

Latitude 6250N
 Departure 4685E
 Elevation
 Dip at Collar . . -55°
 Bearing 100°
 Total Depth . . . 532.3m Core Size BQ
 Remarks

Noranda Exploration Company, Limited
 DIAMOND DRILL CORE LOG

Tests Depth	Dip	Magnetic Bearing	Corrected Bearing
152.7	53°	128°	103°
339.9	51°	131°	106°
524.7	49°	140°	115°

Project No. . . . 4730 Sheet No. . . 1 of 7
 Property Lake Bond Hole No. . . LB-93-4
 NTS 12H/1 Grid Name . . Lake Bond
 Date Started . . Feb 9/93 Completed . . Feb. 17/93
 Contractor . . . Longyear Canada Inc.
 Logged By Chris Collins

Depth & Lithology	Description	Alteration	Mineralization	Remarks
0-5.9 Casing	Overburden			
5.9-39.8 Mafic flows	Dark green color to locally maroon where hematized, fine grained with a very granular to locally mottled texture and note moderately sheared throughout with a well developed fabric at; 7.9m, at 60°, 15.6 at 65°, 20.1 at 55° see the fabric become weaker below 20.1m at 7.9 & 12.2-13.6 see jasper laminae within the mafic flow at 65° to C.A. and associated with strong silicification. See 2 dark grey fine-medium crystalline, massive mafic dykes cut unit at 18.6-20.0 with sharp chilled margins at 45-50°, at 23.8-26.1 with sharp chilled margins at 30-35° to C.A. the lower contact is determined by underlying dyke	Local moderate hematization gives the unit a maroon color, 20-25% veining as cm scale anastomosing to chaotic & cross cutting veins of silica epidote & calcite. See moderate strong epidote/silica alt. related to veining from 26.2-lower contact.	See minor dissem. pyrite in mafic dykes	
39.8-40.5 Feldspar porphyritic mafic dyke	Dark grey color, fine-medium grained with a porphyritic texture with 2% mm sized euhedral feldspar laths in a fine grained massive groundmass. Sharp upper contact at 45° to C.A. Lower contact is related to underlying dyke.			
40.5-43.7 Granitic dyke	Grey near contacts to pink in core, well developed porphyritic texture with 10% 5-10mm sized subhedral to euhedral feldspar laths and 5% cloudy to smokey. 2-5mm sized quartz phenocrysts in a pink aphanatic siliceous ground mass. See sharp upper contact at 40°, note no chills, texture is homogenous to contacts.			
43.7-48.5 Diabase dyke	Dark grey green color, finely crystalline with a very equigranular, homogenous, massive texture. see fine glassy chilled margins associated with sharp, upper and lower contacts at 30° to C.A.			
48.5-50.3 Mafic flows	Dark grey-green color; fine grained with a massive to locally mottled texture with 2% chlorite spotting.	Minor chlorite as mm scale spots, minor calcite veining		
50.3-53.0 Granitic dyke	Exactly as from 40.5-43.7 see sharp upper and lower contacts at 50-55° to C.A.			

Noranda Exploration Company, Limited
DIAMOND DRILL CORE LOG

Project No. . . . 4730
Property Lake Bond

Sheet No. . . 2 of 7

Hole No. . . LB-93-4

Depth & Lithology	Description	Alteration	Mineralization	Remarks
53.0-61.5 Mafic flows	(as from 5.9-39.8) dark green fine grained with a massive to locally mottled texture. see local zones with vesicular texture with 3-5% cm scale rounded quartz amygdals i.e. 59.3-59.4. See local maroon colored intervals i.e. hematized and note a vague banding in such between 60.6-60.9m at 45° to C.A.	20-25% cm scale veins of silica/epidote calcite in appro. equal volumes local hematization and local silicification associated with jasper		
61.5-70.5 Mafic dyke (diabase)	Pale grey-green color, medium crystalline with an equigranular, homogenous, massive texture. Sharp contacts with very fine grained glassy chilled margins Upper C at 50°, lower C at 20° to C.A.	Weak pervasive carbonatization associate with 1-2% mm sized calcite spots		
70.5-86.6 Mafic flows	(Much like 53.0-61.5) dark grey-green color, locally olive green where epidote veining is prevalent. Fine grained with a massive to mottled texture, note local zones of vesicular texture with 3-5% 1-5mm sized quartz and calcite amygdals over 10-15cm i.e. 76.1-76.2	10-15%, 1-10 cm sized quartz and quartz/epidote veining often anastomosing and giving a breccia texture to the unit. Silica veins are aphanitic		
	Note 2 very vein grained massive textured light grey mafic dykes cutting the unit at 83.0-83.5 with sharp upper and lower contacts at 20° to C.A. & at 84.6-85.8 with sharp upper and lower contacts at 45° to C.A. Note slightly coarser crystalline core to the lower mafic dyke	Epidote is a pale olive green color associated with Si plus 5% sub cm to cm scale calcite veins moderate pervasive chlorite alt in mafic groundmass		
86.6-90.6 Mafic dyke (diabase)	(as from 61.5-70.5) dark grey green color, medium crystalline with a very homogenous massive granular texture. See chilled margins at both the sharp, upper and lower contacts which are 25-30° to C.A. See a very fine grained massive mafic dyke cut this at 87.1-87.5 with sharp contacts at 20-35° to C.A.			
90.6-92.5 Mafic flows	Exactly as from 70.5-86.6m	As from 70.5-86.6 except predominantly silica veins with lesser epidote and calcite		

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DIAMOND DRILL CORE LOG

Project No. 4730 Sheet No. . 3 of 7
Property Lake Bond
Hole No. . . LB-93-4

Depth & Lithology	Description	Alteration	Mineralization	Remarks
92.5-102.4 Diorite	Overall a dark grey color; and texturally ranges from fine to medium crystalline and equigranular and massive near the upper contact to 93.3 where it becomes coarser but massive to 96.3 where it gradually becomes coarse grained with a well developed porphyritic texture with 10-15% subhedral to euhedral feldspar laths in a medium crystalline black groundmass, see a xenolith of f.g. mafic dyke at 100.7, see a very sharp lower contact to this interval determined by underlying dyke.			
102.4-104.6 Mafic dyke	Light grey very finely crystalline with a massive, very homogenous texture very sharp contacts at 10-20° to C.A.			
104.6-120.4 Diorite	Exactly as from 96.3-102.4 Note a chilled margin at the sharp lower contact at 45° to C.A. see a xenolith of lower granitic dyke at 120.1m			
120.4-156.3 Granitic dyke	As seen above at 40.5-43.7 and 50.3-58.0 overall a pale pink color except near upper and lower contact where it is grey. Very well developed porphyritic texture with 3-5% sub cm sized euhedral cloudy quartz phenocrysts and up to 3% 1-3mm sized subhedral to euhedral feldspar laths in a very fine crystalline to aphanitic pink glassy groundmass, see a very sharp, sheared lower C at 10-15° to C.A.			
156.3-189.3 Mafic flows	Overall the unit is a dark grey to dark green color and texturally it is predominantly fine to very fine grained and massive to granular textured; locally see the unit grade into medium crystalline weakly feldspar porphyritic intervals which host up to 10% mm scale subhedral feldspar laths in a slightly finer crystalline mafic groundmass. These intervals look like dykes but for the gradational nature of contacts (flow cores?) see that at 169.3-171.5 at 174.9-177.7; see small scale mafic dyke with sharp contacts at 35° to core axis at 170.7-171.0 see a sharp lower contact to this unit as defined by underlying strata.	See minor subcm scale cross cutting veins of very f.g. aphanitic quartz with lesser calcite and local epidote at 181.7 to lower contact see local mottled textures assoc. with silicification and chloritization, locally looks brecciated		
189.3-191.3 Mixed chemical clastic sediment	Light grey to light grey green color, fine to very fine grained and locally very well preserved stratification with laminae at 50-55° to long core axis, the unit is comprised of a medium grained volcanoclastic from 189.3-189.9 then gives way to a mix of very fine grained argillite with lesser grey-white chert see small scale shearing which is associated with the lower C and at 40° to C.A.			
191.3-201.2 Diorite	Dark green color, medium to locally coarsely crystalline (most notable in core) and massive to locally porphyritic texture with local sections hosting 2-5% subhedral feldspar laths in a medium crystalline groundmass. Sharp upper C with fine chill at 40° see 0.5m chill at sharp lower contact at 30-35° to C.A.		Minor euhedral diss. pyrite near both contacts.	

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DIAMOND DRILL CORE LOG

Project No. 4730 Sheet No. . 4 of 7
Property Lake Bond
Hole No. . . LB-93-4

Depth & Lithology	Description	Alteration	Mineralization	Remarks
201.2-253.3 Mafic flows "Red Basalt"	Overall the unit is a very deep red to maroon color, and texturally it is generally fine to very fine grained, and ranges from massive to strongly foliated, to locally vesicular and locally brecciated. From 201.2-212.8 v.f.g. massive textured zones of strong silicification in the form of jasper, from 212.8-236.9 see a very well developed foliation at a variety of angles to C.A. i.e. 215.2- at 40° 218.1 at 40-45° at 220.6 at 40,° (note local jasper over these zones) at 228.8 at 50° to C.A.; at 230.5 at 45° to C.A.; at 232.4 at 25° at 232.4 at 25° See several dykes 204.2 mafic dyke with sharp contacts at 45-60°; at 207.1-207.5 mafic dyke with sharp contacts at 20° to C.A. See a feldspar porphyritic dyke from 236.9-237.4 with sharp contacts at 60° to core axis 5% mm sized euhedral feldspar laths in a grey aphanitic siliceous groundmass. From 237.4-253.3 the unit becomes more mottled to locally fragmental or brecciated see local zones with preserved vesicular texture with 3-5% mm sized calcite amygdalae. From 248.8-253.3 see well developed fragmental texture with 2-5 cm sized hematized mafic clasts in a grey granular mafic matrix.	Strong pervasive hematization of the entire unit, local strong silicification as jasper from 201.2-212.8 and again from 219.8-222.8 & 223-225.4 assoc. with brecciation. Note local unhematized intervals at various intervals over unit these are quite chloritic At 237.4-253.3 see a dramatic increase in veining with 15-20% chaotic veins of calcite/epidote and lesser quartz. Note the unit becomes less hematized towards lower contact.		
253.3-256.3 Mafic dyke (Diabase)	Dark green, fine to locally medium crystalline with a massive granular texture. See sharp upper and lower contacts with associated chilled margins at 65-75° to C.A.		Minor diss. py	
256.3-259.0 Mafic flows	Pale grey green color, locally deep red to maroon colored where hematized, fragmental texture consisting of 65% green and lesser red mafic fragments, massive and vesicular in a grey mafic matrix. Very much like the unit from 248.8-253.3 except less and local hematization locally see a well developed foliation at 50° to C.A.	Extensive carbonatization of the matrix - local hematization of mafic clasts, extensive quartz, carbonate and epidote veining enhancing the fragmental texture.		
259.0-261.4 Feldspar porphyritic dyke	Exactly as from 236.9-237.4, 3-5% mm sized euhedral feldspar laths in a grey aphanitic siliceous groundmass, sharp upper and lower contacts at 80° to C.A.		Minor diss. py	

Noranda Exploration Company, Limited
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Project No. 4730 Sheet No. . 5 of 7
Property Lake Bond
Hole No. . . LB-93-4

Depth & Lithology	Description	Alteration	Mineralization	Remarks
261.4-272.9 Mafic flows	(Exactly as from 256.3-259.0) overall a pale grey green color, locally maroon where hematized, massive granular to locally brecciated texture related to chaotic veins of epidote/silica and calcite locally see well developed foliation at 65° to the core axis. The lower contact is determined by the underlying dyke.	Local strong hematization and local strong pervasive carbonatization, strong epidote alt related to veining.		
272.9-305.0 Diorite	Light grey to grey green color, medium to locally coarsely crystalline with a very well developed porphyritic-texture with 10-15% 2mm-1cm size subhedral to euhedral feldspar laths in a medium crystalline equigranular massive groundmass. See a sharp upper contact 55-60° to core axis with a fine massive to locally glassy chill into 277.3m. See a chill from 303 to sharp lower contact at 45° to core axis.	Minor epidote veining and local weak pervasive epidote alt.		
305.0-326.9 Mafic flows	(typical of that seen in other LB holes) overall a dark green to locally maroon color where hematized and locally a pale olive green color where there is moderate epidote alt. Texturally it is very fine grained and varies from quite massive and granular to locally vesicular with well preserved quartz and calcite amygdaloids up to 3mm & 5% over 10-20cm i.e. 314.2-320.8 see local fragmental texture. See a moderate fabric throughout, at 50-60° to C.A. lower contact is determined by underlying dyke.	Moderate to locally strong pervasive chlorite alt. local pervasive hematite. 20% veining predominately epidote and calcite with lesser silica.		
326.9-355.8 Mafic dyke	Overall the unit is a dark grey color and texturally is predominately very fine grained and massive although note local gradational textural variations within i.e. 333.5-335.6 see a weak porphyritic texture with 1-2% mm sized subhedral feldspar laths. 337-343 the unit becomes medium grained and massive textured. 350.5-352.2 as from 337-343.3m note sharp contact at 20-25° to C.A. marks the transition. See sharp upper C at 60° and lower C at 45°			
355.8-363.2 Mafic flows	Dark green color, fine grained with a massive to vein brecciated textured, locally see hits of primary fragmental texture with pillow selvage at 362.7-362.8 and local vesicular texture.	Moderate to strong pervasive chloritization strong calcite and epidote related to vein bx.		
363.2-365.8 Mafic dyke	Dark grey, fine to locally medium grained, generally massive but locally weakly feldspar porphyritic with up to 3% subhedral mm scale feldspar laths sharp contact at 35-40° to core axis.			

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DIAMOND DRILL CORE LOG

Project No. 4730 Sheet No. . 6 of 7
Property Lake Bond
Hole No. . . LB-93-4

Depth & Lithology	Description	Alteration	Mineralization	Remarks
365.8-387.2 Mafic flows	Dark grey green to pale olive color where epidotized, generally fine grained and massive to locally vesicular with up to 2-3% calcite amygdalae locally over 10-15cm i.e. 368.1-368.3, 384.5-384.7. See well developed fabric in hematized intervals at 370.9-371.8 at 45° and note intense mm scale calcite veining parallel to the fabric at 381.9-383.7 45° to C.A. note the lower contact this unit does not mark a lithological change but textural alteration variation into foliated hematized mafics.	See 20X mm to cm scale anastomosing and cross cutting veins of calcite and epidote with much lesser silica moderate pervasive chlorite alt. local hematization.		
387.2-408.5 Mafic flows "Red basalt"	Overall a deep red to maroon color although note local dark and pale green intervals. texturally this unit is fine to very fine grained and generally strongly foliated although see local vesicular intervals i.e. 404.1-404.2, 405.4-405.6. See well developed fabric at 392.1-393.6 at 65-70° to C.A., note the fabric weakens below 393.2 but is still evident at 55-70° See local small scale shear zones associated with chloritic fractures. The lower contact to this unit is marked at a shear zone and marks quite an alt and textural change into underlying stockwork zone.	Strong pervasive hematization see 10-15% sub cm 3cm sized cross cutting and anastomosing veins of calcite with lesser epidote and silica		
408.5-428.1 Stockwork alt. and mineralized mafic volcanics	Overall the unit is a dark green to black color, fine to very fine grained and now consists predominantly of altered mafic fragments in a matrix of massive black hydrothermal chlorite veins. See the chlorite as a pervasive alt in relict mafic fragments and as massive patches & 1-4cm sized anastomosing veins carrying sulphides. Locally see weakly preserved primary textures including relict vesicular texture at the upper contact and at 409.1-409.2, 409.9, 411.0 and 412.4-412.5 from 422.8-425.6 see a well developed fragmental texture with epidotized and carbonatized mafic fragments in a chlorite vein matrix. The lower contact to this zone is controlled by underlying dyke.	See strong to local intense chlorite as pervasive alt in mafic fragments, massive replacement patches and as anastomosing 1-4cm sized veins see 10% 1-2cm sized cross-cutting and anastomosing calcite veins and local silica veins.	See pyrite as fine grained disseminations thin stringers and local massive patches up to 3-4cm in size often assoc. with black chlorite, see sphalerite as fine grained red brown diss. and wispy stringers in chl and pyrite veins and locally assoc. with silica veins. 408.5-411.8 2% total sulphide, diss and local stringer pyrite with tr sph. 411.8-418.1 15% total sulphide with 8-10% pyrite as medium grained stringers (locally up to 10cm) and 5-7% sph as patchy diss and thin wispy stringer assoc with pyrite veins and si veins 418.1-422.8 7-10% total sulphide. Predominately pyrite as cm scale and smaller cross cutting stringers and diss. with tr-1% sph as patchy diss enveloped in pyrite stringers. 422.8-425.6 tr-1% py as fine diss and local thin stringers 425.6-428.1 7-10% total sulphide as pyrite stringers and diss with tr sph except at 427.7-428.1 see 3% of sph as cm scale stringers.	
428.1-433.6 Feldspar porphyritic mafic dyke	Pale grey green color with well developed porphyritic texture with 5-7% subhedral to euhedral feldspar laths in a fine to medium grained mafic groundmass. See a very sharp upper and lower contacts at 25-30° to core axis.			

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DIAMOND DRILL CORE LOG

Project No. 4730 Sheet No. . 7 of 7
Property Lake Bond
Hole No. . . LB-93-4

Depth & Lithology	Description	Alteration	Mineralization	Remarks
433.6-447.9 Stockwork alt and mineralized mafic volcanic	Overall a dark grey green to black color, very mottled or granular texture due to strong pervasive alteration see strong pervasive and spotty black chlorite alteration and locally patchy epidote alt. pervasive and vein carbonate alt. No primary textures preserved.	Strong chloritization with lesser patchy epidote alt and pervasive carbonate intense chlorite between 439.8-445.7	433.6-439.8 see minor diss pyrite with tr sph, 439.8-445.7 see 4-6% stringer and dissem. py with trace sphalerite, 445.7-447.9 barren	
447.9-451.2 Mafic dyke	Dark grey, very fine grained massive homogenous texture, sharp chilled upper and lower contacts at 60° to C.A.			
451.2-472.8 Stockwork alt and mineralized mafic flow	Pale grey green color, with a well developed stockwork texture with 70% amygdaloidal to massive mafic breccia fragments in an anastomosing massive black chlorite vein matrix. Note local penetrative fabric at 463.6-465.2 at 40-45° to C.A.	Moderate to strong stockwork textured chlorite alt. local epidotization and silicification	Overall 1% total sulphide with py and traces of sph	
472.8-483.7 Mafic flows	Overall a dark grey & finely crystalline with massive homogenous textures. See a coarser core at 482.4. Sharp upper and lower contacts at 25-30°			
483.7-494.1 Mafic flows	Dark grey, massive to locally mottled very fine grained (hornfelsed) mafic flow mottling is result of local moderate patchy chlorite alt. minor dikeing (mafic)	See local moderate chl alt - local silica	See 2-3% sph associated with chl and silica veining at 491.1-492.2 & 493.8-494.1	
494.1-532.3 Gabbro	Dark green color, medium to locally coarsely crystalline with a massive homogeneous texture.			
532.3	END OF HOLE			
	Core stored at Buchans core facility			