QUEENSTON MINING INC

Drill Hole: MB96-01

DIAMOND DRILL HOLE RECORD

Property: MCBEAN Col loc from #1 post, L19262, 360'S, 900'W
Northing: 18791.90
Easting: 9669.00
Elevation: 11007.30

Collar Azimuth (Grid) 356.7
Collar Dip: -60.0
(0 Degrees Grid equals 017 degrees True)
Hole Length: 1648.0

Date Printed: 22 May, 1998

*** Dip Tests *** Depth	Azi.	Dip	*** Dip Tests *** Depth	Azi.	Dip
112		-60.0	1005	2.0	-55.0
300		-57.5	1208		-54.5
600		-56.0	1438		-55.0
900		-54.5	1500		-54.5

Date Started: Aug 13, 1996
Date Completed: Aug 20, 1996

Drilled by: BENOIT
Core Size: BQ
Material left in hole BX CASING
Core Location: Upper Canada Site 1
Logged by: M. McGill

From (ft)	To (ft)	Geology
		SUMMARY LOG
.0	112.0	OVERBURDEN
112.0	282.0	DIORITE
282.0	376.5	BASALT
376.5	817.0	GABBRO
817.0	820.0	ULTRAMAFIC KOMATIITE
820.0	1004.4	BASALT
1004.4	1004.5	START OF DEFORMATION ZONE
1004.5	1007.0	ALTERED SYENITE
1007.0	1011.0	ULTRAMAFIC KOMATIITE
1011.0	1017.5	ALTERED SYENITE
1017.5	1034.0	ULTRAMAFIC KOMATIITE
1034.0	1038.5	MAFIC SYENITE
1038.5	1041.5	ULTRAMAFIC KOMATIITE
1041.5	1043.0	MAFIC INTRUSIVE
1043.0	1048.0	ULTRAMAFIC KOMATIITE
1048.0	1052.3	ULTRAMAFIC KOMATIITE
1052.3	1053.5	MAFIC INTRUSIVE

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

From (ft)	To (ft)	Geology
1053.5	1054.5	ALTERED SYENITE
1054.5	1057.5	PORPHYRITIC SYENITE
1057.5	1059.5	ULTRAMAFIC KOMATIITE
1059.5	1068.5	ALTERED SYENITE
1068.5	1080.9	ULTRAMAFIC KOMATIITE
1080.9	1082.0	ULTRAMAFIC KOMATIITE
1082.0	1084.5	SYENITE
1084.5	1087.0	ULTRAMAFIC KOMATIITE
1087.0	1088.8	MAFIC SYENITE
1088.8	1096.0	SYENITE
1096.0	1109.5	BASALTIC KOMATIITE
1109.5	1112.0	ALTERED SYENITE
1112.0	1114.0	SYENITE
1114.0	1117.0	BASALTIC KOMATIITE
1117.0	1129.5	MAFIC SYENITE
1129.5	1135.0	ALTERED SYENITE
1135.0	1140.2	PORPHYRITIC SYENITE
1140.2	1159.5	ULTRAMAFIC KOMATIITE
1159.5	1167.0	ALTERED GABBRO
1167.0	1193.0	BASALTIC KOMATIITE
1193.0	1202.0	ALTERED GABBRO
1202.0	1208.0	ULTRAMAFIC KOMATIITE
1208.0	1366.0	BASALTIC KOMATIITE
1366.0	1382.0	SILTSTONE TUFF
1382.0	1406.0	ULTRAMAFIC KOMATIITE
1406.0	1406.1	TIMISKAMING GROUP

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

From (ft)	To (ft)	Geology
1406.1	1411.9	TRACHYTE
1411.9	1415.2	SILTSTONE
1415.2	1428.2	ULTRAMAFIC KOMATIITE
1428.2	1436.0	SILTSTONE
1436.0	1475.5	GREEN CARBONATE ZONE
1475.5	1648.0	LAPILLI TUFF

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

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
.0	112.0	OVERBURDEN 0 to 90 feet - CLAY, 90 to 112 feet- BOULDERS.								
112.0	282.0	DIORITE LITH- med grained, equigranular, pale grey colour with pink or red cast locally (weak patchy hem altr), speckled appearance (chlor in matrix). Contains scattered 1 to 2 in diam basaltic xenoliths; unit cut by porphyritic mafic dykes 2 to 8 inches wide (2 or 3) and scattered late qtz veins 1/2 to 2 inches thick typically.(Contain calcite and patchy chlor +/- py). ALTER-diorite is weakly magnetic throughout, and contains up to 1.5% finely diss subhedral to euhedral py 1-3 mm across. STRUC- Qtz veins cut core @ 40 to 70 DTCA Ex- @ 144.0 ft @ 60 DTCA, 2 inches wide.								
282.0	376.5	BASALT LITH- med to fine grained dk green flow with sugg. Of pillow selvages, few scattered amygs (1/4 inch diam, qtz filled); unit is cut by 2-4 inch thick porphyritic mafic dykes similar to those cutting the diorite above; hairline to 1/2 inch thick calcite and epidote veins crosscut the unit, few amphibole-rich patches. ALTER- strongly magnetic unit, pervasively carbonatized. STRUC- fairly massive, little fabric developed; 'foliated zone ' with strong schistosity developed against diorite contact for 3 ft- fabric @ 40 DTCA (top contact may be a shear) - very chloritic; carb-epidote veining @ 40-60 DTCA scattered throughout the unit Fault @ 312 ft; 2 and 4 inch chlor gouge seams; bottom contact @ 70 DTCA; also a shear surface @ 20 DTCA within the fault zone; shear @ 368 ft @ 15 DTCA, sliver of chlor gouge.								
376.5	817.0	GABBRO LITH- med grained dk green intrusive unit with short intervals of basalt-like material similar to basalt described above. Slightly coarser-grained amphib-rich sections are present as well as massive and schistose zones. Unit is cut by pink QFP dykelets,(variably oriented) and carb and qtz-carb veining. Gabbro comp decreasing in vol downhole, lower areas cut by leuco dior dykes. ALTER- mod to str magnetic throughout. Perv calcitic. Scattered diss py to 1% throughout. Few epid -filled fractures. Slightly elevated py content in more schistose and amphibole-rich zones. STRUC-massive and mod schistose domains. Examples of foliations: 40 DTCA @ 470 ft; 60 DTCA @ 497 ft; 60 DTCA @ 505 ft; 60 DTCA @ 601 ft; 55 DTCA @ 618 ft; Shears @ 592.5 ft @ 20 DTCA, @ 497 ft @ 60 DTCA Faults- ? rubble zone @ 618 ft; ? rubble zone @ 633 ft w/ tr gouge; broken core zone @ 781.5 ft.								
817.0	820.0	ULTRAMAFIC KOMATIITE LITH- dark green fine grained flow ? w/ blueish cast. Sharp contacts above and below, suggestion of flow texture (breccia?, lower contact may have chill margin. ALTR- carbonated and weakly talcose, 0.5% fine diss py, weakly magnetic. STRUC- weakly foliated, fabric barely developed (talc) @ 25 DTCA.								

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
820.0	1004.4	BASALT LITH- dark green fined grained flow w/ suggestion of flow breccia, few scattered 1/8 inch diam amygs scattered gabbroic dyke-like bodies or inclusions, few amphibole rich sections 6-8 inches thick cut by irregular calcite and qtz calcite stringers and veinlets (hairline mostly, few 1/4-1/2 in thick), few schistose zones as per basalts above in hole. ALTR- pervasively carbonated up to 943 ft, 0.5% diss py, mod to strongly magnetic, weak patchy hematitic altr becoming evident @ 905 ft becoming slowly more pervasive down hole until @ 996.0 ft a pale pink cast is visible. Calcite and quartz carb veining becoming pinky red around 960 ft also; spec hem in vugs and fractures @ 977 ft. Distinct altr front @ 948 ft, calcite is replaced by Fe carb (no more reaction to HCL) in matrix.(calcite still in late hairline stringers after 948 ft) rock becoming less hematitic towards contact @ 1005 ft (increasing chlor content). STRUC- fairly massive unit with few schistose zones ex 908 ft to 923 ft foliation @ 55-60 DTCA, fol @ 892 ft 40 DTCA; 953 ft @ 40 DTCA. Shears @ 844 30 DTCA; @ 876 ft 20 DTCA; 928 ft 45 DTCA; 943 ft 20 DTCA; 988.5 ft 50 DTCA; 998 ft 40 DTCA; 968 ft 50 DTCA spec hem; 981 ft 50 DTCA spec hem. Fault defines lower contact of unit @ 1004.5, 3 in gouge @ 70 DTCA(chlor / hem) above a 6 in Breccia zone catching quartz veining and altered wallrock fragments. A high strain zone 2 ft thick is developed immediately above the fault strongly sheared, good foliation, some brecciation of basalts.								
1004.4	1004.5	START OF DEFORMATION ZONE 1004.5 1648.0 Deformation Zone. Starting at the base of the basalt unit,(fault) and continueing downhole a significant increase in ductile deformation occurs. Some silicified units show elements of brittle deformation (cataclastic textures, breccias).								
1004.5	1007.0	ALTERED SYENITE LITH fine grained orange-red colour, massive, brecciated, cut by irregular qtz veins, 2% finely diss py in rock ALTR- hematized, silicified breccia zone found against fault @ 1004.5 (6 in thick). STRUC- fault w/ 1/16 in gouge @ 1006.3 @ 70 DTCA.								
1007.0	1011.0	ULTRAMAFIC KOMATIITE LITH-fine grained, banded, dark grey green unit with blueish hue. ALTR- strongly schistose with mod talc alteration; nonmagnetic; non calcitic; contains fragments of above syenite unit @ upper contact, contains 0.5% diss py. STRUC- variable orientations of foliation, ex 30 DTCA @ 1008 ft, 70 DTCA @ 1010 ft ; fault w/ 2 in gouge @ 1007 ft @ 80 DTCA Folded banding @ 1010 ft; fold axis almost parallel to core axis.								
1011.0	1017.5	ALTERED SYENITE LITH-fine grained, medium grey in colour w/ patchy and pervasive reddish alteration variably developed, cut by patches and veins of qtz w/ chlorite and ankerite inclusions. ALTR- 3% diss and fine crystaline py throughout wallrock, hematized locally, probably silicified; wkly magnetic, non calcitic.								

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

STRUC- foliation defined by hairline qtz infillings @ 60 DTCA.

1017.5 1034.0 ULTRAMAFIC KOMATIITE
LITH- dark blue grey banded unit; strongly foliated, qtz ankerite banding on 1/4 to 1/8 in scale throughout, non calcitic, non magnetic, weakly talcose.
ALTR- patchy qtz w/ chlorite + ankerite inclusions intrude unit at several spots, spotty py.
STRUC- foliation @ 50 - 60 DTCA (well developed strain shadows around qtz carb inclusions) Fault w/ 1 in crushed rock gouge @ 75 DTCA @ 1025 ft ; fault w/ 1/2 in gouge @ 30 DTCA @ 1025.2 ft ; fault w/ 1/4 in gouge @ 50 DTCA @ 1025.5 ft ; strong fault w/ 3 in gouge fault breccia @ 1034.0 ft @ 55 DTCA.

1034.0 1038.5 MAFIC SYENITE
LITH- medium grained grey unit with pink or pale red cast; chlorite developed in matrix.
ALTR- weakly magnetic; non calcitic; cut by fine qtz gash type veining,(both pale white and dark grey), few scattered cubes py(0.5%), -silicified?.
STRUC- foliation developed in matrix chlorite, typically 40-50 DTCA; brittle deformation in this unit is distinctly different from other syenites described above. Locally breccia textures developed-kinks breaks/bands and offsets in mineral foliation common, qtz infilling in these breaks. Ex @ 1033.5 breccia zone 1 in thick @ 60 DTCA.

1038.5 1041.5 ULTRAMAFIC KOMATIITE
LITH + ALTR- dark blue grey banded unit, strongly foliated, qtz ankerite banding, some distended and broken bands, tr spotty py, weak talcose altr.
STRUC- foliation typically @ 70 DTCA. Strong shear @ 1040 ft @ 40 DTCA, chlorite on surfaces. Augen structures, small broken and open ended folds on 1/8 in-1/2 in scale throughout unit, non magnetic.

1041.5 1043.0 MAFIC INTRUSIVE
LITH- medium grained, med grey colour with weak red cast, foliated, amphibole phenos?, small kom bas inclusions 1-2 in across in unit, sharp contacts, dioritic composition?.
ALTR- weak calcitic alteration, slightly magnetic, tr py (diss).
STRUC- foliation developing in matrix (chlorite-amphibole?) @ 40 DTCA.

1043.0 1048.0 ULTRAMAFIC KOMATIITE
LITH- highly deformed kom intruded by altered syenite which in turn appears cut by later mafic dykes. The whole assemblage is metasomatized so that contacts are not sharp. Strongly foliated @ 45 DTCA (typically) throughout. Recognizable kom bas lenses throughout.
ALTR- non calcitic, locally magnetic, entire zone is intensly altered, local silicification, tr py. Weakly talcose.
STRUC- well foliated, typically @ 45 DTCA.

1048.0 1052.3 ULTRAMAFIC KOMATIITE
LITH- dark grey green banded, blueish cast, cut by 1/2 in thick syenite? stringers.
ALTR- non calcitic, non magnetic, wispy hematite bands 1/8 in thick, tr py,

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

weakly talcose.
STRUC- highly deformed, qtz ankerite bands, foliation @ 30-40 DTCA, typically tiny folds (recumbent) 1/4 in scale in banding.

1052.3 1053.5 MAFIC INTRUSIVE
LITH- fine grained, steel grey in colour, foliated unit with sharp contacts, smeared out chlorite altr, amphibole phenos?.
ALTR- silicified, non magnetic, non calcitic, chlorite clots and fracture fillings. Tr diss py.
STRUC- foliation @ 40 DTCA, highly deformed unit, brittle deformation (brecciation and cracking in situ); very high strain area, 1 or 2 strong chlorite shears parallel to foliation.

1053.5 1054.5 ALTERED SYENITE
LITH- a highly deformed banded unit consisting of altered grey syenite and orange red syenite bounded by kom basalt; cut by patchy and irregular qtz veins 1-1/2 in thick @ low angles to core axis.
ALTR- non calcitic, spotty magnetism, partially silicified? tr diss py.
STRUC- in a very high strain region, irregular foliation.

1054.5 1057.5 PORPHYRITIC SYENITE
LITH- pale orange colour, medium to medium coarse grained, feldspar rich rock with small kom basalt inclusions, massive, well mineralized throughout, sharp contacts.
ALTR- silicified, non magnetic, non calcitic, 3-4% fine diss py with some coarse crystaline py, cut by pale white and dark grey qtz veining (barren).
STRUC- massive unit -white veining is irregular/patchy, dark qtz veins are later?; cut unit @ high angles to core axis, some chlorite infilling. Blebby py tr chalcopyrite along margins of dark qtz.

1057.5 1059.5 ULTRAMAFIC KOMATIITE
LITH- dark green grey colour, blueish cast, banded.
ALTR- non magnetic, non calcitic, tr py only, weakly talcose.
STRUC- highly deformed bands, folded on 1/4 in scale.

1059.5 1068.5 ALTERED SYENITE
LITH- dark grey foliated unit, cut by orange syenite and fresh syenite, and probably mafic dykes (similar to those found @ 1041 ft to 1043 ft); highly deformed unit, sheared contacts between intrusive bodies, kom basalt inclusions.
ALTR- variably magnetic, coarse diss py up to 3-4% locally, non calcitic, fine diss py in fresh syenite and orange syenite 3-6%.
STRUC- foliation typically @ 40 DTCA, fine qtz-ankerite stringers and blebby qtz crosscut foliation, some are parallel to folition; 2-3 generations minimum, some fine folding in veins.

1068.5 1080.9 ULTRAMAFIC KOMATIITE
LITH- dull green grey unit with blueish cast, banded and foliated.
ALTR- non calcitic, non magnetic, 0.5% subhedral spotty py, weakly talcose.
STRUCT- foliation @ 25 DTCA, high strain area, bands typically folded, boudinaged and broken off.

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
1080.9	1082.0	ULTRAMAFIC KOMATIITE LITH- dark green grey banded unit cut by mafic dykes. ALTR- dyke material is magnetic, non calcitic, weakly talcose.								
1082.0	1084.5	SYENITE LITH- pale pink grey colour with red cast, med grained, slightly porphritic, massive. ALTR- silicified, non-calcitic, moderately magnetic with diss and blebby py 2.5% (blebs to 1/4in across). STRUC- hairline fractures @ high and low angles to core axis, light qtz and dark qtz w/ chlorite+hematite infillings; tr sulfide.								
1084.5	1087.0	ULTRAMAFIC KOMATIITE LITH- dark green fine grained, foliated and banded unit cut by irregular orange syenite inclusions and a steel grey mafic dyke??. ALTR- non calcitic, non magnetic, tr py-except in orange syenite 1.5%, weakly talcose. STRUC- foliation @ 70 DTCA, crenulation cleavage appearing along with kink bands @ high angles to core axis.								
1087.0	1088.8	MAFIC SYENITE LITH- dark grey speckled unit, foliated, fine to med grained with 1/4 in thick inclusions? of reddish syenite?, kom basalt inclusions near end of unit 3 in long. ALTR- non calcitic, weakly magnetic, chlorite in matrix defines foliation, 0.5% spotty py. STRUC- foliation @ 50 DTCA typically.								
1088.8	1096.0	SYENITE LITH- red orange fine grained, massive unit cut by steel grey altered mafic dykes? typically @ 50 DTCA. ALTR- silicified weakly magnetic, non calcitic, 5-6% fine diss py throughout cut by hairline qtz+chlorite filled fractures. STRUC- fractures typically @ 40 DTCA.								
1096.0	1109.5	BASALTIC KOMATIITE LITH- dark green to green grey, banded speckled appearance, cut by fine grained mafic dykes(subtle inclusions of dioritic and or gabbroic material); also some red syenite material?. ALTR- non-calcitic, non-magnetic except for inclusions, diss py throughout or subhedral crystals to 1/8 in across; up to 1.5% content; irregular grey qtz stringers cutting weak fushite alteration @ 1098 ft ; mod talcose. STRUC- very high strain area, banding (qtz-ankerite) is folded(chevron and ptgmatically) folds are oriented @ high angles to core axis; some folds are broken and dismembered; numerous tight shears parallel to dominant foliation @ 50-60 DTCA.								
1109.5	1112.0	ALTERED SYENITE LITH- dark grey, med grained, foliated with a brown red cast. ALTR- silicified, non calcitic, spotty py to 1%, weakly magnetic.								

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

STRUC- strongly foliated unit, foliation running parallel to core axis.

1112.0 1114.0 SYENITE
LITH- reddish orange, massive, aphanitic unit cut by hairline white qtz fractures, well mineralized.
ALTR- non magnetic, non calcitic, silicified w/ 2% diss py and spotty subhedral crystals.
STRUC- qtz filled fractures @ 40-59 DTCA.

1114.0 1117.0 BASALTIC KOMATIITE
LITH- dark green fine grained banded unit, cut by orange syenite, steel grey mafic dykes and altered syenite.
ALTR- mod talcose, non calcitic, non magnetic becoming hematitic at bottom contact, tr diss py, specular hematite in brecciated area.
STRUC- foliations typically @ 40 DTCA, qtz hematite breccia near bottom contact.

1117.0 1129.5 MAFIC SYENITE
LITH- dark grey colour, med grained and foliated with red brown overprint, mafics in matrix define foliation, speckled appearence becoming slightly coarser grained towards bottom contact, contains 2 in diam chlorite and kom basalt inclusions, top 3.5 ft might be a mafic dyke of similar composition.
ALTR- weakly calcitic, hematized?/biotitic?, weakly magnetic, patchy silicification, 0.5% to 1% spotty and diss py.
STRUC- foliation typically @ 50 DTCA, defined by mafics (chlorite after amphibole?) in matrix; set of white qtz-carb veins 1/8 in thick cut unit @ 60 DTCA; brecciation at top contact.

1129.5 1135.0 ALTERED SYENITE
LITH- pale grey, strongly foliated and banded appearance, locally cut by qtz carb stringers.
ALTR- silicified? weakly magnetic, some irregular patchy qtz (barren) stringers.
STRUC- white qtz stringers @ 60 DTCA, foliation @ 40 DTCA but variable.

1135.0 1140.2 PORPHYRITIC SYENITE
LITH- pale orange colour, massive with white/cream feldspar phenos to 1/16 in across, cut by patchy and fine stockwork qtz; spotted appearance.
ALTR- silicified, non magnetic, weakly calcitic, with diss and fine crystalline py to 1/16 in across; up to 6% locally, also clusters of crystals; chlorite in qtz patches and stockworks, chlorite clots and patches in matrix.
STRUC- massive unit.

1140.2 1159.5 ULTRAMAFIC KOMATIITE
LITH- dark green, fine grained, foliated and banded unit, qtz ankerite banding; cut by deformed mafic dykes 8 in thick @ 1158 ft, dioritic composition?.
ALTR- mod talcose, non magnetic, weakly calcitic, tr diss py.
STRUC- foliation @ 70-80 DTCA; banding is tightly folded, often dismembered and boudinaged limbs, axial planes @ 40 DTCA @ 1141 ft; cm scale folding; O

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

RQD; very high strain area Fault - top contact (very sharp) 1140.2 ft w/ 3 in rubbly chlorite + gouge; @ 1148.5 4 in chlorite gouge @ 55 DTCA strong fault @ 1154.0 ft, 3 in gouge with qtz fragments @ 60 DTCA w/ chloritic rubble/gouge; possible Larder Lake Break?, 2 ft lost core @ 1148 ft and @ 1158 ft.

1159.5 1167.0 ALTERED GABBRO
LITH- dark grey brown colour, fine-med grained, well foliated with a banded and speckled appearance; distinctive red-brown cast, contains kom basalt inclusions, cut by wispy orange syenite material.
ALTR- weakly calcitic, magnetic (biotite?/hematite?) overprint; some intense chlorite alteration (black aphanitic); locally selective? silicificaton in orange syenite material; usually pyritic (diss) from 0.5-2%, few 1/8 in thick qtz carb veins at small angles to core axis.
STRUC- typical foliation @ 65 DTCA; fault @ 1162.8; 1 in gouge, fine fault breccia @ 70-80 DTCA.

1167.0 1193.0 BASALTIC KOMATIITE
LITH- dark grey green unit, banded, slighty foliated, cut by altered gabbro like bodies, and 4 to 11 in thick white carb qtz veins near top contact with wallrock fragments and trace py.
ALTR- calcitic, non magnetic, except for gabbro inclusions, tr py.
STRUC- foliation @ 35-40 DTCA near top of unit; 60-70 DTCA at bottom of unit, sheared area 1 in thick @ 1185 ft, @ 70 DTCA; the gabbro bodies look possibly intrusive and or like basalts in part (quench/chill textures).

1193.0 1202.0 ALTERED GABBRO
LITH- very dark grey to black in colour, med grained, slightly foliated, featureless unit; contains small kom basalt inclusions, few banded zones.(chlorite after amphibole? in matrix).
ALTR- calcitic, strongly magnetic, with variable diss py to 1%; distinctive red-brown (biotite) overprint.
STRUC- foliation typically @ 50 DTCA, sharp bottom contact @ 15 DTCA.

1202.0 1208.0 ULTRAMAFIC KOMATIITE
LITH- very dark green, fined grained, variably foliated unit.
ALTR- weakly talcose, non magnetic, calcite, tr py.
STRUC- sheared area @ 1204.5 @ 40 DTCA, lots of broken up core in this unit.

1208.0 1366.0 BASALTIC KOMATIITE
Komatiitic Basalt -dark green, fine grained, strongly foliated to locally massive, banded units. Generally non magnetic, highly deformed, containing carbonate and spotty diss py throughout, cut randomly by qtz carb veins and patches; these features are often highly deformed, boudinaged, folded, and broken up and are generally devoid of sulphide, contains numerous altered gabbro inclusions as described below.
Altered Gabbros - dark grey brown colour, med grained, often strongly foliated with a speckled or crudely banded appearance; variably calcitic, variably magnetic, often has a brown cast (hematite?/biotite?); variable diss py to 3%.

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

1208.0 1212.8 Altered Gabbro.
Massive, slightly foliated, foliation @ 55 DTCA, calcitic.

1212.8 1215.0 Basaltic Komatiite.
Scrappy qtz carb banding @ 50 DTCA, calcitic.

1215.0 1221.5 Altered Gabbro.
Both foliated and massive sections, 2% diss and spotty py, foliation @ 50 DTCA, calcitic.

1221.5 1222.0 Basaltic Komatiite.
Scrappy banding @ 60 DTCA, foliations 60 DTCA, non calcitic.

1222.0 1225.5 Altered Gabbro.
Patchy and banded siliceous alteration, magnetic, weakly calcitic, foliation @ 50 DTCA.

1225.5 1228.2 Basaltic Komatiite.
Foliated/banded, weakly calcitic, foliation @ 50 DTCA.

1228.2 1228.7 Altered Gabbro.

1228.7 1230.7 Basaltic Komatiite.

1230.7 1236.0 Altered Gabbro.
Patchy and dismembered bands of qtz carb material, patchy siliceous alteration.

1236.0 1237.8 Basaltic Komatiite.
Foliation @ 60 DTCA, broken folding in bands.

1237.8 1238.5 Altered Gabbro.
Well developed banding (1/16-1/8 in scale) (shearing?), silicified and mineralized with some coarse diss py, altered syenite inclusions? (brecciated); highly deformed qtz veining 1/2 in thick on both contacts, non calcitic, non magnetic.

1238.5 1243.5 Basaltic Komatiite.

1243.5 1253.0 Altered Gabbro.
Intercalated komatiitic and gabbro. Banded qtz carb material; contacts oriented sub-parallel to CA. Fine diss py in gabbro/qtz/carb banding, tr in kom material.

1253.0 1256.2 Basaltic Komatiite.

1256.2 1258.0 Altered Syenite.
Orange colour, silicified, magnetic (spec hematite?), non calcitic, hematized ground mass, cut by 1/4-1/2 in wide qtz veins @ 25 DTCA with crystalline ankerite?, blebby chalco, wispy and patchy spec hematite, possible moly?/galena?/alteiite?.

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

1258.0 1260.0 Altered Gabbro.

1260.0 1262.0 Basaltic Komatiite.
Magnetic.

1262.0 1267.0 Altered Gabbro.
Magnetic, non calcitic.

1267.0 1270.5 Basaltic Komatiite.
Spotty magnetism, non calcitic.

1270.5 1272.2 Altered Gabbro.
Magnetic, non calcitic.

1272.2 1273.0 Basaltic Komatiite.
Non magnetic, non calcitic.

1273.0 1279.0 Altered Gabbro.
Brownish cast well developed, magnetic, non calcitic.

1279.0 1280.3 Basaltic Komatiite.
Weakly magnetic, non calcitic.

1280.3 1280.8 Altered Gabbro.
Magnetic, non calcitic.

1280.8 1283.0 Basaltic Komatiite.
Non calcitic, weakly magnetic.

1283.0 1283.5 Altered Gabbro.
Magnetic, non calcitic.

1283.5 1286.0 Basaltic Komatiite.
Non magnetic, non calcitic.

1286.0 1288.8 Altered Gabbro.
Magnetic, non calcitic.

1288.8 1290.5 Basaltic Komatiite.
Non magnetic, weakly calcitic.

1290.5 1293.5 Altered Gabbro.
Magnetic, non calcitic, speckled appearance (carbonate porphyroblasts?), spec hematite in sinuous fractures (hairline thickness).

1293.5 1299.5 Basaltic Komatiite.
Non magnetic, weakly calcitic.

1299.5 1301.0 Altered Gabbro.
Magnetic, weakly calcitic.

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

1301.0 1302.0 Basaltic Komatiite.
Non magnetic, weakly calcitic.

1302.0 1311.5 Altered Gabbro.
Spotty magnetic areas, calcitic.

1311.5 1321.8 Basaltic Komatiite.
Non magnetic, calcitic, foliations @ 30-40 DTCA.

1321.8 1323.4 Altered Gabbro.
Magnetic, calcitic, pale brownish alteration, (patchy) with elevated sulphides similar to surrounding units.

1323.4 1326.8 Basaltic Komatiite.
Weakly magnetic, calcitic.

1326.8 1329.2 Mafic intrusive.
?dark grey with weak brownish cast, strongly magnetic, mafic phenos (acicular; chlorite alteration, amphiboles?), calcitic, massive, (blotchy texture) silicified?.

1329.2 1337.0 Basaltic Komatiite.
Weakly magnetic, locally calcitic.

1337.0 1342.0 Altered Gabbro.
Magnetic, calcitic.

1342.0 1343.5 Basaltic Komatiite.
Non magnetic, calcitic.

1343.5 1344.5 Altered Gabbro.
? Basalt- magnetic, non calcitic.

1344.5 1345.5 Basaltic Komatiite.
Non magnetic, calcitic.

1345.5 1352.3 Basaltic Komatiite.
? variably magnetic, speckled, very dark green colour, non calcitic, vague suggestion of flow like textures, (probably alteration).

1352.3 1355.0 Altered Gabbro.
Speckled with brown-red cast, magnetic, weakly calcitic, carb qtz vein @ 1353.8 ft @ 20-30 DTCA with grey blue metallic; this metallic occurs as 2-3 mm blebs and as thin selvages along vein margins), ? spec hematite, ?galena ?alteiite ?moly ?, 0.75% diss and spotty py.

1355.0 1360.0 Basaltic Komatiite.
Variably magnetic, weakly calcitic, faults - top contact @ 1355.0 ft @ 75 DTCA; 1 in crushed zone; and @ 1357.0 ft @ 80 DTCA w/ 1in gouge zone; @ 1358.0 ft @ 80 DTCA w/ 1.5in gouge zone.

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

1360.0 1361.1 Altered Syenite.
LITH- fine grained, massive, pale mauve coloured unit, essentially featureless; sharp contacts, appears similar to more deformed foliated units uphole called altered syenite.
ALTR- silicified, non calcitic, weakly magnetic.
STRUC- essentially massive, bottom contact @ 50 DTCA (sharp).
VEINING- hairline carb veins @ 65 DTCA; 1/8 in thick qtz carb veins with chlorite blebs; no sulphide in either set.
MINERALIZATION- tr py as subhedral crystals to 1/16 in across.

1361.1 1366.0 Basaltic Komatiite.
Weakly magnetic, weakly calcitic, contains a few 3-4 in gabbro sections, crushed zone @ 1365.0 ft @ 70 DTCA, sheared?.

1366.0 1382.0 SILTSTONE TUFF
LITH- medium-fine grained foliated unit, dark grey green in colour with a faint reddish cast down to 1372.5 ft; then becoming more greenish in colour, slightly gritty texture with suggestion of flattened lithic fragments throughout. Becoming fine grained and brownish and finally very dark green @ the bottom contact (2-3 in zone)(high chlorite content); suggestion of bedding.
ALTR- magnetic throughout, non calcitic; possible biotite? alteration towards bottom.
STRUC- well foliated throughout, defined by mafics (chlorite?) in matrix; typically @ 60 DTCA, suggestion of bedding;(parallel to foliation), ? beds several inches thick / compositional layering?.
VEINING- fine qtz carb veining cuts unit parallel to foliation randomly throughout, barren; later irregular crosscutting qtz folded to 1/4 in thick, with crystals and selvages along vein margins; barren, @ 20 DTCA.
MINERALIZATION- spotty subhedral py to 1/16 in across scattered throughout unit, some py following foliation - generally no more than 0.5% py overall.

1382.0 1406.0 ULTRAMAFIC KOMATIITE
LITH- dark green, medium grained banded and foliated unit; cut by 1/8 to 1/2 in thick qtz-carb, carb-qtz, and carb veining; generally sub-parallel to foliation; flesh to pale grey in colour, banding parallel foliation.
ALTR- mod to strongly talcose alteration throughout becoming light green (apple green) in colour @ 1401.0 ft (fushite alteration beginning to become apparent); weakly magnetic locally, weakly calcitic; flesh coloured bands are possibly silicified.
STRUC- foliation @ 60-70 DTCA; veining and banding typically boudinaged and tightly folded on 1/4 in scale in places, tight isoclinal folds with axial planes parallel to foliations.
VEINING- sub-parallel and discordant qtz-carb veins 1/8 to 1/2 in thick, often folded ptygmatically, generally barren of sulphides, crystalline ankerite as vein selvages is common.
MINERALIZATION- unit overall contains 0.5% max diss and spotty crystalline py, locally in flesh coloured bands 1-2% diss py is developed, some pyritic bands 1/4in with diss and crystalline mineralization - becoming as massive sulphide veining locally. Ex 1384.8 ft - tuff bands??.

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
1406.0	1406.1	TIMISKAMING GROUP Change of Formations- end of Larder Lake Group rocks; beginning of Timiskaming Group rocks. An assemblage of polymictic lapilli tuffs, highly altered kom basalts and ultramafic flows?, and trachytic micro-agglomerates; some locally derived silty arenites are intercalated in the sequence. These rocks are highly deformed and considered to be within the deformation zone.								
1406.1	1411.9	TRACHYTE LITH- pale orange coloured, fine grained agglomerate containing small bombs, fragments, and lapilli size shards set in a fine grained felsic matrix. ALTR- silicified, non magnetic, non calcitic, with weak pervasive hematite alteration throughout, wispy sericite occasionally visible. STRUC- foliation developed throughout- typically @ 45 DTCA; crenulated wispy veinlets (sheared); fine mafics in matrix define foliation (chlorite). VEINING- wispy and irregular qtz carb, carb qtz veinlets to 1/16 in thick cut unit @ high and low angles to CA. Generally deformed, contain wispy sericite, occasionally fine diss py; more often crystalline ankerite. MINERALIZATION- unit contains subhedral py (deformed crystals) to 1/8 in across (spotty) and fine grained diss and fracture filling py, 0.75-1% py max.								
1411.9	1415.2	SILTSTONE LITH- pale brown to pale green grey in colour, fine grained, gritty, foliated unit; uniform grain size, homogeneous and featureless, some banding (tectonic?/alteration?) at a 1/8 to 1/4 in scale. ALTR- magnetic, non calcitic, weak hematitic alteration (patchy), weakly silicified near lower contact, tiny magnetite grains? developed in matrix. STRUC- foliation @ 60 DTCA; sharp upper and lower contacts parallel to foliation (mod to high strain in unit). VEINING- wispy boundinaged, dismembered, and broken qtz carb veins sub-parallel to foliation, barren. MINERALIZATION- fine diss py throughout, 0.5%.								
1415.2	1428.2	ULTRAMAFIC KOMATIITE LITH- pale green grey banded unit, fine to med grained, foliated, crenulated; blotchy appearance, cut by boudinaged and deformed carb and qtz carb blebs and veining. ALTR- weakly talcose, non magnetic, weakly calcitic, (silicified in part?). STRUC- foliation @ 70 DTCA typically, folded carb veining shows extreme thickening in hinge areas; axial planes are sub-parallel to foliations. VEINING- highly deformed veins, folded, boundinaged, generally devoid of sulphides, 1/16-1/2 in thick. Some veins are sub-parallel to foliation, some at small angles to CA. MINERALIZATION- trace diss py except for trachyte inclusions where it may reach 2%.								
1428.2	1436.0	SILTSTONE LITH- pale green grey to orange brown, fine grained, gritty, foliated with								

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

subtle banding; part of this unit (1432-1434) may be similar to trachytic agglomerate (1406-1411); unit becomes finer grained and more red in colour toward bottom contact.
ALTR- weakly magnetic, non calcitic, weakly sericitic (wispy) alteration in matrix, fine diss magnetite? in groundmass; trachytic portion is silicified.
STRUC- weakly foliated, mafics in matrix? (chlorite?) typically @ 40-50 DTCA, veining is folded and boudinaged.
VEINING- dark qtz; crenulated (sheared parallel to foliation) veining to 1/8 in (barren); pale translucent qtz blebs and irregular veins sub-parallel to foliation with crystalline ankerite along margins, generally barren, few contain diss py.

1436.0 1475.5 GREEN CARBONATE ZONE
LITH- pale apple green, fine grained, blotchy and or mottled unit with pervasive fuchsite alteration throughout, wispy hair net fractures cut unit at all angles to CA, locally foliated, locally almost massive, recrystallized, highly deformed unit,.
Probably a very highly altered u/mafic flow?.
ALTR- weakly calcitic locally, non magnetic, strongly carbonated (ankerite), with chlorite in fractures, fuchsite as matrix and fracture-shear filling material, some wispy sericite in foliated areas.
STRUC- foliation typically 50 DTCA.
VEINING- irregular qtz and qtz carb veining throughout unit; some gash type veining perpendicular to core axis; some @ 30-40 DTCA, generally deformed, boudinaged and barren of sulphides.
MINERALIZATION- tr diss py, except for gritty sedimentary unit from 1443.5-1448.5, where 2-3.5% diss py is common.

1475.5 1648.0 LAPILLI TUFF
LITH- dark grey green to reddish brown in colour, fine to med grained accumulations of lapilli-sized lithic and volcanic fragments fully supported in a silt sized felsic/chlorite matrix; variable amounts of lapilli sized fragments across unit. Fragments are largest at the top of the unit; locally banded where shearing is most intense, generally foliated, fragments typically stretched, kinked and or boudinaged. Intercalated with tuff are several narrow kom basalt bands and 1 altered syenite band. Fragments are of komatiitic, mafic, and felsic composition.
ALTR- spotty weak to mod magnetism, weakly calcitic, pervasive hematite alteration overprints unit from 1519.5 to 1536.5, scattered fine black specs in matrix (magnetite?), occasionally wispy sericite alteration in matrix parallel to foliation.
STRUC- unit is foliated throughout-typically at 45-60 DTCA; (locally @ 30DTCA), folded, boudinaged and occasionally crenulated fragments; foliations show first signs of crenulation; locally S2 cuts core axis @ high angles (70-80 DTCA), veining often sub parallel to S1 faulting/broken core from 1578 to 1618, faults @ 1580; 1/2 in gouge; orientation unknown, 2 faults @ 1612 within rubble zone; 2 gouge zones 4 in thick with coarse gouge and fault breccia material, orientation unknown.
VEINING- 1/8 to 1 in thick qtz, carb, qtz-carb veins cut unit @ 40-60 DTCA; generally barren of sulphides, more veining in kom basalt units 1/2 to 2 in thick bull qtz, both @ high angles to core axis, as well as sub parallel to

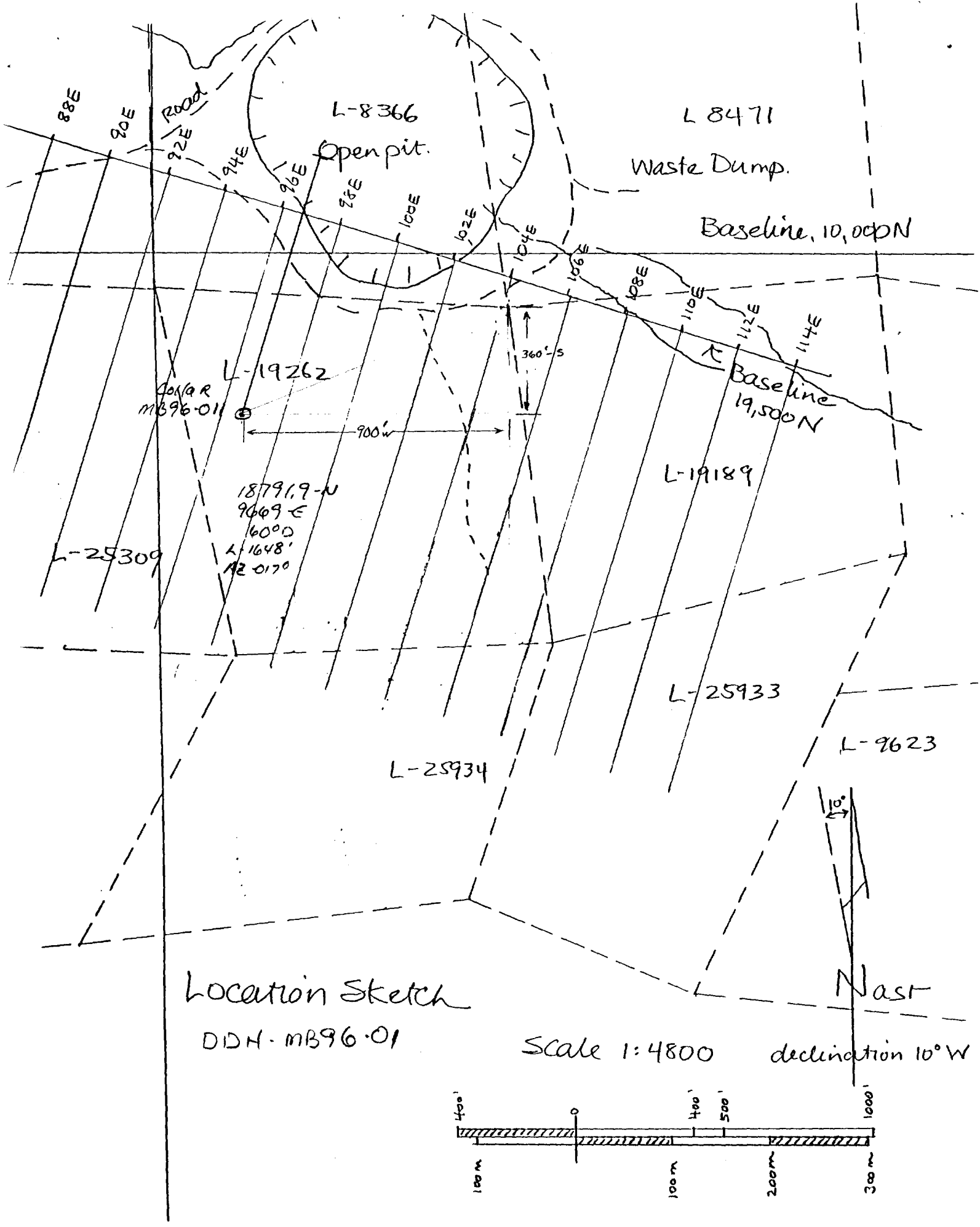
From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T

CA.
MINERALIZATION- diss and spotty subhedral crystalline py to 1/16 in across distributed throughout the unit, generally 0.5-1% with local accumulations up to 3%, some pyrite occupies fractures parallel to foliation, locally specular hematite in fol or fractures parallel to foliation.

1548.5 1553.0 Ultramafic Komatiite.
Dark green banded unit with thick qtz veining containing several inclusions; 1 of wallrock and 1 felsic? flesh coloured 1.5in long with diss sulphides.

1615.5 1627.5 Ultramafic Komatiite.
Dark green banded/veined section, blotchy and irregular qtz and carbonate lenses and bands.

End of Hole- 1648.0 ft.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L 8471
Waste Dump.
Baseline, 10,000N
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90E
Road
92E
94E
96E
98E
100E
102E
104E
106E
108E
110E
112E
114E
360'-S
L-19262
DDH
MB96-01
900'W
Baseline
19,500N
L-19189
L-25309
L-25933
L-25934
L-9623
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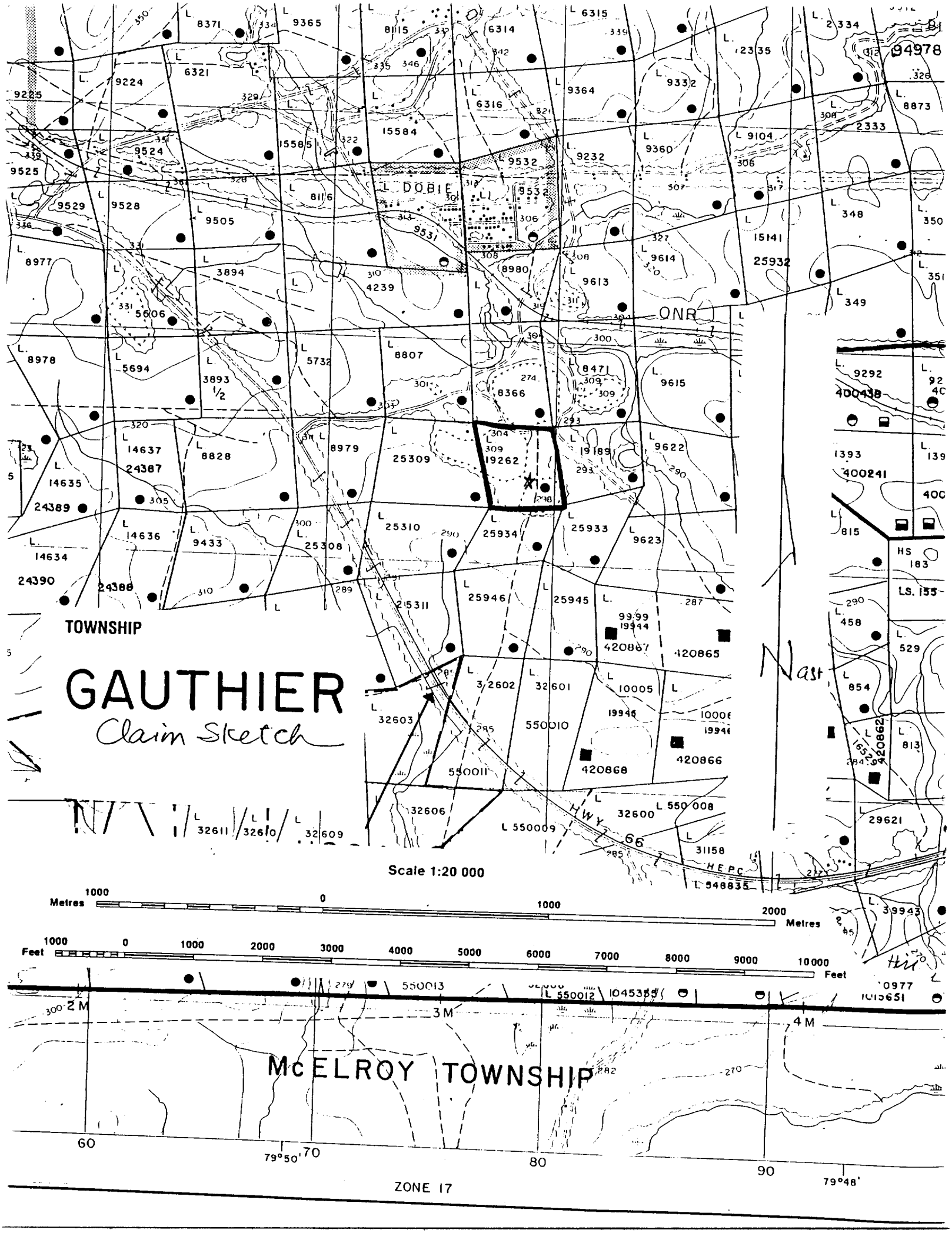
TOWNSHIP
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Claim Sketch
DOBIE
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HWY 66
HEPC
Nast
Scale 1:20 000
1000 Metres 0 1000 2000 Metres
1000 Feet 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 Feet
2 M
3 M
4 M
McELROY TOWNSHIP
60
79°50'
70
80
90
79°48'
ZONE 17

QUEENSTON MINING INC

Drill Hole: MB96-02

DIAMOND DRILL HOLE RECORD

Property: MCBEAN Claim #L 19262 290'W, 640'S of #1 post
Northing: 18729.40
Easting: 10321.90
Elevation: 10973.60

Collar Azimuth (Grid) 2.2
Collar Dip: -71.0
(0 Degrees Grid equals 017 degrees True)
Hole Length: 2148.0

Date Printed: 22 May, 1998

*** Dip Tests ***			*** Dip Tests ***		
Depth	Azi.	Dip	Depth	Azi.	Dip
60		-70.0	1003	8.0	-68.0
300		-69.0	1200		-68.0
600		-68.0	1500		-68.0
900		-67.0	1800		-65.0

Date Started: Aug 20, 1996
Date Completed: Sep 03, 1996

Drilled by: BENOIT
Core Size: BQ
Material left in hole BX CASING
Core Location: Upper Canada Site 1
Logged by: M. McGill & D Alexander

DR Alexander

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

SUMMARY LOG

.0	60.0	OVERBURDEN
60.0	67.4	DIORITE
67.4	167.0	DIORITE
167.0	224.8	GABBRO
224.8	252.0	DIORITE
252.0	270.0	MAFIC SYENITE
290.0	458.0	GABBRO
458.0	483.5	FELDSPAR PORPHYRY
483.5	963.0	GABBRO
963.0	1008.0	BASALT GABBRO
1008.0	1027.0	GABBRO
1027.0	1481.5	BASALT GABBRO
1481.5	1481.6	START OF DEFORMATION ZONE
1481.6	1534.5	BASALT
1534.5	1540.5	BASALTIC KOMATIITE
1540.5	1544.6	APLITE
1544.6	1547.0	ALTERED GABBRO

From (ft)	To (ft)	Geology
1547.0	1549.5	ALTERED SYENITE
1549.5	1553.5	FELSITE
1553.5	1555.0	PORPHYRITIC SYENITE
1555.0	1558.5	FELSITE
1558.5	1560.5	PORPHYRITIC SYENITE
1560.5	1588.5	ULTRAMAFIC KOMATIITE
1588.5	1620.0	ALTERED GABBRO
1620.0	1627.0	ALTERED SYENITE
1627.0	1647.0	ULTRAMAFIC KOMATIITE
1647.0	1674.1	ALTERED SYENITE
1674.1	1696.0	ULTRAMAFIC KOMATIITE
1696.0	1706.0	ALTERED GABBRO
1706.5	1708.5	ULTRAMAFIC KOMATIITE
1708.5	1735.5	ALTERED GABBRO
1735.5	1743.0	ULTRAMAFIC KOMATIITE
1743.0	1762.5	ALTERED GABBRO
1762.5	1786.0	FELSITE
1786.0	1790.0	ALTERED GABBRO
1790.0	1793.0	FELSITE
1793.0	1794.0	ALTERED GABBRO
1794.0	1795.2	FELSITE
1795.2	1796.5	ALTERED GABBRO
1796.5	1803.1	FELSITE
1803.1	1804.5	ALTERED GABBRO
1804.5	1818.0	FELSITE
1818.0	1821.8	ALTERED GABBRO

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

From (ft)	To (ft)	Geology
1821.8	1826.0	FELSITE
1826.0	1856.0	ULTRAMAFIC KOMATIITE
1856.0	1856.1	TIMISKAMING GROUP
1856.1	1940.0	GREEN CARBONATE ZONE
1940.0	1959.0	ULTRAMAFIC KOMATIITE
1959.0	2010.5	GREEN CARBONATE ZONE
2010.5	2025.3	LAPILLI TUFF
2025.3	2036.0	GREEN CARBONATE ZONE
2036.0	2044.8	LAPILLI TUFF
2044.3	2046.8	GREEN CARBONATE ZONE
2046.8	2070.8	LAPILLI TUFF
2070.8	2087.2	GREEN CARBONATE ZONE
2087.2	2099.0	LAPILLI TUFF
2099.0	2148.0	LAPILLI TUFF

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

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

.0 60.0 OVERBURDEN
0-35 clay, 35-60 boulders and gravel.

60.0 67.4 DIORITE
LITH- a med grained rock as the ensuing unit cut by some narrow dykes/dykelets of syenite and mafic syenite here. There is some concern that it is a surface phenomenon, but a few sections have ground margins. The diorite varies from a dull grey to a reddish, from a pervasive fracturing and altering with hematite + or - potassium from the syenite units. The diorite is weakly to moderately magnetic. Abundant feldspar phenocrysts to 3mm in size with minor qtz, some of which appears to be after amphibole. The major syenite sections, 60-62.2 lower contact diffuses @ 48 degrees; and, 66.8-67.4 with somewhat diffused contacts @ 48/70 DTCA; are dark green and chloritic, non magnetic units with abundant grey to reddish stained feldspars. The two syenite sections extend from 62.2 to 63.3 at 48/ 74 DTCA the contacts diffuse; and 64.5 65.4 upper contact with veining at 77 DTCA, lower contact diffuses at 70 DTCA. The syenites are of the orange variety, fine grained with an almost coalesced sense of the orange to brick red feldspars. The syenite is weakly to moderately magnetic.
ALTR- all of the rocks are stained reddish, apparently more from hematite alteration/fracturing then from genetic potassium. The rocks are locally calcitic in the presence of accessory fine fracturing, otherwise the rocks are not pervasively calcitic. All of the rocks are hard and mod siliceous.
MINERALISATION-consists of hematite + - magnetite along fractures as well as minor amounts of fine py, most noteworthy in the orange syenite sections.
VEINING- is largely characterised by fine calcitic to open vuggy fractures @ variable angles to the core axis often with chloritic slips and hematitic slicks.
COMMENTS- mafic syenite 60.0-62.2 @ 48 DTCA and 66.8-67.4 @ 48 DTCA.

67.4 167.0 DIORITE
LITH- a med grained unit that is quite variable in colour over its length as: brick red at its upper contact to 72.1, followed by material with a brownish cast to 77.0. Grey-green to greyer diorite to 103 where the rock is pinkish to brownish again below 148.0 and is strongly stained pink to brick colour below 153.0. The lower contact zone from 166.0 to 167.0 is reddish grey to brick coloured with included material. The diorite is essentially composed of tubular to lath shaped feldspar phenos up to 3mm in size with minor qtz phenos and chlorite blebs in a chlorite matrix. Xenoliths to 3cm in size are scattered throughout the unit (apparent gabbro), plus there are wider mafic dykes and included material particularly in the lower contact zone. The unit varies form weakly to moderately magnetic and while there is no direct association with colour the pink sections appear to be most weakly magnetic. Contacts @ 70/25 DTCA both with strong hematite staining.
ALTR- the diorite is mod altered, hematite is most evident due to variable staining probably related to fracturing. Calcite fracturing also produces local zones with associated pervasive calcite reactions. The main alteration minerals in the matrix are calcite and epidote - epidote most often tied to the lath shaped feldspars and along some fractures.
STRUC- most of the structure that is present consists of chloritic slips and fractures + - hematite, magnetite, epidote, and calcite, usually at shallow

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

angles to the core axis.
MINERALISATION- is minor in amount aside from hematite and magnetite, traces of py are often localised along open fractures and or alteration healed zones.
VEINING- is typified by fine calcitic to open fractures + - hematite staining, chlorite and epidote. There is one irregularly veined section in the system from 152.6 - 155.6 (outside contacts 28 DTCA) which consists of milky to oily qtz amongst diorite followed by an orange red to burgundy coloured mafic syenite to altered syenite at a similar orientation, 28/30 DTCA.

COMMENTS- are mainly directed at included material within the diorite.

78.7-79.7 Mafic dyke @ 50/55 DTCA; dark grey green to green dyke with chlorite and epidote - altered contacts. Dyke is magnetic with 1-3mm blebs of chlorite after hornblende?, contacts are sharp. Dyke is unveined, unmineralised.

88.6-88.9 Peridotite, contacts ground but steep to core axis. Rock is very dark green to black, with a crude cumulate texture, strongly magnetic, minor veining unmineralised.

89.5-90.5 Gabbro inclusion, medium grained, contacts irregular-upper steep, lower shallow. Gabbro is magnetic as medium grained parts of ensuing unit.

152.6-155.6 Qtz veining as described above.

155.6-156.6 Mafic syenite, accessory pyrite to approx 5%. Rock is moderately magnetic.

166.0-166.3 and 166.6-166.9 two irregular inclusions of the adjacent gabbro unit.
Lower contact of diorite is sharp @ 28 DTCA with irregular dykelets over the next few feet.

167.0 224.8 GABBRO
LITH- a sequence of med to coarse grained gabbroic rocks cut by scattered dykes/dykelets of diorite, feldspar porphyry and mafic syenite. The gabbro consists of essentially two phases, a dark green almost felted to weakly blocky phase with visible blebs of chlorite + - hornblende in a dark green matrix, plus a mottled, rather cumulate-textured phase with dark irregular to block blebs of chlorite + - hornblende in a white to cream coloured feldspathic matrix. The rocks are mod to strongly magnetic. Diorite rocks are similar to those described above while the feldspar porphyry units exhibit much more noteworthy tabular to subrounded feldspar phenocrysts to 3mm in size in a dull greyish to grey green matrix. Both the diorites and the feldspar porphyries are mod magnetic and carry clots/inclusions/xenoliths of mafic cum gabbroic material up to 2cm in size. Mafic syenite is similar to unit found in hole one. These units are typically dark greyish to greyish brown and grey red in colour from a strongly feldspathic groundmass where individual phenocrysts are difficult

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

to see. Chlorite is present in the matrix and in lath shaped pseudomorphs throughout the rock. The mafic syenites are magnetic and tend to be relatively hard.
ALTR- the rocks are variably altered with calcite and chlorite + - hematite staining as in the previous units. This alteration is largely related to fine fracturing. Epidote alteration is also common but essentially within the gabbroic rocks. Feldspathic units are usually hard and maybe weakly silicified.
MINERALISATION- the rocks are very weakly to unmineralised with sulphides. Hematite is a common constituent of fractures with calcite and chlorite + - epidote. The core is cut by white to pinkish and reddish stained calcite fractures at variable angles to the core axis. Veins range from open and vuggy to fine veinlets ranging from 1-3mm in width (qtz veining is rare).
COMMENTS- most comments are directed at outlining variations within the system.

167.4-168.8 Upper contact zone with irregular narrow dykelets of reddish stained diorite. Upper at 26 DTCA.

170.1-179.0 Feldspar porphyries, reddish to grey with fine calcitic and hematitic fractures. Contacts @ 18/50 DTCA and irregular to stepped in appearance. A large inclusion of gabbro within this unit from 173.0-173.6 just cutting the core axis. The lower contact is strongly reddish stained over 6 in.

182.1-183.2 Feldspar porphyry, grey hard. Contacts @ 43/82 DTCA lower contact irregular.

205.6-207.1 Feldspar porphyry, dull grey to slightly reddish, weakly fractured trace epidote alteration, epidote developed at contacts. Contacts at 52 DTCA.

218.9-224.1 Contact zone with several narrow dykelets of diorite up to 8 in in width. Contacts tend to be irregular.

221.9-222.2 Mafic syenite a narrow dull grey red dyke within the lower contact zone at 53/67 DTCA.

224.1-224.2 Mafic syenite as above at 60/38 DTCA. This unit marks the contact but does not appear to be an alteration phenomenon.

224.8 252.0 DIORITE
LITH- dark grey, med grained, with a pale pink mauve cast, contains small fragments of chlorite material (Basalt?) up to 2 in across. Feldspar laths set in a chlorite matrix + - magnetite.
ALTR- weak hematite alteration in matrix and along fine hairline fractures. Calcite, magnetite below 248 ft.
STRUC- fairly massive, breakage occurs along pre-existing hairline fractures, some chlorite in these fractures, shear @ 280 ft @ 25 DTCA.
VEINING- minor hairline carb and qtz filled veinlets cut core at @ 55 DTCA and 70-80 DTCA; some veins are slightly vuggy with minor crystalline py in

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

veinlets (to 0.5% locally), few 1/2 in qtz veins with coarse spotty py.
MINERALISATION- scattered diss and subhedral py to 1/16 in across, throughout unit and along some veins/fractures and in vuggy areas.

252.0 270.0 MAFIC SYENITE
LITH- dark purple grey colour, fine grained, passive unit, containing a few basaltic xenoliths up to 1 in across; slightly diffused upper and lower contacts, upper contact @ 45 DTCA, tabular mafics in matrix, weakly magnetic, calcitic, tr diss py.

290.0 458.0 GABBRO
LITH- dark green grey unit, fine grained and felty in texture from 290 to 358 ft, and then becoming med to med-coarse grained and more massive. Cut by numerous dykes of syenite, mafic syenite, porphritic syenite. Some fine grained basalt like sections (uniform and featureless), contains scattered basalt xenoliths.
ALTR- calcitic, moderately to strongly magnetic, patchy and pervasive hematite alteration accessory with some fractures, also some fracture filling epidote.
STRUC- fairly massive unit with little fabric. Breaks (joints) normally associated with veining; hematite often plates shear surfaces. Shears @ 351 ft @ 45 DTCA, @ 379.5 @ 25 DTCA (chlorite). Fault @ 349.2 @ 60 DTCA 1/4 in chlorite gouge.
VEINING- few carb + - qtz veins 1/4 in to 1 in thick cut unit @ high angles to core axis. Often with hematite (spec hem) ex 356 ft + - tr py, and vuggy.
MINERALISATION- scattered diss py bleby and accicular specularite growths in some vuggy veins, specular chalcopyrite in vuggy and massive carb + - qtz veining ex 356 ft. Some diss and fine crystalline py in fractures. More py common in dykes and cross cutting lithologies than in gabbro host..

COMMENTS:- weathered out (vuggy) qtz carb veins w/ blebby chalcopyrite and crystalline spec hematite @ 355.8 and 356.1; typically 1-2 in thick @ 50-70 DTCA, 400.0 to 408.0; wispy hematite filled fractures cut core @ small angles to core axis; Brecciated top contact of unit with 4 ft quench texture zone, pseudo shards(basalt-like frothy textures).

297.5 299.0 Diorite.
Contains strong hematite alteration, sharp upper contact @ 45 DTCA; shear @ 40 DTCA @ 298.5 (hematitic).

305.5 307.0 Diorite.
Reddish alteration along contacts, brecciated sharp irregular contacts-(dark grey green with reddish hue, med grained).

307.0 308.0 Basalt.
Aphenitic, dark green carbonated unit, massive and featureless (a mafic dyke?).

308.5 309.0 Syenite.
Bright red colour, fine grained, micro phenocrysts of feldspar. Strong hematitic alteration, alteration front extends 6 in uphole into gabbro, tr

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

sulphide content, strongly magnetic. Silicified?.

315.5 316.5 Syenite.
Pale red orange syenite, med grained with irregular upper contact. Lower contact sharp @ 40 DTCA, cut by 3/4 in qtz veins @ small angles to core axis. Slightly vuggy with qtz and spec hematite crystals and some coarse spotty py to 1% in and around 1/4 in wide vugs, silicified.

319.0 323.0 Syenite.
As above, broken up core/vuggy areas with scattered py and spec hematite in vugs over 4 ft area, irregular qtz vein @ 15-20 DTCA 2 in thick (320-321) with tr py + bleby chalcopyrite. Also vuggy broken up core 325-326 in gabbro scattered crystalline py, spec hematite; some sericite or sheared vein contacts. Lineations (slicks) @ 40 DTCA typically.

341.0 342.0 Mafic intrusive.
Fine grained dark green unit, sharp contacts, strongly magnetic, calcitic, tr sulphides.

342.0 349.0 Basalt.
Fine grained (sheared?) dark green chlorite unit, weakly to non magnetic, contains fragments of following unit, tr sulphides.

344.0 345.0 Altered Syenite.
Orange red in colour, aphanitic, brecciated, includes basalt inclusions, tr sulphides, cut by 1 in carb veins (barren), non magnetic, silicified.

345.0 348.0 Porphyritic Syenite.
Pale orange colour, calcitic, pale white feldspar phenos in slightly orange matrix cut by hairline chlorite filled fractures @ 45 and 60 DTCA; slightly vuggy with tr sulphides, silicified.

348.0 349.0 Basalt.
Dark green, aphanitic, featureless, chlorite unit, non magnetic, slightly vuggy near lower contact, red syenite dyke @ bottom contact @ 55 DTCA, tr sulphides.

353.3 355.0 Syenite.
Fresh??. Dark red to maroon in colour, aphanitic with numerous feldspar phenos, silicified, cut by fine (1/16-1/8 in) qtz and carb veinlets, few with spec hematite, most have hematite alteration halos developed for 1/8 in away from contacts; veins @ 45-60 DTCA, strongly magnetic unit, tr diss py in veinlets.

363.0 368.5 Basalt.
Dark green, chloritic, homogeneous, calcitic, non magnetic.

391.8 398.1 Diorite.
Similar to 305-307 unit, includes short section of porphyritic syenite (394.0-394.5); spotty py crystals to 1/16 in following healed fractures @ 45-50 DTCA; upper contact sharp @ 45 DTCA, lower contact sharp @ 65 DTCA.

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

420.0 420.8 Porphyritic Syenite.
Pale orange unit similar to that @ 345-348 with less distinct phenos, sharp often brecciated contacts, weakly magnetic, calcitic, contains 0.5-1% fine crystalline py to 1/16 in, as scattered, locally clustered and diss sulphide cut by hairline chlorite and hematite fractures at variable angles to core axis.

422.0 422.5 Porphyritic Syenite.
423.0 242.0 Porphyritic Syenite.
425.2 426.0 Porphyritic Syenite.
432.5 433.5 Porphyritic Syenite.

458.0 483.5 FELDSPAR PORPHYRY
LITH- dark grey colour; fresh spotted appearance, upper contact sharp @ 40 DTCA, lower sharp and irregular. Pale white to salmon coloured phenocrysts, tabular to rounded 1/16 to 1/4 in long set in a dark grey aphanitic matrix, weakly magnetic, weakly calcitic, few basalt inclusions, weak hematite staining locally, 0.5-0.75% diss py locally.

483.5 963.0 GABBRO
An assemblage of mostly gabbro with minor basalt, syenite, altered syenite and altered gabbro dykes and inclusions. The host gabbro is similar in texture and alteration to those units described above (167-224 and 290-458). This unit grades into an underlying basalt unit; the contact is not very sharp, but a distinct change in grain size and texture is visible. Shear @ 552.5 @ 25 DTCA, with epidote and carb alteration. 1 ft of ground core @ 558ft, 5ft of ground core @ 568 ft, core becoming broken and rubbly. RQD-0 down to 571. Hematitic shear @ 647ft @ 35 DTCA, ground 3ft of core @ 650 ft. Shear @ 705.0 @ 35 DTCA, hematitic, carbonate in voids, slicks perpendicular to shear angle.

484.0 485.0 Altered Syenite.
Red coloured syenite dykes 3/4 in thick @ 25 DTCA, offset slightly by hairline slips @ high angles to core axis, 0.75% cubic py. Non magnetic, calcitic, sinuous and irregular, sharp contacts.

486.5 487.0 Altered Syenite.
488.0 488.7 Altered Syenite.

571.5 572.0 Altered Syenite.
Dark red purple in colour, aphanitic, containing angular fragments of orange or red altered syenite; also red syenite rims/selvages developed outside of contacts; sharp contacts between colours may be alteration fronts, magnetic (purple areas), calcitic. Also contains partially assimilated fragments of gabbro, tr sulphides, dyke rock? (diabase?).

575.0 577.5 Altered Syenite.

577.5 640.5 Basalt.
Dark grass green, med -fine to fine grained, calcitic, magnetic zone

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

containing numerous partially digested (epidote alteration well developed) gabbro inclusions. Altered syenite and altered gabbro dykes?. Scrappy carb and qtz carb veinlets cut the unit @ 45-65 DTCA and @ 20-25 DTCA. They can be hematized and epidotized (variably). Red (altered syenite) also randomly cuts the unit. Comments: @ 600.0-601.0 altered pillow rim?; cherty bands, strongly hematized silicified and epidotized @ very low angles to core axis. Minor scrappy and patch qtz, gabbro fragments to 3 in across nearby.

589.0 590.0 Syenite.
? dark grey pinkish dyke well fractured/brecciated and cut by an irregular stockwork of chlorite fractures, sharp (irregular-offset by slips) contacts @ 30 DTCA, tr sulphide content, magnetic, calcitic, silicified?.

622.0 623.5 Altered Syenite.
Siliceous, highly altered? syenite?, bands, dark dirt brown in colour, 1/2-1 in thick, almost parallel to core axis with 1-1.5% diss py.

620.0 621.0 Altered Syenite.
Dark grey to dark red (alteration?) fine grained, slightly mottled appearance, cut by wispy qtz carb fracture fillings (sub parallel to core axis), sharp contacts, magnetic, calcitic with 1% spotty and diss py.

625.0 625.5 Altered Syenite.
Lower contact @ 40 DTCA.

627.1 628.0 Mafic intrusive.
Dark grey to almost black in colour, porphyritic (mafic laths chlorite after amphibole?), foliated unit strongly calcitic, strongly magnetic, sharp contacts @ 50 DTCA. Foliation @ 45-50 DTCA, soft, 2% fine crystalline py.

628.0 629.7 Altered Gabbro.
Very dark grey to black, slightly speckled, foliated, med grained unit, similar to those logged in MB-96-01, 1.5% spotty py.

633.0 640.5 Fragmental texture? with basalt pillow rims??? a pillow breccia??

658.0 663.0 Basalt.
Dark green massive, med grained flow? magnetic.

677.0 679.0 Basalt.

681.5 684.7 Basalt.
Sharp bottom contact @ 45 DTCA.

691.0 694.9 Mafic intrusive.
Very dark grey to black, foliated, med to med-fine grained unit, sharp bottom contact @ 70 DTCA, fine lath like mafics in matrix (chlorite after amphibole?), foliation @ 40 DTCA, variably magnetic, calcitic, tr sulphides.

708.0 710.5 Mafic intrusive.
Similar to above, less foliated, slightly larger mafic phenos; sharp upper

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

contact @ 40 DTCA, weak hematitic alteration?, strongly magnetic.

728.0 732.0 Altered Syenite.
Medium grey in colour, med grained becoming fresher looking (less alteration/replacement in matrix towards 732), ?non foliated equivalent of altered syenites logged in MB 96-01, magnetic, calcitic, silicified?, with trace sulphides, with hematite alteration.

732.0 733.5 Syenite.
Dark grey microporphyritic with aphanitic matrix, hematitic alteration, tr sulphides, sharp bottom contact @ 45 DTCA..

733.5 734.5 Basalt.
Narrow sections of dark green, fine grained featureless flow material.

735.0 735.8 Basalt.

762.2 763.5 Altered Syenite.
Pale mauve with a red cast, med-fine grained, massive, silicified, with hematite alteration, magnetic, 1% spotty py, calcitic.

764.0 765.0 Porphyritic Syenite.
Light grey with mauve red cast, ghost phenos in a finer aphanitic matrix, calcitic, magnetic, 1% spotty crystalline py.

766.5 768.0 Basalt.
As noted above, @ 769 hematitic shear @ 30 DTCA, @ 773.2 fault @ 70 DTCA, 2 in chlorite gouge.

774.0 774.5 Altered Gabbro.
Very dark grey with a pale brown cast, foliated (fol @ 30 DTCA), unit contains 0.75% spotty py, med grained, calcitic. Shear @ 776.6 @50 DTCA, fault zone @ 784.8 @ 30 DTCA, crushed rock with tr chlorite gouge 2 in thick.

775.0 776.5 Altered Gabbro.

824.0 830.0 Basalt.
Pale pink to mauve coloured, siliceous and carb alteration in a med grained (altered?) chlorite interval, calcitic, brecciated appearance; coarse cubic py (to 1/4 in across) and med grained diss py 4-5% locally.

849-852 Vuggy qtz carb veining parallel to core axis with bleby diss and patchy py to 5% locally, ~ 2% overall in matrix, irregular syenitic dykelets to 1/4 in thick (pink-red) cut unit, locally siliceous, calcitic throughout.

862.0 864.0 Gabbro.
Cut by 1/2-7 in wide syenitic dykelets, pale pink to light grey, slightly porphritic locally, sharp contacts typically @ 30-40 DTCA, 0.5% to 1% spotty py in some of the bodies, calcitic, epidote alteration.

869.1 869.8 Altered Syenite.

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

Pale pink, med grained, weakly hematized along hairline fractures, tr diss py, sharp contacts typically @ 35 (top) and 55 (bottom) DTCA.

888.0 917.0 Basalt.
Dark grass green, med grained fairly uniform basalt with gabbroic inclusions and fine blotchy carbonate alteration, also fine qtz carb veining to 1/8 in thick @ high angles to core axis.. Shear at 913 @ 35 DTCA broken core zone.

917.0 918.5 Diorite.
Pale grey dioritic dykes, sharp irregular contacts, bottom @ 45 DTCA. Tr sulphides, weakly hematized locally, calcitic.

925.0 927.0 Syenite.
Pale red syenite dykelets with dioritic inclusions similar to above unit; weak hematitic alteration, 2% diss py throughout, silicified, calcitic, non magnetic.

944.5 945.2 Syenite.
Pale pink syenite dykelet. Similar to unit @ 869.1 to 869.8, higher sulphide content.

956.0 963.0 Feldspar Porphyry.
Cutting gabbro and basalt. Dark grey with 1/8 in feldspar phenos; sharp irregular contacts @ high angles usually, tr sulphide, some reddish syenite material along contacts and as bleby inclusions.

963.0 1008.0 BASALT GABBRO
Dark green fine to med grained, magnetic unit, with gabbroic, syenitic, and aplitic inclusions, fairly massive with suggestions of flow breccia texture @ 974-978. Strongly amphibolitic @ 991-995.

983.0 989.0 Syenite.
Reddish to pale grey in colour, locally porphyritic, sinuous aspect with sharp contacts @ low angles to core axis, siliceous. Weak hematite alteration @983-984 with 2% diss py-pale rd colour. Remainder of this unit is grey and contains 1% py. Shear @ 991.0 @ 35 DTCA with tr chlorite gouge.

995.0 997.0 Syenite.
As above.

999.3 1005.0 Aplite.
Flesh coloured, fine grained, homogeneous unit, siliceous, an aphanitic qtz feldspathic unit with sharp contacts, few fine mafics (chlorite flakes?) in groundmass; cut by chlorite fractures (typically @ 40-50 DTCA) and chlorite clots. Non magnetic, calcitic, upper contact @ 45 DTCA lower contact @ 15 DTCA. 1% spotty and diss py in aplite, locally higher in some chlorite clots.

1008.0 1027.0 GABBRO
As described above.

1027.0 1481.5 BASALT GABBRO

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

An assemblage of massive and occasionally flow textured basalt with gabbro dykes and inclusions, contains a few scattered syenitic dykes; essentially an undeformed package.
LITH- dark grass green, med to fine grained, massive to locally flowy basalt unit; gabbro similar to units uphole.
ALTR- magnetic, calcitic throughout with spotty epidote alteration in veinlets, wispy carb alteration in some areas, weak hematite alteration in lower part of package (1400-1481.5).
STRUC- generally a massive to weakly foliated unit, scattered shears and faults.
VEINING- mm size to 1/4 in thick calcite, qtz and carb-qtz veining throughout unit, generally @ high angles to core axis.
MINERALISATION- scattered diss py (<0.5%) throughout, some higher concentrations in thicker veining; also crystalline py in few slightly vuggy areas.

Fault @ 1038 1/4 in chlorite gouge @ 20 DTCA.
Shear @ 1043 @ 10 DTCA slight chlorite gouge.

1045.0-1045.5 Narrow kom basalt horizons, pale blue green with weak talc alteration.

1099.4-1000.4 Diorite dykelet, dark grey with pink cast, med grained, cut by 1/4 in qtz carb vein @ 50 DTCA, sharp contacts typically @ 40 DTCA, bottom @ 20 DTCA, 0.5% spotty py.

1116.0-1117.0 Altered syenite, pale grey in colour, med grained, calcitic, weakly magnetic, highly carbonated dykes with carb-qtz veins/vuggy areas cutting unit at high angles to core axis. Contains bleby and coarse crystalline py to 1/8 in across, some in vuggy areas also (to 2%).

1125.5-1147.0 Numerous gabbro inclusions in section, coarse brecciated appearance.

1160.0-1166.0 Wispy and fracture filling epidote alteration developed.

1210.0-1212.5 Slightly vuggy area, crystalline pyrite in vugs and as diss py in wallrock to 7%.

1229.0-1237.0 Numerous gabbro inclusions, some are very coarse grained.

1249.5-1250.0 Altered syenite pale pink in colour, med grained, highly carbonated, calcitic, patchy silicification, 2% bleby subhedral pyrite, non magnetic.

1257.0-1286.0 Patches/fragments of gabbro. Shear @ 1263 @ 30 DTCA (slick parallel to core axis.).

1296.0 1297.5 Porphyritic Syenite.
Very pale pink in colour, an aggregate of 1/8-1/4 in diameter rounded feldspars closely interlocked with minor feldspathic matrix, tr pyrite,

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

increase in py in wallrock.

1308.0-1320.0 Slightly schistose zone, foliation developing @ 50 DTCA typically, few scrappy qtz carb veins parallel to foliation.

1340.0-1380.0 Predominately gabbro in this interval, fairly massive med to med-coarse grained, weak hematite alteration (1362-1364).
Gabbro inclusions predominately with small angular blocks of basalt and rare fragments of kom basalt. Very weak patchy hematite alteration visible, scattered spotty py to 0.5% locally.

1412.0-1423.0 Predominately basalt with a few gabbro blocks to 4 in across, hematite alteration increases slightly in intensity, scattered fine crystalline to 0.75% locally.

1463.0-1464.0 Kom basalt inclusion, med grass green unit, fine grained slightly foliated band, sharp contact @ low angles to core axis. Flow textures visible.

1027.5 1029.0 Syenite.
Pale pink colour, med grained slightly vuggy unit; calcitic, weakly magnetic, patchy silicification contains 1.5% fine crystalline and diss py.

1481.5 1481.6 START OF DEFORMATION ZONE
All rocks from this point downhole exhibit pronounced deformation; generally units are mod to strongly foliated, and/or banded. Core angles are variable. Tight isoclinal folding is commonly visible in alteration bands present in several lithologies.

1481.6 1534.5 BASALT
Basalt-Komatiitic Basalt Package. Weakly to moderately deformed package of intercalated basalt and kom basalt.

Basalt.
LITH- very dark green colour, med grained, grainy or mottled texture commonly developed (alteration).
ALTR- magnetic, calcitic, weak patchy hematite alteration, locally silicified.
STRUC- foliated typically @ 45-55 DTCA.
VEINING- scattered scrappy carb and carb qtz veins from hairline to 1/4 in thick, generally sub parallel to foliation or flatter (30-45 DTCA), some irregular reddish syenite?.
MINERALISATION- 0.5% to 2.5% fine crystalline py some finer diss also, irregular distribution, probably higher concentrations in or near to patchy siliceous hematite alteration and syenite? veining.

Komatiitic Basalt.
LITH- med grass green with a pale bluish cast, med to med-fine grained with suggestions of basaltic (pillow rims?) texture.
ALTR- very weak talcose alteration, non magnetic, calcitic, chloritic mostly.
STRUC- weakly foliated throughout, typically @ 45 DTCA, although variable.

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

VEINING- scrappy fine carb and carb-qtz veins typically parallel to foliation.
MINERALISATION- tr diss py.

1484.5-1485.0 Mafic dyke? very dark grey green med grained, mod foliated with a pale red cast, sharp contacts, fine mafic phenos (chlorite after amphibole; accicular habit), non magnetic, calcitic.

1500.0-1501.0 Inclusions of gabbro, diffuse contacts.

1505.0 Sheared zone 1/2 in thick @ 35 DTCA.

1508.2 1510.0 Basaltic Komatiite.
Banded appearance, carb-qtz and pale pink bands parallel to foliation @ 55 DTCA; 0.5% diss py and scattered fine crystalline grey metallic (follows foliation) specular hematite, sphalerite? galena?.

1515.0-1515.5 Altered syenite? pale purple, siliceous unit, sharp contacts, cloudy feldspar phenos in an aphanitic matrix, magnetic, calcitic, 0.75 % spotty py.

1515.5 1519.0 Porphyritic Syenite.
Pale pink or salmon coloured, feldspar-pheno rich rock, patchy, irregular with sharp contacts, contains 0.5-1.5% diss and spotty py, chlorite clots to 1/4 in across, sulphide to 2% locally, non magnetic, calcitic.

1519.8 1529.0 Basaltic Komatiite.
Massive to weakly foliated unit, featureless except for fine scrappy carb veining (mm size) parallel to foliation. Fol @ 45 DTCA.

1534.5 1540.5 BASALTIC KOMATIITE
LITH- very dark green to black coloured, banded speckled unit, foliated fine grained, no primary texture visible.
ALTR- weak talcose alteration, non calcitic (ankeritic?), non magnetic, carb bands and wispy veinlets parallel to foliation well developed throughout.
STRUC- strongly foliated, typically @ 50-60 DTCA, some crenulation cleavage developing, fine kink bands @ 70 DTCA is common.
VEINING- carb veining developed parallel to foliation, generally barren.
MINERALISATION- tr sulphide (py).

Porphritic-Syenite-Aplite Dyke Package.
A sequence of highly altered (silicified, possibly albitic, ankeritic) syenite porphyries, gabbro inclusions, aplite and other rocks of unknown protolith. Sharp upper and lower contacts against komatiitic rocks. Contains grey metallic sulphides; possibly galena? in fine fractures and as splotches or blebs up to 1/4 in across, plus crystalline and bleby pyrite(1/16-1/8 in across max) throughout.

1540.5 1544.6 APLITE
LITH- pale beige to cream in colour, aphanitic, massive with rare minuscule

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

chlorite flakes in matrix, and wispy/spotty orange brown alteration? spots/fracture fillings.
ALTR- probably silicified, non calcitic, non magnetic, with incipient ankerite in fractures and as spots throughout.
STRUC- massive top contact @ 75 DTCA, bottom @ 35 DTCA.
VEINING- no significant veining.
MINERALISATION- contains 1-2% subhedral crystalline py 1mm size to 1/8 in across max.

1544.6 1547.0 ALTERED GABBRO
Dark grey, med grained speckled rock consisting of essentially of chlorite and ankerite, grainy texture is an alteration feature; weakly magnetic, weakly calcitic, grain size and intensity of alteration increasing towards top contact. Contains 0.5% diss py, bottom contact @ 40 DTCA.

1547.0 1549.5 ALTERED SYENITE
Maroon red to brown coloured, speckled + blotchy and finely veined (ankerite) unit, fine grained, siliceous massive and irregularly foliated @ small angles to core axis., weakly magnetic. Wispy chlorite in matrix, diss py to 1%; brownish cast towards bottom contact, foliated section @ 1549.0-1549.5.

1549.5 1553.5 FELSITE
Med grey colour with a pale brown cast, aphanitic, massive, siliceous, essentially featureless. Very fine wispy chlorite spots (after amphibole??) in matrix. Contains a few fresh to almost ghost like inclusions of porphyritic syenite. Spotty and diss py throughout to 2%. Fine hairline fractures at low angles to core axis(15-20 DTCA) containing grey metallic sulphides? galena? sphalerite? (weak brown streak). Dark qtz infilling in fractures with metallic. Some conjugate fractures developed.

1553.5 1555.0 PORPHYRITIC SYENITE
Pale buff to beige colour with a weak orange cast, abundant pale white to salmon coloured feldspar phenos in a fine grained felsic matrix. Some phenos are ghost like; massive, silicified non magnetic, non calcitic. Bleby and 1/4 in thick pale white barren qtz veins cut unit. Fracture filling bleby and fine crystalline py locally to 3%, overall 0.75-2%. Patches to 1/4 in across, generally crystals are subhedral.

1555.0 1558.5 FELSITE

1558.5 1560.5 PORPHYRITIC SYENITE
As described above.

1560.5 1588.5 ULTRAMAFIC KOMATIITE
LITH- dark green to green black in colour, foliated and banded, fine grained highly altered and deformed unit with inclusions of altered basalt, altered syenite and green porphritic syenite.
ALTR- non magnetic, non calcitic, ankerite and siliceous bands and partings parallel to foliation. Mild talcose alteration.
STRUC- strongly foliated throughout, tight isoclinal folding in some bands.

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

Foliation typically @ 40-60 DTCA; some recumbent folds in ankerite bands ex 1564.2 axial planes typically at high angles to core axis. Many bands are boudinaged and broken apart.
VEINING- qtz and carb-qtz veining; variable thickness (1/8-2 in) cuts unit often sub parallel to foliation, generally barren of sulphides.
MINERALISATION- tr diss py, generally more sulphide in included units.

1569.5 1572.9 *Porphyritic Syenite.*
Pale grey to beige in colour, locally with a faint green cast; pale white feldspar phenos 1/16-1/8 in across, rounded, set in a siliceous aphanitic matrix, non magnetic, weakly calcitic, irregular patchy aspect to unit. Criss-crossed by fine chlorite(hairnet)fractures, irregular patchy qtz carb veining also intrudes unit. Spotty and diss py to 0.5%; also grey blue metallics in matrix, fracture filling; blebby- moly, galena? (dark grey streak, soft).

1575.0 1578.1 Altered Syenite.
This unit is similar to those logged in MB 96-01 as altered syenite. In this setting the siliceous carb banding appears to overprint a pre-existing kom basalt unit, instead of these being a distinct syenite band. Dark grey with banded and mottled appearance. The altered material is light grey sometimes with a pale pink cast (weak hematite??). Bands are boudinaged distended and ptygmatically folded. Magnetic, non calcitic, py to 1.5% diss and deformed subhedral py to 1/8 in across.

1588.5 1620.0 ALTERED GABBRO
LITH- dark grey med grained mottled/speckled unit with a faint brownish cast, a few tiny kom basalt inclusions, pseudo banded locally.
ALTR- weakly calcitic, ankeritic, weakly to non magnetic, minor siliceous veining, weak hematite overprint (biotite???).
STRUC- strongly foliated throughout, typically @ 55-65 DTCA, locally perpendicular to core axis. Fault with 1/4 in chlorite gouge @ 60 DTCA @ 1589, rubbly core @ 1607-1608.
VEINING- minor siliceous/ankerite veining, wispy and folded typically sub parallel to foliation, sometimes with a reddish hue? alteration generally barren of sulphides.
MINERALISATION- tr to 0.5% diss py throughout, sometimes as trails parallel to foliation.

1620.0 1627.0 ALTERED SYENITE
LITH- pale grey brown colour, med grained, foliated and speckled in appearance, a highly altered probably silicified unit similar to those logged in MB-96-01. Mafics (chlorite) in matrix define foliation.. Small inclusions of basalt and kom basalt. Small blebs of altered syenite.
ALTR- weakly magnetic, weakly calcitic, ankerite, locally silicified (patchy)
STRUC- well foliated @ 40 DTCA, hairline joints and fractures with orange alteration (hem?) weak hematite overprint on entire unit, sharp contacts, bottom @ 50 DTCA, top with minor brecciation.
VEINING- minor red syenite veining, intrusive bodies.
MINERALISATION- diss and spotty py to 0.75% throughout, slight increase near top of unit.

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

1627.0 1647.0 ULTRAMAFIC KOMATIITE
A unit very similar to the one described from 1560.5-1588.5; more serpentine in the matrix; lower core quality (poor to nil RQD) and more faults/shears within unit. Foliation @ 65 DTCA @ 1636. Fault @ 1637 @ 65 DTCA 3 in thick fault breccia +- chlorite gouge.(Larder Lake Break?) fault @ 1641.5-1642.5 @ 50 DTCA (top contact). Fine fault breccia and gouge, chunks of qtz + carb material.

1647.0 1674.1 ALTERED SYENITE
A package of highly deformed and altered syenites with minor kom basalt inclusions, cut by later? less deformed red orange syenite (similar to that logged in hole MB-96-01) characterize this interval. Scrappy carb veinlets and more extensive qtz with carb inclusions intrude these units.

1647.0 1662.4 Altered Syenite.
Variable appearance from mafic syenite to steel grey altered syenite to sheared/banded to altered gabbro appearance.
LITH- med to dark grey, med grained, speckled and or banded/laminated unit foliated, locally with a brownish cast (mafic syenite?).
ALTR- weakly calcitic, magnetic, weak hematite alteration locally, ankeritic, hematite, siliceous, carb bands are common locally.
STRUC- Strongly foliated, typically @ 70-75 DTCA; banding is often boudinaged and occasionally folded on a cm scale, axial planes @ high angles to core axis. Fault zone @ 1650 3 in gouge with broken core, orientation unknown.
VEINING- irregular carb and qtz veining @ 45-75 DTCA 1/16-1/2 in thick sometimes deformed, and patchy; generally barren.
MINERALISATION- fine diss py to 0.5% locally.

1662.4 1665.0 Altered Syenite.
LITH- distinctive orange red colour, fine grained and massive, few ghostly feldspars in groundmass, sharp stepped contacts, brecciated also @ contacts.
ALTR- silicified, magnetic, non calcitic.
STRUC- massive, non foliated, brittle deformation, vein contacts are irregular with stepped sharp boundaries.
VEINING- patchy and scrappy qtz veining hairline to 2 in across intrudes unit, commonly with ankerite selvages and chlorite clots and wisps, generally low sulphide content. Small veins often cut units @ low angles to core axis, larger patches are @ high angles to core axis. Hairline chlorite veining @ 45 DTCA locally.
MINERALISATION- diss py throughout groundmass, very little in veining, 1-2% fine crystalline py. Greyish wispy and bleby metallic near qtz veining,(sphalerite?) weak brown staining.

1665.0 1668.2 Altered Syenite.
1668.2 1671.0 Altered Syenite.
1671.2 1674.1 Altered Syenite.

1674.1 1696.0 ULTRAMAFIC KOMATIITE
Very high strain area.

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
		A very highly altered and deformed ultramafic unit very similar to the unit described 1627-1647. Pale grey green, soapy greasy feel, banded and blotchy appearance due to carb and qtz carb veining and intrusions. This unit has numerous shears and faults and is the most deformed kom basalt in this hole. Foliation is commonly @ 70-75 DTCA, units contain diss py locally to 1% over 4-6 in intervals, overall the sulphide content is <0.5%. STRUC- 1681.8 fault zone (crushed/gouge) 3 in thick @ 60 DTCA; @ 1680.0 strong tight shear with 1/8 in gouge @ 55 DTCA; @ 1687-1688 crushed zone(0-RQD); several strong shears @ 1684-1688 @ 40-50 DTCA; @ 1691 fault w/ 3 in of fine fault gouge and breccia @ 65 DTCA; @ 1690.2 strong shear/broken core zone @ 45 DTCA; @ 1695.5 fine folding in dark bands @ cm scale, axial plane @ 40 DTCA.								
1696.0	1706.0	ALTERED GABBRO LITH-very dark grey in colour, with finely speckled or banded appearance locally with a distinctive brown red cast, generally foliated. Banding on a mm or cm scale (alteration?). Less deformed areas have a strong resemblance to fresh gabbros described above the deformation zone; contains few mafic dykes/sharp contacts. ALTR- calcitic, magnetic, weak hematite (or biotite) alteration in past, locally silicified (near qtz carb veining) patchy/banded siliceous/carb alteration (locally). STRUC- foliated throughout med to strongly developed, typically @ : 50 DTCA 1705 & 1718 & 1748 & 1787, @ 35 DTCA @ 1820, @ 45 DTCA @ 1849. VEINING- minor wispy carb and carb qtz (mm) generally parallel to foliation, few scrappy cross cutting carb veins 1/4 in thick near top contact; barren of sulphide. MINERALISATION- diss py sprinkled throughout unit, slightly higher concentrations near siliceous carb banding generally < 0.5%.								
1706.5	1708.5	ULTRAMAFIC KOMATIITE LITH- very dark grass green colour with a blue cast, fine grained weakly foliated, generally featureless except for wispy and scrappy carb veining, sharp contacts. ALTR- chlorite, very minor serpentine content, calcitic, spotty magnetism (mostly non magnetic). STRUC- mod foliated throughout typically @ 50-55 DTCA, some tight folding visible in mineralised sections; (tight isoclinal, cm scale) axial planes parallel to foliation. VEINING- scrappy and wispy carb veining generally parallel to foliation, barren, few 1/4 in carb qtz veinlets parallel to core axis or @ low angles (subordinate to others). Few hematitic, patchy siliceous boudinaged veins @ high angles to core axis. MINERALISATION- tr sulphides, tr diss py in siliceous veining.								
1708.5	1735.5	ALTERED GABBRO Slightly coarse grained areas; speckled cut by fine grained mafic dykes? @ 1710.8-1711.3 and @ 1722.8-1723.8 and 1728.8-1730.0. Very dark grey fine grained, magnetic, sharp contacts, brownish coloration, weakly mineralised 0.5% diss py commonly. Contacts generally parallel to foliation, foliated less so than wallrock.								

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
1735.5	1743.0	ULTRAMAFIC KOMATIITE								
1743.0	1762.5	ALTERED GABBRO 1750.5 1751.0 Altered Syenite. Sharp contacts @ 65 DTCA med grey colour with a weak mauve cast, med grained, speckled appearance, foliated, magnetic, calcitic, tr sulphide.								
1762.5	1786.0	FELSITE Similar to rocks described above in the hole, pale beige to med grey, aphanitic, massive, siliceous units with sharp contacts. Slightly grainy appearance locally. Cut by fine qtz carb veins trending similarly to foliation in adjoining units 0.5% diss py throughout,(brassy looking fairly bright), diss to 1/4 in across bleby and subhedral, commonly 1/16 in across, non calcitic, locally with very fine flakes of chlorite? in groundmass, hematitic alteration in hairline fractures locally. Some areas are pale orange to reddish and look somewhat like syenite or red syenite units described elsewhere. Higher hematite alteration or locally albitic alteration?.								
1786.0	1790.0	ALTERED GABBRO Slightly coarser grain size than surrounding gabbro units, foliated @ 35 DTCA S2 and 50 DTCA S1 (later foliation defined by chlorite clots and wisps). Speckled appearance, non calcitic, strongly magnetic, porphyroblasts? of carb (1/16 in across).								
1790.0	1793.0	FELSITE Orange red colour with texture suggestive of red syenite logged elsewhere; cut by 1/2 in irregular qtz carb vein @ 60 DTCA, more sulphides than preceding section of felsite.								
1793.0	1794.0	ALTERED GABBRO Highly altered unit similar to 1786-1790.								
1794.0	1795.2	FELSITE Red orange colour as @ 1790-1793.								
1795.2	1796.5	ALTERED GABBRO As above.								
1796.5	1803.1	FELSITE As above.								
1803.1	1804.5	ALTERED GABBRO A partially assimilated equivalent to the other gabbro units; banded appearance, light beige (silica/carb?) bands with dark grey black mafic bands, silicified, magnetic, non calcitic- foliation @ 55 DTCA.								
1804.5	1818.0	FELSITE As above shear @ 1805.2 @ 40 DTCA.								

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

1818.0 1821.8 ALTERED GABBRO
Similar to that described between 1786-1790, speckled, strongly foliated unit with carb porphyroblasts developing.

1821.8 1826.0 FELSITE
As above.

1826.0 1856.0 ULTRAMAFIC KOMATIITE
Dark green foliated interval similar to the one logged in 1735-1743, with more carb qtz banding/veining. A few inclusions of altered gabbro and felsite are present; banding becoming very irregular and distorted towards bottom of unit. Folding/banding becoming parallel to core axis.

1856.0 1856.1 TIMISKAMING GROUP

1856.1 1940.0 GREEN CARBONATE ZONE
Komatiite, Siltstone/Lapilli, Tuff, Syenite Sequence.

Siltstone.
LITH- beige to light grey with a olive green cast weakly foliated with subtle compositional banding, contains bands of kom basalt; fine grained, fairly homogenous grain size.
ALTR- locally silicified, non magnetic, non calcitic, tr wispy sericite locally.
STRUC- weakly foliated typically @ 35-40 DTCA; boudinaged and kinked (visible in kom basalt bands).
VEINING- wispy carb qtz veins 1/16-1/8 in thick, locally developed, generally @ high angles to core axis, some irregular patchy qtz sub parallel to core axis, veining generally barren of sulphides.
MINERALISATION- diss py distinctive throughout, typically <0.5% with local areas to 0.75% fine to very fine grain size.

Komatiitic Basalt.
LITH- med grey with apple green cast, strongly foliated and highly deformed unit intruded by numerous qtz carb blebs/veins/patches. No primary texture visible. Probably of ultramafic derivation.
ALTR- non magnetic, non calcitic generally, weak fuchsite alteration in groundmass, ankerite selvages in qtz patches and veining. Beige sericite? bands locally silicified.
STRUC-irregular foliation; locally @ 50 DTCA boudinaged banding and qtz veining some tight folding on a cm scale (axial planes @ high angles to core axis). Kinks banding and coarse crenulations developing ex @ 1897-1900.
VEINING- qtz with ankerite selvages as irregular blebs, patches and veins up to several inches across, generally poor in sulphides.
MINERALISATION- fine grained diss py up to 0.5% locally overall less than 0.5%, few spotty crystals (subhedral to 1/16 in across).

Porphyritic Syenite.
LITH- pale orange to light grey with orange cast. Siliceous, aphanitic, groundmass supported rounded to subhedral feldspar phenos 1/8-3/16 in across. Sharp upper (@ 40 DTCA) and lower contacts (@ 60 DTCA). Contains few

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

clots of chlorite ALTR- silicified non calcitic, non magnetic, very weak hematitic alteration along hairline fractures, wispy sericite in matrix locally.
STRUC- massive unit cut by hairline qtz carb veining @ 40-60 DTCA.
VEINING- fine mm scale qtz carb veining as noted above, generally barren.
MINERALISATION-tr fine diss py; some py in chlorite fuchsite clots.

Lapilli Tuff.
Intermixed with kom basalt layers and lenses, becoming the dominant lithology toward the bottom of the sequence (to 1940).
LITH- light grey green to beige to dark grass green, gritty to fine fragmental texture, generally foliated, locally with compositional banding on a cm scale; fragments are variable in composition, some appear trachytic some of kom composition, some are beige (felsic?) and highly altered, locally the matrix might be described as a crystal tuff. Fragments generally moderately to well flattened parallel to foliation direction. Matrix of variable composition -chloritic/komatitic to more felsic/crystalline/sericite.
ALTR- generally non magnetic with a few weakly magnetic areas; non calcitic, locally sericitic, rarely hematitic (ex @ 1897). Locally siliceous alteration in banded areas/fragmented.
STRUC- foliated throughout, typically @ 50-60 DTCA.
MINERALISATION- fine diss py and slightly coarser spotty py not >than 0.5% except locally near banding or near hematite alteration (ex 1897).

1856.0 1857.0 Siltstone.
Siltstone- dirty interval, strong chlorite (biotite?) alter; appears similar to altered units above; gritty appearence.

1856.0 1859.5 Ultramafic Komatiite.

1859.5-1861.4 Siltstone.

1861.4 1862.5 Ultramafic Komatiite QTZ.

1862.5-1864.2 Siltstone, very weak hematitic alteration.

1864.2 1868.0 Ultramafic Komatiite.
With lapilli tuff; highly deformed, fol sub-parallel to CA.

1868.0-1869.3 Porphyritic Syenite.

1869.3 1871.8 Ultramafic Komatiite.

1871.8-1872.7 Siltstone, weak hematite alteration.

1872.7 1882.8 Ultramafic Komatiite with tuffaceous sections.

1882.8-1883.8 QTZ veining with beige (ankerite?) inclusions. (anhedral 1-2 in across 0.5% spotty py) tr wispy fuchsite in qtz.

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

1883.9 1884.9 Ultramafic Komatiite.

1884.9-1888.8 Lapilli Tuff.

1888.8-1890.2 QTZ veining.

1890.2-1891.7 Lapilli Tuff.

1891.7-1892.8 QTZ zone with mineralised ankerite inclusions (weak hematite alteration?).

1892.8-1893.4 Lapilli Tuff.

1893.4 1894.4 Ultramafic Komatiite.

1894.4-1895.0 Lapilli Tuff.

1895.0 1895.7 Ultramafic Komatiite.

1895.7-1896.5 Lapilli Tuff.

1896.5-1897.0 Lapilli Tuff with 3 in Kom basalt @ top contact, hematite alteration and 2.5% diss py in tuff portion of unit.

1897.0 1899.8 Ultramafic Komatiite.

1879.8-1903.2 Lapilli Tuff.

1903.2 1905.3 Ultramafic Komatiite Fuchsite alteration increasing in intensity.

1905.3 1926.0 Lapilli Tuff 1906.4-1908.0 coarse agglomerate texture. This unit becomes dark green in colour (higher chlor conc) and speckled (carb??).

1926.0 1929.2 Ultramafic Komatiite.

1929.2-1930.1 QTZ veining with beige (hematitic alteration, ankeritic) inclusions, sulphides in the inclusions.

1930.1-1930.8 Lapilli Tuff (sericitic).

1930.8 1931.3 Ultramafic Komatiite.

1931.3 1932.0 Lapilli Tuff (sericitic).

1932.0 1933.8 Ultramafic Komatiite.

1933.8 1936.0 Porphyritic Syenite -material against top and bottom contacts appears similar to felsite as described in this hole (felsite possible phase of this syenite??) Much greater sulphide

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

content compared with unit as described 1868-1869. Upper contact sharp @ 80 DTCA, lower sharp @ 70 DTCA.

1936.0 1936.3 Ultramafic Komatiite.

1936.3-1936.5 QTZ zone with beige inclusions.

1936.5 1937.2 Ultramafic Komatiite.

1937.2-1938.8 Lapilli Tuff.

1938.8 1939.0 Ultramafic Komatiite.

1939.0 1940.0 Lapilli Tuff. Unit becoming more chloritic and strongly foliated up to contact.

1940.0 1959.0 ULTRAMAFIC KOMATIITE
A dark green to almost black banded and blotchy unit, cut by numerous carb-qtz bands veins, red coloured felsic rock (undeformed) and containing inclusions of fuchsite bearing kom basalt and possible altered gabbro? xenoliths w/ brownish cast. Highly deformed foliated non magnetic, non calcitic, probably of kom basalt (strict sense) derivation. Foliation typically @ 60-70 DTCA strongly chloritic, minor section of lapilli tuff within unit. Lots of broken up/crushed core and some faulting in this interval.
STRUC- possible fault @ 1951.0 orientation unknown; shear? @ 1950 parallel to core axis with minor gouge. 1948-1951 crushed zone 0-RQD. Fault @ 1958.8, orientation established @ 45-50 DTCA.
MINERALISATION- not strongly pyritized (~0.5% overall) higher py content in included units.

1959.0 2010.5 *GREEN CARBONATE ZONE*
Komatiitic Basalt, a unit very similar to that logged @ 1845-1849. A banded highly deformed and foliated interval with included lapilli tuff (hematitic alteration) and red syenite and trachyte similar to that logged in MB96-01, non magnetic, non calcitic, weak fuchsite alteration. Fault @ 1959.8, crushed core with suggestions of fault breccia @ 60 DTCA.

1974.0-1974.5 Altered syenite- red orange colour, aphanitic, siliceous, massive unit, non magnetic, with sharp contacts, cut by bleby qtz with ankerite selvages and inclusions, diss py. This section contains more py than (1874-1874.5).

1977.6-1978.4 Lapilli Tuff- Hematite and fuchsite alteration; some kom basalt component.

1979.3 1981.0 Trachyte Agglomerate.
LITH- pale red in colour fine grained massive and hard; sharp contacts suggestions of agglomerate textures (2-3 in) fragments, few mafics (chlorite) in groundmass.
ALTR- siliceous non calcitic, weakly magnetic pervasive and local hematitic

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

alteration around hairline fractures.
STRUC- weak foliation beginning to develop @ high angles to core axis (50 DTCA @ top contact and 40 DTCA lower contact).
VEINING- bleby qtz and 1/16 in fracture fillings @ low angles to core axis, not well mineralised.
MINERALISATION- fine diss py to 0.5% throughout (in matrix).

1981.0 2010.5 Ultramafic Komatiite.
Lighter green in colour less chlorite in matrix, becoming slightly more talcose towards the end of the unit.

Komatiitic/Tuff Sequence. Intercalated highly altered and deformed ultramafic rocks and lapilli tuffs similar to those described above. (both sericitic) and dark green (chloritic) varieties of the tuff are present. The komatiites are generally bright green to apple green due to a greater amount of fuchsite and sericite being present in these areas (green carb). Irregular qtz as veins and patches are present in both lithologies, with generally greater amounts of qtz in the ultramafic rocks.

2010.5 2025.3 LAPILLI TUFF
Med green, banded scrappy veining.

2025.3 2036.0 GREEN CARBONATE ZONE
2029.9 2030.5 Quartz Vein Zone Cloudy qtz vein with sharp contacts and fine diss py, and inclusions.

2036.0 2044.8 LAPILLI TUFF
Med grey green, slightly banded/spotted/knotted appearance, carb porphyroblasts. Foliated.

2044.3 2046.8 GREEN CARBONATE ZONE

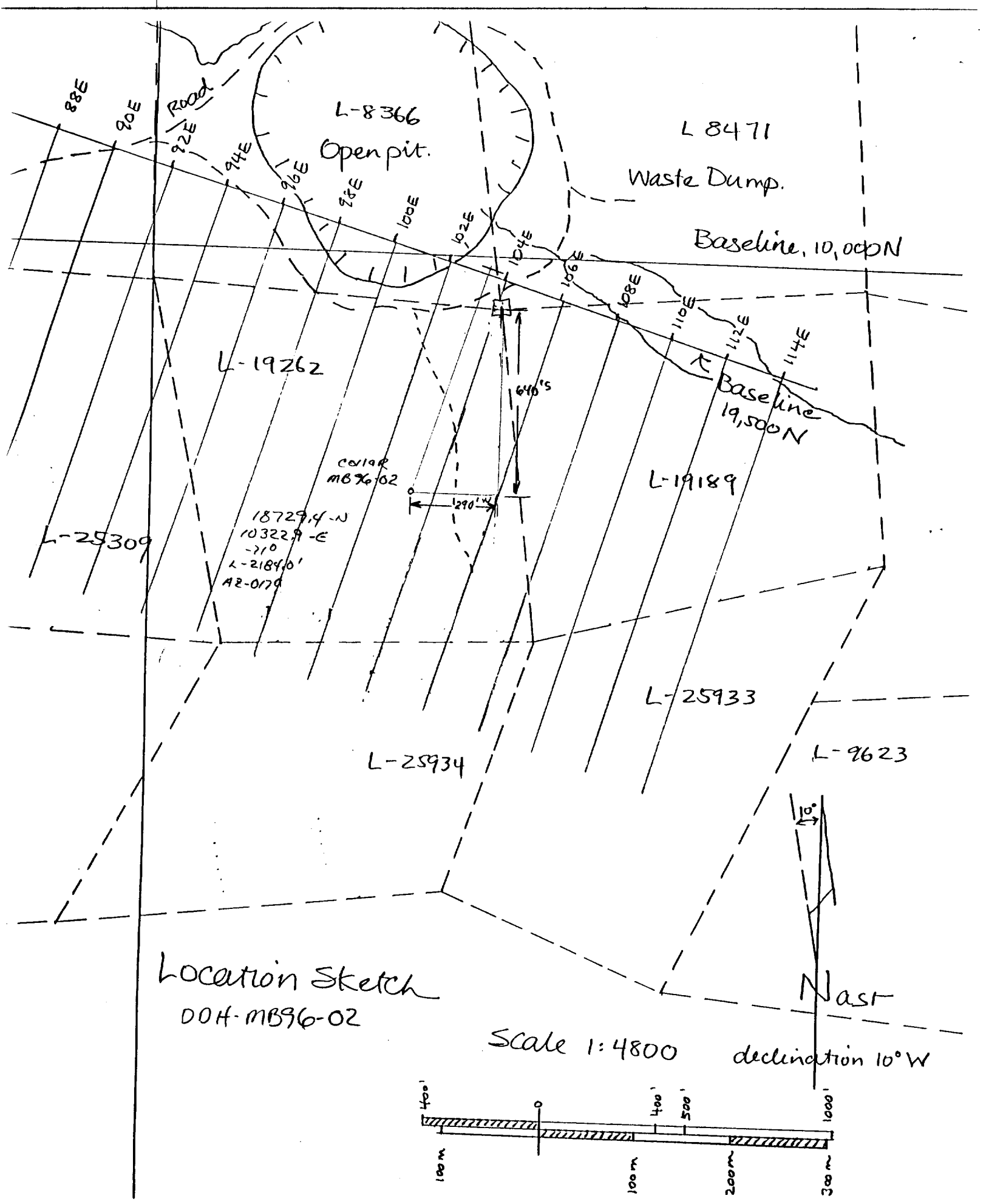
2046.8 2070.8 LAPILLI TUFF
Med green with lighter beige coloured ashy/crystal tuff sections. Foliated @ 50 DTCA typically.

2070.8 2087.2 GREEN CARBONATE ZONE
Bright green (fuchsite rich) banded and pseudo massive (recrystalised carb+sericite) interval. Irregular patchy pale grey barren qtz cut unit randomly. Not heavily mineralised.

2087.2 2099.0 LAPILLI TUFF
Med grey green, predominately ash tuff zone with sericite rich bands; scattered fine grained magnetite in matrix.

2099.0 2148.0 LAPILLI TUFF
Unit becoming dark green(chlorite) and more carbonated downward. Calcitic from about 2103 downwards. Spotty lumpy texture, carb microporphyroblasts developing, foliation becoming stronger. Foliation @ 60 DTCA @ 2110 and @ 65 DTCA @ 2145.

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
		2148.0 Ft- End of Hole.								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L 8471
Waste Dump.
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90E
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94E
96E
98E
100E
102E
104E
106E
108E
110E
112E
114E
Baseline, 10,000N
Baseline
19,500N
L-19262
L-19189
L-25309
L-25933
L-25934
L-9623
646'S
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collar
MB96-02
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-710
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DDH-MB96-02
Scale 1:4800
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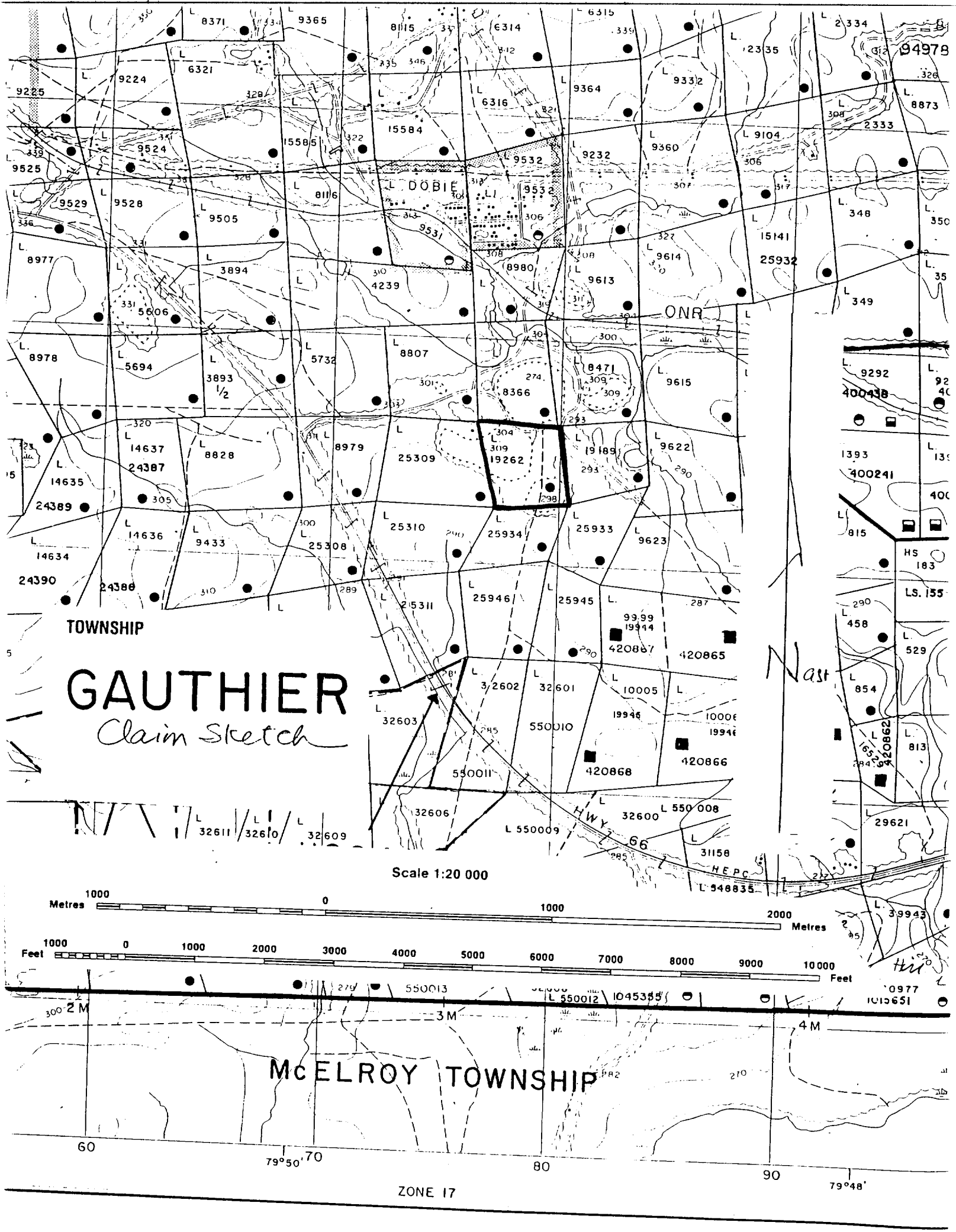
TOWNSHIP
GAUTHIER
Claim Sketch
DOBIE
ONR
HWY 66
HEPC
Nast
McELROY TOWNSHIP
Scale 1:20 000
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1000 Feet 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 Feet
2 M
3 M
4 M
60
79°50'
70
80
90
79°48'
ZONE 17

QUEENSTON MINING INC

DIAMOND DRILL HOLE RECORD

Drill Hole: MB96-03

Property: MCBEAN Col loc from #1 post, L19262, 360'S, 810'W
Northing: 18800.00
Easting: 9755.20
Elevation: 11005.40

Collar Azimuth (Grid) 5.2
Collar Dip -67.5
(0 Degrees Grid equals 017 degrees True)
Hole Length: 2202.0

Date Printed: 6 Jul, 1998

*** Dip Tests ***			*** Dip Tests ***		
Depth	Azi.	Dip	Depth	Azi.	Dip
110.0		-67.0	1483.0	2.0	-64.0
300.0		-66.0	1500.0		-63.5
600.0		-65.5	1800.0		-61.0
900.0		-65.0	2100.0		-59.5
1200.0		-66.0			

Date Started: September 3, 1996
Date Completed: September 16, 1996

Drilled by: BENOIT
Core Size: BQ
Material left in hole BX CASING
Core Location: Upper Canada Site 1
Logged by: D. R. Alexander

Dale R Alexander

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

SUMMARY LOG

From (ft)	To (ft)	Geology
.0	110.0	OVERBURDEN
110.0	335.1	GABBRO
335.1	383.0	BASALT
383.0	928.4	GABBRO
928.4	956.5	BASALT
956.5	1137.0	GABBRO
1137.0	1155.6	BASALT
1155.6	1190.4	GABBRO
1190.4	1190.5	START OF DEFORMATION ZONE
1190.5	1192.5	APLITE
1192.5	1221.2	SYENITE
1221.2	1265.4	ULTRAMAFIC KOMATIITE
1265.4	1338.7	ULTRAMAFIC KOMATIITE
1338.7	1398.5	CARBONATED GABBRO
1398.5	1412.2	FAULT ZONE
1412.2	1413.8	FELSITE
1413.8	1467.6	ULTRAMAFIC KOMATIITE

2.18728

From (ft)	To (ft)	Geology
1467.6	1488.1	ALTERED SYENITE
1488.1	1508.3	ULTRAMAFIC KOMATIITE
1508.3	1557.7	GREEN CARBONATE ZONE
1557.7	1751.0	ULTRAMAFIC KOMATIITE
1751.0	1751.1	TIMISKAMING GROUP
1751.1	2202.0	TUFF

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

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
.0	110.0	OVERBURDEN								
110.0	335.1	GABBRO A complex sequence of mafic intrusive rocks cut by a variety of other dykes and dykelets. The rock is typically dark green to dark grey green in colour and is weakly to moderately magnetic. The most distinctive phase is mottled in appearance from off-white to pale lime coloured, epidote-altered feldspars in a quasi cumulate to network texture amongst dark green to almost black, chlorite-altered mafic minerals. There is a weak reaction to calcite usually around calcitic veins and fractures and a similar weak reaction to the presence of ankerite. The mottled unit tends to be more strongly magnetic. The balance of the gabbro varies from fine to medium grained with variable amounts of feldspar and epidote-altered feldspar visible in a finely granular to finely felted matrix. Both phases of the gabbro contain larger blebs to inclusions of mafic minerals some of which are up to 5mm and psuedomorphic after hornblende. The gabbro could also be described as dirty, with some larger fragments/inclusions/xenoliths of basaltic to gabbroic to chlorite-altered material. The system is also cut by a number of dykes, which are detailed under the comments section. Dyke types include. Altered syenite, a brick red to dull grey red unit that varies from very fine grained to medium grained with scattered subrounded plagioclase feldspar in a sea of orange to brick red feldspar plus or minus irregular to acicular blebs of chlorite or chlorite after hornblende. Most of these rocks are magnetic. :Mafic dykes, fine grained, finely felted-textured rocks that range from dull grey green to a dull green with a weak turquoise cast. These dykes are locally characterized by acicular to blocky mafic minerals up to 5mm in size. The dykes are also calcitic and moderately magnetic. The coarser grained varieties could be lamprophyres. : Diorite, fine to medium grained dykes characterized by a mass of lath-shaped feldspar (albite?) plus or minus some more tabular plagioclase. Dykes are also flecked with 5 to 15% mafic minerals and minor quartz. Rocks are often stained reddish with hematite varying from grey to off-white and orange red to red. Dykes are variably magnetic and are usually dirty with a fair amount of included mafic material. There is some suggestion that the potential altered syenites with plagioclase here are in fact diorites - finer grained to redder varieties due to alteration. Alteration throughout the system consists of chlorite and epidote plus or minus some staining from hematite. There is a local weak ankeritic alteration and some accessory calcite alteration around stringers and fractures. Veining essentially consists of calcitic veins and fractures often at shallow angles to the core axis. Hematite, chlorite and epidote are often associated with fracturing. Quartz is minor to rare. With regard to mineralization, hematite is the most common mineral in the gabbro complex and is most often associated with fracturing. Sulphides are minor in amount. Specific units within the gabbro system include :. 110.0 114.3 Altered Syenite. Lower contact at 64 DTCA with a gabbro inclusion along the core axis from 113.4-113.9, weakly to nonmagnetic and unmineralized.								

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

135.9 136.1 Altered Syenite.
Narrow, fine to medium grained at 40 DTCA.

145.4 149.8 Altered Syenite.
Fine grained with medium grained sections, orange red to dull grey red, traces of pyrite, contacts at 18/26 DTCA, plus a narrow 2.5 cm inclusion at 55 degrees at 146.5 (or possibly 2 dykes of syenite), magnetic.

153.1 153.9 Mafic Intrusive.
Fine to medium grained at 55/50 DTCA, with chilled contacts over 1cm. Trace of pyrite, magnetic.

158.0 158.7 Altered Syenite.
Orange red, fractured, mottled with visible plagioclase. Contacts at 53/76 degrees, magnetic.

160.7 163.9 Mafic Intrusive.
With coarse grained mafic minerals, magnetic, potential lamprophyre. Minor fracturing, unmineralized.
184.9 185.1 Altered syenite to diorite, at 47 DTCA with included material.

185.3 185.9 Mafic Intrusive.
Fine grained, fine felted texture, this unit is difficult to type as a dyke or a fine grained phase of the gabbro. Upper contact at 47 degrees, lower contact broken.

194.7 195.0 Altered syenite to diorite as above, magnetic, contacts at 52/57 degrees.

193.0 251.0 A broad zone here with accessory diorite dykes. Within this system the adjacent gabbroic rocks are more strongly cooked and locally calcitic with accessory pyrite. Calcite appears vein related to locally flooded from accessory fracturing. Other than genetically, the accessory pyrite does not appear to be of much interest - the diorites are sparsely mineralized but their intrusion could have promoted conversion of hematite/ magnetite to sulphide. A number of the gabbros here are moderate to strongly magnetic.

198.3 198.5 Accessory calcite and pyrite in gabbro, flooding ?.

199.9 200.1 Diorite.
Pinkish white, contacts at 47/57 DTCA, the adjacent gabbro being cooked over 5 to 6mm.

200.9 201.8 Mud seam - narrow 1mm at 15 DTCA.

200.9 201.8 Diorite.
Grey to reddish, mottled, contacts at 75/48 DTCA.

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

201.8 204.0 Gabbro.
Cooked, carbonated.

204.0 217.1 Diorite.
One of the larger dykes, contacts at 41/63 DTCA. This dyke is largely pink to reddish stained and the adjacent gabbro is more strongly cooked and carbonated, particularly at the lower contact. The core is also blocky here and there from fine chloritic plus or minus mud seams at shallow angles to the core axis.

217.1 219.3 Gabbro.
Cooked, stained, carbonated.

219.3 232.0 Diorite.
Grey to pinkish and orange-red stained with irregular included material along the core axis between 224.5 and 226, plus a couple of inclusions/bands with definable contacts at 221.4 to 221.9 at 42/38 DTCA, and at 227.4 - 2.5 cms at 50 DTCA. Alternately there may be multiple dykes of diorite here. Outside contacts are at 42/37 both of which are irregular with accessory pyrite.

232.0 237.0 Gabbro.
Altered, carbonated, trace to 2% pyrite. There are also a couple of very dark inclusions in this section to 5cm in size.

At 237.0 Mud seam, 5mm at 54 DTCA.

237.0 244.7 Diorite.
Pinkish grey to orange red, locally blocky from shallow facturing plus or minus mud with chlorite.

252.2 252.5 Diorite.
Pink grey, irregular contacts at 16/27 DTCA.

254.3 254.9 Diorite.
Pink grey, irregular contacts at 28/40 DTCA. Below the main diorite section sic 193 to 251, the gabbro appears to be much more strongly magnetic and altered with epidote.

276.4 281.2 Gabbro.
Finer grained with pervasive calcite alteration plus two narrow dioritic dykes in this area, grey in colour at 278.5, 1.8 cm dyke at 50 DTCA and at 281.9, 3cm dykelet at 45 DTCA.

297.1 297.9 Vuggy calcite epidote vein along core axis w/ a 2cm splash of galena. Below the calcitic section from 276.4 to 281.2 most of the rock is a rather coarse grained hornblende gabbro moderate to strongly magnetic, weak epidote alteration and increasingly calcitic towards the lower contact - both as a pervasive component and fine calcitic fractures. There are scattered fine dykelets of diorite in this basal area and the lower contact,

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

which may be more perceived than real is placed along one of the wider dioritic dykes in this area. Dykelets include: at 314.8, 4cm with irregular contacts averaging 48 DTCA; at 320.8, 1cm, irregular at 50 DTCA; 321.9, 5mm at 38 DTCA; 329.2, 5cm at 70/38 DTCA; 329.9, 5mm at 52 DTCA; and, the unit at the lower contact from 334.8 to 335.1 at 62/78 DTCA.

322.3 322.7 Mafic Intrusive.
Finer grained, calcitic with poorly defined contacts at 62/52 DTCA. The lower contact of the gabbro system is defined along the diorite dyke from 334.8 to 335.1, contact at 78 DTCA.

335.1 383.0 BASALT
A very interesting zone of what appears to be basalt cued around some sections of gouge from 349.4 - 350.0 and 351.1 - 351.4. Some of these rocks are difficult to distinguish from altered gabbro due to alteration. Also, since this is the first component of basalt in the system definitive changes from gabbro are searched for although distinctions are scant indeed. Some local bleached sections, however, do appear to be relict quench textures or selvage margins more typical of basalt.
The rock is characteristically very dark grey-green, to green and brownish black to black and is moderate to strongly magnetic. The basalt is fine grained to very fine grained and often granular textured from the amount of carbonate (calcite) present. Individual rock -forming minerals are difficult to distinguish due to the grain size although relict, blocky hornblende blebs or pseudomorphs can locally be distinguished in the tentative gabbroic sections. Gabbro is essentially determined from texture alone with breakdowns occurring in the comments section. The sequence is also cut by a couple a diorite dykes. The rocks are variably altered with chlorite and carbonate - calcite being the dominant carbonate mineral as veins, fractures and local zones of flooding. Hematite staining is not common in the sequence and is largely focussed in the fractures and stringers.
By far the dominant structure in the system is a gouged zone from 349.4 to 350.0 at 60/48 DTCA with a second section of gouge slips between 351.1 and 351.4 averaging 60 DTCA. Above the gouge zones the rocks are moderate to strongly foliated at 50 to 60 DTCA to the core axis - 60 degrees dominates. The foliation, however, is not nearly as well developed as in the main deformation zone. Locally, the foliation shows minor crenulation to wavy variations but no specific drags or features are highlighted. Below the gouge zones the rocks are dominately granular textured and weakly to nonfoliated.
The sequence is also cut by quite numerous white to reddish stained stringers and veinlets of calcite at variable angles to the core axis. Certain of these stringers are pitted and vuggy. Above the first gouge zone from 349.0 to 349.4 is a calcitic vein breccia at 60 degrees to the core axis.
The dominant mineral in the system is pyrite, commonly in cubes 1 -2mm in size with some coarser crystals to 5mm on a side around the pitted to vuggy fractures.
The sequence breakdown includes:.

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

335.1 349.0 Basalt.
Generally foliated at 50 to 60 DTCA, with two, more granular sections of potential gabbro at 345.3-346.1 at 50/45 degrees, and, 346.9-347.4 at 50/57 degrees. Contacts of gabbroic sections are relatively clear but diffuse. Trace to 2% pyrite here.

349.0 350.0 Fault gouge fronted by a vein breccia from 349.0 to 349.4 as described above. Contacts at 60/48 degrees. Unmineralized.

350.0 350.8 Basalt.
Grey, weak bleaching, 1 to 2% pyrite.

350.8 351.1 Diorite.
Orange red stained, irregular contacts at 20/54 DTCA.

351.1 351.4 Partly gouged section with fine mud seams at 60 DTCA.

351.4 352.9 Basalt.
Blocky core with some pitted and vuggy stringers, accompanied by some coarse pyrite.

352.9 355.0 Diorite.
Partly blocky with pitted vuggy stringers, dull orange red with several mafic inclusions. Contacts broken at 20/50 degrees. Scattered coarse pyrite.

355.0 371.1 Basalt.
Partly blocky, fine grained, granular textured, nonfoliated, with scattered vuggy stringers. There is some bleaching here associated with the vuggy stringers although the pattern locally appears rather like bleached selvage material - bleached portions tend to be a grey green to grey turquoise colour. Mineralization is poor. Lower contact at 47 DTCA.

371.1 377.5 Gabbro.
A granular textured section with scattered passages having distinct hornblende gabbro textures while other zones are not as readily defined texturally. The whole zone, however, is granular in nature and includes two dioritic inclusions at 373.3 to 373.6 irregular, and, 374.2 to 374.7 just cutting along the core axis. The gabbro is moderate to strongly magnetic but little different than the adjacent basalt. Contacts at 47/52 degrees.

377.5 378.5 Basalt.
Dark grey to black.

378.5 380.2 Gabbro.
Dark with some distinctly gabbroic textures. Upper contact at 55 DTCA, lower irregular and poorly defined along a stringer at 40 degrees.

380.2 383.0 Basalt.
Very dark brownish to almost black with weak bleaching locally. Lower contact broken at 17 degrees. Some pyrite here.

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
383.0	928.4	GABBRO Return to a complex of gabbroic rx, as at the outset of the drill hole, w/ a mix of other units including basalt, felsic intrusives etc. The gabbroic rx are typified by two phases as before, a white to dark green phase w/ a mottled to netted appearance due to dominant plagioclase w / blebs to blocky looking mafic minerals. The second phase is dominated by blocky hornblende xtals or chlorite pseudomorphic after hornblende in a rather cumulate texture w/ less recognizable plagioclase. The hornblende gabbro is normally dark green to very dark green to almost black. Both gabbro units are mod to strongly mag. As previous some of the basaltic units are difficult to distinguish due to the varying grain size of the gabbro phases. For the most part basalts are very fine grained and often foliated. Chlorite is a common constituent as well as amphibole since a number of the very dark sections are amphibolitized. Granular textures due to carbonate content are also common. The basalt is normally mag. Dioritic units range from pale grey to off white units to much more orange red varieties due to hematite staining. These are the most weakly mag units of the package, although local sections are found to be mod mag. As before the rx are dominated by plag. Local albite laths are notable +- more scattered more tabular xtals. The whole is speckled w/ 5-15% mafic minerals. Qtz is minor. Dykes are often dirty w/ variable amounts of included material. Mafic dykes are also found within this sequence. As previous, the fine grained, granular to finely matrix is typical w/ occasional coarser blebs to acicular patches of mafic minerals. These dykes are often difficult to distinguish from some of the adjacent gabbro when they are small in size. The system is variably alt w/ chlorite and carbonate - calcite appearing as the dominant carb material. Epidote alt is common but most evident in the feldspathic gabbro sections. Hematite is also a common constituent for staining stringers and dykes. Veining is common throughout as stringers and fractures of calcite @ variable angles to the core axis. *Qtz stringers are not common. Py remains the dominant sulphide ranging from* fine grained sprinklings within some dykes and along contact zones, to considerably coarser grained around several of the pitted and vuggy calcite fractures. 383.0 407.3 Gabbro. Gabbro, feldspathic to hornblende type w/ some dark finer grained phases. From 389.3 390.0 there is a 5mm pitted calcite vein 17 degrees w/ accessory coarse py in the wall rx. 407.3 408.9 Mafic Intrusive. Mafic dyke, fine grained, partly bleached and foliated, contact zones over 2cm @ 70/65 DTCA. Most of the central core is granular and carb but some acicular mafics are seen approaching the contact zones. The rx is dark brownish green, to brownish black w/ a weak grey green to turquoise cast @ the contacts. 408.9 421.9 Gabbro. Gabbro, a mix of phases w/ the basal part becoming fine grained, very dark, amphibolitized and containing accessory fine calcite stringers from 417.0 to									

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

421.9.

421.9 424.1 Diorite.
Diorite, grey w/ fine fractures containing pinkish staining. The upper contact is broken @ a shallow angle, lower contact @ 23 DTCA. This dyke also hosts a milky qtz vein from 422.1 to 422.6 @ 62/57 DTCA. Tr py.

424.1 428.2 Gabbro.
Gabbro, dark, partly amphiblitized w/ numerous tiny calcite gashes @ 45-50 DTCA. There are also 3 narrow dioritic dyklets here @ 427.2 for 2.5 cm @ 32 DTCA, @ 427.3 for 5cm @ 40 DTCA, and 427.8 1cm @ 45 DTCA.

428.2 442.8 Diorite.
Diorite, grey to pinkish grey, scattered milky qtz stringers here to 8 cm. Tr to minor py. Variably mag.

442.8 462.9 Gabbro.
Gabbro, dark and granular, calcitic w/ scattered feldspathic and hornblende sections. This area is moderate to strongly calcitic from accessory calcite gashes.

462.9 472.3 Basalt.
Basalt, very dark green to black, amphibolitized, and calcitic. Upper contact a little diffuse @ 52 DTCA, followed by a bleached foliated zone w/ accessory calcite, pitted and vuggy from 463.3 - 464.9 @ 25 DTCA. There are also some irregular knots of pinkish to red diorite here that are pittted and vuggy from fracturing as @ 466 - 8cm cutting core axis, 468.9 - 469.3 irregular, and 470.4 - 5cm along core axis. There is also accessory py in this area.

472.3 475.2 Diorite.
Diorite, dull grey red w/ orange red staining around some fine fractures. Some accessory py. Contacts @ 46/36 DTCA.

475.2 482.1 Gabbro.
Gabbro, fine grained and dark w/ feldspathic phases, calcitic, w/ 3 irregular narrow patches of diorite between 476.3 and 476.9.

482.1 482.9 Diorite.
Diorite, reddish grey, converging contacts @ 21 DTCA.

482.9 483.5 Gabbro.
Gabbro, dark, blocky, calcitic.

483.5 489.2 Diorite.
Diorite, reddish grey, some chloritic slips, plus minor accessory py around vuggy stringers. Upper contact is irregular to nearly along core axis, lower contact @ 52 DTCA.

489.2 498.9 Gabbro.
Gabbro, dark, fine grained and granular, calcitic gabbro along w/ some

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

gabbro w/ a mottled appearance and a weak reddish cast. The mineralogy still appears to be preferentially alt and stained w/ reddish calcite as particularly noted circa 518.0.

498.9 500.0 Diorite.
Diorite, dull grey to reddish, contacts 70/22 DTCA.

500.0 526.6 Gabbro.
Gabbro, much more finely granular phases of both the felspathic gabbro and hornblende gabbro which are strongly overprinted w/ reddish stained calcite. This is most notable in the feldspathic members which become mottled in appearance and are dull reddish grey green to almost reddish brown in colour. The best example of progressive alt to a mottled nature is @ 518 where visible feldspars are progressively overprinted(sample for type as # 25) Mafic blebs to pseudomorphs are scattered throughout.

526.6 540.0 Basalt.
Basalt? w/ potential gabbroic sections. This unit begins along a subtle colour change @ 65 DTCA into a black granular carb rx which appears to be a carbonatized amphibolized w/ some very fine grained sections, particularly from 535.8 to the base of the system where there is a moderate to strong, wavy to crenulated cleavage along the core axis. The axis or attitude of some of the kinks ranges from 27 to 35 degrees, but it is not well dev throughout. The rx are strongly calcitic. The lower contact is w/ pitted calcite veining @ 40 DTCA.

540.0 564.9 Gabbro.
Gabbro, lighter in colour, grey to green grey and dark green, strongly mag, calcitic. Some accessory py here along the odd open to vuggy fracture.

564.9 566.5 Basalt.
Basalt, dark green to black, fine grained, granular, amphibolitic, mag, calcitic, tr py. Contacts @ 50/46 DTCA.

566.5 569.7 Gabbro.
Gabbro, mixed phase, grey, granular, calcitic, some accessory py @ diorite contact and along vuggy fractures.

569.7 574.7 Diorite.
Diorite, grey to dull reddish grey, fine to med grained, weakly to non mag, upper 2 feet, fractured, pitted and vuggy w/ some accessory py. Contacts @ 37/25 DTCA.

574.7 578.9 Gabbro.
Gabbro, dark green, to grey green, coarsely granular, calcitic.

578.9 582.3 Diorite.
Diorite, dull grey w/ minor orange red staining, weakly to non mag, calcitic. Contacts @ 40/30 DTCA.

582.3 584.2 Gabbro.

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

Gabbro, dull grey to almost black, hornblende type but granular w/ some reddish stained calcite.

584.2 589.3 Diorite.
Diorite, dull grey w/ weak pinkish stain, blocky, weakly to non mag. Unmineralized, contacts @ 42/45 DTCA.

589.3 603.6 Gabbro.
Gabbro, dark granular and calcitic w/ more of the epidote alt feldspathic units at the base which are non to weakly calcitic.

603.6 604.0 Basalt.
Basalt?, a very fine grained weakly foliated unit, grey green in colour w/ streaky epidote alt, unmineralized, contacts sharp and well defined @ 60 DTCA.

604.0 604.9 Gabbro.
Gabbro, coarse feldspathic style w/ epidote alt.

604.9 605.4 Diorite.
Diorite, grey red, medium grained, sharp contacts @ 43/36 DTCA.

605.4 616.1 Gabbro.
Gabbro, for the most part of the feldspathic variety, w/ epidote alt weak calcite. Basal section is much darker green and chloritic but appears to be more granular hornblende phase than a separate unit.

616.1 616.6 Diorite.
Diorite, pink grey, weakly mag, sharp contacts @ 25 DTCA.

616.6 619.0 Gabbro.
Gabbro, chloritic alt hornblende variety w/ more of the feldspathic phase towards the base.

619.0 619.4 Mafic Intrusive.
Mafic dyke, a finely granular to finely felted dyke w/ occasional knots of alt mafic material. The dyke is grey green to limey grey green in colour from epidote alt. There are a handfull of these dykes in this area than appear to be almost a cross between the hornblend gabbros and the earlier mafic dykes, contacts are sharp and well defined due to colour differential @ 64 DTCA.

619.4 625.8 Gabbro.
Gabbro, dominated by the epidote alt feldspathic variety.

625.8 627.2 Mafic Intrusive.
Mafic dyke, as above, w/ epidote, contacts irregular @ 51/40 DTCA.

627.2 630.4 Gabbro.
Gabbro, feldspathic.

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

630.4 631.1 Mafic Intrusive.
Mafic dyke as above, w/ epidote, contacts irregular @ 30/40 DTCA.

631.1 634.5 Gabbro.
Gabbro, dominated by feldspathic, becoming mottled and calcitic over basal 10cm.

634.5 654.9 Basalt.
Basalt? a very dark to black coloured, amphibolitized unit consisting of granular textured sections w/ or without tr of reddish calcite, and very fine grained, black finely foliated sections. Some of the granular sections tend to suggest gabbro although no relict textures exist to be of much assistance. The whole is strongly overprinted w/ calcite, and is mod to strongly mag. There is also some accessory py in the unit which is often near pitted, vuggy calcite stringers.

654.9 655.2 Diorite.
Diorite, pinkish grey, irregular contacts @ 60/0 DTCA.

655.2 686.7 Gabbro.
Gabbro, mixed variable phases of feldspathic gabbro and more finely granular varieties of hornblende gabbro. Overprinting w/ calcite remains strong through this area. Mod to strongly mag.

686.7 688.4 Basalt.
Basalt?, a dark very fine grained to finely granular amphibolitized section w/ a mod well dev foliation across the upper 10 inches @ 40 DTCA. The upper contact is broken and blocky, lower contact @ 27 DTCA. The rx is calcitic and mod to strongly mag.

688.4 703.3 Gabbro.
Gabbro, epidote alt, feldspathic variety dominates.

703.3 703.8 Gabbro.
Gabbro, phase w/ relict feldspars locally in a finely granular amphibolitized unit @ 35/56 DTCA.

703.8 704.5 Gabbro.
Gabbro, coarse, feldspathic.

704.5 706.4 Basalt.
Basalt?, black granular amphibolitized section as previous but without any semblance of gabbroic textures here. Mag, mod calcitic, contacts @ 50/46 DTCA.

706.4 728.0 Gabbro.
Gabbro, mixed phases, dominated by feldspathic type, calcitic, mag. The feldspathic phases being less pervasively alt w/ calcite.

728.0 729.0 Mafic Intrusive.
Mafic dyke, finely granular to finely felted texture as earlier in the hole

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

grey green to yellowish green in colour from accessory epidote alt. Rx is calcitic, mag, sharp contacts @ 25/34 DTCA. This unit is a possible affiliate of the hornblende gabbro phase.

729.0 744.7 Gabbro.
Gabbro, mixed phases, feldspathic is dominant, calcitic.

744.7 745.8 Diorite.
Diorite, an irregular dyklet or inclusion of diorite amongst patches of gabbro.

745.8 751.4 Gabbro.
Gabbro, mainly feldspathic w/ some dark granular altered gabbro adjacent to dioritic units. Also tr accessory py adjacent to diorite.

751.4 752.2 Diorite.
Diorite, a grey irregular dyklet @ 14/36 DTCA.

752.2 771.4 Gabbro.
Gabbro, mixed phases of feldspathic gabbro and black amphibolitized gabbro. The amphib sections appear to be a gabbro from relict textures and the relationship w/ the feldsp phases rather than being basalts. The core is blocky below 765 feet approaching more dioritic sections plus there is accessory py in this area.

771.4 772.8 Diorite.
Diorite, a series of dioritic dyklets or inclusions. The upper unit is blocky and broken w/ a lower contact along the core axis. The second unit is an irregular knot 4cm in size @ 772 @ 38/61 DTCA. The third unit is from 772.3 to 772.8 a 3cm dyke @ 50/12 DTCA. A fourth dyke is found in the adjacent gabbro @ 774 feet 3cm @ 57 DTCA. All dykes are pinkish grey, fractured and alt, amongst altered feldspathic gabbro. There are traces of accessory py here.

772.8 787.3 Gabbro.
Gabbro, dominated by the feldspathic variety plus scattered black amphibolitized sections particularly around dioritic inclusions and in section of blocky core. From 777 to 780.3 the core is black and blocky from narrow sections of pitted vuggy dioritic material running in and out along the core axis. There is accessory py here as well.

787.3 787.8 Diorite.
Diorite, pale pinkish grey @ 30/35 DTCA.

787.8 824.5 Gabbro.
Gabbro, mixed phases, dominated by feldspathic gabbro w/ several of the hornblende phases being finer grained, narrow and quasi dyke-like in appearance. There is also more numerous clots and inclusions of mafic material in this area but most have some semblance of a relict gabbroic texture.

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

824.5 825.7 Diorite.
Diorite, pale pinkish grey to buff grey, blocky irregular w/ contacts @ 0/24 DTCA.

825.7 876.0 Gabbro.
Gabbro, this sequence is dominated by more of the hornblende variety w/ more strongly chloritic passages of the feldspathic gabbro. Local sections are blocky. The lower contact here is finer grained, weakly foliated and slightly cooked.

876.0 880.0 Mafic Intrusive.
Mafic intrusive? This unit varies from very dark green to black w/ a slight reddish cast. The matrix is finely granular to finely felted, w/ some fine acicular amphibole seen locally. The reddish colour is from calcite which is pervasive as well as amorphous. The rx is mod to strongly mag, contacts @ 35/48 DTCA. This unit also appears to mark the start of the lower contact zone.

880.1 928.4 Lower contact zone.
Lower contact zone, gabbro dominated by the hornblende variety. The rx varies from very dark green to grey and black w/ local weak reddish casts due to overprinting from calcite. The rx is mod to strongly calcitic throughout, a feature probably related to a zone of broken core between 885 and 895. There is no semblance to a fault in this area but most of the core is broken into 1cm sized bits w/ pitted and vuggy fractures and local accessory py. The lower contact w/ basalt is a little diffuse but reasonably defined @ 22 DTCA.

928.4 956.5 BASALT
A wider sequence of basalt than seen previously in the gabbbro complex. This sequence consists of intercalated, foliated, amphibolitic sections w/ more granular carb amphibolitic sections that range from 1 to 2 feet in length, up to about 8 feet. The granular carb sections w/ a weak foliation is somewhat variable but avg 40-45 DTCA, and is enhanced by calcite blebs and fractures. The basalt is weakly to mod mag. Effectively amphibole, calcite plus or minus chlorite are the only minerals visible. The basalt is rather poorly veined w/ calcite and is sparsely mineralz w/ py. Both contacts are a little diffuse and hard to precisely pinpoint, due to the pervasive alt here, but contacts are @ 22/40 DTCA.

956.5 1137.0 GABBRO
Return to a system of gabbroic rx, again a complex of fine to coarse grained feldspathic and hornblende rich rx w/ variable amounts of included material from basaltic sections to potential mafic intrusives. Interestingly in this sequence there are a few recognizable sections larger than inclusion size indicative of dykes or larger xenoliths, and, a very high percentage of questionable mafic intrusive to basaltic material exhibits gabbroic textures seen in the coarser phases. The rx varies from grey green to very dark green to locally black w/ occasional reddish staining due to hematite. The rx is

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

identical to that seen previous w/ the exception that the coarser feldspathic sections are usually duller in colour due to an increase in chlorite and calcite alt. The gabbro is generally mod to strongly mag throughout. Alt consists of calcite and chlorite +- epidote w/ calcite being pervasive and locally reddish stained from hematite. Veining is less than 10% normally and is almost exclusively calcite as pinkish to white stringers and fractures up to 1cm size. Mineralz is scattered in the system and is most frequently found near pitted and vuggy fractures, and looks recrystalized.
The upper contact zone is gradational from dark amphibolitic rx and exhibits a fine granular texture, w/ ghost blebs of hornblende up to about 963 where the first of the typical feldspathic textures is developed. It is just before 963 where the rx grades lighter in colour. Between 963 and 1012 there are various dark, granular, amphibolitic sections amongst the gabbro suggestive of included basalt although most of these areas grade into gabbroic rx w/ no(or rare) distinct contacts. Also, amphibolitization appears at least partly related to stringer intrusions in some areas.

1011.9 1015.5 Basalt.
Basalt? A fine grained, granular textured weakly foliated section of potential basalt. The fol varies from 45 to 60 DTCA, and is enhanced by injections of stringers w/ strong adjacent hematite staining. Chlorite amphibole and carbonate are the only rx forming minerals noted. There are also some vuggy fractures here w/ accessory py and some accessory amphib @ the margins. Contacts are reasonably well defined @ 65/47 DTCA. This is a rare section seemingly devoid of gabbro textures.

1015.5 1078.5 Gabbro.
Gabbro, dominated by the feldspathic variety that is duller in colour here but the feldspathic texture is easily recognized. There are several fine grained amphibolitic sections here as well w/ accessory hematite staining that typically exhibits gabbroic textures occasionally, and normally have gradational contacts into more definite gabbroic rx.
1078.5 1088.3 Gabbro.
Gabbro zone w/ accessory calcite alt, some of which is stained reddish from hematite. The rx has a very coarsely granular texture w/ some pitted and vuggy sections containing accessory py.

1088.3 1090.1 Mafic Intrusive.
Two potential dykes of mafic intrusive @ 1088.3 to 1088.7 @ 42/68 DTCA, and @ 1089.0 1091.1 @ 34/40 DTCA. These two dykes have relatively sharp contacts w/ coarsely carb gabbro and are moderately calcitic, magnetic finely felted to granular textured and contain chloritic blebs to alt acicular mafic xtals. The upper unit is grey green; the lower brownish grey.

1095.9 1116.3 Leached to Carbonated Zone flodded zone.
The rx type appears to be gabbro grading from coarsely granular carb gabbro to more amphibolitic, granular dull reddish grey to black carb gabbro circa 1093. What relict textures remain appear to be gabbroic and strongly calcitic, while the vast majority of the section is finely pitted to vuggy w/ leached out carb. Contacts are reasonably sharp @ 37/42 DTCA - shallower

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

core angles near the top. The rx varies from orangish to pinkish to black and a leached putty colour. Carb has almost obliterated the rx. Accessory dull py is common w/ coarse xtals in several of the larger vugs and local concentrations of finer material up to 7%.

1116.3 1137.0 Gabbro.
Gabbro, as before the leached section except w/ more reddish hematitic stain. The gabbro is dull grey to black w/ a reddish cast, is mod to strongly mag, calcitic, and relatively coarsely granular. Minor accessory py. The lower contact is sharp @ 57 DTCA.

1137.0 1155.6 BASALT
Basalt, a short sequence of dark grey green to dark reddish green basalt. The unit is fine grained w/ few visible minerals although chlorite plus or minus amphibole is inferred. The rx is very weakly to non mag and is strongly overprinted w/ calcite which tends to develope the reddish colouration due to the presence of hematite. Some coarse hematite is noted along slips and within pitted to vuggy fractures. The main alt/ metamorphic minerals are calcite, chlorite, and amphibole. The rx is weakly fractured w/ stringers of milky to pinkish calcite some of which are pitted and vuggy w/ coarse hematite. There is accessory fine py in this unit but it is not specifically associated w/ vuggy fractures - it is more of a sprinkling throughout the rx.

1148.4 1149.2 Mafic Intrusive.
Mafic intrusive/basalt? - a narrow fol, dyke @ 58/50 DTCA, typified by streaks to bladed blebs of amphibole in a granular carb matrix. This unit was previously noted as a common phase in the amphibolitized basalt sections and as such was not separated as a mafic intrusive. Here the contacts are sharp and weakly fol, and the unit is quite distinctive in this section. The unit is also weakly mag, sparsely mineralz w/ py and exhibits a moderately dev internal fol @ 40 to 45 DTCA. The lower contact is sharp @ 62 DTCA.

1155.6 1190.4 GABBRO
Contacts zone, into a sequence of intercalated gabbroic and basaltic rx that mark the end of the broad gabbroic system that sits adjacent to elements of the main deformation zone. As before, in areas w/ accessory alt, gabbros are distinguished by their texture and alt w/ most of the finer grained amphibz rx w/ or w/out a fol relegated to the basaltic members - gabbroic rx dominate. There are also some narrow dyklets of syenite in this package plus some unusual alt zones. As above, basaltic section tend to be weakly to non mag, while the definite gabbroic sections are mod to strongly mag - this variation in the mag is unusual compared compared to the prior sequence in the hole. The rx vary from a dull reddish grey green to almost black w/ a reddish cast due to a strong overprinting w/ calcite tinted by hematite. Mineralz is generally minor but ranges up to 2-3% finely sprinkled in some locations. Coarse hematite on slips and in vuggy fractures is also common although there are fewer vuggy fractures than in most of the hole to date. Veining is largely calcitic, white to orangish @ variable angles to the core

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

axis.

1155.6 1161.8 Gabbro.
Gabbro, granular, carb, dull grey green to reddish grey green, sparsely mineralz.

1161.8 1164.1 Basalt.
Basalt? A very fine grained, a dark greenish red to wine coloured, non mag, w/ some coarse hematite in fractures and in vuggy stringers. Upper contact w/ accessory veining @ 52 DTCA, lower contact broken.

1164.1 1164.7 Gabbro.
Gabbro, coarsely granular, dull pinkish grey.

1164.7 1168.0 Basalt.
Basalt, dull wine red unit, very fine grained w/ odd stretched chlorite blebs, non mag. Locally this unit has a distinct feldspathic appearance, it may have previously been logged as a mafic syenite. Upper contacts @ 30 DTCA, lower contact broken over 20cm.

1168.0 1170.1 Gabbro.
Gabbro, reddish grey green, granualar, mag, some accessory py here 2-3% associated w/ orange red stringer sections.

1170.1 1171.9 Basalt.
Basalt, dark grey red to somewhat brownish, fine grained, calcitic non mag, weakly fol @ 50 to 55 DTCA. Contacts are @ 46/48 DTCA.

1171.9 1172.6 Syenite.
A narrow, orange red dyke of syenite @ 50 DTCA.

1172.6 1176.3 Gabbro.
Gabbro, coarse textured, variably stained from carb/hematite.

1176.3 1176.5 Syenite.
Syenite fine grained, orange red, hard w/ the upper contact along a narrrow mud seam @ 82 DTCA, lower contact irregular and effectively along core axis. Some py.

1176.5 1179.0 Gabbro.
Gabbro, dark grey green to reddish flooded w/ orange red calcite/hematite staining between two syenite units.

1179.0 1179.7 Porphyritic Syenite.
Porphyritic syenite, orange red w/ ghost phenos of feldspar, minor qtz veining, tr accessory py on fractures. Contacts are irregular @ 34/40 DTCA. The lower contact being chloritic w/ a narrow rootless chunk of syenite adjacent. W/ the irregular chloritic section at the lower contact there appears to be a crudely kinked layering w/ kink axis @ 80 DTCA.

1179.7 1183.1 Gabbro.

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

Gabbro, dull grey brown, coarsely granular, magnetic.

1183.1 1187.1 Gabbro.
Gabbro, sharp irregular, chloritic contact @ 45 DTCA, into a strongly orange red stained and alt gabbro, particularly down to 1185.5 w/ orange red partly vuggy stringers(not apparently syenite dykes) running locally along the core axis. The lower portion of this zone is dull reddish grey green and somewhat mottled in appearance from carb.

1187.1 1188.9 Porphyritic Syenite.
Porph syenite - two dyklets in the order of 3cm in size running along the core axis amongst what appears to be more strongly alt gabbro. The gabbro is strongly mottled in appearance from carb alt, calcitic.

1188.9 1190.4 Gabbro.
Gabbro? This is the lower contact of the gabbro system and grades ankeritic from the calcitic alt between the two porphyritic dykes just previous. Carb alt is pervasive w/ a change from the just previous section where the gabbro appears mottled from carb alt to rather patchy mottled gabbro within a sea of carb. The rx is grey buff w/ mottled grey green patches and a pervasive pinkish cast. The rx is sprinkled w/ py. The lower contact is a little diffuse @ 48 DTCA. Rx is mag.

1190.4 1190.5 START OF DEFORMATION ZONE

1190.5 1192.5 APLITE
Contact into a narrow pale dyke of aplite. The dyke is esentially composed of feldspar w/ a few distinct xtals but the colouration is suggestive of sodic feldspar. There is a fine sprinkling of chlorite in the package although the total is minor in amount. The unit is hard, non mag, and esentially non carb except around some fine fracturing stained by hematite plus or minus calcite and chlorite is common. The rx is sparsely mineralz w/ py. Lower contact irregular @ 30 DTCA.

1192.5 1221.2 SYENITE
Contact into the first sequence of dyke rx framing the upper reaches of the deformation zone. This system sits along the south or hanging wall margin of the Larder Lake break. The sequence is typified by the presence of syenite dykes w/ or w/out mineralz in a mixture of basaltic to peridotitic komatiite rx plus or minus other intrusives including gabbro and aplite. Alt is variable throughout this section. The zone is also strongly deformed w/ a mod to strong fol plus kink folds and dragging @ variable angles to the core axis, esp notable in the softer more ductile UM komatiite rx. UM komatiites are found throughout at the def zone. In general they are characterized by a strong fol and unctous feel due to the presence of talc and serpentine. The rx are typically fine grained, black to bluish black in colour, weakly to variably mag and have a strong carb component(normally ankeritic) as bands, lenses wisps, and blebs throughout.

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

By contrast, the basaltic komatiites tend to be duller green and chloritic and lack the talc serpentine of the UM members. Probably a number of basalts encountered earlier in this drill hole are komatiitic. Syenites range from very fine grained and orange red, non mag, hard units to porph syenites and rx w/ variable degrees of alt. Individual variations are broken out under the comments section. By far the strongest alt product is carb - calcite dominating to 1204.1 feet followed by a change to ank. Most noteworthy in the UM komatiites.
Veining is also mixed. Most of the veining is carb, w/ accessory qtz veining in this syenite section. The zone is also variably mineralz w/ py.

1192.5 1193.2 Gabbro.
Gabbro, dark green to grey green, reddish stained, coarsely granular, mod mag, tr sulphides.

1193.2 1195.5 Alteration zone.
Characterized by irregular dyklets of alt syenite to aplite intercalated w/ streaky calcitic basalt to 1194.7. Followed by a pale greyish to brownish sections of ank gabbro w/ streaks or stretched chloritic blebs (as the basal contact of the previous wide gabbro section), @ 66 DTCA, what appears to be a streaky basaltic komatiite w/ narrow dyklets from 1195.0 to 1195.5. Lower contact @ 61 DTCA. This whole section is mag w/ tiny blebs of exsolved magnetite. The dyklets are grey to pinkish grey and orangish in colour, are harder than the adjacent rx, partially silicified and have diffuse contacts.

1195.5 1196.1 Aplite.
Aplite, pale grey buff, finely fractured, non mag, about 3% py. Contacts @ 61/51 DTCA.

1196.1 1198.1 Porphyritic Syenite.
Porph syenite to aplite - irregular narrow dyklets of orange red to brick syenite w/ local paler windows of apparent aplite. Rx is calcitic and weakly to non mag, sparsely mineralz. Lower contact @ 40 DTCA. @ 1197.8 there is 2cm gouge @ 62 DTCA.

1198.1 1201.0 Basaltic Komatiite.
Basaltic komatiite, calcitic, streaked w/ narrow stringers and/or dyklets of syenite. Weakly to mod mag, foliated @ 50-60 DTCA.

1201.0 1201.5 Altered Syenite.
Altered syenite, dull orange red to brick coloured syenite w/ a darker central zone due to fracturing w/ mafics and accessory py. Weakly mag. Contacts @ 50 DTCA.

1201.5 1204.1 Gabbro.
Gabbro or mafic syenite - gabbro favoured. This section is a dark green to grey green coloured w/ an orangish reddish cast, presumably due to strong overprinting from calcite plus hematite as opposed to a feldspathic unit. The rx is mod to strongly mag and marks the end of the calcitic material. Lower contact @ 50 DTCA, tr py.

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

1204.1 1205.8 Basaltic Komatiite.
Basaltic komatiite, dark green to almost black, very fine grained, mod mag basalt w/ a mod dev foliation @ 45-55 DTCA. There are a few dull grey siliceous looking sections here as well as some of the fine calcite fractures and veins. Tr py, lower contact @ 56 DTCA.

1205.8 1221.2 Porphyritic Syenite.
Porph syenite to syenite zone consisting of a number of irregular dykes to dyklets of syenite at generally shallow angles to the core axis cutting UM komatiite. The porph nature is not always observable but the unit differs from the massive orange red typical syenites. The colour varies from a very light orange red to a bright brick colour w/ local brownish to buff alt patches and some local buff to beige alt at dyke margins or along irregular fractures. The syenites are cut by fine carb fractures at all angles to the core axis as well as some irregular to milky slightly bluish qtz stringers. The dykes are finely sprinkled w/ py and contain some irregular trails that start and stop along the core for no apparent reason. The local buff to beige(locally to ochre) alt around dyke margins is often very pyritic.
Three Um passages(broader sections) are blue black in colour, weakly to non mag and mod to strongly fol w/ ank bands to wisps and discontinuous lenses less than 5mm in width. There is local buff to beige and weakly purplish alt of the carb - alt w/ accessory py. Dykes include 1205.8 1206.8 @ 56/45 DTCA followed by dull grey green carb basalt, buff alt at top 1207 1208.4 @ 35 DTCA, 15% qtz stringers; 1208.4 1209.4 an irregular knot of syenite along the core axis w/ adjacent ochre alt of the UM; 1209.4 1211.4 upper contact broken, lower contact along core axis cutting UM komatiite, py trails here, accessory veining @ lower contact the UM following is fol/layered @ 40 DTCA as the contact quickly angling along the core axis over a few cm. Several ank lenses are step fractured as steep angles w/ other kinks and drags being difficult to determine an orientation, local beige to purplish alt of ank bands. 1213.0 1213.8 irregular syenite @ 30/0 DTCA w/ accessory py locally around a 1.5cm qtz vein near the top of the dyke @ 17 DTCA and, some accessory py w/ ochre alt in the adjacent UMs. @ 1214.0 1216.8 contacts irregular avg 25/17 DTCA. There is an irregular qtz vein in this unit @ 1214.9 - 1215.7 @ 20/14 DTCA w/ fragments of syenite and streaks of komatiite.
The lower portion below the qtz vein has brownish to buff alt patches plus some brecciation and veining in the adjacent komatiite. @ 1218.7 1220.1 syenite @ 47/20 DTCA, and, 1221.1 1221.2 irregular syenite knot. The UM from 1216.8 to 1218.7 is typically soft w/ irregular ank to 1217.2 followed by more competent granular zone w/ tiny dyklets to stringers of syenite w/ accessory buff to reddish alt @ 55 to 65 DTCA. The lowest UM section also contains some accessory buff alt in addition to the typical soft blue black ank material. The lower contact of the zone is along an irregular knot of syenite @ 41 DTCA.

1221.2 1265.4 ULTRAMAFIC KOMATIITE
Contact into a sequence of dull grey black to blue black, schistose, foliated UM consisting of blue black talcose serpentinized sections containing streaks, lenses and discontinuous bands of milky ank. The core is

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

weakly to non mag and is strongly schistose @ 35 to 55 DTCA. Given the amount of ank present it is sometimes difficult to distinguish veining although some milky to dog tooth qtz and qtz-carb veining up to 4cm thick is locally present. Mineralz is in minor to tr amounts usually as py in a re-xtalization habitat. Drag folds, kinks etc are not common in such deformed rx except near some of the felsic dykes/inclusions.
There are several narrow granulated seams or fracture zones across the unit w/ better defined gouge @ 1226.1 2mm @ 40 DTCA, 1227.6 - 1228.3 2mm running along the core axis, 1229.0 -1229.9 along core, 1231.5 1244.2 gouged and granulated @ 50/37 DTCA, and at the lower contact 5cm of gouge preserved w/ 6 feet of core presumably lost in this locale(1259.2 1265.4).
At 1249.8 there is a lot of blonde alt just cutting the core w/ no associated sulphides.
Within this system there are also some potential dyklets of alt syenite. The dykes appear to be felsic but are strongly alt to a reddish grey to buff grey w/ reddish to ochre highlights. The units are granular, carb, veined and fractured and, due to alt are difficult to determine, much in the way of minerology. Dykes include: 1248.3 1248.5 @ 62/33 DTCA, 1257 1257.5 two irregular knots along the core axis. At the base of the system 1258.3 1258.8 and 1259 1259.2 are two irregular vein breccias, presumably just above the zone of lost core and gouge. Drag folds and kinks are found circa 1247 foliation along core axis w/ kink axis @ 80 DTCA, plus in the dyke areas the fol is highly irregular.

1265.4 1338.7 ULTRAMAFIC KOMATIITE
Apparent contact along the zone of lost core into a komatiite sequence w/ several dykes of syenite. The sequence is subdivided on the basis of syenite alone of which there is a wide variety of alt assemblages. For the most part, the UM is fairly consistent w/ what is described above. Some of the syenite dykes on the other hand are mod well fractured w/ carb and qtz and are finely mineralz w/ py.

1265.4 1266.5 Syenite.
Syenite, two narrow orange dykes @ 32 and 40/32 DTCA,separated by dark red green, hard, carb komatiite from 1265.8 - 1266.0 the intervening zone being highly carb and in part silicified from the adjacent dykes. Tr accessory py here. Komatiite mag, syenite non mag.

1266.5 1271.3 Ultramafic Komatiite.
Komatiite, w/ a narrow syenite dyke dyklet @ 1266.7 2.5cm @ 47 DTCA. The rx is foliated @ 30 to 35 DTCA and is weakly to non mag.

1271.3 1274.0 Ultramafic Komatiite.
Komatiite, cut by about 12 narrow dyklets of alt syenite. Dyklets vary from dull grey red to brick and slightly brownish in colour, w/ very local purplish tints from hematite. What appears to be the ank members of the komatiite subsequently grade brownish to buff and greyish in colour from accessory alt.

1274.0 1278.3 Porphyritic Syenite.

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

Porph syenite, @ 43/53 DTCA. The dyke is an orange brick colour with ghost phenos of feldspar, weak fracturing and tr of fine py throughout.

1278.3 1291.5 Ultramafic Komatiite.
Komatiite, typical, schistosity avg 50-55 DTCA, more strongly mag than previous although moderate here. There are some narrow granular banded sections in this portion that are grey to brownish in colour and appear to consist of alt bands of grey carb w/ magnetite, and chlorite - amphibole plus or minus biotite. Units are found @ 1281.5 @ 70 DTCA poorly banded, 1284.9-1285.6 uniformly banded,@ 57 DTCA, 1289.8-1290.2 @ 45 DTCA. And @ 1290.8 4cm @ 52 DTCA.

1281.8 1292.9 Altered Syenite.
Alt syenite cutting komatiite. This section of intrusion within the syenite zone - it starts as a series of very narrow stringers of strongly carb syenite up to 3mm in width @ 40 DTCA down to 1291.9 followed by two wider dyklets of 5cm and 10cm @ 40/38 and 45/35 DTCA respectively w/ another narrow 5mm dyklet of syenite @ 1292.9 @ 38 DTCA. The larger of the two dykes which is also lowest in the sequence is brick red to grey red in colour, locally mag, locally strongly carb and mod mineralz. Hanging wall to this dyke the 5cm dyklet is granular and more strongly carb and varies from a brownish grey to a dull orange red. Further up section the narrow syenite dykes are similar to the 5cm unit w/ the adjacent komatiite being somewhat brownish in colour due to tiny blebs of grey to reddish stained ank in a brownish alt komatiite matrix. The whole of the section is partly silicified from the intrusives. The footwall dyklet is surrounded by much more obvious komatiite although the rx is partially cooked and brownish in colour w/ the section being somewhat harder than the greasy, unctuous UM therafter - accessory alt is found to 1293.9, however, before blue black UM is reached. The rx are weakly mag.

1292.9 1293.9 Ultramafic Komatiite.
Komatiite, ankeritic, brownish alt w/ some potential stringers of alt syenite although the alt is too strong to specify. The sequence shows a couple of drag folds @ 47 DTCA, plus some kinking, overturning, crenulations @ 32 DTCA w/ the foliation. The rx is foliated @ 35 to 50 DTCA, lower contact @ 39 DTCA.

1293.9 1296.2 Ultramafic Komatiite.
Komatiite, blue black, weakly to mod mag w/ exsolved magnetite, fol @ 50-60 DTCA.

1296.2 1297.1 Altered Syenite.
Alt syenite, three very strongly carb syenite dyklets to stringers @ 6cm, 2.5cm, and 1cm respectively from top to bottom, amoungst streaky ankeritic UM. The dykes? are grey to slightly brownish w/ locally pinkish to purplish casts due to Fe. Dykes are granulated to strongly carb w/ more or less glassy to harder syenite bits sitting in a sea of red carb. Contacts vary from 40-50 DTCA subparallel to the fol. The rx is mod hard and contains tr py.

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

1297.1 1302.6 Ultramafic Komatiite.
UM, blue black w/ brownish alt patches - a function of reddish stained carb and a weak olive coloured alt of the UM. No specific syenites are noted. Weakly mag, tr py. @ 1301.4, 1cm gouge @ 40 DTCA.

1302.6 1303.0 Altered Syenite.
Alt syenite, dull brick red w/ weak orange to buff alt just cutting the core axis @ 4 DTCA.

1303.0 1304.5 Altered Syenite.
Alt syenite, separated from the previous section by 5cm of UM. The dyke is partly granulated w/ a mosaic of syenite in a strongly carb matrix. The dyke varies from orange red to greyish is finely mineralz w/ py and the contacts are @ 24/46 DTCA.

1304.5 1306.1 Ultramafic Komatiite.
UM w/ some brownish alt across most of the section and a narrow 2cm alt syenite dyklet at the upper contact @ 15 DTCA.

1306.1 1307.3 Altered Syenite.
Alt syenite, bright orange red to orange buff w/ a more strongly carb granulated upper portions w/ grey tones from 1306.1 to 1306.8. Tr py, contacts @ 20/42 DTCA.

1307.3 1313.0 Ultramafic Komatiite.
UM, blue black w/ brownish patches, fol @ 45-55 DTCA, weakly to mod mag. There are two very narrow alt syenite dyklets @ 1312.8 1cm @ 55 DTCA, and @ 1313.0 1cm @ 47 DTCA.

1313.0 1317.5 Ultramafic Komatiite.
Alt UM, brownish more massive ankeritic UM w/ intercalated streaky UM parts. Distinctions between more massive and streaky parts are fol parallel @ 30 to 40 DTCA. The section is initiated along a narrow alt syenite stringer w/ other such stringers @ 1315.3 1cm @ 35 DTCA, and 1317.1 to 1317.5 a couple of stringers @ 42 DTCA. There is a suggestion that this section would have been previously logged as steel grey alt syenite. The more massive sections are suggestive of possible strongly alt syenite but neither granulated material nor relict syenite shreds are present. Only tr py present. Locally exsolved magnetite, particularly in the more massive ank sections making the rx weak to mod mag.

1317.5 1319.0 Altered Syenite.
Alt syenite, bright orange to slightly reddish, finely fractured, some coarse blebs of py along fractures. Contacts @ 30/25 DTCA and irregular w/ fracturing.

1319.0 1326.0 Ultramafic Komatiite.
Alt UM, brownish as above. This zone is distinctive in that there are scattered stringers to dyklets of granulated, carb syenite w/ weak pinkish tints here and there throughout and usually at shallow angles to the core axis. Adjacent to a few of these dyklets, greyish silicification is kicked

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

out into the UM. The dyklets and their alt envelopes tend to contain exsolved magnetite while the brownish UM is only weakly mag. The UM is largely ank w/ mafic streaks and blebs. Accessory fine py accompanies the syenite stringers.

1326.0 1328.0 Porphyritic Syenite.
Porph syenite, dull orange buff to orange w/ brick red tones towards the base. Contacts @ 42/47 DTCA. Porph nature due to ghost phenos of milky feldspar patches. As usual the rx is hard, finely fractured, and mineralz w/ some fine py plus or minus the odd coarser bleb. @ 1327.9 there is a narrow 1.5cm strip of grey to browish, carb, alt UM running along the core axis.

1328.0 1329.7 Ultramafic Komatiite.
Alt UM, dark browish black, blocky, carb and alt between two syenite dykes.

1329.7 1336.5 Altered Syenite.
Alt syenite in what appears to be a composite dyke or a series of dykes All are of the orange red variety, and esentially non porphyritic but variable amounts of included material are present. From 1329.7 to 1331.1 the syenite is a dull brick and massive to grey red and granulated w/ a couple of alt clots to 3cm in size - UM type, buff and one w/ green carb, contacts @ 37/33 DTCA. From 1331.1 to 1334.0 the syenite is orange red w/ fractures and patches of dark carb UM along the core axis. After 3.5cm of streaky reddish stained UM @ 1334.0, the syenite is brick red to grey red in colour in sharp contact w/ brighter to orange and orange buff syenite from 1334.6 to 1334.9. At 1334.9 there is 5cm of blocky UM and syenite followed by bright orange syenite w/ some redder tones towards the end of the hole. Outside contacts are @ 37/27 DTCA. The unit is sparsely mineralz w/ py.

1336.5 1338.7 Altered Syenite.
Contact zone, alt syenite or alt ultrmafics. This is a most unusual zone in that about the only visible mineralogy is ank and mafics as the ultramafic system but the zone is bright orange red to brick coloured from staining w/ only one recognizable syenite dyklet 4mm @ 46 DTCA. The rx are moderately hard, mod mag, and crudely fol @ 40-50 DTCA. The zone marks a transition from ank rx to calcitic rx within a few cm below the lower contact. Lower contact sharp w/ syenite @ 46 DTCA.

1338.7 1398.5 CARBONATED GABBRO
Contact into a zone dominated by what appears to be carb gabbro dykes as in the hanging wall sequence intercalated w/ UM komatiite. A major change is noted in this area as well from ank alt in the overlying rx to very strong calcite in the gabbroic sections and mod calcite within UM to a general ank alt again below 1381. The UM units are fairly typical blue black and fine grained, w/ a strong calcite component, however the streaky to layered ank style of material is absent resulting in more massive UM.
The calcitic gabbroic rx are brownish to reddish black in colour from a high component of reddish calcite combined w/ an amphibolitized mafic to ultramafic component. In some respects w/ the streaks to stretched lenses of mafic material the rx appear close to the strongly ank UMs in composition

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

although here the system is almost entirely composed of reddish carb and mafics without any of the syenitic dyklets that promote such alt. The gabbros are generally mod mag, the UMs less so. There are also some potential alt syenites in this section.

1338.7 1340.0 Ultramafic.
Contact zone, deeply stained orange red carb(ank) UM w/ a narrow deep orange red section from 1339.2 - 1339.5 fol parallel @ 60 DTCA. The orange red section amongst dull orange red to green rx appears more felsic to an alt syenite although the minerology is difficult to type due to staining and alt. The surrounding rx contain streaks and blebs of UM.

1340.0 1340.2 Gabbro.
Gabbro?, deep wine red, calcitic, and grading quickly towards a more granular texture as the ensuing rx. This is the first calcitic portion of the sequence. Potential tr of gouge on the core face @ 1340.0 @ 75 DTCA. Lower contact @ 40 DTCA. Mag, unmineralz.

1340.2 1341.0 Ultramafic Komatiite.
UM, blue black, soft, foliated @ 50 DTCA.

1341.0 1348.1 Carbonated Gabbro.
Carb gabbro w/ scattered inclusions of UM from 1 to 6cm wide. Foliation /contact vary from 35 to 45 DTCA.

1348.1 1348.6 Altered Syenite.
A deep orange red streaky to layered zone w/ several narrow fine stringers of potential alt syenite, 2 to 3mm wide amongst UM. Strongly stained, hematitic calcitic, magnetic. Contacts @ 45/70 DTCA.

1348.6 1348.9 Ultramafic Komatiite.
UM, calcitic @ 70/65 DTCA.

1348.9 1355.5 Gabbro.
Gabbro, brownish, granular calcitic minor fracturing w/ injected UM. Lower contact irregular @ 55 DTCA.

1355.5 1358.7 Ultramafic.
UM, blue black w/ some brownish alt over the upper 14cm and a gabbroic patch w/ diffuse contacts from 1356.7 - 1357.3 @ 38/42 DTCA.

1358.7 1361.9 Carbonated Gabbro.
Carb gabbro, calcitic, reddish to brownish, amphibolitic, mod mag. Contacts sharp @ 41/45 DTCA.

1361.9 1362.9 Ultramafic.
UM, blue black, massive, some calcitic fracturing.

1362.9 1363.6 Carbonated Gabbro.
Carb gabbro, calcitic, coarsely granular, reddish to brownish, mag contacts sharp @ 38/58 DTCA.

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

1363.6 1365.1 Ultramafic.
UM, fine grained, blue black, locally mag from exsolved magnetite mostly near calcitic fractures.

1365.1 1371.9 Carbonated Gabbro.
Carb gabbro, reddish to brownish black, w/ a couple of intercalated UM passages to 8cm in size. Sub-parallel to the fol @ 50-65 DTCA generally steeper at lower third of zone. Contacts 42/47 DTCA.

1371.9 1373.6 Ultramafic.
UM, blue black w/ some streaky, granular reddish to brownish stringers and a wider pinkish brick coloured calcite section from 1373.3 - 1373.6 @ 37/52 DTCA. While this vein is granular and looks like a potential alt syenite w/ tr of py, the only mineral recognized is granular calcite that reacts vigorously w/ Hcl.

1373.6 1385.1 Carbonated Gabbro.
Carb gabbro, a most unusual unit w/ two narrow sections of UM near the top @ 1374 - 3cm @ 52 DTCA but irregular, and @ 1374.9 4mm @ 50 DTCA. At the outset the gabbro ranges from brownish to reddish black and is strongly calcitic. Three areas are much more strongly reddish in colour over the upper 10cm, 1375.0-1375.3, 1377.2-1377.5, and 1378.8-1379.3. In the two middle sections here there is a stringer like component to the deep orange red colouration although an alt syenite is not inferred. At approx 1380.0 calcite decreases rapidly at the expense of ank and the rx grades progressively lighter in colour through brownish to reddish grey to grey green and brownish grey green by the contact w/ alt syenite. With the appearance of ank, first as a white speckling and then pervasively the rx also becomes harder and the dark mineral that is sometimes acicular and indicative of hornblende grades to show blebs and streaks and stretched lenses of UM in a matrix that is a granualar mozaic of pinkish to milky and buff coloured carb, not too dissimilar from the carb(ank) UM units adjacent to alt syenites in the previous section. Thus these particular gabbroic zones may be a function of alt in the sequence rather than a separate rx type. The basal 35cm of the gabbro also grades progressively more chloritic and there is a narrow pinkish vein or dyklet 10cm from the contact @ 44 DTCA, w/ tr chalcopyrite 1385.1 1398.5 contact zone.
Lower contact zone - a rather wide, tenuous contact zone definition here but this area is complicated by the strong presence of ank which tends to create a matrix that is a granular mozaic of pinkish to buff and white carb plus some streaks to blebs of mafic minerals such that original textures are obliterated. The rx in this sequence are quite uniformly hard and weakly to mod mag - rx designations are essentially on texture variations and prior history. At the upper contact the rx initially appears as a fine grained, brick red, strongly fractured, alt syenite that grades darker grey green, more granualar textured w/ brick red staining adjacent to veining down to 1386.9. Between the interval 1386.9 and 1391.0 the rx appears to be a strongly carb, hard UM w/ some silicification promoted by lighter coloured stringers to dyklets of potential syenite as in the upper alt syenite zone - the colour is normally grey green to buff and brown w/ scattered pinkish

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

grey to orangish narrow stringers? Around 1391 the core grades to the grey carb(ank) gabbro to carb UM, that is hard, granular textured,with mafic lenses, blebs and streaks and a mozaic textured matrix.
From 1396.5 - 1396.7 there is a softer section of grey green carb UM w/ lensoid blebs of ank in a more notable carb UM matrix @ 38 DTCA. This section is followed by a carb gabbro/carb UM unit w/ incipient stringers to dyklets of alt syenite? Due to the overall hardness of this section it may have been previously logged as felsite. The lower contact is @ 17 DTCA w/ 2cm of qtz-ank veining.

1398.5 1412.2 FAULT ZONE
Contact along a dark green to blue black UM into a highly disrupted zone of broken to blocky core w/ several gouged sections, some accessory veining, and a dyke of brick red alt syenite. The UM is typically soft, weakly to non mag, strongly ank and is sparsely mineralz.

1398.5 1399.2 Ultramafic Komatiite.
UM, massive, speckled w/ carb to UM w/ ank lenses fol @ 42 DTCA.

1399.2 1399.9 Gouge zone.

1399.9 1401.8 Ultramafic Komatiite.
UM, strong ank w/ 5mm gouge @ 1400.2 @ 46 DTCA.

1401.8 1402.8 Quartz.
Two large qtz-ank veins separated by 5cm of UM. Veins are barren w/ rx fragments @ 45/35 DTCA (15cm) and, 0/50 DTCA, lower contact broken.

1402.8 1404.1 Ultramafic Komatiite.
UM, core broken, foliated @ shallow angles.

1404.1 1406.0 Syenite.
Syenite, bright brick red to slightly orange, massive w/ mod veining and weak alt fractures w/ tr of magnetite in them. Tr py.

1406.0 1408.2 Ultramafic Komatiite.
UM, broken w/ gouge @ 1406.1 - 1cm, 1407.5 - 1.5cm @ 25 DTCA, 1407.9 2cm and 1408.2 2cm @ 30 DTCA.

1408.2 1410.0 Quartz.
Qtz-ank veining up to 12cm core length, w/ rx fragments of UM, partly blocky core, tr py. There are also a couple of very narrow syenite dyklets.
1410.0 1412.2 Ultramafic Komatiite.
UM, blocky to broken but w/ 2cm qtz-ank vein along the core axis @ 1412.2 2cm gouge @ 40 DTCA @ 1410.1 and 3.5cm gouge @ 1412.2. Also there is one carb alt UM more massive section from 1410.3 to 1410.7 w/ granular buff alt @ 20 DTCA.

1412.2 1413.8 FELSITE

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

Felsite - contact into a narrow grey buff to brownish coloured dyke? w/ local weak orangish cast along some fine fractures healed w/ carb +- tr of hematite staining and py. The dyke is essentially featureless to amorphous and is speckled w/ pale ank in a very fine grained matrix. There is minor veining here and tr of py. Contacts @ 42/52 DTCA.

1413.8 1467.6 *ULTRAMAFIC KOMATIITE*

A sequence of dull blue grey to blue black ank UM rx w/ scattered brownish sections/dykes interpreted as potential carb gabbro. As usual the UM is fol to streaky layered from ank lenses, blebs and streaks sub parallel to the fol. The rx is generally weakly to nonmag, although the majority of the gabbroic alt sections are mod mag.

While there are a number of variations the normal gabbroic units are granular textured from ank w/ a dull brownish to black matrix that here is very massive but appears to be a mix of chlorite and amphibole plus or minus biotite as opposed to a number of the gabbroic sections previous where the matrix was also a granular carb mosaic w/ mafic blebs most of which were amphibole. Several of these units also have incipient streaks to stringers that are a granular mosaic of carb some of which is stained orange red and may relate to the alt syenite. This feature lends creedance to the possibility that the gabbroic units are in fact alt UM.

There are also a couple of dykes of potential alt syenite in the system which are more fully discussed later. Mineralz is not prolific the alt gabbro sections tending to carry accessory py 2-3%. Veining is largely ank.

1413.8 1415.5 Ultramafic Komatiite.
UM, blue black, fol @ 55-60 DTCA.

1415.5 1416.0 Carbonated Gabbro.
Carb gabbro - this section being lighter in colour to pale brown and grey brown, carb, granular textured, tr fine py, weakly mag. Contacts @ 75/40 DTCA.

1416.0 1418.7 Ultramafic Komatiite.
UM, blue black, fol @ 40 to 50 DTCA.

1418.7 1420.0 Carbonated Gabbro.
Carb gabbro, this unit is different in that the matrix is dark brown in colour very fine grained and mod to strongly mag. Superimposed on the matrix are irregular blotches of off white to beige ank. The rx is finely mineralz w/ py and is much harder than most of the rx in the system. Contacts @ 44/38 DTCA.

1420.0 1426.1 Ultramafic Komatiite.
UM, blue black, fol @ 45-50 dtca w/ local narrow brownish carb alt w/ fine fol parallel streaks to dyklets up to about 2mm in size of potential alt syenite - although these features are grey to pinkish (granular mosaic) they are slightly harder than the adjacent rx. Brownish patches include: 1420.9-1421.3 fol parallel @ 40/50 dtca, 1421.5 - 1421.9 patchy, fol alt @ 44 dtca, and, 1423.3 - 1423.8 again patchy w/ accessory py @ 40 dtca.

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

1426.1 1426.7 Carbonated Gabbro.
Carb gabbro, brown, carb, granular @ 37/47 dtca, w/ a 2cm strip of blue black UM @ 1427.3 - @ 32 dtca. Weak accessory py. Weakly mag.

1426.7 1427.0 Ultramafic Komatiite.
UM, blue black.

1427.0 1428.9 Carbonated Gabbro.
Carb gabbro, mod to locally strongly mag w/ some local blue black UM streaks -the widest @ 1428.0 2.5cm @ 48/54 dtca. Outside gabbro contacts @ 41/28 dtca.

1428.9 1431.8 Ultramafic Komatiite.
UM, dominated by patchy brownish alt amongst blue black UM. The rx is variably mag, and also contains a number of incipient, fol parallel, streaks, blebs, and lenses of what appears to be alt syenite. The syenite streaks to dyklets consist of finely granular to granulated pinkish to beige to weakly puplish patches, the largest of which is a knot cutting the core axis @ 1430.2 - 4cm. All of these syenite patches are discontinuous to lenticular in nature, but they do appear to be the source/cause of the brownish alt in the adjacent UM - the section here is clearly UM w/ alt sections tending to have diffuse contacts. Foliation varies from 30-45 dtca.

1431.8 1467.6 Ultramafic Komatiite.
UM, blue black, weakly to non mag, mod to strongly fol, @ 0/30 dtca 25-30 is most common. Fol is enhanced by ank streaks, lenses etc as previous. Within the section there are two narrow dyklets of alt syenite @ 1451.3 2.5cm @ 30 dtca grey buff to pale orange, carb, w/ tr of py; and 1464.8 1.5cm @ 30 dtca, grey brown in colour and more strongly carb, also with accessory py. Neither dyke is mag. Also, there is one dark grey, harder carb unit of possible alt syenite @ 1466.4 3cm irregular @ 14/37 dtca possible by virtue of accessory py bleaching along some fine fractures, and accessory py. There is some coarse accessory py in the UM. The lower contact of the overall system is @ 32 dtca.

1467.6 1488.1 ALTERED SYENITE
Contact into a mixed sequence of alt syenite, qtz veining, and chert amongst carb UM. This zone is a whole melange of rx types. The zone looks rather healthy although no visible gold was spotted. For all intents, the zone is non mag. Due to the extraordinary variations here, units are logged out separately in detail.

1467.6 1469.6 Altered Syenite.
Alt syenite, contacts 32/24 dtca. This dyke is dull grey red and fractured w/ chlorite over a few mm at the upper contact before rapidly changing to a dull orange brown to orange buff colour. The dyke is well mineralz w/ 3-5% fine py and is weakly veined w/ carb and lesser grey qtz stringers.

1469.6 1470.0 Ultramafic Komatiite.
UM, dark green, foliated.

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

1470.0 1472.5 Altered Syenite.
Alt syenite, contacts @ 23/32 dtca, w/ the lower contact irregular with veining. The syenite is a dull to bright orange buff colour to locally dull grey red adjacent to some streaky UM sections along the core. About 60% of this zone is milky to slightly greyish qtz and qtz-ank veining. Tr accessory sulphides in syenite portions, porphyritic.

1472.5 1475.6 Ultramafic Komatiite.
UM, dull grey green to almost black w/ about 50% qtz veining plus or minus ank. Some accessory py along upper contact. Fol @ 20 to 30 dtca.

1475.6 1476.2 Altered Syenite.
Alt syenite, @ 30/44 dtca, pale orange buff in colour amongst about 65% qtz veining - greyish w/ ank fractures.

1476.2 1477.9 Ultramafic Komatiite.
Alt UM, dark grey green in colour, dull, w/ 20% veining and a fol effectively running along the core axis.

1477.9 1481.2 Altered Syenite.
Alt syenite @ 20/22 dtca. The core is dull orange red to brick coloured, w/ orange buff to beige orange sections. The section is also cut by streaky UM running nearly along the core axis. As before there is about 45-50% grey to milky qtz-ank veining.

1481.2 1483.4 Cherty Sediments.
Chert - contact into 4 narrow units of what appears to be chert amongst dark grey green bands of carb UM. The bands are 6,8,4 and 26.5 cm respectively from top to bottom @ 45 to 60 dtca. The chert is grey to grey beige in colour w/ bone white colloidal patches. The chert is essentially unmineralz except for some fracturing w/ py, chalcopyrite and galena adjacent to a 1cm brick red syenite at the lower contact. The UM however does contain tr sulphides and a narrow granular, granulated, carb alt syenite 1cm @ 66dtca @ 1482.2 also contains some fine py.

1483.4 1484.9 Altered Syenite.
Alt syenite, contacts @ 57/27 dtca. Contact along a narrow, 1cm brick red syenite into another qtz veined alt syenite. The main body of syenite is dull orange buff to beige and orange brown in colour w/ localized bright orange red alt adjacent to some fractures. The syenites contain about 40% veining and is mineralz w/ blebs to local fine grained py.
1484.9 1488.1 Ultramafic.
Carb UM dull grey green to almost black and locally brownish in colour w/ 3 narrow units of carb qtz veined alt syenite @ 1485.3 4cm @ 29 dtca, 1486.5 2.5cm @ 35 dtca, and @ the lower contact, 3cm @ 37 dtca w/ an irregular lower contact running along the core axis. The syenites are mineralz w/ 2-3% py, plus there is some py adjacent in the UM as well. The UM is fol @ 35 to 45 dtca w/ some of the ank streaks behind folded back onto themselves leaving a hook pattern locally subparallel to the foliation.

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
1488.1	1508.3	ULTRAMAFIC KOMATIITE Return to blue black carb UM rx w/ a mod to strong fol @ 25 to 45 dtca. Shallower angles dominating the upper half of the system, becoming gradually steeper w/ depth. As before the rx is weakly to non mag except in the presence of accessory alt or narrow dyklets. Talc, chlorite and ank are the main rx constituents. The rx grades from the grey green colour around the previous section to blue black by 1492 feet, where the rx is fairly consistent in nature. 1496.0 1497.2 Ultramafic Komatiite. There are a number of grey buff to slightly pinkinsh streaks to stringers in this section @ 10-15 dtca that may be alt syenites?? These narrow bands, up to 5mm in width are granular and almost totally composed of carb w/ tr of exsolved magnetite and minor fine py. The matrix is finely granulated. Also just above this section the ank streaks are contorted to kinked w/ axis @ 25 and 44 dtca - opposing to the fol. 1500.3 1500.6 Quartz. Qtz-ank vein @ 30 dtca, w/ fragments of alt syenite plus a couple of alt syenite streaks/dyklets below here to 1501. 1503.7 1503.9 Altered Syenite. Alt syenite, dull reddish grey to brick coloured, alt carb, granular textured syenite w/ 2-3% accessory py. Contacts @ 40/35 dtca. The lower contact of the system is sharp @ 42 dtca.							
1508.3	1557.7	GREEN CARBONATE ZONE Contact into a system of carb rx dominated by the bright emerald green fuchsite carb but w/ more typical UM sections, blonde to yellowish altered sections, tuffaceous rx, alt syenites and alt zones affiliated w/ what appears to be incipient dykes/streaks of alt syenite. Since the rx are quite variable they are best highlighted on a section by section basis. In general the rx are weakly to non mag, except around some of the potential alt syenite units, are poorly to mod veined w/ qtz and sparsely mineralz except in some alt and/or syenitic sections. Three splashes of VG were found by C.Page @ 1549.3 feet - no other gold noted. 1508.3 1509.4 Ultramafic Komatiite Tuff Altered Syenite. Contact zone - carb UM to tuff w/ several narrow what appears to be incipient, alt syenite dyklets cutting the core axis and alt the adjacent rx. The dyklets are dull orangish brown to buff in colour w/ some pinkish streaks and granular carb material, are non mag, fine grained granular textured w/ accessory py. The avg size of these units is less than 5mm but there is one larger dyke @ 1508.9, 2.5cm @ 45 dtca. The adjacent UM or tuff varies from dull grey to green black to a dull earthy reddish brown. The rx is finely layered to alt banded @ 34-45 dtca. 1509.4 1516.1 Tuff. Tuff, this is an unusual unit that may have timiskaming affinities due to							

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

the rx type and alt relative to lower units seen in other holes or this may be an alt UM tuff. The rx is finely layered or alt banded @ 45 to 50 DTCA, w/ pale dark green layers intercalated w/ buff to beige coloured bands some of which exhibit a reddish tint. Streaks lenses, and knots of qtz-ank are locally found throughout the unit, parallel to the fol/layering. Locally fine lapilli sized chloritic blebs or fragments are also noted as well as some exsolved magnetite in occasional layers. The basal footwall grades more brownish to reddish and olive in colour, like the contact zone above and this area similarly hosts two granular, harder carb units of potential alt syenite affinity - 1.5cm @ 1515.6 and 2.5cm @ the lower contact. There is also a more definite reddish stained, alt and carb zone w/ some alt syenite affinity from 1511.7 - 1512.0 @ 46 dtca.

1516.1 1521.7 Ultramafic Komatiite.
Carb UM, dark, dull green grey to black in colour, ank w/ some accessory brownish alt and banding around a few narrow grey granular carb bands between 1517.1 and 1517.8. The rx is mod to strongly fol @ 45 to 55 dtca There is also a subtle increase in fuchsite over the basal 10cm. Contacts 45 dtca.

1521.7 1522.3 Green Carbonate Zone.
Bright emerald green carb w/ some patchy blonde to yellowish and ochre coloured alt.

1522.3 1523.1 Altered Syenite.
Alt syenite, reddish grey to reddish buff in colour, well mineralz w/ 5-7% py- in streaks and disseminated. Contacts @ 65/0 - lower contact irregular and running along core axis.

1523.1 1525.8 Green Carbonate Zone.
Green carb, w/ scattered dark chlorite-serpentine fractures and some streaky sericite - yellow to ochre alt.

1525.8 1526.2 Altered Syenite.
Alt syenite, a granular to granulated, alt dyke. Reddish buff to grey red in colour. Contacts @ 40 dtca.

1526.2 1528.2 Green Carbonate Zone.
Green carb w/ irregular patches of ochre coloured alt. At one point (1527 to 1527.2) two grey to purple grey, granulated carb streaks are found in the ochre alt which may be relict syenite, and, the adjacent rx appear slightly harder and silicified??.

1528.2 1530.5 Green Carbonate Zone.
Green carb w/ much more dark UM, chlorite-serpentine streaks @ 45 to 55 dtca, plus some narrow to 1cm bands of yellowish to ochre coloured alt.

1530.5 1552.3 Green Carbonate Zone.
Green carb, w/ both patchy and fol parallel zones of ochre coloured alt. Several of these ochre coloured sections are harder and more siliceous and appear to be affiliated w/ either accessory qtz veining or the incipient

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

dykes of alt syenite. Most of these silicified ochre coloured units are also the best mineralz w/ py as well. Zones of interest are: 1533.0 a 1cm alt syenite? plus 3cm of buff alt; 1533.4 to 1535.5 ochre, siliceous zone w/ accessory fine veining and a possible incipient alt syenite knot @ 1534.3; 1536.3 - 1536.6 w/ a potential 1.5cm syenite @ the upper contact; 1540.1 - 1540.7 layered ochre alt @ 40/45 dtca, partly siliceous, 1542.8 - 1543.1 ochre alt, partly siliceous from veining; 1548.0 - 1548.5 an irregular patch along the core axis; 1548.9 - 1549.4 ochre coloured w/ veining and splashes of VG in the vein; and 1549.3 to 1551.2 ochre to slightly reddish alt but non siliceous. From 1551.2 1551.8 is a qtz ank vein.

1552.3 1552.7 Altered Syenite.
Alt syenite, orange buff w/ grey veining @ 40/34 DTCA.

1552.7 1553.3 Alteration zone.
Banded purple grey to slightly reddish sections within a buff to brownish ochre alt zone. Local sections within this unit are siliceous but not so throughout. Accessory py.

1553.3 1556.3 Green Carbonate Zone.
Green carb w/ highly contorted brownish ochre to buff altered layering plus accessory UM streaks. The dominately ochre section to 1555.5 is siliceous and mineralz w/ accessory py.

1556.3 1557.7 Altered Syenite.
Alt syenite, dull grey red to brick coloured, fine grained w/ some milky to greyish veining and accessory py. Upper contact irregular w/ veining, lower contact along a 1.5cm vein breccia w/ fragments of alt syenite @ 33 dtca.

1557.7 1751.0 ULTRAMAFIC KOMATIITE
Contact into one of the broader sequences within the deformation zone consisting of dominant blue black, schistose, foliated UM intercalated w/ or cut by numerous brown alt zones and occasional dykes of alt syenite. In this sequence a new style of brownish alt appears. Previously brownish alt was characterized by granular ank in a dark carb matrix w/ or without amphibole. Locally within these zones incipient or larger dykes were found central or adjacent to the alt ergo a heat source/fluid source for alt/metamorphosing the adjacent rx. Other than carb, which was occasionally reddish in colour, and mafics, no other minerals were noted.
The carb was also easily distinguished and granular in most circumstances. In addition to the units just described, a narrow series of brownish to reddish alt units appear in this sequence. They are carb as well but are most typically banded either as a function of compostitional layering or alt or both. It would also appear that the incipient style of alt syenite need not be present either, although several pinkish streaks in the system appear to suggest their presence. Some of the layers are very fine grained to almost an earthy red brown colour intercalated w/ potential streaky UM to amphibolitized layers, more coarsely granular carb layers, and layers w/ fine chloritic to amphibolitic foliation parallel blebs, and incipient dyklets to stringer like layers. It would appear from grain size variations,

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

fine lapilli sized blebs and the layering that some of these units are tuffaceous members as distinguished in the upper part of the green carb zone. This makes the possible Timiskaming association interesting. The tuffs are invariably mag, often mod to strongly so, and are mineralz w/ accessory py locally. All of the sequence is ankeritic.

1557.7 1564.7 Ultramafic Komatiite.
UM, blue black w/ local weak brownish alt associated w/ the incipient dyklets style as 1561.5 - 1561.9 and 1564.3 - 1564.7 i.e. Narrow dyklets in these zones kick out some alt and carb into the adjacent UM making the rx appear brown. The UM are weakly mag, alt zones mod mag.

1564.7 1568.1 Ultramafic Komatiite.
UM, largely brownish alt w/ blue black parts. Alt is related to 3 larger syenite dykes @ 1564.7 - 1565.0 @ 50/62 dtca, @ 1566 - 1.5cm @ 22 dtca, and a zone of broken core w/ an alt syenite sections from 1566.1 - 1567.3 contacts unknown, broken. Syenites range from dull grey red to brownish red, brick and dull orange colours and are mineralz w/ accessory py.

1568.1 1573.9 Ultramafic Komatiite.
UM, blue black w/ weak streaky brownish alt, fol @ 50-60 dtca.

1573.9 1575.0 Altered Syenite.
Alt syenite? broken core to 1cm chips, but almost all are a dull grey red syenite.

1575.0 1575.5 Ultramafic Komatiite.
UM, blue black.

1575.5 1577.0 Ultramafic Komatiite.
UM, brown alt, granular, carb, contacts @ 56/54 dtca.

1577.0 1579.9 Ultramafic Komatiite.
UM blue black w/ patchy brownish alt in patches up to 8cm in width that are streaky w/ um and reddish carb. Fol @ 60 dtca.

1579.9 1581.6 Ultramafic Komatiite.
UM dominately brownish alt related to a 4cm dyklet of syenite @ 1580.1 @ 60 dtca. Plus an 8cm patch of alt syenite just cutting the core axis @ 1580.4. The dominant sphere of influence for these two dyklets ends circa 1580.7 but streaky brownish alt associated w/ reddish carb continues to 1581.6. Accessory py is found in and adjacent to the syenite.

1581.6 1593.4 Ultramafic Komatiite.
UM, blue black w/ brownish alt patches avg 4 to 5 cm in size. The brownish alt patches are locally seen to be associated w/ mm size dyklets of alt syenite but are normally just streaky alt sections w/ accessory reddish carb which creates brownish hue to blue black UMs.

1593.4 1600.9 Ultramafic Komatiite.
UM, brownish alt for the most part related to a handful of narrow incipient

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

dyklets to 1cm in size, plus 2 larger dykes @ 1594.9 5cm @ 82/60 dtca, and, 1599.4 to 1600.4 both contacts broken but fol @ 45 to 50 dtca on either side of the dyke. The upper dyke is dull grey red and granulated, the lower is very fine grained, and dull grey red to brownish red in colour w/ some accessory py. The lower contact is along a 2cm dyklet of syenite @ 50 dtca.

1600.9 1619.7 Ultramafic Komatiite.
UM, a sequence of intercalated brownish alt units and the more typical blue black UM w/ local patchy to streaky alt. Brownish units dominate this section and tend to show some measure of the incipient alt syenite dyklets Although such is not always the case - some sections have the diagnostic streaks to blebs of mafic material suggestive of the carb gabbro style of unit. The main units of brownish style alt are: 1601.0 2cm @ 67 dtca, 1602.2 1603.7 @ 54/62 dtca; 1605.3 1606.9 w/ some streaky UM in the central portion, plus 2-3% py @ 55/48 dtca; 1608.3 1609.0 @ 60/58 dtca; @ 1609.2 4cm @ 55 dtca; 1609.9 1610.5 @ 60/43 dtca; 1613.6 4.5 cm @ 35/30 dtca; 1614.1 1616.4 @ 25/40 dtca w/ some accessory py and noteworthy 5mm to 1cm dyklets of syenite 1617.0 1617.9 @ 52/42 dtca; and 1618.9 to 1619.7 @ 35/24 dtca.

1619.7 1632.0 Ultramafic Komatiite.
UM, blue black, ank, weakly to mod mag w/ local brownish, granular, carb alt sections.

1632.0 1632.4 Tuff.
Tuffs? the first of the brownish alt potential tuffaceous units w/ very fine grained dark brown bands, dark brownish green potential chlorite bands and a couple of blue grey bands of potential UM or talc alt tuffs The very first chlorite alt potential tuff layer is seen earlier @ 1631.5 Contacts of this section @ 42/38 dtca. This unit is not as wide nor as well dev as those seen further down section.

1632.4 1635.3 Ultramafic Komatiite.
UM, blue black w/ some more chloritic sections.

1635.3 1635.7 Altered Syenite.
Alt syenite, pale grey buff w/ pitted and leached pale orange coloured margins about 2 cm thick. Contacts @ 55 dtca w/ the upper contact broken.

1635.7 1642.5 Ultramafic Komatiite.
UM, blue black w/ some mod sized patches of dull brown granular alt as 1637.6 - 1637.9 @ 60 dtca; 1640.2 2cm patchy; 1640.3 2cm @ 60 dtca; 1640.7 - 1640.9 @ 56/40 dtca; surrounded by more chloritic alt and 1641.6 - 1641.9 @ 55/48 dtca.

1642.5 1644.8 Ultramafic Komatiite.
UM, brownish alt to tuffaceous w/ some distinct banding over the top 15cm @ 55 dtca, but therafter more of the granular incipient dyke style of alt around scattered, narrow harder dykes up to 1cm in size. Also, the section 1643.0 to 1643.5 is a blue black UM @ 50/60 dtca. Lower contact is sharp @ 47 dtca.

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

1644.8 1649.0 Ultramafic Komatiite.
UM, blue black w/ weak brownish streaked sections due to reddish carb. Fol @ 45-60 dtca - 60 dtca dominant.

1649.0 1667.5 Ultramafic Komatiite.
Brownish alt UM w/ a possible tuff section at the outset to 1651.5, although the banding appears most related to the incipient style of syenite dyklets to 1cm in size which are at variable angles to the core axis w/ the layering reflecting same. Overall, alt appears weaker in this zone w/ more distinct reddish carb streaks blebs and lenses in a more definite UM matrix. This zone also contains a number of dark blue black UM sections from 4 to 15cm in size w/ a more blotchy ank alt. The lower contact is irregular and runs along the core axis for about 30cm.

1667.5 1670.9 Ultramafic Komatiite.
UM, blue black, non mag, w/ blotchy ank.

1670.9 1672.5 Ultramafic Komatiite.
UM, brownish from intro of granular reddish carb, tr py, mod mag.

1672.5 1676.4 Ultramafic Komatiite.
UM, blue black, w/ local patchy biotite alt, fol @ 55-60 dtca, ank alt is also blotchy here.

1676.4 1677.4 Ultramafic Komatiite.
UM brownish alt, granular. Upper contact is irregular lower contact @ 60 dtca.

1677.4 1679.9 Ultramafic Komatiite.
UM, blue black.

1679.9 1683.0 Ultramafic Komatiite.
Brownish granular, alt UM from accessory reddish carb apparently related to a series of incipient dykes of alt syenite as 1680.1 2mm @ 56 dtca; 1680.7 1cm @ 52 dtca; 1681.1 an irregular 8cm patch along the core axis, and 1682.5 4cm @ 52 dtca. Outside contacts of the unit are @ 56 dtca.

1683.0 1683.9 Ultramafic Komatiite.
UM, blue black.

1683.9 1684.1 Ultramafic Komatiite.
UM, brown to red brown, fine grained streaky alt, a much redder colour here, streaky rather than banded as the tuff units suggest @ 52 dtca.

1684.1 1684.2 Ultramafic Komatiite.
UM, blue black.

1684.2 1690.8 Tuff.
Tuffaceous zone, a brownish alt zone, characterized by a fine grained, granular upper section to 1685.5 w/ incipient dykes and patches of alt syenite followed by layered sequence w/ very fine grained rich brown red

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

bands, some granular textured bands, some fine grained bands w/ mafic streaks to blebs and some streaky UM bands plus or minus varying chlorite alt @ 50-60 dtca - the potential tuff style of unit. There is also some intercalated blue black UM at 1688.0; 5cm, irregular, and @ 1688.5; 8cm @ 52 dtca. The tuff is mod mag and often contains accessory py.

1690.8 1694.4 Ultramafic Komatiite.
UM, blue black, w/ a brownish alt section, granular w/ incipient dykes and some intercalated blue black UM from 1691.5 to 1692.2.

1694.4 1696.2 Ultramafic Komatiite.
UM, brownish alt, granular, carb, w/ a streaky to layered appearance over the basal 15cm, although not typically tuffaceous.

1696.2 1710.1 Ultramafic Komatiite.
UM, blue black, fol @ 35-50 dtca - avg 50 w/ some some streaky biotite alt between 1704.9 to 1796.5.

1710.1 1711.5 Ultramafic Komatiite.
UM, brownish alt, granular, carb, w/ some very dark brown streaky alt around the contact for 1-2cm @ 65 dtca.

1711.5 1722.2 Ultramafic Komatiite.
UM, blue black, typical, w/ one red brown alt patch @ 1716.8 for 8cm and a narrow 6cm dyklet of alt syenite cutting the core axis @ 1721.0 The basal 20cm of the unit grades considerably greener in colour and chloritic? w/ a 5mm gouge noted @ 1721.7 @ 64 dtca.

1722.2 1726.1 Ultramafic Komatiite.
Alternating red brown to brown, granular streaky alt UM zones w/ blue black UM rx. Incipient dyklets and UM streaks are seen throughout, thus the tuffaceous member is not inferred. Some of the core is blocky and broken. Brownish zones as always are mod to locally strongly mag; the UM unit is weakly so.

1726.1 1731.7 Ultramafic Komatiite.
UM, blue black w/ 2 irregular syenite dykes @ 1727.7 to 1728.9 running along the core axis 4cm wide, and @ 1729.1 3.5cm @ 40 dtca. There is some reddish to brownish alt in the base of this section as well below the alt syenite dyklets.

1731.7 1733.1 Ultramafic Komatiite.
Brownish alt, granular textured, carb UM w/ a couple of potential incipient dyklets of alt syenite @ either contact. Mod mag and mod mineralz w/ 3-5% py. Upper contact @ 65 dtca, lower contact along core axis.

1733.1 1736.0 Ultramafic Komatiite.
UM, blue black, carb, fol @ 40-50 dtca w/ several narrow alt syenite dyklets up to 5mm in size sub-parallel to the fol. Some bands/dykes are contorted and refolded sub-parallel to the fol. @ 1735.1 there is a 2mm mud gouge @ 65 dtca. The core also grades more chloritic here.

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

1736.0 1737.1 Altered Syenite.
Alt syenite @ 56/52 dtca. The upper half of the dyke is very fine grained and dull orange grading to a more of a beige porph syenite circa 1736.5. The upper fine grained portion is the better mineralz area.
1737.1 1751.0 Ultramafic Komatiite.
UM, blue black, grading rapidly greener and more chloritic w/ narrow gouged sections to the end of the zone. There are also some wider qtz-ank veins in this area as well @ 1740.5 1742.0 @ 62/71 dtca, and @ 1743.2 1744.1 @ 72/76 dtca. Both veins are fractured w/ mafics and contain some bright orange red stained patches that locally appear fracture controlled. Gouged to granulated sections include: 1738.0 12cm granulated w/ 8cm gouge @ 68 dtca, 1739.1 1cm @ 45 dtca, 1739.2 1cm @ 46 dtca, 1740.2 6mm @ 38 dtca, 1745.0 3cm gouged, contacts unclear, 1749.7 2cm @ 22 dtca, and @ 1751 - apparently 3cm @ a steep angle to the core axis. The lower contact of this section is broken but appears to be along the section of gouge.

1751.0 1751.1 TIMISKAMING GROUP

1751.1 2202.0 TUFF
Contact along the previous fault gouge into a sequence of dominately tuffaceous rx that are quite strongly leached to pitted and stained suggestive of a potential weathered regolith or an active plumbing system since the basal 13 feet of the previous unit is to a lesser extent also partly leached and earthy to the touch.
There are a couple of units in this system, the change appearing to occur circa 1769 along a zone of blocky broken core from 1764.5 to 1772.0. The upper unit is most strongly pitted and weathered, and is stained a rather bright orange red over the first 45cm. Below that the rx is a streaky, fol, carbonated tuff that varies from a dull yellow grey green to brownish colour w/ variable tones of orange red to red staining due to hematite. The avg fol in this system is @ 50 dtca.
Carb is the main mineral noted in the tuff as a pervasive reddish to grey flooding plus secondary? white specs are common throughout. The carb appears to be exclusively ank. The tuff designation reflects scattered stretched chlorite blebs that appear to be fragments. In deference to the pervasive carb, the tuff matrix appears felsic - greyish in colour w/ streaky sericite and chlorite alt, plus much reddish to greyish ank. The rx is poorly veined and is variably mineralz w/ some fine py. One red unit in the tuff system from 1754 to 1754.4 appears to be a dull dyke of alt syenite @ 58/54 dtca.
The transition into more sedimentary looking rx is along a zone of broken blocky core w/ possible dykes of alt syenite @ 1769 3.5cm @ 70 dtca, and 1769.7 - 1770.3 contacts broken. On a large scale the sequence is layered to locally finely laminated @ 50 to 60 dtca w/ pinkish to orangish layers and scattered sericite to chloritic layers. On the finer scale, the pinkish layers are a function of carb alt w/ the chloritic and sericitic layers being more streaky alt than finely laminated. This feature combined w/ scattered fine chloritic blebs that may be fragments suggest a contamination of tuffaceous rx, albeit a duller grey green colour and not as strongly

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

weathered as the top unit. At the base of the unit there is some accessory brick red alt w/ a very fine grained unit of dull brick red potential trachyte at the basal contact 7.5cm, upper contact @ 57 dtca lower contact irregular and diffused by UM.

1787.5 1790.9 Ultramafic Komatiite.
A narrow unit of dull greenish to bluish grey and blue black, carb, UM. The rx is mod to strongly ank, weakly to mod mag, and mod to strongly fol @ 60 dtca. Tr py. Both contacts are irregular and diffuse.

1790.9 1803.5 Tuff.
Return to the Timiskaming system of tuffaceous to sedimentary rx that extends to the end of the hole. The tuffaceous units are the most diagnostic or easiest to distinguish due to local accessory alt and fragment content w/ a number of the finer grained horizons being much more difficult to type.
The rx vary from a dull grey green to green colour and are normally not laminated although contacts between individual units may show some accessory hematite staining and chlorite alt. Most of the rx are very finely granular textured, sufficiently fine that individual minerals are difficult to distinguish. Carb is a common constituent, in this area calcite at the apparent expense of ank. Chlorite and sericite are also locally noted in wisps and streaks plus or minus some potential fine grains of biotite and tr of exsolved magnetite. Veining and mineralz vary from weak to mod - veins are dominately calcite, some of which are stained from hematite. Py is the main sulphide noted, unusually sparse in amount but some of the units are locally finely mineralz.

1790.9 1803.5 Tuff.
Chloritic tuff, a dark grey green to green chloritic unit that is mod fol @ 55-65 dtca. Fine sericite to chloritic fragments are visible locally up to 2-3mm in size. The matrix is streaky to granular and fol w/ a local mottled appearance due to accessory alt next to the UM et al. The upper 45cm of this unit is leached to bleached a much paler grey green. Fine calcitic fractures, some fine py.

1803.5 1811.0 Volcaniclastic ?.
A finely granular unit of potential wacky to gritty composition, apparently devoid of fragments, carb, weakly fol, dull grey green to green in colour. Variably streaky sericite and chlorite alt. The upper contact is broken w/ accessory chlorite over 4cm (fol @ 62 dtca). The lower contact is along a 45cm, fol, chloritic, calcitic zone @ 48 dtca.

1811.0 1828.4 Tuff.
Tuff, chloritic tuff to intermediate tuff w/ stretched chloritic blebs or fragments to 1cm in size. The upper two feet of the unit is stained reddish from hematite which grades to a more grey green colour. Similarily the lower contact area is more strongly fol @ 52 dtca w/ accessory reddish staining over 30cm. The exact contact appears to be highlighted by accessory chlorite over 2mm @ 50 dtca. There is also some fine py.

1828.4 1829.3 Volcaniclastic.

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

A narrow, very fine grained, finely granular unit of dark grey green possible sediments. Accessory chlorite alt around either contact @ 52 dtca.

1829.3 1844.9 Tuff.
A series of tuff units in the mafic to intermediate composition range w/ contact variably defined by accessory hematite alt and fol sections w/ accessory chlorite fragments being common and locally well defined w/ a possible sence of fining in the down hole direction. Units are @ 1829.3-1832.1 @ 52/48 dtca; 1832.1-1835.1; @ 1835.1 1838.6 @ 62/57 dtca; and @ 1838.6-1844.9 lower contact @ 62 dtca followed by 25cm of accessory chlorite alt and veining. From 1836.9 - 1837.5 there is a dark reddish to brick coloured section of alt syenite(to mafic syenite) just cutting the core axis - mod mag, accessory py.
Below 1844.9 the pattern is reasonably well established. The sequence continues as an intercalated assemblage of tuffaceous and volcaniclastic rx. Tuff units normally commence w/ a more strongly chloritic, fol basal section and grade finer grained w/ fine fragments in the down hole direction until a new basal section is encountered. Volcaniclastic units on the other hand represent sedimentation between extrusions of tuffs, their contacts w/ the upper part of the tuff unit is subtle but may have tr of chlorite alt at the contact. Volcanic units are normally traced backwards from a chloritic basal tuffaceous section to the top of the former unit. This first section described above is also typical; volcanic units are much narrower and defined by the fine grained, granular texture w/ lack of fragments. Tuffaceous units are invariably defined by the presence of fragments w/ ragged chloritic blebs to stretched lenses being very diagnostic on dry core. In general the sequence is quite dry although there are some local areas w/ accessory alt and some fine mineralz. The very fine grained py locally contained in some units is of unknown genisis - there is no apparent affinity for contact zones or tuff over volcaniclastic, nor does mag appear to be relevant.

1858.9 1865.5 Tuff.
A coarser tuff horizon w/ local stretched fragments up to 2cm in size. Foliated @ 55 to 60 dtca.

1897.1 1911.0 Volcaniclastic.
A granular volcaniclastic unit to 1898.6 followed by a series of tuff units w/ accessory carb and some contorted material particularly in some of the basal chlorite sections. Axis or kinks of contortions however appear to be sub-parallel to the fol for the most part @ 50-60 dtca w/ some offsetting fractures along some limbs.

1960.5 1965.9 Tuff.
Accessory hematite staining in a coarsely granular carb tuff unit. The rx is non mag, and essentially unmineralz.

1968.3 1969.3 Quartz.
A 3cm reddish qtz knot w/ a carb pressure shadow followed by a qtz-ank vein @ 1969.0 2.5cm @ 57 dtca - are w/ some accessory hematite staining here.

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

1986.3 2001.0 Tuff.
Tuff, coarsely granular matrix w/ scattered larger fragments up to 3cm rounded(a grey porph) and 5cm stretched(Carbonated).

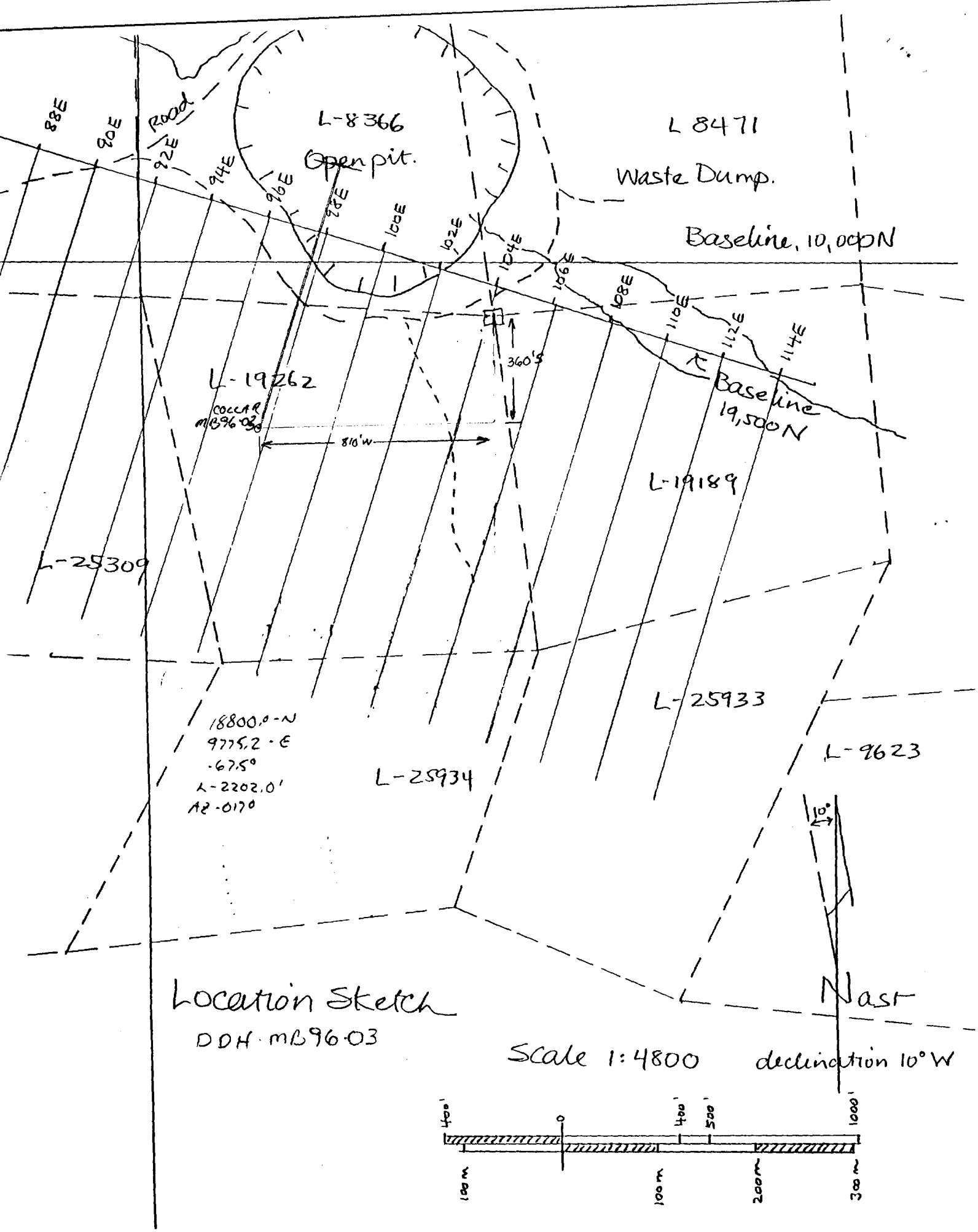
2022.4 2083.0 Tuff.
Along a fol basal contact, a tuff unit @ 2202.4 there is an increase in chlorite alt and a general increase in carb alt(calcite & ankerite) leading to a very strongly carb tuff section from 2051.1 to 2068.4 w/ carb decreasing after this point to more normal Timiskaming tuffs by 2083.0. Margins of the main zone are more strongly fol @ 65 to75 dtca while the central part of the zone is very strongly fol and carb w/ local contorted layering. Also in this unit from 2054.9 - 2055.2 @ 72 dtca, and @ 2057.2 - 2057.7 @ 44/60 dtca are two narrow pale grey, strongly carb, granular sections of possible volcaniclastic. The upper volcaniclastic is finely mineralised. Also in this system two larger fragments were noted @ 2033.2 2.5cm grey porph, and, @ 2051.0 3cm stretched carb. Closer to the def zone this system might have reacted to form a carb zone.

2098.7 2106.3 Tuff.
Contact into a sequence of tuff units which have more felsic looking upper portions. From 2098.7 - 2100.5 the rx is qtz veined and streaky in appearance w/ accessory chlorite and sericite, grading to off white to pale grey and slightly yellowish to the top of the zone @ 2101.8. A second unit, although not as well dev has a greyer more felsic looking top zone from 2104.4 to 2104.7 w/ a third zone having a dull grey top section from 2105.4 - 2106.2. There is some accessory py in the first unit. Fol in the system are quite variable from 45 to 70 dtca.

2106.3 2152.8 Tuff.
Below the units w/ more felsic top zones the streaky tuff grades progressively more foliated @ 55 - 65 dtca heading into another one of the highly contorted, carb, zones from 2110.5 to 2141.7. Carb content decreases rapidly below 2141.7 but contorted disrupted layering is noticable to 2152.8. Potential axis of folds are variable but the most common orientation is sub-parallel to the pervailing 60 dtca fol. Within this area is a dark grey, finely granular volcaniclastic unit w/ no visible contortions from 2145.1 to 2147.4, although both contacts w/ tuffs are wavy to irregular @ 62/20 dtca.

2187.3 2192.9 Tuff.
Tuff, a streaky tuff w/ larger than avg fragments that are well defined here near the end of the hole. Fragments are up to 4cm in size, stretched sub-parallel to the fol. Other than this unit most of the tuffaceous sections have been rather poorly dev w/ only scattered fragments below 2152.8. Dull greyish volcaniclastic units are also noted in this area.

2202.0 EOH.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L 8471
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104E
106E
108E
110E
112E
114E
360'S
L-19262
COLLAR
mB96-03
810'W
Baseline
19,500N
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L-25309
L-25933
L-25934
L-9623
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AZ-017.0
10°
Location Sketch
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500'
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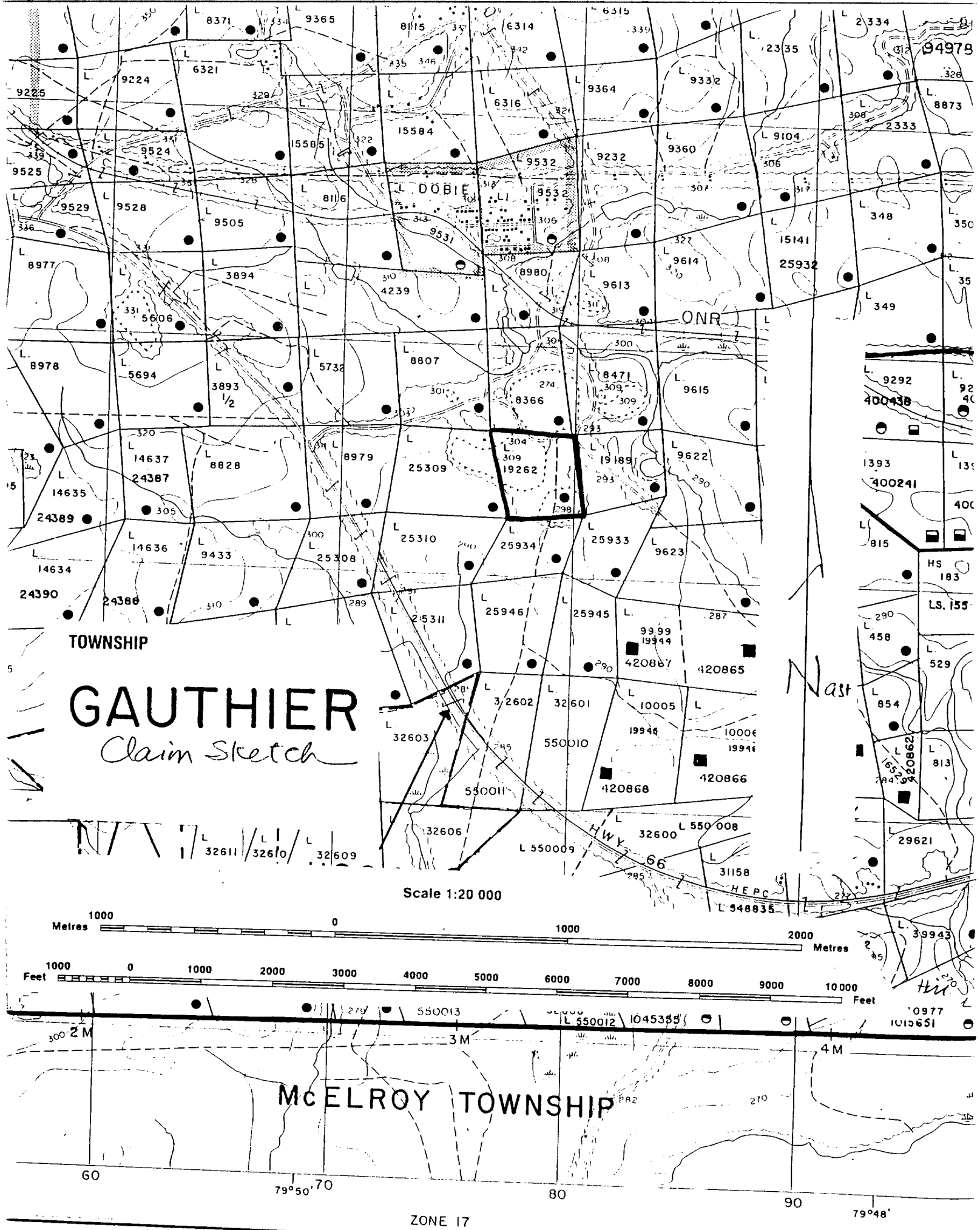
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GAUTHIER
Claim Sketch
DOBIE
ONR
McELROY TOWNSHIP
HWY 66
Scale 1:20 000
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1000 Feet 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 Feet
2M
3M
4M
60
79°50'
70
80
90
79°48'
ZONE 17

QUEENSTON MINING INC

Drill Hole: MB96-04

DIAMOND DRILL HOLE RECORD

Property: MCBEAN Col loc from #1 post, L19262, 450'S, 310'W
Northing: 18983.20
Easting: 10251.20
Elevation: 10993.40

Collar Azimuth (Grid) 3.1
Collar Dip: -64.0
(0 Degrees Grid equals 017 degrees True)
Hole Length: 1812.0

Date Printed: 6 Jul, 1998

*** Dip Tests ***			*** Dip Tests ***		
Depth	Azi.	Dip	Depth	Azi.	Dip
108.0		-66.0	1462.0	9.5	-63.0
300.0		-65.0	1550.0		-65.0
600.0		-65.0	1672.0	7.5	-62.0
900.0		-62.5	1812.0		-61.5
1200.0		-65.0			

Date Started: Sep 16, 1996
Date Completed: Sep 26, 1996

Drilled by: BENOIT
Core Size: BQ
Material left in hole BX 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

SUMMARY LOG

.0	104.0	OVERBURDEN
104.0	1016.5	GABBRO
1016.5	1016.6	START OF DEFORMATION ZONE
1016.6	1087.5	ALTERED GABBRO ULTRAMAFIC KOMATIITE BASALT
1087.5	1141.8	PORPHYRITIC SYENITE
1141.8	1148.0	ULTRAMAFIC KOMATIITE
1148.0	1171.0	ALTERED GABBRO SYENITE ULTRAMAFIC KOMATIITE
1171.0	1207.7	ULTRAMAFIC KOMATIITE
1207.7	1271.9	ALTERED SYENITE ALTERED GABBRO
1271.9	1331.1	FELSITE TUFF
1331.1	1351.3	ALTERED GABBRO
1351.3	1356.9	FELSITE
1356.9	1357.0	TIMISKAMING GROUP
1357.0	1433.4	ULTRAMAFIC KOMATIITE TUFF
1433.4	1455.0	BASALTIC KOMATIITE
1455.0	1493.6	GREEN CARBONATE ZONE
1493.6	1556.5	ULTRAMAFIC KOMATIITE

From (ft)	To (ft)	Geology
1556.5	1571.3	TUFF
1571.3	1686.5	ULTRAMAFIC KOMATIITE TUFF
1686.5	1812.0	LAPILLI TUFF

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

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
.0	104.0	OVERBURDEN 0-20 Boulders, 20-90 Clay, 90-104 Boulders.								
104.0	1016.5	GABBRO LITH- a dark grass green coloured, med to med coarse grained complex containing other intrusive/extrusive phases; basalt, syenite and feldspar porphyry. ALTR- magnetic, carbonated; hematitic alteration near/in veining; epidote alteration in/near veining; hematite in contained units and as crystalline spec hematite, carb is patchy, incipient and in veining. STRUC- generally massive and undeformed, cut by veining; sharp contacts, sometimes brecciated with included units; some jointing and local shearing. VEINING- carb and qtz carb veining is common; variable from hairline thickness to several inches thick, often @ 40-50 DTCA, some veining also at very low angles to core axis. Vuggy areas, (weathered out veining). 104.0 112.2 Gabbro. Gabbro with matrix and shear surface epidote. Jointing @ 50 DTCA with hematite and/or epidote, magnetic. 112.2 113.4 Mafic Intrusive. Dark grey with brownish cast, fine wispy accicular chlorite phenos; sharp contacts @ 50/70 DTCA, xenoliths of gabbro visible within dykes, magnetic, calcitic, fine diss py in matrix to 0.5%. 113.4 to 118.5 Gabbro. Heavily altered, presumably by nearby mafic dyke above and syenite below; hematized and carbonated, hard, hairline fractures with qtz and chlorite cut unit @ 40-50 DTCA, fine diss py to 0.5% locally, magnetic, silicified?. 118.5 122.5 Altered Syenite. A unit consisting of fine grained nearly brown aphanitic material, a coarser grained (deformed?) pale red brown intrusive looking phase and a very siliceous dark grey brown 'pseudo-intrusive' section with a finely banded, cherty jasper-like component (chilled-margins?); some altered wallrock gabbro visible. 118.5 119.0 Altered Syenite. Top cnt @ 20-25 DTCA; tr py. 119.0-119.8 Pale red-brown, intrusive looking syenite; altered with carb and hematite, tr sulphide. 119.8-120.8 Banded area, looks like a tiny oxide facies iron formation; bands @ 65 DTCA; xenoliths of gabbro positioned at top contact, tr sulphide. 120.8-122.5 'pseudo intrusive' with weak greenish cast (epidote?); faint banding at top contact becoming more crystalline? downward. Bottom contact sharp @ 55 DTCA, tr fine diss py. 122.5-122.8 Gabbro- sandwiched between above syenite and irregular							

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

intrusives below, vuggy, irregular patchy carb veining with chlorite clots, tr sulphide.

122.8 124.0 Feldspar Porphyry.
A pale beige or grey moderately altered felsic dyke with irregular sharp contacts @ 30 DTCA. 2-3mm feldspar phenos (cream coloured) occupy 35-40% of the fine felsic matrix. Unit is slightly vuggy and cut by a hematitic, carbonated band 1/2 in thick @ 30 DTCA. Only trace py in dyke.

124.0 to 145.0 Gabbro.
A hybrid unit with gabbro textures and basalt like sections, locally amphibolitic, locally with wispy qtz carb veining parallel to core axis, hematitic alteration within veining and in fractures; also patchy pervasive and fracture filling epidote; fractures in unit are often oriented parallel to core axis. Diss and spotty py near veining and distributed randomly throughout unit to 2% locally. Shear parallel to CA @ 136 (2 ft long down core); shear? @ 141 @ 30 DTCA/chloritic.

145.0 to 156.0 Gabbro.
Med to med coarse grained; possibly cumulate textured interval. Scrappy and irregular carb and qtz carb veining @ variable angles to core axis. Hematite and epidote common in larger (1/4-1/2 in)veins and on joint surfaces; fn xtalline spec hem in vugs and along fractures; only tr amounts of sulphide; fine grained basalt like areas commonly 1-2 feet long; @ 148.2 shear @ 15 DTCA (irregular surface); chloritic with slickensides @ 30 DTCA.

153.0-153.8 Altered syenite? aphanitic, dark grey with pale greenish cast (epidote?) sharp scalloped contacts @ high angles to core axis; very similar to unit described @ 120.8-122.5 except no phenos visible; tr sulphide.

156.0 159.0 Basalt.
Fine grained massive section, dark green, scrappy carb and epidote alteration; fine veining; tr sulphides.

159.0 to 169.0 Gabbro.
Coarse grained cumulate.

169.0 172.5 Basalt.
Fine grained, slightly amphibolitic, vuggy lower contact @ 50 DTCA, w/ carb/qtz/hematite/spec hematite crystals.

172.5 to 175.0 Gabbro.
Coarse grained intrusive, 3 in thick dark grey aphanitic mafic? dyke @ 175.0; hard, tr sulphide; sharp contacts @ high angles to core axis with epidote alteration.

175.0 to 176.5 Gabbro.
Med to fine grained amphibolitic, sharp contacts at 75 DTCA.

176.5 to 195.0 Gabbro.
Coarse grained intrusive, contains angular pieces of finer (basalt-gabbro?)

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

material, and an aphanitic dykelet @ 185.5 to 186.1 (sharp contacts, dark grey to olive green, w/ tr sulphide only; magnetic; calcitic; and wky hem). Shear at 182.3 @ 20 DTCA hematite/carb alteration, weak slickensides parallel to core axis.

195.0 204.8 Diorite.
Med to dark grey with a faint red cast (hematite alteration); porphyritic and massive, scattered plagioclase phenos in a fine crystalline matrix of feldspar and mafics- phenos are pale white, subhedral to anhedral, and range from 1/16 to 1/8 in across. Hematite alteration developed pervasively and in hairline fractures. Calcite in fine fractures; magnetic; sharp upper (30 DTCA) and lower (70 DTCA) contacts; lower 4 in of horizon quite strongly hematitic/locally silicified? with spotty py (1% locally) At the top contact a 3 in band looks like the feldspar porphyry described in holes 1, 2 and 3.

204.8 to 217.4 Gabbro.
Dark grey green, locally schistose, w/ local intrusive texture; small inclusion 6-7 in long of kom basalt @ top contact, and weakly komatiitic material for the next 3 ft. Pink qtz carb vein (2 in) @ 206 with tr sulphide; wispy/scrappy carb veining with patchy epidote, minor hematite and tr spotty py.

217.4 223.2 Syenite.
Red orange in colour, massive and med grained, few feldspar phenos set in a felsic finely crystalline to aphanitic matrix, (few flecks of chlorite in matrix). Fresh appearance; weakly magnetic; calcitic (fine fractures) hematitic and hard; probably albitized/silicified; diss and crystalline py on fracture surfaces overall 0.5% max. Lower contact sharp @ high angles to core axis.

217.9 218.9 Feldspar Porphyry.
Med grey, med-coarse grained, crowded phenos to 1/8 in across set in an aphanitic felsic matrix ; tr sulphide.

223.2 to 247.0 Gabbro.
Coarse to med coarse grained cumulate texture, with few fine grained basaltic units and several mafic dykes as described above (olive green sharp contacts). Hematite alteration (weathering) common along fractures; variable orientations (usually >50 DTCA). Scrappy carb and carb-qtz veining to 1/4 in thick. Shear @ 223.5 @ 30 DTCA, and @ 213.5 with tr carb gouge. Mafic dyke @ 230.0-231.5; 225.8-226.3; tr sulphides, sharp contacts @ high angles to core axis. Basaltic @ 242.0-243.0; weak shear @ 25 DTCA @ 239, w/ hematite, carb infilling.

247.0 250.8 Syenite.
Pale red brown colour, med to med fine grained massive intrusive with a few feldspar 'micro-phenos' (white, subhedral to 1/16 in across) sinuous tongue-like upper contact; sharp lower contact @ 50 DTCA; magnetic, calcitic, contains wispy mafics (chlorite?) in matrix; tr sulphide content.

250.8 to 259.5 Gabbro.

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

Med coarse grained igneous texture; carb-qtz-hematite veining @ high angle's to core axis; to 1/4 in thick, sulphide poor. Shear @ 258.0 @ 30 DTCA; hematite alteration.

259.5 263.0 Mafic Intrusive.
Dark grey with a purple-red cast. Med grained and calcitic/hematitic; equigranular 'pseudo felted' matrix of accicular mafics(amphiboles?) and remnant feldspar plates (now chlorite and hematite +carb), weakly magnetic, sharp upper and lower contacts (50/60 DTCA) tr sulphide except for a slight increase near lower contact.

263.0 to 265.0 Basalt/Gabbro.
Dk green, fn grned flow (or intrusive?); w/ slightly amphibolitic texture towards lower cnt. Featureless except for a few scrappy carb stringers.

265.0 to 283.8 Gabbro.
Coarse to med-coarse grained, intrusive texture; few small (2-4 in long) basaltic zones, cut by carb- chlorite-qtz veins typically @ 45-55 DTCA, few splashes of bleby py; low background sulphide.

283.8 285.1 Diorite.
Med grey coloured (locally porphyritic) subhedral to anhedral feldspar phenos (pale white) set in dark grey felsic matrix, few accicular mafics (chlorite after amphibole) and chlorite clots to 1/8 in across; massive and equigranular, calcitic, weakly magnetic; sharp contacts @ high angles to core axis, contains 0.5% spotty py along fine fractures.

285.1 to 289.2 Gabbro.

289.2 292.2 Diorite.
A similar unit to that described at 195 to 204 but without the hem alter.

292.2 to 320.6 Gabbro.
Coarse grained intrusive with a few finer-grained basaltic looking sections @ 297.2-297.9 (mafic dyke?) and 306-307.3; patch of red altered syenite @ 310. Shear @ 318.2 @ 50 DTCA w/ hematite alteration.

320.6 322.5 Basalt.
Fine grained, olive green coloured, broken up with wk epidote alteration around fragments and along fine fractures; trace sulphide; calcitic, strongly magnetic.

322.5 337.0 Diorite.
'Altered'-a dark grey intrusive looking unit similar in some respects to diorite logged above but more altered -silicified?/hematitic/carbonated-slight greenish cast- feldspar 'phenos' still visible locally. Patchy pervasive and banded/wispy hematite alteration variably developed throughout the unit. Contains rafts of gabbro- altered and amphibolitic; sharp hematitic contacts, locally vuggy and veined with qtz-carb+hematite material. Spotty and diss py (sometimes follows fine fractures) to 1.5% locally; overall 0.75% sulphide.

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

337.0 342.3 Basalt.
Dark green grey slightly foliated interval with scrappy irregular carb qtz veining (to 1/4 in thick) minor patchy silicification. Foliation @ 45 DTCA @ 337.5, calcitic, magnetic.

342.3 to 349.8 Gabbro.
Med grained, intrusive texture, scrappy carb-qtz veining; tr sulphides.

349.8 355.5 Diorite.
Very dark grey coloured, slightly porphyritic intrusive with pale red orange cast (hem alteration in matrix and strongly developed as halos around fine qtz carb veining and fine hairline fractures); pale grey feldspar phenos scattered (not abundant); subhedral to 1/4 in across set in dark grey aphanitic matrix ; silicified?/albitizied?. Calcitic, magnetic; contains 1% spotty subhedral and diss py in matrix and some fractures (chlorite carb/qtz hematite alteration in fractures @ 45 DTCA most commonly). Sharp stepped contacts at 50/30 DTCA. Contains a basalt inclusion @ 351.1-352.1.

355.5 to 359.3 Basalt.
Fn grned green grey unit, fairly massive w/ cse breccia textures locally (stepped appearence); wk hem alter in central portion of unit gives the rock a pale purple cast.

359.3 to 368.8 Gabbro.
Coarse grained intrusive texture, patchy epidote alteration, contains one narrow (6 in) section of basalt.

368.8 372.5 Diorite.
A dioritic dyke?; a med-grey coloured aphanitic unit with zones similar in composition to diorite described above; pale green cast locally (epidote); hard (silicified?) and weakly hematitic around hairline fractures; magnetic, calcitic; cut by 1/8 in qtz carb veins @ 45-55 DTCA; sharp upper and lower contacts @ high angles to core axis.

372.5 to 386.7 Gabbro.
Coarse grained igneous texture, cut by massive pale grey green mafic dykes with numerous chlorite after amphibole? microphenos set in a fine grained feldspathic matrix. The lack of hematite alteration and slightly coarser grain size in groundmass differentiates these dykes from other 'diorites'. Contain tr sulphide, ; dykes are located @ 374.2 to 375.3. Shear @ 378 @ 60 DTCA with tr chloritic gouge; low RQD in this interval, rubbly.

386.7 394.8 Feldspar Porphyry.
Dark grey in colour, w/ euhedral feldspar phenos to 1/4 in long set in very dark grey aphanitic felsic matrix. A massive, fresh unit with sharp contacts @ 75-80 DTCA. Hard, weakly magnetic and calcitic (in fracture filling qtz carb material); (hairline thickness's @ 45 DTCA typically); weak hematite staining occurs along these fractures also. Tr sulphide content. Diorite dyke material occurs @ 389.8-391.6 and @ 393.0-394.8. These dykes are similar to those @ 195-204.3. Hematite staining gives the units a red orange

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

colour and they contain about 2% diss and spotty py.

394.8 to 404.9 Gabbro.
Coarse to med coarse grned intrusive texture.

404.8 410.1 Basalt.
Dark green-grey fine grained, slightly foliated unit with chlorite clots/alteration zones, and very weak hematite alteration- magnetic and calcitic; foliation @ 70 DTCA typically.

410.1 414.0 Diorite.
Pale grey in colour, weak mauve cast with fuzzy feldspars set in a fine felsic matrix. Similar to dykes described above @ 368-372; fine grained and slightly hematitic @ top contact.

414.0 to 415.5 Gabbro.
Coarse grained intrusive.

415.5 418.8 Diorite.
A dark grey crystalline, massive dyke, composed largely of light grey feldspars (1/8 in across, pale white colour) set in a darker felsic matrix which is fine grained and crystalline. Magnetic; calcitic; aphanitic contact zones 3-4 in thick @ top and bottom contacts (sharp @ high angles to core axis).

418.8 to 424.6 Gabbro.
Coarse grained intrusive.

424.6 425.8 Diorite.
Dark grey with reddish cast- similar to that @ 410-414.

425.8 to 444.4 Gabbro.
Coarse grained intrusive section cut by coarse grained dioritic dykes similar in composition to nearby intrusives, med grey in colour, minor fine groundmass, predominately plagioclase plates, with fine specks of chlorite and wallrock inclusions to 1/2 in across; scrappy qtz carb veining to 1/16 in thick, weak hematite staining locally, magnetic calcitic, dykes found @ 433-434, 435.5-436.2, and 441.3 to 444.4- another fine grained mafic dyke @ 438-439 (med grey, micro-porphyry texture) weak hematite alteration, magnetic, sharp contacts.

444.4 to 566.0 Gabbro.
Coarse to med coarse grained intrusive unit with local finer grained and basaltic sections. Magnetic, calcitic, and local patchy epidote alteration, fine qtz carb veining @ angles between 45-80 DTCA. Locally weak hematite alteration in veining; spotty py to 0.5% locally; some amphibolitic sections developed.
Basaltic sections @ 475-477, 454.4-458.4, 496.5-497.0, 462.0-463.5, 487.0-488.0, 498.8-500.5. Shears @ very low angles to core axis in the interval 448-481. Faults @ 515 @ 40 DTCA w/ 1/2 in gouge (chlorite); @ 546.8 @ 50 DTCA w/ 1/4 in gouge (chlorite), possible fault @ 547 @ 50 DTCA/shear @

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519.5 @ 30 DTCA with tr gouge.

566.0 569.0 Diorite.
A dyke, similar to that described @ 195-204.8; contacts sharp at 45-50 DTCA; 0.5% spotty py.

569.0 to 575.8 Gabbro.
Med grained intrusive, slightly foliated.

575.8 577.1 Diorite.
Dyke; pale grey with weak mauve cast, (weakly hematitic); few feldspar phenos -(siliceous?) set in aphanitic feldspathic groundmass, similar to dykes described above in hole; magnetic, sharp upper and lower contacts @ 40/70 DTCA, 0.5% diss py.

577.1 to 795.0 Gabbro.
Med to med - coarse grained sequence of intrusive cumulate rocks with minor fine grained portions and basaltic intervals. Magnetic, calcitic with qtz carb and carb veinlets typically @ 50-80 DTCA ranging from 1/16-1/4 in thick,(normally sulphide poor, often slightly hematitic), spotty background py.
Basaltic sections (often weakly foliated @ 30-40 DTCA) 618.5-624.0; 628.0 629.0; 640.5-641.2; 659.8-665.3; 698.5-704.0; 748.0-773.9.

673.2 675.5 Mafic Intrusive.
Cutting all wallrocks @ 30 DTCA, sharp carbonated cnts; consists of actinolites? (accicular dk green xtals commonly 1/8 in across) set in a totally altered matrix of fine carb (after feldspar?). Calcitic, non magnetic to very wkly magnetic.

738.2 740.1 Mafic Intrusive.
Dk grey porphyritic dyke w/ euhedral to slightly accicular biotite phenos up to 3/16 in long and set in an aphanitic, massive felsic? groundmass; slightly magnetic, calcitic; sharp cnts at 60/40 DTCA; tr sulphide; poss wk hem alter.

757.5-768.0- Komatiitic like zones in larger basaltic units; black, chloritic to slightly talcose, cut by altered syenite dykelets; irregular patchy and slightly vuggy, dirty pink colour, calcitic and hard with 0.5% spotty py; (dykes occupy the interval between 762-767). Other syenite dykes @ 749-749.9 and 773.1-773.8, dark red maroon in colour, fine grained and hard with sharp contacts @ 40-60 DTCA, tr sulphide content. Rubbly core zone @ 623-624; Fault @ 691.4 @ 40 DTCA, shear @ 15 DTCA nearby (remnant of chlorite gouge); Fault @ 695.0 @ 40 DTCA (possible gouge?). Tight faults @ 750.3-750.9 @ 70 w/ DTCA minor chlorite gouge; poss fault @ 770.0 @ 40 DTCA w/ 1/8 in gouge Rocks in this gabbro interval begin to show slight deformation around 678.

795.0 801.5 Feldspar Porphyry.
Similar to the dyke described @ 386-394 with wk hematite alteration in fine dykelets and fine feldspar phenos, especially towards bottom of unit. Sharp

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

top contact @ 85 DTCA; sinuous @ low angle bott contact.

801.5 to 1016.5 Gabbro.
An interval similar to that described from 577.0-795.0; generally massive gabbro with lesser basaltic lenses. This sequence shows minimal deformation. The bottom contact reflects the beginning of the deformation zone.

801.5 to 804.5- Gabbro.

804.5 826.0 Basalt.
Shear @ 808.5 @ 20 DTCA, with fabric @ 30 DTCA.

826.0 to 896.0 Gabbro.
Predominately intrusive texture, med grained, calcitic, and strongly magnetic. Shear @ 30 DTCA @ 834.1 with carb,hematite and epidote alteration; slickensides perpendicular to core axis. Patchy carb-qtz veining with weak hematite staining and epidotized wallrock? fragments, tr sulphide.

Shear @ 860.4, w/ epidote/hematite alter and tr chlorite gouge @ 60 DTCA (2-planes) Larder Lake Break?- Fault zone @ 869.5; 4 breaks over 6 in intervals; first fault plane is strongest- 2 in of gouge and fault breccia @ 60 DTCA; other planes have less gouge (generally chloritic) 1/16-1/8 in thick @ 60-70 DTCA. Other faults are located in an area of altered syenite dykelets; red-orange, brecciated and weakly mineralized with diss py.

Shear @ 875.8 @ 30 DTCA w/ carb and hematite gouge 1/16 in thick, very smooth surfaces, with accessory py nearby; 1 in thick altered syenite dykelet @ 880.0 with sharp contacts @ 60 DTCA; tr sulphide.

896.0 to 924.0 Gabbro and Basalt.
Intercalated basalt and gabbro in roughly 50/50 proportions, massive and undeformed, local patchy qtz-carb veining with wk hematite staining and pervasive epidote locally; tr sulphide only, locally vuggy, often these features are parallel to core axis.

Fault? @ 921.0 @ 50 DTCA (possibly a vuggy area); shearing @ low angles to core axis up to 928 with qtz carb infillings and scattered sulphide.
Shear @ 933.4 @ 75 DTCA ; smooth plane with tr chlorite/hematite gouge.

924.0 to 956.0 Gabbro.
Coarse grained massive intrusive interval with a few patchy qtz veins and scattered 1/8-1/4 in carb-qtz veins @ high angles to core axis, weak hematite and epidote alteration in veins.

956.0 to 1016.5 Gabbro and Basalt.
Coarse grained gabbro and fine grained and locally weakly foliated basalt interlayers. Cut by several types of diorite dyke material similar to those described earlier in the gabbro sequence. Weak hematite staining in basaltic areas, locally slightly vuggy; cut by irregular scrappy qtz-carb veins @ high angles to core axis. Veining is generally weakly hematitic and low in sulphides; few altered syenite dykelets. Crystalline py to 1% locally in

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

dykelets and/or vuggy areas Fault @ 959.4 @ 70 DTCA 1/2 in crushed zone; Shear @ 1007-1008 @ 10 DTCA w/ chloritic slip surfaces; Shear @ 1016.5 @ 30 DTCA as above.

971.1 972.2 Diorite.
Altered diorite dyke, dark grey strongly altered (hematite-carb silicified) ghostly feldspars in an aphanitic matrix, 0.5% diss py.

990.7 993.0 Diorite.
Dark grey dyke with pale green-cast; almost porphyritic texture. Mostly med grained feldspar, with little matrix; sharp contacts @ high angles to core axis.

994.5 995.5 Diorite.
Dark grey dyke with red cast (hematite stain); glomeroporphyritic texture. Mostly 1/16-1/8 in feldspar crystals with little or no matrix, chlorite blotches and wisps in matrix, tr diss sulphides, sharp contacts @ 75 DTCA.

1016.5 1016.6 START OF DEFORMATION ZONE

1016.6 1087.5 ALTERED GABBRO ULTRAMAFIC KOMATIITE BASALT
Deformed basalt very similar to that above the contact of the deformation zone, heavily carbonated gabbroic rocks and moderately deformed komatiitic rocks of probably u/mafic derivation characterise the top of the deformation zone. A marked increase in deformation (mod to strong foliation and deformed veining) exists in all units. Banded and kinked areas are common. The sequence is calcitic (both veining and matrix) and magnetic.

Basalt.
LITH- dark chlorite green, fine grained and mod foliated, sometimes with a banded or streaky appearance, dark green and black layers.
ALTR- chloritic, calcitic, magnetic, locally becoming slightly bluish where grading into kom sections.
STRUC- foliated throughout, typically @ 20-40 DTCA.
VEINING- fine mm size carb veining parallel to foliation, sometimes up to 1/2 in thick with qtz; generally not well mineralised.
MINERALISATION- tr amounts of diss py.

Komatiitic Basalt.
LITH- dark green to pale blue green, fine grained and mod to strongly foliated. Intercalated with more basaltic looking sections, sometimes slightly speckled appearance.
ALTR- calcitic, weakly magnetic, slightly talcose.
STRUC- med to strongly foliated depended upon the concentration of talc. Typically @ 40-50 DTCA with locally flatter angles.
VEINING- fine (mm to 1/8 in) carb veining; generally parallel to foliation, not well mineralised, some patchy slightly pink carb veins with chloritic and wallrock inclusions.
MINERALISATION- tr background sulphide only.

Altered Gabbro.

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

LITH- med to med-fine grained, very dark grey to almost black in colour, slightly gritty and foliated, with a very fine speckled appearance (weak brown-red cast locally).
ALTR- heavily carbonated, calcitic, and weakly hematitic locally, possibly biotitic locally, magnetic.
STRUC- weakly to mod foliated throughout, typically @ 40-50 DTCA.
VEINING- few irregular deformed carb-silica/hematite veins, generally less than 1 in thick (almost patchy); with minor sulphide.
MINERALISATION-spotty subhedral pyrite, generally <0.5% mm size typically.

1016.6 1020.0 Basalt.
Fine bands of more komatiitic (bluish/softer) composition (1/4-1/2 in thick) intercalated with a fine grained chloritic mafic flow? rock. Bull qtz vein @ 1018.8 @ 40 DTCA, (1 in thick), foliation typically @ 45 DTCA.

1020.0 1023.2 Altered Gabbro.
Slightly amphibolitic, diss py to 0.5% locally, chlorite shear @ top contact @ 40 DTCA. Foliation @ 40-45 DTCA.

1023.2 1028.8 Basalt.
Dark green banded interval with small altered gabbro and kom basalt sections. Foliation @ 45-50 DTCA, fault? @ 1026.2 @ 40 DTCA.

1028.8 1046.1 Ultramafic Komatiite.
Pale bluish green, slightly speckled, (basalt like textures), weak talcose alteration, some minor basaltic and gabbro material included in interval; scrappy carb veining some weak serpentine on shear surfaces. Foliation @ 40 DTCA typically; tr sulphide. Shear at 1032.5 @ 35 DTCA; @ 1041.5 @ 25 DTCA.

1046.1 1051.9 Altered Gabbro.
Sharp top and bottom contacts @ 50 DTCA, foliated @ 55 DTCA, weak hematite alteration, contains few 1/2-1 in size basaltic xenoliths; slightly amphibolitic locally, 0.5%-0.75% spotty py.

1051.9 1054.4 Ultramafic Komatiite.
Black to dark green in colour, with basaltic looking sections, numerous fine carb veins sub parallel to foliation, low sulphide conc.

1054.4 1060.2 Altered Gabbro.
Dark grey, weakly foliated unit cut by dioritic? dyke (red-orange cast; coarse grained rounded feldspars in feldspathic matrix, (glomeroporphyritic), spotty py @ 1055.8 to 1056.9) locally biotitic (or amphibole?). Fault? contact @ 1055.8 @ 75 DTCA.

1060.2 1069.2 Ultramafic Komatiite.
Black to very dark green black colour, mod foliated, cut by patchy altered syenite? veinlets/dykelets and wispy hairnet pink carbonate veining @ 30 DTCA typically, tr sulphide. 1061.8 to 1064.5 broken/crushed core with several breaks; fault @ 1061.8 @ 35 DTCA, 1/4 in gouge/crushed core; shear @ 1062.1 @ 35 DTCA with tr chlorite/talc gouge; Fault @ 1062.5 @ 40 DTCA with 3/16 in gouge crushed rock. Inclusions? of altered gabbro @ 1066.5-1067.2 w/

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

tr sulphide. Hematitic altered gabbro @ 1067.7-1068.6.

1069.2 1087.5 Altered Gabbro.
Dark grey, slightly speckled to grainy, slightly to mod foliated unit with kom basalt inclusions (these inclusions are intruded by irregular patchy and wispy qtz carb veining with wallrock and flesh coloured ankerite? inclusions); generally sulphide deficient. Foliation in gabbro @ 45-50 DTCA. Magnetic, becoming non calcitic @ about 1071.3.

1087.5 1141.8 PORPHYRITIC SYENITE
Predominately massive pale orange coloured intrusive rock, with minor inclusions of altered gabbro similar to units uphole and kom basalt, also similar to surrounding units. Sharp contacts. All lithologies cut by scrappy and patchy qtz and qtz carb veins.

Porphyritic Syenite.
LITH- pale orange in colour; massive with coarse spotted appearance. Rounded feldspar phenos are 1/8-1/4 in across, slightly altered (carb?) and off white in colour; with dark grey rounded qtz phenos similar size; set in an aphanitic, flesh coloured felsic matrix-locally matrix becoming dark brown in colour, partially digested kom basalt/gabbro xenoliths, few mafics in matrix.
ALTR- weakly magnetic locally, non calcitic, probably silicified/albitized? weak hematite staining around some hairline fractures, slightly cloudy matrix (carb?); small spots (inclusions?) of fuchsite? sericite? alter in matrix up to 1/8 in across.
STRUC- generally massive, (inclusions have sharp contacts @ small angles to core axis), very weak foliation developing locally (carb/sericite).
VEINING- patchy and vein qtz cuts unit randomly; increasing qtz vein conc towards bottom of interval; (1/16-3 in thick commonly @ high angles to core axis, contain ankerite selvages and inclusions, wallrock inclusions and sulphides.).
MINERALISATION- spotty and diss py in matrix, (up to 1/16 in across); bleby and very fine fracture filling py in qtz veins and matrix. Blue metallic in fine fractures (both // and at high angles to CA) and as blebs to 1/16 in across; (galena? sphalerite? spec hematite?- brown streak).

Altered Gabbro.
Very dark grey, speckled appearance, foliated; med to med-fine grain size, strongly carbonated, (non calcitic) locally magnetic.

Ultramafic Komatiite.
Pale green grey coloured, with a locally banded appearance. Foliated and heavily carbonated (ankerite), weakly to moderately talcose; with tr sulphide only; weakly magnetic. 2 intervals of this rock occur in the sequence. Upper example is more massive and overall much less altered, lower example is banded and much more talcose.

Comments on this Sequence:.

1087.5 1090.1 Porphyritic Syenite.

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

Dark coloured matrix material, well mineralised with py.

1090.1 1091.5 Altered Gabbro.
Strongly schistose, very chloritic unit with foliation @ 15 DTCA; sharp contacts @ 10-15 DTCA; 0.5% spotty py in fine qtz veins within inclusions.

1091.5 1100.9 Porphyritic Syenite.
As per main description; fine (hairline) qtz carb filled fractures @ 40 DTCA throughout this interval; some are hematitic. Blue metallic found in this section as noted above. Sharp bottom contact; stepped; at high angles to core axis.

1100.9 1105.5 Altered Gabbro.
Variable foliation angles from 45-10 DTCA; sharp contacts, bottom contact @ 15 DTCA.

1105.5 1107.5 Ultramafic Komatiite.
Well foliated with minor carb banding. Foliation @ 20 DTCA. Some very tight chevron folding in banding locally.

1107.5 1124.0 Porphyritic Syenite.
Slightly more brownish coloration very weakly foliated locally @ 40 DTCA, slightly coarser grained py, small sericite/fuchsite? spots in this interval.

1124.0 1124.8 Altered Gabbro.
Sharp contacts @ 70/40 DTCA.

1124.8 1127.0 Porphyritic Syenite.

1127.0 1127.9 Altered Gabbro.
Mod to strongly foliated @ 40 DTCA, weak sericite alteration in unit; higher concentration @ bottom contact.

1127.9 1134.5 Porphyritic Syenite.
15% Qtz as patchy veins in this interval.

1134.5 1137.5 Ultramafic Komatiite.
Strongly foliated, strongly talcose section with light blue-green colour, non-calcitic, foliation typically @ 50 DTCA.

1137.5 1141.8 Porphyritic Syenite.
Brecciated/patchy qtz-carb veining; kom basalt inclusions, (pale green-beige colour) @ top contact. Sharp bottom contact @ 60-65 DTCA; yellowish (sericitic?) inclusions; (some with elevated diss py content). Py distributed throughout this interval in both wallrock and in veining.

1141.8 1148.0 ULTRAMAFIC KOMATIITE
LITH- dark green to almost black in colour, with banded appearance (carb veining) well foliated; fine grained matrix.
ALTR- non calcitic, non magnetic.
STRUC- foliation/banding @ 60 DTCA; tightly folded and boudinaged @ cm

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

scale; axial planes are generally parallel to foliations.
VEINING- 1/4-1/2 in thick ankerite and qtz-ankerite veining; generally sulphide poor; often lie parallel to foliation; also some patchy qtz veining w/ ankerite selvages.
MINERALISATION- tr sulphide only.

1148.0 1171.0 ALTERED GABBRO SYENITE ULTRAMAFIC KOMATIITE
An interlayered sequence of highly deformed and altered gabbro and fine altered syenite dykes with minor kom basalt (as inclusions?). Banded and patchy appearance. Strongly foliated with fine symmetric folds at a cm scale; kinked quite commonly. Foliation variable between 30 and 80 DTCA. Generally magnetic, non calcitic, and well mineralised with diss, (deformed) and blebby py. The coarser py grains reach 1/8 in across. Py trails mimic foliation/deformation geometry. Irregular patchy and boudinaged qtz-ankerite veining occurs in some fold hinges. A later dark-grey qtz vein set (1/4 in thick) cuts across foliation @ 50-65 DTCA (generally barren). Primary lithologic units do not exceed 12 in in length down core axis.

Altered Gabbro.
Dark grey to black, grainy to strongly foliated, spotty and diss py. Pale red-brown cast (weak hematite alteration): might be locally silicified. Finely banded, (cm-mm scale) where cut by fine syenite dykelets.

Altered Syenite.
Pale orange red in colour, heavily altered and cut by micro stockworks of qtz and carbonate. Crudely foliated locally. Sharp and or slightly diffuse contacts typically 'scalloped'. Strongly pyritic locally, crystalline and blebby or groups of pyrite grains to 4-5%, also some diss py, probably silicified.

Komatiites.
Very dark green to black in colour, foliated and banded (ankerite veining). Banding is highly deformed; finer bands are tightly kinked on a cm scale. Axial planes generally perpendicular to core axis, sparse diss and spotty py.

1171.0 1207.7 ULTRAMAFIC KOMATIITE
A unit of probably ultramafic derivation, with inclusions of altered gabbro, and altered syenite, similar to those described in the overlaying sequence. No primary textures visible.
LITH- dark grey green with a bluish cast, well developed ankerite banding, foliated and soft; highly deformed interval.
ALTR- non calcitic, locally magnetic, weakly talcose.
STRUC- strongly foliated @ 60 DTCA (typically), boudinaged and folded banding; (cm scale) axial planes generally parallel to foliations, moderately sharp upper and lower contacts @ 70-75 DTCA; very strong fault zone @ 1203.0-1207.5 with included intact wallrock and ankerite-qtz vein material, coarse fault breccia and chloritic-talcose gouge material (silty to coarse sandy grain size); top contact stepped at high angles to core axis, bottom contact @ 60 DTCA; small fault @ 1201.6 with 1/2 in coarse gritty gouge @ 50 DTCA; strongly sheared zone between these two faults, foliation @ 40 DTCA.

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

VEINING- well developed ankerite banding/veining, also irregular patchy qtz (white), all poorly mineralised. Ankerite selvages common in qtz rich veins; highly deformed, variable in size from 1/16-1/2 in.
MINERALISATION- poorly mineralised.

Comments on Included Units.

1178.5-1179.1, 1179.7-1180.5 And 1183.0-1183.8- Altered Gabbro.
Dark grey, granular, foliated intervals with a pale red cast, med grained; non-calcitic, magnetic, mafic matrix (chlorite? amphibole?) with reddish plates of carbonate (weak hematite alteration). Larger porphyroblasts of carbonate up to 1/8 in across, foliation @ 60 DTCA typically.

1173.9-1174.2 and 1183.8-1185.0 Altered Syenite.
Red-orange in colour, fine grained, brecciated and fractured interval intruded by 20% patchy and blebby qtz with chlorite clots and thin ankerite selvages; (tr sulphide). Strongly magnetic, non calcitic, fine diss and blebby py occurs in matrix; fine whiskers of spec hematite sit in qtz and wallrock fractures.

1207.7 1271.9 ALTERED SYENITE ALTERED GABBRO
Intercalated pale red-brown felsic rocks with speckled dark grey to black carbonated gabbro. Thin gabbro layers at top of sequence, becoming broader downhole. Top of unit is brecciated and recemented with silica in the vicinity of a narrow strong fault. (increased hematite alteration adjacent to the fault). Few irregular and patchy qtz ankerite veins,, generally very deformed.

Altered Syenite.
Pale red-brown in colour, massive and very fine grained, slightly vuggy in places; fine qtz veining crosscuts unit at angles between 45-80 DTCA; contains ghostly xenoliths of gabbro.
ALTR- probably silicified, possibly albitic, magnetic, non calcitic, hematite halos developed around some fine qtz fractures, locally wkly speckled appearance (carb in matrix).
STRUC- massive non foliated, sharp contacts top and bottom and internally against gabbro, generally @ high angles to core axis.
VEINING- fine qtz veining with ankerite selvages and hematite inclusions (carb?) veins vary from hairline to 1/4 in thick, generally poorly mineralised.
MINERALISATION- matrix is variably pyritic, diss and blebby/med-coarse crystalline (anhedral) to 1/8 in across; spec hematite in fine fractures and in some slightly larger qtz veins.

Altered Gabbro.
LITH-dark grey to black in colour, med grained and foliated with a variably developed speckled appearance. Finely banded and more deformed at the top of the interval and becoming more grainy downhole; locally coarse grained intrusive texture more visible.
ALTR- magnetic, non calcitic, weak hematite alteration w/ carb in matrix, locally amphibolitic, especially in coarser grained areas.

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

STRUC- foliated throughout typically @ 50 DTCA.
VEINING- fn scrappy carb and carb-qtz veining is not common; a few larger (1/2-2 in) rounded blebby qtz -ankerite veins (highly deformed) intrude unit; generally poorly mineralised; some spec hematite and tr chalcopyrite/galena in core ex: @ 1250.5.
MINERALISATION- diss and spotty py throughout, generally tr amounts; higher near veins/contacts, tr chalcopyrite/galena.

Comments on Units in this Sequence.

1207.5 1217.5 Altered Syenite.
Maroon red colour at top of unit to 1211 ft, top contact @ 80 DTCA, contains several narrow (1- 2 in) kom basalt inclusions. Fault @ 1211.5 @ 35-40 DTCA, w/ 1/8 in of fine hematite-chlorite gouge. Brecciated zone around fault @ 1210.5-1212.4; strong hematite alteration; fine (1/8 in) fragments in a siliceous matrix; several tight shears @ 40 DTCA below fault to 1212.4.

1217.5 1222.0 Altered Gabbro.
Strongly foliated, cut by numerous narrow syenite dykes and several irregular qtz ankerite veins, foliation @ 65 DTCA typically. Shear @ 1219.0 @ 60 DTCA, tr hematite mud.

1222.0 1222.8 Altered Syenite.
Sharp top contact @ 30 DTCA qtz vein (1/2 in thick) at bottom contact with chlorite and ankerite inclusions.

1222.8 1223.5 Altered Gabbro.
Amphibolitic, sharp bottom contact @ 50 DTCA.

1223.5 1232.0 Altered Syenite.

1232.0 1234.0 Altered Gabbro.
Spotty appearance, foliation @ 50 DTCA.

1234.0 1236.0 Altered Syenite.
Top contact @ 70 DTCA, bottom contact @ 30 DTCA.

1236.0 1237.7 Altered Gabbro.
Contains small patch of syenite in centre of interval, few amphibole flecks.

1237.7 1239.8 Altered Syenite.
Contains partially absorbed gabbro inclusions, qtz ankerite veins @ 35 DTCA with orange ankerite? inclusions, chlorite clots, enrichment in py along bottom contact. Contact @ 20 DTCA (with qtz veins on lower side).

1239.8 1253.0 Altered Gabbro.
Med to med coarse grained, foliated @ 40 DTCA; intrusive texture clearly visible; some weak hematite alteration in carb plates in matrix (after feldspar); cut by very few qtz-carb veins (1/8-1/4 in thick) @ 40-50 DTCA. These veins contain fine blebby chalcopyrite and in one vein tr galena?. Spec hematite along hairline fractures parallel to core axis. Locally

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

amphibolitic (weak), weakly magnetic only.

1253.0 1263.3 Altered Syenite.
A massive brick red unit cut by slender qtz veins @ angles from 40-70 DTCA. Contains two altered gabbro inclusions; slightly vuggy (mm openings); blebby and diss py; fine spec hematite in fine fractures and as accicular crystals and blebs in patchy carb qtz veining.

1263.3 1271.9 Altered Gabbro.
Med to coarse to very coarse grained, intrusive texture visible, foliated @ 50 DTCA, weak hematite alteration in carb w/in matrix.

1271.9 1331.1 FELSITE TUFF
An interval of predominantly felsite with several sections of pale grey-green coloured tuff. Portions of the felsite are quite similar to the altered syenite described in the preceeding unit. Overall the felsite is quite massive, aphanitic to micro-crystalline and homogeneous, with probably less hematite cf the altered syenite. Contacts between the units are sharp. Xenoliths of almost totally assimilated gabbro? (dark purple colour, strongly magnetic) are visible occasionally in the felsite. They are 1-3 in across typically. One recognisable gabbro xenolith (cut by syenite dykelets) sits @ 1312.5-1314.3.

Felsite.
LITH- pale brown with an orange cast locally. Aphanitic and massive; homogeneous unit cut by scrappy and patchy white qtz veining throughout. Hard, no primary texture visible, the rock is of unknown derivation.
ALTR- non calcitic, non magnetic, weak hematite alteration (pervasive/patchy) locally developed, probably silicified/albitized?.
STRUC- massive; non-foliated; sharp contacts typically @ high angles to core axis.
VEINING- pale white qtz veining, and carb-qtz veining (with ankerite inclusions/selvages) are common throughout, these range from hairline to 2 in thick; @ variable angles to core axis, most are 35-45 DTCA, not well mineralised with a few exceptions. Chalcopyrite occurs as blebs and fillings in fn (1/8 in) veins @ 1286 ft.
MINERALISATION- matrix of unit is well mineralised throughout with diss and spotty/bleby/subhedral py to 1/8 in across. Occasionally large blebs up to 1/4 in across are developed; some blebby py occurs along and inside patchy qtz, not common in most veins.

Tuff.
LITH- part crystal, part ash tuff, w/ fine qtz eyes? and felsic fragments in a highly altered slightly gritty matrix. Subtle banding locally (foliated); hard, may contain almost totally digested fragments of gabbro? (or komatiite?). Increasing alteration near contacts.
ALTR- locally weakly magnetic, non calcitic, mod sericitic with very fine wispy (fuchsite?chlorite?) locally, probably well carbonated matrix, may be locally silicified; weak hematite alteration near/in dykes of syenite?; minor hairnet fracturing w/ chlor.
STRUC- weakly foliated throughout, typically at 40 DTCA.

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

VEINING- fine syenitic? dykelets in upper tuff bed 1/4 in thick, few qtz and qtz-ankerite veins 1/8-1/2 in thick cutting units @ 50-60 DTCA, some with blebby chalcopyrite, otherwise poorly mineralised.
MINERALISATION- very fine grained diss py throughout; generally <0.5%; slightly elevated near contacts or some veins, blebby chalcopyrite in several qtz ankerite veins.

Comments on Units follow:.

1271.9 1274.3 Felsite.
Bott cnt sharp at 50 DTCA.

1274.3 1275.4 Tuff.
Spotty chalco in qtz-ank veining at upper cnt (fne) and in center of interval (1/4 to 1/2 in); tr of spec hem also present.

1275.4 1280.8 Felsite.
This interval resembles 'syenite' logged in the preceding major sequence; slightly more hematite alteration, quite siliceous.

1280.8 1283.2 Tuff Green Carbonate Zone.
Contains gabbro/kom inclusions near bottom contact, wispy fuchsite? and/or chlorite alteration, few tiny syenite dykelets @ 40-50 DTCA. Granulated/altered syenite at bottom contact with fine magnetite? siliceous/hematitic (weak) sharp contact with underlying felsite @ 50 DTCA, irregular patchy qtz ankerite veining.

1283.2 1292.0 Felsite.
Contains inclusions of barely distinguishable mafic (gabbro?) material; dark purple-mauve in colour, magnetic, blebby chalcopyrite in qtz veins; minor spec hematite and fracture fillings, wispy/irregular syenite dykelets.

1292.0 1294.0 Tuff.
Uniform, featureless, with very fine diss py and blebs of chalcopyrite in a qtz vein.

1294.0 1312.5 Felsite.
Well mineralised and veined section, small tuff horizon 6 in long @ 1298.0.

1312.5 1314.5 Gabbro Syenite.
Highly deformed inclusion, siliceous, dark grey with beige-brown cast, irregular altered syenite dykelets cutting a foliated mafic xenolith; cut by numerous fine wispy cuspate qtz-ankerite veinlets 1/8 in thick. Kinked and broken primary units.

1314.3 1331.1 Felsite.
As described above, contains a mafic inclusion several inches long, splotches and fine blebby chalcopyrite near this xenolith. Local hematite alteration about fine qtz stringers.

1331.1 1351.3 ALTERED GABBRO

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

LITH- dark grey in colour, med grained and well foliated with a grainy or finely speckled appearance; similar to gabbro units described higher in the hole. Some wispy chlorite defines foliation. Dark heavily carbonated matrix. Fine magnetite in matrix; cut by wispy altered syenite dykelets.
ALTR- non calcitic, magnetic, weak hematite staining in carb plates w/in matrix, may be silicified (hard).
STRUC- well foliated variable orientation from sub parallel to core axis to 35 DTCA. The latter is most representative. Good RQD; few tight shears @ 30-40 DTCA; slickensides perpendicular to core axis.
VEINING- very fine wispy carb/qtz (both white and dark grey in colour). Veining @ 40 DTCA (some are perpendicular to core axis). Poorly mineralised, tr spec hematite in fine fractures sub parallel to core axis.
MINERALISATION- tr spotty py, some py trails along fine fractures.

1351.3 1356.9 FELSITE
An interval very similar to that described above (1271-1331) with more intense qtz veining throughout unit. Patchy/gash type and wispy qtz-ankerite veining (@ high angles to core axis). Small amounts of fine crystalline pyrite resides in the veining. Two splotches of gabbro?? with sericite alteration and elevated pyrite (diss) occur in the unit.

1356.9 1357.0 TIMISKAMING GROUP
As per the first 3 holes logged. A change in lithologies from this point downward- the appearence of tuffaceous and 'green carb' intervals contrasts w/ the felsite/syenite, gabbro and komatiite sequences occuring uphole.

1357.0 1433.4 ULTRAMAFIC KOMATIITE TUFF
An intercalated sequence of altered tuff beds, blue-black komatiitic rocks and qtz-rich fuchsitic u/mafic lenses. Contacts are sharp and often parallel to foliation. Single lithologies are 1-3 ft long. Minor amounts of felsite as in overlying units.
Tuff Horizons.
Beige to pale brown in colour, fine grained, mod to weakly foliated and/or weakly banded (altered/deformed). Variably altered with hematite, sericite and silica. Locally almost cherty in appearance. Non-calcitic, but likely well carbonated in all variations. Qtz, qtz ankerite and altered brick red syenite dykelets cut many tuff horizons. Weak fuchsitic alteration developed locally, especially where tuffs abut fuchsitic komatiite horizons; variably mineralised with diss py. Foliation variable from, 30-65 DTCA.

Komatiitic Basalts.
Blue-black or very dark-green coloured; banded/veined with strong foliation developed. Ankerite and ankerite qtz banding is typically 1/4-1/2 in thick and parallel to foliation. Weakly to non magnetic, non calcitic, poorly mineralised. Not particularily talcose, possibly a basaltic komatiite.

Ultramafic Komatiite Horizons - Green Carb Zones.
Dark green to apple green to emerald green, strongly foliated intervals with 'crackle textures', highly carbonated (ankerite) with wispy chlorite and fuchsite alter thru/out. Qtz as veining and patchy intrusions normally carries carbonate inclusions and selvages. Qtz is abundant in most of these

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

intervals. These sections are generally non-magnetic, non-calcitic and weakly mineralized.

Notes on Units in this Interval:.

1357.0 1357.9 Tuff.
Brick red, weakly banded and foliated @ 25 DTCA; silicified; non magnetic; cut by 1/4 in red syenitic? dykelets (often // to fol); spotty/blebby and diss py; sharp bott cnt @ 20 DTCA (sheared?).

1357.9 1362.6 Green Carbonate Zone.
A hybrid unit of blue-black kom and fuchsitic u/mafics; very wk fuch alter produces an olive green colour; alter intensity increases towards bott of interval. Non-magentic, locally siliceous against dk grey 'oily' qtz blotches; fol at about 25 DTCA (typical); poorly mineralised.

1362.6 1363.4 Felsite.
A small interval of beige coloured, fn grned felsic material, similar to units described uphole. Sharp cnts at a high angles to CA; poorly mineralised

1363.4 1366.0 Green Carbonate Zone.
Similar to the unit described at 1357 to 1362, becoming more chloritic towards bott cnt. Sharp bott cnt at 20 DTCA.

1366.0 1368.5 Tuff.
Pale brown colour, w/ red cast locally, banded and v fn grned, cherty appearence. Bands are 1/4-1/2 in thick and may be alter related; typically @ 35 DTCA. Spotted appearence locally, carb alter?; sharp upper and lower cnts // to fol/banding. Locally yellowish (sericitic), dk green-black (chlor?) and reddish alter (hem?) in bands. Diss and layered py to 1/8 in w/in unit Increase in seric conc near both cnts (lighter in colour).

1368.5 1373.4 Ultramafic Komatiite.
Dk green-black banded unit w/ blueish spotted sections; fol at 40 DTCA; wkly magnetic and non-calcitic. Bluish section w/ chlor spots may be more u/mafic in comp (wkly talcose).

1373.4 to 1373.8- Felsite.
As described above, heavily veined.

1373.8 1378.1 Green Carbonate Zone.
Emerald green, qtz-rich interval w/ prevasive fuchsite alter, approx 20% qtz veining and patches; sulphide poor; fol at 50 DTCA. U/mafic derivation.

1378.1 to 1380.2- Tuff.
Pale olive green w/ red cast locally, fn grned homogeneous unit cut by irreg qtz-carb veins to 1/4 in; // to fol w/ carbonated syenitic dyklets. Pervasive fuch and hem alter overprints unit; diss py in matrix and syenite dykelets.

1380.2 1382.4 Green Carbonate Zone.

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

As at 1373.8 to 1378.1; qtz veining w/ pale beige inclusions; (ank?, increased Fe conc?); and fn xtalline py following selvages/edges of inclusions.

1382.4 to 1385.4- Tuff.
Grny brown red coloured unit; wkly foliated; sugg of lapilli sized frags; strong sericitic alter at bott cnt; wk hem alter thru/out. * VG at 1383.6 in fn qtz vein; fine jewellery 2 cm long by 1 cm thick * ; fn qtz veining at 40-50 DTCA.

1385.4 1389.7 Green Carbonate Zone.
Emerald green alter u/mafic unit; contains several narrow pale beige-yellow tuff intervals; 10% blebby qtz w/ ank selvages and orange (hem?) carb? inclusions; poorly mineralized; some chlor in unit.

1389.7 1394.5 Tuff.
Pale purple brown; fn grned; wkly banded interval; magnetic; cut by a few syenitic dykelets?; fn hem fractures (poss spec hem locally); hard, (probably silicified); sericitic halos developed at both cnts for 2 to 3 in into unit: non calcitic; well mineralised w/ diss py; fol at 50 DTCA.

1394.5 1398.3 Green Carbonate Zone.
Olive green sequence of qtz veins (w/ ank; dk grey 'oily') and chlor/wk fuch alter. The WR is highly deformed/foliated and kinked locally; few sprinkles of diss py near veins in WR. Some seric alter locally- 'blonde alteration'.

1398.3 to 1399.5 - Tuff.
Beige/tan coloured unit; cut by numerous scrappy/patchy qtz-carb veins (ank selvages); sulphide poor; siliceous/heavily carbonated.

1399.5 1401.5 Green Carbonate Zone.
Olive green/beige sequence of u/mafic rox wkly altered w/ fuch/chlor and sericite (blonde alter); also some reddish hem alter. Tuff horizons 1/2 to 1 in thick; fol at 60 DTCA; highly deformed tuff bands w/ v fn diss py, few irreg qtz-carb veins to 1/4 in thick; wkly magnetic.

1401.5 1406.5 Tuff.
Reddish brown interval cut by num altered syenitic dykelets commonly 1 to 3 in wide. Wk perv hem alter; hard; siliceous w/ a fn gritty texture. Wkly magnetic, non calcitic; only wkly foliated. Fn ladder veins xcut syenitic dykelets ; dykes are perp to CA; ladders are generally // to CA; scrappy qtz-carb veining close to dykelets. Diss py; 1 to 2%.

1406.5 1433.4 Green Carbonate Zone.
Olive/emerald green; highly deformed komatiite of u/mafic derivation. Contains narrow tuffaceous bands; some sericitic and uniform; others red-brown in colour(hematitic). Very similar to the interval from 1401 to 1406. About 15% of this unit is qtz- patchy or vein type- white and/or grey in colour (oily qtz?). The qtz is generally poorly mineralized; contains white ank and orange (hem ank?) inclusions. The matrix material is strongly foliated w/ a 'crackle breccia' texture; chlor and fuch alter occurs along

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

fractures and as incipient xtals. Tuff units are generally mineralised w/ diss py; some hem units are cut by scrappy qtz-ank veins(barren). Foliation typically at 60-65 DTCA; non magnetic and non-calcitic. Fault @ 1418.0 @ 25 DTCA; 1/8 in chlor/fuch gouge.

1433.4 1455.0 BASALTIC KOMATIITE
A VERY HIGH STRAIN AREA.
LITH- pale olive green in colour; banded/mottled appearence; strongly schistose. Heavily altered and strongly deformed basaltic? komatiite. The first 20 in of this unit resembles the above unit w/o the fuch alter.
ALTER- calcitic; chloritic and locally wkly talcose; no fuchsite present.
STRUCT- strongly foliated thru/out; typically at 45 DTCA; numerous faults w/ talc-chlor gouge(one large zone might be the Larder Lake Break?).
VEINING- calcitic-qtz banding/veining well developed thru/out; typically 1/8 to 1/4 in thick; boudinaged; crumpled and typically folded on a cm scale; AP's perp to foliation.
MINERALISATION- tr diss and spotty py.

Structural Items:.

1435.0 1436.3 Fault Zone.
Gouge and fault breccia; cnts at 50/40.

Faults at 1436.5 @ 20 DTCA; 3-4 in of crushed rock/gouge; faults @ 1438.9, 1439.0 @ 40 DTCA; fault at 1440.0; 3 in of gouge/fn fault breccia @ 50 DTCA; faults @ 1441.0 @ 50 DTCA; @ 1446.0 @ 40 DTCA (2-3 in gouge); crushed zone @ 1449.0; fault zne at 1450.5 @ 70 DTCA w/ 3 in gouge; fault zone at 1454.0 @ 50 DTCA (2-3 in chlor gouge).

1455.0 1493.6 GREEN CARBONATE ZONE
Contact along broken core into another green carbonate zone. This member is dominated by the deep rich emerald green colour with local variations to dull grey green from weaker fuchsite to more of a yellowish emerald green particularly in the possible tuffaceous sections. The tuffaceous sections are not well developed until 1470.5 with better distinction as tuff towards the basal part of the sequence. In the basal section the rocks are granular textured from carbonate with a weak foliation developed at 50 to 60 degrees that being enhanced by fine blebs and streaks of fuchsite alteration (poss fragments). In the wider sections the tuffs are also cut by granular reddish veins or incipient dykelets of altered syenite normally sub-parallel to, or potentially the cause of some of the foliation. The variable alteration then colors the tuffs from buff to grey-beige with reddish to lime green and yellowish tones related to hematite/altered syenite, fuchsite/sericite and sericite respectively. There is also a couple of more distinctly u/mafic units in the sequence. For the most part, the emerald green carbonate suite is well veined with greyish qtz w/ or w/out ankerite at the margins. These veins are also fractured with fuchsite plus or minus ank; resulting cnts tending to be irregular. Veining averages 20-25% in the green carb, but is minor in the more tuffaceous to u/mafic sections. Mineralisation is generally minor in amount thru/out. The best py tending to be in the tuffaceous to buff altered rocks. The rocks are wkly to non-magentic.

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

Veining and some of the reddish veins/ dykelets are hard and siliceous, otherwise the carb nodes and tuffs are easily scratched.

The sequence includes:.

1455.0 1456.0 Green Carbonate Zone.
Cnt zone, carb rox, grey green w/ wk fuch alter, fol w/ ank and veining at 65-70 DTCA, lower cnt @ 58 deg, relatively sharp.

1456.0 1467.0 Green Carbonate Zone.
Emerald green carb, 25 to 30% veining, rich in colour, grades greyer in colour approaching an u/mafic over the lower 18 in.

1467.0 to 1467.9- U/mafic Unit.
Narrow black, flecked w/ seric?; plus some buff alter at upper cnt. Cnts at 25/36 deg. Access cse py here at 3%.

1467.9 1470.5 Green Carbonate Zone.
Emerald green carb, 15% veining; tr buff alter approaching lower cnt.

1470.5 to 1471.2- Tuff.
Pale grey-brown; and granular textured; w/ streaky sericite alter and 3% py-vein to fracture controlled. Cnts at 37/45 deg; This is the most granular textured of the units w/ greyish carb.

1471.2 1479.7 Green Carbonate Zone.
Rich in colour, 15-25% veining, tr py. This section also contains some pale brownish grey to buff alter between 1474.0 and 1476.3- not decidedly tuffaceous but finely granular textured w/ sericitic streaks and chlor plus minus talc streaks locally. The streaky alter/foliation is variable from 35 to 50 deg.

1479.7 to 1481.8 - Tuff.
Fnly granular textured, no clear fragments, buff to pale brownish grey w/ reddish overtones. Tr py. Cnts irreg.

1481.8 1482.9 Green Carbonate Zone.
50% Veining.

1482.9 1485.9 Green Carbonate Zone.
Tuff? grey brown to reddish grey brown approaching emerald green in colour locally due to fuch content. Fine (to 5mm) dull orange red to brick coloured incipient dykelets? of altered syenite are also present in this section The rock is fnly granular textured from carb but contains commonly fuchsitic and locally sericitic streaks and blebbs that tend to enhance a wk fol at 45-50 deg. Minor veining; 2-3% py.

1485.9 1488.0 Green Carbonate Zone.
Emerald green carb w/ two patches of brownish alter about 3 cm in size each.

1488.0 1490.4 Green Carbonate Zone.

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

Sharply gradational cnt over 2 cm from emerald green carb into dull grey-green carb w/ variable fuch alter. In this section fuch alter is moderate. There is scattered brownish beige to orange altered sections in this area as well- the two largest at 1488.5, 2.5 cm at 25 deg around a 5 mm qtz vein, and the basal 8 cm with orange staining, plus streaky carbonated tuffaceous(?) material at 47/52 deg.

1490.4 1493.6 Green Carbonate Zone.
Carbonated u/mafic; gradational from above; the u/mafic has decreasing fuch alter across this zone such that by the lower cnt the u/mafic is dull grey green w/ a wk fuch component and much more numerous blu-black to dk green streaks. There is some dull streaky ochre coloured alter in the system at 1491- 6 cm at 47 deg; along w/ a grey-buff to weakly reddish to red, granular carbonated patch at 1492.9- 2 cm w/ fn py at 30/47 deg; streaky buff alter/ tuffaceous material at the lower cnt 3cm @ 52/46 deg.

1493.6 1556.5 ULTRAMAFIC KOMATIITE
LITH- dk grey to blue black in colour, banded and foliated interval of probably u/mafic derivation. Top 11 ft contains intrusions of alter syenite and sections of silicified? tuffaceous material. No primary textures visible.
ALTER- locally wkly calcitic, wkly magnetic; ankeritic; chlor/talcose matrix, locally siliceous near veining/syenitic intrusions.
VEINING- qtz-ank veining/banding developed thru/out unit. Typically 1/8 to 1/2 in thick, boudinaged, crumpled/kinked. Also patchy vein material- siliceous/grainy w/ v wk hem alter.
STRUCT- fol defined by veining typically at 40 DTCA. Few crushed/sheared areas; kink bands developed locally; AP's at lower angles than veining ex: at 1556 - 20 DTCA.

Structural Details as follows:.

Fault at 1495.0 @ 50 DTCA w/ tr of chlor gouge; sheared/crushed area at 1519.5 ft - shear surface at ~20 DTCA; shears at 1523.0 @ 25 DTCA w/ tr gouge; Crushed Zone @ 1511.2 -1/2 in crushed zone @ high angles to CA; fault at 1549.4 ft- 2 in of chlor gouge/fn fault gouge at 55 DTCA; crushed core zone- 1550.5 to 1553.0 ft- poss fault zones? 0 RQD (broken/crushed core); fault at 1553.1 ft @ 50 DTCA w/ 1/4 in gouge.

MINERALISATION- fine diss py in tuff bands and syenite dykelets; tr spotty py in kom matrix material.

1556.5 1571.3 TUFF
LITH- a fn grned slightly gritty banded to moderatly foliated multi-coloured fragmental interval. Quite randomly altered- banding and colouration changes are thought to be alteration zones and not primary lithologic changes. Red-orange-brown to dk olive green to pale grey w/ wk reddish cast; w/ sharp cnts top and bott; cut by a few qtz-ank veins (generally highly deformed except for 1 example); locally fn lapilli-sized fragments in narrow beds 1/4 to 1/2 in thick; fragments are u/mafic, felsic, and mafic in composition. Fn qtz xtals present also.
ALTER- locally hematitic/siliceous w/ spec hem in fn qtz-carb veinlets(mm)

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

locally chloritic; locally wkly sericitic(in frags); fn granular magnetite developed locally; entire unit is wkly to strongly magnetic; non-calcitic some xtalline ank in veins.
STRUCT- foliated thru/out typically at 50 DTCA; flattened and stretched lapilli locally; boudinaged and kinked veining is common; bott cnt sharp at 30 DTCA.
VEINING- minor deformed qtz and qtz-carbonate(ank selvages); some hairline fractures w/ spec hem at low angles to CA.
MINERALISATION- fn diss py thru/out unit- often distributed as trails following foliations/healed fractures.

1571.3 1686.5 ULTRAMAFIC KOMATIITE TUFF
A sequence of variably altered komatiitic u/mafics and sericitic/siliceous tuffs, injected w/ qtz and carb-qtz veins and patches. One altered syenite dykelet also xcuts this interval. The u/mafic rocks are chloritic-ankeritic and variably fuchsitic w/ the characteristic banded or foliated-crinkled textures. Tuffaceous bands are pale grey-green to beige in colour and variably altered- some are grainy and have subtle banding (probably alter); others are totally replaced w/ sericite and silica/carbonate. Contacts are sharp; some areas show elevated hem alter also. Qtz veining is variably developed and often deformed. Ankerite selvages/inclusions are common. Blonde alter in carb inclusions w/in veins are well developed locally. Py occurs predom in tuff beds and in some 'blonde' inclusions. Qtz veining is generally poorly mineralised. Kom WR are are foliated @ 50 DTCA typically.

Comments on Units:.

1571.3 to 1577.0- V15.
Dk blue to black banded/veined interval similar to that described above at 1493 to 1556; non-calcitic, wkly magnetic to non-magnetic; w/ pale white qtz-carb veining/patchwork (10%) w/ some wk hem/sericite alter. A section of brick red altered syenite w/ 1-2% fnly diss py xcuts the interval at 1572.8 -1573.5; sharp bott cnt at 30 DTCA; contains smokey purple inclusions; some fn diss py occurs in hematitic veining; no fuch alter.

1577.0 1596.5 Green Carbonate Zone.
Banded/veined u/mafic unit w/ variably developed fuchsite alter (matrix); interbedded w/ red-brown tuff beds. Tuff layers vary from 1 in to several feet in thickness Patchy and irreg qtz and qtz-ank veining (10-15%) cuts unit. Reddish-blonde alter in carb inclusions w/in some qtz veins. Tuff layers and altered inclusions are generally mineralised w/ fn diss py. WR foliated @ 40-50 DTCA; non-magnetic and non calcitic.

1596.5 1616.0 Ultramafic Komatiite.
Blue-black banded/veined unit w/ very wk to nil fuch alter and sparse white qtz veining. Some blonde tuff beds and qtz veining w/ beige inclusions; these areas are commonly wkly mineralised w/ diss py. Non-calcitic; non-magnetic locally silicified. Tuff bands are variable in thickness (1/4 to 3 in thick) and highly deformed/folded/kinked. They are generally silicified, sericitic and mineralized. The WR is med grey, foliated @ 50 DTCA- locally w/ a distinctive spotty appearence (chlor? spots in carbonated

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

matrix).

1616.0 1660.0 Green Carbonate Zone.
Med grey to emerald green interval, consisting of predom altered u/mafic material cut by patchy and irreg qtz-carb and qtz veining w/ minor amounts of tuffaceous material. A non-calcitic, generally non-magnetic unit w/ mod to strongly fuch alter in the matrix. Fuchsite is pervasive and fracture /foliation controlled. Qtz veining is ankeritic (as selvages) and contains sericitic inclusions; it is poorly mineralised. Foliated at 50 DTCA typically. Tuff bands are beige to emerald green, fn grned and locally fragmental w/ lapilli sized frags (flattened/stretched); cnts are sharp, // to foliation; bands vary from 1/2 to 10 in thick.

1660.0 1686.5 Green Carbonate Zone.
Predom tuffaceous w/ wkly fuchsitic u/mafic intervals becoming less fuch and more chloritic towards end of the interval. Scrappy and irreg qtz cuts all lithologies. The tuff is generally hard(siliceous) and in part entirely altered and replaced w/ carb, sericite and silica to produce a massive blonde coloured rock w/ scrappy inclusions and clots of u/mafic WR and fuch material. Less altered tuff is pale beige in colour, slightly grainy and mod foliated; seric and very wk hem alter is visible here and there; foliated at 50 DTCA.

1686.5 1812.0 LAPILLI TUFF
A sequence of interbedded ashy/crystal/lithic tuffs and cse lapilli tuffs /fn polymict agglomerates, cut by patchy and irreg qtz veins (generally white w/ ank selvages). All rocks are well carbonated w/ various degrees of chlorite, fuchsite, sericite, and hematite/siliceous alteration. Subtle bedding/banding is accented w/ a mod foliation typically @ 50 DTCA; fragments are flattened generally. Frags and matrix are of several compositions; u/mafic, basaltic frags/ash; cherty fragments; felsic frags and qtz xtals/fn frags. Fine magnetite is developed locally in matrix; all rocks are wkly magnetic. Locally calcitic; fn diss py is distributed randomly thru/out and in narrow beds/bands.

Details on Internal Units.

1686.5 to 1693.0- Tuff.
Pale grey-pink in colour w/ green cast locally, sericitic and wkly altered w/ hem; becoming slightly more siliceous towards bott cnt. 2 in sericitic alter zones at both cnts. Wispy and fn xtalline spec hem in hairline fractures near bott cnts; lapilli sized flattened frags occur in central portion of interval; overall 0.5% diss py.

1693.0 to 1740.2- Tuff.
Dk grass green interval w/ slightly gritty mafic groundmass into which has accumulated pale white, salmon pink and pale lithic fragments. At 1695 to 1698- u/mafic frags? are predom; grainy, heavily carbonated interval; foliated, wkly mineralised; at 1728.5 to 1729.0- strongly sericitic section; fragmental beds (congl/agglom) at: 1703.9 to 1705.4; 1708.8 to 1710.0; 1715.9 to 1716.4 1721.9 to 1724.9 and 1727.0 to 1728.5.

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

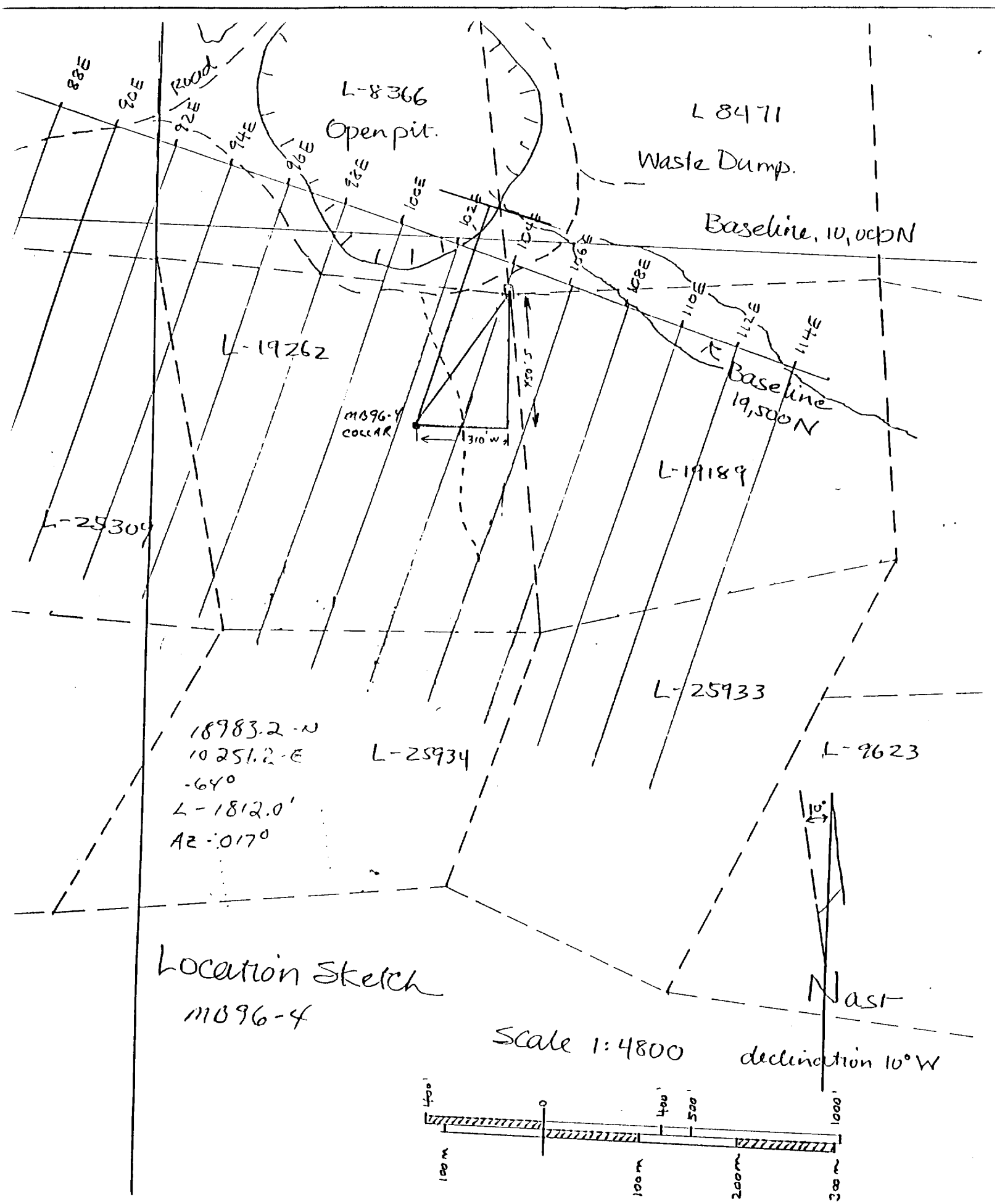
1740.2 to 1758.0- Tuff.
Light beige-green in colour, fn grned gritty and sericitic/wkly chloritic Becoming a lapilli fragmental from 1750.5 to 1756.4; qtz vein at 1747.5 to 1750.5; fragmental section (1-2 in diam); light yellow, beige cherty, dk green mafic/u-mafic cobbles w/ little matrix; v wk fuch alter as wispy clots in matrix.

1758.0 to 1764.0- Tuff.
Dk grass green colour, chloritic, predom fn tuff sequence w/ lapilli bed at 1758.0 to 1760.5.

1764.0 to 1782.2- Tuff.
Light apple green/sericitic interval w/ a lapilli frag section from 1779.5 to 1782.2; a siliceous, pale mauve-pink fragmental section at 1774.3 to 1777.0; frags are cherty, felsic and mafic/u-mafic in composition.

1782.2 to 1812.0- Tuff.
Dk green, chloritic section; begins as a gritty, mod foliated (at 50 DTCA) heavily carbonated tuff; grades into fragmental/agglomeratic sections towards bott of hole; fn fragmental @ 1788 to 1795.5; cse agglomerate @ 1788.5 to 1801.5 and 1804.0 to 1812.0 w/ cherty/felsic lithic frags; w/ some mafic/chlor/u-mafic pieces, some w/ chilled margins, set in a gritty matrix.

End of Hole- 1812.0 ft.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Open pit.
L 8471
Waste Dump.
Baseline, 10,000N
Baseline
19,500N
L-19262
L-19189
L-25309
L-25933
L-25934
L-9623
M096-4
COLLAR
310' W
450' S
18983.2 -N
10251.2 -E
-64°
L-1812.0'
AZ -017°
88E
90E
92E
94E
96E
98E
100E
102W
104W
106W
108E
110W
112W
114W
Road
10°
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Location Sketch
M096-4
Scale 1:4800
declination 10° W
100'
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400'
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1000'
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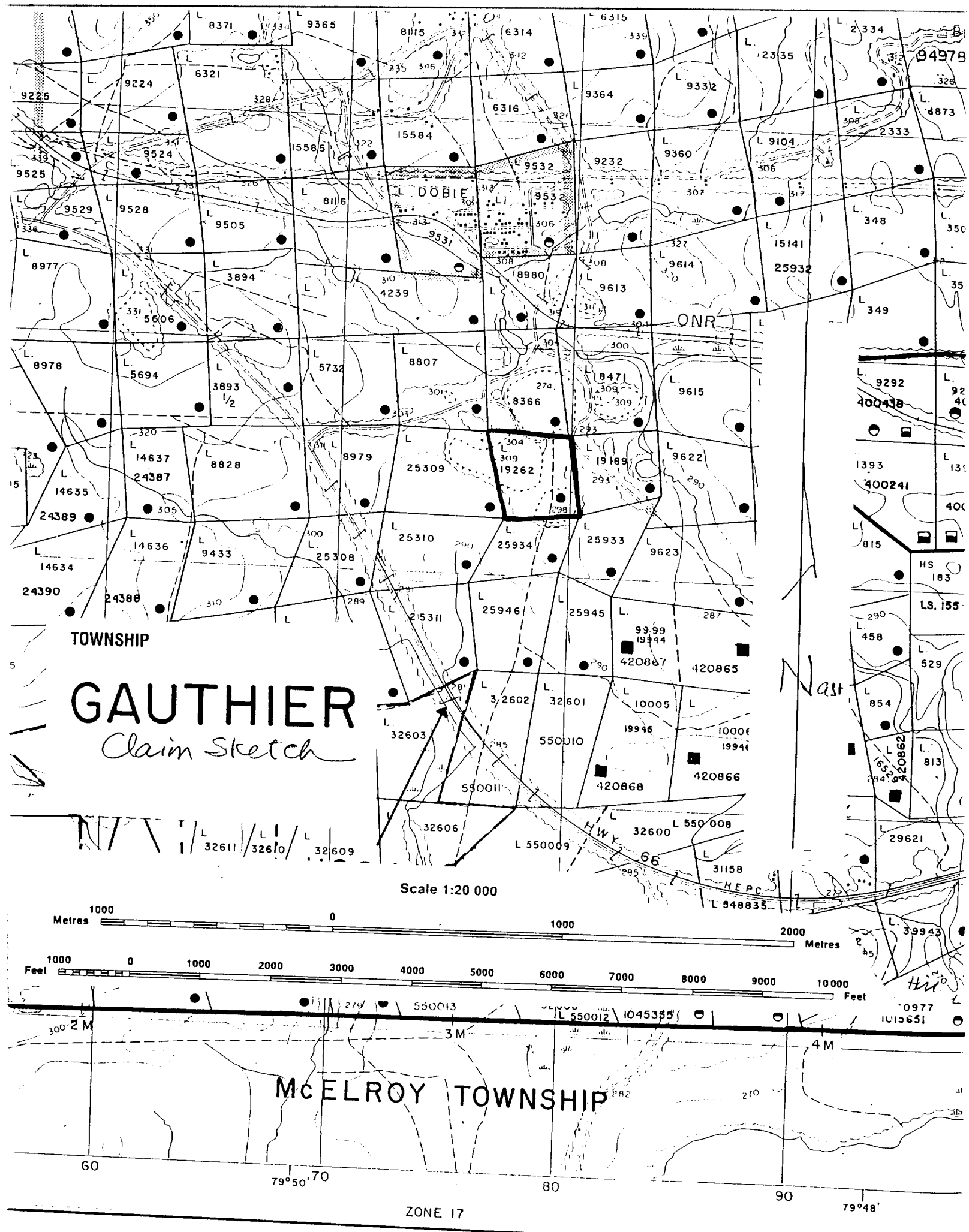
TOWNSHIP
GAUTHIER
Claim Sketch
DOBIE
ONR
HWY 66
HEPC
McELROY TOWNSHIP
Scale 1:20 000
1000 Metres 0 1000 2000 Metres
1000 Feet 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 Feet
2 M
3 M
4 M
60
79°50'
70
80
90
79°48'
ZONE 17

QUEENSTON MINING INC

Drill Hole: MB96-05

DIAMOND DRILL HOLE RECORD

Property: MCBEAN Col loc from #1 post, L19262, 790'S, 50'W
Northing: 18643.20
Easting: 10626.10
Elevation: 10976.80

Collar Azimuth (Grid) 356.2
Collar Dip: -73.0
(0 Degrees Grid equals 017 degrees True)
Hole Length: 2824.0

Date Printed: 6 Jul, 1998

*** Dip Tests ***			*** Dip Tests ***		
Depth	Azi.	Dip	Depth	Azi.	Dip
38.0		-74.0	1500.0		-71.5
300.0		-72.0	1800.0		-69.0
600.0		-73.0	2100.0		-69.0
900.0		-73.0	2400.0		-66.0
1200.0		-73.0	2750.0		-61.0

Date Started: Sept 26, 1996
Date Completed: Oct 18, 1996

Drilled by: BENIOT
Core Size: BQ
Material left in hole BX CASING
Core Location: Upper Canada Site 1
Logged by: DRA and JDS

Dave R Alexander J Schonfeldt

From (ft)	To (ft)	Geology
		SUMMARY LOG
.0	32.0	OVERBURDEN
32.0	309.0	GABBRO
309.0	432.9	DIORITE
432.9	506.6	GABBRO
506.6	591.4	DIORITE
591.4	658.0	GABBRO
658.0	820.5	DIORITE
820.5	883.0	GABBRO
883.0	1076.2	APLITE
1076.2	1076.9	FAULT ZONE
1076.9	1766.5	GABBRO
1766.5	1766.6	START OF DEFORMATION ZONE
1766.6	1771.4	PORPHYRITIC SYENITE
1771.4	1836.1	ULTRAMAFIC KOMATIITE
1836.1	1861.2	GREEN CARBONATE ZONE
1861.2	1946.3	FELSITE
1946.3	1977.7	ULTRAMAFIC KOMATIITE

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

2.18728

From (ft)	To (ft)	Geology
1977.7	1994.5	GREEN CARBONATE ZONE
1994.5	2084.9	ULTRAMAFIC KOMATIITE
2084.9	2112.6	ULTRAMAFIC KOMATIITE
2112.6	2134.8	TUFF
2134.8	2145.5	ALTERED SYENITE
2154.6	2181.8	FAULT ZONE
2181.8	2205.5	GREEN CARBONATE ZONE
2205.5	2246.8	FELSITE
2246.8	2295.0	ULTRAMAFIC KOMATIITE
2295.0	2336.0	GREEN CARBONATE ZONE
2336.0	2362.0	TUFF ULTRAMAFIC KOMATIITE
2362.0	2365.2	FELSITE
2365.2	2373.9	ULTRAMAFIC KOMATIITE
2373.9	2391.5	FELSITE
2391.5	2413.5	ULTRAMAFIC KOMATIITE
2413.5	2484.9	GREEN CARBONATE ZONE
2484.9	2515.9	TUFF
2515.9	2824.0	TUFF

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

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

.0 32.0 OVERBURDEN
Gravel and boulders.

32.0 309.0 GABBRO
Collar in the broad gabbro complex as noted elsewhere in this area, characterized by feldspathic and hornblende rich phases along with an assortment of dioritic to mafic dykes and various patchy inclusions. The feldspathic gabbro tends to be the dominant member. It is typically various shades of green grey w/ occasional lime tints, due to the preponderance of anorthasitic feldspar which is variably altered w/ epidote. Most of the feldspars connect such that a rather network pattern is dev w/ the feldspar while alt mafic phenocrysts to inclusions sit within an essentially feldspathic matrix. The hornblende rich phase is normally darker in colour to dark green and grey green. This exhibits a quasi cumulate texture from blocky to acicular to subrounded mafic phenos +- feldspar. Both phases of the gabbro are mod to strongly mag. Contacts between phases can be either sharp or gradational.
Alt in the system consists of chlorite and epidote plus calcite and hematite. Calcite and hematite are related in that hematite staining or fractures w/ hematite are usually within or around calcitic fractures. Staining locally is quite strong w/ from a bright orange red to a rust colour. Similarly, rx are sometimes pervasively calcitic around accessory calcitic fractures. Overall veining is minor in amount w/ what appears to be earlier calcitic +- hematite veins and fractures cut by later fine, white calcite veinlets. Mineralz is also minor in amount and tends to be focussed in and around the calcite veins and fractures, w/ occasional accessory mineralz in the felsic dykes. Later rx types in this system include diorites and mafic dykes along w/ certain sections of basalt of a somewhat uncertain relationship to the gabbroic package. Diorite dykes take various forms due to the size of the dyke and variable staining/alt from calcite and hematite. Units vary from fine to med grained and are typically grey to off white in colour w/ lath-shaped albitic feldspar + scatttered more tabular, anorthsitic phenos. The whole is speckled w/ 10-20% mafic minerals +- chlorite and epidote.
Alteration- qtz appears to be a minor constituent. Diorite dykes also contain erratic included material. The mafic intrusive members are characterized by narrow, very fine grained dykes, rarely exceeding a few feet in length. Typically the units are dull to dark green grey to bluish grey and turquoise grey, and, are moderately to strongly overprinted w/ calcite, mod to strongly mag, and have sharp contacts. The ground mass varies from fine grained to finely granular textured w/ carbonate to finely felted in texture w/ coarser acicular to more rarely blocky phenos of amphibole +- biotite. The biotite component locally suggests designation of lamprophyre as appropriate. Dykes are often unveined and sparsley to unmineralz.
Units within the gabbro complex include:.

49.4 49.9 Diorite.
Sequence cut by a very fine grained, grey red unit that is finely granular textured from carb and stained w/ hematite. It is harder and more siliceous than the adjacent gabbro and is veined w/ calcite w/ a couple of small

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

chalcopyrite blebs. Below the dyke the gabbro is fine grained and more strongly chloritic to 51.0 feet w/ the section above the dyke being fine grained strongly reddish stained and locally mineralz w/ fine py. Upper contact w/ calcite veining @ 60 DTCA, lower contact broken @ 65 DTCA.

83.8 85.6 Diorite.
Sequence cut by a dyke of fine grained diorite @ 85 DTCA.

88.7 89.1 Mafic Intrusive.
Sequence cut by a mafic dyke, which is very fine grained, mod mag, calcitic, dark grey green to reddish tinged and harder than adjacent gabbro. The lower contact is streaked w/ hematite staining. Contacts @ 48/60 DTCA.

123.0 124.6 Diorite.
Sequence cut by a stained orange red dyke of diorite @ 58 DTCA.

123.4 124.0 Mafic Intrusive Diorite.
This section appears to have a narrow dull grey turquoise mafic intrusive to 123.6, w/ a diorite dyklet injected along its lower contact from 123.6 to 124.0. Upper contact at 56 DTCA, diorite dyke at 62 DTCA. The diorite is dull grey in colour and the top bit is stained reddish along the basal 5cm.

136.1 137.8 Mafic Intrusive.
Sequence cut by a mafic intrusive, which is dull grey to greyish brown, calcitic, magnetic and contains possible biotite. Both contacts are with veining- upper at 32 degrees to the core axis, with an irregular 4cm knot of stained diorite just above to lower contact along pitted and vuggy calcitic veining at 18 dtca.

140.0 143.4 Diorite.
Sequence cut by a dyke of orange red stained diorite @ 65 DTCA. This unit contains.
Tr py mineralz.

141.6 143.9 Diorite.
Sequence cut by a dyke of diorite which, is grey, med grained w/ a pinkish cast @ 35 DTCA.
149.0 Open calcite fracture @ 14 DTCA, w/ strong staining for 10cm on either side.

160.9 161.5- Diorite.
Sequence cut by a dyke of diorite, stained red to brick coloured @ 50 DTCA.

165.8 167.9 Diorite.
Sequence cut by a dyke of diorite which, is med grained, and orangish grey in colour. Contacts @ 35/50 DTCA.

171.0 172.5 Mafic Intrusive.
Sequence cut by a mafic intrusive which is fine grained, dull reddish grey green to brownish in colour. This unit contains amphibole +- biotite, is calcitic, magnetic and has irregular and shallow contacts @ 17 DTCA.

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

190.4 190.9 Strong orange staining around fracturing. Staining appears most related to a shallow angle generation. This unit contains tr py.

226.8 227.2 Diorite.
Sequence cut by a dyke of diorite, orange pink @ 25 DTCA.

228.0 228.9 Diorite.
Sequence cut by a dyke of diorite which is irregular, orange pink in colour and @ 60 DTCA.

237.4 238.0 Diorite.
Sequence cut by a dyke of diorite which is dark green grey w/ orange staining to locally orange red in colour. Contacts @ 57/34 DTCA. Tr py mineralz.

240.0 241.3 Calcite vein, vein breccia w/ some qtz and calcite flooding. There are some fractures here w/ serpentine, hematite. Calcite is white to greyish, plus there is a rx fragment at 240.7- of a dyke?, hard dark reddish brown, stained w/ a tr of mud?? @ 45 DTCA. The gabbro is much finer grained and chloritic for 17cm above and 12cm below the vein w/ accessory hematite staining above the vein. Tr py. Contacts @ 28/52 DTCA.

244.8 248.8 Calcite vein, pinkish, gash like running along core axis; tr py. Hematite staining of adjacent rx.

269.0 270.4 Diorite.
Sequence cut by a dyke of alt diorite, which is fine grained, grey with pinkinsh toned dyke? @ 44/48 DTCA. This unit is partly leached from pitted vuggy fractures w/ tr py. Fine mafic specs and ghost phenocrysts of possible feld are suggestive of diorite plus the adjacent gabbro is very fine grained and chloritic @ the dyke margins. This rx is weakly to mod mag.

282.3 283.7 Diorite.
Sequence cut by a dyke of diorite which is pinkish grey, somewhat irregular and @ 56/82 DTCA.

296.1 297.5 Diorite.
Sequence cut by a dyke of diorite, pinkish grey @ 65 DTCA.

300.1 300.9 Diorite.
Sequence cut by a diorite dyke, pinkish grey @ 58/70 DTCA.

306.6 307.0 Diorite.
Sequence cut by a dyke of diorite, pinkish grey, upper contact @ 55 DTCA, lower contact broken. This unit is also partly pitted and leached w/ calcite fractures. Below the alt diorite? from 269 270, the gabbro has a higher number of fine grained dark chloritic phases or inclusions of other mafic material. Contacts however, are normally irregular and diffuse and do not appear to represent dykes of mafic intrusive. The lower contact is irregular @ 47 DTCA.

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
309.0	432.9	DIORITE Contact into a very dirty dioritic sequence - dirty by virtue of the fact the dioritic intrusion appears to have happened in multiple phases and a number of inclusions exist. The rx contain a high percentage of feld w/ both lath shaped albitic feldspar and tabular more anorthositic phenos. Qtz is minor in amount and non distinguished + there is a variable mafic component as chlorite +- biotite. The diorite is quite variable in colour across the sequence from pale pinkish grey to quite dark grey, w/ red to orange red stained sections from probable hematite and local bleached yellowish to greenish sections from accessory epidote and sericite alt. The diorite is also variably mag. The multiple phases of intrusions are typified by lighter coloured units in sharp contact w/ dark units w/ or w/out indications of chilling at dyke margins. There are also scattered narrow cross-cutting dyklets of diorite. At the upper contact, to 315.5, there are also several angular inclusions of gabbro - the largest from 309.3 to 310.3 suggesting that the exact diorite contact could be either @ 309.0 or 310.3. Some of the core is blocky. Veining across the system is generally minor in amount, as is mineralz. 315.5 321.9 Light coloured bleached section, pale yellowish grey to brownish grey w/ local reddish tones from hematite. 321.9 323.2 Gabbro. Gabbro inclusion, contacts @ 31/52 DTCA, dark grey, fine granular, to finely felted texture w/ strong carb, and, cut by two narrow dyklets of pale pinkish grey diorite. 323.2 329.4 Diorite. Sequence cut by a dyke of diorite, dark grey in colour. 329.4 343.3 Gabbro. Gabbro inclusion - which is the largest section of gabbro in the system. For the most part this unit is fine grained and partly cooked from the adjacent diorite. The rx varies from dark grey to dark green grey w/ reddish tones. The matrix is finely felted to granular textured w/ the feldspathic variety of gabbro seenover 1 foot just above the basal contact contacts for this unit @ 40/48 DTCA. The lower contact being very fine grained, foliated, and stained w/ hematite over 10cm. 343.3 343.8 Diorite. Sequencce cut by a dyke of diorite, very fine grained, orange red in colour @ 48/50 DTCA. 343.8 369.4 Diorite. Sequence cut by a dyke of diorite, med to coarse grained, w/ a number of irregular gabbrois intrusions up to a foot in size. Sections of this zone are blocky, w/ the diorite becoming more uniform and greyer in colour below 358.0. Just prior to the lower contact is a 2-5m chloritic seam w/ veining @ 16 DTCA. There is some accessory py in the adjacent diorite here and for a few feet above.								

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

369.4 378.0 Basalt.
Basalt - an inclusion? - a short sequence of what appears to be basalt. Both contacts are fine grained, hematite stained, and are irregular and partly broken. Three distinct, quite strongly carb diorites cut the basalt @ 371.0 372.0 @ 50/45 DTCA, 372.5 372.9 @ 60/52 DTCA, and @ 376.3 376.7 @ 46/62 DTCA. Outside the contact zone, the basalt is very fine grained and black in colour to approx 375, where the rx grades sharply to grey green in colour before becoming, darker and more chloritic below, 376.9. The top section to 375 is finely amphibolitic w/ streaky pinkish to dark greyish calcitic patches. On the pale grey green sections the rx also becomes very strongly calcitic, and continues to be overprinted w/ calcite to the lower contact and on into the adjacent diorite. This is slightly different than the amphibolic upper part where calcite is most often combined w/ the streaky calcite alt. The zone is only weakly to non mag and contains tr accessory py, particularly near the diorite dyklets and near the upper contact. Also there is a 1cm reddish mud gouge @ 52 DTCA.- The zone of weakness to promote intrusion?.

378.0 383.8 Diorite.
Sequence cut by a dyke of diorite, grey overprinted w/ calcite grading weaker in the down hole direction.

386.2 392.9 Diorite.
Sequence cut by a dyke of diorite, dark grey to reddish grey and med grained with darker grey, fine grained sections to 392.9 where the rx grades sharply to a darker finer grained motled appearance from a sea of dark reddish feldspar w/ pervasive chlorite alt. In the finer grained sections, however, there are scattered white tabular plag feld and chloritic to biotitic blebs to 5mm in size. The apparent chemistry, combined w/ relative hardness and uniform mag(moderate) across this zone suggest a diorite.

392.9 395.0 Gabbro.
Gabbro inclusion at 50 DTCA, upper contact broken and diffuse, lower contact clean and sh rp w/ accessory staining. The gabbro is moderately mag, and is coarse grained - the feldspathic variety but w/ accessory hornblende, chlorite, and epidote.

395.0 399.9 Diorite.
Sequence cut by a dyke of diorite which is for the most part dark grey to dark reddish grey and med to coarse grained w/ a couple of the fine grained included sections that could be alt diorite as above or alt gabbro. This unit could be alt gabbro because of some potential, although poorly dev gabbroic textures as the feldspathic gabbro variety. The diorite is more strongly mag than the inclusions which are found at 398.0, 4cm, irregular contacts, and @ 398.4 399.1 @ 67/52 DTCA, both inclusions w/ diffuse contacts.
399.9 400.8 Diorite.
Sequence cut by a dyke of diorite, pink grey, med grained, sharp contacts at 60/40 DTCA.

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

400.8 403.7 Diorite.
Sequence cut by a dyke of diorite, narrow, fine grained w/ apparent dioritic composition w/ lots of feld + scattered mafic blebs in a reddish green to green grey rx. The dyke is hard and mod mag.

403.7 404.0 Diorite.
Sequence cut by a dyke of diorite which is broken and much more pinkish in colour. Upper contact is broken. The relationship between the two units is unclear although this dyke is med grained and appears to be in sharp contact w/ the overlying dyke from the broken core. Both are reddish stained at the contact. Lower contact sharp @ 34 DTCA.

404.0 418.7 Gabbro.
Gabbro inclusion? - questionable inclusion due to the length of the section here. The gabbro is of the feldspathic variety, med grained with strong chloritic alt over the 4.5 feet and lower 2 feet.

418.7 430.4 Diorite.
Sequence cut by a diorite dyke which is dull pink grey, w/ orangish tinges, med grained w/ numerous chlorite inclusons up to 4cm in size. This unit is much like the start of the zone at 309 feet. I.e. Inclusions etal and suggests that the previous gabbroic unit is not an inclusion but part of the pre-existing basement intruded by a second diorite dyke.

430.4 431.2 Gabbro.
Gabbro inclusion or potential basalt, dark green, very fine grained, finely felted texture. Contacts at 20/61 DTCA.

431.2 431.7 Mafic Intrusive.
Mafic intrusive, a narrow, very fine grained, finely granular, red brown dyke which is streaky in nature from relic epidote-alt material. This dyke is weakly to non mag and non calcitic. The upper contact is sharp & partly chilled @ 61 DTCA, the lower contact is broken at 52 DTCA.

431.7 432.1 Diorite.
Sequence cut by a dyke of diorite, pink grey, med grained, and weakly mag.
432.1 432.9 Gabbro.
Gabbro inclusion?, again a dark green, very fine grained gabbroic to basaltic looking inclusion @ 38/30 DTCA.
The placement of the lower contact of the diorite complex at this point is somewhat arbitrary in veiw of the adjacent rx and other dioritic rx lower in the system.

432.9 506.6 GABBRO
Contact into another sequence of gabbroic rx, in this instance between two zones dominated by diorite. The gabbro is also dominated by an unusual rx type ergo the separation here. The main rx type is a dark grey green to dark green unit that is granular textured and essentially composed of carb, chlor, plag, and amphibole(or amphibole pseudomorphs.) What is unusual is the local presence of apparent metacrysts of white, tabular plag +- qtz, and or pinkish carb blebs along the core producing a rather diotitic appearance

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

to a number of sections but maintaining a matrix w/ a gabbroic texture. These units are also weakly to moderatly magnetic, contain scatered inclusions of mafic material and are variably overprinted w/ carbonate - the dull pinkish to reddish varieties tending to react strongly to Hcl & colour the core reddish. Contacts w/ other coarse grained feldspathic gabbro phases and finer grained sections are often quite sharp. Given the rx position between two dioritic complexes the variations within this sequence are not entirely unexpected, although the main rx type may be a hybrid. Other units within this system include:.

440.6 441.4 Gabbro.
Gabbro coarse grained, feldspathic, sharp irregular contacts @ 25/48 DTCA.

441.6 442.4 Diorite.
Diorite, pale pinkish green, med grained @ 52 DTCA.

444.1 444.6 Gabbro.
Gabbro or basalt, a dark green very fine grained unit streaked w/ some epidote alt, contacts @ 43/37 DTCA. A second very fine grained, gabbroic unit starting at 445 grades to the hybrid style of unit.

456.0 456.6 Diorite.
Sequence cut by a diotite dyke, grey to pinkish grey @ 62DTCA.

456.6 463.9 Feldspar Porphyry.
Feldspar porphyry - a grey to grey brown to locally slightly pinkish toned dyke w/ tabular to albitic shaped feldspars in a very fine grained matrix. Phenocrysts are up to 2mm in size, some of which are stained reddish or lime green from epidote alt near local fine fracturing along the core. Lower contact sharp w/ calcite veining @ 32 DTCA. This section is followed by 15cm of med to coarse grained dioritic material with up to 2cm mafic inclusions. The relationship between the feld porph(which may be dioritic in composition) and the dioritic section is unclear. The lower contact is irregular.

470.0 498.0 Broken Blocky Core.

463.9 483.4 Gabbro.
Gabbro, the hybrid type of phase w/ some more chloritic sections and local 1 to 2 cm dyklets of dioritic material. Inside the blocky zone the felted texture w/ albite and amphibole are more evident than previous and the rock is variably calcitic and reddish hued.

483.4 487.1 Feldspar Porphyry.
Feldspar porphyry, a second dyke w/ tabular to lath shaped feldspar in a very fine grained matrix. This unit varies from grey to dull grey brown in colour. Contacts @ 44/40 DTCA.

490.1 490.9 Diorite.
Diorite, dark reddish grey, med grained, contacts @ 54/49 DTCA, and diffuse.
494.1 495.1 Gabbro.

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

Gabbro, fine grained chloritic section at 46/30 DTCA. Upper contact broken Circa 500 feet the gabbro grades from the hybrid phase into a fine grained, dark green, chloritic basal section w/ a crude finely felted texture dev. This unit is also weakly to mod mag, and mod to strongly calcitic. Near the lower contact, there is a dull grey red dioritic dyke or inclusion -13cm w/ irregular contacts averg. 45 DTCA. The lower contact is irregular averg 45 DTCA.

506.6 591.4 DIORITE

Return to a system as previous, that is dominated by dioritic rocks w/ variably altered rx intercalated within the sequence + a fair amount of included material as well. Diorites vary from pink to grey in colour with variable reddish to orange tones from hematite staining. Carb is also a common constituent throughout as well, and, the rx are normally harder than either the adjacent gabbros or included material, although certain sections of country rxs appear silicified related to intrusions. The diorites are also variably mag. The other main unit in the system is gabbro. Essentially all of the types of gabbro previously noted are found including feldspathic to hornblende rich varieties, and fine grained, finely felted rx to some potential hybridized units. Gabbros also range from weakly to mod and locally strongly mag.

506.6 539.1 Diorite.
This section is thoroughly riddled w/ narrow dyklets to wider units of diorites, intruding feldspathic to fine grained and chloritic gabbro. The wider dykes of diorite, typically one to five feet in width are chocked full with mafic(um gabbroic) inclusions from 1 to 6cm in size. These dykes combined w/ variable carb alt, some pitted to vuggy fractures, hematite staining and blocky core make subdivisions into narrow units extremely complex. There is local accessory py w/ some of the vuggy carb fractures, otherwise the rocks are poorly mineralz. The lower contact is irregular along a narrow dyke of diorite @ 10 DTCA.

539.1 542.0 Gabbro.
Gabbro: dark grey green to reddish toned, strong calcite, fine grained, finely granular to finely felted texture w/ blebs to blotches of reddish calcite, and one narrow, 6cm diorite dyklet @ 540.9 @ 55 DTCA.

542.0 545.3 Diorite.
Diorite: dark grey red, med grained, w/ scattered inclusions to 5cm in size of mafic material. Hematite stained, contacts diffuse @ 42/28 DTCA.

545.3 548.1 Gabbro.
Gabbro: dark green, fine grained, w/ a granular to finely felted texture and strong overprinting w/ calcite in subrounded blebs to reddish streaks.

548.1 549.9 Diorite.
Diorite: dark reddish grey w/ numerous inclusions of mafic material. Contacts @ 40 DTCA.

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

549.9 551.9 Gabbro.
Gabbro: dark green and fine grained, finely felted texture, w/ a strong overprinting of reddish carb.

551.9 553.2 Diorite.
Diorite: dull pinkinsh to orange grey, fine grained with apparent coarser diffuse margins. Contacts @ 26/42 DTCA, lower contact w/ veining. There is some accessory coarse py associated w/ fracturing here.

553.2 556.4 Gabbro.
Gabbro: dark green to reddish grey from a strong overprinting/ calcite.

556.4 564.9 Diorite.
Diorite: dark pinkish grey to grey red w/ scattered inclusions of mafic material to 3cm in size. Part of this zone is blocky. Contacts @ 30/22 DTCA.

564.9 570.9 Gabbro.
Gabbro: dark green to reddish green and orangish green from stained carb. There is a narrow, 5cm diorite dyklet in this section as well @ 566.4 @ 50 DTCA.

570.9 584.9 Diorite.
Diorite: orange grey at outset grading to pinkish grey and grey w/ depth. This dyke is med grained, partly blocky and fractured w/ hematite. Upper contact is diffuse @ 60 DTCA, lower contact sharp @ 42 DTCA. Minor py on some slips.

584.9 591.4 Gabbro.
Gabbro: dark green and strongly chloritic, calcitic w/ less of the the reddish calcite than previous but a strong reaction to Hcl. The lower contact here is sharp and well defined @ 16 DTCA.

591.4 658.0 GABBRO
Return to a suite of gabbroic rx, which below an upper contact zone grade to the more normal felspathic gabbro circa 627. As in the previous gabbro complex between the diorite units this sequence is initiated along what is best described as a hybrid phase. In this circumstance the hybrid gabbro is characterized by numerous mm sized grains of zoned plagioclase in a fine grained, granular to finely felted mafic matrix. These plag phenocrysts/metacrysts range from milky white to lime green and epidote alt and are frequently rimmed w/ hematite staining. The are also scattered mafic inclusions in this area, a phenomenon related to both the dioritic and gabbroic rx. The hybrid is moderately mag, and varries from dull brownish green to reddish green depending on the amount of hematite staining. The hybrid style of unit grades rapidly towards the fine grained finely granular, chloritic, finely felted texture style of gabbro, circa 600.9 w/ the number of feld metas diminishing across the interval 591.4 to 600.9. Save for a much coarser grained dyke from 613.7 to 617.7, the gabbro is fine grained, dark green, chloritic, calcitic, w/ a finely felted texture and variable reddish carb down to the more common feldspathic gabbro around 627. At 595.4 2mm mud gouge @ 60 DTCA.

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

613.7 617.7 Gabbro.
Gabbro: dark green w/ pinkish calcitic patches and coarse grained, coarsley felted textured, to cummulate style hornblende gabbro. The dyke? is cut by pitted and vuggy calcite fractures @ shallow angles to the core axis and both contacts are w/ similar veining @ 17/13 DTCA. The unit is calcitic and not as strongly magnetic as the fine grained adjacent rx.
The feld gabbro member is med to coarse grained, and mod mag. It is also weakly to mod calcitic. Approaching the lower contact, the gabbro becomes more strongly chloritic, and calcitic and is cut by an increased number of calcite veinlets @ varaible angles to the core axis. W/ depth the rx is also finer grained, but maintains mod to strong magnetism. Within the lower reaches of the gabbro there are 2 narrow units as: 628.8 629.2 diorite, fine grained, dull grey red, calcitic, contacts @ 49/22 DTCA. At 638.2 - mafic intrusive, dark red brown w/ green streaks and fine chloritic blebs, 5cm @ 54 DTCA. The lower contact is along the core axis from 657.1 to 658.7.

658.0 820.5 DIORITE
Diorite complex: contact into another sequence of diorite, quite different than prior zones in that dioritic textures are not well developed, and the host for most of this system is basalt. W/ depth, the dioritic character, of the rx is much more evident. I.e grey plagioclase- rich rocks with both tabular phenos of feld and more albitic varieties, minor qtz, and 10 to 25% mafic minerals as blebs of chlorite, +- biotite, and acicular psuedomorphs after amphibole. These reasonably diagnostic diorites grade into almost amorphous feldspathic units with or without relict feld and mafics that vary from grey to pale grey, orangish, and brick red in colour. Most of the suite is hard, variably overprinted w/ calcite and weakly to mod mag. W/ depth the basaltic member is similarily more distinct as dark green to black, very fine grained units w/ weak granular texture and strong calcite, chlorite, and amphibole components. The basalt is usually mod mag as well. Up section the amount of calcite, plus hematite staining between dykes and along the foliation, makes the basalt range from dark green to reddish green and locally a dark rich red brown. Invariably the rock have a very fine grained granular texture, and are srongly overprinted w/ calcite, both a pervasive phenomenon and as patchy reddish to buff alt. A couple of dykes of potential syenite are also present in this sequence as well as host material that is more gabbroic in appearance around the basal zone. In general the rx are mod veined and fractured w/ fine calcite stringers and fractures, qtz veining is rare and is most often associated w/ the dioritic members. There is also local py mineralz. A number of the core angles in this system are very shallow to the core axis such that they appear to be much thicker than they actually are.

658.0 660.3 Basalt.
Basalt? a dark reddish green to brown coloured unit w/ a fine granular texture that is pervasively flooded w/ reddish calcite, strong reaction to Hcl, mod mag.

660.3 661.5 Mafic Intrusive.
Mafic intrusive?, a second unit here that is sufficiently flooded w/ calcite

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

that the matrix component is obliterated to a granular reddish carb w/ mafic streaks and stretched to bladed mafic blebs. Again the unit is strongly calcitic, mod mag. Contacts are sharp @ 35 DTCA.

661.5 675.5 Basalt.
Basalt: continue in strongly carb basalt, dark red green to almost black in colour w/ some more siliceous reddish patches of indeterminate origin due to diffuse contacts and strong carb component. A foliation here runs effectively along the core axis, enhanced by streaky buff coloured calcite? Some accessory py.

675.5 683.0 Diorite.
Diorite? this unit is very fine grained to amorphous w/ a dull grey red matrix that is hard and feldspathic and contains scattered mafic flecs, some of which are blocky as if after hornblend. The upper contact is bleached grey in appearance over 18cm, w/ the lower contact bleached over 4cm. The upper zone, to 679 is also broken and blocky. The dyke is variably overprinted with calcite, diminishing w/ depth. The rock is mod mag, w/ sharp contacts @ 30 DTCA.

683.0 688.2 Basalt.
Basalt: dark green to black, w/ pinkish to orange red carb layers. Layering/foliation @ 0-15 DTCA plus some pitted and weathered stringers here, and accessory py to 5%.

688.2 692.3 Diorite.
Diorite: grey to dark grey red, hard, siliceous, weakly calcitic, w/ local relict diorite textures. Contacts sharp @ 14/71 DTCA.

692.3 693.5 Basalt.
Basalt: brownish to black and foliated w/ carb along the core axis from 693.1 to 696.0.

693.5 708.0 Diorite.
Diorite: hard, siliceous, amorphous, varying from dull reddish grey to grey w/ local orange tones. The dyke is weakly mag, and weakly mineralz w/ tr py. The dyke also has some fine fractures over the upper 3.5 feet w/ more scattered fractures thereafter. Contacts @ 7/60 DTCA.

708.0 709.4 Basalt.
Basalt: brownish to reddish, granular, calcitic, and weakly mag.

709.4 714.0 Syenite.
Syenite? a dull orange, to orange grey, very fine grained, hard, siliceous, weakly mag dyke with no semblance of relict dioritic textures or phenos to confirm the normal dioritic rx here. Contacts @ 33/45 DTCA, the lower contact being somewhat diffuse.

714.0 716.9 Diorite.
Diorite: dark reddish grey, hard, mottled in appearance, weakly to mod mag.

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

716.9 720.0 Syenite.
Syenite, orange red, hard, very fine grained, as previous. Contacts @ 26/24 DTCA.

720.0 720.6 Mud gouge @ 24 DTCA.

720.6 721.4 Basalt.
Basalt: dark reddish brown to almost black, granular textured.

721.4 722.0 Diorite.
Diorite: pale pinkish grey, very fine grained to amorphous w/ irregular contacts @ 53/7 DTCA.

722.0 730.1 Basalt.
Basalt: dark reddish green to almost black w/ streaks to layers of reddish to milky calcite. Foliation/layering runs effectively along the core axis. The rx is strongly mag, calcitic, and mod mineralz w/ fine to coarse py. Some sections appear amphibolitized, other streaky zones appear to contain traces of talc. There is also a narrow pinkish grey diorite running along the core axis from 723.1 to 723.9.

730.1 747.1 Diorite.
Diorite, a series of dykes separated by narrow units of basalt as 737.4 4cm @ 24 DTCA, and a 21 cm patch along the core axis centred @ 741 feet. The upper unit is pale grey in colour, the other two are grey to grey red w/ local orangish tones. Scattered relict dioritic textures persist, rocks are hard, amorphous, weakly to mod mag, and mineralz w/ fine py. Outside contact for this zone @ 10/28 DTCA.

747.1 748.6 Syenite.
Syenite: to possibly diorite, pale orange red to brick coloured, and amorphous w/ some mafic streaks along fractures in the central zone. Contacts are @ 28/22 DTCA. Non mag.

748.6 760.7 Basalt.
Basalt zone w/ a mixture of rock types that are difficult to distinguish due to strong hematite/calcite. The resultant zone varries from dark reddish green to a dark rich brown red. Two distinctive dark rich red brown units are found @ 751.9-5cm @ 46/30 DTCA, and from 757.3 to 758.5 amoungst broken blocky core. Both units are mod to strongly mag, strongly calcitic, and without other features to characterize their origins, appear to be very fine grained mafic intrusives. Other sections of the core are generally fine to coarsely granular textured w/ carb, w/ a section from 755.4 to 756.4 @ 42/30 DTCA, appearing to have relict dioritic texture, and the basal zone from 758.5 760.7 exhibiting hybrid gabbro style textures amongst coarsely granular carb rx.

760.7 781.7 Diorite.
Diorite: grey to grey beige w/ orangish to reddish tones, fine to med grained w/ scattered qtz veins and tr py. This rx is weakly overprinted w/ calcite in the presence of accessory fine calcitic fractures, weakly to non

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

mag except where units are reddish stained from iron. Contacts @ 37/42 DTCA.

781.7 782.8 Basalt.
Basalt: dark reddish green to brownish, fine grained, strongly calcitic, mod mag.

782.8 790.9 Diorite.
Diorite: grey to orangish, fine to med grained, w/ local well dev feldspar phenocrysts. Contacts @ 35/68 DTCA-upper contact irregular.

790.9 792.7 Basalt.
Basalt dark reddish brown, strongly calcitic, and stained w/ hematite.

792.7 797.7 Diorite.
Diorite: grey to orangish, 5 to 7 % qtz veining, tr py. Contacts @ 68/29 DTCA.

802.9 804.2 Basalt.
Basalt: dark green to almost black, partly amphibolitized, chloritic, calcitic, w/ no reddish staining, mod mag, one qtz vein cuts this unit for 1cm @ 45 DTCA, some accessory py.

804.2 805.3 Gabbro.
Gabbro: this host rock is a marked departure from the fine grained basaltic units up in the section. This unit and others that follow have a rather mottled appearance from the presence of pervasive greyish calcite in a rather network pattern surrounding mafic blebs. There is also scattered mafic intrusions throughout up to 4cm in size. The gabbro is dark grey green in colour w/ local more greyish to reddish tones lower in the sequence. The rocks are variably overprinted w/ calcite and are mod to strongly mag. Veining and mineralz are very minor in amount.

805.3 807.0 Diorite.
Diorite, orange grey to grey, fine to med grained, tr py. The rock is weakly calcitic and weakly mag. Contacts @ 41/33 DTCA.

807.0 812.0 Gabbro.
Gabbro: dark grey green w/ more pronounced reddish staining near contacts. Calcitic, strongly mag, scattered mafic intrusions.

812.0 820.5 Diorite.
Diorite: grey to orangish and pinkish grey w/ more staining near dyke margins and throughout a zone of blocky core from 810 to the base. Tr py only. Contacts @ 55/65 DTCA and irregular to broken. The lower part of the diorite is broken and blocky.

820.5 883.0 GABBRO
Gabbro complex as seen elsewhere in the hole w/ the mix of normal feldspathic and hornblende rich varieties not seen until around 853 feet. The upper section is variably alt w/ chlorite, calcite, and hematite, and is

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cut by scattered dykes of diorite. The upper zone is also finer grained and more pervasively alt w/ calcite than the lower, coarser grained sequence. The core is also blocky in the upper zone and there are a few inclusions of potential basaltic material. The gabbro varies from med to dark grey green and green in colour w/ some reddish toned sections and portions that are almost black in colour. The rock is fractured w/ calcite some of the stringers being pitted and vuggy. The gabbro is also mod to strongly mag, the finer grained phases seeming to be the most responsive. Dioritic dykes are often weakly to mod mag as well. Py mineralz is very minor in amount across this area.

820.5 833.0 Gabbro.
Gabbro: a mixed sequence of gabbroic rx dominated by dark green, very fine grained, finely felted rocks intercalated w/ dark reddish green more coarsely granular carb gabbro, reddish toned from an invasion of reddish stained carb. Both units are mag the reddish green, more strongly carb units tending to be more so. Contacts between phases are usually quite sharply gradational, although they may be irregular @ 50 to 70 DTCA. The upper contact is reddish green to 821.3 feet, contact @ 57 DTCA, w/ reddish green rx occurring again below 825.9, contact broken but sharply gradational @ 65 DTCA. At 827.6, 2mm mud gouge @ 64 DTCA. Two interesting units occur in the lower part of this contact zone. The first from 827.8 to 829.0 @ 50/28 DTCA, is a very dark green to black, fine grained amphibolitized basalt. The second from 830.9 to 832.4 @ 42/55 DTCA, starts as a dark, very fine grained basalt type of unit but grades to a blue black and talcose carb komatiite below the upper 10cm and within 1cm of the basal contact. Both units are mod to strongly calcitic and are mod mag, but unveined, and unmineralz. The very base of this section is a chloritic fine grained gabbro w/ reddish green granular gabbro between two basaltic to komatiitic units.

833.0 833.7 Diorite.
Diorite; dull grey to grey brown w/ weak orangish tones @ 36/50 DTCA.

833.7 844.8 Gabbro.
Gabbro; reddish green granular, carb, strongly mag, w/ isolated narrow dioritic dyklets @ 833.9 1cm reddish @ 50 DTCA, @ 842.8 for 5cm, pinkish grey @ 53 DTCA, and @ 843.9 for 3.5cm pinkish to grey @ 65 DTCA.

844.8 847.9 Diorite.
Diorite; pinkish grey to slightly orangish, blocky core, weakly to mod mag, upper contact @ 68 DTCA, lower contact broken.

847.9 848.2 Gabbro.
Gabbro; dark green, chloritic, granular textured.

848.2 852.5 Diorite.
Diorite; pinkish grey w/ orangish tones, mod mag, core is blocky throughout. Contacts @ 24/44 DTCA, and much greyer over either margin for 7cm.

852.5 883.0 Gabbro.
Gabbro; fine to med grained at first, grading to the much coarser grained

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feldspathic and hornblende rich varieties below 855 feet. Approaching the basal contact, the gabbro becomes much more strongly carb, w/ an invasion of greyish to slightly reddish calcite. The precise lower contact zone is fine grained and chloritic w/ accessory qtz, + some py over 20cm. The lower contact is sharp but irregular avg 50 DTCA.

883.0 1076.2 APLITE

Contact into a rather wide sequence of light coloured felsic rocks cutting gabbroic to dioritic +- basaltic rx. Compositionally this is a very unusual sequence and is not exactly similar to the narrow fine grained aplites seen in other holes. Certainly the rx are light in colour and indicitive of aplitic material although these units are porphyritic. These rx vary from a light grey to grey beige to off white colour, w/ various tones of orangish to reddish staining from carb +- hematite. The matrix is very fine grained and apears to be composed of silica and plagioclase w/ ghost phenos of plag + fairly numerous, tabular, somewhat zoned phenos of feld scattered throughout. What is most unusual about the system are patches of more distinctly dioritic material within the aplitic units, giving rise to diffuse reddish to greyish patches of diorite surrounded by much lighter coloured aplite. The observation begs the question, if the aplite is in fact a diorite which has been blasted by alt or are the dioritic members inclusions within an aplitic magma.

Around certain of the dioritic inclusions, the core is fractured and bleached next to veining and fracturing such that the rx come very close to an aplitic appearance, while in other areas, unfractured dioritic material is sharply gradational into aplitic material without any accesssory fracturing or alt. Contacts w/ country similarly do not betray the relationship. Aplitic sections in contact w/ mafic rx do not become dioritic in appearance, but a distinctly dioritic dyke between 1031 and 1040 in sharp contact w/ aplite never loses its dioritic texture and mafic flecs throughout even though there is quite variable bleaching and alt. Given a lack of definitive evidence, the sequence is suggested to be aplite w/ the use of the aplite designation being more fluid than other rx types. The system is variably veined w/ milky to greyish stringers of qtz +- carb and is fractured to more rarely veined w/ calcite. Essentially the rock is non mag except around some of the dioritic inclusions Although most of the country rx including gabbro to basalt to diorite is mod mag. Similarly the aplite is much less carb than the country rx. The sequence is also locally mineralz w/ fine cubic py.

883.0 910.4 Aplite.
Aplite: pale orange grey to pale grey to pale grey beige w/ depth, and and becoming much more strongly reddish stained w/ dioritic inclusions towards the base after 906. This section avg 10% veining, w/ tr to 1% "%.
Py mineralz. Less veining in reddish basal section, and basal section is mag.

910.4 911.1 Gabbro.
Gabbro? grey green, very fine grained, w/ some coarser ovoid carb blebs and scattered mafic blebs in a fine grained, grey green to brownish coloured

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

matrix, that is finely granular textured. Non mag. Contacts @ 58/38 DTCA.

911.1 925.5 Aplite.
Aplite: dominately reddish stained and almost syenitic in appearance locally due to glassy, orange red nature. Scattered diorite sections throughout that are weakly mag. Broken core from 913.0 to 915.4. From 917.5 918.4 the core is grey to greenish toned w/ a fine speckling of chlorite and carbonate in a reddish very siliceous groundmass, weakly mag. Below this unit the rx are more reddish stained and contain more frequent dioritic intrusions. Not particularly well mineralz.

925.5 926.2 Basalt.
Gabbro or basalt, grey green, chloritic, weakly carb, mod mag, tr accessory py. Contacts @ 76/71 DTCA.

926.2 962.8 Aplite.
Aplite, w/ very pale green to grey beige sections + intercalated more reddish to orangish tones particularly in the dioritic inclusons. A couple of dioritic inclusions look more like dykes w/ sharply gradational contacts. Strong qtz veining from 932 to 933 w/ tr of py + a splash of galena? Some fine hematite filled fractures.

962.8 963.2 Carbonated Zone.
Carbonate rx to carb komattite. This rx is almost entirely carb, in coarse granular aggregates within an olive to dark green to dull bluish black matrix w/ chlorite and possibly talc. Contacts @ 70/15 DTCA.

963.2 964.8 Aplite.
Aplite: pale buff grey.

964.8 966.4 Carbonated Zone.
As above w/ some weak fuchsite alt near lower contact. Contacts @ 66/64 DTCA.

966.4 978.6 Aplite.
Aplite: very pale in colour, w/ very scattered dioritic portions. Accessory Qtz veining, and tr py circa 970-971.

978.6 990.5 Gabbro.
Gabbro?? this is a most unusual unit varrying from dark pinkish grey to dark grey green w/ pinkish tones. It is totally invaded by coarse rossettes of grey to pinkish carb, plus zoned tabular metacrysts? of plagioclase some of which are more lath-like and potentially albite in a dark green finely felted matrix(when visible) of mafic minerals including chlorite and amphibolite. There are also scattered mafic inclusions. This unit is mod mag. Its appearance seems to vary between a highly alt diorite and a strongly carb gabbro - the matrix component, relative softness, and mag capacity suggesting the gabbro member. Contacts @ 30/20 DTCA and irregular.

990.5 996.9 Aplite.
Aplite: pale pinkish grey w/ much more frequent reddish dioritic included here.

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996.9 1000.2 Basalt.
Basalt?: two units of very fine grained material of probable basaltic composition separated by a unit of aplite w/ diorite. Contacts are @ 40/76 and 70/24 respectively. The upper unit is very fine grained and dark red brown to almost black in colour, and is mod hard from silicification from the adjacent dykes or silicification accompanying alt healed fractures w/ buff carb and fine py, up to 10% locally. The upper unit also contains scattered mafic blebs and black acicular xtals or pseudomorphs of amphibole. The lower unit has an 11cm upper contact and a 4cm lower contact zone of orange brown carb w/ streaks and blebs of mafic material followed by an 11cm hematite breccia zone below the upper contact previous to a streaky chloritic basalt that continues over 18cm w/ some breccia to the lower contact. Both units are mod mag, and mod to strongly calcitic. The lower unit is not nearly as well mineralz w/ py but there are splashes of chalcopyrite here.

1000.2 1030.0 Aplite.
Aplite: pale pinkish grey to pale grey w/ buff to pinkish tones and darker reddish to grey, mod mag, chloritic inclusions to 30cm in size. Minor veining, tr fine py except for some irregular patches of buff carb and chlorite alt w/ fracturing running along the core axis between 1025.5 and 1027.7. The aplite in this area is very fine grained and and orange red to brick coloured - rather like a non porphyritic syenite.

1030.0 1039.2 Diorite.
Diorite: a questionable contact here w/ dark fracturing, silicification and orange red staining into a dioritic unit that is locally bleached to a very pale grey and grey buff colour but maintains the mafic flecs throughout - a dioritic characteristic. Most of the unit is pinkish grey to reddish grey and mag. @ 1038.0 the diorite contains a mafic inclusion just cutting the core axis. Mineralz consisits of tr py w/ very localized sections up to 2% Contacts @ 40/56 DTCA.

1039.2 1044.3 Gabbro.
Gabbro: dark reddish green, strongly carb, granular textured, mod mag, and becoming what appears to be strongly carbonated and partially silicified over the basal 12cm adjacent to the next dyke of aplite - here brick to orange red @ the contact, which is very irregular to almost along the core axis.

1044.3 1049.5 Aplite.
Aplite: pale orangish to off white w/ local stronger orangish to pinkish and grey tones. This dyke, unlike most others is partially fractured w/ chlorite and there are some chlorite/carbontate specs throughout. There are also isolated dioritic inclusions. Contacts @ 50 DTCA and slightly irregular.

1049.5 1050.4 Gabbro.
Gabbro: dark reddish green, granular textured w/ a strong invaision of reddish calcite. The rx is mag and contains acicular to subovoid blebs of dark mafic material. Accessory py here as well.

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

1050.4 1051.2 Aplite.
Aplite or diorite? a narrow orangish grey to dull pinkish dyklet @ 50/52 DTCA. The unit is more strongly stained w/ hematite and is more carbonated than most of the aplite dykes but a weak dioritic texture is only developed locally. It is probably more strongly carb due to its size and the environment. The dyke is weakly mag and contains only a tr of py.

1051.2 1056.2 Gabbro.
Gabbro, dark reddish green to almost black, granular textured, partly amphibolitized gabbro w/ strong reddish carb invading certains sections. These reddish sections are mod to strongly mag. The balance of the system being weakly mag. Some accessory py here plus accessory qtz veining from 1052.7 to 1054.2.

1056.2 1061.5 Altered Syenite.
Alt syenite or aplite? three narrow dykes of very fine grained orangish to orange red alt syneite w/ varrying degrees of calcite alt. The upper unit being most reactive followed by the lower unit w/ the central dyklet not reacting to Hcl. The dykes are separated by dark reddish green strongly carb gabbro. More definitve aplites lower in this section have very fine grained orange red margins such that the colouration et al here may be a function of dyke size and alt rather than a true syenite. The dykes include 1056.2-1058.0 @ 32/24 DTCA irregular intrusion w/ fracturing and veining, and 1060.9-1061.5 @ 53/25 DTCA contacts irregular and ragged.

1061.5 1063.9 Gabbro.
Gabbro: dark green to almost black w/ streaky to pervasive reddish carb alt @ 30 DTCA. Unit is granular textured, mag, acccessory py at contacts.

1063.9 1069.0 Aplite.
Aplite: pale to dull orangish grey w/ very fine grained orangish red contact zones suggestive of alt syenite plus minor included dioritic material. Contact show a weakly stepped nature @ 22/32 DTCA.

1069.0 1071.5 Gabbro.
Gabbro: dark green to dark reddish green w/ much stronger reddish staining within 22 and 7cm of the upper and lower contacts respectively. Mod mag throughout, tr py.

1071.5 1074.0 Altered Syenite.
Alt syenite: or aplite? again another very fine grained orange red section of normal alt syenite appearance that from previous sections may in fact be a more strongly stained aplite. At 1072.0 there are 5cm of gabbro, thus 2 dykes? The dykes are weakly to non mag, except around the gabbroic sections and are fractured w/ calcite +- qtz. Around certain of the fractures there are coarser aggragates to blebs of py up to 1cm.

1074.0 1076.2 Gabbro.
Gabbro: granular textured, dark green to almost black and strongly reddish stained. The rx is foliated approaching the adjacent fault zone @ 25 DTCA

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

over 4cm. The lower contact of this system is at 19 DTCA- the contact allowed to run up to the fault zone before breaking out a separate unit.

1076.2 1076.9 FAULT ZONE
Contact along veining into a mud gouge section @ 19/26 DTCA w/ a strong pale orange pink calcite vein running along the core axis. The mud gouge is a dark reddish brown colour.

1076.9 1766.5 GABBRO
Contact into a broad sequence of gabbroic rx that are characteristic of the hanging wall sequence. The complex is dirty in that there are a series of phases of both hornblende gabbro and feldspathic gabbro that contain a mixed variety of included material and are cut by other dykes of both mafic and felsic origin. The sequence ranges from dark reddish green to green and grey green to almost black in some more amphibolitized portions. Colour is partially a function of alt- chlorite, calcite and hematite are the main minerals. Intensity of alt apperars to be at least partly related to other intrusions as well as shearing and/or faulting and the presence of weathered, pitted to vuggy calcite fractures. The rx are variably overprinted w/ calcite - the finer grained sections tending to react more strongly. The core is also quite uniformly mag from mod to strongly so. Veining is irregular in amount but most often consists of calcite fractures to stringers comprising less than 10% of the rx. Some of the pitted and vuggy fractures tend to be in areas w/ accessory py as well, otherwise mineralz is minor in amount. At the start of the zone, the gabbro is relatively fine grained, reddish stained and mod foliated @ 30/35 DTCA. Down to 1081 feet where the fol diminishes sharply. From 1018 to 1098 the gabbro remains relatively fine grained, chloritic, calcitic and partially reddish stained approaching less alt feld gabbro below 1098 feet.

1111.7 1112.2 Gabbro.
Gabbro: pitted, vuggy, pink calcite stringer 2.5cm @ 35 DTCA. And a tr of ground core? The core is relatively blocky below this section to around 1133 and is quite strongly calcitic.

1112.2 1181.2 Gabbro.
Gabbro w/ numerous strong stained reddish which tend to be finer grained and more chloritic w/ relatively sharp contacts - appear to be related to fracture controlled alt.

1181.2 1185.1 Fault Zone.
Fault zone w/ blocky to gouged and broken core w/ dark brown red gouge @ 1181.2 - 8mm @ 33 DTCA, 1181.4 - 2mm @ 63 DTCA, 1182.2 - 3mm @ 63 DTCA, within broken core from 1182.2 to 1185.1 and @ 1185.1 - 5mm @ 50 DTCA. This zone combined w/ the fault at the start of the system probably accounts for the strong red staining in the interval between 1112.2 to 1181.2. Below the fault the core is variably reddish stained to around 1188 where more normal feld gabbro occurs.

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

1191.8 1192.7 Diorite.
Diorite, orange stained, pitted to vuggy w/ mafic flecs, tr py, weakly mag, calcitic. Contacts @ 35 DTCA, the adjacent gabbro being finer grained and chloritic over a few mms.

1205.8 1206.9 Diorite.
Diorite orange red dyklet @ 76 DTCA, irregular.

1206.9 1208.0 Diorite.
Diorite orange red dyklet @ 45 DTCA.

1208.0 1215.0 Gabbro.
Gabbro accessory calcite fractures, white to orangish, pitted and vuggy w/ minor accessory py.

1231.8 1272.7 Diorite.
Diorite: pinkish grey, med grained, @ 45 DTCA.

1241.3 1249.0 Gabbro.
Gabbro: foliated, amphibolitized section perhaps related to intrusions of some grey dioritic dykes that are strongly carb @ 1245.6 - 1.5cm @ 40 DTCA 1246.0 - an 8.5cm irregular dyke @ 35/14 DTCA, 1247.1 - 29.5cm dyke cutting the core axis, and 1248.4 to 1248.9 a narrow dyke just cutting the core axis plus two dyklets following the section @ 1249.4 irregular 5cm patch and 1250.2 - 4cm @ 28 DTCA. While the amphibolitic, carb, foliated zone is more basaltic looking due to the fine grain size, both margins of this zone grade to fol, carb, coarse gabbro. Some accessory py is noted here as well, near some of the dyklets, and near a couple of pitted and vuggy stringers.

1269.2 1271.3 Diorite.
Diorite: grey to orangish coloured dyklet @ 75/64 DTCA.

1278.2 1302.4 Gabbro.
Gabbro intercalated w/ basalt? a sharp gradational contact into a foliated and amphibolitized zone. The unit is strongly calcitic and in general mod to strongly mag. Throughout this section there are definite gabbroic parts - granular textured, coarser grained w/ distinct gabbroic textures. What are also present are fol, fine grained, amphibolitic, streaky calcite sections that are more basaltic in appearance although this is from lack of gabbroic features rather than a positive definition of basaltic features. Contacts between the units are ill defined to diffuse to sharply gradational such that the entire system may be a gabbro w/ variable fol and alt. The rx vary from dark green to brownish from an invasion of dull pinkish to red calcite w/ darker black streaky amphibolitized sections. The fol is between 60/70 DTCA which is enhanced by the streaky calcite. There is some locally accessory py here as well. Below this zone the gabbro is generally more strongly chloritic w/ the finer grained phases beining more finely amphibolitized as well.

1346.6 1405.1 Gabbro.
Gabbro: strongly chloritic, strongly mag, and strongly calcitic zone w/ one

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very fine grained black, amphibolitized section of potential basalt from 1386.5 - 1390.2 @ 45/65 DTCA. Aside from this unit the gabbro is a mixture of coarse grained feld gabbro and hornblend gabbro w/ irregular fine grained phases, and coarse feldspathic sections w/ numerous mafic inclusions up to 5cm in size. Add to this some fine calcitic fractures, some pitted and vuggy fractures and variable chlorite, calcite and epidote alt and the zone from a distance looks very much like a coarse breccia to vein breccia. The effect is quite marked from dry core but these various elements are easily distinguished once the core is wet. There also appear to be some narrow dioritic dyklet running along the core axis locally. Both margins of this zone are more strongly chloritic and weakly fol @ 60-70 DTCA. The narrow basaltic sections is very fine grained and streaked w/ calcite and is fol @ 60-70. The rx is strongly mag and contains a mixture of chlorite and fine amphibole plus streaks to layers of milky calcite. There is also coarse accessory py in this section.

1412.4 1413.0 Diorite.
Diorite: dull pinkish grey, w/ orange tones @ 31/48 DTCA.

1455.1 1455.6 Diorite.
Diorite: dark pinkish grey w/ orange tones, med grained, Contacts @ 50/34 DTCA. Lower contact irregular, tr py.

1456.1 1459.5 Diorite.
Diorite: grey in colour w/ strong orange staining to 1458, below which staining is isolated along fine open fractures. Tr py, weakly mag. The dyke is also partly pitted from carb. Contacts broken @ 52/54 DTCA.

1462.0 1477.0 Gabbro.
Gabbro: Scattered coarse grained phases here w/ hornblende pheno/metacrysts up to 3cm in size.

1478.0 1508.0 Broken Blocky Core.
Core is locally blocky from accessory pitted and vuggy calcite fractures.

1508.0 1518.0 Gabbro.
Gabbro: very fine grained, black, amphibolitized, w/ a weakly dev fol @ 30-40 DTCA. This unit could be an intercalated basalt although there are no diagnostic features. Contacts are gradational. Most of this unit is harder and more siliceous than the adjacent rx, and is mod mag. The lower contact zone however, grades more strongly chloritic and is strongly mag.

1520.3 1521.0 Diorite.
Diorite? pale pinkish in colour and strongly carb. The dyke is rather amorphous and is pitted w/ carb. The unit is very irregular w/ contacts avg 7/68 DTCA.

1553.5 1557.0 Diorite.
Diorite: med to coarse grained and grey in colour w/ pinkish tones grading to pinkish to dull pinkish grey circa 1554.5. There is some qtz veining in this area w/ grey ank at stringer margins plus accessory py as well.

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

Contacts @ 55/81 DTCA.

1570.1 1576.0 Diorite.
A zone w/ a series of narrow dioritic dykes cutting dark green, quite fine grained, granular textured, chloritic, partially amphibolized gabbro. Accessory alt, pitted and vuggy stringers and py mineralz is kicked out in the adjacent rx here around some of the diorites as: 1570.1 - 1570.6, a *poorly defined orange pink diorite running along the core axis w/ accessory* veining, alt, and mineralz, from 1569.3 - to 1571.1; 1571.7 - 1572.2 orange stained diorite, pitted, carb @ 65/29 DTCA w/ little accessory py in the wallrock; @ 1574 a 2cm, pitted weathered diorite that are only weakly calcitic and mag, the gabbro is strongly calcitic and mod mag.

1605.7 1618.3 Gabbro.
Gabbro grades from fine to coarser grained material away from the above zone and subsequently back to finer grained more chloritic and calcitic approaching this section of narrow orange pink to pinkish grey dioritic dyklets. Narrow dioritic dyklets include 1605.7 - 4cm, avg 42 DTCA; 1609.5 - 7cm @ 58 DTCA, this unit being bright orange red very fine grained and may be an alt syenite; 1613.3 - up to 2cm just cutting the core axis; 1616.0 - 1617.4 a 3cm dyke running along the core axis w/ what appears to be an irregular disjointed end to this dyke carrying along the core axis to 1618.3. Minor accessory py here.

1624.2 1636.7 Gabbro.
Gabbro to basalt: a sharp gradational change to a diffuse contact @ 63 DTCA into a fine grained, chloritic, mod calcitic, partly amphibolitized section. The rx is very dark green to black and is mod to strongly mag. The unit is granular textured from carb and contains scattered acicular to mm sized blocky pseudomorphs of mafic material suggestive of gabbro. The unit is not nearly as calcitic as adjacent hornblende gabbro which is quite coarse grained. The lower contact is sharp @ 52 DTCA.

1637.7 1757.0 Gabbro.
Gabbro is relatively more uniform in appearance down to the lower contact zone. Hornblende gabbro dominates over the first part of the zone. Giving way to a more dominant feld gabbro circa 1718. The feld gabbro is med grained, mod to strongly mag, and is variably overprinted w/ calcite - more redish calcite increasing toward the lower contact. There are a couple of *very fine grained, chloritic fol sections of possible basalt affinity* @ 1705.2 to 1705.8 @ 47/62 DTCA, and, 1712.6 - 1714.0 @ 48 DTCA. There is also a dark, orange - reddish calcite increasing toward the lower contact.

1757.0 1760.8 Gabbro.
Gabbro to basalt: very fine grained, dark green to almost black and locally brownish, foliated to contorted, calcitic, gabbro to basalt like a number of prior fine grained, partly amphibolitized sections further up in the drill hole, although here the granular texture is poorly dev except in carbonate sections and the rx is much more chloritic and amphibolitic. The lower contact is along 13cm of foliated, brownish granular carb @ 52 DTCA.

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

1760.8 1766.5 Carbonated Gabbro.
Carbonated gabbro: this unit is really quite unusual, and changes dramatically along its length. The zone begins in what appears to be a strongly carb gabbro: dark reddish green to brownish w/ mafic blebs to a fine grained matrix of chlorite plus amphibole that has been totally invaded by red carb. Over the first foot the calcitic carb grades towards ankerite - the core becomes gradually harder and the rx grades to an amorphous sea of carb w/ numerous tiny mafic blebs. By 1764.5 mafic blebs become less and less distinguishable. The rx grades lighter in colour and harder to partially silicified approaching an aplite to porph syenite dyke at the start of the deformation zone. The colour of the rx progressively changes from brownish to orange brown to dull orange by the end of the zone and looks decidedly felsic by the lower contact. The unit is mod to strongly mag throughout and is weakly fractured w/ hematite in fractures up to 5mm thick usually w/ carb. This may be a contact dyke?? of mafic syenite or a pronounced metasomatic effect. The lower contact is clear although diffused w/ alt @ 30 DTCA.

1766.5 1766.6 START OF DEFORMATION ZONE

1766.6 1771.4 PORPHYRITIC SYENITE
Contact into a pale orange red to slightly brownish dyke of porh syenite For the most part the rx is very fine grained to amorphous although rather diffuse, subovoid to tabular feldspar phenocrysts (or possibly metacrysts) are readily noted throughout. The rx is hard, siliceous?, non mag, apparently non carb, and is finely fractured w/ ankerite? plus scattered wider qtz veins and fine hematite fractures. Although minor in amount the core is mineralz w/ a mixture of fine py plus some coarser py blebs and aggregates that appear to fracture controlled locally. The lower contact is broken, w/ blocky core from 1770.0 to 1771.4.

1771.4 1836.1 ULTRAMAFIC KOMATIITE
Contact into a system of black to blue black ultramafic rx typical of deformation zone sequence. The rx are characteristically very fine grained and soft, and are essentially composed of chlorite and talc w/ abundant milky to greyish ank in streaks, blebs and lenses that are both parallel to and enhance the foliation which avg 50-60 DTCA, but it can be found in much shallower orientations and can be locally contorted. The UMs are weakly to mod mag and are cut by a number of felsic to gabbroic dykes, most of which are much more strongly mag than the host rx.

1771.4 1780.2 Ultramafic Komatiite.
Blue black UM, foliated @ 50 DTCA. There is a 6cm knot of pinkish grey granular carb material @ 1773.9 w/ accesssory py just cutting the core axis.

1780.0 1780.2 Gabbro.
Gabbro? a narrow, dull red brown, mod hard, carbonated mafic dyke, that has a matrix of reddish carb in which there are fairly numerous blebs of

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

acicular to tabular to subovoid mafic material. The dyke is mod mag and is weakly mineralz w/ py. Two nearly identical dykes follow @ 1781.5 to 1782.1 @ 46/56 DTCA, and, 1782.8 to 1784.7 @ 75/0 DTCA - lower contact w/ irregular qtz veining over 15cm. Both of these dykes are mod hard although the lower dyke is more siliceous near the base around the qtz veining. Similarly both are dull reddish in colour from carb, w/ streaky to acicular mafic blebs, strong magnetism, and fine py. These dykes look very much like the contact zone gabbroic rx @ 1760.8.

1788.0 1789.3 Aplite.
Aplite or albite? a milky to off white felsic dyke w/ a crudely dev porph texture @ 25 - 54 DTCA. This unit is hard, weakly ankeritic, non mag, weakly veined and fractured w/ qtz carb @ shallow angles to the core axis and is weakly mineralz w/ py although there are some coarse cubes of py to 7mm on side along the upper contact and a couple of pyritic aggregates near vein intersections. There is also a 2.5cm patch of green carb within this aplite @ the upper contact.

1790.8 1791.4 Gabbro.
Gabbro identical to previous units except w/ a harder much more siliceous central core w/ orange red staining related to veining or to the incipient style of syenite dyklet seen in other drill holes. This dyke is also strongly mag, has the mafic blebs in the matrix away from orange red central zone and is mineralz w/ py. Contact are @ 58/56 DTCA, and are sharp w/ some chloritization.

1791.4 1798.0 Ultramafic Komatiite.
Ultramafic, blue black but w/ pinkish more siliceous patches up to a maximum of 4cm in size, generally irregular in shape but locally appearing quasi porph as if incipient dyklets of syenite or other felsic material.

1803.5 1803.8 Carbonate section - ankeritic w/ brownish alt @ 50/62 DTCA. There are no relict textures here or incipient dyklets to suggest the origin of this species.

1815.8 1816.9 Fault Zone.
A mud gouged and rubbled zone w/ outside contacts @ 52/48 DTCA. This zone had to be washed due to cave and was consequently cemented on Oct 4th. Below the fault zone the ank component of the system increases and local patchy siliceous to syenitic alt occurs up to a wider dyke @ 1820.9 The fol in this section is locally disrupted but avg 45 DTCA.

1820.9 1836.1 Ultramafic Komatiite.
Lower contact zone characterized by a series of carb felsic dykes cutting UM komatiites. The komatiites have an increased ank component in this system and continue to have a mod to well dev fol @ 50 - 60 DTCA. The ultramafics also grades more greyish to olive in colour approaching the lower contact w/ green carb rx. Contortions in the fol outline some fold axis as @ 1825 feet - fold axis @ 50 DTCA opposing a fol @ 60 DTCA; and @ 1829.6 - fold axis @ 14 DTCA w/ a highly disrupted fol here. The felsic dykes in this system are probably classed as felsite - another rather fluid term indicative of a

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

generally hard siliceous rx that does not fall into a syenite, aplite, or feld porph catagory(these terms being more specific.) These dykes vary from dull grey red to brick coloured and orange red. They are mod hard and siliceous, carb, mag and tend to be mineralz w/ fine py. Under the lens most of the dykes are amorphous w/ a crudely porph texture and certain of the dykes, particulary the brick red varieties, are weakly to mod fol and exhibit a matrix that is a granular mosaic of carb w/ no other mineralz recognizable.

The brick red members are also not as hard as the dykes w/ orange red portions (usually contact zones) that may in fact be alt syenites. Dykes include 1820.9 - 1855.5 dull grey orange w/ orange red contacts, carb, mag, crude porph texture dev locally. Contacts @ 55/45 DTCA, lower contact weakly fol over 5cm. 1822.6 1823.5 dull red orange to bright red orange more siliceous dyke essentially in contact w/ the previous unit save for 2.5cm of UM material. Upper contact irregular avg 50 DTCA, lower contact 60 DTCA.

At 1823.9 - 2.5cm @ 72 DTCA, and, @ 1824.1 - 3.5cm, irregular avg 72 DTCA, both of these as patchy orange red staining, siliceous, mag, w/ minor py. Unit is irregular, contacts avg 56 DTCA. 1829.1 1829.5 @ 35/50 DTCA, 1830.0 1830.3 @ 60/34 DTCA, @ 1830.9 1.5cm @ 65 DTCA, 1833.4 1833.8 @ 35/50 DTCA, and @ 1835.2 1.9cm @ 30 DTCA, are all grey to brick coloured dyklets? that are weakly to mod fol, w/ a matrix component that is a granular carb mosaic. The colour is suggestive of trachyte but the timiskaming contact is nowhere in size. The lower contact of the UM is defined by a dramatic change in alt @ 1836.1 @ 55 DTCA.

1836.1 1861.2 GREEN CARBONATE ZONE

Contact along an 8cm lime coloured band of alt (carb rx) into a zone defined by the presence of fuchsite alt. This is not one of the strong bright green zones w/ veining et al that commonly occurs lower in the sequence for in this area the rx is duller in colour, w/ fine dark UM streaks and blebs throughout the system that clearly earmarks the unit as a previous UM. The majority of the fuchsite carbonate, however, is certainly emerald green in colour or various tones therof, w/ the strongest fuchsite between 1838 to 1857 feet. Fuchsite alt gradually diminishes approaching the contact zones. A second species of carb rx are also found in this system. They vary from pale brown to brownish beige in colour to locally dull yellow ochre in colour w/ local greyish overtones. The greyer portions tend to be mag, such that while the carb UM has proceeded to a fuchsite carb these other members may reflect a subtly different primary host that has also become thoroughly carbonated.

The system is also cut by scattered dykes and dyklets of brick to orange red to reddish grey felsite, the largest of which is hard siliceous and has a crudely dev porph texture much like some of the porph syenite dykes. The sequence is not particularly well veined and py mineralz is generally minor in amount except around some of the felsite dykes.

1836.1 1836.4 Carb, lime green to yellowish coloured from sericite? in an

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

off white to brownish granular carb matrix. Contacts @ 48/62 DTCA.

1836.4 1841.1 Carbonate, dull grey green w/ weak fuchsite alt @ the outset to 1837.3, @ which point the carb grades progressively more fuchsitic down hole - i.e. Less UM streaks and blebs indicitive of the host rx. Minor patchy yellowish alt here and a potential incipient felsite dyklet @ 1840.5 - 2.5cm irregular to ragged @ 46 DTCA.

1841.1 1842.4 Carb, greyish to brownish type of carb w/ beige alt contact zones and a weak pinkish cast due to Fe. The rx is mod to strongly mag, and is sparsley mineralz. Contacts @ 42/52 DTCA. The lower contact w/ qtz ank veining.

1842.4 1849.8 Green Carbonate Zone.
Carb/komatiite - fuchsitic, w/ patchy, brick coloured carbonated felsite dyklets as 1845.2 - irregular 5cm patch; 1845.5 - 1846.1 a narrow dyklet just cutting the core axis; 1846.9 - 1847.2 an amalgom of narrow dykes avg 50 DTCA although contacts are irregular; plus patchy brick coloured alt from 1848.2 to 1849.0. As in the previous unit these brick coloured patches are almost totally carb w/ no other minerals recognized. The patches are mod mag, and mineralz w/ py.

1849.8 1850.9 Carbonated Zone rx.
Carb komatiite, a section of the brownish to beige to dull yellow ochre carb rx w/ a weakly greyish section @ the central core. The rx appears to be almost totally ank. Very minor veining here, a tr of py, non mag. Contacts @ 47/20 the upper contact w/ a 2cm orange red stringer or carbonated dyklet.

1850.9 1851.4 Dull coloured fuchsite carb w/ minor patchy brick alt and tr py.

1851.4 1856.0 Felsite.
Felsite dyke: the largest dyke in the system, which varies from grey red to orange red in colour w/ a locally crudely porph texture dev. The rx is fine grained, hard siliceous and is mineralz w/ 2-3% fine py. Contacts are irregular avg 22/50 DTCA.

1857.1 1861.2 Carbonated Zone.
Carb rx, carb komatiite. The basal section here of dull grey green weakly fuchsitic carb w/ brownish to beige and dull yellow ochre tones due to variable chlorite and sericite? streaks plus greyish to pinkish carb throughout. The rock is fol @ 40 to 50 DTCA and is sparsely mineralz. The upper contact zone to 1858 contains three narrow patches of beige to pinkish grey, granular textured, more siliceous carb alt, that may represent relict felsite dyke material. Contact of the zone are @ 66/60 DTCA.

1861.2 1946.3 FELSITE
Contact into a sequence of felsite dykes that are similar to the larger dyke

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

in the just previous green carb zone w/ the exception that this sequence is generally more carb and is not as hard and siliceous as the previous unit, and, most of this sequence is mod mag. The felsites vary from a dull grey red to pinkish grey colour w/ local orange red tones normally associated w/ fine fracturing or accessory alt adjacent to veining. The rx is finely granular textured and strongly carb. The dykes are also finely flecked w/ magnetite and sparsely mineralz w/ fine py. In zones where the dykes are better mineralz the felsite is more weakly mag, suggesting that some py has formed at the expence of magnetite.

Veining is not strong in the system but there are a number of qtz or qtz-ank healed fractures w/ scattered wider veins. Most of the veining is pitted and vyggy w/ accessory py found in the wall rx. The host of the felsite system is UM komatiite and, within the zone, intercaated komatiite comprises 10 to 20% of the rx by volume. Komatiites are typically black to blue black w/ a strong ank component. The rx are not as soft as most of the UMs in the deformation zone and are more competent than other UM sequences - no doubt a function of the adjacent dyke material. The UMs also tend to be weakly to mod mag, and mod to strongly foliated. Veining and mineralz are minor.

1861.2 1866.0 Felsite.
Felsite, dull grey red w/ orangish parts, the greyer toned sections are more strongly mag. Py is stronger @ the upper contact.

1866.0 1866.3 Carbonated Zone.
Carbonated komatiite, to carb rx, grey green w/ weak fuchsite alt and some felsite streaks. Mod mag @ contacts which are irregular @ 56/50 DTCA. Minor py.

1866.3 1876.5 Felsite.
Felsite, w/ two irregular knots of UM @ 1875.1 - 9cm w/ fragments of felsite and weak fuchsite alt @ 70 DTCA, and, @ 1876.0 - 1.6cm of blue black UM @ 33 DTCA. The felsite is grey red w/ some wider orange sections that are better mineralz w/ 3% py. As before the greyer sections are flecked w/ magnetite and are magnetic.

1876.5 1879.2 Ultramafic Komatiite.
UM, blue black, strong ank component, foliated @ 40 DTCA, mod mag, and by a narrow orange red dyklet of syenite? @ 1878.4 - 2cm @ 48 DTCA. Minor py except around around dyklets. Contacts @ 55/40 DTCA, the lower contact being a little irregular and diffuse.

1879.2 1912.5 Felsite.
Felsite, as above w/ greyer red sections that are mod mag and orange red to pinkish alt next to veining and fracturing. Most of the veining here is pitted and vuggy w/ one larger qtz vein @ 1885.5 - 3.5cm @ 30/15 DTCA, upper contact irregular. Py content is variable and up to 3-5%. There are some discontinuous fractures in this felsite w/ minor amounts of UM material.

1912.5 1915.6 Ultramafic Komatiite.
UM, carb, dark green to black, speckled appearance due to lens shaped blebs

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of ank rather than the more streaky nature. Weakly to non mag, tr py, contacts @ 40/16 DTCA.

1915.6 1923.0 Felsite.
Felsite, orange red @ contact and adjacent to veining w/ most of the zone being grey red to orange red, mag, 2-3% py.

1923.0 1923.9 Ultramafic Komatiite.
UM, dull grey green, ankeritic, contacts irregular @ 28/38 DTCA.

1923.9 1925.9 Felsite.
Felsite, grey red to orange red, mag, 2-3% py.

1925.9 1926.4 Ultramafic Komatiite.
UM, black to dark green, ankeritic, contacts irregular @ 32/62 DTCA.

1926.4 1929.0 Felsite.
Felsite, dull grey red locally, to bright orange red. The upper contact here is irregular followed by a chloritic fracturing running along the core axis from 1926.7 to 1927.7 w/ the lower contact running along the core axis below that point to 1928.9. The host UM is similarly foliated along the core axis next to the dyke. The whole of the zone is weakly to mod mag and weakly mineralz w/ 1-2% py. The core is blocky. Outside contacts @ 62/32 DTCA.

1929.0 1934.7 Felsite.
Felsite, dull grey red to orange red, the grey red sections being darker in colour and more strongly mag than previously noted. There a number of pitted and vuggy fractures here but there is little excess py in the wall rx.

1934.7 1936.4 Ultramafic Komatiite.
UM, dark reddish green to almost black and strongly invaded by red carb w/ narrow dark reddish, earthy to brick coloured unit that is flecked w/ mafic blebs and may be a narrow mafic intrusive - 10.5cm @ 45 DTCA, @1935.8. The mafic intrusive is mod mag, the UM weakly so. The UM is also foliated @ 20 to 30 DTCA, contacts @ 25/50 DTCA.

1936.4 1946.3 Felsite.
Felsite, the basal unit and considerably darker than previous, partly a function of excess chlorite fracturing esp over the top 50cm of the zone plus or minus the close proximaty to a broad UM unit. The dark colour is also a function of the Fe content. These felsites are the most strongly mag in the system. The rx are hard, siliceous, however, and, the more typical orange red to pinkish grey tones are evident around excess fracturing and veining. The unit is fractured w/ hematite and is mod mineralz w/ both fine py and coarser aggregates that appear to be localized around fracture junctions. The lower contact is sharp @ 18 DTCA.

1946.3 1977.7 ULTRAMAFIC KOMATIITE
Contact into a sequence dominated by the blue black streaky ankeritic, alt UM rx w/ a mod variety of included material. The UM is characteristically

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

soft and striped to streaked w/ milky to greyish ank. The rx is weakly to mag, and is sparsely mineralz w/ py. Aside from a number of dyklets and variably alt sections there are also gouged and granulated sections of core and a mod developed fol that can be quite variable but avg about 60 DTCA. Local sections of core are also alt to a brownish colour due in part to variations in style and type of carb but also apparently related to scatered fine dyklets of potential felsite that in previous holes have shown associated brownish to beige carb alt in the wallrx. Previously some of these rx were felt to be gabbro.

1946.3 1948.7 Ultramafic Komatiite.
UM, blue black, soft, ankeritic, and foliated @ 60/65 DTCA w/ dull brownish to olive coloured alt patches. Brownish alt is almost totally carb w/ some UM streaks w/ a couple of fine incipient dykes of potential carb felsite.

1948.7 1950.5 Ultramafic Komatiite.
Carb UM to gabbro, brownish in colour and rather coarsely granular textured from carb w/ fine mafic blebs and some stretched blebs throughout. There are also a couple of dull pinkish red stringers in this zone up to 4mm thick suggestive of incipient dyklets of felsite promoting the brownish alt. Contacts are somewhat diffuse @ 42/58 DTCA.

1950.5 1955.1 Ultramafic Komatiite.
UM, blue black w/ some narrow pinkish stringers or incipient dyklets of felsite throughout but most common up to 1953 and @ the lower contact. At 1953 to 1953.5 is a narrow, olive coloured, foliated carb Um @ 45/72 DTCA. Aside from the stringers to dyklets, py mineralz is minor.

1955.1 1955.9 Felsite.
Felsite, a dull pinkish red coloured dyke of felsite that is thoroughly fractured w/ UM stringers, has irregular contacts, is strongly carb and weakly mag. Py mineralz avg 2-3%, contacts are irregular avg 52/42 DTCA.

1955.9 1958.0 Ultramafic Komatiite.
UM, blue black w/ numerous beige to milky carb streaks along w/ pinkish to orangish lenses and streaks that may represent incipient dyklets of felsite. 2-3% py.

1958.0 1970.0 Fault Zone.
Fault zone w/in blue black, UM w/ gouge @ 1958 - 3.5cm @ 28 DTCA, 1958.6 1.5cm @ 50 DTCA, w/ broken core between these two zones; 1963.9 - 10cm @ 35/54 DTCA, angles opposing, 1964.9 - 1965.2 @ 52/62 DTCA, followed by broken and rubbled core to 1970 w/ about two feet of rubbled core recovered and potentially 3 feet lost. The basal foot of rubbled core is a bright orange red felsite host.

1970.0 1974.4 Felsite.
Felsite, a section of dark greenish to blue black UMs dominated by felsite due to the presence of two larger dykes along w/ a handfull of dull orange red to brick coloured stringers of incipient dyklets of felsite throughout. The 2 larger dykes are @ 1970.0 - 1971.4 upper contact broken w/ faulting,

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

lower contact irregular to ragged avg 46 DTCA, and, 1972.1 - 1973.0 w/ very irregular to ragged contacts. The upper contact is chloritic and fractured w/ UMs over the top 18cm, while the lower unit grades to quite pale grey in colour w/ pinkish to orange red overtones. Both dykes are mod carb but are relatively hard and siliceous, fractured w/ UM material, non mag, and mineralz w/ py as are the incipient dyklets elsewhere here, as well sections w/ incipient dyklets also tend to have an associated invasion of reddish carb in the adjacent country rx.

1974.4 1975.2 Chert.
Chert or grey qtz veining? - 3 narrow units of chert as 7mm @ 66 DTCA, 10.8 cm @ 48/88 DTCA, and, 4.5cm @ 55 DTCA. Separated by dark green chlorite, ankeritic UM. The question regarding whether this section is veining or a chert is based on the fact that the rock is totally featureless and partly fractured but there is no inference to origin.

1975.2 1977.7 Ultramafic Komatiite.
UM, dark green to black and coarsely granular textured, from greyish to locally pinkish ankerite blebs and lenses. The contact zones of the granular zone are darker green to blue black UM w/ patchy to streaky incipient felsite dykes that are dull orange red to brick coloured, and are weakly mineralz w/ py - 14cm @ upper contact, 18cm @ lower contact. The lower contact of the system is sharp although a bit irregular to ragged @ 74 DTCA.

1977.7 1994.5 GREEN CARBONATE ZONE
Contact into a narrow sequence of green carb rx separated by virtue of their fuchsitic component. This sequence is not the strong bright green carb type but a much duller variety w/ the rx type being clearly a komatiite w/ weak fuchsite alt. Somewhat unique to this sequence are dull brick red to greyish red, greenish red and brownish to beige, fol to layered sections that may be tuffs. They are slightly harder than UM rx, and, aside from fine streaks and flecs of alt are almost entirely composed of fine grained carb. The fol to layering is locally contorted but for the most part avg 65 to 75 DTCA. The rx are sparsely mineralz w/ py but are better mineralz w/ than the adjacent UMs.

Two main areas w/ tuffaceous material exist from 1979.9 - 1983.0 and then from 1985.5 to 1994.5 - this lower section, aside from two units between 1987.4 and 1988, having zones that look more like alt streaking rather than specific tuffaceous units. Traces of felsite are also found in this system @ 1982.3 - 1982.7, an irregular, very fine grained orange red unit of potential syenite, @ 1991.9 1992.9 a dull to bright red orange dyke of porph syenite @ 90/65 DTCA, the upper contact being irregular w/ veining and, two dull orange red patches of possible felsite 5cm and 3.5cm between 1993.3 and 1993.7 - contact irregular but avg 65 DTCA. The lower contact is gradational due to the decreasing fuchsite component into blue black UM -the ultimate contact placed @ the end of an alt streaked zone. Lower contact irregular and ragged avg 70 DTCA.

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
1994.5	2084.9	ULTRAMAFIC KOMATIITE Contact into a sequence of blue black UM rx, typical of the deformation zone style of material which in this instance contains a wide mix of alt related to intrusion of dykes and inclusions/remnants of intercalted material plus gouged and granulated zones related to faulting. The dominant rx type is blue black UM komatiite w/ streaky lenses and discontinous bands of mikly to greyish ank. The rx is soft, strongly fol, weakly to locally mod mag, rather poorly veined aside from the ank component and sparsely to unmineralz. Most py minerlaz is related to dykes or more competent included material - similarly for veining. 1994.5 2004.3 Ultramafic Komatiite. UM, blue black, strongly fol @ 45-55 DTCA. At 2000.2 there is a narrow 1cm dyklet of reddish granular, carb felsite @ 50 DTCA. 2004.3 2010.2 Fault Zone. Fault zone w/ gouged zones @ 2004.3 5mm @ 60 DTCA, followed by 14cm of granulated core, 2005.1 - 2cm @ 50 DTCA, just beneath 5cm of olive to brownish carb UM, 2005.3 - 3.5cm @ 60 DTCA, followed by 11cm of granulated core, 2005.9 - 5cm @ 60/40 DTCA, 2006.7 - 9cm gouge surrounded by broken core, 2008.9 - 3mm @ 55 DTCA, followed by 25cm of broken core of an olive coloured, carb, granular rx that may be a tuff, and 2009.9 to 2010.2 gouged and granulated core @ 55 DTCA. 2010.2 2013.9 Ultramafic Komatiite. UM, strongly fol @ 0-30 DTCA, blue black w/ minor patchy olive coloured carb. 2013.9 2014.9 Carbonated Zone. Olive coloured carb rx of uncertain origin. The unit is harder than the adjacent blue black UMs and is relatively massive. It is essentially composed of carb w/ some fine mafic flecs. The unit appears almost to be an intrusive but is weakly fol near the contact zones - a phenomenon that is not common in intrusive rx although it could be an older gabbroic intrusion. The rx is fractured w/ UM material and some coarse hematite, is non mag, contains a couple of narrow qtz-ank stringers and is weakly mineralz w/ py. Contacts @ 35/26 DTCA. 2014.9 2017.1 Ultramafic Komatiite. UM, blue black, containing a 9cm dyklet of carb felsite @ 2015.5 @ 70/58 DTCA. The core here is blocky, and the UM has some weakly olive coloured tones adjacent to the upper contact of the pinkish grey to brownish felsite. The dyke contains 2% diss py - the UM is very sparsely mineralz. 2017.1 2018.0 Ultramafic Komatiite. UM - a narrow section of olive to brownish carb rx intercalated w/ blue black to olive UMs that ends along a 6cm horizon that is grey brown to weakly pinkish toned @ 60 DTCA. The basal 6cm are harder than the other rx here, are strongly carb, weakly to mod foliated, and weakly mineralz w/ tr py. Although only a hint this section appears to have once been a felsite dyke having promoted accessory alt above its upper contact similar to incipient dyklets found in other holes.								

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

2018.0 2032.7 Ultramafic Komatiite.
UM, blue black, strongly fol, w/ scattered narrow dyklets of felsite to syenite, plus sections where there appear to be fine stringers to incipient dyklets of felsite. There is also patchy olive coloured alt in the UMs most often near dyke margins or in areas w/ the fine incipient dyklets. Dyklets most often have very irregular to ragged contacts. The main ones include: 2019.3, 6cm of dull orange red very fine grained felsite to alt syenite @ 45/50 DTCA, contacts converging; 2021.7 - 12cm of dull grey red felsite @ 60/32 DTCA; 2023.6 - 3cm dull orangish felsite @ 70/59 DTCA; 2026.5 - 17cm of dull orange red syenite w/ qtz-ank veining, irregular @ 0/46 DTCA, and, 2029.3 - 4.3cm dull grey red to brick coloured felsite @ 50/85 DTCA. The olive coloured carb alt is also locally noted next to qtz-ank veining. Fol in this system is variable but usually at a steep angle to the core axis. Locally ank streaks are kinked to contorted w/ kink axis @ 0-20 DTCA.

2032.7 2043.4 Ultramafic Komatiite.
UM, blue black to olive w/ paler pistachio green tones in this section related to weak fuchsite alt. The rx is more competent here and has a well dev fol @ 65 to 50 DTCA. As above the core is cut by scattered dykes of what appears to be strongly carb and alt felsite - dull greyer rx which are harder than the adjacent UM suite, w/ olive to brownish alt tones. Dykes are invariably fractured w/ UM material and have irregular to ragged to diffuse contacts w/ streaky incipient style material occurring in the adjacent UM locally. Dykes are weakly to mod mag and are normally mineralz w/ py. Fuchsite alt in the system is weak and patchy - the majority of the UM being blue black to grey green w/ weak fuchsite tones. From 2037.5 to 2039.5 there is accessory grey qtz-ank veining - about 40%. Dykes are found @ 2035.1 - 2035.6 @ 80/46 DTCA, 2036.4 - 2036.7 @ 80/77 DTCA - lower contact w/ veining, @ 2039.6 - 2039.9 @ 65/54 DTCA, @ 2042.4 an irregular 3cm patch and @ 2043.0 a narrow brownish carb dyke 5cm @ 55/60 DTCA.

2043.4 2044.3 Felsite.
Felsite, dull grey red w/ weak orangish to dark green tones depending on amount and type of alt. The rx is strongly carb, fractured w/ UM, weakly siliceous, locally weakly to mod mag and is finely mineralz w/ py. Contacts are irregular avg 67/62 DTCA.

2044.3 2044.7 Ultramafic Komatiite.
UM, blue black to olive, fol, carb.

2044.7 2047.0 Ultramafic Komatiite.
Carbonated UMs? - a narrow sequence of dark brownish to almost black carb Um that contains narrow grey carb bands w/ tr of pinkish material and fine exsolved magnetite. All of the rx are granualr textured, to effectively a mosaic of carb. Grey carb bands are of varying widths and may represent a series of incipient dyklets promoting alt in the adjacent UMs. This style of alt is common elsewhere in the system but the striped to layered nature is rare. Layering is reasonably consistant @ 65-75 DTCA, contacts are @ 60/63 DTCA. Sulphides are minor, but are best dev in the grey bands.

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

2047.0 2077.0 Ultramafic Komatiite.
UM, blue black, strongly fol @ 55 to 80 DTCA w/ a section between 2054 and 2063.8 being fol @ 15 to 30 DTCA, related to contorted layering in the upper contact area and granulated core below 2063.8 to 2064.6. In a section w/ contorted to kinked layers, an axis to some kinking occurring @ 21 DTCA, while the fol is @ 52 DTCA. At 2057.9 there is 1cm of gouge @ 43 DTCA, and between 2063.8 to 2064.6 the core is granulated w/ 5mm and 8mm of gouge respectively @ either contact @ 47 DTCA. The UM is weakly to non mag, and very sparsely to unmineralz.

2077.0 2084.9 Fault Zone.
Fault zone, represented by gouged and granulated core bounding a more competent although highly fol, contorted, ankeritic central zone from 2078.9 - 2082.7. In the two outside zones of granulated core gouge occurs @ 2077.0 - 2cm @ 15 DTCA, 2077.8 - 11cm @ 45 DTCA, in the upper zone (2077.0 - 2078.9), and, 2082.7 - 1cm @ 46 DTCA, 2082.9 - 6mm @ 47 DTCA and 2084.4 - 2084.9 up to 10cm @ 43/5 DTCA, in the lower zone (2082.7 - 2084.9) The basal gouge zone marks a change in alt.

2084.9 2112.6 ULTRAMAFIC KOMATIITE
Contact into a zone of very strongly alt UM komatiite, apparently related to the strong faulting just above this system as well as faulting and intrusions lower in the hole, and, a number of very narrow dyklets of syenite +- the incipient style of dyklet that ranges up to 1cm in width. The upper contact is along a narrow, pale orange-red dyklet of syenite @ 80 DTCA and is followed thereafter by brown to red brown alt komatiites, that are almost completely obliterated by reddish carb, the red brown carbs exhibit a poorly dev fol @ 35 to 45 which is enhanced by streaks and narrow lenses of UM material. Around 2088.9 and extending to 2092.4 more recognizable UM occurs which is olive in colour w/ blue black streaks, patchy brownish alt and some narrow dyklets of alt syenite. Below 2092.4, to 2104.6 the system is characterized by brown to red brown to olive brown strongly carbonated and fol UM w/ some local finer grained fol portions of unknown origin that may be tuffaceous, along w/ some fine incipient dyklets of alt syenite. In this section, after 2096.5 the rx also becomes speckled w/ ankerite. Two gouge sections are also found in this area @ 2092.9 - 5cm, and @ 2093.8 - 7mm @ 64 DTCA. The basal package, 2104.6 - 2112.6, is again different. This section is coarsely granular textured to speckled w/ ank. Contact zones contain more distinctive blue black UM as a matrix component while the central core from 2107 - 2110 is more totally invaded by redish carb and is slightly harder than the adjacent rx.

There are also number of incipient dyklets of syenite in this corridor. Overall this system has very little of the normal blue black UM. - i.e. The whole zone. The rx are also quite strongly mag, throughout, and, most of the incipient dyklets of syenite are also mag, w/ little of the exsolved magnetite being converted to py. There are usually fine tr of py in the system throughout however mineralz is sparse. The lower contact is sharp along 4cm of blue black UM @ 65 DTCA.

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

2112.6 2134.8 TUFF

Contact into a sequence of what appears to be intercalated tuffaceous and UM material. A precise definition of tuff is difficult due to strong prevailing ank content which gives the rx a fine to coarse granular texture and generally obliterates the original rx. Potential tuff units, however are more competent than the adjacent UM rx, are streaky to fol to crudley layered, mag, but do not contain number of incipient dyklets or size of dyke to promote the roughly similar style of alt. Due to the mod to strongly mag properties of most of the tuff units the sequence may be the protolith of the overlying alt zone. The UM member is much more strongly chloritic than previous. The UM is dull to dark grey green w/ local blue black tones, is mod to strongly fol, soft, weakly to mod mag, and strongly carbonated probably due to the ductility contrast, the UM is more strongly fol than the tuff units.

2112.6 2113.9 Tuff.
Tuff, dull grey brown to reddish grey green w/ strong ank and weak mafic fractures. Contacts are a bit diffuse @ 65/55 DTCA.

2113.9 2117.4 Ultramafic Komatiite.
UM chloritic, granular from carb but also finely speckled w/ ank as well. Between 2115 and 2116.5 the UM contains some accessory brownish alt apparently related to a few incipient dyklets of felsite w/ some broken core in the section 2115.0 - 2115.4. There is accessory reddish carb in this area and tr py before a sharp contact @ 67 DTCA, @ 2116.5 into more strongly fol UM @ the base of the zone.

2117.4 2132.0 Tuff.
Tuff, intercalated w/ narrow 1 to 5cm sections of apparent chloritic more strongly fol UM. The rx varies from dull brownish grey to reddish green to quite dark green in colour, is strongly granular textured to to locally streaky in appearance. From 2119 to 2122.8 more strongly brownish alt w/ narrow potential incipient dykes of felsite up to 1cm in width and generally sub parallel to the fol @ 55 to 65 DTCA. Below this section rx gradually becomes more chloritic and is very dark green in colour after 2127- up to 2131. The basal section (2131 - 2132) is subtly lighter in colour and more coarsely granular in texture. Contacts @ 50 DTCA, upper contact w/ veining.

2132.0 2134.8 Ultramafic Komatiite.
UM, dark green, chloritic, ankeritic, lower contact broken w/ tr gouge @ 70 DTCA.

2134.8 2145.5 ALTERED SYENITE

Contact into a syenite dyke, very fine grained, mod to strongly carb, bright orange red to greyish orange red and locally grey red depending on amount of carb alt +- fracturing. Orange red section generally more siliceous and harder than the darker coloured zones which are more strongly carb alt. The orange red sections tend to be better veined w/ stringers of qtz, and better mineralz w/ py than their more carb equivilents. Py mineralz ranges up to

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

3-5 % as fine diss throughout rx and coarse euhedral py near fractures. This syenite is weakly mag locally.

2154.6 2181.8 FAULT ZONE
Fault zone typified by a sequence of blocky rubbled core w/in UM rx. This sequence contains a number of gouge zones @ 2156.0 - 1.8cm @ 39 DTCA, @ 2156.3 - 2.cm @ 35 DTCA, @ 2156.5 - 2156.9, @ 2159.3 - 2.5cm, @ 2166.2 to 2166.6 @ 30/41 DTCA, @ 2180.3 - 4.5cm @ 60 DTCA, and @ 2181.8 2.5cm @ 51 DTCA - core is strongly rubbled down to 2167 w/ blocky to broken core till the end of the zone. (zone cemented on Oct 9th). At the upper contact there are fragments of alt syenite, in early gouged sections followed by blue black to browish UM w/ numerous syenite streaks to dyklets down to 2166.2. Syenite portions are bright orange red and mm in size, often finely mineralz w/ py. The UM in this zone is blue black to brownish alt and streaky in nature. Between 2166.6 and 2177.0 the UM is typically blue black w/ scattered orange red to brownish grey dyklets to stringers of syenite or felsite up to 5cm in size. Tr fuchsite alt between 2175.3 and 2176. The basal contact of the system is blue black to dull grey green invariably chloritic, ankeritic UM w/out syenite dykes. The sequence is rather poorly veined w/ stringers of qtz-ank. Outside the syenite dyklets the zone is rather poorly mineralz. The sequence is only weakly mag, w/ the syenite sections being more mag than the UM. Foliation varies between 50-70 DTCA.

2181.8 2205.5 GREEN CARBONATE ZONE
Contact into a sequence dominated by bright emerald green fuchsitic carb w/ blonde to ochre streaky alt bands - grey to beige finely laminated tuff sections? Narrow dyklets of alt syenite and a number of finely laminated to streaked tuffaceous units w/ or without narrow incipient dyklets of felsite. The upper contact zone to 2187 is dull grey green to olive and blue black in colour grading to a more fuchsitic carb from 2187 to 2197.5. The lower contact zone 2197.5 - 2205.5 shows a decreasing amount of fuchsite alt throughout, w/ increased beige to ochre coloured rx. The sequence is essentially non mag, and poorly veined. Outside the syenite dykes the unit is not well mineralz. Foliation/layering is fairly consistent @ 55/65 DTCA. More prominant dykes of syenite to felsite include: 2184.3 - 10cm @ 60/58 DTCA, 2184.9 3cm @ 60 DTCA, 2187.2 4cm @ 67 DTCA, and 2197.8 3cm @ 68 DTCA. From 2202 - 2204.3 there is an irregular felsite dykelet to patch, @ 2205.3 2.5 cm felsite @ 62 DTCA.

2205.5 2246.8 FELSITE
Felsite, Sequence of felsite dykes intruding UM rx. The felsites are orange red, brown red to grey red in colour. They are fine grained, variably mag, and quite hard. These dykes are veined w/ qtz-ank stringers and are well mineralz w/ 2-3% py and up to 5% locally. UMs in this sequence are blue black in colour, fine grained, strongly mag, and considerably harder than UM which have not been alt by intruding dykes, which cut the sequence fairly consistently. These UM tend to be bleached and more carb near dyklets. UMs also contain mafic metacrysts varrying in shape from acicular to tabular and up to 2mm in size. Veining in the UM consists of carb fractures w/ some

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leaching present along w/ rare qtz veining. Mineralz in the UMs is limited to areas where dyklets are present.

2205.2 2211.9 Felsite.
Felsite, tan to beige, hard, w/ carbonate patches along core axis up 5cm long, well mineralz w/ 2-3% py. This zone contains a section of green carb @ 2206.0 7cm @ 65/54 DTCA.

2211.9 2213.1 Ultramafic Komatiite.
The UMs in this zone are streaky w/ incipient dyklets, harder than avg and contain tr py. Contacts @ 49/67 DTCA.

2213.1 2214.7 Felsite.
Felsite, brownish red, quite hard, contains some hematite fracturing, Mineralz w/ 1-2% py.

2214.7 2218.2 Ultramafic Komatiite.
UM, variably bleached, scattered incipient dyklets, more abundent below 2216.8. Layering @ lower contact - disrupted through fracturing, contacts @ 40/32 DTCA.

2218.2 2220.0 Felsite.
Felsite or alt syenite?, bright red orange, containing fractures of carb alt. Both upper and lower contacts are diffuse, variably mag, and well mineralz w/ 3-5% py.

2220.0 2230.5 Ultramafic Komatiite.
UM, containing numerous incipient syenite dyklets, streaky and foliated to 2223.5 where it grades to a more granular texture and then becomes more foliated below 2227. The basalt foot is softer and more foliated as compared to the rest of the sequence. These rx are mod to strongly mag, and contain mafic metacrysts which are more noticable in foliated contact zones.

2230.5 2232.9 Felsite.
Felsite, dull red orange to to brown orange w/ the latter being the most prominant, contains a few qtz stringers. Contacts @ 60/50 DTCA.

2232.9 2235.8 Ultramafic Komatiite.
UM, contains mafic metacrysts ranging in shape from rounded flecs to tabular xtals up to 2mm in size, intruded by a felsite dyke 10cm long @ 2334.1.

2235.8 2246.8 Felsite.
Felsite, dark red w/ tr of bright orange @ top of sequence and becoming a darker brownish orange near bottom. Fine grained and quite hard, variably mag w/ the darker sections being more so. This zone contains some qtz veining and patches up to 3cm in size. Also contains mafic flecs predominantly in the bright orange sections near top of unit. Mineralz w/ 3-5% py. Contacts @ 60/58 DTCA.

2246.8 2295.0 ULTRAMAFIC KOMATIITE

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

Contact into a UM unit, blue black w/ some dark green areas, quite granular till 2250 where they become foliated till 2272 where they are granualar for 16cm w/ foliation returning till end of unit. This unit is quite soft except near intrusives where UM are considerably harder. These UM are variably mag w/ granular areas being more so, granular area also contain mafic flecs ranging in shape from acicular to tabular. This unit is modestly veined w/ qtz-ank, both stringers and patches. This unit is cut by dykes of felsite, as well as numerous smaller incipient dyklets style of intrusions. These rx are a deep orange red to almost brown in some areas, variably mag, quite hard, fine grained and contain both stringers and patches of qtz-ank. Also contains small mafic flecs which are mag and occurr most often near contacts w/ UM units. UM in this zone contain zones of broken blocky core w/ some gouge: these areas are as follows.

@ 2249.2 to 2251 - broken blocky core w/ some qtz veining @ 60/50 DTCA, @ 2251.2 to 2252 - ground core w/ some broken blocky fragments and tr mud, 2252.8 to 2254.2 - very broken blocky core w/ very little mud, contact w/ water seam, 3.8 feet lost core, @ 2258.0 to 2259.3 broken blocky core w/ some smaller fragments and some gouge, @ 2259.8 to 2260 - broken blocky core, 2262 to 2263 - broken blocky core, 2263.8 to 2267 - broken blocky core w/ considerable mud gouge.

2268.0 2268.2 Felsite.
Felsite, w/ tr py mineralz.

2274.0 2277.5 Felsite.
Felsite, dark red to brown red, w/ lighter almost purple coloured sections non mag except for purple areas which are slightly mag, quite hard, well veined w/ qtz-ank, and well mineralz w/ py @ 2-3%. Contacts @ 30/50 DTCA.

2279.6 2283.3 Felsite.
Contact into a felsite, dark brown red in colour, w/ qtz stringers and very small black mafic strands esp near contacts. These rx are well mineralz w/ py @ 3-5%. Non mag except near contacts w/ concentrations of mafic strands where rx are weakly mag. Contacts @ 70/35 DTCA.

2284.0 2288.0 Felsite.
Contact into a large dark brown red felsite dyke, which contains considerably more mafics than above felsite dykes. Larger mafic stringers, and stronger magnetics, contains qtz stringers and patches up to 2cm in size. Well mineralz w/ 2-3% py. Contacts @ 60/65 DTCA.

2295.0 2336.0 GREEN CARBONATE ZONE
Contact into a green carb zone, pale green to emerald green w/ brown to beige and ochre coloured areas, non mag, fine grained, fairly hard, slightly foliated, and well veined w/ qtz both in veins and patches up to 2.5cm in size. Not particularly well mineralz. Contacts @ 60/30 DTCA. This unit is also cut by incipient felsite dyklets as well as a couple of larger felsite intrusions. The second most noteable felsite dyke occurrs @ 2315.8 for 52cm @ 70/80 DTCA. This noted intrusion is a brown red colour, contains 5% qtz

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

stringers and is well mineralz w/ 1-2% py. They most notable intrusion occurs @ 2298.2 for 249cm @ 60/70 DTCA. This felsite dyke contains qtz stringers and patches up to 2cm in size, and is fairly well mineralz w/ 3% py and up to 5% locally. Felsites in this sequence are variably mag. This unit also contains zone which may be tuffaceous in nature.

2293.9 2298.2 Ultramafic Komatiite.
This zone features a section of UM rx intruded by a felsite dyke 12cm. This dyke is brown red, contains 20% qtz veining, non mag, and well mineralz 3-5% py. UM in this zone are blue black w/ beige to ochre banding, variably mag, fairly hard, and could possibly be tuffaceous in nature. Poorly mineralz except where intrusions occur.

2298.2 2306.3 Felsite.
Felsite, dark brown red, non mag, quite hard, and contains stringers and patches of qtz up to 2cm in size. Well mineralz w/ 3-5% py. Contacts @ 70/60 DTCA.

2306.3 2315.8 Green Carbonate Zone Tuff.
Green carb from pale green to emerald green associated w/ well dev carb zone. There is also a unit of beige to ochre banded rx which are quite hard, fine grained and may be tuffaceous in nature. Green carbs here are non mag, fine grained, and contain dyklets of felsite along w/ stringers and patches of qtz. Emerald green areas contain small flecs and thin bands of mafic material. Mineralz w/ 1% py. Lower contact @ 80 DTCA.

2315.8 2315.9 Felsite.
Felsite, dark red brown to light orangish red, non mag, quite hard, and contains qtz veins up to 5%. Poorly mineralz w/ 1% except near upper contact where py reaches 5% locally. Contacts @ 80/60 DTCA.

2315.9 2336.0 Green Carbonate Zone.
Green carb, lime green to dark emerald green and contains blonde to line green tuffaceous material(or possibly alt) This zone features numerous qtz veins and patches up to 3cm in size, is non mag, and is fairly hard. Closer to the lower contact colouring becomes a darker green w/ qtz veining up to 20%. Mineralz w/ 1-2% py and up to 5% locally. Contacts @ 60/70 DTCA.

2336.0 2362.0 TUFF ULTRAMAFIC KOMATIITE
Contact into a unit of carb tuff intercalated w/ UM material. Range in colour from green black UM looking unit to a grey banded tuffaceous unit. This zone is cut by incipient felsite dykes and contains qtz veins and patches. Rx in this unit are fine grained, variably mag, and are fairly hard. @ 2347.2 tiny vesicles occur mm in size containing what appears to rust, and are magnetic. Entire unit is mineralz w/ 1-2% py esp near incipient felsite dyklets. Lower contact @ 50 DTCA.

2362.0 2365.2 FELSITE
Felsite, dark brown red @ upper contact to bright orange red @ lower contact

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

mag, more so in dark areas, fine grained, and quite hard. These rx contain small stringers of mafic material as well as qtz veins and patches. This sequence is mineralz w/ 1% py and features a blonde light green carb band 4cm @ 2363.9 @ 50/54 DTCA, mineralz is increased locally near this band Contacts @ 50/50 DTCA.

2365.2 2373.9 ULTRAMAFIC KOMATIITE
UM w/ strong ank component, blue black w/ ank banding, mag, quite soft, foliated, fine grained, and contain qtz stringers and patches as well as blonde alt bands up to 1cm. Not particularly mineralz. Contacts @ 48/60 DTCA.

2373.9 2391.5 FELSITE
Felsite, dark brown red to light orange red, variably mag, quite hard, and containing qtz stringers and patches as well as being mineralz w/ 1-2% py and up to 5% locally. This sequence has an almost porph texture, being fine grained but w/ visible phenos of milky white material. Contacts @ 70/60 DTCA.

2373.9 2376.0 Felsite.
Felsite, dark brown red variety, w/ stringers of qtz as well as smaller stringers and flecs of mafic material. Well mineralz esp near qtz veins w/1-2% py. Contacts @ 70/50 DTCA.

2376.0 2376.4 Carbonated Zone.
Carb band, 7cm wide - broken and blocky pieces of emerald green core w/ 30% qtz veining. Upper contact @ 50 DTCA.

2376.4 2391.5 Felsite.
Felsite dark red variety w/ bands of light orange red @ 2379.5 and 2379.7 2cm and 4cm respectively. The light orange bands are more highly mineralz w/ py than the rest of the zone. Zone also contains qtz stringers and patches up to 1cm wide.

2378.2 2379.0 Broken Blocky Core.
Broken blocky core which appears UM in nature - contacts unclear.

2379.0 2391.5 Felsite.
Felsite, numerous stringers of mafic material up to 1cm in size.

2391.5 2413.5 ULTRAMAFIC KOMATIITE
Contact into Komatiite sequence, blue black, foliated, magnetic,soft, and well veined w/ qtz most notably between 2395 and 2397, also between, 2398.4 to 2399.4 @ 60/58 DTCA, there is a banded zone ranging from grey purple to light purple w/ dark bands up to 5mm wide. This zone is strongly mag, and mineralz w/ 3% py. The remainder is a more typical blue black UM unit which contains only tr py.

2409.3 2410.0 Broken Blocky Core.
Broken blocky core w/ up to 5% qtz veins.

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

2410.0 2413.5 Tuff.
Sequence appears to become more tuffaceous in nature? w/ blonde and brown bands which are mineralz w/ 1-2% py. Lower contact @ 49 DTCA.

2413.5 2484.9 GREEN CARBONATE ZONE
Contact into green carb unit, dark emerald green to pale light green w/ light brown to blonde tuffaceous areas. This unit is fairly soft w/ the emerald green sections being the softest, variably mag, w/ tuff sections being more strongly so. Contains qtz veins and patches up to 15cm wide. Zone of pale green carb contains small flecs of mafic material. Contacts @ 40/50 DTCA.

2413.5 2421.2 Green Carbonate Zone.
Green carb, emerald green variety, qtz veins up to 3cm, as well as blonde alt bands up to 7cm wide. Blonde bands contain flecs of mafic material as well as being well mineralz w/ 1% py. Emerald zones are poorly mineralz. Lower contact @ 70 DTCA.

2421.2 2429.0 Green Carbonate Zone.
Green carb, lime green variety, contains incipient felsite dyklets, but is not well mineralz.

2435.7 2439.2 Tuff.
Zone consisits of brown blonde rx of a tuffaceous nature, which contain small mafic flecs and are considerably harder than surrounding green carb rx. Lower contact 80 DTCA.

2439.2 2484.9 Green Carbonate Zone.
Return to dark emerald green variety of rx, w/ alternating pale green zones. This zone contains a tuff unit @ 2441.1 to 2443.0 @ 60/40 DTCA, which is well mineralz w/ 1-2% py. The rest of the zone contains only tr py. @ 2465.5 to 2467.0 zone contains broken blocky core in what appears to be a flesite dyke, @ 50 DTCA. Mineralz w/ 1% py. @ 2471.5 there is another beige tuff unit for 5cm @ 80/80 DTCA. Also contains two mafic patches @ 2469 and 2471 the first being mineralz w/ 1%py the latter being unmineralz @ 2474.0 to 2476.6 blonde tuff @ 60/40 DTCA, w/ 2-3% py. Qtz veining becomes more prominant near lower contact @ 45 DTCA.

2484.9 2515.9 TUFF
Contact into a bleached carb tuffaceous unit, which maintains a pale green colour from weak fuchsite alt. This unit is variably mag, fine grained, quite hard, and contain stringers and patches of qtz up to 19cm, as well as tiny clasts of mafic material. This sequence is generally poorly mineralz w/ only tr py. Except near qtz stringers py can reach 3% locally. This sequence also contains flecs of green carb mineralz w/ 2% py. Contacts 70/60 DTCA.

2501.3 2502.0 Quartz.
Qtz vein w/ slight ank alt and mineralz w/ 1% py. Contacts @ 70/40 DTCA.

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

Zones of dark green in this sequence appear to contain most of the mineralz.

2515.9 2824.0 TUFF

Contact into a tuffaceous unit intercalated w/ agglomerate/conglomerate units. These rx range in colour from blue black w/ alternating bands of brown and beige. They are mag w/ the darker sections being more so, and quite hard. There is a gradational contact from a bleached tuff sequence into a darker coloured tuff, to fragmental and agglomerate/congl zones. The coarser fragments are rounded to angular contained in a gritty matrix. There are also a couple of coarser units across the zone. Both veining and mineralz are poor within this unit.

2515.9 2528.0 Tuff.
Dark coloured tuffaceous type rx, fine grained, w/ tiny fragments just visible. Qtz veining and mineralz are minimal. This zone contains a couple of blonde tuff bands also not well mineralz.

2528.0 2558.0 Agglomerate.
Agglomerate unit, fragments are larger and varrying in shape from subangular to rugged. Bands of bleached tuff become more prominant in this zone. From 2532.2 to 2534.0 core is broken and blocky w/ tr gouge, core appears to be broken along depositional seams. Contacts @ 49/60 DTCA. Mineralz and veining is poor, although there are 3 qtz veins @ 2536 for 2cm @ 60/60 DTCA, @ 2537 for 2cm @ 50/60 DTCA, and @ 2537.9 for 4cm @ 50/50 DTCA. @ 2540 there is a gradational contact into tuffaceous type rx for 20cm then a gradational return to agglomerate rx which contain fragments which appear elongated or flattened. @ 2546.3 there is a qtz vein for 3cm @ 70/40 DTCA.

2558.0 2568.0 Tuff.
Gradational contact into a tuff unit, which contains little or no mineralz but does contain a few small qtz veins.

2568.0 2595.3 Tuff.
Contact into a dark tuffaceous rx which contain a number of blond tuffaceous clasts up to 1cm in size, these occur most predominantly between 2569 and 2570 and are contained in a fine grained matrix. @ 2585.6 there is a qtz vein for 4cm @ 50/50 DTCA which is well mineralz w/ 1-2% py.

2595.3 2615.8 Agglomerate.
Gradational contact into an agglomerate unit which begins w/ a large qtz vein for 40cm @ 60/60 DTCA. This unit contains a few blonde tuffaceous fragments, and is not well mineralz except near lower contact where py reaches tr levels. Fragments in this zone are angular to stringy and flattened, modest qtz veining and unmineralz.

2615.8 2628.5 Tuff.
Gradational contact into a tuff unit, which contains considerable qtz veining but little mineralz. @ 2627.8 to 2628.5 qtz vein @ 60/60 DTCA, which contains 1-2% py.

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

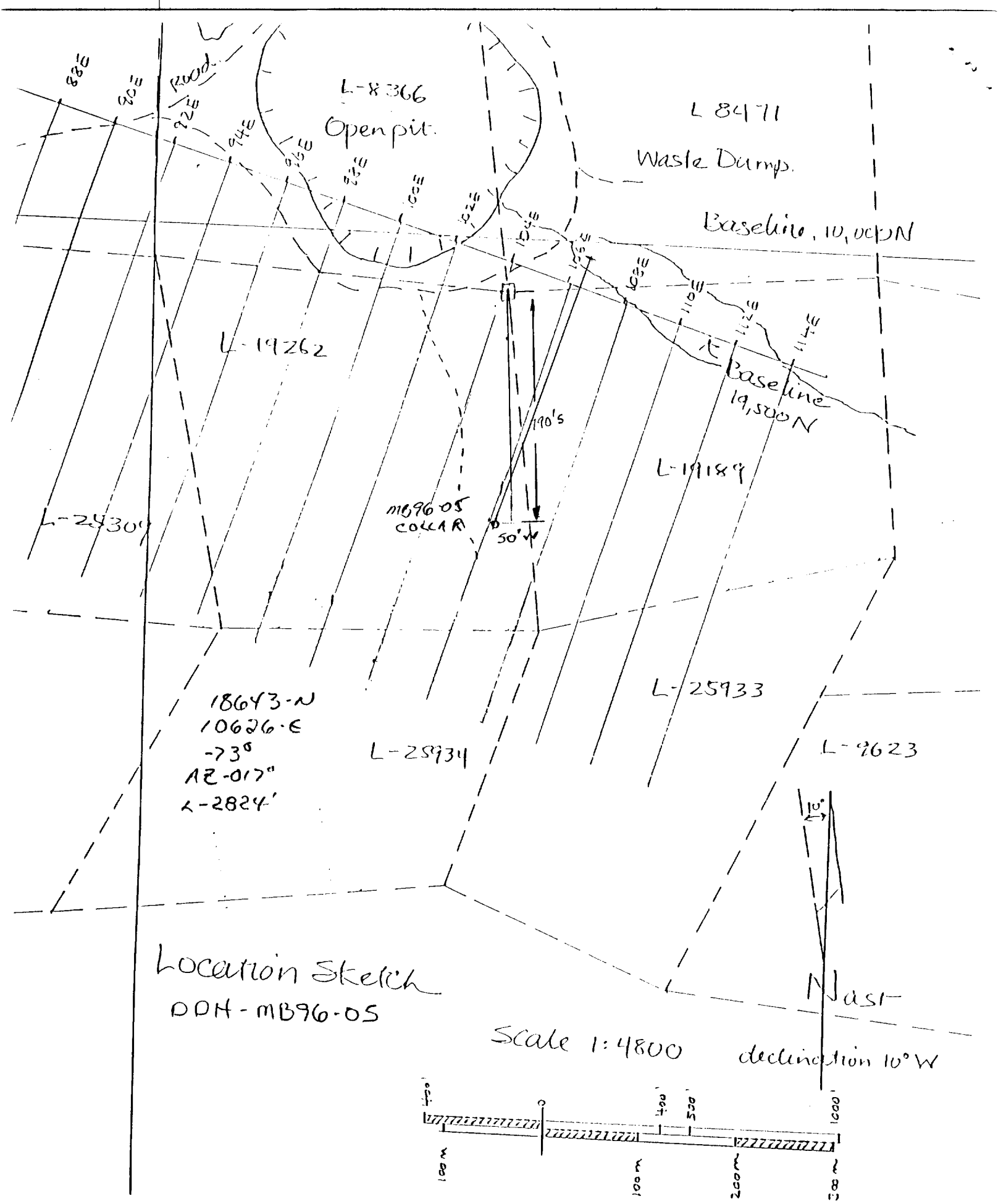
2628.5 2642.0 Agglomerate.
Gradational contact to an agglomerate unit, blue black, variably mag, and containing rounded to angular fragments w/in a fine to med grained matrix. Some qtz veining is apparent but there is little mineralz. There is a coarser grained unit across this zone @ 2634.8 3cm @ 45/40 DTCA.

2642.0 2646.7 Tuff.
Gradational contact into a tuff unit, @ 2644.3 to 2645.6 there is a zone of broken blocky core, which is unmineralz.

2646.7 2790.0 Agglomerate.
Gradational contact into an agg type unit, containing angular to rugged shaped fragments up to 1cm in size, and below 2705 there are a few qtz veins which are mineralz @ 2705.6 for 3cm @ 80/60 DTCA, @ 2707.9 for 6cm @ 70/40 DTCA. Also included in this unit are small fragments and stringers of pale green carb material. Below 2735 there are frags of darker green carb material which are mineralz w/ up to 3% py.

2790.0 2824.0 Tuff.
Gradational contact to a tuff unit which contains fragments of dark green carb as well as lime green clasts. @ 2815.9 for 7cm @ 60/50 DTCA, there is a qtz vein. Mineralz is poor w/in this unit.

End of Hole- 2824.0 ft.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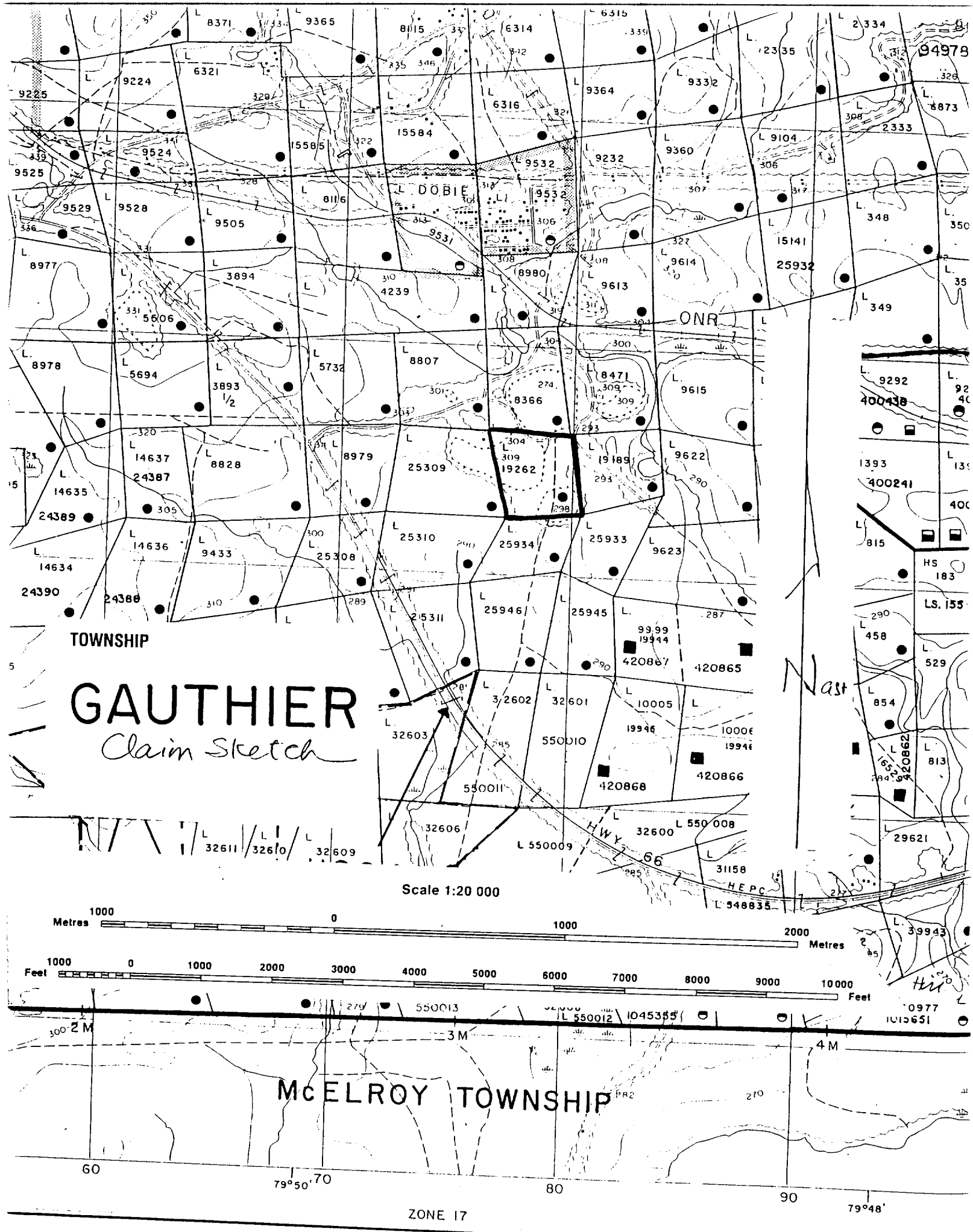
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1000 Metres 0 1000 2000 Metres
1000 Feet 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 Feet
2 M
3 M
4 M
60
79°50'
70
80
90
79°48'
ZONE 17

QUEENSTON MINING INC

Drill Hole: MB96-06

DIAMOND DRILL HOLE RECORD

Property: MCBEAN Col loc from #4 post, L25309, 165'S, 650'E
Northing: 18830.40
Easting: 8787.30
Elevation: 10990.30

Collar Azimuth (Grid) .6
Collar Dip: -60.5
(0 Degrees Grid equals 017 degrees True)
Hole Length: 1852.0

Date Printed: 6 Jul, 1998

*** Dip Tests ***			*** Dip Tests ***		
Depth	Azi.	Dip	Depth	Azi.	Dip
90.0		-65.0	600.0		-59.5
118.0		-62.5	900.0		-55.5
150.0		-61.0	1200.0		-53.0
200.0		-59.5	1500.0		-53.5
300.0		-57.5	1828.0		-51.0

Date Started: Oct. 18 1996
Date Completed: Oct. 30 1996

Drilled by: BENOIT
Core Size: BQ
Material left in hole BX CASING
Core Location: Upper Canada Site 1
Logged by: D. Schonfeldt

D Schonfeldt

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

SUMMARY LOG

.0	88.8	OVERBURDEN
88.8	444.0	GABBRO
444.0	444.1	START OF DEFORMATION ZONE
444.0	528.9	APLITE
528.9	559.5	ULTRAMAFIC KOMATIITE
559.5	585.1	FELSITE
585.1	618.8	GREEN CARBONATE ZONE
618.8	626.8	SYENITE
626.8	684.0	ULTRAMAFIC KOMATIITE
684.0	699.0	GABBRO
699.0	730.0	BASALT
730.0	756.0	ULTRAMAFIC KOMATIITE
756.0	802.0	BASALT GABBRO
802.0	899.0	ULTRAMAFIC KOMATIITE
899.0	929.0	BASALT
929.0	946.1	ALTERED SYENITE
946.1	995.9	ULTRAMAFIC KOMATIITE

From (ft)	To (ft)	Geology
995.9	1004.4	ALTERED SYENITE
1004.4	1124.0	GREEN CARBONATE ZONE
1124.0	1136.5	ULTRAMAFIC KOMATIITE
1136.5	1167.9	ALTERED SYENITE
1167.9	1192.9	GREEN CARBONATE ZONE
1192.9	1210.9	SYENITE
1210.9	1216.2	GREEN CARBONATE ZONE
1216.2	1255.3	FELSITE
1255.3	1335.2	ULTRAMAFIC KOMATIITE FELSITE TUFF
1335.5	1364.9	TUFF
1364.8	1364.9	END OF DEFORMATION ZONE
1364.9	1512.4	TUFF AGGLOMERATE CONGLOMERATE
1512.4	1512.5	START OF DEFORMATION ZONE
1512.4	1516.0	FAULT ZONE
1516.0	1582.3	ULTRAMAFIC KOMATIITE
1582.2	1582.3	TIMISKAMING GROUP
1582.3	1852.0	TUFF

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

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
.0	88.8	OVERBURDEN .0 20.0 Sand. 20.0 40.0 Clay. 40.0 88.8 Boulders, 2 feet lost at 85.0.								
88.8	444.0	GABBRO This gabbroic sequence includes both feldspathic rich phases as well as hornblend rich phases. Included in this sequence are numerous dykes of diorite and basalt. These rx are calcite altered for the most part, and generally react strongly to Hcl. This sequence is for the most part either strongly or mod mag, quite hard and massive. Feldspathic rich phases range in colour from a dark black green/white speckled appearance to a darker less speckled appearance near contacts with hornblend rich phases. These rx have a med fine to med grained texture and contain only traces of py mineralization, except locally near calcite stringers where py can reach 5.0%. Hornblende rich phases in this zone are a dark blue black in colour and become a shade lighter near contact with feldspathic rich areas. Hornblende rich zones are highly mag; and quite hard. Mineralization within this zone is minimal, as is veining Feldspathic rich phases often contain fragments of mafic material up to 2cm in size Basaltic zones within this sequence are black in colour, strongly mag, hard, highly calcified, exhibit tr flow structures?(pillows) and are fine grained. Calcite stingers within this zone are vuggy and often contain most of the visible mineralization. 131.0 131.7 Broken Blocky Core. 131.7 136.3 Diorite. Sequence is cut by a diorite dyke; contacts at 30/70 DTCA. Not well mineralz. 140.0 146.4 Quartz. Sequence cut by a qtz vein @ 10/50 DTCA. Not well mineralz. 152.0 153.0 Broken Blocky Core. 306.7 311.8 Basalt. Sequence cut by a basalt dyke, which is very fine grained, black in colour and contains traces of biotite. This basalt is harder than surrounding rx and does not appear as calcitic. It is strongly magnetic and poorly mineralz. Contacts for this intrusion at 60/80 DTCA. 342.3 344.0 Gabbro. Sharp contact at 40 DTCA into a hornblende rich phase. Not well mineralz. Gradational contact at aprox 344.0 back to a feldspathic rich phase. 370.9 371.4 Basalt. Sequence cut by an intrusion of basalt. Contacts difficult to distinguish. Well mineralz with 1-2% py. 391.3 393.0 Broken Blocky Core This zone contains numerous calcite stringers, and is well mineralz with 1-2% py. 402.0 404.0 Broken Blocky Core.									

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

434.0 437.0 Basalt.
Sequence cut by a dyke of basalt. Rx in this zone are black in colour with accessory reddish carbonate, partly silicif. They are fine grained, mod mag, and quite hard. Upper contact sharp at 80 DTCA; lower contact gradational. Fairly well mineralz. With 1-2% py.

437.0 444.0 Gabbro.
This sequence of gabbro reacts with Hcl near gradational upper contact and does not react with Hcl near basal contact; which is at 70 DTCA. This change represents the transition from calcite alt to ankerite alt. This zone is fairly well mineralz with py up to 3% locally.

444.0 444.1 START OF DEFORMATION ZONE
This zone is crudely porphyritic with metacrysts appearing syenitic in nature, with the host being gabbro. This zone is quite hard, weakly to non mag, and non calcitic. The colour of this sequence ranges from a light red brown to a brown with only a hint of red. Mineralz within this sequence is fairly well developed with 1-2% py as well as up to 5% galena esp between 449.0 and 460.0. Stringers and blebs of hematite are also visible within this zone. This sequence is cut by numerous dykes of gabbro as well as containing moderate qtz veining.

444.0 528.9 APLITE
462.3 468.4 Gabbro.
Sequence cut by a dyke of gabbro @ 80/60 DTCA. Fairly well mineralz with 1.5% py.

470.3 476.9 Gabbro.
Sequence cut by a dyke of gabbro (hornblende rich phase) @ 60/70 DTCA. This zone is highly mag and softer than surrounding rx. This zone is not well mineralz except near contacts; where py can reach up to 1.5%.

493.9 495.4 Gabbro.
Sequence cut by a dyke of gabbro @ 70/60 DTCA. This gabbroic zone contains a qtz vein for 5cm @ 494.10. This zone is non mag and appears slightly foliated near lower contact. Mineralz with 1.0% py.

498.8 500.7 Carbonated Gabbro.
Sequence cut by a dyke of carbonated gabbro @ 60/50 DTCA. This zone is non mag, and is softer than surrounding rx. This zone contains qtz veining with tr calcopyrt and py at 1%.

502.1 507.9 Quartz Vein Zone.
Sequence cut by a qtz vein @ 80/80 DTCA. Not well mineralz.

509.5 513.0 Broken Blocky Core.
BBC zone is well mineralz with py at 1.5% and up to 3% locally.

513.4 518.2 Aplite.

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

Aplite becomes more porphyritic in nature and contains clasts of weak fuchsite altered green carb, up to 2cm wide and mineralz with up to 1.5% py.

525.9 526.8 Quartz.
Sequence cut by a qtz vein which contains tr chalcopy.

528.9 559.5 ULTRAMAFIC KOMATIITE
Sequence of ultramafic komatiite which ranges in colour from a blue black to a dark green black. These rx are mod foliated, weakly to mod mag, quite soft. And non calcitic. These rx are fine grained and are fairly well veined with qtz +-ankerite. This zone is not well mineralz except in ass with qtz veins which contain py up to 1%. This sequence is cut with a dyke of felsic material. Contacts for this UM unit @ 50/70 DTCA.

529.0 531.5 Ultramafic Komatiite.
Sequence of V15 which contains altered felsic material which is fairly well mineralz with 1.5% py.

531.5 561.0 Broken Blocky Core w/ Gouge.
Sequence contains sections of broken blocky core with gouge. Most apparent between 539.0 546.0 and between 558.0 559.5.

559.5 585.1 FELSITE
Sequence ranges in colour from a brown red to an orange red. Rx in this zone are variably mag, quite hard, and non calcitic. Metacrysts in this zone are generally med to med coarse grained and range from rounded to sub angular in shape. A few larger fragments of mafic material (up to 1cm size)are also present. Weak fuchsite alt occurs towards basal contact after 580.0. Veining is quite well dev in this zone with qtz +-ankerite. Contacts @ 70/50 DTCA. Sequence cut by a dyke of gabbro.

567.0 568.0 Broken Blocky Core.

568.0 570.0 Ultramafic Komatiite.
Sequence cut by intrusion of UM which is softer than surrounding rx and is weakly to mod mag. Upper contact sharp at 70 DTCA; lower contact gradational. This sequence contains green bands in proximity to lower contact. Not well mineralz with only tr py.

570.0 577.1 Aplite.
Sequence of aplite contains bands of UM which appear to hold the majority of py mineralz; up to 3%.

577.1 579.0 Altered Gabbro.
Sequence is cut by a dyke of altered gabbro. Xtals within this zone appear to be flattened. Contacts at 80/60 DTCA. Moderately mineralz with 1% py.

580.0 582.6 Ultramafic Komatiite.
Sequence cut by a dyke of UM material which contains weak fuchsite alt as well as blond alt bands. This zone is fine grained, foliated, weak mag, quite soft and non calcitic. Contacts for this sequence at 50/50 DTCA. Not

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

well mineralz with only tr py.

585.1 618.8 GREEN CARBONATE ZONE
Zone begins with a typical green carb rx ranging in colour from a bright emerald green at upper contact to a pale lime green at lower contact. Some areas have a pale red colour because of red carb invasion. Contacts for this sequence are @ 85/50 DTCA. Rx in this zone are weakly to mod foliated, variably mag, quite hard and non calcitic. This zone is intruded by dykes of UM, as well as felsite or possibly altered syenite. Qtz +-ankerite veining is well dev within this zone. Mineralz is not well dev with only tr py.

602.5 603.9 Felsite.
Sequence is cut by a dyke of altered felsite; blond beige to ochre in colour; which contains stringers of green carb within it. Fairly well mineralz with 1.5% py.

607.0 618.8 Green Carbonate Zone.
Green carb within this zone begins to loose emerald green colour and become dark red black because of the invasion of red carb as well alt by intruding syenite. Mineralz with 1.5% py.

609.4 612.1 Syenite.
Sequence is cut by a dyke of syenite; contacts diff to distinguish. Mineralz with tr py as well as tr Cu.

612.6 613.8 Syenite.
Sequence cut by a dyke of syenite which is brown red in colour, quite hard, mod mag, and non calcitic. Not well mineralz. Contacts at 60/60 DTCA.

613.8 618.8 Ultramafic Komatiite.
Sequence cut by a dyke of komatiite which is fine grained, fol, mod mag, and considerably softer than surrounding rx. This unit is not well mineralz. Contacts at 50/50 DTCA.

618.8 626.8 SYENITE
This unit consists of a syenite which ranges in colour from brown red to orange red. These rx are mod mag, very hard, and non calcitic. This zone is well veined with qtz +- ankerite and is well mineralz with 3-5% fine diss py as well as tr Cu. Stringers and blebs of mafic material(strongly mag), are visible within this zone esp near basal contact. This unit is also cut with a dyke of gabbro. Contacts for this syenite at 60/60 DTCA.

621.9 624.8 Altered Gabbro.
Sequence cut by a dyke of altered gabbro, which is quite hard, strongly mag, and is non calcitic. Veining is not well dev within this zone. Mineralz is also poor except near basal contact where py reaches 2%. Contacts for this unit are @ 30/50 DTCA.

626.8 684.0 ULTRAMAFIC KOMATIITE
Contact into an ultramafic komatiite unit, which is cut by dykes of gabbro as well with dykes of felsite/altered syenite? Komatiites within this

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

sequence are blue black in colour, fine grained, highly foliated, mod mag, & quite soft. Veining in this unit is quite well dev w/ qtz +- ank. Mineralz is not well dev. This UM sequence is highly contorted and shows a strong invasion of red carb. Stringers and blebs of calcite mimic the fol within this sequence. Contacts at 60/50 DTCA. Gabbros in this unit are highly alt, are soft, mod mag, and calcitic. This unit is poorly veined as well as poorly mineralz. Felsite/altered syenite within this zone range in colour from brown red to orange red. They are mod mag, non calcitic and contain blebs of hematite. Both veining and mineralz are well dev within this unit. Fine diss py up to 2%.

628.1 631.5 Porphyritic Syenite.
Sequence cut by a dyke of altered syenite which is dark brown red in colour, mod mag, and non calcitic. This syenite contains a number of small qtz+-ank veins, as well as py mineralz up to 2%. Upper contact for this unit at 70 DTCA, basal contact at 60 dtca.

637.8 644.2 Altered Gabbro.
Sequence is cut by a dyke of altered gabbro which is quite soft, strongly mag, and calcitic. This unit contains an intrusion of mafic material near basal contact. Contacts for this zone at 70/80 DTCA. This unit is not well mineralz.

647.2 648.9 Altered Syenite.
Sequence interrupted by a dyke of altered syenite, which is dark brown red in colour, quite hard, mod mag, and non calcitic. Mineralz is not well dev within this unit. Contacts @ 60/80 DTCA.

659.8 665.6 Altered Syenite.
Sequence cut by a dyke of altered syenite. Not well mineralz. Contacts at 60/30 DTCA.

661.0 663.1 Altered Syenite.
Sequence cut by a dyke of altered syenite, which is brown red to ochre in colour This unit is weakly mag, quite hard and non calcitic except where invaded by stringers of calcite. Mineralz is fairly well dev within this unit w/ 1.5% py. Contacts for this unit @ 60/60 DTCA.

664.0 666.4 Felsite.
Sequence cut by a felsite dyke which contains moderate qtz veining as well as moderate mineralz with py at 1%. Contacts at 60/60 DTCA.

671.4 673.5 Altered Syenite.
Sequence cut by a dyke of altered syenite red brown near upper contact to light purple near basal contact. Fairly well mineralz esp near upper contact w/ 1-2% py. Contacts at 60/60 DTCA.

677.6 680.6 Felsite Carbonated Gabbro.
Sequence is cut by a dyke of felsite which contains a zone of carb gabbro within it, at 679.0 679.7. Felsite in this sequence is orange red in colour, quite hard and non calcitic. This unit is well veined with qtz +- ank and

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

also contains stringers of hematite. This unit is well mineralz with 1-2% py, and up to 5% py at contacts. Contacts at 40/50 DTCA.

681.7 684.0 Felsite.
Sequence cut by a dyke of felsite which is brown red in colour, quite hard, and non calcitic. This unit is well veined w/ qtz +- ank up to 15%, and fairly well mineralz w/ 2.5% py. Contacts for this unit at 70/70 DTCA.

684.0 699.0 GABBRO
Contact into a gabbroic unit which is extremely carb., and contains sections of basaltic material within it. This unit is coarsely granular and invaded w/ red carb. Unit is quite hard, strongly mag, and calcitic. Veining and mineralz are both poor within this sequence.
Contacts for this unit @ 70/60 DTCA.

699.0 730.0 BASALT
Contact into a basaltic unit which is pale green in colour, quite hard, mod to strongly mag, and calcitic. This unit is variably fol and contains some interflow looking material esp between 710.0 722.5. Tr chert and graphite are visible within this sequence as well as scattered dykes of altered gabbro, particularly near lower contact. The lower section of this sequence is strongly fol, and invaded with layers of red carb. Contacts at 60/60 DTCA. Mineralz is well dev within this unit with py at 1-2% and up to 5% locally.

707.7 709.7 Cherty Sediments graphite.
Sequence cut by a zone of cherty sediments which contains some graphite. This unit is beige/brown with bands of red/purple in colour. This unit is very hard and extremely silicified. This unit is strongly mag, and calcitic. This unit is very well mineralz with up to 5% py which is concentrated in stringers and veinlets. Contacts for this unit are @ 60/70 DTCA.

709.7 720.7 Basalt.
Sequence cut by a dyke of basalt which exhibits interflow looking material. This unit is quite hard, weakly mag, and calcitic. Mineralz is well dev with py at 1-2%. Contacts for this unit at 70/50 DTCA. Contains small graphite unit.

716.0 716.9 Graphite.
Sequence cut by a unit of graphite which is black in colour, quite soft, non mag, and non calcitic. This unit is well veined with qtz +- ank up to 15%. Mineralz is poor within this unit.

721.8 722.6 Gabbro.
Sequence cut by a dyke of gabbro which is quite hard, mod mag, and calcitic. Mineralz is not well dev within this unit except near upper contact with py at 3% locally Contacts for this unit at 50/50 DTCA.

723.0 724.9 Gabbro.
Sequence cut by a dyke of gabbro which is mineralz w/ only tr py. Contacts at 60/60 DTCA.

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

724.9 730.0 Basalt.
Basalt in this zone becomes strongly fol. And invaded w/ red carb, which has a distinct layered appearance. Fol ranges between 40/60 DTCA. At 726.3 basalt becomes gouged and granulated for 3cm.

730.0 756.0 ULTRAMAFIC KOMATIITE
Contact into a komatiite type rx unit, which is blue black in colour, quite soft, variably mag, and non calcitic except for calcite stringers which invade this unit, and mimic the foliation which is at 50 DTCA. Mineralz is not well dev within this sequence nor is veining although there are a couple of qtz veins; the largest @ 730.0 731.2 @ 60/80 DTCA. This unit is cut by dykes of felsite as well as altered gabbro.

743.2 744.0 Felsite.
Sequence is cut by a dyke of felsite which is brown orange in colour, quite hard, slightly mag and non calcitic. This unit is quite well mineralz with py at 1-2%. Contacts for this unit @ 30/70 DTCA.

748.0 756.0 Carbonated Gabbro.
Gabbro becomes the dominant rx type in this zone. This unit is dark brown red in colour, quite hard, strongly mag, and calcitic. This unit is extremely carbonated, and quite well mineralz w/ 1.0% py.

756.0 802.0 BASALT GABBRO
Contacts into an alternating sequence of basalt and gabbro. Basalts in this zone are very foliated and contorted. They are quite hard, strongly mag, fine grained, and are striped with discontinuous bands of calcite. Gabbros within this zone are, also fol, contorted, med to med coarse grained, and striped with calcite bands. They are quite hard, and strongly mag. Fol for gabbros and basalts ranges between 25/35 DTCA, and becomes shallower w/ depth. Both the basalt and gabbro within this sequence contain limited qtz +- ank veining and tr-1% py mineralz. Mineralz is concentrated within carb alt bands. This unit ranges in colour from black to pale green w/ ochre carb alt bands. Most of this unit is pitted and vuggy. Upper contacts for this sequence is @ 50 DTCA, lower contact is gradational. Contacts between basalts and gabbros are gradational, carb alt band tend to decrease in the last 3 feet.

784.2 785.0 Quartz.
Qtz vein +- ank. Not well mineralz.

802.0 899.0 ULTRAMAFIC KOMATIITE
Gradational contact into komatiite unit w/ dykes of carb gabbro within gradational upper contact.(802 836). Komatiites within this unit are fine grained, quite soft, mildly fol, strongly mag, and calcitic. These komatiites contain discontinuous bands of carbonate, and are not well veined or mineralz. This unit is cut by dykes of altered gabbro, as well as basalt.

822.2 822.9 Broken Blocky Core.

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

831.9 835.6 Altered Gabbro.
Sequence cut by a dyke of alt gabbro, which is considerably harder than surrounding rx, is strongly mag, weakly fol, and calcitic. Veining is poor within this unit, but mineralz is better dev than in surrounding rx with py at 1.0%.

863.5 865.0 Broken Blocky Core broken blocky core w/ granulated area @ 864.0.

870.7 874.0 Basalt.
Sequence cut by a dyke of basalt, which is very carb, light purple/pink in colour, strongly mag, and harder than UM but softer than alt gabbro. This unit is not well mineralz. Contacts for this unit are gradational.

884.0 888.9 Altered Gabbro.
Sequence cut by a dyke of alt gabbro which is mineralz w/ 1% py. Contacts for this unit are sharp at 70/40 DTCA.

899.0 929.0 BASALT
Gradational contact into a sequence of basalt, which is green in colour, quite hard, strongly mag, fine grained, massive, and calcitic. This unit is mod foliated and very contorted, with the unit becoming more contorted with depth. Mineralz is limited within this unit. Veining is poor near upper contact and tends to improve near basal contact, where qtz +- ank veining occurs in a cross cutting fashion. Basal contact for this unit is sharp at 50 DTCA. This unit is cut by dykes of carb gabbro as well as syenite.

911.2 912.5 Carbonated Gabbro.
Sequence cut by a dyke of carb gabbro which is brown red in colour, quite hard, weakly mag, and calcitic. This unit is mod mineralz w/ 1-2% py. Contacts for this unit are sharp @ 30/80 DTCA.

920.1 920.5 *Syenite.*
Sequence is cut by a dyke of syenite, which is dark red/orange in colour, quite hard, weakly mag, and mildly calcitic. This unit contains poorly dev phenos of feld within its fine grained matrix. This unit contains 1% py mineralz. Contacts for this unit are well defined @ 40/40 DTCA.

920.9 922.9 Carbonated Gabbro.
Sequence cut by a dyke of carb gabbro which is brown red in colour, quite hard, strongly mag, and calcitic. This unit contains tr-1% py mineralz which is concentrated near upper contact. Contacts for this unit are @ 80/70 DTCA. This unit also contains small mm sized dyklets of syenite within it.

922.9 925.6 Syenite.
Sequence cut by a dyke of syenite which is brown orange in colour, quite hard, and well mineralz w/ 2-3% py. Contacts for this unit @ 50/70 DTCA.

924.6 927.9 Syenite.
Sequence cut by a dyke of syenite @ 60/60 DTCA. This unit is more brown in colour than previously described syenites. Unit is fairly well mineralz w/ 1.5% py.

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

928.0 929.0 Quartz Vein Zone.
Qtz +- ank veining is well dev in this zone w/ veining both parallel to core axis and cross cutting core axis. This zone is weakly mag, and non calcitic. Mineralz is not well dev w/ only tr py.

929.0 946.1 ALTERED SYENITE
Contact into a sequence of syenite which ranges in colour from brown red to orange red with depth. This unit is quite hard, variably mag, and non calcitic. Py mineralz is not well dev within this unit. Qtz +- ank veining in this unit is well dev,and continues to retains cross cutting characteristics described in previous unit; Cross cutting decreases w/ depth. Stringers and blebs of hematite are visible within this unit. This unit is cut by dykes of UM as well as alt gabbro.

932.0 935.5 Ultramafic Komatiite.
Sequence cut by a dyke of UM which is blue black in colour, quite soft, and contains x cutting qtz +-ank veins. This unit is fol as well as contorted. Mineralz w/ 1% py. Contacts for this unit are sharp at 50/70 DTCA.

936.2 937.4 Ultramafic Komatiite.
Sequence cut by a small UM dyke which is well mineral w/ 1-2% py. Contacts @ 40/60 DTCA.

937.8 939.3 Ultramafic Komatiite.
Sequence cut by a dyke of UM which is not well mineralz. Upper contact at 40 DTCA, lower contact diff to distinguish because of BBC till 940.0.

946.1 995.9 ULTRAMAFIC KOMATIITE
Contact into a komatiite type rx sequence, which is blue black in colour, w/ a Strong milky to grey beige ank component expressed as discontinuous bands of carb. This unit is quite soft, mod mag, and non calcitic. This unit shows varying degrees of fol and is extremely contorted near upper contact. Contortion decreases w/ depth. Mineralz is not well dev in this unit nor is veining. Upper contact hard to distinguish because of BBC, lower contact @ 80 DTCA. This unit is cut by dykes of basalt as well as carb gabbro.

961.6 965.0 Basalt.
Sequence cut by a dyke of basalt which is highly altered, pale green in colour, fine grained, weakly mag, and contains only tr py mineralz.
971.4 977.5 Broken Blocky Core w/ Gouge w/ 7.5 feet of lost core.

981.5 984.0 Ultramafic Komatiite.
UM unit in this zone contains concentrations of py mineralz, 2-3% and up to 5% locally.

984.0 995.9 Carbonated Gabbro.
Sequence cut by a dyke of carb gabbro intercalated w/ UM units. Gabbro is olive green in colour, non mag, and soft. Tr py mineralz.

995.9 1004.4 ALTERED SYENITE

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

Sequence cut by a dyke of alt syenite which is brown red in colour, highly fractured, non mag, quite hard, and non calcitic. This unit is psuedo porphyritic in nature, containing poorly dev phenos of feld within its fine grained matrix. Stringers and blebs of hematite are visible within this unit. This unit is well mineralz w/ 2/3% py. Veining within this unit is not well dev. Contacts for this sequence are sharp & @ 80/60 DTCA.

1004.4 1124.0 GREEN CARBONATE ZONE

Contact into a zone of green carb. This sequence contains semi-continous green carb w/ strongly ank milky grey streaks to blue black UM sections. Also included in the basal section of this sequence are; felsites, syenites, as well as blond to ochre alt bands and some tuffaceous to incipient dyklets style of inclusions. Green carbs within this unit are a pale green colour w/ milky ank alt bands. These rx are variably mag, quite soft, non calcitic, and fol, w/ the fol avg 65 DTCA. Mineralz and veining are not well dev within this unit.

1004.7 1004.9 Felsite.
Sequence cut by a dyke of felsite @ 70/60 DTCA. Not well mineralz w/ only tr py.

1005.9 1007.1 Blonde Alteration Zone.
Sequence cut by a blond alt band which is well mineralz w/ 1-2% py. Contacts @ 40/50 DTCA.

1031.8 1034.8 Blonde Alteration Zone.
Sequence cut by a blond alt band @ 60/60 DTCA. This alt band is well mineralz w/ 1-2% py.

1035.0 1036.4 Felsite.
Sequence cut by a dyke of felsite which is red blond in colour, siliceous, quite hard, non mag, and not well mineralz. Contacts for this unit @ 80/40 DTCA.

1038.2 1038.9 Syenite.
Sequence cut by a dyke of syenite which is brown red in colour, quite hard, and non mag. Mineralz w/ 1% py. Contacts at 70/50 DTCA.

1044.1 1045.1 Altered Syenite.
Sequence cut by a dyke of altered syenite, which is blond to red/beige in colour, variably mag, quite hard, and non calcitic. This unit is well mineralz w/ 1-2% py. Contacts for this unit at 60/50 DTCA.

1051.7 1052.4 Blonde Alteration Zone.
Sequence is predominantly blond alt bands which are mineralz w/ 1% py.

1057.6 1061.6 Felsite.
Sequence cut by numerous dykes of felsite, which are well veined w/ qtz +- ank. Mineralz is not well dev within this zone.

1073.9 1074.9 Altered Syenite.

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

Sequence cut by a dyke of alt syenite, which is well mineralz with 1-2% py.

1078.1 1080.0 Altered Syenite.
Sequence cut by a dyke of alt syenite, which is not well mineralz with 1% py. Contacts for this unit @ 60/50 DTCA.

1081.2 1082.9 Blonde Alteration Zone Ochre Alteration Zone.
Sequence is cut by alt bands which range in colour from blond to ochre. These alt bands contain bands of mafic material, as well as qtz +- ank veins. This unit is quite hard, mod mag, and non calcitic. This unit is well mineralz w/ 2-3% py. Contacts for this unit are sharp at 50/50 DTCA.

1087.3 1088.7 Blonde Alteration Zone.
Sequence is cut by a blond alt band, which is fairly well mineralz w/ 1-2% py. Upper contact for this unit grad, lower contact @ 40 DTCA.

1103.8 1105.0 Blonde Alteration Zone.
Sequence cut by a blond alt band @ 40/40 DTCA. This unit is well mineralz w/ 3-5% py.

1113.2 1115.5 Felsite.
Sequence cut by a dyke of felsite at 70/60 DTCA. This unit is brown red in colour, quite hard, and weakly mag. Mineralz is well dev in this zone w/ 3% py.

1116.0 1116.9 Altered Syenite.
Sequence cut by a dyke of alt syenite, which is extremely contorted, variably mag, and mineralz w/ 1-2% py. Contacts @ 40/40 DTCA.

1120.1 1121.9 Altered Syenite.
Sequence cut by a dyke of alt syenite, which contains qtz +- ank veins as well as patches. Mineralz w/ 1-2% py.

1124.0 1136.5 ULTRAMAFIC KOMATIITE
Contact into an UM komatiite sequence which is blue black in colour, quite soft, mod to strongly mag, non calcitic and fine grained. This unit is fol, contorted, and contains discontinuous stringers of carb which mimic the fol. This unit is not well veined or well mineralized. This unit is cut by dykes of carb gabbro and alt syenite, as well as blond and ochre alt bands.

1130.8 1131.1 Blonde Alteration Zone Ochre Alteration Zone.
Sequence cut by alt bands which range in colour from blond to ochre, and are well mineralz w/ py @ 3-5%.

1132.0 1134.4 Altered Syenite.
Sequence cut by a dyke of alt syenite which is brown red in colour, well veined w/ qtz +- ank, quite hard, mod mag, and non calcitic. This unit is well mineralz w/ 3-5% py. Contacts for this unit @ 80/80 DTCA.

1133.4 1134.5 Altered Syenite.
Sequence cut by a dyke of alt syenite which is well veined w/ qtz +- ank, as

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

well as being well mineralz w/ 3-5% py. Contacts for this unit @ 80/60 DTCA.

1134.5 1136.5 Carbonated Gabbro.
Sequence cut by a dyke of carb gabbro, which is quite hard, strongly mag, and non calcitic. This unit contain tr py mineralz. Contacts for this unit @ 60/50 DTCA.

1136.5 1167.9 ALTERED SYENITE
Contact into a sequence of altered syenite, which range in colour from brown red to to orange red. This unit is quite hard, mod to strongly mag, non calcitic, and contain stringers and blebs of hematite within their fine grained matrix. This unit is well veined w/ qtz +- ank, as well as being well mineralz w/ 3-5% py. This unit is cut by dykes of carb gabbro as well as UM.
1139.7 1145.8 Carbonated Gabbro.
Sequence cut by a dyke of carb gabbro which is quite hard, mod to strongly mag, and non calcitic. Mineralz within this unit is concentrated near upper contact @ 1.5%, and near lower contact where there is an ochre alt band which holds the majority of the mineralz, @ 2-3% py. Contacts for this unit are well defined @ 60/40 DTCA.

1158.2 1167.9 Ultramafic Komatiite.
Sequence cut by a dyke of UM which contains a number of incipient syenite dykes, as well as alt banding which ranges in colour from blond to ochre. UM in this unit are blue black in colour, quite soft, fol, and contorted. This unit becomes more contorted w/ depth. Mineralz within this unit is concentrated in alt bands where py reaches 3%. Upper contact for this unit gradational, basal contact @ 60 DTCA.

1167.9 1192.9 GREEN CARBONATE ZONE
Contact into a green carb sequence, which contains discontinuous green carb w/ sections of UM as well as alt syenite intrusions and alt bands. Green carbs in this sequence range in colour from med green to light green. This unit is quite hard, weakly to strongly mag, and are mildly calcitic. After 1183.9 fuchsite alt decreases and rx return to a more typical UM unit. Alt syenites within this sequence are a brown red and occur as tiny dyklets up to 2cm. These syenites are fairly well mineralz w/ up to 1-2% py. UM in this unit show weak fuchsite alt near upper contact w/ gr carb. Fuchsite alt decreases w/ depth, and ends at 1183. After 1183 Um are blue black in colour, quite soft, non calcitic, med grained, and weakly fol. Streaks and blebs of hematite are visible within this UM unit. Mineralz is poor within this unit as is veining.

1172.9 1174.3 Broken Blocky Core.

1183.5 1184.0 Ochre Alteration Zone.
Sequence contains alt band which is ochre in colour @ 60/60 DTCA. This alt band is extremely well mineralz w/ 5-10% py.

1185.8 1186.7 Ultramafic Komatiite.
Sequence cut by a dyke of komatiite, which is very fine grained, and highly

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

mineralz with 5% py. Contacts for this unit are gradational.

1188.0 1188.7 Blonde Alteration Zone.
Sequence contains a blond alt band which is very well mineralz w/ 2-3% fine diss py. Contacts for this band at 60/60 DTCA.

1192.9 1210.9 SYENITE
Contact into a sequence dominated by syenite, w/ inclusions of UM. Syenites in this zone are brown red in colour, are quite hard, variably mag, and non calcitic. Syenites in some parts of this sequence become pseudo porphyritic and contains poorly dev phenos of feld within their fine grained matrix. Veining and mineralz are both poor within this unit. UM in this sequence range in colour from blue black to pale green(weak fuchsite alt) are soft, mod mag, and non calcitic. Mineralz is poor within this unit, but it tends to improve where rx have been alt by fuchsite.

1196.9 1198.9 Ultramafic Komatiite.
Sequence contains an intrusion of UM rx which are typical blue black komatiites, and gradationaly become more alt by fuchsite with depth. This unit is mildly fol and mineralz with py which is concentrated near basal contact. Upper contact hard to determine, lower contact well defined at 40 DTCA.

1202.2 1206.9 Porphyritic Syenite.
Sequence cut by a dyke of porphyritic syenite which contains mod well dev phenos of feld within its fine grained matrix. Feld phenos are flattened and rounded. Mineralz within this sequence is fairly well dev with 1-2% fine diss py. Stringers and blebs of hematite are visible within this unit.

1210.9 1216.2 GREEN CARBONATE ZONE
Contact into a green carb sequence which contains units of UM as well as syenite dykes. Gr carb in this zone are a dark emerald green, quite soft, weakly mag, and non calcitic. This unit is well veined w/ qtz +- ank as well as being well mineralz w/ py up to 5%. UM in this sequence contain blonde/ochre alt bands, and range from blue black to pale green near contact w/ gr carb. These rx are mod fol as well as mod contorted. Modest qtz +- ank cross cutting is present and mineralz is not well dev w/ only tr py. Syenites within this sequence are brown red in colour, quite hard, slightly mag, and non calcitic. Veining is fairly well dev in this unit w/ qtz +- ank up to 5%. Mineralz is also fairly well dev w/ 1-2% py.

1210.9 1212.5 Green Carbonate Zone.
Emerald gr carb w/ qtz +- ank veins and patches. Upper contact hard to distinguish, lower contact at 80 DTCA. This unit is well mineralz w/ 5% py.

1212.5 1214.1 Syenite.
Sequence is cut by a dyke of syenite, which is well veined w/ qtz +- ank and well mineralz w/ 1-2% py. Fragments and stringers of gr carb are visible within this unit. Lower contact at 30 DTCA.

1214.1 1216.2 Green Carbonate Zone Ultramafic Komatiite.

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

Sequence continues to be strong gr carb and gradationaly changes to more typical blue black UM near basal contact. Mineralz is fairly well dev at upper contact and appears to decrease in relation to decrease in fuchsite alt, to basal contact.

1216.2 1255.3 FELSITE
Contact into a sequence dominated by felsites. This unit also includes inclusions of typical blue black UM komatiites, & altered gabbro. Felsites in this unit are brown red in colour, Strongly mag, quite hard, and contain streaks and blebs of hematite. Veining within this sequence is poor. Mineralz is mod dev w/ 1% fine diss py.

1218.6 1219.2 Ultramafic Komatiite.
Contact into a komattite type rx unit, which is blue black in colour, quite soft, mod mag, and non calcitic. This unit contains discontinuous stringers of carb which mimic the fol @ 40 DTCA. This unit is not well veined or well mineralz w/ only tr py. Contacts for this sequence @ 60/40 DTCA.

1222.9 1225.9 Ultramafic Komatiite.
Contact into a komatiite unit which is very similar to previously described UM unit. Contacts at 40/40 DTCA.

1224.9 1228.3 Ultramafic Komatiite.
Contact into a komatiite unit very similar to previously described um unit. Mineralz w/ 1% py. Contacts @ 60/06 DTCA.

1225.5 1229.2 Ultramafic Komatiite.
Contact into a komatiite unit similar to previously described unit. Contacts @ 50/40 DTCA. Mineralz w/ tr py.

1229.8 1232.9 Ultramafic Komatiite.
Contact into a komatiite unit similar to previously described units except that this unit contains an ochre tint. Mineralz improves in this unit to 1-2% py. Contacts for this unit @ 50/50 DTCA.

1246.5 1249.8 Ultramafic Komatiite.
Contact into a komatiite type rx unit which contains blond and ochre alt bands as well as mod qtz +- ank veining. Rx in this unit become contorted w/ depth. This unit is not well mineralz. Contacts for this unit @ 50/80 DTCA.

1253.5 1254.2 Carbonated Gabbro.
Sequence cut by a dyke of carb gabbro, which is brown ochre in colour, quite hard, mod mag, and not well mineralz.

1255.3 1335.2 ULTRAMAFIC KOMATIITE FELSITE TUFF
Contact into an um unit which contains felsite dykes, as well as zones which appear tuffaceous in nature. This sequence is extremely altered and contorted, containing numerous bands of blond to ochre alt as well as weak fuchsite alt near top of sequence. After 1330 rx tend to be more tuffaceous in nature. Ums in this sequence range in colour from pale green(weak fuchsite alt) to a more typical blue black komatiite type looking rx. UMs in

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

this sequence are quite soft, mod mag, and non calcitic. These rx are quite fol and contorted. Felsite in this sequence are more brown than red in colour, are quite hard, strongly mag, and are quite fractured. These felsites contain stringers and blebs of hematite within their matrix. Felsites within this sequence have created small alt zone adjacent to intrusions.

1315.2 1321.8 Ultramafic Komatiite.
Contact into a um unit which is a more typical blue bk colour, and gradationaly changes to a pale green colour near basal contact. These rx are quite soft, variably mag, contorted and fol w/ the fol avg aprox 50 DTCA. This unit is not well mineralz. Contacts for this unit at 70/60 DTCA.

1321.8 1324.9 Ultramafic Komatiite Ochre Alteration Zone.
Contact into an um unit which contains numerous alt bands which contain concentrations of fine diss py up to 2.0%. Lower contact at 60 DTCA.

1335.5 1364.9 TUFF
Contact into a tuffaceous unit intercalated with blue black um units, as well as altered gabbro, and dykes of felsite. Tuffs in this unit are pale green to beige in colour, and fine grained although they do contain the odd larger fragment which generally are flattened or elongated. These rx are variably mag, quite silicious and are non calcitic. Um in this sequence are blue bk in colour, slightly fol, and well veined w/ qtz +- ank. Mineralz is limited. Ums in this sequence are mildly fol and quite contorted. Alt gabbro in this unit are quite hard, slightly fol, and contain numerous blond to ochre alt bands which tend to hold the majority of the py mineralz. Felsites in this unit are brown red in colour, quite hard, mod mag, fractured, well veined w/ qtz +- ank, and mineralz w/ py and specular hematite.

1255.3 1264.7 Ultramafic Komatiite.
Sequence cut by a dyke of um which has a pale green colour(weak fuchsite alt) and is well veined w/ qtz +- ank. This unit is not well mineralz w/ only tr py. Contacts for this unit are sharp at 40/60 DTCA.

1264.7 1266.4 Altered Gabbro.
Sequence cut by a dyke of alt gabbro, which contains bands of blond to ochre alt, and is fol @ aprox 50 DTCA. The lower contact for this unit is shallow at 20 DTCA, and contains the majority of this units mineralz w/ py at 2% over the last 3 inches.

1266.4 1281.3 Ultramafic Komatiite.
Sequence cut by an um unit which has a more typical blue bk colour. This unit is mod fol and highly contorted. This unit contains beige and ochre alt bands which are not well mineralz. Lower contact at 70 DTCA.

1283.3 1295.9 Felsite.
Sequence cut by a dyke of felsite, which is brown red in colour and is well veined with qtz +- ank. This unit is vuggy, pitted, mod mag, and quite hard. Mineralz within this unit is poor w/ tr py and tr specular hematite. Contacts for this unit are well defined at 60/70 DTCA.

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

1336.3 1346.2 Blonde Alteration Zone Ochre Alteration Zone.
Contact into an um unit? which is highly alt by blond and ochre alt bands. This unit is fol as well as being highly contorted. Fol becomes shallower w/ depth. This unit is not well mineralz. Lower contact for this unit is gradational.

1346.2 1357.8 Ultramafic Komatiite.
Um unit returns to a more typical blue black colour. This unit is highly contorted, slightly fol, and contains a syenite dyke @ 1348.0 for 10cm @ 40/60 DTCA. Mineralz is poor within this unit as is veining. This unit is variably mag and quite hard. Basal contact for this unit is gradational.

1357.8 1364.9 Tuff.
Gradational contact into a tuffaceous unit, which is slightly mag, non calcitic and quite hard. This unit is fractured and pitted. This unit contains limited veining & mineralz. Hardness of this unit decreases w/ proximity to basal contact, which is gradational. Mineralz tends to improve in the last 2 feet of sequence where py reaches 1%.

1364.8 1364.9 END OF DEFORMATION ZONE

1364.9 1512.4 TUFF AGGLOMERATE CONGLOMERATE
Gradational contact into a tuffaceous unit of rx, which grades into agg and congl type rx. This unit ranges in colour from a grey black to green grey, is mod mag, quite soft, and non calcitic. Tuffs in this unit are med to med coarse grained and have a gritty feel to them. These tuffaceous units are variably mineralz, and contain little veining. Tuffs in this sequence appear slightly contorted near upper contact, and contain a few larger fragments of mafic material, which appear elongated. Agglomerates within this unit contain angular fragments mm sized which are flattened or elliptical. Identifiable frags include; mafics as well as qtz, and syenite. These rx have a dark green black colour and frags are contained in a fine grained matrix. Conglomerates in this sequence contain mm size rounded clasts in a fine grained matrix. Congl retain dr green bk colour.

1364.9 1399.0 Tuff.
Gradational contact into a tuffaceous unit which is well mineralz w/ 1-2% fine diss py. Within this unit there is a zone of what appears to be highly alt UM at 1383.9 for 25cm @ 40/50 DTCA, this unit is also well mineralz w/ 2-3% py.

1399.0 1407.1 Agglomerate.
Gradational contact into an agglom type rx, which contains angular frag up to 2cm. These fragments appear slightly elliptical in shape. Frags contained include; blond alt, amphibole and qtz. Mineralz is minimal within this unit.

1418.4 1467.6 Conglomerate.
Gradational contact into a more congl type rx unit, which has a pale green colour, and contains rounded frags cm in size. These fragments appear

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

elongated or flattened. This unit is quite contorted. Fragments include feldspar, mafics and qtz. Mineralz is well dev w/ py at 1% and up to 3% locally. Tr specular hematite is also visible.

1466.9 1472.4 Blonde Alteration Zone.
Sequence contains a blond alt zone which is well mineralz w/ 1% py.

1471.7 1479.3 Broken Blocky Core w/ tr gouge and granulation.

1498.0 1512.4 Tuff.
Gradational contact into an aglom type rx unit, which is very similar to previously described aglom units. This unit contains an inclusion of komatiite @ 1506.7 for 17cm @ 80/70 DTCA. After this point rx become increasingly pitted w/ depth. Basal section of this unit, after 1500.0 becomes mildly calcitic. Mineralz is poor w/ tr fine diss py.

1512.4 1512.5 START OF DEFORMATION ZONE

Contact into a zone of broken blocky core w/ gouge and granulated areas, as well as fault breccia. Breccia contains fragments of tuff, komatiite, and qtz. This zone is not well mineralz w/ only tr py.

1512.4 1516.0 FAULT ZONE

1516.0 1582.3 ULTRAMAFIC KOMATIITE
Contact into a typical deformation zone komatiite, which is blue black to lime green in colour (weak fuchsite alt) in colour. This unit is very soft, weakly mag, and non calcitic. This unit is mod fol and highly contorted near upper contact. This sequence remains granulated and pitted w/ tr gouge until 1526.6. Mineralz within this unit is poor w/ only tr py. This unit is cut by dykes of basalt, felsite, porphyritic syenite, syenite, and alt gabbro. Lower contact for this unit at 40 DTCA. Mineralz improves to 1% py in the last 12 inches before lower contact. Fol @ 45-80 DTCA. Basal contact @ 70 DTCA.

1542.0 1545.6 Porphyritic Syenite.
Sequence cut by a dyke porphyritic syenite, which has a brown red colour, is quite hard, mod mag, and non calcitic. This unit Contains well rounded to angular, well dev phenos of feld, within a fine grained matrix. This unit is mineralz w/ 1% fine diss py. Contacts for this unit @ 40/60 DTCA.

1545.6 1554.8 Altered Gabbro.
Sequence cut by a dyke of highly alt gabbro, which is mod mag, quite hard, and non calcitic. Not well mineralz. Lower contact at 50 DTCA.

1568.7 1571.2 Blonde Alteration Zone Ochre Alteration Zone.
Um unit is highly alt w/ blonde and ochre alt which is well mineralz w/ 2-3% py.

1571.2 1572.9 Syenite.
Sequence cut by a dyke of syenite, which is orange red in colour, mod mag,

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

non calcitic, and well veined w/ qtz +- ank. Mineralz is very well dev within this unit at 3-5% py. Contacts for this unit @ 50/60 DTCA.

1582.2 1582.3 TIMISKAMING GROUP

1582.3 1852.0 TUFF

Contact into an alt tuffaceous unit, which grades into a more agglomerate type rx unit. This sequence also contains a komatiite unit between 1590.0 1591.8. Tuffs in this unit are typically grey to dark w/ blond and ochre alt bands. This unit is quite hard, mod mag, and non calcitic. These rx are med to med coarse grained & have a gritty feel. Mineralz is concentrated within alt bands @ 2-3% py. Agglomerates within this sequence range in colour from light grey to dark grey. This unit is fairly hard, variably mag, and in non-calcitic. Fragments in this agg range in size from mm to 2cm. These fragments range in shape from angular to sub-angular, although most appear elongated or flatened. Fragments include: qtz, mafics, and feldspar contained within a fine grained matrix.

1584.5 1587.4 Ochre Alteration Zone Blonde Alteration Zone.
This unit is fairly well mineralz w\ 1-2% fine diss py.

1590.0 1591.0 Ultramafic Komatiite.
Contact into a typical komatiite which is blue black grading to a pale green, suggesting weak fuchsite alt.

1643.0 1643.3 Quartz.
A fairly large qtz vein cuts this unit at 70\70 DTCA. Not well mineralz.

1650.8 1667.9 Agglomerate.
Gradational contact into a more agg type rx sequence, with a qtz vein at 1659.7 for 15cm at 80/60 DTCA. Agg in this sequence are grey in colour with a slight beige blonde alteration colour change. This sequence is mineralz with tr py and up to 2% locally.

1672.7 1674.3 Tuff.
Gradational contact into a bleached blonde beige tuffaceous unit which is well mineralz with 2-3% fine dis py.

1677.8 1685.0 Ochre Alteration Zone.
Gradational contact both upper and lower. Fairly well mineralz w/ 1-2% fine diss as well as coarse euhedral py.

1706.7 1715.0 Agglomerate.
Gradational contact into grey coloured, fairly hard, variably mag, and non-calcitic agg rx unit. This unit has a distinct banded look and is not well mineralz. Frags within this unit continue to be elongated.

1712.7 1713.1 Quartz.
Sequence cut by a milky grey qtz vein at 50/80 DTCA. Not well mineralz.

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

1733.9 1734.8 Quartz.
Sequence cut by a milky grey qtz +- ank vein which contains tr orange hematite staining. Mineraliz with 1% py. Contacts at 80/80 DTCA.

1783.4 1787.4 Broken Blocky Core w/ Gouge.

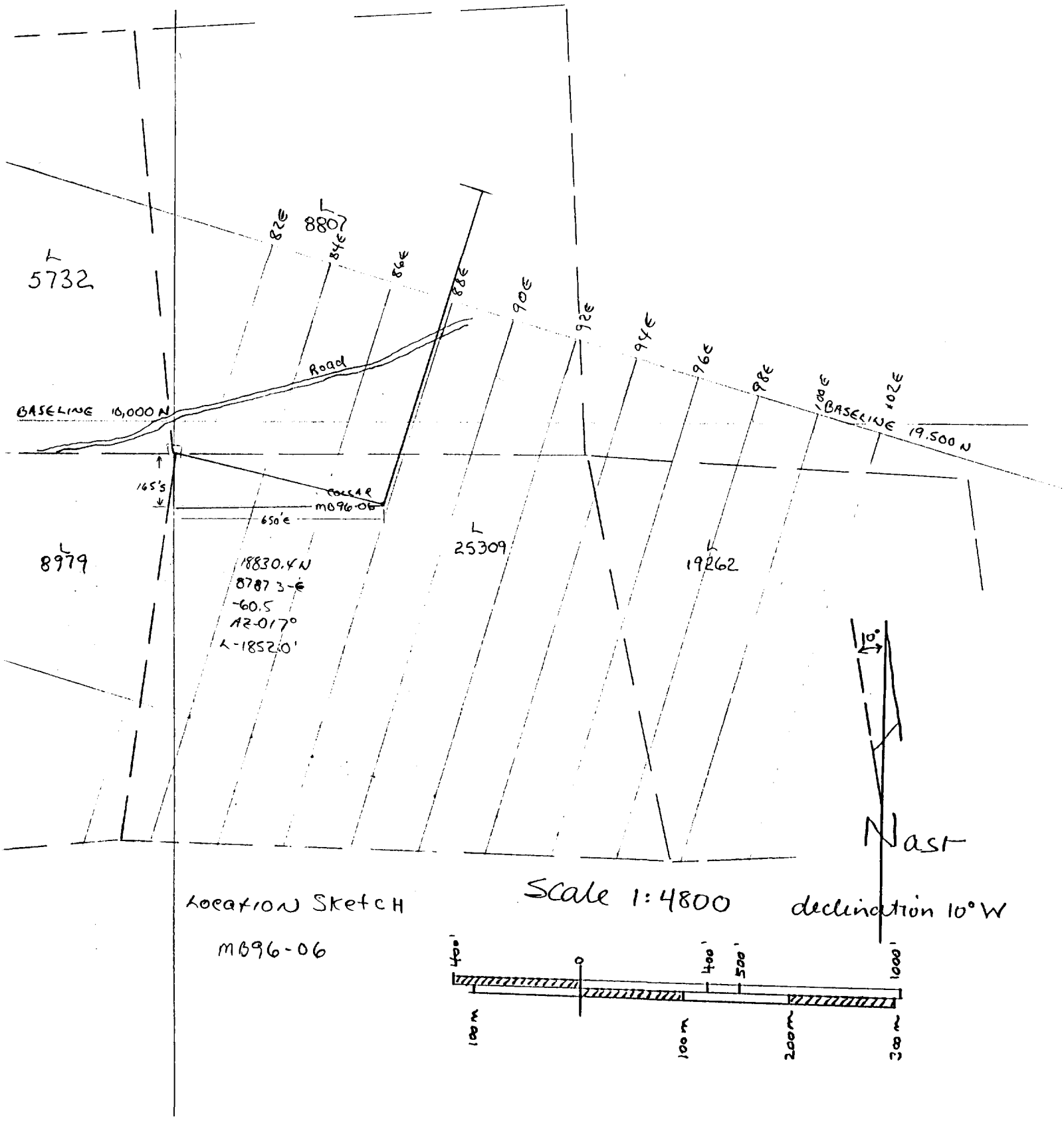
1816.3 1818.5 Quartz Vein Zone.
Sequence cut by two qtz veins @ 1816.3 for 6cm @ 80/80 DTCA, and @ 1817.1 for 10cm @ 70/80 DTCA. Mineralz w/ 1% py.

1817.5 1852.0 Tuff Agglomerate.
Tuff/Agg sequence continues. It gradationally changes from one sequence to the other. This sequence remains fairly hard, non magnetic, and non calcitic. Fragments continue to remain elongated and banded appearance continues till EOH. Banding continues to be quite contorted. Ochre and blond alt bands tend to decrease w/ depth, and there is no alt banding after 1841.3.

1832.8 1837.1 Blonde Alteration Zone.
Gradational contacts into a bleached alt zone, which is well mineralz w/ 2-3% py.

1840.3 1841.3 Blonde Alteration Zone.
Gradational contact into a bleached alt zone, which is well mineralz w/ 2-3% py.

1852 Feet- End of Hole.

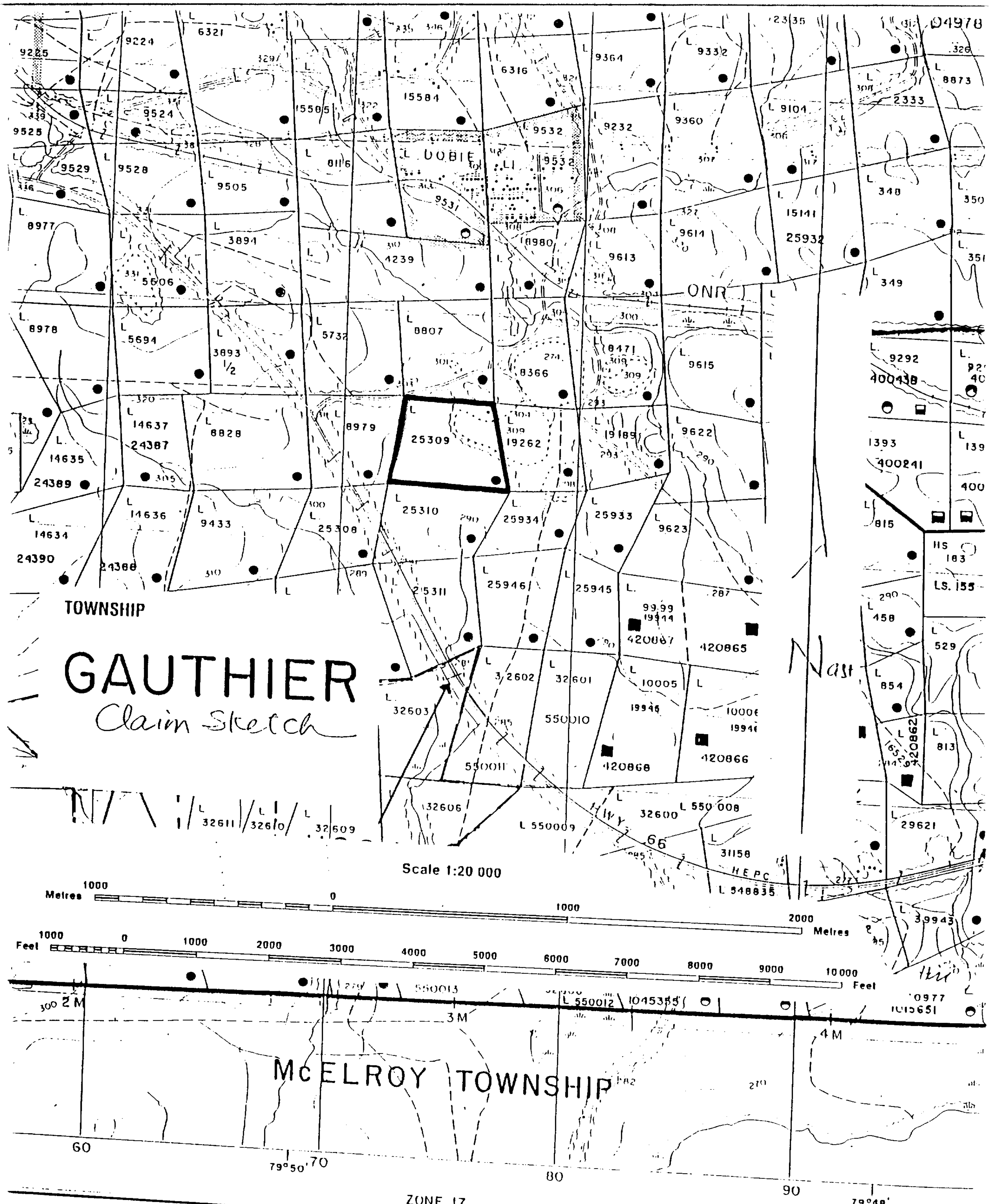


Location Sketch

MB96-06

Scale 1:4800

declination 10° W



TOWNSHIP
GAUTHIER
Claim Sketch
Scale 1:20 000
Metres 1000 0 1000 2000 Metres
Feet 1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10 000 Feet
McELROY TOWNSHIP
ZONE 17
79°50'
79°48'
60
70
80
90
2 M
3 M
4 M
ONR
HWY 66
L DOBIE
HEPC
Nast
25309
25310
25311
25934
25933
19262
8366
8807
8979
32603
32602
32601
550010
550011
420868
420866
420865

QUEENSTON MINING INC

Drill Hole: MB96-07

DIAMOND DRILL HOLE RECORD

Property: MCBEAN Col loc from #1 post, L19262, 100'S, 210'W
Northing: 19231.90
Easting: 10247.00
Elevation: 10983.60

Collar Azimuth (Grid) 351.9
Collar Dip: -64.0
(0 Degrees Grid equals 017 degrees True)
Hole Length: 1466.2

Date Printed: 22 May, 1998

*** Dip Tests ***			*** Dip Tests ***		
Depth	Azi.	Dip	Depth	Azi.	Dip
92		-63.5	1197		-61.0
295		-62.5	1353	344.0	-59.0
902		-63.5			

Date Started: October 28, 1996
Date Completed: November 4, 1996

Drilled by: BENOIT
Core Size: BQ
Material left in hole BX CASING
Core Location: Upper Canada Site 1
Logged by: D. Alexander & D. Schonfeldt

Dave R Alexander J Schonfeldt

From (ft)	To (ft)	Geology
		SUMMARY LOG
.0	91.8	OVERBURDEN
91.8	699.0	GABBRO
699.0	763.0	ALTERED GABBRO ULTRAMAFIC KOMATIITE
763.0	763.1	START OF DEFORMATION ZONE
763.1	775.7	ULTRAMAFIC KOMATIITE
775.7	783.0	PORPHYRITIC SYENITE
783.0	848.4	ULTRAMAFIC KOMATIITE
848.4	891.3	GABBRO
891.3	894.2	PORPHYRITIC SYENITE
894.2	906.8	ULTRAMAFIC KOMATIITE
906.8	933.9	PORPHYRITIC SYENITE
933.9	1018.2	GREEN CARBONATE ZONE
1018.2	1075.2	ULTRAMAFIC KOMATIITE
1075.2	1134.0	GREEN CARBONATE ZONE
1134.0	1203.4	ULTRAMAFIC
1203.4	1215.0	SYENITE
1215.0	1280.0	GREEN CARBONATE ZONE

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

2.18128

From (ft)	To (ft)	Geology
1280.0	1320.0	TUFF
1320.0	1466.2	TUFF TIMISKAMING GROUP

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

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

.0 91.8 OVERBURDEN
0- 9.8 Boulders; 9.8-78.7 clay; 78.7-91.8 Boulders.
The tropari test at 1353 feet -59d 344az was not used.

91.8 699.0 GABBRO
Collar into a complex of gabbroic rocks typical of the broad zone that is hanging-wall to the deformation package - i.e. Gabbroic rocks with basaltic sections, both of which are cut by dykes of diorite and more elusive mafic intrusives.
The gabbro is characterized by both feldspathic and hornblende-rich varieties, with a mix of grain sizes apparently due to a whole series of intrusions/pulses or phases. The feldspathic variety ranges from medium to dark green to locally black in colour with readily recognizable plagioclase in a somewhat network pattern surrounding mafic minerals and chlorite-altered mafic equivalents. Plagioclase is variably stained or altered with epidote. The hornblende-rich phase is normally darker green in colour with subovoid to rectangular phenocrysts of hornblende, which locally exhibit a cumulate texture in the coarser grained sections. Both phases vary from fine to coarse grained with contacts between phases normally being diffused and irregular. Finer grained phases are more often noted around accessory fracturing or at contacts with other units.
The gabbros are moderate to strongly magnetic with the strongest magnetism not being specifically associated with one phase over another, although some of the finer grained, hornblende-rich varieties are most often strongly magnetic. The gabbros are also 'dirty' intrusives with a mixed collection of included material - normally irregular mafic inclusions up to 3 cms in size. The rocks are variably altered with chlorite and epidote plus or minus sections of amphibolitization. The core is also moderately fractured with fine stringers to hairline fractures filled with calcite. In areas with accessory fracturing, the host becomes pervasively calcitic.
Mineralization in the system is minor in amount - a combination of hematite and pyrite. Hematite, although not always easily identified, is common throughout, usually along fractures and slip faces, and, imparting a reddish colouration to the rock. Pyrite is minor in amount and is usually found associated with the later felsic (dioritic) dykes, or associated with some pitted and vuggy calcitic fractures (none at the top of the hole here).
Also typical to the gabbro complex are dioritic dykes. These dykes cut the gabbro units and similarly contain irregular mafic inclusions up to a few centimeters in size. Diorites range from dull grey to grey red in colour to much more pinkish and orange red tones depending on the amount of carbonate fracturing plus or minus hematite staining. Dykes are harder and more siliceous than the gabbro units and are essentially composed of feldspar (plagioclase), with minor quartz and 10 to 20% mafic minerals ranging from acicular to bladed amphibole to a fine speckling and fracturing with chlorite plus or minus biotite. Contacts with the gabbro units may be irregular but are usually sharp with inconsistent chilled to alteration effects of the adjacent rocks. Units are normally weakly, if not moderately, magnetic. Feldspars are also locally stained with epidote and/or hematite.
Intermittently within the system, there are also very fine grained mafic intrusives. Colours range from dull grey green to grey red with various reddish tones to earthy-looking rocks that are brownish to bluish grey green

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

and almost turquoise coloured. They are normally very fine grained with or without a finely felted texture, calcitic, magnetic and contain bladed to acicular amphibole or amphibole pseudomorphs, as well as mafic blebs. Acicular amphibole pseudomorphs are most common near contact zones.
Selected units within the gabbro complex include :.

91.8 94.5 Diorite,grey to beige coloured and medium to coarse grained with more grey red sections around calcitic fractures and a dull grey green lower contact zone below 93.4 feet. The dyke contains scattered mafic inclusions to 8 mm in size, is moderately magnetic and is weakly mineralized with pyrite. The lower contact is sharp and chilled at 67 degrees.

99.1 101.3 Diorite pinkish grey and blocky from fracturing at shallow angles to the core axis. Contacts at 34/14 degrees. Moderately magnetic.

112.2 115.5 Diorite pinkish grey, medium grained, weakly magnetic with a 4 cm mafic inclusion at its upper contact. Both contacts broken.

116.3 117.6 Diorite orange red, stained and blocky from fracturing. Contacts broken - lower contact appears to be at 45 degrees. Diorite is fine grained, magnetic and has numerous chlotite-hematite plus or minus calcite slips.

123.3 124.4 Diorite again blocky from fracturing. The upper contact here is leached and weathered to an orange red colour over 8 cms - the balance of the unit is pinkish grey. Upper contact broken, lower contact irregular averaging 38 degrees.

140.8 141.9 Diorite dull grey with a pinkish grey central zone at 50/45 degrees having sharply gradational contacts with the grey dyke - almost as if two dioritic phases are present. Outside contacts of the larger dyke are broken but appear to be at 61/64 degrees. Weakly magnetic throughout.

146.6 151.8 Diorite grey, medium grained with scattered orange red to red fractures healed with hematite and carbonate. Contacts broken at 54/64 degrees.

155.0 157.0 Diorite dull grey red, blocky, pervasively calcitic. Contacts are irregular at 70/80 degrees with the adjacent gabbro being fine grained, streaky, chloritic and calcitic over 8 cms and 12 cms respectively. Minor pyrite.

164.9 166.6 Diorite medium to coarse grained, beige to grey red in colour with some epidote-altered feldspar at the upper contact. Contacts at 47 degrees.

166.6 168.6 Mafic intrusive dull reddish grey green, very fine grained with mafic blebs to acicular pseudomorphs. The dyke is blocky and appears to cut a dyke of diorite. The unit is magnetic, pervasively calcitic, contacts broken at 47 degrees.

168.6 175.1 Diorite continuation of the medium to coarse grained dyke, grey to grey beige with pinkish to orangish tones around fracturing. Contacts at 47/35 degrees.

175.7 177.3 Diorite dull greyish to grey red, fine grained. Upper contact irregular to ragged, lower contact at 41 degrees.

179.6 182.8 Diorite with a central, chloritic, very fine grained inclusion and chloritic fracturing from 181.1 to 181.7, or, two dykes at 75/57 and 57/47 degrees. Two dykes are probably true since the

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

upper dyke is much more orangish to reddish than the lower, greyer unit. Both dykes are magnetic but the lower unit is more notably porphyritic.

184.6 187.7 Mafic intrusive (??), a fine grained, dark green, pervasively calcitic unit with much of the carbonate stained reddish in colour. Weakly to moderately magnetic. Upper contact at 65 degrees, lower contact broken.

187.7 188.0 Diorite, medium grained, dull grey red. Contacts broken. For 10 cms below this dyke the core is very fine grained and chloritic as if part of the overlying mafic intrusive - a more exact determination here is unclear.

At 189.8, Diorite, 3 cms, reddish grey at 13 degrees.

198.8 199.4 Diorite, very fine grained, dull grey in colour at 48/42 degrees.

202.9 206.1 Diorite grey to orangish with accessory orange staining from hematite around some fine fractures. Trace pyrite. Contacts are irregular averaging 48/58 degrees.

At 238.7, Diorite, 4 cms, pinkish grey, medium grained at 53 degrees.

260.3 263.4 Diorite pinkish grey, medium grained, with local orange red staining along fractures, variably magnetic, particularly in the greyer sections, contacts at 60/50 degrees.

264.1 265.7 Diorite pinkish grey, medium grained, some orange red fractures, contacts at 60/78 degrees.

265.7 317.0 Area with pervasive calcite. Most of the rock in this section is gabbro although there are amphibolitized units of potential basalt, and a couple of dykes of mafic intrusive. Some accessory fracturing combined with a few of the pitted and vuggy fractures contribute to the pervasive calcite here and, sections of blocky core.

266.9 269.2 Fob (?), a very dark green to almost black, fine grained, foliated, amphibolitized section with a moderately developed foliation at 45 to 60 degrees. Local patches appear gabbroic but the majority of the rock here is very fine grained and granular textured with amphibole and calcite. The unit is moderate to strongly magnetic and contains traces of pyrite. Contacts at 47/62 degrees - the gabbro below this section also being foliated and calcitic.

272.3 272.9 Ultramafic Komatiite - a black, very fine grained unit with amphibolitized contacts at 37/43 degrees. The rock is moderately soft and chloritic, and is weakly to nonmagnetic.

274.5 277.4 Mafic intrusive a dull grey green to brownish unit with a local bluish cast at 52/67 degrees. The unit is magnetic, calcitic, and contains some relict amphibole. Contacts are sharp and fairly well defined.

279.9 284.4 Mafic intrusive another very fine grained dyke with a finely granular texture and acicular to lensoid and tabular blebs of mafic material throughout. Rock is magnetic, calcitic, unmineralized. Contacts at 35/60 degrees.

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
284.4	285.4	Basalt a fine grained, dark, amphibolitized section between two mafic intrusives.								
285.4	286.7	Mafic intrusive fine grained, dull grey to reddish grey, foliated at 30 to 35 degrees, with mafic blebs stretched parallel to the foliation. Contacts at 54/25 degrees. Below this zone to 289.1, the rocks are amphibolitized calcitic and foliated at 20 to 30 degrees with some accessory veining and, what look like narrow mafic intrusives locally subparallel to the foliation.								
294.5	295.2	Mafic intrusive (?), a narrow, fine grained section of possible mafic intrusive at 10/25 degrees. The unit is foliated with stretched mafic blebs, and has sharp, well defined contacts. Dark green to reddish green in colour.								
317.7	322.5	In this section the gabbro has graded to the more normal feldspathic variety and is only weakly calcitic. The core remains blocky, however, over this short interval and is cut by, or includes some very fine grained dioritic (?) material. The units are grey to putty coloured and more siliceous than either the gabbro or the previous mafic intrusives. Most contacts are at shallow angles to the core axis, and due to the blocky core, it is difficult to get a clear picture of the units in general. The largest dykelet is at the base of the system from 321.9 to 322.5 at 42/60 degrees. It is very fine grained to amorphous, siliceous, magnetic, weakly altered with epidote and is in contact with coarse grained feldspathic gabbro.								
332.4	333.5	Diorite dull grey, blocky, mottled, magnetic. Contacts at 28/42.								
335.8	336.4	Diorite dull grey, blocky, medium grained. Contacts at 57/52.								
339.2	340.6	Diorite dull grey to grey brown, medium grained, magnetic, very irregular contacts.								
346.1	346.9	Diorite dull grey to grey brown, blocky, with epidote alteration of dyke and along fractures. Contacts are broken and irregular.								
351.4	354.7	Diorite grey, coarse grained, siliceous. Contacts at 40/77 degrees - lower contact broken.								
355.0	356.8	Diorite grey, coarse grained, magnetic, contacts at 60/53 degrees.								
358.4	359.0	Diorite grey, fine to medium grained, contacts irregular with veining.								
364.7	368.4	Diorite grey, medium to coarse grained, magnetic, contacts at 70/52.								
368.8	369.9	Diorite grey, fine to medium grained, magnetic, contacts at 45/55 degrees - lower contact broken.								
369.9	373.2	Basalt (?) - a granular, calcitic, amphibolitized section grading more strongly foliated over the basal two thirds of the unit before another diorite dyke. The foliation is subparallel to the dyke contact at 30 degrees.								
373.2	374.5	Diorite dull grey with a reddish cast, fine grained, calcitic, magnetic, blocky. Contacts broken at 30/50 degrees and irregular.								
378.6	380.0	Diorite dull grey, fine grained, contacts broken - uper at 30 degrees.								
400.7	402.2	Diorite pinkish grey, fine grained with orange coloured healing of some fine fractures. The dyke is magnetic, partly bleached.								

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
		Contacts at 60/57 degrees. Below the dyke, the gabbro is fine grained, partly bleached to grey and grey green with scattered reddish tones to 409.1. This section on a first pass looks like a mafic intrusive although more characteristic gabbroic textures are developed with depth.								
422.0	427.6	Diorite grey to pinkish grey, fine to medium grained, fractured, carbonated, blocky, magnetic. Contacts at 46/49 degrees. The gabbro above this unit is also calcitic as the just previous section that looks like a mafic intrusive - up section here to 420.1.								
435.4	454.1	Gabbro, carbonated. Irregular contacts to a dull reddish green to brownish grey section of carbonated gabbro that at first appears to be a mafic intrusive but on closer inspection looks to be a fine grained phase of gabbro that is granular textured with accessory calcite that locally grades amphibolitic. The rock is weakly magnetic, contains numerous fine mafic blebs some of which are crudely acicular, is strongly calcitic, and is finely sprinkled with epidote and chlorite alteration particularly at the top of the zone. The upper contact appears to be sharp but broken with the lower contact being sharply gradational into more normal hornblende gabbro below a calcite vein. Aside from the upper few feet, typical hornblende gabbro features are noted throughout - the accessory reddish calcite and local amphibolite being the alteration product which looks distinctive.								
467.2	481.0	Gabbro, carbonated. A second unit of hornblende gabbro that has been totally invaded with reddish carbonate and has a central zone that is amphibolitic. The top of this section is very fine grained and moderately foliated over 25 cms with a sharply gradational colour boundary at 479.5 marking a change to basal rocks with less reddish carbonate. A 3.5 cm foliated section at the base, at 50 degrees, marks the end of the reddish carbonate totally. The rock varies from dark reddish green to brownish and almost black, is granular textured, strongly calcitic, moderately foliated at 30 to 60 degrees, and is weakly to moderately magnetic. Contacts are at 70/50 degrees. Most of the gabbro in this area is hornblende-rich, and quite variably calcitic.								
530.5	541.5	Gabbro, carbonated. Again, another strongly calcitic interval with an irregular invasion of reddish carbonate, some amphibolitized sections, and some foliated sections. Unlike the two previous zones the variation in reddish carbonate and foliation is much more irregular here, although as before, hornblende gabbro is the assumed host. The upper contact zone appears to be brecciated with accessory carbonate invading along fractures over 20 cms - the lower contact sequence is gradational. Rocks are moderate to strongly magnetic. Trace pyrite.								
550.6	551.0	Diorite fine grained, pale pinkish grey to orangish, carbonated								

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

and locally pitted, weakly magnetic, contacts broken at 65/58 degrees.

592.4 593.7 Gabbro, dull grey green, coarsely granular textured with mafic blebs throughout and strongly calcitic. This unit is of interest in that it is a gabbro section with sharp contacts at 72/67 degrees - the rock is a relatively normal gabbro except for its strong calcite content and that it is weakly to nonmagnetic.

At 597.2 - diorite, pale pinkish, 4 cms at 67 degrees.

599.9 630.2 Gabbro, another section of gabbro that has been invaded by reddish carbonate plus some localized amphibolitization. The rock is strongly calcitic, weakly magnetic and coarsely granular textured with the outside contacts marked by a return to the more normal feldspathic gabbro. Contact zones are gradational over some 4 feet at the upper contact and 25 cms at the lower contact. There are also two narrow dykes of pale pinkish diorite in the upper contact zone as 3 cms at 57 degrees at 602.4, and 602.9 to 603.5 at 45/40 degrees.

644.7 648.9 Gabbro, reddish to brownish, calcitic, fine grained and magnetic with a duller grey section from 647.7 to 648.2 at 38 degrees that contains coarse pseudomorphs of hornblende and amphibole to 5 mm in size - a mafic intrusive (?). Below the intrusive section the core is moderately foliated and more strongly chloritic. Contacts are relatively sharp at 22/41 degrees.

650.1 652.0 Gabbro, foliated, calcitic, partly amphibolitic, magnetic with relatively sharp contacts at 70/52 degrees. There is some kinking of the foliation here but the kink axis is a little obtuse to yield a bearing.

654.2 655.9 Gabbro to mafic intrusive - relatively sharp contacts here to what appears to be a chloritic, calcitic, mottled feldspathic gabbro with coarse pseudomorphs of hornblende and amphibole to 8 mm in size. Contacts are sharp but broken at 52/42 degrees.

670.4 694.1 Gabbro, invaded with reddish carbonate and becoming coarser grained below 674.5 with strong calcite and variable amphibolitization. This zone is also variably magnetic although normally weakly so, and there are trace amounts of pyrite locally. Contacts at 60/45 degrees - lower contact broken.

694.1 699.0 Basalt (?), - lower contact zone. Contact into a short, very fine grained, chloritic sequence that appears to be a basalt. The rock is dark green to almost black, moderately soft, moderately foliated, noncalcitic and variably magnetic. There is one, narrow, calcitic gabbro section in this zone from 696.3 to 696.9 at 17/32 degrees. This unit marks the contact to komatiitic rocks with the lower contact being very fine grained, black, and cooked over 9 cms. Lower contact broken at 39 degrees.

699.0 763.0 ALTERED GABBRO ULTRAMAFIC KOMATIITE

Contact into a sequence of intercalated gabbroic and komatiitic rocks with a couple of potential dykes of altered diorite. While the presence of ultramafic komatiite is generally indicative of the start of the Deformation

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

Zone, effects of deformation are not readily apparent until below 763 where the ultramafic becomes much more strongly carbonated (ankerite plus calcite) and is highly contorted.
The dominant rock type in this package is carbonated gabbro - the brownish to reddish units viewed as altered zones in the hanging-wall sequence. Rocks are coarsely granular textured with calcite, are variably amphibolitic, magnetic, and are weakly to moderately foliated at 60 to 65 degrees. The gabbros are totally invaded/metamorphosed with calcite and amphibole.
The ultramafic member is very fine grained, soft to unctuous in feel and ranges from blue black to bluish grey, dark green and black in colour. The ultramafic is variably magnetic and is locally overprinted with calcite. Ankerite is not a common component until below 763.
The system breakdown includes :.

699.0 713.1 Ultramafic Komatiite with dark green to black alteration patches of chlorite and fine amphibole to 5 cms in size. There is about 5 mm of gouged/granulated core apparent along the upper contact plus some granulated core at 700 over 4 cms, some fine muddy slips between 710.8 and 711.2, and, some fine muddy slips over 12 cms at the basal contact.

713.1 714.0 Gabbro, a very fine grained, blocky, foliated, amphibolitized section that probably represents a foliated upper contact to the ensuing carbonated gabbro although this is unclear due to the blocky and broken nature to the core.

714.0 730.6 Gabbro, dull reddish grey green and brownish to black carbonated gabbro. The rock is coarsely granular textured with calcite and is amphibolitized to 724, below which the rock grades finer grained and dull grey green in colour. Foliated at 55 to 60 degrees. Both contacts broken.

730.6 731.3 Ultramafic Komatiite dark green to blue black.

731.3 733.1 Diorite (?), an unusual grey, siliceous, moderately calcitic dyke with moderately well developed metacrysts of plagioclase to 5 mm in size in a fine grained, dull grey matrix. Some amphibolitization at contacts, with a trace of mud at the lower contact. Contacts at 35/50 degrees.

733.1 735.1 Ultramafic Komatiite blue black.

735.1 738.1 Carbonated gabbro, calcitic, granular, amphibolitized, with a much finer grained, calcitic, reddish dyke of either a fine grained gabbro or a mafic intrusive from 736.6 to 737.7 at 37/55 degrees. Outside contacts of the gabbro section are at 40/55 degrees - upper contact broken.

738.1 738.6 Ultramafic Komatiite dark green to blue black, very fine grained.

738.6 745.4 Carbonated gabbro, reddish to brownish with local greener calcitic sections. There are 6 cms of blue black ultramafic at the lower contact. Contacts are at 62/42 degrees.

745.4 747.1 Diorite (?), a dull reddish, siliceous dyke that is moderately overprinted with calcite, moderately magnetic, and, like the previous diorite, has moderately developed feldspar phenocrysts to 5 mm in size.

747.1 748.9 Gabbro, reddish to brownish, granular textured, strongly calcitic. Contacts are at 42 degrees - lower contact irregular.

748.9 749.8 Ultramafic Komatiite black to blue black with pinkish calcite

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

streaks.

749.8 753.8 Carbonated gabbro with some narrow ultramafic horizons up to 8 cms in size. Contacts at 45/28 degrees.

753.8 757.1 Ultramafic Komatiite black to blue black with discontinuous, calcitic streaks and stringers.

757.1 758.6 Carbonated gabbro, variably amphibolitized, contacts at 55/48 degrees.

758.6 759.5 Ultramafic Komatiite dark green to blue black with white to pinkish and locally brownish calcitic streaks.

759.5 763.0 Carbonated gabbro, coarse granular texture, strongly calcitic, magnetic, dark reddish to brownish and black, partly amphibolitized. The upper contact is streaky here - the lower contact is sharp. Contacts at 40/58 degrees. Below this unit the rocks become much more highly contorted and deformed as the influence of the Deformation Zone begins.

763.0 763.1 START OF DEFORMATION ZONE

763.1 775.7 ULTRAMAFIC KOMATIITE

Contact into a unit of komatiitic ultramafic that appears to mark the start of the Deformation Zone by a transition from calcitic to ankeritic carbonate, a strong milky to greyish ankerite presence in the rock and the rocks become dramatically more deformed with highly contorted streaks, stringers and discontinuous lenses of carbonate. The ultramafic is black to blue black in colour, weakly magnetic and strongly altered. The foliation in the system, enhanced by carbonate streaks et al tends to run nearly along the core axis with axes to kinked and contorted sections being at a wide variety of core angles. There is also some streaky brownish alteration associated with calcite around the top of the zone. Pyrite mineralization is minor in amount but there are some local aggregates in the system.

769.4 771.0 *Carbonated Gabbro a narrow, grey brown to brown and reddish* granular carbonated gabbro - carbonate is ankerite with a local weak reaction to calcite around fractures. The internal parts of this unit are contorted while the outside contacts are clean and sharp at 68/50 degrees. Trace to 1% pyrite around some fractures plus scattered fine blebs of hematite.

The lower contact is sharp at 48 degrees.

775.7 783.0 PORPHYRITIC SYENITE

Contact to a pale to dull orange coloured syenite dyke with moderately well developed phenocrysts of plagioclase throughout. The rock, aside from the visible metacrysts is very fine grained to amorphous. The unit is hard, siliceous and variably flooded with quartz around some irregular veining. Pyrite mineralization is minor with more of the aggregate style along fracture intersections than finely sprinkled pyrite throughout.
From 778.7 to 779.9, the dyke is fractured with ultramafic material running along the core axis. Then, from 780.3 to 780.6, there is a reddish to brick coloured carb rock effectively running along the core axis with a further patch from 781.8 to 782.3. These sections seem to barely cut the core axis.

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They consist of lenses to streaks and blebs of reddish ankerite in a dark matrix that may be indicative of ultramafic or one of the carbonated gabbro units that has been thoroughly altered.
None of these rocks are magnetic. There is a local greying of the dyke around accessory alteration.
The lower contact is sharp although a litte irregular at 29 degrees.

783.0 848.4 ULTRAMAFIC KOMATIITE

Contact into the deformation zone style of ultramafic komatiite characterized by soft, foliated, blue black to black, talcose ultramafic rocks with a variable ankerite component expressed as streaks, stringers, discontinuous layers and blebs of carbonate which tend to enhance the foliation which varies from 25 to 55 degrees. Komatiites within this sequence are broken, blocky and granulated with trace gouge in areas. Mineralization within the system is poor with only trace pyrite. Included within the sequence is a zone of altered gabbro.
Gabbro ranges in colour from brown orange red to brown red. There is also a mafic intrusive within the gabbro zone which may be the cause for the colour variation. This zone is strongly magnetic and does not react with HCl. Stringers and blebs of ankerite up to 5 mm wide are present within this sequence along with angular flecks of amphibole up to 1 cm. The gabbro is fairly well mineralized with 1-2% pyrite. Veining is poor. Contacts are at 30/60 degrees.

783.0 797.2 Komatiite, blue black, soft, variably magnetic. Syenite dyke at 783.9 - 3 cms at 50/40 degrees. At 793.3, 12 cm quartz +/- ankerite vein at 80 degrees, and streaked with orange hematite staining.

797.2 811.1 Altered Gabbro with a mafic intrusion at 798.9 (12 cms), contacts shallow at 20 degrees. This zone also contains a small syenite intrusion at 810.9 (1 cm) at 70 degrees. Contacts for this section are shallow at 30/40 degrees, and this zone is fairly well mineralized with 1-2% pyrite - up to 3% at contacts with the mafic intrusion.

811.1 848.4 Komatiite, typical blue black colour, soft, variably magnetic. This sequence contains stringers and blebs of ankerite. Mineralization is poor with only trace pyrite. After 820, the core becomes broken and granulated with trace gouge until 840. From 836.5 to 838.0, quartz vein +/- ankerite, not well mineralized, contacts irregular.

Lower contact of the system at 60 degrees.

848.4 891.3 GABBRO

The gabbroic rocks within this sequence are highly altered, moderate to strongly magnetic and considerably harder than the previous komatiitic units. The rocks do not react with HCl. The sequence includes a couple of small ultramafic dykes as well as a larger komatitic zone from 879.8 to 881.8 at 60/70 degrees to the core axis. Also included in this sequence is a syenite intrusion from 882.9 to 885.5 at 70/80 degrees.
Between 889.5 and 891.3, there are three smaller syenite intrusions which

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

have altered the surrounding gabbroic rocks. Komatiites within this sequence are considerably softer than the surrounding rocks and retain their typical blue black colour. They also contain streaks and blebs of ankerite and are poorly mineralized.
The syenite units are a red-orange brown colour and contain stringers of ankerite as well as veins and patches of quartz +/- ankerite. Stringers and blebs of hematite are also visible within the syenites. Below 889.5, the syenite gains a porphyritic appearance with moderate to well developed phenocrysts of feldspar in the matrix. The syenites in this area are fairly well mineralized with 1-2% pyrite in a more aggregate type of dispersion.
Contacts for the gabbroic sequence are at 70 degrees.

848.4 879.8 Gabbro, with mafic intrusions at 864.9 (7 cms) at 70/60 degrees, and at 868 (5 cms) at 80/60 degrees. This gabbroic unit is mineralized with disseminated pyrite up to 1%.
879.8 882.9 Ultramafic Komatiite contacts at 60/70 degrees - typical, blue black komatiitic unit.
882.9 885.9 Syenite contacts at 70/80 degrees. This zone is orange-red brown in colour and contains stringers of ankerite as well as patches and veins of quartz +/- ankerite. Mineralized with 1-2% pyrite.
885.9 891.3 Gabbro, as previous. This unit is cut by three porphyritic syenite dykes at 889.5 - 11 cms at 70/80 degrees; 890.2 - 2 cms at 70/60 degrees, and; at 890.8 - 5 cms at 60/50 degrees.

891.3 894.2 PORPHYRITIC SYENITE
A brown red dyke that is weakly magnetic and does not react to HCl. The dyke contains moderate to well developed phenocrysts of feldspar as well as stringers and blebs of hematite more notable near upper and lower contacts. Stringers of ankerite are also visible within this sequence. Veining is poor but mineralization is fairly well developed with pyrite ranging between 2 and 3%. The matrix component is very fine grained. Contacts are sharp at 70 degrees to the core axis.

894.2 906.8 ULTRAMAFIC KOMATIITE
Contact into a typical komatiite sequence. The rocks are a blue black colour, soft, and variably magnetic. The colour of the ultramafic becomes increasingly pale green with depth suggesting weak fuchsite alteration. This sequence is foliated - average foliation being around 50 degrees. There is an ankerite component in this sequence expressed as streaks and stringers which mimic the foliation. Veining is well developed within this sequence, with two, large quartz +/- ankerite veins at 902.6 - 16 cms at 70 degrees; and 906.0 - 17 cms at 60/70 degrees, trace pyrite.
Mineralization is also fairly well developed with pyrite as both aggregates and finely disseminated.
Contacts of the sequence are at 70/80 degrees.

906.8 933.9 PORPHYRITIC SYENITE
Contact to an orange brown red syenite dyke with well developed phenocrysts of feldspar in a fine grained matrix. This unit is siliceous, quite hard, and nonmagnetic. The dyke contains stringers of ankerite as well as blebs of hematite. Quartz +/- ankerite veining is poor within this sequence as is

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

pyrite mineralization at trace to 1%. An ultramafic unit, consisting of komatiite as well as an altered gabbro cut this sequence. Also intersecting this unit is a purple banded section which appears tuffaceous in nature.
In the lower portion of the syenite, below the ultramafic intrusion, the rock develops a more blonde beige colouration and the phenocrysts are not as well developed. Contacts for this syenite are at 80/70 degrees.
Ultramafics within this zone are a typical blue black then fading to a pale green colour suggesting weak fuchsite alteration. Gabbros within this section are highly altered. Mineralization within the ultramafic unit is poor with only trace pyrite.
The tuffaceous unit grades from an ochre to beige colour and is not well mineralized except near contact zones where pyrite can reach 3%.

906.8 919.9 Syenite, siliceous, hard, nonmagnetic, orange red brown, with well developed phenocrysts of feldspar. Mineralization poor with 1% pyrite.

919.9 928.0 Ultramafic Komatiite with highly altered gabbro between 925.2 and 926.8. Komatiite is soft, foliated and typical blue black colour fading to a pale green with depth. Gabbro is altered to a brown red colour. Contacts for the ultramafic are at 70 degrees to the core axis.

928.0 928.8 Tuff fine grained with stringers of ankerite. Ochre to beige in colour. Mineralization is up to 3% and concentrated near contacts which are at 70/80 degrees.

933.9 1018.2 GREEN CARBONATE ZONE

Contact into an emerald green carbonate zone with syenite intrusions as well as blonde alteration sections. The carbonate within this sequence is moderately hard, variably weakly magnetic and generally does not react to HCl. The rocks are well veined with quartz +/- ankerite but are generally not well mineralized.
Syenites within this sequence range in colour from orange brown to red brown. They are siliceous and quite hard. They contain stringers of ankerite as well as quartz +/- ankerite veins and patches. Mineralization is modest with about 1% pyrite.
Blonde alteration zones within the sequence are generally nonmagnetic and have a hardness greater than typical green carbonate but less than the syenite intrusions.
Contacts of the green carb zone are at 70/60 degrees.

944.0 949.2 Gradational contact into a grey, apparent alteration band. The rock is milky to grey in colour with stringers of ankerite. Flecks of green carbonate are visible within this fine grained alteration near the bottom contact. Mineralization is nil.

951.0 953.5 Syenite dyke cutting green carbonate at 70/60 degrees. The syenite is an orange brown colour and contains ankerite stringers as well as quartz +/- ankerite veins and patches. This sequence is moderately mineralized with about 1% disseminated pyrite.

At 956.8 - quartz vein, 30 cms, milky grey, at 70/80 degrees. Only trace

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

pyrite.

At 959.9 - syenite, 13 cms, with quartz patches and veins at 70 degrees. Mineralization within this zone is well developed with 2-3% finely disseminated pyrite.

At 960.9 - syenite, 10 cms, with quartz veining at 60 degrees. This intrusion is fairly well mineralized with 2-3% pyrite.

At 969.0 - beige alteration, 30 cms, at 50/60 degrees with fragments of green carbonate up to 3 cms within it. Not well mineralized - trace pyrite.

971.8 974.2 Ochre Alteration Zone beige to ochre alteration. Contacts at 70/60 degrees. Fragments of green carbonate up to 3 cms as well as a couple of small quartz +/- ankerite veins. Not well mineralized - only trace pyrite.
974.7 975.9 Beige altered zone with quartz +/- ankerite veins. This zone is better mineralized than previous sequence with 1-2% pyrite.

At 976.9 - syenite, 19 cms, at 70/80 degrees to the core axis. This zone is well veined with quartz +/- ankerite but poorly mineralized with only trace pyrite.

At 989.0 - blonde alteration band, 6 cms, at 50 degrees. This band is fairly well mineralized with 1-2% finely disseminated pyrite.

996.8 998.0 Blonde Alteration Zone at 70/60 degrees. Mineralized with approximately 1% disseminated pyrite.

At 999.3 - syenite dyke, 9 cms, at 50/60 degrees. Well veined with quartz +/- ankerite. Mineralization is poor with only trace pyrite.

At 1011.5, blonde alteration, 17 cms, at 80 degrees. Well mineralized with 1-2% pyrite.

At 1014.4 - syenite dyke, 22 cms, cuts green carbonate at 60/70 degrees. This zone is well veined with quartz +/- ankerite as well as containing stringers of ankerite. Mineralization in this dyke is fairly well developed at 1-2% pyrite of the aggregate variety.

1017.3 1018.2 Syenite dyke at 70/60 degrees. Mineralized with 1-2% pyrite both disseminated and as aggregates.

1018.2 1075.2 ULTRAMAFIC KOMATIITE
An ultramafic komatiite with felsite and syenite dykes.
Contact into a typical komatiitic unit characterized by blue black, soft, foliated rocks which are weakly magnetic and do not react to HCl. This sequence contains stringers and blebs of ankerite which tend to mimic the foliation of approximately 45 degrees to the core axis. Veining is fairly well developed with quartz +/- ankerite. Mineralization is poor within the komatiitic zones with only trace pyrite.

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

The felsites are orange brown to ochre in colour, have a hardness < 7, and do not react with HCl. They are moderately magnetic. The felsites are medium grained and contain fragments of mafic material as well as quartz +/- ankerite patches and veins. Mineralization is well developed in the felsites with 1-2% pyrite and up to 3% locally.
Syenites in this sequence are a red brown colour and are well veined with quartz +/- ankerite. Mineralization is poor with only trace pyrite.
The breakdown of the sequence follows :.

At 1021.9 - syenite dyke, 9 cms, at 70/40 degrees. Well veined with stringers and patches of quartz +/- ankerite. Mineralization poor - trace pyrite.

1029.2 1030.1 Felsite dyke at 70 degrees. The dyke is modestly veined with quartz +/- ankerite, as well as being mineralized with 1-2% aggregate pyrite.

At 1030.9 - syenite dyke, 10 cms, at 80/60 degrees. Mineralized with trace to 1% disseminated pyrite.

At 1031.5 - felsite dyke, 13 cms, at 50 degrees. Well mineralized with 1-2% pyrite.

At 1037.4 - felsite dyke, 12 cms, at 50 degrees. Mineralized with 1-2% pyrite.

At 1039.2 - felsite dyke, 7.5 cms, at 50/60 degrees. Pyrite 1-2%.

1054.6 1058.5 Felsite dyke, with an inclusion of ultramafics at 1056.0 for 4.5 cms at 50/60 degrees. The felsite is well veined with quartz +/- ankerite as well as being well mineralized with 1-2% pyrite which locally reaches 3%. Contacts of the felsite are 60/50 degrees.

1058.6 1060.9 Syenite dyke at 60/50 degrees. This syenitic type zone has a beige to slightly red colouration, is moderately magnetic, hard, and does not react to HCl. The syenite contains a pseudoporphyritic section with poorly developed phenocrysts of feldspar between 1058.8 and 1059.5. This zone is fairly well veined with quartz +/- ankerite and is well mineralized with 1-2% pyrite.

1068.7 1075.2 Tuff (?). This unit appears tuffaceous in nature with visible lithic fragments on a mm scale which have been highly altered. The tuff ranges in colour from orange brown to ochre. It is fairly hard, moderately magnetic and does not react with HCl. Veining is not well developed. Mineralization is well developed with 1-2% disseminated pyrite. Contacts at 60/70 degrees.

1075.2 1134.0 GREEN CARBONATE ZONE

A green carbonate sequence with blonde alteration and possible tuffaceous units as well as scattered syenite dykes. The green carbonate within the

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

sequence ranges in colour from an emerald green to a more modest lime green. The rocks have a hardness of approximately 6, are slightly magnetic and do not react with HCl. The ankerite component is expressed as discontinuous streaks, stringers and patches of carbonate. The sequence is well veined with quartz +/- ankerite. Mineralization is poor with only trace pyrite, although it tends to improve to approximately 1% in the lime green sections. Syenites within the sequence do not appear until after 1115 and are red brown in colour, slightly magnetic, hard, and do not react with HCl. Mineralization is minimal with only trace pyrite.

At 1078.3 - 13 cm, brown alteration band or possible tuff at 70/60 degrees. Well veined with quartz +/- ankerite as well as being well mineralized with 1-2% pyrite.

At 1079.3 - blonde alteration (possibly tuff), 5.5 cms, at 60/70 degrees. Mineralized with only trace pyrite.

At 1080.1 - tuff, blonde beige colour, 10 cms, at 70/85 degrees. This inclusion appears tuffaceous in nature with highly altered fragments on a mm scale. Mineralization is fairly well developed with 1-2% pyrite.

At 1110.4 - tuff, blonde to orange, 14 cms, at 80/60 degrees. This unit is veined with quartz +/- ankerite as well as being fairly well mineralized with 1-2% pyrite.

1111.9 1114.0 Quartz - carbonate vein with ankerite at 40/80 degrees. Poorly mineralized with only trace pyrite.

At 1115.9 - syenite,7 cms, at 60/70 degrees cut by quartz veining. Fairly well mineralized with 1-2% pyrite.

At 1116.7 - syenite, 7 cms, at 60/70 degrees. Not well mineralized with only trace pyrite.

At 1117.9 - syenite, 10 cms at 70 degrees, trace to 1% pyrite.

At 1129.9 - syenite, 7.5 cms at 50/80 degrees, mineralized with 1-2% pyrite of the aggregate style.

At 1131.4 - syenite, 12.5 cms at 40/60 degrees, 1-2 % pyrite.

At 1132.4 - syenite, 30 cms at 40/60 degrees. This section appears to contain a number of smaller dykes intermittently cutting a quartz vein. This zone is not well mineralized with only trace to 1% pyrite.

Contacts for the green carb zone at 60 degrees.

1134.0 1203.4 ULTRAMAFIC
Ultramafic sequence with sections of syenite and tuff.
Fault contact into gouged komatiite. The komatiite is soft, slightly magnetic and does not react to HCl. The ankerite component is expressed as

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

discontinuous streaks, stringers and blebs of carbonate which mimic the foliation at 50 to 80 degrees to the core axis. This sequence appears slightly contorted especially near the upper and lower contacts where there is gouge as well as broken and granulated core. Contacts for the overall ultramafic sequence are at 60 degrees.
This zone is not well veined nor is it well mineralized with only trace to 1% pyrite. Pyrite is usually concentrated near contacts with syenite and tuff units and adjacent to some blonde alteration bands.
Syenites within this sequence are hard, brown red in colour and are very slightly magnetic. They are well veined with quartz +/- ankerite as well as being mineralized with trace amounts of pyrite.
Tuff zones within the sequence are hard, moderately magnetic, fine grained and do not react with HCl. Pyrite mineralization is between 1 and 3%.
Breakdown of this sequence is as follows :.

1134.0 1136.9 Fault Zone broken core with gouge and granulated sections as well as brecciated type rocks containing fragments of quartz, komatiite and weak green carb. Contacts for this sequence are hard to distinguish.

At 1136.9 - tuff,33 cms, upper contact at 80 degrees, lower contact indistinct. Well mineralized with 1-3% pyrite.

At 1143.6 - syenite dyke, 8 cms, at 50/60 degrees. Fairly well mineralized with 1-2% pyrite in aggregates.

At 1146.5 - syenite dyke, 13.5 cms at 80 degrees, 1% disseminated pyrite.

1147.6 1149.1 Syenite dyke with a weak porphyritic texture from poorly developed phenocrysts of feldspar. Contacts at 70 degrees. This zone is well veined with quartz +/- ankerite but is poorly mineralized with trace to 1% disseminated pyrite.

At 1149.3 - tuff, 27 cms, at 70 degrees. This tuffaceous unit is beige to grey beige in colour, is hard, slightly magnetic and does not react with HCl. This unit has a tuffaceous character as well as a chert component. It has a banded appearance and is not well mineralized internally, but the upper and lower contacts are well mineralized with 1-3% pyrite. The tuff is very fine grained and siliceous.

At 1154.5 - felsite dyke, 12 cms at 60/70 degrees. Beige in colour and well mineralized with 3-5% pyrite.

1157.5 1158.9 Tuff (?), or possibly just highly altered ultramafic. Contacts at 70 degrees. Well mineralized with 1-3% pyrite.

At 1163.6 - tuff (?), 25 cms at 70 degrees, 1-2% pyrite.

1175.0 1183.2 Fault Zone, broken core with gouge and granulated sections. One section of broken core at 1180 is a syenite. Ultramafics in this zone are moderately contorted.

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

At 1190.4 - quartz vein, 16 cms at at 70/40 degrees. Not well mineralized.

At 1192.3 - syenite dyke, 6 cms at 60 degrees, trace to 1% pyrite.

At 1193.1 - syenite dyke, 4 cms at 50/40 degrees, 1-2% pyrite.

1194.7 1196.6 Tuff this zone appears tuffaceous in nature but could be a highly altered ultramafic. The rock is quite hard and is strongly magnetic with flecks of what appears to be magnetite. Fairly well mineralized with 1-2% pyrite. Stringers of ankerite are common throughout. Upper contact sharp at 50 degrees, lower contact gradational.

At 1200.9 - quartz vein, 7 cms at 60 degrees. Modestly mineralized with only trace pyrite.

1203.4 1215.0 SYENITE
Contact into a fairly large syenite intrusion which ranges in colour from orange brown to red brown with the orange sections being slightly magnetic and the brown red sections being moderately magnetic. These rocks are hard and do not react to HCl. The zone is well veined with quartz +/- ankerite as well as containing stringers and blebs of ankerite. This syenite appears to contain small fractures which tend to hold the majority of the pyrite mineralization - at 1-2%. Contacts are at 80/50 degrees.
Ultramafics within the system are represented by komatiitic type rocks which are typical and are foliated at 50 to 70 degrees to the core axis. These komatiites tend to become a pale green colour towards the basal contact with a green carb zone. The ultramafics are not well mineralized with only trace pyrite.

1203.4 1208.6 Syenite, contacts at 80/50 degrees.
1208.6 1210.6 Ultramafic Komatiite contacts at 50/70 degrees.
1210.6 1211.4 Syenite,at 70 degrees, mineralized with 1-2% pyrite.
1211.4 1215.0 Ultramafic Komatiite with a couple of felsite dykelets at 1212.5 - 1 cm at 60 degrees; and 1212.8 - 1 cm at 70 degrees. Dykelets are mineralized with 1-2% pyrite, ultramafics are poorly mineralized with only trace pyrite.

1215.0 1280.0 GREEN CARBONATE ZONE
Contact into a green carbonate zone with syenite, felsite and tuff sections. The green carbonate rocks within this sequence range in colour from a dark emerald green to a pale light green colour. The rocks are fairly hard, variably magnetic and do not react with HCl. Veining within the zone is modest with only a few quartz +/- ankerite veins. Mineralization is better than in previous green carbonate zones with pyrite ranging from trace to 3% - lime green sections appearing to be better mineralized than emerald green zones.
Syenites within this sequence are brown red in colour, hard, slightly magnetic, and do not react with HCl. They are well veined with quartz +/- ankerite as well as being well mineralized with pyrite at 2-3%.
Felsites in the sequence are fine grained, equigranular, fairly hard,

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

moderately magnetic and do not react with HCl. The felsites are not well veined, but are fairly well mineralized with 1-2% disseminated pyrite as well as traces of specular hematite.
Tuffaceous sections within the sequence vary from beige to blonde in colour, are hard, weakly magnetic and do not react with HCl.
The breakdown of the sequence follows :.

At 1215.0 - syenite, 8 cms, at 50/40 degrees, not well mineralized.

At 1215.8 - syenite, 8 cms, at 50/80 degrees, well mineralized with 2-3% finely disseminated pyrite.

1219.8 1224.9 Felsite dyke at 60/75 degrees. This dyke is fairly well veined with quartz +/- ankerite as well as being well mineralized with 1-2% disseminated pyrite.
1224.9 1225.9 Tuff with a distinctly banded appearance. It is fairly well veined with quartz +/- ankerite but poorly mineralized with only trace pyrite. Basal contact at 70 degrees.
1226.3 1227.3 Tuff, contacts at 70/50 degrees. This unit resembles the previous section, but contains fragments of green carbonate within it. The tuff is not well mineralized - only trace pyrite.
1231.3 1232.0 Tuff, carbonated tuff, contacts 80/70 degrees, not well mineralized - trace pyrite.

At 1232.7 - tuff, carbonated, contacts at 70 degrees, not well mineralized.

At 1242.1 - felsite dyke, 12 cms, at 60 degrees. The upper contact is well mineralized with 2-3% disseminated pyrite, gradational lower contact into what appears to be a tuffaceous unit that has been altered by the felsite intrusion - tuffaceous unit has a gradational basal contact also into a felsite-type rock at approximately 1243.6 for 12 cms.

1245.8 1248.9 Felsite dyke at 60/80 degrees, well mineralized with 2-3% pyrite.
1249.7 1255.3 Tuff bleached, contacts at 80/60 degrees. This tuffaceous unit has a grey to pale green colouration, is hard, and variably magnetic. The unit has a speckled appearance due to the aggregate type of pyrite mineralization at approximately 1-3%. The zone is moderately veined with quartz +/- ankerite.
1260.1 1263.7 Tuff, contacts at 80/70 degrees. The tuff is pale green in colour, well veined with quartz +/- ankerite, and is well mineralized with 2-3% pyrite both as aggregates and disseminated.

At 1275.3 - tuff, blonde, 8.5 cms, at 70/80 degrees, not well mineralized.

1275.9 1277.9 Quartz vein at 60 degrees, milky to grey colour, not well mineralized.

1280.0 1320.0 TUFF

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

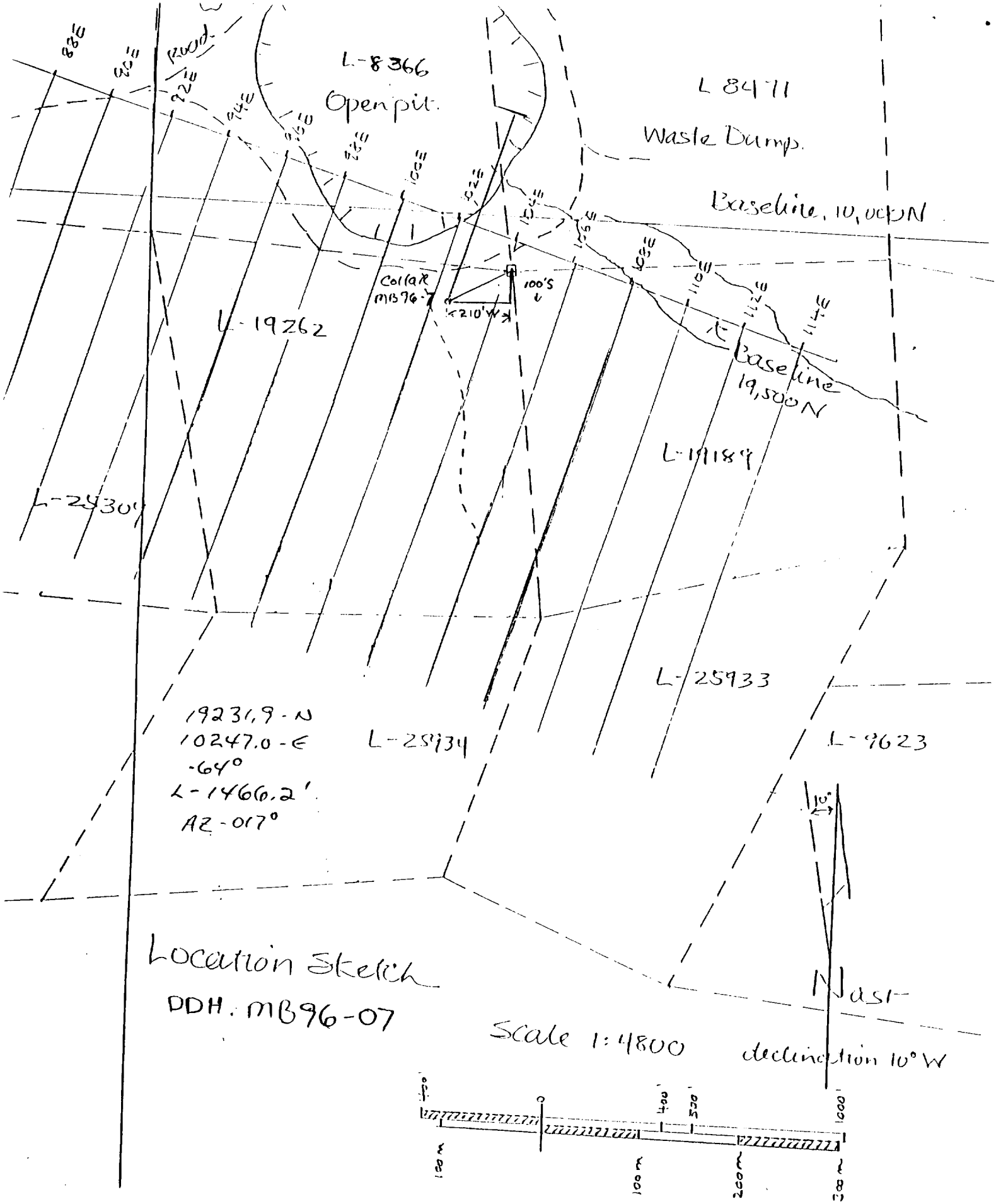
Contact into a bleached, carbonated tuff section - upper contact sharp at 50 degrees. This tuffaceous sequence begins as a lime green colour and gradationally becomes greyer with depth. The rocks are hard, slightly magnetic and do not react to HCl. Included within this sequence are zones of more typical green carbonate as full sections and as tiny fragments incorporated into tuffaceous type rocks. Contacts into green carb zones are generally gradational.
The tuffs are highly altered and generally fine to medium grained. They are modestly veined with quartz and weakly mineralized.
The breakdown of the sequence includes :.

1303.5 1306.5 Green Carbonate Zone contact into a fairly dark green carb zone which is well veined with quartz +/- ankerite but poorly mineralized with only trace pyrite. Contacts diffuse and difficult to determine.

At 1315, the tuffaceous unit begins to become greyer in colour with a gradational contact into a darker agglomerate/conglomerate type rock after approximately 1320. This probably represents the transition into Timiskaming type rocks.

1320.0 1466.2 TUFF TIMISKAMING GROUP
Gradational contact into a more agglomerate type rock sequence which is characterized by a light grey to dark grey colouration, with one pale green tuffaceous unit from 1373 to 1377. These agglomerate type rocks are hard, generally nonmagnetic and do not react with HCl. The sequence contains streaks, stringers and patches of ankerite. Fragments range in size from mm to 1 to 2 cms, and vary in shape from angular to quite rounded. Identifiable fragments include quartz, green carbonate, and komatiite in a fine grained matrix.
The sequence has a distinctly banded look and is probably Timiskaming Group. The entire sequence alternates from agglomerate/conglomerate to tuff with contacts being gradational and quite discreet. Mineralization is poor with only trace pyrite. Fragments are elongated and/or flattened. Banding is intermitently contorted.

1466.2 End of Hole.


L-8366
Open pit.
L 8471
Waste Dump.
Baseline, 10,000N
Collar
MB96-7
100'S
210'W
L-19262
Baseline
19,500N
L-19189
L-25309
L-25933
L-25934
L-9623
19231.9-N
10247.0-E
-64°
L-1466.2'
AZ-017°
10°
N
Location Sketch
DDH. MB96-07
Scale 1:4800
declination 10°W
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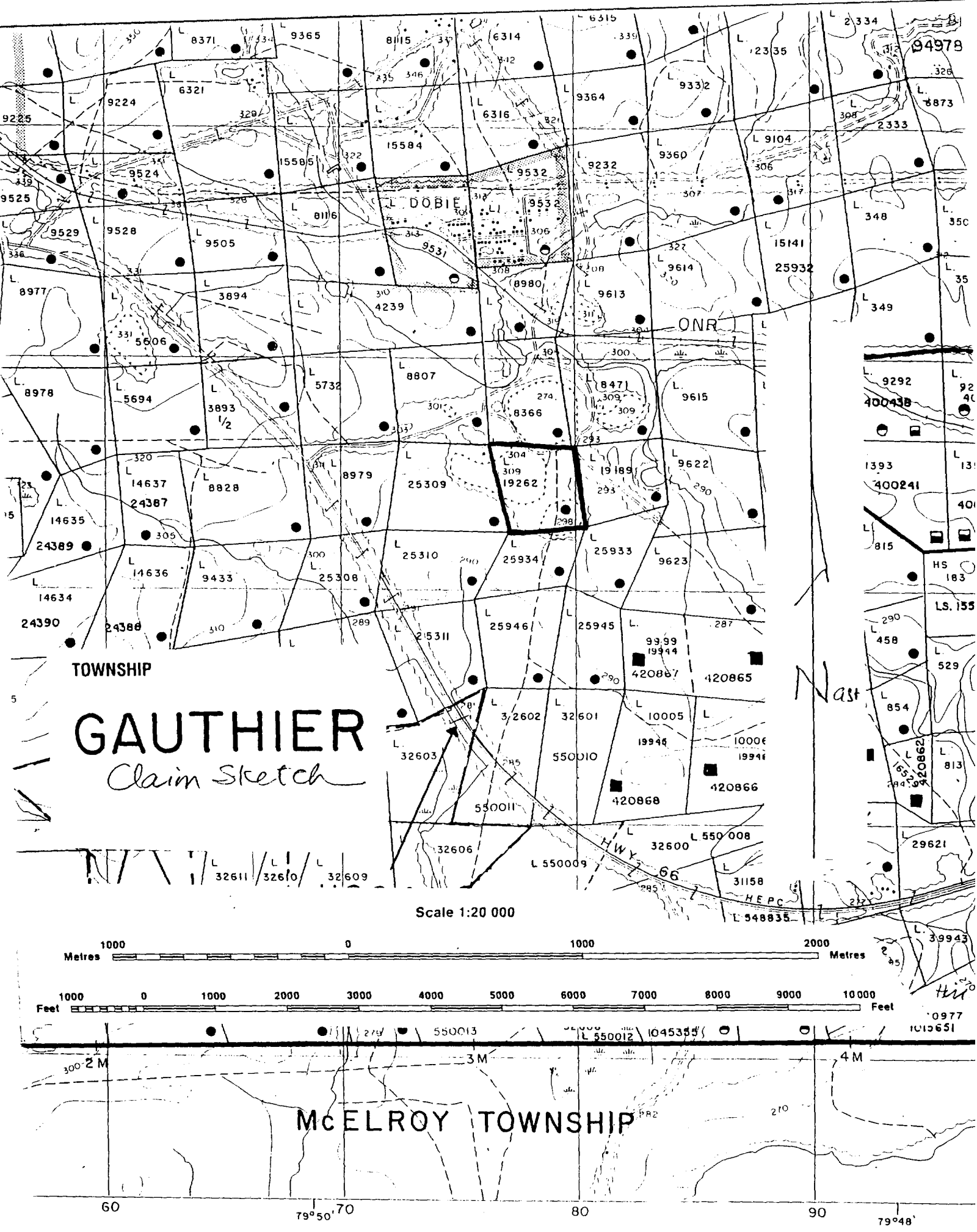
400
500
1000
100
200
300


TOWNSHIP
GAUTHIER
Claim Sketch
DOBIE
ONR
HWY 66
HEPC
McELROY TOWNSHIP
Scale 1:20 000
1000 0 1000 2000 Metres
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 Feet
60
70
80
90
79°50'
79°48'
ZONE 17

QUEENSTON MINING INC

Drill Hole: MB96-09

DIAMOND DRILL HOLE RECORD

Property: MCBEAN Col loc from #2 post, L8366, 30'N, 170'W
Northing: 19374.70
Easting: 10240.50
Elevation: 10977.90

Collar Azimuth (Grid) 358.2
Collar Dip: -54.0
(0 Degrees Grid equals 017 degrees True)
Hole Length: 1241.0

Date Printed: 22 May, 1998

*** Dip Tests ***			*** Dip Tests ***		
Depth	Azi.	Dip	Depth	Azi.	Dip
100		-53.0	900		-50.0
300		-51.5	1196	347.5	-47.0
600		-47.5			

Date Started: Nov 14, 1996
Date Completed: Nov 21, 1996

Drilled by: BENOIT
Core Size: BQ
Material left in hole NX, BX CASING
Core Location: Upper Canada Site 1
Logged by: M. McGill

From (ft)	To (ft)	Geology
		SUMMARY LOG
.0	100.0	OVERBURDEN
100.0	272.0	GABBRO
272.0	380.0	BASALT
380.0	387.0	ULTRAMAFIC
387.0	400.1	FELDSPAR PORPHYRY
400.1	420.4	GABBRO
420.4	465.5	BASALT
465.5	509.5	ULTRAMAFIC
509.5	524.0	DIORITE
524.0	524.1	START OF DEFORMATION ZONE
524.1	549.0	ALTERED GABBRO
549.0	573.3	ALTERED SYENITE
573.3	590.9	ULTRAMAFIC KOMATIITE
590.9	599.1	ALTERED SYENITE
599.1	611.0	ULTRAMAFIC KOMATIITE
611.0	615.2	ALTERED SYENITE
615.2	663.0	ULTRAMAFIC KOMATIITE

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

From (ft)	To (ft)	Geology
663.0	678.5	ALTERED SYENITE
678.5	1066.5	ULTRAMAFIC KOMATIITE
1066.5	1066.6	TIMISKAMING GROUP
1066.6	1241.0	CONGLOMERATE

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

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
.0	100.0	OVERBURDEN								
100.0	272.0	GABBRO LITH- a pale grey-green med to med-cse grned intrusive, consisting of equigranular feldspar and pyroxene. Contains basaltic intervals and is intruded by aplite and dioritic dykes. ALTER- calcitic and weakly to mod magnetic; epidote alter along vein margins, wk hem alter/staining along hairline fractures and in/along fine veining. VEINING- sparsely veined; 1/16 to 1/4 in carb-qtz and carb veins cut the unit randomly, typically @ 40-70 DTCA; locally veins are weathered out and slightly vuggy; thicker veins contain carb selvages, traces of py, chalcopyrite and epidote. MINERALIZATION- traces of diss py throughout matrix, low conc of py and chalcopyrite in veining; greater amounts of py in dykes/intrusive units. STRUCT- massive interval; mod to very blocky core locally; breakage along existing hairline fractures/veins. 100.0 102.0 Mafic intrusive. Pale grey, fine grned dyke? of dioritic composition; feldspar rich w/ rounded mafics(now chlor); very wkly magnetic. Hosts siliceous alter near top contact w/ wk hem alter, spotty py and fine incipient dyklets of alter syenite. 102.0 to 114.0- scattered intervals of basalt up to 2 ft long; csely brecciated contacts at high angles to CA. 115.5 116.9 Diorite. See description below at 120 to 139.5 ft. 118.0 120.5 Mafic intrusive. Dk grey-green, fine grned, felty textured magnetic intrusive; sharp contacts top/bott @ high angles to CA; hard; 1 ft thick chilled margin developed against underlying dior dyke(siliceous); wk hem alter throughout. 120.5 139.5 Diorite. Pale pink-grey coloured, med to med-cse grned diorite dyke; includes slightly altered 3G and V7 xenoliths 1-2 ft long. Consists of pale white, unaltered euhedral feldspar laths(1mm and 3-4 mm size ranges) set in a pale pink felsic matrix w/ fine anhedral/acicular mafics(chlor after amphibole/cpx?). Very hard, mod magnetic and wkly hematitic thru/out. Appears to post-date the MI noted above, as well as gabbro and basaltic phases. Contains fine blebby py throughout matrix and along fine fractures;. 152.0 153.0 Mafic intrusive. See below, 172 to 184 ft. 159.0 160.0 Mafic intrusive. See below, 172 to 184 ft. 172.3 184.9 Mafic intrusive. Dark green-grey in colour, fn grned and massive, w/ slight fol?/trachytic							

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

texture? defined by acicular mafics. Wkly calcitic, wkly magnetic, consists of 1/8 to 1/4 long fine amphiboles? set in a wkly hematitic groundmass. Matrix consists of about equal proportins of fine feldspar and mafics. Some biotite present both in matrix and as small phenos. Sharp contacts @ 20 to 50 DTCA. Py occurs as diss and fine subhedral xtals to 1/8 in across locally.

184.9 192.0 Diorite.
Dark grey w/ a pale reddish cast; consists of pale white feldspar phenos 1/8 in across typically,(normally subhedral w/ fuzzy outlines); set in a fine grained matrix of tiny euhedral feldspars and mafics(chlor/amphibole?) Phenos are often zoned; carb alter is begining to develop thru/out the rock Magnetic and calcitic; cut by hairline to 1/16 in qtz/carb/epid veinlets w/ fine py(strong alter halos developed away from vein contacts 1/4 in- hem and carb); tr fine diss py in matrix, sharp contacts @ 50/35 DTCA.

192.0 192.8 Mafic intrusive.
Pale olive green colour, fine grained dioritic intrusive w/ sharp contacts, consists of feldspar microphenocrysts set in a feldspar-rich matrix. Minor fine mafics in groundmass. Cataclastic textures in matrix and phenos locally. Magnetic and hard. Some hem metasomatism at top contact away from overlying dykes. Tr diss py.

194.8 195.8 Diorite.
See above, 184 to 192 ft; sharp contacts @ 20/60 DTCA.

Scattered MI units as per 172 to 184 from 195.8 to 216.0 ft. Generally less than 1 ft long.

216.0 219.3 Basalt.
Dk grey-green, fn grned interval, cut by wispy carb veining; locally siliceous and wkly hematized; magnetic and calcitic; fairly massive and featureless interval; subtle contacts @ high angles to CA; diss, blebby and fracture filling py, elevated conc compared with surrounding areas.

224.0 232.5 Aplite.
A pale cream coloured, aphanitic dyke? w/ fine green speckling locally. This dyke has included intervals of altered(bleached) WR and appears to be later intruded by a pinkish-grey syenite? dyke. The aplite contains anhedral feldspar phenos locally and variable amounts of fine chlor as tiny knots in the matrix. It is hard, and non-magnetic. It is calcitic, and locally weakly stained w/ hem both in the matrix and along hairline fractures. The syenite dyke is maroon in colour and becomes bleached(grey w/ a pink cast)downhole. It is located @ 227-229 ft and shows sharp contacts @ high angles to the CA. It is calcitic, magnetic and locally porphyritic; both feldspar and mafic phenos are present. Py occurs in tr amounts as fine diss. The aplite component is weakly mineralized w/ diss and fine xtalline py.

251.0 261.3 Diorite.
A pale pink-grey dyke, very similar to that described above at 184 to 192 -sharp contacts @ 40/50 DTCA; siliceous/albitic?; magnetic; w/ slightly cser phenos locally compared with above intervals; spotty cubic py to 1/8 in

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

across.

272.0 380.0 BASALT
A sequence of cse to very cse grned flows and flow centers intercalated w/ minor amounts of gabbro, very similar to that described above. Narrow dykes of aplite and diorite cut the unit randomly. Crystals of plag and cpx up to 1/2 in across are developed locally.(cumulate-looking textures developed locally also) Weakly magnetic and calcitic thru/out. Wk epidote commonly along fine carb veining. Cse grned amphibolitic sections; some zones w/ variolitic textures; some flow breccia and flow top? material. Scrappy carb and carb-qtz veining thru/out interval; generally weakly mineralized. Py occurs as disseminations and as clusters of fine subhedral xtals.

380.0 387.0 ULTRAMAFIC
A mixed unit, consisting of predom u/mafic kom and minor basalt similar to above unit. Pale blue green colour, soft and wkly magnetic. Fragments of cse V7 flow material are suspended in an u/mafic matrix. Calcitic; contains only tr sulphide. Sharp bott contact @ 80 DTCA w/ local 2mm subhedral py.

387.0 400.1 FELDSPAR PORPHYRY
A dk grey interval, consisting of 1 to 3 mm feldspar phenos supported in a very dk grey, aphanitic felsic matrix. Phenos are lath-like or rounded, zoned and quite fresh looking. Hem alter permiates the matrix and shows in hairline fractures xcutting the unit. The groundmass has a subtle felted texture and contains abundant chlor. The unit is magnetic and calcitic. Sharp bott contact @ 65 DTCA; shear surface w/ fibrous seric? oriented perp to CA.

400.1 420.4 GABBRO
A pale green, med to med-cse grned interval w/ a speckled appearence. Likely an altered equivilant of gabbros described uphole; it has been locally recrystalized and metasomatized (K?) and now contains fresh K-feldspar which now gives the rock a more dioritic, almost porphyritic appearence in spots. Contains numerous 1/2 to 1 in diam basalt frags, some very rounded, and others quite angular. Wk pervasive hem gives the unit a pink cast. Cut by FP(405.4 to 407.4) and irreg salmon-coloured dioritic dyke material(402 to 402.5). Wispy high angle carb-qtz veining to 1/8 in cuts unit; these contain tr spec hem and tr diss py. Wispy epidote infills 1/16-1/8 in fractures; often // to CA. Calcitic and wkly magnetic. Becoming foliated from 419 to 420.4; a narrow band(frag?) of deformed u/mafic? sits @ 419.1 to 419.3 w/ fol @ 65 DTCA. Sharp irreg bott contact @ 55 DTCA. Wkly mineralized w/ diss and spotty py near veins and in groundmass.

420.4 465.5 BASALT
LITH- A dk grey-green coloured, fine to med grned sequence of basalts, cut by dioritic dykes. Contains wkly foliated and csely brecciated intervals, and a few narrow u/mafic lenses. Slightly vuggy(weathered) zones locally.
ALTER- calcitic thru/out and magnetic; wk hem alter in matrix and veining;

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

strong chlor rind developed at bott contact for 3 in; locally amphibolitic.
VEINING- scrappy carb and carb-qtz veining and knots up to 1/2 in thick; often w/ hem staining; locally blotchy and often strongly folded on a cm scale; some veins contain diss and fine xtalline py; orientations variable; often at 55 to 65 DTCA w/ few examples // to CA.
MINERALIZATION- diss and fine xtals of py to 2 mm in matrix, near veins and around frags in breccia zones. Minor diss and fine fracture-filling py in dioritic dykes.
Struct- prodominantly massive, w/ foliated zones becoming more common towards bott contact. Brecciated zone @ 454.0 to 456.8, w/ locally higher sulphide content.
Comments on subunits follow:.
420.4 to 431.5- mass basalt, wkly fol/ bott contact @ 30 DTCA.

431.5 to 433.0- crudely banded zone, w/ wispy carb-hem alter; fol/banding @ 50 DTCA; some veining tightly folded on a cm scale w/ axial planes @ 50 DTCA; locally py to 1%(diss).

433.0 to 435.3- mass basalt w/ 1 in boudinaged carb-qtz-hem vein? @ 50 DTCA.

435.3 to 437.2- dioritic dyke; maroon colour, med grned, consists of pale grey-white feldspars(1 to 3 mm, subhedral) barely supported in fine chlor; strong hem alter thru/out; tr diss/fracture filling py.

437.2 to 454.0- deformed basalt interval, cut by numerous fine hematitic carb veins and patches, and scrappy dioritic dykelets similiar to those described @ 435.3 to 437.2; becoming more carbonated/veined and slightly foliated towards 454 ft; fol/veining @ 70 DTCA.

454.0 to 459.1- breccia zone; a sequence of sheared/brecciated basalt+dior dyke material; fragments are typically 1/2 to 1 in long and flattened // to the foliation(@ 50-55 DTCA). Boudinaged veining and cse cataclastic textures are present. Well mineralized w/ diss and subhedral xtalline py to 1/16 in across. Sliver of u/mafic material @ 455.3 ft.

459.1 to 465.5- foliated, highly carbonated interval; fol @ 50 DTCA w/ some fine biot and chlor(after mafics); looks like 'carbonated gabbro' as described in other McBean holes- very dk grey, speckled/banded appear. Small u/mafic intervals @ 459.1 to 459.8 and 462.3 to 462.7; fault @ 462.7 @ 40 DTCA w/ 1/2 in muddy gouge. Mafic dyke @ 464.6 to 465.3 w/ sharp contacts @ 30/40 DTCA; dk grey w/ red cast(hem) in matrix, fine chlor(after amphibole?) needles define fol;(fol @ 55 DTCA); muddy carbonated groundmass appears to be mostly feldspathic.

465.5 509.5 ULTRAMAFIC
LITH- pale blue-green colour, fine grned and fairly mass, soft; subtle flow tops? developed locally sugg tops may be downhole(north); unit includes carbonated basaltic inclusions similar to above unit, and frags of cse V7 flow center material; cse grned dioritic dykes also intrude the interval.
ALTER- very wkly talcose, calcitic and magnetic. Very wk hem alter in some patchy ?vein material locally.

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

VEINING- wispy/gash carb veining developed locally; 1/8 to 1/4 in thick; often @ 55-60 DTCA; normally sulphide poor.
MINERALIZATION- sparsely mineralized; slightly elevated py conc's in dykes and basaltic units.
STRUCT- massive w/ locally foliated areas near some veining and adjacent to faults/shears. Where present foliations are @ 50-60 DTCA. More fabric developed w/in other included lithologies. Shears: @ 466.5- 40 DTCA; @ 471 .2- 25 & 50 DTCA; @ 471.7 several shears @ 50 to 70 DTCA; @ 485.5 @ 25 DTCA; Faults- @ 477.2- 1/2 in gouge @ 80 DTCA; @ 478.8 @ 55 DTCA w/ cse gouge; @ 480.2- 1 in gouge @ 60 DTCA; @ 504.8 and 504.8- gritty gouge @ about 60 DTCA; @ 505.4- 1/2 in muddy gouge @ 75 DTCA; @ 508.4- gritty 1/2 in gouge @ 75 DTCA.

468.0 470.1 Basalt.
Dk grey-black, fne grned, foliated; subtle speckled appearence, strongly carbonated; sharp contacts @ 40/60 DTCA.

477.3 478.0 Basalt.
Black, foliated, cse flow?.

491.5 493.1 Diorite.
Pale grey w/ an orange cast; med-cse grned; consists of abundant feldspars 1 to 4 mm across(pale white, anhedral, fuzzy boundaries) set in a felsic matrix w/ tiny interstitial feldspars and minor (chloritic) mafics; mod hem alter within patchy invading carb and in hairline fractures. Diss py in matrix Sharp contacts @ 30/80; wkly magnetic, hard.

493.1 500.9 Basalt.
Dk grey-black carbonated basalt; fine grned and massive becoming more foliated below 496.3 ft. Below 498.0 the grn size becomes cser as the unit grades into a cse flow center. U/mafic inclusion @ 494.8 to 495.3 w/ sugg of flow top texture. Wispy/patchy carb alter in cse flow zone w/ wk hem overprint. Where foliated, fabric is at 70 DTCA. Fine knots of hematized carb developed in fol zones. Small lamp? dyke @ 495.3 to 496.3- very dk grey green, w/ abundant biotite and acicular chlor (after amphibole?) phenos set in a dk felsic groundmass; sharp upper contact @ 40 DTCA; fol @ 30 DTCA.

500.9 503.9 Diorite.
Dk grey, speckled dyke; cse grned, consisting of prominent feldspars(1-4 mm across, euhedral to subhedral, pale white) barely supported in a dk grey felsic groundmass w/ minor interstitial chlor. Hard, and wkly mineralized w/ diss py; sharp contacts @ 40/60 DTCA.

509.5 524.0 DIORITE
A pale grey unit very similar to that described above at 500 to 503, with an orange cast locally (wk hem stain). Massive, slightly vuggy; cut by a set of wkly mineralized siliceous veins 1/4 to 3 in thick(@ 55 DTCA). Veins are pale grey-blue in colour and have slightly fuzzy contacts. Weakly mineralized w/ diss and spotty anhedral py; sharp contacts @ 60/70 DTCA.

524.0 524.1 START OF DEFORMATION ZONE

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

524.1 549.0 ALTERED GABBRO

LITH- very dk grey to black coloured unit, w/ a pale brown cast. Med grned and well foliated; distinct speckled/banded appearence due to veining and alteration. Contains a narrow u/mafic band @ 530.9-531.0. Cut by patchy, irreg carb-qtz material and 1 dioritic dyke @ 529.9 to 530.8 ft. Consists of mostly carbonate and chlorite, after feldspar and mafics.

ALTER- heavily carbonated; streaky/wispy/veins and 1/8 in knots developed thru/out unit. Calcitic, and wkly hematized. Very local silicification near patchy veining; mod magnetic.

VEINING- wispy, irreg and knotted veins from 1/8 to 2 in across. Finer veins are mostly carb w/ hem stain; larger veins are more siliceous. Local tight folding on a cm scale; axial planes are generally // to fol. Most veining cuts core @ 60 DTCA. Veining carries little sulphide, a few contain fine spec hem.

MINERALIZATION- poorly mineralized interval; trace amounts of diss and fine anhedral py scattered thru/out matrix.

STRUCT- strongly foliated thru/out; typically @ 60 DTCA w/ locally flatter zones ie 30-40 DTCA; fault @ 534.4 w/ 1/4 in cse gritty mud, @ 70 DTCA.

549.0 573.3 ALTERED SYENITE

LITH- a sequence of altered syenitic rocks, some of which resemble dioritic units described uphole, and others which are similar to those described in other McBean holes. Pale orange to salmon coloured, med grned equigranular to porphyritic w/ aphanitic felsic matrices. Contains xenos of carbonated gabbro, in various stages of digestion? into the intrusive phases. Cut by qtz and qtz-carb veins and fine incipient syenite dykelets. Cross-cutting relationships suggest that the more dioritic phases are intruding the syenitic units.

ALTER- magnetic, calcitic and mod to strong pervasive hem alter in matrix and hairline fractures. Hard, probably silicified.

VEINING- scrappy and irreg qtz and qtz-carb veining cuts all phases, generally at high angles to CA. Contain chlor, hem and fine spec hem locally, but only traces of sulphide.

MINERALIZATION- diss and fine subhedral py (+/- very cse cubes locally) developed in groundmass of most units. Rare cse blebby chalco to 1/2 in across. Fine spec hem in some veining. Minor fine fracture filling py

STRUCT- massive units w/ fol developed in xenos of included gabbro- @ 40 to 50 DTCA typically; local cse cataclastic/breccia textures developed towards bott of interval.

Comments on Sub-Units:.

549.0 to 552.4- pale flesh coloured, dioritic unit, spotted/psuedo-porphyritic appearance, BBC in lower 40% of interval.

552.4 to 553.2- 3Ga unit, w/ patchy hematitic carb-qtz alter.

553.2 to 554.1- pale-pink, aphanitic altered syenite; increasing hem conc.

554.1 to 554.8- altered/bleached/hematized carbonated gabbro?; veined w/ spec hem, and elevated py content.

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

554.8 to 555.5- altered syenite, hematitic, similar to 553-554 interval.

555.5 to 556.8- carbonated gabbro; black, foliated, biotitic(lamp dyke ?) invaded by red syenitic dykes.

556.8 to 562.5- pale pink interval of porphyritic syenite; scattered pale white rounded feldspar phenos to 1/4 in across; few inch scale 3Ga xenos: wispy chloritic/hematitic veining; few 1/8 in barren qtz veins at 55 DTCA subtle bott contact at high angle against more dioritic unit below.

562.5 to 564.9- dioritic phase as decribed above, w/ more intense hem alter and elevated py conc.

564.9 to 569.1- porphyritic syenite; pale red cast, hematitic and cut by numerous hairline carb stringers at 40 to 60 DTCA; scattered rounded phenos in a aphanitic felsic groundmass.

569.1 to 571.1- highly altered gabbro?; invaded by swirling/patchy carb/hem alter and poss syenitic dykelets; becoming more digested towards bott contact.

571.1 to 572.9- dioritic at top contact, grading into a brecciated porphyritic syenite; riddled w/ fine chloritic/hematitic stringers.

572.9 to 573.3- heavily altered gabbro?- almost assimilated into host intrusives; maroon colour, fine grned, locally brecciated; cut by syenitic dykelets.

573.3 590.9 ULTRAMAFIC KOMATIITE
A pale grey green, slightly talcose interval, strongly deformed and faulted /crushed for most of its length. Locally veined w/ qtz at 40 to 50 DTCA; poorly mineralized and very wkly magnetic; calcitic, becoming less so towards bott of unit.

575.0 578.0 Ground core.

578.2 581.0 Fault Zone.
Gritty/pebbly gouge zones @ approx 50 to 60 DTCA.

581.0 588.0 Ground core.

588.0 590.0 Fault Zone.
Crushed zones w/ cse gritty gouge zones @ about 50 to 60 DTCA.

590.9 599.1 ALTERED SYENITE
Brick red colour, fine grned and massive; cut by wispy qtz, qtz-carb and chlor veining; hard(probably silicified/albitic?), and non-magnetic. Non-calcitic, and well mineralized w/ fine anhedral py. Sharp contacts @ 50/50 DTCA. Tr of spec hem in some of the veining.

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

591.5 598.0 Ground core.

599.1 611.0 ULTRAMAFIC KOMATIITE
LITH- a sequence of highly deformed and altered pale green kom basalt, of probably u/mafic derivation, intercalated w/ steel grey 'altered syenite'. The rocks are strongly foliated, and have a finely laminated appearence. The latter units may be tuffaceous horizons. Contacts between the two rock types are normally sharp and // locally developed foliations.
ALTER- strongly carbonated(non-calcitic), and very wkly hematized locally; also local silicification in both lithologies(better developed in the syenite) VEINING- irreg patchy qtz-carb veining (to 2 in thick) and fine (1/8 in) stringers crosscut the S1 fabric, often @ 30 to 45 DTCA.
MINERALIZATION- fine cubic py is distributed thru/out the matrix, commonly following the foliation. The xtals are deformed/rotated and some have small strain shadows forming.
STRUCT- strongly foliated, w/ quite variable orientations throughout the sequence; 50 to 60 DTCA is nominal; 20 DTCA is locally developed. Some kinking is developed almost // to the CA in the komatiitic intervals.

611.0 615.2 ALTERED SYENITE
LITH- brick red in colour, fine grnd w/ a gritty texture; fairly massive; invaded by numerous patches and fine veins of white qtz; sharp upper and lower contacts @ 60/55 DTCA.
ALTER- strongly carbonated and probably silicified; hematized throu/out; non-calcitic and non-magnetic; fine grned fracture-filling spec hem; hairline fractures w/ chlor.
VEINING- patchy white qtz w/ carb and thin chlor selvages invades the unit randomly; fine white qtz-carb stringers cut the unit @ 50 to 60 DTCA, both sets contain blebby and diss py.
MINERALIZATION- blebby, cse anhedral and diss py developed in the matrix, and to a lesser extent in veining/fractures. Locally xtals/plates up to 1/4 in across have grown.
STRUCT- massive unit.

615.2 663.0 ULTRAMAFIC KOMATIITE
LITH- an interval of predom finely banded, highly altered komatiitic rocks of u/mafic derivation, intercalated w/ blonde coloured tuffaceous horizons. All units are strongly altered and deformed/foliated. Irreg reddish altered syenite dykes cut these units. Patchy and sinuous qtz-carb veining invades all above lithologies.
ALTER- strongly carbonated (wk calcite reaction), wk hem alter developing; locally sericitic in tuffaceous horizons. Local silicification adjacent to veining. Wk fuchsite alter appears in lower sections of interval. Kom areas non-magnetic; tuffs are mod to strongly magnetic.
VEINING- patchy and irreg qtz w/ carb selvages/inclusions; variable from 1/4 in to 3 inches across; generally invading units sub-parallel to local fabrics. Contain only tr amounts of sulphide. Syenite dykes are sinuous, and vary from 1/4 to 2 in across; often mineralized w/ fine py and appear to pre-date the qtz-carb veining. A fine set of discordant veins is developing towards bott of sequence; typically @ 30 to 60 DTCA.
MINERALIZATION- diss and fine subhedral py is found in matrix and syenite

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

dykes. Rare as slightly cser xtals in fine qtz-carb veins.
STRUCT- well foliated interval; ranges from 30 to 40 DTCA; local shears // foliation. Some cm scale ptygmatic folding in fine veining locally; kinks appearing lower in sequence(// to some fine veining) @ 50 DTCA.

Descriptions follow of sub-units:.

615.2 to 623.8- alter kom; cut by scrappy syenite dykes.

623.8 to 627.0- tuff band; very wkly fuchsitic at top contact, becoming more sericitic downhole; locally silicified; uniform.

627.0 to 632.9- kom w/ light olive green coloured tuff bands; veining/ syenite dykelets becoming more common.

632.9 to 636.8- prodominantly tuff w/ sinuous syenite dykes/veins; wk ser alter.

636.8 to 639.0- kom w/ folded carb bands/veins; high strain area.

639.0 to 645.5- tuff w/ increasing hem, seric, locally siliceous, w/ few skinny syenite dykes.

645.5 653.0 Green Carbonate Zone.
Kom interval w/ minor wkly hematized tuff horizons; wk matrix fuchsite alter; some patchy qtz veining.

653.0 to 654.0- tuff band w/ seric/hem alter.

654.0 to 663.0- kom w/ one olive coloured tuff band; highly deformed/folded veining; more veining than above noted kom's.

663.0 678.5 ALTERED SYENITE
LITH- pale orange in colour, fine grned and fairly mass, w/ inclusions of u/mafic kom and intruded by irreg bright red syenitic dykes. Aphanitic matrix; well veined w/ a subtle mottled texture; hard.
ALTER- hematized thru/out, silicified/albitized?; wkly magnetic; non-calcitic although well carbonated.
VEINING- cse patchy and irreg pale white qtz veining w/ carb inclusions/ selvages cut unit randomly. Range from 1/2 to 3 in across; generally poorly mineralized. Fine qtz-carb veining cuts interval @ high angles to CA; also w/ little sulphide; hairline/wispy hem filled fractures cut unit at low angles; hem halos surround some fine veining.
MINERALIZATION- blebby/patchy and cse xtaline py is developed in matrix and along low angle fractures; smaller xtals are 1 to 3mm across; larger xtals and blebs range from 1/8 in to 1 in long/across locally. Strain shadows developed around some xtals. Fine grned spec hem in a few fine fractures.
STRUCT- fairly massive unit; brittle deformation has allowed several sets of veins to develop; qtz veining appears to post date syenite dykelet intrusion.

678.5 1066.5 ULTRAMAFIC KOMATIITE

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

LITH- a sequence of highly altered and deformed komatiitic basalts of u/mafic derivation containing minor dykes/inclusions of carbonated gabbro, altered syenite and felsite. Black-green in colour w/ prominent banding/veining of carbonate and qtz. Strongly foliated and locally faulted and sheared. Soft; no primary textures visible; cut randomly by 1 to 4 in thick qtz and carb veins and patches.
ALTER- strongly carbonated thru/out, as veins/patchy intrusions/knots and fine speckling; locally silicified against some veins and/or specific altered sub-units; local wk hem alter in groundmass of specific sub-units and in hairline fractures; wk talcose alteration locally; strongly chloritic in most areas; generally non magnetic; except for some included units, generally non-calcitic.
VEINING- carb and carb-qtz veining throughout the interval; variable from mm size wispy stringers to boudinaged/folded 1/4 to 1 in thick discreet veins. Also cser patchy qtz and qtz-carb areas to 2 to 3 in across; local bull qtz veins 4 to 24 in thick. Most veining is poorly mineralized; some patchy material in the 1/2 to 2 in range contains sulphide. Most veining is // to local fabric orientation. Minor fine incipient red syenite dykelets, sub-// to fol.
MINERALIZATION- diss and 1 to 3 mm subhedral xtalline py is developed thru/out unit; both randomly in matrix and more commonly in or near alter zones/patches. Most veining is internally not well mineralized.
STRUCT- strongly foliated thru/out. Fol angles are variable; from 30 to 70 DTCA w/ many areas at 45 to 55 DTCA. Much of the veining is boudinaged, stretched and tightly folded, often recumbantly. AP directions are generally // to local foliations. Thick fault zones developed locally w/ cse gritty and pebbly gouge zones.

Descriptions of Sub-Units are as follows:.

678.5 682.9 Green Carbonate Zone.
Kom interval w/ wk fuchsite alter in matrix; decreases in downhole; contains several narrow seric tuff horizons w/ abundant diss py.

682.9 to 686.0- kom section w/ several felsite and syenite dykes; locally well mineralized w/ diss py.

686.0 to 686.7- carbonated gabbro inclusion- dk grey to black coloured, strongly foliated/granular appearence; heavily carbonated and wkly pyritic (diss); wkly magnetic w/ sharp contacts // to fol(60 DTCA).

686.7 to 698.0- kom basalt w/ several narrow carb gabbro intervals; fol @ 65 DTCA.

698.0 to 699.0- carb gabbro; sharp contacts @ 60/60 DTCA.

699.0 703.2 Fault Zone.
Soft kom interval w/ num faults zones as follows: fault @ 699.0- 1/2 in gouge @ 60 DTCA; fault @ 699.8 to 703.2- several 2 to 3 in thick gritty gouge zones @ approx 60 to 70 DTCA, mixed in w/ crushed/blocky core.

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

705.5 706.2 Fault Zone.
703.2 to 706.2- kom section; very soft/soapy; cut by rubbly fault @ 705.5 to 706 @ about 50 DTCA.

706.2 to 709.0- carbonated gabbro interval.

709.0 to 730.5- kom section w/ several irreg patchy qtz intrusions;(w/ diss py); fault @ 710.1 @ 50 DTCA (1 in thick crushed rock/gouge); becoming very granulated/sheared towards 730.5 (fol @ 30 DTCA).

730.5 731.9 Quartz.
Qtz vein w/ small wallrock frags; tr sulphide.

731.5 to 738.0- kom interval; heavily veined interval, brecciated and granulated, fol @ 25 to 35 DTCA.

738.0 739.3 Felsite.
Pale mauve in colour; fn grned, siliceous and massive. Cut by 2 sets of qtz -carb veins; one set 1/4 to 1/2 in thick, irreg w/ fuzzy boundaries and an earlier? set, 1/16 to 1/8 in thick w/ sharp contacts(poorly mineralized). Both sets at high angles to CA. Non-magnetic, non-calcitic and well mineralized w/ diss and fine subhedral py. Sharp contacts @ 50/70 DTCA.

739.3 to 743.4- kom interval; soft, well veined(strongly deformed).

743.4 to 748.5- ? carbonated felsite/altered syenite? a pale pink-grey, silicified interval, foliated and heavily altered w/ subtle patches/wisps of carb/qtz material. Top section looks more like a carbonated gabbro; a sharp contact @ 746.5 @ 40 DTCA brings in a felsite-looking section which finishes @ 747.3 @ 40 DTCA, grading back into a gabbroic interval to 748.5 The felsite portion is well mineralized w/ diss and spotty py. Magnetic, and non-calcitic.

748.5 to 775.5- kom interval w/ several slightly vuggy, dirty orange coloured altered syenite? dykes(wkly hematized/pyritic) and 3 or 4 narrow(2 to 5 in) carb gabbro units. Fol @ 50 to 60 DTCA.

775.5 to 788.0- predom carb gabbro w/ minor dk blue-black kom. Pale brown cast(wk hem alter?) w/ subtle speckled appearence. Locally pyritic; non-calcitic and mod to strongly magnetic. Sharp contacts @ variable angles to CA(mostly high).

788.0 to 828.2- kom interval; contains few narrow carb gabbro intervals. Becoming quite blocky below 819 ft; fault zones/lost core as follows: BBC from 819 to 824 ft; fault from 824 to 825 ft(fault breccia/gouge @ about 50 DTCA); 825 to 828- lost core; 828.0 to 828.2- rubbly broken core.

824.0 825.0 Fault Zone.

825.0 828.0 Lost Core.

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

828.0 to 829.3- altered syenite; brick red, massive and featureless, hematitic w/ hairline carb-qtz veining @ 50 DTCA and diss py in matrix. Patchy orange hem alter around very fine stringers.

829.3 830.0 Fault Zone.
Cse gritty fault breccia; @ 60 DTCA (bott).

830.0 834.5 Altered Gabbro.
Faults as follows: @ 831 @ 60 DTCA, 2 in of gouge; @ 833.8 @ 40 DTCA, 1 in muddy gouge.

834.5 838.0 Lost Core.

838.0 853.0 Altered Gabbro.
Carb gabbro; silicified, banded, pale brown colour, w/ minor sections of kom. Sharp contacts // to fol (typically @ 45 DTCA).

853.0 854.5- Kom basalt, fol @ 50 DTCA; tight folding.

854.5 856.0 Felsite.
Pale mauve grey colour, fne grned and hard. Silicified and carbonated, w/ speckled carb alter. Non-calcitic, wkly magnetic. Pyritic (diss), w/ sharp top contact @ 50 DTCA; tr chalco in matrix; wispy carb-qtz veining.

856.0 to 868.5- mixed kom and carb gabbro interval w/ abundant rubbly core and faulting: faults @ 858.9 @ 60 DTCA, 2 in of cse muddy gouge; @ 863.0 @ unknown angle; @ 868.4 @ 40 DTCA, 1 in crushed zone w/ muddy gouge; Shears @ 856.8 @ 50 DTCA; @ 867.5 @ 40 DTCA w/ tr gouge.

868.5 870.1 Altered Syenite.
Pale red in colour, w/ wk mottled/speckled appearance, cut by numerous fine qtz-carb stringers @ 30 DTCA; these are crosscut by thicker irreg veins at high angles to CA. Hard, probably silicified and hematitic. Fine spec hem in hairline fractures and the thicker veins. Carbonated, wkly magnetic and non-calcitic. Diss py in matrix.

870.1 874.3 Fault Zone.
Fault zone- about 90% of this interval consists of cse gritty and pebbly fault breccia in a kom section. Angles are 50 to 60 DTCA. Some local qtz veining in remnants of WR.

874.3 to 955.0- komatiitic interval w/ few narrow altered red syenite dykes, minor carb gabbro and one beige felsite dyke. Rubbly w/ lost core down to 878.0.
877.3 878.0 Lost Core.

878.0 927.0 Fault Zone.
Fol @ 50 to 60 DTCA in this section; Faults: @ 892.6 @ 65 DTCA, 1/2 in gouge; @ 893.3 @ 60 DTCA w/ 1/2 in gouge; @ 899.4 w/ rubbly core @ unknown angle; @ 902.3 @ 60 DTCA w/ crushed rock/gouge; Shears: @ 882.2 @ 40 DTCA; @ 916.9 @ 50 DTCA; @ 927.3 @ 60 DTCA; QTZ VEIN @ 924.0 to 924.9 w/ WR

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

inclusions and tr of a blue metallic (galena?) in qtz. Poorly mineralized otherwise, sharp top contact @ 50 DTCA, brecciated bott cnt.

955.0 958.0 Felsite.
A dk brown-mauve coloured, massive interval w/ subtle speckling giving the unit a grainy texture; hard and strongly magnetic. Weakly calcitic, and hematized both in matrix and in fine carb-qtz veining. Both hairnet and 1/8 to 1/4 in veining at variable angles to CA; poorly mineralized. Minor fine acicular mafics(chlor) in matrix. Sharp contacts @ 20/50 DTCA. Spotty anhedral py in matrix.

958.0 to 1032.0- komatiitic basalts; w/ minor patchy qtz-carb/hem alter, few skinny carb gabbro units. Fol @ 40 deg becoming steeper downhole to 60 DTCA.

1032.0 1047.0 Green Carbonate Zone.
1032.0 to 1047.0- tuffaceous ? interval; possibly a bed of Timisk type material crudely banded, fne grned pale grass green coloured unit; hard(silicified?) and sericitic locally. Hint of fuchsite alter. Wkly calcitic, magnetic near top contact; well carbonated w/ 1mm carb speckling developed from 1040 to 1047 ft. Highly deformed; tight recumbant folds(cm scale) in finely laminated zones Well foliated @ 30 to 40 DTCA. Cut by patchy irreg qtz 1/2 to 2 in in diam; w/ orange (hem?) staining; contains a few clasts of qtz and u/mafic material; variably mineralized w/ diss py.

1047.0 to 1066.5- kom interval; well veined, sharp bott contact @ 50 DTCA traces of wispy seric in matrix.

1066.5 1066.6 TIMISKAMING GROUP

1066.6 1241.0 CONGLOMERATE
LITH- pale grass green colour, matrix supported polymict congl, consisting of rounded to sub-angular clasts of qtz, chert(beige, black, orange), and lithic frags of basaltic, u/mafic, felsic and 'dioritic' composition. Groundmass is a intermediate to mafic composition lithic tuff, locally csening to almost lapilli size; few fine carb veins, up to 1/2 in max.
ALTER- wkly to strongly calcitic; essentially non-magnetic; wkly chlor matrix wispy seric alter locally (in clasts?).
VEINING- scattered carb and qtz-carb veining at 30 to 50 DTCA; 1/8 to 1/2 thick w/ thicker veins often qtz w/ carb selvages; poorly mineralized
MINERALIZATION- poorly mineralized; diss py in clasts locally.
STRUCT- strongly deformed unit- most clasts are flattened/stretched and locally tightly folded, on a cm scale. Mod to strongly foliated; stronger fabrics developed in more highly deformed zones and in cser grned tuff units.

Comments on Sub-Units:.

1066.6 to 1099.0- conglomerate; fol @ 60 DTCA.

1099.0 to 1124.0- few frags in tuff to lapilli tuff matrix; bedding may be younging downhole?; fol @ about 40 DTCA.

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

1124.0 to 1174.5- congl section, very highly deformed; folded and kinked clasts; A.P. @ 10 to 35 DTCA,(quite variable), kinking and folding scales vary from mm to cm; fine chevron folds developed in very flattened clasts? tuff bands?.
BBC from 1165.0 to 1166.5.

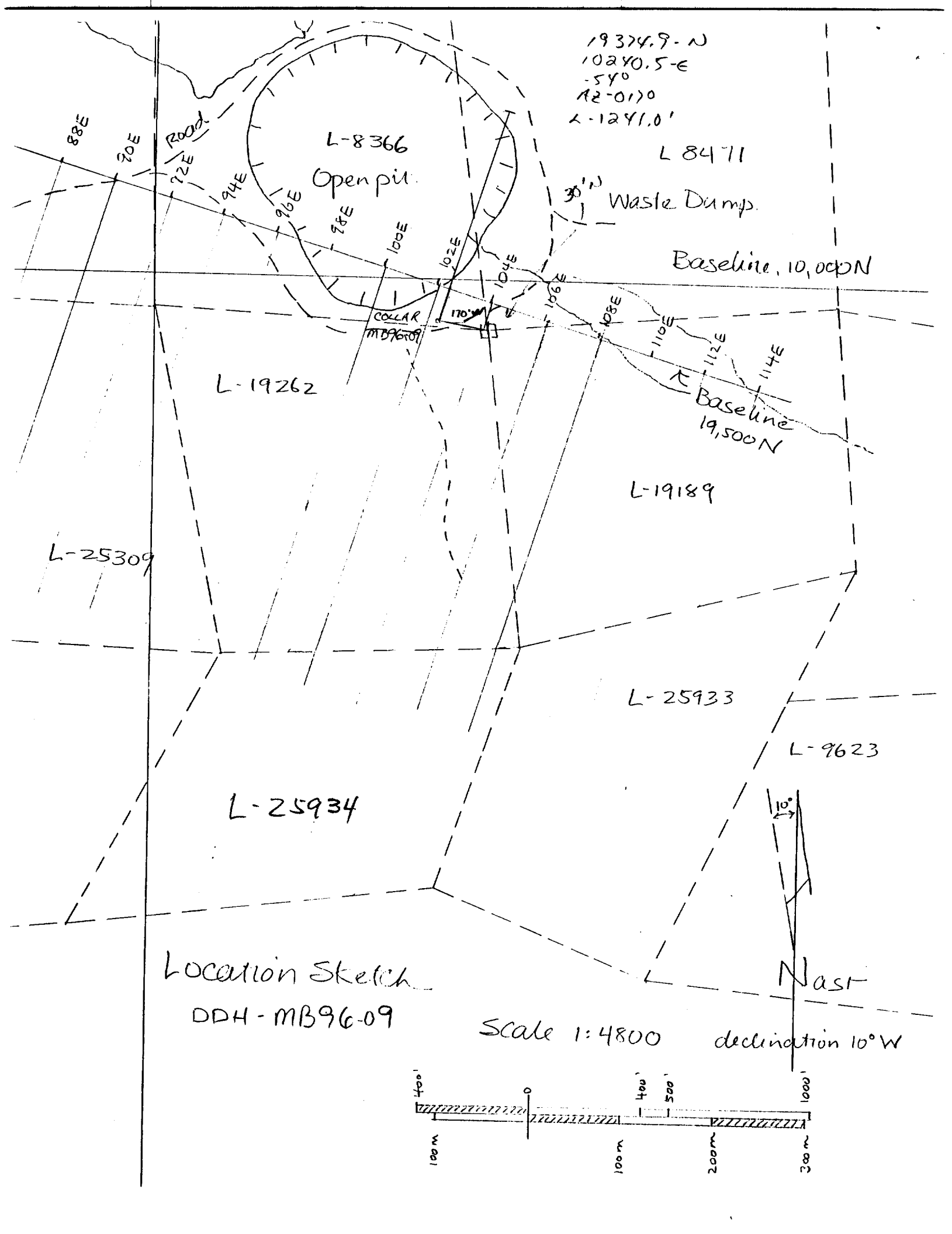
1174.5 to 1196.5- congl interval; less deformed than above; some larger clasts up to 5 in across.

1196.5 to 1218.8- tuff section w/ scattered clasts; there appears to be some grading in the tuff- tops downhole.

1218.8 to 1235.0- congl section; fol @ 50 to 60 DTCA.

1235.0 to 1241.0- tuffaceous interval; w/ few clasts; variable fol from 20 to 50 DTCA.

END of HOLE- 1241.0 Ft.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10240.5-E
-54°
A2-0170
L-1241.0'
L-8366
Open pit
L 8471
Waste Dump
Road
88E
90E
92E
94E
96E
98E
100E
102E
104E
106E
108E
110E
112E
114E
30'N
Baseline, 10,000N
COLLAR
MB96-09
170°
L-19262
Baseline
19,500N
L-19189
L-25309
L-25933
L-9623
L-25934
10°
N
Location Sketch
DDH-MB96-09
Scale 1:4800
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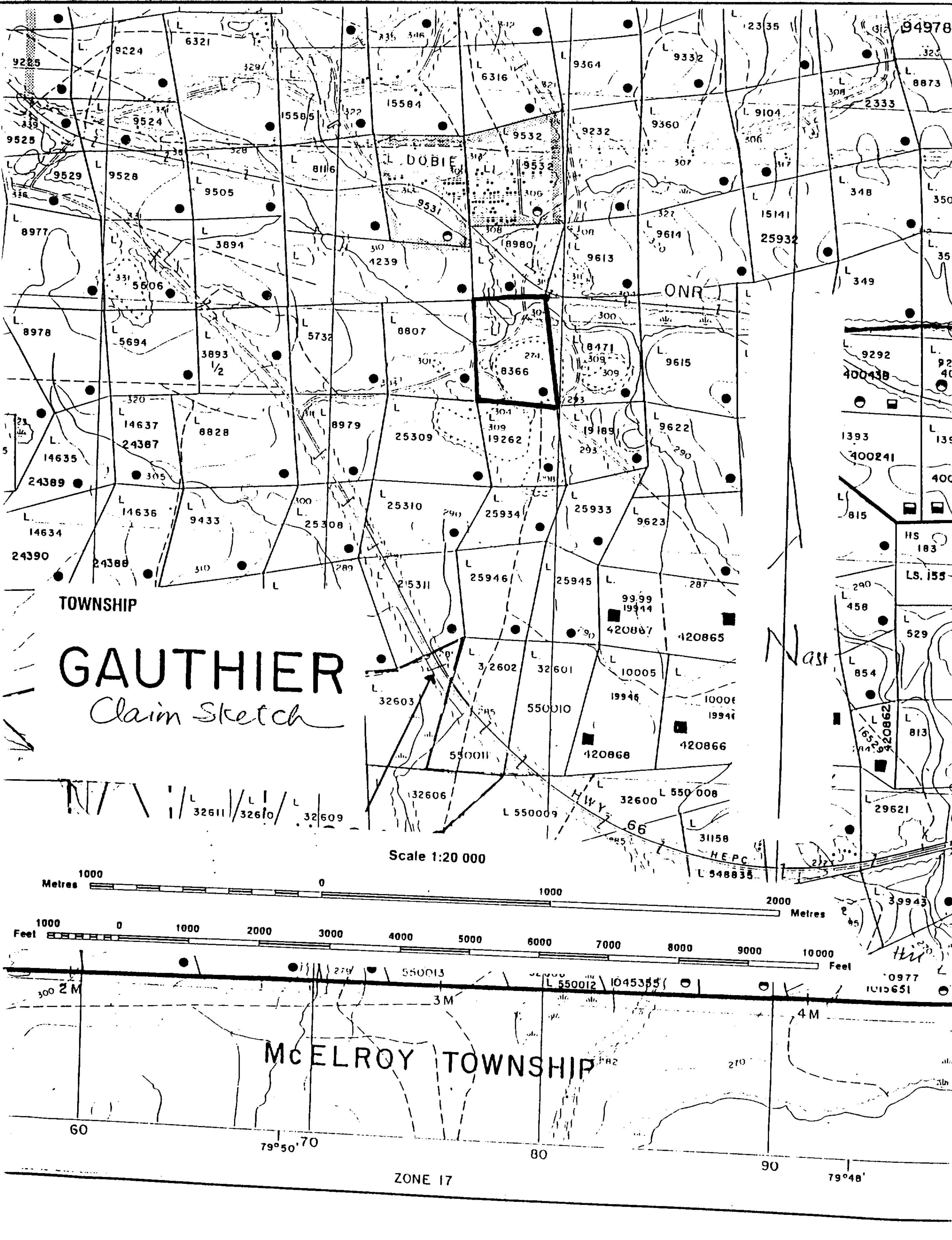
400'
0
400'
500'
1000'
100m
100m
200m
300m


94978
TOWNSHIP
GAUTHIER
Claim Sketch
Nast
ONR
HWY 66
HEPC
DOBIE
8366
Scale 1:20 000
Metres
Feet
McELROY TOWNSHIP
2 M
3 M
4 M
60
70
80
90
79°50'
79°48'
ZONE 17

QUEENSTON MINING INC

Drill Hole: MB96-10

DIAMOND DRILL HOLE RECORD

Property: MCBEAN Col loc from #4 post, 19262, 60'S, 120'E
Northing: 19085.30
Easting: 9401.60
Elevation: 10993.20

Collar Azimuth (Grid) 359.9
Collar Dip: -64.0
(0 Degrees Grid equals 017 degrees True)
Hole Length: 1677.0

Date Printed: 6 Jul, 1998

*** Dip Tests ***			*** Dip Tests ***		
Depth	Azi.	Dip	Depth	Azi.	Dip
136.0		-63.5	900.0		-61.0
300.0		-61.0	1200.0		-55.0
600.0		-60.0	1500.0		-54.0

Date Started: November 20, 1996
Date Completed: November 28, 1996

Drilled by: BENOIT
Core Size: BQ
Material left in hole BX AND NX CASING
Core Location: Upper Canada Site 1
Logged by: Dale Alexander

Dale R Alexander

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

SUMMARY LOG

.0	136.0	OVERBURDEN
136.0	619.7	GABBRO
619.7	621.2	DIORITE
621.2	621.3	START OF DEFORMATION ZONE
621.3	661.5	ULTRAMAFIC KOMATIITE
661.5	759.0	CARBONATED ZONE
759.0	818.5	ULTRAMAFIC
818.5	840.0	FAULT ZONE
840.0	868.6	ULTRAMAFIC
868.6	906.6	ALTERED GABBRO
906.6	938.0	ULTRAMAFIC
938.0	1014.8	BASALT
1014.8	1036.3	ULTRAMAFIC
1036.3	1062.8	FELSITE
1062.8	1062.9	TIMISKAMING GROUP
1062.9	1092.0	TUFF
1092.0	1111.9	CARBONATED ZONE

2.18728

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
1111.9	1196.4	TUFF								
1196.4	1263.9	ULTRAMAFIC								
1263.9	1325.4	TUFF								
1325.4	1349.6	FAULT ZONE								
1349.6	1677.0	TUFF								

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

.0 136.0 OVERBURDEN
Tropari at 1631 feet- -48d, 348.5az not used.

136.0 619.7 GABBRO
Collar into a sequence of gabbroic rocks typical of the McBean system. The gabbro complex consists of both feldspathic and hornblende-rich phases and ranges from fine to medium grained. The mix of grain sizes is apparently due to a whole series of intrusions or pulses since grain size is quite variable, but contacts between phases are commonly diffuse. The complex is also 'dirty' in that there are scattered inclusions within the system, the whole of which is subsequently cut by dykes of diorite and mafic intrusives. There are also occasional basaltic sections in the complex.
The dominant phase in this particular sequence is hornblende gabbro. This phase is dark green to very dark green and grey-green in colour, and is composed of coarse mafic minerals in a finer grained mafic to chloritic matrix. The diagnostic feature of this unit is the coarse blocky to tabular hornblende phenocrysts that range up to 5mm in dimension. Locally an almost cumulate texture is developed. The feldspathic member varies from grey-green to off-white in colour due to a high percentage of plagioclase which may be partially altered with lime coloured epidote. This member has a quasi network pattern developed from the fine mafic minerals occurring amongst the plagioclase feldspar.
Both of the gabbro members are moderate to strongly magnetic, variably calcitic, in general poorly veined and sparsely mineralized. Veining consists of fine calcite +/- quartz veins and fractures along with some wider stringers. Some of the veins are pitted and vuggy - these veins tending to contain accessory pyrite mineralization both in the veins and in the adjacent wallrock. Accessory veining and fracturing leads to a local pervasive calcite overprinting.
Intrusive members are described separately in the system but do include dioritic dykes and mafic intrusives +/- some basaltic sections.
At the collar of the hole to approximately 184, the core is blocky due to some low angle calcite fractures and some pitted and vuggy veins. There is also a trace of gouge in this area at 138.5 - 4cm within a strongly foliated section from 138.0 to 138.6 at 56 degrees. A second foliated section is noted at 146.5 - 2.5 cm at 58 degrees.
182.4 183.2 Mafic Intrusive - a very fine grained, dull grey to grey green dyke. Calcitic, magnetic, with sharp contacts at 55/65 degrees.

At 195.6, diorite - a 10 cm dyke with broken contacts at roughly 30 degrees. The diorite is dull pinkish grey in colour, fine grained with poorly defined phenocrysts of feldspar, a weak sprinkling of mafic minerals, and, is calcitic and magnetic.

Circa 214, the gabbro becomes more uniform in appearance over a short distance within the hornblende-rich phase, which exhibits some coarse almost cumulate-style textures. This phase grades amphibolitic towards a contact at 265.8.

265.8 282.1 Amphibolitic section, characterized by strong calcite and fine grained amphibolite. The sequence is coarsely granular from

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

carbonate and is strongly magnetic plus there is some accessory pyrite mineralization in the system. The section may represent an original basaltic host rock, although the core is sufficiently altered to preclude positive identification. There is, however, some patchy, pinkish siliceous material in the zone below 275 that is reminiscent of the incipient dyke style of alteration in the main deformation zone. Contacts are at 70/60 degrees and there is a moderately developed foliation in the zone at 55 to 65 degrees.

Below the amphibolitized section, return to gabbro dominated by the hornblende-rich phase. The rock continues to be moderate to strongly calcitic and moderate to strongly magnetic. There are some narrow grey to off-white dykelets of diorite in this area too as at: 297.3 - 2.4 cm at 28 degrees; 311.0 - 1.2 cm irregular; 314.5 - 1.3 cm at 32 degrees; 325.5 - 3.7 cm at 30 degrees; 326.9 - 18 cm, contacts irregular with gabbroic inclusions or more than one narrow dyke.

There is also a narrow, blocky, foliated, partly amphibolitic section from 319.8 to 321.1 with a moderately developed foliation at 65 to 75 degrees.

The core becomes blocky again circa 390 approaching a zone with dioritic intrusives from 390.1 to 428. This section is framed by two sets of dioritic intrusives with a central zone of strongly calcitic variably amphibolitized gabbro that also contains a narrow gouge section at 402.0 2.5 cm at 68 degrees. This section includes :.

390.1 397.7 Diorite a pinkish grey to grey dyke at 42/76 degrees. The diorite contains reasonably well defined plagioclase phenocrysts along with 20 to 25% mafics as a fine sprinkling in addition to being along fine fractures. This dyke is blocky below 392, is weakly to nonmagnetic, essentially noncalcitic, is finely fractured and sparsely mineralized.

397.7 400.6 Gabbro, amphibolitized, somewhat blocky, magnetic, and strongly calcitic. At 398.5 there is a 1 cm mud gouge at 65 degrees.

400.6 401.7 Diorite a grey to pinkish grey dyke that is pitted to weathered, with blocky and broken core, the upper contact is sharp at 36 degrees the lower contact is irregular and is nearly along the core axis with a couple of patches of dyke material extending to 402.0.

402.0 402.1 Fault gouge a narrow, 2.5 cm gouge at 68 degrees. The gouge zone is within strongly calcitic, variably amphibolitic gabbro that extends from 401.7 to 420.9. A central section from 409.1 to 419.3 is the most weakly amphibolitic, amphibole being best developed near the contacts with the dykes.

420.9 428.0 Diorite a pale pinkish grey dyke that is blocky throughout with broken contacts at 44 degrees.

Below the section defined by the diorite dykes the hornblende gabbro continues to be quite strongly calcitic and moderately to strongly magnetic. From 430.1 and 434.0 the gabbro contains a granular, strongly calcitic, magnetic and amphibolitic section with 3 cm chilled to foliated contact

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

zones at 45/40 degrees. This section does maintain a gabbroic texture however and is not interpreted to be a separate mafic intrusive.

From 456.9 to 458.8, the gabbro is very fine grained, chloritic, strongly calcitic and moderately foliated at 35 degrees. Due to a lack of any specific features, this section may be a remnant of basalt or a basaltic inclusion. The rock is magnetic. Contacts at 45/35 degrees.

479.9 480.7 Mafic Intrusive (?), a narrow very fine grained, reddish grey green dyke with sharp contacts at 40/34 degrees. The dyke is calcitic, nonmagnetic, invaded with reddish carbonate and flecked with fine, acicular mafic minerals.

From 508 to 518, the core becomes blocky once more - here related to a series of the pitted to vuggy calcitic fractures at shallow angles to the core axis. There is also a fine grained, moderately foliated, partly amphibolitized section within the zone of blocky core from 512 to 514.9 which is foliated at 35 to 45 degrees.

526.8 to 529.5, contact to a carbonated (calcitic), amphibolitized section that is streaky to foliated at 45 to 50 degrees to the core axis. This style of unit appears to mark the start of a lower contact zone that is hanging wall to the Deformation Zone. These zones are invariably invaded with reddish calcite, are moderately magnetic, weakly to moderately foliated and tend to have rather sharp contacts. While these units initially appear related to the mafic intrusives, many have a crudely developed texture similar to the main gabbro body. With depth the amount of reddish calcite alteration increases and the adjacent hornblende gabbros become very fine grained and strongly altered with chlorite and calcite. The sequence proceeds as :.

526.8 529.5 Amphibolitized, calcitic, foliated section. Contacts at 52/56 degrees.

529.5 532.5 Foliated, calcitic, chloritic section of probable very fine grained gabbro, that is cut by a milky dyke of diorite from 530.3 to 530.9 with very irregular contacts at shallow angles to the core axis.

532.5 543.5 Very fine grained hornblende gabbro, grey green in colour, strongly calcitic and strongly magnetic with a couple of weakly foliated passages next to veining and a weak amphibolitization locally.

543.5 557.6 Contact along veining into an amphibolitized and calcitic, reddish green unit at 55/18 degrees - upper contact with veining. The unit is moderately magnetic, and has a coarsely granular texture from carbonate. The contact zones are streaky with mafic material, while the central section has a crudely developed, spotted gabbro texture with altered tabular metacrysts of chlorite after hornblende. A weak to moderately developed foliation exists in the lower third of the unit at 25 to 30 degrees, which is best developed approaching the streaky lower contact zone.

557.6 559.1 Foliated, chloritic, altered gabbro as the section downhole from the previous amphibolitic unit. Lower contact with calcite

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

veining at 52 degrees.

559.1 566.5 Hornblende gabbro, fine grained.

566.5 567.0 Mafic intrusive ? - a fine grained, calcitic, amphibolitic unit with sharp contacts at 42/51 degrees. The dyke has some fine acicular metacrysts as well as a couple of more tabular spots in the central zone. This unit, however, is definitely crosscutting the gabbro.

567.0 579.3 Hornblende gabbro, chloritic, calcitic, medium grained, strongly magnetic, dark green to dark grey green in colour.

579.3 587.5 Coarse grained, calcitic, amphibolitic, biotitic, moderately magnetic gabbro which mimics the texture of the previous unit but has relatively well defined contact zones. The rock is fine grained over 16 cms at the upper contact, followed by coarsely granular to spotted gabbro to 585 where the rock grades finer grained and amphibolitic to the end of the zone. The core is brownish to grey in colour, contacts at 18/65 degrees.

587.5 599.2 Fine grained hornblende gabbro, variably calcitic and variably spotted with hornblende. The rock varies from dark green to grey green with a reddish colouration approaching the lower contact. The rock is moderately magnetic and is locally foliated at 40 to 45 degrees. From 588.8 to 590.1, the gabbro is cut by 3 irregular pitted to vuggy dykes of fine grained diorite averaging 35 to 45 dtca. The dykes are pale grey to orangish in colour and are fractured to veined with calcite such the rock is hard to identify. Approaching the lower contact the gabbro becomes foliated at 597.8, contorted after 598.1 and strongly reddish stained below 598.4 up to a dyke contact at 599.2. The variations within this zone suggest that variations in rock types here are largely a reflection of alteration hanging wall to the deformation zone.

599.2 601.3 Diorite a narrow, fine to medium grained, pale orangish stained dyke that is variably calcitic, weakly magnetic, finely fractured with calcite and chlorite and contains a couple of inclusions of mafic material. Trace pyrite. Upper contact broken, lower contact at 51 degrees.

601.3 619.7 Hornblende gabbro, fine grained, dark green with variable reddish staining. The rock is moderate to strongly magnetic, moderate to strongly calcitic, and, is variably foliated at 45 degrees - especially so approaching the end of the zone, below 613.4. This lower section is also characterized by patchy veining and silicification with orange-red staining that locally looks like altered diorite although no feldspar is visible but scattered mafic blebs do occur. These patches include 613.5 - 1.4 cms at 74 degrees, 614.4 - 14 cms at 58 degrees, 617.5 - 17 cms at 37/60 degrees, 618.4 - 5.4 cms at 57/40 degrees, and 619.0 - 17 cms at 50/75 degrees. Contacts to all of these patches are irregular. Patches also contain traces of pyrite.

The lower contact of the system is broken at 71 degrees.

619.7 621.2 DIORITE

Contact into a narrow dyke of diorite that appears to mark the end of the

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

gabbro system and the start of the deformation zone. The dyke is pale orangish grey in colour, siliceous, appears to be feldspathic, and is both finely speckled and fractured with mafic material. It does not appear to be either an altered or porphyritic syenite although it is roughly in the correct physical position. The dyke is weakly calcitic in the presence of local fine calcitic fractures, is nonmagnetic, and is sparsely mineralized with fine pyrite. The upper contact is broken at 71 degrees, the lower contact is irregular at 62 degrees.

621.2 621.3 START OF DEFORMATION ZONE

621.3 661.5 ULTRAMAFIC KOMATIITE

Contact into ultramafic rocks that mark the start of the Deformation Zone. The ultramafic is reasonably typical of the system. It is blue black in colour with a variable milky to greyish ankerite content that enhances the foliation at 35 to 45 degrees to the core axis. The rocks are weakly to moderately magnetic, talcose, poorly veined aside from the ankerite content and sparsely mineralized with pyrite.

At the top of the zone the rocks are quite highly contorted with pinkish carbonate veining running nearly along the core axis to 623.1.

From 623.1 to 625.8, the ultramafic is highly carbonated and varies from brownish to greyish and reddish in colour. In the central part of this section there are three narrow, more siliceous units that are more orangish in colour that may represent incipient dykelets of syenite. They are up to 10 cm in width but are too strongly carbonated to permit a positive identification. The adjacent rocks are foliated at 40 to 45 degrees, contacts of the section are broken at 65/44 degrees. Similar sections in other holes suggest that these units are carbonated gabbros but in this circumstance the nonsiliceous sections appear to have more of an ultramafic affinity and are fractured with ultramafic material.

From 636.3 to 639.3 the ultramafic is paler in colour, foliated at 40 to 50 degrees and has a higher ankerite content than the normal blue black variety. Contacts are at 50/37 degrees with the upper part of the zone being fronted by two reddish grey dykes of felsite at 635.5 - 635.9 and and 636.0 - 636.3 with irregular contacts averaging 55 degrees. The two dykes are fine grained, hard, siliceous, strongly carbonated, granular textured, moderately veined with quartz and carbonate, poorly mineralized with pyrite and a trace of chalcopyrite, and, are strongly magnetic from a fair amount of exsolved magnetite.

Below 639.3 return to blue black, magnetic ultramafic with a moderate to well developed foliation at 35 to 45 degrees to the core axis. There is a trace of granulated core here at 632.4, along with some fault gouge at the base of the system.

647.4 647.5 Fault gouge 1.5 cm gouge at 53 degrees.

648.9 649.3 Fault gouge at 62 degrees with 4 cm of granulated core above the gouged zone.

649.3 661.5 Breccia Potentially a fault breccia related to the just previous zones of gouge, consisting of fragments to patches of variously carbonated ultramafic plus or minus some syenitic material within veining. Most fragments are angular and broken and are up to 5 cms in size, with scattered larger patches of carbonated

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

ultramafic to 15 cms. The patches to fragments vary from an olive to reddish colour with or without a blue black streaky ultramafic component. Fragments are enclosed by the blue black ultramafic which is also highly contorted, and, the ankerite lenses to layers are broken into fragments. Some of the core here is blocky and the lower contact is irregular. Pyrite mineralization is very minor in the sequence but the odd splash of chalcopyrite is noted.

661.5 759.0 CARBONATED ZONE

This is an interesting zone of apparent altered ultramafic rocks that take on a wide number of variations, for the most part related to alteration associated with intrusions of felsite. The dominant rock type is ultramafic. It occurs as blue black to greyish sections which are more strongly ankeritic, paler in colour and more competent physically than the typical blue black talcose ultramafic units; in addition to greyer to greener units related to varying ankerite and chlorite inputs; olive to beige, brown and dark yellow ochre sections that are often next to or between wider dykes of felsite; to brown and reddish more siliceous sections that are characterized by the incipient dykelet style of alteration, and; some streaky to layered units that are somewhat suggestive of tuffaceous material. Ultramafic streaks are common throughout the system. The whole of this zone is sparsely to moderately veined with ankerite and quartz, and is sparsely mineralized with pyrite - the better pyrite being within or adjacent to the felsic dykes. The felsite units range from dull grey red units of typical felsite to more orange red units of possible siliceous altered syenite to pale dykes of silica flooded porphyritic syenite in addition to the very fine grained potential incipient orangish dykelets in some of the altered zones.

Alteration in the system is essentially ankerite and chlorite with local trace amounts of fuchsite, and assumed sericite in the yellowish zones.

The system breakdown includes :.

661.5 663.0 Breccia brownish to grey and beige, carbonated +/- syenitic fragments over 34 cms, followed by streaky brownish to beige and olive carbonated ultramafic. This is a continuation of the overlying breccia except that carbonated rocks dominate. Magnetic, 1-2% pyrite.

663.0 664.2 Felsite a dull greyish brown to brown and orangish, siliceous, strongly carbonated dyke with 1-2% fine pyrite. The dyke is finely fractured with ultramafic material - the upper contact being very irregular, the lower contact sharp but stepped at 19 degrees. Magnetic.

664.2 669.9 Dull greyish to brownish to very locally blue black carbonated ultramafic with a moderately developed foliation at 45 to 50 degrees. This zone is variably fractured to brecciated to 665.9 and thereafter foliated to streaky. There is some irregular incipient syenitic material circa 667 and the ultramafic is more siliceous over the basal 10 cm approaching a dyke of felsite. Moderately magnetic, trace pyrite.

669.9 672.2 Felsite Two narrow dull grey red to red dykes of siliceous felsite separated by brownish to grey, siliceous, carbonated, foliated ultramafic from 670.3 to 671.3. Contacts of the dykes

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
		are at 45/60 and 30/82 with all but the lowest contact being diffuse. The dykes are moderately magnetic and contain traces of pyrite.								
672.2	676.5	Carbonated ultramafic, brownish to grey and foliated at first becoming greenish to grey and reddish stained with incipient dykelets of syenite below 675. There is also accessory fine pyrite in this section.								
676.5	677.4	Altered Syenite Two narrow dykes of orange red, siliceous altered syenite separated by dull yellow ochre carbonate alteration from 676.8 to 677.0 that is finely mineralized with pyrite. The syenite dykes are weakly mineralized, contacts are irregular at 70/45 and 54/44 degrees. The dykes are also fractured with ultramafic material.								
677.4	684.7	Carbonated ultramafic with very weak fuchsite alteration, along with irregular syenitic patches up to 6 cms in size, and, brownish to greyish and beige sections of carbonated ultramafic invariably located next to the syenitic patches. There is also one larger, silica flooded and veined dyke of pale reddish porphyritic syenite from 678.2 to 679.1 with irregular contacts at 0/50 degrees. There is a minor amount of fine pyrite in the syenitic patches and in the carb rocks immediately adjacent. The fuchsite alteration imparts a pale greenish colour to the core. The rocks are variably magnetic.								
684.7	686.4	Dark green to black and olive coloured ultramafic with irregular patches of grey red to brick coloured, carbonated felsite. Only trace pyrite here, contacts at 20/45 degrees - lower contact irregular.								
686.4	687.5	Felsite Irregular contact to a dark grey red to brick coloured unit of felsite. The dyke is fine grained, siiceous, hard, strongly carbonated, magnetic and moderately mineralized with pyrite - both as fine disseminations and coarser aggregates along fracture planes. Contacts are 45/67 degrees.								
687.5	691.7	Carbonated ultramafic, grey to brownish and moderately foliated at 55 to 65 degrees with patches of brick red altered felsite and a brownish siliceous section with the incipient dykelet style of alteration from 688.8 to 689.2 at 55/60 degrees. Over the basal 15 cms the rock grades to an olive to reddish colour approaching a dyke contact.								
691.7	695.2	Altered Syenite Two dykes of silica flooded, altered, pale, hard syenite separated by black to brownish carbonated ultramafic from 693.8 to 694.6. Contacts of the dykes are at 30/45 and 50/45 with the upper contact of the first dyke being irregular with veining. The dykes are pale orangish brown to pale orange in colour, are magnetic locally and are finely mineralized with pyrite. The ultramafic is unmineralized.								
695.2	697.2	Carbonated ultramafic with a strong ankerite component and a pale colour. The rock is pale green to grey green with dark ultramafic streaks and weak but pervasive fuchsite alteration along with grey to brownish and olive coloured carbonate patches. Trace pyrite.								
697.2	705.9	Grey to brownish and beige carb rocks with local sections of								

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

more distinct streaky ultramafic and variable olive to reddish tones. The core is moderately siliceous throughout related to some potential incipient dykelets of syenite plus 2 larger dykes at 700.5 to 701.0, an altered brick red to orangish, weakly mineralized, veined and partly brecciated felsite at 42/56 degrees; and, at 702.3 to 703.2 an orange-red, siliceous finely mineralized, altered syenite at 56/50 degrees - upper contact very irregular. The most strongly altered members of the package are the grey to beige and olive coloured rocks that appear to be almost totally carbonate with some streaky alteration. The rocks are variably magnetic and are sparsely mineralized with pyrite.

705.9 714.5 Carbonated ultramafic, the grey to brownish to somewhat cola coloured style of alteration that is characterized by fine incipient dykelets of syenite. The rock is partly siliceous, weakly foliated at 40 to 50 degrees, variably magnetic and sparsely mineralized. Contacts are at 55/37 degrees.

714.5 719.0 Strongly carbonated ultramafic that is highly fractured to veined with orange red staining +/- some potential incipient dykelets of syenite. This section is locally contorted, weakly to moderately magnetic and is quite well mineralized with 3-5 % fine pyrite.

719.0 728.8 Carbonated ultramafic, the typical brownish to grey to cola coloured style of rock that is cut by incipient dykes of syenite, is partly siliceous around these dykelets, variably magnetic and sparsely mineralized. The upper contact is brecciated and chloritic over 10 cms with contacts of the zone at 41/77 degrees. Weakly foliated at 45 to 60.

728.8 732.2 Felsite A relatively narrow dark grey red to brick coloured strongly carbonated dyke of felsite. If not for this section's siliceous nature, more strongly reddish colour and sharp contacts, it would be very difficult to separate from other portions of the carb zone. Contacts are at 77/50 degrees.

732.2 759.0 A section of the grey to brownish to cola coloured carbonated ultramafic with incipient dykelets of syenite, which in this section is intercalated with narrow horizons of blue black to grey, softer, ultramafic. The brownish sections are partly silicified as normal, weakly to moderately magnetic. The more ultramafic members are weakly to nonmagnetic and essentially unmineralized. Contacts between members are diffuse to sharp and generally subparallel to the foliation at 50 to 60 degrees to the core axis. Alteration at the lower contact of the zone is stronger and varies from brownish to beige and dull yellow ochre below 755. There is also accessory alteration for 10 cms above the upper contact of the only recognizable felsite dyke in this sequence from 749.3 to 750.4 at 60/65 degrees. The felsite is dull grey red in colour, very fine grained, and is mineralized with fine pyrite. Contacts are irregular and somewhat diffuse.

The lower contact of the system is sharp although a little irregular at 78 degrees with greyish to ochre alteration.

759.0 818.5 ULTRAMAFIC

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

Contact into a sequence of the more normal blue black carbonated ultramafic with a moderate to well developed foliation at 55 to 65 degrees. The rocks are soft, soapy, talcose, unctuous and are variably magnetic - more so with depth. Aside from lenses, stringers and discontinuous layers of ankerite throughout the system, the core is sparsely veined with ankerite and quartz and is very sparsely mineralized with pyrite. Within the system there are scattered brownish altered horizons that appear to be related to the incipient dykelet style of alteration in addition to some wider dykelets of possible altered felsite. As normal, these altered units are partly silicified, moderately magnetic, moderately foliated and are better mineralized than the surrounding blue black ultramafic.
Altered units include : at 772.2 - 6.5 cms at 70 degrees with a 2.4 cm dykelet of felsite; 781.0 to 781.5 at 50/65 degrees with a 2 cm dykelet of altered syenite; 782.8 to 784.4 with numerous brownish sections in the order of 2 to 8 cms in width with a more definite altered felsite at 783.9 - 6 cms at 45 degrees; 784.4 to 786.6 brownish, variably siliceous with several narrow incipient dykelets; 790.5 to 790.8 a dull grey red, strongly carbonated felsite at 60 degrees followed by 9 cms of brownish alteration; 791.4 to 792.2 brownish alteration at 45/70 degrees; and 807.5 to 810.3 brownish with incipient dykelets amongst broken core.
Below 799 the core is blocky and broken with a trace of gouge noted at 799.4 - 5 mm at 50 degrees, along with scattered granulated core and 5.5 feet of lost core from 802.0 to 807.5. The lower contact is with gouge.
799.0 802.0 Blocky, highly fractured core.
802.0 807.5 Lost core.
807.5 818.5 Blocky, highly fractured core.

818.5 840.0 **FAULT ZONE**
Contact into a fault zone, the margins of which are defined by gouge material, but the preceeding zone of blocky and lost core is probably part and parcel of the same system i.e. Below 799. The host to the fault is a black to blue black very fine grained, magnetic, talcose ultramafic. The rock is moderately calcitic around pinkish to white calcite stringers with a diminished ankerite component here. There is some brownish to black patchy alteration in the system often with diffuse contacts and locally suggestive of amphibolite. Calcite veining is about 10%, pyrite mineralization is very sparse. Gouge sections include :.
818.5 820.0 Fault gouge.
830.0 830.5 Fault gouge.
830.0 831.1 Fault gouge lower contact at 61 degrees.
832.6 832.9 Fault gouge.
835.4 836.4 Fault gouge lower contact at 60 degrees.
837.9 838.0 Fault gouge.
839.8 840.0 Fault gouge.

840.0 868.6 **ULTRAMAFIC**
Contact into an unusual sequence of ultramafic rocks. The fringes of this zone from 840.0 to 842.0 and 856.0 to 868.6 consist of very dark green to black and blue black ultramafic intercalated with brownish to reddish and greyish carbonated sections that are similar to the incipient dykelet style of alteration except that here the light coloured lensoid to stringer-like

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

'dykelets' are carbonate, and the carbonate is calcite. The blue black sections show no reaction to HCl except around calcite stringers while the brownish to reddish sections are strongly reactive. The brown altered zones, however, do contain streaks to stretched lenses of ultramafic material within them.
The central part of this unit is of ultramafic composition but is coarsely granular to finely felted to minced in texture and is strongly calcitic. All of the rocks are moderately magnetic except for the blue black ultramafics which are only weakly so. The core is very poorly veined and sparsely to unmineralized.
Two units near the base of this section appear to be narrow dykes. They are deep reddish wine to greyish red in colour, fine grained, calcitic, magnetic and are flecked with tiny lenses of mafic material. For lack of better definition they are thought to be mafic intrusives.
The variation from ankerite alteration to calcite appears to have a profound effect on the rocks.
861.0 861.8 Mafic Intrusive Upper contact broken, lower at 41 degrees.
865.4 867.5 Mafic Intrusive Contacts at 45/56 - lower contact with brownish alteration over 11 cms in the adjacent ultramafic.

868.6 906.6 ALTERED GABBRO
Contact into another unit that is unusual in the normal scheme of the Deformation zone. This particular gabbro is coarsely granular textured from calcite with a fine grained granular carbonated to finely felted matrix. There are definite textures here that are typical of the hanging-wall gabbros except that the rocks are strongly altered and deformed. The gabbro varies from very dark green locally to a more common reddish to greyish rock that is moderately to strongly magnetic. While carbonate is the most abundant mineral, chlorite is also present as well as some subrectangular carbonated phenocrysts that look like relict plagioclase. Fine grained pseudomorphs of chlorite after amphibole are also present, along with scattered mafic inclusions to 2 cms in size. The core is cut by a few, random brownish to reddish foliated zones as well that contain some dark streaky ultramafic material. Foliation in these zones ranges from 40 to 65 degrees. They are up to 12 cms in width and contrast with the massive gabbro. The rocks are finely fractured with calcite - some of the stringers being pitted and vuggy, and, the rock contains a moderate amount of finely disseminated pyrite.
The lower contact is foliated at 36 degrees over 6 cms with some accessory fine pyrite. The precise contact is broken at 26 degrees.

906.6 938.0 ULTRAMAFIC
Return to a sequence of fine grained blue black ultramafic rocks intercalated with the reddish to brownish strongly carbonated sections. As before, the operative carbonate here is calcite - the difference being that the blue black ultramafic is also locally pervasively calcitic. The brownish altered sections are moderate to stongly magnetic, the blue black zones being less magnetic. Also as previous, the brownish to reddish sections look similar to the incipient dykelet style of alteration but the vein-like material here is all calcite and the rock is not silicified. There are also ultramafic streaks within the altered rocks. The core is moderately

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

fractured with calcite, and is sparsely mineralized with pyrite. The rocks are moderately foliated at 50 to 60 degrees.
The upper contact of this system is along another of those fine grained, red brown, calcitic, nonmagnetic dykes of possible mafic intrusive. The rock is weakly to nonmagnetic, calcitic, moderately foliated at 40 to 50 degrees, is finely fractured with calcite and finely mineralized with pyrite. Contacts are at 26/44 degrees.

906.6 909.0 Mafic Intrusive.

The system is also cut by a rather clean, pinkish grey to grey, siliceous, felsic dyke from 926.9 to 929.7 at 75/65 degrees. The dyke is hard and siliceous with recognizable albite and more tabular plagioclase feldspars in a fine grained matrix that is partly fractured with mafic material. The unit is weakly fractured with calcite and is mineralized with fine splashes to fracture controlled coarser aggregates of pyrite and chalcopyrite.

926.9 929.7 Felsite.

From 931.0 to 935.5 the core is blocky with some granulated sections.
The lower contact of the system is along a narrow, 4 cm, orange red dyke of syenite with veining at 8/47 degrees. Contacts are irregular.

938.0 1014.8 **BASALT**
Contact into a sequence of basalt - another abberation from the normal deformation zone package. The dominant rock type is basalt, a fine grained to very fine grained, medium to dark green unit with a moderate to well developed foliation at 35 to 60 degrees. The foliation is enhanced by stringers to streaks, layers and lenses of calcite. Consequently, all of the core is moderate to strongly calcitic throughout. The rocks are also moderately magnetic throughout. Within the system there are a number of streaky, black, calcitic, amphibolitic units intercalated with the basalt. These units often appear to be ultramafic in composition but are not at all soapy to talcose, and may be amphibolitized basalts although the mineralogy precludes a definite identification - ultramafic preferred.
Also cutting the sequence are a number of tentatively identified gabbroic to mafic intrusives. In a couple of the larger dykes the central part of the dyke is distincly gabbroic in texture even though the rock has been strongly invaded with reddish to greyish calcite. The matrix in these areas is dark green and finely granular to finely felted. The contact zones on the other hand are generally much redder in colour and harder, with fine fractures that appear to be healed with calcite and chlorite +/- quartz. The fine fractures are usually bleached reddish to beige at their margins. Lower in the sequence there are a number of smaller dykes that do not have a central core that is particularly gabbroic and are finely fractured throughout such that these units are reddish and silicified with a very fine chloritic calcitic matrix that suggests a felsite to potential trachyte origin. The units, however, are thought of as altered gabbros. The smaller dykes also have porphyritic to porphyroblastic margins - an apparent metamorphic effect with ovoid to subrectangular metacrysts, some of which are probable plagioclase. The dykes also have sharp, although irregular to ragged

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

contacts suggestive of an intrusive rather than an alteration-style contact. The dykes are moderately magnetic, further indicative of a gabbroic versus a felsic origin.
The sequence breakdown includes :.
938.0 938.6 Contact zone, pale reddish carbonated basalt (10 cms) followed by 6 cms of chloritic basalt.
938.6 939.8 Ultramafic Komatiite a dark streaky, amphibolitized section. Foliated at 55 to 60 degrees.
939.8 958.3 Basalt, green with the odd beige to dull reddish alteration patch that tends to carry trace accessory pyrite.
958.3 962.2 Ultramafic Komatiite Black, foliated to contorted, amphibolitic unit of potential ultramafic affinity, contacts are foliation parallel and somewhat gradational at 40/55 degrees.
962.2 965.5 Basalt, green, calcitic..
965.5 968.0 Mafic Intrusive A dark green, medium grained, granular to finely felted mafic dyke that is weakly calcitic, weakly magnetic, and is speckled with fine amphibolitic blebs, plus rare amphibole pseudomorphs. Contacts are at 70/35 degrees and sharp.
968.0 982.1 Basalt, with the odd brownish to greyish and reddish altered section and minor amphibolitized streaks. Foliation is locally contorted and ranges from 35 to 55 degrees.
982.1 986.9 Altered Gabbro Dark reddish green, calcitic gabbro with wine red, more siliceous, fractured contact zones. Contacts are irregular at 14/58 degrees. Magnetic, trace pyrite.
986.9 987.5 Basalt, dark green..
987.5 992.8 Altered Gabbro Dark green to dark reddish green with narrow more siliceous contacts over a couple of cms. Contacts irregular at 15/72 degrees.
992.8 994.9 Basalt, green, calcitic with minor brownish alteration at the previous gabbro contact.
994.9 995.4 Altered Gabbro One of the narrow reddish siliceous dykes at 62/60 degrees. Trace pyrite.
995.4 997.5 Basalt, with a black amphibolitic section at 994.8 - 9.5 cms at 55/48 degrees. This section is strongly calcitic.
997.5 1002.3 Altered Gabbro A dark reddish green to reddish grey dyke with contacts at 51/20 degrees - lower contact very irregular, and porphyritic ?.
1002.3 1002.6 Basalt, dark green, contorted as dyke contacts.
1002.6 1003.2 Altered Gabbro Another of the siliceous style of dyke at 40/53 degrees.
1003.2 1004.0 Basalt.
1004.0 1004.4 Altered Gabbro Siliceous, reddish dyke at 59/52 degrees.
1004.4 1007.3 Basalt, quite dark green and strongly calcitic here with patchy dark amphibolitic streaky sections.
1007.3 1009.1 Altered Gabbro A dull reddish green to grey, siliceous, carbonated gabbro dyke at 71/64 degrees. Trace to 1% pyrite.
1009.1 1010.0 Basalt, dark green with a trace of the black amphibolitic material.
1010.0 1010.8 Altered Gabbro Siliceous style of dyke at 64 degrees.
1010.8 1013.1 Basalt, dark green to green with a variable black amphibolitic component. At 1011.8 there is a dark reddish green siliceous

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

gabbro dyke at 60 degrees - 4 cms.

1013.1 1014.0 Altered Gabbro The last of the reddish siliceous gabbro dykes. This particular dyke is the lightest coloured of the lot but appears to be of the same style as the others. Contacts are at 57/60 degrees.

1014.0 1014.8 Basalt, dark green, calcitic. Lower contact at 66 degrees.

The contact placement is somewhat arbitrary but the ensuing amphibolitic rocks can be used to frame the carb sequence that follows.

1014.8 1036.3 ULTRAMAFIC

Contact into a zone that marks the transition from basaltic rocks to ultramafic rocks, and, at depth felsites with ultramafic. The contact is placed along a black streaky amphibolitic section that appears to be of ultramafic affinity but this type of unit is also common in the overlying basalts. The distinction here is that this member is ankeritic as opposed to the overlying rocks that are calcitic - ergo the change is chemical as well. This narrow section is followed by carb rocks and dykes of felsite before more typical blue black ultramafic rocks are reached.

The sequence breakdown includes :.

1014.8 1015.8 Ultramafic, streaky, amphibolitic, ankeritic, foliated at 55 to 60 degrees. Weakly magnetic, unmineralized.

1015.8 1018.6 Carbonated Zone Grey to pale olive and pale green fuchsitic carb rocks that are quasi layered to foliated at 55 to 60 degrees. The upper part is the more layered to tuffaceous-looking section with more foliated rocks below 1016.4 where fuchsite comes into the system. The basal zone from 1018.0 to 1018.6 is pale grey brown to pale brown in colour and foliated at 55 to 65 degrees. The carb rocks are sprinkled with exsolved magnetite, are poorly veined and sparsely mineralized with pyrite.

1018.6 1021.8 Felsite A pale pinkish grey to orangish, siliceous, very fine grained, weakly magnetic dyke at 46/60 degrees. The dyke is poorly veined and sparsely mineralized.

1021.8 1036.3 Ultramafic, with some subtle variations. This section commences along 10 cms of strongly ankeritic ultramafic with a sharply gradational contact into medium grey carbonate rocks of a definite ultramafic affinity from 1022.1 to 1023.2 at 55/48 degrees. This section is followed by black strongly ankeritic ultramafic to 1025.5 before a second brownish to greyish carb section is encountered from 1025.5 to 1026.0 - upper contact at 45 degrees, lower contact broken. Below 1026 the rock is black to blue black, moderate to strongly ankeritic ultramafic save for a 4 cm fuchsitic carbonate band at 1033 at 56 degrees. The ultramafic in this lower area is foliated at 45 to 55 degrees with some highly contorted layering, is poorly veined aside fron the normal streaky ankerite, sparsely mineralized and exhibits patchy magnetism. The lower contact is sharp but a little irregular at 57 degrees.

1036.3 1062.8 FELSITE

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

Contact into a sequence dominated by dykes of felsite cutting blue black soapy, unctuous ultramafic rocks. This zone continues to be ankeritic. The felsites vary from grey to brownish, beige and orangish to more rarely wine red to purple, and are very fine grained, hard, siliceous units. The lighter coloured parts of the system are essentially a function of fine fracturing where the rock becomes bleached or at contact margins. Contacts with the ultramafic rocks are clean and sharp although often a little irregular. All of the dykes are moderate to strongly magnetic, finely fractured, moderately veined with quartz and ankerite and are locally well mineralized with pyrite - both finely disseminated and with coarser fracture controlled aggregates.
The ultramafics are typical with moderate to strong ankerite and a patchy magnetism although most of the ultramafic is weakly to nonmagnetic. There are local brownish altered horizons within the system and mineralization tends to be minor in amount. The ultramafic is moderate to strongly foliated at 50 to 65 degrees except over the basal five feet where the foliation averages 25 to 30 degrees.
The system includes :.

1036.3 1041.7 Felsite, orangish to grey and beige, magnetic, well mineralized. The base of the dyke is very irregular with two knots of brownish altered silicified ultramafic at 1040.6 - 7.5cms, and 1041.3 10.5 cms. Contacts with the felsite are very irregular to tectonically (?) distorted. The lower contact of the system is also irregular but sharp averaging 45 degrees to the core axis.

1041.7 1042.6 Ultramafic Black partly amphibolitized ultramafic with knots to broken lenses of ankerite +/- quartz. Unmineralized.

1042.6 1045.8 Felsite, grey to brownish with orangish and beige healed fractures. Mineralized with 2-3% pyrite most of which is coarser and fracture controlled. Contacts are irregular at 48/24 degrees.

1045.8 1048.0 Ultramafic Blue black, foliated at 45 to 55 degrees, with a section of brownish alteration at 1047.7 - 9cms at 50 degrees.

1048.0 1050.1 Felsite, most pyrite here is coarse and fracture controlled. Contacts are at 50/60 degrees.

1050.1 1051.2 Ultramafic Moderately silicified, and brownish altered between two dykes. Foliated at 45 to 55 degrees, trace pyrite.

1051.2 1051.8 Felsite, narrow, dark grey to beige, trace pyrite. Contacts at 56/70 degrees.

1051.8 1055.4 Ultramafic Blue black, weakly magnetic, trace of pyrite with a brownish altered, siliceous carbonated section at 1053.5 to 1056.1 at 57/55 degrees that appears to be the incipient dykelet style of unit. The zone is foliated at 55 to 65 degrees.

1055.4 1056.3 Felsite, pinkish grey to orangish, trace pyrite. Contacts at 85/64 degrees - the upper contact with 2.5cms of dark alteration.

1056.3 1057.0 Ultramafic Blue black.

1057.0 1058.1 Felsite, grey beige to orangish with a wine red upper contact over 13cms. Mineralized with 1-2% pyrite. Contacts at 57/70.

1058.1 1062.8 Ultramafic Blue black, foliated ultramafic. Foliated at 35 degrees over most of the unit but steepening at the base

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

although it is somewhat contorted at that point. Lower contact sharp at 65 degrees.

1062.8 1062.9 TIMISKAMING GROUP

1062.9 1092.0 TUFF

Contact into tuffaceous material that would appear to mark the start of a Timiskaming type assemblage. The zone is strongly altered and varies from a dull grey green to reddish grey green, brownish, grey and reddish. Alteration consists of a mixture ankerite and chlorite with hematite staining throughout. The distinguishing feature of the tuff is the typical gritty texture of the matrix. No specific fragments are noted but the rock is identical to the less altered varieties seen later in the hole.

The tuff is magnetic and is partially silicified from what appear to be incipient dykelets or stringers that kick extra silicification out into the wallrock. The core also has a distinctive speckled to spotted texture from ankerite metacrysts throughout the system. The core is moderately veined with white to pinkish and orange carbonate stringers and fractures, some of which appear to be incipient dykelets. The core is rather sparsely mineralized with pyrite. There is a weak to moderate foliation throughout at 40 to 55 degrees to the core axis. The lower contact is sharp but broken at 49 degrees. There is accessory staining and alteration over the basal 8 feet. Also, at 1065.1 there is a 7 cm chloritic band with veining at 50 degrees.

1092.0 1111.9 CARBONATED ZONE

Contact into a narrow sequence of carb rocks fronted by foliated, carbonated ultramafic.The sequence proceeds as :.

1092.0 1100.7 Ultramafic A package of black to greenish black carbonated ultramafic with 3 patches of reddish, mineralized altered felsite just cutting the core axis between 1092.9 and 1093.9, a 1 cm streak of olive coloured carb running along the core axis at 1095.2, and, a buff to beige altered dyke of felsite also just cutting the core axis at 1098.1 to 1099.1. The surrounding carbonate has a high ankerite content, is weakly to nonmagnetic, sparsely mineralized and has a foliation that varies from 60 to 65 degrees at the start of the zone, changing to nearly along the core axis below 1095 feet. The core contains some 7 to 10% milky to watery quartz and ankerite stringers.

1100.7 1103.8 Carbonated Zone A sharply gradational contact into emerald green fuchsitic carbonate rocks with a foliation running effectively along the core axis. This section contains two olive to buff, mineralized carb patches at 1102.9 and 1103.1 at 6cms and 3cms respectively. The core is otherwise unmineralized, but is veined with quartz ankerite. The lower contact is gradational.

1103.8 1111.9 Ultramafic Strongly ankeritic and pale greyish to olive in colour with a local very weak fuchsite component. Foliated at 50 to 70 degrees, nonmagnetic, unmineralized. The lower contact is very irregular averaging 65 degrees.

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
1111.9	1196.4	TUFF A sequence of tuffaceous rocks of presumed Timiskaming affinity wedged between two zones of ultramafic. The tuff is best defined in a central zone away from the accessory alteration of the contact sections. Here the rock is typically gritty textured with very scattered flattened fragments up to 2cms in size. Layering is essentially defined by variations in sericite, chlorite and carbonate contents. Layering is not so much true bedding but variations in streaky alteration combined with a moderate foliation at 55 to 65 degrees to the core axis. The layering is also locally wavy to contorted, particularly in the contact zones. The rocks tend to be weakly magnetic throughout the system, are poorly veined with stringers and fractures of carbonate +/- quartz, and are in general sparsely mineralized with fine pyrite. The upper contact zone is highly complex. It consists of reddish to orangish strongly carbonated tuffs intercalated with dark, more chloritic tuffs that have a streaky sericite component to 1115. This section has a moderate foliation at 65 to 70 degrees, and contains an 11 cm section of apparent carb rocks with veining at 1113.5 at 66 degrees. From 1115 to 1120.8, the tuff is finely granular and bleached to a pale reddish grey green with a local yellowish cast before a second highly altered and contorted zone. The contorted zone, fron 1120.8 to 1132 consists of reddish, granular, strongly carbonated and stained tuffs intercalated with yellowish green to olive and black carb to carbonated ultramafic rocks. The reddish stained, contorted zone grades paler in colour to bleached tuff around 1132, which in turn grades to more normal tuff as described above after 1137. The central zone is foliated to streaky layered at 55 to 65 degrees. It contains both more massive gritty sections and streaky sections that have a stronger sericite and chlorite component. The foliation/layering becomes wavy to variably contorted below 1074 but only limited bleaching is in evidence until after 1088 and then it is patchy. There is some accessory bleaching and reddish alteration around an irregular section of dark greenish black carbonated ultramafic from 1094.5 to 1095.0. The lower reaches of the tuff are highly contorted and strongly carbonated. The lower contact is broken at 46 degrees.								
1196.4	1263.9	ULTRAMAFIC Contact into a mixed sequence of rocks dominated by ultramafic. The top of the sequence is relatively uniform in appearance as ultramafics go, although the basal half contains a great deal more included material and consequently appears much more strongly altered. The ultramafic ranges from black to blue black with a strong component of milky to greyish ankerite. The ultramafic also contains some of the more brownish altered units in addition to some sections that are more chloritic and greenish black in colour. For the most part the ultramafic is weakly to nonmagnetic although the brownish to greenish altered sections tend to be moderately magnetic and carry trace accessory pyrite. At 1198 there are some pinkish contorted carbonated streaks with accessory pyrite over 10 cms.								

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

At 1200.9 - 7 cms pinkish grey, partly siliceous, strongly carbonated, weakly magnetic felsite at 65 degrees.

1205.3 1205.4 Fault gouge 3.5 cms at 70 degrees, plus a trace of mud higher up at 1204.9 - 5 mm at 72 degrees.

At 1213.4 - a 10 cm fragment of red siliceous felsite just cutting the core axis.

At 1216.1 - a bright, orange red syenite with veining, 5.7 cms at 75/65 degrees. The dykelet is unmineralized.

1220.8-1221.5, 1221.8-1221.9, And 1227.6-1228, grey red siliceous bands of possible tuff (inclusions ?), with associated reddish brown to wine red alteration of the adjacent ultramafic rocks. There is also some potential incipient felsite activity in these areas, but the basic altered rock appears to have been originally tuff. Magnetic, some accessory pyrite, with foliation parallel contacts at 55 to 65 degrees.

At 1214.9 - 3.5 cm vein with orange red syenite at 57 degrees.

At 1227.4 - 1 cm (?) mud gouge at 63 degrees.

1233.5 1248.0 Tuff A section of strongly bleached and carbonated tuff sitting between two zones of altered ultramafic. The tuff varies from orange red to greenish brown in colour, is layered to laminated to foliated at 50 to 60 degrees with some wavy to crudely kinked layers. The tuff is weakly to moderately magnetic, poorly veined and sparsely mineralized. The core is partly blocky and ends along one foot of broken core followed by a foot of sand and gouge. Above the tuff section the ultramafic is blocky to broken over 1.7 feet.

1248.0 1254.4 Ultramafic, blue black to greenish with one wine red to orange red tuff section from 1249.4 to 1250.2 at 80/43 degrees. The tuff section is magnetic and mineralized with 1-2% fine pyrite, the ultramafic has weak patchy magnetism and much less pyrite.

1254.4 1258.7 Felsite A deep wine red to grey red dyke of felsite. The dyke is siliceous and hard, nonmagnetic and rather massive with ghost phenocrysts of plagioclase. The core is weakly fractured with some ultramafic material and is cut by pitted to vuggy orangish to white stringers and fractures of carbonate. The core is sparsely mineralized with trace to 1% very fine pyrite. Contacts are at 78/80 degrees and partly absorbed.

1259.5 1260.5 Felsite A second dyke of felsite as above although the core is blocky here. Contacts are at 63/44 degrees.

The intervening ultramafic, and the ultramafic to the end of the zone contains reddish to brownish altered sections, is quite strongly ankeritic and is partly contorted. The lower contact is sharp at 75 degrees.

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

1263.9 1325.4 TUFF

Return to Timiskaming type tuffaceous rocks, again wedged between two horizons of ultramafic. As previous, the tuffs are more strongly bleached and altered at the contact zones with a cleaner, although still altered central zone. The tuffs in the central zone are dominated by dark green to medium green and grey green varieties. The sequence includes more massive granular to gritty units to finely laminated/streaky units and sections with alternating gritty layers and finely laminated layers on the cm scale. Fragments are most often found in the finely laminated to streaky sections and are dominated by the dark chloritic type. Layering plus a weakly developed foliation average 50 to 60 degrees to the core axis. There are numerous sections, however, where the layering is contorted to ribbon-like.

The sediments are weakly to nonmagnetic - magnetism being associated with the more highly altered members that are invaded with carbonate. The carbonate in this sequence is calcite, which occurs as fine stringers and fractures as well as a pervasive alteration that may or may not impart a reddish colouration to the rock. More greyish to reddish bleached and altered sections are generally calcitic, magnetic and mineralized with pyrite which is minor in amount overall.

The upper contact zone, to 1267, is variably bleached greyish to brownish and wine red. Layering in this section is contorted and most of the zone is ankeritic - calcite occurring below that point. Pyrite is minor.

The lower contact area grades sharply more reddish over the basal 7 cms. The lower contact is sharp at 44 degrees.

1325.4 1349.6 FAULT ZONE

Contact into a zone of ultramafic rocks that contain a number of sections of granulated and gouged core with most of the zone being blocky in nature as well. The ultramafic is typically blue black with a variable ankerite component. It is nonmagnetic and, aside from ankerite streaks and patches is poorly veined and unmineralized. The carbonate component includes both ankerite and calcite.

Within the system there are also some very heavily carbonated remnants of tuff. The tuff parts vary from greyish to brownish and reddish stained and tend to be mottled in appearance from the strong carbonate although a gritty texture can occasionally be observed. The tuffs are similarly blocky in nature, poorly veined and sparsely mineralized with traces of pyrite.

1326.1 1328.0 Fault gouge.

1328.0 1329.0 Lost core.

1329.0 1329.5 Fault gouge These are the first and major sections of gouge in the system with other gouge noted at 1334.3 - 1.5cm at 70 degrees; 1334.6 - 2.4cms; 1334.9 - 2.5cms at 72; 1336.2 -1cm at 70; 1336.7 - 2.7cms; 1338.6 3cms; 1339.3 - 2mm at 67; 1339.7 - 6mm at 62; 1339.9 - 3.4 cms, and; 1345.0 - 3cms, plus a number of mud slips and granulated core with the blocky nature of the system.

Blocky, carbonated tuff sections are found at:.

1330.9 1333.4 Tuff contacts broken.

1341.0 1342.2 Tuff contacts broken and.

1343.8 1344.8 Tuff contacts broken.

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

While all of the contacts of the tuff units are broken and/or blocky there is a general foliation/cleavage in the fault zone at 65 to 75 degrees. The lower contact of the ultramafic is sharp at 60 degrees.

1349.6 1677.0 TUFF

Return to tuffaceous and/or volcaniclastic rocks that are assumed to form part of the Timiskaming Group. This sequence continues to the end of the drillhole. Unlike a number of other Timiskaming intersections noted further east, this sequence has few coarse fragmental sections - the zone is dominated by the near massive, gritty textured style of volcaniclastic with scattered streaky laminated sections where most of the fragments are seen. The main fragment types are mafic to sericitic although a variety of types are found. Most are in the mm range and up to 2 cms or so, and are flattened/stretched subparallel to a weakly to moderately developed foliation at 50 to 60 degrees to the core axis.

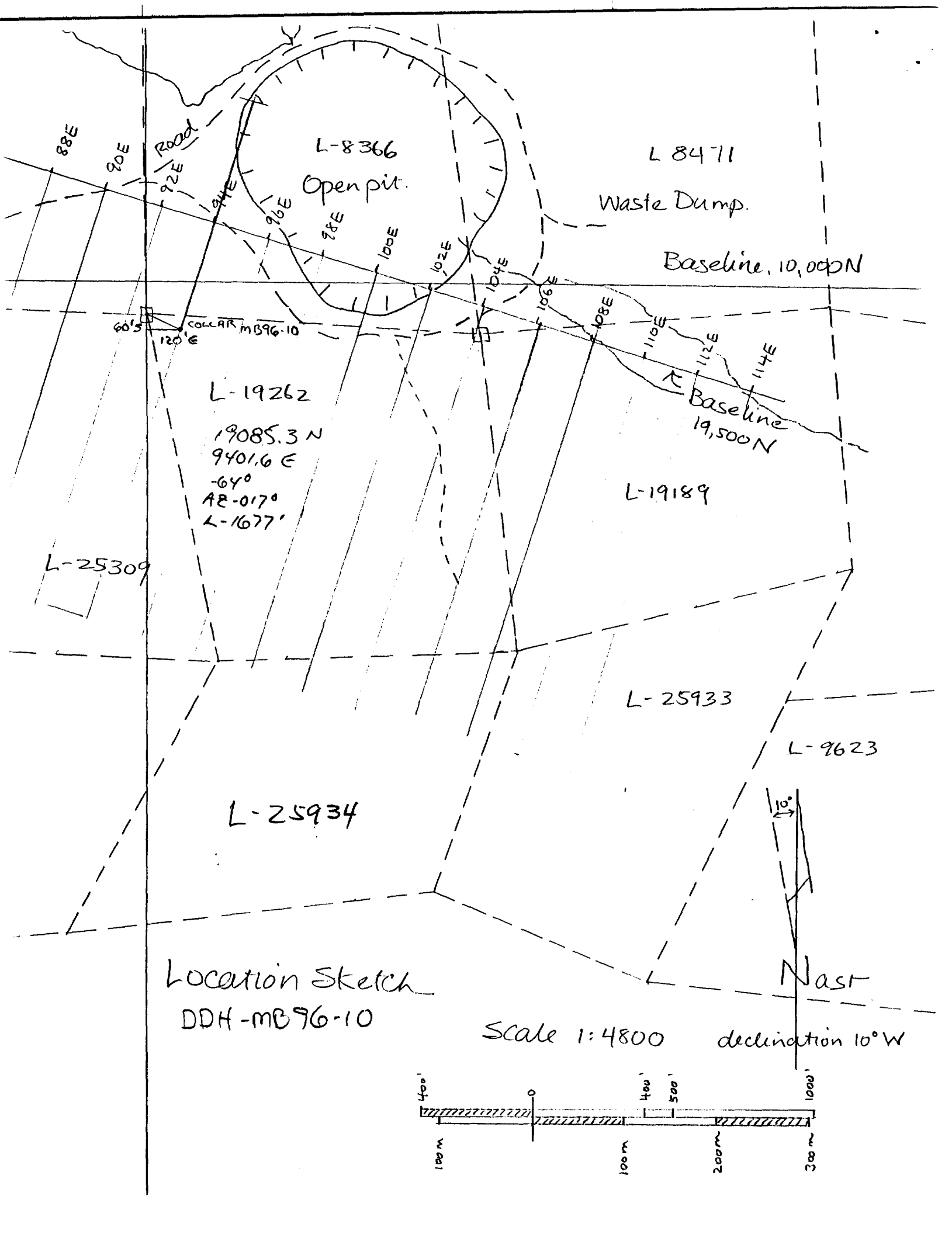
The rocks vary from medium grey to grey green in colour with isolated lighter coloured bleached sections.There are minor reddish carbonate plus dark chlorite altered sections away from the upper contact. Essentially the rocks are nonmagnetic, are poorly veined and sparsely mineralized. There are, of course, exceptions - the upper contact zone is weakly to moderately magnetic adjacent to the fault zone and down to approximately 1366, and, there are occasional areas where finely disseminated pyrite in the order of 2-3% is found. The tuffs are poorly veined to fractured with calcite but a local pervasive calcite alteration is noted with some very fine fracturing that is not obvious until HCl is applied.

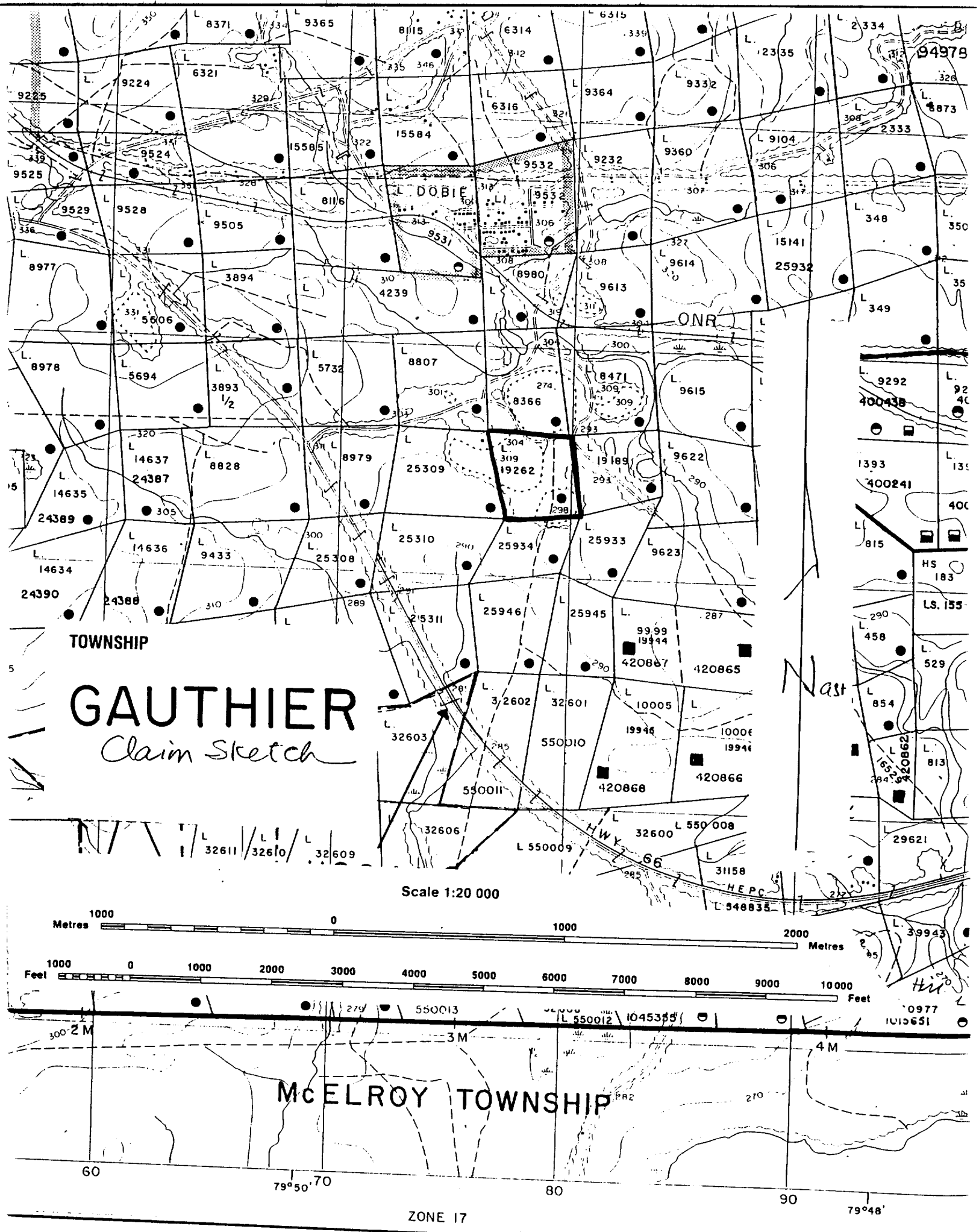
The upper contact zone is brownish to greenish and reddish stained next to fault zone and down to approximately 1368 where the last of the reddish staining of calcite diminishes. Magnetism also diminishes across this zone and the core is pervasively calcitic. Fine pyrite is minor in amount but is sprinkled throughout this area.

Below the upper contact zone the rocks are quite uniform with massive gritty zones and streaky zones with more noteworthy fragments. The core is partly bleached and blocky between 1376 and 1377.2; blocky from 1398 to 1399; and is cut by accessory quartz ankerite veining running nearly along the core axis between 1450 and 1454.

Between 1418 and 1443 there is some cream coloured carbonate-sericite alteration in the system which is also found in a streaky fragmental unit between 1467.5 and 1474, and below 1504 this alteration becomes quite prominent to the end of the hole. At the very end of the hole, after 1657.4, there are scattered larger quartz to cherty subrounded fragments to 6 cms in size in the cream alteration section. The cream alteration layering/streaking in this area becomes highly contorted, the rock grades lighter in colour and there is accessory yellowish streaky sericite alteration. Trace pyrite at end of hole.

End of Hole 1677.0 Feet.


L-8366
Open pit.
L 8471
Waste Dump.
Road
88E
90E
92E
94E
96E
98E
100E
102E
104E
106E
108E
110E
112E
114E
Baseline, 10,000N
Baseline
19,500N
60'S
120'E
COLLAR MB96-10
L-19262
19085.3 N
9401.6 E
-64°
AZ-017°
L-1677'
L-19189
L-25309
L-25933
L-9623
L-25934
10°
Nast
Location Sketch
DDH-MB96-10
Scale 1:4800
declination 10°W
400'
0
400
500
1000'
100m
100m
200m
300m


TOWNSHIP
GAUTHIER
Claim Sketch
DOBIE
ONR
HWY 66
HEPC
Scale 1:20 000
1000 Metres 0 1000 2000 Metres
1000 Feet 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 Feet
2M
3M
4M
McELROY TOWNSHIP
60
79°50'
70
80
90
79°48'
ZONE 17

QUEENSTON MINING INC

DIAMOND DRILL HOLE RECORD

Drill Hole: MB97-14

Property: MCBEAN Col loc from #1 post, L25934, 30'S, 780'W
Northing: 18150.90
Easting: 10340.60
Elevation: 10978.00

Collar Azimuth (Grid) 3.1
Collar Dip: -66.0
(0 Degrees Grid equals 017 degrees True)
Hole Length: 2849.0

Date Printed: 22 May, 1998

*** Dip Tests ***

Depth	Azi.	Dip	Depth	Azi.	Dip
50		-66.5	1808		-63.5
300		-66.5	2108		-64.0
608		-66.0	2408		-65.0
1208		-65.0	2707		-61.0
1508		-63.5			

Date Started: January 6, 1997
Date Completed: Jan 16, 1997

Drilled by: BENOIT
Core Size: NQ
Material left in hole NX CASING
Core Location: Upper Canada Site 1
Logged by: D. R. Alexander & JDS

Dale R Alexander J Schonfeldt

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

SUMMARY LOG

From (ft)	To (ft)	Geology
.0	46.0	OVERBURDEN
46.0	1980.5	GABBRO
1980.5	1980.6	START OF DEFORMATION ZONE
1980.6	1989.0	ALTERED SYENITE
1989.0	2047.2	ULTRAMAFIC
2047.2	2095.9	CARBONATED ZONE SYENITE
2095.9	2099.7	FAULT ZONE
2099.7	2111.2	ULTRAMAFIC
2111.2	2192.0	FELSITE ALTERED GABBRO
2192.0	2219.9	FAULT ZONE
2219.9	2441.6	ULTRAMAFIC
2441.6	2472.5	FAULT ZONE
2472.5	2525.8	ULTRAMAFIC
2525.8	2527.0	FAULT ZONE
2527.0	2542.0	FELSITE
2542.0	2594.0	FAULT ZONE
2590.8	2594.0	FAULT ZONE

2.18728

From (ft)	To (ft)	Geology
2594.0	2616.0	CARBONATED ZONE
2616.0	2639.9	FELSITE
2639.9	2669.0	GREEN CARBONATE ZONE
2669.0	2710.9	ULTRAMAFIC KOMATIITE FELSITE FAULT ZONE
2710.9	2714.8	FELDSPAR PORPHYRY
2714.8	2714.9	TIMISKAMING GROUP
2714.9	2849.0	TUFF ULTRAMAFIC KOMATIITE

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

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
.0	46.0	OVERBURDEN								
46.0	1980.5	GABBRO Collar into the broad sequence of gabbroic rocks hanging-wall to the deformation zone. The package is reasonably diagnostic in that the gabbroic rocks are represented by both feldspathic and hornblende-rich members, the whole of which is cut by dykes of diorite and mafic intrusives. For the most part, the host rock would appear to be a basalt, although windows of the host tend to be quite rare in the package itself. Early in the drillhole, the feldspathic gabbro member dominates. It is characterized by a plagioclase-rich matrix that is off-white to pale greenish to greyish in colour which is thoroughly speckled with mafic minerals that tend to create a rather network pattern. The mafic component is largely hornblende but some amphibole is suggested as well as variable chlorite alteration. The feldspathic matrix is also variably altered with epidote. The hornblende-rich variety is darker in colour to dark green and dark grey green, and consists of blocky to tabular phenocrysts of hornblende in a dark green, chloritic matrix. Both gabbro members are moderate to strongly magnetic, are variably chloritic and calcitic, and contain a mixed variety of included material. Both fine grained and coarser grained phases exist although contacts between phases tend to be diffuse to gradational. The gabbro is weakly to moderately veined with stringers of calcite +/- hematite and chlorite, and is very sparsely mineralized with pyrite. In areas of accessory fracturing and/or intrusion the gabbro can become pervasively calcitic. Also, in local areas with pitted and vuggy calcitic fractures, accessory pyrite is common. The gabbro also has a weak reaction to the presence of ankerite. The largest intrusive member by volume is diorite. Typically these rocks are pinkish to grey in colour and are composed of plagioclase and albite with minor to negligible quartz and about 25% mafic minerals. These dykes are normally magnetic, harder than the adjacent gabbros, fine to medium grained and contain scattered inclusions of mafic material - generally fragments of the adjacent gabbro. Fracturing with calcite and hematite plus variable reddish staining is common in the diorites. Mafic intrusives tend to very fine grained dykes that are variably calcitic and magnetic and are in sharp contact with the adjacent rocks. They differ from the fine grained, spotted, hornblende-rich members in that they have a very fine grained matrix and tend to carry fine acicular needles of amphibole or chlorite after amphibole. Basaltic designations tend to be reserved for very fine grained rocks of a somewhat indeterminate origin in that there is a lack of gabbroic characteristics but few positive fingerprints. Basaltic members are most often very fine grained, dark green to black and amphibolitic. They can readily be confused with contact metamorphic effects of the intrusive rocks. Sections of interest in the package include :. 46.0 67.5 Gabbro, potentially the partly weathered regolith that is weakly to moderately calcitic, variably reddish coloured from carbonate and contains fairly numerous acicular blebs of amphibole or chlorite after amphibole. This section is dark grey green with a dull reddish stain and appears to be more indicative of a fine to									

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
		medium grained gabbro than a mafic intrusive. The rock is moderately magnetic. Lower contact along 4.5 cms of stained calcitic fracturing at 28 degrees.								
106.2	108.9	Diorite, pinkish to grey, medium grained, weakly magnetic, with mafic to gabbroic inclusions to 2 cms in size. Contacts are irregular at 55/39 degrees with accessory amphibolitization and chloritization in the adjacent gabbro. Unmineralized.								
118.6	118.9	Diorite (?), a very fine grained, orangish pink, weakly calcitic unit at 22/27 degrees. Trace pyrite in adjacent gabbro.								
138.3	139.1	Diorite, grey to pinkish grey, weakly magnetic, trace pyrite. The upper contact is irregular to diffuse, lower contact sharp at 45 degrees.								
141.9	142.0	Diorite, pink, fine grained, at 40/57 degrees.								
164.2	165.4	Mafic intrusive, very fine grained, grey green in colour with streaky to patchy epidote alteration and fine acicular pseudomorphs after amphibole throughout. The dyke is nonmagnetic and noncalcitic. Contacts are sharp at 34/36 degrees.								
173.3	173.5	Diorite, orange red very fine grained with an 8 cm inclusion of gabbro at the upper contact. Contacts are at 48/58 degrees. There are also several very narrow dykes in this area as at 169.0 - 3.5 cms, pinkish grey at 45 degrees; 170.5 - 1.2 cms, orange red at 56 degrees; 176.5 - 1.8 cms, fracture controlled at 10 degrees; 181.5 to 182.0, pinkish grey at 37/16 degrees followed by irregular patches of diorite running along the core axis to 182.6; at 187.0 - 2.5 cms running along the core axis for about 1 foot at 6 degrees; and, 196.0 to 196.9 - 2.2 cms, very fine grained, orange red stained running along the core axis. Around the unit at 187 there is some amphibolitization of the adjacent gabbro and there is some accessory orange red staining with fracturing from that point to around 215 feet.								
198.6	200.6	Diorite, pinkish grey with orange red fracturing and staining, contacts irregular at 44/34 degrees. This unit marks the continuation from above - the larger dykes being pulled out to plot separately. Other dykes in the system include 206.3 to 206.8 - very fine grained, orange red with contacts at 52 degrees - the lower contact being irregular and stepped; 212.9 to 214.4 - very fine grained, orange red stained, contacts at 38/60 degrees; 216.3 to 216.8 - pinkish to brownish, medium grained, quite clean in appearance, with contacts at 60/44 degrees; 217.7 to 218.6 - pinkish grey with orange red staining and fracturing, medium grained, contacts at 43/52 degrees; 219.5 to 220.2 - fine to medium grained with strong orange red staining, contacts at 47/51 degrees; at 226.1 - an irregular 8 cm patch, fine grained, orange red; 226.3 to 226.8 - very fine grained, orange red stained, contacts at 45/31 degrees; at 227.1 - 2.8 cms, orange red, very fine grained at 51 degrees; at 232.0 - 9 mms, fine grained, orange red at 47 degrees, and; at 232.8 - 1.8 cms, pinkish grey at 58 degrees.								
235.1	237.6	Diorite, pinkish grey, fine to medium grained and cleaner than previous with very minor staining and alteration of the orange red type. Contacts are sharp but a little ragged at 52 degrees.								

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
		The dyke is hard, weakly to moderately magnetic, and noncalcitic. In addition to the dyke the overall system is cleaner here for a period with less hematite staining along fractures.								
238.0	239.4	Diorite, pinkish grey, fine to medium grained, contacts at 60/43 degrees. This dyke is again followed by a number of smaller dykes as : 239.6 to 240.0 - pinkish grey, contacts at 61/37 degrees; at 240.9 - 1.5 cms at 55 degrees; at 244.9 - 2 cms at 63 degrees; at 245.9 - 1.2 cms at 30 degrees; at 246.9 - 2 cms at 44 degrees, and; at 247.6 - 2.5 cms at 42 degrees.								
250.4	250.9	Mafic intrusive, very fine grained, dull greenish to brownish in colour and finely speckled with subovoid mafic specks. The dyke is weakly magnetic, noncalcitic, and has very sharp contacts at 34/36 degrees although the lower contact is fractured and orangish stained. The unit is unmineralized.								
252.9	253.0	Diorite, pinkish grey, 1.2 cms at 16 degrees that is followed by similar dykes in this area as: 254.4 to 254.9 - fine grained, orange red at 84/86 degrees; at 256.5 - 1.5 cms, tan to beige coloured at 63 degrees, and; 258.8 - 2.5 cms, orange red at 62 degrees. The host in this area continues to be feldspathic gabbro.								
263.4	275.7	Diorite, pinkish grey to orange red and brownish with accessory fracturing and staining around the upper contact becoming more variable thereafter. The dyke is weakly to moderately magnetic throughout, is hard and is essentially noncalcitic. Contacts are at 35/41 degrees. This dyke is followed by some irregular dioritic patches and narrow dykelets down to 295.8 with 2 wider dykes at : 288.5 to 289.5 - grey to deep orange red with irregular contacts at 30/25 degrees, and; 294.7 to 295.8 - dull pinkish grey, medium grained with irregular contacts at 30/40 degrees. From this last dyke at 295.8 the core is a relatively uniform feldspathic gabbro up to the next dyke contact at 335.7.								
335.7	357.0	Diorite, grey to pinkish grey and orange red, medium to coarse grained, weakly to moderately magnetic, hard and essentially noncalcitic except for some fine calcitic fractures. This particular dyke has a fair number of mafic inclusions, the largest being feldspathic gabbro near the contacts. The core is finely fractured and healed with orange red staining - particularly so after 350 feet. Contacts are sharp although a little irregular at 22/26 degrees. Unmineralized.								
357.0	359.6	Epidote altered gabbro with an irregular section of coarse diorite from 358.0 to 358.7. This altered gabbro section is wedged between two larger dykes of diorite.								
359.6	374.2	Diorite, pinkish grey to grey and locally orangish stained, medium grained, and similar to the preceeding unit except for a finer grain size and the core is more highly fractured. The lower part of the zone is blocky from fracturing. Both contacts are irregular.								
374.2	379.0	Blocky, highly fractured core, apparently related to some pitted and vuggy fractures with calcite and hematite running along the core axis as well as some low angle fracturing with a narrow								

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
		diorite dyke in this area. There is accessory hematite here, but no pyrite.								
380.0	380.4	Mafic intrusive (?), a fine grained, finely speckled, chloritic unit that is followed by blocky to broken core to 381.2. Within the broken core there are fragments of dioritic material but the contacts are undefined. The upper contact of the mafic intrusive is diffuse at 60 degrees. The rock is nonmagnetic and weakly foliated.								
385.2	389.3	Diorite, a grey to pinkish grey dyke with some shallow angle fractures and accessory orange staining below 387.5. The upper contact is diffuse at 22 degrees, the lower contact is along a zone of broken core plus some irregular included material but appears to be at 10 degrees. There is minor accessory pyrite associated with the shallow fractures.								
390.5	392.0	Blocky, broken core of no specific origin other than some shallow core angles in this area.								
393.5	395.9	Diorite, dull pinkish grey, medium grained, with scattered gabbroic inclusions. Unmineralized. Contacts are irregular to diffuse averaging 52/60 degrees.								
396.5	399.5	Diorite, dull pinkish grey, medium grained, contacts are irregular to ragged at 29/17 degrees.								
400.2	401.4	Diorite, dull pinkish grey, medium grained, contacts are a little irregular averaging 31 degrees.								
404.4	404.5	Diorite, pinkish grey, 3 cms at 72 degrees.								
413.7	414.0	Diorite, pinkish grey at 56/55 degrees with a narrow 1.8 cm diorite just above this unit at 413.3 at 46 degrees.								
417.8	418.7	Diorite, grey, calcitic, with orange toned contact zones. The accessory calcite alteration here appears to reflect the presence of a fault zone down hole. Contacts of the diorite are at 21/19 degrees. The gabbro that the diorite is cutting is greyer and mottled in nature. It is more strongly carbonated below 416.9 and is weakly but pervasively calcitic up to the contact with basalt.								
421.7	440.1	Contact into an interesting zone of alteration and amphibolitization that appears related to a narrow section of fault gouge at 423.5 - 2 cms at 52 degrees. The upper contact is diffuse to sharply gradational from mottled, calcitic gabbro to amphibolitic calcitic rocks suggestive of an original basaltic protolith. The upper part of the zone is black in colour, granular textured, nonmagnetic, strongly calcitic, and is essentially composed of calcite and amphibole. From 426.0 to 429.0, the core is cut by some 50 to 60% quartz calcite veining wherein the wallrock is very fine grained, chloritic, calcitic and amphibolitic, and, has a somewhat unctuous feel suggestive of serpentine/komatiitic rocks. Amphibolitic calcitic rocks continue to 432.6 where the core sharply grades into dull grey green very fine grained, calcitic, magnetic rocks that are more competent and lighter coloured than previous. Textures in area below 432.6 are impossible to confirm as either gabbro or basalt - this may be a function of diminishing alteration or the presence of a number of grey, calcitic diorite dykes in this								

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
		lower area. The rocks are not uniformly magnetic, and the only suggested mineralogy is chlorite, calcite and amphibole. Diorite is found at 434.1 to 434.9 at 60/33 degrees; at 435.9 - 1.5 cms with irregular contacts at 25 degrees, and; from 437.0 to the end of the zone at 440.1 with a variety of amphibolitized inclusions here. The contacts of this lowest diorite are irregular at 62/58 degrees - the basal 17 cms being lighter in colour and noncalcitic with the adjacent gabbro being of the coarse feldspathic variety. Code 5's for this system follow.								
421.7	423.5	Basalt, (?), amphibolitized.								
423.5	423.6	Fault Zone.								
423.6	426.0	Basalt.								
426.0	429.0	Quartz veined.								
429.0	432.6	Basalt.								
437.0	440.1	Diorite.								
440.7	441.7	Diorite, pinkish grey to brownish, medium grained, noncalcitic weakly magnetic, weak epidote alteration, unmineralized, contacts at 47/40 degrees.								
441.9	442.7	Diorite, pinkish grey to brownish as above - contacts at 67/65 degrees.								
449.1	450.0	Diorite, grey to brownish, contacts irregular. The host to these dioritic members continues to be the grey green feldspathic gabbro.								
459.8	456.1	Fine grained gabbro phase or a mafic intrusive. The rock is dark green, very fine grained and chloritic with a spotted texture. It is weakly to nonmagnetic and noncalcitic. Contacts are irregular to ragged at 60/54 degrees.								
459.1	459.3	Diorite, an irregular, pinkish grey, fine to medium grained patch just cutting the core axis.								
461.8	464.0	Diorite, grey to grey green with pinkish toned to stained contact zones. The dyke is medium grained and contains mafic inclusions to 2 cms in size. Contacts are irregular to ragged averaging 47/63 degrees.								
481.0	481.4	Calcite veining with hematite and strong orange to rusty staining. The veining itself is 2.8 cms thick at 30 degrees and contains stained fragments of wallrock up to 1 cm in size. There are a couple of splashes of chalcopyrite in the system as well.								
493.3	493.4	Diorite, 2.3 cms, pink grey at 72 degrees.								
499.6	500.2	Spotted hornblende gabbro phase cutting feldspathic gabbro at 32/30 degrees - contacts are irregular to ragged. The blocky hornblendes in the center of the dyke are partly amphibolitized. The dyke is noncalcitic and nonmagnetic. It is in this area that a few more of the hornblende gabbro phases are noted.								
538.4	542.5	Diorite, grey, with relatively well defined feldspar phenocrysts along with chlorite spots to pseudormorphs after mafics and scattered mafic inclusions to 2 cms in size. Aside from some pinkish staining along fine fractures the unit looks more like a feldspar porphyry with moderate alteration than a typical diorite. The upper contact is sharp but irregular averaging 45 degrees - the lower contact is sharp but broken.								
554.0	564.0	Blocky, highly fractured core, apparently related to pitted to								

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

vuggy calcitic fractures at shallow angles to the core axis. The rock is dark reddish green to brownish in colour, is moderately calcitic throughout and is mineralized with up to 3% fine pyrite.

564.3 564.4 Diorite, orange red, 1.4 cms at 37 degrees.

569.0 569.3 Diorite, orange red, fine grained, irregular contacts at 25/41 degrees.

574.0 574.4 Diorite, orange red to pinkish, fine grained, irregular contacts at 50/55 degrees.

580.1 597.5 Diorite, dull grey and dirty to locally pinkisk around some alteration-healed fractures. The core is partly blocky from scattered pitted to vuggy fractures at shallow angles to the core axis. There are also several gabbroic inclusions in the system. The core is also cut by a narrow dyke of possible mafic intrusive from 587.0 to 587.7 at 60/45 degrees. This mafic dyke is dark green in colour and spotted with chlorite - contacts are sharp suggesting that the mafic dyke is younger. The lower contact of the diorite is broken with coarse grained feldspathic gabbro - the upper contact is sharp at 45 degrees.

609.6 609.7 Diorite - 3.5 cms, pinkish, granular at 67 degrees.

611.1 611.4 Diorite, pinkish to orangish, granular, at 60/65 degrees.

625.4 625.7 Diorite, dull greyish red, very fine grained to mottled in appearance from weak pervasive calcite here. Contacts are at 45 degrees.

630.4 640.7 Diorite, very fine grained, finely granular textured and grey to brownish and orangish in colour. The dyke is mottled in appearance which may be a function of the blocky nature of this zone although there does not appear to be any accessory calcite associated with this low angle fracturing. The core is finely fractured and is moderately magnetic. At 636 there is an 11.5 cm inclusion (?) of gabbro, or, there are two separate dykes here. The upper contact is irregular averaging 60 degrees, the lower contact is broken.

643.2 645.9 Diorite, grey, fine grained, mottled, granular textured, with some fine pinkish stained fractures. Upper contact broken, lower contact at 54 degrees. Similar to just previous dyke.

689.7 719.9 Diorite, a rather broad of the grey to grey green and brownish fine grained rocks that are hard, moderately magnetic, speckled with mafic minerals, somewhat mottled in appearance and finely fractured with milky to orangish stained calcite. Again the core is blocky, presumably related to the fine fracturing particularly below 692 feet. This may in fact be a series of dykes since there are scattered inclusions to remnants of other rocks as : 691.1 to 691.7 - a brownish to black, chloritic, calcitic, amphibolitized section at 78/60 degrees; 703.7 to 704.7 - an irregular section of feldspathic gabbro, and; 707.1 to 707.5 - a second irregular patch of feldspathic gabbro. Above the dyke there is patchy amphibolitization in the gabbro over about 5 feet. This is followed by the upper contact zone of the dyke which is quite dark grey and very fine grained between the two amphibolitized sections, and is sparsely mineralized with pyrite. After the amphibolitized section from 691.1 to 691.7 the

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
		diorite grades from grey with sightly pnkish tones into the grey green variety with various staining and blocky core related to the fracturing. Outside contacts of the system are at 70/50 degrees. Aside from the upper contact zone there is very little pyrite here.								
719.9	723.5	Mafic intrusive, a sharp contact with iron staining into an interesting dyke of apparent mafic intrusive. The dyke is interesting in the fact that it is a finely granular to finely felted unit essentially composed of calcite and amphibole. The dyke has the typical acicular needles of amphibole in a grey calcitic matrix. The rock is moderately magnetic and is strongly calcitic. Unfortunately, the contacts are with diorite and with partly amphibolitized gabbro such that the relative age of this type of unit is not determined. Contacts are at 50/57 degrees. The rock is unmineralized.								
724.3	727.6	Diorite, the dull greyish to brownish, fine grained, granular textured style of unit at 65/60 degrees.								
729.7	730.5	Diorite, dull grey green to brownish, very fine grained as above, contacts are at 67/63 degrees.								
731.1	732.7	Basalt (?), a narrow, very fine grained, chloritic, calcitic, foliated, weakly magnetic section at 27/43 degrees. The rock is foliated at 50 to 60 degrees and is dark green in colour. It is sufficiently different than the other rocks in the system, and, the lower gabbro contains a number of mafic inclusions to suggest that this is a basalt that may be part of the original protolith.								
766.0	768.3	Diorite, grey, and chock full of plagioclase +/- albite phenocrysts to 4mm in size in a fine grained, grey, felsic matrix that is granular in texture and has a fair mafic component. The dyke is weakly magnetic locally and is stained pinkish along fine fractures. Contacts are irregular and partly diffuse.								
774.6	775.5	Diorite, pale pinkish, coarse grained. Contacts are sharp although partly stepped along fractures at 41/27 degrees.								
776.7	783.2	Diorite, grey to orange, fine grained and orangish stained from fine fracturing. The core is also blocky here. Contacts are sharp but a little diffuse at 42 degrees.								
793.3	793.7	Diorite, orangish stained, fine to medium grained with irregular contacts averaging 55/38 degrees.								
795.2	796.0	Diorite, pale pinkish to orangish, fine to medium grained, containing several mafic inclusions at the upper contact area. The upper contact is consequently very irregular, lower contact sharp at 60 degrees.								
799.0	799.3	Diorite, pale pinkish, medium grained, irregular lower contact. Contacts at 52/50 degrees - lower contact is the average.								
801.0	801.6	Diorite, pinkish to orange with a mix of mafic to gabbroic inclusions to 3 cms in size throughout. The diorite is fine to medium grained. Contacts are irregular at 45/48 degrees.								
815.5	817.5	Diorite, greyish pink, fine to medium grained and somewhat mottled in appearance. Contacts are at 52/56 degrees.								
818.9	819.5	Diorite, as just previous, greyish pink, contacts at 65/38								

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
		degrees - upper contact is irregular.								
821.0	822.8	Diorite, as above, greyish pink, fine to medium grained, mottled, with some amphibole metacrysts here. Contacts are sharp although a little irregular at 45 degrees. Just in this particular area, the intervening gabbro between these three dykes is granular textured, fine grained, nonmagnetic, weakly calcitic and amphibolitized.								
840.0	855.9	Amphibolitic section, apparently related to a pale greenish to blue green coloured shear at 854.1 - 1.3 cms at 7 degrees, plus a gritty slip just above the shear at 853.8 at 12 degrees. Amphibolitization begins immediately below a pitted quartz vein at 840 - 3 cms at 30 degrees, and continues beyond the shear to 855.9 where the rock grades gabbroic. This sequence appears to be an alteration/metamorphic phenomenon rather than an altered basaltic host. The amphiboliic rocks are moderate to strongly calcitic, variably chloritic, weakly to moderately magnetic, moderate to strongly foliated at 0 to 30 degrees, and, are locally sprinkled with very fine pyrite. The rock varies from very dark green to brownish and black in colour with some strong orange red staining around the main shear. From 849.9 to 851.4 the core is cut by irregular dykes to patches of pale pinkish, medium grained diorite that are running along the core axis.								
858.5	859.0	Diorite, pale pinkish, medium grained with some orange red staining along fractures and at the contacts. Contacts are irregular at 42/22 degrees.								
869.3	869.8	Diorite, pinkish, medium grained with irregular veined contacts at 36/12 degrees.								
872.9	873.2	Dioritic material around a pitted and vuggy calcite vein with irregular contacts averaging 24 degrees.								
873.7	874.6	Diorite, grey to pinkish toned with relatively abundant and well developed feldspar phenocrysts. Contacts are a little irregular at 55 degrees. The gabbro in this area is very dirty to brecciated with a number of fragments and some of the fractures filled with dioritic material. Thus these few greyish dioritic dykes in the area from 870 to 881 are hard to delimit.								
875.9	876.5	Diorite, greyish with pinkish tones, medium grained, contacts are irregular at 45 degrees - the lower contact swinging to nearly along the core axis.								
881.0	882.9	Diorite, pale pinkish, medium grained with irregular contacts at 21/57 degrees.								
883.2	885.5	Diorite, pinkish, medium grained with a couple of 4 to 5 cm dykelets of potential feldspar porphyry cutting the diorite at 884.0 and 884.5 at 38 and 44 degrees respectively. These two dykelets have very fine grained, dull grey red contact zones. The dykelets are not completely diagnostic of feldspar porphyry but are distinctly different than the diorite. Contacts are irregular. Contacts of the diorite are at 90/23 degrees plus there is a fragment of diorite in some blocky core just below this area at 886.1 - a 2.5 and a 4 cm piece.								
887.9	888.1	Mafic intrusive - a very fine grained, greyish green, finely granular dykelet or inclusion with irregular contacts averaging								

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
		70/62 degrees.								
894.8	894.9	Diorite, orange red, 1.8 cms at 34 degrees.								
896.5	896.6	Diorite, grey red, 3 cms at 50 degrees.								
903.3	903.5	Diorite, grey red, 3.5 cms at 45 degrees.								
909.4	912.3	Diorite, reddish grey to pinkish grey with an irregular upper contact zone to 911 that contains coarse mafic to gabbroic fragments or inclusions to 6.5 cms in size. The upper contact is irregular but appears to be at 62 degrees, the lower contact is broken at 23 degrees.								
924.9	927.7	Diorite, a dull grey to grey green, mottled, carbonated dyke that is speckled with feldspar in a fine granular matrix that is more chloritic than normal. The upper contact is a little irregular at 82 degrees, the lower contact is broken at 52 degrees. The adjacent gabbro (?) in this area (i.e. Downhole is amphibolitized and calcitic.								
927.7	933.2	Amphibolitic between the two dioritic dykes.								
933.2	946.2	Diorite, dull grey green to grey with greyer to pinkish tones in the upper third of the dyke. The upper third of the dyke also contains scattered mafic to gabbroic inclusions up to 4 cms in size, while the lower portion contains more chlorite alteration and looks identical to the just previous dyke. As usual, the diorite is weakly to moderately magnetic, weakly fractured with pinkish healed calcitic fractures, and is essentially unmineralized. Both contacts are with calcite veining at 50/38 degrees.								
960.1	960.5	A narrow, 1 cm dykelet of reddish, medium grained diorite at 22 degrees.								
971.4	976.5	Diorite (?). This is a dull grey red to grey, very fine grained unit, that is very siliceous and is mottled in appearance. The dyke appears to contain an amorphous mass of greyish to pinkish toned feldspar which is host to a number of mafic specks including amphibolitic pseudomorphs. The dyke is hard and siliceous but no more so than some of more pristine varieties. It is moderately magnetic throughout and has fine grained, greyer contact zones at 55/72 degrees. It is unmineralized.								
987.0	995.0	Fractured, accessory orange red, hematite stained calcitic fractures within the gabbro along with weak but pervasive calcite alteration.								
998.4	1000.8	Two, narrow, pinkish orange dioritic dykes at the top and bottom of this section - 2 cms at 24 degrees, and 2.5 cms at 0 degrees, with a very fine grained, granular buff to yellowish brown dyke of possible felsite (??) at 999.4 - 3 cms at 20 degrees. The felsite dyke of this colour is most unusual in this area but the dyke is unveined and unmineralized.								
1000.8	1025.2	Gabbro, fine to medium grained, feldspathic with scattered narrow dioritic dykelets and patches to 3 cms in size.								
1025.2	1026.7	Diorite, pinkish, medium grained with a 4.5 cm, very fine grained, cherty upper contact zone. Contacts are at 65/64 degrees.								
1027.6	1027.8	Diorite, fine to medium grained, orange red at 22 degrees - the lower contact being irregular to ragged. There is also a								

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
		small splash of chalcopyrite at the upper contact.								
1045.4	1045.9	Diorite, pinkish to grey with veining at the contacts. The dyke is medium grained. Contacts irregular averaging 57/40 degrees.								
1048.3	1064.3	Diorite, grey, medium grained with pinkish to reddish tones around some of the calcitic fracturing. The dyke is relatively clean but does contain a fair number of mafic inclusions up to 2.5 cms in size in the basal third of the unit. The upper contact is clean and sharp at 39 degrees, the lower contact is irregular to diffuse at 51 degrees.								
1087.9	1088.9	A narrow, chloritic, foliated, amphibolitic section at 31/26 degrees. The rock is foliated at 20 to 30 degrees, is granular textured and strongly calcitic. The adjacent gabbro is also calcitic over a few feet. There is no certainty here that the unit represents an original basaltic protolith.								
1124.5	1124.9	Calcite veining associated with two narrow shears or alteration-filled fractures at 1124.7 - 30 degrees and 1124.9 - 37 degrees. The alteration fracturing is blue grey in colour. Above this section there is accessory orange red staining along fractures,to 1115, while, below the zone is a calcitic hornblende gabbro. There is also some accessory pyrite, as well as the odd splash of chalcopyrite here.								
1139.0	1149.5	Amphibolitic section, potentially related to accessory milky, calcitic fractures. Amphibolitization is variable with chlorite and strong calcite alteration as well. Contacts are gradational and there is some accessory pyrite in the system.								
1150.1	1150.6	Diorite, medium grained, grey with pinkish tones. Contacts are irregular to stringer-like at 55(?)/65 degrees - the upper contact being very irregular.								
1155.2	1162.6	Diorite, dull greyish to grey green in colour and relatively dirty with fairly numerous mafic fragments along with accessory chlorite alteration in the matrix and a local weak overprinting from calcite. Feldspars are not as well developed as in some of the previous chloritized dykes but they are noteworthy. The dyke is moderately harder than the adjacent gabbro, weakly to moderately magnetic and is moderately fractured with calcite. The intervening gabbro between these two diorite dykes is fractured to veined with dioritic material. Contacts are a little diffuse at 77/45 degrees.								
1166.9	1168.0	Diorite (?), a narrow orange red, pitted, stained dyke that is only 2.2 cms wide, but it runs along the core axis averaging 15 degrees.								
1186.5	1188.0	Blocky and broken core apparently related to some gritty fractures (no gouge noted), at 7 to 25 degrees. Above this section there is accessory reddish carbonate in the system occurring along fractures as well as pervasive calcite alteration for about 20 feet, while below the zone there is accessory reddish calcite and chlorite to 1189.5 where the rock grades to a chloritic, calcitic amphibolitic zone.								
1189.5	1200.0	Amphibolitic, section - calcitic and partly chloritic with a granular to local finely felted texture. Near the base of this								

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
		system there is a weak development of feldspar metacrysts, and there are two very narrow (6mm and 1 cm), dykelets of pinkish orange diorite at 1199.6 and 1199.0 at 43 and 46 degrees respectively. Contacts of the zone are rather sharply gradational at 40/44 degrees.								
1202.5	1203.4	Diorite, pinkish grey, fine to medium grained and partly granular textured from calcite. Contacts are at 50/61 degrees.								
1203.5	1204.9	Diorite (?), dull grey red, siliceous and very fine grained to amorphous. The dyke is very finely speckled with mafics and has irregular to ragged contacts averaging 55/65 degrees.								
1214.6	1215.3	Diorite, dull grey red, very fine grained to amorphous again and moderately siliceous. Contacts are irregular to ragged with some fracturing at 50/46 degrees. There is also a small patch of diorite at 1210.9 just cutting the core axis. Also in this area is some quartz calcite veining running along the core axis from 1211.1 to 1211.8, 1216.0 to 1218.1 (average 1.8 cms thick), and, 1218.4 to 1218.8. The veining is greyish in colour, contains some pyrite and traces of amphibole, and, promotes local reddish staining and accessory pyrite in the adjacent feldspathic gabbro.								
1225.3	1225.4	Diorite, 2.3 cms, orange red at 58 degrees.								
1226.4	1226.6	Diorite, pinkish grey to orangish, fine to medium grained, at 45 degrees.								
1230.7	1230.8	Diorite, 1.2 cms, orangish at 62 degrees.								
1231.7	1232.4	Diorite, pinkish grey with weak orangish tones, fine to medium grained, contacts a little irregular at 50/57 degrees.								
1232.5	1240.0	Diorite, grey to orangish, medium to coarse grained with fine grained contact zones. Contacts are at 57/52 degrees and a little irregular. These dykes are quite normal in appearance and are cutting rather clean feldspathic gabbro.								
1244.4	1245.5	Diorite, very fine grained, orangish grey in colour, and marginal in apearance to an altered syenite. The dyke is hard, weakly but pervasively calcitic, finely speckled with mafics and is moderately magnetic. Contacts are sharp but irregular to fractured at 56/62 degrees.								
1252.5	1276.4	Chloritic, calcitic and partly amphibolitic hornblende gabbro that has a local brecciated appearance and some accessory calcite fractures. This area is also cut by a few narrow dykelets of diorite as : at 1255.7 - 1.5 cms, fine grained, orange red wiggling along the core axis at 15 degrees for about 35 cms; at 1260.3 - 1.5 cms at 70 degrees that is offset by a fracture running along the core axis; at 1262.2 - 5 cms, grey diorite at 55 degrees; at 1262.6 - 5 mm orange red at 35 degrees; and, 1263.4 - 2.5 cms, orange red at 45 degrees. The gabbro is moderately magnetic throughout - there being no appreciable difference in magnetism relative to the amount of amphibolitization.								
1276.4	1281.8	Mafic intrusive (?), a narrow, foliated dyke that is strongly calcitic and moderately magnetic with an irregular upper contact averaging 50 degrees, and a highly contorted lower contact running along the core axis. The dyke contains fairly								

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
		numerous acicular blebs of amphibole in a chloritic and calcitic matrix that is foliated at 30 to 40 degrees. There is some reddish to greyish calcite flooding in the dyke below 1279 and there is accessory pyrite in this area as well.								
1281.8	1285.0	Diorite, grey with weak pinkish tones particularly in the central 25 cms of the dyke. Contacts are very irregular - the lower contact being broken to offset at 55 degrees. This diorite is partly amphibolitized across the upper and lower thirds of the dyke. It is also moderately magnetic, weakly to moderately overprinted with calcite, moderately hard particularly in the central zone, and is weakly mineralized with pyrite.								
1285.0	1295.2	Amphibolitic section that does not appear to be a continuation of the mafic intrusive above the diorite. The rock is very dark green to black in colour, weakly to moderately foliated at 35 to 50 degrees, moderately magnetic, strongly calcitic, variably mineralized with fine pyrite and is cut by a quartz +/- calcite vein zone from 1289.5 to 1290.9. The vein zone contains accessory pyrite as well as a splash of galena with a greyish calcite fracture. Contacts are at 58/53 degrees. The lower contact placement is somewhat arbitrarily chosen where fine calcite veining and foliation diminishes in a local section with traces of mud along some slips at 50 to 55 degrees. Amphibolitization continues beyond that for some 3 feet where clearly recognizable gabbro is found. Below this zone the sequence becomes more uniform in appearance again with alternating sections of hornblende and feldspathic gabbro cut by the odd dyke of pinkish diorite. There is a weak reaction to the presence of ankerite in this area but calcite is the most common carbonate and is more frequently associated with the hornblende gabbro member.								
1329.1	1330.9	Diorite, pale pinkish to off-white, fine to medium grained, weakly to nonmagnetic. This dyke seems to be controlled by a fracture with weak epidote alteration running along the core axis although the closing contacts are at 51/35 degrees - i.e. Offset?. Another patch of diorite just cuts the core axis from 1331.4 to 1332.0.								
1333.9	1334.0	Diorite, 1.3 cms pinkish at 57 degrees. There are also some fine dykelets in this area at 1334.8 - 1.7 cms off-white at 53 degrees; 1335.8 - 4 mms at 85 degrees; and 1337.1 - 5 mms at 80 degrees.								
1393.0	1397.0	An area with irregular dykelets of diorite and/or fractures at variable angles to the core axis with pale greyish to pinkish dioritic material. There are more than a dozen irregular dykelets in this short space at all angles to the core axis - most commonly shallow.								
1410.2	1454.0	A gradational change is marked in this area by an increase in chlorite alteration throughout, mostly related to pitted and vuggy fractures at shallow angles to the core axis as well as scattered quartz calcite veins also at shallow angles. Both of these types of veins in this area promote accessory pervasive								

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
		calcite +/- amphibolitization for 5 to 10 cms away from the vein itself. Further zones that are calcitic and amphibolitic are developed over 5 to 10 feet in areas of increased fracturing. Accessory pyrite and orange red staining also accompany most of these fractures and veins as well. From 1442.8 to 1444.0 the core is foliated and chloritic around some pinkish veining and alteration from 1444.5 to 1444.8. Contacts of the foliated chloritic section are at 55/43 degrees, and there are two narrow mud slips here at 1443.3 - 2 mm at 52 degrees and 1444.0 - 5 mms at 48 degrees. Another mud slip is also noted at 1447.9 - 2 mms at 23 degrees. The lower contact area is gradational into partly chloritized feldspathic gabbro.								
1476.5	1476.9	Diorite (?), one of the dull grey red very fine grained style of dyke that is weakly but pervasively calcitic, moderately magnetic, and is finely speckled with mafic minerals - some of which are acicular. Contacts are at 73/68 degrees and a little irregular.								
1470.8	1471.6	Diorite, very fine grained, dull grey red as the just previous unit except that there is strong orange red staining at the upper contact. Contacts are at 35/50 degrees. Trace fine pyrite.								
1500.8	1501.5	Diorite, dull grey red as the two previous units with strong orange red staining. Contacts are irregular at 30/33 degrees.								
1471.6	1583.9	Altered amphibolitic. Contact into a broad zone of amphibolitic, calcitic and chloritic rocks that appear to be gabbroic in origin. For the most part the core is dark in colour and very fine grained. The initial pass leads one to conclude that this sequence is a reflection of the original basaltic protolith. There are, however, scattered sections where the rock texture is definitely gabbroic with several elements indicative of strongly blasted feldspathic gabbro, and the odd spotted passage suggestive of hornblende gabbro. Alternately, the rocks exhibit only patchy magnetism - a phenomenon more characteristic of basaltic sequences. The core varies from dark green to dark grey and black in colour, is normally granular textured from calcite and is variably veined with both fine calcitic and pitted, vuggy fractures. The rock is essentially composed of calcite, amphibole and chlorite with other rock-forming minerals seemingly obliterated by alteration. There is accessory orange red staining in the lower 12 feet of the zone which is much more localized than in the ensuing unit. The lower contact is along a quartz vein from 1582.4 to 1583.1 which hosts an internal section of orange red stained mineralized diorite (?) just cutting the core axis and surrounded by vein material. The lower contact is along a foot of broken core with traces of gouge and grit - a fault zone that may explain the anomalous alteration in this area. Within the package, there is also one dyke of altered diorite - grey, chloritic, calcitic, moderately magnetic with reasonably well developed feldspars and scattered mafic								

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
		inclusions in a chloritic carbonated matrix. The dyke extends from 1532.7 to 1533.8 and is at 78/66 degrees.								
1584.0	1621.7	Contact into a zone of strongly stained and altered gabbro that is immediately footwall to the preceeding fault zone. The gabbro members continue to be characterized by feldspathic and hornblende-rich units with the addition of strong pervasive reddish calcite here and the typical orange red staining associated with fracturing. The resultant gabbros vary from dark green to dark grey green and wine red in colour. Unlike the previous interval, the rocks are moderately to occasionally strongly magnetic and amphibolitization is only locally developed. The gabbro also contains scattered fractures filled with hematite. The strongly stained and altered gabbro grades into a zone of blocky core with accessory orange stained fractures below 1621.7, and, subsequently grades to the more chloritic style of altered gabbro after 1632.5. Around 1658 the gabbro grades more strongly stained and fractured once more - the intervening rocks from 1632.5 to 1658 are chloritic with variable amounts of calcite alteration and amphibolitization +/- fine pyrite primarily related to the presence of the pitted and vuggy to pinkish stained calcitic fractures - these fractures also promote blocky core.								
1587.0	1589.0	Diorite (?), or syenite - a dull orange red to brick coloured very fine grained dyke that is highly fractured with chlorite and calcite and is weakly but pervasively calcitic. The dyke is hard and finely speckled to fractured with mafics and does appear to be a more strongly stained variety of the dull grey red very fine grained units, but the unit is similar in its ultimate appearance to an altered syenite. The dyke is magnetic and contains trace fine pyrite. Contacts are very irregular and partly diffuse averaging 72/38 degrees.								
1598.8	1599.1	Diorite, dull to pale orange in colour, with irregular and somewhat diffuse contacts at 83/58 degrees.								
1658.0	1664.0	Stained and altered gabbro with increasing orange red stained fractures such that below 1660.4 the gabbro is very dark, altered and strongly calcitic and is orangish to wine red in colour just above a narrow dyke of diorite. The altered gabbro is moderate to strongly magnetic and is sparsely mineralized with pyrite.								
1664.0	1664.9	Diorite, fine to medium grained and mottled in appearance from strong calcitic alteration and fracturing with orange stain. The diorite is greyish to pinkish with ghost phenocrysts of feldspar - the whole of which is variably stained orangish from fracturing. Contacts are sharp but irregular, averaging 48/62 degrees.								
1664.9	1738.4	Gabbro, dark green to black, chloritic, calcitic and variably amphibolitic hanging wall to some gouged and broken core after 1738.4. The gabbro is dominated by the hornblende-rich variety and the core is relatively blocky from the presence of fairly common pitted and vuggy calcitic fractures at variable angles								

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
		to the core axis. Amphibolitization and fine pyrite mineralization tend to be cued around these vuggy fractures as well. The core ranges from moderate to quite strongly magnetic. Also within this zone is one narrow dyke of greyish, hard diorite with accessory orange stained fractures from 1673.8 to 1675.5 at 25/72 degrees.								
1738.4	1740.9	Broken Blocky Core, with traces of mud along some fracture planes at 1738.4 at 24 degrees, and at 1740.9 at 55 degrees, plus a broken and muddy to gritty zone between 1739.3 and 1739.8. The gabbro in this area is amphibolitized and calcitic and contains a couple of the pitted to vuggy fractures which further promote amphibolitization and blocky core. There are also a couple of other traces of mud in the core at 1743.5 and 1745.0 but these are hard to distinguish as separate slips due to vuggy calcitic fracturing and the rather mobile amount of mud from the main source. The last potential trace of mud at 1745.0, however, does appear to mark the end of the blocky core with more uniform core noted below that point. The gabbro after 1745 consists of dull grey green to dark green and black, feldspathic and hornblende-rich rocks with scattered amphibolitization. Most of the amphibolitization is imposed on a notable gabbro parent which can be distinguished through relict textures although there are areas with accessory veining where calcite and amphibole are the only recognizable minerals with original textures being obliterated. The rocks also remain pervasively altered with calcite and are cut by other intrusives.								
1761.3	1763.1	Mafic intrusive, a dark grey to black, very fine grained dyke with fine stretched to bladed blebs of mafic material in a dark grey matrix. The dyke is weakly to moderately magnetic, weakly but pervasively calcitic, and is sparsely mineralized with fine pyrite. The upper contact is sharp at 25 degrees, the lower contact is a little diffuse at 62 degrees.								
1765.9	1766.5	Diorite, dark greyish mottled with strong pinkish to orange staining. The dyke is strongly calcitic. Trace fine pyrite. The upper contact is irregular at 62 degrees, the lower contact is broken.								
1766.9	1767.4	Accessory reddish calcite alteration above a 2 mm mud slip at 1767.4 at 62 degrees. The gabbro is amphibolitized around this area with strong amphibole and calcite from 1766.5 to 1769 - the amount of amphibole gradually decreasing below that point.								
1803.0	1811.5	Accessory pyrite associated with scattered calcite veining and amphibolitization in this area. Most fractures are at shallow angles.								
1896.0	1930.8	A repeat of the just previous interval - i.e. Accessory fine pyrite mineralization associated with increased quartz-calcite veining at very shallow angles to the core axis. The gabbro is also variably amphibolitized around these vein sections. The lower extremity of the vein system is in contact with a dyke of diorite.								
1930.8	1934.0	Diorite, dull grey in colour with well defined phenocrysts of								

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

feldspar in a dull grey green, very fine grained chloritic, carbonated matrix. There are some irregular mafic fragments in this dyke and trace amounts of pyrite. Contacts are sharp at 27/14 degrees.

1934.0 1980.5 Lower contact zone area of the gabbro complex. In this sequence, the change at the start of the deformation zone is rather anonymous - the gabbro is moderately chloritic and calcitic down to 1974.9 where the rock grades sharply ankeritic across the basal 5 feet. The contact material from 1974.9 to 1980.5 is brownish to cola coloured with greyish ankeritic streaks and patches plus minor orangish staining up to the basal 7.5 cms which are buff to brownish in colour adjacent to a dyke of syenite. Above the ankeritic interval the gabbro is rather normal in appearance - while there is some accessory calcite and chlorite alteration from normal circumstances, there is little orange staining or mineralization. The lower contact is sharp although it undulates a bit averaging 24 degrees to the core axis.

1980.5 1980.6 START OF DEFORMATION ZONE

1980.6 1989.0 ALTERED SYENITE

Contact into a section with three syenite dykes separated by brownish to reddish carbonate rocks. All three dykes are medium to pale orangish in colour, finely fractured, nonmagnetic and sparsely mineralized with pyrite. Contacts are irregular to fractured and stepped as 1980.5 - 1981.7 at 24/33 degrees; 1983.0 - 1983.9 at 70/55 degrees; and, 1987.1 - 1988.4 at 30/21 degrees. The upper dyke is clearly a porphyritic syenite with ghost phenocrysts of feldspar, while no phenocrysts are distinguished in the other two dykes. The lowest dyke has a very irregular upper contact such that fragments of syenite are found just cutting the core axis from 1986.5 to 1987.1.

The intervening rock (and at the lower contact of the system), varies from brownish to grey beige and reddish in colour. It is hard, very fine grained, granular textured, ankeritic and is finely sprinkled with fine magnetite and pyrite. For 16.5 cms below the lowest syenite dyke, the rock looks most like a carbonated gabbro, while the intervening sections are sufficiently altered that only carbonate, magnetite and pyrite are visible. In different circumstances these rocks would probably be described as felsite on a stand-alone basis. Here the inference is that the original protolith was a gabbro that has been strongly blasted - the rocks are hard enough and differently coloured than most of the standard carbonate zones, and the magnetic properties tie to gabbro since it is the only magnetic rock in this part of the package. The only section large enough to code separately sits between the second and third dykes as :.

1983.9 1987.1 Altered Gabbro.

1989.0 2047.2 ULTRAMAFIC

Contact into an interesting sequence of ultramafic rocks that are hanging wall to a green carbonate zone. The dominant rock type is carbonated ultramafic - a variably ankeritic member that is soft, talcose, highly

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

foliated and generally nonmagnetic although some weak patchy magnetism is encountered. The ultramafic varies from blue black to bluish grey and pale green to grey green depending on the amount of ankerite present. The foliation is most often shallow at 0 to 30 degrees to the core axis, but there are local sections where the average foliation is at 40 to 55 degrees. Mineralization, as pyrite, in the system is generally minor in amount - sulphides being more common in the dykes and more strongly carbonated zones. Foreign material found within this system includes dykes of syenite, altered carbonated gabbro to incipient altered ultramafic, and dark grey red to red sections of potential felsite. The felsite units are most problematic. These dykes (?) are hard, siliceous, very fine grained, ankeritic and may or may not be magnetic (although most dykes are magnetic). The rock is very similar to the altered gabbro sitting between the just previous dykes of syenite at the start of the zone. As mentioned at that point the intervening material could be described as felsite if it occurred on a stand alone basis. Such is the case here - elements of what has previously been logged as felsite are operative, but there are no signatures to conclude that the rock is gabbroic, and, to label the sections as carb rock would appear to be a serious misnomer due to at least the factors of colour, hardness and magnetic properties. The units are further described in the system breakdown that follows :.

1989.0 2000.6 Ultramafic, blue black to greenish, ankeritic, and foliated to fractured at shallow angles to the core axis except below 1998 where the foliation steepens to 50 to 60 degrees. The ultramafic also includes a narrow patch of altered felsite at 1997.0 - 6.6 cms at 55 degrees. The felsite is pale orange grey in colour, fine grained, granular textured, nonmagnetic, hard and mineralized with 1-2% fine pyrite.

2000.6 2003.0 Altered Gabbro, a section of grey to grey brown and cola coloured rock that appears to be an altered gabbro in this instance. It is strongly carbonated, magnetic, and contains scattered mafic blebs as well as a couple of tenuously identified fragments. The gabbro has a fine granular texture, is finely fractured with ankerite and contains a minor amount of fine pyrite and orange staining associated with the fractures. Contacts are relatively well defined at 60/57 degrees.

2003.0 2003.8 Ultramafic, blue black with some bownish alteration. Foliated at 35 to 40 degrees, trace pyrite.

2003.8 2011.0 Porphyritic Syenite, pale orangish in colour with a crudely porphyritic texture developed. The dyke is hard, silceous, brittle in appearance, finely fractured to veined with 10 to 20% quartz, nonmagnetic and is mineralized with both fine pyrite and coarser clots to a couple of mms in size. The lower reaches of the dyke are more strongly carbonated over almost 30 cms. Contacts are sharp at 32/47 degrees.

2011.0 2029.1 Ultramafic, blue black to greyish with a variable ankerite component and a variable foliation. In this section there is a narrow, dark grey, mineralized, magnetic felsite (?) at 2016.1 - 10 cms with diffuse contacts at 57/77 degrees, and; a narrow, orange red, very fine grained, siliceous, magnetic

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

dyke of altered syenite at 2019.7 - 8 cms with very irregular contacts averaging 57/21 degrees.

2029.1 2033.0 A package of orange brown to grey red and orangish felsites (?), amongst dark grey to blue black ultramafic. These units are typical of the carbonated gabbro versus carb rocks or felsite question. The units for the most part are hard, magnetic, strongly carbonated and have very irregular to ragged contacts with shreds and blebs of reddish, siliceous carbonated material in the adjacent ultramafic. The first unit, from 2029.1 to 2029.7 is non magnetic. It has a very irregular upper contact with fragments of dyke material stretching back to 2028.0. The matrix is a fine granular mosaic of carbonate. It is essentially unmineralized - the upper contact is very irregular, lower contact at 29 degrees. The second unit from 2030.5 to 2033.0 is magnetic, and contains a knot of ultramafic internally that is just cutting the core axis from 2031.0 to 2031.6. Parts of this dyke are more massive and look syenitic, especially around the ultramafic inclusion and at the lower contact. Contacts are irregular averaging 60/15 degrees.

2033.0 2033.9 Ultramafic, greyish, highly contorted.

2033.9 2035.5 Incipient altered ultramafic in a quasi hanging position to a very fine grained dyke of orange red altered syenite from 2035.7 to 2036.1 at 28/33 degrees. The incipient alteration is characterized by dull reddish to brownish, hard, magnetic alteration streaks or patches to incipient dykelets with a central and very lower portion that has a clear ultramafic affinity. The upper contact is sharp but irregular averaging 45 degrees, the lower contact is somewhat gradational at 30 degrees.

2035.5 2047.2 Ultramafic, except for the narrow altered syenite described above from 2035.7 to 2036.1 at 28/33 degrees. The ultramafic varies from greyish to blue black in colour and is strongly ankeritic. Below 2045.7 the ultramafic is pale grey in colour from an almost total obliteration of the rock by ankerite. The core is foliated at shallow angles to the core axis, is nonmagnetic and is very sparsely to unmineralized. The lower contact is somewhat gradational into green carbonate rocks - the position chosen being at the onset of fuchsite alteration just above a dyke of altered syenite. The contact appears to be at 44 degrees, subparallel to the foliation and the dyke contact.

2047.2 2095.9 CARBONATED ZONE SYENITE

Contact into a sequence of carb rocks cut by numerous dykes of altered syenite. Green carbonate/fuchsite alteration is noted at the outset of the system but is not in evidence below 2051.8 feet - ergo the zone is not designated as a green carbonate horizon. Carb rocks vary from emerald green to olive, buff, brownish, grey brown and yellow ochre in colour. Certain of the carb rocks reflect an ultramafic parent while the more yellowish varieties are sufficiently altered to preclude a determination on its

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

original composition. The carb rocks tend to be nonmagnetic for the most part although there are some sections of potential carbonated gabbro that are magnetic. The rocks have a variable ankerite component and are generally very sparsely mineralized with pyrite +/- the odd splash of chalcopyrite.
The syenite members are typically very fine grained, hard, siliceous, nonmagnetic units that are a variety of shades of orange - from very pale to a brick red colour. The vast majority of the dykes appear to be porphyritic with ghost phenocrysts of feldspar being about the only rock-forming mineral noted. The dykes tend to be variably veined with 5 to 15% quartz +/- ankerite and routinely carry 1 to 2% pyrite which is both finely disseminated and in localized coarser clots. Traces of chalcopyrite are also found in the dykes.
The system breadown includes :.

2047.2 2047.3 Green carb rocks marking the start of the carb zone - the overlying rock is grey carb to carbonated ultramafic back to 2045.7.

2047.3 2047.8 Syenite, orange red, fairly massive with a very crude suggestion of a porphyritic texture. Contacts are irregular at 42/37 degrees.

2047.8 2048.0 Green carb rocks, lower contact gradational into greyer carb rocks subparallel to the foliation.

2048.0 2050.4 Grey, foliated, carbonated ultramafic grading to paler grey carbonate with a weak increase in fuchsite alteration at either contact - 10.5 cms at upper contact, 11.0 cms at lower contact. Contacts are foliation parallel at 35/38 degrees.

2050.4 2051.6 Green carbonate, fuchsitic.

2051.6 2051.9 Syenite, an irregular orange red patch - upper contact is very irregular, lower contact irregular averaging 38 degrees.

2051.9 2056.0 Carb rocks, dull yellow ochre in colour with reddish tones, and fine, weak fuchsite alteration throughout. The carbonate is granular textured, nonmagnetic, relatively massive, is weakly mineralized and hosts about 10% veining.

2056.0 2058.3 Porphyritic Syenite, deep orange red with a crudely developed porphyritic texture. There are some altered patches in the syenite next to the veining with 1 to 2% pyrite and 15 to 20% veining. Contacts are irregular averaging 57/44 degrees.

2058.3 2060.1 Carb rocks, yellow ochre to brownish with a 7.5 cm irregular patch of dull grey green carbonate containing a weak fuchsite component at 2059.3 at 57/62 degrees - contacts converging. The upper part of this carb section from 2058.3 to 2059.3 has strong reddish staining with very weak staining in the lower section.

2060.1 2061.3 Dull grey green carb rocks to carbonated ulramafic with a weak fuchsite component. The section is foliated at 50 to 55 degrees. The upper contact is gradational at 25 degrees, the lower contact is broken.

2061.3 2062.3 Carb rock (?), a dull brownish grey section with more reddish toned portions. This unit is typical of the problem that ranges between incipient altered ultramafic and carbonated gabbro. The rock is hard, but is somewhat streaky in appearance from brownish alteration that looks to be of

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
		ultramafic origin - the reddish passages appearing as incipient dykelets. The rock is finely granular textured with the addition of alteration streaks. This unit is also magnetic and is weakly mineralized with trace to 1% pyrite. Both contacts are broken.								
2062.3	2073.1	Porphyritic Syenite, pale orange with darker orange red sections and a rather crudely developed porphyritic texture. Veining ranges from 5 to 20% with some coarse hematitic fractures as well. The upper contact is broken at 40 degrees, lower contact at 55 degrees. Trace to 1% pyrite.								
2073.1	2078.9	Carb rocks that range from dull yellowish grey green to brownish and almost black depending on a streaky ultramafic component. The system also contains orange red to brick red streaks to patches and/or incipient dykelets that are harder than the adjacent carbonate and promote a patchy magnetism locally. The ultramafic and ankerite components are surprisingly variable across the system. Mineralization is very minor to negligible in amount.								
2078.9	2079.8	Porphyritic Syenite, deep orange red, siliceous, hard, nonmagnetic, with a very poorly developed porphyritic texture. The dyke contains 1 to 2% pyrite and has sharp but irregular contacts at 65/61 degrees.								
2079.8	2080.8	Carb rocks, pale grey green to pale olive toned, with a weakly developed foliation at 75 degrees to the core axis from small lenses to discontinuous layers of ankerite. A matrix component is not well developed. The unit is relatively massive and unmineralized.								
2080.8	2084.3	Porphyritic Syenite, orange red at the outset grading to more beige and grey circa 2082.5. This dyke has a well developed porphyritic texture in upper half but it is less well developed with depth. Mineralization averages 1 to 2% pyrite, contacts are irregular at 81/62 degrees.								
2084.3	2086.3	Carb rocks, dull grey green to olive and black carbonate to carbonated ultramafic. The rock has a well developed foliation at 55 to 70 degrees. The section ends along a 6.5 cm patch of dark reddish to brownish altered syenite. Aside from trace pyrite in the syenite the unit is unmineralized.								
2086.3	2088.0	Carb rocks, dull greyish to brownish carb consisting of numerous close-packed blebs of ankerite with a poorly developed matrix component. There is a weakly developed foliation at 40 to 55 degrees. The carb rock is essentially unmineralized. Contacts are at 50/32 degrees - the lower contact being irregular with veining.								
2088.0	2091.0	Porphyritic Syenite, mid to pale orange red with accessory veining (60%) over the upper 40 cms (to 2089.6 feet). The porphyritic texture is very poorly developed. Mineralization is poor in the veined section but averages 1 to 2% in the lower part of the dyke. Contacts are irregular - the upper contact with veining averages 32 degrees, the lower contact is broken but appears to average 35 degrees.								
2091.0	2091.4	Olive coloured to black, streaky, carbonated ultramafic.								

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

2091.4 2094.0 Porphyritic Syenite, mid to pale orange red with the only hint of a porphyritic texture being found in the more central part of the dyke. The upper contact is broken at 32 degrees, the lower contact is very irregular averaging 60 degrees. Pyrite mineralization averages 1 to 2%.

2094.0 2095.9 Ultramafic, dark grey to black, variably ankeritic and cut by an irregular altered syenite with veining over 8 cms at the base. This unit is hanging wall to a fault zone and, as such, is probably best included with the carb zone herein. The altered syenite dykelet contains 1 to 2% pyrite, otherwise the zone is unmineralized. The lower contact is with granulated core at 32 degrees.

2095.9 2099.7 FAULT ZONE

Contact along granulated and highly fractured core at 32 degrees into a narrow faulted zone. The initial granulated section is only 2 cms thick, followed by 11 cms of blue black, foliated ultramafic and then a zone of blocky and broken core with blue black ultramafic and brownish altered ultramafic fragments to 2098.0. From 2098.0 to the end of the zone is brecciated, broken and gouged core with a narrow section of finely veined and reddish stained carbonated ultramafic +/- altered syenite from 2098.5 to 2098.9. There is a crude foliation in the system at 55 to 65 degrees to the core axis but due to the broken nature and gouging in the area little other information is extractable. The core is very sparsely mineralized with pyrite. The lower contact is broken at 70 degrees.

2099.7 2111.2 ULTRAMAFIC

Contact into what can be best described as a transition zone - a transition from the fault zone to a package of felsitic and gabbroic rocks with scattered sections of ultramafic. The transition takes place through a narrow sequence of ultramafic rocks. To some extent, all of the elements of the underlying sequence are at play in this area but the alteration is sufficiently strong and the rocks are strongly foliated and veined to preclude a definitive correlation.

At the outset of this zone, the ultramafic is blue black in colour, magnetic, ankeritic, and moderate to strongly foliated at 60 to 70 degrees to the core axis. The ankerite content increases circa 2101.5 resulting in strongly banded ankeritic ultramafic with variable brownish to reddish alteration +/- the possibility of some incipient dykelets. This section is also hanging wall to a 3.5 cm dyke at 74 degrees that appears to be a reddish, granular, carbonated gabbro (at 2102.8). Below the gabbro, the ultramafic is gradually invaded by reddish calcite such that by 2104.4 the rock has a strong reaction to the presence of calcite throughout. This area also becomes strongly veined with milky to pinkish wisps, streaks, stringers and veins of calcite at variable angles to the core axis - most often subparallel to the foliation at 50 to 60 degrees.

This lower package of rocks is best described as a chloritic, calcitic ultramafic with diffuse reddish to dark green, granular patches of potential carbonated gabbro and one, dull grey red, calcitic, very fine grained, slightly harder dyke of felsite at 2107.3 to 2108.2 at 57/43 degrees. This

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

assemblage of felsite, gabbro and ultramafic is identical to the ensuing suite of rocks although the package following is less altered. In this area, the diffuse gabbroic patches and the felsite dyke are moderately magnetic with the ultramafic also showing some patchy magnetism. There is gradually less alteration approaching the lower contact which is sharp but a little irregular at 60 degrees.

2111.2 2192.0 FELSITE ALTERED GABBRO

Contact into a sequence of felsites, altered gabbro and ultramafic. The system is dominated by felsite dykes volumetrically with lesser units of potential gabbro and scattered blue black foliated ultramafic members. This sequence also covers a calcite/ankerite alteration front with very strong pervasive calcite down to approximately 2156.5, below which the rocks become progressively more ankeritic.

The felsite members vary from dull grey red to pale grey in colour with a range of pinkish to orangish tones. The reddish units are most typical of the calcite zone while greyer to beige dykes are the more common colouration when ankerite is the dominant carbonate. These rocks are the hardest in the package although calcitic dykes are, on average, softer than the ankeritic members. The dykes are very fine grained and locally have a crudely porphyritic texture developed with quartz and feldspar. In some isolated areas the porphyritic texture is suggestive of a cataclastic origin. The dykes tend to be moderately magnetic in the the presence of digested country rock and weakly to nonmagnetic in the cleaner dykes - calcitic dykes are often moderately magnetic. Dykes are finely fractured with carbonate +/- associated staining, are usually finely mineralized with pyrite and have sharp contacts.

The gabbro members are most notable in the calcitic zone. Gabbro may be a misnomer for these rocks since there are a lack of positive characteristics. The rocks are reddish to black in colour and are essentially a mix of granular reddish carbonate with amphibole +/- some chlorite alteration. Fine acicular amphibole is found throughout the calcitic members but the vast majority of the rock appears as a granular mush. The gabbros are moderately magnetic, poorly veined, sparsely mineralized and tend to have sharp albeit irregular contacts. Gabbros, or interpreted gabbros, are rarer in the ankeritic zone. These dykes tend to be a mix of amphibole and carbonate but are more greenish to brownish in colour and very fine grained, with or without well defined blebs of ankerite.

The ultramafic member is reasonably typical as blue black to dark green, foliated, talcose, carbonated rocks with a variable amount of streaks, stringers and lenses of carbonate. A patchy magnetism is in evidence, the rock is variably chloritic and is sparsely mineralized with pyrite. In one unit there are traces of graphite from 2151.3 to 2153.0.

The system breakdown includes :.

2111.2 2111.6 Gabbro, reddish, granular with irregular to ragged contacts at 60/68 degrees.

2111.6 2112.8 Ultramafic, foliated at 55 to 65 degrees, with 2 irregular patches of grey red, calcitic felsite at 2112.4 - a 6.5 cm irregular patch and at the basal contact - 3 cms averaging 60 degrees.

2112.8 2113.3 Gabbro, brownish to reddish, contacts at 60 degrees.

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
2113.3	2113.4	Ultramafic, chloritic, foliated at 60 degrees.								
2113.4	2116.3	Felsite, grey red, mottled with the crude porphyritic to cataclastic texture best developed near the contacts. The dyke is magnetic, mineralized with 2 to 3% pyrite and has sharp but irregular contacts at 47/70 degrees.								
2116.3	2118.1	Altered Gabbro, dull reddish to black, trace pyrite, lower contact foliated over 4.5 cms.								
2118.1	2119.1	Felsite, grey red, mottled to fractured and brecciated, contacts at 60/41 degrees and converging, 3 to 5% pyrite.								
2119.1	2121.0	Altered Gabbro, reddish to black with an irregular, 6.7 cm patch of foliated ultramafic at 2120.5 at 60/70 degrees followed by 4 cms of veining with felsite (?). Trace to 1% pyrite. The gabbro is calcitic, magnetic and unveined.								
2121.0	2140.9	Felsite, grey red to grey with variable orangish staining related to fine calcitic fractures. The dyke is hard, and is weakly to moderately magnetic depending on the amount of digested (?) material in the system. The crudely porphyritic to locally cataclastic appearing texture is developed throughout. The rock is moderately mineralized with both finely disseminated and coarser aggregates of pyrite. Contacts are sharp but irregular at 72/58 degrees - the upper contact appears to be crosscut by gabbro.								
2140.9	2150.4	Altered Gabbro, reddish to black, granular textured, magnetic, trace pyrite, fairly anonymous in appearance.								
2150.4	2153.4	Ultramafic Komatiite graphitic, a dark green to blue black, foliated, chloritic ultramafic with two graphitic bands at 2151.3 to 2151.7 and 2152.6 to 2153.0. The upper graphitic band has a gradational upper contact with a sharp lower contact at 60 degrees. Similarly, the lower unit has a gradational upper contact with a sharp lower contact although the lower contact is broken but appears to be at 45 degrees. *The disposition of the graphite suggests that tops are down* the hole. The graphite contains some clots of irregular pyrite that tends to be localized along fracturing - the balance of the ultramafic is sparsely mineralized. Contacts are a little irregular at 43/48 degrees, the upper contact being broken.								
2153.4	2155.9	A series of three, narrow, calcitic felsite dykes separated by dark green to blue black ultramafic. Ultramafic is found at 2153.8 to 2154.3 at 32/43 degrees and 2155.0 to 2155.3 at 50/46 degrees. The dykes are very fine grained, grey, calcitic and finely mineralized with up to 5% pyrite.								
2155.9	2159.4	Ultramafic, dark green to blue black. This section marks the transition from calcitic to ankeritic rocks along a highly contorted section with incipient(?) reddish alteration and fine pyrite from 2156.6 to 2157.4 - above this zone is chloritic, calcitic ulramafic; below it is blue black, talcose, ankeritic, foliated ultramafic. Aside from the contorted zone, pyrite is minor. None of this section is magnetic.								
2159.4	2164.2	Felsite, grey to beige, hard, weakly ankeritic with a very irregular upper contact and a couple of fragments of altered								

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
		ultramafic at 2160.1 at 59/50 degrees, and at 2160.7 - 4 cms just cutting the core axis. There may be more than one dyke here. Pyrite mineralization averages 1 to 2% and is very fine. The lower contact is sharp at 75 degrees.								
	2164.2 2165.9	Ultramafic ?, - this section appears to consist of a zone of altered ultramafic that is thoroughly riddled with narrow dykelets of greyish, hard, siliceous felsite up to 7 cms in thickness. The zone is magnetic and is sparsely mineralized with fine pyrite.								
	2165.9 2166.4	Gabbro, carbonated, grey green to brownish with a crudely developed granular texture. The rock is very fine grained and contains fine mafic blebs plus a network pattern of greyish ankerite. Trace pyrite. Contacts are at 74/59 degrees.								
	2166.4 2187.7	Felsite - probably a series of dykes separated by narrow passages of altered ultramafic up to 12 cms in size. The felsites are grey to brownish in colour with localized orangish staining in some of the more highly fractured areas. The ultramafic sections are variably carbonated to amphibolitized and foliated as at 2170.4 - 10 cms, black, partly amphibolitized at 50/70 degrees; at 2178.6 - 4.5 cms, olive to black and carbonated at 62 degrees; at 2178.9 - 2.8 cms, grey to olive and carbonated at 55 degrees; at 2179.1 - 3 cms, dark olive to black and foliated at 60 degrees; at 2179.8 - 11 cms, foliated, carbonated, grey to black at 62 degrees; at 2181.9 - 2.7 cms, olive to green and black, carbonated with some fine pyrite at 42 degrees; at 2184.0 - 6 cms, black to grey and foliated at 78 degrees; at 2185.1 - 1.2 cms streaky altered ultramafic at 63 degrees, and; at 2185.5 - 4 cms, streaky to incipient altered ultramafic at 50 degrees. The felsites are generally magnetic from fine exsolved magnetite as well as greyer sections of partly digested country rock. The dykes are finely mineralized with pyrite although more sparsely than previous. Contacts are at 59/57 degrees and are a little irregular to ragged as most of the contacts in the system.								
	2187.7 2190.2	Ultramafic, dark grey to black and massive to foliated along the upper contact zone to 2189.0, followed by two orange red patches of altered syenite or felsite at 2189.0 to 2189.5 at 56/47 degrees, and 2189.6 to 2189.9 at 51/22 degrees, before ending along strongly foliated, broken, carbonated ultramafic - foliated at 40 to 50 degrees. The altered syenite to felsite is very irregular and highly fractured to veined, and is mineralized with 1 to 2% pyrite.								
	2190.2 2192.0	Felsite, grey to reddish, siliceous, mottled with 3 to 5% fine pyrite. Both contacts are irregular at 43/50 degrees - upper contact with veining and some streaky alteration.								
2192.0	2219.9	FAULT ZONE Contact into a sequence of reasonably competent ultramafic rocks that are thoroughly altered and brecciated and cut by several sections of gouge. The ultramafic is blue black with occasional olive to brownish altered sections								

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

that are consistently adjacent to patches, streaks and bands to dykelets of carb rock which appear to represent an original felsite protolith - sic the incipient style of alteration. The felsite portions vary from grey to beige and orangish in colour, are harder than the adjacent rocks, highly contorted, and are essentially a granular mosaic of ankerite. The ultramafic also contains a host of ankerite and vein fragments related to faulting and brecciation as opposed to the more normal streaks to layers of ankerite. In general, the ultramafic is weakly to nonmagnetic although patchy magnetism is noted in some gouge sections and most of the original felsite inclusions are magnetic. Similarly, mineralization is more focussed in and around the felsite sections. Felsite sections with alteration average 10 to 30 cms in size and comprise some 20% of the package - the largest section extends from 2194.2 to 2196.0 with two more or less discreet, 18 cm, highly contorted felsite portions separated by brownish alteration. Gouge sections within the package include : 2197.8 - 1 cm at 54 degrees; 2210.4 - 5.5 cms gouged and granulated at 60 degrees; 2211.1 - 2 mms at 33 degrees; 2213.4 - 1.5 cms at 51 degrees; 2215.2 to 2216.0 - granulated; 2216.6 to 2216.9 - gouged at 60 degrees with some granulated core to 2218; 2218.6 to 2219.0 - gouged and granulated at 42 degrees, and; 2219.8 - 2.8 cms at 60 degrees. Below the last section of gouge, a quartz vein at 55 degrees marks the lower contact.

2219.9 2441.6 ULTRAMAFIC

Contact into a zone of ultramafic with quite variable alteration styles from the normal, blue black, foliated, ankeritic ultramafic to more brownish incipient altered material, sections of potential carbonated gabbro and felsite dykes that exhibit some contact effects. For the most part, the ultramafic is nonmagnetic as are the felsite dykes although, in the presence of incipient alteration, the rocks can vary from moderate strongly magnetic. The foliation in the system is at a much shallower angle than previous averaging 30 to 45 degrees with sections that are highly contorted and run subparallel to the core axis. This system is divisible into a number of subunits as :.

2219.9 2235.5 Ultramafic, blue black, foliated at 0 to 40 degrees to the core axis, and containing numerous irregular, streaks to patches and dykelets of orange red to pinkish altered felsite promoting brownish alteration of the adjacent ultramafic as in the just previous fault zone. The strong foliation, alteration and contorted felsites are probably related to the nearby fault - the difference in this area being that the ultramafics are foliated and not brecciated as the overlying unit. There is, however, a trace of gouge in the system at 2230.5 - 1.4 cms at 60 degrees and most of this zone is blocky. As before, most of the accessory pyrite mineralization as well as the magnetism is cued around the altered felsite sections.

2235.5 2249.8 Brownish altered ultramafic. The ultramafic is considerably more competent than the adjacent rocks and is marginally harder from units that are suspected to be altered felsites - grey, more siliceous units that are a granular mosaic of carbonate with relatively sharp contacts ie the incipient altered style of material. Most of the potential felsites in this area are grey although some are pinkish to orangish

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
		stained. Several are highly contorted and streaky. Two areas with a strong felsite component extend from 2237.0 to 2238.6 and 2242.5 to 2243.8 with streaky felsitic material above and below these two areas. Below 2244.5 there is much less felsite material recognized although the ultramafic remains brownish altered, relatively hard and nontalcose to 2249.8. The core is moderately magnetic throughout. Mineralization tends to cue along the felsite members but is very minor in amount. Outside contacts of the system are at 35/50 degrees - the upper contact is ragged, the lower contact is along veining.								
2249.8	2261.1	Ultramafic, blue black, ankeritic, talcose, and moderate to strongly foliated at 35 to 50 degrees. This ultramafic contains only scattered brownish altered sections apparently related to incipient alteration up to 6 cms in size. Most altered patches are in the order of a couple of cms and comprise less than 5% of the rock. Alteration patches are magnetic and sparsely mineralized with pyrite - most of the ultramafic is neither mineralized nor magnetic.								
2261.1	2265.2	Foliated, brownish altered ultramafic intercalated with sections of black to blue black foliated ultramafic. Some of this brownish altered material has been logged as altered gabbro in previous drillholes but the parent here appears to be an ultramafic and there are isolated greyish to pinkish streaks suggestive of incipient alteration. The rock is magnetic and rather uniformly foliated at 25 to 35 degrees to the core axis. The largest section of black ultramafic is at the base of the system from 2264.1 to 2265.2 - contacts a little irregular at 27/32 degrees. The upper contact of the brownish altered zone is at 43 degrees. Mineralization is very minor in amount - most often cued to the greyer more siliceous streaks.								
2265.2	2267.0	Felsite, grey to beige and pale reddish brown in colour and very fine grained. The dyke is siliceous, hard, veined with quartz ankerite and is fractured with olive to blue black ultramafic over 3 cms at 2262.2 at 30 degrees plus some accessory fracturing at the base of the zone. The felsite is nonmagnetic and is finely mineralized with traces of pyrite. Contacts are sharp but irregular at 32/52 degrees.								
2267.0	2269.5	Grey to brownish, moderately hard, siliceous altered ultramafic with scattered fine fractures that are healed with silica +/- bleaching which may be incipient dykelets. The unit is weakly to nonmagnetic and is mineralized with 2 to 3% pyrite.								
2269.5	2274.7	Ultramafic, blue black, foliated at 10 to 30 degrees, and carrying accessory quartz-ankerite veining averaging 10 to 15% of the rock. This section is also cut by two, 2.3 cm and 2 cm dykes of beige to pale brownish, veined felsite that run effectively along the core axis from 2272.6 to 2274.5 at 11 and 17 degrees respectively. There is 1 to 2% pyrite in the felsites with only trace amounts in the ultramafic. Contacts of the overall system are 40/33 degrees.								

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
2274.7	2278.8	Felsite, beige to pale brownish with weak pinkish tones. The felsite is hard and siliceous and is moderately veined with 10 to 15% quartz veins plus a similar amount of ankeritic veins at variable angles to the core axis. The unit is also fractured with ultramafic material, is nonmagnetic and is finely mineralized with 1 to 3% pyrite.								
2278.8	2282.0	Broken to blocky core that appears to be a mixture of grey to brownish incipient altered ultramafic with lesser amounts of dark green to olive altered ultramafic. The core is mineralized with 1 to 2% fine pyrite, is partly veined with quartz veins at very shallow angles to the core axis and is of moderate hardness. Both contacts are broken at apparent very shallow angles to the core axis - upper contact at 15 degrees.								
2282.0	2288.4	Felsite, very fine grained, hard, siliceous, and finely mineralized with up to 3 to 5% pyrite locally. This dyke is a dirty brownish to greenish colour from accessory alteration to about 2284.5. Subsequently, the dyke is finely fractured and partially bleached to pale brownish and beige colours with pink to orangish tones. Both contacts are irregular to fragmented with veining at shallow angles to the core axis at approximately 10 degrees. Pyrite occurs both as finely disseminated and as coarser aggregates to trails localized by fracturing.								
2288.4	2312.0	Ultramafic, blue black to greyish and locally olive toned with a variable foliation from 0 to 40 degrees to the core axis - average foliation at 30 degrees. There are only a handful of cm sized patches of brownish alteration and altered felsite in this area as at 2298.0 - a 3 cm and a 4 cm irregular patch of grey brown carbonated felsite, at 2305.0 - a 4.2 cm band of brownish alteration at 30 degrees, and at 2311.3 - an irregular 12 cm dykelet of pinkish felsite with some brownish alteration nearby in broken core. The ultramafic is nonmagnetic except within and around these altered patches. There is also a wider than average quartz vein in this package from 2295.1 to 2296.0 at 20/28 degrees - unmineralized.								
2312.0	2341.3	Brownish altered ultramafic of the incipient style intercalated with sections of black ultramafic that are more competent than the blue black talcose varieties and they are variably streaked with brownish alteration. There are a number of grey to pinkish and orangish stained fractures, streaks, bands and potential dykelets in the system that may represent original felsite material. The brownish alteration in a gross sense is most often localized around these areas - sic incipient alteration. Two larger dykes are of interest at 2335.1 to 2335.6 at 40/30 degrees, and, 2335.9 to 2337.2 at 40/62 degrees. These dykes are a granular mosaic of carbonate +/- some fine mafics, are moderately hard, nonmagnetic and finely mineralized with pyrite. They would appear to have been originally felsites that are now finely fractured and stained with the incipient style of alteration which has nearly obliterated the original character of the rock. While there is								

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
		some brownish contact metamorphism of the ultramafic at the lower contact of the second dyke, it would appear that the incipient style of alteration is a fracturing and alteration event that is not specifically tied to intrusion of the felsites. The upper contact of the system is quite sharp at 35 degrees, the lower contact is gradational subparallel to the foliation at 48 degrees and is somewhat arbitrarily placed. The brownish altered areas are moderately magnetic throughout.								
2341.3	2346.9	Ultramafic, blue black, talcose, foliated at 45 to 55 degrees, and containing some very isolated dark brownish altered patches.								
2346.9	2353.8	Intercalated dark brownish to black altered ultramafic and the more normal blue black, talcose ultramafic with a couple of potential altered felsites at 2348.4 - 6 cms at 60 degrees, and at 2350.0 - 6.6 cms strongly carbonated to incipient altered. The incipient altered component of the brownish to black altered sections is not strong in this area. The rocks are foliated at 50 to 60 degrees at the base of the zone.								
2353.8	2356.0	Siliceous, hard incipient altered ultramafic with numerous pinkish to grey and orangish streaks to dykelets amongst dull green to black and brownish, altered, silicified ultramafic. There is one wider dyke of potential altered syenite here at 2354.1 - 6 cms at 58 degrees. The rocks are moderately magnetic, foliated to laminated at 45 to 55 degrees and are finaly mineralized with 1 to 2% fine pyrite. Contacts are sharp at 58/45 degrees with dramatically less siliceous rock.								
2356.0	2363.8	Blue black, talcose ultramafic with very scattered brownish altered patches associated with pinkish to grey incipient alteration. At 2358.0 there is a trace of granulated core - 1.5 cms at 55 degrees, plus a 1 mm seam at 2360.0 at 60 degrees.								
2363.8	2365.8	Felsite ?, a grey to grey brown siliceous dyke with a very strongly carbonated upper contact zone over 24 cms. The lower part of the dyke is somewhat fractured into long angular chunks of brownish to greenish altered patches and greyer patches that appear to be totally a mosaic of carbonate. The whole of the lower zone is siliceous. The upper carbonated part of the dyke contains ragged fragments of ultramafic up to 1 cm in size - a feature not typical of the felsites, in addition to the rock being magnetic. The core is moderately mineralized with 1 to 2% pyrite which is most dominant in the browner altered sections. Contacts of the dyke are at 30/57 degrees - the upper contact is undulating, the lower contact is sharp with veining.								
2365.8	2367.5	Brownish to greyish incipient altered ultramafic intercalated with blue black, foliated ultramafic - units on a scale of 3 to 15 cms. The brownish altered areas are magnetic and mineralized, the blue black ultramafic is neither magnetic nor mineralized.								
2367.5	2386.2	Blue black, talcose ultramafic with scattered zones of dark brownish to black alteration, and, incipient altered sections								

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
		with greyish to weakly pinkish carbonate bands surrounded by brown alteration. The ultramafic is foliated at 45 to 55 degrees. The altered sections are sparsely mineralized and variably magnetic.								
2386.2	2387.3	Felsite ?, dull grey brown, siliceous, very fine grained dyke that is similar to the unit from 2363.8 to 2365.8 in that it is magnetic and contains tiny ragged fragments of ultramafic at the contact zones. The dyke is finely fractured with orange staining, and mineralized with 1 to 2% fine pyrite. Contacts are at 40/47 degrees - the lower contact being with a 2.8 cm quartz-ankerite vein.								
2387.3	2389.7	Blue black, talcose foliated ultramafic.								
2389.7	2390.2	Felsite or incipient altered section. This section is hard and siliceous and is moderately magnetic with sharp contacts at 52/57 degrees. The dyke (?) is coarsely granular textured with carbonate, is partly streaked with brownish alteration and is partly orangish stained. Since this section reacts as a single unit as opposed to the incipient alteration which is usually more streaky in nature, the interpretation of a felsite is preferrable.								
2390.2	2398.5	Blue black ultramafic, with patchy brownish and incipient style alteration. Two potential dykes of strongly altered felsite as just previous are noted at 2396.3 - 4 cms at 57 degrees, and at 2397.2 - 12 cms at 33 degrees. Both dykes (?) are fractured with orangish staining and are hard to distinguish from incipient alteration. They are hard and siliceous with a dull reddish matrix, and are both magnetic and finely mineralized with pyrite. There is also a patch of mud gouge in this sequence at 2393.6 - 2 cms.								
2398.5	2400.2	Felsite ? - two more of the siliceous, very fine grained, dull grey red, magnetic dykes that are separated by 4 cms of chloritic ultramafic at 2399.8 at 53 degrees. The dykes are also finely fractured with orangish staining that further obliterates the original mineralogy. Outside contacts are relatively sharp at 62/58 degrees. The core is mineralized with 1 to 2% pyrite - better in the lower dyke.								
2400.2	2408.7	Blue black ultramafic with brownish alteration patches scattered throughout but with little to no associated silicification or accessory staining. The very base of this unit from 2408.2 to 2408.7 is brownish altered and contains tiny mafic blebs that make the unit look like a carbonated gabbro. This unit is also magnetic.								
2408.7	2408.8	Fault gouge, 2 cms at 56 degrees. Combined with the small mud seams above, these are the strongest indications of an approaching fault zone +/- the fact that the altered patches are strong indications of fluid movement.								
2408.7	2417.4	Blue black ultramafic with isolated brownish altered sections and minor greyish incipient style bands with brown alteration. The ultramafic is foliated at 45 to 50 degrees, and aside from the alteration patches is unmineralized.								
2417.4	2418.9	Felsite ?, another of the strongly altered, very fine grained,								

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

siliceous, magnetic units that difficult to distinguish due to the strong alteration and local fracturing with orange stain. Trace to 1% fine pyrite. Contacts are sharp at 62/52 degrees.

2418.9 2420.5 Blue black ultramafic, foliated at 40 to 50 degrees and containing a brown siliceous patch at 2419.9 - 4 cms at 60 degrees.

2420.5 2427.2 Grey to greenish, partly chloritized, incipient altered ultramafic characterized by fairly numerous grey to beige and orange stained bands to streaks and/or dykelets subparallel to the foliation at 40 to 55 degrees to the core axis. The overall system is moderately hard with the altered bands being the hardest. Most of the surrounding alteration in this area is chloritic rather than of the brownish variety. There is also one more chloritic, nonsilicified ultramafic section in this package from 2425.0 to 2426.3. The core is magnetic and is sparsely mineralized with fine pyrite - the better pyrite being with the altered sections. Contacts are a little irregular but foliation parallel at 45/52 degrees.

2427.2 2441.6 Ultramafic, blue black and talcose to dark green and more chloritic to a paler almost serpentine green with isolated altered streaks and bands to fine dykelets that vary from brownish to beige, grey, orangish and olive to yellow ochre in colour. The foliation is strong in this area which is hanging wall to a fault zone and probably accounts for the more strongly coloured variations in the alteration - particularly in the corridor 2436.3 to 2438.6 where most of the orangish streaks are found but are rarely more than a couple of mms in size. As previous, alteration bands tend to be the focus of magnetism and mineralization. The lower contact is finely foliated to granulated at 52 degrees.

2441.6 2472.5 FAULT ZONE

Contact into a sequence of ultramafic rocks that is primarily defined by gouged core. The fault contact at the upper part of the sequence runs along the apparent contact of a felsite unit that is very strongly altered, fractured and brecciated over its upper 3 feet. Below the felsite unit the sequence is a blue black, talcose ultramafic that is moderate to strongly foliated at 45 to 60 degrees to the core axis with local sections of blocky core +/- minor gouge, a couple of felsite dykes and minor brownish to incipient altered ultramafic. The rocks are weakly to moderately magnetic throughout, including the blue black ultramafic, and are, in general, sparsely mineralized with pyrite. All of the package is ankeritic.

The sequence breakdown includes :.

2441.6 2442.2 Fault gouge at 44/34 degrees.

2442.2 2448.4 Felsite Carbonated Zone, a very strongly altered and carbonated rock that appears to be an altered felsite dyke. The felsite components are most in evidence at either contact where the rock is a grey red to orangish colour is very fine grained and moderately siliceous. The majority of the dyke, however, is an olive coloured carb rock with variable orangish staining related to fine fractures. The carb rock is granular

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

in texture and appears to be remotely feldspathic in nature. It is of moderate hardness, is weakly to moderately magnetic especially near the orange stained fractures and is mineralized with trace to 1-2% pyrite as fine disseminations and as coarser aggregates along fracturing. The dyke could alternately be a strongly altered section of the incipient style of alteration although for the most part, the carb is more uniform in appearance than an incipient altered package would suggest. The upper contact of the dyke is with gouge at 34 degrees, followed by broken core with grit and gouge of unknown orientation to 2443 and blocky to broken core to 2445. The lower contact is fractured with ultramafic and is irregular at 32 degrees. Just below this main dyke, there is another dyke of dull orange red altered syenite to felsite from 2449.0 to 2449.4 at 40/60 degrees.

2448.4 2459.9 Ultramafic, blue black, foliated, talcose, ankeritic with some blocky core plus gouged to granulated sections at 2449.7 - 2 cms granulated at 60 degrees; 2450.6 - a fine mud slip at 47 degrees; 2450.9 - a fine mud slip at 43 degrees; 2455.8 - 4 cms gouge at unknown orientation, and at 2457.8 - 5 mm gouge at 58 degrees. This section also includes the narrow felsic dyke at 2449 mentioned above. The ultramafic exhibits a patchy magnetism.

2459.9 2468.0 Brownish to grey, incipient altered ultramafic consisting of brown to black ultramafic that is striped to ribboned with grey to beige and locally pinkish alteration streaks as well as a couple of more definite dykes of pinkish to grey altered felsite at 2463.9 to 2464.3 - contacts broken, and 2464.8 to 2465.6 with irregular contacts at 60/40 degrees. Both dykes are fractured with ultramafic and finely mineralized with pyrite. The upper contact is along a pinkish to reddish stained, coarsely granular carbonated section over 18 cms. The whole of the system is moderately hard to siliceous and both contacts are along blocky to broken core.

2468.0 2469.5 Broken, core mixed with gouge and granulated core.

2469.5 2472.0 Lost Core.

2472.0 2472.5 Ultramafic, blue black, with 2 cms of gouge at 2472.1. The lower contact is broken but appears to be at 60 to 70 degrees.

2472.5 2525.8 ULTRAMAFIC

Contact into a reasonably competent sequence aside from a zone of blocky core from 2487.5 to 2496.0. The dominant rock type is brownish altered ultramafic - dark brownish to black rocks that have been almost totally invaded with carbonate resulting in a fine, somewhat interconnecting network of grey to pinkish ankerite in a matrix that is finely granular to streaky with ultramafic +/- some fine amphibole. Incipient greyish to pinkish and orangish streaks are present in the package but are not well developed until after the zone of blocky core. Further, in the lower part of the package, there are scattered units of blue black, talcose ultramafic. The zone of blocky core is related to a series of felsite dykes and quartz-ankerite veining at shallow angles to the core axis amongst dark green to blue black,

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

chloritic ultramafic with some incipient alteration. The sequence is weakly to moderately magnetic throughout and sparsely mineralized with pyrite. The sequence includes :.

2472.5 2487.7 Brownish altered ultramafic, competent rocks with trace to 1% fine pyrite. There are a few very fine grained, reddish brown bands in this package that are remotely suggestive of tuffaceous material as at 2477.0 - 4 mms at 70 degrees; 2477.2 - 7 mms at 50 degrees; 2477.5 - 2 cms at 71 degrees, and; at 2482.5 - 6.2 cms at 45 degrees, plus a narrow, grey brown cherty section at 2479.9 - 8 cms at 56 degrees. The zone is moderately hard, magnetic and contains trace amounts of fine pyrite. There is only a minor amount of material that could be described as incipient alteration in the package which is best developed at the lower contact.

2487.7 2496.1 Blocky, highly fractured core Felsite - a section of blocky core with dark chloritic ultramafic cut by quartz-ankerite veining plus the pitted and vuggy fractures at shallow angles to the core axis, in addition to 3 dykes of altered and fractured felsite and traces of incipient alteration. The felsite dykes include : 2487.7- 2488.8 grey, highly fractured, carbonated, veined and stained with broken contacts; 2489.9-2491.0 grey brown with pale orangish staining around fractures and veining, contacts are broken with pitted to vuggy veining at very shallow angles, and; 2492.5-2493.6 a pale orangish dyke just cutting the core axis with quartz-ankerite veining and chloritic ultramafic fracturing running along the dyke margins at less than 10 degrees to the core axis. The base of the system consists of blocky, dark green to blue black chloritic ultramafic with incipient alteration and more irregular quartz-ankerite veining.

2496.1 2525.8 Brownish altered ultramafic intercalated with some narrow horizons of much softer, talcose, blue black ultramafic. There is also some development of incipient alteration in the package with the best expressions nearest the blue black ultramafics. There are two main areas with blue black, talcose ultramafic at 2498.7 to 2499.5 which is partly veined and contorted, and 2508.8 to 2515.1 where there are a number of 2 cm to 45 cm sized units intercalated with similar sized brownish altered units - the 2 to 4 cm size dominates. In general this zone is magnetic, poorly veined and sparsely mineralized. The core is weakly to moderately ankeritic in this lower zone but also locally reactive to the presence of calcite - a patchy distribution that does not appear to correspond to any particular rock type or location.

2525.8 2527.0 FAULT ZONE

A thoroughly gouged zone in an apparent ultramafic host from the small amount of rock chips visible here. This is more than likely the first gouge of a wider zone that is interrupted by the adjacent felsite zone.

2527.0 2542.0 FELSITE

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

Contact into a sequence of felsite wedged between two fault planes. The dyke, or dykes, is very fine grained, hard, siliceous, magnetic, and strongly carbonated. The felsite varies from quite brownish to reddish across the upper two feet to a greyer and grey brown rock with variable orangish staining down the hole. There are a couple of granulated to strongly foliated sections of ultramafic within the felsite - ergo the suggestion that there may be more than one dyke. Some of the core is also blocky and broken due to the adjacent faulting. Sections of ultramafic include at 2528.0 - 9 cms, foliated to granulated at 65 degrees; at 2535.1 some discs of ultramafic in broken core; 2536.6 - 8 cms of granulated, chloritic ultramafic with quartz-ankerite veining, and at 2537.0 - again some discs of ultramafic in broken core. The core is blocky to broken from 2535 to 2539.
The felsite is quite strongly carbonated throughout and appears to be variably altered with chlorite as well although the strong alteration between the faults pretty well obliterates any original textures. The core is normally sparsely mineralized except near the base of the system where there is both finely disseminated pyrite and some coarser aggregates localized around orange stained fractures. In the section of blocky core there are some pitted and vuggy fractures at shallow angles to the core axis. The lower contact is sharp at 75 degrees with brownish altered ultramafic just prior to a gouge section.

2542.0 2594.0 FAULT ZONE
Contact into a highly faulted, gouged and granulated unit within an UM host rx, also containing dykes of felsite, as well as beige to brown and red brown zones of alt. UMs within this zone are typically blue black to greyish black, quite soft, foliated @ approx 55 dtca, quite contorted (most notably near gouged sections), ankeritic, variably mag, mod well veined w/ qtz-ank, and sparsely mineralz w/ py except near intrusive contact margins and within and adjacent to alt patches and bands. Felsites within this zone are generally brownish tan to orangish red, quite hard, mod mag, slightly calcitic in some areas, fine grained, and contain wisps of chlorite which appear aligned to mimic the foliation within UMs. These felsites are variably mineralz w/ py ranging from tr to 3%. Contacts for FAZ @ 75/70 dtca. The unit breakdown includes:.

2542.0 2548.0 Fault Zone.
A zone of extremely granulated and broken core w/ granulated core from 2542.0 to 2542.8 w/ mud gouge @ 2542.6 1.5cm @ 70 dtca, followed by broken blocky core till end. There are 3 feet of ncr within this unit.

2548.0 2558.9 Ultramafic.
UM unit blue black, soft, variably mag, ankeritic, foliated, mod well veined w/ milky qtz-ank, and sparsley mineralz. This unit is initially slightly granulated for first 4 inches, followed by a zone of more intact core. At 2552.0 till 2552.5 there is an inclusion/patch of unmineralz felsite running along the core axis. At 2553.0 to 2554.0 there are a number of small cm size wisp of yellow alt(probably sericite) which generally run parallel to the fol. At 2555.8 to 2555.9 there is a tan to beige alt band @ 60/60 dtca,

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

which contains 1% py. At 2556.9 there is a 1.5cm mud gouge @ 50 dtca. At 2558.0 to 2558.4 core is extremely rubbled(approx 1 inch size chips). At 2558.7 to 2558.8 there is a tan to orange red felsite dyke @ 50/70 w/ 1.5% fine diss py followed by 1 inch of blue black UM. Basal contact @ 50 dtca and a bit diffuse.

2558.9 2560.9 Felsite.
Felsite, tan to beige, hard, ank, non mag, w/ some qtz veining. This unit contains stringers of chlorite which are aligned to mimic the foliation. This unit is fine grained and contains an inclusion of blue black UM @ 2559.7 till 2560.9 which effectively splits core into two halfs by running along the core axis. Mineralz is mod well developed in the felsite which contains 1% euhedral py. UM is unmineralz. Basal contact for this felsite @ 40 dtca and irregular.

2560.9 2561.9 Ultramafic.
A zone of broken core within UM host.

2561.9 2562.1 Felsite.
Felsite, orangish red brown, well veined w/ qtz-ank and not well mineralz. Contacts @ 80/80 dtca.

2562.1 2570.0 Ultramafic.
UM, blue black to grey black, soft, schistose, fol, variably mag, mod veined w/ qtz-ank and not well mineralz. This unit is not as soft as other UM seen earlier in the hole probably as a function of the numerous alt bands and patches. @ 2561.9 to 2562.0 a dyke of well mineralz felsite of the reddish tan variety @ 40/40 dtca. @ 2562.9 a 1cm tan alt band which is well mineralz w/ 3% py and is cut by a later qtz vein. @ 2565.4 2cm of mud gouge @ 65 dtca. @ 2567.6 to 2567.9 a zone of felsite/alt @ shalow dtca which is well mineralz w/ 1.5% py. @ 2569.9 1cm of gouge @ 70 dtca.

2570.0 2570.7 UM which are alt to a slight greyish tan colour and are considerably harder than surrounding UMs. This unit contains tr coarse euhedral py.

2570.7 2582.7 Ultramafic.
Core in this area is quite broken, fol, and very contorted, w/ fault gouge occurring @ 2571.5 1cm @ 65 dtca, @ 2574.7 2cm @ 70 dtca, @ 2575.2 to 2575.5 granulated core w/ gouge @ 2575.4 1cm @ 70 dtca, @ 2577.2 1.5cm gouge @ 65 dtca, 2577.6 2cm gouge @ 60 w/ some granulation. @ 2579.4 1cm gouge @ 70 dtca, @ 2580.0 1.5cm gouge @ 70 dtca, and @ 2581.1 1cm gouge @ 65 dtca.

2582.7 2590.8 Ultramafic.
UM in this zone contains numerous brown alt patches, a number of variably sized and coloured felsite dykes all within a zone of rubbled core w/ gouged and granulated areas. @ 2582.7 to 2583.0 a brown alt band @ 75/80 dtca which may or may not contain a small felsite dyke within it. This band is well mineralz w/ 2% py. @ 2584.6 1cm of fault gouge @ 60 dtca, @ 2585.2 1cm gouge @ 80 dtca, @ 2586.0 2586.6 a zone of granulated core w/ gouge @ 2586.0 1cm @ 70 dtca, @ 2586.3 1.5cm of gouge @ 80 dtca, @ 2586.5 1cm @ 60 dtca. From

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

2586.6 to 2587.3 brown alt within broken core making contacts diff to determine. @ 2588.4 2588.9 there is a zone of extremely rubbly core which chips appearing to contain some felsite. At 2588.9 to 2589.2 there is a brown red alt band followed by 1cm of gouge @ 70 dtca, @ 2589.4 1cm of mud gouge @ 65 dtca, @ 2589.6 1.5cm of gouge @ 75 dtca, @ 2589.9 1cm of mud gouge @ 70 dtca.

Contact into a zone of extremely gouged and granulated core w/ a brick red to orange felsite to syenite as the host rx. This unit is quite hard, finely fractured, finely felted, weakly mag and mineralz w/ 1% py. This unit is quite pitted and contains fault gouge @ 2591.8 1cm @ 80 dtca, @ 2591.9 2cm @ 80 dtca, @ 2592.7 to 2594.0 unit is extremely granulated and brecciated, w/ mud gouge throughout. Contacts for this unit are @ 70/65 dtca.

2590.8 2594.0 FAULT ZONE

2594.0 2616.0 CARBONATED ZONE

Contact into a unit of UM rx which show varying levels of fuchsite alt ranging from weak very pale green to a more typical blue black colour. This unit is fairly hard, non mag, ank, exhibits varying degrees of fol, and is slightly contorted in some areas. This unit is fairly well veined w/ qtz-ank and is sparsely mineralz. This sequence is cut by dykes of felsite, as well as containing the odd brown to beige alt band. Contacts for this main unit @ 65/45 dtca.

2594.0 2596.0 Carbonated Zone.
Sequence begins in a carb UM unit which has a slight pale green tint suggesting weak fuchsite alt and grades to a pale grey black colour by 2596.0.

2596.0 2606.9 Carbonated Zone.
Pale grey black UM unit which is considerably harder than other UMs seen earlier in the hole. This zone is fol @ approx 65 dtca, and is sparsely mineralz. Basal contact along a qtz vein @ 60 dtca.

2606.9 2607.1 Quartz.
Contact into a milky white qtz vein @ 60/50 dtca. This qtz vein contains a small brick red felsite to syenite inclusion. Neither of these units are mineralz.

2607.1 2616.0 Carbonated Zone.
UM unit is carb and very similar to carb unit @ 2596.0. Basal contact @ 45 dtca.

2616.0 2639.9 FELSITE

Contact into a fairly broad sequence of felsite which contains inclusions of weak fuchsite alt UMs. Felsites within this zone range in colour from red brown to tan and light brown, they are quite hard, fine grained, and non mag. These felsites contain varying amount of py, but generally are very

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

well mineralz. UMs in this sequence are generally pale to lime green in colour and contain only tr py mineralz.

2616.0 2616.9 A highly alt unit of probably UM origins which is dark brown red, quite hard, finely felted and mod mag. Not particularly well mineralz. Basal contact @ 55 dtca.

2616.9 2621.8 Carbonated Zone.
Contact into a unit of pale to lime green UM rx which have been slightly alt by fuchsite. This zone is sparsely mineralz. Basal contact @ 80 dtca.

2621.8 2639.9 Felsite.
Contact into a quite variable felsite unit, which begins w/ a pale orange to red brown felsite which is well mineralz w/ 1.5% py, followed by an inclusion of pale green UM @ 2624.0 to 2625.1 @ 60/80 dtca which contains some accessory py. This inclusion is followed by a large dyke of felsite, tan to beige, hard, fine grained, and non mag. This felsite contains elevated levels of py which occurrs as stringers or elongated blebs which are aligned @ approx 65 dtca to produce a somewhat foliated appearance. Py in this zone @ 5-7%. @ 2626.9 to 2627.2 felsite contains an inclusion of carb UM rx which are pale grey to tan, quite hard, foliated, and weakly mag. Contacts @ 60/60 dtca. This UM unit is modestly mineralz w/ 1% fine diss py. Return to a felsite unit similar to above described felsite till 2631.5. @ 2631.5 to 2634.0 there another inclusion of carb UM rx similar to above described UM inclusion Contacts @ 50/50 w/ the basal contact being a bit irregular. Return to a felsite unit which is tan to brownish red, fine grained, quite hard and non mag. This unit contains 5% py mineralz both in fine diss and coarse euhedral form. @ 2635.0 to 2635.3 there is a pale yellowish alt band(probably sericite) which is well mineralz w/ 2.5% py. Between 2638.0 and 2639.9 felsite is well veined w/ milky qtz-ank veins @ variable angles to the core axis as well as being well mineralz w/ 3-5% py. Basal contact @ 55 dtca and quite irregular.

2639.9 2669.0 GREEN CARBONATE ZONE
Contact into a green carb unit dominated by emerald green carb as well as containg zones of paler green lime colour and yellowish green sections. This unit is quite hard, fine grained, non mag, ankeritic, foliated @ approx 60 dtca, and mod well veined w/ qtz-ank. This unit is generally sparsely mineralz, esp in emerald sections. The paler green and green yellow zones contain some accessory py. Most notably assocciated w/ felsite intrusions/inclusions and wispy sericite stringers. Alt within this unit is predominantly carb and sericite. This unit contains a couple of felsite dykes, 1 UM inclusion, as well as a number of small incipient style of felsite intrusions. Upper contact for this unit @ 55 dtca and irregular, basal contact gradationaly changes into a blue black UM unit. Contacts between emerald green zones and paler green areas are generally gradational but they may be quite sharp.

2637.1 2637.2 Felsite.
A small dyke of mineralz red brown felsite @ 50/50 dtca.

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

2638.0 2638.2 Felsite.
A sub rounded inclusion/fragment of red brown well mineralz felsite.

2643.0 2643.2 Green Carbonate Zone.
A small zone which appears to contain elevated levels of py assocciated w/ wispy yellow stringers of sericite?.

2649.0 2653.0 Green Carbonate Zone.
Green carb here is an emerald green colour.

2654.7 2654.8 Carbonated Zone.
A small inclusion of carb UM rx @ 50/50 dtca.

2655.9 2656.1 Felsite.
Contact into a brown red well mineralz(2-3% py) felsite dyke @ 60/60 dtca w/ the basal contact being a bit irregular.

2656.1 2658.5 Green Carbonate Zone.
Green carb in this zone is pale green to yellowish and contains 0.5% py.

2658.5 2669.0 Green Carbonate Zone.
Green carb here is an emerald green colour till gradational contact @ approx 2669.0.

2669.0 2710.9 ULTRAMAFIC KOMATIITE FELSITE FAULT ZONE
Contact into a sequence of UM rx intercalated w/ felsite dykes and various alt patches to bands within a zone of faulted broken core. UMs in this sequence initially are quite carb being tan to ochre in colour and quite hard, probably a function of carb or of the number of incipient felsite dyklets which penetrate this zone till 2670.3 where UMs becomes a more typical blue black, soft, foliated, schistose unit. Felsites in this zone are generally tan to slightly orangish brown red, quite hard, non mag, fine grained, finely fractured, mod well veined w/ qtz-ank and fairly well mineralz with py of both the fine diss and coarse euhedral varieties. Alt bands/patches within this sequence are generally ochre to deep brown red, quite hard, and appear to contain concentrations of magnetism and mineralz. This unit contains zones of broken core as well as granulated and gouged areas which will be further discussed in the unit breakdown.

2669.0 2679.3 Carbonated Zone.
Carb UM unit, tan to ochre in colour, quite hard, very weakly mag, fine grained, foliated, and containing a number of small incipient dyklets of felsite @ varying dtca. This zone has an alternating tan ochre banded appearance, and is quite well mineralz w/ 2-3% fine diss py.

2679.3 2684.5 Ultramafic Komatiite.
UMs here are a more typical blue black colour and contain alt bands & intrusions @ 2674.2 2674.6 brown to ochre and mineralz w/ 1.0% py, @ 2675.5 2675.6 felsite dyke @ 65/50 dtca, not particularly well mineralz, @ 2675.8

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

to 2675.9 felsite dyke, not well mineralz, @ 2680.9 2681.7 alt band, @ 70/40 dtca and mineralz w/ 1-2% py. @ 2682.4 2682.7 there is a red brown felsite dyke @ 50/60 dtca w/ irregular contacts which contains about 1% py mineralz. @ 2684.0 to 2684.1 there is a sub rounded inclusion of red brown felsite which is not particularly well mineralz. @ 2684.3 to 2684.6 there is a milky white qtz vein which is unmineralz, @ 60/50 dtca.

2684.5 2690.9 Felsite.
Felsite: tan to brown and slightly orangish red, quite hard, fine grained, non mag, w/ a finely fractured texture. This felsite dyke is quite well veined w/ milky white qtz-ank veins, and is mineralz w/ 1.5% py of both the fine diss and coarse euhedral varieties. This unit contains some orange staining(probably hematite) within alt healed fractures. Contacts for this dyke @ 60/70 w/ both contacts being a bit irregular. Basal contact along a 1.5cm band of chlorite.

2690.9 2692.9 Felsite.
Felsite: tan to brownish red w/ orange tints, hard, non mag, fine grained, w/ a finely felted texture. This dyke is well veined w/ qtz-ank, and mineralz w/ 1.0% py. Basal contact @ 50 dtca and diffuse.

2692.9 2710.0 Ultramafic Komatiite.
Contact into a blue black, soft, non mag, schistose, talcy foliated UM unit which is quite broken and blocky w/ granulated and gouged core. This unit is generally quite pitted and does contains some accessory py. This unit contains a number of alt patches which are generally ochre to brown red in colour and contain elevated levels of py. @ 2694.8 to 2695.0 brown red alt band which is well mineralz w/ 2-3% py. @ 2696.7 1.5cm of mud gouge @ 60 dtca, @ 2697.3 1cm of mud gouge @ 65 dtca. @ 2697.8 to 2698.6 granulated core w/ gouge @ 2698.0 @ 70 dtca. @ 2699.0 to 2699.3 there is an ochre to brown red alt band @ 30/40 dtca w/ some accessory py. @ 2699.9 2cm of mud gouge @ 65 dtca. @ 2700.3, 2700.5, 2700.7 there are 3 zones of mud gouge 1cm, 1cm, and 1.5cm respectively, all @ 70 dtca. @ 2701.2, 2701.3, and 2701.5 mud gouge all approx 1cm @ 65, 65, and 70 dtca respectively. @ 2702.6 2.5cm of mud gouge @ 70 dtca. @ 2703.9 1cm of mud gouge @ 70 dtca. @ 2707.6 to 2707.7 milky white unmineralz qtz vein @ 80/70 dtca. @ 2708.5 to 2708.9 tan alt band @ 70/50 dtca, which is mineralz w/ 1-2% very fine diss py. At 2710.3 to 2710.4 there is a small orangish red felsite dyke @ 70/65 dtca, unmineralz. Below this point core is very blocky making basal contact hard to determine.

2710.9 2714.8 FELDSPAR PORPHYRY
Contact into a feldspar porphyry dyke, tan to beige, hard, non mag, w/ well developed phenocrysts of feld mm to cm sized and generally rounded to sub rounded contained within a fine grained matrix. This unit is well veined w/ qtz-ank, and contains approx 1.5% py. Basal contact for this unit @ 60 dtca and quite sharp.

2714.8 2714.9 TIMISKAMING GROUP

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

2714.9 2849.0 TUFF ULTRAMAFIC KOMATIITE

Contact into a sequnece of tuffaceous rx which probably represent the transition into Timiskaming rx. This unit is intercalated w/ UM rx early in the sequence till 2729.0, below this the unit alternates between tuffaceous horizons and agglomerate/conglomerate horizons. This sequence becomes calcitic below 2748.0. Tuffs in this unit are carb, and range in colour from pinkish grey to green grey, and tan to dark grey green to almost black. This unit is quite siliceous, med to fine grained, variably foliated, variably mag, and has a gritty feel to it. Tuffs here have a distinct banded appearance are modestly veined w/ qtz, and are quite variably mineralz w/ py ranging from tr to 3% locally. Contacts between tuff and agg/cong may be sharp but are generally gradational. Early in the sequence there is a modest ank component which dissappeares below 2738.0. This unit also contains a zone of tan, siliceous, well mineralz rx which looks very similar to felsites logged earlier in the hole, but without any definitive contacts. Upper contact for this sequence @ 60 dtca and quite sharp. Sequence breakdown as follows.

2714.9 2715.2 Ultramafic Komatiite.
A small UM unit intercalated in tuff sequence, @ 60/80 dtca.

2715.3 2715.6 Ultramafic Komatiite.
Same as above.

2715.7 2715.9 Ultramafic Komatiite.
UM unit as above @ 70/80 dtca.

2715.9 2718.6 Tuff.
Tuff, pinkish grey to green grey, med to fine grained, quite hard, variably mag, calcitic and banded. Some accessory py here. Basal contact @ 80 dtca and quite sharp.

2718.6 2719.5 Ultramafic Komatiite.
Contact into a UM unit w/ a slight pale green colour, fol, harder than other UMs seen in this hole. Effectively unmineralz. Basal contact sharp @ 70 dtca.

2719.5 2730.4 Tuff.
Tuffs here are pinkish grey to grey green and contain tr accessory py.

2730.4 2732.0 Carbonated Zone.
A unit of tan to light beige very hard siliceous rx, which are fine grained, foliated, and contain approx 3% py. Followed by a bleached tuff unit till 2735.0 which is slightly harder than surrounding tuff units. This bleached zone is unmineralz. Upper contact for carb unit @ 60 dtca, basal contact grades into bleached tuff.

2735.0 2748.0 Tuff.
Tuffs here are a grey green w/ a slight pink tint and contain stringers of chlorite within alt healed fractures, this zone also contains a couple of

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

small cm sized, hard mafic fragments that are strongly mag. This area contains some accessory py.

2748.0 2769.0 Tuff.
Tuffs here are generally cleaner looking and more typical of tuffaceous units seen in earlier holes.

2769.0 2816.0 Tuff.
Tuffs here remain quite hard, variably mag, foliated @ approx 60 dtca, calcitic, sparsley vein and essentially unmineralz. This unit is grey w/ a very slight red tint in areas. Between 2798.0 to 2808.0 tuff contains the odd larger fragment cm sized which are elongated and appear stretched parallel to the foliation.

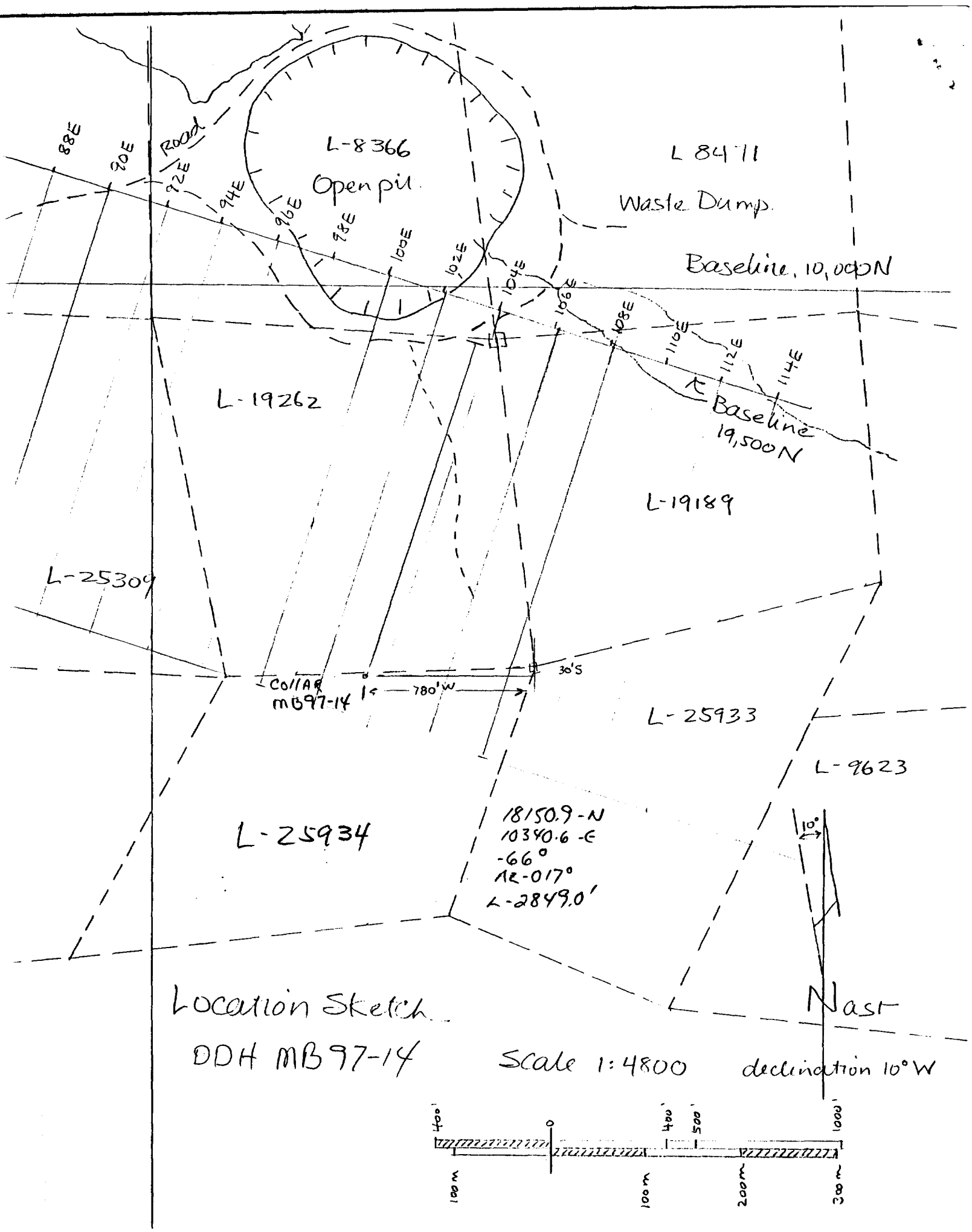
2811.7 2819.0 Tuff.
Tuffs here grey are colour w/ the foliation being quite contorted and containing a zone of broken blocky core from 2814.0 to 2819.0. This unit contains tr py mineralz.

2826.0 2829.0 Tuff.
Tuffs here appear slightly bleached to a pale grey colour and contain approx 1.0% coarse euhedral py.

2829.0 2839.0 Tuff.
Tuffs here retain fol/banded appearance, are quite hard, variably mag, calcitic, fine to med grained and contain tr accessory py.

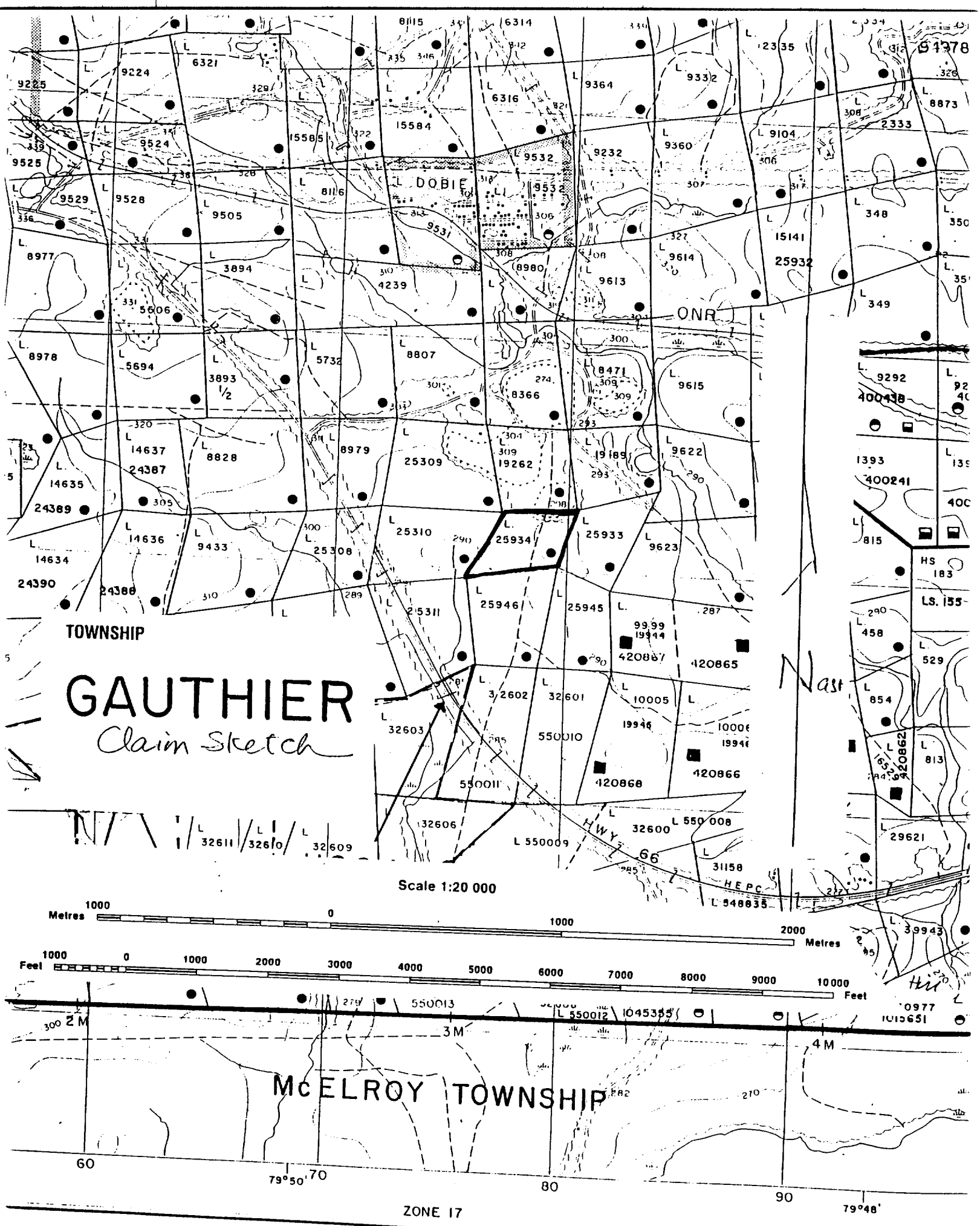
2839.0 2849.0 Tuff.
Tuff unit, remains overprinted w/ calcite, variably mag, quite hard, foliated @ approx 65-70 dtca, fine to med grained, gritty feel,and grey w/ some slight reddish tints. This unit contains a couple of very small x-cutting qtz veins and does contain tr accessory py.

2849.0 EOH.



Location Sketch

DDH MB97-14 Scale 1:4800 declination 10°W


TOWNSHIP
GAUTHIER
Claim Sketch
Scale 1:20 000
Metres
Feet
McELROY TOWNSHIP
ZONE 17
DOBIE
ONR
HWY 66
HEPC
Nast

QUEENSTON MINING INC

Drill Hole: MB97-17

DIAMOND DRILL HOLE RECORD

Property: MCBEAN Col loc from #4 post, L19189, 145'E, 260'S
Northing: 19203.68
Easting: 10606.96
Elevation: 10971.29

Collar Azimuth (Grid) 355.1
Collar Dip: -70.0
(0 Degrees Grid equals 017 degrees True)
Hole Length: 1810.6

Date Printed: 6 Jul, 1998

*** Dip Tests ***			*** Dip Tests ***		
Depth	Azi.	Dip	Depth	Azi.	Dip
68.9		-70.0	1200.5		-69.0
298.5		-68.5	1499.0		-69.0
898.7		-71.0			

Date Started: Feb 8, 1997
Date Completed: Feb 15, 1997

Drilled by: BENOIT
Core Size: BQ
Material left in hole BX 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

SUMMARY LOG

.0	68.9	OVERBURDEN
68.9	899.8	GABBRO
899.8	1044.1	ULTRAMAFIC
1044.1	1068.8	CONTACT ZONE
1068.8	1068.9	START OF DEFORMATION ZONE
1068.9	1079.8	ALTERED GABBRO
1079.8	1113.9	ULTRAMAFIC KOMATIITE
1113.9	1118.2	ALTERED SYENITE
1118.2	1141.3	TUFF
1141.3	1200.5	ULTRAMAFIC KOMATIITE
1200.5	1224.2	ULTRAMAFIC KOMATIITE
1224.2	1228.5	FELSITE
1228.5	1306.9	ULTRAMAFIC KOMATIITE
1306.9	1336.1	FELSITE
1336.1	1393.3	GREEN CARBONATE ZONE
1393.3	1400.2	ULTRAMAFIC KOMATIITE
1400.2	1410.0	FELSITE

From (ft)	To (ft)	Geology
1410.0	1475.4	ULTRAMAFIC KOMATIITE
1475.4	1477.6	CHERTY SEDIMENTS
1477.6	1486.9	PORPHYRITIC SYENITE
1486.9	1572.2	ULTRAMAFIC KOMATIITE
1572.2	1577.7	FELSITE
1577.7	1599.9	GREEN CARBONATE ZONE
1599.9	1683.9	CARBONATED ZONE
1683.9	1717.7	ULTRAMAFIC KOMATIITE
1717.7	1717.8	TIMISKAMING GROUP
1717.8	1810.6	LAPILLI TUFF

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

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
.0	68.9	OVERBURDEN 0 to 68.9- Clay.								
68.9	899.8	GABBRO A system of medium to medium-coarse grained gabbro; equigranular, locally cumulate; magnetic and calcitic throughout. The typical host as logged in the other McBean holes begining with hole MB-96-01. Intercalated with finer-grained, locally strongly amphibolitic units which are very dark in colour. Xcut by several suites of FP, FD and MI type rocks. Specifics on these other units will follow. 68.9 to 94.4- Gabbro. 94.4 101.0 Felsic Dyke. Equigranular, med grained, pale pink colour, fresh, tightly packed aggregate of feldspars. 101.0 to 104.7- Gabbro. 104.7 122.8 Mafic Intrusive. Chloritic, amphibolitic dyke. 122.8 134.3 Mafic Intrusive. Amphibolitic, slightly biotitic dyke, fault @ 127.9, 133.0. 134.3 to 160.0- Gabbro. 160.0 168.0 Feldspar Porphyry. Typical FP, with slightly chloritic matrix. 168.0 to 171.1- Gabbro. 171.1 173.3 Diorite. 173.3 to 196.4- Gabbro. 196.4 205.9 Mafic Intrusive. Very dark olive green; carries fine accicular amphibole and traces of biotite. Slightly epidotised. 205.9 to 233.9- Gabbro. 211.6 216.5 Lost core. 233.9 235.9 Feldspar Porphyry. Type FP with chloritic matrix. 235.9 to 270.8- Gabbro. 270.8 to 276.3- Amphibolitic gabbro.								

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276.3 to 297.6- Gabbro.

297.6 to 304.3- Amphibolitic Gabbro.

304.3 to 312.2- Gabbro.

312.2 313.5 Feldspar Porphyry.
Chloritic matrix.

313.5 to 315.4- Gabbro.

315.4 332.0 Felsic Dyke.

332.0 to 334.1- Gabbro.

334.1 to 334.9- Felsic Dyke.
As above; very crowded texture, equigranular with white feldspars.

334.9 to 341.5- Gabbro.

341.5 to 343.0- Felsic Dyke.

343.0 to 345.0- Gabbro.

345.0 347.2 Felsic Dyke.

347.2 to 355.5- Gabbro.

355.5 361.8 Felsic Dyke.

361.8 to 368.0- Gabbro.

368.0 374.0 Felsic Dyke.

374.0 to 393.3- Gabbro.

393.3 to 393.9- Felsic Dyke.

393.9 to 394.3- Mafic Intrusive.

394.3 to 395.8- Felsic Dyke.

395.8 403.4 Mafic Intrusive.

403.4 408.3 Felsic Dyke.

408.3 to 414.4- Gabbro.

414.4 to 417.0- Amphibolitic Gabbro.

417.0 to 418.8- Gabbro.

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

418.8 421.5 Mafic Intrusive.
Very dark olive green with numerous very fine amphiboles.

421.5 to 486.9- Gabbro.

486.9 491.0 Felsic Dyke.

491.0 to 532.1- Gabbro.

500.6 501.8 Lost core.

532.1 534.3 Mafic Intrusive.

534.3 to 547.8- Gabbro.

547.8 551.0 Felsic Dyke.

551.0 to 552.5- Gabbro.

552.5 553.6 Diorite.

553.6 to 555.0- Gabbro.

555.0 556.7 Felsic Dyke.

556.7 to 568.0- Gabbro.

568.0 569.0 Felsic Dyke.

569.0 to 574.5- Gabbro.

574.5 575.5 Altered Syenite.

575.5 587.2- Gabbro.

587.2 588.4 Mafic Intrusive.
Pale red(strongly hematised) amphibolitic type.

588.4 to 589.3- Gabbro.

589.3 590.4 Mafic Intrusive.
Pale grey with pink cast, strongly bleached, no amphibole.

590.4 to 600.7- Gabbro.

600.7 to 601.7- Felsic Dyke.

601.7 to 604.3- Gabbro.

604.3 to 605.6- Felsic Dyke.

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

605.6 to 607.5- Mafic Intrusive.
Strongly amphibolitic, with biotite.

607.5 to 609.8- Mafic Intrusive.
Aphanitic, very dark red, minor amphibole only.

609.8 to 611.8- Felsic Dyke.
Distinctive spotted appearance; heavily altered feldspars with carb and epidote.

611.8 to 614.2- Gabbro.

614.2 to 617.0- Mafic Intrusive.
Pale olive green, hematised, amphibolitic.

617.0 620.8 Felsic Dyke.

620.8 to 622.2- Mafic Intrusive.
Light grass green, strongly altered with epidote.

622.2 to 624.8- Gabbro.

624.8 626.9 Mafic Intrusive.
Very dark red, aphanitic and hard.

626.9 to 627.9- Gabbro.

627.9 to 628.9- Altered Syenite.

628.9 to 629.4- Mafic Intrusive?.
Pale brownish colour, aphanitic, heavily altered with Fe and silica.

629.4 to 646.9- Gabbro.

646.9 649.4 Felsic Dyke.

649.4 to 652.5- Gabbro.

652.5 659.9 Mafic Intrusive.
Very dark brown with abundant fine amphibole.

659.9 662.9 Diorite.

662.9 to 668.8- Gabbro.

668.8 671.7 Felsic Dyke.

671.7 to 674.8- Gabbro.

674.8 688.9 Diorite.

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

688.9 to 701.5- Gabbro.

700.5 701.3 Fault Zone.

701.5 713.3 Felsic Dyke.

713.3 to 769.0- Gabbro.

769.0 to 770.8- Mafic Intrusive.
Dark green with a red cast, with minor fine amphiboles.

770.8 to 784.0- Amphibolitic Gabbro.

784.0 814.4 Mafic Intrusive.
Highly deformed/foliated, very dark grey to black, amphibolitic with scattered biotite.

814.4 817.5 Mafic Intrusive.
Hematised version of above MI.

817.5 to 823.5- Gabbro.

823.5 824.2 Mafic Intrusive.
Very dark green with minor fine amphibole.

824.2 to 825.2- Gabbro.

825.2 to 825.8- Diorite.

825.8 to 827.0- Mafic Dyke.
Amphibolitic and slightly biotitic, very dark green.

827.0 to 827.6- Felsic Dyke.

827.6 to 834.0- Gabbro.

834.0 to 835.6- Mafic Intrusive?.
Pale red, scattered feldspar phenos?.

835.6 to 836.5- Mafic Intrusive.
Numerous acicular amphiboles in a pale green matrix.

836.5 to 837.0- Mafic Intrusive.
Dark olive green with few amphiboles, reddish cast.

837.0 to 837.5- Gabbro.

837.5 841.9 Mafic Intrusive.
Dark green with 2-4 mm altered mafic? phenos?; spotty appearance.

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

841.9 to 854.2- Gabbro.

854.2 to 854.8- Diorite.

854.8 to 880.0- Gabbro.

880.0 885.6 Mafic Intrusive.
Dark green, epidotised matrix with numerous 2-3 mm accicular amphiboles.

885.6 to 899.8- Gabbro.

899.8 1044.1 ULTRAMAFIC
A major change in the volcanic stratigraphy occurs where the hangingwall gabbros are replaced by a system of fairly undeformed ultra-mafic rocks which are in turn largely replaced(intruded) by a sequence of altered mafic dykes. The MI units dominate this interval volume-wise. The ultra-mafics are a pale green grey to grey blue in colour, soft and well carbonated(calcitic). They become more blue-black towards the bottom cnt. The intrusives are quite variable both compositionally and texturally; they are described below in more detail.

899.8 905.3 Mafic Intrusive.
A fine grained, dark grey section, homogeneous and sparsely veined. Negligible sulphide. Consists of a equidimensional sub-mm mosaic of chloritised mafics and carbonated feldspars. Barely magnetic and calcitic.

905.3 906.3 Feldspar Porphyry.
A dark grey, spotted unit; consists of fairly fresh feldspar phenos(subhedral to laths, 2-3 mm across, slightly hematitic) set in an aphanitic, pale grey-green matrix(fine pervasive chlorite). Hard, calcitic and only weakly mineralised. Sharp cnts @ 30/60. Strong carb alteration /bleaching developed for 1/2 in against lower cnt.

906.3 to 906.9- Mafic Intrusive.
As per 899-905; 1 in of carb/chloritic alter at top cnt; 1 in vuggy qtz-carb veining/alteration also in the upper portion of unit, weakly mineralised.

906.9 911.5 Mafic Intrusive.
A dark green interval, heavily carbonated and weakly foliated at 30 DTCA; contains scattered pale pink carb metacrysts(flattened/stretched parallel to foliation) ; fine rounded biotite grains and numerous altered amphibole needles set in a carbonate/chlorite matrix. Calcitic, non-magnetic and poorly mineralised. Bottom cnt area is intruded by a 1 in FP dykelet(hematised). The cnt is at about 45 DTCA.

911.5 912.5 Mafic Intrusive.
As per 899-905, slightly more hematitic and xcut by sinuous, irregular carb veining. Poorly mineralised.

912.5 915.3 Altered Gabbro.
A pale grey, recognizable gabbro unit, cut by wispy and boudinaged carb-qtz

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veining. The veining and host have in turn been very strongly altered with carbonate. A calcitic, strongly magnetic interval, sprinkled with minor diss py. Sharp cnts at 35/45 DTCA.

915.3 919.0 Mafic Intrusive.
An interval similar to that at 899-905, with a 3 in gabbro inclusion, a few 45 degree 1/4 in carb veins and a greater intensity of carbonate and hematite alteration locally. Slightly elevated sulphide as diss py in the Fe-rich areas. Blocky, and broken up. Sharp bottom cnt at about 60 degrees.

919.0 928.0 Mafic Intrusive.
Another MI similar to the one at 906-911, without the carb metacrysts. More prominent amphibole grains are present; they range from 2-3 mm long and are loosely arranged parallel to a weak developing fabric(foliation) at 60 DTCA. Not particularly well mineralised. Heavily carbonated and chloritic matrix which has a subtle mottled appearance. Strongly magnetic, and hardly veined. Contains traces of diss py.

928.0 941.7 Mafic Intrusive.
Sharp cnt at 30 degrees into another fairly homogeneous interval much as the one at 899-905. Contains a very few high angle carb stringers, a section which might be a partially absorbed u/mafic inclusion and scattered pale pink carb metacrysts up to 4 mm across. A very blocky and broken section. Calcitic and barely magnetic. Sharp bottom cnt at 70 DTCA; barely mineralised.

941.7 942.9 Mafic Intrusive.
A dark grey green section with a faint speckled appearance. Somewhat similar to the amphibole-rich unit at 919-928 but with more equidimensional amphibole grains. Barely magnetic, calcitic and contains little sulphide. A recognizable gabbro inclusion is visible towards the bottom cnt. Xcut by a 1 in dykelet of the more amphibole-rich phase at the bottom cnt(cnts at 40 DTCA). Negligible veining, cut by a very low angle fracture.

942.9 950.0 Mafic Intrusive.
Another fine uniform section as per 899-905. Slightly more granular, probably due to more intense carb and weak hematite alteration. Contains a 8 in section where diss py is developed to about 1% (?). Broken and blocky with negligible veining. Overall poorly mineralised.

950.0 950.8 Ultramafic.
A narrow section of pale green grey serpentine-rich material with a strong foliation. Variable fabric orientation, begining at 60 DTCA near top cnt then quickly flattening towards bottom cnt. Calcitic and poorly mineralised.

950.8 966.0 Mafic Intrusive.
An olive green section with a slightly gritty texture. Contains fine grains of biotite, and heavily altered amphibole needles set in a carbonated, chloritic groundmass. Weakly foliated at 30-40 DTCA. Calcitic and locally weakly magnetic. Cut by a few very fine carb veinlets at high angles. Not well mineralised. Similar to the unit above at 906-911, with more

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alteration. Towards the bottom of the unit, a subtle fragmental texture is apparent locally. At one spot a flattened dark brown cherty frag? is visible. Weakly magnetic, becoming slightly stronger at the bottom of the section. Sharp bottom cnt at 20 DTCA.

966.0 to 966.6- Mafic Intrusive?.
A dark brown, homogeneous section with scattered spotty/cubic 1-2 mm py. Very much like some 'brown dykes' described above. Hematised and fairly hard but probably not silicified. Weakly foliated/layered at about 30 DTCA. Not magnetic, and xcut by very fine carb stringers which are oriented perpendicular to the foliation. Slightly irregular bottom cnt at 60 DTCA.

966.6 973.9 Ultramafic.
A pale green, soft interval. Not magnetic, but continueing calcitic. Massive, with subtle internal brecciation. Poorly mineralised and lightly veined with a few carb-qtz structures at fairly high angles. Locally weakly foliated at about 40 DTCA.

973.9 995.8 Mafic Intrusive.
A fine grained, fairly uniform section, similar to the phase at 899-905. Contains several 10-15 in long ultra-mafic intervals(pale grey-green, weakly foliated at 45 degrees, with minor spotty py) and slightly gritty areas, related to slightly more patchy chlorite and carbonate in the groundmass. Weakly foliated at 30 degrees locally. 2 mm cubic/anhedral and patchy py is randomly distributed throughout. A few larger patches at the top of the section reach 1 in across. Very few veins; a couple of high angle 1/4 in thick carb stringers cut the interval. The rocks are becoming slightly hematitic coming up on the lower cnt. Sharp lower cnt at 30 degrees. Slightly magnetic throughout.

995.8 1002.0 Mafic Intrusive.
A mottled to layered section cut by several ultra-mafic intervals. The layered structure may be fine compositional interlayering; the bands sit at about 45 DTCA and range from 1/4 to 1 in thick. Some layers are slightly gritty. Locally elevated levels of diss py have developed. Strongly magnetic in part; continueing calcitic throughout. Fine high angle carb veining cuts the section near the bottom cnt. Sharp bottom cnt at 40 DTCA.

1002.0 1024.3 Mafic Intrusive.
Sharp cnt back into a fine-grained gritty interval with ultra-mafic layers and some similarities to the rocks at 899-905 and the more amphibole-rich rocks such as those at 906-911. This example contains 1 mm rounded biotite grains and is strongly amphibolitic in the matrix. Weakly magnetic, with a slightly elevated hematite content as compared to MI's uphole. Calcitic and foliated at about 40-45 DTCA. The fabric is a bit more penetrative as compared to rocks above. Scattered 1-2 mm py cubes are visible throughout. The ultra-mafic layers are becoming more blue-green in colour and more veined/sheared locally. Veining is confined to the u/mafics, except for some subtle features near the bottom cnt. Fine hematite layers with minor silica and diss py give way to a highly carbonated, and broken-up zone for the bottom 12 inches in the section. A few gouged fairly tight faults are

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present: @ 1021.0- 1/4 in gouge @ 55 DTCA and @ 1023.7 - 3/4 in gritty gouge @ 60 DTCA. Sharp bottom cnt at 70 DTCA.

1024.3 1044.1 Ultramafic.
Predominantly a pale blue to blue-black section with some minor dark grey, gritty intervals of remnant MI material. Becoming quite broken-up, with a good foliation at 45-60 DTCA. Numerous shears and tight to slightly gougy faults are common. Strongly calcitic, and essentially non-magnetic. Cut by a tiny very dark brown FP at 1037.4-1038.3; very hard and hematised with very fine scrappy carb veinlets and knots throughout. 2-3 mm subhedral py is found in or about these veins. Sharp cnts @ 30/55. Some of the more prominent faults/shears include: @ 1024.5- 1 in coarse gouge at 70 DTCA; @ 1029.5- gouge and crushed core at a high angle; @ 1034.8- strong shear with 1 in of strongly smeared/slightly gougy material @ about 55 DTCA; @ 1042.4 1/2 in of pale green muddy gouge sits at 60 DTCA; fault bounded lower cnt at 60 degrees with 1/4 in of gritty gouge.

Lost Core- 1031.4 to 1033.2.

1044.1 1068.8 CONTACT ZONE
Contact into a transitional area where the rocks are starting to become more altered and deformed, suggesting that the DZ is close by. In this example, an interlayered sequence of ultra-mafic rocks and probably MI units similar to those in the overlying systems make up this area. The entire sequence has become slightly magnetic, and the amount of pervasive and vein controlled hematite is increasing. The rocks are still well calcified. Scrappy and irregular carb veining is increasing in intensity, especially in the subordinate u/mafic sections. A slight increase in diss and fine cubic py concentration is apparent also. Locally weak silicification is beginning to show; often in conjuction with elevated Fe levels. The MI sections contain variable amounts of acicular amphibole, often aligned with an increasingly strong foliation at about 45 DTCA. Locally the MI's are becoming more gritty and appear similar to rocks called altered/carbonated gabbros, farther into the DZ. A pale pink carbonate vein 4 in long is present near the bottom cnt. Moving farther downhole a 4 in interval of dark brown silicified/hematised material with tiny irregular, reddish syenitic dykelets (incipient type alteration) has formed. A light sprinkling of diss py overprints the alteration. In this area calcite is replaced by ankerite and the section is bounded by a narrow rind of strongly chloritic ultra-mafic material. The cnt is sharp at about 80 degrees. One crushed area at about 1049.5 is the only area of violent deformation; the rest of the interval is massive with high RQD values.

1068.8 1068.9 START OF DEFORMATION ZONE
A fairy sharp contact into the Deformation Zone. Protolith is often difficult to pinpoint because of the strong deformation and alteration. Strongly foliated, veined and folded phases altered with silica, hematite and carbonate are the norm. Very similar to other McBean holes.

1068.9 1079.8 ALTERED GABBRO
A speckled to weakly layered interval, dark grey-green to brownish in

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

colour. Moderately foliated, and heavily carbonated as fine metacrysts/speckling especially towards the bottom of the section. Foliated @ 55 DTCA, becoming slightly flatter (45 DTCA) lower in the section. Cut by highly deformed/folded pale red-brown siliceous veins? (incipient type alteration?) and pale white carb-qtz infillings; local silicification and slightly increased sulphide concentrations are developed about these features. Weakly magnetic, ankeritic with minor remnant calcite in fine fractures; more chloritic at the top of the unit, becoming more hematitic at the bottom. The bottom 12 in of the section is invaded by pale pink carb-qtz veining; (irregular, boudinaged, poorly mineralised). A fairly sharp bottom cnt is marked by 1 in of gritty gouge @ about 45 DTCA (weak slicks perp to fault plane). A weakly mineralised interval; contains scattered diss and anhedral py.

1079.8 1113.9 ULTRAMAFIC KOMATIITE

A pale blue-grey weakly banded ultra-mafic phase cut by numerous irregular, boudinaged and folded carb and carb-qtz veins. Most veins range from 1/2-1 in thick and are typically pale white to slightly reddish/granular/hematitic. Several lenses of finely laminated/gritty material and reddish syenitic dykelets occur lower in the unit. A soft, slightly magnetic phase with local silicification and hematisation about veining/dykelets. Diss and fine cubic py is often associated with the intruding features. Foliated throughout; variably developed from 45-55 DTCA. Some locally flatter veins, foliations and axial planes(tightly folded veins). High angle kink bands and low angle crenulation cleavage developed locally. Ankeritic with spotty fine vein calcite.
Comments on Sub-Units follow:.

1079.8 1081.7 Ultramafic Komatiite.
Pale blue ultra-mafic, heavily veined.

1081.7 1082.3 Quartz.
A pale white internally brecciated vein system with pale orange (syenite?)inclusions which in turn are riddled with tiny low angle carb-qtz gash fractures. Poorly mineralised, with 20 degree cnts.

1082.3 1088.6 Ultramafic Komatiite.
Pale blue, finely veined section which changes into a more greenish, very finely laminated rock with minimal veining. Not well mineralised. Cut by several gougy faults- @ 1082.4, 2 in of fine fault breccia/gouge sits at 45 DTCA; @ 1087.9- 2 conjegate intersecting breaks occur at 30/30.

1088.6 1084.1 Altered Syenite.
A pale red-brown section, hard, weakly magnetic and well carbonated. Xcut by 1-2 in thick grey qtz with fine carb selvages(locally salmon coloured with traces of sulphide/specular hematite) at about 45-60 DTCA. Minor diss and spotty py in matrix. Fairly sharp cnts @ 60/45 DTCA.

1084.1 1104.4 Ultramafic Komatiite.
A pale blue section, with an increasing amount of veining downhole; both the pale white carb-qtz type and the pale reddish, hard and often finely pyritic

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

?syenite dykeletes/incipient alteration types are visible. Most veining is 1/4-1/2 in thick, and extremely deformed(boudinaged, folded) on a cm scale. Variably developed and oriented foliation. Minor diss and spotty py in matrix. A 5 in long syenite?/qtz vein structure(as per 1088-1084) sits at 1090 ft. Tight gougy faults @ 1094.2 @ 50 DTCA, and @ 1102.1 @ 45 DTCA.

1104.4 1107.0 V9?.
A finely laminated, pale brown interval, with a slightly granular aspect, cut by dark grey qtz veins and fine reddish syenite dykelets?. Foliated/layered at 45-55 DTCA. Hard (locally silicified), and well mineralised with diss and fine anhedral, bleby or cubic py. The qtz veining is generally sulphide poor, slightly boudinaged and may or may not contain carb as fine crystalline selvages. Sharp cnts @ about 60 DTCA.

1107.0 1111.0 Ultramafic Komatiite.
A pale blue moderately veined section.

1111.0 1111.9 Tuff.
A greenish-brown, finely laminated section with variably oriented layering/banding. Moderately mineralised, hard and strongly magnetic. Fine dykelets appear to be invading the matrix. High angle, sharp cnts with gougy material bounding both cnts.

1111.9 1113.9 Ultramafic Komatiite.
A pale blue section which grades into a finely laminated sequence against the bottom cnt- this material looks much like the phase at 1104-1107 with a similar increase in pyrite content.

1113.9 1118.2 ALTERED SYENITE
LITH- a pale red to brownish colour, slightly mottled and or weakly speckled. Appears to consist of 3 phases; a pale brown felsite-like rock which appears to be cut by a slightly redder altered syenite, and a beige crudely laminated tuff? lens. All rocks are very hard, and heavily altered and veined.
ALTER- heavily carbonated as fine spotty metacrysts and in veins(mostly ankerite). Weakly hematitic throughout with slightly higher concentrations in some fine veinlets. Probably silicified. A hint of sericite and fine granular magnetite is visible at the top cnt of the 'tuff' unit.
VEINING- well veined with a range of linear qtz-carb structures which vary from 1/8 -1/2 in across; generally poorly mineralised and oriented at 30-40 DTCA.
MINERALISATION- moderately mineralised with diss, spotty/anhedral and irregular blebby fracture-filling pyrite. Most sulphide occurs in the matrix material with a local increase in the 'tuff' band.
STRUCT- a massive rock with very weak banding/layering at 75-80 degrees. This appears to have been overprinted by later alteration (silica). Sharp cnts at 75/80.

1118.2 1141.3 TUFF
A sequence of predominantly finely laminated tuffaceous? material cut by

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narrow altered syenite dykelets. Minor ultra-mafic material is also present. The tuff bands are variably coloured from dark grey-green through pale red to beige in part, and generally finely laminated on a sub-cm scale. The layering is weakly to moderately boudinaged, and is oriented at 45-60 DTCA. Fine qtz-carb veinlets and syenitic? dykelets invade the bands; these are generally concordant with the layering and show similar states of strain. Ankerite alteration in veins and the matrix is ubiquitous. Pervasive hematite is variably developed; siliceous alteration is widespread. Fine magnetite grains are sprinkled throughout much of the layered areas. Diss and fine subhedral py is similarly scattered throughout, although veining is conspicously poor in sulphides. The redder syenitic dykelets are mottled and more heavily veined than the host tuffs; they have sharp cnts which mimic the layer orientations and are probably more carbonated also. The syenites are generally non-magnetic, and very hard. Fine carb-qtz gash veins cut some of the tuff zones at low angles.
Comments on sub-units are as follows:.

1118.2 1119.7 Ultramafic Komatiite.

1119.7 1120.9 Altered Syenite.
Contains a small section of ultra-mafic material and a group of very fine 1S dykelets at the top of the interval. Well mineralised; cut by irregular scrappy veins.

1120.9 1122.7 Ultramafic Komatiite.

1122.7 to 1126.3- Tuff.
Pale purple-grey, finely laminated and sparsely veined with minor ultra-mafic material at the begining of the section. Well mineralised with fine py; banding/laminations @ 60 degrees.

1126.3 1126.9 Altered Syenite.
Pale orange-red, well mineralised with fracture filling py; heavily veined.

1126.9 to 1127.6- Tuff.
Pale beige with magnetite grains visible.

1127.6 1129.8 Altered Syenite.
A very pale orange coloured interval which becomes more reddish towards the lower cnt. Contains a narrow contorted tuff lens at about 1129 with abundant cubic/subhedral py. More heavily carbonated at the top, becoming more hematitic and richer in matrix py towards the bottom cnt.

1129.8 to 1137.0- Tuff.
A more greyish coloured section with some low angle granular qtz-carb material invading the upper portion of the interval. Slighter more heavily veined/dyked toward the lower cnt. Layered at 50-60 DTCA; well mineralised and slightly more heavily veined than the previous tuff section.

1137.0 1137.5 Altered Syenite.
Pale red and heavily veined with angular white carb inclusions/selvages.

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

Well mineralised in the matrix.

1137.5 to 1140.5- Tuff.
Dark grey and fairly uniform/slightly gritty becoming more dyked with reddish syenitic material and fine ultra-mafic partings towards the bottom cnt. Layered at 60 DTCA with some flatter areas to 45 degrees.

1140.5 1141.3 Altered Syenite.
A pale red-brown interval, xcut by low angle scrappy qtz veining. Partly dyke-like and partly foliated and looking more like a carbonated gabbro? Poorly mineralised, sharp high angle lower cnt.

1141.3 1200.5 ULTRAMAFIC KOMATIITE
LITH- a blue-black to slightly reddish-brown coloured sequence of highly deformed ultra-mafic rocks intercalated with more hematised/altered equivilents of the same, and minor amounts of tuff and syenitic intrusives. Spotted to mottled to locally finely laminated. Variably veined/banded especially in the upper regions where ultra-mafic rocks dominate. Contains numerous fault zones, most with gritty to fine cobbly gouge.
Comments on the Sub-Units follow:.

1141.3 to 1144.2- Ultra-mafic Komatiite.
A very dark blue-black to slightly purplish coloured section, hematised locally and weakly veined; most of the veining is boudinaged, broken up and or finely brecciated. A few highly deformed syenitic? dykelets with associated diss py cut the upper parts of the section. Soft, only barely magnetic and overall poorly mineralised. Contains traces of spotty chalcopyrite and a wispy olive green mineral, possibly serpentine. Ankeritic.

1144.2 1145.9 Fault Zone.
A section of coarse grained, slightly talcy and gritty gouge, with sharp cnts at 45/45. Several discreet 45 degree slips xcut the zone.

1145.9 to 1167.0- Ultra-mafic Komatiite.
A section of blue-black, chloritic, well foliated and weakly veined ultra-mafic material. Pale green-white carbonate and serpentine form scrappy veins and speckled areas. The rocks become more Fe-rich towards the lower cnt; fine hematite stringers begin to infiltrate/brecciate the rocks, becoming more numerous downhole. Foliated at about 45 degrees; weakly magnetic and ankeritic. Weakly mineralised with a few scattered 2 mm py cubes. Slightly pitted/weathered locally. A few gouge-filled faults occur as follows: @ 1156.6- 2 tight slightly gougy planes sit @ 60 DTCA; @ 1158.4- 1/2 in of muddy gouge sits at 50 degrees.

1167.0 to 1170.9- Ultra-Mafics/Dykelets.
A blue-black, weakly foliated to massive interval xcut by numerous fine red-orange, granular intrusive bodies? which are boudinaged, quite hard, magnetic, and generally moderately mineralised with diss py. Where foliated the fabric/laminations sit at about 50 degrees. A few low angle kink bands are developing across some finely laminated zones. The interval concludes with a cherty, hematitic band about 3 inches thick, with a very finely

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

laminated texture. The layering occurs at about 75 DTCA. Minor diss py is scattered throughout. High angle lower cnt.

1170.9 to 1172.9- Ultra-mafic.
A pale green, weakly banded section with a suggestion of very weak fuchsite alteration. Several 1 in thick cherty/weakly hematitic layers are developed within the section; these are internally layered on a mm scale. The rock is non-magnetic, and cut by wispy and spotty carbonate alteration. It is well mineralised with 3-4 mm cubic and finer anhedral/diss py.

1172.9 to 1183.7- Banded Ultra-mafics.
A sequence of hematised and locally silicified gritty to speckled to finely laminated rocks which are probably of ultra-mafic origin, interlayered with clearly recognizable u/mafics. Most of these phases are magnetic; some resemble the 'tuffs' described above, while others are more granular and foliated. A pale brownish area from 1180.9 to 1181.3 may represent a felsite or an area of silica flooding(low angle cnts, mineralised, magnetic). The dominant fabric sits at about 45-55 DTCA. Some incipient alteration/dykelet textures are developed on a fine (sub-cm) scale. Carbonated(ankerite) and moderately mineralised with diss and fine cubic py. A few larger dyke-like bodies occur with cnts generally concordant to the local fabric. A broken possibly faulted area sits at 1177.0 at about 70 DTCA. Fine galena? @ 1173.2 in a small pale grey siliceous veinlet.

1183.7 to 1200.5- Tuffs/Ultra-Mafics.
A banded, broken-up sequence of blue-black rocks(the minor constituent) and pale brown-red tuff bands/layers. The ultra-mafic component is generally soft, non-magnetic and well veined with irregular, wispy and disjointed carbonate material. The 'tuff' interlayers are reddish brown to slightly more beige in colour, generally fine to very fine grained and laminated on a cm to mm scale. They are hard and probably locally silicified; the layering is oriented at 45 degrees. A variably magnetic and mineralised interval; most of the magnetic and pyritised areas are within the tuff bands proper. The ultra-mafic component is generally finely broken into 1-2 in long segments; some gougy faults have developed in these zones as well. Some comments on the faulting: @ 1185.9- 2 in of coarse rubbly gouge sits at about 50 degrees(at least 2 fault planes); @ 1187.5- 2 in of crushed rock/gouge sits at about 60 DTCA; @ 1190.9- tight fault with 1/4 in gouge; @ 1192.1- 1/2 in of mushy gouge at 70 DTCA; and @ 1193.5- 1 in of finely crushed rock suggests a high angle fault.

1200.5 1224.2 ULTRAMAFIC KOMATIITE
A sequence of strongly sheared and veined ultra-mafics intercalated with minor amounts of brownish, slightly gritty rocks similar to those logged as 'carbonated gabbro' in other McBean holes. Overall, the section contains less Fe alteration, and the ultra-mafic components are more of a pale green colour due to more intense carb alteration. Talc/serpentine alteration is now present more so than chlorite. The rocks become more broken-up and faulted approaching the lower cnt; fine felsite dykelets/highly deformed incipient alteration zones also become more developed.
Comments on the Sub-Units:.

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

1200.5 to 1205.3- Ultra-mafic.
Pale green, finely foliated/layered/veined at 45 DTCA. Non-magnetic, ankeritic and strongly sheared. The carbonate banding/veining is strongly knotted/boudinaged. Poorly mineralised.

1205.3 1206.5 Altered Gabbro.
A brown-red, finely laminated, slightly gritty section with a strong fabric at 45 DTCA. Magnetic and weakly mineralised with spotty/subhedral py grains to 2 mm across. The larger pyrites have well developed mm scale strain shadows. Fine chlorite infills scrappy gash veinlets, which parallel the fabric. Sharp cnts @ 45 DTCA; locally silicified.

1206.5 to 1224.2- Ultra-mafic.
Pale green in colour with more intense patchy carb/talc alteration and very irregular folded and dismembered veining. Broken up and faulted in part, with deformed beige to pale orange-red dykelets of felsite and possibly syenite. Locally silicified. A short segement of foliated/gritty/weakly hematised 3Ga is present at 1219 ft. Pale white sinuous qtz patches/veins with beige coloured carb inclusions intrude the rocks approaching the bottom cnt. Moderately mineralised; cse spotty/rounded pyrite grains are developed locally in the ultra-mafic components; finer diss and cubic py is found in and about the dykelets and gabbroic material. Continueing ankeritic and variably magnetic. A narrow fault zone is developed at 1218.3-1218.5; a solid infilling of gritty, pale green gouge with several 3-4 mm py cubes and 70 degree cnts is present.

1218.3 1218.5 Fault Zone.

1224.2 1228.5 FELSITE
LITH- a pale beige to flesh tone, massive to locally weakly foliated and well veined with fine qtz and qtz-carb stringers. Very hard and weakly speckled locally with fine subhedral phenos? or carb metacrysts?(sub-mm size). Contains a couple of u/mafic inclusions, one of which has been crushed into cm size fragments. The contacts are sharp, slightly irregular and have a pale alteration/chilling? rind developed(on the felsite side).
ALTER- silicified and well carbonated(ankerite). Essentially non-magnetic.
VEINING- xcut by several generations of mm size qtz and qtz-carb veinlets, generally at angles greater than 45 degrees. Most veins are poorly mineralised.
MINERALISATION- well mineralised with fine diss py distributed throughout the matrix. U/mafic inclusions are sulphide-poor. Some fine anhedral grains show preferential stretching/flattening into a weak fabric in one zone.
STRUCTURE- a massive unit with one foliated zone. The fabric is at 45 DTCA. Contacts are sharp and at a high angle at the top(about 70) and at a low angle at the bottom(about 15 DTCA).

1228.5 1306.9 ULTRAMAFIC KOMATIITE
A sequence of altered and deformed ultra-mafics, with brown coloured gritty/foliated sections and possibly tuffaceous horizons. This system contains most of the elements of the two previously described V15 units,

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

ranging from the more Fe-rich areas to the pale green more sheared types. Fault zones, syenitic dyklets and variably developed incipient alteration are important features.

Specifics on the various Sub-Units are as follows:.

1228.5 to 1232.6- Ultra-mafic.
A pale green, more carb/serpentine rich zone xcut by several beige dykelets of felsite much like the overlying unit. Well veined, and very intensely deformed on a cm to mm scale- tight folding, variably foliated and locally kinked especially near the top of the section. Becoming more uniformly foliated @ 45 DTCA with fine chloritic partings moving downhole. Locally well mineralised with diss py(more so in and around dykes). Non-magnetic and locally silicified. Sharp bottom cnt at 45 degrees.

1232.6 to 1244.0- Banded Ultra-mafic.
A pale brown-red section with a fine laminated/layered apperance. Foliated /layered at 30-45 DTCA. Locally magnetic, and largely silicified. The banding varies from 2-3 mm through to 2 cm in thickness. Well mineralised with fine cubic and diss py. Weakly hematitic throughout. The top 6 inches is a pale apple green colour suggesting a very weak zone of fuchsite alteration has developed. Some pale orange 'incipient alteration' is developed near the lower cnt. Sharp bottom cnt @ 40 DTCA.

1244.0 to 1247.6- Ultra-mafic.
A pale green-grey interval similar to that at 1228-1232, but without the dykelets. Strong shear at 1246.2 with minor gouge at 30 DTCA. Poorly mineralised except immediately below the top cnt. Foliated @ 30-35 DTCA.

1247.6 to 1268.9- Ultra-mafic.
A heavily deformed and faulted/blocky interval consisting of short segments of heavily veined/banded greenish black material intermixed with coarse, gouged faults and minor patchy qtz veining and irregular syenitic dykelets. Locally finely brecciated and re-cemented with carb/chlorite/hematite/silica. Locally silicified and hematised. Variably foliated at 30-50 DTCA. The more Fe-rich, and dyked areas generally contain elevated amounts of diss and fine cubic py. Some details on faulting: @ 1256.8- 1/2 in gritty gouge with imbricated fragments(the zone is at 80 DTCA; the frags are at 55-60 DTCA); @ 1258.5- minor gouge in a high angle shear/fault; @ 1258.9- 1/4 in gouge @ 50 DTCA; @ 1261.3-1262.9- crushed zone with traces of gouge; @ 1263.3-1263.8- faz with coarse gritty gouge on 2 discreet planes @ 45 & 55 DTCA; @ 1264.3- low angle fault with 1/4 in mushy gouge @ 30 DTCA; @ 1265.0-1265.3- coarse gritty gouge zone @ 45 DTCA(contains qtz pebbles); @ 1266.0-1266.2- gritty gouge seams @ 45 DTCA; @ 1267.1- thin gouge seam @ 40-45 DTCA; @ 1267.4-1268.4 - gritty gouge seam with several discreet planes @ 45-50 DTCA.

1261.3 1267.4 Fault Zone.

1268.9 to 1306.9- Ultra-mafic.
A sequence of blue-black ultra-mafic rocks intercalated with pale orange

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

syenitic dykelets and gritty pale brown 'gabbroic' layers. Similar to the above units with a less altered and veined host where chlorite has become the dominant alteration product. Carbonated as vein fillings and metacryst speckling. Some finer-grained laminated areas are developed near the bottom cnt(poss tuff bands?). The core is broken up locally but less so than in the overlying units. Faulting is also diminished, especially towards the bottom cnt. Slightly vuggy locally; variably mineralised with diss py in the *dyked/gabbroic zones and a few coarse py cubes in the host rocks. Tightly* folded banding and dykelets; axial planes are generally oriented at high angles to the CA. Foliated/banded at 40-60 degrees. Variably magnetic and ankeritic throughout. A bright orange syenite dyke cuts the interval at 1279.5-1280.2(hematised, very hard and invaded with pale white patchy qtz, well mineralised). This dyke has sharp cnts @ 45/20. Faults occur as follows: @ 1275.6-1276.3- strong fault zone with coarse gritty, hematised gouge with 1/2 in diameter contained fragments; bottom cnt @ 45 DTCA; @ 1280.5- 1/2 in crushed rock/gouge @ 40 degrees; finely crushed zone @ 1289.4 with minor gouge; @ 1299.5-1300.0 is a strongly sheared area with traces of gouge @ about 70 DTCA.

1306.9 1336.1 FELSITE

LITH- a system of pale beige to flesh coloured felsite-type rocks intercalated with lessor amounts of finely laminated/foliated ultra-mafic units very much like the overlying units. The felsite components are very hard and finely granulated to almost cherty in texture; locally they also have a 'psuedo-layered' appearance. Pale red-orange 'incipient alteration/dykelets' cut the system locally. The u/mafic lenses are a pale green colour and have sharp cnts parallel to the local fabric.

ALTER- a moderately to strongly carbonated interval with ankerite developed pervasively and within veining. Silicified within the felsites; weakly hematitic and sericitic locally. Generally non-magnetic.

VEINING- scattered irregular/patchy/low angle pale white qtz veining up to 1 in thick are developed most commonly in portions of the felsite. These veins normally have carb selvages and are sparsely mineralised. Finer high angle veins are found in the ultra-mafic rocks; these are 1/4-1/2 in thick, boudinaged and often contain fine carb along internal margins. A few recognizable high angle syenitic dykelets are present lower in the sequence, in addition to 'incipient alteration' features. Slightly elevated amounts of Fe accompanies some of these features; slight weathering/pitting is also common.

MINERALISATION- a well mineralised section, mostly within the felsites. Py as diss and fine cubic to subhedral 1-3 mm grains is distributed throughout the matrix and in and around some of the incipient alteration zones/veins. The ultra-mafic rocks are essentially barren.

STRUCT- a massive interval with high RQD values. The ultra-mafic units are foliated @ 60 DTCA typically; layering in some of the felsites is slightly flatter at 45-50 DTCA. The syenitic dykelets and incipient alteration features generally mimic the local fabrics. Cnts are similarly oriented.

Details on the Sub-Units follow:.

1306.9 to 1312.0- Felsite.

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

Dark reddish brown in colour; slightly gritty texture; xcut by fairly flat qtz veining containing traces of chalcopyrite, galena and possibly sphalerite. A few small u/mafic lenses are present. Well mineralised with bright diss and spotty py. Narrow bands/laminations with dark greenish sericite locally.

1312.0 1314.4 Ultramafic Komatiite.
Predominantly a finely foliated, pale green grey interval with a section of pale reddish gritty tuff/felsite?. Foliated at 50-60 DTCA. Sparsely mineralised except for 1 narrow corridor with diss py at around 1312.4 ft.

1314.4 1316.8 Chsd?.
A section of yellow-beige, very siliceous material xcut with 1/4 in irregular gash veining and chloritic hairline fractures. Contains very fine wispy sericite oriented at high angles to the CA. Subtle internal layering locally. Mineralised with very fine diss and slightly coarser spotty py. Contains a short section of ultra-mafic material with high angle veining.

1316.8 1318.1 Ultramafic Komatiite.
A section of pale green, finely foliated material with several narrow lenses of pale reddish, siliceous infilling material. Poorly mineralised.

1318.1 to 1329.5- Banded Felsite.
Sharp cnt into a sequence of laminated, banded and psuedo-banded felsite and possibly tuffaceous material as noted above @ 1228-1306. The section begins in a finely laminated zone of pale red to yellow/ochre coloured tuff? with sub-cm scale layers(@ 60 DTCA). Some local grading?(might be metamorphic) suggests tops are downhole. Ultra-mafic material is intercalated with the tuff. Moving downhole, the banded matrix becomes more gritty and reddish; this is in turn cut by several red-orange syenitic dykelets(well veined/intruded with scrappy qtz, well mineralised) which sit parallel to the layering. Continueing downhole, the rocks become slightly more reddish and then dark grey with subtle banding at slightly lower core angles. Incipient alteration becomes more common and then dies out below 1328 ft. Well mineralised throughout with diss and subhedral py grains to 2 mm across.(The darker areas and banding might represent well digested ultra-mafic material).

1329.5 to 1336.1- Felsite.
Gradational cnt back into a more massive zone of pale reddish to orange felsite. Slightly gritty texture with subtle banding towards lower cnt. Weakly hematised, and well mineralised with diss and fine fracture-filling py. Xcut by a few syenitic dykelets and a few very thin high angle qtz-carb stringers. Locally weakly magnetic. Strongly bleached at bottom cnt for 5 in (sericite/carbonate).

1336.1 1393.3 GREEN CARBONATE ZONE
LITH- pale chrome green in colour, with a mottled/variegated or finely foliated texture. Segments of fine gritty/laminated material(tuff?) with typical 'blonde' alteration and thinner pale yellow-beige coloured 'albitite dyke' material (as per Kerr) xcut the rocks randomly.(The term 'albitite' is

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

used here to describe the yellow, fine grained and strongly carbonated bodies found throughout this green carb interval. These 'dykes' have sharp, albiet quite deformed cnts, are often rich in fine granulated qtz and well mineralised. The intent is to relook at these structures from a slightly different genetic viewpoint and see where this may lead). Heavily veined with patchy white to grey qtz. A strongly carbonated sequence of rocks of ultra-mafic origin. Occasionally small areas of more chloritic ultra-mafic material remain- these areas closely resemble the other V15 units seen uphole.
ALTER- carbonated (ankerite) both in the matrix and as vein selvages/inclusions. Silicified in large part and strongly fuchsitic throughout(matrix/pervasive, fine fracture fillings). Non-magnetic. The areas with 'blonde alteration' and 'albitite' material presumably have very fine sericite developed in the matrix; fine wispy sericite is also visible in some of the gritty or tuffaceous zones. Non-magnetic.
VEINING- white to pale grey qtz veining occurs throughout the sequence. It is generally highly deformed(boudinaged, folded, distorted) and varies from 1/8 to 2 in in thickness. Carb selvages and inclusions are variably developed. The veins appear to post date the 'albitites' and most of the fuchsite alteration, although there are examples with fine wispy fuchsite material as included material. The qtz is very sparsley mineralised.
MINERALIATION- a weakly mineralised system. Traces of diss py occur in some of the finely foliated fuchsite-rich bands; more significant diss and spotty py occur in the beige 'albitite' dykelets or strongly developed blonde alteration zones. One fine speck of VG is visible- ex: @ 1360.3 ft.
STRUCT- a variably foliated unit with some zones of fairly uniformly developed fabric(@ 45-55 DTCA) and other areas where more intense deformation and veining have totally disrupted the foliation. Cm scale ptygmatic folding, local kinking/crenulation and very low angle foliations are not uncommon. Much of the 'albitite' dyke material is sitting at relatively high angles; similarly the gritty/tuffaceous areas are foliated as noted above.

Details in the System are noted below:.

1336.1 1337.8 Blonde Alteration Zone.
A zone of pale yellow, very strong carb alteration cut by(?) slightly more yellowish 'albitite' material. Small amounts of weakly fuchsitic u/mafic host has been 'mixed in'. The albitite has a conspicuous granulated texture, which consists of sub-mm qtz grains surrounded by carbonate, sericite and interstitial qtz plates. Its' cnts are sharp but amoeba-like. Poorly mineralised with a few specks of py in the 'albitite'. Irregular, deformed cnt into the underlying sub-unit.

1337.8 to 1339.0- Green Carb.
A highly distorted/folded section of finely foliated, fuchsite-rich, readily identifiable u/mafic. Cut by several thin, pale yellow, tuffaceous bands? (or possibly 'albitite' dykelets?). These structures are very finely laminated, and sit at about 45 degrees to the CA. They contain very fine fuchsite-rich layers and are sprinkled with diss py.

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

1339.0 to 1340.6- Tuff?.
Sharp cnt @ 45 degrees into a fine-grained, slightly gritty section which is foliated/layered @ about 45 DTCA. Sericitic throughout with sericite-rich band/layers and miniscule lenses? of fuchsitic alteration(or flattened frags?). Contain fine diss and distended blebs of py, smeared into the fabric. Consists of fine qtz grains set in a carbonate/sericite matrix.

1340.6 to 1346.3- Green Carb.
A relatively uniform section which is finely foliated at 30-45 DTCA going downhole. Contains several intervals very similar to the above described 'tuff', in addition to a few irregular blonde 'albitite' bodies. The latter 2 phases carry moderate amounts of diss py; traces are also found in the host phase. Strongly fuchsitic in the host. Extremely deformed/veined at the top cnt; fine 'albitite' material is folded and then invaded by patchy qtz.

1346.3 to 1379.9- Green Carb.
A highly deformed, intensely veined and strongly fuchsitic interval, which exhibits the typical mottled/disrupted green carb texture. Xcut by several significant 'albitite' bodies (one is 18 in along the core) and includes several 'tuff' layers as per above. Approximately 20% of the section is occupied by qtz veining, both white and grey. Some qtz has carb inclusions and selvages; overall however it is weakly mineralised. Traces of chalcopyrite and fine subhedral py are most common near 'albitite' bodies. As above, the 'albitites' and tuffs carry the bulk of the sulphide as diss and fine spotty py. Much of the matrix is foliated, and much of this is at a very low angle. Some subhedral 2-3 mm py is scattered about the matrix. One 1 mm angular speck of free gold occurs at 1360.3- a single grain lies in white qtz very near the brecciated cnt of an 'albitite'. Py is nearby in both the dyke and to lessor extent in the qtz.

1379.9 to 1381.4- Tuff.
A beige coloured section with a hint of hematite alteration. Slightly gritty and hard. Weakly foliated throughout @ about 30-40 DTCA. Slight bleaching(sericite alteration) is present at the top cnt. Well mineralised with diss py. Xcut by a few 1/8 in wispy qtz stringers, generally at high angles.

1381.4 to 1393.3- Albitite Zone.
A section of slightly less fuchsitic material invaded by several pale beige 'albitite' dyke bodies. All phases have then been xcut by a swarm of high angle qtz gash veins which carry very small amounts of py and chalcopyrite. The dykes are well mineralised with diss py. The section concludes with a narrow tuffaceous interval very much like the rocks noted immediately above.

1393.3 1400.2 ULTRAMAFIC KOMATIITE
A corridor of pale green to dark grey to pale brownish laminated/foliated rocks of ultra-mafic derivation. Consists of interlayered green, foliated material with some 'incipient alteration' and a number of brownish, highly carbonated rocks with some similarities to the 'carbonated gabbro' suite. Foliated/layered at about 45 DTCA. A few thin, dirty beige 'albitites' also cut the sequence. Locally magnetic, silicified and weakly hematitic. Variably mineralised; more so in/near the dykes and in the more Fe and

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

silica-rich areas. Diss and fine subhedral py is the sulphide. Sharp bottom cnt at 55 DTCA.

1400.2 1410.0 FELSITE

LITH- pale purple-grey to red-orange, with a mottled and/or laminated appearance; contains scattered pale white 2-3 mm subhedral feldspar phenos? and remnants of partially absorbed and fresh ultra-mafic material. Aphanitic and very hard. Slightly pitted/weathered out locally. Sharp upper cnt with a 2 mm dirty white chill margin. This phase has characteristics of felsites, altered syenites and some of the FD units logged in hole MB97-15; it most strongly resembles previously logged 1F units however. The similarities between some of these rocks may imply some genetic links.

ALTER- silicified and locally strongly hematised(towards lower cnt). Ankeritic throughout the matrix and in fine stringers. Specular hematite and chlorite infill hairline fractures. Fine crystalline specular hematite occurs in the weathered/vuggy areas along with well formed qtz and carb crystals in the 2-3 mm size range. Non-magnetic.

VEINING- very fine hairline stringers cut the core at about 40-50 degrees; these carry hematite, chlorite, qtz and carb. More irregular, boudinaged and patchy qtz with carb selvages and inclusions are rare. Very little sulphide is present in the veining.

MINERALISATION- very fine diss and slightly coarser subhedral py is sprinkled throughout the groundmass. Slightly greater concentrations near veining and towards the bottom of the section where hematite alteration is more intense.

STRUCT- a massive unit with a subtle internal layering/foliation locally; this sits at 45-50 DTCA. Sharp cnts top and bottom @ 50/45 DTCA.

1410.0 1475.4 ULTRAMAFIC KOMATIITE

LITH- a dark grey-green, soft, finely banded/veined system, which contains intervals of intensely carbonated felsite-like material, patchy irregular qtz and minor brownish material somewhat like the carbonated gabbro phases described earlier in this hole. The host ultra-mafic is heavily carbonated, slightly talcose locally and strongly deformed throughout.

ALTER- well carbonated(mostly ankerite with local fracture controlled calcite); and strongly chloritic; weakly magnetic locally; slightly talcy in some of the most strongly altered areas. Some minor amounts of narrow reddish incipient alteration is developed; weak hematite staining accompanies this and occurs in other larger dyke-like phases. A few narrow tuff? horizons are slightly sericitic.

VEINING- the host u/mafic is heavily veined with fabric concordant carb/qtz material; other more persistant patchy and irregular invasive white qtz occupies large volumes of the core in the middle of the system. These larger veins and masses often have carb as selvages and small angular fragments suspended in the host qtz. Most of this material is not well mineralised.

MINERALISATION- a poorly mineralised section; moderate amounts of diss py are scattered about within the carb zones and dyke-like bodies.

STRUCT- The host u/mafic is foliated @ 45 DTCA in large part; slightly higher angle kink bands crenulate the existing fabric locally. In some areas the fabric is strongly disturbed and distorted; cm scale folding is common in the heavily veined U/mafic domains(axial planes are // to the foliation).

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

A few gougy faults/shears have developed in the host also.

Comments on Sub-Units:.

1410.0 to 1429.0- Ultra-mafic.
Sharp cnt into a dark green-black, heavily veined section with traces of rounded py and a few narrow zones of reddish incipient alteration. A narrow brownish, finely laminated 'altered gabbro' occurs at about 1420. Faulting occurs as follows: @ 1417.6- 1/2 in gouge at 45 DTCA with slicks perp to the CA; @ 1418.5- 1 in sheared zone with gouge @ 45 DTCA; and @ 1419.7- 1 in of talcy gouge @ a high angle.

1429.0 1437.5 Felsite.
A sequence of beige to weak salmon coloured, fairly massive rocks which although fine grained have some scattered pale subhedral feldspar phenos? in the 2-3 mm range and locally some barely visible smaller (sub-mm) feldspars, also white and subhedral. This is another example of a phase with elements of the felsite, syenite and FD dyke groups. It is similar to the 1F logged above at 1400-1410, but with more Fe in the groundmass. It is very hard, essentialy aphanitic and has very fine carb speckling in the matrix as per the more purple-grey felsites. It is xcut by both high and low angle fractures filled with chlorite and qtz-carb; these are either very minute hairline type breaks or part of a set of larger (1/8-1/2 in thick) vein set. Some of the larger veins have weak Fe halos developed; most are sulphide deficient. In contrast, some of the very fine high angle stringers contain diss py or have the same in close proximity. The groundmass is moderately mineralised with diss py. This dyke has included a short section of the u/mafic host near the top cnt. Ankeritic and non-magnetic.

1437.5 to 1443.9- Ultra-mafic.
A sequence of mostly the green black host xcut by several narrow 'incipient syenite? dyke features' and some laminated brownish phases resembling carbonated gabbros. The contained rocks are weakly hematised, silicified and mineralised with diss py. The system is foliated/layered at 45 DTCA. Very low angle, slightly boudinaged qtz veins have xcut the red and brown phases; these are poorly mineralised in general. A healed cobbley fault breccia sits @ 1438.0 @ about 25-30 DTCA.

1443.9 1446.5 Quartz.
Sharp cnt at 30 degrees into a white qtz-rich section containing minor wallrock and a 5 in long pale red syenite? dykelet. Numerous pale white, salmon and beige coloured angular inclusions are suspended in the host qtz; some of the latter 2 components are mineralised with diss py. The syenite has high angle, sharp cnts and only traces of sulphide. It is xcut by fine 45 degree qtz and qtz-carb veins with negligible sulphide also. A shear cuts the core @ 1445.5 @ about 30 DTCA.

1446.5 to 1453.3- Ultra-mafic.
Section of blue-black host which is becoming less uniformly foliated/banded moving downhole. Invaded by a number of 1/2 in thick pale white barren qtz veins/patches. Poorly mineralised both in host and veining.

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

1453.3 1454.8 Quartz.
Another white qtz interval, containing wispy dark green wallrock and pale orange inclusions. Negligible sulphide. Bounded by a healed qtz, wallrock and syenite? dyke breccia at the lower cnt. The cnt is sharp at 35 DTCA.

1454.8 to 1471.5- Ultra-mafic.
A section of pale green strongly deformed and distorted host ultra-mafic cut by several mineralised pale reddish syenitic? dykes?. White qtz veining /patches occur throughout the interval; they are typically poorly mineralised and contain carb and wallrock inclusions. Several pale green-grey gritty tuff? lenses are developed at about 40-50 DTCA(variably mineralised). Locally weak lenses of sericitic/carbonate material are draped about veins and other dyke-like features.

1471.5 to 1475.4- Ultra-mafic.
Returning to a blue-black host ultra-mafic, which is weakly veined, and contains two 3 in long intervals of very hard, pale brown, weakly laminated dyke? material. Variably banded with areas having very low core angles. The upper cnt is fault bounded at about 50 degrees with 1 in of gritty gouge. Another break occurs at the lower cnt- three gougy shears occupy a 2 in thick zone @ about 70-75 DTCA.

1475.4 1477.6 CHERTY SEDIMENTS
Sharp cnt into a pale beige to reddish coloured cherty interval which is weakly laminated on a mm scale locally. Xcut by low angle hematitic hairline fractures; weak Fe staining is developed throughout the unit. Weakly mineralised with very fine diss throughout; this develops into 2-3 mm thick massive py layers towards lower cnt. Sharp bottom cnt @ 70 DTCA.

1477.6 1486.9 PORPHYRITIC SYENITE
LITH- a bright orange-red slightly spotted section of relatively fresh porphyritic syenite. Consists of barely supported subhedral pale white 2-4 mm feldspar phenos set in a pale orange aphanitic groundmass. A few scattered dark grey rounded qtz phenos are also present.
ALTER- strongly silicified, and hematitic throughout. Non-magnetic. Pervasive and vein controled carbonate (ankerite).
VEINING- Weakly veined with 80 and 40-50 degree 1/16-1/8 in qtz and qtz-carb veinlets. Generally weakly mineralised; some contain fine specular hematite and traces of chalcopyrite.
MINERALISATION- moderately mineralised with diss and spotty py throughout the matrix. Traces of chalcopyrite in a few qtz veins (@ bottom cnt).
STRUCT- a massive interval with a high RQD. Sharp, colliform bottom cnt @ 40 DTCA.

1486.9 1572.2 ULTRAMAFIC KOMATIITE
Strongly chloritic cnt zone into a system of finely laminated/veined ultra-mafic rocks which vary from a blue-black variety to a more pale green-grey type. Fairly consistently foliated/layered at about 60 DTCA. Heavily carbonated throughout in the form of penetrative/deformed veining. Ankerite is the dominant carbonate phase with minor local calcite in late

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

fractures. Xcut by several purple to brownish felsite bodies; a few scattered thin slightly gritty 'tuff' horizons are also present. Weakly mineralised with spotty, anhedral py. Generally non-magnetic.

Details on this Sequence:.

1486.9 to 1490.8- Ultra-mafic.
Blue-black banded section with some very high angle kink bands near the top of the section. A 2 in long pale beige patch of 'albitite'? or felsite is located just above the bottom cnt of this section(poorly mineralised). High angle sharp cnt.

1490.8 1496.4 Felsite.
A pale brown to beige coloured interval of coarsely brecciated/stepped material with a section of fresh wallrock from 1492.1 to 1493.1. Very hard, aphanitic and essentially featureless upon close inspection. Carbonated and weakly hematitic. Non-magnetic. Tiny wisps of yellowish sericite are scattered throughout. Massive to crudely laminated internally; the layered texture has subsequently been mildly folded into an orientation almost parallel to the CA. Contains highly distorted and folded fragments of fresh hostrock; other less distinct inclusions appear locally. These appear to be assimilated wallrock fragments. Xcut by boudinaged and angular high angle gash type white qtz veins, generally with very little contained sulphide. The matrix is sprinkled with very fine diss sulphide. Sharp lower cnt at 70 DTCA.

1496.4 to 1513.7- Ultra-mafic.
A slightly paler coloured section with a few scattered 2 mm py cubes in the groundmass. Contains a 4 in interval of finely laminated, pale brown gritty tuff? starting at 1496.7 ft; the cnts and layering are oriented at 80 DTCA. This band is quite hard and contains minute magnetite grains.

1513.7 1515.0 Felsite.
A sharp cnt @ 55 degrees into a dark purple-brown interval of finely speckled felsite. A very hard, magnetic unit with very fine carb alteration in the groundmass. Xcut by very thin hematitic qtz-carb stringers, some of which are slightly weathered out. These are generally very high angle structures. The entire unit is mineralised with diss and anhedral 1-2 mm patches of py. The lower cnt shows evidence of strong chemical interaction between the felsite and underlying ultra-mafics- the felsite appears bleached and slightly chilled; the host has become strongly altered with the development of a pale green chlorite.

1515.0 to 1572.2- Ultra-mafic.
The bottom section of this system is predominantly blue-black to slightly green in colour with scattered thin lenses of pale reddish 'incipient alteration' and more tan to beige coloured 'tuff' beds and/or 'albitite' dykelets. Most of these structures host elevated amounts of sulphide, and are bounded by sharp cnts which mimic the local fabric/layering. The bottom cnt is sharp @ 40 DTCA. A sparsely mineralised interval overall.

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

1572.2 1577.7 FELSITE

LITH- Sharp cnt into a bright red-orange, fairly massive phase which shares some characteristics with the 1F logged above. This example has a fine gritty texture developed in the matrix; very fine sub-angular qtz grains occupy much of the groundmass. A few pale white, subhedral, 2-3 mm feldspar phenos are also visible in the matrix. One large inclusion of bleached wallrock(ultra-mafic) and several lenses of gritty weakly laminated tuff? also occupy the interval.

ALTER- strongly hematised and probably silicified. Variably magnetic. Well carbonated with vein and matrix ankerite. Locally weakly sericitic within the 'tuff' horizons(very fine grains of magnetite locally also).

VEINING- moderately veined at both very high and very low angles with 1/8-1/4 in thick qtz and qtz-carb veinlets. The larger veins are boudinaged and have fine crystalline carb selvages. The low angle breaks often post date other veins and offset other structures in a right-lateral sense.

MINERALISATION- moderately mineralised with diss and high angle fracture filling py. Only minor py occurs in the vein material.

STRUCT- A massive interval with weakly laminated tuff horizons; these lie at 60 DTCA typically. Cnts of the internal units are similarly aligned. Sharp bottom cnt @ 45 DTCA.

1577.7 1599.9 GREEN CARBONATE ZONE

A rich chrome green system with clearly recognizable ultra-mafic textures throughout. The typical banded/veined appearance of the rocks above at 1486-1572 is preserved and overprinted with strong pervasive and very fine fracture filling fuchsite alteration. Lenses of pale yellow 'tuff' and irregular sub-inch scale 'albitite' dykelets occur randomly. A strongly carbonated section(ankerite), with a minimum of fine, high angle, pale grey qtz veining. Non- magnetic. Variably mineralised with fine diss py; little sulphide occurs in the veining, and greater concentrations are visible in the 'tuffs' and 'albitites'.

Some Details on Sub-Units follow:.

1577.7 to 1578.0- Albitite Dyke?.

A sharply bounded, pale yellow and fine grained interval which is weakly foliated at 60 degrees. Slightly gritty; contains tiny flattened wisps of chlorite and fuchsite; sericitic with enrichment noted over several mm at both cnts. Weakly mineralised with very fine diss py. Sub-mm sized qtz grains throughout the groundmass. Hard, and xcut by a few very fine scrappy qtz and carb stringers.

1578.0 to 1579.5- Banded Ultra-mafic.

A mottled, variably veined section which abruptly grades into a finely laminated red-green-brown sequence of tuffaceous? material. Hard and variably altered with hematite and fuchsite. Probably silicified. Layered at 40-50 DTCA. Very fine 'incipient alteration' features; moderately mineralised, which some greater concentrations near the lower cnt in a very siliceous, dark brown to yellowish band.

Some suggestion of flattened fragments(?) internally.

1579.5 to 1584.4- Ultra-mafic.

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

An section of very heavily carbonated/banded/veined material with only traces of fuchsite on fracture surfaces. Poorly mineralised. Banding @ about 40 DTCA.

1584.4 to 1586.0- Green Carb.
As below. Becoming much more fuchsitic throughout. Laminated/banded at the top cnt(green and orange cm scale laminations-tuff?) grading into the more typical foliated /mottled texture as per below.

1586.0 to 1586.5- Felsite?.
A very pale flesh-grey coloured interval with sharp cnts @ 60/65. Quite siliceous, and riddled with very fine stringers(sericite/carb/silica). Slightly bleached at the cnts (strong carb). Mineralised with spotty py to 8 mm across throughout matrix. Non-magnetic.

1586.5 to 1599.9- Green Carb.
A strongly fuchsitic interval, with a finely laminated appearance quite similar to the less altered ultra-mafic rocks above. Xcut by sporadic 'albitite' dykelets and a few carb rimmed high angle qtz veins. Fine spotty and diss py is weakly developed. Becoming more massive and yellow in colour towards the bottom cnt- possibly a tuff bed?. Foliated/banded at 45 to 75 DTCA.

1599.9 1683.9 CARBONATED ZONE
Sharp contact into a strongly carbonated sequence of gritty to massive rocks, including tuffaceous horizons, felsites and green carbonate/ultra-mafic lenses. Ankerite is the dominant carbonate phase. This system seperates the green carb sequences from a less altered ultra-mafic which represents the bottom of the Larder Lake Group in this hole. Specifics on the individual units follow.

1599.9 1606.7 Felsite.
A pale red coloured interval with a very fine speckled(carb alteration) texture in the groundmass. Fairly massive, very hard and well hematised throughout. A non-magnetic phase with textural similarities to the darker purple to grey felsites. Xcut by fine high angle qtz veins with carb selvages, and slightly larger, more patchy qtz bodies, commonly at low core angles. Several pale green lenses of fine -grained tuff? occur around 1605 ft. These have sharp cnts at 45 degrees and contain fine flecks of fuchsite and smeared-out carb-rich fragments?. A well mineralised interval; diss and anhedral/patchy py is found predominantly in the matrix. Sharp bottom cnt @ 40 DTCA.

1606.7 1608.0 Tuff.
A short section of mostly fine grained, weakly laminated tuffaceous material with a pale red cast. The remainder appears similar to the overlying phase. Locally silicified. Narrow lenses of more sericite/fuchsite rich material have escaped the silicification. Layered at about 40 degrees. Locally sprinkled with very fine granular magnetite. Moderately mineralised with spotty and diss py; the sulphide is generally better developed in the more felsite-like areas. Invaded by patchy white to grey qtz, and a few thinner

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

veins which remain concordant with the layered aspect. Sharp bottom cnt at 40 DTCA.

1608.0 to 1609.5- Felsite.
Similar to the rocks above at 1599-1606; slightly more hematised and mineralised. Xcut by sinuous, irregular lenses of sericite-rich material which is slightly more pyritic than the matrix. Cut by several teardrop shaped carb-qtz patches towards the lower cnt. Slightly magnetic in part. Bounded by a qtz vein breccia zone at the bottom cnt.

1609.5 to 1610.8- Carb.
A very short section of pale beige coloured material. Very hard, and weakly foliated at 60 degrees. Fairly massive with no primary texture visible. Slightly magnetic(contains minute magnetite specks), and weakly mineralised with very fine diss py. Invaded by a rounded body of reddish felsite? much like that in the overlying unit. Sharp, high angle lower cnt.

1610.8 to 1612.3- Felsite.
Cnt into a slightly darker coloured phase, similar to the felsite above at 1608-1609. Gritty in appearance, with a slightly larger grain size; very hard and very slightly foliated. Contains a hint of very fine sericite in the matrix. Weakly magnetic locally. Weakly veined; 1/8-1/4 in deformed qtz stringers follow the developing fabric. Small knots and wisps of chlorite are also caught up in the rock; these also mimic the fabric (55-60 DTCA). Moderately mineralised with fine groundmass py. Sharp lower cnt; wispy fuchsite blebs are appearing as one approaches the interface.

1612.3 1613.0 Green Carbonate Zone.
Sharp cnt @ 40 degrees into a pale apple green, finely laminated, tuffaceous -looking section. A weakly sericitic and fuchsitic band with only traces of sulphide. Layered/foliated at about 40 DTCA. Non-magnetic and fairly soft with a sharp lower cnt at 45 DTCA.

1613.0 1616.9 Felsite.
Continueing downhole into another felsite, very similar to the unit above at 1610-1612. This example contains several small inclusions and lenses of pale green material similar to the tuff band immediately above. The gritty groundmass texture continues to become slightly coarser and more conspicuous going downhole. The qtz grains are thought to be megacrysts, although they are beginning to resemble primary qtz grains locally. The unit is randomly xcut by irregular qtz bodies/veins at both low and high angles. Mineralised with fine diss py in the matrix; slightly elevated amounts near some of the veining. Slightly more magnetic than the overlying units.

1616.9 to 1617.5- Green Carb.
A lens very similar to that noted at 1612-1613. The lower portion of the unit is displaced by a pale white, 2 in thick qtz vein with pale red inclusions much like the felsite above. These inclusions are well mineralised with diss py and scattered specks of chalcopyrite. Sharp cnts @ 60/60.

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

1617.5 1629.1 Tuff Green Carbonate Zone.
A system of intercalated fine and coarser grained tuffs, some of which are strongly sericitic and fuchsitic. The finer ashy? varieties are altered with sericite/fuchsite, whereas the coarser(sand size) beds are slightly hematitic and more often silicified. This section begins with a pale beige interval of slightly dirty tuff, which contains small, flattened lithic fragments, qtz eyes and tiny wisps of fuchsite set in a carbonated, ashy groundmass. (This rock is distinctly different from the overlying 'felsites' because of variations in grain size and composition). Moving downhole, more of the finer layers begin to dominate the interval. These resemble the 'Green Carb tuffs' described above with generally slightly more fuchsite alteration as small spots and in the matrix. A strongly ankeritic system with local slightly magnetic hot spots. Weakly mineralised with diss py; slightly more sulphide is sometimes associated with some of the more siliceous zones. Contacts between the various beds are always sharp and follow local fabrics/layering closely. The rocks are randomly xcut by 1-2 in thick high angle qtz veins; these are sulphide-poor on the whole. Carb selvages and inclusions are ubiquitous. A 3 in long ultra-mafic segment defines the bottom cnt.

1629.1 1638.6 Tuff.
Sharp cnt into a maroon coloured, finely mottled to weakly laminated tuffaceous interval. In some respects this rock is much like the dark coloured felsites logged in many McBean holes; however it is texturally slightly different. The matrix has a very fine psuedo-crystalline appearance resembling some MI units logged in hole 15 and above in this hole. It is slightly magnetic, very hard and hematised throughout. Both fresh looking and strongly metasomatised faintly laminated sections of ultra-mafic material are visible in the lower half of the unit. Carbonated with ankerite. Variably mineralised with coarse diss and anhedral 1-2 mm py. Sparsely veined. Bottom cnt @ 40 degrees.

1638.6 to 1639.8- Ultra-mafic.
Sharp cnt into a short segment of dark green, well foliated and veined material. Typically mottled/finely laminated appearance. Weakly mineralised. One pale yellow 1/2 in thick 'albitite dyke' cuts the section very near the upper cnt. Sharp lower cnt at 50 DTCA.

1639.8 1656.8 Tuff.
A sequence of heavily carbonated, strongly veined material with a coarse grainy/gritty texture. Locally strongly sericitic and/or weakly fuchsitic. Consists of an accumulation of 0.5-1 mm qtz grains(?) with only minor amounts of very fine sericitic/carbonated groundmass. This grades locally into more ashy areas where the qtz content is almost nil; spotty fuchsite becomes more evident in some of these zones. The system is extensively invaded by greyish qtz from 1652 downward; the remaining hostrock becomes a pale green colour as the sericite and fuchsite concentration increases. The interval is variably mineralised; moderate amounts of diss and spotty/anhedral py is scattered throughout the matrix material, however traces of py, chalcopyrite and molybdenite (in fine fractures) are visible in the qtz. The interval is bounded by a thin sliver of ultra-mafic material

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

at the bottom cnt.

1656.8 1668.9 Porphyritic Syenite.
Sharp cnt into a pale yellow-beige coloured section of porphyry. This is one of the least altered/deformed examples of this rock type logged to date from the McBean area. It consists of a tightly packed aggregate of subhedral 2-4 mm feldspar and lesser qtz phenocrysts, set in felsic aphanitic groundmass. Some of feldspars are zoned; most have slightly altered margins. Very fine wispy deep yellow sericite is found throughout the matrix. Only very weakly hematised. Locally a slightly cataclastic texture is developing- broken and displaced feldspars near the bottom cnt are an example. Very hard and non-magnetic. Moderately carbonated with ankerite in the matrix and as selvages and discreet crystals in qtz veins. A moderately veined section cut by 1/2 -1 in thick, high angle, pale white infillings. A few larger low angle bodies are also present. Most of the qtz is weakly mineralised; an exception are the 1-2 mm blebs of galena with very fine chalcopyrite at around 1663.5 ft. The groundmass, in contrast is well pyritised with diss and spotty/patchy sulphide throughout. Fine angular splashes of fuchsite are also visible in the matrix. A weakly fuchsitic/spotty tuff? lens is present at 1662.2 to 1663.3; it is slightly less well mineralised than the host and very weakly foliated at 45 DTCA.

1668.9 to 1671.6- Ultra-mafic.
Sharp cnt at 60 degrees into a dark green, strongly foliated/banded and veined section. Bounded at the top cnt by a 2 in thick strongly sericitic alteration zone against the overlying syenite. Foliated/banded at 50 DTCA; invaded by a body of qtz and pale yellow 'albitite' material with orange coloured carb? inclusions. Non-magnetic and weakly mineralised except for the 'albitite' material. Sharp bottom cnt @ 45 DTCA.

1671.6 1683.9 Felsite.
Cnt into a pale yellow to beige coloured, fine grained and essentially homogeneous interval. Looks like a hematite-deficient felsite; a subtle speckled texture is developed locally along with mottled slightly darker zones(assimilated inclusions?). Appears to sericitic throughout. Weakly veined with 1/4-1/2 in thick pale white veins; these sit at both high and long angles and are generally devoid of sulphide. A very hard, probably silicified unit which is well mineralised with diss and patchy/bleby py; some of these are 1-2 cm across. Looks much like the phases called 'albitite' where locally this rock becomes very massive, featureless and probably more rich in sericite. Non-magnetic.

1683.9 1717.7 ULTRAMAFIC KOMATIITE
Sharp cnt at 45 degrees into a typical blue-black to pale green, banded/ veined unit. Foliated/banded at 45-60 DTCA. The laminated texture is quite consistent throughout this interval, except where interlayered with tuffs? and/or cut by felsites. Short sections of both of the latter phases are scattered throughout the host. Well carbonated- ankerite is the dominant type. A few pale yellow-beige coloured 'albitite' dyklets have invaded the host; it continues to be non-magnetic and is very weakly talcose in part. Not well mineralised; diss and spotty py is confined to the felsites and

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

tuffs.

Details on the Sub Units are as follows:.

1683.9 to 1695.2- Ultra-mafic.
Contains several narrow brownish 'incipient-alteration' zones and a finely laminated tuff? horizon; these are silicified, weakly hematitic and moderately mineralised with diss and spotty py. A few 2-3 mm cubes of py are scattered about in the host.

1695.2 to 1696.2- Felsite.
A pale pinkish-grey segment, very hard and riddled with very fine wispy stringers of greyish qtz and carbonate. Non-magnetic and well mineralised with diss py throughout the matrix. Sharp cnts @ 45/60; the upper margin has a protruding tongue developed and the lower has a pale white, 2-3 mm thick chilled margin?/alteration rind? developed.

1696.2 to 1701.8- Ultra-mafic.
Similar to the section described above- contains one short section of finely granulated/veined pale brown felsite? at about 1696.7 ft.

1701.8 to 1703.9- Felsite?.
A brown to dark grey coloured section with a laminated appearance; consists of a fine grained, very siliceous phase invading? rocks which may have been altered gabbros. A magnetic, very hard interval which is variably mineralised with diss py. The layering sits at 30-35 DTCA. Slightly irregular, sharp cnts at 40/30 DTCA.

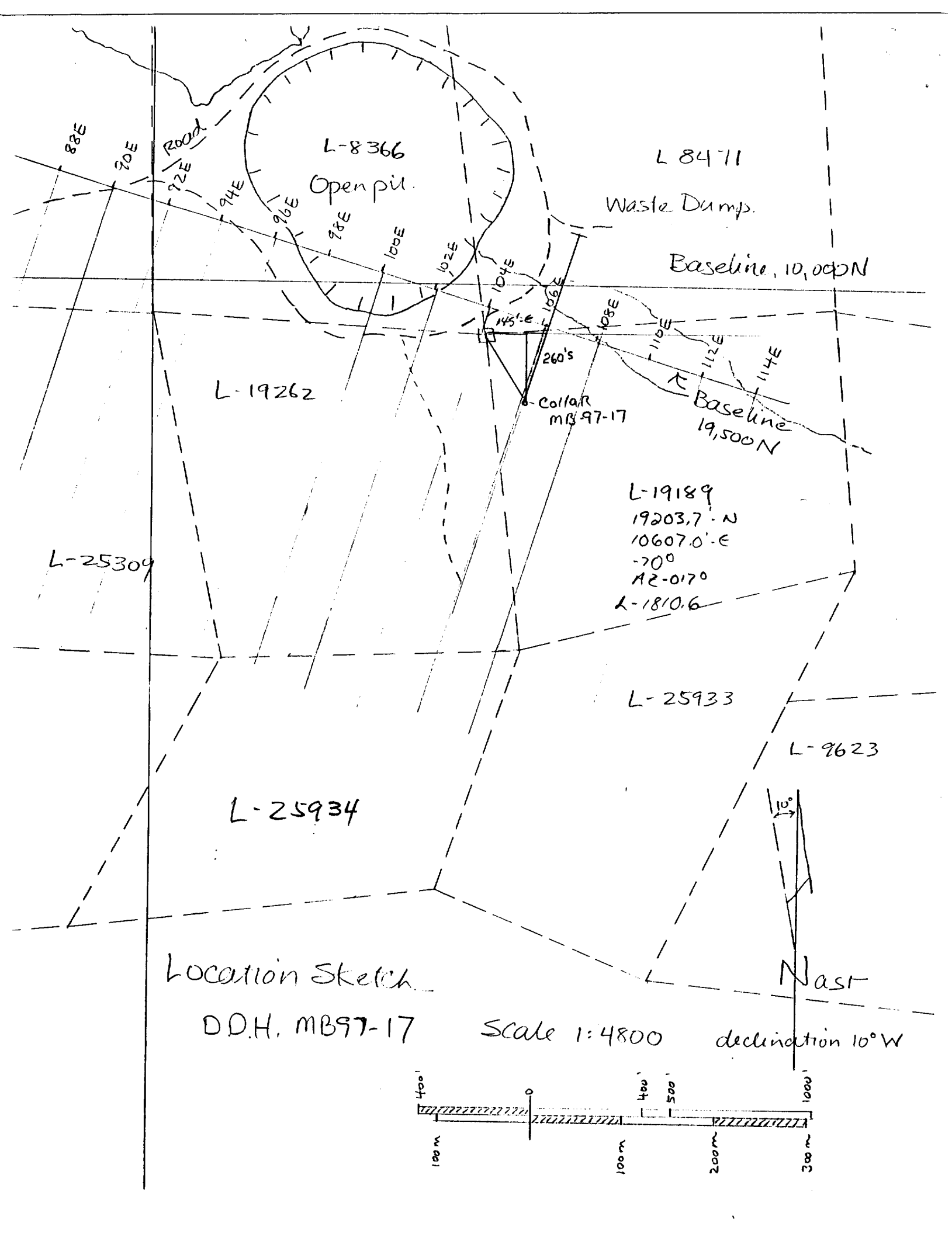
1703.9 to 1708.7- Ultra-mafic.
Another typical banded interval, cut by a 5 in long qtz/carbonate patch with beige inclusions (carb?) and negligible sulphide. A narrow beige coloured dyke-like structure cuts the section near the top cnt- this phase is well mineralised and has sharp cnts which follow the host-rock fabric.

1708.7 to 1712.2- Tuff?.
Cnt into a pale reddish, very hard, mottled to weakly foliated section. Appears to be a highly altered tuff horizon which has been invaded by deformed red felsite/syenite?, which in turn has hematised and silicified the host. Weakly sericitic and well mineralised with diss and spotty py. Foliated/layered at about 60 DTCA. Moderately veined by scrappy, irregular 1/4 in thick qtz-carb fracture fillings; these are poorly mineralised and often have carb selvages. A finely foliated pale green section of altered host? sits in the upper part of the interval. Sharp cnts @ 50/40 DTCA.

1712.2 to 1717.7-Ultra-mafic.
The final interval of laminated/banded material; contains several narrow sections of pale yellow dyke? material and reddish tuff?. Sharp bottom cnt at 60 DTCA.

1717.7 1717.8 TIMISKAMING GROUP

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
1717.8	1810.6	LAPILLI TUFF A sequence of pale grass-green tuffs and lapilli tuffs which grade downhole into a polymictic conglomerate/fragmental. Strongly carbonated throughout; calcite alteration becomes dominant below about 1781, replacing ankerite. Weakly magnetic locally and strongly deformed. Foliated/layered throughout at 50-60 DTCA. Sparsely mineralised with scattered diss and slightly coarser anhedral py- mostly in the matrix. The fragmental zone consists of groundmass supported cobbles and pebbles of mafic, ultra-mafic, felsic and cherty composition. Most fragments are flattened; the intensity of deformation increases downhole such that fragments are becoming folded and more strongly distorted. The clasts vary from quite rounded to sub-angular in appearance. Variably veined; 1-2 in thick, high angle patchy veins cut the upper regions, whereas some very fine, gash/offset type veins at very low core angles xcut areas lower down in the sequence. Comments:. 1717.8 to 1765.0- Lapilli Tuff. Predominantly tuff and fine lapilli tuff; strongly foliated/laminated with a fine speckled appearance locally. Not well mineralised. Strongly hematised and silicified for 15 in below the top cnt, with elevated amounts of diss py. 1765.0 1810.6 Conglomerate. Coarse laminated appearance at the top of the section- smaller fragments are strongly flattened into cm scale 'layers'. The clasts become larger moving downhole and in turn become very intensely deformed below about 1782. Diss py occurs locally in discreet bands or close to the margins of deformed fragments- the mineralised corridors are deformed along with the fragments. End of Hole- 1810.6 feet.								


L-8366
Open pit
L 8471
Waste Dumps
Road
88E
90E
92E
94E
96E
98E
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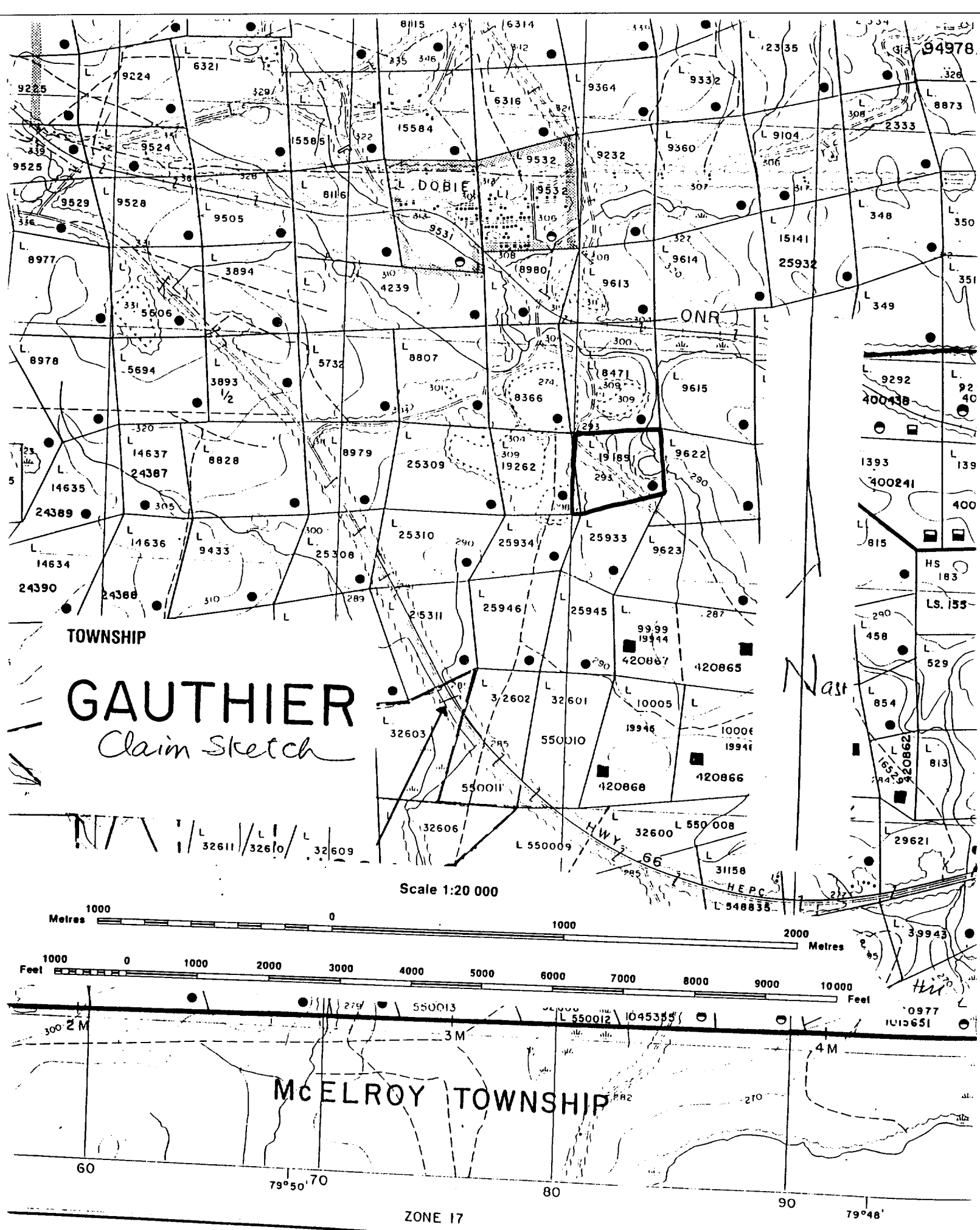
102E
104E
106E
108E
110E
112E
114E
Baseline 10,000N
145°-E
260°S
Collar
MB97-17
Baseline
19,500N
L-19262
L-19189
19203.7'-N
10607.0'-E
-70°
AZ-017°
L-1810.6
L-25309
L-25933
L-9623
L-25934
10°
N
Location Sketch
D.D.H. MB97-17
Scale 1:4800
declination 10°W
400'
0
400'
500'
1000'
100m
0
100m
200m
300m


TOWNSHIP
GAUTHIER
Claim Sketch
Scale 1:20 000
Metres
Feet
DOBIE
ONR
HWY 66
HEPC
McELROY TOWNSHIP
ZONE 17
79°50'
79°48'

QUEENSTON MINING INC

Drill Hole: MB97-18

DIAMOND DRILL HOLE RECORD

Property: MCBEAN Col loc from #1 post, L19262, 540'S, 45'E
Northing: 18903.50
Easting: 10617.90
Elevation: 10971.90

Collar Azimuth (Grid) .0
Collar Dip: -70.0
(0 Degrees Grid equals 017 degrees True)
Hole Length: 2185.0

Date Printed: 6 Jul, 1998

*** Dip Tests ***			*** Dip Tests ***		
Depth	Azi.	Dip	Depth	Azi.	Dip
68.0		-70.0	1208.0		-68.0
308.0		-68.5	1500.0		-67.5
608.0		-69.0	1798.0		-66.5
908.0		-68.5	2108.0		-65.5

Date Started: February 18, 1997
Date Completed: March 02, 1997

Drilled by: BENOIT
Core Size: NQ
Material left in hole NX CASING
Core Location: Upper Canada Site 1
Logged by: D. R. Alexander & JDS

Dale R Alexander

From (ft)	To (ft)	Geology
		SUMMARY LOG
.0	60.0	OVERBURDEN
60.0	398.0	GABBRO
398.0	425.4	MAFIC INTRUSIVE FELSIC DYKE DIORITE
425.4	828.9	GABBRO
828.9	853.9	SYENITE
853.9	1395.8	GABBRO
1395.8	1395.9	START OF DEFORMATION ZONE
1395.9	1458.0	ULTRAMAFIC
1458.0	1481.0	TUFF
1481.0	1588.0	ULTRAMAFIC KOMATIITE
1588.0	1660.0	GREEN CARBONATE ZONE
1660.0	1709.0	ULTRAMAFIC KOMATIITE
1709.0	1838.0	GREEN CARBONATE ZONE
1838.0	1946.8	ULTRAMAFIC KOMATIITE
1946.8	1989.7	FELSITE
1989.7	2048.0	GREEN CARBONATE ZONE
2048.0	2072.0	ULTRAMAFIC KOMATIITE

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

2.18.28

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
2072.0	2072.1	*TIMISKAMING GROUP*								
2072.1	2185.0	TUFF AGGLOMERATE								

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
.0	60.0	OVERBURDEN								
60.0	398.0	GABBRO Collar into the gabbro complex that is hanging wall to the Deformation zone throughout this part of the McBean package. The gabbro complex is typical, in that it consists of two dominant phases and a mixture of fine to coarse grained rocks. The most common phase is a pale lime to dark green and grey green feldspathic gabbro that is coarsely speckled with hornblende in an off-white to pale lime coloured matrix of plagioclase. This matrix component is variably altered with epidote which accounts for the lime colour. The hornblende phenocrysts are a mixture of both tabular and more acicular varieties that are variably altered with chlorite and to a lesser extent epidote. The second phase is much darker in colour to dark green and dark grey green with coarse blocky phenocrysts of hornblende in a dark, chloritic matrix. Both phases of the gabbro are magnetic and are variably altered with chlorite. Contacts between phases are locally well defined but most are gradational across finer grained sections that suggests that the phases could actually be pulses of the same magma. The gabbros are also 'dirty' with variably sized fragments of mafic material scattered throughout the system averaging 2 to 4 cms that tend to be localized along contacts between different phases. The gabbros are variably fractured with fine stringers to fine fractures of calcite +/- quartz with or without hematite staining. In areas where there is accessory fracturing with calcite, the gabbro becomes pervasively calcitic but normally the gabbro is noncalcitic except in some of the finer grained, chloritic phases. Mineralization tends to be very minor in amount with the exception of a series of pitted to vuggy fractures that are normally accompanied by fine to coarse pyrite crystals. The pitted to vuggy fractures are most often at shallow angles to the core axis which promotes a blocky nature to the core and pervasive calcite alteration. The gabbro is also locally amphibolitized next to these pitted and vuggy fractures and may similarly be amphibolitic next to the numerous dykes of diorite and mafic intrusives throughout the package. The dioritic intrusives in the package are typified by pale pinkish to grey and orangish coloured rocks that are largely composed of plagioclase with very minor quartz and 10 to 15% mafic minerals. The dykes vary from fine to coarse grained and are normally magnetic except for the larger sized dykes that are magnetic only in the contact regions. Colour variations are, for the most part, a function of fracturing and staining with hematite and calcite along with some variation in chlorite and epidote alteration. Contacts are normally sharp and well defined. These dykes are also 'dirty' in that they contain local mafic to gabbroic fragments that are most often encountered in the contact zones. Mafic intrusives in the package are characteristically very fine grained members with, sharp, well defined contacts. These rocks vary from a reddish grey to dark grey green, dark green, brownish and almost greyish turquoise colour. They are distinguished by their very fine grained nature and sharp contacts and are most often speckled with fine acicular blades of amphibole. These dykes are neither uniformly magnetic nor calcitic. Individual descriptions of mafic dykes are found in the comments section.									

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

The host to the gabbro package is assumed to be basaltic flows of the Larder Lake Group. Basaltic sections, however, are very poorly defined in the system and are often amphibolitized. Since most of the basalts are windows in the gabbro complex, they tend to be defined by their lack of gabbroic characteristics as opposed to positive identification of flow features.
Sections of interest in the package include :.

61.5 61.9 Diorite - a narrow, 3.3 cm, medium grained pinkish to orange dyke at 15 degrees to the core axis. This dyke is partly pitted and fractured with the adjacent core being fractured and blocky over 45 cms.

63.4 63.5 Diorite, pinkish orange, fine grained at 47 degrees.

65.5 65.9 Diorite, dull grey red with pinkish to orange staining and a more strongly chloritic matrix than normally encountered. The dyke is weakly magnetic and contains well defined phenocrysts of albite and more blocky plagioclase. Contacts are at 50/56 degrees.

70.0 72.0 Diorite - a very blocky dyke that is deep orange red to brick coloured from hematite staining. There are a couple of dark gabbroic fragments in this dyke or there are a couple of diorite dykes here - the blocky nature of the core precludes a more definite interpretation. The upper contact is broken, the lower contact is irregular averaging 47 degrees.

78.4 78.6 Strong fracturing to brecciation with hematite over 5 cms at 36 degrees.

78.9 82.8 Diorite - fine to medium grained with deep orange red staining from hematite. There are scattered mafic fragments in this unit. The dyke is weakly to moderately magnetic, finely fractured with calcite and is partly blocky. The upper contact is broken, the lower contact is sharp at 48 degrees.

95.5 106.5 Fine grained section of chloritic and pervasively calcitic rocks that are hanging wall to a veined and gouged horizon. The contact with feldspathic gabbro is quite sharp with veining at 36 degrees, the lower contact being foliated, fractured and veined at 42 degrees. The rock still appears to be gabbro albeit dark, chloritic and calcitic with a relict spotted to mottled appearance from hornblende, rather than suggesting a mafic intrusive here. There is also weak accessory pyrite in the base of the system here. The more mottled rocks are most notable after 100.5, and are more strongly magnetic than the fine grained rocks at the start of this zone.

106.5 109.2 Quartz Vein Zone fault gouge. Contact into a narrow veined zone with 2 to 10 cm quartz veins amongst very fine grained, foliated, finely amphibolitic, blocky rocks that are variably altered to streaked and fractured with calcite and chlorite +/- traces of talc. There are variable amounts of grit within the blocky sections along with a wider section of gouge at 108.8 - 4 cms at 51 degrees, and a gouged slip face over 2 mms at the basal contact at 70 degrees. The quartz veins themselves are finely fractured with calcite and irregular in shape within this blocky zone. The core is nonmagnetic.

109.2 121.4 Felsic Dyke. This unit can best be described as an altered feldspar porphyry with numerous fine to coarse phenocrysts of

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

milky to greyish albite +/- plagioclase(?) in a fine grained dark greyish matrix that is moderately altered with chlorite. The coarser phenocrysts in the dyke are notably zoned. The unit is separated from a feldspar porphyry in that this dyke is more strongly altered with chlorite and contains the odd mafic inclusion unlike the more pristine feldspar porphyry dykes. The dyke is weakly to moderately magnetic, finely fractured with milky to orange stained calcite and is very sparsely mineralized with pyrite. The core is locally blocky particularly near the base of the system from the fracturing and the upper contact is partly amphibolitized over the first 25 cms. This unit is also cut by some narrow dykes of diorite at 111.5 - 3.4 cms at 84 degrees; 112.1 to 112.5 at 65 degrees; at 112.7 - 1 cm at 41 degrees; at 113.2 - 1.8 cms at 50 degrees, and; 113.7 to 114.8 at 49/38 degrees. The diorite units are pale pinkish grey to grey in colour and are medium grained with finer grained, partly absorbed contacts. They are much more weakly to nonmagnetic than the feldspar porphyry host. It follows that the diorite dykes are younger than the feldspar porphyry. Only scattered traces of very fine pyrite are noted here. Contacts are broken - upper at 70 degrees with gouge, lower at 54 degrees.

135.1 135.4 Diorite, dull grey red, fine to medium grained, siliceous, weakly magnetic with broken contacts at 36 (?) degrees. There are also a number of fine dioritic dykelets to stringers in this area at variable angles to the core axis - most are under 1 cm in size. From 147.4 to 151.9 there are a couple of paler, orangish dioritic dykelets running right along the core axis.

155.0 155.2 Mafic intrusive, dull reddish grey green, very fine grained and spotted with mafic material. This dyke may represent the contact zone of a lower dyke that is interrupted by a felsic dyke from 155.2 to 156.0 - in that instance the mafic intrusive would be older than the felsic dyke. Alternately, this could be a dyke totally independent of the other mi. The dyke is pervasively calcitic, weakly to moderately magnetic, unmineralized and has contacts at 60 degrees.

155.2 156.0 Felsic dyke - similar to the above unit with the exception here that most of the feldspars are finer albite to 1 mm in size and there is no specific inference to zoning. The contacts are relatively sharp to partly absorbed at 60 degrees. Also similar to the previous felsic dyke the unit is magnetic and contains some fine mafic fragments.

156.0 163.4 Mafic Intrusive - a unit that is not typical of the very fine grained mafic intrusives. This particular dyke exhibits a fine granular to mottled texture and is finely spotted with mafic minerals in addition to being finely flecked with plagioclase. It is dark grey green in colour with weak reddish tones and is weakly to moderately magnetic. The core is quite blocky in nature from fine fracturing and is locally pervasively calcitic around an accessory number of fractures. The unit is unmineralized. The dyke is also cut by a fine dykelet of diorite at 157.2 - 1.6 cms at 57 degrees. The dyke also appears to be

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
		cut by a couple of the felsite dykes (FD's) at 161.7 and at 162.0, although the core is blocky and the contacts are somewhat ephemeral. This could suggest that the upper mafic intrusive is in fact the contact zone for this wider dyke that is interrupted by the felsic dyke from 155.2 to 156.0. The lower contact of this mafic intrusive is not chilled although it is a little irregular with diorite averaging 56 degrees.								
163.4	168.0	Diorite - pale grey green in colour and mottled in texture with orange red to dull grey red staining bleeding out from fine calcitic fractures at variable angles to the core axis. The pale green colour comes from a weak epidote alteration of some of the feldspars. The rock is weakly to moderately magnetic and contains traces of fine pyrite that usually track close to the fine fractures. The lower contact of the diorite is broken.								
169.4	169.6	Diorite, pale orangish and strongly feldspathic to almost aplitic at 68 degrees.								
173.8	173.9	Diorite, dull grey red, fine grained, weakly magnetic, with sharp contacts at 42 degrees.								
177.5	178.5	Diorite, deep orange red to brick coloured, fine to medium grained with a sharp but irregular contact averaging 45 degrees, and, a more diffuse to irregular lower contact averaging 50 degrees.								
179.0	181.0	Diorite, dull grey red with orange red staining along fractures and medium to somewhat coarser grained than average. The dyke has a few mafic fragments around both contacts and the intervening gabbro up section is partly amphibolitized. Contacts are at 46/67 degrees - the upper contact being quite irregular.								
181.5	181.6	Diorite, pinkish grey, fine to medium grained, at 63 degrees.								
181.8	181.9	Diorite, pinkish grey, 3 cms, fine to medium grained at 50 degrees.								
182.1	182.2	Diorite, pinkisk grey, 4 mms at 43 degrees.								
182.5	182.9	Diorite, paler pinkish grey in colour with some amphibolitization of the adjacent gabbro up-section. Contacts are sharp at 60/68 degrees. The dyke is fine to medium grained.								
183.6	183.8	Diorite, dull pinkish grey, fine to medium grained, 4.7 cms in size at 57/68 degrees.								
184.7	185.8	Diorite, pinkish grey, medium grained, contains some gabbro fragments or inclusions. Contacts are sharp at 50/42 degrees.								
186.0	187.2	Diorite, pinkish grey, with gabbroic fragments at its base. Contacts are at 36 degrees.								
187.5	187.8	Diorite, pinkish grey, fractured with some pitting and vugs. This dyke is very irregular around the fracturing and the adjacent gabbro is amphibolitized.								
189.1	191.6	Diorite - a couple of dykes here with two subparallel dykelets running along the core axis from 190.0 to 191.6 separated by 1 to 2 cms of amphibolitized gabbro. The upper contact is stepped to fractured at 65 degrees, the lower contact is veined and foliated at 20 degrees. There is some accessory pyrite at the lower contact. The diorite is pinkish grey in colour and fine to medium grained. All of this section is strongly calcitic.								
191.6	198.9	Fine grained. Contact into a fine grained zone of blocky core								

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
		that would appear to be a fine grained mafic intrusive or a very fine grained gabbro rather than a basalt. The rock has a fine granular texture, is quite strongly magnetic and is variably calcitic from numerous fine irregular calcitic fractures. Away from fractures the rock is noncalcitic. The rock is very dark grey to dark green, reddish and brownish toned. It is finely amphibolitic throughout but otherwise quite anonymous in appearance. There is some accessory pyrite around the upper contact adjacent to the contact zone of the diorite. The lower contact is foliated and irregular averaging 27 degrees.								
198.9	200.3	Diorite, dull grey in colour with fine orange stained fractures. The diorite is fine to medium grained and mottled in appearance from a strong overprinting with calcite. The core is blocky, moderately magnetic and very sparsely mineralized with traces of fine pyrite. Contacts are irregular at 27/60 degrees.								
200.3	203.2	Gabbro, fine to medium grained, chloritic and calcitic between two dykes of diorite.								
203.2	205.3	Diorite, pinkish grey in colour, fine to medium grained with a mottled texture due to a moderate to strong overprinting from calcite. Trace pyrite along fractures, some blocky core over basal 15 cms with a trace of grit. Contacts are at 57/70 degrees - there is some amphibolitization of the adjacent gabbro at the lower contact.								
205.6	208.1	Diorite, pinkish grey to grey in colour with some accessory albite in the system here. The dyke is weakly to moderately magnetic, contains some mafic fragments around the upper contact, is fractured to blocky with fine calcitic fractures and is unmineralized. Contacts of the dyke are at 42/62 degrees.								
208.7	209.3	Diorite, pinkish, fine to medium grained, contacts at 50/57 degrees. There is some amphibolitization of the intervening gabbro here.								
209.9	210.2	*Diorite, pink, fine to medium grained, contacts at 20/71.*								
211.0	211.2	Diorite, pink, fine grained and cherty at the contacts. The upper contact is at 55 degrees, lower contact broken.								
211.4	211.9	Diorite, pink, fine to medium grained with a very fine grained and siliceous lower contact. Contacts are sharp at 36/47 degrees.								
212.1	212.7	Mafic intrusive (??) - a very dark green to almost black unit that is very fine grained and chloritic with sharp contacts at 28/56 degrees. The dyke contains some fine acicular amphibole but other minerals are difficult to determine given the fine grain size. The dyke is weakly magnetic and noncalcitic although the adjacent gabbro is pervasively calcitic for a couple of cms at the dyke contacts.								
213.2	213.5	Diorite, pinkish to reddish, fine to medium grained, contacts are at 30/38 degrees.								
214.0	214.2	Diorite, pink to greyish, 5 cms, medium grained with sharp contacts at 51/57 degrees.								
216.6	217.3	Mafic intrusive - another of the dark green to black, very fine grained chloritic units that is weakly magnetic and noncalcitic but the adjacent gabbro up-hole is calcitic at the contact. The lower contact is with diorite which appears to cut the mafic								

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 PPB
		intrusive since there is an irregular, 8-cm, patch of the chloritic intrusive below the lower diorite contact and some fragments of mafic intrusive within the diorite dyke itself. Contacts are at 33/31 degrees.								
217.3	218.4	Diorite, grey to pinkish grey, fine to medium grained and containing mafic fragments to 3 cms in size. Contacts are at 31/58 degrees.								
221.9	225.8	Mafic Intrusive, a fine grained to finely granular textured mafic dyke that varies from very dark grey green to brownish in colour with reddish tones. This dyke is also not typical of the mafic intrusives although it is finely flecked with amphibole. The dyke is weakly magnetic with local more strongly magnetic patches. It is pervasively calcitic, variably altered with epidote and chlorite and contains some tabular mafic spots along with the odd grain of possible plagioclase. The core is blocky in nature and the contacts are broken at 35 to 45 degrees.								
228.1	228.2	Diorite, pink to orangish, fine to medium grained, 4 cms, at 90 degrees - upper contact broken.								
228.5	229.5	Diorite, grey to grey red with orange staining along fractures, fine to medium grained with more cherty contacts at 50/62 degrees.								
231.4	232.3	Diorite, pinkish to grey, fine to medium grained with accessory orange to reddish staining along some fractures. Contacts are at 49/47 degrees and are partly irregular with fracturing and staining.								
234.2	234.3	Diorite, dull orange red, 4.3 cms at 48 degrees.								
235.4	236.2	Strong orange red staining and pervasive calcite in a local highly fractured gabbro section.								
238.7	239.0	Diorite, dull pinkish orange, fine to medium grained with slightly reddened contacts at 53/61 degrees.								
240.3	240.4	Diorite, dull orange red to brick coloured, 4 cms, fine grained at 54 degrees.								
242.2	242.3	Diorite, grey with pink to orange staining, fine to medium grained, 4 cms at 61/48 degrees.								
247.9	248.3	Diorite, orange pink to greyish, fine to medium grained with very irregular contacts related to fine fracturing.								
248.6	249.2	Diorite, orange pink to greyish, medium grained at 57/50 degrees. At the lower contact there is a very fine grained, siliceous, orange pink dioritic looking, 2.4 cm section at 59 degrees that appears to be later than the medium grained diorite and just transgresses the lower contact. This dykelet is very fne grained to amorphous and while siliceous, it is little different in hardness than the adjacent rocks.								
249.5	249.7	Diorite, orange pink to greyish, medium grained, contacts broken at approximately 58 degrees.								
249.7	250.3	Diorite, greyish with orange red staining, medium grained, contacts at 40/27 degrees and broken. There are also a few scattered, very narrow dykelets of diorite in this area that are less than 1 cm in thickness.								
253.3	253.9	Diorite, grey with orange stained fractures. The core here is blocky to broken such that only the upper contact is visible at								

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

58 degrees. There is some amphibolitizaton along with accessory calcite and chlorite alteration in the adjacent gabbro.

255.1 255.2 Diorite, grey with a weak pinkish cast, 2.9 cms at 52 degrees.

256.3 256.4 Diorite, orange red, 4 cms at 51 degrees.

256.5 257.8 Diorite, grey to pink orange with accessory orange red staining along fine fractures. Contacts are sharp at 55/60 degrees.

258.7 270.7 Felsic Dyke - contact into another of the units that are characterized by a strong albite component in a dull grey green to green chloritic matrix. This unit almost looks to bridge the gap between some of the more typical felsic dykes and the plagioclase-bearing mafic intrusives since the matrix component here is approaching a mafic composition with feldspar, chlorite and acicular metacrysts(?) of amphibole. The rock is hard and siliceous, dull greyish to brownish in colour, weakly to moderately magnetic and contains scattered mafic fragments as well as crosscutting dykes of pinkish to orange diorite much like the previous felsic dykes. The rock is blocky to broken, which is apparently a function of fine, orange stained calcitic fractures at shallow angles to the core axis. Crosscutting diorite dykes are found at 258.8 - 1 cm at 42 degrees; 260.1 to 260.7 at 58/48 degrees; 260.9 to 261.5 at 60/69 degrees, and; at 265.5 - 1.6 cms at 51 degrees. The upper contact is very irregular with fracturing, the lower contact is sharp but broken at 48 degrees. Both contacts are slightly chilled but there is little accessory chilling or alteration accompanying the diorite dykes. The lower contact is with a 9 cm section of what appears to be a strongly altered and metamorphosed basalt that contains coarse, carbonate replaced varioles to 1.5 cms in size. The basalt is calcitic, chloritic, nonmagnetic and crudely foliated. It is almost a mush of mafic minerals which is in contact with calcitic, feldspathic gabbro along veining at 270.9 at 35 degrees.

270.7 270.9 Basalt, variolitic.

272.0 272.1 Diorite.
Diorite, pink, fine grained, weakly mag, strongly calcitic.

273.9 274.0 Diorite.
Diorite dyke, pink, med grained, weakly mag, strongly calcitic, contacts @ 70/70 dtca.

274.3 274.9 Mafic Intrusive.
Mafic intrusive, grey w/ slight orange tints from hematite, fine grained, weakly calcitic, non mag, and hard. Contacts for this dyke are sharp @ 50/80 dtca, Basal contact w/ 9 inches of orangish to pink med grained diorite dyke @ 75 dtca.

275.9 276.6 Mafic Intrusive.
Mafic intrusive, grey w/ slight orange tints from hematite, fine grained, weakly calcitic and weakly mag adjacent to contacts which are sharp @ 80/70 dtca.

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

277.9 279.0 Diorite.
Diorite dyke, pinkish orange, med grained, hard, calcitic, weakly mag, approx 10% mafic minerals. Contact sharp @ 50/55 dtca.

279.8 280.0 Diorite.
Diorite as above. Contacts @ 80/70 dtca.

280.7 281.0 Diorite.
Diorite dyke, as above. Contacts @ 80/80 dtca.

281.5 281.8 Diorite.
Diorite dyke, as above. Contacts @ 80/80 dtca.

282.4 283.0 Diorite.
Diorite dyke, quite dirty w/ hanging wall inclusions, most notably near upper contact. Contacts @ 60/70 dtca.

287.7 288.0 Diorite.
Diorite dyke, pinkish orange, med grained, and speckled w/ 10% mafic minerals. Contacts @ 70/75 dtca.

289.1 289.4 Diorite.
Diorite dyke, pinkish, fine grained, non mag, and weakly calcitic. Contacts sharp @ 75/80 dtca.

291.0 297.0 Feldspar Porphyry.
Contact into a porph felsic dyke. This unit is grey orange, quite hard, weakly mag, and slightly calcitic. This dyke contains well dev phenos of zoned mm sized feldspar, w/in its fine grained matrix. Contacts for this dyke are sharp @ 65/60 dtca. Basal 1 foot of this dyke is quite dirty containing cm sized fragments of gabbroic wall rx.

297.3 298.2 Mafic Intrusive.
A grey to strongly orange stained mafic intrusive. This dyke is hard, fine grained, non mag in center, weakly mag near contacts, calcitc, and finely fractured. Contacts are sharp @ 70/70 dtca.

301.6 305.4 Mafic Intrusive.
A grey black to slightly orange stained mafic intrusive. This dyke is non mag, fine grained, calcitic, and speckled w/ mafic material. This unit has a slightly felted texture, and contains small stringers of hematite staining. Contacts are sharp @ 60/50 dtca.

308.6 308.9 Diorite.
A bright orange to red diorite dyke. This dyke is fine grained, hard calcitic, non mag, and contains poorly dev phenos of feld w/in fine grained matrix. Contacts @ 60/50 dtca.

310.9 311.0 Diorite.
Diorite dyke, as above. Contacts @ 75/80 dtca.

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

313.0 316.0 Broken Blocky Core w/ Gouge.
Contact into a fault zone w/ an apparent gabbroic host. Core in this zone is quite broken and blocky w/ fault gouge @ 315.3 to 315.7 core here is very granulated an composed of almost entirley mud.

317.0 337.2 Altered Gabbro.
Gabbroic unit here becomes quite alt, it is patchy pink grey green and strongly stained orange red by hematite. Gabbro here is med grained and has a finely felted texture. This unit is mod mag, strongly calcitc, and unmineralz. This unit contains a couple of areas of more easily recognizable gabbro, as well as a couple of white calcite bands, and numerous small diorite dykelets to inclusions. This unit is also quite silicified and hematized. This alt feature is a result of intrusive syenite which follows. Basal contact w/ alt syenite @ 65 dtca.

337.2 339.5 Altered Syenite.
Alt syenite dyke. This unit is bright orange red, fine grained, finely fractured, silicified, weakly mag, weakly calcitic, and hematized. This dyke is cut by a small dioritic intrusion @ 337.6 4cm along core axis, and contains stringers of calcite w/in alt healed fractures. Basal contact for this dyke @ 70 dtca. Gabbro remains alt below this contact, as above.

343.0 343.6 Altered Syenite.
A dyke of alt syenite, as above. Contacts @ 40/60 dtca.

344.6 344.9 Altered Syenite.
An inclusion of alt syenite, as above, w/ irregular contacts.

346.8 347.4 Altered Syenite.
Syenite dyke, as above, but w/ better dev py, tr-1%. Contacts are shallow @ 35/40 dtca.

352.1 352.5 Altered Syenite.
Contact into a syenite dyke, as above, not particularly well mineralz. Contacts @ 60/70 opposing angles.

353.5 354.0 Feldspar Porphyry.
Feld porph dyke. Fine grained, mod mag, weakly calcitic, and slightly silicified. This dyke contains well dev feld phenos mm sized, w/in a fine grained matrix. Contacts for this dyke @ 60/60 w/ the upper contact being quite diffuse, and the basal contact being sharp.

354.0 354.6 Altered Syenite.
Syenite dyke, bright orange red, silicified, hematized, non mag, fine grained, and finely fractured w/ calcite filling alt healed fractures. Contacts for this dyke @ 60/70 dtca, w/ the basal contact being a bit irregular.

356.9 360.5 Feldspar Porphyry.
This dyke looks very similar to FP @ 353.5. Contacts @ 70/60 dtca. This unit

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

contains tr accessory py as well as tr specular hematite.

360.5 370.7 Gabbro.
Contact into an easily recognizable feldspathic rich gabbro unit. This unit is hematized, strongly calcitic, mod mag, and unmineralz. Unit cut by a couple of v small diorite dykes. Basal contact @ 50 dtca.

370.7 371.6 Gabbro.
Sharp contact into a phase of hornblende rich gabbro w/ inclusions of feldspathic rich gabbro w/in it. This unit is dark grey green, calcitic, fine grained, unmineralz, and weakly to mod mag. Basal contact @ 70 dtca.

371.6 398.0 Altered Gabbro.
Gabbro here becomes progressively alt towards bottom contact w/ MI. This unit is silicified, hematized, calcitic, mod mag, and cut by numerous small diorite dykelets. There are a number of gradational phase changes here(feldspathic rich to hornblende rich).

398.0 425.4 MAFIC INTRUSIVE FELSIC DYKE DIORITE
Gabbro complex here is cut by a rather complex dyke sequence featuring 2 mafic intrusives, which in turn are cut by at least two younger generations of felsic dykes and/or diorite dykes. The relationship between FD and 2D is unclear. Mafic intrusives here are grey green, fine grained, mod mag, and calcitic. Felsic dykes are bright orange, med to coarse grained, mod mag, calcitic, and jam packed w/ feld phenos w/ very little matrix component. Diorites here are orange red, fine to med grained, variably mag, calcitic and contain varrying degrees of feld pheno development. From well dev to poorly dev. Diorites here are also cut by a number of small syenite inclusions. The whole of this sequence generally contains tr accessory py. Sequence breakdown as follows.

398.0 399.7 Mafic Intrusive.
Mafic intrusive dyke, dark grey green to black, fine grained, silicified, calcitic, and mod mag. Contacts @ 60/50 dtca, w/ upper contact being sharp and basal contact being slightly irregular.

399.7 402.7 Felsic Dyke.
Felsic dyke, bright orange red, med to coarse grained, hematized, silicified, calcitic, weakly to mod mag, and packed w/ feld phenos, approx 5% mafics, and very little matrix component. Basal contact w/ MI @ 70 dtca.

402.7 404.0 Mafic Intrusive.
Mafic intrusive. This dyke is identical to unit @ 398.0. Basal contact @ 59 dtca.

404.0 404.9 Gabbro.
Feldspathic rich gabbro unit, contains a 2 inch irregular shaped inclusion of orange red diorite. Basal contact @ 50 dtca.

404.9 425.4 Diorite.

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

Contact into a rather dirty diorite dyke. This unit is orange red, variably mag, calcitic, hematized, silicified, and fine to med grained. This dyke is younger than FD and MI as it contains zones of injested FD and MI material w/in it, as well as the odd fragment of hanging wall gabbroic material. @ 407.8 there is a 1.5cm syenite dyke @ 70/70 dtca. Between 415.4 to 424.6 This dyke is in turn cut by a younger, coarser grained, and slightly darker dyke of diorite, which has injested some gabbroic material, as well as what appears to be fragments of original finer grained and lighter coloured diorite, esp near contacts. Contacts for this dyke @ 70/65 dtca. The whole of this diorite sequence is speckled w/ tr coarse euhedral py. Basal contact for entire sequence is shallow but sharp @ 40 dtca.

425.4 828.9 GABBRO

Return to the suite of gabbroic rx, hanging wall to the deformation zone. Gabbro here has been alt and hematized by above intrusive complex. Rx here are fine to med grained, slightly silicified, mod mag, calcitic, and stained orange red by hematite. This gabbroic sequence continues to be intruded by diorite, mafic intrusives, and the odd syenite dyke, as well as an inclusion of ultramafics. Sequence breakdown as follows.

425.4 437.1 Altered Gabbro.
Feldspathic rich gabbro phase, which has been alt, hematized, and silicified. This unit is stained orange red by hematite, but still retains typical gabbroic textures. This unit is fine to med grained, calcitic, mod mag, and not particularly well mineralz. Basal contact @ 65 dtca.

437.1 437.3 Diorite.
Diorite dyke, orange red, med grained, silicified, hematized, contains moderately well dev phenos of feld. Basal contact @ 65 dtca.

439.7 446.4 Felsic Dyke.
Contact into a felsic dyke v similar to unit @ 399.7. This dyke contains injested material of gabbro, as well as inclusions of what appears to be mafic intrusive material, although the relations ship between FD and MI is unclear. This dyke is fine to med grained and packed full of feld phenos, w/ very little matrix component. This unit contains some accessory py, as well as a couple of small splashes of chalcopy. Basal contct for this dyke @ 60 dtca.

446.4 449.4 Diorite.
Contact into a rather dirty diorite dyke, dirty by virtue of the numerous inclusions/fragments of gabbroic, and mafic intrusive material. This dyke is orange red, med grained, hematized, silicified, variably mag, calcitic, and not well mineralz. Unit contains poorly dev feld phenos. Basal contact 50 dtca.

452.4 459.8 Felsic Dyke.
Contact into a felsic dyke, thoroughly riddled w/ inclusions of gabbro, and mafic intrusive material. This unit is orange red, silicified, hematized, mod mag, med grained, and calcitic. This dyke is jammed full of feld phenos,

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

containing little matrix material. There is some accessory py here. Basal contact along zone of BBC, making contacts uncertain. @ 454.9 to 455.0 there is a qtz vein @ 80/80 dtca, Vein itself is unmineralz, but there is up to 2.5% py in adjacent FD @ contact margins.

459.8 461.0 Altered Syenite.
Contact into a dyke of alt syenite, which appears slightly porph for first 3 inches below upper contact. This unit is bright orange red, fine grained, weakly mag, calcitc, silicified, hematized, and finely fractured w/ calcite. This dyke does contain some accessory py, as well as a splash of chalcopy. Basal contact @ 50 dtca.

461.0 465.4 Altered Gabbro.
Alt gabbro, hematized, silicified, cut by a couple of v small diorite dyklets. Not well mineralz. Basal contact @ 70 dtca.

465.4 465.9 Felsic Dyke.
Felsic dyke v similar to unit @ 452.4, this unit appears to have been partially injested by the diorite unit below. Basal contact w/ this diorite is very diffuse @ approx 65 dtca.

465.9 471.0 Diorite.
A bright orange red diorite dyke, med grained, silicified, hematized, calcitic, and variably mag. This dyke appears to be the youngest in the sequence as it contains fragments of partially injested FD, gabbro, and an earlier finer grained diorite dyke. These age relationships are uncertain. Basal contact for this dyke w/ gabbro @ 58 dtca.

471.0 474.5 Gabbro.
Contact into a hematized, slightly silicified gabbroic unit, med grained, mod mag, and calcitic. Not well mineralz. Basal contact @ 80 dtca, and sharp.

474.5 477.4 Felsic Dyke.
Contact into a felsic dyke slightly different than any seen previously in this hole. This dyke is orange red, med grained, silicified, hematized, mod mag, calcitic, and quite vuggy to pitted in areas. This unit contains a couple of small inclusions of gabbroic wall rx, as well as being packed full of zoned feld phenos w/ little matrix component, and speckled w/ 1% mafic minerals. This unit does contains tr accessory py, as well as tr specular hematite. Basal contact for this dyke @ 80 dtca.

477.4 489.5 Gabbro.
Contact into a sequence of alternating feldspathic rich/hornblende rich gabbro phases, which appear to become progressively more amphibolitic w/ depth. This sequnece is fine to med grained, hematized, slightly silicified, mod mag, and calcitic. There is some accessory py here as well as tr specular hematite. This gabbroic sequence also contains a couple of small diorite dykelets as well as modest qtz veining. Basal contact @ 50 dtca.

489.5 510.0 Ultramafic Komatiite.
Contact into a black, fine grained, chloritic, variably mag, amphibolitic,

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

strongly calcitic, foliated, and quite contorted Komatiite unit, that is slightly schistose, and contains a couple of fault zones w/ granulated core, and fault gouge. Fault gouge occurs @ 496.9 1.5cm @ 40 dtca, @ 499.0 to 500.0 Core is granulated w/ tr mud. @ 503.9 fault gouge for 1cm @ 75 dtca, and @ basal contact for 1cm @ 40 dtca. This unit does contain some accessory py as well as, modest qtz veining. Basal contact for this unit @ 40 dtca.

510.0 533.5 Gabbro.
Contact into an amphibolitic, hematized, fine to med grained, calcitic, mod mag, and slightly silicified, gabbroic unit. This sequence is riddled w/ small diorite dykelets, as well as a couple of more prominant ones, @ 516.5 to 516.7 @ 65/65 dtca, and @ 523.9 1cm @ 70 dtca. This unit contains tr accessory py, as well as tr specular hematite. Basal contact w/ MI @ 40 dtca. Gabbro @ upper contact is finely felted.

533.5 541.3 Mafic Intrusive.
Contact into a hematized, slightly reddish grey, fine grained, calcitic, variably mag, and slightly silicified mafic intrusive dyke. This unit contains the odd small fragment of gabbroic wall rx w/in it. There is some accessory py here. Core is quite blocky here, basal contact @ 45 dtca.

541.6 547.5 Mafic Intrusive.
Contact into a dark grey green to black, fine grained, mafic intrusive dyke. This dyke is variably mag, calcitic, and contains tr accessory py. Contacts for this unit @ 40/45 dtca.

547.5 548.8 Porphyritic Syenite.
Contact into a porph syenite dyke, dark red matrix w/ well dev mm sized phenos. This dyke is silicified, variably mag, over printed w/ calcite, finely fractured w/ chlorite, and quite well mineralz w/ 2.5% py, both of the fine diss and coarse euhedral varieties. Basal contact for this dyke @ 45 dtca, and slightly irregular.

548.8 575.2 Gabbro.
Gabbro here is hematized, silicified, mod mag, calcitic, med grained, and cut by numerous very small dykelets of diorite to syenite, as well as a mafic intrusive dyke @ 554.9 to 555.5 @ 50/50 dtca. Gabbro w/in this sequence is also quite vuggy and pitted, w/ accessory py associated w/ calcite vugs. There is also some qtz veining here. Gabbro here appears to become less hematized w/ depth. Below 563.0 gabbro becomes a more typical lime green colour from epidote alt. Basal contact @ 80 dtca, and well defined.

575.2 577.0 Mafic Intrusive.
A fine grained, grey, slightly orange red hematite stained, calcitic, silicified, and mod mag, mafic intrusive dyke. This dyke is effectively unmineralz. Basal contact @ 70 dtca, and quite sharp.

577.0 584.3 Gabbro.
A fine to med grained, mod mag, calcitic, lime green to green gabroic unit which contains a hematite stained qtz vein @ 579.3 to 579.6 @ 80/60 dtca.

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

This unit does contains tr accessory py. Basal contact @ 80 dtca.

584.3 590.6 Diorite.
A pinkish orange, med grained, silicified, calcitic, and variably mag, dyke of diorite. This unit contains chlorite filled fine fractures, as well as moderately dev feld phenos, and tr accessory py. Basal contact @ 70 dtca. Unit also contains the odd small fragment of gabbroic wall rx.

590.9 591.0 Diorite.
Diorite: as above, contacts @ 70/70 dtca.

591.3 591.8 Diorite.
Diorite: as above, contacts @ 50/70 dtca opposing angles.

597.8 598.0 Mafic Intrusive.
A grey green, fine grained, mod mag, non calcitic, mafic intrusive dyke. This unit is unmineralz. Contacts are sharp @ 50/60 dtca.

610.0 610.7 Diorite.
A pinkish grey, med grained, hematized, weakly mag, and slightly calcitic, diorite dyke. This unit contains poorly dev feld phenos, and is speckled w/ 3-5% mafic minerals. Contacts @ 50/60 dtca.

614.5 614.9 Mafic Intrusive.
A fine grained, dark grey green, to slightly red brown, mod mag, calcitic, mafic intrusive dyke. This unit contains tabular amphibole xtals which are aligned to give this unit a quasi foliated appearance. Contacts @ 80/70 dtca.

615.4 616.2 Diorite.
A reddish brown, fine grained, weakly mag, non calcitic, diorite dyke, w/ poorly dev phenos of feld. This unit contains the odd fragment of gabbroic wall rx. Contacts @ 80/80 dtca.

616.4 618.9 Mafic Intrusive.
Contact into a grey brown, fine grained, mod mag, and slightly overprinted w/ calcite mafic intrusive dyke. This unit is cut by 2 diorite dykes, @ 616.8 2 inches @ 80/80 dtca, and @ 617.4 to 617.8 @ 80/80 dtca. Contacts for MI @ 80/80 dtca.

618.9 626.6 Diorite.
Contact into two generations of diorite. Initial contact into a light brown red med grained diorite, which is cut by a slightly darker and finer grained, diorite @ 620.1 620.8 @ 65/70 dtca. Both of these dykes are weakly mag, slightly overprinted by calcite, and hematized. Outside basal contact for this dyke @ 75 dtca. There is some accessory py here, as well as tr specular hematite.

628.0 629.8 Diorite.
A fine to med grained, brown red, weakly mag, weakly calcitic, hard, dyke of diorite. This unit contains poorly dev phenos of feld, and tr accessory py. Contacts @ 50/80 dtca, both being irregular.

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

637.3 637.8 Felsic Dyke.
A slightly pinkish, to lime green, med grained, felsic dyke, packed full of albite+-plagioclase feld phenos, w/ little matrix component, This unit is weakly mag, non calcitic, and unmineralz. Contacts @ 80/80 dtca.

641.5 645.7 Diorite.
A fine to med grained, orangish brown, weakly mag diorite dyke, that is variably overprinted w/ calcite. This unit contains mod well dev feld phenos, and is speckled w/ 5% mafic minerals. This unit contains the odd small inclusion of gabbroic wall rx as well as 1 larger gabbro inclusion @ 642.5 to 642.9 @ 70/60 dtca. There is tr accessory py here. Contacts @ 40/40 dtca.

646.2 650.2 Diorite.
A fine grained, weakly mag, overprinted w/ calcite, pinkish brown, diorite dyke, containing small fairly well dev feld phenos, and speckled w/ 10% mafic minerals. Contacts @ 70/50 dtca.

651.1 651.3 Diorite.
Small diorite dyke: as above, contacts @ 85/50 w/ basal contact being slightly irregular.

652.5 652.7 Diorite.
A dioritic inclusion, as above, running along core axis.

652.9 656.2 Diorite.
A pinkish red brown, med grained, weakly mag, calcitic diorite dyke that has been cut by a slightly darker, and finer grained diorite dyke, from 653.0 to 655.6 @ 70/70 dtca. Both of these units contain mod well dev feld phenos, as well as tr accessory py. There are also a few small chlorite filled fractures here. Outside contacts for main unit @ 80/80 dtca, and sharp.

656.6 656.8 Felsic Dyke.
Felsic dyke, identical to FD @ 637.3. Contacts @ 60/70 dtca, opposing angles.

658.1 658.2 Diorite.
An orangish brown, diorite dyke w/ fairly well dev feld phenos, and speckled w/ 10-15% mafic minerals. Contacts @ 60/50 dtca.

659.4 659.7 Felsic Dyke.
A small Felsic dyke, as @ 637.3 and 656.6. Contacts @ 70/70 dtca, w/ the upper contact being slightly irregular.

660.2 660.3 Mafic Intrusive.
A grey to slightly orange stained, fine grained, mod mag, overprinted w/ calcite mafic intrusive dyke, @ 80/80 dtca.

662.3 672.3 Felsic Dyke.
Contact into a felsic dyke considerably different than FDs seen earlier in this hole. FD here is greyish green w/ variable orange red hematite

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

staining, weakly mag, calcitic, silicified, and packed full of albite+-plagioclase feldspar phenos up to cm sized, w/ very little chloritic matrix component. This dyke contains the odd fragment of gabbroic wall rx, and is cut by an orangish coloured diorite dyke which contains fairly well dev phenos of feldspar, @ 662.5 to 665.0 @ 70/70 dtca, as well as containing an inclusion of gabbro from 668.4 to 669.8 @ 50/60 dtca. Diorite here contains numerous fragments of chlorite, and gabbro. Gabbroic inclusion here is quite blasted, hematized, and amphibolitic. There is some accessory py here. Basal contact for FD @ 80 dtca.

672.3 676.6 Felsic Dyke.
Contact into 2 distinct generations of felsic dykes. The first from 672.3 to 672.9 and younger than the second. The first dyke here is fine grained and is packed full of very small feld phenos, w/ the odd larger up to cm sized pheno, and very little light coloured matrix, cutting second dyke @ 75 dtca. The second dyke from 672.9 to 676.6 is slightly darker in colour w/ more mafic minerals, and less phenos, although the majority of phenos here are larger(up to cm sized). This second and older dyke is slightly orange red in colour, and more hematized than dyke #1. Both of these units are weakly mag, overprinted w/ calcite, and not well mineralz. Basal contact for main FD unit @ 60 dtca.

676.6 678.0 Altered Gabbro.
Gabbro here is quite blasted, alt, chloritic, soft, amphibolitic, strongly calcitic, fine grained, foliated, and mod mag. Basal contact for this unit @ 70 dtca.

678.0 679.0 Felsic Dyke.
A med to coarse grained, grey, weakly mag, calcitic, felsic dyke. This unit is similar to dyke #2 as above, but w/ 5-10% mafic minerals, and an inclusion of FD material that looks very similar to FD @ 662.3. This dyke contains tr accessory py. Basal contact @ 80 dtca.

679.0 682.0 Altered Gabbro.
Gabbro here is grey black, fine grained, chloritic, amphibolitic, foliated, w/ the foliation being slightly contorted. Gradational contact into a more typical, easily recognizable gabbroic unit.

688.6 689.5 Diorite.
A fine grained, brown red to slightly orange, hematized, variably mag, silicified, and calcitic diorite dyke. This unit contains small poorly dev feld phenos, as well as some ghost phenos and is speckled w/ 5% mafic minerals. Tr accessory py. Contacts @ 80/40 dtca, and irregular.

691.3 691.8 Mafic Intrusive.
A fine grained, grey to slightly orange red hematite stained, mod mag, and calcitic mafic intrusive dyke. This unit contains 5-10% mafic minerals probably amphibole. Contacts are sharp @ 75/80 dtca.

692.0 693.2 Diorite.
A med grained, orange grey, variably mag, and calcitic dyke of diorite. This

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

dyke contains mod well dev feld phenos, and is speckled w/ 5% mafic minerals. Contacts @ 80/60 dtca, w/ the upper contact being slightly irregular.

701.4 701.7 Diorite.
An inclusion of reddish brown diorite, running along core axis.

705.8 707.7 Diorite.
Contact into a reddish brown, fine to med grained, weakly mag, calcitic, and hematized dyke of diorite. This dyke contains fairly well dev feld phenos, and is speckled w/ 1% mafic minerals. There is some accessory py here. Contacts @ 40/70 dtca. There is also the odd inclusion of gabbroic wall rx here.

712.0 712.6 Diorite.
Diorite dyke: as above. Contacts @ 80/80 dtca, w/ the basal contact being slightly irregular.

713.7 714.2 Diorite.
Diorite dyke: as above, except that this dyke contains numerous small inclusions of gabbroic wall rx. Contacts @ 50/60 dtca, w/ both contacts being slightly irregular.

714.9 715.3 Diorite.
Diorite dyke: as above. Contacts @ 50/80 dtca, w/ basal contact being very irregular.

722.0 724.2 Altered Gabbro.
Gabbro here becomes quite blasted, and chewed up. This unit is amphibolitic, slightly chloritic, and remains calcitic, and mod mag. Gradational contact into less blasted more typical gabbroic unit.

725.7 735.2 Diorite.
Contact into a brown red to orange, med grained, weakly mag, calcitic dyke of diorite. This dyke is quite dirty by virtue that it contains numerous irregular fragments of gabbroic wall rx. The matrix of this unit contains a high % of feld phenos, and is quasi FD. Unit is also speckled w/ 5-10% mafic minerals. This unit is strongly hematized, and is slightly finely fractured. Between 729.5 to 730.8 there is an inclusion of highly alt, amphibolitic, chloritic, gabbro? @ 50/40 dtca. This diorite dyke contains tr accessory py as well as a couple of splashes of chalcopy. Contacts for this dyke @ 60/50 dtca.

735.2 736.4 Altered Gabbro.
Gabbro? here is amphibolitic, chloritic, fine grained, calcitic, and mod mag. Gradational contact into a more typical less alt gabbro unit.

745.0 746.6 Mafic Intrusive.
Contact into a grey to slightly orange stained, fine grained, calcitic, mod mag, and silicified mafic intrusive dyke. Contacts for this dyke @ 40/70 dtca, and sharp.

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

750.1 750.2 Diorite.
A small highly silicified, brown red, fine grained, weakly mag, and calcitic dyke of diorite. Contacts for this dyke @ 50/50 dtca.

774.0 777.6 Felsic Dyke.
Contact into a fine to med grained, hematized, silicified, orangish brown, weakly calcitic, and variably mag, felsic dyke. This unit is packed full of variably sized albite+-plagioclase feld phenos, w/ very little matrix component. This unit contains hematite w/in alt healed fractures, as well as the odd irregular shaped fragment of gabbroic wall rx. There is tr accessory py here. Contacts for this dyke @ 70/70 dtca.

763.1 763.5 There is what appears to be a 2 inch irregular shaped inclusion which is surrounded by a halo of almost pure hematite. This zone has been totally silicified by fluid movement created by below adjacent diorite intrusion.

763.6 764.9 Diorite.
Contact into a bright red orange, fine to med grained dyke, which appears syenitic adjacent to upper contact, then becoming more dioritic looking. This dyke is variably mag, slightly overprinted w/ calcite, silicified, hematized, and not well mineralz. This unit is speckled w/ 2% mafic minerals. Contacts for this unit @ 65/60 dtca.

771.6 775.9 Diorite.
A fine to med grained, grey red to slightly orange stained, variably mag, overprinted w/ calcite, silicified, and hematized diorite dyke. This unit contains poorly dev phenos of feld, and is speckled w/ approx 5% mafic minerals. This unit is finely fractured w/ calcite. There is tr accessory py here as well as tr specular hematite. Contacts for this dyke @ 60/40 dtca.

779.2 780.2 Mafic Intrusive.
A grey slightly orange stained, fine grained, mod mag, overprinted w/ calcite, silicified, and hematized mafic intrusive dyke. This unit contains 5-10% amphibole+-biotite, and is not well mineralz. Contacts for this dyke @ 80/80 dtca, there are also a couple of small inclusions of gabbroic wall rx.

784.3 784.9 Mafic Intrusive.
Mafic intrusive dyke, as above, Sharp but irregular contacts @ 60/60 dtca.

788.7 789.1 Diorite.
A fine grained, pinkish to red orange, fine grained, variably mag, calcitic, hematized, and silicified dyke of diorite which contains poorly dev phenos of feld. Not well mineralz. Contacts @ 70/65 dtca.

789.4 790.7 Felsic Dyke.
A brownish pink to slightly lime green stained, fine to med grained, mod mag, calcitic felsic dyke, that is packed full of albite+-plagioclase feld phenos mm sized, w/ very little matrix material. There is some epidote alt here, as well as hematite stained fine fractures. Contacts for this dyke @

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

70/50 dtca.

790.7 791.0 Diorite.
A pinkish red, med grained, diorite dyke which cut previous FD as there is a 1 inch FD inclusion @ 790.9. Outside contacts for 2D @ 70/65 dtca.

793.2 828.9 Diorite.
Contact into a rather broad and complicated diorite sequence which has been cut by a mafic intrusive dyke, cuts a felsic dyke, and contains a number of variably sized gabbroic intrusions. Diorites here are orange brown red, med grained, and speckled w/ 10% mafic minerals. They are variably mag, calcitic, hematized, and silicified, as well as containing variably sized feld phenos in its matrix. This unit also contains some accessory py. @ 793.6 to 793.8 there is a amphibolitic, chloritic gabbro inclusion @ 70/50 dtca. @ 795.9 to 796.0 there is a milky qtz vein which is surrounded by a halo of silicified hematite. @ 805.7 to 806.9 there is a fine grained, grey green mafic intrusive which contains the odd fragment of partially digested, diorite, and gabbro. Contacts for this dyke @ 60/60 dtca, opposing angles. From 808.0 to 808.6 there is a gabbroic inclusion @ 70/65 dtca. From 809.6 to 813.2, diorite has intruded a felsic dyke. This dyke is pinkish red brown, fine grained and looks very similar to FD @ 789.4 except w/out the lime green epidote alt. Contacts @ 70/70 dtca, this FD contains the odd fragment of gabbro which appears to have been partially digested. @ 815.7 to 815.9 diorite contains an inclusion of gabbro @ 70/80 dtca. @ 815.9 to 818.0 diorite cuts FD which appears to be same FD as above, @ 70/80 dtca. From 818.0 to 818.2 there is a gabbroic inclusion @ 80/80 dtca. @ 819.6 to 820.5 there is a gabbroic inclusion @ 75/70 dtca. Followed by 12 inches of diorite till 821.5 where there is another gabbro inclusion till 822.3 @ 70/80 dtca. Diorite and FD here are finely fractured, variably mag, and slightly overprinted w/ calcite. MI is mod mag, and overprinted w/ calcite as well. There is some accessory py throughout this unit. Basal contact for 2D sequence @ 80 dtca, w/ numerous gabbro frags in this area.

828.9 853.9 SYENITE
Contact into a rather broad sequence of syenite, which appears to have intruded into a pre-existing diorite unit, as there are partially digested zenoliths of diorite which hold fragments of gabbroic wall rx w/in them. This syenite dyke is bright orange red, weakly mag, overprinted w/ calcite, silicified, fine grained, hematized, and mineralz w/ 1% fine diss py. This dyke is mod well vein w/ qtz, and finely fractured w/ chlorite. Basal contact @ 60 dtca. Sequence breakdown as follows.

828.9 837.0 Syenite.
Syenite here appears to contain a zenolith of partially digested diorite. This unit looks more like a syenite than diorite, but does contain, remnant feld phenos, as well as a few gabbroic fragments. Basal contact is unclear.

837.0 849.0 Syenite.
Syenite here looks more typical, is silicified, hematized, and finely fractured w/ chlorite. This unit contains 1% fine diss py, as well as an

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

inclusion of gabbro from 840.4 to 841.0 @ 80/70 dtca. Basal contact @ 70 dtca.

849.0 849.9 Altered Gabbro.
A slightly chloritic, amphibolitic, gabbro inclusion @ 70/70 dtca.

849.9 850.9 Syenite.
Syenite: as above. @ 70/70 dtca, w/ basal contact being very irregular. Syenite here contains 1% fine diss py.

850.9 852.0 Altered Gabbro.
Gabbro here is slightly chloritic, amphibolitic, and contains numerous small intrusions/inclusions of syenite. Tr accessory py here. Basal contact @ 50 dtca.

852.0 853.9 Syenite.
Syenite here has a finely felted texture, is fine grained, finely fractured w/ chlorite, weakly mag, calcitic, and appears to contain some remnant dioritic textures. This unit is slightly lighter in colour than previous unit, and is mineralz w/ 2% py, both of the fine diss and coarse euhedral varieties. Basal contact @ 60 dtca.

853.9 1395.8 GABBRO
Return to the sequence of gabbroic rx, hanging wall to the deformation zone. This gabbroic sequence remains as described in previous code 4 gabbro descriptions. Sequence breakdown as follows.

853.9 857.5 Mafic Intrusive.
Contact into a brown red, fine grained, hematized, weakly to mod mag mafic intrusive dyke. This dyke appears to have partially digested a pre existing diorite unit as there are ghost feld phenos visible w/in this unit, as well as about 25% mafic minerals which are aligned to give this dyke a pseudo foliated appearance. There is some accessory py here. Basal contact @ 45 dtca.

857.5 870.0 Broken Blocky Core.
Contact into a zone of broken blocky, and rubbled core w/ an apparent gabbro host. Gabbro here is fine to med grained, mod mag, calcitic, slightly chloritic, amphibolitic, and vuggy to pitted. There is some accessory py here, mostly associated w/ calcite vugs. After 870.0 core becomes more intact.

870.0 878.8 Altered Gabbro.
Gabbro here is grey to black, fine grained, chloritic, amphibolitic, mod mag, and strongly calcitic. Basal contact w/ FD @ 70 dtca.

878.8 886.6 Felsic Dyke.
A grey to slightly orange stained, med grained, weakly mag, and over printed w/ calcite felsic dyke that is packed full of albite+-plagioclase feld phenos, w/ very little matrix component. This unit contains some accessory

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

py. Basal contact @ 80 dtca, w/ py concentrations here.

890.2 898.0 Diorite.
Contact into red brown to slightly orange stained, med grained, weakly mag, overprinted w/ calcite, and hematized diorite dyke. This unit contains mod well dev feld phenos, and is speckled w/ 5-10% mafic minerals. There is some accessory py here. Basal contact @ 80 dtca.

898.0 898.9 Mafic Intrusive.
Contact into a red brown, fine grained, mod mag, calcitic and finely felted, mafic intrusive dyke. This dyke is hematized, and not well mineralz. Basal contact @ 70 dtca.

898.9 906.1 Altered Gabbro.
Contact into a highly alt, chewed up and blasted gabbro? unit. This unit is chloritic, amphibolitic, mod mag, fine grained, hematized, and strongly calcitic. There is a 2 inch milky qtz vein @ basal contact. There is tr accessory py here. Basal contact @ 80 dtca.

906.1 912.0 Feldspar Porphyry.
Contact into a feld porph dyke which has been cut by dykes of syenite. FD here is grey to slightly red orange stained, coarse grained, weakly mag, calcitic, silicified, and hematized. This dyke contains coarse albite+-plagioclase phenos up to 1 cm in size, w/in a dark fine grained matrix. There is some accessory py here which is concentrated adjacent to contacts w/ syenite. @ 908.0 to 908.9 there is an orange to brick red syenite dyke @ 60/60 dtca, w/ opposing angles. @ 910.3 to 911.3 there is a red brown, dyke of syenite? @ 60/70 dtca. Core here is quite broken and blocky. Basal contact for this sequence @ 40 dtca, w/ py.

912.0 928.0 Altered Gabbro.
Contact into a highly alt and blasted unit, that has a finely felted texture, is grey to black, fine grained, chloritic, amphibolitic, mod mag, and strongly calcitic. Probably an alt gabbro, based on mag properties, rather than texture, as there is little primary texture left. This unit is cut by a dyke of diorite @ 916.5 to 917.4 @ 70/70 dtca. This dyke is pinkish grey, and mineralz w/ 1% very fine diss py. Alt gabbro here is quite well mineralz w/ 2% py both of the fine diss and coarse euhedral varieties. Gradational contact into a less blasted easily recognizable gabbro unit.

939.0 946.9 Altered Gabbro.
Gabbro here again becomes, quite blasted and alt, being chloritic, amphibolitic, and containing little in the way of primary textures. Gabbro designation from mag properties. Gradational basal contact.

946.9 959.8 Altered Gabbro.
Alt gabbro here appears to have been effected by what is best described as incipient alt, as well as containing a couple of dykes of syenite. This unit is mod mag, calcitic, ankeritic, and silicified. Mineralz is well dev w/in this unit w/ 2-3% py which appears concentrated w/in incipient alt zones and w/in and adjacent to syenite dykes. Qtz-ank veining is also mod well dev

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

w/in this unit. This unit is grey to black w/ ochre coloured areas, and zones of pale grey which appear slightly bleached. Basal contact @ 60 dtca, and sharp.

959.8 961.9 Mafic Intrusive.
A red brown, fine grained, mod mag, calcitic, mafic intrusive dyke. This unit contains amphibole+-biotite xtals which are aligned to give this dyke a psuedo foliated appearance. There is some coarse euhedral py here as well. Basal contact @ 70 dtca, and sharp.

972.9 973.8 Altered Gabbro.
Unit here is black, fine grained, mod mag, amphibolitic, chloritic, and calcitic. Probably an alt gabbro. Gradational contact into a cleaner, more easily recognizable gabbro unit.

999.9 1011.0 Mafic Intrusive.
Contact into a rather broad mafic intrusive dyke which is cut by an UM sequence. MI here is black red, fine grained, weakly mag, calcitic, and contains cm sized tabular amphibole xtals as well as some rather coarse biotite which appear randomly scattered throughout this unit. @ 1003.0 to 1005.7 there is an inclusion of 4U which is soft, chloritic, non mag, strongly calcitic, foliated @ approx 60 dtca, and mineralz w/ 1.5% py, concentrated adjacent to upper contact. Contacts for 4U @ 60/65 dtca. MI here is finely fractured w/ calcite. Outside contact for MI @ 80/80 dtca, and quite sharp.

1020.7 1023.9 Altered Gabbro.
A red orange, fine to med grained, weakly mag, calcitic, strongly hematized unit of alt gabbro, Which contains a couple of chalcopy splashes.

1025.0 1025.2 Syenite.
Contact into a small, non mag, pinkish red, fine grained, finely fractured, calcitic dyke of syenite @ 80/80 dtca.

1031.0 1031.4 Diorite.
A bright orange to brick red, med grained, varaibly mag, calcitic diorite dyke, speckled w/ 5% mafic minerals @ 70/70 dtca w/ sharp contacts.

1031.8 1032.1 Felsic Dyke.
An orange grey med grained, weakly mag, calcitic, felsic dyke, packed full of small albite+-plagioclase phenos as well as the odd larger cm sized feld pheno w/ very little matrix component. This dyke is hematized, mineralz w/ tr py, as well as containing a couple of chalcopy splashes. Contacts for this dyke @ 50/80 dtca, w/ the upper contact being slightly irregular.

1033.7 1040.9 Porphyritic Syenite.
Contact into a fine grained, bright orange, weakly mag, weakly calcitc, silicified, and hematized dyke of porph syenite? This dyke contains a few phenos of feld w/in its fine grained matrix. There is some accessory py here. Contacts for this dyke @ 50/40 dtca, w/ both contacts being very irregular. This unit is cut by a mafic intrusive dyke from 1034.9 to 1035.6.

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

This MI is black green fine grained, mod mag, calcitic, and contains the odd syenite fragment w/in it esp near contacts. This dyke is @ 60/50 dtca. Unit is again cut by MI as above @ 1037.0 to 1039.0 @ 50/40 dtca. There is some accessory py w/in this sequence.

1043.9 1045.6 Feldspar Porphyry.
Contact into a grey, weakly mag, weakly calcitc, silicified fledspar porphyry dyke. This dyke contains very well developed and quite fresh coarse(cm sized), albite+-plagioclase feld phenos, contained w/in a fine grained chloritic matrix. There is some accessory py here, associated w/in calcite vugs. Contacts for this dyke @ 60/60 dtca, and quite sharp.

1054.2 1055.2 Mafic Intrusive.
Contact into a black green, fine grained, mod mag, chloritic, calcitic, and finely felted mafic intrusive dyke. This unit is speckled w/ amphibole +-biotite xtals, and is not well mineralz. Contacts for this dyke are sharp @ 60/60 dtca.

1062.0 1068.0 Gabbro.
Gabbro here contains a couple of small diorite dykes @ 70 dtca.

1068.4 1068.7 Diorite.
A pinkish grey, med grained, calcitic, weakly mag, silicified diorite dyke w/ poorly dev feld phenos, and speckled w/ 5-10% mafic minerals. Contacts @ 40/80 dtca.

1068.7 1077.6 Gabbro.
Gabbro here is thoroughly riddled w/ v small dykes of diorite at variable angles to core axis.

1077.6 1079.0 Felsic Dyke.
A grey to slightly orange stained, weakly mag, calcitic, hematized felsic dyke, packed full of small albite+-plagioclase feld phenos, w/ very little matrix component. This unit contains tr accessory py. Contacts for this dyke @ 60/50. This dyke also contains epidote alt in fine fractures.

1097.0 1110.1 Altered Gabbro.
Gradational contact into a highly alt, blasted, chloritic, amphibolitic, calcitic, fine grained, mod mag, grey to black coloured unit of possible gabbro. This unit is hematized, speckled w/ 1-2% fine diss py, and moderately well veined w/ qtz. Sharp basal contact w/ FD @ 80 dtca.

1110.1 1112.7 Felsic Dyke.
Contact into a grey to slightly orange stained, med to coarse grained, silicified, weakly mag, calcitic, and hematized felsic dyke. This unit contains coarse albite+-plagioclase feld phenos, w/in a grey fine grained matrix. Phenos here are not as tightly packed as in other FDs in this hole but more so than what has previously been logged as FPs. This unit could have been dropped into either bucket. There is tr accessory py here. Basal contact for this dyke @ 75 dtca.

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

1112.7 1119.0 Altered Gabbro.
Gabbro? here is quite alt, blasted, chloritic, amphibolitic, mod mag, calcitic, fine grained, and grey black in colour. There is little in the way of primary textures here. Gabbro designation based primarily on mag properties. This unit is very well mineralz w/ 2-3% py and up to 5% locally, both of the fine diss and coarse euhedral varieties. Gradational basal contact into a fresher more easily recognizable gabbroic unit.

1134.0 1137.0 Altered Gabbro.
Gabbro here appears to be a fine grained unit w/in a coarse grained unit There are some flow textures here, as what appears to be pillow rims, and a fine flow brecciated appearance.

1140.0 1174.0 Mafic Intrusive.
Contact into a rather broad mafic intrusive. This dyke is grey black, fine grained, mod mag, calcitic, silicified, and looks slightly diff than previously logged MIs, in that there are few of the tabular amphiboles which are charcteristic of uphole MIs. @ 1148.0 to 1148.2 this MI is cut by a grey FD @ 70/70 dtca. This mafic intrusive unit is not well mineralz although there is a few small splashes of chalcopy. This dyke is also slightly hematized. Upper contact for this dyke presumably along zone of BBC, making contact uncertain. Basal contact @ 70 dtca. There is also some epidote alt here w/in fine fractures. From 1163.0 to 1166.8 there is an inclusion of what appears to be amphibolitic, chloritic, gabbro, well mineralz, contacts @ 70/70 dtca.

1190.0 1195.0 Gabbro.
Gabbro here contains numerous v small dyke of diorite at varying degrees core axis. This unit remains calcitic, mod mag, green to lime green, and is also quite silicified. There is tr accessory py here as well.

1195.0 1199.4 Gabbro.
Gabbro here is amphibolitic till 1195.4 where it gradationally returns to a cleaned more easily recognizable gabbroic unit till basal contact w/ MI @ 80 dtca, and very sharp.

1199.4 1200.0 Mafic Intrusive.
Contact into a more typical MI unit as seen earlier in this hole. This unit is grey black, fine grained, calcitic, mod mag, silicified, and contains amphibole+-biotite xtals which appear randomly scattered throughout this unit. Mineralz is not well dev here. Basal contact is is very sharp @ 80 dtca.

1209.7 1209.9 Diorite.
A rather different looking diorite dyke. This unit is pinkish white w/ feld phenos being alt by epidote, giving this unit a patchy network pattern of lime green. This unit is calcitic, silicified, and non mag. Not well mineralz. Contacts @ 40/50 dtca.

1222.0 1230.0 Altered Gabbro.
Gabbro here is quite alt, blasted, amphibolitic, chloritic, calcitic, mod

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

mag, and fairly vuggy and pitted. There is some accessory py, associated w/ calcite vugs. Gradational basal contact into a cleaner, more easily recognizable gabbro unit. @ 1227.0 1227.6 gabbro is cut by a greyish pink diorite dyke @ 50/50 dtca, w/ both contacts being slightly irregular.

1237.3 1238.0 Diorite.
A pinkish grey, med grained, calcitic, weakly mag, silicified, dyke of diorite. Contacts for this dyke @ 50/50 dtca, opposing angles, and quite irregular.

1238.0 1251.0 Altered Gabbro.
Gabbro here is quite blasted, amphibolitic, chloritic, hematized, mod mag, calcitic, very vuggy, and pitted. Core here is also quite broken, and blocky. There is some accessory py here, associated w/ calcite vugs. This unit is also varaibly riddled w/ small syenite to diorite dykes @ varying degrees to core axis. Gradational basal contact into a less alt more easily recognizable gabbro unit.

1251.0 1274.0 Gabbro.
Gabbro here is green to lime green, fine to med grained, mod mag, calcitic, and quite fresh looking. This unit contains a couple of very small diorite to syenite dykes to inclusions. Not well mineralz. Gradational basal contact into an alt amphiboitic gabbro unit.

1274.0 1278.8 Altered Gabbro.
Gradational contact into an alt, blasted, chloritic, amphibolitic, fine grained, black, calcitic, and mod mag unit of gabbro. This unit is fairly well mineralz w/ 1-2% py. Basal contact @ 70 dtca.

1278.8 1311.2 Carbonated Gabbro Mafic Intrusive.
Contact into a highly blasted by carb and alt unit. This sequence is so blasted that there are few primary textures left. This unit contains a few textures that are gabbroic, and some that are characteristic of a mafic intrusive. From initial contact for 6 inches core appears gabbroic below this to 1288.0 core appears more like a mafic intrusive w/ small irregular mafic fragments. @ 1288.8 core appears more gabbroic for 3 feet. Below this core appears more like a mafic intrusive. The whole of this unit is speckled w/ metacrysts of carb, and albite feld, giving the zone a quasi FD appearance. This entire sequence is mod mag, slightly silicified, and calcitic. From 1310.0 to 1311.2 core appears to be more gabbroic in nature. The overprinting of this unit by carb has made it very difficult to classify. This unit is quite broken and blocky, and mineralz w/ tr fine diss py. Basal contact @ 80 dtca. There is also some slight hematite staining here.

1311.2 1334.7 Altered Gabbro.
A grey black, fine grained, mod mag, calcitic, slightly chloritic, and amphibolitic unit of highly blasted gabbro. This unit is slightly vuggy and speckled w/ tr-1% fine diss py. Gabbro here cut by a black green, fine grained, mod mag, MI @ 1318.0 1318.5 @ 60/60 dtca, w/ sharp contacts. From 1328.0 to 1332.0 gabbro becomes foliated @ approx 55 dtca. Basal contact

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

sharp @ 63 dtca.

1334.7 1339.5 Mafic Intrusive.
Sharp contact into a grey green, fine grained, mod mag, calcitic, slightly silicified, and slightly epidote alt mafic intrusive dyke. This dyke contains an inclusion of gabbroic material @ 1336.9 to 1337.0 @ 60/50 dtca. MI here is speckled w/ 10-15% amphibole+-biotite which appear randomly scattered throughout this unit. There is tr accessory coarse py here as well. Basal contact @ 70 dtca, and sharp.

1339.5 1344.6 Gabbro.
Contact into a feldspathic rich gabbro unit which becomes more amphibolitic towards basal contact w/ MI. Basal contact @ 50 dtca, and sharp. This unit also contains a small syenite dyke @ 1340.8 1.5cm @ 80/80 dtca. There is also tr accessory py here.

1344.6 1356.0 Mafic Intrusive.
Contact into what appears to be two distinct generations of mafic intrusives. From 1344.6 to 1348.9 this dyke appears to have cut second unit as it contains fragments of the second dyke w/in it @ contact margins. This dyke is brown red, fine grained, mod mag, speckled w/ amphibole+-biotite, and overprinted w/ calcite. Basal contact shallow but sharp @ 30 dtca. This older dyke from 1348.8 1352.6 is black, fine grained, mod mag, speckled w/ amphibole+-biotite, and overprinted w/ calcite as well. Basal contact @ 70 dtca, and sharp. Return to the younger MI here till 1354.3 basal contact @ 65 dtca. From 1354.3 to 1356.0 the older generation of MI. Basal contact @ 60 dtca. Both of these units are speckled w/ tr fine diss and coarse euhedral py.

1357.1 1358.8 Mafic Intrusive.
A black, fine grained, calcitic, mod mag, and speckled w/ amphibole+-biotite mafic intrusive dyke. This dyke has a quasi foliated appearance, and contains tr accessory py. Contacts @ 70/80 dtca.

1364.0 1365.6 Mafic Intrusive.
Contact into a red brown, fine grained, hematized, silicified, mod mag, calcitic, and vuggy mafic intrusive dyke. This unit contains a couple of chalcopy splashes. Contacts are sharp @ 60/70 dtca.

1366.9 1367.1 Mafic Intrusive.
A fine grained, red brown mod mag, and calcitic mafic intrusive dyke, @ 80/80 dtca.

1370.6 1370.9 Syenite.
Contact into a fine grained, non mag, overprinted w/ calcite, silicified, dyke of syenite @ 80/70 dtca, w/ the upper contact being slightly irregular.

1370.9 1377.0 Altered Gabbro.
Gabbro here becomes amphibolitic, chloritic, and remains mod mag, and calcitc. Sharp basal contact @ 60 dtca.

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

1377.0 1378.0 Mafic Intrusive.
Contact into a grey black green, fine grained, mod mag, calcitic, slightly silicified, and speckled w/ amphibole+-biotite, mafic intrusive dyke. This unit contains some coarse accessory py. Basal contact sharp @ 65 dtca.

1378.7 1378.9 Mafic Intrusive.
Mafic intrusive dyke: as above @ 70/70 dtca.

1380.7 1381.4 Mafic Intrusive.
Mafic intrusive dyke: as above @ 70/40 dtca.

1381.9 1382.9 Mafic Intrusive.
Mafic intrusive dyke: as above @ 60/60 dtca.

1383.5 1395.8 Mafic Intrusive.
Contact into a broad sequence of mafic intrusive dykes which features 2 distinct generations of MIs. The first from 1383.5 to 1386.1 is grey green, fine grained, mod mag, calcitic, and overprinted w/ carb. This dyke contains metacrysts of carb and albite feld giving this unit a psuedo FD appearance. This unit cuts a more typical looking black, fine grained MI, which contains amphibole+-biotite xtals aligned to give this dyke a quasi foliated appearance till 1388.0. Below this, initial MI returns till 1393.0 where more typical looking MI occurs. Both units here contain tr accessory py. Basal contact @ 60 dtca, and sharp.

1395.8 1395.9 START OF DEFORMATION ZONE

1395.9 1458.0 ULTRAMAFIC
Contact into a UM sequence associated w/ the start of the deformation zone. This unit is a typical green black to blue black, soft, chloritic, variably mag, calcitic, foliated, often contorted near high strain areas, schistose, and talcy. UMs here contain a number of fault zones, w/ gouge and granulated core, as well as being cut by mafic intrusive dykes, syenite dykes, alt gabbro and various other inclusions. UMs here contains some accessory py, and moderate qtz veining. MIs here are generally black, fine grained, mod mag, and speckled w/ amphibole +- biotite. Syenites here are generally orange to brick red, silicified, weakly mag, fine grained, and fairly well mineralz. Alt gabbros here are typically fine to med grained, mod mag, and have a finely felted texture. Sequence breakdown as follows.

1395.9 1396.9 Ultramafic.
A blue black to green black soft, schistose, talcy, calcitic, and variably mag UM unit. Not well mineralz. Contacts @ 50/50 dtca.

1396.9 1398.3 Mafic Intrusive.
A black, fine grained, mod mag, calcitic, and speckled w/ amphibole+-biotite mafic intrusive dyke. This unit contains some accessory py, concentrated near contact zones. Basal contact for this dyke 70 dtca.

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

1398.3 1399.5 Ultramafic.
Contact into a blue green, UM unit as above. Contacts @ 70/50 dtca.

1399.5 1405.0 Altered Gabbro.
Contact into an extremely blasted, chloritic, amphibolitic, grey black, mod mag, fine grained, and calcitic gabbro inclusion. This unit contains some accessory py. Basal contact for this unit shallow and irregular @ 35 dtca.

1405.0 1406.0 Ultramafic.
UM unit as above. Basal contact @ 50 dtca.

1406.0 1408.2 Altered Gabbro.
Alt gabbro unit: as above. Speckled w/ 1% fine diss py. Basal contact @ 60 dtca.

1408.2 1408.7 Ultramafic.
Contact into a blue black UM unit which is cut by a finely fractured, cream to slightly pink diorite dyke from 1408.4 to 1408.6 @ 60/60 dtca. Outside contacts for 4U @ 60/60 dtca.

1408.7 1412.9 Altered Gabbro.
Alt gabbro, as @ 1406.0, w/ tr euhedral py. Basal contact @ 60 dtca.

1412.9 1417.6 Fault Zone.
Fault zone w/ an apparent UM host. Core here is quite broken, blocky, and w/ fault gouge @ 1415.2 1cm @ 65 dtca, @ 1415.5 1.5cm @ 60 dtca, 1416.4 1cm @ 65 dtca. From 1416.9 to 1417.0 core is extremely rubbled and is about 50% mud. Basal contact for this unit @ 60 dtca,w/ tr mud.

1417.6 1422.0 Altered Gabbro.
Alt gabbro, brown black, foliated, contorted, mod mag, fine to med grained, highly contorted, and not well mineralz. Basal contact @ 62 dtca.

1422.0 1425.1 Fault Zone.
Fault zone w/ an UM host. Core here is quite broken, blocky, and granulated w/ fault gouge occuring @ 1423.0 1cm @ 63 dtca, @ 1423.5 to 1423.8 core is extremely granulated and contains some mud. @ 1424.3 1.5cm fault gouge @ 65 dtca. Basal contact for this unit @ 50 dtca.

1425.1 1439.0 Altered Gabbro.
Alt gabbro, brown black, fine to med grained, mod mag, calcitic, slightly felted texture, variably foliated, and not particularly well mineralz. Gabbro unit contains UM inclusion from 1430.5 to 1431.7 @ 60/40 dtca. Outside contacts for gabbro @ 50/60 dtca. @ 1438.0 there is an alt change from calcite above this point to ankerite below.

1439.0 1452.3 Ultramafic Komatiite.
Contact into a fairly rubbled komatiite sequence. Komatiites here are, ankeritic, blue black, foliated @ approx 60 dtca, variably mag, fine grained, and contain tr py mineralz. @ 1446.0 to 1446.4 unit is cut by a slightly mineralz, patchy, brown beige, finely fractured, ank, mod mag,

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

felsite dyke @ 70/40 dtca. @ 1447.0 to 1448.0 komatiite is cut by an alt gabbro dyke @ 60/60 dtca. @ 1448.4 to 1450.0 sequence cut by a felsite dyke as above, @ 60/70 dtca. @ 1450.5 to 1451.0 felsite, as above @ 80/40 dtca. Basal contact for komatiite @ 50 dtca.

1452.3 1454.9 Altered Gabbro.
Contact into an alt gabbro unit. Brown, med grained, ankeritic, mod mag, tr accessory py. Basal contact @ 50 dtca.

1454.9 1458.0 Ultramafic Komatiite.
Contact into a pale green, weak fuchsite alt UM unit. Fine grained, variably mag, ank, slightly harder than UM seen earlier in this hole, foliated, and slightly contorted. Not well mineralz. Basal contact @ 40 dtca, w/ qtz veining.

1458.0 1481.0 TUFF
Contact into a sequence of carb tuffaceous type rx. This unit is brownish red, to beige w/ some lime green areas, is fine to med grained, variably mag, ank, silicified, foliated to banded, has a gritty texture, and contains the odd larger cm sized fragment of hanging wall material. This unit is fairly well mineralz, and moderately veined w/ qtz-ank. This unit is cut by felsite dykes, as well as containing a couple of UM inclusions. Basal contact @ 60 dtca. Sequence breakdown as follows.

1458.0 1461.7 Tuff.
Contact into a carb tuff unit, tan to slightly red brown, silicified, banded, fine grained, variably mag, ank, gritty texture, mod well veined w/ qtz-ank, and not particularly well mineralz w/ tr py. Basal contact @ 65 dtca.

1461.7 1463.7 Felsite.
A red brown, silicified, mod mag, ank, fine grained, felsite dyke. This unit contains approx 30% qtz-ank, and 1% accessory py. Basal contact @ 50 dtca.

1463.7 1478.5 Tuff.
A tan to red brown, and pale green, fine grained, banded, silicified, ank, variably mag tuff unit. @ 1464.7 to 1464.9 lime green UM band @ 70/80 dtca, @ 1465.2 to 1465.8 a lime green UM band @ 80/80 dtca, @ 1468.2 to 1468.3 a red brown well mineralz felsite dyke @ 60/60 dtca. This dyke appears to have concentrated py in adjacent tuff. @ 1472.0 to 1474.6 a lime green to grey carb UM unit @ 55/70 dtca. The whole of this tuff sequence is moderately well veined w/ qtz-ank. Basal contact @ 80 dtca. There are also a couple of chalcopy splashes here.

1478.5 1479.7 Felsite.
A red brown, silicified, mod mag, fine grained, ank, dyke of felsite. This dyke is well veined w/ qtz-ank, as well as being well mineralz w/ 3-5% py. Basal contact @ 70 dtca.

1479.7 1481.0 Tuff.

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

A red brown, fine grained, well mineralz w/ 2% fine diss py unit of tuff type rxs. Basal contact @ 60 dtca.

1481.0 1588.0 ULTRAMAFIC KOMATIITE

Return to a komattite dominated sequence, which contains dykes of felsite, carb gabbro, ochre alt zones, and intercalated w/ tuff units. This sequence also contains a couple of fault zones w/ breccia, granulated core, and fault gouge. Komatiites here are typically blue black, quite broken and blocky, soft, variably mag, ank, foliated, and quite contorted, most notably in high strain fault zones. Felsites here generally have a patchy brown beige appearance, are silicified, mod mag, well veined w/ qtz-ank and well mineralz. Carb gabbros here are typically, brown red, med grained, mod mag, ank, and overprinted w/ carb giving them a spotted appearance. Carb gabbros are quite well mineralz also. Tuff units here are variably coloured from grey to brown and slightly pink to lime green, variably mag, fine to med grained, silicified, and mineralz w/ tr-1.5% py. Gradational basal contact w/ green carb. Sequence breakdown as follows.

1481.0 1494.8 Ultramafic Komatiite.
Contact into a blue black, foliated, slightly contorted, ankeritic, variably mag, and fine grained komatiite unit. @ 1481.4 to 1481.7 core is brecciated, containing fragments of felsite, and qtz. @ 1492.0 till end of unit komatiite is slightly harder, and has a slight ochre tint. There is tr accesory py here. Basal contact @ 75 dtca.

1494.8 1507.6 Carbonated Gabbro.
Contact into carb gabbro dyke, this unit is red brown, med grained, mod mag, foliated, and has a somewhat spotted appearance. This unit variably silicified, contains tr py mineralz, and contains a couple of small UM inclusions as well as a dyke of felsite @ 1497.5 to 1498.4 @ 70/60 dtca. This felsite dyke contains 1.5% py mineralz. Basal contact for carb gabbro sequence @ 70 dtca, along a 1.5cm milky white qtz vein.

1507.6 1515.9 Fault Zone.
Contact into a fault zone w/ a komatiite host. This unit is quite broken blocky, and rubbled w/ granulated core and fault gouge. @ 1509.0 to 1511.5 core is extremely granulated and almost entirely mud. @ from 1512.0 to 1513.0 komatiite is cut by a few small felsite dykes which have potentially silicified core. Below this core till 1513.9 is granulated, w/ mud. @ 1514.5 1cm fault gouge @ 75 dtca, @ 1515.0 1.5cm gouge @ 70 dtca. Basal contact for fault zone @ 60 dtca, w/ fault gouge.

1515.9 1536.9 Tuff.
Contact into a carb tuff sequence, which contains a couple of pale green UM inclusions. Tuffs here are typically silicified, variably mag, banded, fine grained, and beige to pink and grey green in colour. This unit contains tr-1% py mineralz, and is modestly veined w/ qtz-ank. @ 1519.8 to 1520.7 lime green carb komatiite unit @ 60/80 dtca, @ 1522.0 to 1522.8 a pale green UM unit @ 80/80 dtca. @ 1530.6 to 1531.0 pale green UM unit @ 80/70 dtca, @ 1531.6 to 1532.0 pale green UM unit @ 70/70 upper contact w/ gouge. @ 1532.3

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

to 1533.0 pale green UM unit w/ tuff unit @ 1532.6 to 1532.8 @ 80/80 dtca. UM inclusions here are well veined w/ qtz-ank and contain tr accessory py. Basal contact for tuff sequence @ 80 dtca.

1536.9 1557.4 Ultramafic Komatiite.
Contact into a blue black, foliated, slightly contorted, variably mag, soft, ankeritic, fine grained komatiite sequence. This unit is cut by dykes of felsite as well as containing a number of ochre alt zones, and some fault gouge. Core in this sequence is quite broken and blocky. At 1537.1 2cm of fault gouge @ 65 dtca, followed by 1 foot of komatiite which has been alt to an ochre colour and is slightly harder than other UMs seen in this hole. @ 1541.2 1cm of gouge @ 75 dtca, @ 1541.6 1cm of gouge @ 70 dtca, @ 1542.0 to 1542.6 felsite dyke @ 80/60 dtca, w/ upper contact along 1cm of gouge. @ 1542.9 to 1543.0 felsite dyke @ 70/60 dtca opposing angles. This dyke is followed by 5 feet of komatiite best decribed as incipient alt, w/ tr accessory py. From 1549.0 till 1552.9 the sequence of komatiite is alt by numerous incipient to very small felsite dykelets. @ 1552.9 to 1554.0 there is a dyke of felsite @ 70/70 dtca. Below this till end of unit komatiites again appear to be effected by varying levels of incipient alt. Basal contact for komatiite sequence @ 75 dtca.

1557.4 1558.2 Felsite.
A red brown, finely felted, silicified, mod mag, fine grained, and not particularly well mineralz dyke of felsite. Basal contact @ 60 dtca.

1558.5 1566.0 Felsite.
Contact into a rather broad felsite dyke, which is intercalted w/ carb gabbro units. Felsites here generally have a finely felted texture, are fine grained, mod mag, red brown and slightly mineralz. Carb gabbro here is grey brown, med grained, mod mag, and not well mineralz. Basal contact @ 45 dtca, w/ tr gouge.

1566.0 1588.0 Fault Zone.
Contact into a fairly large fault zone w/ a komatiite host, and cut by dykes of felsite and syenite. Core here is extremely rubbled w/ granulated and fault gouged sections. @ 1566.0 to 1568.0 core is slightly granulated and contains fault gouge @ 1566.5 1cm @ 40 dtca, @ 1567.5 to 1568.0 core is almost entirely mud. From 1572.0 to 1574.5 core is quite rubbled w/ Gouge @ 1573.4 1.5cm @ 50 dtca. @ 1574.5 to 1574.8 felsite dyke @ 80/80 dtca. From 1574.8 to 1575.9 core is almost entirley mud. At 1575.9 to 1576.0 syenite dyke @ 80/70 dtca. From 1576.0 1584.0 core here is almost entirely mud w/ 4 feet lost core here. From 1584.0 to 1588.0 core is slightly more intact, but contains fault gouge @ 1586.7 1cm @ 70 dtca, and @ 1586.9 1.5cm @ 75 dtca. @ 1587.0 1587.3 felsite dyke, w/ contacts along BBC. @ 1587.8 to 1588.0 felsite dyke @ 60/45 dtca.

1588.0 1660.0 **GREEN CARBONATE ZONE**
Gradational contact into a very broad green carb zone, apparently a fuchsite alt UM unit. This sequence is dominated by emerald green carb, and is cut by dykes of albitite?, and intercalated w/ less to non alt komatiite

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

units(paler green). This green carb zone also features numerous tan to beige alt zones. Green carbs here are typically quite hard, variably mag, strongly ank, fine grained, foliated, and quite contorted. This sequence is extremly well veined w/ qtz-ank, both of the milky white, and smokey grey varieties. There is some accessory py w/in green carb zone Komatiites here are blue black, soft, foliated, ank, variably mag, fine grained, and unmineralz. Albitite? dykes here are typically tan to beige in colour, quite hard, fine to med grained, have a slightly felted texture, are non mag, and appear to contain concentrations of py. Tan to beige alt zones also tend to be quite well mineralz. Sequence breakdown as follows.

1588.0 1591.0 Taz.
Tan to lime green alt zone, well mineralz w/ 2% fine diss and coarse euhedral py. Gradational basal contact into emerald green carb.

1591.0 1615.2 Green Carbonate Zone.
Gradational contact into emerald green carb, which contains approx 25% qtz-ank veining, both milky white and grey varieties. There is tr accessory py here.

1615.2 1650.0 Green Carbonate Zone.
Green carb here is not as well veined w/ qtz, and appears to contain slightly more py mineralz. Green carb here is cut by dykes of albitite?, @ 1642.3 to 1642.7 @ 50/60 dtca, w/ 2% fine diss py. @ 1646.9 to 1647.4 @ 80/60 dtca, w/ approx 25% qtz and 2% fine diss py. @ 1648.2 to 1648.6 @ 60/60 dtca, w/ tr py. Gradational contact into slightly greyer green carb unit.

1650.0 1660.0 Ultramafic Komatiite.
Pale grey green (weak fuchsite alt) grading to a more typical blue black UM unit. Core here is variably mag, foliated, slightly silicified, ank and not well mineralz.

1660.0 1709.0 ULTRAMAFIC KOMATIITE
Gradational contact into a typical blue black komatiite unit. This sequence is blue black, foliated, ankeritic, soft, talcose, schistose, variably mag, and not well mineralz. Core here is quite broken and blocky w/ fault gouge and some slightly granulated sections. Sequence breakdown as follows.

1660.0 1665.0 Fault Zone.
Core here is quite rubbled, slightly granulated, and contains fault gouge @ 1660.3 2cm @ 50 dtca, @ 1660.9 1cm @ 50 dtca, @ 1662.2 1.5cm @ 70 dtca, @ 1662.6 1cm @ 50 dtca, @ 1663.0 1.5cm @ 60 dtca, @ 1663.5 4cm of almost entirely mud, @ 1664.2 2cm of fault gouge @ 60 dtca. Below this core becomes slightly more intact until 1676.0.

1676.0 1680.0 Fault Zone.
Core here is quite rubbled w/ fault gouge @ 1676.6 2cm @ 60 dtca, @ 1677.2 1cm @ 60 dtca, 1678.9 1cm @ 60 dtca. Below this core becomes slightly more intact.

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

1686.0 1688.0 Fault Zone.
Core here is slightly rubbled, w/ fault gouge @ 1686.4 2cm @ 60 dtca, @ 1687.4 1cm @ 60 dtca, @ 1687.5 1cm @ 65 dtca, @ 1687.8 1.5cm @ 60 dtca. Below this core becomes more intact until gradational basal contact w/ green carb.

1707.0 1709.0 Ultramafic Komatiite.
Komatiite here grades into a pale green weak fuchsite alt unit.

1709.0 1838.0 GREEN CARBONATE ZONE
Gradational contact into the second green carb sequence seen in this hole, once again dominated by emerald green carb. This green carb sequence is cut by dyke of albitite?, felsite, contains a number of tan to ochre alt zones, and is intercalated w/ less alt blue black to lime green komatiite units. Felsites here generally have a patchy brown beige appearance and are quite well mineralz, albitite? dykes typically are tan to beige, and hold concentrations of py mineralz. Tan to ochre alt zones are also generally well mineralz. Green carbs here are quite well veined w/ qtz-ank both of the milky white and smokey grey varieties, as well as containing tr py minerlaz. Sequence breakdown as follows.

1709.0 1751.0 Green Carbonate Zone.
Gradational contact into an emerald green carb unit. This unit contains approx 20% qtz-ank veining, both of the milky white and smokey grey varieties. There is also some accessory py mineralz here. Gradational basal contact.

1751.0 1760.3 Ultramafic Komatiite.
Gradational contact into a pale green to blue black, foliated, contorted, ank, variable mag, slightly silicified, unmineralz, weak fuchsite alt komatiite unit. Basal contact is also gradational.

1760.3 1805.3 Green Carbonate Zone.
Green carb here is emerald in colour and well veined w/ approx 25% qtz ank, both of the milky white and smokey grey varieties. This unit contains a few small tan alt to albitite? dykelets which contain 2% fine diss py, as well as a number of small well mineralz felsite dykes. Basal contact for this unit @ 60 dtca.

1805.3 1808.0 Felsite.
Tan, silicified, weakly mag, ankeritic, fine grained, and well veined, w/ qtz-ank felsite dyke. This dyke is well mineralz w/ 3-5% py. Basal contact @ 75 dtca.

1808.0 1823.0 Green Carbonate Zone.
Emerald green carb here is thoroughly riddled w/ small well mineralz felsite dykes, small well mineralz albitite? dykes, and numerous tan to blonde well mineralz alt bands. There is a reduced qtz-ank component here. Basal contact is gradational. @ 1819.7 there is a 1cm vein which is very well mineralz w/

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

5% subhedral py and a couple of small VG splashes.

1823.0 1824.1 Ochre Alteration Zone.
Gradational contact into a fairly large ochre alt band, which contains 2.5% fine diss py. Basal contact @ 70 dtca, w/ albitite? dyke.

1824.1 1824.5 Albitite.
A small zone of numerous albitite? dykelets, mineralz w/ 1% fine diss py. Basal contact @ 70 dtca.

1826.0 1826.2 Felsite.
Contact into a tan to beige, well mineralz felsite dyke @ 60/70 dtca.

1828.0 1829.0 Albitite.
Emerald green carb here is thoroughly riddled w/ small well mineralz albitite? dykelets to alt bands.

1829.9 1831.0 Ochre Alteration Zone.
An ochre to slightly tan alt band which contains 2% fine diss py.

1831.0 1832.6 Green Carbonate Zone.
Green carb here is quite contorted, and contains tr accessory py. Basal contact @ 60 dtca, and very irregular.

1832.6 1832.8 Felsite.
A tan to slightly red brown well mineralz felsite dyke @ 60/75 dtca.

1832.8 1838.0 Carbonated Zone.
Core here is brown red to light brown in colour, quite silicified, ankeritic, non mag, and not particularly well mineralz. Gradational basal contact.

1838.0 1946.8 ULTRAMAFIC KOMATIITE
Gradational contact into a blue black, foliated, schistose, talcy, variably mag, ankeritic, and not well mineralz komatiite sequence. This sequence is quite well veined w/ qtz-ank, both of the milky white and smokey grey varieties. Komatiites here contain a number of fault zones, are cut by dykes of felsite, contains numerous tan to ochre alt bands and a zone of pale green weak fuchsite alt rx. Sequence breakdown as follows.

1838.0 1845.9 Ultramafic Komatiite Fault Zone.
Komatiite unit here contains a number of slightly mineralz alt zones @ 1838.2 to 1838.9, @ 1339.0 1839.4, and @ 1839.5 to 1839.8 a well mineralz 3-5% py dyke of felsite @ 60/50 dtca, w/ upper contact being slightly irregular. @ 1840.4 to 1840.9 an unmineralz milky white qtz-ank vein @ 50/50 dtca. At 1845.0 to 1845.9 there is a small fault zone w/ gouge @ 1845.2 1cm @ 70 dtca, @ 1845.5 2cm @ 65 dtca, and @ 1845.9 @ 70 dtca, along basal contact.

1845.9 1848.9 Felsite.

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

A tan to patchy brown red, mod mag, fine to med grained, silicified, and very well mineralz felsite dyke. This unit contains 5% py. Basal contact @ 65 dtca.

1848.9 1892.0 Ultramafic Komatiite Fault Zone.
A typical blue black, ankeritic, foliated, komatiite unit which contains A number of fault zones @ 1860.3 to 1860.8 w/ granulated core and tr mud gouge. @ 1870.0 to 1872.0 w/ fault gouge @ 1870.2 4cm @ 70 dtca, @ 1870.5 1cm @ 70 dtca, @ 1870.7 1.5cm @ 75 dtca, @ 1871.0 to 1871.5 core is extremely granulated w/ fault gouge @ 1871.7 2cm @ 70 dtca. At 1873.6 2cm of fault gouge @ 75 dtca. @ 1877.0 3cm of fault gouge @ 70 dtca. Below this core becomes slightly more intact. Basal 16 inches of the unit is effected by what is best described as incipient alt, and is slightly harder than the norm. Basal contact @ 60 dtca, and slightly irregular.

1892.0 1893.0 Quartz.
Contact into a fairly large unmineralz, milky white to slightly grey qtz-ank vein. Basal contact @ 70 dtca.

1893.0 1912.2 Ultramafic Komatiite.
Contact into a pale grey black to slightly pale green(weak fuchsite alt) komatiite unit. This sequence contains a slightly brown red to mauve mineralz alt band from 1895.4 to 1895.9. From 1906.0 to 1908.0 komatiite is riddled w/ small tan to ochre alt bands which contain from tr to 1.5% fine diss py. Komatiites here contain some accessory py. Basal contact @ 60 dtca, and quite sharp.

1912.2 1914.0 Felsite.
Sharp contact into a brown red to slightly tan, patchy, fine to med grained, silicified, and mod mag felsite dyke. This dyke has a slightly finely felted texture, and is well mineralz w/ 3-5% fine diss and coarse euhedral py. This dyke also contains tr sphalerite?. Basal contact for this dyke @ 50 dtca.

1914.0 1946.8 Ultramafic Komatiite.
Contact into a pale green to med green, weak to mod fuchsite alt komatiite sequence. This unit is cut by a red brown well mineralz felsite dyke @ 1916.9 to 1917.0 @ 80/80 dtca. @ 1931.0 to 1931.6 there is a red brown, well mineralz felsite dyke running along the core axis. The whole of this UM sequence contains numerous small tan alt bands and a few incipient to very small felsite dykelets, both of which are generally quite well mineralz. This sequence is also quite well veined w/ qtz-ank both of the milky white and smokey grey varieties, and contains tr-1% fine diss and coarse euhedral py. Basal contact quite sharp @ 80 dtca.

1946.8 1989.7 FELSITE
Contact into a sequence dominated by felsite, and intercalated w/ blue black to pale gr komatiite units. Felsites here are generally tan to beige and red brown w/ a somewhat patchy appearance. They are weakly to mod mag, ankeritic, silicified, fine to med grained, well veined w/ qtz-ank, and well mineralz w/ 2-3% py, both of the fine diss and coarse euhedral varieties.

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

This sequence also contains a number of tan to ochre alt zones w/in the UM units. Alt bands are generally quite well mineralz also. Basal contact w/ fuchsite alt komatiite @ 80 dtca. Sequence breakdown as follows.

1946.8 1951.2 Felsite.
Contact into a red brown, slightly finely felted, fine to med grained, mod mag, finely fractured, and silicified dyke of felsite. This unit is mod well veined w/ qtz-ank, and very well mineralz w/ 3-5% fine diss py and tr specular hematite. Basal contact for this dyke @ 75 dtca.

1951.2 1952.9 Ultramafic Komatiite.
Contact into a pale grey green incipient alt komatiite unit. This unit is foliated, fine grained, non mag, ankeritic, and slightly silicified. Mineralz is not well dev here. Basal contact @ 60 dtca.

1952.9 1957.3 Felsite.
A brown orange to brick red, finely fractured, fine grained, weakly mag, and silicified dyke of felsite. This unit is well mineralz w/ 3% py and tr chalcopy. This dyke is thoroughly riddled w/ qtz-ank veins, as well as containing the odd small inclusion of chlorite. There is also some chlorite filled fine fractures here. Basal contact @ 50 dtca, and quite irregular.

1957.3 1970.0 Ultramafic Komatiite.
Contact into a blue black, fine grained, ank, variably mag, soft, unmineralz komatiite unit. This sequence contains an ochre alt zone @ 1959.5 to 1960.0 w/ tr mineralz. @ 1962.2 there is 2 inches of ochre alt followed by a 4 inch well mineralz felsite dyke @ 80/80 dtca, there is also an increase in py in contact margin of adjacent UM. @ 1963.9 to 1964.9 there is a well mineralz felsite dyke @ 70/80 dtca, opposing angles. @ 1967.2 to 1969.0 there is a narrow well mineralz felsite dyke running along the core axis, followed by a 2 inch milky white unmineralz qtz-ank vein. Basal contact for this sequence @ 70 dtca.

1970.0 1971.2 Felsite.
Sharp contact into a patchy looking red brown, mod mag, silicified, and fine grained, felsite dyke. This dyke is mineralz w/ 2-3% fine diss py. Basal contact @ 70 dtca.

1971.2 1977.6 Ultramafic.
Contact into a black, slightly ankeritic, slightly foliated and contorted UM unit. This sequence is quite soft, fine grained, non mag, and not particularly well mineralz. Basal contact shallow @ 40 dtca.

1977.6 1989.7 Felsite.
Contact into two distinctly different felsite dykes. The first from 1977.6 to 1979.0 has a red brown patchy appearance, is mod mag, and is mineralz w/ 2.5% fine diss py. Basal contact @ 80 dtca. The second dyke is much larger, is tan in colour, slightly less mag, fine grained, siliceous, and laced w/ numerous milky white to smokey grey qtz-ank veins to veinlets. This dyke is also slightly finely fractured, and is mineralz w/ 3% coarse euhedral py, as well as containing tr specular hematite. Basal contact is quite sharp @ 75

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

dtca.

1989.7 2048.0 GREEN CARBONATE ZONE

Contact into a green carb unit which contains some of the emerald green carb but in general is dominated by a medium to lime green colouration. This sequence is well veined w/ qtz-ank and contains tr accessory py. This sequence is cut by dykes of felsite as well as containing a number of tuffaceous horizons. Felsites here generally have a patchy red brown appearance, are mod mag, silicified, fine grained, and quite well mineralz. Tuff units here generally are slightly reddish to beige in colour, are silicified, variably mag, fine to med grained, and have a gritty feel to them. Tuffs here are also quite well mineralz. Gradational basal contact for this unit. Sequence breakdown as follows.

1989.7 1993.9 Ultramafic Komatiite.
A blue black to grey and grading to pale green, weak fuchsite alt UM unit. This unit is slightly harder than norm for UMs, is variably mag, foliated, ankeritic, fine grained, and not well mineralz. This unit is cut by a small well mineralz felsite dyke @ 1990.6 to 1990.8 @ 80/80 dtca. @ 1992.9 to 1993.2 there is a zone of ochre alt which contains, tr fine diss py. Basal contact @ 70 dtca.

1993.9 1994.9 Felsite.
A patchy red brown, silicified, fine grained, mod mag, and well mineralz (2% fine diss py) felsite dyke. Basal contact along 2 inch milky white qtz-ank vein @ 80 dtca, irregular.

1994.9 2006.0 Green Carbonate Zone.
A med to emerald green carb unit which contains a narrow well mineralz tuffaceous band from 1996.6 to 1996.9, @ 1997.1 to 1998.0 this unit is cut by a well mineralz(2% fine diss py) red brown to slightly orangish felsite dyke @ 70/70 dtca. @ 2000.3 to 2001.0 there is a red to red brown and slightly tan, banded to foliated, silicified, gritty, med grained tuff unit which contains 1-2% very fine diss py. Basal contact for this sequence @ 60 dtca.

2006.0 2008.6 Tuff.
A pinkish to slightly tan coloured tuff unit. This zone is silicified, banded to foliated, fine grained, variably mag, has a gritty texture, and is moderately veined w/ smokey grey qtz-ank. Mineralz is also quite well dev here w/ 1% py and up to 3% locally, mainly of the fine diss variety. Basal contact @ 70 dtca.

2008.6 2048.0 Green Carbonate Zone.
Contact into a med green grading to emerald green and returning to a grey green weak fuchsite alt UM near basal contact. Green carb here is extremely well veined w/ qtz-ank composing about 35% of core, and not well mineralz w/ only tr py. This sequence contains numerous small tan alt zones as well as a few larger ones @ 2016.5 to 2017.4, @ 2024.0 to 2024.6, 2025.4 to 2025.9, and @ 2037.8 to 2038.0. These alt bands are typically quite well mineralz.

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

This sequence is also cut by a small, red brown well mineralz felsite dyke @ 2046.3 to 2046.7 @ 50/50 dtca. Gradational basal contact.

2048.0 2072.0 ULTRAMAFIC KOMATIITE
Contact into a slightly pale green and grading to a typical blue black, foliated, ankeritic, soft, variably mag, fine grained, and not well mineralz komatiite unit. This sequence contains a number of ochre alt zones, which contatin the majority of this units mineralz. Below 2058.0 this sequence becomes quite broken and blocky to rubbled till 2070.0 basal contact for this unit is quite sharp @ 60 dtca.

2072.0 2072.1 TIMISKAMING GROUP

2072.1 2185.0 TUFF AGGLOMERATE
A somewhat rusty looking contact into carb tuffaceous to agglomerate type rx, probably representing the transition into the Timiskaming sequence of rx. Tuffs here are typically grey green to tan in colour, silicified,fine to med grained, variably mag, banded to foliated, ankeritic till 2152.0 and calcitic below this point. Tuffs here also contain the odd larger fragment of qtz, and felsite, have a gritty feel to them, and are slightly mineralz locally. Agglomerates here generally are also grey green, banded to foliated, silicified and contain quite angular mm to cm sized fragments w/in a fine grained groundmass. The whole of this unit contains the odd cherty bed, and is intercalated w/ a couple of small carb UM units. There is moderately well dev qtz-ank veining early in this unit which appears to diminish below 2085.0. The whole of this unit is not well mineralz although there are some py concentrations on a very local scale. Banded to foliated appearance is variably contorted throughout this unit. Sequence breakdown as follows.

2072.1 2077.0 Tuff.
A rusty beige to tan and slightly grey green tuff unit, w/ some qtz-ank veining, fine grained w/ the odd larger fragment of qtz and felsite. Banded appearance is slightly contorted near gradational basal contact not well mineralz.

2077.0 2078.0 Agglomerate.
Agglomerate unit w/ angular cm sized fragments of qtz and felsite contained w/in a grey green fine grained matrix. There is some accessory py here. Gradational basal contact.

2078.0 2102.4 Tuff.
Tuff unit, grey green, silicified, banded, variably mag, unmineralz, and containing the odd larger frag to band of chert. Sharp basal contact @ 70 dtca.

2102.4 2108.0 Agglomerate.
Agglomerate unit: as at 2077.0. Gradational basal contact.

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

2108.0 2138.6 Tuff.
A grey green tuff unit, banded, variably mag, w/ the odd larger frag of qtz. This unit contains a couple of cm wide cherty beds which do contain some py mineralz. The majority of this unit is unmineralz. @ 2138.0 to 2138.1 there is an unmineralz dyke of felsite @ 50/50 dtca, w/ the basal contact along 1cm wide chert band. Basal contact for this unit @ 50 dtca.

2138.6 2141.8 Ultramafic Komatiite.
A silicified, grey green, foliated, variably mag, fine grained, carb UM unit. This unit is not well mineralz. Basal contact @ 70 dtca.

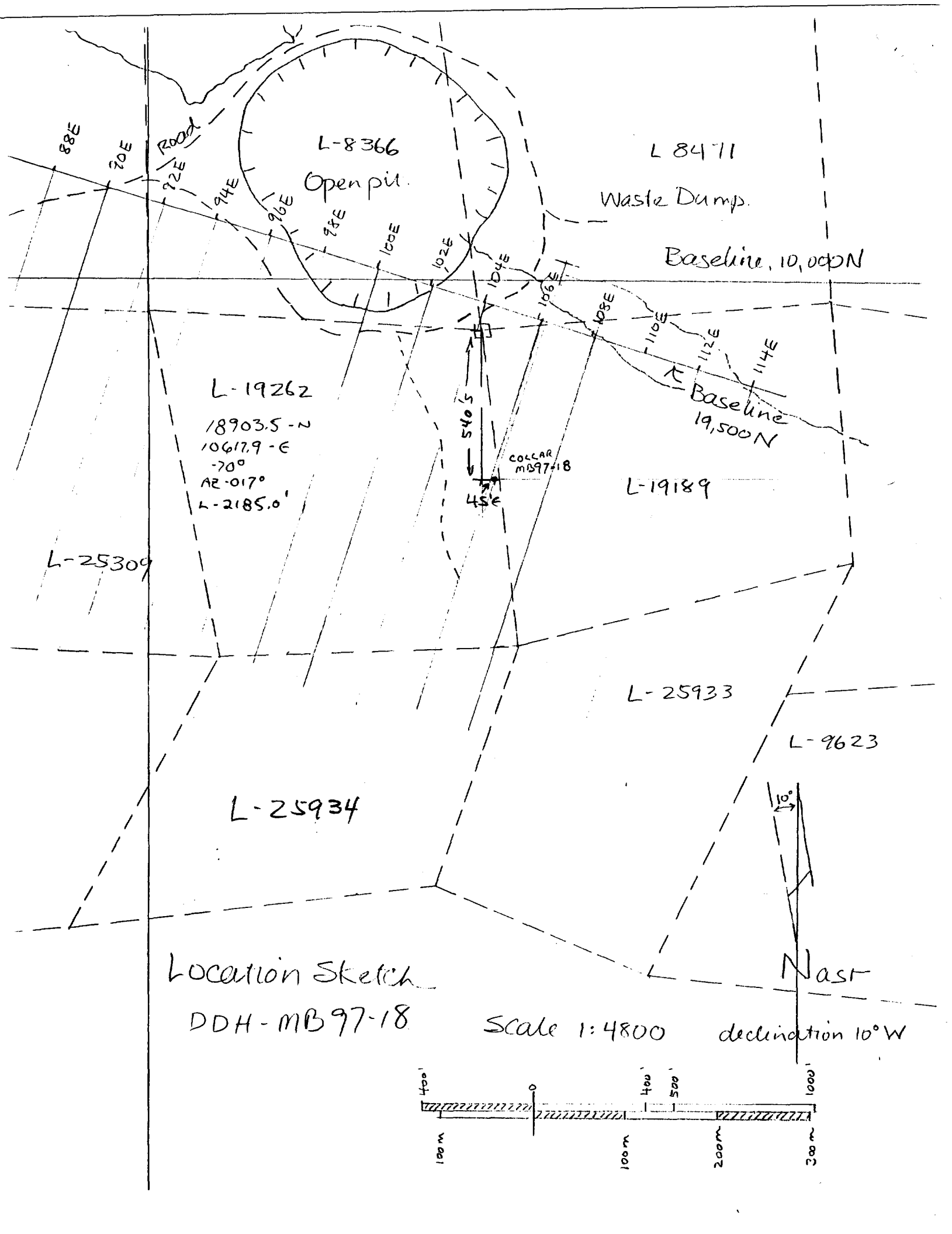
2141.8 2145.8 Agglomerate.
A highly contorted agg unit which contains numerous fragments of qtz, and felsite as well as a couple of mm sized cherty beds. Not particularly well mineralz. Basal contact @ 50 dtca.

2145.8 2146.2 Ultramafic Komatiite.
Contact into a foliated, silicified UM unit which is unmineralz. Basal contact @ 65 dtca.

2146.2 2158.0 Tuff.
Tuff unit, grey green, banded, fine grained, gritty texture, not well mineralz. This unit contains a cherty bed @ 2152.8 to 2152.9. There is also an alt change here @ 2152.0 from ankerite above to calcite below. Gradational basal contact. There is also some wispy sericite alt here.

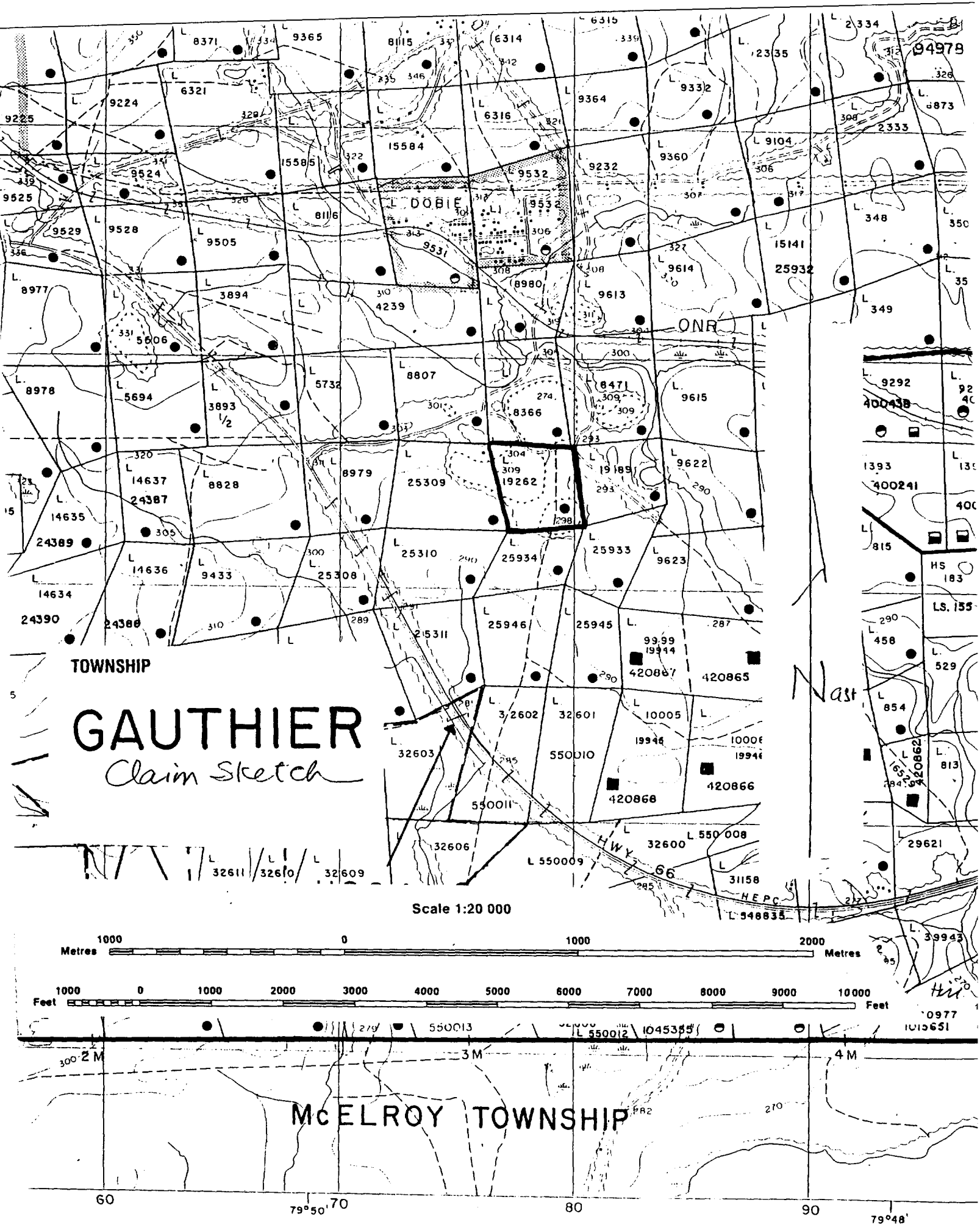
2158.0 2185.0 Tuff.
Tuffs here become a darker grey to only slightly green coloured, are fine grained, calcitic, variably mag, and extremely contorted. This sequence contains numerous mm to cm wide contorted chert beds which contain tr py mineralz. This unit also contains a few contorted small qtz veins and elongated qtz fragments. There is some wispy sericite alt here also.

2185.0 EOH.



Location Sketch

DDH-MB97-18 Scale 1:4800 declination 10°W


TOWNSHIP
GAUTHIER
Claim Sketch
DOBIE
ONR
HWY 66
HEPC
McELROY TOWNSHIP
Scale 1:20 000
1000 0 1000 2000 Metres
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 Feet
2 M
3M
4 M
60
79°50'
70
80
90
79°48'
ZONE 17

QUEENSTON MINING INC

DIAMOND DRILL HOLE RECORD

Drill Hole: MB97-28

Property: MCBEAN Col loc from #1 post, L25309, 480'S, 710'W
Northing: 18521.69
Easting: 8780.18
Elevation: 10974.63

Collar Azimuth (Grid) 358.2
Collar Dip: -72.0
(0 Degrees Grid equals 017 degrees True)
Hole Length: 2774.9

Date Printed: 25 May, 1998

*** Dip Tests ***

Depth	Azi.	Dip
89		-73.0
296		-72.0
590		-74.0
902		-73.0
1201		-71.5

*** Dip Tests ***

Depth	Azi.	Dip
1499		-73.5
1799		-73.5
2099		-73.5
2401		-74.0

Date Started: Oct 16, 1997
Date Completed: November 10, 1997

Drilled by: BENOIT
Core Size: NQ
Material left in hole NQ CASING
Core Location: Upper Canada Site 1
Logged by: M. McGill & Dale Alexander

Dale R Alexander

RECEIVED
JUL 29 1998
GEOSCIENCE ASSESSMENT OFFICE

SUMMARY LOG

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
.0	88.6	OVERBURDEN								
88.6	638.0	GABBRO								
638.0	638.1	START OF DEFORMATION ZONE								
638.1	671.9	APLITE								
671.9	748.7	GREEN CARBONATE ZONE								
748.7	812.8	ULTRAMAFIC								
812.8	1000.8	APLITE								
1000.8	1089.5	GREEN CARBONATE ZONE								
1089.5	1684.1	ULTRAMAFIC								
1684.1	1687.1	CONTACT ZONE								
1687.1	1760.9	BASALT								
1760.9	1764.7	ULTRAMAFIC								
1764.7	1771.6	BASALT								
1771.6	1779.1	CHERTY EXHALITE GRAPHITIC								
1779.1	1809.8	CARBONATED ZONE BASALT								
1809.8	1819.2	ULTRAMAFIC AMPHIBOLITIC								
1819.2	1886.4	BASALT CARBONATED ZONE								

2.18728

From (ft)	To (ft)	Geology
1886.4	1911.0	CARBONACEOUS SEDIMENTS
1911.0	1931.0	BASALT FLOW BOTTOM
1931.0	1938.7	ULTRAMAFIC
1938.7	1941.9	BASALT
1941.9	1949.3	CHERTY EXHALITE
1949.3	1953.5	BASALT
1953.5	1962.1	ULTRAMAFIC
1962.1	1969.9	ULTRAMAFIC AMPHIBOLITIC
1969.9	1985.0	BASALT
1985.0	2013.1	ULTRAMAFIC
2013.1	2025.3	ULTRAMAFIC AMPHIBOLITIC
2025.3	2032.3	ULTRAMAFIC
2032.3	2044.4	ULTRAMAFIC AMPHIBOLITIC
2044.4	2073.6	BASALT
2073.6	2084.7	ULTRAMAFIC FLOW BASALT
2084.7	2087.2	CHERTY EXHALITE GRAPHITIC
2087.2	2115.2	BASALT
2115.2	2201.6	FELSITE
2201.6	2226.9	BASALT
2226.9	2236.0	DIORITE
2236.0	2241.7	ULTRAMAFIC AMPHIBOLITIC
2241.7	2269.5	FELSITE
2269.5	2269.6	START OF DEFORMATION ZONE
2269.6	2274.0	PORPHYRITIC SYENITE
2274.0	2774.9	ULTRAMAFIC

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

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
.0	88.6	OVERBURDEN 0.0 to 49 feet- sand, 49 to 88.6 sand and boulders. Cementing of the drillhole at 2346 feet circa the start of the McBean package of deformed rocks. The drillhole was lost at 2774.9 when, after changing the bit, the drill was unable to penetrate through the fault zone that was previously cemented at 2346 feet. A wedge was emplaced at roughly 2200 feet, with the hole renamed as MB97-28W. The log and assays were transported to the new log - assay zones were stripped from this log (28W) except for the interval from the wedge to the end of the hole at 2774.9 since that area is relogged in hole 28W.								
88.6	638.0	GABBRO The hole collars into the typical McBean hanging wall gabbro complex which in this hole consists of predominately medium to medium-cse grained gabbro intercalated with finer grained basaltic sections, and local very coarse grained amphibolitic gabbro. This assemblege is cut by several types of mafic dykes, also commonly seen in other McBean holes. Most of these rocks are moderately to strongly magnetic and are pervasively calcitic, both as matrix alteration and as fine calcite stringers. Local zones of strongly weathered, often rubbly core are variably stained with hematite. Weak epidote alteration is developed along some fine fractures. A weakly mineralised package with local exceptions in proximity to some of the veining and in many of the weathered rubbly zones where late 1-2 mm cubic py is well developed. The gabbro is generally quite homogeneous in terms of texture and grain size; 1-3 mm subhedral to spidery, slightly chloritised/amphibolitic mafics are set in a fairly fresh matrix of pale white plagioclase. Locally the mafics are slightly aligned. Traces of diss py, and small rounded basaltic inclusions are sprinkled throughout. A massive rock with weak 50-60 degree jointing. Generally poorly veined. Details on specific subunits are as follows. 88.6 101.5 Gabbro. Gabbro with some low angle, weakly stained (Fe) carb-qtz veinlets and a rubbly, weathered section at 93 to 99 feet with elevated amounts of diss and bleby py. 101.5 105.1 Amphibolitic. A dark grey to black, coarser grained, strongly amphibolitic zone with some very fine scrappy carb stringers. 105.1 105.9 Mafic intrusive. A very dark grey coloured porphyritic dyke consisting of abundant 1-3 mm amphiboles and lessor biotite grains in a very fine grained mafic matrix. Almost non-magnetic, fairly fresh and weakly mineralised. Sharp cnts @ 50/45. Strongly calcitic. 105.9 146.8 Gabbro. A section of mostly gabbro with some irregular amphibolitic patches and scrappy mafic dyke material near the top of the interval and again down at 137 to 142. Scrappy calcitic and epidote stringers are developed from 108 to 113.								

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

146.8 147.6 Mafic intrusive.
Sharp cnt into a very fine grained, pale grey, rather homogeneous dyke. Contains very little in the way of internal texture or structure. Strongly calcitic and magnetic. A subtle planar fabric? is developed at 35-40 DTCA by very tiny amphiboles?. Contacts at 40/45 DTCA.
Essentially unmineralised.

147.6 155.7 Gabbro.
Continuing in medium to medium-coarsed grained gabbro; this section looks more like a cumulate than the above interval. Contains a few small mafic inclusions.

155.7 163.0 Amphibolitic.
A dark grey-green interval of coarse grained amphibolitic material with a few gabbro inclusions and 'veinlets'. Weakly mineralised.

163.0 177.8 Gabbro.
Returning to a slightly coarser grained section of gabbro with small scattered amphibolitic inclusions. Cut by a narrow, high angle, dry looking qtz-carb veinlet at 167.2 and a tiny pale grey MI (much like that at 146-147) at 169.1 @ 30 DTCA.

177.8 179.3 Mafic intrusive.
Sharp cnt into a dark grey green, amphibole-rich dyke, much like the unit noted above at 105. This example contains abundant laths and needles of fresh amphibole set in a fine grained granular feldspathic matrix. Weakly magnetic, except at the margins where a strong response to the pen magnet is noted. Weakly calcitic in very fine fractures. Contains some flakey biotite. Very little, if any sulphide is present. Contacts at 35/30 DTCA. A slight alignment of the phenos is visible; it is nominally @ 45 DTCA.

179.3 200.7 Amphibolitic.
Another section of very cse and comparatively finer grained amphibolitic material, some of which may be altered gabbro and some which resembles altered basalt. A slightly blocky section with very low RQD values. Xenoliths of gabbro, fine mafic dyke material and a medium grained intrusive? of gabbroic composition are scattered throughout. Not well mineralised overall. Locally weathered and slightly pitted with elevated amounts of fine cubic py. Cut by a few fine, irregular calcite stringers.

200.7 236.5 Amphibolitic.
A slightly different amphibolitic interval; more calcite has entered the system both as fine stringers and pervasive matrix alteration and in many places the original rock texture is preserved; less material has been replaced with amphibole and more fine chlorite is developed. The resultant rock is mottled/veined and slightly finer grained with a more grey colour. Parts of this section appear to be altered basalt; in other spots the gabbro protolith is clearly preserved. Low angle calcite stringers are more common in this section. Background sulphide concentrations are increasing both as diss and fine cubic py. Continuing strongly magnetic and calcitic.

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

236.5 266.1 Broken Blocky Core.
A finely broken-up, strongly weathered interval, most likely composed of material much like that noted above at 200 to 236. Weakly stained with hematite, and pitted throughout. Late cubic and diss py to 2-3 % is developed in much of the section. A fault (sandy seam) may lie at 259.5. Locally siliceous and/or invaded by reddish ?syenitic dykelets?.

266.1 272.2 Amphibolitic.
Returning to an interval much as that noted above at 200-236. Contains a few small gabbro blocks. Xcut by numerous fine calcite stringers at 45-60 DTCA. Weakly mineralised.

272.2 281.2 Gabbro.
A slightly chaotic gabbro interval containing numerous sub-rounded to sub-angular amphibolitic inclusions and small pieces of coarser-grained gabbro; this pattern grades downhole into more masive gabbro. Probably a cumulate. Poorly mineralised. High angle lower cnt.

281.2 290.5 Amphibolitic.
Returning to a sequence of material much like the rocks at 200-236. Blocky with weathered/pitted zones up to 10 inches long. Locally becoming more coarse grained and richer in secondary amphibole. Grades smoothly into recognizable gabbro at the lower cnt. Low to nil RQD values.

290.5 292.0 Gabbro.
A short section of medium-coarse grained gabbro; becoming slightly fresher and more grainy towards 292. Fairly sharp, high angle cnt.

292.0 292.7 Amphibolitic.
Returning to a sliver of material like that at 200-236.

292.7 297.4 Mafic intrusive.
Sharp cnt into a very dark green-grey mafic dyke with abundant fine accicular amphiboles, lessor fine biotite and an interesting blotchy/mottled texture. These minerals are supported in a light green, feldpathic groundmass which is pervasively chloritised and only weakly calcitic. Weakly magnetic near the contacts. A fairly fresh rock which appears to have been overprinted at several scales with chlorite; the blotchy texture appears related to chlorite patches growing around clusters of fine amphibole needles. Contains very little sulphide. Contacts @ 15/40 DTCA.

297.4 324.8 Amphibolitic.
Another section of mostly amphibolitised gabbro/basalt? with small blocks of of fresh gabbro and chunks of coarser cumulate material. Locally finely veined with epidote. Shot through with irregular hairline calcite stringers. A fine grained dyke (as per 146-147) lies at 320.7 to 321.5; it has sharp, high angle contacts and appears to be weakly chloritised. A few very low angle, weakly hematitic carb-qtz stringers cut the section. Overall a weakly mineralised interval.

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

324.8 341.5 Gabbro.
Returning to a cumulate gabbro interval. A medium-cse grained section with numerous inclusions of amphibolitic material. Cut by a few scrappy high angle qtz-carb qtz sweats; some carry traces of hematite and py. Weakly mineralised overall.

341.5 368.0 Amphibolitic.
A section of very dark grass green material, some of which is recognizable highly altered gabbro, and some of which may be basaltic. Strongly calcitic in wispy stringers and in the matrix. Quite blocky to finely broken-up in part; a few areas are pitted/weathered out. Pyrite is scattered throughout the interval as fine cubes and disseminations; at one spot a few cubes are developed which are between 1/4 and 1/2 in across. A few irregular, feldspar-rich veinlets? xcut the unit at high angles also. An amphibole-rich mafic dyke similar to that noted at 292-297 lies at 357.4 to 358.6. Its cnts are sharp @ 30/50 DTCA.

368.0 410.0 Gabbro.
Another slightly longer interval of mostly gabbro, with a number of amphibolitic inclusions ranging from 1/2 in across to several feet in thickness. The host gabbro is locally coarse to very coarse grained with mafics approaching 1/8 inch in diameter. Locally patchy epidote alteration is developing along with very fine fracture-filling material. A slightly more sulphide-rich interval, with numerous narrow weathered and pitted zones. Fine offset-filling calcite veinlets are also becoming more common. A few blocky broken sections carry weak hematite staining.

410.0 413.1 Diorite.
A pale purple-grey to pale orange coloured, medium grained dyke quite typical of the hangingwall sequence at McBean. A weakly magnetic, variably hematised phase which has been silicified and cut by several fine siliceous veinlets. Hematitic halos are developed about most of these features. Flecked with very fine sericite and amphibole after primary mafics. Feldspar grains are becoming ghostly; boundaries are not distinct. Weakly mineralised with spotty/diss py. Calcitic throughout; slightly pitted and magnetic near the cnts. Sharp cnts @ 45/45 DTCA.

413.1 436.5 Amphibolitic.
Remnants of gabbro lie in amongst coarse grained amphibolitic material, which is in turn is cut by felspathic 'veinlets' and irregular scrappy calcite stringers. Locally quite rubbly and broken up. Weakly mineralised overall. Continuing calcitic and magnetic.

436.5 473.0 Gabbro.
Returning to the host gabbro; this section is predominantly intrusive with small angular inclusions and narrow dyke-like zones of basaltic? material. Overall medium grained with a few small angular zones which are quite coarse grained. Cut by high and low angle feldspar-rich veinlets in the lower half of the interval. Low RQD values throughout. Generally high angle jointing. Poorly mineralised; weak epidote alteration rims a few very fine fractures.

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

473.0 511.5 Amphibolitic.
The uppermost portion of this interval appears to altered gabbro; below 489.5 the protolith may be basalt. The rocks are strongly magnetic and calcitic, and are blocky throughout with local finer broken-up sections. The normal fine calcite stringers invade both rock types; more reddish, boudinaged and fine irregular vein material cuts the basaltic zone. A pale green mafic dyke lies at 496.0 to 497.7; this is another amphibole rich phase much like those noted above. This example is strongly magnetic except for the bottom 3 inches where 2-3% diss py is developed against the lower cnt. Sharp, high angle cnts. Weak slips/joints are becoming more common moving downhole; these lie at 20-40 DTCA. Slightly more sulphide is present below 489; fine cubic and diss habits are typical. A gougy slip/tight fault sits at 501 @ 60-65 DTCA.

501.0 501.1 Fault gouge.

511.5 537.0 Gabbro.
Returning to a massive, uniform section of medium-grained gabbro. This interval contains a number of basaltic inclusions and narrow dyke-like bodies of the same along with pale yellow to pinkish high angle feldspathic dykes. Some low angle fractures also cut these rocks; very thin hematite/carb/qtz infillings are common. Weakly mineralised overall. Moderately magnetic. Gradational lower cnt @ about 20 DTCA.

537.0 557.5 Basalt.
A dark grass green, fine grained section with weakly banded/foliated zones which are accentuated by wispy and scrappy carb alteration and veining. The banding lies at 30-40 DTCA typically. Reddish feldspathic and carbonate material is injected into the interval also; these features are generally deformed/boudinaged and are variably oriented from 30 to 60 DTCA. Moderately mineralised with diss and locally coarse cubic py; the mineralisation often follows the banding/foliation and or lies close to the feldspathic bodies. Calcitic and strongly magnetic. The volume of vein and intrusive material is slowly increasing moving downhole; this section is a good example of this. A tight, slightly gougy slip sits @ 550.4 @ 40 DTCA.

550.4 550.5 Fault gouge.

557.5 570.4 Gabbro.
A medium grained interval, weakly brecciated and cut by numerous fine hematitic fractures. Carries a few basaltic/amphibolitic inclusions. Not well mineralised. Low RQD values, locally quite broken and blocky.

570.4 638.0 Amphibolitic.
Returning to a more strongly altered section, some of which is probably basalt much like the rocks above @ 537 to 557. The remainder is a medium-coarse grained mostly amphibolitic fairly massive rock which might have been gabbro originally. Cut by several narrow, sinuous pale grey aphanitic mafic dykelets which are strongly magnetic and quite hard; examples of these sit at 587 to 587.5. The rocks become more altered and slightly foliated approaching the bottom cnt; hairline calcite stringers

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

also become more abundant. A weakly foliated, dark grey amphibolitic zone is developed at 621.3-624; this may represent a highly altered dyke? It is sharply bounded at 60/50, and foliated at 50 DTCA. This feature is weakly mineralised, weakly magnetic and strongly calcitic. Overall, a weakly mineralised section. Pale orange-red carbonate and feldspathic stringers and vein-like structures cut the unit randomly. Locally quite rubbly and finely broken up; examples of this are at 582.8-583.7, and at 618-619. A few very low angle slightly gougy shears/slips also cut the unit; an example lies at 577.0. The lower cnt is an irregular, interpenetrating one, against the underlying intrusive.

638.0 638.1 START OF DEFORMATION ZONE
The assumed cnt of the Deformation Zone, based largely on the deformed state of rocks underlying the below described aplite unit. This position is consistent with that described in hole MB96-06.

638.1 671.9 APLITE
Rubbly, finely broken-up cnt into a pale pink to flesh coloured massive phase which presents characteristics of earlier described felsites and aplites. This example is weakly to non-magnetic, very hard and contains scattered partially assimilated ultramafic inclusions. It mainly consists of the subtle porphyritic sub-type of aplite with some zones which resemble felsite (finer grained, slightly gritty/grainy texture, pale pink-purple colour). The porphyritic areas carry cloudy 1-2 mm subhedral feldspar phenos which typically have rather obscure outlines and are supported in a pale pink, aphanitic felsic groundmass. A more definitive porphyritic texture is visible near the top cnt in tiny tentacles invading the overlying unit and near the lower cnt in more strongly hematitic areas. Cloudy and wispy carb alteration is developed throughout the interval. Most probably silicified. Well mineralised with diss and fine cubic py throughout. Very little sulphide is found in the veining. Locally slightly more heavily mineralised with scrappy fracture-controlled py. Well fractured and variably veined with blobby, irregular and more finite pale white qtz veins and fine stringers. Many of these veins contain pale white ankerite as the carbonate phase. Late very fine fracture-filling calcite is present in spots; the upper 18 inches is well calcified also. Weak hematite staining occurs in many of the finer stringers and to a lesser extent in portions of the groundmass. Fe alteration is variable, but increases slightly in intensity moving downhole. Contains tiny inclusions of pale greenish sericitic (almost fuchsitic) material. Slightly elevated sulphide contents in some of the larger ultramafic rafts; py grains are developed along the inside margins of veins in some of these examples, in contrast to the veining in the aplite. Sharp lower cnt @ 15 DTCA.

671.9 748.7 GREEN CARBONATE ZONE
A system of weakly fuchsitic ultramafic rocks xcut by several felsite dykes. The ultramafic components exhibit several textures; in most areas the original layered/carbonated textures are preserved. The more intense varigated/veined textures found in classic emerald green GC zones are not yet developed. Most units are highly deformed and foliated; quite typical of the deformation zone as seen in other McBean holes. Several variations of

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

felsite dykes are also represented. Most of these are well mineralised. Most rocks in the sequence are non-magnetic and ankeritic. Details on these sub-units follow below.

671.9 672.8 Ultramafic.
A short section of blue-black fairly massive chlorite-rich material, invaded by grainy irregular masses of pale beige carbonate (ankerite) with hints of reddish spotty/veinlet incipient alteration. This grades into a brownish, carb speckled, chaotic, brecciated zone where a felsite dyke is invading the ultramafic host at a low? angle.

672.8 675.0 Felsite.
A pale pink, fractured zone of slightly hematitic siliceous material which has broken up into small angular fragments at its top cnt. Both the host rock and dyke material are heavily carbonated. Locally diss and fine cubic py is strongly developed; fracture fillings, zones about carb alteration and contacts are mineralised. Xcut in part by scrappy high angle pale white qtz-carb veinlets. Contains some small angular ghost-like dark grey host rock inclusions. Sharp slightly irregular lower cnt at 30 DTCA.

675.0 677.0 Ultramafic.
Returning to a fairly massive blue-black section of ultramafic material. Pale greenish-yellowish patchy carbonate alteration is developed along both cnts. Not particularly well foliated, or mineralised. Sharp bottom cnt at about 20 DTCA.

677.0 678.5 Quartz.
A zone of pale grey to milky qtz which has invaded a pale beige grey carbonated rock which might represent a bleached felsite?. The qtz is weakly mineralised with fine diss py and a very fine blueish metallic which appears to be fracture controlled (moly?). Late, very fine chloritic fractures xcut the qtz zones at very low angles also. The bleached carbonated phase is heavily mineralised with brassy diss py and riddled with small qtz stringers, some of which also carry the blue metallic. Traces of chalcopyrite are also visible along one of the chloritic fractures near the bottom cnt.

678.5 679.4 Ultramafic.
A small sliver of heavily carbonated/banded ultramafic, xcut and offset along 45 degree carb-filled fractures. The banding lies at 30-40 DTCA and is often strongly boudinaged, resulting in an almost fragmental texture. Sharp, slightly brecciated contacts @ 20/40 DTCA.

679.4 686.0 Felsite.
A pale pink-purple, finely mottled to crudely banded typical felsite. Grainy matrix texture with a subtle planar fabric developing at about 40-50 DTCA. Very hard and weakly hematised. Contains dark greyish patches which might be ghostly relicts of ultramafic material. Weakly magnetic in part. Devoid of veining. Xcut by a few very fine hematitic/siliceous fracture fillings at about 45 degrees or higher angles. Moderately mineralised throughout with fine diss py. Locally appears almost porphyritic; subtle outlines of pale

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

white feldspars? occur near the lower cnt. Several thin slivers of sericitic material occur within the unit. Sharp lower cnt at 35 DTCA.

686.0 693.0 Ultramafic.
Returning to the host ultramafic; this section is a typical pale grey-green heavily banded/layered/carbonated ultramafic. The layering lies at 50 DTCA in the upper portion of the unit; this falls to about 30 degrees below 690. Not especially well veined except for a few irregular, fine wormy carb-qtz veinlets near the top cnt. Weakly mineralised with scattered fine spotty py. Cut by an amphibolitic, dark green mafic dyke at 688.3 to 689.4; this appears very similar to small dykes described outside of the DZ. The dyke has sharp cnts at 30/20 and contains biotite. Weakly mineralised as per the host. Barely responds to the pen magnet. Gradational lower cnt.

693.0 706.6 Green Carbonate Zone.
A continuation of the above carbonated ultramafic system with the addition of very weak pervasive fuchsite alteration. Tiny flecks of the green mineral are also visible in some of the narrow high-angle cross-cutting carb veinlets. Very low-angle, somewhat disrupted fabric. Weakly mineralised; slightly more fine py here than above where fuchsite is absent. A few sinuous, irregular low angle carb-qtz veins occur; these are xcut by later high angle gash veins which are more qtz-rich. Little sulphide resides in either vein set.

706.6 709.8 Ultramafic.
Returning to ultramafic rocks without fuchsite. Heavily carbonated with very irregular carbonate veining/alteration. Quite variable foliation orientations; locally kinked at high angles. Sharp bottom cnt at 50 DTCA.

709.8 720.2 Felsite.
A section of predominantly maroon coloured, gritty/grainy felsite dykes cutting through ultramafics similar to the overlying unit. These rocks have fairly similar textures to other felsites, however these examples are more strongly hematised in general. The alteration appears mostly pervasive; variable amounts of tiny fractures are also sources of Fe. The rocks are fairly massive, with almost no veining. They are variably magnetic and well mineralised with diss and spotty anhedral py; some fracture control is also evident. Some porphyritic textures are also visible; an example is at 717.5 to 718.9. Dyke cnts are generally sharp, often with some suggestion of chilling; angles are generally in the 30-60 degree range. These rocks are hard and probably silicified. One small dyke appears to contain altered needles of amphibole?; this example may not be a felsite. The small slivers of trapped host material are slightly more carbonated than the surrounding ultramafics; little sulphide is present however.

720.2 721.8 Ultramafic.
The host ultramafic without fuchsite. Very much like the rocks above 709; with traces of sulphide only.

721.8 722.7 Broken Blocky Core.

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

722.7 723.7 Ultramafic.
As above at 720-721.

723.7 725.6 Felsite.
Two intervals of dark red felsite sandwich a short section of magnetic host rock similar to the 4U noted above. These dykes? are similar to the larger felsites just above with the addition of numerous square carb metacrysts about 2 mm across; these give the rocks a slightly mottled appearance. The dyke cnts are a little less sharp- slightly more scalloped/irregular and diffuse in general. The cnts are oriented at 45-50 DTCA. Moderately mineralised with fine diss py.

725.6 727.9 Ultramafic.
Returning to the host ultramafic. Pale grey-green in colour without fuchsite alteration. Foliated/banded at about 40 DTCA except for the top 4 inches which is more massive and slightly grainy/gritty. Highly deformed and sheared; many of the carb bands are elongated and broken up into small boudinaged losenges giving the rock an almost fragmental appearance. Weakly mineralised with diss py. Fairly sharp lower cnt at 45 DTCA.

727.9 742.0 Green Carbonate Zone.
Sharp cnt into a more massive, slightly granular, sericitic, highly carbonated unit which is lacking in the more common ultramafic layered/banded/sheared textures. The host here resembles some of the strongly carbonated 'tuffs' logged at Anoki, with the addition of very weak fuchsite alteration. Fuchsite occurs as tiny flecks and/or weak pervasive matrix alteration throughout most of the section. The rocks are moderately hard, essentially non-magnetic and weakly mineralised with traces of very fine py. Carb and qtz veining is absent. The unit is invaded or overprinted by pale reddish patchy to wormy/dyke-like alteration which makes the host quite hard and adds considerable local py to the system. The alteration fluids appear to have come into the rocks in several stages, based on varying intensities and textures/colours. The texture locally reminds one of incipient alteration. A few tiny carb gash fillings sit at 45 DTCA near the sharp, undulating lower cnt. The cnt is @ about 50 degrees and lies perp to the above mentioned stringers; a slightly larger carb-qtz fracture-filling is developed along the cnt with 1-2% spotty py.

742.0 743.9 Felsite.
A pale red, fine grained dyke? invades the green carb zone. It is very hard, and very slightly magnetic. It is well mineralised in the matrix with very fine diss py, and compared with other felsites uphole is more fractured internally, resulting in it being riddled with tiny carb-qtz fillings and irregular stringers. Small amounts of coarser py are associated with the larger examples of these features. Fairly sharp, high angle disrupted lower cnt; a very low angle slip xcuts the bottom 2-3 inches of the unit and breaks up an already coarsely brecciated area.

743.9 747.2 Green Carbonate Zone.
Returning to the pale green weakly fuchsitic unit noted above at 727-742. About 40% of this interval is overprinted/invaded by patchy, brecciated pale

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

red dyke material probably related to the felsite immediately above and some of the reddish alteration seen above. Much more very fine fracturing is developed here; some is lying at very low core angles and some is more at 45-50 degrees and associated with some of the dyke material. Scrappy and irregular qtz-carb material is infilling about the dyke material; spotty py lies along and within some of these small qtz bodies. Sharp, slightly sheared lower cnt at 35 DTCA.

747.2 748.7 Felsite.
Another small brick red felsite forms the basal memnber of this sequence. This example is strongly hematised and slightly magnetic. Scattered cubic carb metacrysts float about in the matrix. Contains slightly more diss py than the nearest example uphole. Riddled with very fine hematite/qtz filled fractures. Very fine grained and massive with several fresh wallrock inclusions and small dark grey ghostly xenoliths?. Some alteration? chilling is visible at the lower cnt. Sharp lower cnt at 45 DTCA.

748.7 812.8 ULTRAMAFIC
A new sequence of predominantly blue-black, strongly chloritic and weakly talcose ultramafic rocks with a prominent banded/layered texture throughout. Heavily carbonated as fine speckling and wispy veining/layering. Ankeritic with some late very fine fracture controlled calcite near the lower cnt. Typically banded/foliated at 40-50 DTCA with locally steeper orientations. Tiny recumbant folds, boudinage structures and small carbonate knots are commonplace in the layered portions. Slightly magnetic overall. Poorly mineralised with traces of fine cubic py. The host rocks are cut by a variety of syenitic and other ?dyke rocks below about 782. The host phase returns albiet in a more deformed/faulted fashion near the lower cnt. Details follow below.

748.7 781.8 Ultramafic.
The host phase. Low RQD, but generally good coring ground. Strongly chloritic down to about 772, where the rocks become more pale green-grey in colour. Rocks below 772 are slightly more broken up with a few narrow finely ringed/crushed zones. A small dirty brownish dyke? or alteration zone? sits at 778-778.5; is hard with 0.5-1% diss py and somewhat fuzzy cnts which mimic the layering in the host rocks. The bottom cnt lies @ 55 DTCA; it is very finely scalloped/irregular where it comes in contact with a strongly metasomatised underlying dyke?. A 3 in thick almost solid chlorite rind? is developed immediately above the cnt.

781.8 788.1 Felsite ?.
A pale brown to weak pink, slightly grainy unit with two internal textures. Cut by at least two generations of 1/16 to 1/8 in high angle carb stringers and strongly altered with small blebs and fracture fillings of reddish carbonate and possibly feldspathic material (a type of incipient alteration?). Variably magnetic. Quite hard and ankeritic. Weakly foliated in places at about 50 DTCA. Generally fine grained with zones containing prominent 1-2 mm carb metacrysts. Variably mineralised with diss and 1-2 mm spotty py. Contains a few tiny angular ultramafic inclusions. Probably locally silicified. Weakly hematised throughout. This interval appears much

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

like a felsite in part; the more massive, finer grained areas which appear bounded by sharp internal cnts might be dykes. The remainder of the interval has a slightly larger grain size, and appears more in keeping with a protolith which has undergone strong incipient alteration and intense carbonate overprinting. Parts of these areas look like strongly blasted ultramafic material; other areas are more problematic. The protolith in these zones might possibly have been a mafic dyke? An altered gabbro seems less likely as the primary lithology. Subtle banding/layering on a mm scale, variable foliation directions, kinked carb stringers and subtle internal brecciation also differentiates this component from the 'felsite' type of texture. The sequence is bounded at a high angle, sharp cnt.

788.1 796.8 Porphyritic Syenite.
An interpenetrating, chaotic cnt zone opens this interval; inclusions of the overlying unit have been taken up by the syenite, causing low angle fracturing, brecciation and accompaning carb-qtz infilling to develop. The unit is a bright orange-red colour, very hard and weakly magnetic. It carries abundant pale white to pinkish, subrounded feldspar phenos in a slightly orange to brownish aphanitic matrix. Most phenos are 1-2 mm across. A few smaller qtz eyes are visible. The entire unit is riddled with very fine wispy white carb fractures/stringers, and even smaller hematite-bearing microfractures. A strongly hematitic unit, which is probably silicified. Variably mineralised with diss matrix py and coarser bleby and fracture-filling py. Very much like other 1Sp units logged in the earlier McBean holes. Sharp lower cnt at 35 DTCA.

796.8 800.0 Carbonated Zone.
A sharp cnt into another dirty brownish grey, strongly carbonated interval. This section bears some resemblance to the felsite? section above, but appears to be derived 2 or 3 different primary rock types. The rocks are variable in colour from a brownish grey to a dirty olive green, with some reddish tones in part. Parts of the unit are probably altered ultramafics; other portions are slightly more bleached looking and appear to be strongly altered via the incipient alteration scenario. A short section might represent an altered mafic dyke; remnant amphiboles (now chlorite?) suggest a relation with other such mafic logged at McBean. All portions of the interval are moderately to strongly magnetic, fairly hard. A few scrappy, high angle carb-qtz veinlets cut the unit; hematite lies along one fracture and dirty dark grey qtz fills in other examples. A few fine magnetite grains are visible in one spot, within a carb bleb? Locally foliated at about 65 degrees. Locally brecciated/sheared at high core angles. Fairly sharp basal cnt at 55 DTCA.

800.0 802.8 Ultramafic.
Returning to a section of blue-black, chloritic ultramafic host which is strongly faulted at two points and finely broken-up in general. A few high angle, 1/2 in thick milky qtz veins cut the unit at about 801.1; they contain wallrock inclusions and only traces of sulphide. Slightly calcitic in very fine late stringers. Moderately magnetic. Details on the faulting follows:.

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

799.9 801.1 Fault gouge.
Two 1 inch thick, gritty gouge zones are developed at about 50/65 DTCA.

801.7 801.8 Fault gouge.
Two inch thick, chloritic crushed zone with an 1/8 in thick slip zone @ 65 degrees at one side and a 25 degree bounding slip at the other.

801.8 803.4 Felsite ?.
High angle cnt into a olive-brown coloured, highly carbonated zone with some similarities to the rocks above at 781-788. Finely brecciated and subsequently healed internally; quite hard and strongly magnetic. Variably hematised. Riddled with pale white, hairline carb stringers. Moderately mineralised with diss and fine spotty py. Rubbly lower cnt at about 75 DTCA.

803.4 812.8 Ultramafic.
The final section of this ultramafic system. A blocky and broken-up interval, pale grey-green to dark green in colour and moderately foliated at about 40 DTCA. Contains several 3 to 8 inch long sections of highly carbonated/silicified material, similar to the problematic carbonated rocks described above. These examples are variable in colour from brown to olive to pale grey and tend to be slightly more magnetic than the the host. Cnts are generally sharp and mimic the host fabric. Incipient alteration modifying pre-existing dykes might describe some of these rocks. Most are not well mineralised. A three inch thick gritty fault gouge zone sits at 812.2; it lies at about 70 DTCA. The interval bottoms out along a milky qtz-carb vein which carries choritic wallrock slivers. Sharp cnt @ 50 degrees.

812.2 812.3 Fault gouge.

812.8 1000.8 APLITE
A broad interval of pale pink to flesh-coloured aplite begins at 812.8. A good example of the 'porphyritic' type of aplite wherein clearly visible feldspar grains are present throughout most of the unit. These crystals range from 0.5 mm to 2 mm across, and crudely fall into 2 size populations. The larger grains (1-2 mm) are most common; the smaller grains generally occur with the larger grains but not independently. These feldspars are supported by a pale pink, siliceous, aphanitic groundmass which contains very little in the way of mafics. Phenocrysts are typically pale pink to milky white, and have subhedral to good tabular/lath-like habits. They are not extremelly fresh, however outlines are generally crisp. Zoning is visible in a few examples. Locally slightly higher amounts of background hematite tends to accentuate the feldspars; in some zones a more tightly packed arrangement of grains gives the rock an almost dioritic appearance, except for the lack of mafics. The rocks are non-magnetic and free of calcite except for some traces of late fracture-filling material.
Qtz grains are obvious in portions of the unit; grains are 1-1.5 mm across and sub-angular. In most areas they do not exceed 10% by volume. The interval contains a number of partially metasomatised inclusions; these are of ultramafic derivation mostly. A few smaller, very pale greenish (sericitic) inclusions are also present; these vary in size from a few mm to

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

3-4 inches thick. A modestly mineralised section; fine diss and slightly larger spots and fracture-filling knots of py are found throughout the unit. A massive rock with moderate RQD values; jointing is fracture/vein controlled and generally lies at angles above 50 degrees. A weakly veined section; 1/8-1/4 inch thick high angle qtz-carb stringers are scattered throughout. These veins are not heavily mineralised but they are not completely devoid of py; some examples contain small amounts of hematite also which in some cases (the finest fractures mostly) tends to spill out into the host rocks. More details follow below.

812.8 834.0 Aplite.
Moderately hematised throughout. Xcut by irregular hairline fractures which carry hematite. Cloudy porphyritic textures developed locally. Slightly more veining than the norm for the unit. A small greenish, brecciated inclusion lies at 826; it appears to be an ultramafic fragment.

834.0 837.2 Mafic intrusive ?.
A dark grey-green weakly foliated section. Slightly grainy texture; non-magnetic and weakly veined with slender, high angle carb stringers. Consists of a finely intergrown mosaic of carbonate and very fine patchy chlorite. Carries small amounts of diss py. Sharp cnts @ 55/60. A strong carb? alteration halo 2 inches thick is developed at the bottom cnt.

837.2 850.8 Aplite.
Returning to the host phase. A weakly hematitic section with more prominent feldspars towards the bottom cnt. A two inch thick qtz vein lies at 844, against which which lies a greenish, weakly fuchsitic inclusion. Traces of py are developed in both features.

850.8 857.0 Mafic intrusive ?.
Another section of weakly foliated material; the fabric lies at a very low core angle. *Slightly more chloritic/amphibolitic than the dyke above at 834.* Very weakly magnetic. Contains a very few high angle carb-filled fractures and traces of diss py in the matrix. Homogeneous and massive. A weak alteration halo with slightly elevated py is developed at the basal cnt. This contact is sharp at 40 DTCA.

857.0 860.3 Aplite.
Returning to a section of aplite with a greater concentration of bimodal phenos than in previous areas. Contains a pale greenish, sericitic dyke? at 858.1-859.0 with sharp cnts and a core zone which resembles the MI inclusions noted above- in effect most of the dyke has been altered to a carbonate-rich, sericitic/fuchsitic material. This altered material carries 1% diss py; the core area is essentially unmineralised. Sharp lower cnt @ 30 DTCA.

860.3 862.6 Mafic intrusive ?.
Much as that described above at 850-857. Strong carb/sericitic alteration is developed at the upper cnt and to lesser degree at the lower cnt. Weakly foliated at about 40 DTCA. The rocks here are more bleached looking with some hints of reddish incipient alteration becoming visible. Several 1/8 in

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

thick qtz-carb stringers cut the unit at 50 DTCA; they are unmineralised except for some weak hematite staining in the marginal carb selvages. This example is mineralised throughout with diss py. Sharp lower cnt @ 60 DTCA.

862.6 873.9 Aplite.
The host phase; carries less hematite in the matrix and slightly larger, pale white, fairly conspicuous feldspar phenos throughout. Contains a brecciated, broken up section of MI at 868-869.8 with strongly altered margins and 1-2% diss py. Slightly more fine milky qtz veinlets towards the lower cnt. Sharp, coarsely brecciated lower cnt at about 50 DTCA.

873.9 875.9 Mafic intrusive ?.
Another feature, much like the above noted dykes? This example is more intensely altered so that only a small segment of core around 875 retains some semblance of the primary texture/mineralogy. Quite hard and weakly hematised at the top cnt for 12 inches; a few reddish spots reminiscent of incipient alteration are visible. Cut by an irregular brecciated/distorted qtz vein 1/2 in thick @ 875.5- the vein lies at about 55 DTCA and contains coarse cubic and subhedral py grains (locally 10% over the vein width) and traces of wispy fuchsite. Overall the interval is modestly mineralised with diss py. Slightly irregular sharp lower cnt @ 60 DTCA. A strong alteration halo 3 in thick is developed at the cnt- sericite/fuchsite/carb in composition.

875.9 876.9 Aplite.

876.9 883.1 Mafic intrusive Ultramafic ?.
Cnt into a slightly thicker unit of strongly altered material which might have been either a mafic dyke or possibly an inclusion of ultramafic material. This example consists of 3 components; a pale grey-green, slightly gritty/foliated zone with weak incipient alteration which contains several small blebs of pale orange aplite; a 3 inch long stretch of mineralised aplite with an irregular high angle qtz vein (carries sericitic inclusions and selvages) and a basal zone which appears to a more bleached/carbonated/silicified equivalent of the first component. The latter two zones are well mineralised with spotty and diss py. The upper cnt is weakly altered with wispy/pervasive fuchsite; the lower cnt is slightly irregular with several scrappy carb-hematite stringers.

883.1 941.1 Aplite.
Returning to a wider aplite section. The appearance of qtz eyes and locally more strongly hematised zones (ex- 916.5-918) characterises this interval. Fine qtz stringers are scattered throughout; a slightly greater concentration is developed near the top cnt. Some of the slightly thicker veins have very fine ladder structures developed, generally perp to the vein margins. Most carry little sulphide and lie at about 60 DTCA. Finer fractures carry hematite and a few rather more irregular wandering types of fractures carry fine spotty py. Other diss and fine cubic py is scattered randomly throughout the matrix. Overall, not a strongly mineralised area. Approaching the lower cnt, the density and size of qtz veins increases. A few begin to carry fine blebby/diss py. Some very fine fracture-filling

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

molybdenite occurs @ 931.9 in the vicinity of some 1-2 inch veins. At 933 are some small scrappy fuchsite-bearing fracture-fillings? with locally 2-3% slightly coarser py grains. Irregular, convoluted lower cnt.

941.1 945.7 Ultramafic.
Another pale apple green-grey, strongly altered inclusion. This example is more strongly foliated than ones farther uphole; the fabric is quite flat and slightly kinked at high angles in part. Much of the material is very weakly altered with matrix fuchsite; the intensity of this mineralisation increases at both cnts. Locally silicified and weakly hematised. Locally reddened with spotty and fine wormy dyke-like incipient alteration. Modestly mineralised with diss py; slightly greater concentrations are developed in the upper 2/3 of the interval. A smoky, greyish, low angle qtz vein invades the upper 12 inches of the unit; it carries traces of py but more importantly disrupts the upper cnt area. Greater amounts py are visible in the altered host rocks around the qtz. Not particularly magnetic except for some weak reaction around 944. Sharp, slightly irregular (very open tiny folds are forming) lower cnt @ 50 DTCA.

945.7 1000.8 Aplite.
The final aplite section in this sequence; characterised by a return to more clearly defined porphyritic textures. Varies from a very pale white coloured rock to a more reddish, hematite-rich phase. More of the smaller feldspars are visible in this section. Qtz eyes are common. Contains two small, pale green/reddened inclusions with fuchsite and 2-3% diss py @ 960 and 963.1 A slightly higher density of qtz veining is present; most are poorly mineralised, although a few carry tiny wisps of fuchsite. Most veins lie at 50 degrees or steeper. At least two generations of veining exist; the slightly thicker veins appear younger. Weakly mineralised overall in this segment; some fracture control (low angle) of fine py is evident. A trace of a blue-grey metallic (galena?) is present at 985.7. Sharp lower cnt at about 50 DTCA.

1000.8 1089.5 GREEN CARBONATE ZONE
Opening into a broad system of strongly fuchsitic ultramafic (and other rocks), interspersed with several intrusive bodies. Several textures and at least two protoliths are represented in the emerald green phases; drab green variations are also developed which are derived from ultramafics. A highly deformed and locally strongly veined unit with abundant accessory carbonate in the matrix and qtz veins/infillings. Well foliated with quite variable fabric orientations; high angle kink bands xcut the S1 in places. Overall, a fairly well mineralised (sulphide) system, compared to some other examples logged in earlier McBean holes. Pyrite is the dominant sulphide. Chlorite, sericite and small amounts of hematite are the other important alteration products. Details on the sub-units are as follows.

1000.8 1027.5 Green Carbonate Zone.
An emerald green unit, which begins as a fairly massive, fine grained, slightly gritty rock with a very weak low angle foliation and/or a subtle speckled alteration? texture(ex-1001-1003). This relatively less deformed phase quickly becomes disrupted and brecciated where qtz stringers begin to

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

invade the rock(ex-1005-1006). Moving downhole again, the more massive material becomes layered (ex @ 1007-1008-@ 50 DTCA) and what appears to be very tiny tuff?/carb interbeds are visible. Very fine black speckling appears in the layered zone (1008.8-rutile??); the rocks then become progressively more deformed and invaded by qtz until at 1013 the typical shredded qtz/varigated and highly deformed qtz-rich texture is well developed. From 1013 to 1027, the volume of qtz ranges up 30-40% of the rock mass; carb selvages and inclusions, small flecks of fuchsite and weak cloudy orange (hematite?) alteration appears in some of the (milky to greyish) qtz. The veining is quite variable in orientation; both high and low angle qtz bodies up to 2 inches thick are developed. A set of finer (1/8 in) gash type *stringers @60 mimic local kink bands. The carbonate is ankeritic.* A non-magnetic unit with small amounts of fine diss py sprinkled throughout the groundmass. Very little sulphide is present in the veining. Variable foliation directions; all angles from flat to 90 degrees can be seen. A short section of weakly mineralised reddish aplite dyke material cuts the unit @ 1004.8-1005.3; above the upper cnt for 4 inches sits a pale olive coloured carb rock? with a grainy texture; slightly more py is present in this section vs the dyke or host rocks.

1027.5 1048.1 Green Carbonate Zone.
Below 1027, the bright emerald green colour is replaced by a more olive-green appearance, due to an increase in the amount of chlorite alteration and a corresponding decrease in fuchsite. The varigated/brecciated texture remains, although a decrease in veining occurs in several zones within the segment. High angle kinks are more prominent now; these postdate low angle carb layering/banding and some of the heavier qtz veining. Below 1042, the amount of qtz and carb veining increases to 30-35% as does the fuchsite concentration. Slightly more matrix py also becomes visible. Very little sulphide is carried in the qtz. About 25% qtz exists in the section. Strong slip at 1028.7 @ 30 DTCA.

1048.1 1051.8 Aplite.
Sharp, finely colliform/cuspate cnt @ 20 degrees into a pale beige to yellowish dyke of variably porphyritic intrusive, which looks somewhat like the overlying aplites. Very hard, massive and weakly hematised; less Fe is in the system here as compared to the overlying aplites. Modestly mineralised with diss and slightly coarser spotty py; a slight increase in sulphide concentration occurs towards the bottom cnt. Contains numerous pale white, subhedral to squat feldspar phenos 0.5 to 2 mm across; in most cases they are supported in the groundmass and still have recognizable outlines. Not magnetic or calcitic. Small amounts of ankerite are present in a few tiny low angle qtz-carb stringers/sweats. Larger qtz veins akin to those in the surrounding green carb zones are absent; instead very fine qtz threads are liberally sprinkled throughout at low angles(20-40 DTCA). Sharp lower cnt at 80 DTCA.

1051.8 1055.6 Green Carbonate Zone.
Returning to pale olive to weak emerald green section with 15% qtz-carb banding and a finer varigated/kinked texture, for the most part lying at 60-75 DTCA. Slightly more sheared appearance. Carries a 3 in long stretch of

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

tightly folded peanut-butter coloured dyke? material near the top cnt; 2-3% py is developed here in contrast to the nominal 0.5% or less in the other wallrock. Slightly more sulphide present near the top cnt also. Irregular, convoluted lower cnt.

1055.6 1057.6 Green Carbonate Zone.
A pale olive green coloured section; a massive to slightly foliated/layered carb rock which is kinked and folded on a mm scale internally. Gritty and sericitic, suggesting a possible tuffaceous protolith. Contains tiny dark grey, slightly ragged qtz eyes. Very hard (silicified) and non-magnetic. The primary? layering lies at both high and low core angles. Riddled with a modest amount of fine qtz as 1/8-1/4 in thick irregular boudinaged stringers and sweats; some appear almost conformable with the layering, while other examples are discordant at low angles. Little sulphide is visible in the veining; much more is found in the matrix and along the margins of qtz. Overall a strongly mineralised section with abundant fine diss py. Some sulphide follows the layering/banding. Invaded by a wormy, siliceous well mineralised dyke?? near the top cnt. Irregular high angle lower cnt. About 10% qtz.

1057.6 1059.0 Green Carbonate Zone.
Returning to a pale emerald green section, much as per 1051-1055 with more qtz and fuchsite. Fine fuchsite is visible in the qtz and carb inclusions (in the qtz) as weak overprints and small flecks. Weakly mineralised with traces of diss py in the matrix. Sharp lower cnt at 35 DTCA. Carries approx 40% qtz.

1059.0 1062.7 Green Carbonate Zone.
Opening into a highly disrupted zone which consists of strongly fuchsitic emerald green varigated material, and a pale beige to weakly orange, slightly gritty and finely laminated carb phase. Both of these rocks are highly deformed/kinked/folded and in turn have been brecciated with patchy and wormy pale grey qtz. The qtz occupies about 50% of this section and carries abundant pale white to brownish carb as inclusions and selvages. Fuchsite is common in the qtz as discreet specks/wisps and as alteration in the carb. The gritty carb unit is very well mineralised with very fine diss py, in most examples. This contrasts with the very small amounts of sulphide found in the qtz, the carb in the qtz and the emerald green material. Two groups of fine specks of VG occur at 1060.8; several sit in a tiny pale white qtz knot and the others lie in a fine layer? of the gritty carb material. Some of the carb material might be lumped in with the 'peanut-butter coloured' phases/alteration seen elswhere in this green carb system.

1062.7 1071.0 Green Carbonate Zone.
Returning to a mixed sequence of slightly paler emerald green rocks, scattered scrappy qtz-carb veining and numerous olive to peanut-butter coloured layers? or dykes? The host is less deformed and slightly gritty to foliated in large part; the fabric is typically at 40-55 DTCA. The rocks have a strong resemblance to those present at the top of this GC system. Where veined, the host becomes brecciated and disrupted. Small zones of

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

siliceous, pale beige carb material are present; as in above examples these areas are well mineralised with fine diss py. The peanut-butter coloured features are blobby to lens-like and conform to local layering/fabrics; many are tightly folded on a cm scale. Recumbant and similar geometries are present. They are also modestly mineralised with fine spotty and diss py. Carries approx 15% qtz.

1071.0 1077.7 Carbonated Zone Quartz.
A section which is largely composed of strongly silicified/veined pale brown to beige coloured slightly gritty carb material, such as that above at 1059-1062. Short intervals of olive green, tuff? and thinner layered/disrupted peanut-butter type material fill in. Portions of the brown carb phase look much like a more carbonated version of the aplite described at 1048(porphyritic). These zones are well mineralised with fine diss py. Small fuchsitic fragments are caught up in the brown material. Near the lower cnt the siliceous carb becomes slightly hematitic and locally magnetic with some local areas beginning to appear as if incipient alteration is invading the rocks. Veining in all components is smaller volumetrically than the overlying subunits; it is generally lying at high angles and is weakly mineralised. High angle lower cnt.

1077.7 1089.5 Green Carbonate Zone.
Returning to a pale green to more drab green, variably veined section (with about 15% qtz) more massive/weakly foliated/gritty textured rocks, much as at 1027-1048. Dykes, siliceous zones and peanut butter stuff is essentially absent. Where a fabric is developed it lies at 50-55 DTCA. Locally softer with a hint of talc developing. Slightly more chloritic than the above described sections; moving downhole the unit slowly becomes darker in colour and more grey-green to almost blue at the basal cnt. Fuchsite alteration is barely visible in these rocks and slowly fades out moving towards 1089. Weakly mineralised overall. Slightly magnetic locally. Gradational lower cnt at 55 DTCA.

1089.5 1684.1 ULTRAMAFIC
Opening into a broad sequence of moderately deformed, blue-black, carbonated ultramafic rocks which now consist of predominantly chlorite and varying amounts of talc. Wispy irregular carbonate stringers/layering lies at 30-50 DTCA with the majority sitting at 40-45 degrees. Weakly foliated in part; 40-50 degree core angles are typical. Fine carb speckling is developed locally. Not particularly well mineralised; scattered cubes and rounded grains of py are visible throughout with locally greater concentrations near dykes. A magnetic system; variable but quite strong locally. Calcitic below about 1137. Only minor amounts of ankerite are present. Cut by a number of dirty felsites and some narrow mafic and felsic dykes. More dyke rocks intrude the unit moving downhole. Locally strongly faulted. Details follow below.

1089.5 1107.6 Ultramafic.
Finely foliated/laminated with weak speckling. Sparsely mineralised except for a very few 2-4 mm py cubes.

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

1107.6 1118.1 Ultramafic.
Blue-black host with an increasing amount of patchy and wormy pale milky qtz and qtz-carb material. The carb stringers/alteration is more deformed in this interval; mm to cm scale folding and boudinaged veinlets are common. Contains a few narrow, brownish alteration corridors with 2-3% py over 1/2 to 1 inch thicknesses. A very slight increase in matrix sulphide is visible.

1118.1 1119.9 Amphibolitic.
A short section of moderately foliated, brownish-grey amphibolitic material, some of which might represent small altered mafic dykes? Non-magnetic and slightly hematitic especially near the bottom cnt where a few tiny wormy carb-qtz veins have introduced qtz and Fe to the system. Mineralised with fine diss py, especially near the lower cnt; 1-2% max. The fabric lies at 50 degrees nominally; lower angles are present where small veins have kinked and rotated the original S1. Sharp cnts at 50 DTCA.

1119.9 1135.8 Ultramafic.
Resuming in the blue-black host. Slightly more heavily veined with both patchy qtz and wispy carb. Weakly speckled with carb in part. Slightly more mineralised with fine cubic py than the overlying subunits. Invaded by qtz at 1121-1121.9; pale reddish carb inclusions occupy much of the vein. Elevated sulphide in and around the qtz as fine fracture-fillings and disseminations. Amphibolitic for 3 inches below the qtz. Fairly sharp cnts at about 45 DTCA. Narrow broken/blocky section around 1130.1. A patch of pale greyish, siliceous/carb alteration occurs at 1130.8-1131.3; it carries negligible sulphide, but is quite magnetic. A narrow, siliceous, weakly hematitic vein? cuts the unit at 1132.2; it is well mineralised with 2 mm cubic py and has carbonated and weakly silicified the wall rock for 2 in away from both cnts.

1135.8 1137.3 Felsite.
A dark greyish-brown dirty felsite dyke? Strongly contaminated with ultramafic hostrock. Cut by tiny high angle qtz-carb stringers and more patchy, irregular pale reddish incipient alteration. Quite hard, partially magnetic and well mineralised with diss py. Sharp upper cnt @ 35 degrees; more diffuse although distinct lower cnt at 20 DTCA.

1137.3 1143.8 Breccia.
A short section of the host which has been veined and locally altered and subsequently broken-up forming a coarse tectonic breccia. This has subsequently been healed and recemented with chlorite and hematite back into a fairly massive rock which cores well and is only slightly blocky. Variably mineralised within small angular pale brown carb fragments and patches. Patchy, irregular/brecciated milky qtz carries carb inclusions; some of these are mineralised also. Locally magnetic. Narrow zones of amphibolitic material similar to the rocks above at 1118 are preserved. A fault with 1 inch of muddy gouge lies at 1139.7 @ 20 DTCA.

1139.7 1139.8 Fault gouge.

1143.8 1157.5 Fault Zone.

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

A slightly paler grey coloured section of the host which is cut by several strong discreet gouged breaks. Weakly carbonated with wispy and fine spotty carb. Sparsely mineralised. Cut by very low angle slips towards the lower cnt.

1143.9 1144.1 Fault gouge.
3 In thick crushed rock and muddy gouge with cnts @ 30/70 DTCA.

1144.1 1145.0 Broken Blocky Core.
A finely crushed and broken zone with high angle cnts and the remnants of similarly oriented slips.

1149.9 1151.3 Fault gouge.
A fault zone which contains two elements; a 4 inch thick gritty gouged zone at 1149.9 to 1150.2 with cnts @ 45/30 DTCA and a series of flat (20 DTCA) to slightly arcuate gougy slips which lie between 1150.4 and 1151.3.

1152.5 1152.6 Fault gouge.
1/2 In thick muddy/pebbly fault plane @ 30 DTCA.

1154.6 1154.8 Fault gouge.
1/4 In thick muddy seam @ 45-50 DTCA.

1156.0 1156.1 Fault gouge.
Narrow mud seam at an unknown angle within a narrow broken/crushed zone.

1157.0 1157.5 Fault gouge.
A gritty, muddy fault breccia zone with cnts @ 35/50.

1157.5 1170.3 Ultramafic.
A section of very finely veined, almost black ultramafic rocks. Very irregular veining and fabric directions- quite disrupted and locally tightly folded on a mm scale. Overall the fabric is at about 45-50 DTCA. Weakly mineralised with a few fine cubes of py. Locally hematitic along very fine fractures. Weakly magnetic throughout. Cut by several gougy slips right above the lower cnt.

1170.3 1173.3 Felsite.
A short interval of dark grey fine-grained rock with a pale pinkish cast. Very hard and strongly magnetic. Riddled with fine, high angle carb stringers; many of these are slightly hematitic and have locally stained the adjacent wallrock. A rather dirty, contaminated unit with 2-3% diss and slightly coarser fracture controlled py. Sharp cnts @ 30/60 DTCA.

1173.3 1182.8 Ultramafic.
Returning to the host phase and an interval much like that above at 1157-1170. This section contains slightly more layered carb material and some reddish incipient alteration, some of which resembles very low angle syenitic dykelets? Brownish to pale grey, slightly gritty/siliceous layers with elevated amounts of py are found in several spots. These are typically lying at 55-65 DTCA. The rocks become magnetic below about 1181. Contains

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

about 0.5 to 1% fine cubic py. Sharp basal cnt at 50 DTCA.

1182.8 1185.8 Felsite.
Another pale pink, dirty felsite much like the one at 1170. Contains less carb stringers and more pale reddish patchy carb-qtz material. Slightly more pervasive hematite alteration is developed near the contacts. Strongly magnetic. Well mineralised with diss and some 2-4 mm cubic py near some of the patchy carb material. Contains faint scattered 1-2 mm euhedral carb metacrysts throughout. Very sharp lower cnt at 60 DTCA.

1185.8 1210.0 Ultramafic.
Returning to the blue-black host; this section contains a greater than average amount of patchy and scrappy carb alteration and highly deformed (folded) stringers. Similarly, an increase in fine cubic groundmass py is visible. A few narrow corridors of amphibolitic material are also present. Locally quite strongly magnetic. Moderate RQD values here.

1210.0 1407.9 Ultramafic.
Opening into a thick interval of weakly veined/carbonated rocks which are not especially deformed or broken by major fault zones. Weakly speckled to and or xcut by fine wispy calcitic stringers. Variably mineralised with fine cubic py; generally less than 1% overall. Black to blue-black to pale grey blue in colour with minimal fabric development. Local jointing mimics the 40-50 degree stringers/fabrics. A few broken up areas and shears/slips are noted herein. At 1242.8 lies a slightly gougy slip @ 55 DTCA; @ 1277.8 sits a 4 inch thick finely broken up zone; @ 1284.5 lies a gougy slip at 20-25 DTCA; @ 1286.0 and 1295.0 lie short sections of broken, blocky core; @ 1377.2 lies a gougy slip @ 30 DTCA; @ 1394.5 to 1396.4 lies a broken/crushed zone; possibly faulted here; 12 in of core was ground/lost; @ 1407.0- 1 in crushed/gougy fault @ 40 DTCA. A few 3-4 inch thick amphibolitic corridors are developed between 1370 and 1385. Sharp lower cnt @ 70 DTCA.

1407.0 1407.1 Fault gouge.

1407.9 1414.9 Felsite.
Sharp cnt into a dark grey, fine grained felsite. Very hard and strongly magnetic. Contains several slivers of strongly chloritic ultramafic host and a few very small angular fairly fresh wallrock fragments. Slightly mottled appearance locally (carb metacrysts?) and finely fractured with a network of carb threads more in the center of the interval. Weakly hematised; the rock carries a very pale pink cast in part. Strongly calcitic and well mineralised with diss and 1-2 mm spotty py. Prominent 2-3 mm squarish carb metacrysts? are developed right at the basal cnt. A 1 in thick, carb-qtz breccia vein intrudes the unit right at the top cnt. Sharp lower cnt @ 35 DTCA.

1414.9 1424.2 Ultramafic.
Returning to the host ultramafic; a broken-up, locally amphibolitic section, which is the continuation of the broad subunit above (to 1407). One example of a gritty, siliceous/amphibolitic layer at 1422.5 is isoclinally folded with an axial plane at 40 DTCA. A series of slightly gougy slips lying at 50

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

degrees sits between 1416-1418. Broken/cushed zones follow and continue down to 1420.3.

1424.2 1427.1 Amphibolitic.
A more continuous finely foliated, amphibolitic zone which is invaded by irregular wormy, boudinaged incipient dykelets? and slightly thicker (2-3 in) patchy siliceous felsite? blobs. Well mineralised in and around the siliceous areas. Sharp cnts top and bottom @ 30/40 DTCA. Strongly magnetic.

1427.1 1479.8 Ultramafic.
Continuing with the broad subunit as above at 1414. Strongly magnetic, and continuing calcitic. Moderate RQD values. Becoming more broken up and jointed below 1466. Contains a short stretch of weakly foliated, very dark grey to black amphibolitic material @ 1477.2 to 1478; this zone resembles the next underlying phase. Weakly mineralised.

1479.8 1493.3 Mafic intrusive ?.
Sharp cnt into a medium to medium-coarse grained, very dark grey to almost black phase which exhibits an intrusive type of texture, but which instead appears to be a totally recrystallised (originally finer grained) mafic intrusive? with amphibole, chlorite, abundant carbonate and minor biotite. In part, the rocks have been invaded by reddish incipient alteration, which brings in more Fe and carbonate. A few spots look as if they are almost syenitic to dioritic; this may also be an alteration texture however. 1 to 2 inch thick pale pink qtz-carb veins? xcut the unit at high angles; these features are well mineralised and tend to increase the sulphide content of the enclosing wallrocks. The matrix is variable in composition and texture; locally it is richer in amphibole and begins to appear weakly foliated where more acicular mafics are dominant. In other areas, the rock is less grainy and much richer in a pale tourquoise green chlorite; the chlorite occupies much of the matrix as discreet rounded patches and interstitial material between carbonate grains. Still other areas are more coarse grained; this is a reflection of a greater carbonate content. Well mineralised with diss and fine cubic py. Strongly calcitic throughout. The unit is bounded by fairly sharp contacts; they lie @ 45/50 DTCA.

1493.3 1499.5 Ultramafic.
A short section of the host ultramafic. Calcitic and weakly carbonated with wispy stringers. No appreciable sulphide.

1499.5 1505.5 Mafic intrusive ?.
Entering another interval much as the dyke? above at 1479. This example is weakly foliated at about 30 DTCA and becomes slightly finer grained moving downhole. Contains less amphibole and more reddish carb as interstial groundmass material and metacrysts. Strongly calcitic and magnetic throughout. Well mineralised with diss and fine spotty py throughout. Xcut by several pale pink qtz-carb veins and blobby intrusions; these are weakly hematitic and typically more strongly mineralised both internally and externally than the surrounding host. A tiny dark grey-green felsite? dyke cuts the unit at 1530.7 at 30 DTCA. It is slightly more sulphide-rich than the host and very strongly magnetic. Sharp cnts @ 65/25 DTCA.

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

1505.5 1536.5 Ultramafic.
Returning to the blue-black host phase. Continuing magnetic and calcitic. Cut by a strong fault at 1511.2 to 1511.6; the zone contains talcy, gritty gouge. The zone cnts lie at about 60 degrees. Another strong, gougy slip sits at 1509.1 @ 35 DTCA. Slightly more blocky and broken below 1523. A pale pink carb-qtz vein cuts the unit at 20 DTCA at 1535-1535.5; it contains very little sulphide.

1511.2 1511.6 Fault gouge.

1536.5 1540.8 Amphibolitic.
A short section of more amphibolitic ultramafic material intercalated with blueish hostrock. Wispy and granulated/deformed, pale pink carb and qtz veining is also mixed into the section. Strongly calcitic. The discreet nature (sharp cnts) of the more amphibole-rich zones suggests that these areas might represent small mafic dykes. There are some textural similarities here with the rocks above at 1479. The layering/fabrics sit at 30-40 DTCA nominally. Well mineralised in and around the qtz-carb material in the more amphibole-rich areas.

1540.8 1524.9 Felsite.
Sharp cnt into a pale grey unit with a weak pink cast. Very fine grained and hard. Calcitic and strongly magnetic. Altered with very fine fracture-filling and groundmass chlorite. Weakly hematised. Cut by a few high angle carb threads. Small euhedral metacrysts of feldspar?? are visible towards the bottom cnt; they are replaced with carbonate and contain very tiny grains of magnetite. Modestly mineralised with diss and fine spotty py. Cnts @ 50/40 DTCA.

1524.9 1544.0 Ultramafic.
The host ultramafic phase. Blue-black and strongly chloritic. Irregular lower cnt bounded by a tiny ptygmatically folded carb stringer.

1544.0 1549.0 Amphibolitic.
A very highly deformed, variably amphibolitised and weakly foliated section. Dark grey to almost black in colour. Invaded by 1/8-1/4 in thick high angle carb-qtz veinlets and larger patches of pale pink qtz-carb alteration. The former are ptygmatically folded(especially near the upper cnt); the latter are variably developed from ghostly, fuzzy examples to cleanly bounded rounded bubbles containing abundant very fine granular magnetite. A strongly magnetic section with scattered fine cubic py. The altered areas are more strongly mineralised. Very sharp lower cnt @ 35 DTCA.

1549.0 1557.8 Ultramafic.
Continuing with the host rocks; pale blue and strongly magnetic. Cut by a few scrappy carb stringers lying at 45 DTCA. Very little sulphide here.

1557.8 1561.3 Amphibolitic.
Cnt into a black, fine grained amphibolitic section. Locally slightly coarser grained where larger carbonate grains have formed. Cut by a very few

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

wispy carb stringers towards the lower cnt. Not magnetic except where the carb stringers have come in. Weakly mineralised at best. Foliated at 50 DTCA. Sharp cnts at 20/45 DTCA.

1561.3 1568.0 Ultramafic.
Returning to the host ultramafic. Fairly massive with minimal veining and only traces of sulphide.

1568.0 1577.5 Felsite.
Sharp cnt into a dark grey, slightly mottled, massive dirty felsite. Fine grained and very hard. Calcitic and moderately to strongly magnetic. Subtle internal breccia textures; a well fractured and subsequently healed (with chlorite) phase with weak hematite alteration in part. Contains a few scattered 1-2 mm pale yellowish coloured feldspar? phenocrysts?/metacrysts? Riddled with very fine carb threads; the density and size of these increases slightly moving downhole. A well mineralised unit; diss and 1-3 mm cubic and subhedral crystalline py is found throughout. Some fracture control of the sulphide is visible. Contains a few fresh intact wallrock xenoliths 2-3 inches across. Sharp cnts @ 60/70 DTCA.

1577.5 1631.2 Ultramafic.
A slightly different sequence of internally more variable ultramafic rocks; weakly amphibolitic in part to more greenish with less of a blue tint. Locally more chloritic; this gives the the rocks a more green-black appearance in part. A less magnetic section; narrow corridors still react well to the pen magnet. Weakly veined with wispy carbonate; the more blueish sections tend to carry most of the stringy carb. Not strongly foliated, although well fractured on a mm to cm scale locally. Calcitic throughout. Contains only traces of fine cubic py; more appears in the more chloritic/amphibolitic zones.

1631.2 1644.8 Basaltic Komatiite.
Sharp but subtle cnt into a dark green unit which is moving more into the basaltic komatiite field. Calcitic and non-magnetic. Massive with a slightly granular texture. Xcut with very fine chloritic fractures. Contains traces of fine cubic py and internal zones of more ultramafic material. Carries small amounts of wispy/scrappy carb stringer material at 45-55 DTCA. Cnts at 40/40 DTCA.

1644.8 1646.9 Ultramafic.
Ultramafic host; dark grey-green and non-magnetic.

1646.9 1651.7 Amphibolitic.
Opening into a black coloured, fine to medium-fine grained interval. Heavily carbonated and re-crystallised; this creates a psuedo-intrusive texture in the matrix. Massive with a uniform grain size. Calcitic and strongly magnetic. Cut by a very few slightly fuzzy carb-qtz veins and a few patches of weakly hematitic carb-qtz alteration. Variably mineralised with fine cubic py; the more altered carb-rich areas carry more sulphide. Sharp basal cnt @ 40 DTCA.

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

1651.7 1652.5 Ultramafic.
A tiny sliver of blue-green ultramafic host.

1652.5 1654.2 Felsic Dyke.
Sharp cnt into a very dark grey, speckled dyke. Contains an abundance of 0.5 to 1 mm feldspar phenos; a slightly bimodal population which is just barely supported in a very fine grained crystalline matrix of discreet feldspars and amphiboles? Weakly calcitic in the matrix and fine fractures. Slightly dusted/altered phenocrysts of plagioclase. Moderately magnetic and partially silicified. Well mineralised with very fine cubic and spotty py. Sharp cnts @ 40/45 DTCA. Not exactly like other brownish (more hematite-rich) examples, but probably related to them. Not an FP.

1654.2 1657.5 Ultramafic.
A dark blue-grey section of fairly massive ultramafic host. Non-magnetic and essentially free of calcite. Contains no sulphide. Slightly more strongly chloritic at the cnts against the surounding intrusives.

1657.5 1673.3 Felsic Dyke.
Sharp cnt into a thick felsic dyke which is characterised by 2-3 inch thick marginal zones which look very much the above described intrusive at 1652. The finer speckled aspect grades smoothly into a darker muddy grey to purple brown coloured, rather massive phase with a very subtle speckled or spotted appearance. The rocks are porphyritic, but contain far fewer phenos than the marginal equivalents. The phenos are a dirty white to pale blue colour and often fuzzy and or mottled; the majority are subhedral, equidimensional and range from 0.5 to 1.5 mm across. A few scattered much larger examples reach 3-4 mm. Many are altered with carb and very fine chlorite. These grains are set in a dirty grey to brownish almost aphanitic groundmass which has a very fine gritty/grainy texture, somewhat like some of the felsite units. A very hard rock which has been silicified and locally hematised (more towards the basal cnt). Weakly calcitic in both the matrix and fractures.
Weakly veined with scattered very fine 30-50 degree carb-qtz threads and slightly thicker fracture-fillings and gashes. Hematite is introduced along many of these features. Contains a few fresh, small sub-angular inclusions of ultramafic host. Well mineralised with diss and fine spotty py. More strongly mineralised towards the bottom cnt. Cut by a dark grey, almost aphanitic mafic dyke at approx 1665-1666; it is strongly magnetic and very weakly mineralised. It has very sharp high angle cnts with subtle chilling at the margins. Broken and blocky near the bottom cnt. Sharp 10-15 degree lower cnt. Not a typical FD.

1673.3 1675.7 Ultramafic.
A short interval of weakly calcitic, pale green to black host ultramafic. Devoid of sulphides. Fairly massive with wispy, swirling carb alteration.

1675.7 1676.9 Ultramafic ?.
A pale grey-green interval which from afar looks texturally like a felsite. Very hard and calcitic in fractures. Non-magnetic. Fine grained with a very fine mottled texture which results from a pervasive overprinting of the original rock type with a pale tourquoise-green chlorite. Finely

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

cracked/fractured; a darker green chlorite infills these features and occurs as 1-2 mm spots growing in the groundmass. Cut by a few high angle carb-qtz gashes and stringers. Well mineralised with diss and fine cubic py in the matrix and around carb-qtz gashes. This may be very strongly altered section of ultramafic against the underlying dyke. It appears to have fairly definitive high angle cnts however.

1676.9 1681.0 Felsic Dyke.
A pale brown, speckled porphyritic dyke which is quite representative of other McBean FD's. Sharp cnts @ 70/30 DTCA delimit the unit. Abundant milky white feldspar phenos (plag?) are set in a slightly muddy, brownish to flesh coloured aphanitic groundmass. Very small amounts of wispy mafics (chlorite)? are visible in the matrix. Two populations of feldspar are developed; a larger 2-3 mm family and a more abundant 0.5-1 mm set. Most phenos are fairly fresh looking and tend to be euhedral with tabular to equidimensional habits. Some zoning is visible. All phenos are supported in the matrix. A very hard, silicified and variably hematised phase. Xcut by several generations of fine qtz-carb stringers lying at 30-50 DTCA and some higher angle gashes and blebs of more qtz-rich infilling material. Weakly magnetic. Well mineralised with diss and fine cubic py throughout; the distribution is not fracture-controlled.

1681.0 1684.1 Ultramafic.
The basal interval of ultramafic rocks in a broad sequence of the same. A pale grass green coloured interval with a slightly sheared aspect near the top cnt. More grainy/mottled texture moving downhole. Essentially non-magnetic. Calcitic in fine fractures. Weakly mineralised with traces of fine cubic py. Ambiguous, high angle lower cnt.

1684.1 1687.1 CONTACT ZONE
A dark green, mottled to grainy almost flowy textured interval with a subtle very coarse breccia texture. This section is interpreted to be a transitional zone between the overlying predominantly ultramafic system and the underlying more mafic-rich sequence. The last remnants of komatiitic lavas are intermingling with lighter green mafic rocks in a chaotic, slightly brecciated zone which contains relect variolitic textures. Modestly mineralised with fine spotty py. Calcitic and non-magnetic. The basal cnt is fairly sharp, but quite subtle; it lies at about 45 DTCA. Tops here are thought to be uphole.

1687.1 1760.9 BASALT
Opening into a wide section of pale grass green, fine grained, pillowed lavas which contain narrow variolitic zones and very poorly developed pillow rims locally. Probably an Mg tholeiite. Quite hard and massive with little fabric. Generally non-magnetic, except for a narrow zone right below the upper cnt. Xcut with abundant scrappy and wispy carb-qtz stringers, fine stockworks and veinlets. Calcitic in both the groundmass and veining. Much of the veining lies at about 30-50 DTCA. Not well mineralised; scattered diss and fine subhedral py is found throughout with slightly greater concentrations near or within the veining. Locally silicified and weakly epidotised. Cut by three narrow pale grey, weakly amphibolitic mafic dykes

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

at around 1690. Rounded varioles are typically lighter green in colour, somewhat more felsic than the matrix and range from 0.5 to 2 mm across; they tend to coalesce within pillows and against rims. Rims are poorly defined; variolitic textures and subtle slightly more chloritic zones are diagnostic. The rocks become slightly more olive green in colour approaching the basal cnt. A high angle, fairly sharp lower cnt.

1760.9 1764.7 ULTRAMAFIC

A narrow interval of pale green to grey-blue, soft, slightly talcose ultramafic material. Calcitic and non-magnetic with only traces of sulphide. The section opens in a pale green, weakly mottled/speckled zone which resembles the 'breccia' described above at 1684 in the CTZ. This grades into a more greyish, more massive section cut by a few scrappy carb stringers. Sharp lower cnt at 45 DTCA.

1764.7 1771.6 BASALT

A pale grey to beige, strongly altered mafic flow, which exhibits well developed flow top/variolitic textures at the top cnt. Variably silicified, strongly carbonated (calcite), and becoming more sulphide-rich towards the basal cnt. A narrow corridor of weakly fuchsitic material occurs at about 1770.6 to 1771.0 Opening the sequence is a pale beige/dark grey speckled, fine variolitic flow top which is finely brecciated locally. This grades into a cherty/quench zone which has tiny fractures (almost polysutures) developed. This grades in turn into a very fine broken variolitic (typical 'broken spherulitic' texture) zone which gradually coalesces downward into a more massive flow rock.(Tops are interpreted to be uphole) The massive, fine grained textures dominate down to about 1768.8 where subtle variolitic textures again become visible; these remain intact down to about 1771. The remainder of the section is more massive again. The rocks become well mineralised at about 1768.8, where 2-3 mm cubic py appears, as well as fine anhedral/patchy pyrrhotite. Below 1770.8, fine diss py appears, replacing the coarser sulphide above. A weakly veined section; a few scrappy, irregular carb-qtz fracture-fillings cut the interval above 1768, at both flat and steep angles. Dark grey ?smoky qtz and granulated qtz accompanies the carbonate component. Traces of very fine py occur in a few veins. Sharp basal cnt @ 40 DTCA.

1771.6 1779.1 CHERTY EXHALITE GRAPHITIC

Opening into a narrow exhalite/interflow horizon which consists of two components; a graphitic, pelitic sediment and an underlying pale purple to buff chert zone. The graphitic zone is quite massive with little in the way of clean bedding. Where visible, the bedding is distorted and or tightly folded. A nominal bedding orientation is about 40 DTCA. Very little silty material occurs (a small bed occurs at 1773.5); the zone is essentially a silicified graphitic argillite. Irregular, folded and boudinaged qtz-carb veining and gash fillings tend to accentuate the deformation. A well mineralised section; py occurs as spotty bleby/spidery accumulations which are crudely bedded, or as diss to streaky accumulations; some is found within qtz also. Small amounts of very fine wispy fracture-filling sphalerite is visible in close association with some of the streaky py and a few small qtz sweats. The small amount of carb in veins and gashes is

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

calcite. The graphitic section bottoms out along a low angle folded cnt at around 1775; a 3-4 inch thick almost massive bed of grainy py then leads into the chert interval. The chert zone is somewhat chaotic and not laminated or bedded; instead it consists of a pale beige to mauve coloured component which hosts a number of angular fragments? of more bone coloured chert which is very finely fractured with chlorite. The entire section was then xcut by a few pale white high angle qtz and qtz-carb gashes.
Sulphides are common; they occur as 1/2 in diam pyritic and pyrrhotite/py nodules; wispy and streaky py fracture-fillings and as very fine wispy fracture-filings of sphalerite. Traces of chalcopyrite are also present.
A massive unit with a moderate RQD value. Two graphitic slips are conspicous; one @ 1773.4 @ 40 degrees with some finely brecciated carb infilling and a second @ 1777.5 @ 50 DTCA. Sharp lower cnt at 55 DTCA.

1771.6 1775.1 Graphitic.

1775.1 1779.1 Chert.

1779.1 1809.8 CARBONATED ZONE BASALT
Cnt into a pale grey, distinctly hard and gritty unit which resembles some of the more intensely altered variations of felsite logged above and in other McBean holes. This unit however is thought to be derived from a ?mafic flow which has been very intensely altered with carbonate and silica. It now consists of a very grained mosaic of intergrown carbonate, qtz and tiny mafics(chlorite/amphibole). Small mafic spots (metacrysts) 0.5-3 mm across are scattered throughout. The rocks are now massive and variably magnetic and calcitic. The unit is cut by a very few 1/4 in thick high angle carb-qtz stringers which typically strongly bleach the immediate wallrocks. Very fine carb threads are more common xcutting features; chlorite and carb infill these. A well mineralised unit; 2-3 mm cubic py occurs throughout the interval; some fracture control is evident in part. A few areas see larger patches or groups of these same crystals developed. The unit encloses a short section of purplish chert at 1794.1 to 1795.1. It is bounded by very sharp, undulating cnts at about 30/30 DTCA. It is well mineralised and graphitic. A tight graphitic slip cuts the core here at 1794.5 @ 30 DTCA. At 1806-1807 lies a short window of preserved ?flow breccia or flow top material. Angular dark grey-green fragments are suspended in a fine breccia-like zone. The unit concludes along a graphitic slip at 35 DTCA.

1794.1 1795.1 Chert.

1809.8 1819.2 ULTRAMAFIC AMPHIBOLITIC
A section of brownish to dark grey, weakly amphibolitic and strongly carbonated ultramafic rocks, much like the amphibolitic zones described above in the large ultramafic system which ended at 1684. This example is essentially non-magnetic (with a few tiny magnetic zones) and calcitic throughout. It is medium to local med-coarse grained with an equigranular, fairly homogeneous and massive character. More discreet acicular amphiboles and some fine biotite flakes are visible in the coarser-grained zones. Locally weakly silicified. Xcut by a few fine carb and carb-qtz stringers, which typically bleach the surrounding wallrock. Locally weakly flooded with

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

qtz-carb material. A well mineralised interval; diss and fine cubic and spotty py occurs throughout much of the matrix. More sulphide is often visible where alteration is more intense. Becoming slightly foliated at a very low core angle near the basal cnt. Sharp cnt at 35 DTCA.

1819.2 1886.4 BASALT CARBONATED ZONE

A section of intercalated ultramafic and very heavily altered ?mafic flows, with the latter constituting much of the interval. The V7 designation is somewhat presumptuous but it probably best describes the dominant rock chemistry in this section. All of these rocks are calcitic both in veining and groundmass. A weakly deformed section with small areas where primary textures are well preserved. Much of the section is weakly magnetic. Weak fuchsite alteration is developed locally. A sparsely veined area, save the normal background of fine carb stringers. Strongly mineralised in part. Parts of this interval are beginning to look quite like the 'flow ores' documented at the Kerr Deposit- this is the first McBean hole to intersect mineralisation just quite like this. Details follow below.

1819.2 1827.8 Basalt flow.

A pale brown to beige coloured, fine grained to slightly gritty textured variably silicified unit which opens with 5 in thick, cherty upper zone; this grades quickly into a subtle brecciated ?flow top which becomes more massive at about 1821. This 2 foot interval is strongly pyritic with nodular/grainy accumulations up to several inches across and finer wispy and fine fracture-controlled sulphide(tops are interpreted to be uphole here). Moving downhole, the rocks become slightly lighter in colour and exchange the coarser sulphides for a heavy overprint of fine diss py. The matrix becomes slightly grittier here and just begins to develop a foliation (@ 40 DTCA). A bit of sericite has overgrown portions of this zone. There are several very small cherty fragments? in this area also. At 1824.1 the diss py is again exchanged for scattered py cubes 2-3 mm across, as the matrix *becomes slightly greyer in colour and not quite so gritty. Some of the* pyrite also follows the very weak matrix fabric. Very fine wispy pyrrhotite is present here, as are a few faint patches of fuchsite alteration. Below 1826.7 the sulphide content decreases; weak fuchsite alteration is visible right up to the lower cnt. It is sharp @ 45-50 DTCA.

1827.8 1839.6 Basalt Ultramafic Flow.

A mixed section of mafic and ultramafic, variably silicified lavas. The interval opens with a dark grey variolitic flow top zone which is in sharp cnt (at 1828.3) with an underlying weakly layered and foliated (ultramafic) section. This second zone is weakly stained with fuchsite, silicified and contains fine streaky py and fine pale milky carb stringers. The fabric/layering/veining here lies at 35 DTCA. Below 1830, the layered texture dissappears and is replaced by a darker green, more ultramafic-rich zone in which are suspended small blocks of variolitic (mafic) lava. Very fine diss pyrrhotite, traces of chalcopyrite and fine fracture-controlled cubic py occur throughout the section. Weak patchy carb-qtz alteration is developed locally. The lower 2 feet of the section has a more bleached appearance and contains traces of pervasive fuchsite alteration. Two pale grey, very fine grained mafic dykes cut the core at about 1837; they are

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

mineralised with spotty py and are otherwise homogeneous and featureless.

1839.6 1848.0 Ultramafic.
A more massive, locally silicified, dark grey-green ultramafic flow begins at a very sharp, high angle cnt. The rocks become slightly lighter in colour from 1841-1843. Moving downhole they darken again and develop subtle flow top/flow breccia textures which continue down to 1846.8 where a more layered aspect begins to evolve (tops are thought to be downhole here). This texture occupies the remainder of the unit down to 1848. Except for a narrow sliver of silicified graphitic material at 1847.1. Bedding? lies @ 35 DTCA here. Below this for about a 1/2 inch is a very finely laminated, dark grey cherty lens. The ultramafic chemistry then returns for the last 8 inches of the unit. The very last 4 inches are weakly altered with fuchsite; the unit then concludes at a very sharp 40 degree cnt. These rocks are magnetic and calcitic in a few wispy, ragged stringers and blebs. The veining is commonly cutting the core at 40-50 DTCA with some locally steeper angles. A variably mineralised section; streaky, wispy and fine ragged fracture-controlled py is most common. Very fine diss and microfracture-filling pyrrhotite is present below 1840.

1848.0 1886.4 Basalt.
Opening into a thicker package of strongly altered, fine to medium-fine grained rocks with a massive, rather homogeneous character. The section is moderately to strongly magnetic, and quite calcitic both in the matrix and in veining (both fine stringers and small inclusions in larger qtz veinlets). The sequence is medium to dark grey in colour and has little in the way of internal texture except for a slightly variable grain size and a few subtle internal cnts between these zones. Fragments are absent. Some small zones of weak silica flooding are beginning to develop; much of the interval is weakly silicified. Sparsely veined with 1/8-1/4 in thick high angle qtz-carb and carb stringers and thicker pale grey qtz veins which often lie at very low core angles. These veins contain small amounts of carb as selvages, small angular pale grey chloritic inclusions and wispy/streaky/bleby py and diss/spotty po in some cases. Traces of chalcopyrite are also visible.
The sulphide within the veining contrasts with much of what has been logged before at McBean; in almost all previous examples this amount and texture of sulphide lies outside the veining. Fine fracture-filling py is also scattered throughout the unit. As well, diss and fine cubic py and fine anhedral/spotty po can be found in the wallrocks here. Some increased amounts of sulphide coincide with the areas of weak silica flooding also. Sharp high angle lower cnt.

1886.4 1911.0 CARBONACEOUS SEDIMENTS
A coal black, very fine grained graphitic/pelitic interval with very little silt or coarser grained component. Subtle, generally quite irregular (folded) and deformed bedding is visible; it is most obvious where very small laminae of silty material are deposited and or where sulphide is developed. The bedding is nominally oriented at 20-40 degrees; higher and lower orientations are common. Grading is only weakly developed; some examples suggest tops are downhole but the deformed state of these rocks

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

makes this a bit suspect. Silicified over much of the interval. Weakly magnetic in the lower half of the section. Weakly veined with scrappy, pale white carb-qtz stringers and gashes. Most are highly deformed(folded, boudinaged) and lie at both very high and very low core angles. A well mineralised section; deformed nodules and streaks of py are present throughout. Some of this material mimics the bedding and emphasizes the deformation nicely; broken off, folded and extended fracture-filling material is common. Some py is also growing in and on top of small qtz-carb knots and boudins. Broken up along 40-50 degree joints throughout; many surfaces carry fine slicks at small angles (30 degress is typical) to the core axis. Gradational silty lower cnt at 25 DTCA.

1911.0 1931.0 BASALT FLOW BOTTOM

Opening into a pale grey-green, fairly massive rock which is characterised by abundant flowy textures. The sequence begins with a weakly variolitic top? (almost 'chicken-feed') which grades into a fine flow breccia at about 1913.5. The breccia consists of small angular massive fragments, and chunks of variolitic material which are welded together with a glassy light green interstitial fluid. The rocks become more massive and slightly darker in colour below 1923.5 with the occasional zone of variolitic material, more felsic (late fluid) flooding and slightly coarser flow breccia. A short section of pale beige, almost cherty material begins at 1930 and becomes more brownish and riddled with fine carb threads as the bottom cnt approaches. Sharp, slip bounded basal cnt @ 40 DTCA. A weakly magnetic, sparsely veined unit with a strong calcite overprint. Not especially well mineralised; traces of spotty and fine subhedral py occur in a few stringers or as fracture fillings. Probably a tholeiitic basalt. Tops are probably uphole in this section.

1931.0 1938.7 ULTRAMAFIC

A short section of very strongly altered ?ultramafic material. A dark grey to grey-green coloured rock with a pale pink cast in part. Medium to medium-coarse grained with a fine mottled/speckled appearance. The interval contains small domains of slightly differing alteration intensity and mineralogy. Some suggestion of local fragment textures are visible. Weakly foliated @ 50-60 DTCA. Contains no appreciable veining, save one dirty dark greenish qtz filling at 1933.5 @ 65 DTCA. Strongly calcitic in the matrix. Variably hematised and silicified with a very weak incipient type alteration beginning; weakly amphibolitic in part. Non-magnetic. Modestly mineralised with diss and fine spotty py; this is more strongly developed in the more Fe-rich areas. The unit is intruded with a narrow mafic dyke at the lower cnt. It is a pale grey colour, very fine grained and has quite sharp cnts @ 50/60 DTCA. Some chilling is visible at the lowermost cnt at 1938.7.

1938.7 1941.9 BASALT

A short section of flowy basalt, quite well mineralised and foliated, becoming more so towards the lower cnt. Pale grey-green in colour with a mildly brecciated, variolitic top; then becoming slightly more massive internally with a fragmental/brecciated? appearance locally. Weakly sheared, locally siliceous and strongly pyritic especially below 1939.7. The unit carries diss and 2-3 mm distorted cubic py grains which mimic the fabric.

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

Extremely siliceous in the lowermost 3 inches of the unit. Sharp lower cnt @ 40 DTCA. Non-magnetic. Cut by few very fine carb threads mostly in the upper portions of the section. The rocks carry some fine sericite, below 1940, and strongly resemble the 'flow ore' type mineralisation described above at 1819-1827.

1941.9 1949.3 CHERTY EXHALITE

Contact into an interval of light grey coloured, weakly laminated cherty material. Contains inclusions of bone white, fractured cherty material and several thin slivers of slightly gritty highly altered ?mafic material which resembles the overlying phase. The remainder of the section is pale grey and layered at about 60 DTCA. A few dark grey cuspate patches and some dark purple zones (graphitic areas?) are found in this material. Pale milky white patches of calcite have infilled various angular fractures; these vary in size from 1/4 across to 2-3 inches thick by 6 inches long. Fine diss and streaky to fine nodular py is distributed throughout much of the grey component; much is concordant with the layering. Traces of fine fracture-controlled chalcopyrite are visible at 1944. A non-magnetic, calcitic interval. Two slightly gougy slips act as bounding cnts to the bone-white material @ 1941.9 and 1942.6; the former is slightly graphitic as are two additional closely spaced breaks at 1942. All of these slips lie at about 30-40 degrees. Brecciated, slightly chaotic lower cnt @ 50 degrees.

1949.3 1953.5 BASALT

A pale grey, slightly gritty phase which looks very much like rocks noted above at 1819-1827. This section is silicified, and very pyritic as disseminations and 1-2 mm anhedral grains. It is strongly calcitic in both the matrix and in two types of veining. Tiny high angle carb stringers and 1-2 in thick, very low angle, slightly smoky qtz veins cut the unit; the former post dates the latter. Neither vein set carries any appreciable sulphide. Non-magnetic. These rocks are interpreted to be very highly altered mafic flows, and with the large amounts of added sulphide and silica/carbonate are easily equated to 'flow ore'. High angle lower cnt.

1953.5 1962.1 ULTRAMAFIC

A pale blue-grey interval of variably deformed and altered fairly massive ultramafic flow rock. Locally foliated and finely speckled with carbonate; fabrics are typically @ 60-75 DTCA. Locally amphibolitic with some biotite in part. Strongly calcitic and non-magnetic. Well mineralised in the more amphibole-rich zones with diss, streaky and 1-3 mm cubic py. Two or three tiny sub-flows are probably developed here; they are typically fine grained with amphibolitic bottoms? and brownish, sometimes slightly siliceous tops. Tops would be interpreted as downhole here. Weakly veined with tiny, high angle carb stringers. Sharp basal cnt @ 65 degrees.

1962.1 1969.9 ULTRAMAFIC AMPHIBOLITIC

Another section of more strongly altered ultramafic material. The interval begins as a dark grey-green weakly amphibolitic/chloritic phase which grades downhole into a more coarsely mottled rock which is being invaded by patchy pale pink qtz-carbonate fluids. A pale blue-green chlorite is also replacing much of the matrix, firstly as very fine grained interstitial material and

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

then farther downhole as more foliated (at 65-75 DTCA) patchy growths between carb-qtz metacrysts and knots. Non-magnetic and continuing strongly calcitic. Overall, a well mineralised section with fine diss and 1-2 mm cubic py visible in much of the rock; higher concentrations are found in areas of more intense alteration. Weakly veined; a few tiny pinkish carb-qtz fractures are present as per the better mineralisation. Sharp lower cnt @ 65-70 DTCA.

1969.9 1985.0 BASALT

Opening into a dark green, fine grained, rather massive and homogeneous mafic flow. Essentially non-magnetic. Calcitic throughout, both in veining and pervasively in the groundmass. The rocks become more altered with weakly hematitic carb and qtz (+/- fine amphibole) moving downhole; this causes the matrix to become more coarse grained and speckled to almost mottled in appearance. A subtle variolitic top is developed for several inches at the botton cnt; this suggests tops are downhole here. A sparsely veined section; a very few fine carb stringers cut the core near the bottom cnt. Locally well mineralised in the more altered zones with fine cubic and diss py. High angle lower cnt zone; it is disrupted on a mm scale and invaded by a set of 1/2 in thick, 40 degree qtz-carb veins.

1985.0 2013.1 ULTRAMAFIC

Returning to a pale blue-grey, fine grained interval of massive to weakly flowy ultramafic material. The rocks here are very weakly magnetic in part and continue to be calcitic. The bulk of this section is homogeneous and relatively undeformed with a few fine scrappy carb stringers and gash fillings (a larger wormy vein cuts the core at 1989). It is similarly weakly mineralised with fine cubic py in a few areas. The cnt regions are slightly more altered and deformed (weakly sheared/foliated). The upper 2-3 feet contains very subtle flow top/flow breccia textures? suggesting tops here are uphole? At the bottom cnt there is a 2 foot zone which is weakly foliated and slightly amphibolitic. The fabric lies at 70 DTCA here. Sharp lower cnt at 80 DTCA.

2013.1 2025.3 ULTRAMAFIC AMPHIBOLITIC

Returning to another strongly altered ultramafic section, which is coarsely mottled and variably amphibolitic. Dark grey in colour with a very pink cast locally. Fairly hard although not pervasively silicified. Some semblance of incipient alteration type textures are begining to develop moving downhole. Strongly carbonated (calcite plates) and not magnetic. A good deal of fresh chlorite is growing in the matrix, lying in small carb stringers or developing in discreet bands throughout the unit. Amphibole occurs as acicular grains from 1 to 3 mm long or as much finer felty groundmass alteration. Modestly mineralised with fine spotty/anhedral py throughout. A very weak fabric is beginning to form at almost 90 DTCA. Xcut by a local set of fine 40-50 degree carb stringers at around 2021-2023. Slightly irregular, high angle basal cnt.

2025.3 2032.3 ULTRAMAFIC

A short section of pale blue-grey lightly speckled flow material, very much like that noted above at 1985. This example is riddled with fine high angle

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

carb threads, many of which are tightly folded (chevron, ptygmatic) on mm to cm scales. AP's are typically almost perp to the CA. Sparsely mineralised. Sharp, high angle basal cnt.

2032.3 2044.4 ULTRAMAFIC AMPHIBOLITIC
Opening into a dark grey, variably mineralised, fine grained unit, which is weakly foliated in part and locally heavily veined. The upper parts of the interval have a coarse, gritty appearance not unlike portions of the unit above at 2013. This area is weakly foliated at 60-65 DTCA, amphibolitic and strongly carbonated. This grades downhole into a finer grained more massive section starting at about 2036.5. Much of the next 3 feet is occupied by a irregular mass of pale white carb-qtz vein material which carries numerous fine wallrock fragments and very little sulphide. By 2039.8, the massive character is replaced by a crudely laminated and varigated texture which continues to 2043.4. This area is silicified, strongly magnetic and more strongly mineralised than most of the rest of the interval. The layering lies at 60 DTCA here and is locally xcut by a few very tiny carb stringers which dump a pale brown alteration product into the wallrock. The section concludes with a fine grained, muddy brown coloured felsite. It is very hard, weakly magnetic and more cracked up/veined than the above host rocks. Diss and fine cubic py is scattered throughout. Broken core obscures the lower cnt.

2044.4 2073.6 BASALT
A broad interval of medium-fine grained strongly altered rocks which are interpreted to be mafic flows or a thick single flow unit. A quite homogeneous, massive to slightly mottled sequence which has little in the way of primary texture. Slightly foliated at about 40-50 degrees just below the upper cnt; this fabric becomes less developed moving downhole. Consists of a fine mosaic of intergrown carbonate, chlorite and minor amphibole. Calcitic and not magnetic. Weakly mineralised throughout with small amounts of spotty py. Veining is absent except for a few scattered very fine carb threads. A small siliceous zone is developed at the bottom cnt for about 12 inches; 2-3% fine cubic py is developed here along with a halo of slightly coarser py, above the siliceous zone for several inches. A small porphyritic felsite body lies right at the cnt and is probably responsible for the alteration. Sharp cnt @ 50 DTCA.

2073.6 2084.7 ULTRAMAFIC FLOW BASALT
A pale grey-green coloured predominantly ultramafic flowy phase with short sections of more mafic looking material. Crudely layered and mottled with a disrupted, chaotic appearance in part. Portions of the section have mottled ultramafic textures; other areas have variolitic more mafic textures. There are several narrow discreet flows developed; tops appear to be downhole. Non-magnetic and strongly calcitic throughout. Locally weakly silicified. A well mineralised interval; numerous streaks and nodules of py up to 1 inch across occur throughout the section. Contains a short interval of weakly developed cherty/graphitic exhalite @ 2077.9 to 2078.5. Small amounts of very fine sphalerite and pyrrhotite are visible in the area. Wispy and mottled carb stringers and patchy carb alteration is present throughout the section. Gradational high angle lower cnt.

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

2084.7 2087.2 CHERTY EXHALITE GRAPHITIC

A small section of weakly graphitic, deformed exhalite material with some very fine-grained mafic tuff component. More of a silicified unit than a section where a discreet laminated or massive chert zone has been deposited. Highly disrupted, variably oriented bedding. Well mineralised with streaky, nodular and blebby py. Very fine fracture-filling sphalerite and slightly coarser closely associated pyrrhotite is also present. Invaded at the top cnt by a narrow irregular qtz sweat with abundant blebby py, po and chalcopyrite. Slightly scalloped lower cnt at 60 DTCA.

2087.2 2115.2 BASALT

Opening into an interval of highly carbonated, medium-coarse grained, rather homogeneous rocks which are thought to be very highly altered mafic flows. This example consists of a fine intergrown patchwork of pale pinkish carb, chlorite and lessor scrappy amphibole. Locally slightly larger plates of amphibole impart a spotty texture to the rocks. Grossly similar to other sections logged above in this hole. Very dark grey green with a gritty to finely mottled texture. Massive and uniform with minimal veining or fabric except for the lowermost 3 feet of the interval. There is a hint of a 70-80 degree foliation beinning to form in parts of the uniform zone. Strongly calcitic and becoming slightly magnetic below 2110. Weakly mineralised with scattered spotty/cubic 1-2 mm py. Below 2111.9 the rocks become finer grained, slightly more amphibolitic and riddled with small knots and wispy high angle stringers of carbonate. A layered appearance results with the bands lying at about 60 DTCA. This area is slighty more mineralised; it is sprinkled with very fine cubic py. A tiny pale grey amphibolitic mafic dyke invades the unit at 2114; its' cnts mimic the local layering. Sharp lower cnt at 60 degrees.

2115.2 2201.6 FELSITE

Contact into an intrusive system which contains several variations of a very dark coloured porphyritic felsite. Small angular fragments and larger rafts of ultramafic material are caught up in the unit. Massive to slightly blocky in part. Very hard, well saturated with calcite and variably magnetic. The rocks are composed of a very dark maroon to muddy brown to slightly purplish coloured aphanitic and siliceous groundmass, in which are supported two populations of feldspar phenos. The phenos are either 1-2 mm across or 3-6 mm across; the two families do not usually co-exist in the same intervals. The larger grains are subhedral to euhdreal and generally equidmensional. They are a pale yellow-buff colour, tend to be slightly cloudy and have fuzzy somewhat indistinct boundaries. They are often fractured internally once or twice; carbonate and hematite are the common fillings. Parts of the unit are variably hematised. Short sections of reddish to orange coloured 'dioritic' material are also developed. Generally a modestly mineralised section with variable amounts of diss and fine spotty py throughout. More details follow.

2115.2 2117.9 Diorite.

A short section of reddish to orange coloured medium grained intrusive which resembles dioritic rocks logged in many other McBean holes. Hematised and

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

heavily fractured with fine chloritic and hematitic threads. Not particularly rich in mafics. A greater abundance of feldspar grains gives the rock a more normal crystalline intrusive texture. Contains abundant fine cubic and spotty py throughout the matrix. Strongly silicified. Grades quickly into the underlying zone across a finely amphibolitic cnt which is quite deformed and irregular.

2117.9 2132.0 Felsite.
A very dark coloured, slightly porphyritic section. Brownish to slightly purple, very hard and fractured/finely cracked up throughout. Calcite (and locally specular hematite) infills many of the small breaks and gashes. Both flat and high angle orientations are reflected in the fracturing. Locally strongly hematised and magnetic. Contains many small angular ultramafic fragments up to 1/2 in across. Diss py is sprinkled throughout the matrix; a few spots of slightly more blebby or fracture-controlled sulphide occur in the more fractured areas. Sharp lower cnt @ 45 DTCA.

2132.0 2133.6 Diorite.
Another short dioritic section. Slightly smaller, more tightly packed feldspar grains characterise this example. Strongly hematitic as pervasive alteration patches and halos about fractures. Abundantly fractured; most are healed or sealed with silica and hematite. More strongly mineralised here compared with the first 2D and the surrounding felsite. Essentially non-magnetic. Sharp basal cnt at 65 DTCA.

2133.6 2164.0 Felsite porphyritic.
Opening into a blocky interval of magnetic and porphyritic felsite, characterised by the large phenos. Very few small phenos are developed here. The phenos are fairly prominent down to about 2145 where they begin to become more altered and darker in colour. This progesses until they are the same colour as the matrix; they are only visible because of the minute hematitic strain shadows that have formed about the grains. This zone grades out at about 2150. Below 2150, the matrix slowly becomes lighter in colour (grey) and more altered. Weakly hematised around a few fractures; most are almost perp to the CA and calcitic. Sharp lower cnt at 80 degrees.

2164.0 2194.9 Felsite.
Returning to a more massive, barely porphyritic interval, with a dark grey to weakly purple colouration. Blocky to locally broken up or crushed. Slightly more altered matrix (compared with the upper sections) with a muddy aspect. Becoming slightly more fractured and hematitic moving downhole. Phenos become more obvious at about 2180. A few small ultramafic fragments are caught up in the matrix from place to place. A magnetic, very dark grey mottled (amphibolitic) dyke? is located at 2187.5 to 2189.3. It has fine grained cnt zones (chilled/earlier alteration?) developed along sharp, high angle, slightly irregular cnts. The section terminates at a sharp 60 degree angle.

2194.9 2196.7 Diorite.
Sharp cnt into a pale orange, medium grained dioritic phase much like the units noted above at 2115 and 2132. Flooded with hematite beginning at the

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

top cnt and subsequently feathering out moving downhole. The feldspar grains are almost obliterated within the hematitic zone; they become more distinguishable toward the lower cnt. The rocks here are not magnetic. Greater concentrations of sulphide (diss py) are present outside of the hematised zone. Sharp lower cnt @ 35 DTCA.

2196.7 2201.6 Felsite.
Resuming the phenocryst poor, more altered and massive host felsite. Slightly more blocky/jointed at 25-45 degrees. Wispy/cloudy matrix and fracture (carb/hematite) alteration is becoming more intense in this section. A few irregular amphibolitic rafts are present in the zone, as are small patches of red-brown alteration (Fe?). 0.5-1% diss py is sprinkled throughout. A non-magnetic section. Sharp lower cnt at 60 DTCA.

2201.6 2226.9 BASALT
An interval of totally recrystallised, strongly carbonated rocks which are thought to be related to the carbonated sections above at 2044-2073 and 2087-2115. Dark grey-green with a prominent pink speckling/mottling. The interval opens as a fine grained amphibolitic schist which quickly grades into a coarser grained mottled phase at about 2203. As in the above examples this section is thought to have been derived from a mafic flow rock as opposed to an ultramafic protolith. This example is also more heavily altered than the above noted areas; it consists of a coarse grained aggregate of pale pinkish carbonate/granulated qtz plates and interstitial chlorite plus or minus finer wispy or anhedral amphibole. The amphibole component is variably developed; it tends to be more abundant below 2220.5. A massive, variably magnetic unit which begins to aquire a weak fabric from 2223 downward. The foliation is typically at about 50-60 DTCA. Sparsely veined with fine pinkish carb-qtz stringers; most lie at about 60 DTCA. A moderately mineralised section; 1-2 mm cubic py is scattered throughout with a slightly greater concentration occurring in the lowermost 5 feet. Several narrow fine grained lenses of chlorite and amphibole-rich material occur very near the bottom cnt. Sharp basal cnt at 60 DTCA.

2226.9 2236.0 DIORITE
A pale red-orange medium grained intrusive phase containing a fairly tightly packed population of 2-3 mm pale white feldspars. The feldspar grains are just supported in the matrix and are typically subhedral and have somewhat fuzzy boundaries. The matrix is a reddish brown colour and aphanitic; it carries tiny mafic flecks and dirty chloritic patches and fracture-fillings. Calcitic in fractures. Weakly hematised groundmass. A hard, very slightly magnetic phase which is well fractured up and xcut by a network of very fine carb and chlorite threads. Carries several ghostly xenoliths of mafic/amphibolitic material and a few small and quite large(6 in long) angular fresher examples of the same. Well mineralised throughout with very fine cubic py. Cut by a few 1/8 thick irregular carb stringers. Not a diorite per se but somewhat similar to other McBean rocks called diorites; this example lies between the FD and 2D designations. Sharp lower cnt at 40 DTCA.

2236.0 2241.7 ULTRAMAFIC AMPHIBOLITIC

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

A short section of very dark grey-green, weakly foliated, amphibole and chlorite-rich material. Strongly calcitic and hematised throughout. The beginnings of incipient type alteration and a more deformed matrix suggest that a deformation zone type of structural enviroment is nearby. Strongly magnetic in part. Cut by a few wispy calcite stringers and gashes which roughly parallel the foliation (30-40 DTCA). One stringer contains a 3 mm speck of chalcopyrite @ 2239.1 Weakly mineralised with traces of diss py. Regularly jointed and locally broken up at 30-40 degrees. Irregular, flat lying lower cnt against the underlying intrusive.

2241.7 2269.5 FELSITE

Returning to another arm of the intrusive system described at 2115. This interval contains the same variations described above and a short section of fairly fresh, pale blue ultramafic material. Details are as follows.

2241.7 2251.4 Felsite porphyritic.
Opening into a coarsely porphyritic section with the typical purple-brown matrix. Locally smaller phenos are developed in this example. Calcitic and magnetic. Well mineralised with diss and fine spotty py throughout. Locally fractured and cracked with chloritic fillings. Very hard and hematitic.

2251.4 2260.2 Felsite.
Sharp cnt @ 45 degrees into the more massive, phenocryst-poor type of felsite. This interval contains a very few scattered phenos, intermediate in size between the typical larger ones and the 1-2 mm grains seen in the other example above. The rocks are otherwise quite similar; slightly gritty textured and homogeneous except for the odd tiny carbonate or hematitic fracture and fleck of amphibole. Other mafic/ultramafic inclusions are not common here; a ghostly example sits right at the lower cnt. Weakly mineralised with scattered diss py. Calcitic and magnetic. Tiny amphibole needles are beginning to become visible in the matrix moving downhole.

2260.2 2260.6 Felsite porphyritic.
A tiny sliver of the coarser porphyritic phase. Sharp cnts at 50/45 DTCA.

2260.6 2262.9 Ultramafic.
A pale blue-grey section of very weakly foliated, slightly talcy ultramafic. Foliated and veined with fine carb stringers at 45 DTCA; a couple of slightly flatter stringers xcut the fabric at 25 DTCA. Strongly calcitic and mineralised with fine cubic py, especially near the upper cnt. Non-magnetic. Sharp lower cnt at 65 DTCA.

2262.9 2269.5 Felsite porphyritic.
Returning to the coarse porphyry variation. Much as above with an increasing amount of groundmass alteration approaching the lower cnt. More fine veining/stringers with alteration halos and incipient type alteration textures become apparent below 2267.5. An alteration front sits at 2267.8; ankerite replaces calcite as the dominate carbonate alteration product. Well mineralised with diss and spotty py. Minimal veining developed. Magnetic and hematitic. Sharp, slighty irregular basal cnt at 30-40 DTCA.

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

2269.5 2269.6 START OF DEFORMATION ZONE
The beginning of a more deformed system of intrusive and ultramafic rocks typical of the McBean Deformation Zone.

2269.6 2274.0 PORPHYRITIC SYENITE
A pale orange, very hard interval of porphyritic syenite very typical of earlier McBean holes within the Deformation Zone. 2-3 mm rounded, pale white, somewhat obscure (strongly altered much as the matrix) feldspar phenos are supported in a pale orange, cloudy groundmass. Locally qtz eyes are visible. The rocks are silicified and weakly hematised throughout. Ankeritic and xcut by 1/8 in thick pale white qtz-carb stringers and blebs; these contain negligible sulphide and post date the hematite alteration. Weakly mineralised with diss py; this is found in the groundmass. Non-magnetic. Several fairly fresh ultramafic/amphibolitic inclusions are caught up in the section. Sharp lower cnt at 50 DTCA.

2274.0 2774.9 ULTRAMAFIC
Contact into a wide package of heavily carbonated, layered/veined pale grey-green to blue-black ultramafics, typical of the McBean Deformation zone. Highly deformed, strongly foliated and locally faulted and crushed or broken up. Ankeritic with little or no late calcite alteration. Xcut by a variety of narrow intrusive bodies. Variably magnetic. Strongly chloritic to locally amphibolitic. Weakly mineralised with scattered fine pyrite; more is developed in and around intrusives or in zones of incipient type alteration. More details follow:.

2274.0 2280.7 Amphibolitic.
A short section of variably amphibolitic and silicified material with a well developed 40 degree foliation. Portions of this zone might be tuffaceous; these areas are lighter coloured and somewhat gritty. There is a very faint greenish hue to some of these areas, suggesting they are beginning to alter with fuchsite. Locally magnetic; invaded by a few scrappy concordant carb sweats. Weakly mineralised. Gradational lower cnt into a small qtz zone.

2280.7 2282.5 Quartz.
A milky white, fairly massive qtz vein with numerous pale white and pale brown, angular carb inclusions floating about near the vein margins. Weakly mineralised with spotty py and very fine grains of magnetite. The py is located in both the qtz and in some of the inclusions near the margins. Small angular fracture-fillings and clots of chlorite are present near the bottom cnt. The basal cnt is chloritic and at about 75-80 degrees to the CA.

2282.5 2295.9 Ultramafic.
A finely banded/layered section with a strong 45 degree foliation. Slightly varigated and strongly sheared; small drag folds are forming in and along some of the carb banding. Other bands are boudinaged and disrupted in a plastic fashion. Slightly talcy at the top cnt; becoming slightly harder moving downhole. Non-magnetic and poorly mineralised. Low RQD; broken up and crushed locally. Gradational lower cnt into a more altered zone.

2295.9 2299.9 Ultramafic silicified.

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

A pale pink to flesh coloured section which has been silicified and weakly hematised. Weakly foliated with quite variable (flatter) orientations. Wispy amphibole and chlorite define the fabrics. Invaded by irregular patchy zones of siliceous, aphanitic fluid which are generally well mineralised with fine spotty/anhedral py. Cut by a slightly smoky grey vein at about 2297.2 which carries carb selvages and inclusions and virtually no sulphide. The rocks become slightly redder and then quite yellow at the bottom cnt where a small bleb of pale white qtz invades the cnt area. Irregular, high angle lower cnt.

2299.9 2325.5 Ultramafic.
A finely banded to varigated section with a mottled and disrupted appearance. Foliated and kinked @ 50-60 DTCA. Locally silicified in areas 2-4 in long and in wormy 'peanut butter coloured' dyke-like features. The former features might be incipient alteration type features with very little hematite. Heavily carbonated throughout with a subordinate chlorite and fine amphibole component. Not well mineralised except for the silicified zones. Essentially non-magnetic. Cut by a few pale white qtz-carb veins up to 1 in thick; they are typically highly deformed and are devoid of sulphide. Highly deformed (very tight mm scale ptygmatic folding) lower cnt at about 30 DTCA.

2325.5 2327.0 Amphibolitic.
A short, weakly amphibolitic, pale brown coloured interval which has been silicified and xcut wth 1/8 in reddish stringers of carb+qtz+hematite. The rocks here have a crudely layered appearance and have undergone strong incipient type alteration. The layering lies at 55-60 DTCA and is strongly deformed on a mm to cm scale; tight recumbant folding is developed right within narrow alteration horizons. Modestly mineralised with scattered 2-3 mm cubic py. Sharp lower cnt @ 60 DTCA.

2327.0 2347.0 Fault Zone.
Returning to a section of rocks much as per 2298-2325 with more talc and chlorite component. An intensely deformed, broken, crushed and faulted zone with several distinct gougy horizons. This interval also contains a few short pale brown to red, rather siliceous dyke-like zones which might represent either altered syenites or areas of very strong incipient alteration. A poorly mineralised interval except for the above mentioned siliceous zones. Details follow.

2330.4 2331.2 Fault gouge.
A strong fault zone filled with gritty, pebbly gouge. The cnts are sharp @ 40/40.

2332.9 2340.4 Broken Blocky Core.

2335.5 2336.0 Fault gouge.
A poorly defined fault zone infilled with gritty fault breccia. The lower cnt lies at about 60 DTCA.

2343.0 2346.0 Broken Blocky Core.
About half of this section consists of gritty fault gouge.

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

2341.9 2343.0 Altered Syenite ?.

2346.0 2347.0 Altered Syenite ?.

2346.7 2346.8 Fault gouge.
A 1/2 in thick muddy seam is present @ 55-60 DTCA.

2347.0 2349.6 Ultramafic.
Returning to more massive section of blue-black, moderately talcose ultramafic material. Much as above at 2327.0 Cut by two gougy slips @ 2348 and 2348.2 which lie at 70/60 DTCA.

2349.6 2352.0 Amphibolitic hematite.
A pale orange to brownish, laminated and siliceous section of strong incipient alteration. Banded at 55 degrees. Mineralised with diss and fine spotty py. Cut by two pale orange gritty qtz-carb veins at about 50 DTCA and some low angle pale white blobby qtz near the lower cnt. The cnt is sharp @ 70 DTCA.

2352.0 2368.0 Ultramafic.
A blue black section of modestly veined host. Cut by a series of irregular pale white 1-3 in thick qtz-carb veins and blebs. Layered/foliated at 30-40 degrees with variable orientations (locally folded/boudinaged). Fine carb stringers are especially deformed (tightly folded). Poorly mineralised with scattered diss py in brownish carb inclusions in a few of the larger qtz veins. A speck of galena? lies in a qtz bleb at 2363.3. Slightly magnetic.

2368.0 2371.4 Broken Blocky Core.
A broken up section containing several low angle gritty fault zones from 2368-2369.

2368-2369 Fault gouge.
Fault zones at about 15-20 DTCA.

2371.4 2372.8 Ultramafic.

2372.8 2373.4 Amphibolitic.
A narrow corridor of dark maroon-brown coloured, very hard and weakly amphibolitic material with sharp cnts at 65/50 DTCA. Heavily carbonated and granular with tiny acicular amphiboles in the matrix. Well mineralised with diss and fine spotty py. Weakly magnetic and xcut by a few 30-40 degree carb stringers. Possibly a mafic dyke?.

2373.4 2380.0 Ultramafic.

2380.0 2380.9 Silicified hematite.
Opening into another brownish zone, somewhat like that noted above at 2372. Contains very little amphibole. Weakly speckled with fine carb. Xcut by several 40-45 degree 1/4 in qtz carb stringers with little sulphide. Sharp but quite convoluted cnts at low angles. Very hard, weakly hematised and

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

magnetic. Well mineralised with 1-2 mm spotty, anhedral py grains. Possibly a dyke, but more likely an alteration feature.

2380.9 2389.9 Ultramafic.
Returning to the blue-black host. A more chloritic, finely carbonated interval with abundant scrappy and distorted carb stringers at 35-45 DTCA. Carries a few scattered py grains up to 3 mm across. Very weakly magnetic.

2389.9 2392.7 Amphibolitic.
A zone of strong incipient alteration which has invaded the wallrocks in a patchy or flamey manner. Small areas of essentially unaltered host are still visible. Quite reddish (hematitic) down to about 2391; becoming darker brown and more rich in amphibole below this. Cut by a low angle quite dry qtz vein around 2391. Well mineralised with diss and spotty py in the red and more amphibolitic zones. Slightly pitted/weathered out in the center of the qtz vein. Non-magnetic. Sharp cnts @ 40/30 DTCA.

2392.7 2396.5 Ultramafic.
A short section of blue-black host. Cut by several patchy vein-like structures between 2394.5 and 2395; they are a pale orange in colour and might be tiny altered syenite dykelets?. They are quite hard and not particularly well mineralised, except for xcutting sinuous chloritic fracture-fillings which carry 1-2 mm blebby py. Not magnetic. The host is quite disrupted with broken and chaotic carb stringers and a few 2-3 mm py cubes scattered about.

2396.5 2399.8 Silicified hematite amphibolitic.
A pale brown, strongly altered interval with small amounts of fine amphibole, especially at near the cnts. An example of strong incipient alteration spreading out over a longer interval. Quite hard and bleached looking with patchy and hairline fracture-controlled alteration. Weakly hematised and not magnetic. Mottled or crudely layered appearance. Well mineralised with diss and fine spotty py throughout. Cut by a very few fine carb-hematite stringers at high core angles. Sharp cnts @ 20/40 DTCA. Contains 1 or 2 fairly fresh wallrock inclusions.

2399.8 2403.6 Ultramafic.
Returning to the blue-back host. This section has quite variably oriented (disrupted) fabrics and carb stringers; parts lie at very low core angles. Contains similarly oriented amphibolitic material. Weakly mineralised.

2403.6 2404.7 Amphibolitic.
A sharply bounded, dark brown, slightly muddy interval with high angle cnts. Weakly amphibolitic, slightly grainy matrix which is strongly carbonated and slightly magnetic in the very center of the section. Weakly foliated at 60-65 DTCA; it is defined by slightly fresher, acicular amphibole grains. Weakly hematitic and well mineralised with diss and 1-2 mm spotty py. Possibly a highly altered mafic dyke?.

2404.7 2445.3 Ultramafic.
The host unit. This stretch is blue-black with a slowly increasing amount of

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

carb banding/veining moving downhole. The layering is quite variable, but normally is at a slightly lower angle (20-40 DTCA) than the above 4U zones. Some areas have almost flat fabrics which are then kinked or very tightly folded along an S2 at about 10-20 DTCA. Broken, offset and boudinaged stringers are common. The rocks are locally broken up and crushed. Variably mineralised with fine cubic py; some localities contain 1-2% over several inches. Locally pitted out slightly (carbonate). Several low angle, slightly gritty shears cut the core; they lie at approx 20 DTCA. The section concludes with a 12 in interval of rubbly core, some of which is a gritty fault gouge zone. The uppermost cnt of the faulting lies at about 50 degrees. A 2 in qtz bleb falls out against the basal cnt which is very sharp and weakly sheared @ 25 DTCA.

2445.3 2456.2 Felsite.
Sharp cnt into a pale pink/flesh to orange coloured interval. Very hard, fine grained and slightly gritty. Very finely mottled/speckled with tiny sub-mm carb metacrysts throughout. Generally homogeneous and massive with a modest number of high angle pale white, qtz-carb stringers in the 1/8 to 1/2 in thick size range. Non-magnetic and ankeritic. Well mineralised throughout the matrix with diss py. Most of the above mentioned stringers contain no sulphide. Very tiny hematitic and qtz-filled threads cut the unit randomly. The upper half of the unit is more strongly hematised and more orange in colour. Sharp lower cnt at 30 DTCA.

2456.2 2479.5 Ultramafic.
The host unit, black to blue black in colour, nonmagnetic, strongly foliated at 5 to 30 degrees to the core axis. The foliation is enhanced by numerous streaks, stringers and lenses of ankerite. The unit is essentially unmineralized with only isolated grains of fine pyrite.

2479.5 2483.9 Silicified amphibolitic.
Contact into a narrow section of brownish to incipient altered ultramafic that is characterized by the typical brownish to cola colour with weak orangish staining around fractures. There are two such units here separated by blue black ultramafic at 2480.4 to 2481.6 at 41/32 degrees. The incipient altered sections are hard, siliceous, and weakly fractured and flecked with amphibole. The upper unit is nonmagnetic, the lower unit is more typically moderately magnetic. Both units are mineralized with 1-2% finely disseminated pyrite. The intervening ultramafic is unmineralized. Outside contacts of the altered zones are at 11/23 degrees.

2483.9 2501.4 Ultramafic.
Return to black to blue black, ankeritic, foliated ultramafic with a well developed albeit variable foliation at 20 to 50 degrees to the core axis. The ultramafic is nonmagnetic except for some local sections of brownish alteration and amphibolitization - most of these sections being a couple of cms in size with the largest at 2490.3 to 2490.8 at 28/23 degrees. The ultramafic is very sparsely to unmineralized aside from the brownish altered sections that are mineralized with up to 1-2% fine pyrite.

2501.4 2505.1 Silicified amphibolitic.

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

Brownish altered and silicified to incipient altered ultramafic. The rock is coarsely granular textured from ankerite, is partly amphibolitized, and is brick to orange red stained along some fractures. The core is moderately magnetic with some grains of exsolved magnetite noted in the more brick coloured sections and is moderately well mineralized with fine pyrite. Both contacts are sharp but irregular at 33/35 degrees.

2505.1 2507.7 Ultramafic.
Black to blue black ultramafic with weak tones of brownish alteration. The ankerite in this section is more streaky and discontinuous than previous and is partly contorted. The lower contact is dark green, very fine grained, partly chloritized over 5.5 cms.

2507.7 2509.2 Felsite.
Contact into a dull grey brown, very fine grained, silicified dyke of felsite that is finely speckled with ankerite and is finely fractured with orange stained carb. The mineralogy of the felsite is obscured by the very fine grained nature but the rock is hard and siliceous. The dyke is magnetic and is moderately mineralized with 1-2% fine pyrite that is for the most part fracture controlled. The adjacent ultramafic is partly cooked - contacts are sharp but irregular at 47/51 degrees.

2509.2 2511.7 Ultramafic.
Return to black to blue black ultramafic rocks with streaks to lenses of pale grey ankerite and weak patches of amphibolitization. This section is unmineralized.

2511.7 2521.8 Silicified amphibolitic Syenite.
Contact into one of the larger packages of the incipient style of alteration that is characterized by brownish altered, silicified and partly amphibolitized rocks with grey to beige ankerite healed fractures that are variably stained orangish to brick in colour. The central core of this section differs, however, in that it is orange brick in colour, very fine grained, siliceous, nonmagnetic, and appears to be an altered syenite with irregular dull carb patches that appear to have an affinity with the incipient altered ultramafics. This section highlights the question posed by the incipient alteration in that the source of fluids to genetic relationship with the syenites is unclear. The syenitic section extends from 2515.6 to 2520.7 - the upper contact being very irregular, orange stained and shredded in appearance, while the lower contact is irregular with ankerite fracturing that effectively runs along the core axis. Given the fine grained nature of the syenitic section which almost obliterates the mineralogy, combined with its nonmagnetic properties away from the carb patches, and the fact that the section is surrounded by typical incipient alteration - the central part is concluded to be an altered syenite that has been intruded into a very tectonically active zone. The whole of this package is mineralized with up to 3-5% finely disseminated pyrite. Outside contacts are at 52/15 degrees.

2521.8 2532.0 Ultramafic.
Return to the typical blue black ultramafic rocks with a variable ankerite

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

content and a moderate to well developed foliation at 25 to 50 degrees. The foliation is locally contorted. Trace only pyrite.

2532.0 2550.9 Ultramafic silicified amphibolitic section.
This section consists of a package of black to blue black, variably amphibolitized ultramafic rocks intercalated with more brownish altered to incipient altered sections. These brownish to incipient altered sections range from a couple of cms to 50 cms in size - the wider sections tending to host the more incipient altered members which are harder, more siliceous, and more strongly magnetic than the brownish altered sections. The widest of the incipient altered sections is at the base of the unit from 2549.2 to 2550.9 at 40/33 degrees. The foliation is a bit more uniform in this area from 20 to 40 degrees. Mineralization is elevated to 1-2% in the more altered parts of the package, otherwise pyrite contents are minor.

2550.9 2598.5 Carbonated Ultramafics.
Contact after a section of incipient alteration into a sequence of quite strongly carbonated ultramafic that varies from dull grey green to blue grey, black and blue black in colour. The foliation in this package is variable from 0 to 50 degrees to the core axis with 20 to 30 degrees being the most common orientation. The ankerite component is strong in this area and there are scattered, wider than average quartz veins in the system. There is also some weakly developed brownish to incipient style alteration at 2589.5 - 3 cms with veining at 38 degrees, and 2590.7 to 2591.1 contacts irregular. There is some potential lost core in this interval from 2578.1 to 2581.1 with blocky and broken core apparently related to changing of the bit +/- overdrilling of previous sections. Pyrite mineralization is minor to negligible.

2598.5 2602.4 Felsite.
Contact into a narrow dyke of dull orange grey to pale brownish grey felsite that is very fine grained, siliceous, nonmagnetic and unmineralized. The felsite is thoroughly fractured to veined with ankerite +/- quartz - the upper contact being along veining with fragments of felsite and dark ultramafic fracturing to 2599.9. Both contacts are obscured by veining at 73/64 degrees.

2602.4 2604.0 Silicified amphibolitic.
Two patches of brownish to incipient altered ultramafic - the upper patch centered at 2602.8 is 8 cms in size, just cutting the core axis and is surrounded by black to blue black, partly amphibolitized ultramafic. The lower patch extends from 2602.9 to 2604.0 and is more of a pinkish grey colour and is mottled in texture. The upper patch is brownish in colour and nonmagnetic - the lower patch is moderately magnetic. Both patches are mineralized with trace to 1% fine pyrite. The lower contact is irregular with veining.

2604.0 2609.0 Ultramafic.
A section of black to blue black, variably amphibolitized ultramafic with two, irregular milky quartz-ankerite veins running nearly along the core axis that make up about 25% of this section from 2604.0 to 2605.4, and from

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

2606.6 to 2607.9. True widths of these veins are in the order of 2 to 5 cms. They are weakly orange stained. The ultramafic is similarly foliated at very shallow angles, is strongly ankeritic and weakly to moderately amphibolitic. The section is nonmagnetic and unmineralized.

2609.0 2610.9 Felsite.
Contact into a narrow unit of potential felsite - a grey pink to pale brick coloured siliceous rock with a crudely developed porphyritic texture. The section is mottled to brecciated in appearance from fine discontinuous amphibolitic fractures, with the upper contact being very irregular and brecciated to shredded in appearance - the lower contact is sharp with quartz veining over 1 cm at 28 degrees. The unit is similar to the previous syenite section except that the potential dyke is not flanked by incipient alteration in this instance. The dyke is moderately magnetic from the fracturing and is mineralized with 3-5% pyrite as fine disseminations and fracture controlled streaks.

2610.9 2619.4 Silicified amphibolitic.
A section of brownish, silicified, amphibolitic, magnetic ultramafic that tends to be lacking the stronger incipient alteration style until the basal 30 cms. Most of this unit is coarsely granular to mottled in appearance with irregular grey to beige and locally more reddish close packed lenses of ankerite and silica in a brownish to black finely amphibolitic matrix. At the base of the unit there are 12 cms of pinkish to dull orangish stained carb silica that is finely fractured with amphibole from 2618.5 to 2618.9 that may represent a relict felsite, before the zone ends along 14 cms of brownish, more typical, incipient alteration. The lower contact is irregular but is well defined averaging 46 degrees to the core axis. As normal, these brownish altered zones are finely mineralized with disseminated pyrite.

2619.4 2624.7 Carbonated Ultramafics.
A narrow section of dull grey to black and blue black strongly ankeritic ultramafic with a moderate to well developed foliation at 20 to 40 degrees. This ultramafic is more competent and moderately hard due to the increased ankerite component and there are traces of fuchsite alteration adjacent to some vuggy carb stringers near the base of the unit after 2623.5. The ultramafic is finely amphibolitized, nonmagnetic and is essentially unmineralized.

2624.7 2631.7 Silicified amphibolitic.
This is another of the incipient altered ultramafic packages that is characterized in this area by brownish grey to pinkish toned ankerite and silica healed fractures amongst brownish altered, partly amphibolitized and granular to mottled textured ultramafic. The base of this package appears to be along a unit of altered syenite to felsite as previous - it is coded separately here due to its size. A foliated to laminated nature is well developed by the incipient alteration at 30 to 65 degrees to the core axis. The rock is magnetic, and is mineralized with fine pyrite. At 2627.1, the core is cut by a 21.5 cm quartz-ankerite vein at 35/53 degrees. Outside contacts are well defined at 39/49 degrees.

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

2631.7 2636.1 Altered Syenite.
Contact into a narrow dull pinkish grey to orange brick coloured felsic intrusive that is irregularly fractured to brecciated with the brownish, incipient altered material as described above. The potential dyke is very fine grained and siliceous with most of its mineralogy obscured by the strong alteration. The dyke varies from very weakly to moderately magnetic from fracturing and local exsolved magnetite. The core is also moderately mineralized with disseminated and some fracture controlled pyrite. As discussed earlier in the drillhole, the genetic relationship between incipient alteration and syenite is unclear with many of these units lacking definitive characteristics of an intrusive. The lower contact is irregularly brecciated with brownish alteration that averages 14 degrees to the core axis.

2636.1 2677.1 Ultramafic.
Black to blue black, talcose to finely amphibolitized, ankeritic ultramafic. There is some brownish alteration to weak incipient alteration over 12 cms at the upper contact with only isolated brownish alteration below that point as at 2651.6 to 2652.1 - poorly developed at 24/32 degrees; 2658.1 to 2658.6 along the core axis; at 2661.1 - 1 cm at 25 degrees; at 2670.7 - 3 cms at 30 degrees, and; 2671.5 to 2674.0 running along the core axis and associated with irregular veining. The brownish altered areas are weakly magnetic and mineralized with fine pyrite, otherwise the ultramafic is nonmagnetic and very sparsely mineralized.

2677.1 2683.3 Amphibolitic.
This is a complicated package of variably chloritized and brownish altered ultramafic. The sequence starts along a chloritized ultramafic with a moderate to strong ankerite component and irregular contorted patches of brownish to incipient alteration. After some irregular quartz ankerite veining between 2680.8 and 2681.6 the ultramafic grades brownish altered, more siliceous, amphibolitic and granular textured up to the lower contact which consists of the laminated style of incipient alteration over 18 cms at 45/51 degrees. There is also a narrow quartz vein near the upper contact of this section at 2677.7 - 6.5 cms at 60 degrees with some potential altered felsite over 6 cms at the upper contact. As normal, the brownish and incipient altered rocks are variably magnetic and carry an elevated pyrite content. The foliation is highly variable.

2683.3 2690.6 Amphibolitic silicified.
A section of continuing finely amphibolitized to chloritized ultramafics which in this area hosts three pinkish grey to dull pinkish buff, silicified sections that are fractured to brecciated with amphibolitized material and may represent relict felsite or the high end member of incipient alteration. The three sections are at 2684.4 to 2686.2, 2687.9 to 2688.7, and a 5.5 cm patch at 2689.9. Contacts are irregular, with or without quartz veining, and are at shallow angles to the core axis. These rocks are hard and siliceous, weakly to nonmagnetic and finely mineralized with pyrite. While the lowest patch looks most like weakly stained carb alteration, the lack of brownish alteration or incipient alteration around the other two lend creedence to the idea that these highly fractured to brecciated members are relict

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

felsite. The adjacent ultramafic is dark green to black and blue black in colour and is variably chloritized and finely amphibolitized. The core is also cut by irregular quartz +/- ankerite veins that appear to promote some chloritization of the adjacent rock. The foliation throughout the section is irregular and contorted at shallow angles to the core axis. The lower contact is with veining at 19 degrees.

2690.6 2705.0 Ultramafic amphibolitic.
Very dark green to black, chloritized and finely amphibolitized ultramafic. The ultramafic is moderate to strongly foliated to contorted at shallow angles to the core axis, exhibits a weak to moderate patchy magnetism, is irregularly veined with discontinuous stringers of quartz, is moderate to strongly ankeritic, and is very sparsely mineralized.

2705.0 2706.0 Silicified amphibolitic.
Contact into a narrow section of dull grey to beige and brownish incipient alteration that is typically hard and siliceous, moderately magnetic, weakly orange stained and mineralized with trace to 1% fine pyrite. Contacts of this section are sharp albeit a little irregular at 34/26 degrees.

2706.0 2731.8 Ultramafic amphibolitic.
Return to black, finely amphibolitic ultramafic with a moderate to well developed foliation at 0 to 30 degrees to the core axis. The ultramafic exhibits a weak, patchy magnetism, is poorly veined and very sparsely to unmineralized. Due to low angle fracturing, the core is blocky to broken between 2707.1 and 2708.5.

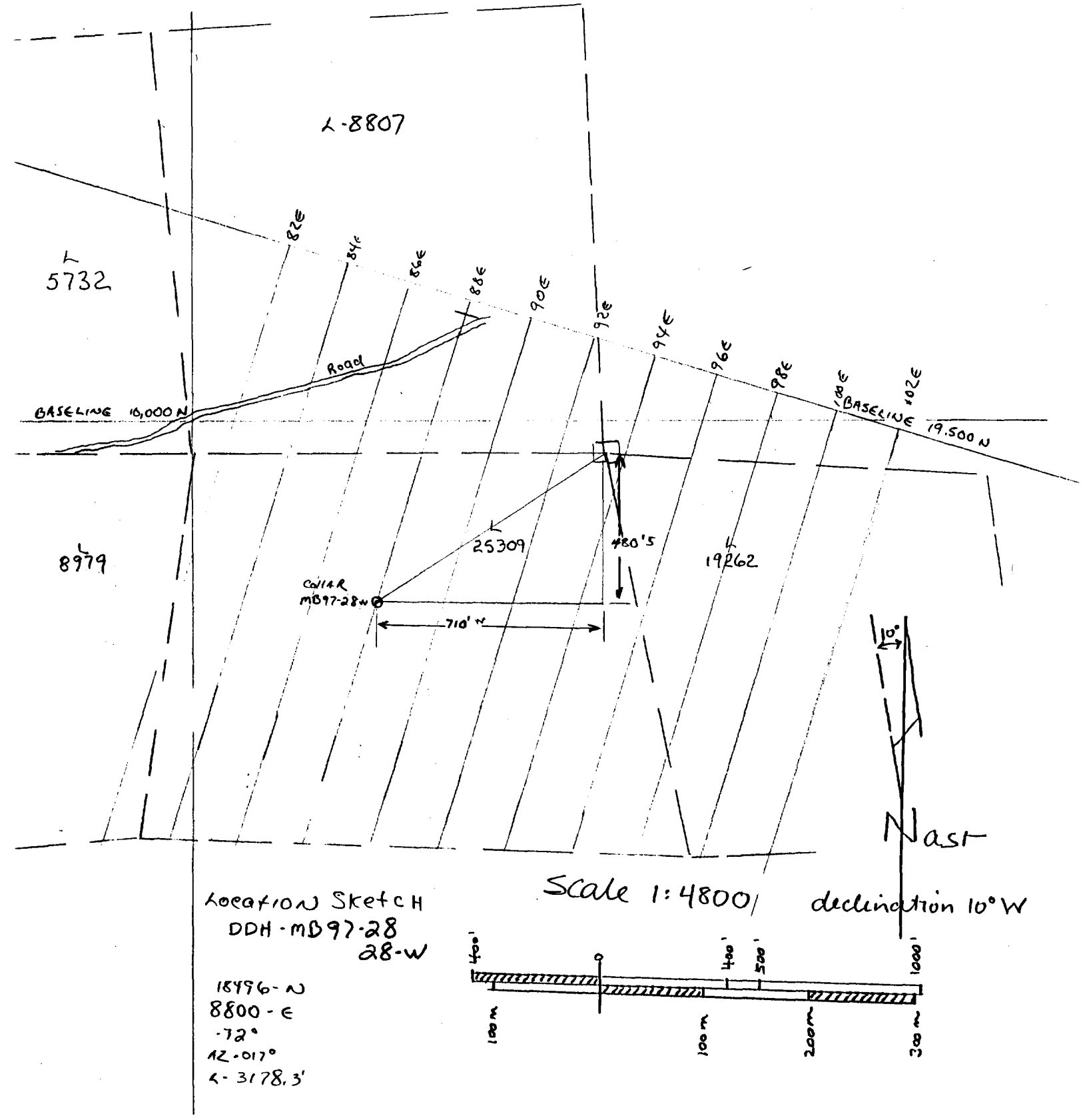
2731.8 2743.6 Ultramafic silicified amphibolitic.
Contact into a sequence of intercalated black to blue black ultramafic rocks and brownish to incipient altered ultramafic. Most of the brownish altered sections in this area are of moderate hardness with only local sections where the alteration has proceeded to the more strongly siliceous incipient stage. The brownish altered sections dominate and occupy about 60% of the section. The ultramafic varies from black to blue black - the finely amphibolitized black sections and the brownish altered zones exhibiting a weak, patchy magnetism with the more incipient altered passages being moderately magnetic. Brownish altered sections range from a couple of cms to 1.7 feet - average 30 to 50 cms, with two main black to blue black ultramafic parts at 2735.1 to 2738.9, and, 2740.2 to 2741.6. The foliation in this package is more uniform at 30 to 45 degrees. The rocks are poorly veined and are not particularly well mineralized. Outside contacts of the system are at 44/47 degrees.

2743.6 2758.5 Ultramafic amphibolitic.
Return to black and blue black relatively anonymous ultramafic that is variably ankeritic and finely amphibolitized. The finely amphibolitic members continue to exhibit a patchy magnetism and pyrite mineralization is very sparse. The foliation varies from 0 to 50 degrees in this area.

2758.5 2774.9 Silicified amphibolitic.
Contact into a sequence of brownish altered ultramafic that is moderately

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

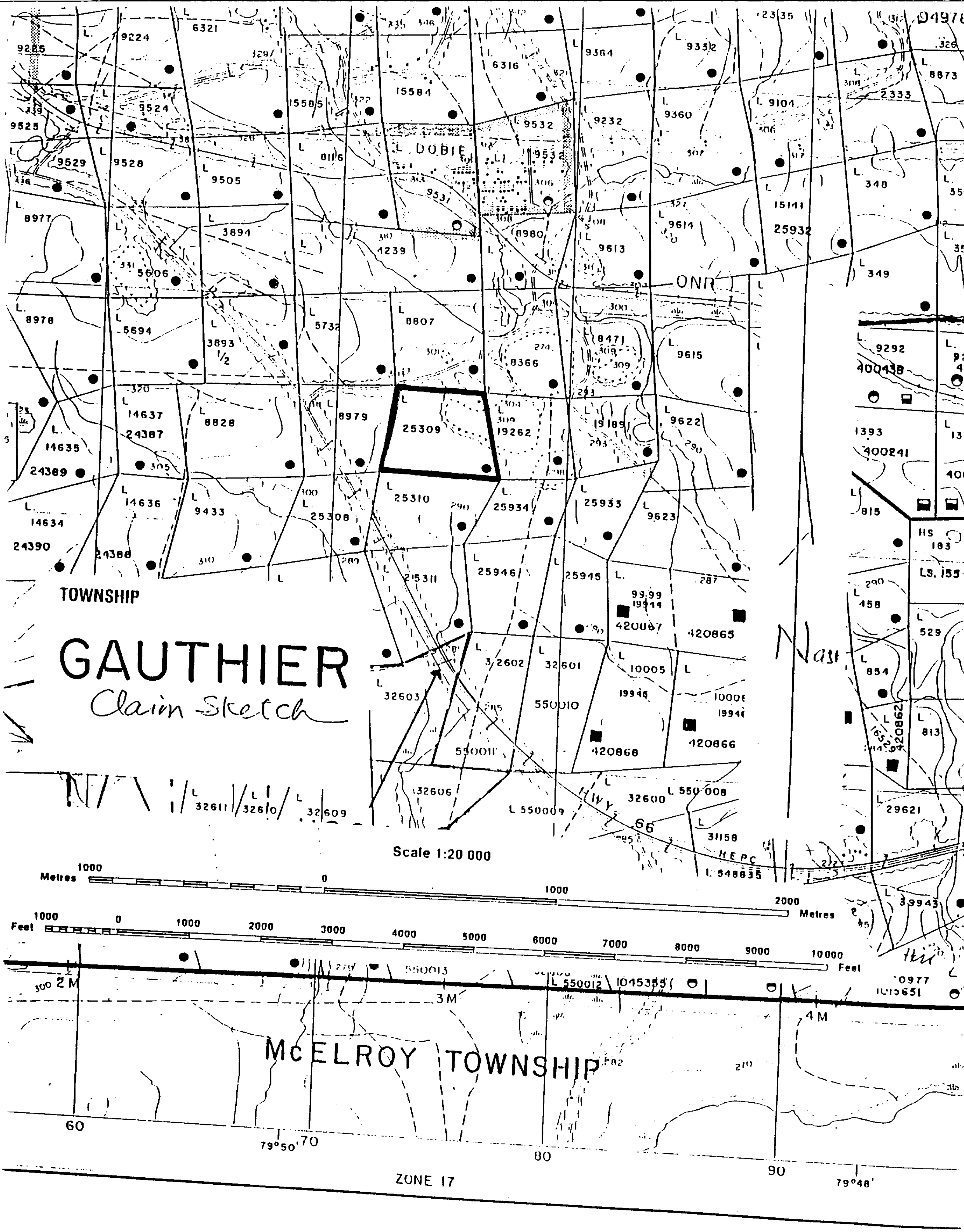
silicified and amphibolitic, with rare sections where the alteration is strong enough to qualify as the incipient type. The brownish altered rocks comprise about 90 to 95% of the section with a few narrow units of intercalated black to blue black, amphibolitized ultramafic in the order of 2 to 5 cms. The rocks are moderately hard, moderately magnetic and are weakly to moderately mineralized with pyrite. There are two interesting units at the start of this zone at 2758.5-2759.9 at 67/52 degrees, and 2760.2-2761.3 at 46/58 degrees. Both of these units contain lenticular amphibolitic shreds +/- a couple of amphibolitic fragments in addition to bluish grey metacrysts to relict phenocrysts of plagioclase. The matrix component of both units is obscured by the strong brownish alteration but the suggestion is that these sections are altered felsic dykes. Both units are moderately magnetic and are mineralized with trace amounts of pyrite. The base of the second dyke at 2761.3 also marks a change from ankeritic to calcitic alteration. At the end of the hole the rocks are brownish altered, calcitic and moderately magnetic aside from the more blue black ultramafic sections that are nonmagnetic.



Location Sketch
DDH - MB97-28
28-W

18496 - N
8800 - E
-72°
AZ - 017°
L - 3178.3'

Scale 1:4800 / declination 10°W


TOWNSHIP
GAUTHIER
Claim Sketch
Scale 1:20 000
Metres
Feet
McELROY TOWNSHIP
ZONE 17
79°50'
79°48'
25309
25310
25311
25308
25934
L. DOBIE
ONR
HWY 66

QUEENSTON MINING INC

Drill Hole: MB97-28W

DIAMOND DRILL HOLE RECORD

Property: MCBEAN Col loc from #1 post, L25309, 480'S, 710'W
Northing: 18521.69
Easting: 8780.18
Elevation: 10974.63

Collar Azimuth (Grid) 358.2
Collar Dip: -72.0
(0 Degrees Grid equals 017 degrees True)
Hole Length: 3178.3

Date Printed: 22 May, 1998

*** Dip Tests ***			*** Dip Tests ***		
Depth	Azi.	Dip	Depth	Azi.	Dip
89		-73.0	1799		-73.5
296		-72.0	2099		-73.5
590		-74.0	2174		-73.5
902		-73.0	2214		-70.5
1201		-71.5	2460		-70.0
1499		-73.5	2797		-70.5

Date Started: Nov 12, 1997
Date Completed: Dec 19, 1997

Drilled by: BENOIT
Core Size: NQ, BQ
Material left in hole NQ CASING
Core Location: Upper Canada Site 1
Logged by: M. McGill & Dale Alexander

Dale R Alexander Mark McGill

From (ft)	To (ft)	Geology
		SUMMARY LOG
.0	88.6	OVERBURDEN
88.6	638.0	GABBRO
638.0	638.1	START OF DEFORMATION ZONE
638.1	671.9	APLITE
671.9	748.7	GREEN CARBONATE ZONE
748.7	812.8	ULTRAMAFIC
812.8	1000.8	APLITE
1000.8	1089.5	GREEN CARBONATE ZONE
1089.5	1684.1	ULTRAMAFIC
1684.1	1687.1	CONTACT ZONE
1687.1	1760.9	BASALT
1760.9	1764.7	ULTRAMAFIC
1764.7	1771.6	BASALT
1771.6	1779.1	CHERTY EXHALITE GRAPHITIC
1779.1	1809.8	CARBONATED ZONE BASALT
1809.8	1819.2	ULTRAMAFIC AMPHIBOLITIC
1819.2	1886.4	BASALT CARBONATED ZONE

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

From (ft)	To (ft)	Geology	Sample No.	From (ft)	To (ft)	Len (ft)	PY %	AU OZ/T	AU1 OZ/T	AU2 OZ/T
1886.4	1911.0	CARBONACEOUS SEDIMENTS								
1911.0	1931.0	BASALT FLOW BOTTOM								
1931.0	1938.7	ULTRAMAFIC								
1938.7	1941.9	BASALT								
1941.9	1949.3	CHERTY EXHALITE								
1949.3	1953.5	BASALT								
1953.5	1962.1	ULTRAMAFIC								
1962.1	1969.9	ULTRAMAFIC AMPHIBOLITIC								
1969.9	1985.0	BASALT								
1985.0	2013.1	ULTRAMAFIC								
2013.1	2025.3	ULTRAMAFIC AMPHIBOLITIC								
2025.3	2032.3	ULTRAMAFIC								
2032.3	2044.4	ULTRAMAFIC AMPHIBOLITIC								
2044.4	2073.6	BASALT								
2073.6	2084.7	ULTRAMAFIC FLOW BASALT								
2084.7	2087.2	CHERTY EXHALITE GRAPHITIC								
2087.2	2115.2	BASALT								
2115.2	2201.6	FELSITE								
2201.6	2215.8	BASALT								
2215.8	2221.6	DIORITE								
2221.6	2224.2	ULTRAMAFIC AMPHIBOLITIC								
2224.2	2225.4	DIORITE								
2225.4	2230.6	BASALT								
2230.6	2257.6	FELSITE								
2257.6	2257.7	START OF DEFORMATION ZONE								

From (ft)	To (ft)	Geology
2257.7	2261.9	ULTRAMAFIC
2261.9	2262.6	PORPHYRITIC SYENITE
2262.6	2836.2	ULTRAMAFIC
2836.2	2896.2	FELSITE
2896.2	2900.1	ALTERED SYENITE
2900.1	2961.3	ULTRAMAFIC
2961.3	2961.4	TIMISKAMING GROUP
2961.4	2969.9	TUFF
2969.9	2971.4	ULTRAMAFIC
2971.4	2977.0	TUFF
2977.0	2981.1	ULTRAMAFIC
2981.1	2995.4	CARBONATED ZONE TUFF
2995.4	3011.8	INCIPIENT ALTERED ULTRAMAFICS
3011.8	3178.3	TUFF

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

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

.0 88.6 OVERBURDEN

0.0 to 49 feet- sand, 49 to 88.6 sand and boulders.
The original drillhole MB97-28 was cemented in a fault gouge at 2346 feet. The cement didn't hold such that the rods became stuck on November 10, and the hole had to be wedged to continue. The wedge was emplaced at 2194.3 feet (first core at 2204.2 feet), such that the area from 2204.2 onward is relogged after transporting this log into a separate file. Assays from 2203.0 to 2774.9 in the original hole are found with the log of MB97-28 - ie samples 50545 to 50709 incl. This interval in the wedged hole (2194.3 to 2774.9) is generally not resampled for assay.

88.6 638.0 GABBRO

The hole collars into the typical McBean hanging wall gabbro complex which in this hole consists of predominately medium to medium-cse grained gabbro intercalated with finer grained basaltic sections, and local very coarse grained amphibolitic gabbro. This assemblege is cut by several types of mafic dykes, also commonly seen in other McBean holes. Most of these rocks are moderate to strongly magnetic and are pervasively calcitic, both as matrix alteration and as fine calcite stringers. Local zones of strongly weathered, often rubbly core are variably stained with hematite. Weak epidote alteration is developed along some fine fractures. A weakly mineralised package with local exceptions in proximity to some of the veining and in many of the weathered rubbly zones where late 1-2 mm cubic py is well developed. The gabbro is generally quite homogeneous in terms of texture and grain size; 1-3 mm subhedral to spidery, slightly chloritised/amphibolitic mafics are set in a fairly fresh matrix of pale white plagioclase. Locally the mafics are slightly aligned. Traces of diss py, and small rounded basaltic inclusions are sprinkled throughout. A massive rock with weak 50-60 degree jointing. Generally poorly veined. Details on specific subunits are as follows.

88.6 101.5 Gabbro.
Gabbro with some low angle, weakly stained (Fe) carb-qtz veinlets and a rubbly, weathered section at 93 to 99 feet with elevated amounts of diss and bleby py.

101.5 105.1 Amphibolitic.
A dark grey to black, coarser grained, strongly amphibolitic zone with some very fine scrappy carb stringers.

105.1 105.9 Mafic intrusive.
A very dark grey coloured porphyritic dyke consisting of abundant 1-3 mm amphiboles and lessor biotite grains in a very fine grained mafic matrix. Essentially non-magnetic, fairly fresh and weakly mineralised. Sharp cnts @ 50/45. Strongly calcitic.

105.9 146.8 Gabbro.
A section of mostly gabbro with some irregular amphibolitic patches and scrappy mafic dyke material near the top of the interval and again down at 137 to 142. Scrappy calcitic and epidote stringers are developed from 108 to 113.

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

146.8 147.6 Mafic intrusive.
Sharp cnt into a very fine grained, pale grey, rather homogeneous dyke. Contains very little in the way of internal texture or structure. Strongly calcitic and magnetic. A subtle planar fabric? is developed at 35-40 DTCA by very tiny amphiboles?. Contacts at 40/45 DTCA.
Essentially unmineralised.

147.6 155.7 Gabbro.
Continuing in medium to medium-coarsed grained gabbro; this section looks more like a cumulate than the above interval. Contains a few small mafic inclusions.

155.7 163.0 Amphibolitic.
A dark grey-green interval of coarse grained amphibolitic material with a few gabbro inclusions and 'veinlets'. Weakly mineralised.

163.0 177.8 Gabbro.
Returning to a slightly coarser grained section of gabbro with small scattered amphibolitic inclusions. Cut by a narrow, high angle, dry looking qtz-carb veinlet at 167.2 and a tiny pale grey MI (much like that at 146-147) at 169.1 @ 30 DTCA.

177.8 179.3 Mafic intrusive.
Sharp cnt into a dark grey green, amphibole-rich dyke, much like the unit noted above at 105. This example contains abundant laths and needles of fresh amphibole set in a fine grained granular feldspathic matrix. Weakly magnetic, except at the margins where a strong response to the pen magnet is noted. Weakly calcitic in very fine fractures. Contains some flakey biotite. Very little, if any sulphide is present. Contacts at 35/30 DTCA. A slight alignment of the phenos is visible; it is nominally @ 45 DTCA.

179.3 200.7 Amphibolitic.
Another section of very cse and comparatively finer grained amphibolitic material, some of which may be altered gabbro and some of which resembles altered basalt. A slightly blocky section with very low RQD values. Xenoliths of gabbro, fine mafic dyke material and a medium grained intrusive? of gabbroic composition are scattered throughout. Not well mineralised overall. Locally weathered and slightly pitted with elevated amounts of fine cubic py. Cut by a few fine, irregular calcite stringers.

200.7 236.5 Amphibolitic.
A slightly different amphibolitic interval; more calcite has entered the system both as fine stringers and pervasive matrix alteration and in many places the original rock texture is preserved; less material has been replaced with amphibole and more fine chlorite is developed. The resultant rock is mottled/veined and slightly finer grained with a more grey colour. Parts of this section appear to be altered basalt; in other spots the gabbro protolith is clearly preserved. Low angle calcite stringers are more common in this section. Background sulphide concentrations are increasing both as diss and fine cubic py. Continuing strongly magnetic and calcitic.

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

236.5 266.1 Broken Blocky Core.
A finely broken-up, strongly weathered interval, most likely composed of material much like that noted above at 200 to 236. Weakly stained with hematite, and pitted throughout. Late cubic and diss py to 2-3 % is developed in much of the section. A fault (sandy seam) may lie at 259.5. Locally siliceous and/or invaded by reddish ?syenitic dykelets?.

266.1 272.2 Amphibolitic.
Returning to an interval much as that noted above at 200-236. Contains a few small gabbro blocks. Xcut by numerous fine calcite stringers at 45-60 DTCA. Weakly mineralised.

272.2 281.2 Gabbro.
A slightly chaotic gabbro interval containing numerous sub-rounded to sub-angular amphibolitic inclusions and small pieces of coarser-grained gabbro; this pattern grades downhole into more masive gabbro. Probably a cumulate. Poorly mineralised. High angle lower cnt.

281.2 290.5 Amphibolitic.
Returning to a sequence of material much like the rocks at 200-236. Blocky with weathered/pitted zones up to 10 inches long. Locally becoming more coarse grained and richer in secondary amphibole. Grades smoothly into recognizable gabbro at the lower cnt. Low to nil RQD values.

290.5 292.0 Gabbro.
A short section of medium-coarse grained gabbro; becoming slightly fresher and more grainy towards 292. Fairly sharp, high angle cnt.

292.0 292.7 Amphibolitic.
Returning to a sliver of material like that at 200-236.

292.7 297.4 Mafic intrusive.
Sharp cnt into a very dark green-grey mafic dyke with abundant fine accicular amphiboles, lessor fine biotite and an interesting blotchy/mottled texture. These minerals are supported in a light green, feldpathic groundmass which is pervasively chloritised and only weakly calcitic. Weakly magnetic near the contacts. A fairly fresh rock which appears to have been overprinted at several scales with chlorite; the blotchy texture appears related to chlorite patches growing around clusters of fine amphibole needles. Contains very little sulphide. Contacts @ 15/40 DTCA.

297.4 324.8 Amphibolitic.
Another section of mostly amphibolitised gabbro/basalt? with small blocks of of fresh gabbro and chunks of coarser cumulate material. Locally finely veined with epidote. Shot through with irregular hairline calcite stringers. A fine grained dyke (as per 146-147) lies at 320.7 to 321.5; it has sharp, high angle contacts and appears to be weakly chloritised. A few very low angle, weakly hematitic carb-qtz stringers cut the section. Overall a weakly mineralised interval.

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

324.8 341.5 Gabbro.
Returning to a cumulate gabbro interval. A medium-cse grained section with numerous inclusions of amphibolitic material. Cut by a few scrappy high angle qtz-carb qtz sweats; some carry traces of hematite and py. Weakly mineralised overall.

341.5 368.0 Amphibolitic.
A section of very dark grass green material, some of which is recognizable highly altered gabbro, and some of which may be basaltic. Strongly calcitic in wispy stringers and in the matrix. Quite blocky to finely broken-up in part; a few areas are pitted/weathered out. Pyrite is scattered throughout the interval as fine cubes and disseminations; at one spot a few cubes are developed which are between 1/4 and 1/2 in across. A few irregular, feldspar-rich veinlets? xcut the unit at high angles also. An amphibole-rich mafic dyke similar to that noted at 292-297 lies at 357.4 to 358.6. Its cnts are sharp @ 30/50 DTCA.

368.0 410.0 Gabbro.
Another slightly longer interval of mostly gabbro, with a number of amphibolitic inclusions ranging from 1/2 in across to several feet in thickness. The host gabbro is locally coarse to very coarse grained with mafics approaching 1/8 inch in diameter. Locally patchy epidote alteration is developing along with very fine fracture-filling material. A slightly more sulphide-rich interval, with numerous narrow weathered and pitted zones. Fine offset-filling calcite veinlets are also becoming more common. A few blocky broken sections carry weak hematite staining.

410.0 413.1 Diorite.
A pale purple-grey to pale orange coloured, medium grained dyke quite typical of the hangingwall sequence at McBean. A weakly magnetic, variably hematised phase which has been silicified and cut by several fine siliceous veinlets. Hematitic halos are developed about most of these features. Flecked with very fine sericite and amphibole after primary mafics. Feldspar grains are becoming ghostly; boundaries are not distinct. Weakly mineralised with spotty/diss py. Calcitic throughout; slightly pitted and magnetic near the cnts. Sharp cnts @ 45/45 DTCA.

413.1 436.5 Amphibolitic.
Remnants of gabbro lie in amongst coarse grained amphibolitic material, which is in turn is cut by felspathic 'veinlets' and irregular scrappy calcite stringers. Locally quite rubbly and broken up. Weakly mineralised overall. Continuing calcitic and magnetic.

436.5 473.0 Gabbro.
Returning to the host gabbro; this section is predominantly intrusive with small angular inclusions and narrow dyke-like zones of basaltic? material. Overall medium grained with a few small angular zones which are quite coarse grained. Cut by high and low angle feldspar-rich veinlets in the lower half of the interval. Low RQD values throughout. Generally high angle jointing. Poorly mineralised; weak epidote alteration rims a few very fine fractures.

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

473.0 511.5 Amphibolitic.
The uppermost portion of this interval appears to be altered gabbro; below 489.5 the protolith may be basalt. The rocks are strongly magnetic and calcitic, and are blocky throughout with local finer broken-up sections. The normal fine calcite stringers invade both rock types; more reddish, boudinaged and fine irregular vein material cuts the basaltic zone. A pale green mafic dyke lies at 496.0 to 497.7; this is another amphibole rich phase much like those noted above. This example is strongly magnetic except for the bottom 3 inches where 2-3% diss py is developed against the lower cnt. Sharp, high angle cnts. Weak slips/joints are becoming more common moving downhole; these lie at 20-40 DTCA. Slightly more sulphide is present below 489; fine cubic and diss habits are typical. A gougy slip/tight fault sits at 501 @ 60-65 DTCA.

501.0 501.1 Fault gouge.

511.5 537.0 Gabbro.
Returning to a massive, pretty uniform section of medium-grained gabbro. This interval contains a number of basaltic inclusions and narrow dyke-like bodies of the same along with pale yellow to pinkish high angle feldspathic dykes. Some low angle fractures also cut these rocks; very thin hematite/carb/qtz infillings are common. Weakly mineralised overall. Moderately magnetic. Gradational lower cnt @ about 20 DTCA.

537.0 557.5 Basalt.
A dark grass green, fine grained section with weakly banded/foliated zones which are accentuated by wispy and scrappy carb alteration and veining. The banding lies at 30-40 DTCA typically. Reddish feldspathic and carbonate material is injected into the interval also; these features are generally deformed/boudinaged and are variably oriented from 30 to 60 DTCA. Moderately mineralised with diss and locally coarse cubic py; the mineralisation often follows the banding/foliation and or lies close to the feldspathic bodies. Calcitic and strongly magnetic. The volume of vein and intrusive material is slowly increasing moving downhole; this section is a good indicator of this. A tight, slightly gougy slip sits @ 550.4 @ 40 DTCA.

550.4 550.5 Fault gouge.

557.5 570.4 Gabbro.
A medium grained interval, weakly brecciated and cut by numerous fine hematitic fractures. Carries a few basaltic/amphibolitic inclusions. Not well mineralised. Low RQD values, locally quite broken and blocky.

570.4 638.0 Amphibolitic.
Returning to a more strongly altered section, some of which is probably basalt much like the rocks above @ 537 to 557. The remainder is a medium-coarse grained mostly amphibolitic fairly massive rock which might have been gabbro originally. Cut by several narrow, sinuous pale grey aphanitic mafic dykelets which are strongly magnetic and quite hard; examples of these sit at 587 to 587.5. The rocks become more altered and slightly foliated approaching the bottom cnt; hairline calcite stringers

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

also become more abundant. A weakly foliated, dark grey amphibolitic zone is developed at 621.3-624; this may represent a highly altered dyke? It is sharply bounded at 60/50, and foliated at 50 DTCA. This feature is weakly mineralised, weakly magnetic and strongly calcitic. Overall, a weakly mineralised section. Pale orange-red carbonate and feldspathic stringers and vein-like structures cut the unit randomly. Locally quite rubbly and finely broken up; examples of this are at 582.8-583.7, and at 618-619. A few very low angle slightly gougy shears/slips also cut the unit; an example lies at 577.0. The lower cnt is an irregular, interpenetrating one, against the underlying intrusive.

638.0 638.1 START OF DEFORMATION ZONE
The assumed cnt of the Deformation Zone, based largely on the deformed state of rocks underlying the below described aplite unit. This position is consistent with that described in hole MB96-06.

638.1 671.9 APLITE
Rubbly, finely broken-up cnt into a pale pink to flesh coloured massive phase which presents characteristics of earlier described felsites and aplites. This example is weakly to non-magnetic, very hard and contains scattered partially assimilated ultramafic inclusions. It mainly consists of the subtle porphyritic sub-type of aplite with some zones which resemble felsite (finer grained, slightly gritty/grainy texture, pale pink-purple colour). The porphyritic areas carry cloudy 1-2 mm subhedral feldspar phenos which typically have rather obscure outlines and are supported in a pale pink, aphanitic felsic groundmass. A more definitive porphyritic texture is visible near the top cnt in tiny tentacles invading the overlying unit and near the lower cnt in more strongly hematitic areas. Cloudy and wispy carb alteration is developed throughout the interval. Most probably silicified. Well mineralised with diss and fine cubic py throughout. Very little sulphide is found in the veining. Locally slightly more heavily mineralised with scrappy fracture-controlled py. Well fractured and variably veined with blobby, irregular and more finite pale white qtz veins and fine stringers. Many of these veins contain pale white ankerite as the carbonate phase. Late very fine fracture-filling calcite is present in spots; the upper 18 inches is well calcified also. Weak hematite staining occurs in many of the finer stringers and to a lesser extent in portions of the groundmass. Fe alteration is variable, but increases slightly in intensity moving downhole. Contains tiny inclusions of pale greenish sericitic (almost fuchsitic) material. Slightly elevated sulphide contents in some of the larger ultramafic rafts; py grains are developed along the inside margins of veins in some of these examples, in contrast to the veining in the aplite. Sharp lower cnt @ 15 DTCA.

671.9 748.7 GREEN CARBONATE ZONE
A system of weakly fuchsitic ultramafic rocks xcut by several felsite dykes. The ultramafic components exhibit several textures; in most areas the original layered/carbonated textures are preserved. The more intense varigated/veined textures found in classic emerald green GC zones are not yet developed. Most units are highly deformed and foliated; quite typical of the deformation zone as seen in other McBean holes. Several variations of

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

felsite dykes are also represented. Most of these are well mineralised. Most rocks in the sequence are non-magnetic and ankeritic. Details on these sub-units follow below.

671.9 672.8 Ultramafic.
A short section of blue-black fairly massive chlorite-rich material, invaded by grainy irregular masses of pale beige carbonate (ankerite) with hints of reddish spotty/veinlet incipient alteration. This grades into a brownish, carb speckled, chaotic, brecciated zone where a felsite dyke is invading the ultramafic host at a low? angle.

672.8 675.0 Felsite.
A pale pink, fractured zone of slightly hematitic siliceous material which has broken up into small angular fragments at its top cnt. Both the host rock and dyke material are heavily carbonated. Locally diss and fine cubic py is strongly developed; fracture fillings, zones about carb alteration and contacts are mineralised. Xcut in part by scrappy high angle pale white qtz-carb veinlets. Contains some small angular ghost-like dark grey host rock inclusions. Sharp slightly irregular lower cnt at 30 DTCA.

675.0 677.0 Ultramafic.
Returning to a fairly massive blue-black section of ultramafic material. Pale greenish-yellowish patchy carbonate alteration is developed along both cnts. Not particularly well foliated, or mineralised. Sharp bottom cnt at about 20 DTCA.

677.0 678.5 Quartz.
A zone of pale grey to milky qtz which has invaded a pale beige grey carbonated rock which might represent a bleached felsite?. The qtz is weakly mineralised with fine diss py and a very fine blueish metallic which appears to be fracture controlled (moly?). Late, very fine chloritic fractures xcut the qtz zones at very low angles also. The bleached carbonated phase is heavily mineralised with brassy diss py and riddled with small qtz stringers, some of which also carry the blue metallic. Traces of chalcopyrite are also visible along one of the chloritic fractures near the bottom cnt.

678.5 679.4 Ultramafic.
A small sliver of heavily carbonated/banded ultramafic, xcut and offset along 45 degree carb-filled fractures. The banding lies at 30-40 DTCA and is often strongly boudinaged, resulting in an almost fragmental texture. Sharp, slightly brecciated contacts @ 20/40 DTCA.

679.4 686.0 Felsite.
A pale pink-purple, finely mottled to crudely banded typical felsite. Grainy matrix texture with a subtle planar fabric developing at about 40-50 DTCA. Very hard and weakly hematised. Contains dark greyish patches which might be ghostly relicts of ultramafic material. Weakly magnetic in part. Devoid of veining. Xcut by a few very fine hematitic/siliceous fracture fillings at about 45 degrees or higher angles. Moderately mineralised throughout with fine diss py. Locally appears almost porphyritic; subtle outlines of pale

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

white feldspars? occur near the lower cnt. Several thin slivers of sericitic material occur within the unit. Sharp lower cnt at 35 DTCA.

686.0 693.0 Ultramafic.
Returning to the host ultramafic; this section is a typical pale grey-green heavily banded/layered/carbonated ultramafic. The layering lies at 50 DTCA in the upper portion of the unit; this falls to about 30 degrees below 690. Not especially well veined except for a few irregular, fine wormy carb-qtz veinlets near the top cnt. Weakly mineralised with scattered fine spotty py. Cut by an amphibolitic, dark green mafic dyke at 688.3 to 689.4; this appears very similar to small dykes described outside of the DZ. The dyke has sharp cnts at 30/20 and contains biotite. Weakly mineralised as per the host. Barely responds to the pen magnet. Gradational lower cnt.

693.0 706.6 Green Carbonate Zone.
A continuation of the above carbonated ultramafic system with the addition of very weak pervasive fuchsite alteration. Tiny flecks of the green mineral are also visible in some of the narrow high-angle cross-cutting carb veinlets. Very low-angle, somewhat disrupted fabric. Weakly mineralised; slightly more fine py here than above where fuchsite is absent. A few sinuous, irregular low angle carb-qtz veins occur; these are xcut by later high angle gash veins which are more qtz-rich. Little sulphide resides in either vein set.

706.6 709.8 Ultramafic.
Returning to ultramafic rocks without fuchsite. Heavily carbonated with very irregular carbonate veining/alteration. Quite variable foliation orientations; locally kinked at high angles. Sharp bottom cnt at 50 DTCA.

709.8 720.2 Felsite.
A section of predominantly maroon coloured, gritty/grainy felsite dykes cutting through ultramafics similar to the overlying unit. These rocks have fairly similar textures to other felsites, however these examples are more strongly hematised in general. The alteration appears mostly pervasive; variable amounts of tiny fractures are also sources of Fe. The rocks are fairly massive, with almost no veining. They are variably magnetic and well mineralised with diss and spotty anhedral py; some fracture control is also evident. Some porphyritic textures are also evident; an example is at 717.5 to 718.9. Dyke cnts are generally sharp, often with some suggestion of chilling; angles are generally in the 30-60 degree range. These rocks are hard and probably silicified. One small dyke appears to contain altered needles of amphibole?; this example may not be a felsite. The small slivers of trapped host material are slightly more carbonated than the surrounding ultramafics; little sulphide is present however.

720.2 721.8 Ultramafic.
The host ultramafic without fuchsite. Very much like the rocks above 709; with traces of sulphide only.

721.8 722.7 Broken Blocky Core.

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

722.7 723.7 Ultramafic.
As above at 720-721.

723.7 725.6 Felsite.
Two intervals of dark red felsite sandwich a short section of magnetic host rock similar to the 4U noted above. These dykes? are similar to the larger felsites just above with the addition of numerous square carb metacrysts about 2 mm across; these give the rocks a slightly mottled appearance. The dyke cnts are a little less sharp- slightly more scalloped/irregular and diffuse in general. The cnts are oriented at 45-50 DTCA. Moderately mineralised with fine diss py.

725.6 727.9 Ultramafic.
Returning to the host ultramafic. Pale grey-green in colour without fuchsite alteration. Foliated/banded at about 40 DTCA except for the top 4 inches which is more massive and slightly grainy/gritty. Highly deformed and sheared; many of the carb bands are elongated and broken up into small boudinaged losenges giving the rock an almost fragmental appearance. Weakly mineralised with diss py. Fairly sharp lower cnt at 45 DTCA.

727.9 742.0 Green Carbonate Zone.
Sharp cnt into a more massive, slightly granular, sericitic, highly carbonated unit which is lacking in the more common ultramafic layered/banded/sheared textures. The host here resembles some of the strongly carbonated 'tuffs' logged at Anoki, with the addition of very weak fuchsite alteration. Fuchsite occurs as tiny flecks and/or weak pervasive matrix alteration throughout most of the section. The rocks are moderately hard, essentially non-magnetic and weakly mineralised with traces of very fine py. Carb and qtz veining is absent. The unit is invaded or overprinted by pale reddish patchy to wormy/dyke-like alteration which makes the host quite hard and adds considerable local py to the system. The alteration fluids appear to have come into the rocks in several stages, based on varying intensities and textures/colours. The texture locally reminds one of incipient alteration. A few tiny carb gash fillings sit at 45 DTCA near the sharp, undulating lower cnt. The cnt is @ about 50 degrees and lies perp to the above mentioned stringers; a slightly larger carb-qtz fracture-filling is developed along the cnt with 1-2% spotty py.

742.0 743.9 Felsite.
A pale red, fine grained dyke? invades the green carb zone. It is very hard, and very slightly magnetic. It is well mineralised in the matrix with very fine diss py, and compared with other felsites uphole is more fractured internally, resulting in it being riddled with tiny carb-qtz fillings and irregular stringers. Small amounts of coarser py are associated with the larger examples of these features. Fairly sharp, high angle disrupted lower cnt; a very low angle slip xcuts the bottom 2-3 inches of the unit and breaks up an already coarsely brecciated area.

743.9 747.2 Green Carbonate Zone.
Returning to the pale green weakly fuchsitic unit noted above at 727-742. About 40% of this interval is overprinted/invaded by patchy, brecciated pale

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

red dyke material probably related to the felsite immediately above and some of the reddish alteration seen above. Much more very fine fracturing is developed here; some is lying at very low core angles and some is more at 45-50 degrees and associated with some of the dyke material. Scrappy and irregular qtz-carb material is infilling about the dyke material; spotty py lies along and within some of these small qtz bodies. Sharp, slightly sheared lower cnt at 35 DTCA.

747.2 748.7 Felsite.
Another small brick red felsite forms the basal memnber of this sequence. This example is strongly hematised and slightly magnetic. Scattered cubic carb metacrysts float about in the matrix. Contains slightly more diss py than the nearest example uphole. Riddled with very fine hematite/qtz filled fractures. Very fine grained and massive with several fresh wallrock inclusions and small dark grey ghostly xenoliths?. Some alteration? chilling is visible at the lower cnt. Sharp lower cnt at 45 DTCA.

748.7 812.8 ULTRAMAFIC
A new sequence of predominantly blue-black, strongly chloritic and weakly talcose ultramafic rocks with a prominent banded/layered texture throughout. Heavily carbonated as fine speckling and wispy veining/layering. Ankeritic with some late very fine fracture controlled calcite near the lower cnt. Typically banded/foliated at 40-50 DTCA with locally steeper orientations. Tiny recumbant folds, boudinage structures and small knots are commonplace in the layered portions. Slightly magnetic overall. Poorly mineralised with traces of fine cubic py. The host rocks are cut by a variety of syenitic and other ?dyke rocks below about 782. The host phase returns albiet in a more deformed/faulted fashion near the lower cnt. Details follow below.

748.7 781.8 Ultramafic.
The host phase. Low RQD, but generally good coring ground. Strongly chloritic down to about 772, where the rocks become more pale green-grey in colour. Rocks below 772 are slightly more broken up with a few narrow finely ringed/crushed zones. A small dirty brownish dyke? or alteration zone? sits at 778-778.5; it is hard with 0.5-1% diss py and somewhat fuzzy cnts which mimic the layering in the host rocks. The bottom cnt lies @ 55 DTCA; it is very finely scalloped/irregular where it comes in contact with a strongly metasomatised underlying dyke?. A 3 in thick almost solid chlorite rind? is developed immediately above the cnt.

781.8 788.1 Felsite ?.
A pale brown to weak pink, slightly grainy unit with two internal textures. Cut by at least two generations of 1/16 to 1/8 in high angle carb stringers and strongly altered with small blebs and fracture fillings of reddish carbonate and possibly feldspathic material (a type of incipient alteration?). Variably magnetic. Quite hard and ankeritic. Weakly foliated in places at about 50 DTCA. Generally fine grained with zones containing prominent 1-2 mm carb metacrysts. Variably mineralised with diss and 1-2 mm spotty py. Contains a few tiny angular ultramafic inclusions. Probably locally silicified. Weakly hematised throughout. This interval appears much like a felsite in part; the more massive, finer grained areas which appear

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

bounded by sharp internal cnts might be dykes. The remainder of the interval has a slightly larger grain size, and appears more in keeping with a protolith which has undergone strong incipient alteration and intense carbonate overprinting. Parts of these areas look like strongly blasted ultramafic material; other areas are more problematic. The protolith in these zones might possibly have been a mafic dyke? An altered gabbro seems less likely as the primary lithology. Subtle banding/layering on a mm scale, variable foliation directions, kinked carb stringers and subtle internal brecciation also differentiates this component from the 'felsite' type of texture. The sequence is bounded at a high angle, sharp cnt.

788.1 796.8 Porphyritic Syenite.
An interpenetrating, chaotic cnt zone opens this interval; inclusions of the overlying unit have been taken up by the syenite, causing low angle fracturing, brecciation and accompaning carb-qtz infilling to develop. The unit is a bright orange-red colour, very hard and weakly magnetic. It carries abundant pale white to pinkish, subrounded feldspar phenos in a slightly orange to brownish aphanitic matrix. Most phenos are 1-2 mm across. A few smaller qtz eyes are visible. The entire unit is riddled with very fine wispy white carb fractures/stringers, and even smaller hematite-bearing microfractures. A strongly hematitic unit, which is probably silicified. Variably mineralised with diss matrix py and coarser bleby and fracture-filling py. Very much like other 1Sp units logged in the earlier McBean holes. Sharp lower cnt at 35 DTCA.

796.8 800.0 Carbonated Zone.
A sharp cnt into another dirty brownish grey, strongly carbonated interval. This section bears some resemblance to the felsite? section above, but appears to be derived 2 or 3 different primary rock types. The rocks are variable in colour from a brownish grey to a dirty olive green, with some reddish tones in part. Parts of the unit are probably altered ultramafics; other portions are slightly more bleached looking and appear to be strongly altered via the incipient alteration scenario. A short section might represent an altered mafic dyke; remnant amphiboles (now chlorite?) suggest a genetic relationship with other such mafic dykes logged at McBean. All portions of the interval are moderately to strongly magnetic and fairly hard. A few scrappy, high angle carb-qtz veinlets cut the unit; hematite lies along one fracture and dirty dark grey qtz fills in other examples. A few fine magnetite grains are visible in one spot, within a carb bleb? Locally foliated at about 65 degrees. Locally brecciated/sheared at high core angles. Fairly sharp basal cnt at 55 DTCA.

800.0 802.8 Ultramafic.
Returning to a section of blue-black, chloritic ultramafic host which is strongly faulted at two points and finely broken-up in general. A few high angle, 1/2 in thick milky qtz veins cut the unit at about 801.1; they contain wallrock inclusions and only traces of sulphide. Slightly calcitic in very fine late stringers. Moderately magnetic. Details on the faulting follows:.

799.9 801.1 Fault gouge.

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

Two 1 inch thick, gritty gouge zones are developed at about 50/65 DTCA.

801.7 801.8 Fault gouge.
Two inch thick, chloritic crushed zone with an 1/8 in thick slip zone @ 65 degrees at one side and a 25 degree bounding slip at the other.

801.8 803.4 Felsite ?.
High angle cnt into a olive-brown coloured, highly carbonated zone with some similarities to the rocks above at 781-788. Finely brecciated and subsequently healed internally; quite hard and strongly magnetic. Variably hematised. Riddled with pale white, hairline carb stringers. Moderately mineralised with diss and fine spotty py. Rubbly lower cnt at about 75 DTCA.

803.4 812.8 Ultramafic.
The final section of this ultramafic system. A blocky and broken-up interval, pale grey-green to dark green in colour and moderately foliated at about 40 DTCA. Contains several 3 to 8 inch long sections of highly carbonated/silicified material, similar to some of the problematic carbonated rocks described above. These examples are variable in colour from brown to olive to pale grey and tend to be slightly more magnetic than the the host. Cnts are generally sharp and mimic the host fabric. Incipient alteration modifying pre-existing dykes might describe some of these rocks. Most are not well mineralised. A three inch thick gritty fault gouge zone sits at 812.2; it lies at about 70 DTCA. The interval bottoms out along a milky qtz-carb vein which carries chloritic wallrock slivers. Sharp cnt @ 50 degrees.

812.2 812.3 Fault gouge.

812.8 1000.8 APLITE
A broad interval of pale pink to flesh-coloured aplite begins at 812.8. A good example of the 'porphyritic' type of aplite wherein clearly visible feldspar grains are present throughout most of the unit. These crystals range from 0.5 mm to 2 mm across, and crudely fall into 2 size populations. The larger grains (1-2 mm) are most common; the smaller grains generally occur with the larger grains but not independently. These feldspars are supported by a pale pink, siliceous, aphanitic groundmass which contains very little in the way of mafics. Phenocrysts are typically pale pink to milky white, and have subhedral to good tabular/lath-like habits. They are not extremelly fresh, however outlines are generally crisp. Zoning is visible in a few areas. Locally slightly higher amounts of background hematite tends to accentuate the feldspars; in some zones a more tightly packed arrangement of grains gives the rock an almost dioritic appearance, except for the lack of mafics. The rocks are non-magnetic and free of calcite except for some traces of late fracture-filling material.
Qtz grains are obvious in portions of the unit; grains are 1-1.5 mm across and sub-angular. In most areas they do not exceed 10% by volume. The interval contains a number of partially metasomatised inclusions; these are of ultramafic derivation mostly. A few smaller, very pale greenish (sericitic) inclusions are also present; these vary in size from a few mm to

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

3-4 inches thick. A modestly mineralised section; fine diss and slightly larger spots and fracture-filling knots of py are found throughout the unit. A massive rock with moderate RQD values; jointing is fracture/vein controlled and generally lies at angles above 50 degrees. A weakly veined section; 1/8-1/4 inch thick high angle qtz-carb stringers are scattered throughout. These veins are not heavily mineralised but they are not completely devoid of py; some examples contain small amounts of hematite also which in some cases (the finest fractures mostly) tends to spill out into the host rocks. More details follow below.

812.8 834.0 Aplite.
Moderately hematised throughout. Xcut by irregular hairline fractures which carry hematite. Cloudy porphyritic textures developed locally. Slightly more veining than the norm for the unit. A small greenish, brecciated inclusion lies at 826; it appears to be an ultramafic fragment.

834.0 837.2 Mafic intrusive ?.
A dark grey-green weakly foliated section. Slightly grainy texture; non-magnetic and weakly veined with slender, high angle carb stringers. Consists of a finely intergrown mosaic of carbonate and very fine patchy chlorite. Carries small amounts of diss py. Sharp cnts @ 55/60. A strong carb? alteration halo 2 inches thick is developed at the bottom cnt.

837.2 850.8 Aplite.
Returning to the host phase. A weakly hematitic section with more prominent feldspars towards the bottom cnt. A two inch thick qtz vein lies at 844, against which lies a greenish, weakly fuchsitic inclusion. Traces of py are developed in both features.

850.8 857.0 Mafic intrusive ?.
Another section of weakly foliated material; the fabric lies at a very low core angle. Slightly more chloritic/amphibolitic than the dyke above at 834. Very weakly magnetic. Contains a very few high angle carb-filled fractures and traces of diss py in the matrix. Homogeneous and massive. A weak alteration halo with slightly elevated py is developed at the basal cnt. This contact is sharp at 40 DTCA.

857.0 860.3 Aplite.
Returning to a section of aplite with a greater concentration of bimodal phenos than in previous areas. Contains a pale greenish, sericitic dyke? at 858.1-859.0 with sharp cnts and a core zone which resembles the MI inclusions noted above- in effect most of the dyke has been altered to a carbonate-rich, sericitic/fuchsitic material. This altered material carries 1% diss py; the core area is essentially unmineralised. Sharp lower cnt @ 30 DTCA.

860.3 862.6 Mafic intrusive ?.
Much as that described above at 850-857. Strong carb/sericitic alteration is developed at the upper cnt and to lesser degree at the lower cnt. Weakly foliated at about 40 DTCA. The rocks here are more bleached looking with some hints of reddish incipient alteration becoming visible. Several 1/8 in

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

thick qtz-carb stringers cut the unit at 50 DTCA; they are unmineralised except for some weak hematite staining in the marginal carb selvages. This example is mineralised throughout with diss py. Sharp lower cnt @ 60 DTCA.

862.6 873.9 Aplite.
The host phase; carries less hematite in the matrix and slightly larger, pale white, fairly conspicuous feldspar phenos throughout. Contains a brecciated, broken up section of MI at 868-869.8 with strongly altered margins and 1-2% diss py. Slightly more fine milky qtz veinlets towards the lower cnt. Sharp, coarsely brecciated lower cnt at about 50 DTCA.

873.9 875.9 Mafic intrusive ?.
Another feature, much like the above noted dykes? This example is more intensely altered so that only a small segment of core around 875 retains some semblance of the primary texture/mineralogy. Quite hard and weakly hematised at the top cnt for 12 inches; a few reddish spots reminiscent of incipient alteration are visible. Cut by an irregular brecciated/distorted qtz vein 1/2 in thick @ 875.5- the vein lies at about 55 DTCA and contains coarse cubic and subhedral py grains (locally 10% over the vein width) and traces of wispy fuchsite. Overall the interval is modestly mineralised with diss py. Slightly irregular sharp lower cnt @ 60 DTCA. A strong alteration halo 3 in thick is developed at the cnt- sericite/fuchsite/carb in composition.

875.9 876.9 Aplite.

876.9 883.1 Mafic intrusive Ultramafic ?.
Cnt into a slightly thicker unit of strongly altered material which might have been either a mafic dyke or possibly an inclusion of ultramafic material. This example consists of 3 components; a pale grey-green, slightly gritty/foliated zone with weak incipient alteration which contains several small blebs of pale orange aplite; a 3 inch long stretch of mineralised aplite with an irregular high angle qtz vein (carries sericitic inclusions and selvages) and a basal zone which appears to a more bleached/carbonated/silicified equivalent of the first component. The latter two zones are well mineralised with spotty and diss py. The upper cnt is weakly altered with wispy/pervasive fuchsite; the lower cnt is slightly irregular with several scrappy carb-hematite stringers.

883.1 941.1 Aplite.
Returning to a wider aplite section. The appearance of qtz eyes and locally more strongly hematised zones (ex- 916.5-918) characterizes this interval. Fine qtz stringers are scattered throughout; a slightly greater concentration is developed near the top cnt. Some of the slightly thicker veins have very fine ladder structures developed, generally perp to the vein margins. Most carry little sulphide and lie at about 60 DTCA. Finer fractures carry hematite and a few rather more irregular wandering types of fractures carry fine spotty py. Other diss and fine cubic py is scattered randomly throughout the matrix. Overall, not a strongly mineralised area. Approaching the lower cnt, the density and size of qtz veins increases. A few begin to carry fine blebby/diss py. Some very fine fracture-filling

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

molybdenite occurs @ 931.9 in the vicinity of some 1-2 inch veins. At 933 are some small scrappy fuchsite-bearing fracture-fillings? with locally 2-3% slightly coarser py grains. Irregular, convoluted lower cnt.

941.1 945.7 Ultramafic.
Another pale apple green-grey, strongly altered inclusion. This example is more strongly foliated than ones farther uphole; the fabric is quite flat and slightly kinked at high angles in part. Much of the material is very weakly altered with matrix fuchsite; the intensity of this mineralisation increases at both cnts. Locally silicified and weakly hematised. Locally reddened with spotty and fine wormy dyke-like incipient alteration. Modestly mineralised with diss py; slightly greater concentrations are developed in the upper 2/3 of the interval. A smoky, greyish, low angle qtz vein invades the upper 12 inches of the unit; it carries traces of py but more importantly disrupts the upper cnt area. Greater amounts py are visible in the altered host rocks around the qtz. Not particularly magnetic except for some weak reaction around 944. Sharp, slightly irregular (very open tiny folds are forming) lower cnt @ 50 DTCA.

945.7 1000.8 Aplite.
The final aplite section in this sequence; characterised by a return to more clearly defined porphyritic textures. Varies from a very pale white coloured rock to a more reddish, hematite-rich phase. More of the smaller feldspars are visible in this section. Qtz eyes are common. Contains two small, pale green/reddened inclusions with fuchsite and 2-3% diss py @ 960 and 963.1 A slightly higher density of qtz veining is present; most are poorly mineralised, although a few carry tiny wisps of fuchsite. Most veins lie at 50 degrees or steeper. At least two generations of veining exist; the slightly thicker veins appear younger. Weakly mineralised overall in this segment; some fracture control (low angle) of fine py is evident. A trace of a blue-grey metallic (galena?) is present at 985.7. Sharp lower cnt at about 50 DTCA.

1000.8 1089.5 GREEN CARBONATE ZONE
Opening into a broad system of strongly fuchsitic ultramafic (and other rocks), interspersed with several intrusive bodies. Several textures and at least two protoliths are represented in the emerald green phases; drab green variations are also developed which are derived from ultramafics. A highly deformed and locally strongly veined unit with abundant accessory carbonate in the matrix and qtz veins/infillings. Well foliated with quite variable fabric orientations; high angle kink bands xcut the S1 in places. Overall, a fairly well mineralised (sulphide) system, compared to some other examples logged in earlier McBean holes. Pyrite is the dominant sulphide. Chlorite, sericite and small amounts of hematite are the other important alteration products. Details on the sub-units are as follows.

1000.8 1027.5 Green Carbonate Zone.
An emerald green unit, which begins as a fairly massive, fine grained, slightly gritty rock with a very weak low angle foliation and/or a subtle speckled alteration? texture(ex-1001-1003). This relatively less deformed phase quickly becomes disrupted and brecciated where qtz stringers begin to

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

invade the rock(ex-1005-1006). Moving downhole again, the more massive material becomes layered (ex @ 1007-1008-@ 50 DTCA) and what appears to be very tiny tuff?/carb interbeds are visible. Very fine black speckling appears in the layered zone (1008.8-rutile??); the rocks then become progressively more deformed and invaded by qtz until at 1013 the typical shredded qtz/varigated and highly deformed qtz-rich texture is well developed. From 1013 to 1027, the volume of qtz ranges up 30-40% of the rock mass; carb selvages and inclusions, small flecks of fuchsite and weak cloudy orange (hematite?) alteration appears in some of the (milky to greyish) qtz. The veining is quite variable in orientation; both high and low angle qtz bodies up to 2 inches thick are developed. A set of finer (1/8 in) gash type stringers @ 60 mimic local kink bands. The carbonate is ankeritic. A non-magnetic unit with small amounts of fine diss py sprinkled throughout the groundmass. Very little sulphide is present in the veining. Variable foliation directions; all angles from flat to 90 degrees can be seen. A short section of weakly mineralised reddish aplite dyke material cuts the unit @ 1004.8-1005.3; above the upper cnt for 4 inches sits a pale olive coloured carb rock? with a grainy texture; slightly more py is present in this section vs the dyke or host rocks.

1027.5 1048.1 Green Carbonate Zone.
Below 1027, the bright emerald green colour is replaced by a more olive-green appearance, due to an increase in the amount of chlorite alteration and a corresponding decrease in fuchsite. The varigated/brecciated texture remains, although a decrease in veining occurs in several zones within the segment. High angle kinks are more prominent now; these postdate low angle carb layering/banding and some of the heavier qtz veining. Below 1042, the amount of qtz and carb veining increases to 30-35% as does the fuchsite concentration. Slightly more matrix py also becomes visible. Very little sulphide is carried in the qtz; still, about 25% of the unit is qtz. Strong slip at 1028.7 @ 30 DTCA.

1048.1 1051.8 Aplite.
Sharp, finely colliform/cuspate cnt @ 20 degrees into a pale beige to yellowish dyke of variably porphyritic intrusive, which looks somewhat like the overlying aplites. Very hard, massive and weakly hematised; less Fe is in the system here as compared to the overlying aplites. Modestly mineralised with diss and slightly coarser spotty py; a slight increase in sulphide concentration occurs towards the bottom cnt. Contains numerous pale white, subhedral to squat feldspar phenos 0.5 to 2 mm across; in most cases they are supported in the groundmass and still have recognizable outlines. Not magnetic or calcitic. Small amounts of ankerite are present in a few tiny low angle qtz-carb stringers/sweats. Larger qtz veins akin to those in the surrounding green carb zones are absent; instead very fine qtz threads are liberally sprinkled throughout at low angles(20-40 DTCA). Sharp lower cnt at 80 DTCA.

1051.8 1055.6 Green Carbonate Zone.
Returning to pale olive to weak emerald green section with 15% qtz-carb banding and a finer varigated/kinked texture, for the most part lying at 60-75 DTCA. More sheared here. Carries a 3 in long stretch of tightly folded

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

peanut-butter coloured dyke? material near the top cnt; 2-3% py is developed here in contrast to the nominal 0.5% or less in the other wallrock. Slightly more sulphide present near the top cnt also. Irregular, convoluted lower cnt.

1055.6 1057.6 Green Carbonate Zone.
A pale olive green coloured section; a massive to slightly foliated/layered carb rock which is kinked and folded on a mm scale internally. Gritty and sericitic, suggesting a possible tuffaceous protolith. Contains tiny dark grey, slightly ragged qtz eyes. Very hard (silicified) and non-magnetic. The primary? layering lies at both high and low core angles. Riddled with a modest amount of fine qtz as 1/8-1/4 in thick irregular boudinaged stringers and sweats; some appear almost conformable with the layering, while other examples are discordant at low angles. Little sulphide is visible in the veining; much more is found in the matrix and along the margins of qtz. Overall a strongly mineralised section with abundant fine diss py. Some sulphide follows the layering/banding. Invaded by a wormy, siliceous well mineralised dyke?? near the top cnt. Irregular high angle lower cnt. About 10% qtz.

1057.6 1059.0 Green Carbonate Zone.
Returning to a pale emerald green section, much as per 1051-1055 with more qtz and fuchsite. Fine fuchsite is visible in the qtz and carb inclusions (in the qtz) as weak overprints and small flecks. Weakly mineralised with traces of diss py in the matrix. Sharp lower cnt at 35 DTCA. Carries approx 40% qtz.

1059.0 1062.7 Green Carbonate Zone.
Opening into a highly disrupted zone which consists of strongly fuchsitic emerald green varigated material, and a pale beige to weakly orange, slightly gritty and finely laminated carb phase. Both of these rocks are highly deformed/kinked/folded and in turn have been brecciated with patchy and wormy pale grey qtz. The qtz occupies about 50% of this section and carries abundant pale white to brownish carb as inclusions and selvages. Fuchsite is common in the qtz as discreet specks/wisps and as alteration in the carb. The gritty carb unit is very well mineralised with very fine diss py, in most examples. This contrasts with the very small amounts of sulphide found in the qtz, the carb in the qtz and the emerald green material. Two groups of fine specks of VG occur at 1060.8; several sit in a tiny pale white qtz knot and the others lie in a fine layer? of the gritty carb material. Some of the carb material might be lumped in with the 'peanut-butter coloured' phases/alteration seen elswhere in this green carb system.

1062.7 1071.0 Green Carbonate Zone.
Returning to a mixed sequence of slightly paler emerald green rocks, scattered scrappy qtz-carb veining and numerous olive to peanut-butter coloured layers? or dykes? The host is less deformed and slightly gritty to foliated in large part; the fabric is typically at 40-55 DTCA. The rocks have a strong resemblance to those present at the top of this GC system. Where veined, the host becomes brecciated and disrupted. Small zones of siliceous, pale beige carb material are present; as in above examples these

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

areas are well mineralised with fine diss py. The peanut-butter coloured features are blobby to lens-like and conform to local layering/fabrics; many are tightly folded on a cm scale. Recumbant and similar geometries are present. They are also modestly mineralised with fine spotty and diss py. Carries approx 15% qtz.

1071.0 1077.7 Carbonated Zone Quartz.
A section which is largely composed of strongly silicified/veined pale brown to beige coloured slightly gritty carb material, such as that above at 1059-1062. Short intervals of olive green, tuff? and thinner layered/disrupted peanut-butter type material fill in. Portions of the brown carb phase look much like a more carbonated version of the aplite described at 1048(porphyritic). These zones are well mineralised with fine diss py. Small fuchsitic fragments are caught up in the brown material. Near the lower cnt the siliceous carb becomes slightly hematitic and locally magnetic with some local areas beginning to appear as if incipient alteration is invading the rocks. Veining in all components is smaller volumetrically than the overlying subunits; it is generally lying at high angles and is weakly mineralised. High angle lower cnt.

1077.7 1089.5 Green Carbonate Zone.
Returning to a pale green to more drab green, variably veined section (with about 15% qtz) more massive/weakly foliated/gritty textured rocks, much as at 1027-1048. Dykes, siliceous zones and peanut butter type material is essentially absent. Where a fabric is developed it lies at 50-55 DTCA. Locally softer with a hint of talc developing. Slightly more chloritic than the above described sections; moving downhole the unit slowly becomes darker in colour and more grey-green to almost blue at the basal cnt. Fuchsite alteration is barely visible in these rocks and slowly fades out moving towards 1089. Weakly mineralised overall. Slightly magnetic locally. Gradational lower cnt at 55 DTCA.

1089.5 1684.1 ULTRAMAFIC
Opening into a broad sequence of moderately deformed, blue-black, carbonated ultramafic rocks which now consist of predominantly chlorite and varying amounts of talc. Wispy irregular carbonate stringers/layering lies at 30-50 DTCA with the majority sitting at 40-45 degrees. Weakly foliated in part; 40-50 degree core angles are typical. Fine carb speckling is developed locally. Not particularly well mineralised; scattered cubes and rounded grains of py are visible throughout with locally greater concentrations near dykes. A magnetic system; variable but quite strong locally. Calcitic below about 1137. Only minor amounts of ankerite are present. Cut by a number of dirty felsites and some narrow mafic and felsic dykes. More dyke rocks intrude the unit moving downhole. Locally strongly faulted. Details follow below.

1089.5 1107.6 Ultramafic.
Finely foliated/laminated with weak speckling. Sparsely mineralised except for a very few 2-4 mm py cubes.

1107.6 1118.1 Ultramafic.

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

Blue-black host with an increasing amount of patchy and wormy pale milky qtz and qtz-carb material. The carb stringers/alteration is more deformed in this interval; mm to cm scale folding and boudinaged veinlets are common. Contains a few narrow, brownish alteration corridors with 2-3% py over 1/2 to 1 inch thicknesses. A very slight increase in matrix sulphide is visible.

1118.1 1119.9 Amphibolitic.
A short section of moderately foliated, brownish-grey amphibolitic material, some of which might represent small altered mafic dykes? Non-magnetic and slightly hematitic especially near the bottom cnt where a few tiny wormy carb-qtz veins have introduced qtz and Fe to the system. Mineralised with fine diss py, especially near the lower cnt; 1-2% max. The fabric lies at 50 degrees nominally; lower angles are present where small veins have kinked and rotated the original S1. Sharp cnts at 50 DTCA.

1119.9 1135.8 Ultramafic.
Resuming in the blue-black host. Slightly more heavily veined with both patchy qtz and wispy carb. Weakly speckled with carb in part. Slightly more mineralised with fine cubic py than the overlying subunits. Invaded by qtz at 1121-1121.9; pale reddish carb inclusions occupy much of the vein. Elevated sulphide in and around the qtz as fine fracture-fillings and disseminations. Amphibolitic for 3 inches below the qtz. Fairly sharp cnts at about 45 DTCA. Narrow broken/blocky section around 1130.1. A patch of pale greyish, siliceous/carb alteration occurs at 1130.8-1131.3; it carries negligible sulphide, but is quite magnetic. A narrow, siliceous, weakly hematitic vein? cuts the unit at 1132.2; it is well mineralised with 2 mm cubic py and has carbonated and weakly silicified the wall rock for 2 in away from both cnts.

1135.8 1137.3 Felsite.
A dark greyish-brown dirty felsite dyke? Strongly contaminated with ultramafic hostrock. Cut by tiny high angle qtz-carb stringers and more patchy, irregular pale reddish incipient alteration. Quite hard, partially magnetic and well mineralised with diss py. Sharp upper cnt @ 35 degrees; more diffuse although distinct lower cnt at 20 DTCA.

1137.3 1143.8 Breccia.
A short section of the host which has been veined and locally altered and subsequently broken-up forming a coarse tectonic breccia. This has subsequently been healed and recemented with chlorite and hematite back into a fairly massive rock which cores well and is only slightly blocky. Variably mineralised within small angular pale brown carb fragments and patches. Patchy, irregular/brecciated milky qtz carries carb inclusions; some of these are mineralised also. Locally magnetic. Narrow zones of amphibolitic material similar to the rocks above at 1118 are preserved. A fault with 1 inch of muddy gouge lies at 1139.7 @ 20 DTCA.

1139.7 1139.8 Fault gouge.

1143.8 1157.5 Fault Zone.
An slightly paler grey coloured section of the host which is cut by several

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

strong discreet gouged breaks. Weakly carbonated with wispy and fine spotty carb. Sparsely mineralised. Cut by very low angle slips towards the lower cnt.

1143.9 1144.1 Fault gouge.
3 In thick crushed rock and muddy gouge with cnts @ 30/70 DTCA.

1144.1 1145.0 Broken Blocky Core.
A finely crushed and broken zone with high angle cnts and the remnants of similarly oriented slips.

1149.9 1151.3 Fault gouge.
A fault zone which contains two elements; a 4 inch thick gritty gouged zone at 1149.9 to 1150.2 with cnts @ 45/30 DTCA and a series of flat (20 DTCA) to slightly arcuate gougy slips which lie between 1150.4 and 1151.3.

1152.5 1152.6 Fault gouge.
1/2 In thick muddy/pebbly fault plane @ 30 DTCA.

1154.6 1154.8 Fault gouge.
1/4 In thick muddy seam @ 45-50 DTCA.

1156.0 1156.1 Fault gouge.
Narrow mud seam at an unknown angle within a narrow broken/crushed zone.

1157.0 1157.5 Fault gouge.
A gritty, muddy fault breccia zone with cnts @ 35/50.

1157.5 1170.3 Ultramafic.
A section of very finely veined, almost black ultramafic rocks. Very irregular veining and fabric directions- quite disrupted and locally tightly folded on a mm scale. Overall the fabric is at about 45-50 DTCA. Weakly mineralised with a few fine cubes of py. Locally hematitic along very fine fractures. Weakly magnetic throughout. Cut by several gougy slips right above the lower cnt.

1170.3 1173.3 Felsite.
A short interval of dark grey fine-grained rock with a pale pinkish cast. Very hard and strongly magnetic. Riddled with fine, high angle carb stringers; many of these are slightly hematitic and have locally stained the adjacent wallrock. A rather dirty, contaminated unit with 2-3% diss and slightly coarser fracture controlled py. Sharp cnts @ 30/60 DTCA.

1173.3 1182.8 Ultramafic.
Returning to the host phase and an interval much like that above at 1157-1170. This section contains slightly more layered carb material and some reddish incipient alteration, some of which resembles very low angle syenitic dykelets? Brownish to pale grey, slightly gritty/siliceous layers with elevated amounts of py are found in several spots. These are typically lying at 55-65 DTCA. The rocks become magnetic below about 1181. Contains about 0.5 to 1% fine cubic py. Sharp basal cnt at 50 DTCA.

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

1182.8 1185.8 Felsite.
Another pale pink, dirty felsite much like the one at 1170. Contains less carb stringers; and more pale reddish patchy carb-qtz material. Slightly more pervasive hematite alteration is developed near the contacts. Strongly magnetic. Well mineralised with diss and some 2-4 mm cubic py near some of the patchy carb material. Contains faint scattered 1-2 mm euhedral carb metacrysts throughout. Very sharp lower cnt at 60 DTCA.

1185.8 1210.0 Ultramafic.
Returning to the blue-black host; this section contains a greater than average amount of patchy and scrappy carb alteration and highly deformed (folded) stringers. Similarly, an increase in fine cubic groundmass py is visible. A few narrow corridors of amphibolitic material are also present. Locally quite strongly magnetic. Moderate RQD values here.

1210.0 1407.9 Ultramafic Broken Blocky Core.
Opening into a thick interval of weakly veined/carbonated rocks which are not especially deformed but which is locally broken up and/or faulted. Weakly speckled or xcut by fine wispy calcitic stringers. Variably mineralised with fine cubic py; generally less than 1% overall. Black to blue-black to pale grey blue in colour with minimal fabric development. Local jointing mimics the 40-50 degree stringers/fabrics. A few broken up areas and shears/slips are noted herein. At 1242.8 lies a slightly gougy slip @ 55 DTCA; @ 1277.8 sits a 4 inch thick finely broken up zone; @ 1284.5 lies a gougy slip at 20-25 DTCA; @ 1286.0 and 1295.0 lie short sections of broken, blocky core; @ 1377.2 lies a gougy slip @ 30 DTCA; @ 1394.5 to 1396.4 lies a broken/crushed zone; possibly faulted here; 12 in of core was ground/lost; @ 1407.0- 1 in crushed/gougy fault @ 40 DTCA. A few 3-4 inch thick amphibolitic corridors are developed between 1370 and 1385. Sharp lower cnt @ 70 DTCA.

Blank.
1407.9 1414.9 Felsite.
Sharp cnt into a dark grey, fine grained felsite. Very hard and strongly magnetic. Contains several slivers of strongly chloritic ultramafic host and a few very small angular fairly fresh wallrock fragments. Slightly mottled appearance locally (carb metacrysts?) and finely fractured with a network of carb threads more in the center of the interval. Weakly hematised; the rock carries a very pale pink cast in part. Strongly calcitic and well mineralised with diss and 1-2 mm spotty py. Prominent 2-3 mm squarish carb metacrysts? are developed right at the basal cnt. A 1 in thick, carb-qtz breccia vein intrudes the unit right at the top cnt. Sharp lower cnt @ 35 DTCA.

1414.9 1424.2 Ultramafic.
Returning to the host ultramafic; a broken-up, locally amphibolitic section, which is the continuation of the broad subunit above (to 1407). One example of a gritty, siliceous/amphibolitic layer at 1422.5 is isoclinally folded with an axial plane at 40 DTCA. A series of slightly gougy slips lying at 50 degrees sits between 1416-1418. Broken/cushed zones follow and continue down

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

to 1420.3.

1424.2 1427.1 Amphibolitic.
A more continuous finely foliated, amphibolitic zone which is invaded by irregular wormy, boudinaged incipient dykelets? and slightly thicker (2-3 in) patchy siliceous felsite? blobs. Well mineralised in and around the siliceous areas. Sharp cnts top and bottom @ 30/40 DTCA. Strongly magnetic.

1427.1 1479.8 Ultramafic.
Continuing with the broad subunit as above at 1414. Strongly magnetic, and continuing calcitic. Moderate RQD values. Becoming more broken up and jointed below 1466. Contains a short stretch of weakly foliated, very dark grey to black amphibolitic material @ 1477.2 to 1478; this zone resembles the next underlying phase. Weakly mineralised.

1479.8 1493.3 Mafic intrusive ?.
Sharp cnt into a medium to medium-coarse grained, very dark grey to almost black phase. Upon first inspection the rocks appear to have a primary intrusive texture, but they are probably represent a recrystallised mafic dyke? with amphibole, chlorite, abundant carbonate and minor biotite. In part, the rocks have been invaded by reddish incipient alteration, which brings in more Fe and carbonate. A few spots look as if they are almost syenitic to dioritic; this may also be an alteration texture however. 1 to 2 inch thick pale pink qtz-carb veins? xcut the unit at high angles; these features are well mineralised and tend to increase the sulphide content of the enclosing wallrocks. The matrix is variable in composition and texture; locally it is richer in amphibole and begins to appear weakly foliated where more acicular mafics are dominant. In other areas, the rock is less grainy and much richer in a pale tourquoise green chlorite; the chlorite occupies much of the matrix as discreet rounded patches and interstitial material between carbonate grains. Still other areas are more coarse grained; this is a reflection of a greater carbonate content. Well mineralised with diss and fine cubic py. Strongly calcitic throughout. The unit is bounded by fairly sharp contacts; they lie @ 45/50 DTCA.

1493.3 1499.5 Ultramafic.
A short section of the host ultramafic. Calcitic and weakly carbonated with wispy stringers. No appreciable sulphide.

1499.5 1505.5 Mafic intrusive ?.
Entering another interval much as the dyke? above at 1479. This example is weakly foliated at about 30 DTCA and becomes slightly finer grained moving downhole. Contains less amphibole and more reddish carb as interstial groundmass material and metacrysts. Strongly calcitic and magnetic throughout. Well mineralised with diss and fine spotty py throughout. Xcut by several pale pink qtz-carb veins and blobby intrusions; these are weakly hematitic and typically more strongly mineralised both internally and externally than the surrounding host. A tiny dark grey-green felsite? dyke cuts the unit at 1530.7 at 30 DTCA. It is slightly more sulphide-rich than the host and very strongly magnetic. Sharp cnts @ 65/25 DTCA.

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

1505.5 1536.5 Ultramafic.
Returning to the blue-black host phase. Continuing magnetic and calcitic. Cut by a strong fault at 1511.2 to 1511.6; the zone contains talcy, gritty gouge. The zone cnts lie at about 60 degrees. Another strong, gougy slip sits at 1509.1 @ 35 DTCA. Slightly more blocky and broken below 1523. A pale pink carb-qtz vein cuts the unit at 20 DTCA at 1535-1535.5; it contains very little sulphide.

1511.2 1511.6 Fault gouge.

1536.5 1540.8 Amphibolitic.
A short section of more amphibolitic ultramafic material intercalated with blueish hostrock. Wispy and granulated/deformed, pale pink carb and qtz veining is also mixed into the section. Strongly calcitic. The discreet nature (sharp cnts) of the more amphibole-rich zones suggests that these areas might represent small mafic dykes. There are some textural similarities here with the rocks above at 1479. The layering/fabrics sit at 30-40 DTCA nominally. Well mineralised in and around the qtz-carb material in the more amphibole-rich areas.

1540.8 1542.9 Felsite.
Sharp cnt into a pale grey unit with a weak pink cast. Very fine grained and hard. Calcitic and strongly magnetic. Altered with very fine fracture-filling and groundmass chlorite. Weakly hematised. Cut by a few high angle carb threads. Small euhedral metacrysts of feldspar?? are visible towards the bottom cnt; they are replaced with carbonate and contain very tiny grains of magnetite. Modestly mineralised with diss and fine spotty py. Cnts @ 50/40 DTCA.

1542.9 1544.0 Ultramafic.
The host ultramafic phase. Blue-black and strongly chloritic. Irregular lower cnt bounded by a tiny ptygmatically folded carb stringer.

1544.0 1549.0 Amphibolitic.
A very highly deformed, variably amphibolitised and weakly foliated section. Dark grey to almost black in colour. Invaded by 1/8-1/4 in thick high angle carb-qtz veinlets and larger patches of pale pink qtz-carb alteration. The former are ptygmatically folded(especially near the up cnt); the latter are variably developed from ghostly, fuzzy examples to cleanly bounded rounded bubbles containing abundant very fine granular magnetite. A strongly magnetic section with scattered fine cubic py. The altered areas are more strongly mineralised. Very sharp lower cnt @ 35 DTCA.

1549.0 1557.8 Ultramafic.
Continuing with the host rocks; pale blue and strongly magnetic. Cut by a few scrappy carb stringers lying at 45 DTCA. Very little sulphide here.

1557.8 1561.3 Amphibolitic.
Cnt into a black, fine grained amphibolitic section. Locally slightly coarser grained where larger carbonate grains have formed. Cut by a very few wispy carb stringers towards the lower cnt. Not magnetic except where the

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

carb stringers have come in. Weakly mineralised at best. Foliated at 50 DTCA. Sharp cnts at 20/45 DTCA.

1561.3 1568.0 Ultramafic.
Returning to the host ultramafic. Fairly massive with minimal veining and only traces of sulphide.

1568.0 1577.5 Felsite.
Sharp cnt into a dark grey, slightly mottled, massive dirty felsite. Fine grained and very hard. Calcitic and moderately to strongly magnetic. Subtle internal breccia textures; a well fractured and subsequently healed (with chlorite) phase with weak hematite alteration in part. Contains a few scattered 1-2 mm pale yellowish coloured feldspar? phenocrysts?/metacrysts? Riddled with very fine carb threads; the density and size of these increases slightly moving downhole. A well mineralised unit; diss and 1-3 mm cubic and subhedral crystalline py is found throughout. Some fracture control of the sulphide is visible. Contains a few fresh intact wallrock xenoliths 2-3 inches across. Sharp cnts @ 60/70 DTCA.

1577.5 1631.2 Ultramafic.
A slightly different sequence of internally more variable ultramafic rocks; weakly amphibolitic in part to more greenish with less of a blue tint. Locally more chloritic; this gives the the rocks a more green-black appearance in part. A less magnetic section; narrow corridors still react well to the pen magnet. Weakly veined with wispy carbonate; the more blueish sections tend to carry most of the stringy carb. Not strongly foliated, although well fractured on a mm to cm scale locally. Calcitic throughout. Contains only traces of fine cubic py; more appears in the more chloritic/amphibolitic zones.

1631.2 1644.8 Basaltic Komatiite.
Sharp but subtle cnt into a dark green unit which is moving more into the basaltic komatiite field. Calcitic and non-magnetic. Massive with a slightly granular texture. Xcut with very fine chloritic fractures. Contains traces of fine cubic py and internal zones of more ultramafic material. Carries small amounts of wispy/scrappy carb stringer material at 45-55 DTCA. Cnts at 40/40 DTCA.

1644.8 1646.9 Ultramafic.
Ultramafic host; dark grey-green and non-magnetic.

1646.9 1651.7 Amphibolitic.
Opening into a black coloured, fine to medium-fine grained interval. Heavily carbonated and re-crystallised; this creates a psuedo-intrusive texture in the matrix. Massive with a uniform grain size. Calcitic and strongly magnetic. Cut by a very few slightly fuzzy carb-qtz veins and a few patches of weakly hematitic carb-qtz alteration. Variably mineralised with fine cubic py; the more altered carb-rich areas carry more sulphide. Sharp basal cnt @ 40 DTCA.

1651.7 1652.5 Ultramafic.

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

A tiny sliver of blue-green ultramafic host.

1652.5 1654.2 Felsic Dyke.
Sharp cnt into a very dark grey, speckled dyke. Contains an abundance of 0.5 to 1 mm feldspar phenos; a slightly bimodal population which is just barely supported in a very fine grained crystalline matrix of discreet feldspars and amphiboles? Weakly calcitic in the matrix and fine fractures. Slightly dusted/altered phenocrysts of plagioclase. Moderately magnetic and partially silicified. Well mineralised with very fine cubic and spotty py. Sharp cnts @ 40/45 DTCA. Not exactly like other brownish (more hematite-rich) examples, but probably related to them. Not an FP.

1654.2 1657.5 Ultramafic.
A dark blue-grey section of fairly massive ultramafic host. Non-magnetic and essentially free of calcite. Contains no sulphide. Slightly more strongly chloritic at the cnts against the surounding intrusives.

1657.5 1673.3 Felsic Dyke.
Sharp cnt into a thick felsic dyke which is characterised by 2-3 inch thick marginal zones which look very much the above described intrusive at 1652. The finer speckled aspect grades smoothly into a darker muddy grey to purple brown coloured, rather massive phase with a very subtle speckled or spotted appearance. The rocks are porphyritic, but contain far fewer phenos than the marginal equivalents. The phenos are a dirty white to pale blue colour and often fuzzy and or mottled; the majority are subhedral, equidimensional and range from 0.5 to 1.5 mm across. A few scattered much larger examples reach 3-4 mm. Many are altered with carb and very fine chlorite. These grains are set in a dirty grey to brownish almost aphanitic groundmass which has a very fine gritty/grainy texture, somewhat like some of the felsite units. A very hard rock which has been silicified and locally hematised (more towards the basal cnt). Weakly calcitic in both the matrix and fractures.
Weakly veined with scattered very fine 30-50 degree carb-qtz threads and slightly thicker fracture-fillings and gashes. Hematite is introduced along many of these features. Contains a few fresh, small sub-angular inclusions of ultramafic host. Well mineralised with diss and fine spotty py. More strongly mineralised towards the bottom cnt. Cut by a dark grey, almost aphanitic mafic dyke at approx 1665-1666; it is strongly magnetic and very weakly mineralised. It has very sharp high angle cnts with subtle chilling at the margins. Broken and blocky near the bottom cnt. Sharp 10-15 degree lower cnt. Not a typical FD.

1673.3 1675.7 Ultramafic.
A short interval of weakly calcitic, pale green to black host ultramafic. Devoid of sulphides. Fairly massive with wispy, swirling carb alteration.

1675.7 1676.9 Ultramafic ?.
A pale grey-green interval which from afar looks texturally like a felsite. Very hard and calcitic in fractures. Non-magnetic. Fine grained with a very fine mottled texture which results from a pervasive overprinting of the original rock type with a pale tourquoise-green chlorite. Finely cracked/fractured; a darker green chlorite infills these features and occurs

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

as 1-2 mm spots growing in the groundmass. Cut by a few high angle carb-qtz gashes and stringers. Well mineralised with diss and fine cubic py in the matrix and around carb-qtz gashes. This may be very strongly altered section of ultramafic against the underlying dyke. It appears to have fairly definitive high angle cnts however.

1676.9 1681.0 Felsic Dyke.
A pale brown, speckled porphyritic dyke which is quite representative of other McBean FD's. Sharp cnts @ 70/30 DTCA delimit the unit. Abundant milky white feldspar phenos (plag?) are set in a slightly muddy, brownish to flesh coloured aphanitic groundmass. Very small amounts of wispy mafics (chlorite)? are visible in the matrix. Two populations of feldspar are developed; a larger 2-3 mm family and a more abundant 0.5-1 mm set. Most phenos are fairly fresh looking and tend to be euhedral with tabular to equidimensional habits. Some zoning is visible. All phenos are supported in the matrix. A very hard, silicified and variably hematised phase. Xcut by several generations of fine qtz-carb stringers lying at 30-50 DTCA and some higher angle gashes and blebs of more qtz-rich infilling material. Weakly magnetic. Well mineralised with diss and fine cubic py throughout; the distribution is not fracture-controlled.

1681.0 1684.1 Ultramafic.
The basal interval of ultramafic rocks in a broad sequence of the same. A pale grass green coloured interval with a slightly sheared aspect near the top cnt. More grainy/mottled texture moving downhole. Essentially non-magnetic. Calcitic in fine fractures. Weakly mineralised with traces of fine cubic py. Ambiguous, high angle lower cnt.

1684.1 1687.1 CONTACT ZONE
A dark green, mottled to grainy almost flowy textured interval with a subtle very coarse breccia texture. This section is interpreted to be a transitional zone between the overlying predominantly ultramafic system and the underlying more mafic-rich sequence. The last remnants of komatiitic lavas are intermingling with lighter green mafic rocks in a chaotic, slightly brecciated zone which contains relect variolitic textures. Modestly mineralised with fine spotty py. Calcitic and non-magnetic. The basal cnt is fairly sharp, but quite subtle; it lies at about 45 DTCA. Tops here are thought to be uphole.

1687.1 1760.9 BASALT
Opening into a wide section of pale grass green, fine grained, pillowed lavas which contain narrow variolitic zones and very poorly developed pillow rims locally. Probably an Mg tholeiite. Quite hard and massive with little fabric. Generally non-magnetic, except for a narrow zone right below the upper cnt. Xcut with abundant scrappy and wispy carb-qtz stringers, fine stockworks and veinlets. Calcitic in both the groundmass and veining. Much of the veining lies at about 30-50 DTCA. Not well mineralised; scattered diss and fine subhedral py is found throughout with slightly greater concentrations near or within the veining. Locally silicified and weakly epidotised. Cut by three narrow pale grey, weakly amphibolitic mafic dykes at around 1690. Rounded varioles are typically lighter green in colour,

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

somewhat more felsic than the matrix and range from 0.5 to 2 mm across; they tend to coalesce within pillows and against rims. Rims are poorly defined; variolitic textures and subtle slightly more chloritic zones are diagnostic. The rocks become slightly more olive green in colour approaching the basal cnt. A high angle, fairly sharp lower cnt.

1760.9 1764.7 ULTRAMAFIC
A narrow interval of pale green to grey-blue, soft, slightly talcose ultramafic material. Calcitic and non-magnetic with only traces of sulphide. The section opens in a pale green, weakly mottled/speckled zone which resembles the 'breccia' described above at 1684 in the CTZ. This grades into a more greyish, more massive section cut by a few scrappy carb stringers. Sharp lower cnt at 45 DTCA.

1764.7 1771.6 BASALT
A pale grey to beige, strongly altered mafic flow, which exhibits well developed flow top/variolitic textures at the top cnt. Variably silicified, strongly carbonated (calcite), and becoming more sulphide-rich towards the basal cnt. A narrow corridor of weakly fuchsitic material occurs at about 1770.6 to 1771.0 Opening the sequence is a pale beige/dark grey speckled, fine variolitic flow top which is finely brecciated locally. This grades into a cherty/quench zone which has tiny fractures (almost polysutures) developed. This grades in turn into a very fine broken variolitic (typical 'broken spherulitic' texture) zone which gradually coalesces downward into a more massive flow rock.(Tops are interpreted to be uphole) The massive, fine grained textures dominate down to about 1768.8 where subtle variolitic textures again become visible; these remain intact down to about 1771. The remainder of the section is more massive again. The rocks become well mineralised at about 1768.8, where 2-3 mm cubic py appears, as well as fine anhedral/patchy pyrrhotite. Below 1770.8, fine diss py appears, replacing the coarser sulphide above. A weakly veined section; a few scrappy, irregular carb-qtz fracture-fillings cut the interval above 1768, at both flat and steep angles. Dark grey ?smoky qtz and granulated qtz accompanies the carbonate component. Traces of very fine py occur in a few veins. Sharp basal cnt @ 40 DTCA.

1771.6 1779.1 CHERTY EXHALITE GRAPHITIC
Opening into a narrow exhalite/interflow horizon which consists of two components; a graphitic, pelitic sediment and an underlying pale purple to buff chert zone. The graphitic zone is quite massive with little in the way of clean bedding. Where visible, the bedding is distorted and or tightly folded. A nominal bedding orientation is about 40 DTCA. Very little silty material occurs (a small bed occurs at 1773.5); the zone is essentially a silicified graphitic argillite. Irregular, folded and boudinaged qtz-carb veining and gash fillings tend to accentuate the deformation. A well mineralised section; py occurs as spotty bleby/spidery accumulations which are crudely bedded, or as diss to streaky accumulations; some is found within qtz also. Small amounts of very fine wispy fracture-filling sphalerite is visible in close association with some of the streaky py and a few small qtz sweats. The small amount of carb in veins and gashes is calcite. The graphitic section bottoms out along a low angle folded cnt at

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

around 1775; a 3-4 inch thick almost massive bed of grainy py then leads into the chert interval. The chert zone is somewhat chaotic and not laminated or bedded; instead it consists of a pale beige to mauve coloured component which hosts a number of angular fragments? of more bone coloured chert which is very finely fractured with chlorite. The entire section was then xcut by a few pale white high angle qtz and qtz-carb gashes.
Sulphides are common; they occur as 1/2 in diam pyritic and pyrrhotite/py nodules; wispy and streaky py fracture-fillings and as very fine wispy fracture-fillings of sphalerite. Traces of chalcopyrite are also present.
A massive unit with a moderate RQD value. Two graphitic slips are conspicous; one @ 1773.4 @ 40 degrees with some finely brecciated carb infilling and a second @ 1777.5 @ 50 DTCA. Sharp lower cnt at 55 DTCA.

1771.6 1775.1 Graphitic.

1775.1 1779.1 Chert.

1779.1 1809.8 CARBONATED ZONE BASALT
Cnt into a pale grey, distinctly hard and gritty unit which roughly resembles some of the more intensely altered variations of felsite logged above and in other McBean holes. This unit however is thought to be derived from a ?mafic flow which has been very intensely altered with carbonate and silica. It now consists of a very grained mosaic of intergrown carbonate, qtz and tiny mafics(chlorite/amphibole). Small mafic spots (metacrysts) 0.5-3 mm across are scattered throughout. The rocks are now massive and variably magnetic and calcitic. The unit is cut by a very few 1/4 in thick high angle carb-qtz stringers which typically strongly bleach the immediate wallrocks. Very fine carb threads are more common xcutting features; chlorite and carb infill these. A well mineralised unit; 2-3 mm cubic py occurs throughout the interval; some fracture control is evident in part. A few areas see larger patches or groups of these same crystals developed. The unit encloses a short section of purplish chert at 1794.1 to 1795.1. It is bounded by very sharp, undulating cnts at about 30/30 DTCA. It is well mineralised and graphitic. A tight graphitic slip cuts the core here at 1794.5 @ 30 DTCA. At 1806-1807 lies a short window of preserved ?flow breccia or flow top material. Angular dark grey-green fragments are suspended in a fine breccia-like zone. The unit concludes along a graphitic slip at 35 DTCA.

1794.1 1795.1 Chert.

1809.8 1819.2 ULTRAMAFIC AMPHIBOLITIC
A section of brownish to dark grey, weakly amphibolitic and strongly carbonated ultramafic rocks, much like the amphibolitic zones described above in the large ultramafic system which ended at 1684. This example is essentially non-magnetic (with a few tiny magnetic zones) and calcitic throughout. It is medium to locally med-coarse grained with an equigranular, fairly homogeneous and massive character. More discreet acicular amphiboles and some fine biotite flakes are visible in the coarser-grained zones. Locally weakly silicified. Xcut by a few fine carb and carb-qtz stringers, which typically bleach the surrounding wallrock. Locally weakly flooded with

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

qtz-carb material. A well mineralised interval; diss and fine cubic and spotty py occurs throughout much of the matrix. More sulphide is often visible where alteration is more intense. Becoming slightly foliated at a very low core angle near the basal cnt. Sharp cnt at 35 DTCA.

1819.2 1886.4 BASALT CARBONATED ZONE

A section of intercalated ultramafic and very heavily altered ?mafic flows, with the latter constituting much of the interval. The V7 designation is somewhat presumptuous but it probably best describes the dominant rock chemistry in this section. All of these rocks are calcitic both in veining and groundmass. A weakly deformed section with small areas where primary textures are well preserved. Much of the section is weakly magnetic. Weak fuchsite alteration is developed locally. A sparsely veined area, save the normal background of fine carb stringers. Strongly mineralised in part. Parts of this interval are beginning to look quite like the 'flow ores' documented at the Kerr Deposit- this is the first McBean hole to intersect mineralisation just quite like this. Details follow below.

1819.2 1827.8 Basalt flow.

A pale brown to beige coloured, fine grained to slightly gritty textured variably silicified unit which opens with 5 in thick, cherty upper zone; this grades quickly into a subtle brecciated ?flow top which becomes more massive at about 1821. Below 1821 is a 2 foot interval which is strongly pyritic with nodular/grainy accumulations up to several inches across and finer wispy and fine fracture-controlled sulphide(tops are interpreted to be uphole here). Moving downhole, the rocks become slightly lighter in colour and exchange the coarser sulphides for a heavy overprint of fine diss py. The matrix becomes slightly grittier here and just begins to develop a foliation (@ 40 DTCA). A bit of sericite has overgrown portions of this zone. There are several very small cherty fragments? in this area also. At 1824.1 the diss py is again exchanged for scattered py cubes 2-3 mm across, as the matrix becomes slightly greyer in colour and not quite so gritty. Some of the pyrite also follows the very weak matrix fabric. Very fine wispy pyrrhotite is present here, as are a few faint patches of fuchsite alteration. Below 1826.7 the sulphide content decreases; weak fuchsite alteration is visible right up to the lower cnt. It is sharp @ 45-50 DTCA.

1827.8 1839.6 Basalt Ultramafic Flow.

A mixed section of mafic and ultramafic variably silicified lavas. The interval opens with a dark grey variolitic flow top zone which is in sharp cnt (at 1828.3) with an underlying weakly layered and foliated (ultramafic) section. This second zone is weakly stained with fuchsite, silicified and contains fine streaky py and fine pale milky carb stringers. The fabric/layering/veining here lies at 35 DTCA. Below 1830, the layered texture dissappears and is replaced by a darker green, more ultramafic-rich zone in which are suspended small blocks of variolitic (mafic) lava. Very fine diss pyrrhotite, traces of chalcopyrite and fine fracture-controlled cubic py occur throughout the section. Weak patchy carb-qtz alteration is developed locally. The lower 2 feet of the section has a more bleached appearance and contains traces of pervasive fuchsite alteration. Two pale grey, very fine grained mafic dykes cut the core at about 1837; they are

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

mineralised with spotty py and are otherwise homogeneous and featureless.

1839.6 1848.0 Ultramafic.
A more massive, locally silicified, dark grey-green ultramafic flow begins at a very sharp, high angle cnt. The rocks become slightly lighter in colour from 1841-1843. Moving downhole they darken again and develop subtle flow top/flow breccia textures which continue down to 1846.8 where a more layered aspect begins to evolve (tops are thought to be downhole here). This texture occupies the remainder of the unit down to 1848 except for a narrow sliver of silicified graphitic material at 1847.1. Bedding? lies @ 35 DTCA here. Below this for about a 1/2 inch is a very finely laminated, dark grey cherty lens. The ultramafic chemistry then returns for the last 8 inches of the unit. The very last 4 inches are weakly altered with fuchsite; the unit then concludes at a very sharp 40 degree cnt. These rocks are magnetic and calcitic in a few wispy, ragged stringers and blebs. The veining is commonly cutting the core at 40-50 DTCA with some locally steeper angles. A variably mineralised section; streaky, wispy and fine ragged fracture-controlled py is most common. Very fine diss and microfracture-filling pyrrhotite is present below 1840.

1848.0 1886.4 Basalt.
Opening into a thicker package of strongly altered, fine to medium-fine grained rocks with a massive, rather homogeneous character. The section is moderately to strongly magnetic, and quite calcitic both in the matrix and in veining (both fine stringers and small inclusions in larger qtz veinlets). The sequence is medium to dark grey in colour and has little in the way of internal texture except for a slightly variable grain size and a few subtle internal cnts between these zones. Fragments are absent. Some small zones of weak silica flooding are beginning to develop; much of the interval is weakly silicified. Sparsely veined with 1/8-1/4 in thick high angle qtz-carb and carb stringers and thicker pale grey qtz veins which often lie at very low core angles. These veins contain small amounts of carb as selvages, small angular pale grey chloritic inclusions and wispy/streaky/bleby py and diss/spotty po in some cases. Traces of chalcopyrite are also visible.
The sulphide within the veining contrasts with much of what has been logged before at McBean; in almost all previous examples this amount and texture of sulphide lies outside the veining. Fine fracture-filling py is also scattered throughout the unit. As well, diss and fine cubic py and fine anhedral/spotty po can be found in the wallrocks here. Some increased amounts of sulphide coincide with the areas of weak silica flooding also. Sharp high angle lower cnt.

1886.4 1911.0 CARBONACEOUS SEDIMENTS
A coal black, very fine grained graphitic/pelitic interval with very little silt or coarser grained component. Subtle, generally quite irregular (folded) and deformed bedding is visible; it is most obvious where very small laminae of silty material are deposited and or where sulphide is developed. The bedding is nominally oriented at 20-40 degrees; higher and lower orientations are common. Grading is only weakly developed; some examples suggest tops are downhole but the deformed state of these rocks

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

makes this a bit suspect. Silicified over much of the interval. Weakly magnetic in the lower half of the section. Weakly veined with scrappy, pale white carb-qtz stringers and gashes. Most are highly deformed(folded, boudinaged) and lie at both very high and very low core angles. A well mineralised section; deformed nodules and streaks of py are present throughout. Some of this material mimics the bedding and emphasizes the deformation nicely; broken off, folded and extended fracture-filling material is common. Some py is also growing in and on top of small qtz-carb knots and boudins. Broken up along 40-50 degree joints throughout; many surfaces carry fine slicks at small angles (30 degress is typical) to the core axis. Gradational silty lower cnt at 25 DTCA.

1911.0 1931.0 BASALT FLOW BOTTOM

Opening into a pale grey-green, fairly massive rock which is characterized by abundant flowy textures. The sequence begins with a weakly variolitic top? (almost 'chicken-feed') which grades into a fine flow breccia at about 1913.5. The breccia consists of small angular massive fragments, and chunks of variolitic material which are welded together with a glassy light green interstitial fluid. The rocks become more massive and slightly darker in colour below 1923.5 with the occasional zone of variolitic material, more felsic (late fluid) flooding and slightly coarser flow breccia. A short section of pale beige, almost cherty material begins at 1930 and becomes more brownish and riddled with fine carb threads as the bottom cnt approaches. Sharp, slip bounded basal cnt @ 40 DTCA. A weakly magnetic, sparsely veined unit with a strong calcite overprint. Not especially well mineralised; traces of spotty and fine subhedral py occur in a few stringers or as fracture fillings. Probably a tholeiitic basalt. Tops are probably uphole in this section.

1931.0 1938.7 ULTRAMAFIC

A short section of very strongly altered ?ultramafic material. A dark grey to grey-green coloured rock with a pale pink cast in part. Medium to medium-coarse grained with a fine mottled/speckled appearance. The interval contains small domains of slightly differing alteration intensity and mineralogy. Some suggestion of local fragment textures are visible. Weakly foliated @ 50-60 DTCA. Contains no appreciable veining, save one dirty dark greenish qtz filling at 1933.5 @ 65 DTCA. Strongly calcitic in the matrix. Variably hematised and silicified with a very weak incipient type alteration beginning; weakly amphibolitic in part. Non-magnetic. Modestly mineralised with diss and fine spotty py; this is more strongly developed in the more Fe-rich areas. The unit is intruded with a narrow mafic dyke at the lower cnt. It is a pale grey colour, very fine grained and has quite sharp cnts @ 50/60 DTCA. Some chilling is visible at the lowermost cnt at 1938.7.

1938.7 1941.9 BASALT

A short section of flowy basalt, quite well mineralised and foliated, becoming more so towards the lower cnt. Pale grey-green in colour with a mildly brecciated, variolitic top; then becoming slightly more massive internally with a fragmental/brecciated? appearance locally. Weakly sheared, locally siliceous and strongly pyritic especially below 1939.7. The unit carries diss and 2-3 mm distorted cubic py grains which mimic the fabric.

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

Extremely siliceous in the lowermost 3 inches of the unit. Sharp lower cnt @ 40 DTCA. Non-magnetic. Cut by few very fine carb threads mostly in the upper portions of the section. The rocks carry some fine sericite, below 1940, and strongly resemble the 'flow ore' type mineralisation described above at 1819-1827.

1941.9 1949.3 CHERTY EXHALITE

Contact into an interval of light grey coloured, weakly laminated cherty material. Contains inclusions of bone white, fractured cherty material and several thin slivers of slightly gritty highly altered ?mafic material which resembles the overlying phase. The remainder of the section is pale grey and layered at about 60 DTCA. A few dark grey cuspate patches and some dark purple zones (graphitic areas?) are found in this material. Pale milky white patches of calcite have infilled various angular fractures; these vary in size from 1/4 across to 2-3 inches thick by 6 inches long. Fine diss and streaky to fine nodular py is distributed throughout much of the grey component; much is concordant with the layering. Traces of fine fracture-controlled chalcopyrite are visible at 1944. A non-magnetic, calcitic interval. Two slightly gougy slips act as bounding cnts to the bone-white material @ 1941.9 and 1942.6; the former is slightly graphitic as are two (additional) closely spaced breaks at 1942. All of these slips lie at about 30-40 degrees. Brecciated, slightly chaotic lower cnt @ 50 degrees.

1949.3 1953.5 BASALT

A pale grey, slightly gritty phase which looks very much like rocks noted above at 1819-1827. This section is silicified, and very pyritic as disseminations and 1-2 mm anhedral grains. It is strongly calcitic in both the matrix and in two types of veining. Tiny high angle carb stringers and 1-2 in thick, very low angle, slightly smoky qtz veins cut the unit; the former post date the latter. Neither vein set carries any appreciable sulphide. Non-magnetic. These rocks are interpreted to be very highly altered mafic flows, and with the large amounts of added sulphide and silica/carbonate are easily equated to 'flow ore'. High angle lower cnt.

1953.5 1962.1 ULTRAMAFIC

A pale blue-grey interval of variably deformed and altered fairly massive ultramafic flow rock. Locally foliated and finely speckled with carbonate; fabrics are typically 60-75 DTCA. Locally amphibolitic with some biotite in part. Strongly calcitic and non-magnetic. Well mineralised in the more amphibole-rich zones with diss, streaky and 1-3 mm cubic py. Two or three tiny sub-flows are probably developed here; they are typically fine grained with amphibolitic bottoms? and brownish, sometimes slightly siliceous tops. Tops would be interpreted as downhole here. Weakly veined with tiny, high angle carb stringers. Sharp basal cnt @ 65 degrees.

1962.1 1969.9 ULTRAMAFIC AMPHIBOLITIC

Another section of more strongly altered ultramafic material. The interval begins as a dark grey-green weakly amphibolitic/chloritic phase which grades downhole into a more coarsely mottled rock which is being invaded by patchy pale pink qtz-carbonate fluids. A pale blue-green chlorite is also replacing much of the matrix, firstly as very fine grained interstitial material and

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

then farther downhole as more foliated (at 65-75 DTCA) patchy growths between carb-qtz metacrysts and knots. Non-magnetic and continuing strongly calcitic. Overall, a well mineralised section with fine diss and 1-2 mm cubic py visible in much of the rock; higher concentrations are found in areas of more intense alteration. Weakly veined; a few tiny pinkish carb-qtz fractures are present as per the better mineralisation. Sharp lower cnt @ 65-70 DTCA.

1969.9 1985.0 BASALT

Opening into a dark green, fine grained, rather massive and homogeneous mafic flow. Essentially non-magnetic. Calcitic throughout, both in veining and pervasively in the groundmass. The rocks become more altered with weakly hematitic carb and qtz (+/- fine amphibole) moving downhole; this causes the matrix to become more coarse grained and speckled to almost mottled in appearance. A subtle variolitic top is developed for several inches at the bottom cnt; this suggests tops are downhole here. A sparsely veined section; a very few fine carb stringers cut the core near the bottom cnt. Locally well mineralised in the more altered zones with fine cubic and diss py. High angle lower cnt zone; it is disrupted on a mm scale and invaded by a set of 1/2 in thick, 40 degree qtz-carb veins.

1985.0 2013.1 ULTRAMAFIC

Returning to a pale blue-grey, fine grained interval of massive to weakly flowy ultramafic material. The rocks here are very weakly magnetic in part and continue to be calcitic. The bulk of this section is homogeneous and relatively undeformed with a few fine scrappy carb stringers and gash fillings(a larger wormy vein cuts the core at 1989). It is similarly weakly mineralised with fine cubic py in a few areas. The cnt regions are slightly more altered and deformed (weakly sheared/foliated). The upper 2-3 feet contains very subtle flow top/flow breccia textures? suggesting tops here are uphole? At the bottom cnt there is a 2 foot zone which is weakly foliated and slightly amphibolitic. The fabric lies at 70 DTCA here. Sharp lower cnt at 80 DTCA.

2013.1 2025.3 ULTRAMAFIC AMPHIBOLITIC

Returning to another strongly altered ultramafic section, which is coarsely mottled and variably amphibolitic. Dark grey in colour with a very pink cast locally. Fairly hard although not pervasively silicified. Some semblance of incipient alteration type textures are begining to develop moving downhole. Strongly carbonated (calcite plates) and not magnetic. A good deal of fresh chlorite is growing in the matrix, lying in small carb stringers or developing in discreet bands throughout the unit. Amphibole occurs as acicular grains from 1 to 3 mm long or as much finer felty groundmass alteration. Modestly mineralised with fine spotty/anhedral py throughout. A very weak fabric is beginning to form at almost 90 DTCA. Xcut by a local set of fine 40-50 degree carb stringers at around 2021-2023. Slightly irregular, high angle basal cnt.

2025.3 2032.3 ULTRAMAFIC

A short section of pale blue-grey lightly speckled flow material, very much like that noted above at 1985. This example is riddled with fine high angle

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

carb threads, many of which are tightly folded (chevron, ptygmatic) on mm to cm scales. AP's are typically almost perp to the CA. Sparsely mineralised. Sharp, high angle basal cnt.

2032.3 2044.4 ULTRAMAFIC AMPHIBOLITIC

Opening into a dark grey, variably mineralised, fine grained unit, which is weakly foliated in part and locally heavily veined. The upper parts of the interval have a coarse, gritty appearance not unlike portions of the unit above at 2013. This area is weakly foliated at 60-65 DTCA, amphibolitic and strongly carbonated. This grades downhole into a finer grained more massive section starting at about 2036.5. Much of the next 3 feet is occupied by a irregular mass of pale white carb-qtz vein material which carries numerous fine wallrock fragments and very little sulphide. By 2039.8, the massive character is replaced by a crudely laminated and varigated texture which continues to 2043.4. This area is silicified, strongly magnetic and more strongly mineralised than most of the rest of the interval. The layering lies at 60 DTCA here and is locally xcut by a few very tiny carb stringers which dump a pale brown alteration product into the wallrock. The section concludes with a fine grained, muddy brown coloured felsite. It is very hard, weakly magnetic and more cracked up/veined than the above host rocks. Diss and fine cubic py is scattered throughout. Broken core obscures the lower cnt.

2044.4 2073.6 BASALT

A broad interval of medium-fine grained strongly altered rocks which are interpreted to be mafic flows or a thick single flow unit. A quite homogeneous, massive to slightly mottled sequence which has little in the way of primary texture. Slightly foliated at about 40-50 degrees just below the upper cnt; this fabric becomes less developed moving downhole. Consists of a fine mosaic of intergrown carbonate, chlorite and minor amphibole. Calcitic and not magnetic. Weakly mineralised throughout with small amounts of spotty py. Veining is absent except for a few scattered very fine carb threads. A small siliceous zone is developed at the bottom cnt for about 12 inches; 2-3% fine cubic py is developed here along with a halo of slightly coarser py, above the siliceous zone for several inches. A small porphyritic felsite body lies right at the cnt and is probably responsible for the alteration. Sharp cnt @ 50 DTCA.

2073.6 2084.7 ULTRAMAFIC FLOW BASALT

A pale grey-green coloured predominantly ultramafic flowy phase with short sections of more mafic looking material. Crudely layered and mottled with a disrupted, chaotic appearance in part. Portions of the section have mottled ultramafic textures; other areas have variolitic more mafic textures. There are several narrow discreet flows developed; tops appear to be downhole. Non-magnetic and strongly calcitic throughout. Locally weakly silicified. A well mineralised interval; numerous streaks and nodules of py up to 1 inch across occur throughout the section. Contains a short interval of weakly developed cherty/graphitic exhalite @ 2077.9 to 2078.5. Small amounts of very fine sphalerite and pyrrhotite are visible in the area. Wispy and mottled carb stringers and patchy carb alteration is present throughout the section. Gradational high angle lower cnt.

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

2084.7 2087.2 CHERTY EXHALITE GRAPHITIC

A small section of weakly graphitic, deformed exhalite material with some very fine-grained mafic tuff component. More of a silicified unit than a section where a discreet laminated or massive chert zone has been deposited. Highly disrupted, variably oriented bedding. Well mineralised with streaky, nodular and blebby py. Very fine fracture-filling sphalerite and slightly coarser closely associated pyrrhotite are also present. Invaded at the top cnt by a narrow irregular qtz sweat with abundant blebby py, po and chalcopyrite. Slightly scalloped lower cnt at 60 DTCA.

2087.2 2115.2 BASALT

Opening into an interval of highly carbonated, medium-coarse grained, rather homogeneous rocks which are thought to be very highly altered mafic flows. This example consists of a fine intergrown patchwork of pale pinkish carb, chlorite and lessor scrappy amphibole. Locally slightly larger plates of amphibole impart a spotty texture to the rocks. Grossly similar to other sections logged above in this hole. Very dark grey green with with a gritty to finely mottled texture. Massive and uniform with minimal veining or fabric except for the lowermost 3 feet of the interval. There is a hint of a 70-80 degree foliation beginning to form in parts of the uniform zone. Strongly calcitic and becoming slightly magnetic below 2110. Weakly mineralised with scattered spotty/cubic 1-2 mm py. Below 2111.9 the rocks become finer grained, slightly more amphibolitic and riddled with small knots and wispy high angle stringers of carbonate. A layered appearance results with the bands lying at about 60 DTCA. This area is slighty more mineralised; it is sprinkled with very fine cubic py. A tiny pale grey amphibolitic mafic dyke invades the unit at 2114; its' cnts mimic the local layering. Sharp lower cnt at 60 degrees.

2115.2 2201.6 FELSITE

Contact into an intrusive system which contains several variations of a very dark coloured porphyritic felsite. Small angular fragments and larger rafts of ultramafic material are caught up in the unit. Massive to slightly blocky in part. Very hard, well saturated with calcite and variably magnetic. The rocks are composed of a very dark maroon to muddy brown to slightly purplish coloured aphanitic and siliceous groundmass, in which are supported two populations of feldspar phenos. The phenos are either 1-2 mm across or 3-6 mm across; the two families do not usually co-exist in the same intervals. The larger grains are subhedral to euhdreal and generally equidmensional. They are a pale yellow-buff colour, tend to be slightly cloudy and have fuzzy somewhat indistinct boundaries. They are often fractured internally once or twice; carbonate and hematite are the common fillings. Parts of the unit are variably hematised. Short sections of reddish to orange coloured 'dioritic' material are also developed. Generally a modestly mineralised section with variable amounts of diss and fine spotty py throughout. More details follow.

A wedge was placed in the drillhole at 2194.3 feet due to a problem with stuck rods in the original hole MB97-28 circa 2346 feet. The wedge was drilled with a bullnose bit such that there is no core until 2204.2 feet in

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

the next code 4 unit.

2115.2 2117.9 Diorite.
A short section of reddish to orange coloured medium grained intrusive which resembles dioritic rocks logged in many other McBean holes. Hematised and heavily fractured with fine chloritic and hematitic threads. Not particularly rich in mafics. A greater abundance of feldspar grains gives the rock a more normal crystalline intrusive texture. Contains abundant fine cubic and spotty py throughout the matrix. Strongly silicified. Grades quickly into the underlying zone across a finely amphibolitic cnt which is quite deformed and irregular.

2117.9 2132.0 Felsite.
A very dark coloured, slightly porphyritic section. Brownish to slightly purple, very hard and fractured/finely cracked up throughout. Calcite (and locally specular hematite) infills many of the small breaks and gashes. Both flat and high angle orientations are reflected in the fracturing. Locally strongly hematised and magnetic. Contains many small angular ultramafic fragments up to 1/2 in across. Diss py is sprinkled throughout the matrix; a few spots of slightly more blebby or fracture-controlled sulphide occur in the more fractured areas. Sharp lower cnt @ 45 DTCA.

2132.0 2133.6 Diorite.
Another short dioritic section. Slightly smaller, more tightly packed feldspar grains characterise this example. Strongly hematitic as pervasive alteration patches and halos about fractures. Abundantly fractured; most are healed or sealed with silica and hematite. More strongly mineralised here compared with the first 2D and the surrounding felsite. Essentially non-magnetic. Sharp basal cnt at 65 DTCA.

2133.6 2164.0 Felsite porphyritic.
Opening into an blocky interval of magnetic and porphyritic felsite, characterised by the large phenos. Very few small phenos are developed here. The phenos are fairly prominent down to about 2145 where they begin to become more altered and darker in colour. This progesses until they are the same colour as the matrix; they are only visible because of the minute hematitic strain shadows that have formed about the grains. This zone grades out at about 2150. Below 2150, the matrix slowly becomes lighter in colour (grey) and more altered. Weakly hematised around a few fractures; most are almost perp to the CA and calcitic. Sharp lower cnt at 80 degrees.

2164.0 2194.9 Felsite.
Returning to a more massive, barely porphyritic interval, with a dark grey to weakly purple colouration. Blocky to locally broken up or crushed. Slightly more altered matrix (compared with the upper sections) with a muddy aspect. Becoming slightly more fractured and hematitic moving downhole. Phenos become more obvious at about 2180. A few small ultramafic fragments are caught up in the matrix from place to place. A magnetic, very dark grey mottled (amphibolitic) dyke? is located at 2187.5 to 2189.3. It has fine grained cnt zones (chilled/earlier alteration?) developed along sharp, high angle, slightly irregular cnts. The section terminates at a sharp 60 degree

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

angle.

2194.9 2196.7 Diorite.
Sharp cnt into a pale orange, medium grained dioritic phase much like the units noted above at 2115 and 2132. Flooded with hematite beginning at the top cnt and subsequently feathering out moving downhole. The feldspar grains are almost obliterated within the hematitic zone; they become more distinguishable toward the lower cnt. The rocks here are not magnetic. Greater concentrations of sulphide (diss py) are present outside of the hematised zone. Sharp lower cnt @ 35 DTCA.

2196.7 2201.6 Felsite.
Resuming the phenocryst poor, more altered and massive host felsite. Slightly more blocky/jointed at 25-45 degrees. Wispy/cloudy matrix and fracture (carb/hematite) alteration is becoming more intense in this section. A few irregular amphibolitic rafts are present in the zone, as are small patches of red-brown alteration (Fe?). 0.5-1% diss py is sprinkled throughout. A non-magnetic section. Sharp lower cnt at 60 DTCA.

2201.6 2215.8 BASALT
An interval of totally recrystallised, strongly carbonated rocks which are thought to be related to the carbonated sections above at 2044-2073 and 2087-2115. Dark grey-green with a prominent pink speckling/mottling. The interval opens as a fine grained amphibolitic schist which quickly grades into a coarser grained mottled phase at about 2203. As in the above examples this section is thought to have been derived from a mafic flow rock as opposed to an ultramafic protolith. This example is also more heavily altered than the above noted areas; it consists of a coarse grained aggregate of pale pinkish carbonate/granulated qtz plates and interstitial chlorite plus or minus finer wispy or anhedral amphibole. The amphibole component is variably developed; it tends to be more abundant below 2211.4. A massive, variably magnetic unit which begins to aquire a weak fabric from 2213.8 downward. The foliation is typically at about 50-60 DTCA. Sparsely veined with fine pinkish carb-qtz stringers; most lie at about 60 DTCA. A moderately mineralised section; 1-2 mm cubic py is scattered throughout with a slightly greater concentration occurring in the lowermost 5 feet. Several narrow fine grained lenses of chlorite and amphibole-rich material occur very near the bottom cnt. Sharp basal cnt at 60 DTCA.

This start of the wedge zone is not resampled for assay generally since the first pass in hole MB97-28 was adequately sampled.

2215.8 2221.6 DIORITE
A dull orange grey to pinkish grey, medium grained intrusive phase containing a fairly tightly packed population of 2-3 mm pale white feldspars. The feldspar grains are just supported in the matrix and are typically subhedral and have somewhat fuzzy boundaries. The matrix is a reddish brown colour and aphanitic; it carries tiny mafic flecks and dirty chloritic patches and fracture-fillings. Calcitic in fractures. Weakly hematized groundmass. A hard, very slightly magnetic phase which is well fractured up and xcut by a network of very fine carb and chlorite threads.

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

The dyke is more strongly orange stained around areas with accessory fracturing and at the upper contact over 9 cms. Well mineralised throughout with very fine cubic py. Cut by a few 1/8 thick irregular carb stringers. Not a diorite per se but somewhat similar to other McBean rocks called diorites; this example lies between the FD and 2D designations. Contacts are sharp although a little irregular at 56/62 degrees.

2221.6 2224.2 ULTRAMAFIC AMPHIBOLITIC
A short section of very dark grey-green to black, moderately foliated to locally contorted amphibole and chlorite-rich material. Strongly calcitic from fine calcite threads throughout which are subparallel to a wavy foliation that varies from 15 to 40 degrees. Weakly mineralised with traces of diss py. The lower contact is sharp but a little irregular at 52 degrees.

2224.2 2225.4 DIORITE
A short section of grey to pale pinkish grey diorite that is finely fractured to overprinted with calcite. There are two sections of diorite here separated by an irregular chloritic and amphibolitized unit or inclusion at 2225.1 - 7 cms. Outside contacts are also irregular.

2225.4 2230.6 BASALT
Contact into a narrow, mottled, calcitic unit of potential altered basalt. The unit is dark green to brownish green in colour and looks much like the unit at 2201.6 to 2215.8 except that the invasion of pinkish calcite is not as coarse here and the rocks exhibit a patchy but moderate to strong magnetism. The brownish colour and strong pink calcite component almost obliterate the original mineralogy but the rock appears to be mafic in composition except for 6 cms of foliated material at the lower contact that look distinctly ultramafic. The lower contact is a little diffuse at 51 degrees.

2230.6 2257.6 FELSITE
Returning to another arm of the intrusive system described at 2115. This interval contains the same variations described above and a short section of moderately foliated ultramafic material. Details are as follows.

2230.6 2240.8 Felsite porphyritic.
Opening into a dirty, coarsely porphyritic section with the typical purple-brown matrix. Locally smaller phenos are developed in this example. Calcitic and weakly to moderately magnetic. Well mineralised with diss and fine spotty py throughout. Locally fractured and cracked with chloritic fillings. Very hard and hematitic. The coarser phenocrysts are up to 5 mms in size and have a weak bluish cast. There is accessory pinkish staining around some of the chloritic fractures and there is a narrow amphibolitic mafic to ultramafic section or inclusion from 2239.2 to 2239.8 with irregular, ragged contacts averaging 68/56 degrees.

2240.8 2249.2 Felsite.
Sharp cnt @ 51 degrees into the more massive, phenocryst-poor type of

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

felsite. This interval contains a very few scattered phenos, intermediate in size between the typical larger ones and the 1-2 mm grains seen in the other example above. The rocks are otherwise quite similar; slightly gritty textured and homogeneous except for the odd tiny carbonate or hematitic fracture and fleck of amphibole. In addition to the fine flecks of amphibole, there are a handful of dark amphibolitic clots or fragments to 2 cms in size. Weakly mineralised with scattered diss py. Calcitic and magnetic. Tiny amphibole needles are beginning to become visible in the matrix moving downhole.

2249.2 2252.0 Ultramafic.
A dark blue grey to black section of very weakly to moderately foliated, slightly talcose ultramafic. Foliated and veined with fine carb stringers at 45 DTCA. Moderately to strongly calcitic and partly amphibolitized in the upper contact area around a 4.5 cm coarsely porphyritic dyke of felsite as above at 2250.8 at 51 degrees, and, some weak brownish alteration approaching the lower contact. The ultramafic is nonmagnetic and is very sparsely mineralized - the felsite is mineralized with pyrite. Contacts are sharp and well defined at 36/65 degrees.

2252.0 2257.6 Felsite porphyritic.
Returning to the coarse porphyry variation. Much as above with an increasing amount of groundmass alteration approaching the lower cnt. More fine veining / fracturing in this section and consequently more pinkish staining than in the upper dyke. A weak expression of an alteration front sits over about 15 cms at the at the lower contact - ankerite replaces calcite as the dominate carbonate alteration product. Well mineralised with diss and spotty py. Minimal veining developed. Magnetic and hematitic. Sharp, slighty irregular basal cnt at 45 DTCA.

2257.6 2257.7 START OF DEFORMATION ZONE
The beginning of a more deformed system of intrusive and ultramafic rocks typical of the McBean Deformation Zone.

2257.7 2261.9 ULTRAMAFIC
Contact along a 16.5 cm, black, partly amphibolitized, ankeritic ultramafic that is deformed and contorted, just ahead of a brownish, silicified, amphibolitic incipient altered zone of ultramafic typical to the deformation package. There is also a brownish, coarsely amphibolitized section in this interval from 2258.8 to 2259.7 at 29/22 degrees, flanking a 3 cm dykelet of potential porphyritic syenite that runs essentially along the core axis to 2260.7. The incipient alteration style of material is moderate to strongly magnetic in this area - the other rocks are nonmagnetic. The system is weakly to moderately mineralized with disseminated pyrite - the incipient altered sections having a slightly elevated content over the other rocks. The lower contact is sharp but a little irregular at 32 degrees.

2261.9 2262.6 PORPHYRITIC SYENITE
A pale orange, very hard interval of porphyritic syenite very typical of earlier McBean holes within the Deformation Zone. 2-3 mm rounded, pale

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

white, somewhat obscure (strongly altered much as the matrix) feldspar phenos are supported in a pale orange, cloudy groundmass. The rocks are silicified and weakly hematised throughout. Ankeritic and xcut by 1/8 in thick pale white qtz-carb stringers and blebs; these contain negligible sulphide and post date the hematite alteration. Weakly mineralised with diss py; this is found in the groundmass. Non-magnetic. Contacts are sharp but a little irregular at 32/45 degrees.

2262.6 2836.2 ULTRAMAFIC

Contact into a wide package of heavily carbonated, layered/veined pale grey-green to blue-black ultramafics, typical of the McBean Deformation zone. Highly deformed, strongly foliated and locally faulted and crushed or broken up. Ankeritic with little or no late calcite alteration. Xcut by a variety of narrow intrusive bodies. Variably magnetic. Strongly chloritic to locally amphibolitic. Weakly talcose overall. Weakly mineralised with scattered fine pyrite; more is developed in and around intrusives or in zones of incipient type alteration. More details follow:.

2262.6 2269.0 Carbonated Zone amphibolitic silicified.

A short section of variably amphibolitic and silicified material with a well developed foliation at 20 to 40 degrees. Portions of this zone might be tuffaceous; these areas are lighter coloured and somewhat gritty. There is a very faint greenish hue to some of these areas, suggesting they are beginning to alter with fuchsite. The rocks vary from brown to grey brown in the more siliceous areas typical to preliminary incipient alteration, with dull to dark grey green and black strongly ankeritic sections and more olive to yellowish toned sections that are strongly ankeritic and may host traces of fuchsite +/- sericite. Most of the section is moderate to strongly magnetic except for the grey green ankeritic ultramafic parts. The zone is invaded by a few scrappy concordant carb sweats. Weakly mineralised. Sharp lower contact with veining - irregular at 31 degrees.

2269.0 2270.7 Syenite ?.

A narrow pale greyish to orange unit that looks much like one of the pale units of porphyritic syenite that has been almost totally obliterated by fracturing, veining and silicification. The mottled nature of the unit to milky greyish and orangish tones, very crudely developed phenocrysts of potential plagioclase and fine discontinuous fractures with magnetite are essentially the only features remaining. The rock is very fine grained and well fractured to veined with ankerite +/- quartz. It is mineralized with 2-3% pyrite in fine disseminations and coarser crystal clusters. Contacts are irregular with veining at 31/20 degrees.

2270.7 2285.2 Ultramafic.

A sequence of dull bluish grey to blue black ultramafic that is fairly representative of strongly carbonated rocks in the McBean section. The ultramafic is strongly ankeritic and has a moderate to well developed foliation from 0 to 55 degrees to the core axis - a central section from 2275 to 2279 being more highly contorted to brecciated with 0 to 30 degree core angles. The system contains numerous streaks, knots, stringers, lenses and discontinuous layers of ankerite in a dark, partly talcose matrix. There

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

are traces of granulated core at 2273.5 - 6 cms, and 2274.4 - 2 cms subparallel to the prevailing foliation at 35 to 40 degrees but no gouge is noted. The lower contact is quite irregular and somewhat crosscuts the prevailing foliation at 50 degrees. The ultramafic is nonmagnetic and is essentially unmineralized.

2285.2 2291.2 Ultramafic silicified.
A pale pink to flesh coloured section which has been silicified and weakly hematised. Weakly foliated with quite variable (flatter) orientations. Wispy amphibole and chlorite define the fabrics. Invaded by irregular patchy zones of siliceous, aphanitic fluid which are generally well mineralised with fine spotty/anhedral py. The remaining mineralogy is almost exclusively carb which has been silicified and is rather mottled in appearance from the fine chlorite and fine amphibolitic fracturing. The impression is of two potential dykes that have been totally blasted with alteration since this section does not resemble incipient alteration. The dykes (?) are fractured with 1.5 cms of ultramafic material at 2287.5 at 37 degrees, with a larger section of carbonated ultramafic from 2289.6 to 2290.3 with sharp but irregular contacts at 78/71 degrees. Both dykes are weakly to moderately magnetic, and the lower dyke is more yellowish to yellow ochre in colour. The rocks are also irregularly veined with 5 to 10% smoky quartz which is devoid of mineralization. Just below the lower contact there is a 7 cm, elliptical fragment of yellow ochre, similar dyke (?) material in the adjacent ultramafic. The lower contact is sharp at 64 degrees.
This unit was anomalous in hole 28.

2291.2 2317.6 Ultramafic Carbonated Ultramafics.
A finely banded to varigated section with a mottled and disrupted appearance. Foliated and kinked @ 45 to 60 DTCA. Locally silicified in areas 2-4 in long and in wormy 'peanut butter coloured' dyke-like features. The former features might be incipient alteration type features with very little hematite. Heavily carbonated throughout with a subordinate chlorite and fine amphibole component. The largest of these is 20 cms thick from 2302.4 to 2305.0 at 59/47 degrees - it looks most like well developed incipient alteration. The remainder of these sections are only 1 to 2 cms in size and while they are orangish to pinkish in the upper reaches here, the lower 5 feet, after 2312.2 hosts more of the typical fine, brownish to olive coloured alteration streaks that are weakly siliceous, amphibolitic and nonmagnetic at this small size - they appear to be the forerunners to incipient alteration. Not well mineralised except for the silicified zones. Essentially non-magnetic. Cut by a few pale white qtz-carb veins up to 1 in thick; they are typically highly deformed and are devoid of sulphide. Highly deformed (very tight mm scale ptygmatic folding).

2317.6 2335.2 Fault Zone.
Contact into a section of thoroughly granulated to gouged and broken core within an ultramafic host. An intensely deformed, broken, crushed and faulted zone with several distinct gougy horizons. This interval also contains a few short pale brown to red, rather siliceous dyke-like zones which might represent either altered syenites or areas of very strong incipient alteration. A poorly mineralised interval except for the above

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

mentioned siliceous zones. Details follow.

2317.6 2321.0 Fault gouge.
A strong fault zone filled with gritty, pebbly gouge and granulated core over the full length of the section. Upper contact at 47 degrees, lower contact along broken core.

2321.0 2321.7 Broken Blocky Core w/ Gouge.
Broken core with veining and orange red patches that may be altered syenite. There is scattered gouge here as well. This interval is followed by strong incipient alteration to 2322.2.

2323.0 2323.6 Fault gouge.
Strong gouge - upper contact at 40 degrees, lower contact broken. The section above from 2322.2 to 2323.0 is blue black, brecciated, ankeritic ultramafic with a trace of gouge at 2322.2 - 2 mms at 32 degrees.

2323.6 2330.7 Ultramafic.
Thoroughly granulated to partly gouged and blasted ultramafic to 2325.8, lower contact along 2 mms gouge at 47 degrees; followed by black to blue black brecciated ultramafic to 2327.6 with a trace of gouge at 2326.7 - 2 mms at 45 degrees, and at 2326.9 - 4 mms at 22 degrees. From 2327.6 to 2329.2 the ultramafic is bleached and granulated to partly gouged prior to a blue black to olive variably granulated to gouged zone to 2330.7 - at 2329.4 - 3.4 cms gouge at 38 degrees.

2330.7 2331.8 Fault gouge.
A strongly gouged section at 37/36 degrees.

2331.8 2335.2 Broken Blocky Core w/ Gouge.
At the outset, this section is blue black, blocky, partly granulated ultramafic followed by blocky to broken, incipient altered ultramafic intercalated with blue black material from 2333 to the end of the zone. There are traces of gouge amongst the broken core. The incipient alteration ranges from greyish to buff with local orange staining, and is magnetic, hard and moderately mineralized with fine pyrite. The broken lower contact is at 47 degrees.

2335.2 2341.9 Ultramafic.
A strongly foliated and sheared section with a more greenish colouration. Disrupted and broken banding with a few larger rounded blebs of carb-qtz material to 2 in across. The layering/foliation lies at 35-40 DTCA. Cut by several slightly gougy slips at 40-45 degrees. Weakly talcose with traces of very fine diss py. Essentially non-magnetic. Becoming crushed and broken up below 2341.6; a remnant of a gougy fault zone lies at 2341.7 @ approx 60 DTCA.

2341.9 2345.2 Lost Core.
The hole was reduced to BQ size beginning at 2345.2 due to continueing adverse ground conditions. No core was returned from this interval. The wedging was successful but the drillers were unable to progress beyond this

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

point with the NQ rods.

2345.2 2353.8 Ultramafic.
Continueing in blue-black ultramafics. A broken up and locally gouged interval which contains several 2-3 inch long patches of silicified and brownish-red alteration with elevated amounts of diss py. Very irregular, brecciated carb veining/alteration or what is left of the same. A strongly chloritic, ankeritic section with minimal background sulphide mineralisation. A fairly dry looking pale milky qtz vein occupies the lower 4 inches of the unit.

2346.2 2346.3 Fault gouge.
A 1/2 in thick crushed/gougy fault zone @ 60 DTCA.

2347.8 2347.9 Fault gouge.
A 1/4 in thick fine muddy seam lying at approx 55 DTCA.

2353.8 2355.6 Silicified amphibolitic.
A zone of pale brown to reddish incipient alteration with the suggestion irregular syenitic dyke material in the upper half of the interval. Quite hard and magnetic with elevated amounts of diss py and fracture-filling specular hematite. A few tiny blebs of chalcopyrite are also present. Xcut by fine (barren) carb gashes and threads; the latter are later and lie at 20 degrees. Becoming more gritty to foliated and weakly amphibolitic below 2355. Foliated/layered at 40-60 DTCA towards the basal cnt. Fairly sharp cnts at 60/70 DTCA.

2355.6 2364.4 Ultramafic.
Returning to the host ultramafic; a slightly more qtz-rich section with slightly more discreet qtz veins and gashes. Weak patchy and wormy carb alteration with a consistent 50-60 angle. Weakly magnetic to non-magnetic. Weakly mineralised with diss py. Cut by several 1 in thick brownish altered zones near the bottom cnt. A better coring section here with moderate RQD values.

2364.4 2372.1 Silicified amphibolitic.
A section of predominantly pale brown to orange, variably silicified, hematised and amphibolitic alteration material. Short sections of blue-black host are preserved internally. Contacts between subunits are typically 40-50 degrees and sharp. Patchy, irregular domains of amphibole and hematite/silica rich alteration are cut by high angle gashes and veinlets of pale white qtz and carb. Finer, low angle offsets and fractures of the same appear to be slightly older in some areas. A few fractures are hematitic and/or contain fine specular hematite. Disseminated py and anhedral knots and spots of the same are developed in much of the altered material; little sulphide is visible inside the veining however. Locally crushed and finely broken up (especially between 2370 and 2371). Generally magnetic; quite variable depending upon the specific location.

2372.1 2374.0 Altered Syenite ?.
A finely broken up zone of pale orange-red coloured, fine grained syenite?

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

The upper cnt is an irregular, interpenetrating one with indistinct boundaries. Xcut with fine qtz-carb gashes and veinlets; some are pale white and others are a dark grey colour with a more suggary texture. Modestly mineralised with diss py and fine flecks and fracture fillings of specular hematite. Weakly magnetic. Sharp lower cnt at 60 DTCA.

2374.0 2416.1 Ultramafic.
Returning to the blue-black host. A strongly chloritic section with several pale greenish zones and an increasing amount of patchy and wispy carb alteration. Much of this layering or banding is disrupted and boudinaged; orientations are quite variable from 10 degrees up to more normal 40-50 DTCA. Weakly magnetic in part. Non-calcitic and weakly mineralised with diss and fine cubic py. Contains several dirty pink-brown slightly gritty alteration zones which have sharp low angle cnts (15-20 DTCA). These are typically well mineralised with diss and fine spotty py and sometimes have some amphibole developing. An example lies at about 2409. Locally finely broken and crushed.

2408.6 2408.7 Fault gouge.
1/4 In of talcy gouge @ 30 DTCA.

2416.1 2421.0 Ultramafic.
A pale greenish, weakly spotted interval with very little chlorite component; essentially a carbonate-rich zone with tiny black chlorite? specks and lenses throughout. Crudely banded/varigated texture. Weakly mineralised with diss py locally and very weakly magnetic in part. Distinctive cnts @ 60/30 DTCA.

2421.0 2447.0 Ultramafic.
Returning to a more chloritic, variably banded interval with low angle layering (typically 25-36 DTCA) and several narrow corridors of strongly boundinaged reddish or brownish incipient alteration. A non-magnetic, ankeritic section with minimal sulphide mineralisation.

2447.0 2453.1 Mafic intrusive.
Sharp cnt into a dark brown, coarsely grained/speckled interval which is bounded by sharp cnts at 20/35 DTCA. Probably a highly altered dyke of mafic or possibly lamporphyric derivation. It consists of either a fairly hard, medium grained dark brown matrix which is locally overprinted by 1-2 mm squarish carb metacrysts and/or carb plates after interstitial feldpars. Variable amounts of amphibole (after primary mafics?) and as later metacrysts are common throughout. Locally fine biotite grains are visible also. Variably mineralised with diss py; some fine fracture control is evident. Magnetic and ankeritic. Weak hematite alteration is developed in the matrix and in fine irregular fractures.

2453.1 2496.5 Ultramafic.
Returning to the blue-black host, much the same as that noted above at 2421-2427. The bandng in this section is more disrupted and irregular to patchy. Where the layering is more consistent, it lies at 35-40 degrees to the CA typically. Three narrow, finely amphibolitic zones are developed;

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

they are 3-6 inches long (along the core) and have fairly sharp cnts which mimic the layering in the enclosing ultramafics. A slight increase in the density of fine bleby/knotty qtz is visible here. Very slightly magnetic in part; the amphibolitic zones are more so in general. A section with low to moderate RQD values; a few narrow crushed/broken zones are developed but coring is quite good otherwise.

2466.0 2469.8 Lost Core.

2496.5 2515.8 Incipient Altered Ultramafics Syenite.
A section of finely banded and locally kinked blue-black ultramafic host, which is invaded by irregular masses and blobs of reddish syenitic dyke material and/or variably developed reddish to brownish (amphibolitic) incipient alteration. Locally strongly magnetic. The dyke material has in turn, also been cut by pale milky white to greyish qtz blebs and irregular masses (often carrying pale white carb selvages and or inclusions).
The host is foliated/sheared at about 40 DTCA. The areas of incipient alteration are often banded, but this is quite variable in orientation. The syenite dykes are a pale red-orange colour, quite hard and fine grained with a few scattered qtz eyes and remnant feldspar grains/phenos? Elevated amounts of diss and 1-2 mm cubic py are found in the syenite and to a lesser degree in some of the areas of incipient alteration. Little sulphide occurs in the qtz. Several small pinheads of a very soft, blueish metallic (molybdenite?) lie at 2512.5 in a small pool of qtz.

2515.8 2532.2 Ultramafic.
Returning to a more finely laminated, chloritic ultramafic section. Locally wavey to weakly crenulated layering; most lies at 30-40 DTCA. Weakly veined with a few 1/2 in thick qtz blebs. Very weakly magnetic in part. Not especially mineralised; traces of py are found in the matrix and virtually nothing is found in the qtz.

2532.2 2577.9 Incipient Altered Ultramafics.
Continueing with a finely laminated to slightly blotchy textured ultramafic host which is a pale green-grey colour. The chlorite component is a lighter shade of green and is about equal modally to the carb component. About 15% of this section is invaded with dark grey to brown to pale orange coloured, patchy and or sinuous incipient alteration products. The altered zones are generally weakly silicified and variably hematised. Some examples are altered with fine amphibole also. Diss and fine cubic py is developed in and around the altered areas; only traces are found in the less altered host rocks. The altered zones are moderately to strongly magnetic; this contrasts with very weakly magnetic wallrocks. Scattered blebs and low angle veins of pale grey to milky qtz xcut portions of the altered zones; they typically carry little sulphide but may contain pale orange or white carb inclusions. The layering or foliation of the host is variable between 30 and 50 DTCA. Contacts along the edges of the stronger alteration zones are generally sharp and mimic the hostrock fabric orientations.

2577.9 2593.8 Felsite.
Sharp cnt @ 60 degrees into a pale orange to flesh coloured, fine grained

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

interval which contains several xenoliths of wallrock material(the largest example lies at 2583). A hard, (silicified) variably magnetic unit which becomes slightly more strongly coloured (hematised) moving downhole. Closer inspection of the groundmass reveals a fine mottling of euhedral carb metacrysts and the occasional pale white, ghostly feldspar phenocryst set in a pale pink, almost transluscent matrix. The unit is riddled with pale white qtz and qtz-carb gashes, blebs and stringers; these vary from 1/8 to 2 inches across and are generally poorly mineralised. They are not barren however. Most lie at 30 to 40 DTCA or at very low core angles. Very fine fractures contain carb, qtz and hematite, especially towards the bottom of the unit. Other low angle fractures contain chlorite; these occur close to wallrock inclusions typically. Partially digested inclusions are also visible. Small amounts of diss and fine cubic py are scattered throughout the matrix. Traces are also present in some of the qtz bodies. Traces of specular hematite are also visible in the matrix and a few veins. Fairly sharp lower cnt @ 20 DTCA.

2593.8 2612.5 Ultramafic.
A short section of dark greenish-grey, finely banded ultramafic with some local zones of very highly deformed and ptygmatically folded carbonate alteration. Weakly talcose; mostly chloritic with both dark and paler greener varieties represented. Essentially non-magnetic. Layered at 40-50 degrees nominally; some weak low angle kinking is developing locally. Weakly mineralised with some very fine diss py. Invaded by low angle/blebby rather bullish qtz near the basal cnt. Continueing ankeritic.

2612.5 2628.6 Felsite.
Another interval of fine grained, pale beige to purplish coloured felsite opening along an irregular, interpenetrating contact. More like the typical felsites logged in other McBean holes as compared to the interval logged above at 2577. Contains scattered ragged zones of darker purple-brown material which is interpreted to be partially assimilated wallrock inclusions(the less contaminated areas of the unit are typically more beige in colour). A well cracked/fractured unit, much of which is riddled with a fine network of purplish-coloured fracture fillings.(specular hematite?) Quite hard, and variably magnetic. Locally pitted and weathered out. Very fine carb speckling is developed throughout much of the groundmass. Variably mineralised with diss and fine cubic py; a few tiny grains of chalcopyrite are also present. Most of the sulphide is found in the matrix and in and around some of the fracturing. Scattered gashes, stringers (45 DTCA) and blebs of pale grey qtz are weakly mineralised, but not barren. Some low angle fractures near the top cnt contain a dark grey to black, fairly hard, earthy mineral that resembles tourmaline? Recognizable specular hematite and chlorite fill other fractures. Sharp lower cnt at 35 DTCA.

2628.6 2632.3 Amphibolitic.
A short interval of weakly silicified and amphibolitised ultramafics with a slightly elevated py content. Speckled, or fine blotchy textures developed in the carb alteration where the layering becomes disrupted. More consistent areas of layering lie at 20-30 DTCA. Cut by several low angle 1/2 in thick pale white qtz veins with fine carb selvages. Well developed strain shadows

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

surround a couple of qtz blebs ?.

2632.3 2656.7 Ultramafic.
Continueing with the pale green-grey host phase. A slightly more talcy section with less prominent carbonate banding/layering. Cut by a couple of low angle, pale milky white qtz veinlets and blebs near the lower cnt; these carry the normal carb selvages, along with small scraps of chlorite. Essentially non-magnetic with only a hint of very fine diss py in the matrix.

2656.7 2666.4 Incipient Altered Ultramafics Felsite.
A section of ultramafics locally amphibolitised in a patchy fashion along with weakly hematised and silicified incipient alteration which is associated with a section of pale beige felsite. Slightly magnetic here; much more so than the surrounding hostrocks. Xcut by numerous patches of pale milky qtz which contain irregular scrappy chlorite and carb inclusions. The rocks appear brecciated locally; chlorite knots and fracture-fillings are abundant near the qtz also. The felsite resembles that described above at 2612; it is pale beige to slightly purplish and is riddled with masses of very fine hairnet like fractures (hematite?). Moderately mineralised within the felsite and amphibolitic zones with diss and fine cubic py.

2659.9 2661.9 Felsite.

2666.4 2768.9 Ultramafic amphibolitic.
Returning to a more chloritic, blue-black interval with scattered 1 to 2 foot long weakly amphibolitic zones. Weakly magnetic in part with a noticably stronger reaction to the pen magnet in the amphibolitic areas. Quite variable carbonate content; locally the rocks are more of a fine grained chlorite schist than the more typical carb-chlorite schist. Quite variable carb layering and foliation orientations also; in places the banding is parallel to the CA. Carb speckling and blotchy or fine patchy alteration textures are more obvious in this section. Becoming slightly more talcose moving downhole. Narrow crushed zones are scattered throughout; some of these contain remnants of gouge suggesting that some faulting is present. (Examples are broken out below). Very subtle siliceous alteration beginning to form in a few spots. Weakly mineralised at best with traces of diss py. A calcite alteration front occurs at 2728.6. The core becomes more broken-up towards the bottom of the section.

2712.5 2712.6 Fault gouge.

2725.0 2725.1 Fault gouge.

2747.8 2747.9 Fault Zone ?.

2768.9 2824.8 Ultramafic silicified amphibolitic.
A section of ultramafic rocks similar to the above described unit but with a slightly greater amount of weak, patchy pink siliceous/hematitic alteration. Blue-black in colour, with strongly disrupted/folded and patchy to stringy carb alteration. Continueing calcitic. Locally black and amphibolitic with a slightly more consistent 40-50 degree foliation in some examples. Greater

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

concentrations of fine py occurs in the more strongly altered (hematitic) zones where blebby qtz and silica invades the hostrocks. This interval is also cut by several veins and blobs of pale milky white qtz; these are very weakly mineralised but not totally devoid of pyrite and are centred at about 2784.5. Scrappy carb and chloritic inclusions are common accessories. A more broken-up section with very low RQD values. Weakly magnetic overall; the altered zones are generally strongly magnetic.

2824.8 2836.2 Ultramafic.
Entering a pale green-grey, well foliated interval with a fine knotted texture(carb metacrysts) locally. Layered/foliated at 50-60 DTCA. Weakly talcose. Weakly magnetic throughout. Returning to a blue-black, locally weakly amphibolitic rock below 2831.8. Overall very little in way of later qtz or carb veining or sulphide mineralisation in the unit. Slightly elevated py content in some of the amphibole-rich areas near the basal cnt. Sharp basal cnt @ 55 DTCA.

2836.2 2896.2 FELSITE
Sharp cnt into a dark grey, slightly gritty to finely mottled, fairly massive interval with a subtle purple or pinkish cast. Generally hard with variable silicification throughout. A very strongly carbonated rock with gross textures similar to many of the felsites logged in other McBean holes. A fine grained phase which has become slightly coarser because of the carbonate crystals growing in the matrix. Contains a few scattered fine feldspar phenos? Strongly calcitic in both the matrix and in fine scrappy high angle stringers. Weak hematitic alteration throughout. Moderately to strongly magnetic. Contains scattered rafts of ultramafic material very much like those described immediately above. Variably mineralised with fine anhedral spotty and fine diss py. Very little veining except for the fine stringers noted above. More details follow.

2836.2 2849.9 Felsite.
Opening with a grey to purple interval. Carries a few narrow amphibolitic corridors. Moderately mineralised throughout the matrix with diss and spotty py. Slightly coarser py developed near a few small qtz blebs. Cut by numerous fine gashes and hairline stringers of carb and qtz. Sharp lower cnt at 55-60 DTCA.

2849.9 2852.7 Ultramafic.
A blue-black section of chloritic ultramafic material. A very weakly foliated interval at 50 degrees to CA. Contains only traces of fine py except for slightly more in a small window of felsite at 2850.5. Not magnetic.

2852.7 2875.0 Felsite.
Returning to the purple grey felsite host. This section contains several narrow amphibolitic and chloritic inclusions up to 4 inches thick. Slighty more veined and or altered with patchy siliceous material; the textures remind one of the incipient alteration zones noted in other rock types. Moderately mineralised with diss and 2-3mm blebby py. The mottled texture in the matrix is becoming slightly more pronounced moving downhole. Sharp lower

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

cnt at 50 DTCA.

2875.0 2876.6 Amphibolitic.
A dark grey to almost black coloured, fine grained amphibolitic interval with numerous patches and wisps of carb alteration. Portions of this zone are strongly chloritic (at the upper cnt for example), suggesting that it is probably of ultramafic derivation. Crudely foliated at about 55 DTCA. Weakly mineralised with traces of fine py.

2876.6 2879.7 Felsite.
A slightly more pinkish coloured felsite section with a greater concentration of scrappy qtz sweats as compared to the above sections. More sulphide accompanies the greater amounts of silica and hematite in this area. An almost 'incipient alteration' like alteration texture. Carries several narrow amphibolitic bands. Sharp lower cnt @ 40 DTCA.

2879.7 2881.8 Ultramafic.
A blue-black, fairly massive chloritic interval which is invaded by a low angle mass of pale pink carbonate material. Weakly sheared along several low angle slips. Becoming slightly more broken up/crushed approaching the lower cnt. Very little sulphide here. 20 degree lower cnt which flattens to nearly 0 meanders down the core axix to about 2882.2.

2881.8 2896.2 Felsite.
The final section of felsite. Becoming more mottled to speckled with carb and fine patchy (pink) siliceous alteration. Dark grey with a brownish to pale purple cast. Contains a small section of amphibolitic material about 5 inches long near the lower cnt; it is weakly foliated and has sharp cnts at 30/20 DTCA. Cut by scrappy low angle carb threads. Moderately mineralised with diss and fine spotty py.

2896.2 2900.1 ALTERED SYENITE
A short section of pale orange, strongly mottled (carbonated) syenite. Calcitic and ankeritic. Very hard and variably magnetic; slightly more so moving downhole. Strongly mineralised with 1-3 mm cubic py throughout the matrix. Xcut by fine, high angle carb-qtz stringers and slightly lower angle pale milky white qtz gashes and blebs up to 1 in across. Traces of py in the veining; pale white carb inclusions are more common. Fine specular hematite fills some very fine fractures in both the groundmass and a few larger veins. Darker purplish zones occur within the upper parts of the unit; these appear to be assimilated chunks of felsite. Sharp lower cnt @ about 35 DTCA.

2900.1 2961.3 ULTRAMAFIC
A sequence of highly altered and disrupted ultramafic rocks xcut by an assortment of qtz-carbonate veins and blebs and dirty felsite bodies. Parts of this section might also be described as having been strongly altered by the 'incipient' type of alteration. Highly variable layering which becomes quite flat lying in the lower parts of the unit. Locally amphibolitic. Variably mineralised with diss and fine spotty py. The calcite component is essentially absent from this sequence. Generally strongly magnetic. More details follow.

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

2900.1 2904.9 Amphibolitic.
A speckled/mottled section of blue-black ultramafic material with an amphibolitic component. Locally the rocks have incipient alteration type textures beginning to form. Crudely banded/layered in part at about 40 degrees to CA. Becomes more disrupted and veined below 2903; small high angle qtz blebs and gashes cut the hostrocks. These are devoid of sulphide but contain the normal carb inclusions and selvages.

2904.9 2920.2 Amphibolitic Felsite.
A section which might be interpreted as a highly developed product of incipient alteration or a zone of dirty felsite invading an amphibolitic ultramafic section. The latter seems better in light of the large amount (about 40%) and texture of the felsite-like material. The felsite is a pale brown to pink-beige colour, quite hard and finely speckled with tiny carb fracture-fillings and metacrysts. It is magnetic, and contains numerous wispy fragments? of amphibole-rich material in part. The groundmass contains the odd angular, ghostly feldspar pheno? and is finely peppered with minute magnetite grains. The zones of felsite are sharply bounded at 35-50 DTCA. The amphibole-rich components are variably foliated and invaded with small wormy, pale pink (siliceous) blebs. All components are xcut by a persistent set of 70-80 degree qtz-carb fracture-fillings. These are not well mineralised, but 1 example at least contains a speck of chalcopyrite. Not an especially well mineralised section; scattered grains of py are visible in most of the unit with a slight preference for the amphibole-rich zones. A few specks of chalcopyrite are also present.

2920.2 2950.1 Amphibolitic silicified.
Entering a section of predominantly amphibolitic material which is invaded by sinuous, low angle fingers of a pale grey, siliceous phase; this is texturally much like some of the felsite above, but without the pink colouration, and/or it contains numerous fine angular 1-3 mm qtz grains (?cataclastic). It is similarly strongly magnetic and finely carbonated throughout. The host is highly deformed and irregularly layered; through much of the section this layering is almost parallel to the CA. Below 2944, core angles return to more normal angles (35-40 DTCA) and the amount of siliceous material decreases considerably. A modestly mineralised interval; slightly higher concentrations of fine cubic py occur in the uppermost and lowermost parts of the section where zones of less disturbed amphibolitic rock is present. Generally strongly magnetic and ankeritic. Xcut by 2 or 3 pale white, fairly bullish looking qtz bodies which carry little except white carb selvages and inclusions.

2950.1 2961.3 Ultramafic.
A pale green, chloritic interval, consisting of a strongly deformed ultramafic host invaded by numerous gashes, blebs and rafts of qtz, qtz-carbonate material and pale grey siliceous felsite? like material. Portions of the host are quite massive, while other areas are strongly foliated/layered as per the normally strongly carbonated ultramafics seen throughout the hole. Small amphibolitic zones are also visible. Most of this section is not magnetic; a few small hots spots occur near the lower cnt.

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

Slightly more sulphide is developed here as compared to most of the system; fine diss and cubic py up to 2 mm across occurs close to the contacts of and in amongst the qtz and 'felsite-like' materials. Very little py is visible within the veining proper however. A crushed zone 3-4 in long at 2960 contains a fine gougy plate; this suggests some faulting here, but the orientation is unknown. Sharp lower cnt at 25 DTCA.

2960.0 2960.1 Fault gouge.

2961.3 2961.4 TIMISKAMING GROUP
The first appearance of tuffaceous rocks below the thick (overlying) ultramafic sequence. This region consists of an intercalated group of tuffs and narrow ultramafic lenses. The ultramafic rocks (or equivilants) dissappear below about 3013. These rocks are slightly different than the normal footwall tuff units encountered in most shallower McBean holes; they are finer grained, (possibly more ashy) and they contain far fewer fragments, which are generally comparitively smaller in size. Compositionally, these rocks are probably a bit more mafic, especially moving farther downhole. Some sections are strongly carbonated and are more problematic with respect to their protolith. More details follow.

2961.4 2969.9 TUFF
Opening into a pale beige to very light brown, slightly gritty phase. An ankeritic, variably sericitic unit consisting of fine lithic fragments (?intermediate composition), small qtz eyes and a minor ash component. Well foliated at 30-40 DTCA with some flatter orientations. Locally weakly kinked locally. Sprinkled with very fine magnetite grains; strongly magnetic except for the topmost inch or so of the unit. Variably silicified near both contacts. Cut by a fine set of low angle qtz-carb stringers and a few slightly thicker, pale glassy grey qtz gashes (almost concordant with the fabric) near the lower cnt. Most of these features contain very little sulphide except for the qtz noted near the lower cnt; it contains small amounts of fine cubic py and 1 very tiny speck of chlacopyrite. Strongly metasomatised against both cnts; the rocks have a dark ochre brown colouration for several inches away from the cnts.

2969.9 2971.4 ULTRAMAFIC
A narrow interval of blue-black, chloritic ultramafic material. Well carbonated with wispy layered carb alteration; this lies at 40 DTCA and occupies only the central portion of the unit. Amphibolitic and somewhat silicified at the top cnt for 3-4 inches. Not magnetic and essentially unmineralised except for a streaky bit of py near the bottom cnt. Sharp upper cnt at 30 DTCA; gradational fragmental lower cnt at about 30 degrees. Very little veining other than the carb alteration.

2971.4 2977.0 TUFF
Returning to a tuff interval which is similar to the one noted above at 2961. This section has a darker brown colour with lesser sericite alteration overall. These rocks have a more pronounced layered to fragmental appearance with a slightly stronger fabric. Orientations are typically 30 to 50 degrees, becoming slightly higher moving downhole. Contains comparitively

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

larger, discreet fragments which are extremely flattened. Continueing magnetic and more strongly mineralised with slightly coarser diss and fine cubic py throughout most of the matrix. Slightly more qtz veining has developed, typically as fine wormy to boudinaged stringers which carry pale grey almost transluscent qtz. These structures lie sub-parallel to the layering/foliation and contains traces of fine cubic py. Locally weakly silicified and magnetic throughout. Probably similar compositionally to the above noted unit with more Fe and Si alteration. The basal cnt is invaded by a pale milky white qtz bleb and locally brecciated; it is likely lying at about 40-50 DTCA.

2977.0 2981.1 ULTRAMAFIC
Sharp cnt into a pale grass green, fairly massive chloritic unit cut by numerous low angle scrappy/blebby qtz bodies. The massive chlorite character is intercalated with several tiny tuff windows which are similar to the overlying section. As well, the ultramafic character slowly dissipates moving downhole and grades into the highly carbonated, more mottled/foliated phase which follows. Not magnetic for the most part. An ankeritic, locally silicified unit, which is almost devoid of sulphide except for some local diss py in the tuff zones(these tuffs are weakly foliated at about 40 DTCA and are weakly sericitic) and near the basal cnt. Somewhat ambiguous low angle lower cnt.

2981.1 2995.4 CARBONATED ZONE TUFF
Entering a pale biege-brown, slightly gritty to finely mottled and foliated section. Becomes slightly more pinkish below about 2990. A very strongly carbonated rock of probably tuffaceous derivation. It is moderately hard and strongly magnetic throughout. Some very weak silicification has developed locally. A subtle layering/foliation is becoming more evident moving downhole; this lies at 20-30 degrees typically and may represent compositional layering or intense deformation of primary lithic fragments. This banding is becoming brecciated and disrupted in a few spots along a slightly ?flatter S2. Gritty and fine grained in the matrix; very fine qtz granules and eyes? are common. A sericitic phase which has been heavily altered with fine carbonate (ankerite). Locally weakly chloritic. Cut by a few sub-cm sized qtz-carb stringers and blebs which are generally parallel to the foliation and locally highly deformed (tightly folded and boudinaged). Little to no sulphide is carried in most vein material. Very fine magnetite grains are also visible in the matrix. Weakly mineralised locally in the groundmass with fine diss py.

2995.4 3011.8 INCIPIENT ALTERED ULTRAMAFICS
A strongly altered (carbonated) finely banded/layered rock with an abundance of fine scrappy red to pink siliceous lenses, layers and blebs throughout. This looks like well developed incipient alteration. A dark grey rock with a distinctive salmon pink cast. The layering although discreet is quite deformed and tends to be irregularly oriented and locally kinked or s-folded on a cm scale. Axial planes and kinks lie at 40 DTCA commonly. In contrast, the primary layering is often sub-parallel to the CA, especially lower down in the unit. A few sulphide-rich layers have also developed. A variably silicified and weakly hematised phase which is strongly magnetic. Modestly

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

mineralised with small amounts of diss py which tend to be structurally controlled. Both cnts are gradational across 1 or 2 inches and mimic the dominant fabric. Essentially no later qtz veining is present.

3011.8 3178.3 TUFF

A sequence of dark grey-green, fine ashy to locally fine lapilli tuffs with minimal veining. Becoming richer in fragments of slightly larger dimensions moving downhole; short sections of nearly conglomeratic material appear just above the bottom of the hole. A weakly magnetic, calcitic interval; the calcite component returns to the groundmass and fine background stringers very near the upper cnt. Fragments are lithic and are intermediate, mafic and ultramafic in composition. Very few cherty clasts are present. Where visible, most fragments are flattened severely. Narrow zones with weak amphibolitic and hematitic overprints occur below 3168. Well foliated/layered at 30-50 degrees with local variations. Some very strong, quite narrow kink bands are oriented at much higher core angles; typically 65-70 DTCA. Weakly mineralised with traces of very fine diss py. The few larger qtz blebs or wormy stringers are essentially devoid of sulphide. More details follow.

3011.8 3022.9 Tuff.

A fine grained, fragment-poor section with several 1-2 inch thick pale milky white qtz blebs. These contain the normal pale white carb incusions and ragged selvages. This section becomes weakly sericitic and thinly layered towards the lower cnt. Very small amounts of quite fine diss py are present.

3022.9 3121.0 Tuff.

A dark green grey, fairly fine grained section with scattered fragments of mostly mafic and ultramafic composition. Not really a lapilli tuff. Locally very fine and more massive; closer to a mafic tuff almost. Minimal veining although there are 2 or 3 isolated 1 to 4 inch diameter qtz blebs. These are poorly mineralised; some fine diss py does however lie close to 1 or 2 of these. Overall barely mineralised with the suggestion of slightly more sulphide moving downhole.

3121.0 3152.7 Conglomerate.

A fine conglomerate consisting of barely matrix supported clasts and fragments up to several inches across, set in a matrix similar to the surrounding tuffs. Clearly recognizable mafic, ultramafic and intermediate (volcanic) fragments. All are very flattened and stretched out parallel to the fabric. Locally weakly mineralised with diss py. A stretch of more massive tuff lies at 3134 to 3139. Minimal veining.

3152.7 3169.1 Tuff.

A section of slightly more carbonated tuff. Slightly more ultramafic in composition. Dark grey-green with a blueish cast. Minimal veining. A few small specks of chalcopyrite lie at 3162.2 near a couple of tiny qtz-carb sweats. Becoming more fragmental near the lower cnt.

3169.1 3172.4 Ultramafic.

A sliver of weakly amphibolitic/chloritic ultramafic material. Well

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

carbonated with fine wispy calcite threads and patches. The fabric here is a touch wavey at about 40 DTCA. Very little sulphide and no apprecaible veining within the section. Essentially non-magnetic. Sharp lower cnt at 40 degrees with a touch of mud.

3172.4 3178.3 Tuff.
Returning to a fine grained, very slightly gritty tuff which is just beginning to carry a few small fragments at the end of the hole. A hematitic halo is developed away from the overlying 4U unit for about 10 inches. A slightly elevated pyrite concentration has developed in the zone also. Minimal veining.

End of Hole- 3178.3 feet.

Ontario Ministry of Northern Development and Mines

Declaration of Assessment Work Performed on Mining Land

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

Transaction Number (office use)
W9880.00470
Assessment Files Research Imaging

32D04NW2007 2.18728 GAUTHIER 900

sections 65(2) and 66(3) of the Mining Act. Under section 8 of the Mining Act, this nt work and correspond with the mining land holder. Questions about this collection ent 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)

Name QUEENSTON MINING INC.	Client Number 185109
Address SUITE 1116, 111 RICHMOND ST. W. TORONTO, ONTARIO M5H 2G4	Telephone Number 416 364-0001 Fax Number 416 364-5098
Name	Client Number
Address	Telephone Number Fax Number

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

☐ Geotechnical: prospecting, surveys, assays and work under section 18 (regs) ☒ Physical: drilling stripping, trenching and associated assays ☐ Rehabilitation

Work Type DIAMOND DRILLING		Office Use Commodity Total $ Value of Work Claimed 573,103
Dates Work Performed From Day 13 Month 08 Year 96 To Day 19 Month 12 Year 97 ✓		NTS Reference
Global Positioning System Data (if available)	Township/Area GAUTHIER TWP. M or G-Plan Number G-3211	Mining Division Larder Lake Resident Geologist District Kirkland Lake

RECEIVED 11 am JUL 29 1998

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)

Name DALE ALEXANDER, MURRAY McGILL, DAVID SCHONFELDT, PROJECT GEOLOGISTS	Telephone Number 705 567 4377
Address c/o QUEENSTON MINING INC, PO BOX 996, KIRKLAND LAKE, ONTARIO P2N 3L1	Fax Number 705 567 4426
Name BENOIT DIAMOND DRILLING LTD.	Telephone Number 819 824-9107
Address 1701, RUE L'HYDRO, C.P. 815, VAL D'OR, QUEBEC	Fax Number 819 825-0784
Name	Telephone Number
Address	Fax Number

4. Certification by Recorded Holder or Agent

I, WAYNE BENHAM (Print Name), 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 of Recorded Holder or Agent W. B.		Date July 29/98
Agent's Address c/o QUEENSTON MINING INC., TORONTO, ONTARIO	Telephone Number 416 364-0001	Fax Number 416 364-5098

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2.18728

Deemed Oct 27/98

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.

* Amendment W9880.00470

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
ag	TB 7827	16 ha	$26,825	N/A	$24,000	$2,825
ag	1234567	12	0	$24,000	0	0
ag	1234568	2	$ 8,892	$ 4,000	0	$4,892
1	L 8365 8000806	7.53 ha	$97,431 ✓	0	$10,000	$87,431
2	L 8471 8000807	9.45 ha	$56,679 ✓	0	$4,000 WB 0	$52,679 WB
3	L 8807 8000808	8.15 ha	$28,128 ✓	0	$5,000 WB 0	$23,128 WB
4	L 19189 8000809.	5.87 ha	$88,032 ✓	0	$6,200	$81,832
5	L 19262 8000707	6.09 ha	$183,302 ✓	0	WB 89,000 0	$174,502 WB
6	L 25309 8000810	8.44 ha	$139,533 ✓	0	$12,000	$127,533
7	L 859580	1	0	$400 ✓	0	0
8	L 859581	1	0	$400 ✓	0	0
9	L 859582	1	0	$400 ✓	0	0
10	L 882658	1	0	$400 ✓	0	0
11	L 882659	1	0	$400 ✓	0	0
12	L 882 660	1	0	$400 ✓	0	0
13	L 892274	1	0	$400 ✓	0	0
14	L 892275	1	0	$400 ✓	0	0
15	L 892276	1	0	$400 ✓	0	0
	Columns Totals:	15	$573,103	$3,600	$37,200	$535,903

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	Date
	July 28/98

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):

RECEIVED
AUG 05 1998
3:45
GEOSCIENCE ASSESSMENT OFFICE

M.C

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)	

0241 (03/97)

RECEIVED
11 am
JUL 29 1998
GEOSCIENCE ASSESSMENT OFFICE

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)	

0241 (03/97)

RECEIVED
11 am
JUL 29 1998
GEOSCIENCE ASSESSMENT OFFICE

2.18728

Ontario Ministry of Northern Development and Mines

Schedule for Declaration of Assessment Work on Mining Land

Transaction Number (office use): W9880.00470

	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.
16	L 892277	1	0	$400	0	0
17	L 892278	1	0	$400	0	0
18	L 892279	1	0	$400	0	0
19	L 980442	1	0	$2,000	0	0
20	L 982172	1	0	$2,000	0	0
21	L 982173	1	0	$2,000	0	0
22	L 982174	1	0	$2,000	0	0
23	L 982175	1	0	$2,000	0	0
24	L 1096919	1	0	$1,200	0	0
25	L 1096920	1	0	$1,200	0	0
26	L 1214386	1	0	$2,000	0	0
28	L 1214387	1	0	$2,000	0	0
29	L 1214388	1	0	$2,000	0	0
30	L 1214389	1	0	$2,000	0	0
31	L 1214390	1	0	$2,000	0	0
32	L 1214391	1	0	$2,000	0	0
33	L 1214392	1	0	$2,000	0	0
34	L 1214393	1	0	$2,000	0	0
35	L 1214394	1	0	$2,000	0	0
36	L 1217404	1	0	$2,000	0	0
	Column Totals		$573,103	$37,200	$37,200	$535,903

0290 (02/96)

RECEIVED
JUL 29 1998 11 am
GEOSCIENCE ASSESSMENT OFFICE

2.18728

LR 28/7/98

Ontario Ministry of Northern Development and Mines

Statement of Costs for Assessment Credit

Transaction Number (office use): W9880.00470

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	26,892 feet	$19.57/ft.	$526,353
CORE LOGGING, DRILL LOG & SECTION	187 days	$250/day	$46,750
Associated Costs (e.g. supplies, mobilization and demobilization).			
Transportation Costs			
Food and Lodging Costs			
		Total Value of Assessment Work	$573,103

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 (please print full name), 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 (recorded holder, agent, or state company position with signing authority) I am authorized to make this certification.

Signature: W. Benham Date: July 28/98

0212 (03/97)

RECEIVED
JUL 29 1998 11 am
GEOSCIENCE ASSESSMENT OFFICE

2.18722

Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

Ontario

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

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

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

September 10, 1998

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

Dear Sir or Madam:

Submission Number: 2.18728

Subject: Transaction Number(s):		**Status**
	W9880.00470	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 Steve Beneteau by e-mail at benetest@epo.gov.on.ca or by telephone at (705) 670-5855.

Yours sincerely,

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

Correspondence ID: 12767

Copy for: Assessment Library

Work Report Assessment Results

Submission Number: 2.18728

Date Correspondence Sent: September 10, 1998 **Assessor:** Steve Beneteau

Transaction Number	First Claim Number	Township(s) / Area(s)	Status	Approval Date
W9880.00470	8366	GAUTHIER	Deemed Approval	September 09, 1998

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

LESLIE MICHAEL DYMENT
Swastika, Ontario

2973090 CANADA INC.
VAL D'OR, QUEBEC

THOMAS JOHN ELI OBRADOVICH
KIRKLAND LAKE, Ontario

JOCELYNE ANNE KIDSTON
SWASTIKA, Ontario

Ontario Ministry of Natural Resources

Ministry of Northern Development and Mines

INDEX TO LAND DISPOSITION

PLAN

G-3211

TOWNSHIP

GAUTHIER

M.N.R. ADMINISTRATIVE DISTRICT

KIRKLAND LAKE

MINING DIVISION

LARDER LAKE

LAND TITLES/REGISTRY DIVISION

TIMISKAMING

Scale 1:20 000

1000 Metres 0 1000 2000 Metres

1000 Feet 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 Feet

Contour Interval 10 Metres

SYMBOLS

- Boundary
- Township, Meridian, Baseline
- Road 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

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 (OC)
- Cancelled
- Reservation
- Sand & Gravel

AREAS WITHDRAWN FROM DISPOSITION

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

Description	Order No.	Date	Disposition	File

TOWNSITE STAKING RESTRICTED S.S. 30(B) MINING ACT

BARRICK POWER LINE
(APPLICATION PENDING UNDER PUBLIC LANDS ACT)

DATE OF ISSUE

MAY 2 1 1998

PROVINCIAL RECORDING OFFICE - SUDBURY

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 MNR UNIT FORESTER FOR THIS AREA CAN BE CONTACTED AT:

P.O. BOX 129
SWASTIKA, ONT.
P0K 1T0
705-642-3222

ARCHIVED JULY 28, 1995

ARCHIVED AUGUST 28/97.

CIRCULATED JANUARY 25, 1995 ML

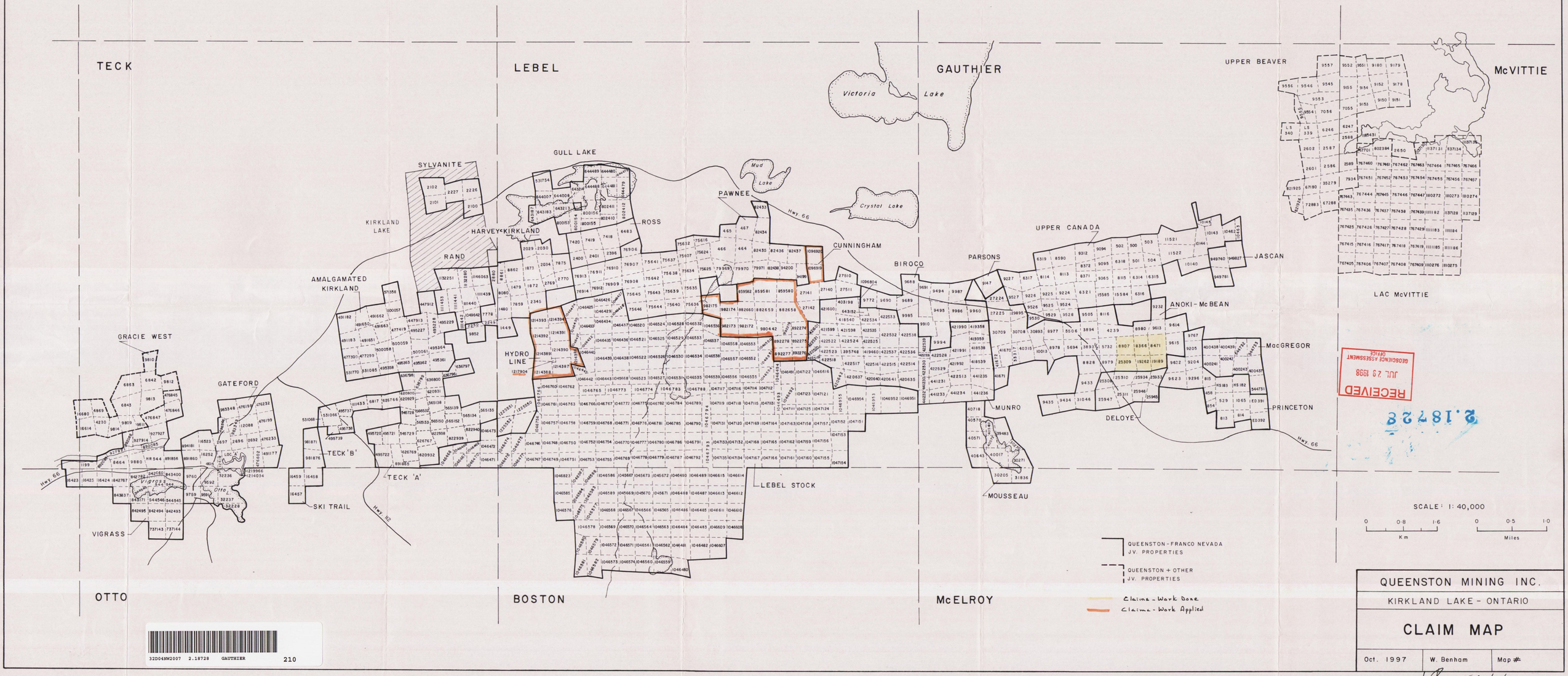
Map base and land disposition drafting by Surveys and Mapping Branch, Ministry of Natural Resources.

The disposition of land, location of lot fabric and parcel boundaries on this index was compiled for administrative purposes only.

5 M.D. 3211

32D04NW2007 2.18729 GAUTHIER 200

G-3211 GAUTHIER TWP.



QUEENSTON MINING INC.

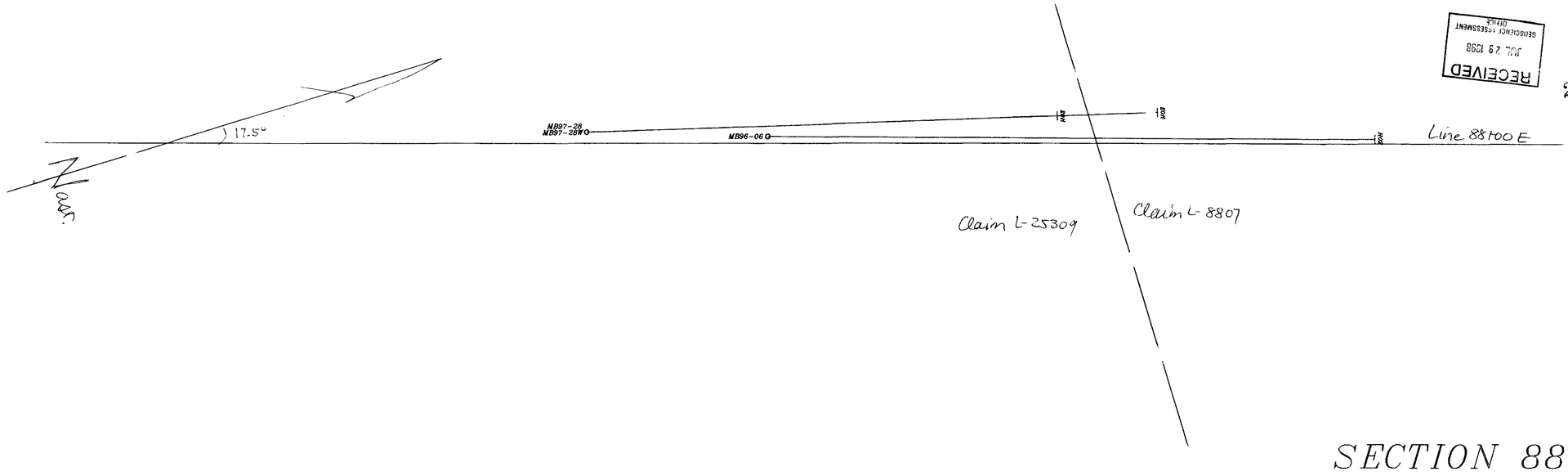
KIRKLAND LAKE - ONTARIO

CLAIM MAP

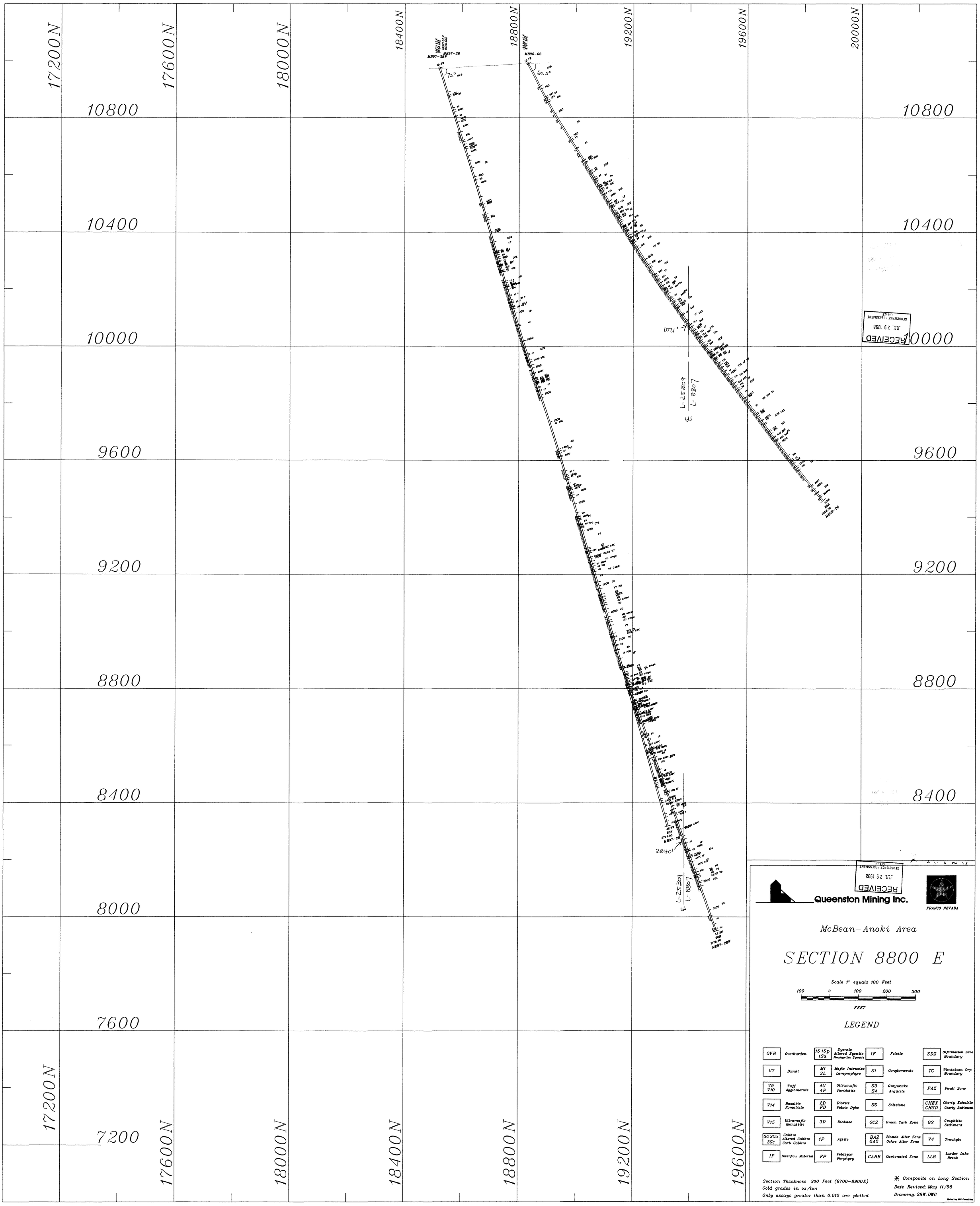
Oct. 1997	W. Benham	Map #

23/9/98

2.18728



SECTION 8800 E



Queenston Mining Inc.

FRANCO NEVADA

McBean–Anoki Area

SECTION 8800 E

Scale 1" equals 100 Feet

100 0 100 200 300

FEET

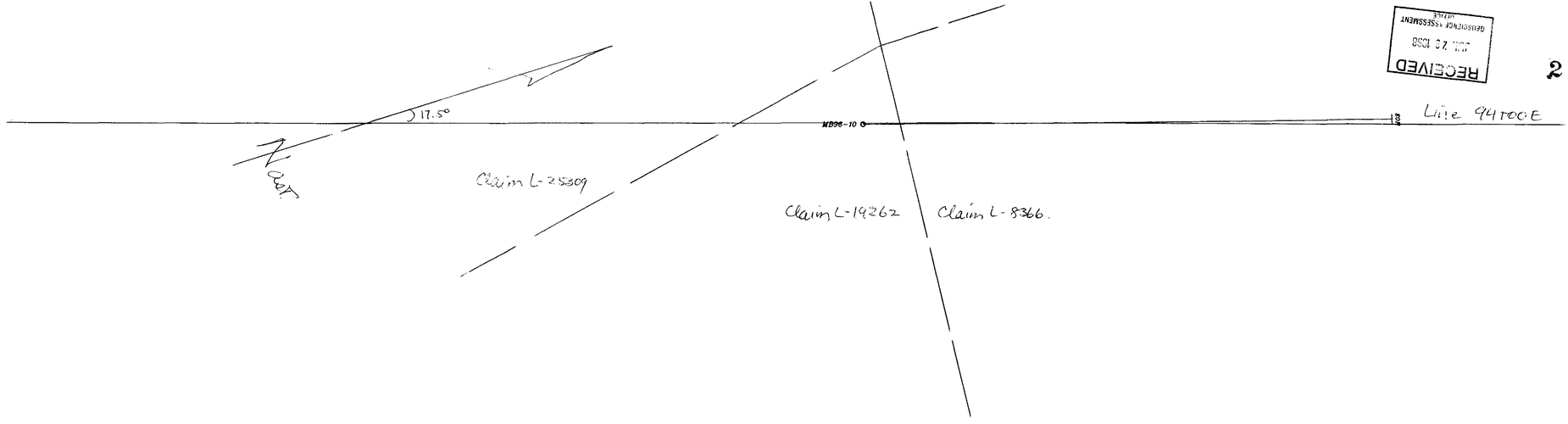
LEGEND

OVB	Overburden	1S 1Sp 1Sa	Syenite, Altered Syenite, Porphyritic Syenite	1F	Felsite	SDZ	Deformation Zone Boundary
V7	Basalt	MI 3L	Mafic Intrusive Lamprophyre	S1	Conglomerate	TG	Timiskam Grp Boundary
V9 V10	Tuff Agglomerate	4U 4P	Ultramafic Peridotite	S3 S4	Greywacke Argillite	FAZ	Fault Zone
V14	Basaltic Komatiite	2D FD	Diorite Felsic Dyke	S6	Siltstone	CHEX CHSD	Cherty Exhalite Cherty Sediment
V15	Ultramafic Komatiite	3D	Diabase	GCZ	Green Carb Zone	GS	Graphitic Sediment
3G 3Ca 3Cc	Gabbro, Altered Gabbro, Carb Gabbro	1P	Aplite	BAZ OAZ	Blonde Alter Zone, Ochre Alter Zone	V4	Trachyte
1F	Interflow Material	FP	Feldspar Porphyry	CARB	Carbonated Zone	LLB	Larder Lake Break

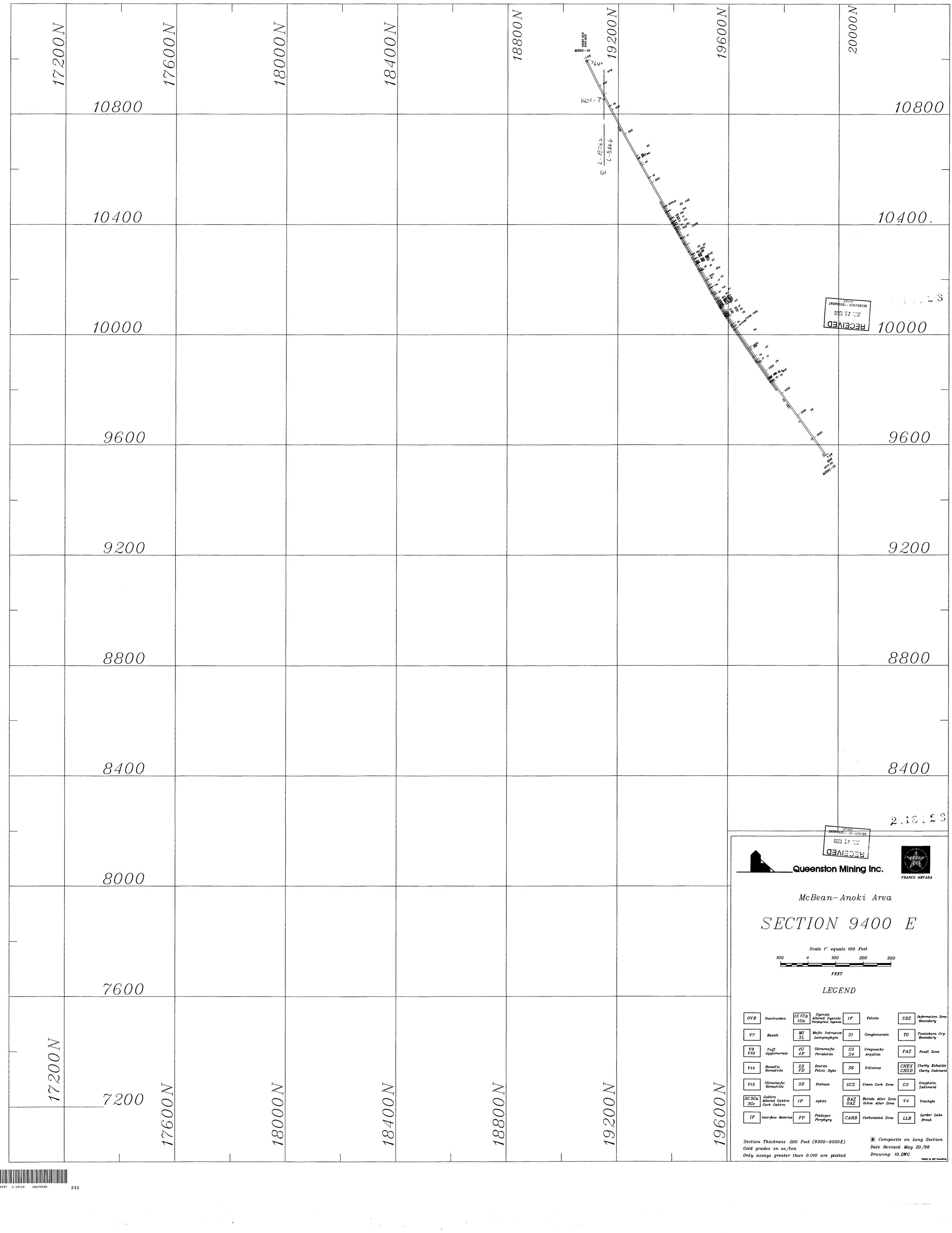
Section Thickness 200 Feet (8700–8900E)
Gold grades in oz/ton
Only assays greater than 0.010 are plotted

✳ Composite on Long Section
Date Revised: May 11/98
Drawing: 28W.DWC

Plotted by GDI Consulting



SECTION 9400 E



Queenston Mining Inc.

FRANCO NEVADA

McBean–Anoki Area

SECTION 9400 E

Scale 1" equals 100 Feet

100 0 100 200 300

FEET

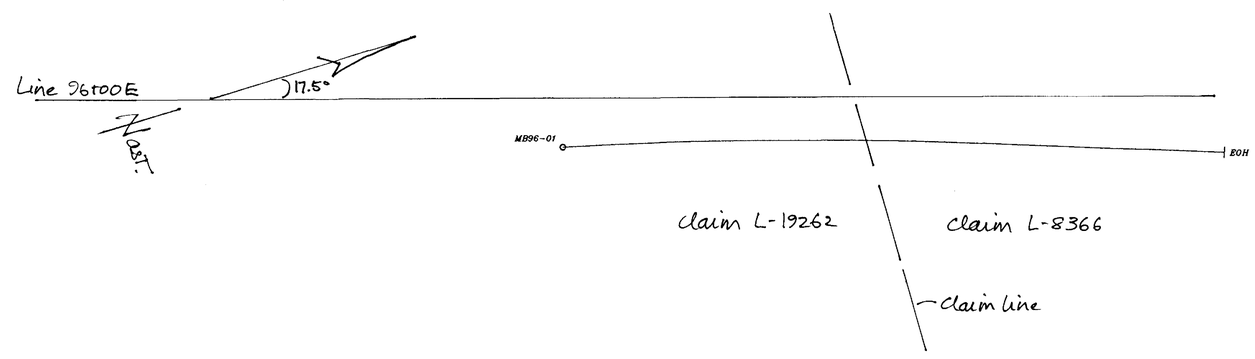
LEGEND

OVB	Overburden	1S 1Sp 1Sa	Syenite Altered Syenite Porphyritic Syenite	1F	Felsite	SDZ	Deformation Zone Boundary
V7	Basalt	MI 3L	Mafic Intrusive Lamprophyre	S1	Conglomerate	TG	Timiskam Grp Boundary
V9 V10	Tuff Agglomerate	4U 4P	Ultramafic Peridotite	S3 S4	Greywacke Argillite	FAZ	Fault Zone
V14	Basaltic Komatiite	2D FD	Diorite Felsic Dyke	S6	Siltstone	CHEX CHSD	Cherty Exhalite Cherty Sediment
V15	Ultramafic Komatiite	3D	Diabase	GCZ	Green Carb Zone	CS	Graphitic Sediment
3C 3Ca 3Cc	Gabbro Altered Gabbro Carb Gabbro	1P	Aplite	BAZ OAZ	Blonde Alter Zone Ochre Alter Zone	V4	Trachyte
IF	Interflow Material	FP	Feldspar Porphyry	CARB	Carbonated Zone	LLB	Larder Lake Break

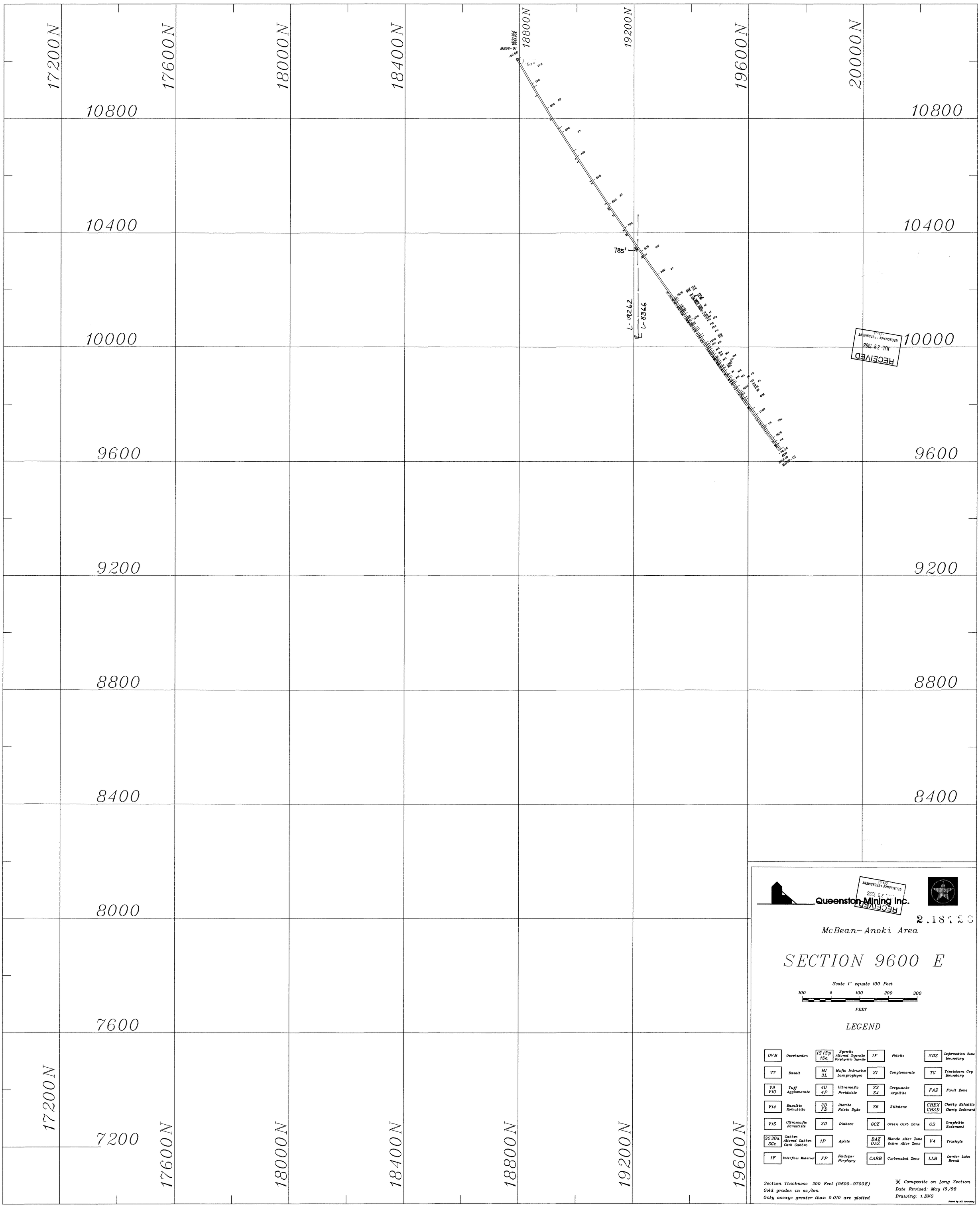
Section Thickness 200 Feet (9300–9500E)
Gold grades in oz/ton
Only assays greater than 0.010 are plotted

✳ Composite on Long Section
Date Revised: May 20/98
Drawing: 10.DWC

Plotted by MDI DataMine



SECTION 9600 E



Queenston Mining Inc.

McBean–Anoki Area

SECTION 9600 E

Scale 1" equals 100 Feet

100 0 100 200 300

FEET

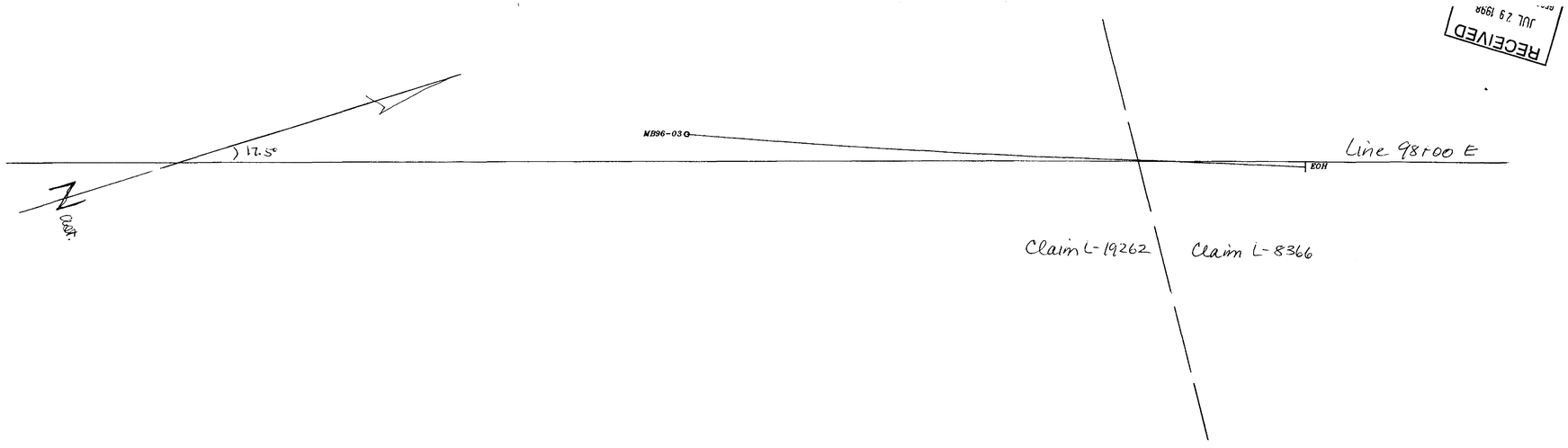
LEGEND

OVB	Overburden	1S 1Sp 1Sa	Syenite Altered Syenite Porphyritic Syenite	1F	Felsite	SDZ	Deformation Zone Boundary
V7	Basalt	MI 3L	Mafic Intrusive Lamprophyre	S1	Conglomerate	TC	Timiskam Grp Boundary
V9 V10	Tuff Agglomerate	4U 4P	Ultramafic Peridotite	S3 S4	Greywacke Argillite	FAZ	Fault Zone
V14	Basaltic Komatiite	2D FD	Diorite Felsic Dyke	S6	Siltstone	CHEX CHSD	Cherty Exhalite Cherty Sediment
V15	Ultramafic Komatiite	3D	Diabase	GCZ	Green Carb Zone	GS	Graphitic Sediment
3G 3Ga 3Gc	Gabbro Altered Gabbro Carb Gabbro	1P	Aplite	BAZ OAZ	Blonde Alter Zone Ochre Alter Zone	V4	Trachyte
1F	Interflow Material	FP	Feldspar Porphyry	CARB	Carbonated Zone	LLB	Larder Lake Break

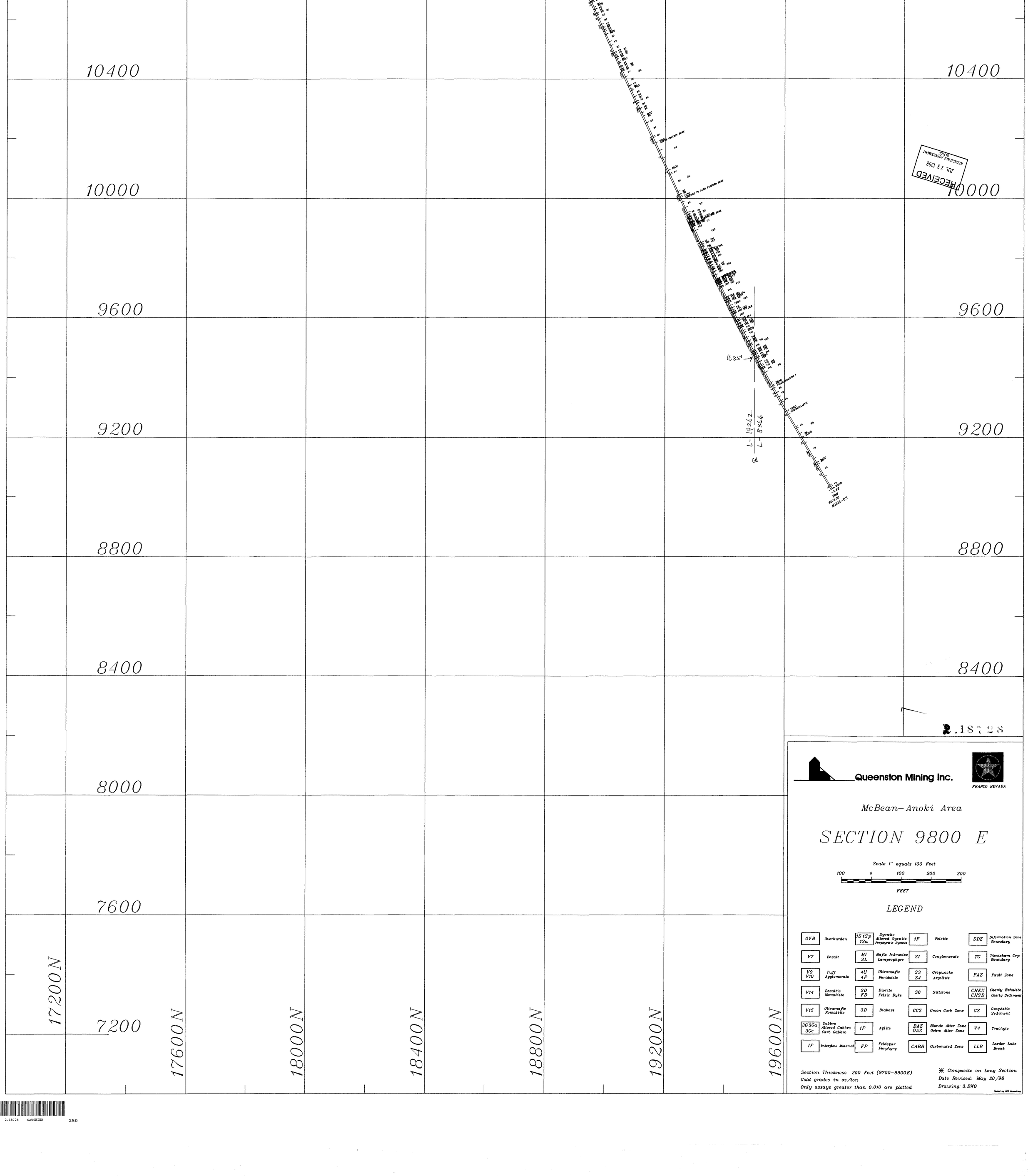
Section Thickness 200 Feet (9500–9700E)
Gold grades in oz/ton
Only assays greater than 0.010 are plotted

✳ Composite on Long Section
Date Revised: May 19/98
Drawing: 1.DWG

Plotted by MEC Consulting



SECTION 9800 E



Queenston Mining Inc.

FRANCO NEVADA

McBean–Anoki Area

SECTION 9800 E

Scale 1" equals 100 Feet

100 0 100 200 300

FEET

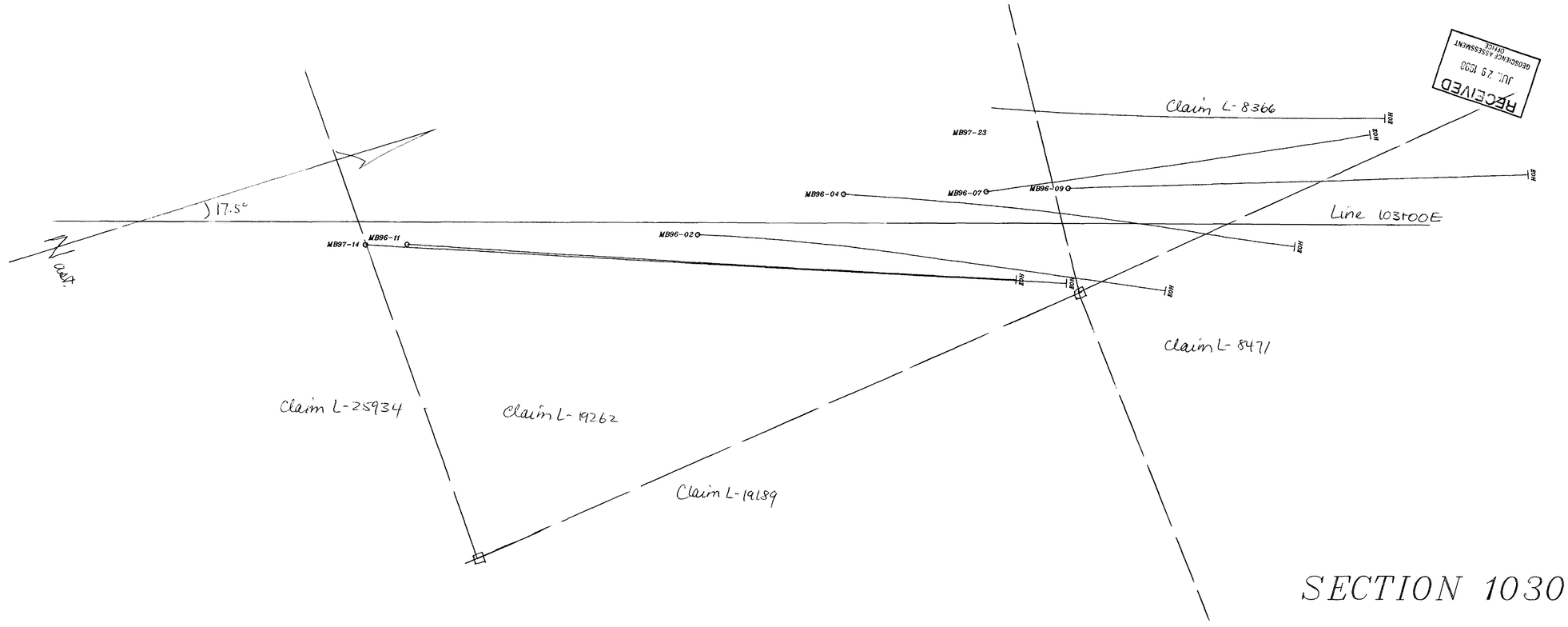
LEGEND

OVB	Overburden	1S 1Sp 1Sa	Syenite, Altered Syenite, Porphyritic Syenite	1F	Felsite	SDZ	Deformation Zone Boundary
V7	Basalt	MI 3L	Mafic Intrusive Lamprophyre	S1	Conglomerate	TG	Timiskam Grp Boundary
V9 V10	Tuff Agglomerate	4U 4P	Ultramafic Peridotite	S3 S4	Greywacke Argillite	FAZ	Fault Zone
V14	Basaltic Komatiite	2D FD	Diorite Felsic Dyke	S6	Siltstone	CHEX CHSD	Cherty Exhalite Cherty Sediment
V15	Ultramafic Komatiite	3D	Diabase	CCZ	Green Carb Zone	GS	Graphitic Sediment
3C 3Ca 3Cc	Gabbro, Altered Gabbro, Carb Gabbro	1P	Aplite	BAZ OAZ	Blonde Alter Zone, Ochre Alter Zone	V4	Trachyte
IF	Interflow Material	FP	Feldspar Porphyry	CARB	Carbonated Zone	LLB	Larder Lake Break

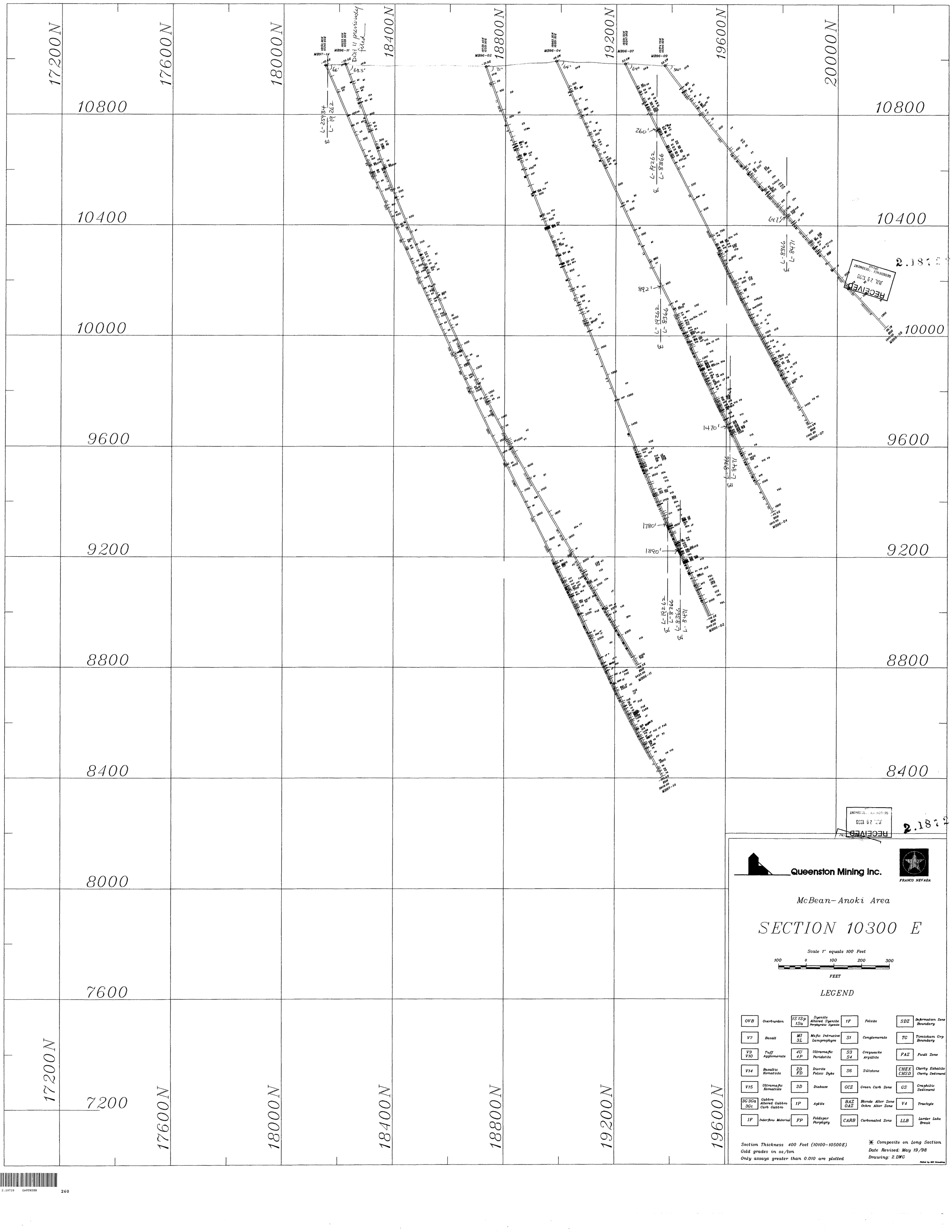
Section Thickness 200 Feet (9700–9900E)
Gold grades in oz/ton
Only assays greater than 0.010 are plotted

✳ Composite on Long Section
Date Revised: May 20/98
Drawing: 3.DWG

Plotted by ARC GreenStrip



SECTION 10300 E



Queenston Mining Inc.

FRANCO NEVADA

McBean–Anoki Area

SECTION 10300 E

Scale 1" equals 100 Feet

100 0 100 200 300

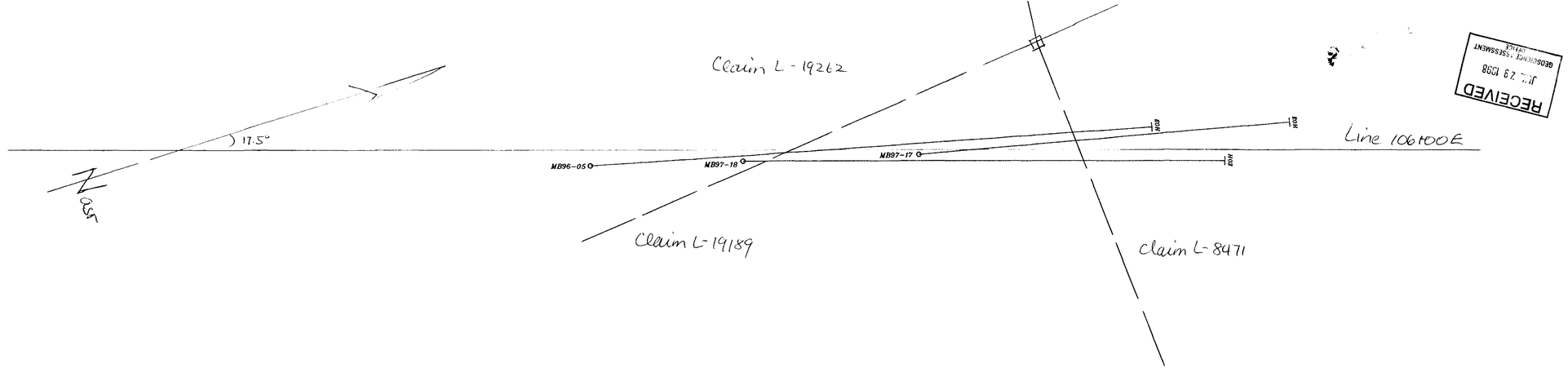
FEET

LEGEND

OVB	Overburden	1S 1Sp 1Sa	Syenite Altered Syenite Porphyritic Syenite	1F	Felsite	SDZ	Deformation Zone Boundary
V7	Basalt	MI 3L	Mafic Intrusive Lamprophyre	S1	Conglomerate	TC	Timiskam Grp Boundary
V9 V10	Tuff Agglomerate	4U 4P	Ultramafic Peridotite	S3 S4	Greywacke Argillite	FAZ	Fault Zone
V14	Basaltic Komatiite	2D FD	Diorite Felsic Dyke	S6	Siltstone	CHEX CHSD	Cherty Exhalite Cherty Sediment
V15	Ultramafic Komatiite	3D	Diabase	GCZ	Green Carb Zone	GS	Graphitic Sediment
3G 3Ga 3Gc	Gabbro Altered Gabbro Carb Gabbro	1P	Aplite	BAZ OAZ	Blonde Alter Zone Ochre Alter Zone	V4	Trachyte
IF	Interflow Material	FP	Feldspar Porphyry	CARB	Carbonated Zone	LLB	Larder Lake Break

Section Thickness 400 Feet (10100–10500E)
Gold grades in oz/ton
Only assays greater than 0.010 are plotted

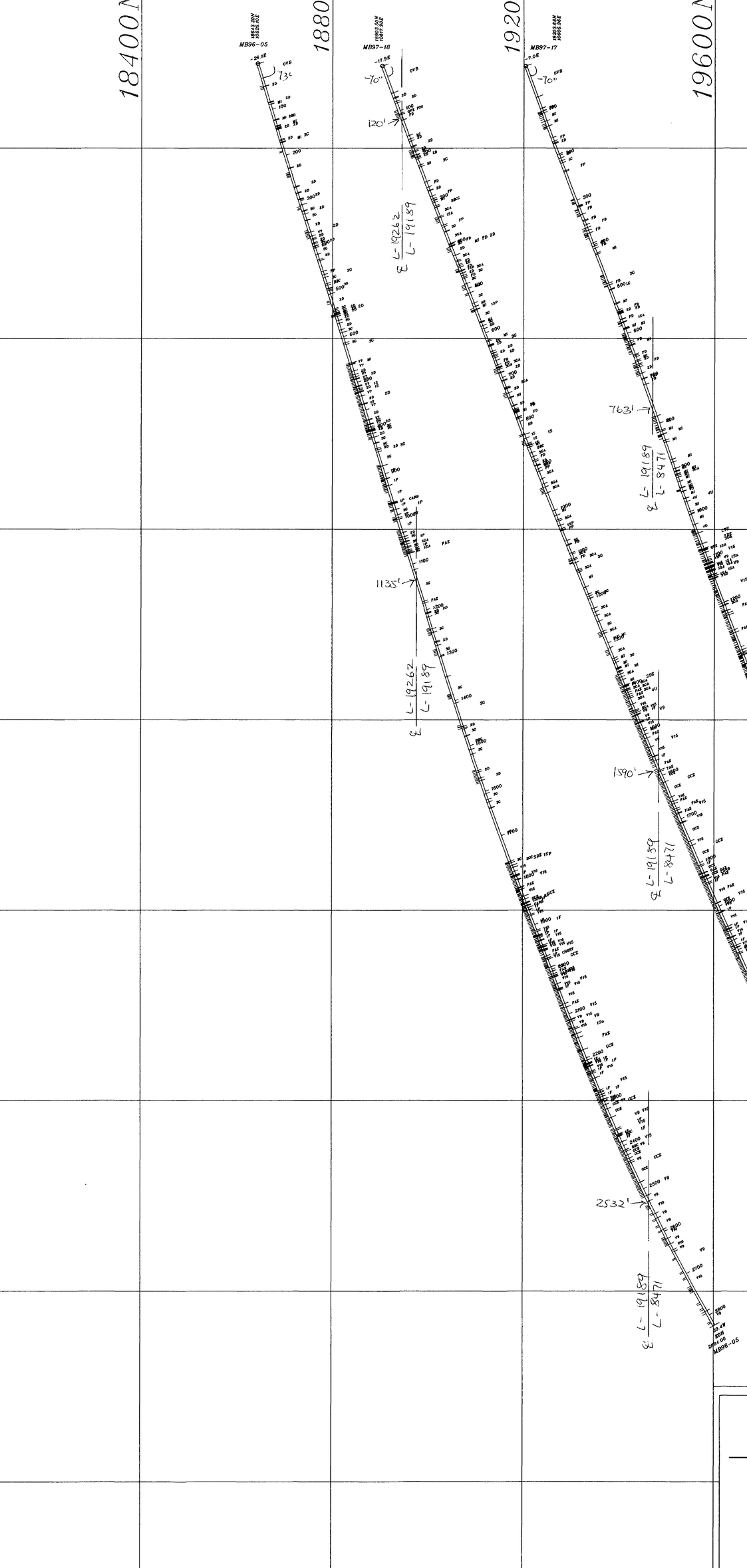
✳ Composite on Long Section
Date Revised: May 19/98
Drawing: 2.DWG



SECTION 10600 E

17200N 17600N 18000N 18400N 18800N 19200N 19600N 20000N

10800 10400 10000 9600 9200 8800 8400 8000 7600 7200



Queenston Mining Inc.

FRANCO NEVADA

McBean–Anoki Area

SECTION 10600 E

Scale 1" equals 100 Feet

100 0 100 200 300

FEET

LEGEND

OVB	Overburden	1S 1Sp 1Sa	Syenite Altered Syenite Porphyritic Syenite	1F	Felsite	SDZ	Deformation Zone Boundary
V7	Basalt	MI 3L	Mafic Intrusive Lamprophyre	S1	Conglomerate	TC	Timiskam Grp Boundary
V9 V10	Tuff Agglomerate	4U 4P	Ultramafic Peridotite	S3 S4	Greywacke Argillite	FAZ	Fault Zone
V14	Basaltic Komatiite	2D FD	Diorite Felsic Dyke	S6	Siltstone	CHEX CHSD	Cherty Exhalite Cherty Sediment
V15	Ultramafic Komatiite	3D	Diabase	GCZ	Green Carb Zone	GS	Graphitic Sediment
3C 3Ca 3Cc	Gabbro Altered Gabbro Carb Gabbro	1P	Aplite	BAZ OAZ	Blonde Alter Zone Ochre Alter Zone	V4	Trachyte
1F	Interflow Material	FP	Feldspar Porphyry	CARB	Carbonated Zone	LLB	Larder Lake Break

Section Thickness 200 Feet (10500–10700E)
Gold grades in oz/ton
Only assays greater than 0.010 are plotted

✳ Composite on Long Section
Date Revised: May 20/98
Drawing: 5.DWG

Plotted by MDI Cheminfo