

drill hole: LWD 99-2

Grid Name: _____

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angle & Direction: _____

Location: _____

Date: 2-3-04

footage				rock type and description	BDD TYPE	BDD THICKNESS	BDD \angle (to C.A.)	COLOR	OXIDES	MAGNETISM	ALT	TEXTURES	comments
From	to	ft	UNIT										
				<u>Virg. Fm (CONT)</u>									
			★	901.5-405 MASSIVE, DK. OLIVE-GREEN SERICITE BDD (TUFF?)									TUFF? [402]
				↓ GRAD									
				405-409 THICK-BDD SERICITE-BEARING SEDIMENT									
				↓ GRAD @ 405.2 2 CM LIMESTONE "BED"									
			★	409-412.8 MASSIVE SERICITE BED (AS AT 401.5-405')									TUFF?
				412.8-413 LIMESTONE BED									
				413-413.2 ARGILLITE/BLK SLATE									
				413.2-413.4 LIMESTONE BED (V. SHARP BASE)									
				413.4-417 BLACK SLATE w/COMMON SLTST + GRAYWACKE BEDS (<2 CM THICK); @ 416 1" GRAYWACKE w/									
			★	417-420.5 XTAL TUFF w/10% MOD-GRN QZ + FELD + MINUTE LITHIC FRAGS (THIN) OF BLACK SLATE + WISPY LENSES OF BLK SLATE									XTAL TUFF
				MASSIVE BDD, w/									
				@ 417 1.5" ZONE OF INTBDD TUFF + BLACK SLATE (30%) w/ FLASER-LIKE BDD									
				@ 418.8-419' MOD-CS GRN BASE OF TUFF BED THAT GRADUALLY UPWARDS									
				@ 419-419.1 INTBDD TUFF + BLACK SLATE (AS AT 417')									
				@ 420.5 SHARP, PLANAR BASE w/A HINT OF GRADING UPWARDS									
				↓									
				420.5-423 INTBDD BLACK SLATE + GRAYWACKE (WHICH INCREASES IN NO. OF BEDS + BED THICKNESSES DOWN HOLE). GRAYWACKES									
				BEDS IN TOP 1/2 OF THIS UNIT ARE THIN (<15% TOTAL VOLUME) + ARE LENSOIDAL TO FLASER-BDD.									
				GRAYWACKE BEDS IN BOTTOM 1/2 ARE MUCH THICKER (80% @ BASE OF THIS UNIT) + ARE HIGHLY CONTORTED/FOLDED (SOFT SEDIMENT).									
				MAYBE THESE BEDS SLUMPED + FOLDED DURING THE EARLY STAGES OF THIS VOLCANIC EVENT THAT DEPOSITED THE ABOVE XTAL TUFF.									
				423-423.1 BLACK SLATE									
				423.1-424 A SINGLE BED OF VOLCANICLASTIC GRAYWACKES									
				w/ SHARP BASE + SOME FN/MOD-GRN XTAL GRAINS									
				424-425.5 MOSTLY GRAYWACKE (BOUMA C?) BEDS; X-BDD IN TOP 2" OF THIS UNIT.									
				↓ SHARP BASES									
				425.5-426.4 BLACK SLATE									
				↓ SHARP									
				426.4-427.2 GRAYWACKES; BOTTOM CONTACT = ?									
				427.2-427.7 GRAYWACKES + BLACK SLATE									
				427.7-427.5 LIMESTONE; SHARP TOP + BOTTOM CONTACTS									

VOLCANIC
INPUT
INCREASES
UP HOLE?

85°
90°

85°

drill hole: LWD-99-2

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footage				rock type and description	BDD TYPE	BDD THICKNESS	BDD \angle (to C.A.)	COLOR	OXIDES	MAGNETISM	ALT	TEXTURES	comments
From	to	ft	UNIT										
				VIRGINIA FM (CONT.)									
							85-90°						
				427.5-431.2 MOSTLY GRAYWACKES w/ BLACK SLATE INTERBDS (IN SETS UP TO 5" THICK)									
				@ 428-428.4 STRANGE WHITE SPECKLED GRAYWACKES w/ BLACK SLATE RIP-UP FRAGMENTS									
				CAUSE UNKNOWN									
				@ 428.7 1" FOLDED GRAYWACKES (SOFT-SUD)									
				431.2-436.5 INTBDD BLACK SLATE + SLTST			85°						
				436.5-448.4 DOMINANTLY BLACK SLATE w/ ~15% SLTST INTBDS.									
				448.4-448.6 MID-GRN LIMESTONE/CONCRETION									
				TOP 1 CM IS RXTAL									
				448.6-479 60/40 BLACK SLATE/SLTST ± GRAYWACKE BDS			85°						
				SHARP BASE + GRAD TOP									
				@ 466 3" X-BDD AND/OR CONVOLUTED BOUMA C									
				479-480 ← ALL IS X-BDD BOUMA C									GOOD X-BDD
				480-508 40/60 BLACK SLATE/SLTST			80-85°						
				@ 504-505 MASSIVE BED, SERICITIC VOLCANICLASTIC GRAYWACKES?									
				508-526 75/25 BLACK SLATE/SLTST									
				@ 518-521 MOSTLY SLTST									
				526-533 40/60 BLACK SLATE/SLTST									
				SLTST BDS = 2"-10" THICK w/ COMMON LENSIFORM BLACK SLATE RIP-UP FRAGMENTS + BDD-WISPS									BLACK SLATE RIP-UPS!
				533-546.5 50/50 BLACK SLATE/SLTST ± BOUMA C			80-85°						
				@ 545.5 1.5" X-BDD BOUMA C									
				546.5-561.5 65/35 BLACK SLATE/SLTST ± X-BDD BOUMA C BDS			85°						
				561.5-581 80/20 BLACK SLATE/SLTST (DISTAL GRAYWACKES)									
				@ 578-578.5 LIMESTONE/CONCRETION w/ SUBHORIZ. RXTAL FABRIC (MID-GRN LENSIFORM) + SUBVERT. RXTAL FABRIC (DIAGENETIC?)									
				GRAD TOP + BOTTOM									
				@ 585 1.5" LIMESTONE/CONCRETION; SHARP BASE, WKLY UNIDULATORY ABRUPT TOP.									
				@ 586 4" " / "									
				IN NEXT INTERVAL									

drill hole: LWN 99-2

Grid Name: _____

angle & Direction: _____

Location: _____

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footage				rock type and description	BDD TYPE	BDD THICKNESS	BDD \angle (to C.A.)	COLOR	OXIDES	MAGN-ETISM	ALT	TEXTURES	comments
From	to	ft	UNIT										
LS	LS10	LS3	P	BIF (CONT) 917-923 REG-BDD TRANSITION ZONE w/ MOTTLED CHERT BANDS (1-6" THICK) THIN-BDD OR BANDS (< 5mm IN SETS UP TO 3" THICK) THAT ARE LOCALLY WAVY-BDD	REG	SEE DESC.	80-90°	GRAYS + WHITES ± GREENS		NIL-MOD			
LS	LS10	LS2	?	923-954 WAVY-BDD = ALTERNATING: GREENISH MOTTLED CHERT BANDS w/DIFFUSE MGT + GREEN (Fe-SIL) TO BROWN (Fe-CHRT) TO GRAY (MGT) BANDS @ 940-946 DECR. MAGNETISM @ 946-954 INCR. MAGNETISM	WAVY	1-8" ± INTERM. BDD 21 CM IN 1-6" SETS	70-90°	GREENS + GRAY + BROWN MOTTLES MIXTURES OF GRAY, BROWN & GRAY		NIL-MOD WK (NIL-MOD) MOD-STRONG WK-MOD-STRONG			
LS	LS10	LS2	?	954-970 WAVY-BDD AS ABOVE BUT MORE GREENISH COLOR INDICATES INCR. Fe-SILICATE CONTENT.	WAVY								
LS	LS9	?	?	970-1003 MOTTLED CHERT w/MGT IN DIFFUSE ZONES AND IN SCATTERED IRREG BEDS (WHICH OFTEN GRADE INTO DIFFUSE ZONES) CONTACTS w/CHERT BEDS ALSO IRREG! ISOLATED RIP-UP FRAGS PRESENT THRU-OUT @ 296.73-296.67 NO CORE (SAMPLED BY BHP) @ 1002.5-1003 INTRAFORMATIONAL CONGL.	MOTT (IRREG)	IRREG. V ₂ = 3"	IRREG	GRAYS + WHITES	MGT	MOD-STRONG			
LS	LS7	LS1	?	1003-1004 WAVY-BDD ZONE	(WAVY)					STRONG			
LS	LS7	LS2	P	1004-1004.8 THIN-BDD ZONE	(THIN)					"			
			?	1004.8-1041 WAVY-BDD IF CHERT = 1/2 - 3" THICK w/DIFFUSE MGT WAVY = < 1 cm	WAVY	AVG = 2 cm	75-90°	GRAYS + REDDISH WHITES	MGT Fe-SILIC.	"			
LS	LS7	?	P	@ 1008 6" ZONE w/BRECC & CRYSTAL CHERT 1041-1066 REG.-BDD MAGNETIC TACONITE = MIXTURES OF THIN-BDD SLATY IF AND CHERT/SILICA-RICH BANDS (1-2") AT SEMI-REGULAR INTERVALS THRU-OUT, ± SOME LOCAL WAVY BDD @ 322.17-322.33M NO CORE (BHP SAMPLE)	REG	AVG = 1-2 cm	75-85°	GRAYS + WHITES	MGT	STRONG			
LS	LS7	?	P	1066-1075 MIXED REG-BDD (AS ABOVE) + WAVY-BDD (AS AT 1004.8-1041)	REG/WAVY	"	"	"	"	"			

drill hole: LWN 99-2

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footage				rock type and description	BDD TYPE	BDD THICKNESS	BDD \angle (to C.A.)	COLOR	OXIDES	MAGNETISM	ALT	TEXTURES	comments
From	to	ft	UNIT										
LS	LS6	LS2	P	BIF (CONT)									
				1075-1122 THIN BDD MIXTURE OF GREEN Fe-SILICATE	THIN	1-10 mm	85°	GREENS + BLK	Fe-SIL MGT	MOD-STRONG			
				RICH BEDS, BLACK (ORGANIC-RICH?) BEDS, +									
				WIDELY-SCATTERED LIGHT-COLORED SILICA-RICH									
				BEDS; ALL HAVE MGT.									
				@1085-1096 DECR. MAGNETISM						NIL-MOD			
				@1096-1109 70% BLACK (ORGANIC-RICH?) BEDS						NIL-(LWK)			
				@1104-1104.5 QZ2 VEIN									
				@1104.5-1107 97% BLACK CARBON-RICH BEDS									
				@1109-1113 IRREG-BDD SIDERITE-BANDS +	(IRREG)								
				FINE-BDD CHALCUDONIC CHERT; BOTH									
				SHOW DISCORDANT BDD RELATIVE TO									
				EACH OTHER.									
				@1113-1118 97% BLACK CARBON-RICH BEDS									
				@1115-1115.8 CHERT									
				@1118-1120.5 IRREG-BDD (AS AT 1109-1113')	(IRREG)								
				@1120.5-1122 100% BLACK CARBON-RICH BEDS.									
				1122-1146 IRREG → WAVY BDD IF CONSISTING OF	IRREG	VAR	VAR	GREENST BROWNS	Fe-SIL + Fe-CARB	V. LWK - WK ((MOD))			
				GRANULAR CHERT (1-7" THICK) W/ IRREG CONTACTS	WAVY								
				AND									
				BRN GOETHITE-SIDERITE BEDS (IRREG-WAVY)									
				2-10 mm THICK IN SETS UP TO 6" THICK									
				@1136-1146 WAVY-BDD W/ INCR. MGT + RICH	WAVY	"	"	"	"	MOD-STRONG			
				BANDS						AND MGT			
				↓ TRANSITIONAL. (MGT-BEDS INCR!)									
				1146-~1260 WAVY-BDD TACONITE = GRANULAR CHERT	WAVY	1mm-1"	70-90°	GRAYS	MGT	STRONG			
				BDS + WAVY MGT-BDS; MGT ALSO									
				IN CHERT AS DIFFUSE ZONES + BEDS + MOTTLES									
				@1188-1204 MOTTLES ARE MORE PRONOUNCED									
				↓ TRANSITION (MORE GREENISH... BUT VAGUE									

SULF ON JOINT FACES ONLY
(SAW SOME THIN SULF
FILMS ON 1 BDD PLANE)

NO SULF. SEEN W/HAND LENS

" " " " "

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Date: 2-12-04

footage				rock type and description	BDD TYPE	BDD THICKNESS	BDD \angle (to C.A.)	COLOR	OXIDES	MAGNETISM	ALT	TEXTURES	comments
From	to	ft	UNIT										
				BIF (CONT)									
LC4	LC3	LC4	T	~1260-1337 WAVY-BDD FE-SILICATES BEARING MAGNETIC TACONITE. ALL TEXTURES SAME AS ABOVE. A VAGUE GREENISH COLOR SUGGESTS INCREASED FE-SILICATES. ALSO MORE OF BROWN COLOR IN SOME OF THE MGT-RICH WAVY BEDS	WAVY	"	"	11 PWS VAGUE GREEN COLOR	MGT + FE-SIL	STRONG			
				@1276-1337 DEFINATE GREEN COLOR				GREEN	CHERTS + "				
				↑ @1296.2-1298 QTZ VEIN @ 80° TO CORE AXIS				BLACK/BRN MGT-BANDS					
				↓ @1279-1321 MARKED DECREASE IN MAGNETISM!				Fe-SIL + GOETH	NIL-WK	!!			
LC3	LC2	LC3	U	1337-1381 REG-BDD IF CONSISTING OF:	REG		80-90°			STRONG			
		LC2		1) THIN-BDD SLATY IF "IN SETS 1-8" THICK	THIN	0.5-3mm		GREEN, GRAY, BRN	MGT, Fe-SIL + Fe-CARB				
		LC1		2) REG-SPACED 1/4-2" CHERT BANDS (LOCALLY JASPEROIDAL) W/ DIFFUSE MGT	REG	1/4-2"		WHITEST BEDS	MGT				
				@1349-~1376 THIN-BDD SETS UP TO 1.5' THICK IN PLACES									
LC2	LC2	FW	U	1381-1398 THIN-BDD GREEN-BRN-GRAY ± RED IF W/ SCATT. GRANULAR/JASPEROIDAL CHERT BEDS UP TO 2" THICK	THIN	AVG = 0.7cm	85°	SCAT. DESCRIP	Fe-SIL, Fe-CARB, MGT Hem	MOD			
				1398-1406 THIN-BDD AS ABOVE BUT W/ THICK JASPEROIDAL CHERT BEDS @ 1398-1399 AND DOMINANTLY CHERT BEDS (60%) @ 1402-1406									
LC2	LC1	FW	V	1406-1408 "BASAL RED" = OX. THIN-BDD SLATY IF	THIN	<1cm	85°	RED ± METALLIC GRAY	Hem	—			
				↓ TRANSITIONAL									
LC3	LC3	FW	No W!	POKOGAMA QTZITE - ALSO "BASAL RED" = V. FN GRN QTZ GRAINS IN A HEMATITE-RICH MATRIX THAT DECREASES DOWNHOLE	THIN	<1.5cm	80-85°	REDS	Hem	—			
1408	1414	FW	POK										
				EDH = 1414' (430.99 m)									

LOWER CHERT

BIF/POKSG