite alteration of mafics? Occasional quartz-chlorite stringers to 2cm wide. Becomes less veined and altered 1140' to end of hole. | 39854 | 1116.3 | 1122.0 | 5.7 | 84 | n/a | .04 | .13 | .09 |
| | | | 39855 | 1122.0 | 1127.0 | 5.0 | 7 | n/a | .01 | .14 | .03 |
| 1147.0 | | END OF HOLE | | | | | | | | | |