

**J. TUACH GEOLOGICAL CONSULTANTS, INC.
DIAMOND DRILL CORE LOG**

Sheet No. 1

LATITUDE _____	Tests _____	Dip _____	Magnetic _____	Corrected _____	Project No. _____	Hole No. <u>1720</u>
DEPARTURE <u>10.669.91N</u> <u>13.452E</u>	Depth _____	_____	Bearing _____	_____	Property <u>Buchans - Middle Branch</u>	
ELEVATION <u>3808.66'</u>	_____	_____	_____	_____	NTS _____	Grid Name <u>Mine grid</u>
DIP AT COLLAR <u>-90°</u>	_____	_____	_____	_____	Date started <u>1958</u>	Completed _____
BEARING _____	_____	_____	_____	_____	Contractor _____	
TOTAL DEPTH <u>1407'</u> CORE SIZE <u>By - 70 - 107'</u> <u>Ax - 107 - 1407'</u>	_____	_____	_____	_____		
REMARKS _____	_____	_____	_____	_____	Logged by <u>J. Harris - 1996</u>	

Depth & Lithology	Description	Alteration	Mineralization
0 - 70'	Ovrburden		
70 - 100'	- Mafic volcanic - Dark to medium green - chloritic - Well foliated throughout - 75 - 80° to the core - wisps and bands of carbonate - Stretched plag. phenos - preserved locally - Foliation increases downward to about 156' - some kink folding 156 - 162' - lost core 150 - 162' - Magnetic diabase dyke - 91.5 - 92'	Chloritic and sericitic alteration throughout	
180 - 237'	- Felsic volcanic - silicified altered rhyolite (of tuff) - White to grey green colour - poor core recovery throughout - White plagioclase phenos., visible locally, fragmental appearance locally - Occasional calcite/quartz veinlets - Weak to moderate foliation over upper 2' - Fault breccia between 186 and 189' (only 1' core)	strong silicification with wispy sericitic bands	1 - 3% dissem. and stringer pyrite @ concentrated on or near fractures Sample = 198 - 203' - only ≈ 2.5' core
237 - 261'	- Altered mafic tuff - Grey green - strongly silicified rock - Slightly more chloritic than above - Fragmental - tuffaceous locally	Very poor core recovery - 218 - 245' ≈ 8' recovered. Strong silicification local sericitic and chloritic alteration some black chlorite	5 - 8% Py. throughout locally 50% and 259.5 - 261' ≈ 60% Py. and cpy. With silica (massive sulphide?)
261 - 290'	- Mafic volcanic, tuff - Dark green chloritic, wisps and stringers of calcite - A few quartz grains 272 - 274' - Wispy quartz - carbonate stringers over lower 5' - Some interbanded prominent quartz felsic volcanic 281 - 290'	Sericitic and weak silicic alteration fading out downwards. Patchy below 271' - chloritic alteration throughout	Py. and occasional cpy. to ≈ 10% down to 271', then 1 - 2% Py.

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Depth & Lithology	Description	Alteration	Mineralization
290 - 315'	- Felsic volcanic - prominent quartz felsic tuff - Grey colour with quartz and pink and white feldspar grains/phenocrysts - Some interbedded tuffaceous Arkose - Slightly irregular lower contact @ 88 - 90° to the core	Moderate silicic and sericitic alteration	Minor Pyrite
315 - 331'	- Mafic volcanic - Pale grey green, soft, chloritic - Irregular carbonate wisps throughout - Flecked with tiny dark chlorite - Gritty look - Patchy silicification and some coarser dacitic tuff towards 331'	Chloritic and sericitic throughout	2 - 3% disseminated Py. throughout, rare speck cpy.
331 - 335'	- Felsic volcanic? - Hard grey silicified rock - felsic dyke or flow? - Possible faint plag. phenos.	Strong silicification	2 - 3% disseminated Py.
335 - 345'	- Interbedded felsic and mafic tuff - Down to 341' mainly prominent quartz dacitic tuff - 341 - 345 mainly mafic (andesitic) tuff	Moderate silicification	to 1% Py.
345 - 360'	- Felsic volcanic - Grey silicified rhyolite? hard aphanitic rock - Tiny flecks of chlorite - 346 - 346.5' rhyolite breccia - @ 359' - 2 - 3" sericitic shear at 70 - 80° to the core	Moderate to strong silicification Some black chloritic alteration	3 - 5% disseminated Pyrite
360 - 409'	- Interbedded mafic and prominent quartz dacitic tuff - Mafic - soft green with wisps of calcite - a few faint plag. crystals and occasional large quartz crystal - Dacite - coarse quartz and smaller feldspar in a chloritic or siliceous matrix - Locally fine black rhyolite as matrix and without phenos from 370 - 371'	Weak to moderate silicification	Py. to 1% disseminated
409 - 478'	- Mafic tuff (Andesite) - Pale green to darker mottled - 409 - 421' - wispy - flattened pale green shards of Andesite tightly packed - layering about 80° to the core - Distinctive mafic tuff as in other holes - Below 421' - similar to above but larger lithic fragments and less tightly packed. Rims of clasts are often altered. - 428 - 429 - sheared fine grained epidotized at ≈ 80° to the core - 438 - 450 - some pinkish felsic clasts	Patchy chloritic and sericitic alteration Somewhat stronger sericitic alteration of matrix. Some epidote alteration Some black chlorite on fractures	<1% Py. throughout 429 - 435' - some minor cpy. disseminated in lithic fragments and in the matrix

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Sheet No. 3

Depth & Lithology	Description	Alteration	Mineralization
409 - 478' (cont'd)	- 446 - 450' - sheared and foliated at $\approx 70^\circ$ to the core - 450 - 459' - strongly hematitized mafic - sheared foliated $50 - 55^\circ$ to the core at 457' - 459 - 465 - reddish brown rhyolite dyke or sill - Below dyke tuff is bleached with some hematitized fragments - 6" mafic dyke at contact.	Poor core recovery 438 - 463' 450 - 459' hematitized	One stringer with Pb - Zn along a fracture at 420.5'
478 - 495'	- Felsic volcanic, prominent quartz tuff to prophyritic intrusive - Obviously fragmental locally - Pale pink to buff colour	Sericitic alteration throughout, feldspars altered to pale green seritie	Minor Py.
495 - 504'	- Rhyolite intrusive - Pink to brownish colour - upper contact chilled and at 45° to core - Soft altered	Sericitic alteration	
504 - 509'	- Prominent quartz tuff as for 478 - 495'		478 - 495' - 2-3% Py.
509 - 515'	- As for 495 - 504'		
515 - 643'	- Felsic volcanic - Prominent quartz - felsic tuff or flow - Pink to green aphanitic groundmass with large quartz and smaller white to orange coloured feldspar phenos - 532 - 533' - chilled mafic dyke - lower contact sheared at $85 - 90^\circ$ to the core	Green colour due to sericitic alteration of groundmass. Feldspars locally altered to sericite	Little or no Py. 550 - 551' - 10 - 15% cpy. and Py. associated with black chlorite (mainly cpy.) to 1% Py. towards base of unit.
643 - 698'	- Felsic volcanic - Prominent quartz but definitely fragmented - tuffaceous - similar to above - pink to green - 643 - 645' - black chl. and abundant tiny quartz stringers - black, mafic looking, maybe just sheared - Picks up a variety of lithic fragments downward including pink rhyolite porphyry and mafic vol. - Some mafic vol. with pink and white carbonate similar to Sandy Lake Fm. basalts	Wipsy sericitic alteration	643 - 645' - 3 - 5% Py.
698 - 701'	- Fault gouge and breccia		
701 - 1129'	- Lithic Arkose and Arkosic conglomerate, variety of lithic fragments - As described previously (see earlier log) - 746 - 1095' - not logged - Sharp conformable contact		
1129 - 1173'	- Felsic to intermediate tuff - dacitic crystal vitric - Green - soft sericitic - feldspar, lithic fragments and a few quartz crystals in a sericitic and chloritic matrix	Sericitic and locally chloritic alteration of matrix Black chlorite wisps and on fractures	Disseminated magnetite and/or hematite near top Elsewhere $\approx 1\%$ dissemin. Py.

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Depth & Lithology	Description	Alteration	Mineralization
1129 - 1173' (cont'd)	- Layering/bedding at $\approx 75^\circ$ to the core - Rhyolite and minor granite fragments - 1148 - 1149.5' - shattered and cemented with silica and epidote - Occasional tuffaceous siltstone or sandstone beds	Black chl. more pronounced 1167 - 1173	
1173 - 1181'	- Rhyolite breccia - conglomerate - Grey and pink rhyolite cobbles and pebbles with very little matrix	Rhyolite clasts are variably silicified	Some disseminated Pb and Zn and Py in silicified rhyolite clasts. Fragments of Pb, Zn, barite and fine pyrite in silicification in matrix Sample 1173 - 1181'
1181 - 1195'	- Pink felsic dyke		
1195 - 1247'	- Rhyolite breccia and dacitic tuff - Green to maroon colour - 1195 - 1209' mainly light green sericitic dacite tuff - @ 1208' carbonate cemented fault? breccia with black chlorite - 1209 - 1225 mainly pinkish rhyolite with very little matrix - 1225 - 1230 interbanded tuff and hard maroon rhyolite - maybe boulders - 1230 - 1236 mainly hard maroon rhyolite - brecciated hematitic jasper infill at 1235' - 1236 - 1247 matrix rich - with pale grey and lesser pink rhyolite clasts.	Poor core recovery 1200 - 1220' Sericitic alteration of groundmass	<1% Py. - locally disseminated magnetite and pale blue mineral
1247 - 1295'	- Heterolithic conglomerate - Mainly rhyolite clasts - maroon, pink and grey - A few mafic vol. clasts and at least one granitic pebble - Matrix of silt to sand sized chips - Occasional jasper chips in matrix - ≈ 1270 - 1277 - grey autobrecciated rhyolite - very finely disseminated pyrite (boulder?) - 1277 - 1282 - Pyritic arkosic sandstone - 1282 - 1295 - Rhyolitic conglomerate grey and a few pink rhyolite clasts with very little matrix - some rhyolite clasts brecciated. - altered rims on clasts locally. Matrix becomes more sericitic and tuffaceous downward - small shear at 1283.	Poor core recovery 1284 - 1295'	<1% pyrite in matrix
1295 - 1407'	- Rhyolite - breccia to conglomerate - Dark maroon - white to orange plagioclase phenos. - Very little matrix material - greenish silicic and pyritic siltstone - Altered rims on many of the rhyolite clasts - Matrix becomes more tuffaceous looking above 1311' - @ ≈ 1307 - fault breccia, core bleached and altered - some lost core		Very fine pyrite in matrix
E.O.H.			

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