

QUEENSTON MINING INC

Drill Hole: MB98-29

DIAMOND DRILL HOLE RECORD

Page: 1 of 28

Property: MCBEAN Collar loc'n from #1 Post L25310 - 560'S, 875'W
 Northing: 17207.84
 Easting: 9238.26
 Elevation: 10949.19

Collar Azimuth (Grid) 355.4
 Collar Dip: 71.5
 (0 Degrees Grid equals 017 degrees True)
 Hole Length: 3099.5
 Date Printed: 25 Mar, 1999

*** Dip Tests ***			*** Dip Tests ***		
Depth	Azi.	Dip	Depth	Azi.	Dip
127.9		-70.5	1771.2		-68.5
295.2		-69.0	2066.4		-68.0
590.4		-69.0	2361.6		-68.0
885.6		-69.0	2656.8		-68.0
1180.9		-68.5	2952.0		-68.0
1476.0		-68.0			

Date Started: May 20, 1998
 Date Completed: Jun 15 1998
 Drilled by: BENOIT
 Core Size: NQ
 Material left in hole NX, HX CASING
 Core Location: Upper Canada Site 1
 Logged by: M. McGill

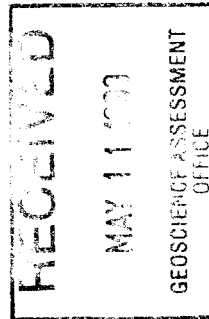


From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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SUMMARY LOG

.0	127.9	OVERBURDEN								
127.9	669.4	DIORITE								
669.4	2123.0	GABBRO								
2123.0	2669.9	BASALT GABBRO								
2669.9	3099.5	ULTRAMAFIC KOMATIITE								

2.19503



From To
(ft) (ft)

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Slightly more pink to purple coloured, slightly muddy looking matrix. Blocky, and cut by several narrow, high angle carb-qtz stringers which carry seams and small blocks of chloritic material. A more fractured section with a greater number of mafic inclusions, many of which are becoming assimilated. Cement job at 148 feet.

157.7 159.7 Amphibolitic.

A coarsely brecciated mafic inclusion (basalt?) which is finely amphibolitized. Calcitic and non-magnetic. Riddled with fingers of dioritic material and fine irregular carb stringers. Carries negligible sulphide. Faulted at 159.5 @ 65 DTCA; probably at least 2 fault planes.

159.4 159.5 Fault gouge.

159.7 167.0 Diorite.

A blocky, pale pink section with several crushed/rubbed sections 8-10 in long.

167.0 168.2 Fault Zone.

A rubbly, broken section with pieces of partially cemented coarse fault breccia material and traces of muddy gouge in amongst finer crushed rock. Slightly more reddish diorite and interstitial chlorite are the main components. The orientation of the break is unclear.

168.2 172.5 Diorite.

A pink to pale reddish coloured section with a slightly larger grain size. Blocky, fractured aspect. Strongly calcitic and hematitic in the matrix.

172.5 173.9 Amphibolitic.

A very dark green mafic inclusion?, consisting of predominantly fine amphibole, lesser fine chlorite (also as clots and fracture fillings) and some fine biotite. Well calcified. Non-magnetic and essentially lacking in sulphide. Similar to the section noted at 157.7. Sharp contacts at 75-80 DTCA.

173.9 185.5 Diorite.

Returning to a pale purple coloured, blocky interval with a slightly muddy groundmass. Similar to that noted above from about 141 feet. Carries a few scattered small mafic inclusions. Cement job at 177 feet.

185.5 198.2 Diorite.

Returning to the very fresh, pale grey to slightly greenish diorite logged at the collar. Contains a greater number of small mafic (as compared to the more muddy variation) inclusions of varying sizes and in various states of assimilation into the host. They are generally rounded or oblong. Locally slightly muddy looking and weakly purplish in colour. Blocky and finely broken up; 0 RQD for the most part. Magnetic and weakly hematitic in and along hairline fractures.

198.2 203.0 Diorite.

A pale pink, medium grained dioritic dyke (which appears to post date the

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green-grey host) begins here. Consists of a tightly packed aggregate of 3-5 mm plagioclase supported in a flesh-coloured groundmass. Slightly more groundmass material as compared to the host; slightly coarser grained also. Quite hard (silicified, albitic?) and essentially non-magnetic. Contains fine mafic flecks throughout. Razor sharp contacts at 40/45 DTCA. Carries very little sulphide. Similar to diorites logged at McBean proper. A xenolith of altered basalt? lies at 198.5 to 200.2 feet; it shows chilling? at the contacts and carries some fine diss py especially near the upper contact. It is slightly magnetic, and now consists of primarily pinkish carbonate and a pale green-blue chlorite. A pale milky qtz-carb vein abuts the lower contact of the xenolith and continues down to 200.8 feet. It carries small angular chlorite inclusions and is devoid of sulphide. Contacts are sharp at about 50/60. Two more narrow slivers of qtz/chloritic material cut the unit below 201 feet.

203.0 332.2 Diorite.

Returning to the fresh host phase. A moderately blocky, rather homogeneous section of pale grey-green diorite with scattered 1/4 to 2 inch mafic inclusions. Slightly reddened locally where hematite has leaked out of very fine high-angle fractures. Low RQD values. Very weakly mineralised with traces of fine py. Small patches of pinkish 2D material (as per 198.2 above) occur at 247.0, 269.0, and 288.8-289.0 feet. Jointing lies at 65-75 DTCA typically. Weakly magnetic and continuing calcitic. Cut by 1 or 2 fine, high angle qtz stringers.

332.2 334.1 Basalt.

A short section of well carbonated, pale green, fine grained material. Locally magnetic. Devoid of sulphide. Sharp upper contact at 50 DTCA; brecciated lower cnt at about 65 DTCA.

334.1 336.5 Diorite.

A short interval of the typical host diorite with an increase in hematite staining, both in the matrix and in low angle hairline fractures. This alteration is related to the underlying much more strongly altered unit.

336.5 345.1 Diorite.

Returning to the coarser grained, presumably later pink diorite phase. This section has been intensely hematized and silicified(albitised?) causing the rocks (especially the upper 3 feet) to turn bright orange-red in colour and the granular texture to become quite muddy in part. Some fracture control of the alteration is evident. The rocks are variably magnetic and weakly calcitic. Fine specular hematite has precipitated on some of the more prominent fractures. Contains small rafts of cleaner, relatively unaltered host rock. A poorly mineralised section; a few scattered specks of chalcopyrite are present however. Fuzzy upper contact, sharp lower contact at 30 DTCA.

345.1 356.5 Diorite.

Continuing with the host diorite; slightly reddened, blocky/broken core with abundant angular mafic inclusions. Becoming very red, and heavily mineralised with patchy py for about 2 inches above the contact at 356.5.

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to pink in colour with a slightly coarser grain size and more internal variation in composition and grain size. Quite blocky and/or crushed locally. Little sign of faulting or gouge. Weathered/weakly pitted locally. Totally crushed below 642.7. More hematite and epidote alteration is evident; locally more fine diss py occurs in the matrix also. The rocks here carry a greater number of mafic inclusions as compared to above. A small piece of the underlying (gabbro) phase lies at about 638 feet. A tiny pale green grey mafic dyke lies in the rubbly core below 642.7.

645.9 646.7 Lamprophyre.

A very dark grey-green intrusive with a dark red cast. Fine grained with 1-2 mm needles and tiny lathes of amphibole and a bit of platy biotite. Consists of a very fine felted matrix of chlorite needles in amongst reddish patches of carbonate. Calcitic, but not magnetic. Sharp contacts at 20/65. Well mineralised with very fine anhedral py grains throughout. Fairly hard and hematized throughout. Possibly a lamprophyre.

646.7 651.0 Diorite.

Returning to the medium-grained host. This section is distinctly red-orange in colour and fairly homogeneous except for a short stretch of pink diorite much like that noted above at 336. Blocky and locally finely fractured with hematite and some diss py near the contacts.

651.0 652.8 Mafic Intrusive.

Sharp contact into another pale grey-green, very fine grained mafic dyke much like the feature at 356.5. This example is fairly hard and non-magnetic. It consists of predominantly a fine growth of pale green chlorite which has replaced mafics both in the groundmass and as phenos. Very little feldspathic component is visible. As well, there are ghostly remnants of needle-like mafic phenos in places. Sharp contacts @ 40/40. Very little sulphide occurs in the phase. Fine qtz-carb sweats/stringers and tiny blebs of the same occur in a few spots. Stringers lie at about 35-40 DTCA.

652.8 669.4 Diorite.

The final section of diorite. This interval is much like that noted at 617-645. A medium-coarse grain size with slightly more epidote alteration characterises much of this area. A few more xenoliths of the underlying gabbro in addition to various small mafic blocks clutter the host. A more cracked up section with an increasing number of hematitic hairline fractures moving downhole. Generally broken to crushed core with 0 RQD. The lower contact lies at fairly high angle; the actual interface is a small scale replica of the chaotic intermingling of rocks as described above.

669.4 2123.0 GABBRO

Contact into a thick complex of gabbroic rocks, which for the first 100 feet or so carries a number of different blocks of the overlying diorite, in addition to mafic xenoliths and dykes quite similar to those seen above. The gabbros begin with a distinctly spotted variety; fine epidote alteration has coloured the larger feldspars a pale green which contrasts with the darker components. Later on, a more homogeneous, very clean hornblende gabbro develops. In between lie the 2D blocks and mafic dykes.

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The spotty phase consists of a medium grained aggregate of chloritic mafics intergrown with smaller pale grey feldspars and somewhat larger anhedral feldspar grains which preferentially alter to epidote and carbonate. A few tiny laths of amphibole are visible in the matrix. Some of the (epidote) altered grains might be olivines? There may also be some small amounts of qtz in the groundmass?? The rocks are slightly calcitic and moderately to strongly magnetic. Scattered hairline carbonate, hematitic and epidote stringers cut the unit, generally at high core angles. Locally diss py dusts the groundmass where alteration is more heavily developed. A blocky, locally finely crushed unit with low RQD values. More details follow below:.

669.4 710.1 Gabbro.

An interval of fairly homogeneous 'spotted' gabbro. Quite blocky and broken up throughout. Contains a few small mafic inclusions and several slightly larger (1-3 in across) diorite blocks. The latter are becoming quite washed out and ghost-like. Towards the lower contact the spotty texture becomes replaced with a more typical equigranular intrusive texture. Locally the rocks exhibit cumulate textures (ex- around 707). Locally mineralised in heavily carbonated zones with diss py.

710.1 715.3 Diorite.

A large xenolith of altered diorite similar to that above. A brecciated, chaotic section with bits of gabbro, and basalt mixed in with the diorite. Blocky and locally crushed. Locally weakly pyritic in the 2D. Cut by some weakly hematitic, siliceous low angle stringers in the upper parts of the interval.

715.3 718.4 Basalt.

A dark green, fine grained, massive section of flow material. Heavily carbonated, but not magnetic. Carries very little sulphide. Cut by a few very fine carb stringers at about 45-55 degrees. Sharp contacts @ 20/80.

718.4 726.3 Diorite.

Another block of pale grey diorite which carries a number of basaltic inclusions. Blocky, heavily carbonated and riddled locally with numerous hairline carb threads. Magnetic and not especially pyritic. Rather muddy, obscure basal contact.

726.3 732.1 Mafic Intrusive.

A section of predominantly very dark grey to almost black coloured dyke material which carries a few angular blocks of basalt? and diorite? Another microporphyrific dyke? may also cut the primary phase. The major unit is characterised by an abundance of fine amphibole needles set in a very fine matrix of chlorite and intergrown carb (after feldspar). The dyke is calcitic and weakly hematized and contains a few larger rounded phenos which are totally replaced with chlorite (possibly olivines?). The rocks are weakly magnetic and carry little sulphide. Contacts with the dyke rock are generally razor sharp and rather subtle. The entire section is crushed and broken up. Sharp lower contact at about 35-40 degrees.

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732.1 750.9 Diorite.

Another interval of diorite intermixed with smaller blocks of gabbro and mafic (basalt) inclusions in various states of assimilation and alteration. Calcitic and magnetic with little in the way of sulphide or veining. Continuing quite blocky and broken up locally. Epidote alteration is more strongly developed locally.

750.9 756.5 Mafic Intrusive.

Sharp contact at 55 DTCA into a fine grained, pale grey-green dyke. Weakly spotted or streaky in appearance in part. A polyphase? dyke which consists of several slightly different components- very fine contacts can be distinguished internally in places. Strongly carbonated and magnetic. Xcut by high angle carb threads in places. May contain basalt inclusions. Locally the rocks are moderately mineralised with diss py. Harder and hematized at the lower contact; it is sharp at about 50 DTCA. Blocky and broken up as per the host rocks. Predominantly chlorite and carbonate with the suggestion of accicular amphiboles as tiny phenos.

756.5 759.0 Basalt.

A short segment of finely amphibolitic basalt. Strongly calcitic and weakly magnetic. Contains very little sulphide. Sharp, slightly cusped lower contact at about 30 DTCA.

759.0 774.2 Diorite Basalt.

A section of pale flesh-toned altered diorite, intermixed with dark green xenoliths of finely amphibolitic basalt. A very blocky, broken up interval cut by several strong serpentine-bearing slips. The diorite component consists of at least two phases; the predominant one may be the coarser 'pink diorite' logged above while the minor constituent may be a remnant of the finer grey-green type logged nearer to the hole collar. Scattered fine spotty py occurs in the diorite. Below 767 very little 2D exists except as small high angle stringers. Below 770, small sweats of gabbro start to invade coarser grained basalt which also contains smaller ghostly mafic inclusions. The bottom contact lies at a high angle, but it is not particularly sharp.

761.4 761.5 Fault gouge.

Serpentine filled slip at 50 DTCA.

764.8 764.9 Fault gouge.

Strong slip @ 40 DTCA with a 1/4 in thick serpentine-filled shear plane. Fine mud in the slip also.

774.2 964.2 Gabbro.

Contact into a package of medium grained, rather homogeneous amphibole-rich gabbro which has a crisp salt and pepper appearance. Locally cumulate textures are developed. Weak epidote alteration overprints much of the unit. Generally calcitic and magnetic throughout. Xcut by numerous fine carb, feldspathic, epidotic and dioritic dykelets and fracture fillings. Many lie at low core angles. Blocky rocks, but coring well. Slightly better RQD numbers than the overlying diorites. Generally higher angle jointing is the

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norm. The gabbros contain many inclusions or intermixed sections of amphibolitic basalt, which is typically strongly calcitic and may carry fine pyrite. Pale pink, dioritic dykelets and more fractured areas are often slightly pitted and carry late fine cubic py and traces of chalcopyrite. This sequence of gabbro with the basaltic and minor diorite components is quite similar to hangingwall rocks logged closer to the McBean zones. The gabbros themselves are slightly cleaner in this instance but the overall package is analogous.

964.2 980.1 Mafic Intrusive.

Sharp contact into a fine-grained, blue-grey dyke which exhibits a smooth grain size progression from the contacts into a slightly coarser center. Contains tiny sub-rounded mafic inclusions and small amounts of fine py in a few spots. A magnetic and strongly calcitic phase. Consists of a very fine groundmass of interlocking feldspars and mafics with scattered amphibole 'microphenos' throughout. Small amounts of biotite and rare (chloritised) rounded phenos (olivine?) are visible in the coarser grained section. Cut by tiny high angle carb threads in part. The dyke has a sharp upper contact at 45 DTCA and a more irregular, sinuous lower contact which almost parallels the core axis near 975. Low angle fractures filled with qtz, carbonate and coarse grained (late?) gabbroic material are associated with the dyke in this area also. This phase cores well with higher RQD values than the surrounding rocks, except as noted below. Rubbly, broken up core characterises the basal contact area; the exact contact orientation is not clear.

980.1 997.5 Basalt amphibolitic.

A stretch of coarse grained amphibolitic and chloritic basaltic material. Xcut by numerous 1/8 in carb stringers lying at about 65/30 DTCA. Well carbonated, and variably magnetic. Very little sulphide developed here. Traces of gabbroic material lie in a few fractures. Contains a few dioritic fracture-fillings. A broken-up and rather blocky section with some weak low angle (20 degree) shears.

997.5 1000.8 Mafic Intrusive.

Another example of the dyke described at 964. This one contains slightly larger mafic (amphibole) phenos and slightly more mafic inclusions. Sharp, high angle contacts. Scattered fine py; fairly hard and very reactive to cold HCl.

1000.8 1062.7 Gabbro.

Returning to a section of mostly gabbro with the normal basaltic and dioritic components. Locally pitted out. Continuing calcitic and magnetic. Weakly mineralised with traces of pyrite and occasionally chalcopyrite. Blocky with a few low angle slips (some weathered out slightly).

1017.0 1019.0 Broken Blocky Core.

1062.7 1089.2 Basalt amphibolitic.

An interval of predominantly basaltic material. Amphibolitic, becoming more coarse grained moving downhole. Variably magnetic and strongly calcitic.

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Contains several sinuous zones and small blobs of pale pink dioritic material. Cut by some very low angle slips and associated mafic dykelets near the lower contact (the porphyritic variety is described below).

1089.2 1094.3 Mafic Intrusive.

Sharp contact into a section of predominantly mafic dyke material with some included basalt and dioritic material. This is a different style of mafic intrusive; it is porphyritic in feldspar and may be related more so to the gabbros per se. It is relatively fresh and is composed of a fine aggregate of feldspars and slightly larger interstitial mafics, now mostly chlorite. Set in this matrix is a moderate population of 1-3 mm (with a few to 6 mm) subhedral to lath-like plagioclase phenos. In addition, there are numerous small angular mafic inclusions, similar to those seen in diorites and other mafic dykes uphole. The rocks here are moderately to strongly magnetic, fairly massive and well carbonated with calcite. Very fine diss py is sprinkled throughout the dyke. The outermost contacts of the unit are sharp and lie at 55/30 DTCA.

1094.3 1121.3 Basalt amphibolitic.

Returning to a predominantly basaltic section, invaded by some sinuous to patchy pale purple siliceous alteration and some irregular tongues of dyke material similar to that noted above at 1089.2. The siliceous material is well mineralised with diss py and calcitic (in small gashes); this fluid might be related to some of the pale pink dioritic dykes often seen in this sequence. Locally pitted and strongly stained with epidote.

1121.3 1145.7 Basalt Gabbro.

An interval of mostly basalt with short segments of gabbro and about 5-10% blobby pale pink diorite (usually at low core angles). Blocky, but coring well. Xcut by irregular carb and gabbro-filled fractures. Carries trace amounts of diss py.

1145.7 1190.1 Gabbro.

Returning to a predominantly gabbroic section. This interval contains minor amounts of basalt and diorite. Continuing blocky, calcitic and magnetic. Jointing at 55-60 DTCA typically.

1190.1 1255.1 Basalt amphibolitic.

Returning to a segment of mostly amphibolitic basalt with minor amounts of gabbro and a couple of mafic dykes similar to ones noted above. Becoming slightly blockier and more broken up locally (ex-the last 12 inches of the section is crushed). Epidote alteration is slightly more strongly developed along fractures and in the groundmass. The dykes fall out as noted below.

1219.0 1228.8 Mafic Intrusive.

An irregular dyke similar to that seen above at 1089. This example is mineralogically quite similar to the host gabbros, but texturally different. It is quite fresh, and is locally bimodal in feldspar. There is some crude alignment in the finer feldspar grains and the unit contains several basaltic inclusions. Not well mineralised. Might be described as microporphyritic. Quite broken-up and or crushed locally. Irregular, sharp

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contacts (35/45-50 DTCA).

1027.1 1208.8 Mafic Intrusive.
See below at 1250.7.

1250.7 1252.1 Mafic Intrusive.

A pale grey-green, fine-grained dyke with some characteristics as per the rocks at 964. This phase is hard, quite magnetic and contains numerous lath-like (amphibole) and more anhedral (chlorite after px?) phenos throughout. Weakly calcitic and locally invaded with small wispy patches of silica + - (very weak) hematite alteration. There is the suggestion of flow banding where phenos have lined up wrapping about inclusions and along contacts. The interval contains two blocks of well mineralised/epidote-rich basalt. The dyke is also well mineralised locally with fine cubic py (in or near the more Si/Fe-rich zones). High angle, very sharp contacts.

1255.1 1300.2 Gabbro.

A gabbro-rich interval with an increasing amount of basalt moving towards 1300. Contains very little diorite. A couple of tiny porphyritic dykelets as per 1089 lie at 1285-1288. Slightly blocky except for a crushed zone at 1279.8 to 1284.4. Magnetic and calcitic with little accessory sulphide.

1279.8 1284.4 Broken Blocky Core.

1300.2 1370.2 Basalt amphibolitic.

Mostly amphibolitic basalt in this section with very minor gabbro. Calcitic and magnetic with numerous scrappy carb and feldspathic fracture-fillings. Scattered fine cubic py, generally in or around fractures or weathered out areas. Quite blocky and broken up locally with prominent low and high angle slips and joints.

1314.0 1315.2 Broken Blocky Core.

Weathered, broken up area; possible faulting with traces of gouge @ about 1314.5.

1325.4 1326.3 Broken Blocky Core.

Weathered, broken-up area. Traces of gouge. Possible high angle faulting here.

1328.2 1324.8 Broken Blocky Core.

Cement job at 1329 feet.

1354.4 1354.5 Fault gouge.

Fine fault breccia and gouge in 1/2 in thick break @ 70 DTCA.

1370.2 1450.5 Gabbro.

Returning to a section of about 60% gabbro intermixed with 40% basalt and coarse-grained (almost pegmatitic) fracture fillings of late gabbroic material. These late features range from 1 to 4 inches thick and are often oriented at fairly low angles to the CA. Blocky, but coring better than the preceding section. Traces of chalcopyrite are present in some of the

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everpresent fine carb stringers. At 1399.4 is a pale amber to gold coloured, slightly resinous looking mineral as tiny anhedral grains (sphalerite, scheelite?) in an open fracture. A high angle fault lies at 1436.3 in amongst some fine rubble. Tiny grains of magnetite and traces of diss py are visible in some of the stringers/fracture fillings.

1408.8 1409.2 Broken Blocky Core.

1450.5 1571.5 Basalt amphibolitic.

Opening into a section of mostly amphibolitic basalt with very minor gabbro and some of the 'gabbroic' fracture fillings as noted in the overlying section. Quite blocky with the normal weathered/pitted out fractures. Epidote is common in fractures and in some of the gabbroic material. Host gabbro blocks are becoming a little darker in colour and more altered in this interval. In contrast, the 'fresh' gabbroic material in fractures is more voluminous and more coarse grained moving downhole. Some of these fillings carry fine diss and slightly coarser cubic py, 1-2 mm magnetite and traces of chalcopyrite. A few small mafic dykes cut the host rocks; details follow below. Continuing calcite and magnetic.

1473.0 1475.0 Broken Blocky Core.

1543.5 1544.9 Mafic Intrusive.

As below.

1547.3 1550.0 Mafic Intrusive.

Two stretches of dark green coloured dyke material rich in fine mafic phenocrysts. Fine grained, with a pale grey-green aphanitic matrix. This groundmass is fairly hard and strongly calcitic. It supports a large number of accicular and slightly larger lath-like amphibole, (some of which is now chlorite) and lessor biotite. A strongly magnetic phase with traces of fine fracture-controlled py. Sharp, slightly irregular contacts which lie at both high and low angles. Some crude alignment of the phenos at about 50-60 DTCA is evident.

1571.5 1575.6 Mafic Intrusive.

Another dark green dyke, different than that at 1543-1550. This phase consists of a fine granular matrix, in which tiny feldpars are still visible. In this is suspended a high concentration of amphibole needles in the 1-2 mm size and a lessor number of anhedral biotite grains. Locally these components are overprinted by finer (later?) amphibole and chlorite. A calcitic and essentially non-magnetic section. Contains traces of fine py. Sharp contacts at about 20/30 DTCA. Contains a section of weakly mineralised, coarse grained gabbroic material.

1572.0 1572.5 Broken Blocky Core fault gouge.

Poss high angle fault here; some gouge present.

1575.6 1660.0 Gabbro Basalt.

Returning to a mixed section with about 65% basalt and 35% gabbro. Numerous irregular fractures filled with pegmatitic gabbroic remnants xcut the section. Feldspar laths up to 1 in long are developed locally. Slightly more

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1741.7 1741.8 Fault gouge.

A 1/2 in crushed zone lying at about 30 DTCA with fine rubble/coarse gouge. Probably faulted here.

1775.2 1812.1 Basalt foliated.

Entering a moderately foliated, well carbonated zone of mostly basalt with only minimal amounts of gabbro and two strongly altered mafic dykes. This interval is the first area in this hole exhibiting some significant deformation and the subtle reddening associated with rocks hangingwall to the deformation zone at McBean. Weakly schisted at 40-45 DTCA; both wispy carb threads/stringers and the matrix fabric assume this orientation. Larger qtz-carb veins typically parallel this angle and are often slightly boudinaged. A magnetic and strongly calcitic section. Locally finely amphibolitic. Generally more heavily mineralised than the surrounding rocks with both diss and cubic py up to 4 mm across. Most veining also carries py and fine magnetite in some examples. A well cored section with low to moderate RQD values. Jointing is generally parallel to the fabric or at slightly higher core angles.

1803.7 1803.8 Fault gouge.

1/4 in of chloritic gouge in a tight break/fault. Lies at 35 DTCA.

1792.7 1795.4 Mafic Intrusive.

A dark purple-brown, fine grained unit; fairly hard and only weakly magnetic. Strongly reactive to cold HCl. Exhibits sharp contacts at 55/50. A very strongly altered dyke which consists of a finely intergrown aggregate of chlorite, reddish carb and finer interstitial white carbonate. Ghostly remnants of amphibole? needles and larger mafic fragments?? are still visible. Well mineralised with fine diss py throughout.

1810.1 1812.1 Mafic Intrusive.

A dark greenish-grey dyke, very strongly carbonated and very slightly foliated. Probably a highly altered example of some of the more amphibole-rich dykes logged uphole. This example has been entirely replaced by chlorite and fine carbonate, leaving behind only remnants of the mafic phenos. Overprinted by wispy carb/silica threads and tiny sweats, especially near the upper contact. Sharp contacts @ 40/45 DTCA. Moderately magnetic. Weakly to moderately mineralised with fine cubic and anhedral py.

1812.1 1864.7 Gabbro.

Returning to the host gabbro, minus the deformation as noted above. This section looks much like the rocks 1000 feet above, except for slightly more reddened fracture-fillings and fine carb stringers. Slightly blocky, but well cored. Continueing calcitic and magnetic. Very little in the way of late gabbroic (coarse-grained) fracture-filling material. Cut by one pale grey mafic dyke. About 85% gabbro and 15% amphibolitic basalt. Contains a short section of more blueish coloured basalt? at around 1815- this looks like some of the HW basalts logged at Anoki.

1852.5 1853.5 Broken Blocky Core.

From To
(ft) (ft)

Geology

Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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1847.0 1849.9 Mafic Intrusive.

A pale greenish-grey, fine grained dyke cuts the hole at a low angle and meanders along the core down to 1849. A very finely intergrown mosaic of feldspar and mafics/chlorite supports a few tiny amphiboles and rare biotite grains. Weakly magnetic; becoming more strongly altered with epidote below 1848.1. Strongly calcitic throughout. Moderately mineralised with spotty 1-2 mm py. Sharp lower contact at 35-40 DTCA.

1864.7 1867.6 Gabbro.

An interval of gabbro invaded by dyke-like bodies of very coarse gabbroic material mixed in with some medium grained material which might be related to dyke material noted above @ 1089. Weakly mineralised with spotty and diss py.

1867.6 1890.0 Basalt.

A short section of mostly chloritic and variably amphibolitic basalt with minor gabbro. Irregularly veined with carbonate and epidote. Strongly calcitic throughout. Contains a short section of blueish basalt at about 1878-1879, as per Anoki and above at 1815. Becoming mineralised towards the basal contact with scattered diss and spotty py- this is related to stronger carb alteration developed around tight slips and narrow gabbroic dykelets as noted below.

1890.0 1896.5 Gabbro.

Another section of both coarse and medium-grained gabbro somewhat like that at 1864. This area consists of strongly altered rafts of the typical host gabbro and irregular blebs of the coarser late gabbro, both of which are weakly silicified and strongly pyritic. A chaotic, almost brecciated zone. Quite hard and not magnetic except for the interstitial basaltic material. Very coarse pyrite plates and subhedral crystals up to 3/4 in across are developed locally. Late carb/silica gashes xcut some of the gabbro at high angles.

1896.5 1939.9 Basalt amphibolitic.

A stretch of mostly amphibolitised basalt with very minor amounts of gabbro and a few fracture-fillings of very coarse-grained 'late gabbro'. Calcitic and magnetic with a few fine threads of carbonate. This unit carries very little sulphide overall, and is cut by a 3 inch thick pale pink carbonate vein at 1934.5 which is barren except for one speck of chalcopyrite. Small areas of the host contain some clear volcanic textures-(ex: small amygds/variolites). Locally slightly more strongly altered with epidote.

1939.9 1941.4 Quartz-carbonate vein Gabbro.

A pale pink, mostly carbonate 'open vein' structure (infilled) in direct contact with a short interval of very coarse grained 'late gabbro'. Sharp, probably sheared contacts @ 40/30 (vein component); basal contact at 40 DTCA (gabbro against underlying host gabbro). Small blades of qtz, carbonate and bits of the underlying 'gabbro' are surrounded by massive calcite. Slightly brecciated appearance at the vein-gabbro contact. Some accessory py and magnetite occurs in the gabbro. Locally stained with hematite in the gabbro below the vein-gabbro contact.

From To
(ft) (ft)

Geology

Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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1941.4 2026.8 Gabbro.

Returning to a section of predominantly host gabbro. A fairly massive section with small remnants of basaltic material; more so near the upper contact. Calcitic, magnetic and weakly epidotised, especially in low angle qtz-filled fractures. Local hematite staining in some of these low angle breaks also. Generally weakly mineralised, again except for the aforementioned fractures. (A good example of one of these lies between 2002 to 2014). Diss and fine cubic py is distributed along and within most of these fractures.

2023.0 2024.0 Broken Blocky Core.

2026.8 2066.0 Basalt Gabbro.

A mixed interval of about 50/50 gabbro and basalt. Fairly massive with some weak very low angle jointing. Weakly veined except for some mineralised 'late gabbro' infillings lower in the section. Some of the basalt is chloritic only and retains some subtle flowy textures (weak flow banding/breccia, local quench textures).

2066.0 2100.8 Gabbro.

Returning to the host gabbro. A massive, fairly uniform section with only minor basaltic material. Weakly mineralised. Cut by a few low angle tongues of very coarse 'late gabbro'. These contain slightly more sulphide as py and traces of chalcopyrite in one instance. Coring well here. Calcitic and magnetic.

2100.8 2107.1 Basalt.

A short interval of very dark grey to almost black basalt cut by a mafic dyke at 2103.9 to 2104.3. Veined with wispy and fine cloudy carb alteration or alternately invaded by patchy siliceous alteration. Locally well mineralised with diss and cubic py up to 6 mm across. A very weak fabric is beginning to form in the matrix; veining mimics this orientation and lies at about 20 DTCA typically.

2103.9 2104.3 Mafic Intrusive.

An altered equivalent of the amphibole-rich mafic dykes noted uphole. This example is probably related to the type noted at 1571. Remnants of the finely granular groundmass are still visible beneath a chlorite and carb overprint. Fine amphibole needles are still intact also. A non-magnetic and quite calcitic section. Very little sulphide is visible. Sharp contacts at 60/20 DTCA.

2104.3 2116.9 Gabbro.

A section of the host gabbro, in a more deformed and altered state. Still quite clearly gabbro, but slightly foliated (and sheared locally) at about 45 DTCA. Carbonated and overprinted with weak epidote alteration. Cut by deformed 'late gabbro' fracture-fillings; locally slightly pyritic where the carbonate alteration is more pronounced.

2116.9 2119.3 Basalt.

From To
(ft) (ft)

Geology

Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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2341.5 2355.9 Basalt Gabbro.
Returning to the host phase as described at 2244.0.

2355.9 2363.3 Basalt.
A finer-grained, more chloritic section. Weakly foliated at high core angles. Weakly mineralised with fine cubic py. Xcut by wispy carb and carb-qtz stringers.

2363.3 2367.4 Basalt Gabbro.
A short section of coarsely amphibolitic host rock.

2367.4 2368.5 Mafic Intrusive.
Another section of dyke material like that at 2339.3. This example contains a large number of 1-2 inch wallrock inclusions. Sharp contacts at 40/40 DTCA. Slightly more porphyritic than the dyke at 2339.3. Poorly mineralised with pervasive epidote alteration.

2368.5 2434.9 Basalt Gabbro.
Returning to the amphibolic host phase. Continueing calcitic and magnetic with minimal amounts of sulphide. Small remnants of recognizable gabbro are present. Locally pillowed and/or brecciated at around 2421-2422. Cut by the normal scrappy carb and carb-qtz stringers at about 60 DTCA. Coring very well with good RQD values. Massive rocks with essentially no fabric developed.

2410.0 2410.8 Mafic Intrusive.
A low angle pale blue-grey dyke which cuts the host rocks. Sharp contacts @ 15/20 with minute chilled margins. A very fine-grained, quite hard unit with tiny (chloritic) phenos embedded in an aphanitic groundmass. Calcitic and strongly magnetic. Carries fine cubic py with elevated amounts immediately at and away from the contacts. The contacts are accentuated by sinuous/boudinaged qtz-carb sweats that carry pyrite also. Similar to the dykes at 964 and 1250.

2434.9 2442.0 Aplite.
A very pale white to almost flesh coloured unit, which becomes more fractured and slightly more pinkish towards the basal contact (more Fe and matrix alteration). Quite hard (albitic/silicified), magnetic, and calcitic in fine fractures. This is one of the cleaner varieties, where a distinctive aggregate of tightly packed feldspars in the 2-3 mm size range are clearly visible. Very little of the normally aphanitic groundmass is present. Contains scattered fine mafic flecks and a few high angle slivers of the host rock. Fractured at high angles throughout; chlorite, hematite and some fine cubic py is associated with these. A few nearly totally assimilated mafic? inclusions are carried in the unit.

2442.0 2501.8 Basalt Gabbro.
Continueing in the amphibolitic host phase. Much as noted above at 2368.0. Xcut by two tiny mafic dykes as noted below.

2473.9 2474.5 Mafic Intrusive.

From To
(ft) (ft)

Geology

Sample From To Len PY AU AU1 AU2
No. (ft) (ft) (ft) % OZ/T OZ/T PPB

mineralised section; the matrix is sprinkled with fine anhedral py and some slightly coarser sulphide lies in a few of the fractures. Fairly sharp contacts; the upper is straight at 30 degrees and the lower irregular at about 60 DTCA.

2658.7 2669.9 Basalt amphibolitic.

A very dark grey to almost black section of strongly carbonated basalt with a few tiny ultramafic layers. Moderately foliated at 35-40 DTCA throughout. Overprinted with numerous wisps and cloudy patches/veinlets of calcite + silica. Xcut by two heavily altered intrusives; the first @ 2659.5 is a pale grey brown colour and appears to be a feldspar. It is very hard and porphyritic near the upper contact. Reaction to cold HCl is vigorous. It is well mineralised with diss py and variably magnetic. Contacts are sharp @ 35-40 (upper) and hazy @ 50-55(lower). Another dark grey QFP? lies at 2667. It contains both Qtz and feldspar phenos in a very dark aphanitic (calcitic) matrix. Contacts are sharp at 20 degrees (upper) and irregular/brecciated @ 65-70(lower).

The unit is variably mineralised with fine diss and spotty py; concentrations vary with proximity to alteration/veining and the intrusives. A variably magnetic unit; most portions are moderately so. Fairly sharp, intercalated lower contact @ about 55 DTCA.

2666.3 2666.4 Fault gouge.

A couple of strong slips here; one with a touch of gouge. Oriented @ 35 DTCA.

2669.9 3099.5 ULTRAMAFIC KOMATIITE

A fairly abrupt change in chemistry here into a sequence of essentially undeformed, weakly to moderately carbonated ultramafic flows containing a few small basaltic rafts. Small amphibole-rich mafic dykes cut the unit randomly; these appear related to those cutting the basalts above. The rocks here are typically blue-grey to very dark greenish-black, soft, fairly massive and fine-grained. Weakly talcose becoming more so moving downhole. In part, individual flows can be distinguished by their very fine grained chloritic (black to green-black) tops and coarse rubbly/ brecciated bottoms. Spinifex is clearly visible in a few spots. Fine carb threads and gashes xcut the rocks randomly; angles range from flat to 50 DTCA. Locally very finely speckled with carb; locally very subtle shearing is beginning to occur. Not well mineralised overall. Generally strongly magnetic, but locally quite variable. More details below.

2669.9 2676.5 Ultramafic.

A weakly foliated section of blue black u/mafic with a 30-40 degree fabric. Calcitic and weakly magnetic. Contains narrow wisps of fine amphibolitic material. Minor fine cubic py.

2676.5 2679.5 Mafic Intrusive.

Three small amphibolitic/chloritic dykes with sharp 30-35 degree contacts occupy about 50% of this interval; the remainder is weakly foliated and well carbonated u/mafic host rock. The dykes are very heavily carbonated (calcite) and deformed such that internal mineral alignment mimics the surrounding foliation. They contain 2-3 mm long wispy amphiboles, some of

52814	2907.3	2910.0	2.7	TR	nil	.000	0
52815	2910.0	2912.6	2.6	TR	nil	.000	0
52816	2912.6	2914.6	2.0	0.5%	nil	.000	0
52817	2914.6	2916.5	1.9	0.5%	nil	.000	0
52818	2916.5	2919.5	3.0	0.5%	nil	.000	0
52819	2919.5	2922.5	3.0	TR	nil	.000	0
52820	2922.5	2924.6	2.1	1.0%	nil	.000	0
52821	2924.6	2926.0	1.4	3.0%	nil	.000	18
52822	2926.0	2927.5	1.5	0.5%	nil	.000	0
52823	2927.5	2928.5	1.0	0.5%	nil	.000	3
52824	2928.5	2930.2	1.7	1.0%	.001	.000	14
52825	2930.2	2932.3	2.1	0.5%	nil	.000	3
52826	2932.3	2934.6	2.3	0.5%	nil	.000	7
52827	2934.6	2937.5	2.9	0.5%	nil	.000	0
52828	2937.5	2939.1	1.6	TR	nil	.000	2
52829	2939.1	2942.0	2.9	TR	nil	.000	0
52830	3015.6	3018.3	2.7	TR	nil	.000	3
52831	3018.3	3019.2	.9	3.0%	nil	.000	4
52832	3019.2	3022.0	2.8	TR	nil	.000	3
52833	3022.0	3024.8	2.8	0.5%	nil	.000	0
52834	3024.8	3028.0	3.2	TR	nil	.000	0
52835	3028.0	3031.0	3.0	TR	nil	.000	2
52836	3031.0	3034.1	3.1	0.5%	nil	.000	0
52837	3034.1	3037.4	3.3	TR	nil	.000	2
52838	3037.4	3040.6	3.2	TR	nil	.000	2

From To
(ft) (ft)

Geology

Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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2804.1 2806.9 Lamprophyre.

A larger example of the dyke noted at 2689. Strongly calcitic, and essentially non magnetic. Some grain size differentiation from edges to center. Weakly mineralised with diss and fine spotty py; a little more is visible near the contacts. Sharp contacts at 55/30 DTCA.

2806.9 2813.2 Ultramafic.

A short section of the host. Some severe grinding/reaming has occurred @ 2809-2811.5.

2813.2 2817.9 Mafic Intrusive.

Opening into a very dark green-grey to almost black coloured amphibole-rich phase. Rocks here resemble the amphibole-rich dykes noted above, for example the dyke at 2804. This one is different; it is variably re-crystallised internally causing variations in the grain size and texture of the resulting product. The areas closest to the contacts look much like dykes already noted (fine grained). In contrast, the central portion of the unit is much coarser grained and very closely resembles the coarser varieties of amphibolitic basalt logged uphole (salt and pepper appearance). A variably magnetic unit which is strongly calcitic throughout. Weakly mineralised with spotty py. Contains biotite. Sharp contacts @ 45/35 DTCA.

2817.9 2821.4 Ultramafic Felsite.

A dark coloured, fine-grained section of the host which has been invaded by a very dark grey, dirty felsite-like rock. The host is strongly chloritic and massive. The intrusive is amoeba-like, irregular in outline and very cloudy. Intense carb alteration and lots of fine diss py characterise the later phase. It is only weakly magnetic which contrasts with many of the felsites. Some irregular, blocky to wormy pale pink calcite veins also cut these main rock types; they lie at 40-45 DTCA typically. A somewhat chaotic section which is slightly blockier than the surrounding rocks.

2821.4 2831.8 Ultramafic.

A short interval of blue-black host rock. Weakly foliated and faintly speckled with carb throughout. The fabric is oriented at 30-35 DTCA. Carries a slightly elevated amount of 2-3 mm cubic py. Essentially non-magnetic down to 2824; from here the rocks become increasingly reactive to the pen magnet moving downhole. The core is locally blocky and broken from 2831 to the bottom contact.

2831.8 2842.1 Felsite.

Opening along a high angle, somewhat convoluted contact into a dark grey, slightly gritty rock. Very hard, and locally pale pink to slightly purplish in colour. Quite variable in colour and texture depending upon the amount of included (contaminating) wallrock and the amount of later carb stringers and fine gashes. The section contains a sizeable raft of finely amphibolitic material which resembles basaltic material from uphole as well as other small xenoliths of recognizable ultramafic wallrock. As well, more 'ghostly' rafts of hostrock are commonly visible in the groundmass. Both strongly magnetic and quite calcitic throughout. A fairly massive phase, which is strongly mineralised. Diss py is liberally sprinkled throughout; larger

From To
(ft) (ft)

Geology

Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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plates or aggregates/clusters of grains up to 1/2 in across are more irregularly distributed. Carb and carb qtz stringers and veinlets cut the rocks at both high and low angles. Some contribute to local reddening where more Fe has been added to the system. Sharp lower contact @ about 35 DTCA.

2842.1 2922.5 Ultramafic.

Returning to the blue-black host phase. Becoming slightly more veined and locally very weakly foliated. Continuing calcitic; most of the section is magnetic also. Primary textures are becoming more difficult to see; some flow bottom breccia is visible ex- 2885-2888. Slightly more pronounced jointing at 55 DTCA typically. Slightly more talcy in this section. Weakly mineralised with scattered fine cubic py.

2871.0 2872.8 Carbonate vein.

Patchy/lobby white calcite veining with wallrock inclusions and negligible sulphide.

2910.0 2912.6 Amphibolitic chloritic.

A short zone of soft chlorite and amphibole (+talc) alteration. Sharp contacts at 40/50 DTCA. Non-magnetic except for a few spots just inside the upper contact. Devoid of sulphide.

2909.8 2909.9 Sheared.

A narrow zone of talcy slivers @ 65-70 DTCA.

2922.5 2937.5 Mafic Intrusive.

Opening into a very dark grey to almost black, finely speckled, amphibole-rich dyke. Consists of very fine amphibole and chlorite intergrown with slightly coarser light coloured carbonate. Larger (later?) amphiboles and minor biotite is suspended in this matrix. Fairly uniform grain-size throughout; magnetic except for narrow 2-3 inch long zones immediately inside the contacts. Strongly calcitic throughout. Xcut by a few cloudy pale pink carb/qtz gashes/pools. Moderately mineralised with both 2-4 mm anhedral py grains and finely diss py locally; slightly more sulphide is present in and near to a couple of patchy, slightly glassy/smokey qtz veins. Weakly foliated at 50-60 DTCA. Sharp contacts @ 45/50 DTCA.

2925.0 2925.9 Quartz vein.

A pale grey, slightly glassy vein orientated at about 25 DTCA. Contains a few small wallrock inclusions and some coarse 3-6 mm anhedral py along the vein margins. Very weak Fe staining is visible in part. A very small speck of molybdenite? is visible in the vein.

2929.8 2930.2 Quartz vein.

A 20-25 degree vein similar to that noted above at 2925. Weakly stained with hematite and weakly mineralised with fine spotty py. The vein contains a few very fine ribbons of chlorite which parallel the vein margins. Slightly more sulphide is present in the immediate wallrock.

2937.5 2952.5 Ultramafic.

A blue-black section of weakly foliated host. Becoming progressively more

From To
(ft) (ft)

Geology

Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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2980.2 2980.5 Broken Blocky Core.

3018.3 3019.2 Amphibolitic.

A very dark grey to black coloured, fine grained section with sharp contacts at 45/60 DTCA. Slightly grittier in the centre of the section; this may be a highly altered mafic dyke. Strongly calcitic, but unresponsive to the pencil magnetic. Modestly mineralised with 1-3 mm cubic py in the much finer grained margins of the unit.

3022.0 3034.1 Amphibolitic.

A very dark grey to almost black, medium to med-coarse grained section of recrystallised mafic material. The textures suggest this might be a raft of gabbro? or possibly the coarser amphibolitic basalt? logged earlier in the hole. The original components are now whitish calcite and very fine amphibole and chlorite; it is not clear whether the texture is a metamorphic one or mirrors the original rock type. Quite calcitic, but not magnetic except for some very weak reaction near the bottom contact. Weakly foliated @ 55 DTCA. Contains very little veining; a couple of small carb-filled gashes cut the unit. Weakly mineralised with fine diss and cubic py. Contains one tiny section of pale blue-green wallrock. Sharp contacts at 55/80 DTCA. Cut by a few high angle slips with traces of muddy gouge.

3031.0 3031.1 Fault gouge.

Strong shear with 1/8 in of gouge @ 35 DTCA.

3034.1 3040.6 Ultramafic.

A short section of the host unit. Pale greenish-blue in colour, fine grained and less talcose moving downhole. Some of this section may be closer to basalt in composition; a transitional zone in effect. Xcut by a couple of fine scrappy qtz-carb stringers. Non-magnetic and calcitic. Broken up core at the lower contact; orientation is unknown.

3040.6 3051.7 Basalt Ultramafic.

An interval of mostly fine grained basalt with some ultramafic material, especially in the upper portions of the interval. Pale grey-green to medium grey in colour, very weakly foliated in part (60 DTCA) and non-magnetic. Strongly calcitic in small patches and scrappy carb stringers. Subtle flow texture is developed in the basaltic components; ex @ 3047.8- fine variolites? Locally well mineralised with fine anhedral py about the carb stringers and in low angle fractures near the basal contact. The upper contact is invaded by a low angle carb-qtz vein which carries small slivers of wallrock and traces of sulphide only. Sharp lower contact delimited by a 2 in thick fault zone; a prominent graphitic shear @ 40 DTCA lies at 3050.9. (a parallel slip 1 in above is also graphitic).

3050.9 3051.0 Fault gouge graphitic.

A graphitic fault zone. Finely crushed rock and muddy gouge material is bounded by two graphitic shears at about 40 DTCA.

3051.7 3069.9 Ultramafic.

From To
(ft) (ft)

Geology

Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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Returning to the blue-black host. A strongly chloritic interval, locally weakly silicified. Some primary texture is visible in this area; several thin flows characterised by flow bottom brecciation and finer tops are preserved. Tops may be downhole here. The flow breccia zones are preferentially altered with carb and silica, making them lighter in colour and substantially harder. As well, elevated amounts of 2-3 mm cubic py are developed in these more altered areas. The chloritic zones are fairly soft, and locally sheared/broken and or faulted. Apart from these zones the rocks are fairly massive and show little fabric. A calcitic and non-magnetic interval. Structural elements are detailed below.

3059.7 3059.8 Fault gouge.

A strong slip with about 1/4 in of soft, talcy mud. The break lies @ 35 DTCA.

3060.8 3061.8 Broken Blocky Core fault gouge.

A finely broken-up/crushed section with some gougy material mixed in. Two discreet shears (at about 55 DTCA) are present towards 3061.8.

3063.9 3064.0 Sheared.

A 1 inch wide strongly sheared area is developed here. The zone is bounded by two discreet slips lying at about 20/25 DTCA. Internally the zone is crushed/crenulated; tiny folded fragments are visible.

3069.9 3094.0 Mafic Intrusive.

Entering a pale grey-green, medium to fine-grained mafic dyke. Quite massive and uniform internally. Non-magnetic and strongly reactive to cold HCl. Xcut by a few 40 degree carb stringers from 1/8 to 1 in thick. A very few stringers lie at higher angles(70 DTCA) also. Locally porphyritic; scattered pale white to cream-coloured swarms of altered feldspars are scattered throughout the unit. The phenos are typically rounded to sub-angular, and range from 2 to 8 mm across. Slightly smaller, less prominent chloritic amphibole? grains are also variably developed. In most of the unit, more accicular or irregular, patchy amphibole is intergrown with fine altered (matrix) feldspar. Modestly mineralised with fine spotty/cubic py. Little sulphide is normally found in the stringers although a slight increase in py occurs nearby some of them.

3094.0 3099.5 Lost core.

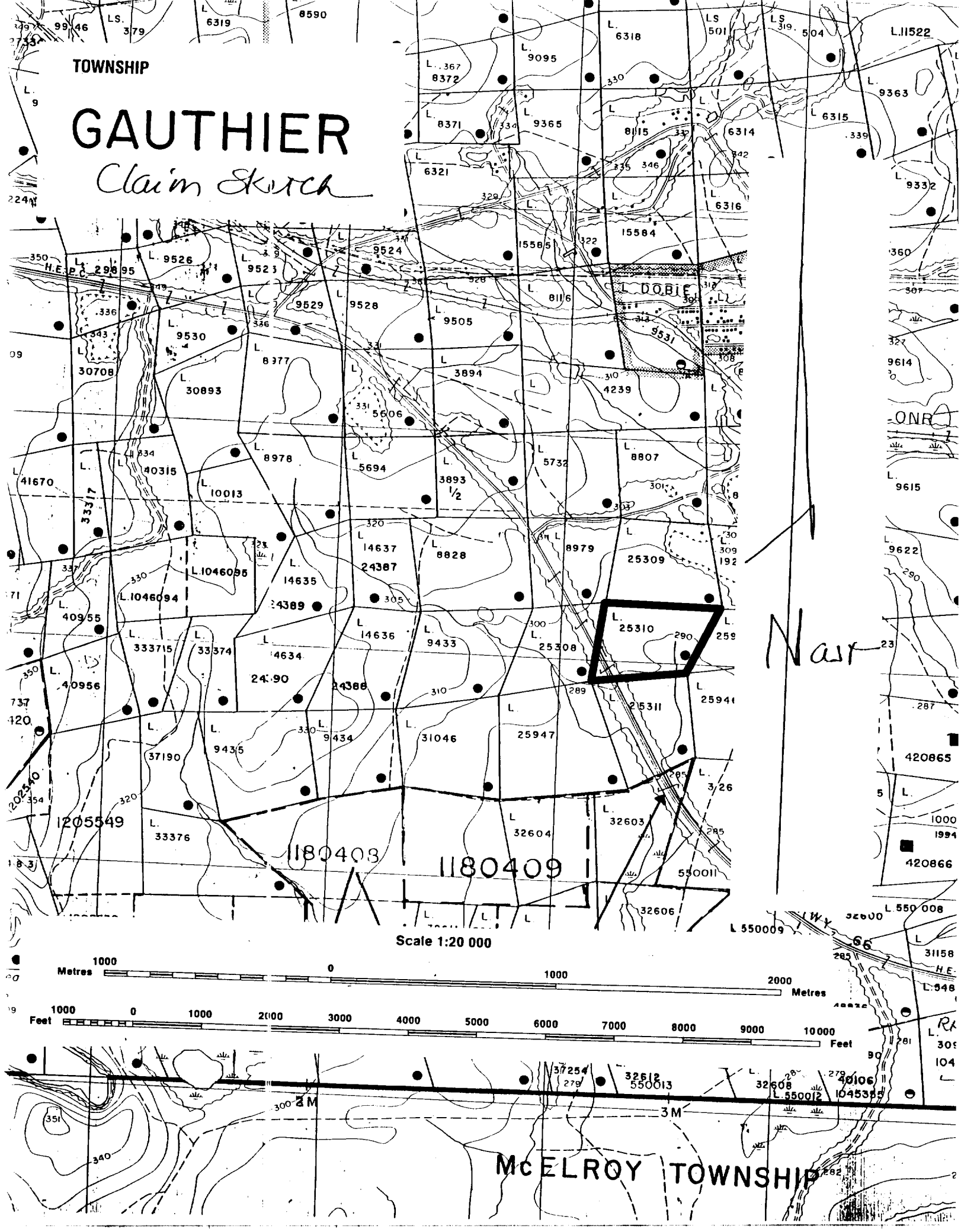
This interval of core was inside the core tube and left in the bottom of the hole with the lost portion of the drill string.

End of Hole- 3099.5 Feet. Hole lost here. See notes under the overburden description.

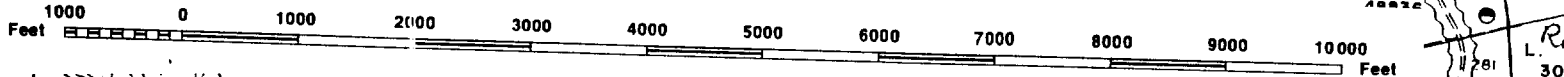
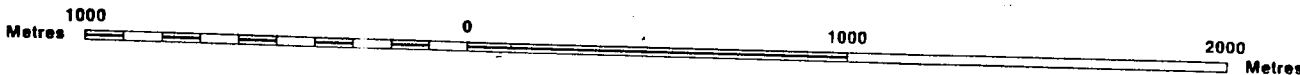
TOWNSHIP

GAUTHIER

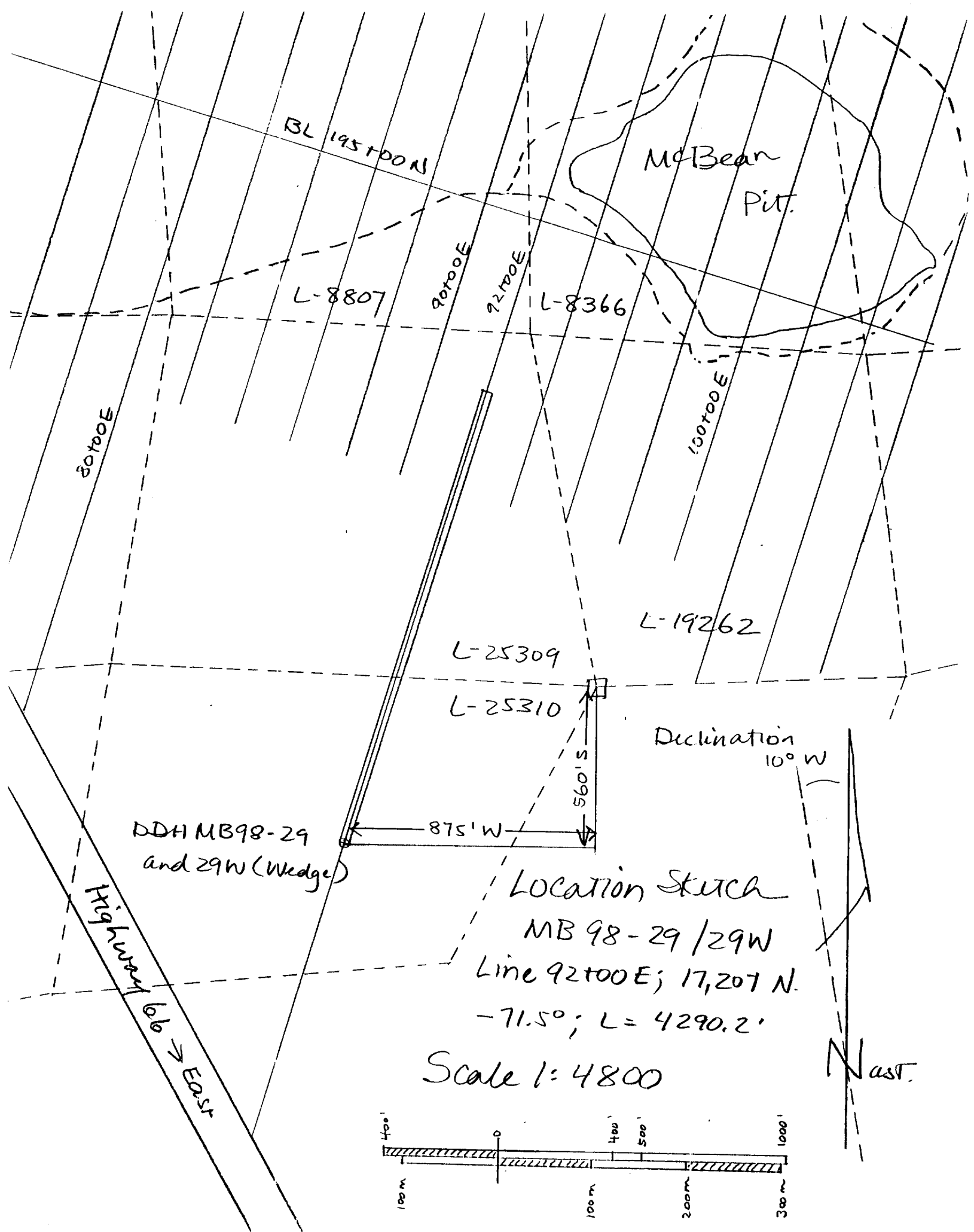
Claim Sketch



Scale 1:20 000



MCELROY TOWNSHIP



BL 195100 N

McBear Pit.

L-8807

90700E

72700E

L-8366

100700E

50700E

L-19262

L-25309

L-25310

Declination 10° W

DDH MB98-29 and 29W (Wedge)

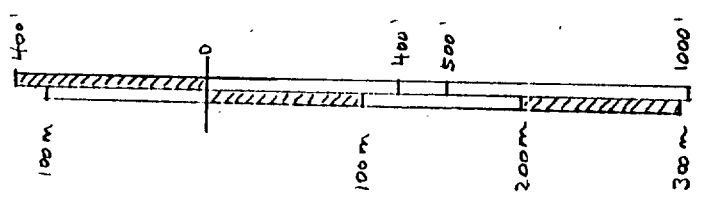
875' W

560' S

Location Sketch
 MB 98-29 / 29W
 Line 92700E; 17,207 N.
 -71.5°; L = 4290.2'

Scale 1:4800

Highway 166 -> East



North

QUEENSTON MINING INC

Drill Hole: MB98-29W

DIAMOND DRILL HOLE RECORD

Property: MCBEAN Collar loc'n from #1 Post L25310 - 560'S, 875'W
 Northing: 17207.84
 Easting: 9238.26
 Elevation: 10949.19

*** Dip Tests ***			*** Dip Tests ***		
Depth	Azi.	Dip	Depth	Azi.	Dip
127.9		-70.5	2656.8		-68.0
295.2		-69.0	2952.0		-68.0
590.4		-69.0	2991.4		-68.0
885.6		-69.0	3247.2		-67.0
1180.9		-68.5	3591.6		-68.0
1476.0		-68.0	3837.6		-62.0
1771.2		-68.5	4132.8		-55.0
2066.4		-68.0	4290.2	357.0	-57.0
2361.6		-68.0			

Date Started: June 17, 1998
 Date Completed: July 2, 1998

Collar Azimuth (Grid) 355.4
 Collar Dip: -71.5
 (0 Degrees Grid equals 017 degrees True)
 Hole Length: 4290.2
 Date Printed: 25 Mar, 1999

Drilled by: BENOIT
 Core Size: NQ
 Material left in hole NX, HX CASING
 Core Location: Upper Canada Site 1
 Logged by: M. McGill, D. Alexander

2.19503

[Handwritten Signature]
 Dave R Alexander

From (ft)	To (ft)	Geology
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Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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SUMMARY LOG

From (ft)	To (ft)	Geology
.0	127.9	OVERBURDEN
127.9	669.4	DIORITE
669.4	2123.0	GABBRO
2123.0	2669.9	BASALT GABBRO
2669.9	3230.5	ULTRAMAFIC KOMATIITE
3230.5	3626.2	BASALT
3626.2	3626.3	START OF DEFORMATION ZONE
3626.3	3670.0	ULTRAMAFIC ULTRAMAFIC KOMATIITE
3670.0	3684.6	FELSIC DYKE
3684.6	3720.1	CARBONATED ULTRAMAFICS CARBONATED ZONE
3720.1	3797.8	INCIPIENT ALTERED ULTRAMAFICS ULTRAMAFIC BASALT
3797.8	4290.2	TUFF

RECEIVED



From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
.0	127.9	OVERBURDEN Tropari @ 4290.2 azimuth @ 357 degrees true, on hold pending survey. 0.0 to 80 feet- clay and loonshit; 80 to 127.9 feet; boulders with minor sand. The HX casing was reamed to 98 feet where the shoe bit failed in boulders. NX casing was driven to 131.9 (reamed 4 feet into the bedrock) and subsequently cemented.								
		Hole 29 was lost at 3099.5 feet. Adverse ground conditions were encountered between 2952 and 2963 and again down at 3060-3062. Broken, faulted and crushed ground filled the hole and eventually caused the rods to stick as they were being pulled back to restore water return. The hole was drilled to 3099.5; core to 3094 was recovered. The last 5.5 feet was left in the core tube (in the hole). The rods were pulled back to 3017.6 before they became stuck. Subsequently, the string was blasted off (at 2965 approx) leaving about 52 feet of steel in the hole. A wedge was placed above the blasted off rods (top of wedge at about 2952). When the wedge was lowered, the rivets broke prematurely as the wedge encountered bad ground at 2952-2963. (The wedge test indicated that the wedge was oriented at 9 o'clock (270 grid az)). Attempts to drill this wedge failed.								
		Another wedge was then placed about 50 feet above the first one at about 2900 feet and the hole was continued as MB98-29W. Assays were stripped from this hole for the samples taken above the wedge and transferred to hole 29W.								
127.9	669.4	DIORITE The hole is collared in a pale grey to slightly pinkish, medium grained diorite. The rocks are slightly blocky, quite hard and slightly magnetic. Pervasive calcite alteration occurs in the matrix and in fine fractures and stringers. Weak hematite staining/weathering lies in some of the fine fractures and locally in the matrix. Milky white carbonate and carb-qtz stringers cut the core at very high angles typically. Small subangular mafic fragments are caught up in the unit. Traces of fine pyrite are sprinkled throughout. This generally fresh-looking phase is slightly different than other 2D dykes logged at McBean and Anoki. It consists of a tightly packed aggregate of 2-4 mm plagioclase grains barely supported in a pale pink aphanitic groundmass. Many of these crystals are twinned; many are subhedral and/or fairly equidimensional also. Weak carbonate and possibly epidote? alteration is just beginning to appear in the feldspars and along very fine fractures. Plagioclase is the dominant feldspar; a few K-feldspar grains are visible in places. Qtz is rare. Small angular flecks of chlorite and chlorite after amphibole are distributed throughout the matrix. The mafics are interstitial to the feldspars. Locally, isolated slightly larger feldspars impart a quasi-porphyritic texture to the rock. More details follow: 127.9 140.0 Diorite. Very fresh looking diorite, blocky with high angle fractures and traces of fine spotty py. 140.0 141.0 Broken Blocky Core.	52501	170.2	172.5	2.3	TR	nil	.000	0
			52502	172.5	173.9	1.4	TR	.001	.000	0
			52503	173.9	177.0	3.1	TR	nil	.000	0
			52504	196.0	198.2	2.2	TR	nil	.000	0
			52505	198.2	198.5	.3	TR	nil	.000	0
			52506	198.5	200.2	1.7	1.0%	nil	.000	0
			52507	200.2	200.8	.6	TR	nil	.000	0
			52508	200.8	203.0	2.2	TR	nil	.000	0
			52509	203.0	206.0	3.0	TR	nil	.000	0
			52510	255.0	256.4	1.4	TR	nil	.000	0
			52511	256.4	257.6	1.2	1.0%	nil	.000	0
			52512	257.6	259.0	1.4	TR	nil	.000	0
			52513	330.9	332.2	1.3	TR	nil	.000	0
			52514	332.2	334.1	1.9	TR	nil	.000	0
			52515	334.1	336.5	2.4	TR	nil	.000	0
			52516	336.5	340.0	3.5	TR	nil	.000	0
			52517	340.0	342.0	2.0	0.5%	nil	.000	0
			52518	342.0	345.1	3.1	TR	nil	.000	0
			52519	345.1	349.0	3.9	TR	nil	.000	0
			52520	349.0	351.5	2.5	TR	nil	.000	0
			52521	351.5	355.0	3.5	TR	nil	.000	0
			52522	355.0	356.5	1.5	3.0%	nil	.000	0
			52523	356.5	357.0	.5	TR	nil	.000	0
			52524	357.0	360.1	3.1	TR	nil	.000	0
			52525	364.1	367.7	3.6	TR	nil	.000	0
			52526	367.7	370.4	2.7	0.5%	nil	.000	0

From To
(ft) (ft)

Geology

Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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A pale pink, medium grained dioritic dyke (which appears to post date the green-grey host) begins here. Consists of a tightly packed aggregate of 3-5 mm plagioclase supported in a flesh-coloured groundmass. Slightly more groundmass material as compared to the host; slightly coarser grained also. Quite hard (silicified, albitic?) and essentially non-magnetic. Contains fine mafic flecks throughout. Razor sharp contacts at 40/45 DTCA. Carries very little sulphide. Similar to diorites logged at McBean proper. A xenolith of altered basalt? lies at 198.5 to 200.2 feet; it shows chilling? at the contacts and carries some fine diss py especially near the upper contact. It is slightly magnetic, and now consists of primarily pinkish carbonate and a pale green-blue chlorite. A pale milky qtz-carb vein abuts the lower contact of the xenolith and continues down to 200.8 feet. It carries small angular chlorite inclusions and is devoid of sulphide. Contacts are sharp at about 50/60. Two more narrow slivers of qtz/chloritic material cut the unit below 201 feet.

203.0 332.2 Diorite.

Returning to the fresh host phase. A moderately blocky, rather homogeneous section of pale grey-green diorite with scattered 1/4 to 2 inch mafic inclusions. Slightly reddened locally where hematite has leaked out of very fine high-angle fractures. Low RQD values. Very weakly mineralised with traces of fine py. Small patches of pinkish 2D material (as per 198.2 above) occur at 247.0, 269.0, and 288.8-289.0 feet. Jointing lies at 65-75 DTCA typically. Weakly magnetic and continuing calcitic. Cut by 1 or 2 fine, high angle qtz stringers.

332.2 334.1 Basalt.

A short section of well carbonated, pale green, fine grained material. Locally magnetic. Devoid of sulphide. Sharp upper contact at 50 DTCA; brecciated lower cnt at about 65 DTCA.

334.1 336.5 Diorite.

A short interval of the typical host diorite with an increase in hematite staining, both in the matrix and in low angle hairline fractures. This alteration is related to the underlying much more strongly altered unit.

336.5 345.1 Diorite.

Returning to the coarser grained, presumably later pink diorite phase. This section has been intensely hematised and silicified(albitised?) causing the rocks (especially the upper 3 feet) to turn bright orange-red in colour and the granular texture to become quite muddy in part. Some fracture control of the alteration is evident. The rocks are variably magnetic and weakly calcitic. Fine specular hematite has precipitated on some of the more prominent fractures. Contains small rafts of cleaner, relatively unaltered host rock. A poorly mineralised section; a few scattered specks of chalcopyrite are present however. Fuzzy upper contact, sharp lower contact at 30 DTCA.

345.1 356.5 Diorite.

Continuing with the host diorite; slightly reddened, blocky/broken core with abundant angular mafic inclusions. Becoming very red, and heavily

From To
(ft) (ft)

Geology

Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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mineralised with patchy py for about 2 inches above the contact at 356.5.

356.5 357.0 Mafic Intrusive.

A very narrow, pale greenish grey mafic dyke. Fine grained with a subtle flowy? texture developed internally. Consists of a finely felted groundmass of chlorite and amphibole? with a few scattered 2-3 mm amphibole lathes. Magnetic and weakly calcitic. Sharp, high angle contacts. No appreciable sulphide.

357.0 559.3 Diorite.

Returning to the host diorite. Opening into a broad section of homogeneous, slightly blocky material containing scattered mafic inclusions, a few small patches of the coarser red to pink 2D phase and a very few narrow qtz or qtz-carb stringers (usually less than 3 in wide, high core angles, slightly pitted, with very little sulphide). Generally high angle angle jointing /tight fractures throughout. Contains traces of diss py. Locally slightly muddy and/or coarser grained with a purplish cast. Calcitic and magnetic. Weak epidote overprinting with a few areas of stronger alteration (very fine fracture control).

559.3 559.7 Mafic Intrusive.

A dark olive green, fine grained dykelet with chilled margins. Sharp contacts at 45/35 DTCA. Magnetic and weakly calcitic. Hematised and quite hard. Consists of an altered felsic component, intermixed with interstitial mafics and slightly larger lathes of the same (amphiboles?, now mostly chlorite). Only traces of sulphide are present.

559.7 594.9 Diorite.

As above down to 559.3.

594.9 602.9 Diorite quartz.

A section of purple to maroon coloured diorite invaded by low angle (parallel to the CA) qtz stringers and hematitic/siliceous alteration and fracture fillings. Locally the host is brecciated and subsequently infilled by small amounts of qtz as stringers and rounded patches. A well mineralised area with fresh brassy py occurring both in the wallrock and veining. The sulphide has several habits; it occurs as isolated cubes up to 6 mm across, as disseminations, as smaller anhedral blebs and as very fine wispy or streaky bands. The finer varieties are more common in the veining. Chloritic fractures also host py grains. Portions of this area are crushed and broken up into pieces less than 1/2 in across typically. Calcite is common in and around fractures. Some of the more prominent fractures in this area lie at 20 to 45 DTCA, in contrast to the higher angle fractures and joints more typical of the host phase.

602.9 617.6 Diorite.

As described above down to 559.3 but with a slightly larger grain size and containing more weak patchy Fe alteration. Carries a few slightly larger, more angular mafic inclusions.

617.6 645.9 Diorite.

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
		The host phase, but in a more altered, chaotic state. Becoming more purple to pink in colour with a slightly coarser grain size and more internal variation in composition and grain size. Quite blocky and/or crushed locally. Little sign of faulting or gouge. Weathered/weakly pitted locally. Totally crushed below 642.7. More hematite and epidote alteration is evident; locally more fine diss py occurs in the matrix also. The rocks here carry a greater number of mafic inclusions as compared to above. A small piece of the underlying (gabbro) phase lies at about 638 feet. A tiny pale green grey mafic dyke lies in the rubbly core below 642.7.								
		645.9 646.7 Lamprophyre. A very dark grey-green intrusive with a dark red cast. Fine grained with 1-2 mm needles and tiny lathes of amphibole and a bit of platy biotite. Consists of a very fine felted matrix of chlorite needles in amongst reddish patches of carbonate. Calcitic, but not magnetic. Sharp contacts at 20/65. Well mineralised with very fine anhedral py grains throughout. Fairly hard and hematized throughout. Possibly a lamprophyre.								
		646.7 651.0 Diorite. Returning to the medium-grained host. This section is distinctly red-orange in colour and fairly homogeneous except for a short stretch of pink diorite much like that noted above at 336. Blocky and locally finely fractured with hematite and some diss py near the contacts.								
		651.0 652.8 Mafic Intrusive. Sharp contact into another pale grey-green, very fine grained mafic dyke much like the feature at 356.5. This example is fairly hard and non-magnetic. It consists of predominantly a fine growth of pale green chlorite which has replaced mafics both in the groundmass and as phenos. Very little feldspathic component is visible. As well, there are ghostly remnants of needle-like mafic phenos in places. Sharp contacts @ 40/40. Very little sulphide occurs in the phase. Fine qtz-carb sweats/stringers and tiny blebs of the same occur in a few spots. Stringers lie at about 35-40 DTCA.								
		652.8 669.4 Diorite. The final section of diorite. This interval is much like that noted at 617-645. A medium-coarse grain size with slightly more epidote alteration characterises much of this area. A few more xenoliths of the underlying gabbro in addition to various small mafic blocks clutter the host. A more cracked up section with an increasing number of hematitic hairline fractures moving downhole. Generally broken to crushed core with 0 RQD. The lower contact lies at fairly high angle; the actual interface is a small scale replica of the chaotic intermingling of rocks as described above.								
669.4	2123.0	GABBRO Contact into a thick complex of gabbroic rocks, which for the first 100 feet or so carries a number of different blocks of the overlying diorite, in addition to mafic xenoliths and dykes quite similar to those seen above. The gabbros begin with a distinctly spotted variety; fine epidote alteration has coloured the larger feldspars a pale green which contrasts with the darker components. Later on, a more homogeneous, very clean hornblende gabbro	52554	687.0	688.8	1.8	TR	nil	.000	0
			52555	688.8	689.9	1.1	1.0%	.001	.000	0
			52556	689.9	691.9	2.0	TR	nil	.000	0
			52557	885.6	888.4	2.8	TR	nil	.000	0
			52558	888.4	891.2	2.8	TR	nil	.000	0
			52559	891.2	894.0	2.8	TR	nil	.000	0

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
		develops. In between lie the 2D blocks and mafic dykes.	52560	894.0	896.5	2.5	TR	nil	.000	0
			52561	896.5	898.9	2.4	TR	nil	.000	0
		The spotty phase consists of a medium grained aggregate of chloritic mafics	52562	958.9	961.9	3.0	TR	nil	.000	0
		intergrown with smaller pale grey feldspars and somewhat larger anhedral	52563	961.9	964.3	2.4	TR	nil	.000	0
		feldspar grains which preferentially alter to epidote and carbonate. A few	52564	964.3	967.0	2.7	TR	nil	.000	0
		tiny laths of amphibole are visible in the matrix. Some of the (epidote)	52565	967.0	969.3	2.3	TR	nil	.000	0
		altered grains might be olivines? There may also be some small amounts of	52566	969.3	971.7	2.4	TR	nil	.000	0
		qtz in the groundmass?? The rocks are slightly calcitic and moderately to	52567	971.7	976.0	4.3	TR	nil	.000	0
		strongly magnetic. Scattered hairline carbonate, hematitic and epidote	52568	976.0	978.1	2.1	0.5%	nil	.000	0
		stringers cut the unit, generally at high core angles. Locally diss py dusts	52569	978.1	980.1	2.0	TR	.001	.000	0
		the groundmass where alteration is more heavily developed. A blocky, locally	52570	980.1	984.0	3.9	TR	nil	.000	0
		finely crushed unit with low RQD values. More details follow below:.	52571	991.7	994.8	3.1	TR	nil	.000	0
			52572	994.8	997.5	2.7	TR	nil	.000	0
		669.4 710.1 Gabbro.	52573	997.5	999.3	1.8	TR	nil	.000	0
		An interval of fairly homogeneous 'spotted' gabbro. Quite blocky and broken	52574	999.3	1000.8	1.5	TR	nil	.000	0
		up throughout. Contains a few small mafic inclusions and several slightly	52575	1000.8	1003.7	2.9	TR	nil	.000	0
		larger (1-3 in across) diorite blocks. The latter are becoming quite washed	52576	1003.7	1006.9	3.2	TR	nil	.000	0
		out and ghost-like. Towards the lower contact the spotty texture becomes	52577	1006.9	1011.0	4.1	TR	nil	.000	0
		replaced with a more typical equigranular intrusive texture. Locally the	52578	1011.0	1013.5	2.5	TR	nil	.000	0
		rocks exhibit cumulate textures (ex- around 707). Locally mineralised in	52579	1080.9	1083.9	3.0	TR	nil	.000	0
		heavily carbonated zones with diss py.	52580	1083.9	1086.5	2.6	TR	nil	.000	0
			52581	1086.5	1089.2	2.7	TR	.001	.000	0
		710.1 715.3 Diorite.	52582	1089.2	1091.7	2.5	TR	nil	.000	0
		A large xenolith of altered diorite similar to that above. A brecciated,	52583	1091.7	1092.8	1.1	1.0%	nil	.000	0
		chaotic section with bits of gabbro, and basalt mixed in with the diorite.	52584	1092.8	1094.3	1.5	TR	nil	.000	0
		Blocky and locally crushed. Locally weakly pyritic in the 2D. Cut by some	52585	1094.3	1095.5	1.2	TR	nil	.000	0
		weakly hematitic, siliceous low angle stringers in the upper parts of the	52586	1095.5	1097.5	2.0	TR	nil	.000	0
		interval.	52587	1097.5	1101.0	3.5	1.0%	nil	.000	0
		715.3 718.4 Basalt.	52588	1101.0	1104.0	3.0	2.0%	nil	.000	0
		A dark green, fine grained, massive section of flow material. Heavily	52589	1104.0	1106.7	2.7	2.0%	nil	.000	0
		carbonated, but not magnetic. Carries very little sulphide. Cut by a few	52590	1106.7	1109.0	2.3	TR	nil	.000	0
		very fine carb stringers at about 45-55 degrees. Sharp contacts @ 20/80.	52591	1247.6	1250.7	3.1	TR	nil	.000	0
			52592	1250.7	1252.1	1.4	3.0%	nil	.000	0
			52593	1252.1	1255.1	3.0	TR	nil	.000	0
		718.4 726.3 Diorite.	52594	1311.0	1314.0	3.0	TR	nil	.000	0
		Another block of pale grey diorite which carries a number of basaltic	52595	1314.0	1315.2	1.2	0.5%	nil	.000	0
		inclusions. Blocky, heavily carbonated and riddled locally with numerous	52596	1315.2	1318.6	3.4	TR	nil	.000	0
		hairline carb threads. Magnetic and not especially pyritic. Rather muddy,	52597	1331.0	1333.0	2.0	TR	nil	.000	0
		obscure basal contact.	52598	1333.0	1336.0	3.0	0.5%	nil	.000	0
			52599	1336.0	1338.2	2.2	TR	nil	.000	0
		726.3 732.1 Mafic Intrusive.	52600	1338.2	1341.1	2.9	TR	nil	.000	0
		A section of predominantly very dark grey to almost black coloured dyke	52601	1341.1	1344.6	3.5	TR	.001	.000	0
		material which carries a few angular blocks of basalt? and diorite? Another	52602	1412.1	1414.0	1.9	TR	nil	.000	0
		microporphyrific dyke? may also cut the primary phase. The major unit is	52603	1414.0	1417.0	3.0	TR	nil	.000	0
		characterised by an abundance of fine amphibole needles set in a very fine	52604	1417.0	1418.1	1.1	TR	nil	.000	0
		matrix of chlorite and intergrown carb (after feldspar). The dyke is	52605	1418.1	1420.9	2.8	TR	nil	.000	0
		calcitic and weakly hematized and contains a few larger rounded phenos which	52606	1541.5	1543.5	2.0	TR	nil	.000	0
		are totally replaced with chlorite (possibly olivines?). The rocks are	52607	1543.5	1544.9	1.4	TR	nil	.000	0
		weakly magnetic and carry little sulphide. Contacts with the dyke rock are	52608	1544.9	1546.0	1.1	0.5%	nil	.000	0
		generally razor sharp and rather subtle. The entire section is crushed and	52609	1546.0	1547.3	1.3	TR	nil	.000	0
		broken up. Sharp lower contact at about 35-40 degrees.	52610	1547.3	1550.0	2.7	TR	nil	.000	0

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
		732.1 750.9 Diorite.	52611	1550.0	1552.7	2.7	TR	nil	.000	0
		Another interval of diorite intermixed with smaller blocks of gabbro and mafic (basalt) inclusions in various states of assimilation and alteration.	52612	1552.7	1554.7	2.0	TR	nil	.000	0
		Calclitic and magnetic with little in the way of sulphide or veining.	52613	1554.7	1557.1	2.4	TR	nil	.000	0
		Continuing quite blocky and broken up locally. Epidote alteration is more strongly developed locally.	52614	1564.6	1566.0	1.4	TR	nil	.000	0
			52615	1566.0	1569.2	3.2	TR	nil	.000	0
			52616	1569.2	1571.5	2.3	0.5%	nil	.000	0
			52617	1571.5	1572.5	1.0	TR	nil	.000	0
			52618	1572.5	1574.0	1.5	0.5%	nil	.000	0
		750.9 756.5 Mafic Intrusive.	52619	1574.0	1575.6	1.6	TR	nil	.000	0
		Sharp contact at 55 DTCA into a fine grained, pale grey-green dyke. Weakly spotted or streaky in appearance in part. A polyphase? dyke which consists of several slightly different components- very fine contacts can be distinguished internally in places. Strongly carbonated and magnetic. Xcut by high angle carb threads in places. May contain basalt inclusions. Locally the rocks are moderately mineralised with diss py. Harder and hematized at the lower contact; it is sharp at about 50 DTCA. Blocky and broken up as per the host rocks. Predominantly chlorite and carbonate with the suggestion of accicular amphiboles as tiny phenos.	52620	1575.6	1579.1	3.5	TR	nil	.000	0
			52621	1613.8	1615.4	1.6	TR	nil	.000	0
			52622	1615.4	1618.2	2.8	TR	nil	.000	0
			52623	1618.2	1620.2	2.0	0.5%	.022	.000	0
			52624	1620.2	1623.6	3.4	TR	nil	.000	0
			52625	1623.6	1626.0	2.4	TR	.001	.000	0
			52626	1626.0	1628.4	2.4	0.5%	nil	.000	0
			52627	1628.4	1631.1	2.7	0.5%	.006	.000	0
			52628	1631.1	1633.7	2.6	TR	.001	.000	0
			52629	1633.7	1637.8	4.1	TR	nil	.000	0
		756.5 759.0 Basalt.	52630	1737.5	1740.5	3.0	TR	nil	.000	0
		A short segment of finely amphibolitic basalt. Strongly calcitic and weakly magnetic. Contains very little sulphide. Sharp, slightly cusped lower contact at about 30 DTCA.	52631	1740.5	1741.7	1.2	TR	nil	.000	0
			52632	1741.7	1744.1	2.4	0.5%	nil	.000	0
			52633	1744.1	1746.9	2.8	TR	nil	.000	0
			52634	1746.9	1749.5	2.6	TR	nil	.000	0
		759.0 774.2 Diorite Basalt.	52635	1749.5	1753.0	3.5	TR	nil	.000	0
		A section of pale flesh-toned altered diorite, intermixed with dark green xenoliths of finely amphibolitic basalt. A very blocky, broken up interval cut by several strong serpentine-bearing slips. The diorite component consists of at least two phases; the predominant one may be the coarser 'pink diorite' logged above while the minor constituent may be a remnant of the finer grey-green type logged nearer to the hole collar. Scattered fine spotty py occurs in the diorite. Below 767 very little 2D exists except as small high angle stringers. Below 770, small sweats of gabbro start to invade coarser grained basalt which also contains smaller ghostly mafic inclusions. The bottom contact lies at a high angle, but it is not particularly sharp.	52636	1775.2	1778.5	3.3	TR	nil	.000	0
			52637	1778.5	1781.5	3.0	TR	.001	.000	0
			52638	1781.5	1784.2	2.7	TR	nil	.000	0
			52639	1784.2	1786.9	2.7	TR	nil	.000	0
			52640	1786.9	1789.6	2.7	0.5%	nil	.000	0
			52641	1789.6	1792.7	3.1	TR	nil	.000	0
			52642	1792.7	1795.4	2.7	0.5%	nil	.000	0
			52643	1795.4	1797.8	2.4	1.0%	.001	.000	0
			52644	1797.8	1800.7	2.9	1.0%	nil	.000	0
			52645	1800.7	1803.9	3.2	1.5%	nil	.000	0
			52646	1803.9	1807.0	3.1	TR	nil	.000	0
			52647	1807.0	1810.1	3.1	TR	nil	.000	0
		761.4 761.5 Fault gouge.	52648	1810.1	1812.1	2.0	TR	nil	.000	0
		Serpentine filled slip at 50 DTCA.	52649	1812.1	1815.0	2.9	TR	nil	.000	0
			52650	1861.6	1864.7	3.1	TR	.002	.000	0
		764.8 764.9 Fault gouge.	52651	1864.7	1867.6	2.9	1.0%	nil	.000	0
		Strong slip @ 40 DTCA with a 1/4 in thick serpentine-filled shear plane. Fine mud in the slip also.	52652	1867.6	1869.9	2.3	TR	nil	.000	0
			52653	1884.0	1886.1	2.1	TR	nil	.000	0
			52654	1886.1	1888.9	2.8	2.0%	nil	.000	0
		774.2 964.2 Gabbro.	52655	1888.9	1890.0	1.1	1.5%	nil	.000	0
		Contact into a package of medium grained, rather homogeneous amphibole-rich gabbro which has a crisp salt and pepper appearance. Locally cumulate textures are developed. Weak epidote alteration overprints much of the unit. Generally calcitic and magnetic throughout. Xcut by numerous fine carb, feldspathic, epidotic and dioritic dykelets and fracture fillings. Many lie at low core angles. Blocky rocks, but coring well. Slightly better RQD	52656	1890.0	1891.8	1.8	0.5%	nil	.000	0
			52657	1891.8	1894.3	2.5	3.0%	nil	.000	0
			52658	1894.3	1896.5	2.2	1.5%	nil	.000	0
			52659	1896.5	1899.1	2.6	0.5%	nil	.000	0
			52660	1899.1	1901.9	2.8	TR	nil	.000	0
			52661	1938.5	1939.9	1.4	TR	nil	.000	0

From To
(ft) (ft)

Geology

Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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coarse grained moving downhole. Variably magnetic and strongly calcitic. Contains several sinuous zones and small blobs of pale pink dioritic material. Cut by some very low angle slips and associated mafic dykelets near the lower contact (the porphyritic variety is described below).

1089.2 1094.3 Mafic Intrusive.

Sharp contact into a section of predominantly mafic dyke material with some included basalt and dioritic material. This is a different style of mafic intrusive; it is porphyritic in feldspar and may be related more so to the gabbros per se. It is relatively fresh and is composed of a fine aggregate of feldspars and slightly larger interstitial mafics, now mostly chlorite. Set in this matrix is a moderate population of 1-3 mm (with a few to 6 mm) subhedral to lath-like plagioclase phenos. In addition, there are numerous small angular mafic inclusions, similar to those seen in diorites and other mafic dykes uphole. The rocks here are moderately to strongly magnetic, fairly massive and well carbonated with calcite. Very fine diss py is sprinkled throughout the dyke. The outermost contacts of the unit are sharp and lie at 55/30 DTCA.

1094.3 1121.3 Basalt amphibolitic.

Returning to a predominantly basaltic section, invaded by some sinuous to patchy pale purple siliceous alteration and some irregular tongues of dyke material similar to that noted above at 1089.2. The siliceous material is well mineralised with diss py and calcitic (in small gashes); this fluid might be related to some of the pale pink dioritic dykes often seen in this sequence. Locally pitted and strongly stained with epidote.

1121.3 1145.7 Basalt Gabbro.

An interval of mostly basalt with short segments of gabbro and about 5-10% blobby pale pink diorite (usually at low core angles). Blocky, but coring well. Xcut by irregular carb and gabbro-filled fractures. Carries trace amounts of diss py.

1145.7 1190.1 Gabbro.

Returning to a predominantly gabbroic section. This interval contains minor amounts of basalt and diorite. Continuing blocky, calcitic and magnetic. Jointing at 55-60 DTCA typically.

1190.1 1255.1 Basalt amphibolitic.

Returning to a segment of mostly amphibolitic basalt with minor amounts of gabbro and a couple of mafic dykes similar to ones noted above. Becoming slightly blockier and more broken up locally (ex-the last 12 inches of the section is crushed). Epidote alteration is slightly more strongly developed along fractures and in the groundmass. The dykes fall out as noted below.

1219.0 1228.8 Mafic Intrusive.

An irregular dyke similar to that seen above at 1089. This example is mineralogically quite similar to the host gabbros, but texturally different. It is quite fresh, and is locally bimodal in feldspar. There is some crude alignment in the finer feldspar grains and the unit contains several basaltic inclusions. Not well mineralised. Might be described as

From To
(ft) (ft)

Geology

Sample From To Len PY AU AU1 AU2
No. (ft) (ft) (ft) % OZ/T OZ/T PPB

microporphyrritic. Quite broken-up and or crushed locally. Irregular, sharp contacts (35/45-50 DTCA).

1027.1 1208.8 Mafic Intrusive.
See below at 1250.7.

1250.7 1252.1 Mafic Intrusive.

A pale grey-green, fine-grained dyke with some characteristics as per the rocks at 964. This phase is hard, quite magnetic and contains numerous lath-like (amphibole) and more anhedral (chlorite after px?) phenos throughout. Weakly calcitic and locally invaded with small wispy patches of silica + (very weak) hematite alteration. There is the suggestion of flow banding where phenos have lined up wrapping about inclusions and along contacts. The interval contains two blocks of well mineralised/epidote-rich basalt. The dyke is also well mineralised locally with fine cubic py (in or near the more Si/Fe-rich zones). High angle, very sharp contacts.

1255.1 1300.2 Gabbro.

A gabbro-rich interval with an increasing amount of basalt moving towards 1300. Contains very little diorite. A couple of tiny porphyritic dykelets as per 1089 lie at 1285-1288. Slightly blocky except for a crushed zone at 1279.8 to 1284.4. Magnetic and calcitic with little accessory sulphide.

1279.8 1284.4 Broken Blocky Core.

1300.2 1370.2 Basalt amphibolitic.

Mostly amphibolitic basalt in this section with very minor gabbro. Calcitic and magnetic with numerous scrappy carb and feldspathic fracture-fillings. Scattered fine cubic py, generally in or around fractures or weathered out areas. Quite blocky and broken up locally with prominent low and high angle slips and joints.

1314.0 1315.2 Broken Blocky Core.

Weathered, broken up area; possible faulting with traces of gouge @ about 1314.5.

1325.4 1326.3 Broken Blocky Core.

Weathered, broken-up area. Traces of gouge. Possible high angle faulting here.

1328.2 1324.8 Broken Blocky Core.

Cement job at 1329 feet.

1354.4 1354.5 Fault gouge.

Fine fault breccia and gouge in 1/2 in thick break @ 70 DTCA.

1370.2 1450.5 Gabbro.

Returning to a section of about 60% gabbro intermixed with 40% basalt and coarse-grained (almost pegmatitic) fracture fillings of late gabbroic material. These late features range from 1 to 4 inches thick and are often oriented at fairly low angles to the CA. Blocky, but coring better than the

From To
(ft) (ft)

Geology

Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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precedeing section. Traces of chalcopyrite are present in some of the everpresent fine carb stringers. At 1399.4 is a pale amber to gold coloured, slightly resinous looking mineral as tiny anhedral grains (sphalerite, scheelite?) in an open fracture. A high angle fault lies at 1436.3 in amongst some fine rubble. Tiny grains of magnetite and traces of diss py are visible in some of the stringers/fracture fillings.

1408.8 1409.2 Broken Blocky Core.

1450.5 1571.5 Basalt amphibolitic.

Opening into a section of mostly amphibolitic basalt with very minor gabbro and some of the 'gabbroic' fracture fillings as noted in the overlying section. Quite blocky with the normal weathered/pitted out fractures. Epidote is common in fractures and in some of the gabbroic material. Host gabbro blocks are becoming a little darker in colour and more altered in this interval. In contrast, the 'fresh' gabbroic material in fractures is more voluminous and more coarse grained moving downhole. Some of these fillings carry fine diss and slightly coarser cubic py, 1-2 mm magnetite and traces of chalcopyrite. A few small mafic dykes cut the host rocks; details follow below. Continuing calcite and magnetic.

1473.0 1475.0 Broken Blocky Core.

1543.5 1544.9 Mafic Intrusive.

As below.

1547.3 1550.0 Mafic Intrusive.

Two stretches of dark green coloured dyke material rich in fine mafic phenocrysts. Fine grained, with a pale grey-green aphanitic matrix. This groundmass is fairly hard and strongly calcitic. It supports a large number of accicular and slightly larger lath-like amphibole, (some of which is now chlorite) and lessor biotite. A strongly magnetic phase with traces of fine fracture-controlled py. Sharp, slightly irregular contacts which lie at both high and low angles. Some crude alignment of the phenos at about 50-60 DTCA is evident.

1571.5 1575.6 Mafic Intrusive.

Another dark green dyke, different than that at 1543-1550. This phase consists of a fine granular matrix, in which tiny feldpars are still visible. In this is suspended a high concentration of amphibole needles in the 1-2 mm size and a lessor number of anhedral biotite grains. Locally these components are overprinted by finer (later?) amphibole and chlorite. A calcitic and essentially non-magnetic section. Contains traces of fine py. Sharp contacts at about 20/30 DTCA. Contains a section of weakly mineralised, coarse grained gabbroic material.

1572.0 1572.5 Broken Blocky Core fault gouge.

Poss high angle fault here; some gouge present.

1575.6 1660.0 Gabbro Basalt.

Returning to a mixed section with about 65% basalt and 35% gabbro. Numerous irregular fractures filled with pegmatitic gabbroic remnants xcut the

From To
(ft) (ft)

Geology

Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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section. Feldspar laths up to 1 in long are developed locally. Slightly more epidote and accessory pyrite (sometimes with patchy siliceous alteration) is present in parts of this interval. Quite blocky, but with little gouge along the breaks. Calcitic and magnetic. Jointing occurs at high angles.

1660.0 1670.1 Basalt amphibolitic.

Predominantly coarse-grained amphibolitic basalt xcut by a few high-angle very coarse-grained feldspathic dykes/fracture-fillings.

1670.1 1683.4 Ultramafic.

A short, fairly massive interval of dark bluish green (chloritic) ultramafic material. Non-magnetic and quite calcitic, both pervasively and as cloudy/patchy and thread-like carb alteration. A few more persistent, high angle fractures filled with white calcite also xcut the unit. Weakly mineralised with scattered py cubes. Locally crushed or finely broken up. The suggestion of a fabric at 45-50 DTCA is visible locally.

1676.3 1677.0 Broken Blocky Core.

1678.0 1678.7 Broken Blocky Core.

1681.0 1681.9 Broken Blocky Core.

Possibly a fault here; orientation unknown.

1683.4 1698.2 Basalt amphibolitic.

A short section of amphibolitic basalt with a few patches of the host gabbro.

1698.2 1724.5 Gabbro Basalt.

A mixed interval; about a 50/50 split of gabbro and basalt. Continuing blocky, calcitic and magnetic. Epidote fracture fillings are a little more prominent here. Locally finely broken up.

1724.5 1775.2 Basalt amphibolitic.

A section of predominantly medium to coarsely amphibolitic basalt with a few patches of host gabbro and some slightly more crystalline areas which look very similar to the 'dykes' described above at 1089. Locally becoming slightly schistose at around 1739-1742; the fabric lies at 60 DTCA. Becoming more calcitic in this section; strong reaction to cold HCl from the groundmass. The rocks contain scattered xenoliths of mafic/basaltic material in a few spots. Sprinkled with slightly elevated amounts of fine cubic py locally. Traces of chalcopyrite are also present. Strongly magnetic. A small raft of ultramafic material lies at 1740.6 to 1741.7, sandwiched between two faults. It is chloritic and non-magnetic.

1724.9 1727.7 Mafic Intrusive.

An amphibole-rich dyke very much as per 1571, except with more calcite both in the matrix and with silica as cloudy patches. This example is a bit richer in biotite and chlorite in the matrix. Weakly mineralised. Sharp contacts at 20/30.

1740.6 1740.7 Fault gouge.

A crushed, weathered fault? at about 70 DTCA. Carries a bit of white (carb) mud.

From To
(ft) (ft)

Geology

Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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1847.0 1849.9 Mafic Intrusive.

A pale greenish-grey, fine grained dyke cuts the hole at a low angle and meanders along the core down to 1849. A very finely intergrown mosaic of feldspar and mafics/chlorite supports a few tiny amphiboles and rare biotite grains. Weakly magnetic; becoming more strongly altered with epidote below 1848.1. Strongly calcitic throughout. Moderately mineralised with spotty 1-2 mm py. Sharp lower contact at 35-40 DTCA.

1864.7 1867.6 Gabbro.

An interval of gabbro invaded by dyke-like bodies of very coarse gabbroic material mixed in with some medium grained material which might be related to dyke material noted above @ 1089. Weakly mineralised with spotty and diss py.

1867.6 1890.0 Basalt.

A short section of mostly chloritic and variably amphibolitic basalt with minor gabbro. Irregularly veined with carbonate and epidote. Strongly calcitic throughout. Contains a short section of blueish basalt at about 1878-1879, as per Anoki and above at 1815. Becoming mineralised towards the basal contact with scattered diss and spotty py- this is related to stronger carb alteration developed around tight slips and narrow gabbroic dykelets as noted below.

1890.0 1896.5 Gabbro.

Another section of both coarse and medium-grained gabbro somewhat like that at 1864. This area consists of strongly altered rafts of the typical host gabbro and irregular blebs of the coarser late gabbro, both of which are weakly silicified and strongly pyritic. A chaotic, almost brecciated zone. Quite hard and not magnetic except for the interstitial basaltic material. Very coarse pyrite plates and subhedral crystals up to 3/4 in across are developed locally. Late carb/silica gashes xcut some of the gabbro at high angles.

1896.5 1939.9 Basalt amphibolitic.

A stretch of mostly amphibolitised basalt with very minor amounts of gabbro and a few fracture-fillings of very coarse-grained 'late gabbro'. Calcitic and magnetic with a few fine threads of carbonate. This unit carries very little sulphide overall, and is cut by a 3 inch thick pale pink carbonate vein at 1934.5 which is barren except for one speck of chalcopyrite. Small areas of the host contain some clear volcanic textures-(ex: small amygds/variolites). Locally slightly more strongly altered with epidote.

1939.9 1941.4 Quartz-carbonate vein Gabbro.

A pale pink, mostly carbonate 'open vein' structure (infilled) in direct contact with a short interval of very coarse grained 'late gabbro'. Sharp, probably sheared contacts @ 40/30 (vein component); basal contact at 40 DTCA (gabbro against underlying host gabbro). Small blades of qtz, carbonate and bits of the underlying 'gabbro' are surrounded by massive calcite. Slightly brecciated appearance at the vein-gabbro contact. Some accessory py and magnetite occurs in the gabbro. Locally stained with hematite in the gabbro

From To
(ft) (ft)

Geology

Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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below the vein-gabbro contact.

1941.4 2026.8 Gabbro.

Returning to a section of predominantly host gabbro. A fairly massive section with small remnants of basaltic material; more so near the upper contact. Calcitic, magnetic and weakly epidotised, especially in low angle qtz-filled fractures. Local hematite staining, in some of these low angle breaks also. Generally weakly mineralised, again except for the aforementioned fractures. (A good example of one of these lies between 2002 to 2014). Diss and fine cubic py is distributed along and within most of these fractures.

2023.0 2024.0 Broken Blocky Core.

2026.8 2066.0 Basalt Gabbro.

A mixed interval of about 50/50 gabbro and basalt. Fairly massive with some weak very low angle jointing. Weakly veined except for some mineralised 'late gabbro' infillings lower in the section. Some of the basalt is chloritic only and retains some subtle flowy textures (weak flow banding/breccia, local quench textures).

2066.0 2100.8 Gabbro.

Returning to the host gabbro. A massive, fairly uniform section with only minor basaltic material. Weakly mineralised. Cut by a few low angle tongues of very coarse 'late gabbro'. These contain slightly more sulphide as py and traces of chalcopyrite in one instance. Coring well here. Calcitic and magnetic.

2100.8 2107.1 Basalt.

A short interval of very dark grey to almost black basalt cut by a mafic dyke at 2103.9 to 2104.3. Veined with wispy and fine cloudy carb alteration or alternately invaded by patchy siliceous alteration. Locally well mineralised with diss and cubic py up to 6 mm across. A very weak fabric is beginning to form in the matrix; veining mimics this orientation and lies at about 20 DTCA typically.

2103.9 2104.3 Mafic Intrusive.

An altered equivalent of the amphibole-rich mafic dykes noted uphole. This example is probably related to the type noted at 1571. Remnants of the finely granular groundmass are still visible beneath a chlorite and carb overprint. Fine amphibole needles are still intact also. A non-magnetic and quite calcitic section. Very little sulphide is visible. Sharp contacts at 60/20 DTCA.

2104.3 2116.9 Gabbro.

A section of the host gabbro, in a more deformed and altered state. Still quite clearly gabbro, but slightly foliated (and sheared locally) at about 45 DTCA. Carbonated and overprinted with weak epidote alteration. Cut by deformed 'late gabbro' fracture-fillings; locally slightly pyritic where the carbonate alteration is more pronounced.

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
		2116.9 2119.3 Basalt.								
		A short stretch of mostly basalt with some remnant gabbro in a very sheared state. The fabric lies at 30-40 degrees. The interval opens with a recumbantly folded carb-qtz stringer about 1/2 in thick. This quickly grades into a quite deformed raft of gabbro which is in turn replaced by a laminated section of presumably basalt. Locally magnetic and quite calcitic throughout. Modestly mineralised with fine subhedral py, much of which is deformed (stretched, rotated).								
		2119.3 2121.8 Gabbro.								
		Another small sliver of gabbro as above at 2104.3.								
		2121.8 2123.0 Broken Blocky Core.								
		A section of finely crushed core. There is little suggestion of gouge here although the small size of the fragments suggests possible faulting.								
2123.0	2669.9	BASALT GABBRO								
		At this footage the basaltic rocks noted above become the dominant phase. Small (1-3 in across) xenoliths of nearly assimilated gabbro are still visible from place to place, but most of the rocks are variably altered (amphibole, chlorite) basalts, very much like those throughout the gabbro interval above. There are some sections of slightly coarser grained material which might represent coarser flow bottoms/tops (especially where truncated by relatively sharp contacts). Alternately, some of these features might be slightly larger remnants of gabbro. Hence the double code V7 3G.	52687	2124.0	2126.9	2.9	TR	nil	.000	0
		The rocks continue to be strongly calcitic, moderately to strongly magnetic and massive with little fabric or significant veining. RQD values are moderate in most parts of the section. More details follow:.	52688	2217.1	2219.9	2.8	TR	nil	.000	10
			52689	2219.9	2222.2	2.3	0.5%	nil	.000	10
			52690	2222.2	2225.5	3.3	1.0%	nil	.000	9
			52691	2225.5	2227.8	2.3	1.5%	nil	.000	2
			52692	2227.8	2230.9	3.1	1.0%	nil	.000	7
			52693	2230.9	2233.7	2.8	2.0%	.002	.000	51
			52694	2233.7	2235.8	2.1	2.0%	.001	.000	32
			52695	2235.8	2238.3	2.5	2.5%	.001	.000	21
			52696	2238.3	2242.0	3.7	1.0%	.001	.000	17
			52697	2242.0	2244.0	2.0	TR	nil	.000	7
			52698	2244.0	2246.5	2.5	TR	nil	.000	0
			52699	2277.9	2280.0	2.1	TR	nil	.000	0
		2123.0 2225.5 Basalt amphibolitic.	52700	2280.0	2282.7	2.7	TR	nil	.000	15
		A broad section of variably amphibolitic basalt; both fine-grained, more black coloured varieties and the more common coarse-grained, dark grass green types are represented. Contains a few small gabbro rafts, very much like those noted immediately above. Xcut by fine carb threads and gash fillings of 'late gabbro' in a few spots. Not well mineralised. A generally massive section with little fabric developed, except for the last 2 feet of the unit. Calcitic and magnetic throughout.	52701	2282.7	2284.8	2.1	TR	nil	.000	5
			52702	2326.0	2328.2	2.2	TR	nil	.000	0
			52703	2328.2	2331.2	3.0	TR	nil	.000	3
			52704	2331.2	2333.8	2.6	0.5%	nil	.000	0
			52705	2333.8	2336.2	2.4	TR	nil	.000	5
			52706	2336.2	2338.0	1.8	TR	nil	.000	3
			52707	2338.0	2339.3	1.3	TR	nil	.000	2
			52708	2339.3	2341.5	2.2	TR	nil	.000	0
		2225.5 2238.3 Felsic Dyke.	52709	2341.5	2344.5	3.0	TR	nil	.000	3
		Opening into a very dark grey, very hard and massive to weakly foliated unit containing small wispy rafts of wallrock. Variably mineralised with diss and fine spotty py both in the groundmass and associated with fine fractures and narrow pale white veinlets. Traces of fine chalcopryrite are present in a few very fine fractures also. A dirty porphyry which consists of pale white feldspars (plagioclase?) set in a very dark grey, (contaminated) aphanitic groundmass. Bimodal in feldspar locally. Strongly silicified/albitised throughout and cut by dark grey to clear to milky qtz sweats/stringers. These lie at 40-50 DTCA typically and xcut the weak 30 degree foliation where it is developed. Fairly sharp contacts at 25/55. Calcitic and magnetic throughout. Similar to some FD's logged in Hole MB97-15, but not a pristine example of an FD.	52710	2351.8	2354.4	2.6	TR	.001	.000	32
			52711	2354.4	2355.9	1.5	TR	nil	.000	0
			52712	2355.9	2359.0	3.1	0.5%	nil	.000	0
			52713	2359.0	2361.6	2.6	0.5%	nil	.000	0
			52714	2361.6	2363.3	1.7	0.5%	nil	.000	2
			52715	2363.3	2367.4	4.1	TR	nil	.000	5
			52716	2367.4	2368.5	1.1	TR	.007	.000	240
			52717	2368.5	2370.4	1.9	TR	.001	.000	22
			52718	2407.5	2410.0	2.5	TR	nil	.000	2
			52719	2410.0	2410.8	.8	3.0%	.001	.000	17
			52720	2410.8	2412.7	1.9	TR	nil	.000	0

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
2238.3	2242.0	Basalt amphibolitic.	52721	2432.0	2434.9	2.9	TR	nil	.000	5
		A very dark grey to black coloured, moderately to strongly foliated section of basalt and narrow streaky remnants of the overlying intrusive. Foliated at 40-50 DTCA. Slightly boudinaged carb stringers lie parallel to the fabric. Rich in fine amphibole and chlorite. Calcitic and moderately magnetic.	52722	2434.9	2436.9	2.0	TR	nil	.000	0
			52723	2436.9	2438.3	1.4	TR	nil	.000	0
			52724	2438.3	2440.3	2.0	0.5%	nil	.000	3
			52725	2440.3	2442.0	1.7	0.5%	nil	.000	10
			52726	2442.0	2444.3	2.3	TR	nil	.000	3
			52727	2469.8	2473.9	4.1	TR	nil	.000	2
			52728	2473.9	2474.5	.6	0.5%	nil	.000	7
2242.0	2244.0	Mafic Intrusive.	52729	2474.5	2476.9	2.4	TR	nil	.000	2
		A more massive section of basalt cut by a very flat, sinuous tongue of pale grey aphanitic dyke material. Quite hard, magnetic and well carbonated throughout. Consists of a very fine felted matrix of feldspar and slightly larger mafics; much of the feldspar is now carbonate. Weakly mineralised with diss py. Very sharp, crisp contacts with negligible metasomatism.	52730	2476.9	2478.1	1.2	TR	nil	.000	15
			52731	2478.1	2478.5	.4	0.5%	nil	.000	3
			52732	2478.5	2481.5	3.0	TR	nil	.000	7
			52733	2499.4	2501.8	2.4	TR	nil	.000	10
			52734	2501.8	2502.3	.5	TR	nil	.000	5
			52735	2502.3	2504.5	2.2	TR	nil	.000	3
2244.0	2339.3	Basalt Gabbro.	52736	2516.3	2518.1	1.8	TR	nil	.000	3
		Returning to the dark green-grey, mostly amphibolitic host. A massive interval with scattered scrappy carb stringers, a few narrow 'late gabbro' filled fractures and rare pieces of gabbro (ex- @ 2277-2278). Locally exhibits flowy textures (fine amygs/varioles) and possibly pillow margins (low angle- see 2301.5). Cut by a few very small mafic dykelets. Locally weakly mineralised with fine diss and spotty py; some enrichment around fractures and veinlets has occurred. Weak epidote alteration in the matrix and a few fractures locally. Weakly jointed at high angles.	52737	2518.1	2521.0	2.9	0.5%	nil	.000	5
			52738	2521.0	2522.8	1.8	TR	nil	.000	2
			52739	2522.8	2524.8	2.0	TR	nil	.000	0
			52740	2524.8	2527.5	2.7	0.5%	nil	.000	5
			52741	2527.5	2529.9	2.4	0.5%	nil	.000	3
			52742	2529.9	2531.9	2.0	1.0%	.001	.000	21
			52743	2531.9	2534.2	2.3	0.5%	nil	.000	3
			52744	2534.2	2536.0	1.8	0.5%	nil	.000	0
			52745	2536.0	2537.8	1.8	1.5%	nil	.000	2
2312.0	2312.8	Gabbro.	52746	2537.8	2539.9	2.1	TR	nil	.000	0
		An irregular, pale grey, highly carbonated bleb of the coarse grained 'late gabbro' described above in the gabbro complex. Quite cloudy, calcitic and weakly magnetic. Poorly mineralised.	52747	2587.9	2591.1	3.2	TR	.001	.000	19
			52748	2591.1	2591.6	.5	TR	nil	.000	0
			52749	2591.6	2594.5	2.9	0.5%	nil	.000	0
			52750	2594.5	2597.8	3.3	TR	nil	.000	0
2252.2	2254.1	Mafic Intrusive.	52751	2605.9	2609.2	3.3	TR	nil	.000	2
		As per 2242.	52752	2609.2	2613.0	3.8	TR	nil	.000	0
			52753	2613.0	2615.6	2.6	TR	nil	.000	0
2302.6	2303.5	Mafic Intrusive.	52754	2615.4	2617.4	2.0	TR	nil	.000	0
		One of the amphibole-rich, dark green dykes as per 726. Very high angle contacts. Magnetic near the contacts. Some fining of grain size near the contacts. Not well mineralised. Calcitic. Contains biotite.	52755	2617.4	2619.7	2.3	TR	nil	.000	0
			52756	2619.7	2621.0	1.3	0.5%	nil	.000	14
			52757	2621.0	2623.5	2.5	TR	nil	.000	1
			52758	2623.5	2626.6	3.1	TR	nil	.000	0
2339.3	2341.5	Mafic Intrusive.	52759	2626.6	2628.0	1.4	TR	nil	.000	0
		A fine-grained, pale green dyke with a very fine speckled appearance. Bounded by subtle but sharp contacts at high angles. Altered with epidote and calcite/qtz in the groundmass and in fine low angle stringers. This phase looks like some of the 'gabbroic' dyke material described above at 1089.0; it is a fine interlocking aggregate of discreet plagioclase and mafic grains. A few of the feldspars are slightly larger and almost euhedral; this imparts a weak microporphyritic texture to the rocks in part. Numerous small mafic xenoliths are caught up in the unit; many are 1/8-1/4 in across and are dark green and chloritic; others are larger, subangular and are recognizable wallrock from close by. A magnetic phase with only minor amounts of fine py in the matrix and associated with some of the carb/qtz stringers.	52760	2628.0	2630.6	2.6	0.5%	nil	.000	0
			52761	2630.6	2634.1	3.5	TR	nil	.000	0
			52762	2634.1	2637.2	3.1	1.0%	nil	.000	0
			52763	2637.2	2639.3	2.1	0.5%	nil	.000	0
			52764	2639.3	2641.0	1.7	TR	.002	.000	68
			52765	2641.0	2643.1	2.1	TR	nil	.000	0
			52766	2643.1	2644.9	1.8	0.5%	nil	.000	0
			52767	2644.9	2647.0	2.1	2.0%	nil	.000	0
			52768	2647.0	2648.3	1.3	2.0%	.001	.000	21
			52769	2648.3	2649.9	1.6	1.0%	.003	.000	90
			52770	2649.9	2652.0	2.1	1.5%	.001	.000	33
			52771	2652.0	2655.0	3.0	2.0%	.001	.000	48

From To
(ft) (ft)

Geology

Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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2473.9 2474.5 Mafic Intrusive.

A pale grey-green weakly speckled dyke with high angle contacts. The upper contact brecciates the host locally. This phase reminds one of the dyke at 2410; it contains pervasive epidote alteration and numerous fine flecks of altered amphibole? throughout the groundmass. Weakly magnetic and slightly reactive to cold HCl.

2478.1 2478.7 Mafic Intrusive.

As above at 2473.9.

2501.8 2502.3 Felsic Dyke.

A tiny, dark grey, pseudo-porphyrific dyke which might be a fresher equivalent of the dyke at 2225.5. Pale white feldspar grains 2-4 mm across are barely supported in a dark grey muddy matrix. Sharp contacts at about 50 DTCA. Magnetic and weakly calcitic. Contains a few scattered py cubes and streaks of py in fine, high angle fractures.

2502.3 2518.1 Basalt Gabbro.

Returning to the host rocks as per 2442. A few small rafts of gabbro are present in this section.

2518.1 2522.8 Mafic Intrusive.

A pale grey, very fine grained, somewhat irregular dyke very much like the rocks at 2473. Cuts the core at a very low angle; the contacts have colliform to angular outlines. Some chilling is visible along the boundaries. Xcut by a few irregular carb threads. Strongly magnetic and weakly mineralised with fine cubic py; most of the sulphide is developed along the contacts.

2522.8 2524.8 Basalt Gabbro.

The host phase.

2524.8 2537.8 Basalt amphibolitic.

An weakly foliated interval with some similarities to the rocks at 2238 and 2355. Strongly chloritic and amphibolitic with a subtle banded appearance. The fabric and some accompanying weak veining lies at 40-50 DTCA. Possibly tuffaceous with very minor amounts of ultramafic? material interbedded with the altered mafic host. Variably magnetic. Locally mineralised with fine cubic near or in the carb-qtz sweats/veining and some of the mafic dyke material. Calcitic throughout. Several skinny mafic dykes (pale green or grey-blue +- fine amphibole) cut the unit; these have contacts which conform to the fabric typically. Invaded by a small blob of intrusive material somewhat like that noted at 2501 above.

2537.8 2591.1 Basalt Gabbro.

A section of coarsely amphibolitic host. Contains some recognizable gabbro near the upper contact. Continuing calcitic and magnetic. Xcut by numerous hairline carb and epidote-filled stringers. A few fine 'late gabbro' fracture-fillings also cut the section.

2591.1 2591.6 Lamprophyre.

From To
(ft) (ft)

Geology

Sample From To Len PY AU AU1 AU2
No. (ft) (ft) (ft) % OZ/T OZ/T PPB

A narrow, amphibole-rich, dark green dykelet with numerous biotite grains. These mafics are barely supported in a very dark green feldspathic matrix. Similar to other MI's logged above but with more biotite, larger amphiboles locally and less groundmass component. Essentially non-magnetic. Bounded by sharp, slightly convoluted contacts which lie at about 50 DTCA. Cut by a bit of wispy carb. Carries very little sulphide.

2591.6 2643.1 Basalt Gabbro.

A slightly more deformed and veined section with a mixed character. The rocks here are slowly becoming more like the sections noted above at 2524 and 2355. Xcut by an increasing density of fine carb and carb-qtz stringers and several small blebs of dirty aplite. Both massive, coarsely amphibolitic (now grey as apposed to greenish above) sections and finer, foliated, chlorite sections are represented. Where seen the fabric lies at 35-45 DTCA. Small slivers of ultramafic material are beginning to show up here. Slightly more blocky here with low RQD values. Weakly mineralised with some slightly elevated amounts near a few of the intrusive bodies and associated with some wispy carb alteration in the more foliated zones. Two narrow mafic (lamp) dykes cut the unit at 2609.5 and 2613-2614; these resemble the dyke noted above at 2591.1 with more Fe alteration. The former is bounded on its lower contact by a tight, slightly gougy, carb-filled slip which lies at 25 DTCA. The other dyke contacts sit at about 30 DTCA.

2619.9 2620.0 Broken Blocky Core.

2643.1 2648.3 Felsic Dyke.

Opening into a dark grey phase with a purple hue. Similar to rocks logged at 2225.5. A dirty intrusive; porphyritic and riddled with chloritic and carbonate-filled fractures. Very hard (silicified/albitic), weakly magnetic and calcitic in fractures. Contains weakly altered pale white feldspar phenos; some are lath-like and range from 3-5 mm across while a larger percentage are 2-3 mm and have more anhedral to squat habits. The latter grains are more altered in general. Locally stained with hematite, especially towards the basal contact. Some suggestion of internal brecciation in part. Contains ghostly xenoliths? of wallrock locally. Well mineralised with diss and fine spotty py, both in the matrix and more so in and along fractures. Fairly sharp, albit irregular contacts at high core angles.

2648.3 2649.9 Basalt.

A short interval of very dark grey, finely amphibolitic basalt; much as logged at 2591.6. Weakly foliated and cut by a few wispy carb-qtz stringers.

2649.9 2658.7 Aplite.

A dirty white section of aplite similar to that noted above at 2434.9. A very hard, finely cracked up phase with weakly contaminated contact zones. The feldspars are less clearly distinguishable in this example; more intense albitic/siliceous alteration has obscured much of the original crystalline texture. Bimodal in part; the larger feldspars reach 8 mm in diameter and tend to be fresher than the smaller ones. Xcut by numerous high and very low angle fractures filled with chlorite and carbonate. Very weak Fe staining is

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
		apparent about a few of the fractures. Calcitic, but not magnetic. A well mineralised section; the matrix is sprinkled with fine anhedral py and some slightly coarser sulphide lies in a few of the fractures. Fairly sharp contacts; the upper is straight at 30 degrees and the lower irregular at about 60 DTCA.								
	2658.7 2669.9	Basalt amphibolitic. A very dark grey to almost black section of strongly carbonated basalt with a few tiny ultramafic layers. Moderately foliated at 35-40 DTCA throughout. Overprinted with numerous wisps and cloudy patches/veinlets of calcite + silica. Xcut by two heavily altered intrusives; the first @ 2659.5 is a pale grey-brown colour and appears to be a felsite. It is very hard and porphyritic near the upper contact. Reaction to cold HCl is vigorous. It is well mineralised with diss py and variably magnetic. Contacts are sharp @ 35-40 (upper) and hazy @ 50-55(lower). Another dark grey QFP? lies at 2667. It contains both Qtz and feldspar phenos in a very dark aphanitic (calcitic) matrix. Contacts are sharp at 20 degrees (upper) and irregular/brecciated @ 65-70(lower). The unit is variably mineralised with fine diss and spotty py; concentrations vary with proximity to alteration/veining and the intrusives. A variably magnetic unit; most portions are moderately so. Fairly sharp, intercalated lower contact @ about 55 DTCA.								
	2666.3 2666.4	Fault gouge. A couple of strong slips here; one with a touch of gouge. Oriented @ 35 DTCA.								
2669.9	3230.5	ULTRAMAFIC KOMATIITE A fairly abrupt change in chemistry here into a sequence of essentially undeformed, weakly carbonated ultramafic flows containing a few small basaltic rafts. Small amphibole-rich mafic dykes cut the unit randomly; these appear related to those cutting the basalts above. The rocks here are typically blue-grey to very dark greenish-black, soft, fairly massive and fine-grained. Weakly talcose becoming more so moving downhole. In part, individual flows can be distinguished by their very fine grained chloritic (black to green-black) tops and coarse rubbly/ brecciated bottoms. Spinifex is clearly visible in a few spots. Fine carb threads and gashes xcut the rocks randomly; angles range from flat to 50 DTCA. Locally very finely speckled with carb; locally very subtle shearing is beginning to occur. Not well mineralised overall. Generally strongly magnetic, but locally quite variable. More details below.	52780	2669.9	2671.1	1.2	TR	nil	.000	5
			52781	2671.1	2674.0	2.9	TR	nil	.000	10
			52782	2674.0	2676.5	2.5	TR	nil	.000	0
			52783	2676.5	2679.5	3.0	1.0%	nil	.000	3
			52784	2679.5	2682.3	2.8	TR	nil	.000	3
			52785	2682.3	2684.9	2.6	TR	nil	.000	7
			52786	2684.9	2686.3	1.4	0.5%	nil	.000	0
			52787	2686.3	2687.8	1.5	TR	nil	.000	0
			52788	2687.8	2689.4	1.6	TR	nil	.000	0
			52789	2689.4	2690.0	.6	1.0%	nil	.000	0
			52790	2690.0	2693.5	3.5	TR	nil	.000	0
			52791	2693.5	2696.2	2.7	TR	nil	.000	0
			52792	2746.2	2750.0	3.8	TR	nil	.000	0
			52793	2750.0	2752.7	2.7	TR	nil	.000	0
	2669.9 2676.5	Ultramafic. A weakly foliated section of blue-black u/mafic with a 30-40 degree fabric. Calcitic and weakly magnetic. Contains narrow wisps of fine amphibolitic material. Minor fine cubic py.	52794	2752.7	2755.2	2.5	TR	nil	.000	0
			52795	2801.4	2804.1	2.7	TR	nil	.000	7
			52796	2804.1	2806.9	2.8	TR	nil	.000	1
			52797	2806.9	2809.6	2.7	1.0%	nil	.000	0
			52798	2809.6	2813.2	3.6	1.0%	nil	.000	2
	2676.5 2679.5	Mafic Intrusive. Three small amphibolitic/chloritic dykes with sharp 30-35 degree contacts occupy about 50% of this interval; the remainder is weakly foliated and well carbonated u/mafic host rock. The dykes are very heavily carbonated (calcite) and deformed such that internal mineral alignment mimics the	52799	2813.2	2815.7	2.5	TR	nil	.000	0
			52800	2815.7	2817.9	2.2	TR	nil	.000	2
			52801	2817.9	2820.0	2.1	1.0%	nil	.000	5
			52802	2820.0	2821.4	1.4	3.0%	nil	.000	9
			52803	2821.4	2823.0	1.6	TR	nil	.000	3

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
		surrounding foliation. They contain 2-3 mm long wispy amphiboles, some of which may be later metacrysts. The dykes are weakly mineralised (fine cubic py near contacts) and strongly magnetic.	52804	2823.0	2826.0	3.0	1.5%	nil	.000	2
			52805	2826.0	2828.7	2.7	TR	nil	.000	2
			52806	2828.7	2831.8	3.1	TR	nil	.000	2
			52807	2831.8	2833.9	2.1	5.0%	nil	.000	0
		2679.5 2682.3 Ultramafic.	52808	2833.9	2835.0	1.1	4.0%	nil	.000	5
		A section of very dark coloured host. Weakly foliated and strongly chloritic.	52809	2835.0	2839.0	4.0	0.5%	nil	.000	9
			52810	2839.0	2840.7	1.7	2.5%	nil	.000	2
		2682.3 2687.8 Basalt amphibolitic.	52811	2840.7	2842.1	1.4	1.5%	nil	.000	2
		An almost black-coloured, fine-grained to grittier amphibole-rich raft of basalt. Very weakly foliated, well carbonated and weakly magnetic. Carries minor fine py near the lower contact. Gradational upper contact, sharp basal contact @ 40 DTCA.	52812	2842.1	2845.0	2.9	TR	nil	.000	2
			52813	2845.0	2847.9	2.9	TR	nil	.000	2
			52859	3067.7	3068.4	.7	5%	nil	.000	12
			52860	3094.1	3095.1	1.0	FR	nil	.000	0
			52861	3095.1	3098.0	2.9	TR	nil	.000	2
		2687.8 2689.4 Ultramafic.	52862	3098.0	3101.2	3.2	0.5%	nil	.000	3
		A short interval of slightly greenish, weakly foliated/feathered ultramafic lava. The lowermost 3 in of the section looks basaltic.	52863	3101.2	3104.5	3.3	0.5%	nil	.000	0
			52864	3104.5	3106.5	2.0	0.5%	nil	.000	3
			52865	3106.5	3108.5	2.0	0.5%	nil	.000	3
		2689.4 2690.0 Lamprophyre.	52866	3108.5	3109.7	1.2	TR	nil	.000	0
		A sharply defined mafic dyke chock full of accicular amphibole and lessor platy biotite. These are supported in a very dark murky matrix composed of fine chlorite and carbonate. The amphiboles are typically 2-4 mm long and lie parallel to the dyke contacts; a small number are bent or lie perp to the now dominant fabric direction. These discordant grains often have contrasting white carb? strain shadows developed. A weakly magnetic phase which reacts well to cold HCl. Locally mineralised (near top contact) with slightly deformed py grains; some of these are rotated or have strain shadows as per the amphiboles. Sharp contacts @ 30/35 DTCA.	52867	3109.7	3112.6	2.9	TR	nil	.000	5
			52868	3112.6	3115.5	2.9	TR	nil	.000	2
			52869	3115.5	3118.5	3.0	TR	nil	.000	7
			52870	3118.5	3121.3	2.8	0.5%	nil	.000	5
			52871	3121.3	3123.8	2.5	TR	nil	.000	0
			52872	3139.0	3143.1	4.1	TR	nil	.000	0
			52873	3143.1	3144.1	1.0	TR	nil	.000	0
			52874	3144.1	3147.0	2.9	TR	nil	.000	2
			52875	3147.0	3150.0	3.0	0.5%	nil	.000	5
			52876	3150.0	3152.6	2.6	0.5%	nil	.000	0
		2690.0 2804.1 Ultramafic Komatiite.	52877	3152.6	3153.5	.9	1.5%	nil	.000	2
		A broad section of well defined flows. Good fine grained (chloritic) tops, a few well developed brecciated bottoms and two examples of fine spinifex texture are visible. Tops are downhole here. Xcut by the normal scattered fine carb threads and gashes. Slightly talcose throughout. Generally strongly magnetic. Calcitic throughout. Contains scattered fine cubic py. Coring very well with minimal jointing; where present slips/joints and many of the carb stringers lie at about 40-50 DTCA.	52878	3153.5	3154.0	.5	TR	nil	.000	5
			52879	3154.0	3156.5	2.5	TR	nil	.000	5
			52880	3156.5	3157.4	.9	TR	nil	.000	7
			52881	3157.4	3158.6	1.2	TR	nil	.000	2
			52882	3158.6	3160.0	1.4	TR	nil	.000	2
			52883	3160.0	3162.2	2.2	0.5%	nil	.000	5
			52884	3162.2	3165.8	3.6	TR	nil	.000	3
			52885	3165.8	3168.3	2.5	0.5%	nil	.000	0
		2699.0 2703.0 Mafic Intrusive ?.	52886	3168.3	3169.0	.7	6.0%	nil	.000	2
		A stretch of the u/mafic host invaded by a low angle, irregular dyke? rock. This phase looks very much like the rocks seen @ 2518 and 2242; in this instance it is magnetic, but very soft and not well mineralised. Very fine grained and homogeneous internally. Reacts only slightly with cold HCl. Possibly an alteration feature??.	52887	3169.0	3170.0	1.0	TR	nil	.000	7
			52888	3170.0	3171.5	1.5	1.0%	nil	.000	2
			52889	3171.5	3171.8	.3	TR	nil	.000	2
			52890	3171.8	3172.1	.3	2.0%	nil	.000	6
			52891	3172.1	3174.9	2.8	2.0%	nil	.000	0
			52892	3174.9	3178.3	3.4	3.0%	nil	.000	0
		2720.7 2721.5 Spinifex.	52893	3178.3	3180.4	2.1	1.0%	nil	.000	3
		2763.0 2764.0 Spinifex.	52894	3180.4	3184.1	3.7	TR	nil	.000	2
		2764.0 2766.0 Flow bottom.	52895	3184.1	3185.1	1.0	0.5%	nil	.000	3
		2783.2 2785.9 Flow bottom.	52896	3185.1	3186.5	1.4	0.5%	nil	.000	3
			52897	3186.5	3188.2	1.7	TR	nil	.000	0
		2803.9 2804.0 Fault gouge.	52898	3188.2	3188.9	.7	3.0%	nil	.000	5
		Strong discreet slip with a touch of muddy gouge; lies at 55-60 DTCA.	52899	3188.9	3191.1	2.2	0.5%	nil	.000	3

From To
(ft) (ft)

Geology

Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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strongly mineralised. Diss py is liberally sprinkled throughout; larger plates or aggregates/clusters of grains up to 1/2 in across are more irregularly distributed. Carb and carb-qtz stringers and veinlets cut the rocks at both high and low angles. Some contribute to local reddening where more Fe has been added to the system. Sharp lower contact @ about 35 DTCA.

2842.1 2887.5 Ultramafic.

Returning to the blue-black host phase. Becoming slightly more veined and locally very weakly foliated. Continuing calcitic; most of the section is magnetic also. Primary textures are becoming more difficult to see; some flow bottom breccia is visible ex- 2885-2887.5. Slightly more pronounced jointing at 55 DTCA typically. Slightly more talcy in this section. Weakly mineralised with scattered fine cubic py.

2871.0 2872.8 Carbonate vein.

Patchy/lobby white calcite veining with wallrock inclusions and negligible sulphide.

2887.5 2900.5 Lost core.

Hole wedged here. No core recovery; the wedge was drilled with a bull bit.

2900.5 2913.3 Ultramafic.

Continuing with the host phase. Several pale green, very soft patches of chlorite-rich material (plus lesser biotite) are visible just above 2913. They have fairly sharp contacts which both parallel and xcut the weak wallrock fabric.

2913.3 2915.1 Mafic Intrusive.

A narrow, dark grey to almost black, medium-grained dyke. Weakly foliated and or banded locally. Consists of a fine aggregate of dirty amphibole and carb grains most probably after feldspar. Slightly larger, needle like amphiboles appear to have overgrown the existing matrix. A strongly magnetic and calcitic phase. Moderately mineralised with diss and fine spotty py. Fine grained chilled? contact zones are present. Sharp contacts at 50/55 DTCA.

2915.1 2921.1 Ultramafic.

The host phase. Strongly chloritic initially down to 2916.1; then turning blueish. Xcut by two narrow sheared/broken zones which have very fine disking developed.

2916.1 2916.2 Broken Blocky Core.

Broken, slightly disked zone with a trace of fine mud. One margin lies at 70 DTCA.

2921.0 2921.1 Broken Blocky Core.

A narrow, finely disked zone at 70 DTCA.

2921.1 2935.7 Mafic Intrusive.

Another very dark coloured mafic dyke much like that noted at 2913.3. This example is slightly grittier internally and is xcut by patchy, pale pink siliceous alteration (@ 2921.4) and a dirty grey qtz vein @ 2932.3. Slightly

From To
(ft) (ft)

Geology

Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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more mineralised with py; diss, fine spotty and coarser cubes up to 4 mm across habits are present. The dyke becomes finer grained at 2933.9 and then coarser again through to the bottom contact, where again a fining is noted- possibly another small intrusive episode at the lower contact? The unit bottoms out against a strong gougy slip.

2935.7 2939.0 Ultramafic.

Returning to the blue-black host phase. Slightly more deformed here; a foliation at 50-60 DTCA is forming and flattening progressively moving downhole. Becoming more talcose and carbonated. Locally finely amphibolitic/chloritic. Magnetic and calcitic with traces of cubic py.

2939.0 2957.5 Fault Zone.

A highly deformed corridor of talcy ultramafic rocks xcut by several strong fault zones. Strongly foliated at very low core angles(0-20 DTCA). Streaky, boudinaged carb stringers give the core a laminated appearance in part. Calcitic, and variably magnetic. Locally very finely speckled with carb. Similarly variably mineralised with small amounts of fine cubic py. Locally quite blocky and broken-up. Cut by pale pink calcite-filled gashes in some of the more massive areas. More details follow.

2941.1 2941.2 Ffg.

A strong, fairly tight slip with a bit of gouge at 45-50 DTCA. Intersected by a lower angle sheared area which grades towards the next break(described below).

2941.4 2941.5 Ffg.

A low angle break with a bit of muddy gouge. Lies at about 20 DTCA.

2944.0 2044.4 Broken Blocky Core.

A broken up area associated with some strongly foliated rock; the fabric lies at about 35 DTCA.

2949.0 2950.8 Ffg.

A very strong fault zone; consists of intact fine pebbly gouge, strongly foliated wallrock and crushed rock + - coarse-sand sized gouge. Opens with a strong gougy shear @ 30 DTCA. This grades into a chaotic crushed zone with rafts of foliated wallrocks surrounded by sandy gouge. The foliation is almost parallel to the CA here. This is (moving downcore) bounded by one intact piece of core. The remaining portion consists of an intact gouge zone sandwiched between two discreet shears at 45/50 DTCA.

2952.9 2953.0 Broken Blocky Core.

A section of finely crushed core cut by a slightly gougy 15 degree slip.

2954.2 2955.1 Broken Blocky Core.

An interval of finely crushed rock xcut by a low angle slightly rubbly/gougy shear. The break lies at about 10 DTCA.

2955.1 2957.2 Broken Blocky Core.

A section of broken core, cut by a long low angle shear which lies at about

From To
(ft) (ft)

Geology

Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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3036.9 3039.5 Mafic Intrusive.

A dark grey to black coloured interval with fairly distinctive contacts. Finer grained at the contacts grading to a coarser center. Gritty/speckled texture in the central zone, presumably due to larger carbonate crystals growing in the matrix. Weakly magnetic in the coarser-grained portions. Strongly calcitic throughout. Well mineralised with 2-3 mm cubic py (near the upper contact) and then grading to finer diss/spotty py through the central and lower parts of the unit. This phase looks similar to the V7 interval above at 3017, however the variation in grain size and sharp contacts suggests this unit might be a strongly altered dyke. Contacts-upper very subtle, yet sharp at 50-60 DTCA; lower-discreet and slightly fuzzy at 55-60 DTCA.

3039.5 3044.1 Basalt Ultramafic.

A pale green-grey, weakly speckled section. Soft and non-magnetic with some very subtle flowy textures suggestive of locally a more basaltic composition. Xcut by fine scrappy carb stringers, generally at high core angles. Quite calcitic; contains negligible sulphide except right at the basal contact. An interval with little apparent deformation, except as noted below. The lower contact is sharp and slightly undulating at about 45 degrees; it is invaded by small irregular carb-qtz veining with streaky py which reflects some strong deformation at the contact and in the underlying phase.

3044.1 3044.9 Graphitic.

A hard, quite calcitic section of black graphitic (exhalite) material. Xcut by ragged/irregular pale white carbonate stringers with patchy and cubic py, especially near the lower contact. The contact is defined by a more discreet 2-3 in wide, high angle carbonate infilling with an irregular, almost angular lower margin. The entire interval is deformed; the graphitic component has been broken into angular slivers which were subsequently recemented into a more massive looking rock. Some minor wispy /streaky py is present in the uppermost 3 inches of the unit.

3044.9 3064.9 Ultramafic.

Returning to the host ultramafic. A blue-black to paler blue-grey interval which is locally strongly sheared/crushed in amongst more massive to slightly foliated zones. Weakly talcose. Calcitic and very weakly magnetic in part. Locally weakly pyritic with 1-3 mm py cubes. Cut by a few fine wispy carb stringers and gashes. More details follow in a structural breakout below.

3044.9 3046.4 Sheared.

A very black, chloritic section, strongly cracked/foliated on a fine scale. Overprinted by an undulating foliation which varies from 20 to 45 DTCA. Cut by a gougy shear at 3045.8 lying at 40 DTCA.

3052.0 3053.3 Sheared fault gouge.

A tiny ductile deformation zone cut by a set of variably gouged shears which lie at about 30-50 DTCA. A few tight shears without gouge are visible

From To
(ft) (ft)

Geology

Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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outside the zone; these mimic the breaks inside the zone.

3055.0 3055.5 Broken Blocky Core fault gouge.

A small zone of crushed/finely broken rock with remant gouge. The orientation of the break is unclear.

3064.9 3089.0 Mafic Intrusive.

Opening into a very dark grey to black mafic dyke. A slightly thicker intrusive as compared to similar dykes logged uphole. This example is very weakly magnetic locally and strongly calcitic. It consists of a fine grained aggregate of altered feldspar plates intergrown with tiny mafics. In this groundmass are set slightly larger, rounded mafics (which are now totally replaced with chlorite) and scattered larger slightly more intact feldspar grains (phenos?). Locally more accicular fine amphibole appears to have overgrown some of the earlier mineralogy, but it is not especially fresh either. A fairly massive unit xcut by a few 50 degree carb threads and slightly thicker and flatter gashes. In a few spots these fractures are offset along later, very tight, slighter flatter angled slips. Not a strongly mineralised unit; a few fine py cubes are visible near the upper contact, whereas only traces of diss and very fine cubic py are present elsewhere. Around 3066 the core is cut by flat lying, fine wormy off-white fracture-fillings? of residual feldspathic material. This material resembles the felsic component of the 'late gabbro' seen xcutting gabbro and basalt earlier in the hole, however no crystalline structure is evident here. A few high angle, very narrow, black, fine grained corridors also xcut the rocks (altered ultramafic slivers?).

Between 3067.7 and 3068.4 lies a short section of core which appears to be out of order. The exact position of this short section is not clear, however it is described here for completeness. The rocks here consist of a finely laminated assemblage of cherty and graphitic (tuff/interflow material), which has been gently folded and brecciated at a mm to cm scale. (The layering lies at 50 to 70 DTCA). These components have in turn been invaded by a dirty beige coloured, low angle crudely laminated qtz vein/fracture filling. Both the vein material and host are well mineralised with streaky/diss/fracture-controlled py. The approximately 9 inch long section of core opens along an irregular 20 degree slip; what follows is broken up into 4 pieces, each of which is bounded by slightly muddy, graphitic slips. This interval of core has been sampled as one sample in its present location. The host dyke rock concludes along a sharp, albiet subtle contact lying at about 20 DTCA.

3089.0 3095.1 Ultramafic.

A short section of dark blue-grey ultramafic with a weak schistosity beginning to form at about 20-40 DTCA. There is some subtle flow bottom breccia very near to the upper contact of the interval and a fine, quite black flow top at 3091.5. This suggests tops are downhole. The rocks here are calcitic but not magnetic. Very weakly mineralised with traces of fine cubic py.

3095.1 3121.3 Mafic Intrusive.

From To
(ft) (ft)

Geology

Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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Another section of very dark grey, slightly mottled mafic dyke material, quite similar to that logged at 3064. This example has a more crinkled to mottled texture developed locally; this reflects a fine growth of (late) chlorite in a random or crude polygonal pattern in the groundmass. The rocks are xcut by a few scattered fine stringers and gashes of white carbonate; thicker high angle ones tend to be displaced by narrower, very low angle ones. Traces of spotty chalcopyrite occur in a few stringers. Similarly, a few small patchy/wormy dykelets of fuzzy coarse-grained 'late gabbro' xcut the unit ex: 3105. A strongly calcitic variably magnetic unit. Weakly mineralised with diss and fine cubic py. Contacts of this unit are sharp @ 60/65 DTCA and have very-fine grained rinds developed in the host rocks for 4-5 inches away from the contact proper.

A short section of fairly clean u/mafic host lies at 3108.5 to 3109.7.

3121.3 3152.6 Ultramafic.

The host phase. A blue-black section becoming more greenish below 3148. A calcitic section which becomes more consistently magnetic below about 3124 feet. Xcut with the normal fine carb threads; these become more numerous below 3143. Becoming foliated below 3143; the fabric becomes stronger and more irregular/flat lying moving towards 3152. Very little sulphide is visible in the section. Contains a small section of mafic dyke material at 3943.1 to 3144.1; this is similar to the units logged above at 3064 and 3095, with more intense carb speckling and veining. It's contacts are sharp @ 55/30 DTCA. Another small dyke-like blob invades the unit @ 3151.4; it reminds one of the underlying dyke material. It is fairly hard and largely displaced with pale pink fracture-filling calcite. Locally well mineralised (not in the calcite). Sharp, wavy lower contact to the host at about 25-35 DTCA.

3943.1 3144.1 Mafic Intrusive.

3152.6 3160.0 Mafic Intrusive.

A grey, very fine grained dyke, consisting of a fine felted mosaic of feldspar and mafics. Much of the original mineralogy is now altered to calcite and chlorite. A fine dusting of pale green chlorite imparts a slight blueish hue to the phase locally (near contacts). A fairly hard, massive phase cut by fine scrappy carb stringers and gashes. Variably magnetic and weakly mineralised overall. The dyke contacts are typically finely amphibolitic/chloritic; this may be mimicing alteration or chilled margins. Xcut by another (later?) mafic dyke at 3156.5-3157.4. Flat lying calcite veinlets invade the lowermost 3 feet of the unit; these are completely lacking in sulphide. Sharp basal contact at 75-80 DTCA.

3156.5 3157.4 Lamprophyre.

A narrow, green-black intrusive, rich in accicular amphibole and fine biotite. Bounded by sharp, 30-40 degree contacts. Calcitic but unresponsive to the pen magnet. Very little sulphide present. Overprinted by fine patchy and scrappy carb stringers.

3160.0 3168.3 Ultramafic.

A pale blue to very dark blue-black section of ultramafic host. Weakly

From To
(ft) (ft)

Geology

Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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foliated at 15 to 40 degrees with local variations down to an almost flat lying fabric. Coreing very well with a few tight joints at 40-60 DTCA. Locally well mineralised with fine py. Generally strongly chloritic with a few paler, more talc-rich areas. Overprinted with fine scrappy carb wisps and stringers. Sharp basal contact @ 35 DTCA.

3168.3 3169.0 Chert.

A finely laminated section of intercalated chert (pale grey) and black pelitic/chloritic material. Possibly an interflow horizon? Banded on a mm scale. Locally weakly graded with some conflicting evidence for tops. Kinked and folded also on a sub-cm scale, leaving tiny ptigmatic (and almost chevron) folds locally. A magnetic unit, with some carbonate (calcite) component in the lighter-coloured beds. Well mineralised with rounded (rotated/deformed) py grains which follow the bedding (as in nodular py). Sharp contacts @ 45/45 DTCA.

3169.0 3170.0 Ultramafic.

A pale green-grey coloured section of highly contorted ultramafic. The fine foliation described in overlying units (ex: around 3152.6) has been crenulated and folded into tiny chevrons along a 50 degree S2. The lower half of the unit has been invaded by a pale grey gritty dykerock? which has in turn been recumbantly folded and strongly boudianged on a cm scale. Continuing calcitic (especially in the 'dyke') and non-magnetic. Sharp lower contact @ 20-25 DTCA.

3170.0 3171.5 Mafic Intrusive.

Another flavour of mafic intrusive. This example is a pale grey colour with a faint blue tint. Texturally it resembles the much darker dykes logged at 3064 and 3095; slightly more blotchy looking on a fine scale. Originally a very fine grained mosaic of feldspar and mafics, which is now largely carbonate overprinted by fuzzy sub-mm sized amphibole needles. Patchy carb alteration contributes to the slightly blotchy texture. Fairly hard, quite magnetic and strongly calcitic. Modestly mineralised with fine cubic and diss py. Just beginning to develop a foliation at about 30 DTCA. Contains traces of biotite. Completely lacking in veining/stringers.

3171.5 3171.8 Ultramafic.

Much as above at 3169.0.

3171.8 3172.1 Felsic Dyke.

A tiny interval of porphyritic dyke material which looks something like the underlying rock type with the addition of plagioclase phenocrysts. Outwardly, it lies somewhere in the FD/FP area, not being really typical of either phase. A hard, dark grey, spotted phase with a fine grained, felted matrix. 2-5 mm pale white, euhedral feldspar phenos are scattered throughout. Strongly calcitic and barely magnetic. Modestly mineralised with fine cubic py. Sharp, undulating upper contact @ 70 degrees approx. Separated from the underlying phase by a 1/4 in thick carb stringer, lying @ 55 DTCA.

3172.1 3180.4 Mafic Intrusive.

From To
(ft) (ft)

Geology

Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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A dark grey to slightly blueish, massive phase which reminds one of a dirty felsite. Very hard and almost aphanitic (possibly weakly silicified?). Closer inspection reveals remnants of a very fine crystalline groundmass which is now quite muddy with alteration products. Xcut by a few scrappy slivers and threads of carbonate. Cracked up internally; chlorite infills most of these very small fractures. Carries a few small angular xenoliths of the host ultramafic phase. Moderately magnetic and calcitic. Well mineralised with fine cubic py; some crude fracture control is visible locally. The rocks become slightly lighter in colour towards the lower contact; as well they become lightly spotted with small mafic clots? At the lower contact there is a 3 inch thick fine chloritic rind developed against the underlying ultramafics (an alteration feature?). The contact lies at a high angle although it is quite irregular and convoluted.

3180.4 3184.1 Ultramafic.

A short section of dark blue to green ultramafic host. Cut by scrappy and fine patchy carb at and just below the upper contact for about 14 inches. Weakly foliated at about 50 DTCA. Variably magnetic and continuing calcitic. Slightly blocky/broken up.

3184.1 3193.8 Felsite Ultramafic.

An interval of pale green to blue-black ultramafic material xcut by a number of tongues of pale purple-coloured felsite. The host is weakly foliated at 20 degrees (or less in part) and is almost brecciated in places. The section also includes zones of very dark grey to almost black material rich in chlorite and/or fine amphibole; these areas resemble some of the mafic dyke material described above. The felsites proper are sharply bounded, arcuate to irregular bodies, very hard and generally strongly magnetic. Some examples are massive and carry little in the way of veining; others in contrast are well fractured on a mm and cm scale and are subsequently xcut by milky calcite veinlets and gashes. Some areas in the felsites are more flesh to pale pinkish in colour; presumably these zones are more siliceous and hematitic. Variably mineralised; the more massive bodies tend to carry fine diss py, whereas the more cracked/veined/Fe-rich areas have more sulphide in the form of patchy and slightly coarser spotty py grains. Most of the larger bodies have narrow chloritic rinds formed along their contacts. A few narrow wormy fingers of the felsite are highly deformed (folded, boudinaged) especially further down in the section. The section concludes along a high angle, slightly irregular lower contact.

3193.8 3197.1 Ultramafic.

Returning to a pale green section of the host. This interval is much like the rocks noted above at 3180. Weakly foliated in the upper 70% of the section; this becomes quite irregular towards the lower contact. Appears brecciated/tightly folded approaching 3197.

3197.1 3197.4 Felsic Dyke.

Another tiny porphyritic interval which looks alot like the rocks described at 3171. Slightly cuspat, high angle contacts. Magnetic and calcitic. Invaded by tiny pale pink patches. Well mineralised with diss py. Rounded to subhedral feldspar phenos.

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
		grained along with which have been deposited mm to cm thick layers of a pale green, more felsic liquid. Small cherty zones are also present. The whole package has subsequently been disrupted, resulting in variably oriented layering and very fine kinking/folding in the lighter coloured layers. Irregular, patchy qtz and qtz-carb veining has invaded a few of the more disrupted areas. Well mineralised throughout; both finely diss and coarser cubic py is present in and along the lighter bands, veins and in the matrix proper. The larger py grains are generally deformed(rounded/rotated). Much of the section is probably silicified. The carbonate veining/alteration is calcite. The rocks have quite variable magnetic properties, from very strong to almost no reaction to the pen magnet. Layering here varies from 35 DTCA near the upper contact, up to 60 degrees near the lower contact. Some very subtle grading is visible in the section; although not definitive, tops may be downhole in this unit. Sharp, slightly cusped lower contact at 50-55 DTCA.	52929	3258.0	3260.3	2.3	TR	nil	.000	7
			52930	3260.3	3262.2	1.9	2.0%	nil	.000	3
			52931	3262.2	3265.0	2.8	0.5%	nil	.000	2
			52932	3265.0	3266.9	1.9	0.5%	nil	.000	5
			52933	3266.9	3270.1	3.2	TR	nil	.000	2
			52934	3270.1	3271.5	1.4	1.5%	nil	.000	0
			52935	3271.5	3273.0	1.5	4.0%	nil	.000	0
			52936	3273.0	3274.4	1.4	7.0%	nil	.000	0
			52937	3274.4	3275.5	1.1	4.0%	nil	.000	4
			52938	3275.5	3276.9	1.4	1.5%	nil	.000	2
			52939	3276.9	3278.1	1.2	1.5%	nil	.000	2
			52940	3278.1	3279.7	1.6	6.0%	nil	.000	10
			52941	3279.7	3281.2	1.5	2.5%	nil	.000	7
			52942	3281.2	3283.9	2.7	0.5%	nil	.000	3
			52943	3283.9	3286.6	2.7	TR	nil	.000	5
			52944	3295.4	3298.0	2.6	TR	nil	.000	2
		3234.6 3241.1 Basalt.	52945	3298.0	3299.9	1.9	2.5%	nil	.000	6
		Contact into a pale grey-green, finely mottled to massive section of strongly altered(calcite) basalt. Xcut by very fine, irregular/arcuate carb threads and fracture-fillings. A somewhat anomalous section with little texture other than the alteration and fracturing; locally some suggestion of flow banding and flow breccia type material is visible, especially near the bottom contact. Strongly magnetic and locally well mineralised with diss and 2-3 mm spotty py grains. A tiny section of darker basalt like that above @ 3230 is present at about 3237. Sharp, high angle lower contact with some suggestion of a very fine breccia texture developing(small rounded fragments).	52946	3299.9	3302.9	3.0	TR	nil	.000	7
			52947	3302.9	3305.0	2.1	0.5%	nil	.000	0
			52948	3305.0	3307.0	2.0	TR	nil	.000	3
			52949	3307.0	3309.2	2.2	0.5%	nil	.000	0
			52950	3309.2	3311.1	1.9	0.5%	nil	.000	0
			52951	3311.1	3314.0	2.9	0.5%	nil	.000	0
			52952	3314.0	3316.1	2.1	TR	nil	.000	0
			52953	3322.6	3325.0	2.4	TR	nil	.000	12
			52954	3325.0	3327.5	2.5	0.5%	nil	.000	3
			52955	3327.5	3329.0	1.5	TR	nil	.000	5
			52956	3329.0	3332.4	3.4	TR	nil	.000	3
		3241.1 3243.4 Amphibolitic.	52957	3332.4	3334.9	2.5	TR	nil	.000	0
		Returning to a short interval very much like that above at 3230. Quite disrupted, irregular layering at the top contact, becoming more consistent @ about 45-50 DTCA moving downhole. Well mineralised with diss and cubic py near wispy, pale pink alteration halos, which surround small dendritic fractures and along the lighter coloured bands. Very hard and continuing calcitic. Variably magnetic also. Sharp lower contact at 30 DTCA.	52958	3435.0	3437.9	2.9	TR	nil	.000	3
			52959	3437.9	3441.0	3.1	0.5%	nil	.000	0
			52960	3441.0	3444.0	3.0	0.5%	nil	.000	10
			52961	3444.0	3445.9	1.9	2.5%	nil	.000	13
			52962	3445.9	3449.7	3.8	TR	nil	.000	2
			52963	3466.1	3469.1	3.0	TR	nil	.000	0
			52964	3469.1	3471.8	2.7	0.5%	nil	.000	9
		3243.4 3250.8 Basalt.	52965	3471.8	3474.0	2.2	TR	nil	.000	3
		A massive to weakly banded section, finely mottled and locally crudely brecciated. Similar to the rocks above at 3234, but with more flowy texture developed. Strongly calcitic and magnetic throughout. Weakly mineralised with fine py locally. Consists of a number of thin, slightly ropey/brecciated flows with a small amount of slightly frothy top texture. Weakly veined with wispy and patchy carbonate. The banding/layering is oriented @ 40 DTCA. Tops may be downhole here.	52966	3474.0	3477.8	3.8	0.5%	nil	.000	9
			52967	3477.8	3480.0	2.2	0.5%	nil	.000	7
			52968	3480.0	3483.0	3.0	TR	nil	.000	3
			52969	3483.0	3486.0	3.0	0.5%	nil	.000	0
			52970	3486.0	3489.0	3.0	1.0%	nil	.000	5
			52971	3489.0	3492.4	3.4	TR	nil	.000	3
			52972	3503.0	3505.7	2.7	TR	nil	.000	7
			52973	3505.7	3507.1	1.4	TR	nil	.000	10
		3250.8 3255.3 Mafic Intrusive.	52974	3507.1	3510.0	2.9	0.5%	nil	.000	3
		Sharp contact @ 30 degrees into a pale green, weakly speckled mafic dyke. Slightly foliated due to a preferential alignment of numerous tiny amphibole needles growing throughout the matrix. Both the very fine granular groundmass and the tiny phenos are becoming fuzzy because of later carb and chlorite alteration. Apart from the weak fabric, the rocks here are quite	52975	3510.0	3512.9	2.9	1.0%	nil	.000	7
			52976	3512.9	3514.3	1.4	0.5%	nil	.000	7
			52977	3514.3	3517.0	2.7	TR	nil	.000	9
			52978	3525.0	3528.3	3.3	TR	nil	.000	9
			52979	3528.3	3531.5	3.2	TR	nil	.000	7

From To
(ft) (ft)

Geology

Sample From To Len PY AU AU1 AU2
No. (ft) (ft) (ft) % OZ/T OZ/T PPB

tuff with small lithic fragments/small bombs are also present. Good variolites are not common, but are well developed along very narrow horizons here and there (ex: 3296.5). Some fine leucoxene flecking is developing in some of the slightly coarser areas. These rocks are calcitic and variably magnetic, become slightly more so moving downhole. Tops are downhole here. Locally well mineralised with fine diss py; more so in the laminated/sheared areas. Weakly jointed rocks, normally at high core angles.

3318.5 3437.9 Basalt pillowed variolitic.

Continuing with flowy to pillowed basalt. The flows are beginning to become pillowed and more variolitic moving downhole. Sub-metre sized pillows are appearing amongst variolitic and shaly flow tops. Distinctive black quench material and pseudo-ropy flow tops are visible higher in the sequence. A slightly greater amount of scrappy carbonate and Qtz infillings are developing also. Pale cream cherty residual fluids are appearing as fragments and streaky lenses in some tops. A few dark amygs are present locally. The stratigraphy/layering lies at 30-60 DTCA. Locally epidote alteration is becoming more apparent. Variably magnetic, becoming less so moving downhole. Calcitic here with minor py in and along pillow margins and scattered throughout in small amounts. Varioles in this interval vary in size from 1/8 to almost 2 in across. They typically occur in small swarms sometimes coalescing and sometimes breaking away from thicker sections of lava with the same (more felsic) composition. Most are slightly elliptical, suggesting flattening has occurred roughly perpendicular to the stratigraphy.

Moving downhole towards 3437, varioles become more numerous and slightly larger. The lower sections are pillowed, but selvages are not well developed; rims are better defined by the variations in the variolitic textures.

3437.9 3483.0 Basalt flowy, frothy, variolitic.

Returning to a slightly more uniform section with strong similarities to the rocks at 3279-3318. Locally variolitic here. Strongly magnetic in only one or two spots; the remainder is barely magnetic, but still moves the pen magnetic slightly. Continuing calcitic with minor amounts of epidote and spotty/cubic py. Contains minor patchy and scrappy carb-Qtz alteration associated with fractures and flow contacts. Some sulphide enrichment is present in these areas also. Coring well with moderate to high RQD values. Tops may be downhole here; somewhat inconclusive.

3483.0 3514.3 Basalt flowy to massive, slightly more fabric.

A slightly more homogeneous, fine-grained section (less flow texture) with an slightly increased amount of fine carb stringers and threads developed as compared to the preceding interval. A very weak foliation is becoming visible in parts of this interval; both the fabric and veining are oriented at between 30 and 55 DTCA. A calcitic and very weakly magnetic section. Some tiny (sub-cm) varioles are present in one or two spots, but the larger, more conspicuous examples are absent. Modestly mineralised; diss and spotty/cubic 1-3 mm py is present along both veining/fractures and more randomly in the matrix. Stratigraphy here lies at about 50 DTCA.

From To
(ft) (ft)

Geology

Sample From To Len PY AU AU1 AU2
No. (ft) (ft) (ft) % OZ/T OZ/T PPB

3505.6 3505.7 Fault gouge.
Tight slip with a bit of gritty gouge @ 65 DTCA.

3514.3 3578.6 Basalt frothy variolitic.
Returning to a slightly more flowy section. Larger variolites as per 3318 and some frothy zones are intercalated with more massive slightly gritty textured areas. Patches and wisps (locally twisted/folded) of pale white to slightly pinkish carb (calcite) and more discreet veinlets of the same invade the unit. Slightly elevated amounts of diss and 2-4 mm cubic py occur near or in many of these weakly altered zones. Coring well in this section; generally good RQD values except for a broken-up, finely blocky section @ 3547.6 to 3549.0. Calcitic and very weakly magnetic. The lower contact of this package is along a crudely brecciated and variolitic flow top section with trace to locally 2% cubic pyrite after 3574.3. The flows are dark green and moderately chloritic.

3547.6 3549.0 Broken Blocky Core.

3578.6 3595.8 Basalt.
Contact into a sequence of relatively massive basaltic flows that are greyer in colour than the previous chloritic units and are characterized by more brecciated flow top zones with minor foliated material and only a very local development of variolites. There appear to be only a couple of flows in this narrow package but the contacts are obscured by a mafic dyke. The upper contact zone is very fine grained, dark grey to black in colour, weakly mineralized with pyrite, moderately siliceous, and, overprinted with calcite. The contact is at 50 degrees, and is reminiscent of the black, amphibolitized upper contact zone to the overall suite. The upper contact zone extends to 3580.0. The lower contact zone is dark green to black in colour and more strongly foliated than the balance of the system - it is finely mineralized with an average of 2% cubic pyrite and is more strongly fractured to overprinted with calcite. This lower foliated zone starts at 3594.9, is foliated at 50 to 55 degrees, and has contacts at 57/53 degrees. The description for the mafic intrusive follows.

3584.1 3586.4 Mafic Intrusive.

Contact into a narrow dyke of relatively anonymous mafic intrusive. The unit is fine grained with a poorly developed granular texture and has sharp, cross-cutting contacts at 23/37 degrees. The dyke is dull greyish in colour with only a very local reddish tint next to some calcite fractures and veins. The dyke is nonmagnetic, unmineralized, and, moderate to strongly overprinted with calcite.

3595.8 3626.2 Basalt frothy variolitic.

Return to the massive to frothy flow style of section that tends to dominate the lower reaches of this basaltic package. As before, the flows are fine grained and chloritic with crudely foliated to brecciated and variolitic tops. Some of the variolites coalesce to form larger patches in the order of 2 to 6 cms. The foliation in the system varies from 45 to 55 degrees. The basalt is weakly fractured with calcite which gives rise to local overprinting from calcite around some of the fractures. Mineralization is

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
		largely confined to the flow top zones and consists of up to 2-3% pyrite in fine blebs and disseminated cubes. The basalt is nonmagnetic. This is the last of the basaltic package. The lower contact area is marked by a foliated zone after 3622.7, ending along a cherty interflow member from 3625.6 to 3626.2. The cherty interflow is foliated to laminated at 45 to 55 degrees, is locally magnetic, siliceous, very weakly calcitic and well mineralized with 15 to 20% coarse pyrite. The lower contact is clean and sharp at 56 degrees.								
		3625.6 3626.2 Interflow Material.								
3626.2	3626.3	START OF DEFORMATION ZONE	53004	3626.2	3629.0	2.8	TR-1	nil	.000	3
3626.3	3670.0	ULTRAMAFIC ULTRAMAFIC KOMATIITE Contact into a short package of ultramafic rocks that appear to mark the start of the Deformation Zone due to the dramatic increase in strain in the rocks overall. Other than the effects of strain, the rocks are somewhat anonymous in this section. The ultramafic varies from black to blue black in colour with a slightly greenish tinge in the only area where there is a crude development of spinifex within an apparent flow top zone from 3633.0 to 3635.6 - below 3635.6 the textures are absent next to a gouge zone from 3636.0 to 3636.6. The only other colour variation is within a few cms of either contact where the ultramafic exhibits a brownish cast, is very fine grained, and, partly amphibolitic. On the whole, the ultramafic is very fine grained, soft, moderate to strongly foliated and has a patchy weak to strong magnetism. The core is cut by numerous threads to streaks and fractures with calcite that tend to enhance the foliation. The foliation varies from 50 to 55 degrees above the gouge zone to more uniformly at 40 degrees to the core axis across the base of the unit. Mineralization is very minor in amount but there are local scattered cubes of pyrite in the system. The upper contact is clean and sharp at 56 degrees, the lower contact is similarly well defined at 46 degrees, albeit a little irregular. The two sections of note are coded as follows. 3633.0 3635.6 Spinifex. Tops appear to be downhole ??. 3636.0 3636.6 Fault gouge. - @ 57/50 degrees. Traces of mud are also found along local fractures as at 3651.0 - @ 50 degrees, 3652.8 - 5 mms @ 23 degrees, 3662.2 - @ 52 degrees, and at 3667.2 - @ 51 degrees.	53005	3629.0	3632.0	3.0	TR	nil	.000	2
			53006	3632.0	3635.0	3.0	NIL	nil	.000	0
			53007	3635.0	3637.0	2.0	NIL	nil	.000	0
			53008	3637.0	3640.0	3.0	TR	nil	.000	0
			53009	3664.0	3667.0	3.0	NIL	nil	.000	0
			53010	3667.0	3670.0	3.0	TR	nil	.000	0
3670.0	3684.6	FELSIC DYKE Contact into a narrow dyke or dykes that are typical of the felsic dyke designation - the separation between the two units by blue grey to blue black, foliated ultramafic from 3678.5 to 3679.3 at 37/42 degrees with irregular contacts. The felsic dykes are characteristically grey to brownish	53011	3670.0	3673.0	3.0	TR	nil	.000	0
			53012	3673.0	3676.0	3.0	1-2	nil	.000	1
			53013	3676.0	3678.5	2.5	TR	nil	.000	0
			53014	3678.5	3679.3	.8	TR	nil	.000	2

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
		in colour and dirty in appearance from accessory alteration in the area. The rocks contain the diagnostic coarse feldspars to feldspar patches from 2 mm to a cm in size - 2 to 3 mms being the norm. The bimodal nature with both fine and coarse feldspar is not well expressed in this package. The dykes also contain assorted mafic to ultramafic fragments up to 3 to 4 cms in size that are elongated subparallel to the foliation at 45 degrees. The dykes are moderately hard and siliceous and exhibit a patchy magnetism. They are variably overprinted with calcite even though veining to fracturing is not strong. Mineralization varies from finely disseminated pyrite to more fracture controlled pyrite cubes and aggregates. Both contacts are a little irregular at 46/52 degrees. The narrow ultramafic section is coded as :	53015	3679.3	3682.0	2.7	1-2	nil	.000	0
			53016	3682.0	3684.6	2.6	TR-1	nil	.000	3
		3678.5 3679.3 Ultramafic. - foliated at 40 to 45 degrees with a trace of gouge at the upper contact.								
3684.6	3720.1	CARBONATED ULTRAMAFICS CARBONATED ZONE Contact into a package of carbonated ultramafic rocks that mark the onset of ankerite alteration within 18 cms of the contact with the felsic dyke. The alteration front and the carb rocks that follow are a potential second alternative for distinguishing the start of the deformation zone since a switch to ankerite alteration is a common constituent in the deformation package. This unit is readily split into two parts - an upper ankeritic ultramafic, and, a lower carb to carbonated ultramafic package that is marked by an increase in ankerite alteration, increased veining to fracturing, and, a loss of magnetic properties at 3697.5. The lower contact placement for the system is somewhat arbitrary at 3720.0 at 49 degrees, but it marks a change in the alteration overall. The upper member of this package grades sharply from a typical blue black, soft, talcose ultramafic that is foliated at 40 to 50 degrees, into a very fine grained, black to brownish, ankeritic ultramafic at 3687.7 at 50 degrees. While the contact ultramafic to 3687.7 is weakly reactive to the presence of calcite, the increase in the ankerite component begins within 18 cms of the contact. The contact ultramafic is foliated at an average of 40 degrees which steepens to 55 to 60 degrees after 3687.7. Both parts of this ultramafic area are magnetic. The lower ultramafic here is black to slightly brownish in colour, harder than the contact ultramafic, and contains numerous fine streaks to threads, blebs and discontinuous layers of grey to beige and off-white ankerite. The ultramafic is variably amphibolitized, and is sparsely mineralized with traces of disseminated cubic pyrite. From 3691.7 to 3693.5, the core is blocky to broken with traces of gouge on some slip faces. The change to carb rocks at 3697.5 is marked by a further increase in the ankerite component and greyer to grey green carb sections with buff to dull yellow ochre carb patches. For the most part, the carb rocks are clearly from an ultramafic protolith. The carb rocks are nonmagnetic as previously mentioned and are highlighted by a dramatic increase in quartz ankerite veining to some 20 to 30% of the rock as compared against less than 10% in the overlying ultramafic. Mineralization is sparse in the carb package tending to cue along the more buff to yellowish sericitic patches. One yellowish patch in the system from 3702.1 to 3703.8 at 67/54 degrees is far	53017	3684.6	3687.7	3.1	TR	nil	.000	0
			53018	3687.7	3690.0	2.3	TR-1	nil	.000	3
			53019	3690.0	3691.7	1.7	TR-1	nil	.000	3
			53020	3691.7	3693.5	1.8	TR	nil	.000	5
			53021	3693.5	3695.0	1.5	TR	nil	.000	2
			53022	3695.0	3697.5	2.5	TR	nil	.000	15
			53023	3697.5	3700.0	2.5	TR	nil	.000	9
			53024	3700.0	3702.1	2.1	NIL	nil	.000	2
			53025	3702.1	3703.8	1.7	TR	nil	.000	9
			53026	3703.8	3706.0	2.2	NIL	nil	.000	2
			53027	3706.0	3709.0	3.0	NIL	nil	.000	7
			53028	3709.0	3712.0	3.0	TR	nil	.000	15
			53029	3712.0	3715.0	3.0	TR	nil	.000	10
			53030	3715.0	3718.0	3.0	TR	nil	.000	12
			53031	3718.0	3720.1	2.1	TR-1	nil	.000	0

From To
(ft) (ft)

Geology

Sample No.	From (ft)	To (ft)	Len (ft)	PY ‡	AU OZ/T	AU1 OZ/T	AU2 PPB
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basalt.

3740.3 3751.2 Ultramafic Carbonated Ultramafics.

A section of mottled ultramafic with a moderate development of calcite streaks and carbonate metacrysts. The protolith is clearly ultramafic here. The rock is dark blue grey to black in colour, calcitic and for the most part only weakly to nonmagnetic. This section is very sparsely mineralized with pyrite. The lower contact is harder and more siliceous with a component of the incipient style of alteration over the basal 30 cms i.e. Weakly magnetic and slightly better mineralized. Lower contact at 52 degrees.

3751.2 3764.8 Ultramafic.

Relatively typical, blue black, soft, soapy talcose ultramafic of the deformation package. There is an erratic development of carbonate metacrysts up to 3752.8, thereafter the rocks are streaked with ankerite. In the corridor 3755.3 to 3759.8, the core is partly blocky with discing that develops on a cm scale from a strong foliation and fracturing that averages 60 degrees to the core axis. Several of the fractures are muddy - the strongest gouge at 3755.6 - 1.7 cms at 65 degrees. The rocks exhibit a weak to moderate patchy magnetism but it is essentially unmineralized.

3764.8 3777.9 Incipient Altered Ultramafics Basalt.

Contact into another of the sections that is incipient altered and may be potentially basalt from a lack of ultramafic characteristics rather than proactive basaltic features. The rock varies from dark green to dark reddish green, is moderately hard and magnetic. The core is weakly speckled with mafics and calcite metacrysts in addition to being fractured with dark reddish silica and calcite. From 3767.9 to 3770.4, the rock is pinkish grey in colour, strongly flooded with silica and resembles a felsite although the upper contact is irregular (lower contact sharp at 45 degrees), and the fabric on either side of the contact is identical - ergo most likely very strong alteration of the incipient style somewhat central to this altered package. Both contacts of this unit are a little obscure but are relatively sharp at 52/68 degrees. The unit is weakly mineralized with pyrite - the stronger incipient altered section hosting 1-2% pyrite in fine blebs and aggregates.

3777.9 3781.3 Ultramafic Incipient Altered Ultramafics.

Contact into blue black, ankeritic ultramafic rocks once more with some incipient altered material in the package from 3778.5 to 3778.8 contacts broken, and, 3779.8 to 3780.9 contacts at 75/64 degrees. There is a narrow gouge in the blue black ultramafic at the start of the unit at 3778.0 - 1 cm at 68 degrees with a second 5 mm fracture at the same location at 55 degrees, and, 2.5 cms of gouged to granulated core at 3778.4 at 60 to 65 degrees. The incipient altered sections in this area are grey brown to brown in colour with scattered orangish, carb silica streaks and fractures.

3781.3 3791.8 Incipient Altered Ultramafics Basalt.

Return to the last of the incipient altered ultramafic to potential basalt units in the package. Again the rock is dark green to dark reddish green and brownish in colour, variably hard depending on the amount of incipient

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
		altered fractures, and, weakly to moderately magnetic. The upper contact of this unit is broken but is strongly fractured with incipient alteration at 55 to 65 degrees to the core axis. As in the previous larger unit there is also a section here with stronger orangish alteration from 3789.3 to 3790.5 - upper contact gradational, lower contact at 62 degrees. The lower contact of the unit is along 12 cms of strong, orangish incipient alteration - lower contact at 62 degrees. The core is partly mottled from a development of carbonate metacrysts and is sparsely mineralized with disseminated cubes of pyrite.								
	3791.8	3797.8 Ultramafic.								
		The basal unit of this package consisting of black to blue black, ankeritic ultramafic with only very local orangish fractures of the incipient alteration style. Most of this core is blocky to broken with traces of mud along some of the slip faces as at 3792.3 at 69.3 degrees, 3792.4, 3794.0 at 70 degrees, 3794.2, and 3796.2. The ultramafic is ankeritic, weakly to nonmagnetic, and essentially unmineralized. The lower contact is placed at the first suggested tuffaceous material at 53 degrees.								
3797.8	4290.2	TUFF								
		Contact into a broad sequence of tuffaceous to volcanoclastic rocks that are highly altered in this context. The tuff members tend to be split into two main candidates - a streaky altered variety which invariably displays the coarser fragments, and, a much more gritty textured to quartzose variety that is crudely streaked to foliated with alteration and generally lacking in fragments. The two styles are kept together due to the fact that they are normally intercalated and intimately associated in the footwall of the McBean deformation zone. The parent magma to the coarser tuff appears to be ultramafic to mafic in composition - in the first part of the sequence there are a number of narrow, intercalated carbonated ultramafic units along with carbonate patches and the odd trace of fuchsite. The streaky altered to laminated nature of the matrix in the coarse tuffs also appears to contain some material with an ultramafic affinity in addition to chlorite, sericite and ankerite streaks. The gritty to more volcanoclastic member's parent is less obvious - the streaky altered to layered nature from streaks to blebs and threads of sericite +/- chlorite normal to this style of unit has been almost entirely obliterated by a pervasive granular ankerite overprinting. The first major part of this sequence extends to 3874.9, and is dominated by the coarse tuffs with a mix of coarse fragments up to about 6 cms in size - quartz fragments dominate and are the most obvious. The zone consists of a number of carb sections, carbonated ultramafic units and some, more gritty textured, volcanoclastic members intercalated with the alteration layered tuff. Alteration layers are at 60 to 70 degrees to the core axis and are defined by variations in the ankerite, sericite and chlorite contents +/- darker material of an apparent ultramafic affinity. The tuffs are generally moderately magnetic from the presence of exsolved magnetite in the system - magnetism is decidedly weaker below 3828.5 in the lower half of the unit. Carb patches (they are generally not discreet units), and more definite ultramafic units are more common in the magnetic zone - the two largest ultramafic sections at 3798.8-3799.7 at 58/61 degrees	53063	3797.8	3799.7	1.9	TR-1	.001	.000	29
			53064	3799.7	3802.0	2.3	3-5	.005	.000	183
			53065	3802.0	3805.0	3.0	3-5	.007	.000	224
			53066	3805.0	3808.0	3.0	3-5	.006	.000	189
			53067	3808.0	3810.0	2.0	5-7	.014	.000	490
			53068	3810.0	3812.0	2.0	2-3	.013	.000	429
			53069	3812.0	3814.4	2.4	TR-1	.003	.000	105
			53070	3814.4	3817.0	2.6	2-3	.001	.000	41
			53071	3817.0	3820.0	3.0	TR-1	.004	.000	137
			53072	3820.0	3823.0	3.0	TR	.004	.000	149
			53073	3823.0	3826.0	3.0	TR-1	.002	.000	65
			53074	3826.0	3829.0	3.0	2-3	.002	.000	53
			53075	3829.0	3832.0	3.0	TR	.001	.000	39
			53076	3832.0	3835.0	3.0	2-3	.001	.000	48
			53077	3835.0	3838.0	3.0	1-2	.001	.000	34
			53078	3838.0	3841.0	3.0	TR-1	.001	.000	27
			53079	3841.0	3844.0	3.0	TR-1	nil	.000	10
			53080	3844.0	3847.0	3.0	TR	nil	.000	9
			53081	3847.0	3850.0	3.0	1-2	.001	.000	31
			53082	3850.0	3853.0	3.0	1-2	.001	.000	20
			53083	3853.0	3856.0	3.0	2-3	.001	.000	46
			53084	3856.0	3859.0	3.0	TR-1	.001	.000	19
			53085	3859.0	3862.0	3.0	1-2	nil	.000	0
			53086	3862.0	3865.0	3.0	1-2	.001	.000	19
			53087	3865.0	3868.0	3.0	TR	nil	.000	0
			53088	3868.0	3871.0	3.0	TR	.001	.000	32
			53089	3871.0	3873.0	2.0	TR	.001	.000	41
			53090	3873.0	3874.9	1.9	TR	.001	.000	21
			53091	3874.9	3877.5	2.6	TR	nil	.000	0
			53092	3877.5	3880.0	2.5	TR	nil	.000	0

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
		near the top of the zone, and at 3814.4-3815.0 at 70/65 degrees. The foliation in the ultramafics tends to mimic the layering in the tuffs, and, most of the remaining units are in the order of a few cms in size. Pyrite mineralization is variable in the package with streaks to fine blebs and aggregates tending to occur subparallel to the foliation up to 5-7% locally. Veining, on average, is minor in amount consisting of ankerite or ankerite +/- quartz. Interestingly, some of the better veining with grey quartz to about 10% is found in the corridor where there are some fuchsite carb patches between 3810.9 and 3814.4 - the veins themselves are unmineralized. The lower half of the coarse tuff sequence is essentially devoid of carb patches or ultramafic units. The lower contact is sharp at 70 degrees - the upper contact is partly reddish stained over 30 cms. Since the coarser tuffs are suggested to have a volcanoclastic affiliation, the section is coded as:								
			53093	3880.0	3883.0	3.0	TR	nil	.000	5
			53094	3883.0	3886.0	3.0	TR	nil	.000	0
			53095	3886.0	3889.0	3.0	TR	.001	.000	22
			53096	3889.0	3892.0	3.0	TR	.003	.000	111
			53097	3892.0	3895.0	3.0	TR	.002	.000	63
			53098	3895.0	3898.0	3.0	TR	.001	.000	21
			53099	3898.0	3901.0	3.0	TR	.005	.000	172
			53100	3901.0	3904.0	3.0	TR	.002	.000	51
			53101	3904.0	3907.0	3.0	TR	.003	.000	87
			53102	3907.0	3910.0	3.0	TR	nil	.000	0
			53103	3910.0	3913.0	3.0	TR	nil	.000	5
			53104	3913.0	3916.0	3.0	TR	nil	.000	2
			53105	3916.0	3919.0	3.0	TR	.003	.000	105
			53106	3919.0	3922.0	3.0	TR	.002	.000	74
		3797.8 3874.9 Tuff Conglomerate.	53107	3922.0	3925.1	3.1	TR	.006	.000	190
			53108	3925.1	3927.4	2.3	NIL	nil	.000	0
			53109	3927.4	3929.1	1.7	NIL	nil	.000	0
		The second package of the tuff system is framed by some narrow units of carbonated ultramafic separating this gritty tuff from the coarse fragmentals above, and, from much more highly altered and stained gritty tuffs at depth. As noted earlier, the parent magma for this package is not obvious, and the rocks tend to lean toward a volcanoclastic genesis. In other areas on the property this unit is typically a gritty, rather quartz-rich unit with tiny wisps of alteration in a granular to gritty matrix - a layering is not nearly as well developed as in the laminated to coarser tuffs but these units are often intercalated with various grain-sized material such that a layering can be reasonably developed. In this area, some semblance of the gritty texture is preserved but the rocks are pervasively overprinted with ankerite resulting in a granular to gritty texture with little layering in evidence. A foliation averaging 60 degrees to the core axis is best developed around the fringes of the zone. Essentially the resultant rock is a granular aggregate of ankerite +/- quartz, that is liberally sprinkled with magnetite and contains wisps to streaks and fractures of sericite and chlorite along with the very odd trace of fuchsite. The rocks are not well veined nor are they particularly well mineralized with only scattered traces of pyrite.	53110	3929.0	3931.1	2.1	NIL	.008	.000	288
			53111	3931.1	3933.4	2.3	NIL	nil	.000	10
			53112	3933.4	3935.2	1.8	NIL	.003	.000	96
			53113	3935.2	3938.0	2.8	NIL	nil	.000	0
			53114	3938.0	3939.9	1.9	NIL	nil	.000	0
			53115	3939.9	3942.0	2.1	TR	nil	.000	0
			53116	3942.0	3945.0	3.0	TR	nil	.000	0
			53117	3945.0	3948.0	3.0	TR	nil	.000	0
			53118	3948.0	3951.0	3.0	TR	nil	.000	51
			53119	3951.0	3954.0	3.0	TR	nil	.000	0
			53120	3954.0	3956.5	2.5	TR	nil	.000	0
			53121	3956.5	3959.5	3.0	TR	nil	.000	12
			53122	3959.5	3962.0	2.5	TR	.001	.000	29
			53123	3962.0	3964.1	2.1	1-2	.006	.000	185
			53124	3964.1	3965.5	1.4	TR	.001	.000	29
			53125	3965.5	3968.0	2.5	NIL	.004	.000	132
			53126	3968.0	3971.0	3.0	NIL	.006	.000	209
			53127	3971.0	3974.0	3.0	TR	.001	.000	39
		The ultramafic units at the margins of this package are similarly strongly ankeritic and fine grained with lenses to patches and streaks of off-white to beige ankerite in a fine grained chloritic matrix. The matrix component varies from dull blue grey to dark blue green and locally brownish in color. The ultramafics exhibit a patchy magnetism and are sparsely mineralized with pyrite. The units around the upper contact are too small to be coded individually as at 3875.0 - 4.5 cms at 75 degrees; 3875.5 - 4 cms at 50 degrees; 3876.0 - 5 cms at 60 degrees, and, 3877.0 to 3877.5 - at 53/63 degrees. There is some weak orangish to yellowish staining in the gritty tuff after 3916 approaching the lower ultramafic units which can be coded separately as :	53128	3974.0	3977.0	3.0	TR	.003	.000	99
			53129	3977.0	3979.0	2.0	NIL	nil	.000	7
			53130	3979.0	3982.0	3.0	TR	.001	.000	22
			53131	3982.0	3985.0	3.0	TR	.001	.000	36
			53132	3985.0	3987.3	2.3	TR	.001	.000	19
			53133	3987.3	3989.0	1.7	TR	.001	.000	39
			53134	3989.0	3991.0	2.0	TR	.003	.000	108
			53135	3991.0	3994.0	3.0	TR	.001	.000	31
			53136	3994.0	3997.0	3.0	TR	.005	.000	187
			53137	3997.0	3999.5	2.5	TR	.005	.000	173
			53138	3999.5	4001.4	1.9	NIL	.002	.000	65
			53139	4001.4	4004.0	2.6	TR	.003	.000	113
		3925.1 3925.9 Carbonated Ultramafics - contacts at 61/53 degrees, and.	53140	4004.0	4007.0	3.0	TR	.003	.000	94
			53141	4007.0	4010.0	3.0	TR	nil	.000	12
		3927.4 3933.4 Carbonated Ultramafics.	53142	4010.0	4013.0	3.0	TR	.001	.000	29
		- upper contact at 51 degrees, lower contact broken but appears to be at 55	53143	4013.0	4016.0	3.0	TR	.008	.000	278

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
		degrees. There are also a couple of wider, irregular quartz ankerite stringers in this ultramafic from 3929.1 to 3931.1, albeit they are unmineralized. Again, the carbonated ultramafic exhibits a weak and patchy magnetism.	53144	4016.0	4019.0	3.0	TR	.013	.000	439
			53145	4019.0	4022.0	3.0	NIL	.007	.000	242
			53146	4022.0	4025.0	3.0	NIL	.004	.000	122
			53147	4025.0	4026.6	1.6	TR	.010	.000	351
			53148	4026.6	4029.0	2.4	TR	nil	.000	12
		Below the unit of carbonated ultramafic ending at 3933.4, the tuff package becomes a mixed assemblage of the gritty textured rocks intercalated with coarser fragmental horizons and units of variably carbonated ultramafic.	53149	4029.0	4031.9	2.9	TR	nil	.000	10
		This package is variably stained and altered - an apparent consequence of local fault zones and fault breccias in the package that tend to cut along the softer ultramafics. Several zones of core here are blocky. The gritty tuff sections take up an orange staining much more readily than the coarser fragmental units and, aside from their crudely laminated to foliated nature, locally look rather like a syenite. The orangish alteration and staining, however, appears to be largely a function of iron content. Most of the rocks are magnetic - the orange stained and coarser altered tuff sections tending to be more strongly magnetic than the ultramafic members and the less altered tuffs.	53150	4031.9	4034.1	2.2	TR	.001	.000	24
			53151	4034.1	4038.5	4.4	TR	.001	.000	50
			53152	4038.5	4041.0	2.5	TR	nil	.000	3
			53153	4041.0	4044.0	3.0	TR	nil	.000	9
			53154	4044.0	4047.0	3.0	TR	.001	.000	24
			53155	4047.0	4050.0	3.0	TR	.003	.000	87
			53156	4050.0	4053.0	3.0	TR	.001	.000	34
			53157	4053.0	4056.0	3.0	TR	.001	.000	23
			53158	4056.0	4059.0	3.0	NIL	.002	.000	72
			53159	4059.0	4060.9	1.9	TR	.001	.000	17
			53160	4060.9	4063.0	2.1	2-3	.001	.000	27
			53161	4063.0	4066.0	3.0	2-3	.001	.000	39
		As before, the coarse tuff has a decidedly ultramafic heritage while the source for the gritty tuffs is less obvious. All of the rocks are ankeritic, and, are rather poorly veined and sparsely mineralized. The sequence breakdown proceeds as :	53162	4066.0	4069.0	3.0	2-3	.005	.000	144
			53163	4069.0	4072.0	3.0	1-2	.001	.000	27
			53164	4072.0	4074.0	2.0	TR	nil	.000	0
			53165	4074.0	4077.0	3.0	1-2	.001	.000	17
			53166	4077.0	4079.0	2.0	2-3	.002	.000	45
		3933.4 3935.2 Tuff.	53167	4079.0	4082.0	3.0	1-2	nil	.000	7
		Gritty tuff, grey with a weak orangish cast, moderately foliated at 60 to 70 degrees.	53168	4082.0	4085.0	3.0	1-2	nil	.000	9
			53169	4085.0	4088.0	3.0	TR-1	nil	.000	9
			53170	4088.0	4091.0	3.0	TR-1	.001	.000	38
		3935.2 3939.9 Tuff Carbonated Ultramafics.	53171	4091.0	4094.0	3.0	TR-1	nil	.000	0
		The streaky altered to laminated nature of this section suggests a coarse tuff although no fragments are outstanding. Local sections appear to be more of a streaky altered carbonated ultramafic to carb rock, and there are also narrow sections (to a couple of cms in size) of gritty tuff that highlight the complexity of this short section. Both contacts of this section are broken but appear to be subparallel to the foliation at 60 to 65 degrees.	53172	4094.0	4097.0	3.0	TR-1	.001	.000	31
			53173	4097.0	4100.0	3.0	1-2	.004	.000	127
			53174	4100.0	4103.0	3.0	3-5	.027	.000	915
			53175	4103.0	4106.0	3.0	3-5	.001	.000	33
			53176	4106.0	4108.0	2.0	2-3	.001	.000	27
			53177	4108.0	4111.0	3.0	1-2	.001	.000	27
			53178	4111.0	4114.0	3.0	1-2	.001	.000	36
		3939.9 3956.5 Tuff altered.	53179	4114.0	4117.0	3.0	1-2	.001	.000	24
		A section of gritty altered tuff that is variably orangish stained - moderately so at the upper contact but becoming strongly orange stained after 3948 approaching the fault breccia (next). There is also some accessory greyish quartz-ankerite veining in the more strongly stained rocks.	53180	4117.0	4120.0	3.0	TR-1	.001	.000	27
			53181	4120.0	4123.0	3.0	3-5	.002	.000	65
			53182	4123.0	4125.0	2.0	2-3	.003	.000	111
			53183	4125.0	4127.2	2.2	2-3	.001	.000	50
			53184	4127.2	4130.0	2.8	TR-1	.001	.000	36
		3956.5 3959.5 Fault Zone Breccia.	53185	4130.0	4133.0	3.0	1-2	.001	.000	38
		Contact into a zone of broken core with traces of gouge throughout - most notable at 3957.0. At the upper contact there is 15 cms of more competent carbonated ultramafic with some 12 cms of carb rock at the lower contact (outside contacts at 64/61 degrees), with a central zone consisting of broken core. The broken core is made up of dull blue grey to olive carbonated ultramafic hosting numerous angular fragments of ankerite up to about 1 cm in size. Trace only fine pyrite - rare speck.	53186	4133.0	4136.0	3.0	TR-1	.001	.000	17
			53187	4136.0	4139.0	3.0	TR-1	.002	.000	53
			53188	4139.0	4142.0	3.0	TR-1	.001	.000	29
			53189	4142.0	4145.0	3.0	TR-1	.002	.000	77
			53190	4145.0	4148.0	3.0	1-2	.005	.000	185
			53191	4148.0	4151.0	3.0	2-3	.001	.000	45
			53192	4151.0	4154.0	3.0	2-3	.001	.000	38
			53193	4154.0	4157.0	3.0	2-3	.001	.000	27
		3959.5 3964.1 Carbonated Zone Tuff.	53194	4157.0	4160.0	3.0	1-2	.001	.000	36

From To
(ft) (ft)

Geology

Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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4001.4 4034.1 Tuff altered.

Return to the gritty tuff style of unit. Here a local more laminated nature is in evidence although, as before, the gritty texture is preserved in these sections and there are no fragments present. The majority of this section, however, is strongly orange stained with most of the original fabric obliterated by pervasive ankerite alteration - several sections are again essentially a carbonate mosaic that is partly fractured with alteration. The strong alteration here is assumed to be a consequence of the fault zone that follows. Between 4026.6 and 4031.9 the tuff is more strongly chloritized and is partly contorted such that some of the orangish ankerite streaks to lenses are disjointed to broken in nature - locally looking like fragments rather than streaks to layers. The contacts of this chloritized section are broken but appear to be subparallel to the foliation at 40/45 degrees as opposed to a better developed foliation around the top of this zone at 60 to 70 degrees. The magnetism is more variable from this point up to the following fault zone - the rocks above are moderate to strongly magnetic. The tuff is poorly veined with ankerite and is sparsely mineralized.

4034.1 4038.5 Fault Zone.

Broken contact into a faulted zone consisting essentially of variably orange stained chips of gritty tuff and grit to gouge. There is some 10 cms of gouged material at the upper contact plus some bits of mud across the section but the amount and certainly their orientation is unclear.

4038.5 4060.6 Tuff.

Below the fault zone the rock continues to be a gritty tuff - in this area a more normal tuff that is streaky altered to layered at 60 to 70 degrees to the core axis. This tuff is devoid of fragments and can probably be better classed as a volcanoclastic. The orangish staining diminishes across this section away from the fault zone such that the rocks are cleaner at depth. The least altered member is grey green in colour with a crudely developed layering that is defined by variations in the amounts of streaky sericite and chlorite alteration in combination with a variable ankerite content. The orange to beige staining is patchy in nature across this package. Magnetism diminishes substantially here although a patchy weak to moderate magnetism is present throughout. Veining is minimal, pyrite mineralization is sparse. The lower contact is a little irregular around a 7.5 cm, quartz ankerite vein at 40 degrees. The upper part of the zone is blocky to roughly 4047.5.

4060.9 4127.2 Tuff sericitic.

Contact into an interesting sericitic sequence of gritty tuff with a weakly to moderately developed foliation at 55 to 60 degrees to the core axis. This sequence is not specifically layered as it is streaky altered - the matrix is gritty to granular textured with a strong ankerite component and contains very fine discontinuous wisps to threads and streaks of sericite, chlorite and fuchsite. These threads of alteration tend to define the foliation - fuchsite is most common in the upper third of the unit but it is present throughout. For the most part, the unit is massive in appearance and pale yellowish grey in colour. This tuff also contains isolated fragments to 3 cms in size - fragments being a mix of cherty, vein material and altered types. The core is rather poorly veined with ankerite but is variably

From To
(ft) (ft)

Geology

Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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mineralized with pyrite in fine grained blebs, aggregates and streaks that are often oriented subparallel to the foliation. The pyrite, however, is generally tarnished to dull in colour. There are a couple of narrow sections with gouge in this package in addition to a local coarse, laminated tuff, and, two sections of carbonated ultramafic as .

4067.2 4068.7 Broken Blocky Core w/ Gouge.

A short chloritized section with traces of grit to mud along most of the blocky faces - the most prominent at 4068.8, 2 mms at 69 degrees.

4072.1 4072.2 Fault gouge - 1.6 cms of mud to grit at 70 degrees.

4072.4 4072.5 Fault gouge - 3 cms at 67 degrees.

4075.5 4075.7 Carbonated Ultramafics.

A narrow dull olive to almost black unit of ankeritic ultramafic, as the ultramafic sections previously encountered. Contacts broken at 60/62 degrees.

4077.9 4078.4 Tuff.

A narrow, more chloritic, streaky altered to layered tuff. The tuff is darker grey green in colour than the adjacent sericitic rocks and is more typical of the coarse tuff style of unit. Foliation / layering and contacts are uniform at 62 degrees. This narrow patch contains about 7% dull pyrite.

4107.3 4108.0 Broken Blocky Core.

A blocky to broken patch of core with accessory chlorite alteration in the sericitic tuff - no gouge or faulting perceived.

4117.7 4119.1 Carbonated Zone.

A dull green streaky altered carb section composed of about 90% off-white to beige ankerite fractured with chlorite +/- sericite. The unit is unmineralized, contacts are at 60/46 degrees. A second narrow carb patch exists above this wider one at 4117.0 - 4 cms at 45/50 degrees.

The lower contact of the sericitic tuff package is sharp with 1.5 cms of quartz ankerite veining at 45 degrees.

4127.2 4187.9 Tuff Conglomerate.

Return to a package of coarse tuff with more of a suggested mafic than ultramafic parentage here. The rocks are medium to dark green in colour with local greyer to beige parts related to variations in carb alteration. A gritty textured matrix is only crudely developed although there are some isolated more massive gritty tuff sections up to roughly 30 cms in size. Coarse fragments are well defined up to a maximum of 7 cms in the short dimension and, while there is a mix of fragment sizes, 2 to 4 cm elongated fragments are most common. The foliation in the sequence is well defined at 60 to 65 degrees. Layering, as before, is defined by variations in alteration. In this sequence there is also a change from a dominant ankerite alteration to dominant calcite suggested with the first appearance of calcite in the system at 4144.7. The coarse tuff exhibits a patchy weak to moderate magnetism particularly in the top half of the unit - the rocks tend

From To
(ft) (ft)

Geology

Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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to be cleaner after the calcite / ankerite alteration front. The sequence is poorly veined and variably mineralized with pyrite - dull, brassy fine grained aggregates, blebs and streaks usually subparallel to the foliation in addition to scattered cubes. Up to 3-5% pyrite is locally common. The lower contact of the system is sharp at 62 degrees.

4187.9 4232.8 Tuff fine grained.

Contact into a much more thinly laminated unit of tuff to volcanoclastic that is medium to dark green in colour with erratic paler grey green to grey and beige bleached sections. The true gritty texture with quartz eyes is very poorly developed here but the layering is defined by streaky alteration that is somewhat earthy in appearance within a granular to gritty matrix. Much of this fine streaky alteration to layering is contorted but the average layering in the noncontorted sections is relatively consistent at 50 to 60 degrees. The carbonate in the system grades ankeritic again circa 4211 - below this point the greyer to beige bleached sections are more common than in the upper calcitic and chloritic portion. Bleaching is largely a function of variations in the amount of ankerite - there are no sulphide implications. The upper part of this zone also contains scattered exsolved magnetite to roughly 4195, below which the core is essentially nonmagnetic. Veining overall is weak but tends to be focussed in the bleached areas in the more ankeritic suite. Pyrite mineralization is variable but is minor in overall amounts. Approaching the lower contact there is a narrow, dull grey green to olive coloured section of ankeritic ultramafic from 4228.1 to 4228.9 at 60/55 degrees. The lower contact is somewhat gradational at 60 degrees.

4232.8 4234.7 Tuff Conglomerate.

This a very short unit of coarse tuff that is notable by the moderate number of fragments from 1 to 4 cms in size that are stretched subparallel to the foliation at 60 degrees to the core axis. This unit is also more siliceous than the adjacent thinly laminated rocks although the section ends along a 3 cm more thinly laminated top (?) at 60 degrees. The coarse tuff is dull grey in colour but is variably bleached to beige next to some quartz ankerite fracturing to veining. Pyrite content is less than 1%.

4234.7 4290.2 Tuff.

Return to the gritty tuff member of the system that is slightly more siliceous here. The gritty texture is not consistently well developed in the package due to a mottling with ankerite at the outset of the zone to roughly 4240.0, and, an increase in the amount of chlorite +/- calcite after 4281. The central part of this package is variably altered with sericite and ankerite such that the core varies from dull grey green to dull yellowish green with a weak orangish stain. There are also a couple of dull, earthy grey thinly laminated to ankerite mottled units within the central package as 4257.6 to 4257.8 at 60 degrees, separated from the next unit by a quartz veined zone; 4260.8 to 4261.2 - upper contact irregular with veining, lower contact at 63 degrees; 4263.6 to 4264.6 - mottled and contorted with an upper contact at 38 degrees, lower contact irregular, and; 4266.1 to 4266.5 - contacts are irregular at 66/62 degrees.

The quartz-veined zone from 4257.8 to 4260.8 consists of milky to slightly

From To
(ft) (ft)

Geology

Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
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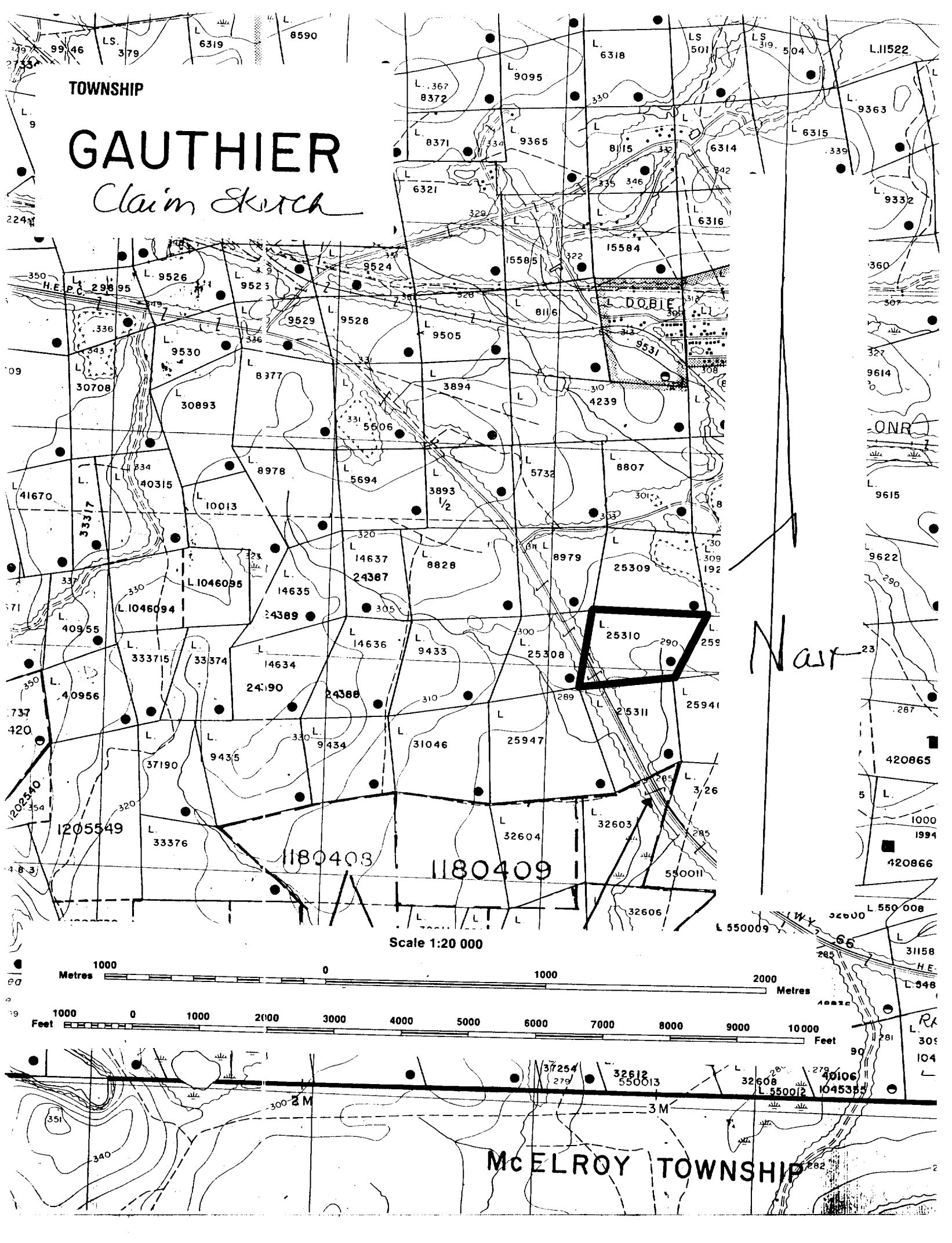
greyish quartz ankerite with patchy sericite alteration and traces of pyrite. The core is blocky from 4242 to 4257.8 around a more blocky to broken zone from 4246 to 4255 - no gouge or mud noted. The tuff is nonmagnetic and, aside from the quartz vein zone is poorly veined with quartz ankerite. Pyrite mineralization ranges up to 2-3% on a very local scale with foliation parallel streaks, blebs and fine grained aggregates along with some disseminated cubes. From 4246 to 4272, the tuff is dominated by yellowish sericitic rocks with more patchy sericite alteration away from this central zone.

4290.2 End of Hole.

TOWNSHIP

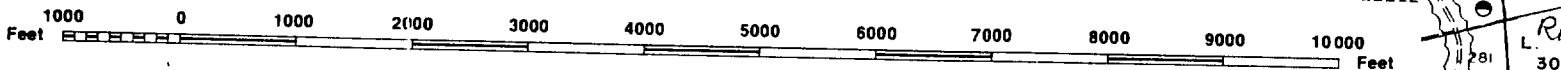
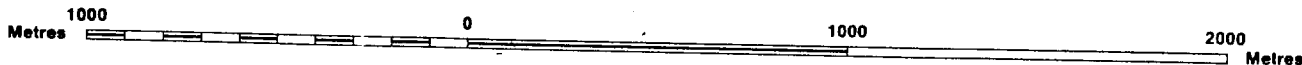
GAUTHIER

Claim Sketch

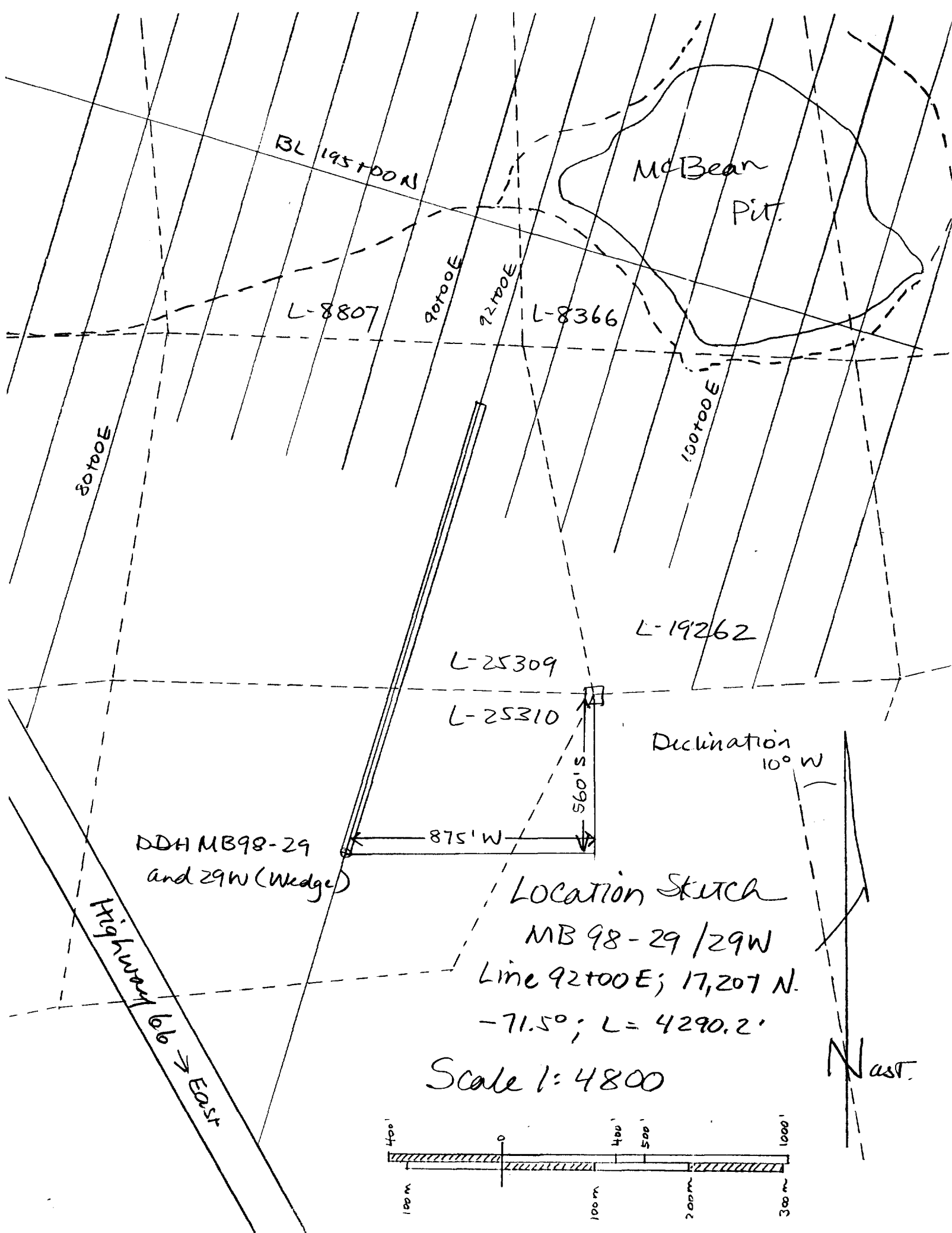


North

Scale 1:20 000



McELROY TOWNSHIP





Declaration of Assessment Work Performed on Mining Land

Mining Act, Subsection 65(2) and 66(3), R.S.O. 1990

Transaction Number (office use) W9980.00335 Assessment Files Research Imaging



32D04SW2016 2.19503 GAUTHIER 900

Subsections 65(2) and 66(3) of the Mining Act. Under section 8 of the Mining Act, this assessment work and correspond with the mining land holder. Questions about this collection should be directed to the Ministry of Northern Development and Mines, 3rd Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

Instructions: - For work performed on Crown Lands before recording a claim, use form 0240. - Please type or print in ink.

1. Recorded holder(s) (Attach a list if necessary)

Form for recorded holder(s) with fields for Name, Address, Client Number, Telephone Number, and Fax Number. Includes entry for QUEENSTON MINING INC.

2. Type of work performed: Check (✓) and report on only ONE of the following groups for this declaration.

Form for type of work performed with checkboxes for Geotechnical, Physical, and Rehabilitation. Includes work type DIAMOND DRILLING, dates, and location information.

Please remember to: - obtain a work permit from the Ministry of Natural Resources as required; - provide proper notice to surface rights holders before starting work; - complete and attach a Statement of Costs, form 0212; - provide a map showing contiguous mining lands that are linked for assigning work; - include two copies of your technical report.

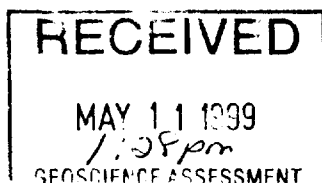
3. Person or companies who prepared the technical report (Attach a list if necessary)

Form for person or companies who prepared the technical report with fields for Name, Address, Telephone Number, and Fax Number. Includes entries for MURRAY MCGILL, BENOIT DIAMOND DRILLING LTD., and SWASTIKA ASSAY LABORATORIES.

4. Certification by Recorded Holder or AGENT

I, WAYNE BENHAM, do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during or after its completion and, to the best of my knowledge, the annexed report is true.

Signature and address section for the recorded holder or agent, including a signature and date (May 10/99).



5. Work to be recorded and distributed. Work can only be assigned to claims that are contiguous (adjoining) to the mining land where work was performed, at the time work was performed. A map showing the contiguous link must accompany this form.

W9980.00335

Mining Claim Number. Or if work was done on other eligible mining land, show in this column the location number indicated on the claim map.	Number of Claim Units. For other mining land, list hectares.	Value of work performed on this claim or other mining land.	Value of work applied to this claim.	Value of work assigned to other mining claims.	Bank. Value of work to be distributed at a future date
TB 7827	16 ha	\$26,825	N/A	\$24,000	\$2,825
1 8000810 L. 25309	8.4 ha	\$76,938	0	0	\$76,938
2 8000891 L. 25310	15.1 ha	\$65,540	0	0	\$65,540
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
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14					
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16					
17					
Column Totals		\$142,478	0	0	\$142,478

I, WAYNE BENHAM (Print Full Name), do hereby certify that the above work credits are eligible under subsection 7 (1) of the Assessment Work Regulation 6/96 for assignment to contiguous claims or for application to the claim where the work was done.

Signature of Recorded Holder or Agent Authorized in Writing: W. Benham Date: May 10/99

2.19503

6. Instructions for cutting back credits that are not approved.

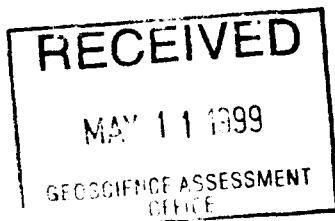
Some of the credits claimed in this declaration may be cut back. Please check (✓) in the boxes below to show how you wish to prioritize the deletion of credits:

- 1. Credits are to be cut back from the Bank first, followed by option 2 or 3 or 4 as indicated.
- 2. Credits are to be cut back starting with the claims listed last, working backwards; or
- 3. Credits are to be cut back equally over all claims listed in this declaration; or
- 4. Credits are to be cut back as prioritized on the attached appendix or as follows (describe):

Note: If you have not indicated how your credits are to be deleted, credits will be cut back from the Bank first, followed by option number 2 if necessary.

For Office Use Only

Received Stamp	Deemed Approved Date	Date Notification Sent
	Date Approved	Total Value of Credit Approved
	Approved for Recording by Mining Recorder (Signature)	



Personal information collected on this form is obtained under the authority of subsection 6 (1) of the Assessment Work Regulation 6/96. Under section 8 of the Mining Act, this information is a public record. This information will be used to review the assessment work and correspond with the mining land holder. Questions about this collection should be directed to a Provincial Mining Recorder, Ministry of Northern Development and Mines, 3rd Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

Work Type	Units of work Depending on the type of work, list the number of hours/days worked, metres of drilling, kilometres of grid line, number of samples, etc.	Cost Per Unit of work	Total Cost
DIAMOND DRILLING	4,290 feet	\$26.84/ft.	\$115,134
CORE LOGGING, DRILL LOG S, SECTIONS	50 days	\$250/day	\$12,500
GEOTECHNICIAN-CORE GRAB & SPLIT	40 days	\$150/day	\$6,000
ASSAYING	737 samples Au	\$12.00/sample	\$8,844
Associated Costs (e.g. supplies, mobilization and demobilization).			
Transportation Costs			
Food and Lodging Costs			
2.19503			
Total Value of Assessment Work			\$142,478

Calculations of Filing Discounts:

1. Work filed within two years of performance is claimed at 100% of the above Total Value of Assessment Work.
2. If work is filed after two years and up to five years after performance, it can only be claimed at 50% of the Total Value of Assessment Work. If this situation applies to your claims, use the calculation below:

TOTAL VALUE OF ASSESSMENT WORK x 0.50 = Total \$ value of worked claimed.

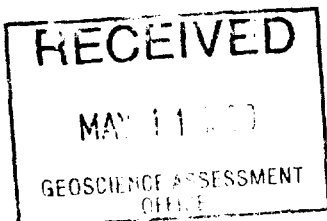
Note:

- Work older than 5 years is not eligible for credit.
- A recorded holder may be required to verify expenditures claimed in this statement of costs within 45 days of a request for verification and/or correction/clarification. If verification and/or correction/clarification is not made, the Minister may reject all or part of the assessment work submitted.

Certification verifying costs:

I, WAYNE BENHAM, do hereby certify, that the amounts shown are as accurate as may reasonably be determined and the costs were incurred while conducting assessment work on the lands indicated on the accompanying

Declaration of Work form as AGENT I am authorized to make this certification.
(recorded holder, agent, or state company position with signing authority)



Signature <i>W. Benham</i>	Date <i>May 10/99</i>
-------------------------------	--------------------------

Geoscience Assessment Office
933 Ramsey Lake Road
6th Floor
Sudbury, Ontario
P3E 6B5

Telephone: (888) 415-9846
Fax: (877) 670-1555

June 8, 1999

Wayne Benham
QUEENSTON MINING INC.
1116-111 RICHMOND STREET WEST
TORONTO, ONTARIO
M5H-2G4

Visit our website at:
www.gov.on.ca/MNDM/MINES/LANDS/mlsmnpge.htm

Dear Sir or Madam:

Submission Number: 2.19503

Status

Subject: Transaction Number(s): W9980.00335 Deemed Approval

We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.

If the status for a transaction is a 45 Day Notice, the summary will outline the reasons for the notice, and any steps you can take to remedy deficiencies. The 90-day deemed approval provision, subsection 6(7) of the Assessment Work Regulation, will no longer be in effect for assessment work which has received a 45 Day Notice. Allowable changes to your credit distribution can be made by contacting the Geoscience Assessment Office within this 45 Day period, otherwise assessment credit will be cut back and distributed as outlined in Section #6 of the Declaration of Assessment work form.

Please note any revisions must be submitted in DUPLICATE to the Geoscience Assessment Office, by the response date on the summary.

If you have any questions regarding this correspondence, please contact Bruce Gates by e-mail at bruce.gates@ndm.gov.on.ca or by telephone at (705) 670-5856.

Yours sincerely,



ORIGINAL SIGNED BY
Blair Kite
Supervisor, Geoscience Assessment Office
Mining Lands Section

Work Report Assessment Results

Submission Number: 2.19503

Date Correspondence Sent: June 08, 1999

Assessor: Bruce Gates

Transaction Number	First Claim Number	Township(s) / Area(s)	Status	Approval Date
W9980.00335	25309	GAUTHIER	Deemed Approval	June 08, 1999

Section:
16 Drilling PDRILL

Correspondence to:
Resident Geologist
Kirkland Lake, ON

Assessment Files Library
Sudbury, ON

Recorded Holder(s) and/or Agent(s):
Wayne Benham
QUEENSTON MINING INC.
TORONTO, ONTARIO

ARNOLD TOWNSHIP

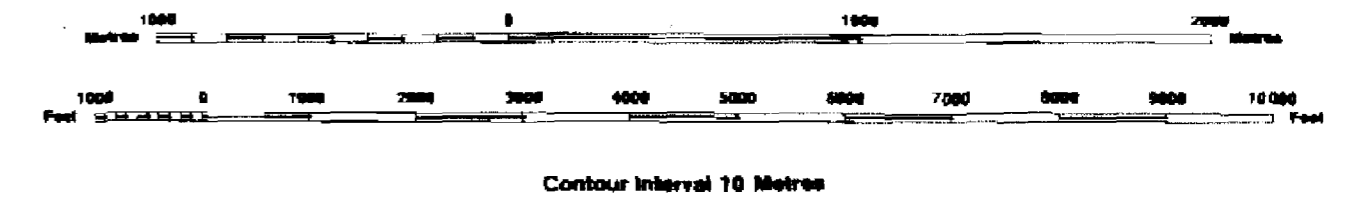
INDEX TO LAND DISPOSITION

PLAN
 G-3211
 TOWNSHIP

M.N.R. ADMINISTRATIVE DISTRICT
 KIRKLAND LAKE
 MINING DIVISION
 LARDER LAKE
 LAND TITLES/REGISTRY DIVISION
 TIMISKAMING

GAUTHIER

Scale 1:20 000



AREAS WITHDRAWN FROM DISPOSITION

- MRO - Mining Rights Only
- SRO - Surface Rights Only
- M-S - Mining and Surface Rights

SYMBOLS

- Boundary
- Township Meridian Baseline
- Flood allowance: surveyed
- shoreline
- Lot/Concession: surveyed
- unsurveyed
- Parcel: surveyed
- unsurveyed
- Right-of-way: road
- railway
- utility
- Reservation
- Cliff, Pit, Pile
- Contour
- Interpolated
- Approximate
- Depression
- Control point (horizontal)
- Flooded land
- Mine head frame
- Pipeline (above ground)
- Railway: single track
- double track
- abandoned
- Road, highway, county, township
- access
- trail, bush
- Shoreline (original)
- Transmission line
- Wooded area

- Ⓜ TOWNSHIP STAKING RESTRICTED S.S. 30(B) MINING ACT
- Ⓜ BARRICK POWER LINE (APPLICATION PENDING UNDER PUBLIC LANDS ACT)
- Ⓜ Section 35, The Mining Act, RSO 1990, Order W-1399 M.R.O. 9902/01 95150

DISPOSITION OF CROWN LANDS

- Patent
- Surface & Mining Rights
- Surface Rights Only
- Mining Rights Only
- Lease
- Surface & Mining Rights
- Surface Rights Only
- Mining Rights Only
- Licence of Occupation
- Order-in-Council
- Cancelled
- Reservation
- Sand & Gravel

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES, AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES, FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.

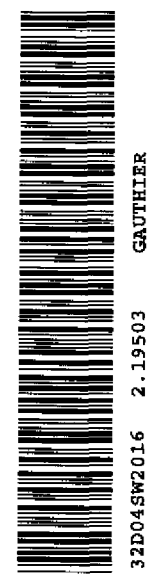
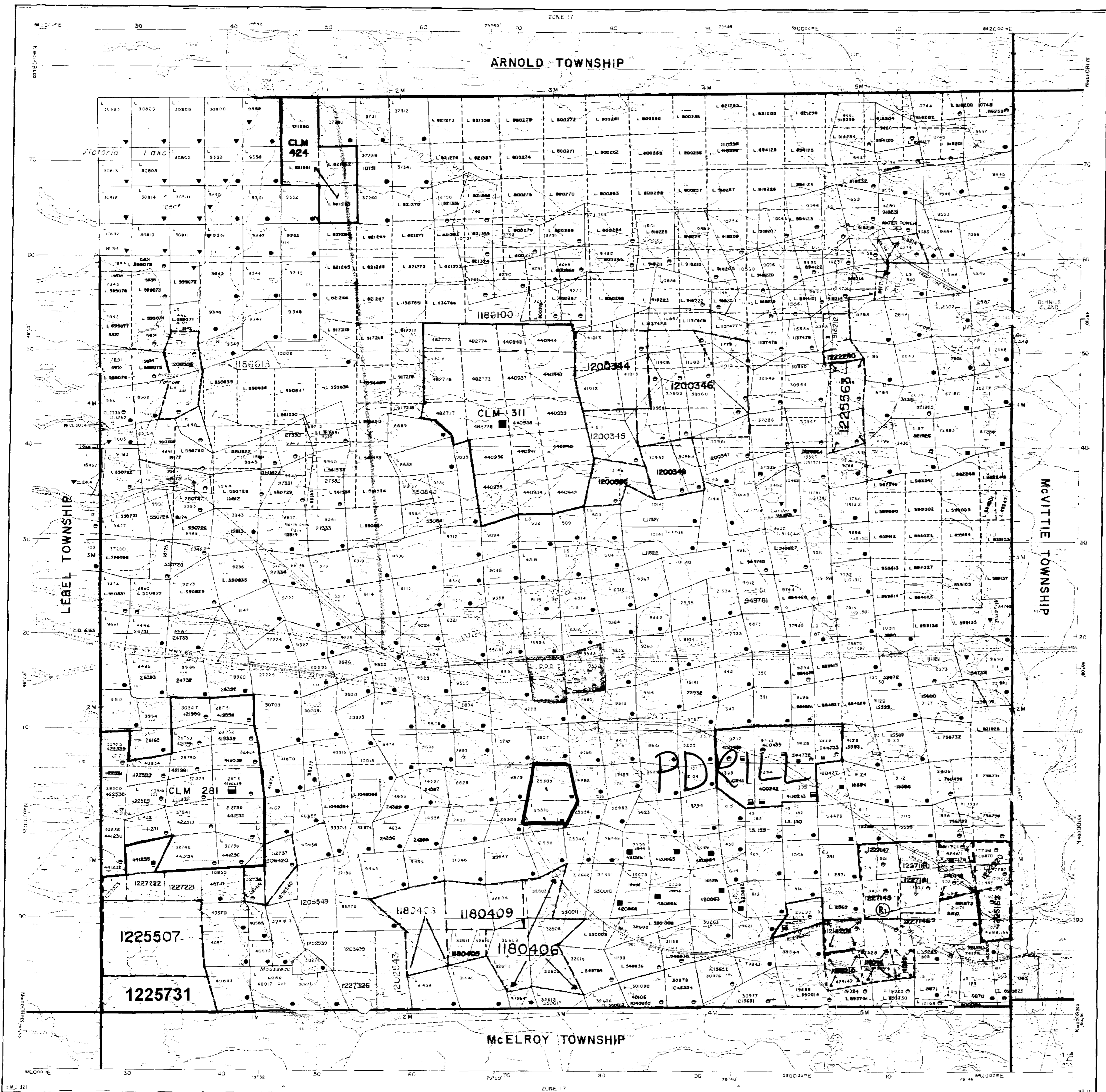
NOTICE OF FORESTRY ACTIVITY

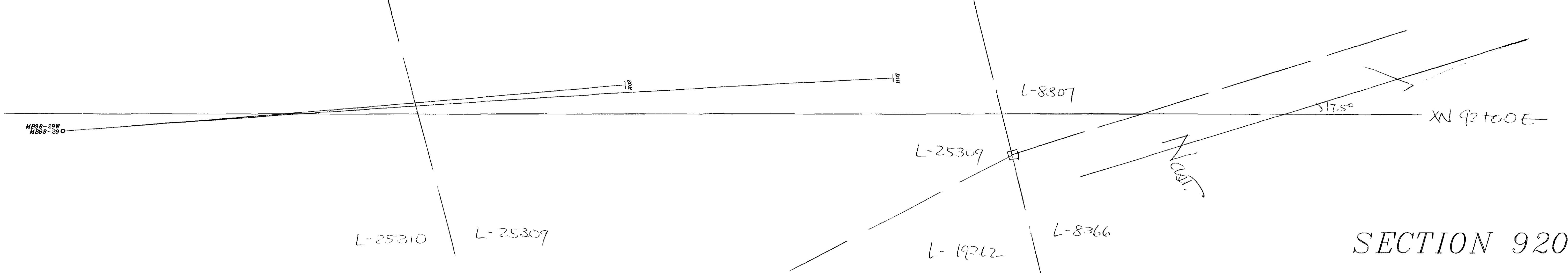
THIS TOWNSHIP / AREA FALLS WITHIN THE _____ TIMISKAMING MANAGEMENT UNIT AND MAY BE SUBJECT TO FORESTRY OPERATIONS. THE MIN. UNIT FORESTER FOR THIS AREA CAN BE CONTACTED AT:

P.O. BOX 129
 SWASTON, ONT.
 P0P 1T0
 705-642-2822

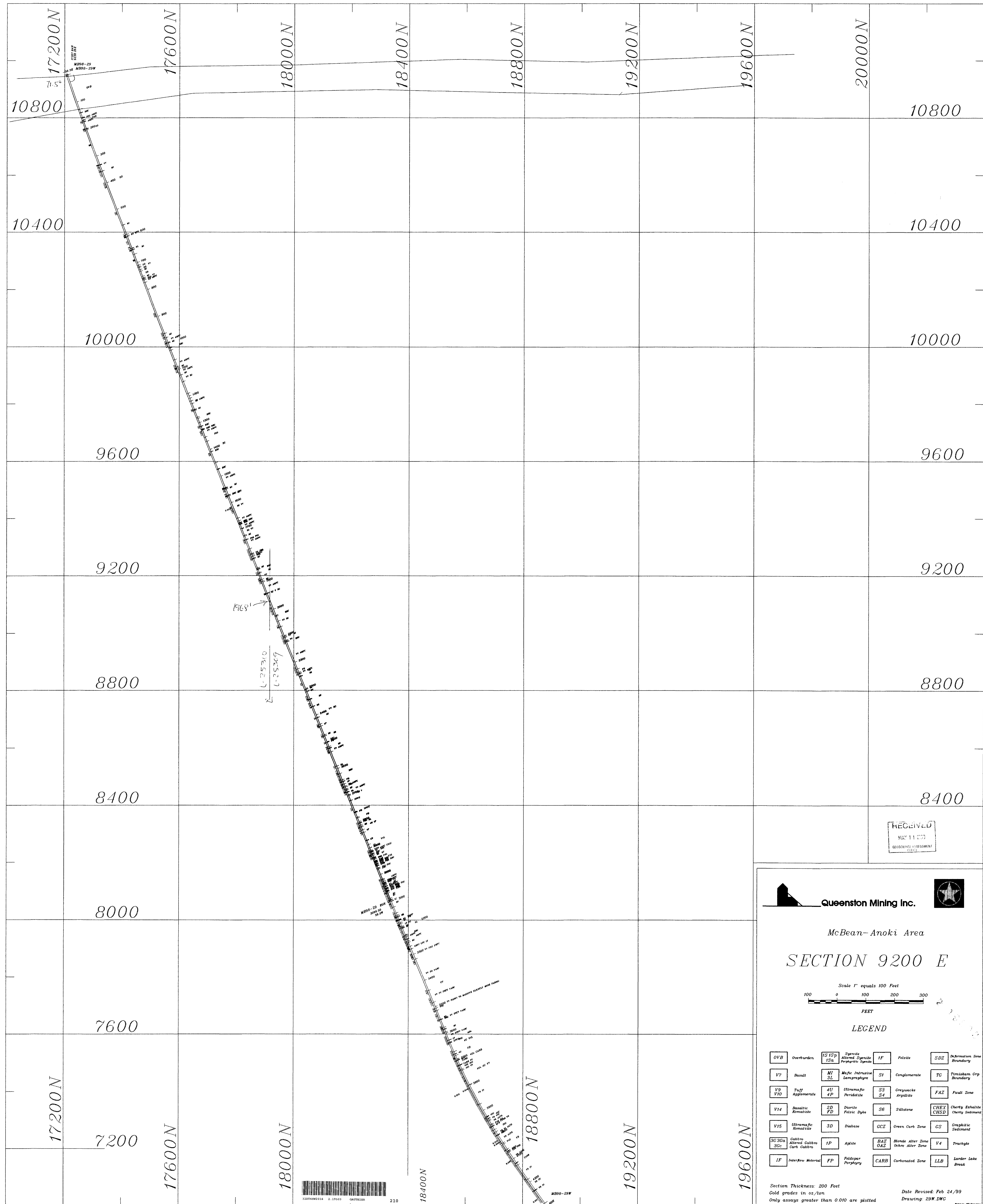
ARCHIVED JULY 28, 1995
 ARCHIVED AUGUST 28/97.

CIRCULATED JANUARY 25, 1995 ML





SECTION 9200 E



RECEIVED
MAY 11 2000
GEOLOGICAL ASSESSMENT
CIBC

Queenston Mining Inc.

McBean-Anoki Area

SECTION 9200 E

Scale 1" equals 100 Feet

LEGEND

OVB Overburden	IS ISp Spinite	IP Felsite	SDZ Deformation Zone Boundary
V7 Basalt	MI 3L Mafic Intrusive Lamprophyre	S1 Conglomerate	TC Trenchmark Crp Boundary
V9 Tuff	4U Ultramafic Ultramafic	S3 Siltstone	FAZ Fault Zone
V10 Agglomerate	4P Peridotite	S4 Argillite	CHES Cherty Schistose Cherty Sediment
V14 Basaltic Basaltic	2D Diorite Diorite	S6 Siltstone	CHES Cherty Schistose Cherty Sediment
V15 Ultramafic Ultramafic	3D Diabase	CCZ Green Carb Zone	GS Orogenic Sediment
3C 3Ca Gabbro Gabbro	IP Aplite	BAZ Basalt Alter Zone	V4 Trachyte
3C Carb Gabbro	PP Feldspar Porphyry	CARB Carbonated Zone	LLB Larder Lake Break

Section Thickness: 200 Feet
Gold grades in oz./ton
Only assays greater than 0.010 are plotted

Date Revised: Feb 24/99
Drawing: 29W.DWC

