Report on Drilling of Two Holes On the Waldman Property (Claims 1212226 & 1247791) Gillies Limit North Township, Ontario

Assessment Report for Cabo Mining Enterprises Corp.

S. Sears July, 2005



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#### INTRODUCTION

Two drill holes (COB-22, -23) totalling 364 metres were completed on claims 1212226 and 1247791 as part of a larger drill program undertaken in the area. The holes were drilled to test for Cobalt Type Ag-Co mineralization hosted by calcite-quartz veins and potential volcanic hosted base metal mineralization. The holes were located near the old Wallingford Shaft, which is located approximately 500 metres SSW of the past producing Waldman #1 Shaft. The drilling was contracted out to Norex Drilling Ltd. of Timmins, Ontario. Logging and drill supervision were completed by personnel of Cabo Mining Enterprises Corp. under the supervision of Seymour Sears, P.Geo. (Sears, Barry & Associates Ltd.). The drilling was completed between May 16th and 25th, 2005, with logging completed by June 31st, 2005. The Waldman area is located approximately two (2) km south of the town of Cobalt (Figures 1 & 2).

#### **PROPERTY DESCRIPTION & ACCESS**

Hole COB-22 was collared on Claim # 1212226 and Hole COB-23 was collared on Claim # 1247791. The claims are located in the extreme northern part of Gillies Limit North Township, Larder Lake Mining Division, Ontario (Fig. 2).

Access is via the Coleman Road that departs eastwards from Highway 11B at the southwestern end of the town of Cobalt for 1.5 km and then for 1.4 km south along Hound Chute Road (a Hydro Dam access road) to an old railbed that once was a street car line that serviced mines in the local area. COB-22 is located approximately 100 metres north of the railbed whereas COB-23 is located approximately 140 metres south of the railbed.

#### GEOGRAPHY

Maximum relief in the area is approximately 20 metres. Topography is generally rolling with local steep ledges and cliffs and occasional swamp. The eastern side of the property drains into Giroux Lake while the western side drains westwards into a small creek that drains into Giroux Creek. Giroux Creek flows southwest through the Waldman Grid area and then south into the Montreal River.

Overburden is relatively shallow over much of the area except for local swamps. Vegetation consists mainly of mature mixed forest with abundant dense underbrush.

#### **EXPLORATION HISTORY**

The northern part of the grid area was first explored in 1909 by Waldman Silver Mines Ltd. who sunk a shaft to a depth of 85 feet and commenced production in 1910. Additional production was attained in 1918, 1919 and 1930. This deposit is reported to have produced 33,525 oz. of



Figure 1: Regional Location Map of Ontario

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silver and 2066 lbs. of Cobalt (Sergiades, 1968). Two other shafts, 110 and 105 feet deep, and a total of 4000 feet of underground drifting and crosscutting were completed on this prospect, including work in 1948 and 1955. In 1944 and 1949, Waldag Mining Co. Ltd. are reported to have completed 33 drill holes in excess of 10,000 feet although not all drill logs are available. No assay results were reported. In 1978, Teck Corp. completed a ground magnetometer and VLF-EM survey over part of the claims.

In the southern part of the Waldman Grid area, one shaft was completed on an old prospect. This shaft is referred to as the "Wallingford Shaft" and is 70 feet deep with a crosscut at 70 feet and was completed from 1909-1913. In 1963, Canadian Astoria Minerals Ltd. completed 11 drill holes totalling 2214 feet in the southern part of the grid area.

Cabo Mining Corp. (the predecessor of Cabo Mining Enterprises Corp.) completed two drill holes for 237.2 metres, beneath the Waldman #1 Shaft in 1999 (Sears, 2000). During 2004 a grid was established over the Waldman area and geological mapping (Douville & Sears, 2004), a ground magnetometer survey (Clearview Geophysics Inc., 2004), prospecting, and a small stripping program were completed (Sears, 2004). Four other drill holes were completed in the area by mid-May of 2005 (Sears, 2005*a*, *b*) and in late 2004, three drill holes were completed to test a new vein system located 100 metres south of the Waldman #1 Shaft (Sears, 2005*c*).

#### **REGIONAL AND PROPERTY GEOLOGY**

The area is located in the southern part of the main Cobalt mining camp. In the immediate area of the drill holes is located the contact between an inlier of Archean mafic volcanic rocks and Huronian aged Coleman Group conglomerate (Gowganda Formation). Previous geological mapping (Thompson, 1963) indicates that a Nipissing diabase sill is exposed approximately 600 metres to the east of the holes. This sill may have once overlain the local area, a geological setting that is similar to that in the immediate Cobalt Lake area two kilometres to the north.

The holes lie approximately 250 and 530 metres SSW of the Waldman #1 Shaft. The mineralization at the Waldman #1 Shaft was hosted by calcite and quartz breccia veins contained within a cherty interflow band occurring within the Archean volcanic rocks.

#### WORK PROGRAM AND RESULTS

The locations of the drill holes are shown in Figure 3 and drill logs and X-sections are included in Appendix I and II, respectively. Hole COB-22 was drilled from a collar location at 71 W and 235 S on the Waldman Grid at -45°. The hole was oriented at a bearing of 0° and was designed to test for new vein systems and to intersect a positive magnetic anomaly occurring southwest of the Waldman #1 Shaft (Clearview Geophysics Inc., 2004). Hole COB-23 was drilled from a collar location at 103 W and 535 S on the Waldman Grid also at -45° but at a bearing of 325°. This hole was designed to test for east-west veining potentially underlying the Wallingford Shaft. Several carbonate stringers-veinlets-veins with sulphides (pyrite, pyrrhotite, chalcopyrite, sphalerite, galena) and occasionally with sulpharsenides (cobaltite) were encountered throughout both of the holes. The positive magnetic anomaly is most likely the result of magnetite and



pyrrhotite bearing pillowed mafic volcanics intersected within the first 20 metres of Hole COB-22. Hole COB-23 appears to have intersected the Wallingford vein structure between 28.1 and 28.6 metres. The interval includes calcite veinlets and a calcite aggregate (possible vein?) containing pyrite, sphalerite, chalcopyrite, galena, and cobaltite. Assay results are pending.

#### CONCLUSIONS AND RECOMMENDATIONS

The two drill holes that are included in this report encountered numerous narrow, sulphide, and occasional sulpharsenide, bearing calcite stringers, veinlets and veins. These include a 0.5 metre wide zone of calcite veining from 28.1 to 28.6 metres in Hole COB-23 that appears to be part of the vein system associated with the Wallingford Shaft. The positive magnetic anomaly southwest of the Waldman #1 Shaft appears to be related to magnetite and pyrrhotite bearing pillowed mafic volcanics intersected in the top 20 metres of Hole COB-22. Extensive sampling and assaying is required to determine the significance of the veining and this work is currently being completed. Additional work will be dependent upon assay results. A comprehensive report on this area, along with recommendations for further exploration, will be prepared and filed once all of the data is received.

Respectfully submitted,

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Seymour Sears, P.Geo. July 31, 2005

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#### REFERENCES

Clearview Geophysics Inc.

2004: Report on Magnetics Surveys at the Waldman prospect, Cobalt Area, NE Ontario; Assessment Report for Cabo Mining Enterprises Corp.

Douville, D., and Sears, S. M.

2004: Report on Geological Mapping in Gillies Limit North Area (Waldman Grid Area), for Cabo Mining Enterprises Corp.

Ontario Geological Survey

2000: Airborne magnetic and electromagnetic surveys, Temagami area; Ontario Geological Survey, Map 82 066, scale 1:20 000.

Sears, S.M.

- 2005a: Report on Drilling of Two Holes on the Waldman Property (Claims 1231083, 1247791, 1212231, & 1212226), Gillies Limit North Township, Ontario; Assessment Report for Cabo Mining Enterprises Corp. (July, 2005).
- 2005b: Report on Drilling of Two Holes on the Waldman Property (Claims 1247791 & 1212231), Gillies Limit North Township, Ontario; Assessment Report for Cabo Mining Enterprises Corp. (May, 2005).
- 2005c: Report on Drilling of Three Holes on the Waldman Property (Claim 1212226), Gillies Limit North Township, Ontario; Assessment Report for Cabo Mining Enterprises Corp. (January, 2005).
- 2004: Report on a Stripping Program in Gillies Limit North Area (Waldman, Cummings Pit & Oxford Areas); Assessment Report for Cabo Mining Enterprises Corp. (July, 2004).
- 2000: Report on a 1999 Drill Program in the Cobalt Area, Ontario, for Cabo Mining Corp. (April, 2000; includes 2 holes under the Waldman Prospect).

#### Sergiades, A.O.

1968: Silver Cobalt Calcite Vein Deposits of Ontario; Ontario Department of Mines, Mineral Resources Circular No. 10.

#### Thompson, R.

- 1961: Preliminary Report on parts of Coleman Township, Concession IV, Lots 1 to 5 and Gillies Limit, the Eastern "A" Claims, District of Timiskaming; Ontario Department of Mines, P.R. 1961-6.
- 1963: Cobalt Silver Area, Southwestern Sheet; Ontario Department of Mines Map 2051, Scale 1:12,000.

Assessment Files of the Ontario Geological Survey, Larder Lake Office.

### APPENDIX I

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(Drill Hole Logs)

Property Name:	COBALT AREA PROJECT	GRID NAME: Waldman		H. Pintson Norex Drilling			
Grid Bearing	00	BEARING: 00	SURVEY TYPE Acid Te				
Easting:	-71	INCLINATION: -45 degrees	START May	16 2005			
Northing:				18,2005			
Elevation:	315 m	CORE STORED AT: R. Nobes	Pa	age # 1 of 15			
From To	Lithological Description		Sample #	From To Width			
0.00 1.36	Overburden; casing left in ground.						
1.36 15.83	PILLOWED MAFIC VOLCANICS:						
	Massive, heterogeneous, medium green- grained; locally magnetic; minor-moderati stringers; local cm wide bands of mechar chloritized, occasional trace-minor PY-PC CPY, stringers-veinlets at 45-60 degrees without calcite/platy PY, joints/fractures p 15.74. 2.29 - 2.51: Interpillow material; abundan hematitized calcite stringer at 20 degrees 3.15 - 3.2: 1 mm wide calcite, abundant e slivers, vein; both at ~60 degrees to C/A; 6.38 - 6.55: Two up to 5 mm wide segme 6.64: Slip plane at 48 degrees to C/A. 7.79 - 7.91: Wedge shaped chlorite-quart 9.3 - 10.06: Abundant breccia; insitu and	gray to dark green/gray; very fine-grained, locally aphanitic or fine- e insitu breccia - matrix composed of quartz/epidote hairline fractures- nical breccia; scattered PY disseminations; epidotized-silicified- D-CPY, pillow selvages; scattered quartz-epidote, trace-moderate PY- to C/A, also mm- cm-sized aggregates; 2-5 serpentine coated, with or er metre at 20-40 degrees and 50-70 degrees to C/A, hematitized until t quartz-epidote, moderate calcite, moderate MT-PY-CPY; cross cut by a to C/A. epidote, veinlet; 6 mm wide calcite, abundant quartz-epidote, wall rock both are barren. inted calcite veinlets at 0-5 degrees to C/A; barren. tz, abundant PY, minor CPY, aggregate at ~20 degrees to C/A. mechanical, very fine-grained quartz-epidote stringers-veinlets-open	1				
	space fillings as matrix; minor-moderate 11.44 - 11.73: Abundant breccia/hyalocla contacts.	PY, trace CPY-PO, disseminations. stite; moderate preferred orientation at ~55 degrees to C/A; gradational					
	12.92: Calcite, moderate epidote, rare Cl 14.09 - 14.2: Wedge shaped interpillow n 14.65 - 15.05: Magnetic; very fine MT.	PY, stringer at 55 degrees to C/A. naterial; trace calcite, abundant mixed PO-PY, trace CPY.					
	14.84 - 15.0: Interpillow material; modera 15.74 - 15.83: Minor breccia; several mm	ate mixed PO-PY-very fine MT. h-cm long calcite stringers, majority at 0 degrees to C/A; minor PY.					

HOLE # :		COB-22				Page # 2
From	То	Lithological Description	Sample #	From To	Width	
15.83	- 16.94	LAMPROPHYRE DYKE: Massive, medium green; fine- medium-grained, finer grained margins; chloritized, moderate biotite; a few calcite, rare PY, stringers at 25-35 degrees and 55-70 degrees to C/A; several serpentine coated, with or without calcite, joints/fractures at 30-35 degrees and 60-80 degrees to C/A; sharp upper contact at 64 degrees to C/A; lower contact marked by a serpentine coated joint/fracture at 70 degrees to C/A.	-	-	-	
16.94	18.35	PILLOWED MAFIC VOLCANICS: Continuation of preceding pillowed mafic volcanics (1.36 - 15.83); locally magnetic - minor disseminated PO, probably very fine MT as well. 18.3: 2 mm wide calcite, minor PY, gash veinlet at 68 degrees to C/A.				
18.35	22.86	<ul> <li>LAMPROPHYRE DYKE:</li> <li>Similar to above lamprophyre dyke at (15.83 - 16.94); grades from medium green to medium-dark gray downwards; only minor biotite; local minor disseminated PY; majority of serpentine coated joints/fractures have calcite and minor-moderate PY/platy PY; sharp upper contact at 38 degrees to C/A; sharp lower contact at 35 degrees to C/A.</li> <li>18.99 - 19.05: Two 2-4 mm wide serpentine-calcite, trace PY, veinlets at 75 and 64 degrees to C/A.</li> <li>20.1 - 20.51: Fragmented xenolith of dark brown pillowed mafic volcanics, minor-moderate PY disseminations-short stringers; underlying lamprophyre until 22.86 is fine-grained.</li> <li>20.54 - 20.61: ~1 cm wide band of moderate PY disseminations at 40 degrees to C/A.</li> <li>20.77 - 21.05: Three up to 3 mm wide chlorite/serpentine-quartz, minor PY, stringers-veinlets at 60-70 degrees to C/A.</li> <li>21.86: 2 mm wide serpentine-quartz, minor calcite-PY, veinlet at 52 degrees to C/A.</li> <li>21.92 - 22.06: Minor disseminated mm-sized SPH-PY, trace CPY, aggregates.</li> <li>22.77: 2-4 mm wide calcite, moderate serpentine/chlorite, minor SPH, veinlet at 76 degrees to C/A.</li> </ul>				
22.86	32.97	<ul> <li>PILLOWED MAFIC VOLCANICS:</li> <li>Continuation of preceding pillowed mafic volcanics at (16.94 - 18.35); minor-moderate PY disseminations-stringers; no longer magnetic.</li> <li>22.86 - 23.0: Moderate SPH-PY disseminations-stringers just above contact and into volcanics, rare fine cobaltite.</li> <li>23.0 - 23.2: Pillow breccia; minor PY disseminations-stringers, weak preferred orientation at 40 degrees to C/A.</li> <li>24.17 - 25.4: Pillow breccia; cm- dm-sized pale green-gray to dark brown pillow fragments; medium blue-gray matrix; local minor calcite, trace-minor PO-CPY-SPH-PY.</li> <li>24.58: Calcite, abundant PO, minor PY-CPY, coated fracture at 35 degrees to C/A.</li> <li>25.43: 1-3 mm wide calcite, minor PY-PO-CPY-SPH, rare GN, gash veinlet at 50 degrees to C/A; a few underlying discontinuous partially semi-massive SPH, PY and PO-CPY, stringers-veinlets.</li> <li>25.71: Calcite, minor PY, stringer at 75 degrees to C/A.</li> </ul>				

HOLE # :		COB-22						Page # 3
From	То	Lithological Description	Sample	#	From	То	Width	
-	-	26.13 - 26.29: Two calcite, moderate PY, minor CPY, stringers at 74 and 99 (81) degrees to C/A. 26.64 - 27.79: Pillow breccia; similar to pillow breccia at (24.17 - 25.4) with dark brown pillow fragments; local minor calcite, minor-moderate PO-PY, minor CPY-SPH, disseminations-short stringers-veinlets. 27.06: Calcite, semi-massive PO, moderate CPY, fracture at 79 degrees to C/A.	-		-		-	
		27.79 - 28.47: Lamprophyre dykelet; similar to fine-grained lamprophyre at (20.51 - 22.86); sharp upper contact at 58 degrees to C/A; very irregular lower contact at ~60 degrees to C/A.						
		28.44 - 28.48: 3 mm wide calcite-chlorite, minor SPH, rare GN, veinlet at 59 degrees to C/A; barren calcite stringer at 61 degrees to C/A.						
		28.47 - 28.81: Moderate SPH disseminations; a few semi-massive PY stringers at 40-50 degrees to C/A; 2 mm wide calcite-chlorite, abundant SPH, trace PY, veinlet at 49 degrees to C/A.						
		28.81 - 29.72: Lamprophyre dykelet; similar to fine-grained lamprophyre at (20.51 - 22.86); two calcite, rare SPH, stringers at 50 and 33 degrees to C/A; sharp upper contact at 47 degrees to C/A; sharp lower contact at 30 degrees to C/A.						
		29.35 - 29.51: 7 cm wide layer containing mm-cm wide fine- medium-grained biotite-rich laminations at ~38 degrees to C/A; some laminations have sharp contacts.						
		29.67 - 29.89: Up to 5 mm wide milky white quartz gash vein underlain by a 5 cm wide milky white quartz vein, both at ~40 degrees to C/A; veins have sharp, but very irregular, contacts; minor calcite, rare very fine GN-SPH; two grains of cobaltite between the two veins.						
		30.1 - 32.97: Pillow breccia; minor amount of brown pillow fragments. 30.32: 1 cm wide calcite-rich layer in matrix; minor SPH.						
		30.81 - 32.75: Several up to 3 mm wide calcite, minor-abundant PY-SPH-CPY, stringers-veinlets and discontinuous semi-massive PX/PO, stringers veinlets at 20.50 degrees to C(A) minor moderate						
		SPH/PY/PO/CPY/occasional GN, with or without calcite, disseminations-aggregates; a few serpentine coated, minor calcite, abundant platy PY, minor CPY, joints/fractures at 25-40 degrees to C/A.						
32.97	35.93	LAMPROPHYRE DYKE:						
		Similar to preceding lamprophyre dykes; local minor biotite; 4-5 serpentine coated, usually with calcite, occasional minor PY-rare GN, joints/fractures per metre at 40-60 degrees to C/A; slightly irregular upper contact along a pillow edge at 41 degrees to C/A; very irregular, partial intrusive breccia, lower contact at ~45 degrees to C/A.						
		33.19 - 33.51: Xenolith of pillow breccia; dark brown pillow fragments with pale brown margins.						
		33.93 - 34.13: Xenolith of pillow breccia as above (33.19 - 33.51). 35.61: Cm-sized xenolith of a pillow fragment.						

HOLE # :		COB-22						Page # 4
From	То	Lithological Description	Sample	#	From	То	Width	
35.93 3	- 38.05	PILLOWED MAFIC VOLCANICS: Similar to preceding pillowed mafic volcanics; local minor pillow breccia - only pale-dark green pillow fragments; minor-moderate short PO-minor CPY stringers-veinlets; a few calcite, abundant PY-PO-CPY, stringers at 55-65 degrees to C/A; only local SPH; 6-8 serpentine-calcite coated, moderate-abundant PY-PO-CPY, joints/fractures per metre at 45-75 degrees to C/A.	-		-		-	
		36.73: 6 x 3 cm-sized quartz, abundant PO-PY-CPY, aggregate. 36.82 - 37.38: Serpentine, minor platy PY, moderate semi-massive PY, fracture at ~5 degrees to C/A. 37.38: Remnant 3 mm wide calcite, abundant SPH, moderate PY-GN, veinlet at 53 degrees to C/A. 37.77 - 37.94: Pillow breccia matrix; minor calcite, abundant PO-SPH, minor CPY-coarse GN.						
38.05	44.98	LAMPROPHYRE DYKE:						
		Similar to preceding lamprophyre dykes; local minor biotite; ~5 serpentine coated, usually with calcite, occasionally with PY, joints/fractures per metre at 30-45 degrees and 55-85 degrees to C/A; sharp upper contact at 20 degrees to C/A; fairly sharp lower contact marked by mm-sized quartz-SPH aggregates at 41 degrees to C/A.						
		38.78 - 38.9: Xenolith of pillowed mafic volcanics; two short semi-massive CPY-PY veinlets; a few up to 1 cm- sized GN, minor SPH-CPY, aggregates.						
		38.9 - 39.73: Mostly badly broken core; serpentine coated, minor calcite, rare GN, fractures at 5-45 degrees to C/A; remains of a calcite vein/mud seam.						
		40.2 - 41.22: Mostly badly broken core. 40.44 - 41.0: Xenolith of pillow breccia.						
		40.47 - 40.54: Granules - gravel; minor calcite granules, a cm-sized fragment of core contains a 12 mm wide calcite veinlet-mud seam, minor GN.						
		42.25 - 42.7: Fragmented xenolith of pillowed mafic volcanics.						
		42.42 - 43.0: Mostly badly broken core; remnants of a calcitic mud seam at ~42 degrees to C/A. 44.38: Up to 5 mm wide calcite, moderate SPH, minor CPY-PY-GN, gash vein at 41 degrees to C/A.						
44.98	46.63	MASSIVE MAFIC VOLCANICS:						
		Medium green-gray, fine-grained; minor-moderate fracturing; quartz-lesser epidote, usually with SPH, occasional PY/CPY, stringers-veinlets-aggregates; lower contact marked by an up to 4 cm wide epidote-rich aggregate.						
		45.82 - 45.97: Breccia layer; up to 4 cm-sized angular wall rock fragments in a very fine-grained quartz, rare calcite, trace SPH-CPY-rare GN, matrix; matrix supported; sharp upper contact at 35 degrees to C/A; sharp lower contact at 60 degrees to C/A.						

From To	Lithological Description				
FIOIN TO	-	Sample #	From To	Width	
 46.63 68.18	PILLOWED MAFIC VOLCANICS:	-	-	-	
	Heterogeneous, pale-dark green and gray, very fine- to fine-grained; minor-moderate insitu breccia - matrix composed of network of quartz-epidote, usually with minor-moderate PY/PO/CPY, hairline fractures-stringers-veinlets, local pseudobreccia with dark green chloritic fractures; chloritized-silicified-epidotized, usually with PY-occasional PO/CPY, pillow selvages-interpillow material; local cm-sized quartz/epidote aggregates; 3-4 serpentine coated, with or without calcite/platy PY, joints/fractures per metre at 25-40 degrees and 55-75 degrees to C/A.				
	46.65 - 47.5: Abundant silicification-epidotization; minor-moderate PY, minor CPY, rare GN-SPH; three 1 mm wide quartz-epidote, moderate PY, occasional calcite/CPY/GN, veinlets at 25-45 degrees to C/A.				
	<ul> <li>48.41 - 48.7: 2-7 mm wide quartz-epidote, minor PY, trace CPY, rare GN, vein at 5 degrees to C/A.</li> <li>48.88: 1 mm wide quartz-epidote, moderate semi-massive PY, veinlet at 66 degrees to C/A.</li> <li>49.38 - 49.52: 2 mm wide calcite, moderate semi-massive SPH, trace CPY, veinlet at 58 degrees to C/A; 2 mm wide quartz-epidote-calcite, minor PY, veinlet at 51 degrees to C/A.</li> </ul>				
	50.15 - 50.22: Two calcite, minor epidote, stringers at 48 and 44 degrees to C/A; one with abundant PY-GN, trace CPY.				
	50.85: Up to 2 mm wide calcite, pale orange quartz/feldspar margins, trace SPH-CPY, veinlet at 46 degrees to C/A.				
	51.47 - 51.85: Three up to 3 mm wide calcite, pale orange quartz/feldspar margins, trace-minor PY, veinlets at 30- 45 degrees to C/A; one with minor SPH as well.				
	52.75: Calcite, moderate SPH, minor PY-CPY, stringer at 46 degrees to C/A.				
	53.55: Calcite, moderate PY, stringer at 44 degrees to C/A.				
	53.89 - 54.04: Two calcite, moderate PY, stringers at 42 and 47 degrees to C/A.				
	54.56: 2 mm wide calcite, pale orange quartz/feldspar margins, moderate PY, minor CPY, veinlet at 50 degrees to C/A.				
	55.04 - 55.14: Two merging 3-5 mm wide calcite, minor-moderate PY-CPY, veinlets at 43 and 30 degrees to C/A. 56.74: 2 mm wide calcite, moderate SPH-CPY, minor PY, trace GN, veinlet at 26 degrees to C/A; occurs along the margin of a 5 mm wide quartz-epidote, moderate PY, minor SPH-CPY, vein.				
	57.27 - 57.88: Five 1-5 mm wide calcite, trace-moderate SPH, trace-minor CPY-PY, rare GN, veinlets at 38-48 degrees to C/A.				
	58.27 - 58.45: Two 1-2 mm wide calcite, minor PY, rare CPY, veinlets at ~65 degrees to C/A; 5 mm wide quartz- epidote-orange quartz/feldspar-calcite, moderate PY, vein at 32 degrees to C/A.				
	58.45 - 58.57: Mafic intrusive dykelet; medium gray, fine-grained; sharp upper contact at 75 degrees to C/A; sharp lower contact at 69 degrees to C/A.				
	58.6 - 59.21: Pillow breccia; trace calcite, moderate PY-PO, trace CPY, in matrix.				
	58.85: 7 mm wide quartz-epidote, minor calcite-PY-CPY, trace PO, vein at 32 degrees to C/A.				
	59.57 - 60.38: Seven up to 2 mm wide calcite, minor-moderate PO or PY, occasional trace CPY, stringers-veinlets at 45-65 degrees to C/A.				

HOLE # :		COB-22				Page # 6
From	То	Lithological Description	Sample #	From To	Width	
-	-	60.19: 3 mm wide veinlet/mud seam at 70 degrees to C/A; up to 3 mm-sized calcite grains in a matrix of mud; semi-competent; barren.	-	-	-	
		60.43 - 60.67: 1 cm wide semi-massive PY-quartz-epidote, orange quartz/feldspar, minor calcite, trace CPY, gash vein at 32 degrees to C/A; underlain by an up to 3 cm wide calcite, minor GN-SPH, minor cobaltite (?, very fine- grained, gray with a reddish tint, aggregates), gash vein at 57 degrees to C/A; underlain by a few up to 3 mm wide calcite, minor CPY-PY, rare GN, stringers-veinlets at ~75 degrees to C/A and aggregates.				
		60.87 - 61.35: Pillow selvages-interpillow material; moderate PY, minor PO, trace CPY. 61.0: 1-5 mm wide calcite, minor PY, trace CPY, veinlet at 41 degrees to C/A. 62.17 - 62.5: 4 mm wide chlorite/serpentine-quartz-epidote, trace calcite, minor PY-PO-SPH, trace CPY, veinlet at				
		62.34 - 62.71: Mafic intrusive dykelet; massive, medium green, fine-grained; sharp upper contact at 77 degrees to C/A; sharp slightly irregular lower contact at 77 degrees to C/A.				
		<ul> <li>64.02: 2 mm wide quartz-epidote, moderate PO, minor CPY, veinlet at 67 degrees to C/A.</li> <li>65.49: Calcite, minor PY, stringer at 56 degrees to C/A.</li> <li>65.94 - 66.12: Two calcite, moderate PO-CPY, stringers at 65 degrees to C/A.</li> <li>67.17: Calcite, moderate PO, minor CPY, stringer at 64 degrees to C/A.</li> <li>67.79 - 67.84: Four up to 2 mm wide quartz-epidote, minor calcite, minor PO, trace PY/CPY, stringers-veinlets at 60 degrees to C/A.</li> </ul>				
68.18	80.80	LAMPROPHYRE DYKE: Massive, fairly homogeneous, medium green to dark green-gray; fine- medium-grained, finer grained margins; minor-moderate biotite, chloritized biotite, throughout; scattered mm- cm-sized subangular-subrounded xenoliths of mafic volcanics or their alteration products; occasional 1-2 mm wide serpentine/chlorite, minor quartz, rare calcite/PO/CPY/PY, veinlets at 10-50 degrees to C/A; 2-5 often hematitized serpentine coated, with or without				
		calcite/PY-rare GN, joints/tractures per metre at 30-45 degrees and 50-70 degrees to C/A; sharp but very irregular intrusive breccia-like upper contact at 40-0-45 degrees to C/A; lower contact is an intrusive breccia, in part parallel to C/A, over ~30 cm.				
		68.28 - 69.14: At least 35 quartz, moderate chlorite/serpentine, stringers at 30-35 degrees to C/A; a few similar cross cutting stringers at 15-20 degrees to C/A; barren.				
		<ul> <li>68.47: Calcite, rare PY-CPY-SPH, stringer at 62 degrees to C/A.</li> <li>70.14: 2 mm wide calcite, minor GN, veinlet at 56 degrees to C/A; minor hematitization.</li> <li>70.85: Up to 4 mm wide calcite, moderate GN, trace PY-CPY, gash veinlet at 60 degrees to C/A; minor hematitization.</li> </ul>				
		72.87 - 72.97: 3 mm wide calcite-serpentine/chlorite-quartz, trace CPY, veinlet at 26 degrees to C/A. 74.5: Serpentine-quartz coated, moderate CPY, fracture at 63 degrees to C/A. 75.39: 5 mm wide band of abundant disseminated PY at 38 degrees to C/A; moderate fine PY disseminations in wall rock.				

101 <b>E #</b> :		COB-22				Page # 7
From	То	Lithological Description	Sample #	From To	Width	
-	-	75.66: Up to 5 mm wide calcite, minor CPY, trace SPH, gash veinlet at 49 degrees to C/A.	-	-	-	
		76.22 - 76.58: Serpentine-calcite coated, trace CPY-PY-GN, fracture at 0-10 degrees to C/A.				
		76.68: Calcite, minor CPY, trace SPH, stringer at 37 degrees to C/A. 77.42: 4 mm wide chlorite/corporting quarter trace coloite SPH CPX PX, vainlet at 34 degrees to C/A.				
		78.03 - 78.49: Three up to 1 mm wide calcite, minor-moderate SPH, occasional minor CPY-rare GN, stringers at 55-60 degrees to C/A.				
		78.81 - 78.95: Two 1-5 mm wide orange quartz/feldspar, minor calcite, veinlets at 56 and 48 degrees to C/A; barren.				
		78.97 - 79.21: Xenolith of mafic volcanics; cross cut by a 2.5-4 cm wide vein comprised of a mass of aligned acicular actinolite, alignment at ~20 degrees to C/A; vein has sharp upper and lower contacts at 44 degrees and 36 degrees to C/A; vein is cross cut by a calcite stringer.				
80.80	88.26	PILLOWED MAFIC VOLCANICS:				
		Continuation of preceding pillowed mafic volcanics (46.63 - 68.18); mostly medium olive green; minor-moderate PY/PO disseminations-aggregates-short stringers; occasional cm-sized very fine-grained quartz-epidote, occasional PY/PO/SPH, aggregates.				
		80.8 - 81.09: Pale green very fine-grained silicified aggregate; abundant (5%) SPH disseminations-aggregates; very irregular sharp contacts.				
		81.52 - 81.67: 7 cm wide band of abundant orange-brown mm-sized aphanitic quartz aggregates in a blue-gray groundmass; minor PY-PO-CPY-SPH; wall rock is also blue-gray and contains minor amount of the aggregates; band at ~45 degrees to C/A.				
		81.67 - 82.28: Massive milky white quartz vein; very heterogeneous; abundant wall rock-orange-brown quartz inclusions; very fractured - fractures coated with chlorite, minor-moderate PY/PO/CPY/SPH, rare calcite; "ragged" gradational upper contact at 25-30 degrees to C/A - abundant PO-PY-CPY-SPH-chlorite flakes; fairly regular sharp lower contact at ~60 degrees to C/A.				
		82.28 - 83.35: Continuous serpentine coated fracture at 3 degrees to C/A.				
		84.18 - 84.37: 1 mm wide quartz-chlorite, moderate PY-PO, minor CPY, stringer at 16 degrees to C/A.				
		85.53 - 85.73: Poorly developed 2 cm wide calcite-wall rock, moderate PO-PY, minor CPY, vein at 23 degrees to C/A; a few up to 13 mm across quartz-epidote orbicules with orange quartz/feldspar cores; moderate PY-PO in surrounding wall rock.				
		86.26 - 86.45: 2 mm wide quartz-chlorite, trace calcite, moderate PO-PY-CPY, veinlet at 15 degrees to C/A.				
		86.77: Calcite, moderate PO, minor CPY-SPH, stringer at 68 degrees to C/A.				
		86.77: Calcite, moderate PO, minor CPY-SPH, stringer at 68 degrees to C/A.				
		57.54 - 57.00. Three Calolie, faile of Firon 1, stimigers at 00-00 degrees to O/A.				

HOLE # :		COB-22					Page # 8
From	То	Lithological Description	Sample #	Fror	n To	Width	
88.26	- 117.56	LAMPROPHYRE DYKE: Similar to lamprophyre dyke at (68.18 - 80.8) except that central part is medium-grained and contains abundant (25%) biotite; scattered generally <3 cm-sized xenoliths of mafic volcanics; scattered calcite, occasional moderate orange quartz/feldspar, occasional rare CPY/PY, stringers at 30-35 degrees to C/A; 2-5, locally up to 10, serpentine coated, with or without calcite/PY/occasional minor GN/CPY/SPH, joints/fractures per metre at 25-35 degrees and 65-85 degrees to C/A; upper and lower contacts are intrusive breccias in part roughly parallel to C/A. 89.26 - 90.15: Eight serpentine-calcite coated, usually with trace-minor PY/CPY/GN, joints/fractures at 70-85 degrees to C/A. 90.72: Merging 1 cm wide calcite, minor CPY, trace SPH-GN, gash vein at 33 degrees to C/A and 2 mm wide calcite, trace PY-CPY, veinlet at 21 degrees to C/A. 90.94 - 91.57: Several calcite stringers-up to 4 mm wide gash veinlets at 45-85 degrees to C/A; cm-sized breccia with calcite matrix; rare PY-CPY; brownish weakly carbonatized wall rock. 92.12: 2 mm wide calcite, rare GN, gash veinlet at 41 degrees to C/A. 92.29 - 92.63: Mafic intrusive dykelet; massive, medium green, fine-grained; disseminated <1 mm-sized darker green spots; minor disseminated PY; a few 1-3 cm-sized pale brown very fine-grained quartz-SPH aggregates with diffuse margins; sharp upper contact at 41 degrees to C/A; sharp lower contact at 59 degrees to C/A, cross cut by a chlorite, moderate semi-massive PY, stringer at 161 (19) degrees to C/A.	-	-		-	
		<ul> <li>95.62 - 95.7: 2.2 cm wide alteration band with fairly sharp contacts at 38 degrees to C/A; contains a calcite stringer and up to 6 mm wide poorly developed vein, minor PY.</li> <li>95.89 - 96.23: Five up to 4 mm wide quartz-epidote, occasional moderate calcite-trace PY-CPY, stringers-veinlets at 30-38 degrees to C/A.</li> <li>98.7 - 98.85: 1 mm wide calcite, moderate epidote, rare GN, veinlet at 21 degrees to C/A.</li> <li>100.71 - 100.94: Two 7-9 cm long xenoliths of mafic volcanics.</li> <li>100.8: Calcite, trace CPY, rare GN-SPH, stringer at 68 degrees to C/A.</li> <li>101.0: Calcite, moderate CPY-GN, stringer at 63 degrees to C/A.</li> <li>101.55 - 101.73: Mafic intrusive dykelet; resembles mafic intrusive dykelet at (92.29 - 92.63), slightly paler green; sharp upper contact at 42 degrees to C/A; sharp lower contact at 47 degrees to C/A.</li> <li>101.55 - 101.74: Three 1-3 mm wide quartz-epidote, minor calcite, minor-moderate GN-SPH, veinlets at 55-79 degrees to C/A; calcite, abundant GN, stringer at 48 degrees to C/A; cross cut above dykelet.</li> <li>102.16 - 103.23: About 15 up to 3 mm wide quartz-epidote/chlorite, occasional minor-moderate GN/minor CPY/PY/rare SPH, stringers-veinlets at 40-45 degrees and 155-165 (15-25) degrees to C/A.</li> <li>103.96 - 104.07: Three up to 2 mm wide quartz-epidote, moderate calcite, rare GN, stringers-veinlets at 50 degrees to C/A.</li> <li>104.36: 2 mm wide quartz-epidote, trace calcite-PY-CPY, veinlet at 44 degrees to C/A.</li> <li>104.36: 2 mm wide quartz-epidote, trace calcite-PY-CPY, veinlet at 44 degrees to C/A.</li> <li>106.64: 3 mm wide calcite-serpentine veinlet at 76 degrees to C/A; barren.</li> </ul>					

HOLE # :		COB-22				Page # 9
From	То	Lithological Description	Sample #	From 1	o Widti	h
-	-	106.78 - 107.05: 6 mm wide quartz-chlorite-calcite, moderate PY, rare SPH-CPY, vein at 43 degrees to C/A; two 1- 3 mm wide barren quartz-epidote veinlets at 40 and 32 degrees to C/A.	-	-	-	
		108.39: Segmented en echelon calcite-epidote, moderate GN, stringer at 58 degrees to C/A. 109.04: 5 mm wide quartz-chlorite-calcite, minor PY-SPH, trace CPY, vein at 139 (41) degrees to C/A; cross cut by two barren calcite stringers at 38 degrees to C/A.				
		109.53: 4 mm wide calcite, minor epidote, trace GN-SPH, veinlet at 56 degrees to C/A. 111.14: 1-2 mm wide quartz-epidote, minor PY, veinlet at 36 degrees to C/A; cross cut by a subparallel 1 mm wide calcite, minor epidote-PY, rare CPY-GN, veinlet.				
		111.79 - 112.14: Three 1 mm wide calcite-epidote, rare GN-CPY, veinlets at 41-54 degrees to C/A. 112.07 - 112.51: Two calcite stringers at 0-15 degrees to C/A; cross cut above veinlets. 113.78 - 114.16: A few up to 1 cm wide bands of anastomosing epidote stringers, minor breccia, at 130-160 (20-				
		50) degrees to C/A. 114.18 - 114.32: Three up to 2 mm wide calcite, minor pale red quartz/feldspar, rare CPY-GN, stringers-veinlets at				
		114.65 - 117.56: Scattered zones of minor disseminated fine PY and occasional discontinuous PY stringers. 115.5: 3 mm wide calcite, abundant GN, trace CPY, veinlet at 65 degrees to C/A.				
		116.34: 4 mm wide calcite, moderate GN-SPH-CPY, gash veinlet at 59 degrees to C/A. 116.96 - 117.07: 5 mm wide poorly developed quartz-chlorite, minor calcite, abundant CPY-PY, minor GN-SPH, vein at 26 degrees to C/A; offshoot with minor SPH-CPY-PY at 60 degrees to C/A.				
117.56	118.72	INTERLAYER/XENOLITH OF PILLOWED MAFIC VOLCANICS:				
		117.56 - 117.95: Pillow breccia; pale green fragments in a darker green chloritic matrix, minor-moderate PY, trace CPY; minor 3-15 mm-sized calcite, moderate CPY, minor PY, aggregates in matrix as well; minor quartz-epidote, usually with minor PY/CPY/SPH, aggregates in volcanics.				
		117.95 - 118.72: Massive interval; medium green; minor-moderate mm-sized quartz-epidote/chlorite, moderate SPH, minor PY/CPY, aggregates; minor up to 4 cm long very fine-grained intermixed quartz-SPH-GN aggregates in lower 35 cm of interval.				
118.72	173.75	LAMPROPHYRE DYKE: Similar to preceding lamprophyre (88.26 - 117.56); scattered calcite, with or without pale red quartz/feldspar/trace- minor GN/SPH, stringers-veinlets at 25-35 degrees and 65-75 degrees to C/A; 1-4, rarely up to 7, serpentine coated, with or without calcite/PY/platy PY/rare GN, often hematitized, joints/fractures per metre at 35-55 degrees and 75-80 degrees to C/A; upper contact marked by a ragged 1-5 mm wide quartz-chlorite, minor calcite, abundant PY, moderate CPY, gash vein at 26 degrees to C/A, a few barely discernible cm-sized xenoliths below contact; very irregular intrusive breccia-like lower contact in part roughly parallel to C/A.				

HOLE # :		COB-22					Page # 10
From	То	Lithological Description	Sample #	From	n To	Width	
-	-		-	-		-	
		120.6: 1-3 mm wide guartz, moderate CPY-PY-SPH, veinlet at 32 degrees to C/A.					
		120.84 - 121.01: Poorly developed 1 cm wide quartz-chlorite, trace calcite, minor SPH-PY, trace CPY, vein at 25 degrees to C/A; cross cut by an up to 6 mm wide calcite-epidote-orange quartz/feldspar, abundant SPH, moderate GN, trace CPY-PY, vein at 72 degrees to C/A and at 25 degrees to C/A as it partially occurs within the 1 cm wide vein; 1-2 mm wide serpentine/chlorite, minor orange quartz/feldspar, moderate SPH, minor GN, veinlet at 62 degrees to C/A.					
		121.1: Up to 2 mm wide calcite, moderate orange quartz/feldspar-GN, gash veinlet at 80 degrees to C/A. 121.46 - 121.68: Two up to 1 mm wide quartz-chlorite, minor-moderate PY-SPH, stringers at 27-33 degrees to C/A; SPH-CPY-PY coated fracture at 68 degrees to C/A.					
		121.86: 2 mm wide calcite, abundant GN, moderate SPH, gash veinlet at 30 degrees to C/A.					
		122.11: 80% SPH coated fracture at 77 degrees to C/A.					
		122.11 - 122.19: 1.5-2 cm wide quartz-chlorite, abundant SPH-PY, vein at 43 degrees to C/A.					
		122.8 - 123.49: About six calcite, trace-minor SPH, stringers at 35-45 degrees to C/A.					
		123.65 - 123.76: Subrounded pyroxenitic xenolith.					
		123.85: 2 mm wide serpentine-calcite, minor quartz, abundant GN, veinlet at 66 degrees to C/A. 124.04 - 124.55: Four up to 2 mm wide calcite, usually with rare-minor GN/SPH/CPY, stringers-veinlets at 69-73 degrees to C/A: two poorly developed quartz, minor-moderate PY, stringers at 155 (25) degrees to C/A.					
		125.53: 2 mm wide calcite minor epidote, trace GN, veinlet at 76 degrees to C/A.					
		126.01 - 126.15; Subrounded autolith; minor biotite; minor epidotization; sharp contacts.					
		126.08 - 126.31: Four up to 2 mm wide calcite, minor epidote, stringers-veinlets at 67-70 degrees to C/A; one at 111 (69) degrees to C/A; barren.					
		126.35 - 126.46: 5 mm wide chlorite-quartz-serpentine, minor calcite-PY, trace CPY, veinlet at 24 degrees to C/A.					
		126.67 - 127.77: About ten up to 3 mm wide calcite, occasional rare CPY/GN, stringers-veinlets at 60-80 degrees to C/A; two at 40-45 degrees to C/A.					
		127.1 - 127.44: Autolith; minor biotite; minor disseminated PY; minor epidotization; sharp but very irregular contacts.					
		127.89 - 128.0: Three up to 2 mm wide calcite, occasional rare GN or trace CPY, veinlets at 61-69 degrees to C/A.					
		128.0 - 128.76: Autolith; minor biotite; minor disseminated PY; minor epidotization; sharp but very irregular contacts.					
		130.73 - 131.06: About twelve diffuse calcite stringers and two 1-2 mm wide calcite veinlets at 30-35 degrees to C/A; barren.					
		131.05 - 131.9: Moderately to strongly carbonatized lamprophyre; sharp upper contact at 50 degrees to C/A; sharp lower contact at 62 degrees to C/A.					
		132.11 - 132.35: Two 2-3 mm wide calcite, rare CPY-GN, veinlets at 68 and 59 degrees to C/A; 5 mm wide layer of alternating calcite and orange quartz/feldspar laminae at 67 degrees to C/A, trace PY.					

HOLE # :		COB-22						Page # 11
From	То	Lithological Description	Sample	#	From	То	Width	
-	-	133.18: 3-4 mm wide calcite, minor orange quartz/feldspar, minor PY, trace CPY, veinlet at 45 degrees to C/A. 133.68 - 134.31: 1-2 cm wide calcite, minor PY, trace GN, vein at 28 degrees to C/A; 1-10 mm wide calcite, moderate PY, vein at 6 degrees to C/A; several calcite, rare PY, offshoots-stringers; minor disseminated PY in wall rock.	-		-		-	
		134.57 - 135.09: 2-5 mm wide quartz-epidote-chlorite, trace-minor calcite-PY, trace CPY, veinlet at 3 degrees to C/A: minor disseminated PY in wall rock: two calcite, one with minor CPY, stringers at 69 and 73 degrees to C/A.						
		135.85: 2 mm wide calcite veinlet at 55 degrees to C/A; adjacent calcite stringer at 66 degrees to C/A; barren. 136.9 - 137.07: Two 1 mm wide calcite, minor CPY, stringers at 68 degrees to C/A; 3 mm wide calcite, moderate orange quartz/feldspar, veinlet at 74 degrees to C/A; barren.						
		137.43: 1 mm wide calcite veinlet at 64 degrees to C/A; barren.						
		137.65 - 137.75: Two calcite, one with minor PY, stringers at 62 and 46 degrees to C/A.						
		138.23 - 138.41: 7 mm wide calcite, serpentine, wall rock, moderate orange quartz/feldspar, trace PY, rare GN, vein at 45 degrees to C/A; 3-8 mm wide quartz-epidote-chlorite, minor calcite-PY, vein at 135 (45) degrees to C/A, adjacent similar gash vein.						
		138.59: 5 x 4 cm-sized subrounded mafic volcanic or mafic intrusive xenolith.						
		139.31: Calcite stringer at 52 degrees to C/A; barren.						
		140.04 - 140.32: Two 1-2 mm wide quartz-epidote, minor moderate calcite, rare PY, veinlets at 33 and 24 degrees to C/A.						
		140.77: Calcite-epidote, trace CPY, stringer at 54 degrees to C/A.						
		142.17: 1 mm wide calcite-chlorite, minor PY, veinlet at 25 degrees to C/A. 142.8 - 143.0: Three up to 2 mm wide calcite, moderate epidote, trace CPY, stringers-veinlets at 69 degrees to C/A; cross cut a 2-3 mm wide quartz, minor calcite, moderate PY, veinlet at 25 degrees to C/A.						
		143.65 - 150.25: At least 75, up to 3 mm wide, calcite stringers-veinlets at 30-60 degrees to C/A; rare PY/CPY, local minor PY below 148.0; local minor hematitization; minor disseminated PY in wall rock; up to 3 mm-sized biotite flakes.						
		144.83 - 145.05: 1-6 mm wide, pinch and swell, calcite, minor serpentine, vein at 13 degrees to C/A; barren; cross cuts all other calcite stringers-veinlets.						
		145.51 - 145.63: 5 mm wide calcite, rare PY, vein at 27 degrees to C/A.						
		146.52: 7 x 4 cm-sized rounded mafic volcanic xenolith.						
		147.05: 5 mm wide calcite gash vein at 47 degrees to C/A; barren.						
		150.29: Up to 3 cm wide mafic volcanic xenolith that passes through core.						
		151.26: 5 cm long subrounded mafic volcanic xenolith.						
		to C/A.						
		151.87 - 152.05: 6 cm-sized xenolith of pillowed mafic volcanics; 2 cm wide band containing a 2 mm wide calcite veinlet and a 7 mm wide calcite gash vein, both at 19 degrees to C/A; rare CPY-PY.						

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From	То	Lithological Description	Sample	#	From	n To	Width	
-	-	152.23 - 152.32: Five calcite stringers at 15-38 degrees and 70-78 degrees to C/A; one speck of CPY.	-		-		-	
		152.50. A min wide calcite, trace of 1, stinger at 05 degrees to 0/A.						
		154.96 - 155.18: Pale orange medium- coarse-grained feldspar porphyry xenolith						
		155.22 - 155.62: Two 5-8 cm long mafic or intermediate intrusive xenoliths; one 6 cm long mafic volcanic xenolith						
		155.78: Slightly ground end of a piece of core; remnant 3 mm wide massive PY-calcite veinlet at 74 degrees to C/A.						
		155.81 - 155.88: 2-2.5 cm wide calcite, minor orange quartz/feldspar-serpentine along margins, vein at 50 degrees to C/A; barren.						
		156.44 - 156.51: Two calcite-epidote-orange quartz/feldspar, rare CPY, stringers at 59 and 66 degrees to C/A.						
		158.09 - 158.6: Seven calcite stringers at 66-83 degrees and ~25 degrees to C/A; barren; 6 cm long mafic or intermediate intrusive xenolith.						
		158.41 - 158.49: 4-2.5 cm wide wedge shaped calcite, minor wall rock, serpentine, minor PY, vein at ~42 degrees to C/A.						
		158.77 - 158.9: Minor breccia; criss-crossing up to 5 mm wide calcite stringers-veinlets; minor PY.						
		159.1: 10 cm long spotted textured mafic volcanic (or intrusive) xenolith.						
		159.36: Calcite-orange quartz/feldspar, minor PY, stringer at 27 degrees to C/A.						
		159.76: Calcite, trace CPY-PY, stringer at 59 degrees to C/A.						
		160.27 - 160.8: Mafic intrusive dykelet; massive, dark gray, fine- medium-grained, minor disseminated 1-3 mm- sized chloritic spots; local minor carbonatization; sharp upper contact at 46 degrees to C/A; sharp lower contact at 47 degrees to C/A.						
		160.87 - 160.98: Calcite, minor PY, trace CPY, stringer at 26 degrees to C/A.						
		161.64 - 162.78: Eight up to 2 mm wide quartz-chlorite, minor-abundant calcite, occasional trace-minor PY, stringers-veinlets at 12-20 degrees to C/A; seven cross cutting up to 1 mm wide calcite, one with minor PY, stringers at 58-83 degrees to C/A.						
		161.96: 5 cm long subrounded mafic volcanic xenolith; moderate disseminated PY.						
		161.98 - 162.11: 2-6 mm wide calcite, moderate orange quartz/feldspar, minor PY, vein at 24 degrees to C/A.						
		162.78 - 163.93: Strongly carbonatized lamprophyre(?); mottled pale pink-pale gray-medium green; local minor- moderate 1-3 mm-sized disseminated PY grains/aggregates; lower 45 cm of interval consists of cm- dm-sized carbonatized patches "floating" in normal lamprophyre; sharp very irregular upper contact at ~26 degrees to C/A; gradational lower contact.						
		163.14: Irregular up to 5 mm wide calcite veinlet at ~40 degrees to C/A; barren.						
		163.93 - 164.17: Xenolith of pillowed mafic volcanics; local abundant PY.						
		164.4 - 164.79: Two up to 2 mm wide barren calcite veinlets at 73 degrees to C/A; 1-5 mm and 8 mm wide calcite, minor epidote-PY, veins at 25 degrees to C/A; one of the 25 degree veins cross cuts one of the 73 degree veinlets.						

HOLE # :		COB-22					Page
From	То	Lithological Description	Sample #	From	То	Width	
-	-	164.79 - 165.59: Mafic intrusive(?) dykelet; truncates one of the preceding 25 degree veins; upper 35 cm of interval is strongly carbonatized, medium brownish green-gray, fine grained, minor disseminated PY, gradational lower contact; rest of interval is dark green-gray, fine-grained with 1-2 mm-sized chloritic spots, locally weakly carbonatized; sharp upper contact at 55 degrees to C/A; sharp lower contact marked by a calcite-quartz, minor PY, stringer at 45 degrees to C/A.	-	-		-	
		165.0: Irregular up to 2 mm wide calcite veinlet at ~55 degrees to C/A; barren. 165.8 - 165.93: Up to 1.5 cm wide calcite, minor PY, gash vein at 19 degrees to C/A; pinches out completely; truncates a barren calcite stringer at 68 degrees to C/A.					
		166.15 - 166.31: 5 mm wide calcite, moderate orange quartz/feldspar-epidote, trace PY, vein at 14 degrees to C/A.					
		<ul> <li>166.44 - 166.56: Segmented pyroxenitic xenolith.</li> <li>166.83 - 166.9: Two calcite, moderate PY, trace-minor CPY, stringers at 79 degrees to C/A.</li> <li>166.85 - 167.02: Strongly carbonatized intrusive(?) dykelet(?); ~30% 2-3 mm-sized medium brown spots in a medium gray groundmass; all are fine-grained; sharp upper contact at 62 degrees to C/A; sharp lower contact at 60 degrees to C/A.</li> </ul>					
		167.67 - 168.35: Strongly carbonatized intrusive(?) dykelet(?); medium green-gray; fine- medium-grained; minor- moderate biotite; local minor disseminated PY; contact zones resemble rock at (166.85 - 167.02); sharp upper contact at 47 degrees to C/A; sharp lower contact at 51 degrees to C/A; overlying and underlying normal lamprophyre is also carbonatized.					
		168.03: 1-2 mm wide calcite veinlet at 29 degrees to C/A; barren. 168.78 - 173.71: About 20 calcite stringers-veinlets, including four 5-8 mm wide veins, mostly at 20 degrees to C/A; minor-moderate epidote/quartz; essentially barren - a few veinlets with trace-minor PY/CPY; cross cut xenoliths logged below as well.					
		<ul> <li>170.41 - 171.21: Xenolith of mafic volcanics; local minor PY disseminations.</li> <li>171.77 - 172.29: Xenolith of strongly epidotized pillowed mafic volcanics; ~10 cm long section of carbonatized interpillow material with moderate PY.</li> </ul>					
		173.03 - 173.56: Semi-continuous feldspar porphyry xenolith; mottled off white-medium orange-medium brown, medium-grained; minor disseminated PY.					
173.75	190.15	BRECCIATED PILLOWED MAFIC VOLCANICS: Very heterogeneous, pale-medium green/green-gray, aphanitic-very fine-grained; minor local pillow breccia; locally magnetic; pervasively carbonatized wall rock; abundant insitu breccia - matrix comprised of networks of pale gray- pale green-gray (quartz/epidote) stringers-veinlets-aggregates usually with intermixed calcite; strongly epidotized/silicified/chloritized/carbonatized pillow selvages; minor disseminated PY, lesser CPY, usually with					

pillow selvages and carbonatized interpillow material; 1-3 serpentine, or occasionally epidote-calcite, coated joints/fractures per metre at 25-35 degrees and 45-60 degrees to C/A.

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From	То	Lithological Description	Sample	#	From	То	Width	
-	-	174.45 - 176.57: About nine up to 7 mm wide calcite stringers-veinlets-veins at 15-25 degrees to C/A; minor- moderate quartz/epidote; occasional minor PY-trace CPY; a few 1-2 mm wide calcite veinlets at 65-70 degrees to C/A, occasional trace PY/CPY.	-		-		-	
		178.65 - 178.76: 2 mm wide calcite veinlet and calcite stringer at 64 and 79 degrees to C/A; rare CPY. 178.89 - 179.17: 2 mm wide calcite, moderate quartz-epidote, rare PY-CPY, veinlet at 13 degrees to C/A. 179.97 - 180.05: Calcite stringer and 2 mm wide calcite, rare CPY, veinlet at 66 degrees to C/A. 180.16 - 180.36: Strongly carbonatized interpillow material; moderate CPY-PY; underlain by a truncated (by a slip plane at 76 degrees to C/A) ~5 mm wide barren calcite vein at 10 degrees to C/A.						
		180.58 - 180.8: 4 mm-2 cm wide calcite, moderate quartz-epidote, vein at 22 degrees to C/A; barren; cross cut by an irregular 1-2 mm wide hematitized calcite veinlet at 165 (15) degrees to C/A.						
		<ul> <li>181.27: Irregular 8 mm wide calcite, moderate quartz-epidote, moderate PY, vein at 78 degrees to C/A.</li> <li>182.08 - 182.3: A few up to 3 mm wide calcite-epidote-quartz stringers-veinlets at 18-22 degrees to C/A; barren.</li> <li>182.41 - 182.52: 3 mm wide calcite, moderate quartz-epidote, trace PY, veinlet at 155 (25) degrees to C/A.</li> <li>183.19 - 183.33: 1 mm wide calcite-epidote stringer at 14 degrees to C/A; barren.</li> <li>184.31: 5-7 mm wide calcite vein at 30 degrees to C/A; barren; abundant epidote alongside the vein.</li> <li>184.93 - 185.3: Two 2-3 mm wide calcite, moderate quartz-epidote, rare PY, veinlets at 21 and 16 degrees to C/A.</li> <li>187.26 - 187.63: Two 1-2 mm wide calcite-quartz-epidote veinlets at 20 and 33 degrees to C/A; barren.</li> <li>188.26 - 189.84: At least 15 calcite-epidote-quartz, occasional rare PY, stringers at 30-35 degrees to C/A.</li> <li>188.72 - 189.14: Volcanic breccia; mm- cm-sized subangular-subrounded fragments in a strongly carbonatized matrix; matrix supported.</li> <li>189.09: 4 mm wide calcite, moderate epidote-quartz, trace CPY, veinlet at 36 degrees to C/A.</li> <li>189.56 - 189.67: Wedge shaped semi-massive PY-CPY aggregate at ~22 degrees to C/A; underlain by a calcite, minor CPY, stringer at 64 degrees to C/A; abundant very fine MT in wall rock.</li> <li>189.98 - 190.7: At least 20 up to 5 mm wide calcite, occasional moderate quartz or minor PY/CPY, stringers-veinlets at 40-75 degrees to C/A.</li> </ul>						
190.15	200.00	CARBONATIZED PYROXENITE: Massive, fairly homogeneous, mottled medium-dark green-off white, medium-grained; generally interstitial calcite throughout, local interstitial quartz; local minor disseminated 1-3 mm-sized PY cubes; occasional serpentine coated joints/fractures at 55-65 degrees to C/A; sharp upper contact, underlain by a chill margin, at 49 degrees to C/A.						
		191.0 - 194.0: 5-7 calcite stringers-up to 5 mm wide veinlets per metre at 60-70 degrees and less often at ~45 degrees to C/A; rare-trace PY/CPY.						
		191.74 - 191.83: 1-1.5 cm wide pale pink quartz, minor calcite, vein at 26 degrees to C/A; very fractured; rare CPY; lower end of vein truncated by a serpentine-calcite coated joint/slip plane at 63 degrees to C/A.						

HOLE # :		COB-22					Page # 15
From	То	Lithological Description	Sample	#	From To	Width	
-	-		-		-	-	
		195.64: 1.8 cm wide calcite, minor quartz-serpentine-PY, vein at 41 degrees to C/A; minor disseminated PY in wall rock.					
		198.35: Serpentine-calcite coated, moderate platy PY, fracture at 34 degrees to C/A.					
		200.0 E.O.H					

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Property Name:		COBALT AREA PROJECT	GRID NAME: Waldman	LOGGED BY:	H. Pintson
Hole #:		COB-23	Claim #: 1247791	DRILLED BY:	Norex Drilling
Grid Bearin	g:	00	BEARING: 325 degrees	SURVEY TYP	E: Acid Test
Easting		-103	INCLINATION: -45 degrees	START: May	18, 2005
Northing:		-535	TOTAL DEPTH: 164 m	FINISH: May 2	25, 2005
Elevation:		312 m	CORE STORED AT: R. Nobes	Pa	ge # 1 of 14
From	То	Lithological Description		Sample #	From To Width
0.00	3.45	Overburden; casing left in ground.			
3.45	11.34	PILLOWED MAFIC VOLCANICS: Massive, heterogeneous; medium green, gray - slightly coarser grained salt and pe very pale green feldspar groundmass; mi fractures or dark green chloritic fractures, "matrix" stringers-veinlets-veins; silicified, material; all of the preceding generally wi very fine-grained aggregates), dissemina quartz-rich aggregates with PO-CPY-occ joints/fractures per metre at 30-45 degree 4.04 - 4.08: Three discontinuous calcite, 1 5.14 - 5.33: Pillow selvage at ~10 degree disseminations-blebs in wall rock. 5.8: Intersection of two quartz, moderate discontinuous quartz-epidote, abundant F 6.42: Quartz-epidote, minor calcite, mino	locally pale green; aphanitic-very fine-grained, locally mottled green-pal opper texture (~50% ~1 mm-sized angular-rounded dark green spots in a nor-moderate insitu breccia - matrix of pale gray-green network of hairlin , occasional quartz-chlorite/serpentine-epidote-occasional feldspar ,epidotized, occasionally carbonatized, pillow selvages/interpillow th trace-minor PO/PY/CPY/SPH (SPH usually intermixed with quartz in tions-blebs-short stringers; abundant up to 20 cm-sized fine-grained asional SPH; rare calcite stringers-veinlets; 1-3 serpentine coated es and 55-75 degrees, rarely at ~15 degrees, to C/A, limonitized to 4.5. minor PY, stringers at ~60 degrees to C/A. s to C/A; moderate PO, trace CPY; moderate-abundant PO PO-CPY, stringers at 128 (52) and 63 degrees to C/A; 1 cm wide PO-CPY, aggregate. r PO, trace CPY, stringer at 69 degrees to C/A; irregular up to 2 mm wide	e ne	
		silicification of adjacent wall rock. 7.72 - 7.95: Pillow selvage-interpillow ma PO, minor CPY.	terial at ~0 degrees to C/A; minor carbonatization; moderate-abundant		
		8.0 - 8.72: Nearly continuous serpentine 8.41 - 8.56: One pillow selvage, abundan at 63 degrees to C/A and adjacent quartz	coated joints/fractures at 0-15 degrees to C/A; locally moderate platy PY t PO, minor PY-CPY; one 7 mm wide quartz-chlorite-epidote matrix vein z-epidote aggregates, moderate CPY-PO.		
		8.74: Irregular branching up to 5 mm wide 8.81 - 8.93: Quartz-epidote and quartz-ch 9.18 - 9.35: Surficial quartz-epidote-orang CPY aggregate.	e quartz-epidote matrix vein and aggregate; moderate PO, minor CPY. nlorite aggregates; abundant PO, minor CPY. ge feldspar, minor PO, aggregate; encloses a 2 x 3 cm-sized quartz-PO-		
		9.6 - 9.93: Several serpentine coated, mi	nor calcite, joints/fractures at 10-35 degrees to C/A.		
		9.93: Core break; <1 mm wide calcite, at	oundant PO, minor CPY, stringer at 70 degrees to C/A.		

HOLE # :		COB-23					Page #
From	То	Lithological Description	Sample #	From	То	Width	
-	-		-	-		-	
		11.0: Minor broken core; four fragments each with an ~1 mm wide calcite coated, moderate PO, minor CPY, fracture surface.					
		11.23 - 11.76: In descending order; one quartz, minor calcite, moderate PO, minor CPY, stringer at 44 degrees to C/A; one serpentine, minor calcite, trace PY, stringer at 60 degrees to C/A; set of three 2-4 mm wide calcite, minor quartz-serpentine, minor-abundant PO, trace CPY, veinlets at 55-65 degrees to C/A; one serpentine coated, minor PO-CPY, joint/fracture at 68 degrees to C/A; one serpentine-quartz-epidote, moderate CPY, minor PY, stringer at 104 (76) degrees to C/A.					
11.34	13.76	MAFIC INTRUSIVE DYKE:					
		Massive, medium brown-gray; very fine-grained margins, fine- medium-grained core; feldspathic - moderate acicular-prismatic grains; sharp upper intrusive breccia contact at 48 degrees to C/A, 7 mm - 8 cm wide vein-wedge of intrusive material underlain by 25 cm long xenolith/clast of pillowed mafic volcanics, sharp lower contact of xenolith at 39 degrees to C/A; very irregular lower contact at ~36 degrees to C/A.					
		11.97 - 12.19: Set of four up to 2 mm wide calcite, minor quartz-epidote, trace-minor CPY-SPH-PY-PO, rare GN, veinlets at 43-58 degrees to C/A.					
		12.34: Serpentine-calcite-SPH-CPY-GN coated joint/fracture at 57 degrees to C/A. 12.93: 1-2 mm wide calcite, moderate SPH-GN, trace CPY, veinlet at 31 degrees to C/A.					
		13.44 - 13.82: Set of seven calcite, abundant PO, trace-moderate SPH, trace-minor CPY, rare GN, stringers at 50-75 degrees to C/A; at 13.82 have 2 mm wide calcite, semi-massive PO, minor CPY, veinlet at 78 degrees to C/A, semi-massive PO in volcanic wall rock adjacent to this veinlet.					
13.76	37.65	PILLOWED MAFIC VOLCANICS:					
		Continuation of preceding pillowed mafic volcanics at (3.45 - 11.34).					
		14.49 - 14.81: Serpentine coated, calcite cored, joint/fracture at 5 degrees to C/A. 15.67 - 15.86: Very irregular epidote-quartz-remnant wall rock aggregate; abundant PO - locally stockwork-like, minor CPY-SPH.					
		15.94 - 16.04: Up to 1 cm wide quartz-epidote, trace calcite, abundant PO, minor CPY, vein-like aggregate at 29 degrees to C/A.					
		16.4 - 16.56: Quartz-epidote, moderate PO-intermixed quartz-SPH, trace CPY, aggregate. 16.73 - 17.03: Mafic intrusive dykelet; dark green gray, fine-grained; sharp upper contact at 44 degrees to C/A; slightly irregular lower contact partially marked by a PO-quartz vein/aggregate at 39 degrees to C/A; 2.5 x 8 cm-					
		sized emptical quartz-ro-or t, minor orn, aggregate with rainy sharp contacts just below dykelet.					

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HOLE # :		COB-23						Page # 3
From	То	Lithological Description	Sample	#	From	То	Width	
-	-	17.41 - 17.61: 1.5 cm wide quartz, minor chlorite-epidote-feldspar, abundant PO, moderate SPH-CPY, vein at 20 degrees to C/A; vein does not persist to opposite side of core.	-		-		-	
		17.64: ~2 mm wide essentially massive SPH, minor PY, veinlet at 60 degrees to C/A.						
		17.88 - 17.94: 6 cm wide quartz-chlorite, moderate PO, trace CPY, vein with parallel contacts at 56 degrees to C/A; unlike other quartz-rich aggregates this one is clearly cross cutting.						
		18.79: 1 mm wide quartz-serpentine, enclosed massive PY stringer, veinlet at 57 degrees to C/A. 19.41 - 19.78: Up to ~1.5 cm wide quartz-epidote-orange feldspar, moderate PO, minor SPH-CPY, vein at 11						
		degrees to C/A.						
		20.0 - 20.13: Quartz-serpentine, minor calcite, moderate GN, minor CPY-PO-SPH, stringer at 21 degrees to C/A. 20.16 - 20.5: Badly broken core; several serpentine coated, occasional calcite/minor platy PY, fractures at 10-65 degrees to C/A.						
		20.67: Serpentine coated, minor guartz, moderate platy PY, joint/fracture at 40 degrees to C/A.						
		20.77: Serpentine-quartz, minor coarse SPH, gash veinlet at 50 degrees to C/A.						
		21.07: 1 mm wide quartz, semi-massive PO, trace CPY, veinlet at 39 degrees to C/A; cross cuts a quartz, moderate PO, minor CPY-SPH, aggregate.						
		22.06 - 22.26: Irregular up to 5 cm wide quartz-epidote-calcite, abundant SPH-PY-GN, minor CPY, vein at ~15 degrees to C/A; fairly sharp contacts.						
		22.49: Quartz-PY stringer at 41 degrees to C/A.						
		22.84: Minor serpentine-GN coated fracture at 34 degrees to C/A.						
		23.09 - 23.2: Up to 1 cm wide quartz-chlorite, moderate PY, minor CPY-SPH, trace GN, vein at 26 degrees to C/A.						
		23.43 - 24.0: Laminated quartz, quartz-orange feldspar, quartz-epidote, wall rock slivers, vein; up to 2 cm wide						
		aminations at ~15 degrees to C/A; locally abundant PY/PO, minor CPY, trace SPH; fairly regular upper contact at ~17 degrees to C/A; lower contact is a breccia zone.						
		24.56 - 24.83: Three 1-2 cm wide breccia bands; wall rock fragments in an epidote-rich matrix; sharp contacts at 50-70 degrees to C/A; minor PO, trace CPY.						
		25.64 - 25.9: Epidote-quartz-calcite, minor orange feldspar, minor-moderate PO-SPH-CPY, trace GN, vein-like layer; fairly regular-gradational upper contact at 10-40 degrees to C/A; fairly regular lower contact at 22 degrees to C/A						
		26.22: Sementine costed, abundant platy PX, joint/fracture at 48 degrees to C/A						
		27.84 - 28.16: Irregular up to 7 cm wide vein-like calcite-quartz-epidote-chlorite, minor-moderate SPH-PO, trace GN, aggregates/interpillow material.						
		28.12 - 28.55: A few up to 5 mm wide calcite, minor SPH, one with minor semi-massive PY, veinlets at ~37 degrees to C/A; one 3.5 cm long irregular calcite, moderate up to 3 mm-sized subhedral cobaltite, moderate GN, trace CPY-SPH, aggregate; carbonatized wall rock.						

HOLE # :		COB-23						Page # 4
From	То	Lithological Description	Sample	#	From	То	Width	
-	-	28.55 - 28.68: 10 cm wide calcite-orange quartz/feldspar, minor CPY-PY, moderate up to 2 mm wide SPH stringers-laminations, vein; sharp upper contact at 35 degrees to C/A; irregular slightly brecciated lower contact at ~42 degrees to C/A; carbonatized wall rock.	-		-		-	
		28.81 - 28.95: 2 cm wide calcite, minor PY-CPY, vein at 50 degrees to C/A; carbonatized-calcite hairline fracture filled, abundant CPY, wall rock.						
		29.04 - 29.32: Four serpentine-calcite coated, occasional minor CPY-PY, joints/fractures at ~55 degrees to C/A, one at 120 (60) degrees to C/A.						
		<ul> <li>30.48: Very irregular internal contact at ~48 degrees to C/A; truncates overlying pillow selvages.</li> <li>30.54: 2 mm wide calcite-quartz, minor-moderate PO-SPH-CPY, veinlet at 44 degrees to C/A.</li> <li>31.52 - 31.64: Quartz-epidote, minor calcite, trace PO-CPY, aggregate; underlain by a serpentine-calcite coated, abundant PO, minor CPY, joint/fracture at 48 degrees to C/A.</li> </ul>						
		32.17 - 32.29: Irregular calcite-chlorite-quartz, moderate local semi-massive PO-CPY, vein-like band; very irregular contacts at ~20 degrees to C/A.						
		33.04: 4 mm wide serpentine, minor quartz, trace PO-CPY, veinlet at 48 degrees to C/A. 33.8 - 33.98: Mafic intrusive dykelet; massive, medium gray, fine-grained with up to 2 mm-sized black chloritic spots; fairly sharp upper contact at 62 degrees to C/A; lower contact is an intrusive breccia over 1-2 cm.						
		34.33 - 34.62: Three up to 7 x 2 cm-sized calcite, minor-moderate PO, aggregates; 2 mm wide quartz, minor calcite, abundant PO, trace CPY, gash veinlet at 29 degrees to C/A.						
		35.62: Serpentine-calcite-PY coated, minor CPY, joint/fracture at 52 degrees to C/A. 37.04: 3 mm wide quartz, minor serpentine, trace calcite, minor PO, trace CPY, gash veinlet at 29 degrees to C/A. 37.24: 5 x 1 cm-sized calcite-quartz-epidote, moderate PO-CPY, vein-like aggregate at 33 degrees to C/A.						
		to C/A.						
37.65	40.58	MAFIC INTRUSIVE DYKE: Massive, medium brown gray; fine- medium-grained, fine-grained margins; chloritized; a few up to 4 cm-sized quartz-feldspar (similar to alteration products in volcanics) angular xenoliths; four serpentine-calcite coated, occasional minor platy PY, joints/fractures at 15-45 degrees to C/A; sharp upper contact at 43 degrees to C/A; sharp lower contact at 45 degrees to C/A.						
		38.3 - 38.74: Altered, pale green-gray, very fine-grained, siliceous(?) xenolith/interlayer(?); sharp upper contact at 43 degrees to C/A; sharp lower contact at 45 degrees to C/A.						

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HOLE # :		COB-23					Page #
From	То	Lithological Description	Sample #	From	То	Width	
- 40.58	- 73.75	PILLOWED MAFIC VOLCANICS: Continuation of preceding pillowed mafic volcanics at (13.76 - 37.65); local intense brecciation; relatively minor scattered PO-CPY; generally only scattered cm-sized quartz-epidote aggregates with PO-CPY, scarce SPH; salt and pepper textured volcanics are absent; 1-2 serpentine coated, usually with calcite/PY/platy PY, joints/fractures per metre at 30-50 degrees, occasionally at ~70 degrees, to C/A.	-	-		-	
		42.57 - 42.84: Interpillow material-minor pillow breccia; moderate carbonatization, minor PO, trace CPY; cross cut by a sementine-calcite coated, moderate PO, minor CPY, joint/fracture at 46 degrees to C/A					
		<ul> <li>43.23 - 43.47: Interpillow material-pillow selvages; moderate carbonatization; moderate PO, minor CPY.</li> <li>44.81: 6 x 4 cm-sized wedge shaped quartz-epidote, minor calcite, moderate PO-CPY, aggregate; fairly sharp contacts.</li> </ul>					
		45.16 - 45.31: Very fine-grained quartz, minor epidote, trace PO-CPY, aggregate; very irregular but fairly sharp contacts; cross cut by a serpentine-calcite coated, abundant platy PY, minor PO-CPY, joint/fracture at 65 degrees to C/A.					
		<ul> <li>46.04: Calcite, minor PY, scarce CPY, stringer at 56 degrees to C/A.</li> <li>46.27: 2 mm wide calcite, minor PO-CPY, veinlet at 41 degrees to C/A.</li> <li>46.66: Calcite, scarce PO, stringer at 42 degrees to C/A; a few quartz-chlorite, trace calcite, moderate PO, stringers at ~65 degrees to C/A.</li> </ul>					
		<ol> <li>Calcite, moderate PO, trace CPY, stringer at 62 degrees to C/A.</li> <li>47.68: 2-3 mm wide quartz-serpentine, trace calcite, minor semi-massive PO, trace CPY, gash veinlet at 36 degrees to C/A.</li> </ol>					
		48.08 - 48.5: Two up to 18 cm long very fine-grained quartz, moderate calcite, minor disseminated PO, aggregates.					
		48.54: Calcite, scarce PO-SPH, stringer at 56 degrees to C/A.					
		<ul> <li>48.8: Calcite, scarce PO-CPY-SPH, stringer at 44 degrees to C/A.</li> <li>49.93 - 50.07: Very fine-grained quartz, moderate calcite, minor medium-grained SPH-PO, aggregates.</li> <li>50.27 - 50.4: Very fine-grained quartz-intermixed SPH aggregate.</li> <li>50.82 - 50.89: Three up to 3 mm wide quartz-chlorite, minor calcite, minor-moderate PO-CPY, veinlets at 50-63</li> <li>degrees to C/A.</li> </ul>					
		51.22: Quartz-calcite, abundant PO-CPY, stringer at 52 degrees to C/A. 51.71 - 51.83: Very fine-grained quartz-intermixed SPH, trace PO, aggregate. 52.07: Sementine-calcite coated, abundant platy PY, joint/fracture at 34 degrees to C/A.					
		52.41: Calcite, semi-massive PO, stringer at 24 degrees to C/A. 52.87 - 53.01: Two 1 mm wide quartz, moderate PO-CPY, veinlets at 42 and 48 degrees to C/A; cross cut by three calcite, trace PO, stringers at 130 (50) degrees to C/A.					
		53.43: Core break; ~1 mm wide calcite, minor PY, trace CPY-SPH, veinlet at 61 degrees to C/A.					

HOLE # :		COB-23				Page # 6
From	То	Lithological Description	Sample #	From To	Width	
-	_	<ul> <li>53.58 - 53.73: Up to 2 mm wide quartz, trace calcite, moderate PO, minor CPY-SPH, veinlet at 17 degrees to C/A.</li> <li>54.0 - 54.25: 1 mm wide calcite-quartz, moderate PO, minor CPY, veinlet at 8 degrees to C/A.</li> <li>54.1: 4 cm long calcite, moderate PO, aggregate; two grains of cobaltite(?).</li> <li>54.47 - 55.08: 2-3 mm wide quartz-calcite, minor PO-CPY-SPH, veinlet at 3 degrees to C/A.</li> <li>55.71: Quartz, semi-massive PO, trace CPY, stringer at 70 degrees to C/A.</li> <li>55.85: Calcite, moderate PO-platy PY, trace CPY, fracture at 43 degrees to C/A.</li> <li>55.98 - 56.47: Epidotized-brecciated interpillow material-pillow selvages roughly parallel to C/A; local carbonatization; local moderate PO-CPY-SPH.</li> <li>56.87: Minor calcite, moderate CPY-PO, fracture at 70 degrees to C/A.</li> <li>57.15 - 57.53: Essentially very fine-grained quartz aggregate; barren.</li> <li>58.64: ~10 cm of broken core; a few fragments with a remnant 1 mm wide calcite, abundant PY, veinlet probably at ~60 degrees to C/A.</li> <li>59.34 - 59.6: Interpillow material-pillow selvages; minor carbonatization; minor PO-CPY; underlain by an irregular 1-3 mm wide quartz-chlorite, minor semi-massive PO-CPY, trace SPH, veinlet at 32 degrees to C/A.</li> <li>59.34 - 59.6: Interpillow material-pillow selvages; minor carbonatization; minor PO-CPY; underlain by an irregular 1-3 mm wide quartz-chlorite, minor CPY, trace GN, fracture at 52 degrees to C/A.</li> <li>59.79: Calcite, moderate PO, minor CPY, trace GN, fracture at 52 degrees to C/A.</li> <li>60.29: 2 mm wide quartz-calcite, moderate PO-SPH, veinlet at 57 degrees to C/A.</li> </ul>	-	-	_	
		60.56 - 60.63: Quartz, minor calcite, moderate semi-massive PO, trace SPH, stringer at 54 degrees to C/A; 2-5 mm wide calcite-quartz-semi-massive PO, minor SPH, trace CPY, one 1 mm-sized cobaltite(?) grain, veinlet at 54 degrees to C/A.				
		60.73: Calcite, minor serpentine, stringer at 128 (52) degrees to C/A; barren. 60.87 - 61.07: Wall rock mixed with calcite-quartz-epidote, minor orange feldspar, aggregates; minor SPH, trace GN-CPY-PO; one cobaltite(?) grain; interval bound by fairly regular upper contact at 68 degrees to C/A, lower contact marked by a veinlet that grades into one of the aggregates at 57 degrees to C/A.				
		61.2 - 61.38: Pillow selvage roughly parallel to C/A; moderate carbonatization; moderate PO-SPH, trace CPY; upper limit of interval marked by a slip plane at 49 degrees to C/A that truncates pillow selvage; lower limit of interval marked by a 1.5 cm wide carbonatized, minor PO-CPY-SPH, pillow selvage at 56 degrees to C/A.				
		<ul> <li>61.67: 1 mm wide calcite-quartz, trace PO-SPH, veinlet at 20 degrees to C/A.</li> <li>61.84: Two calcite, trace SPH-PO-CPY, stringers at 115 (65) degrees to C/A.</li> <li>62.12 - 64.63: Minor-moderate PO-CPY/SPH almost every 10-20 cm in quartz+/-epidote/chlorite/calcite aggregates-pillow selvages-interpillow material.</li> <li>66.01: 1-2 mm wide quartz-chlorite, trace PO, veinlet at 41 degrees to C/A.</li> </ul>				
		<ul> <li>68.0: Calcite, pale orange quartz/feldspar, minor PY-PO, trace CPY, stringer at 58 degrees to C/A.</li> <li>68.46: Calcite, minor PO, trace CPY, stringer at 55 degrees to C/A.</li> <li>68.78: 1 mm wide calcite, moderate PO, minor CPY, veinlet at 53 degrees to C/A.</li> <li>69.32: 2 mm wide quartz, trace calcite, abundant PO-CPY, veinlet at 41 degrees to C/A.</li> </ul>				

HOLE # :		COB-23				Page # 7
From	То	Lithological Description	Sample #	From To	Width	
-	-	70.13: Quartz-calcite, minor PO, stringer at 31 degrees to C/A. 70.86: Up to 1 mm wide calcite, trace PO, gash veinlet at 39 degrees to C/A; adjacent serpentine-quartz coated,	-	-	-	
		moderate PO, joint/fracture at 76 degrees to C/A.				
		70.91 - 71.03: Very fine-grained quartz-epidote aggregate; barren. 72.02 - 72.25: Set of four quartz-chlorite, minor calcite, minor-abundant PO, trace-minor CPY, stringers-up to 1 mm wide veinlets at 40-55 degrees to C/A.				
		72.4: Calcite, moderate PO, trace CPY, stringer at 27 degrees to C/A; calcite, moderate SPH, minor PO-CPY, fracture at 49 degrees to C/A.				
		73.1 - 73.26: Two quartz, abundant PO, stringers at 55 and 65 degrees to C/A; followed by two 1-2 mm wide calcite, minor PO-CPY, veinlets at ~63 degrees to C/A.				
		73.23 - 73.59: Pale yellow-green epidote-quartz aggregate containing cm-sized medium purple quartz aggregates- bands and wall rock; cross cut by one of the preceding calcite veinlets; minor PO-CPY; irregular upper contact at ~30 degrees to C/A; irregular lower contact at ~35 degrees to C/A.				
		73.67: 1-2 mm wide calcite-quartz, trace PO, veinlet at 58 degrees to C/A.				
73.75	85.45	MASSIVE COARSE-GRAINED MAFIC VOLCANICS:				
13.13		Massive, fairly homogeneous, medium green; salt and pepper texture; locally brecciated-granulated; local very fine- grained intervals with gradational contacts; occasional cm-sized very fine-grained quartz, minor-moderate PO- CPY+/-SPH, aggregates; local disseminated PO; scattered quartz, quartz-calcite, calcite stringers-up to 3mm wide veinlets with minor semi-massive PO, minor-moderate CPY, at 30-75 degrees to C/A; 3-5 serpentine coated, with or without calcite/platy PY/PO, joints/fractures per metre at 30-60 degrees to C/A; gradational upper contact placed arbitrarily; lower contact marked by a 1-3 mm wide quartz-semi-massive PO, moderate CPY-platy PY, veinlet at 82 degrees to C/A.				
		74.48: Quartz, minor SPH-CPY-PO, stringer at 44 degrees to C/A.				
		74.91 - 75.03: Epidote-quartz, minor PO, alteration "band" at ~52 degrees to C/A; cross cut by a quartz, minor PO, fracture at 49 degrees to C/A.				
		75.61 - 75.8: Epidote-quartz-feldspar aggregate-alteration zone; trace calcite, moderate PO, minor SPH-CPY, trace GN; irregular upper gradational contact at ~45 degrees to C/A; irregular sharp-gradational lower contact at ~25 degrees to C/A.				
		75.85 - 76.68: Several semi-massive PO, minor CPY-SPH, stringers-up to 3 mm wide veinlets-aggregates; stringers-veinlets at ~25 and ~145 (35) degrees to C/A; local quartz-PO-SPH-CPY aggregates; local minor medium orange quartz/feldspar disseminations-aggregates.				
		77.0: Calcite-semi-massive PO, minor CPY, stringer at 67 degrees to C/A.				
		78.2: 2-3 mm wide quartz-semi-massive PO, minor CPY-calcite, veinlet at 46 degrees to C/A.				
		78.95 - 79.27: Mineralized zone; four up to 4 cm wide poorly developed veins-aggregates with interlayered wall rock; coarse calcite-PO-CPY-SPH-quartz; contacts at ~40-45 degrees to C/A.				

	COB-23				
From To	Lithological Description	Sample #	From	То	Width
	79.54: Up to 1 cm wide quartz-calcite, abundant PO, minor CPY-SPH, gash vein at 40 degrees to C/A. 80.0 - 80.15: Epidote-quartz-minor calcite-chlorite-wall rock, minor PO, trace CPY-SPH, vein-like moderately banded alteration zone at ~45 degrees to C/A; fairly sharp contacts.	-	-		-
	80.49 - 80.65: 1-1.5 cm wide quartz-epidote-calcite, minor PO, trace CPY, vein at 23 degrees to C/A; up to 1.5 cm wide bleached wall rock next to vein.				
	82.2 - 82.32: Strongly epidotized layer; gradational contacts over a few mm; centre of interval contains a 1 cm wide epidote, minor orange quartz/feldspar, trace PO-CPY, vein at 61 degrees to C/A.				
	82.93 - 83.62: Scattered quartz aggregates with locally abundant PO-CPY-SPH; also calcite-medium orange quartz/feldspar, minor PO-CPY-SPH, aggregates and up to 1 cm wide poorly developed vein at 14 degrees to C/A; cross cut by a few up to 3 mm wide calcite, minor-moderate PO-CPY-SPH, veinlets at ~60 degrees to C/A.				
	83.81 - 83.94: ~1 mm wide calcite, minor PO-CPY, trace SPH, veinlet at 8 degrees to C/A; cross cut by an up to 3 mm wide quartz, trace calcite, abundant PO, moderate CPY, veinlet at 67 degrees to C/A.				
	84.49 - 85.84: Serpentine, minor PY, fracture roughly parallel to C/A followed by one at 12 degrees to C/A; about ten serpentine, occasional quartz/calcite, minor-moderate PO/PY/CPY, stringers-up to 3 mm wide veinlets at 60-85 degrees to C/A.				
85.45 154.10	PILLOWED MAFIC VOLCANICS:				
	Continuation of preceding pillowed mafic volcanics (40.58 - 73.75); pillow selvages often medium yellow-brown (have a "dirty" appearance) and consist of a mixture of fine epidote and brown quartz(?), may also be feldspathized (off-white), minor disseminated PO-CPY-SPH; scattered very fine-grained quartz, minor PO-CPY- SPH, aggregates-stringers-veinlets, occasionally with calcite; 1-3 serpentine coated joints/fractures per metre generally at 30-50 degrees to C/A.				
	86.09 - 86.29: Up to 1 cm wide quartz-semi-massive PO, minor up to 1.5 mm-sized cobaltite, trace SPH-CPY, vein at 14 degrees to C/A.				
	87.15: Calcite, abundant PO, minor CPY, stringer at 53 degrees to C/A; cross cuts epidotized-carbonatized, abundant PO, trace CPY-SPH, pillow selvage-interpillow material.				
	<ul> <li>87.89: Calcite, moderate PO, minor CPY, stringer at 37 degrees to C/A.</li> <li>88.21: 2 mm wide calcite, minor PO-CPY, veinlet at 48 degrees to C/A.</li> <li>88.42: Calcite, moderate PO, trace CPY, stringer at 53 degrees to C/A.</li> <li>88.61: 1 mm wide calcite, minor PO-CPY, veinlet at 44 degrees to C/A.</li> </ul>				
	89.2 - 89.29: Two up to 1 mm wide calcite, rare SPH-PO-CPY, gash veinlets at 50 degrees to C/A. 89.72: 1 mm wide calcite, minor CPY-PO, veinlet at 36 degrees to C/A.				
	90.08: 1 mm wide calcite, rare SPH-CPY-PO, gash veinlet at 55 degrees to C/A. 91.06: Pillow selvage at ~40 degrees to C/A; carbonatized, abundant CPY-PO. 91.42: Slip plane at 49 degrees to C/A.				

HOLE # :		COB-23					Page # 9
From	То	Lithological Description	Sample #	From	То	Width	
-	_	<ul> <li>92.42 - 92.64: Two up to 1 mm wide quartz, trace calcite, minor PO, rare SPH-CPY, stringers at 135 (45) and 155 (25) degrees to C/A; cross cut by two up to 1 mm wide calcite, minor PO-CPY, stringers at 45-50 degrees to C/A.</li> <li>92.98: 2 mm wide calcite, minor PO-CPY, veinlet at 51 degrees to C/A.</li> <li>93.33 - 94.2: Several serpentine coated, occasional minor platy PY, fractures at 15-75 degrees to C/A.</li> <li>93.35: Calcite, rare PO, stringer at 54 degrees to C/A.</li> <li>95.39: Two calcite, trace PO-CPY-SPH, stringers at ~55 degrees to C/A.</li> <li>95.39: Two calcite, trace PO-CPY-SPH, stringers at ~55 degrees to C/A.</li> <li>95.43: Serpentine-minor calcite coated, moderate platy PY, trace CPY-GN, joint/fracture at 52 degrees to C/A.</li> <li>95.8: 1 mm wide quartz, minor PO-CPY, veinlet at 51 degrees to C/A.</li> <li>96.01: 3 mm wide quartz, minor PO-CPY, veinlet at 39 degrees to C/A.</li> <li>97.22: 6 mm wide quartz, minor calcite, moderate PO-CPY-SPH, matrix vein at 36 degrees to C/A; adjacent calcite, rare SPH, stringer at 53 degrees to C/A.</li> <li>97.68: 1 mm wide quartz, trace calcite, moderate PO, veinlet at 48 degrees to C/A.</li> <li>97.68: 1 mm wide quartz, trace calcite, moderate PO, veinlet at 48 degrees to C/A.</li> <li>97.68: 1 mm wide quartz, trace calcite, moderate PO, veinlet at 56 degrees to C/A.</li> <li>97.9: Core break; remnant 3 mm wide calcite, minor PY, veinlet at 56 degrees to C/A.</li> <li>99.01: Calcite-quartz, minor PO, stringer at 50 degrees to C/A.</li> <li>99.26 - 99.51: Two 1 mm wide calcite, moderate PO, minor CPY-PY, veinlets at ~53 degrees to C/A.</li> <li>99.26 - 99.51: Two 1 mm wide calcite, minor quartz, serpentine margins, minor PY (some as 1 mm-sized cubes), rare GN, vein at 12 degrees to C/A; cross cuts a few pillow selvages, minor PO-CPY, that are roughly parallel to C/A.</li> </ul>	-	-		-	
		<ul> <li>101.19: 2 mm wide calcite veinlet, 2 mm wide calcite gash veinlet; both at 50 degrees to C/A; minor PY.</li> <li>101.93: 1 mm wide calcite, minor PY, stringer at 40 degrees to C/A.</li> <li>103.27 - 103.34: Two 1 mm wide calcite, one with rare SPH-GN, the other barren, gash veinlets at 14 and 31 degrees to C/A.</li> <li>103.42: Calcite, moderate platy PY, stringer at 42 degrees to C/A.</li> <li>103.79 - 104.0: Breccia; matrix supported; up to 3 cm-sized mostly angular fragments in a very fine-grained calcite, minor quartz, abundant SPH-PO-CPY, matrix; lower part of breccia cross cut by a 1 mm wide calcite, rare SPH-CPY, gash veinlet at 56 degrees to C/A; irregular upper contact at ~40 degrees to C/A; gradational lower contact.</li> <li>104.13 - 104.26: 5 mm wide quartz-calcite, moderate SPH, minor PO-platy PY, matrix vein at 136 (44) degrees to C/A; 2 mm wide calcite, trace SPH-CPY, veinlet at 49 degrees to C/A.</li> <li>104.7: 2 mm wide calcite, minor SPH, veinlet at 53 degrees to C/A.</li> <li>105.1 - 105.56: Several serpentine coated joints/fractures at 10-55 degrees to C/A.</li> <li>105.64: 2-3 mm wide calcite, minor SPH, trace CPY-PO, veinlet at 51 degrees to C/A.</li> </ul>					

HOLE # :		COB-23						Page # 10
From	То	Lithological Description	Sample	#	From	n To	Width	
-	-	105.64 - 106.02: Breccia; similar to breccia at (103.79 - 104.0); most fragments consist of wall rock slivers in a similar very fine-grained calcitic matrix; abundant SPH, moderate CPY-PO; slivers-matrix have a preferred orientation at 15-20 degrees to C/A; gradational contacts.	-		-		-	
		106.37 - 106.59: Set of eight up to 2 mm wide calcite, trace SPH-PO-CPY, rare GN, stringers-gash veinlets at ~55 degrees to C/A.						
		106.85: Calcite, trace SPH-PO, stringer at 43 degrees to C/A. 106.91: Calcite, trace SPH-PO-CPY, stringer at 50 degrees to C/A. 107.74: 2 mm wide calcite, minor PO, trace PY-CPY-SPH, veinlet at 55 degrees to C/A. 108.12: 1 mm wide quartz, minor calcite-PO-CPY, veinlet at 31 degrees to C/A.						
		108.34 - 108.46: Two 1 mm wide calcite, minor PO-CPY, veinlets at 52 and 41 degrees to C/A. 108.67 - 109.19: Six up to 1 mm wide quartz, trace calcite, trace-moderate PO-CPY, one with moderate SPH, stringers-veinlets at 40-65 degrees to C/A.						
		109.25: Core break; remnant 5 mm wide calcite, minor PY, trace SPH-PO, vein at 59 degrees to C/A. 109.45: 1-2 mm wide quartz, minor calcite, minor SPH-PO-CPY, veinlet at 138 (42) degrees to C/A. 109.73 - 109.82: Quartz, minor calcite-PO-CPY, stringer at 152 (28) degrees to C/A; cross cut by two calcite, trace SPH-CPY, stringers at 47 and 65 degrees to C/A.						
		<ul> <li>110.22: 1 mm wide calcite, moderate PO, minor SPH, trace CPY, veinlet at 70 degrees to C/A.</li> <li>110.67: 2 mm wide calcite, trace SPH-CPY-PO, veinlet at 48 degrees to C/A.</li> <li>112.12: Calcite-quartz, rare SPH, stringer at 22 degrees to C/A.</li> <li>112.77: 5 mm wide quartz-calcite-epidote-chlorite, moderate PO-SPH-CPY, vein at 58 degrees to C/A.</li> </ul>						
		<ul> <li>113.76: Quartz-chlorite, trace PO, stringer at 51 degrees to C/A.</li> <li>114.05: 4 mm wide calcite, moderate PY, trace CPY, veinlet at 58 degrees to C/A.</li> <li>114.43 - 114.51: Two 4-5 mm wide quartz-epidote-calcite veinlets at 58 and 61 degrees to C/A; one with trace PO, the other with abundant PO, minor CPY-SPH.</li> </ul>						
		114.69: 2 mm wide calcite, minor PO-SPH-CPY, trace GN, veinlet at 48 degrees to C/A. 115.52 - 115.71: Set of up to 1.5 cm wide quartz-epidote-calcite veinlets-veins at ~20 degrees to C/A; often discontinuous; sharp to gradational contacts; trace-minor CPY-PO-SPH.						
		116.0 - 116.29: Two 2 mm wide calcite, minor PO-CPY, veinlets at ~60 degrees to C/A; irregular up to 4 mm wide quartz-orange feldspar-calcite, moderate PO-CPY, veinlet at 147 (33) degrees to C/A.						
		116.31 - 116.71: Minor breccia similar to breccia at (103.79 - 104.0); not as calcite-rich; minor CPY-SPH-PO; also pillow selvages-interpillow material with moderate calcite-PO-CPY; calcite, moderate PO, minor CPY, gash veinlet at bottom of interval at 75 degrees to C/A.						
		116.31 - 116.71: Minor breccia similar to breccia at (103.79 - 104.0); not as calcite-rich; minor CPY-SPH-PO; also pillow selvages-interpillow material with moderate calcite-PO-CPY; calcite, moderate PO, minor CPY, gash veinlet at bottom of interval at 75 degrees to C/A.						
		118.82: 1 mm wide calcite, rare PO-CPY-SPH, gash veinlet at 54 degrees to C/A.						

HOLE # :		COB-23						Page # 1
From	То	Lithological Description	Sample	e #	From	То	Width	
-	-		-		-		-	
		119.73 - 119.87: Pair of 5 mm wide quartz, minor calcite, minor-moderate disseminated SPH-CPY-PO, veins at 135 (45) degrees to C/A.						
		120.3 - 120.83: 1 mm wide calcite, rare PO, gash veinlet at 56 degrees to C/A; followed by five up to 3 mm wide quartz-chlorite-calcite, minor-moderate PO-CPY, minor SPH, veinlets at ~147 (33) degrees to C/A; 3 mm wide veinlet at 120.73 has abundant calcite-PO-CPY.						
		121.05: 1 mm wide calcite veinlet at 50 degrees to C/A; barren; truncated by a 1.1 cm wide quartz-calcite-epidote, minor CPY-PO, vein-deformation "band" at 130 (50) degrees to C/A.						
		121.28: Up to 1 mm wide calcite, minor SPH-PO-CPY, stringer at 58 degrees to C/A.						
		121.75: Up to 1 cm wide calcite, minor quartz, minor SPH-CPY, vein at 74 degrees to C/A.						
		122.83 - 123.94: Four up to 1 mm wide quartz-chlorite-calcite, minor-moderate PO-CPY-SPH, stringers-veinlets at 140-160 (40-20) degrees to C/A; six up to 2 mm wide calcite, trace-minor PO-SPH-CPY, stringers-veinlets at 45- 55 degrees to C/A; may cross cut preceding veinlets; a few fractures with moderate PO-CPY at ~120 (60) degrees to C/A.						
		123.87 - 124.45: Shear-vein zone; mm-1 cm wide quartz/epidote/chlorite/serpentine, minor-moderate calcite, sheared laminations; minor breccia (mm-sized wall rock fragments); minor CPY-PY, trace SPH; cross cut by a couple of calcite, trace SPH-CPY, stringers at 55-60 degrees to C/A; upper contact at ~15 degrees to C/A; lower contact at ~25 degrees to C/A; ~2 cm wide calcite, minor quartz-chlorite, vein near bottom of zone, 2-4 mm wide calcite/quartz laminations, abundant PY - in part up to 5 mm-sized spherulites; vein at ~20 degrees to C/A.						
		124.66 - 124.73: Two 2 mm wide quartz, abundant PY, veinlets at 140 (40) degrees to C/A; upper veinlet cross cut by a 2 mm wide calcite, minor PY-CPY, gash veinlet at 46 degrees to C/A; lower veinlet has been refractured and offsets calcite gash veinlet.						
		125.8 - 130.0: Interval of weak to strong carbonatization; local bleaching of wall rock around fractures; local zones of minor brecciation with up to 6 mm wide calcite matrix; gradational contacts.						
		125.8 - 126.12: Several short calcite stringers-veinlets/aggregates; almost a breccia; moderate PY, minor CPY. 126.43 - 126.68: 1 cm wide laminated calcite, minor quartz, vein at 10 degrees to C/A; massive PY in up to 1 mm wide laminations: trace GN in calcite: minor SPH in wall rock						
		126.68 - 127.45: Several up to 3 mm wide calcite, minor-moderate PY-CPY, stringers-veinlets at 20-60 degrees to C/A.						
		128.98: 1.5 cm wide calcitic mud seam at 44 degrees to C/A.						
		128.98 - 129.2: Breccia; mostly mm-sized rounded fragments, strongly carbonatized, several short calcite stringers; abundant very fine PY, minor GN(?); upper contact at mud seam; gradational lower contact.						
		130.0 - 132.0: Most of rock is silicified/epidotized/chloritized/carbonatized/feldspathized; alteration zones, including probable pillow selvages, generally have a preferred orientation at 35-45 degrees to C/A.						
		131.13: Calcite, minor SPH-GN, stringer at 35 degrees to C/A.						
		131.43: Calcite, minor GN-SPH, stringer at 42 degrees to C/A.						

From To	Lithelegical Description						
	Linological Description	Sample	#	From	То	Width	
		-		-		-	
	132.94 - 133.13: 1.5 cm wide quartz-epidote-calcite, moderate SPH-CPY-PO, vein at 15 degrees to C/A; very irregular margins.						
	133.27: 2 mm wide calcite, rare SPH-CPY, veinlet at 54 degrees to C/A.						
	133.56: 2 mm wide calcite-quartz, abundant PO, minor CPY, veinlet at 55 degrees to C/A.						
	133.81: Calcite, minor PO-CPY, stringer at 53 degrees to C/A.						
	134.5 - 134.67: Calcite stringer and 2 mm wide veinlet, minor PO-CPY; at 56 degrees to C/A.						
	134.76 - 134.98: Irregular calcite aggregate on surface of core; epidote-rich margins and enclosed aggregates that appear to be fragments; wall rock fragments as well; minor PO-CPY.						
	135.43: Serpentine-calcite coated, minor PY-GN-SPH, joint/fracture at 44 degrees to C/A.						
	135.82 - 135.95: Calcite aggregate; enclosed epidote-rich aggregates and wall rock fragments; minor PO-CPY; similar to calcite aggregate at (134.76 - 134.98).						
	136.7: 2 mm wide calcite, trace PO, veinlet at 53 degrees to C/A.						
	137.26 - 137.49: Two 2 mm wide calcite, rare SPH, veinlets at 45 and 61 degrees to C/A.						
	137.89 - 138.15: 2 mm wide quartz-epidote, minor calcite-PO-CPY, veinlet at 39 degrees to C/A; two 1 mm wide barren calcite veinlets at 50 and 55 degrees to C/A.						
	139.6 - 139.9: Eight up to 4 mm wide calcite, scarce PY, stringers-veinlets at 40-47 degrees to C/A; ~20 cm long interval with 3-10 mm-sized rounded calcite spots (aggregates), cross cut by calcite stringers-veinlets.						
	140.25 - 142.19: Nearly half the width of core comprised of epidotized-silicified-carbonatized (including local coarse calcite laminations)-feldspathized pillow selvages-interpillow material at 0-25 degrees to C/A; local minor breccia, calcite spotting; minor PO-CPY disseminations-blebs.						
	142.54 - 142.92: Interpillow material as above (140.25 - 142.19), rare CPY-PO; again with coarse calcite laminae- up to 1 cm wide gash veins, barren; cross cut by a few calcite, minor PY-CPY, stringers-up to 3 mm wide gash veinlets at 30-55 degrees to C/A.						
	143.02: Up to 2 mm wide chlorite, moderate calcite, minor quartz-PO, slip plane-veinlet at 46 degrees to C/A.						
	143.76: 1.5 cm wide calcite-epidote-epidote aggregate fragments in calcite, moderate PO, minor CPY, pillow selvage at 59 degrees to C/A.						
	144.07 - 144.19: Calcite-rich aggregate; minor epidote-orange quartz/feldspar, minor SPH-PO-CPY, trace GN; gradational upper contact; lower contact is a pillow selvage.						
	144.7 - 144.8: Interpillow material; mix of calcite-epidote, moderate PO, minor CPY.						
	145.06: 4 mm wide calcite, trace PO, veinlet at 35 degrees to C/A; veinlet is part of, and parallel to, a pillow selvage.						
	145.22: Calcite, trace PO-CPY-SPH, stringer at 42 degrees to C/A.						
	146.19: Remnant 3 mm wide calcite, minor PY-CPY, veinlet at 75 degrees to C/A.						

HOLE # :		COB-23						Page # 1
From	То	Lithological Description	Sample	#	From	То	Width	
-	-	146.4 - 146.57: Pillow selvage; brecciated - epidote aggregate fragments in a calcite matrix, barren; cross cut by a 2 mm wide calcite, minor PY, gash veinlet at 67 degrees to C/A; underlain by 10 cm of brecciated volcanics in a calcite matrix.	-		-		-	
		146.66 - 146.89: Sheared-laminated alteration band/vein; epidote-quartz-calcite-wall rock slivers; minor SPH-PO, trace CPY; fairly regular upper contact at 35 degrees to C/A; fairly regular lower contact at 41 degrees to C/A.						
		147.23 - 147.56: Brecciated vein; hematitized, <2 cm-sized mostly angular calcite and wall rock fragments; matrix of ground-up volcanics and calcite; minor intact calcite veinlets; barren; cross cut by three serpentine coated fractures at 27 degrees to C/A; fairly sharp upper contact at 38 degrees to C/A; fairly sharp lower contact at 33 degrees to C/A.						
		148.25 - 148.47: Four up to 3 mm wide calcite veinlets at 40-65 degrees to C/A; barren. 148.83 - 148.95: 1 mm wide calcite, minor PY, trace CPY-SPH, veinlet at 68 degrees to C/A; 12 mm wide calcite- wall rock fragments, trace PY, vein at 51 degrees to C/A.						
		149.41: 1 mm wide calcite, trace CPY-PY, veinlet at 66 degrees to C/A.						
		149.71: 5 mm wide calcite, rare PY-SPH, vein at 46 degrees to C/A.						
		152.24: 5 mm wide calcite, minor PO-CPY, vein at 38 degrees to C/A. 153.03 - 153.23: Shear-breccia zone; <1 cm-sized angular to flattened volcanic fragments in a pale green matrix; moderate amount of 1-5 mm wide calcite, minor quartz, trace CPY-PO, veinlets-laminations; sharp upper contact marked by a calcite-chlorite, moderate PY, stringer at 30 degrees to C/A; fairly sharp lower contact at 28 degrees to C/A.						
154.10	164.00	CALCITE VEINED-BRECCIATED ZONE:						
		Pillowed mafic volcanics; numerous calcite, rarely with minor PO-CPY, stringers-up to 1 cm wide veins at 15-75 degrees to C/A, also calcite-rich aggregates; a few quartz-rich veins as well; minor to intense brecciation with matrix comprised of networks of epidote-quartz-feldspar-calcite, trace-minor PO-CPY, stringers-veinlets or calcite-only stringers-veinlets.						
		153.28 - 154.45: Ten up to 3 mm wide calcite, trace-minor PO-CPY, veinlets-gash veinlets at 33-62 degrees to C/A.						
		156.06 - 156.33: 3 cm wide laminated calcite-quartz, epidotized-silicified wall rock, vein at 22 degrees to C/A; barren.						
		157.19 - 157.36: 1.5 cm wide milky white quartz-minor calcite, trace GN, vein at 25 degrees to C/A; cross cuts a 3 mm wide calcite veinlet at 39 degrees to C/A; barren.						
		157.89 - 158.14: Two calcite, moderate PO-CPY, stringers at 60 degrees to C/A. 158.41 - 159.78: Pillow breccia; up to 15 cm long pillow fragments in an epidote-rich matrix; local up to 7 cm wide layers with fairly sharp contacts of mm-sized fragments also in an epidote-rich matrix at ~60 degrees to C/A; trace- minor PO-CPY usually in calcite stringers-veinlets-aggregates; gradational contacts.						

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HOLE # :		COB-23				Page # 14
From	То	Lithological Description	Sample #	From To	Width	
-	-	158.76 - 159.78: Deformation zone in pillow breccia; breccia layers with mm-sized fragments are flattened/sheared, interlayered with calcite-rich sheared volcanic layers and a few up to 1.5 cm wide calcite, minor quartz, veins; local moderate orange feldspar; trace SPH-CPY-PO; one 6 cm long quartz aggregate; preferred orientation of veins-shearing at 50-55 degrees to C/A.	-	-	-	
		160.86 - 161.56: Calcite, quartz margins, vein roughly parallel to C/A; several wall rock fragments-slivers; minor- abundant PY-PO; lower end of vein truncated by a 3 mm wide calcite veinlet at 12 degrees to C/A.				
		161.56 - 162.45: Carbonatized mafic intrusive or carbonatite dykelet; massive, homogeneous, medium brown- gray, very fine-grained with up to 2 mm-sized dark green spots that are probably chloritized PX; strongly carbonatized; cross cut by a few calcite veinlets at 55-60 degrees to C/A; one 7 cm long mafic volcanic xenolith at 162.0; upper contact at preceding calcite veinlet; sharp lower contact at 43 degrees to C/A partially offset by a slip plane at 130 (50) degrees to C/A.				
		162.45 - 164.0: Numerous quartz-epidote-feldspar-calcite, occasional minor PY, stringers-veinlets-up to 1.5 cm wide veins at 20-40 degrees to C/A; cross cut by numerous (~20) calcite stringers-up to 5 mm wide veinlets and two 5-10 mm wide quartz, minor calcite, veins at 35-60 degrees to C/A; rare PO-CPY-SPH.				
		163.42 - 163.79: Two 2 cm wide quartz-feldspar, minor calcite, trace PY, veins at 30 degrees to C/A; also several calcite veinlets at 40-45 degrees to C/A.				
		164 0 F O H				

### **APPENDIX II**

(Drill Hole X-Sections)



