

Diamond Drill Record

COLLAR:		HOLE SURVEY		
NORTH	4523.86	FOOTAGE	AZIMUTH	DIP
EAST	9586.04			
ELEVATION	4008.38			
LOGGED BY	D. JENNINGS			
DATE LOGGED	1975			
MAP REFERENCE NO.		METHOD:		

COMPANY NAME PELLY RIVER MINES 0.15969

PROPERTY NAME BILL CLAIMS

DRILLING CONTRACTOR ARCTIC D.D.

ASSAYER NONE

PURPOSE OF HOLE STRAT TEST

HOLE NO.	456-75-14
CLAIM NAME	BILL 37
COMMENCED	
FINISHED	
PROJECT NO.	45600

FROM	TO	RECOVY	DESCRIPTION	SAMPLE				ASSAYS					
				FROM	TO	WIDTH	NO.						
0	1		Overburden										
1	98		Calcareous bio-chlor-(musc?) phyllite; dk gray brown, lamellarly bedded, calcareous, slightly carbonaceous bio-chlor phyllite (musc may be present) w/ thin, off white gty-CO ₂ folia often showing bedding & F ₂ folds; S ₁ = 75° to c.a. @ 50'; S ₂ = 85° to ca. @ 98'										
98	423		Calc-silicate phyllite; fairly homogeneous sequence of calc-silicate w/ 40% blue green to near green clinomph-bearing calc-silicate bands, 40% reddish brown to gray brown bio-phyll. bands and 20% gty calcite marble laminae; internal non-graptitic, highly calcareous w/ v complex internal geometry; contact w/ overlying phyllite map unit conformable w/ S ₂ and defined as last appearance of calc-silicate assemblages; phyllite map unit different from calc-silicate in that calc-silicate assemblages not developed and phyllite bands dk gray brown ⇒ more carbonaceous material; if calc-silicate assemblages develop "subsequently" at phyllite/CO ₂ interface during meta ^m would expect to see calc-silicates in lower part of phyllite unit; S ₂ = 80° @ 150', 80° @ 203', 80° @ 250', 80° @ 300', 60° @ 350', 80° @ 400'										
423	452		Calc-silicate phyllite; 60% thinly bedded, yellow blue-green ep-clinomph. calc-silicate bands, 40% reddish brown bio-phyll. bands and white ball gty rods foliaform w/ S ₂ ; internal										

as a result of
on 11/20/75
for 423

Diamond Drill Record

COLLAR:		HOLE SURVEY		
NORTH _____		FOOTAGE	AZIMUTH	DIP
EAST _____				
ELEVATION _____				
LOGGED BY _____				
DATE LOGGED _____				
MAP REFERENCE NO. _____		METHOD: _____		

COMPANY NAME _____
 PROPERTY NAME _____
 DRILLING CONTRACTOR _____
 ASSAYER _____
 PURPOSE OF HOLE _____

HOLE NO. _____
 CLAIM NAME _____
 COMMENCED _____
 FINISHED _____
 PROJECT NO. _____

FROM	TO	RECOVY	DESCRIPTION	SAMPLE				ASSAYS					
				FROM	TO	WIDTH	NO.						
1198.5	1203		<u>Graphitic bio-musc-andalusite schist</u> ; med-dk gray to black, thinly bedded, heavily gtz-ore (??) mineral, probably aluminous and porphyroblastic graphitic pelitic schist; ^{S₂ pervasive over interval} S ₂ = 48° to c.o. @ 1199'										
1203	1210		<u>Fractured and gouged graphitic bio-musc-and-schist</u> ; as 1198.5-1203 w/ gtz-CaCO ₃ fracture fillings, graphitic schist gouge and broken blocky core over interval; 6" gtz-CaCO ₃ platform fracture filling @ 70° to c.o. @ 1203-1203.5; graph. schist gouge zone @ 70° SW to c.o. 1205-1207; fracture filling, broken core all related to fault zone 1205-1207										
						1205-1207							
						1241.5-1243							
1210	1239.5		<u>Carbonaceous musc-bio-andalusite schist</u> ; lt. gray, usually carbonaceous, weakly porphyroblastic, aluminous, musc > bio pelitic schist; S ₂ pervasive over interval; equiv. to upper Al member; 1220-1227 gouge, rubbly core (13' recovery)										
1239.5	1244.5		<u>Fractured and gouged graphitic schist</u> ; heavily silicified, brecciated and gouged graphitic schist w/ gtz filled hairline fracture & tabulars; minor gouge zone 1241.5-1243 @ 65° to c.o. top & bottom dipping SW										
1244.5	1275		<u>Weakly carbonaceous musc-bio-andalusite schist</u> ; as 1210-1239.5; equiv. to upper Al member of schist unit; S ₂ = 60° to c.o. @ 1250'; pervasive S ₂										
1275	1294.5		<u>Graphitic musc-bio-andalusite schist</u> ; as 1210-1239.5, 1244.5-1275 except graphitic; minor gtz vein streaks 1275-1279; pervasive S ₂ ; gouge @ 70° SW to c.o. 1287-1289.5										
1294.5	1332		<u>Carbonaceous musc-bio-andalusite schist</u> ; as 1210-1239.5, 1244.5-1275; musc > bio to musc = bio; pervasive S ₂ ; typical upper Al member										

} poss. imbricate
 - thin ls representing section

Symmetry Analysis

456-75-14

550-S	935-Z
550.5-553.5-M	939-Z
553.5-Z	940-Z
554-555.5-M	941 ⁹⁴² -M
556.5-S	942-956-perw S ₂
620-S	956.2-indeterminate
641.5-658-perw S ₂	957-981-perw S ₂
658.5-S	981-F ₂ axes S ₂ dip
669.5-S	985.5-Z
670-F ₂ axes S ₂ dip	988-Z
670-674-M(?)	988-1000-perw S ₂
674-Z	1001-Z
675-F ₂ axes S ₂ dip	1001-1038-perw S ₂
676-688-perw S ₂	1038-S
688-Z	1038-1075-perw S ₂
690.5-Z	1075-S
698.25-Z	1078.5-M (single hinge over 1')
704.5-post D ₂ con. fol. n. 55° SW a.p. to F ₂ returned NE	1079-1183-perw S ₂
713.5-Z	1183.5-S
719- 752 incip. crumpled zone rel. to faults? D ₂ or post D ₂ ??	1184-1212-perw S ₂
756-S	1213-S
757-M	1213-1244-perw S ₂
760-Z	1244-F ₂ axes S ₂ dip
760-805-perw S ₂	1251-S
805-single hinge	1251-1279-perw S ₂
805-815-perw S ₂	1279-M
815-single hinge	1279-1290-perw S ₂
815-828-perw S ₂	1290-Z
828-indeterminate-S??	1290-1318-perw S ₂
828-841-perw S ₂	1318.5-S
841-S (F ₂ nearly to S ₂ dip 60°)	1334.5-S
841-870-perw S ₂	1334.5-1360-perw S ₂
870-S	1360-S
878-S	1360-1372-perw S ₂
878-900-perw S ₂	1372-1374-S
900-S	1376-S
907-Z	1388.5-S
907-935-perw S ₂	1398-Z

1401 - S
1402-1404 - ~~S~~ S
1407-1410 - Z
1416 - S
" 1420.5-1422 - Z
1423.0 - M
1423.5 - S
1427.5 - S
1434.75 - Z
1435 - M
1437 - S
1438.5 S
1439-1476 - perw S₂
1478.5 - M
1483-1485 - M
1491.5 - S
1492-1514 - perw S₂
1514 - Z
~~1541.5~~ 1542 - perw S₂
1542.5-1543.5 F₂ axes // S₂ dip
1544-1587 - perw S₂
1587 - S
1587-1596 - perw S₂
1596.5 - S
1612.5 - M
1614.5 - M
1615-1622 - perw S₂
1622 - single hinge
1630 - F₂ axes // S₂ dip
1640 - " " " "
1640-1644 perw S₂
1644-1645 - S
1647-~~1649~~ - S
1649-1661 - perw S₂
1661 - Z
1662 - S
1666 - ~~1670.5~~ - S
1678-1679 F₂ axes // S₂ dip
1679-1694 perw S₂
1694 F₂ axes // S₂ dip
1697 indeterminate

1732 F₂ axes // S₂ dip
1732-1742 - perw S₂
1742 - S
1742-1765 perw S₂
1765 - Z
1765-1844 - perw S₂
1844 - S
1844-1866 perw S₂
1866 - S
1866-1886 - perw S₂
1886 - single hinge
1886-1937 - perw S₂
1937 - Z
1937-1956 - perw S₂
1956 - F₂ axes // S₂ dip
1965 - Z
1973 - F₂ axes // S₂ dip
1973-1988 - perw S₂
1988-1990 F₂ axes // S₂ dip
1990-2033 - perw S₂
2033 - S
2034.5 - S
2035-2052 F₂ axes // S₂ dip (good structure)
2052-2083 - perw S₂
2083.5 - S
2084-2096 - perw S₂
2096 - Z
2103 - Z
2103-2124 - perw S₂
2124 - Z
2124-2159 - perw S₂
2159 - F₂ axes // S₂ dip
2159-2172 - perw S₂
2172.5 - Z
2181 - Z
2184 S
2186 - F₂ axes // S₂ dip
2193 - Z
2193-2203 - perw S₂
2203-2204 - Z
2208 - S

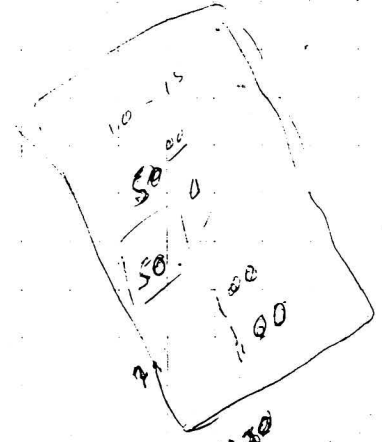
2211 - M
 2212 - S
 2216 - Fraxos // S₂ dip
 2216-2227 - perov. S₂
 2227-2229 Fraxos // S₂ dip
 2232-2234 Fraxos // S₂ dip
 2258.5 - S
 2261-2263 Fraxos // S₂ dip
 2272-2273 " " " " "
 2285 - S
 2294.5-2296 - M
 2297-2301 Fraxos // S₂ dip
 2303-2304 - M
 2305 - S
 2308 - S
 2309.5-2310 Fraxos // S₂ dip
 2313 - S
 2314-2315 Fraxos // S₂ dip
 2327 - S
 2332 - S (good)
 2337 - M
 2337-2348 - perov S₂
 2348.5
 2348-2360 - perov S₂
 2360 - S
 2360-2373 - perov S₂
 2373.5 Fraxos // S₂ dip
 2382 Fraxos // S₂ dip
 2386.5 - S
 2387-2392 - M
 2392-2411 - perov. S₂
 2411 - S

? probably all Fraxos too close to S₂ dip

OK

456-75-14

- 0-1 O/B
- 1-562 CS
- 562-~~641~~ Hb-bio diorite
- 641-794 Carb. bio-musc schist
- 796-953.5 " BMAS - upper unit
- 953.5-1239 Interbedded BMAS + metabasites
- 1239-1244 GS
- 1244-1333 B/BAS + minor interbedded GS
- 1333-1347 Metabasites
- 1347-~~1403~~ Thinly bedded Graph. musc S + minor metabasites
- 1403-1774 Carb. BMAS - upper unit
- 1774-1915 BM = AS - transition zone
- 1915-~~2126~~ BM = AS + metabasites
- 2126-2159.5 ~~MB~~ MB Staur S
- 2159.5-2181 Tactite/marble
- 2181-2417 QF BM Staur schist



12:30
22 days
640
40

Take
Here's summary
of log for 456-75-14. Need
Σ for symmetry anal.
sampling
D

456-75-15

- 0-9.5 O/B
- 9.5-436 CS
- 436-623 BMAS
- 623-647 GS
- 647-710 BMAS
- 710-716.5 WME (QM py schist)
- 716.5-722.5 RB SBGQ (<2% comb.)
- 722.5-729 Maso. pyritic (blackshot) sulfides w/ red br. ZnS (>10% comb.)
- 729-731 Maso. pyritic sulfides
- 731-741 Maso. blackshot pyritic sulfides w/ blk. ZnS (≈10% comb.)
- 741-767 Sulfide-bearing, ribbon bedded graph. gytite (≈5% comb.)
- 767-773 WME (QM py schist)
- 773-821 BM = A Schist

767.0
716.5
51'

DDH 456.7.5.1.4
2 8Cyprus Anvil Mining Corp.
Lithologic LogPage 3 of _____

Date: _____ Logged By: _____

Code	From		To		Recov.		No.		Unit		Description
	10	14	16	20	22	24	26	28	30	34	
											Upper part of this hole is in transition between Vangerda phyllite and 3D calc-silicate. Phyllite is grey-green with biotite purple colours gradually becoming dominant as go down the DDH. Medium green colour is well developed both in matrix and dispersed within the calcite-quartz bands. Cannot readily tell in matrix proportions between tremolite actinolite and chlorite. At about 310 feet begin to see a bluish green tint to the former green sections. This bluish tinge is most noticeable in the meta-basite intervals. In this DDH we do not see the well-developed blue-green amphibole colour as logged in DDH 456-75-13.
											Calc-silicate unit is cut out by fault + 10F dyke before metamorphic grade is high enough to complete this transition. Calcite-qtz bands do contain med green amphibole like observed in deep brown DDH. Appears to be precursor to intense blue green bands of grade 3D calc-silicate.
	10		150						1	#	Overburden
	50		980						2		Brown + greenish grey calcareous phyllite with obvious biotite development yet retention of grey colour - esp on foliation surfaces. Overall calcite-quartz laminae constitute 20-30%. Short carbonaceous interval @ 75 feet underlain by some short abnormally calcareous sections. Blue-green colour locally which actually turns out to be micaceous bands.
											5BD ± biotite / patchy biotite

Code	From	To	Recov.	No.	Unit	Description
	10 14 16 20 22 24 26 28 30 34 35					
L	98.0	1107.0		3		Medium olive green calcareous phyllite. Texturally resembles overlying unit. Green colour like 5D. May include some 5D-banding generally well developed. 5DBO protolith??
L	1107.0	1165.5		4		Medium grey brn & greenish grey calc. phyllite similar to Unit #2 (5.0 - 98.0). Green appears to be related to fractures and may represent retrograding of biotite — is this the problem w/ this green dominant interval?! Normal calcite lamination for 5B — 15-20%. 5B ± biotite?
L	1165.5	1178.5		5		As Unit #3 (98.0 - 107.0). Greyish green with fairly well developed calcite-qtz microlithons. Brownish patches along S ₂ reflect biotite development. Evidence of biotite retrograding. 10-15% calcite-qtz veins. Looks like 5B ± biotite
L	1178.5	1263.0		6		Med grey-green-brown calcareous biotite-chlorite phyllite. 10-20% calcite-qtz white bands. Large number of qtz veins.
L	1263.0	3110.0		7		As above Unit #6 (1178.5 - 1263.0) but more biotite-rich. Better separation of green & brown units. Clear indication of biotite retrograding green on fractures. Green colour largely related to fractures. Original rock was 5B biotite & now has fracture green. Grey colour less obvious — brown becomes dominant as biotite develops. Excellent qtz as lithon preservation

Minor metabasite 113-116

w/ about 20% lithons. Approx. 50-50 brown/green with green fracture controlled overprinting of brown

Core	From	To	Recov.	No.	Unit	Description					
	10	14	16	20	22	24	26	28	30	34	35
L	131100	131235		8		Bluish-grey-green brown weakly calcareous biotite/chlorite phyllite. Minor cc-gtz lithom. - fewer lithom. than above unit # 7. Stronger green overprint of brown biotite. Immediate fracture area contains epidote. Fracture set 40% core axis - on echelon tension gashes - symmetrically arranged epidote (core) & gtz (margin). Cannot tell if metasomatism in matrix (biotite → amphibole) or metasomatism out of matrix (biotite → chlorite). 5B0 biotite ± strongly overprinted					
L	131235	131435		9		5B0 biotite Grey-brown calcareous biotite phyllite with reasonable lithom development. 10% gtz-cc bands mainly in upper part. Green mineral developed patchily along S ₂ & cross-cutting S ₂ - related to fractures & biotite veins.					
L	131435	131890		110		Greenish grey to greyish-green calcareous biotite phyllite which has gone completely green related to numerous on echelon tension fractures filled by quartz-calcite. Only locally is it harder than biotite phyllite. 5B0 biotite retrograded/overprinted 10-15% gtz-cc bands. Texturally 5B rather than 5D.					

DDH 4567514
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Lithologic Log

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Date: Logged By:

Code	From		To		Recov.	No.	Unit	Description		
	10	14	16	20					22	24
L	13890		142120			111		<p>5B0 biotite (5B3 biotite)</p> <p>Medium brn calcareous biotite phyllite. Excellent microstructural texture. Qtz-cs bands range widely from 10% to some bit of intervals of over 50%. Contains blue green amphibole colour up to 20% of intervals. Base metal minerals The blue green appears mainly along or related to lat cross-cutting fractures. Some minor med-green bands seem related to original 5D protolith.</p> <p>The blue-green is not banded blue-green related to micaceous-qtz-calcite bands</p>		
L	141220		141370			112		<p>Medium bluish green w/ yellowish green patches (epidote) moderately hard to hard calc-silicate. Only patches of brn biotite. Interval cut by fracture network containing epidote. Fractures have halos of epidotized rock. Original qtz-cs litho particularly susceptible to the replacement - within 5' one or 5B0 brn (qtz-cs) and blue-green calc-sil w/ yellowish green microtextures. Clearly originally the same rock. Major overprinting of biotite w/ green. This interval grades into calc-silicate mineralogy by overprinting related to fractures</p>		
L	141370		141625			113		<p>50%/50% brnish gray calcareous phyllite & amphibole-calc silicate calcareous phyllite w/ brnish bands + 1/2 hard fault bxa with some blue-green calc-silicate mineralogy / flooding noted in Unit 12 (422-437.0). Fault bxa well developed 442', 445-447' May be master fracture for above altered zone</p>		

Code	From		To		Recov.	No.	Unit	Description		
	10	14	16	20					22	24
	1416	125	1418	10		114		Calcareous biotite phyllite w/ blue green m. bands & patches related apparently to fractures. Background rock excellent 5B0 biotite / Sumpers imposed is blue-green alteration largely fracture controlled - 1 10cm band could be more lithology controlled as was 45.6-75-13. 467.5-469.5' is green altered fault bxa similar to Unit # 13 (437.0-462.5) Fault ~ 40° to core axis		
L	1418	10	510	25		115		Another med yellowish to bluish green calc-silicate w/ purplish brn patches. Brn biotite remnants remote from fractures. Rock hard & cuts very smooth (core surface) Some preserved banding suggests protolith 5B0. Some homogeneous & bluish green sections may be 5D protolith. Base of unit is fault at about 30% core axis. This interval extreme case of fracture controlled flooding above - related to fault bxa noted above.		
L	510	25	514	30		116		Medium grey, generally non-calcareous phyllite. Strong S ₂ foln, well developed microlithons. Unit moderately hard. Colour & appearance of 1D (substantially harder & looks more siliceous) No porphyroblast present. Minor interbedded metabasite resembles 5D 505-522 very broken, rubble w/ gouge sections, S ₂ steeper than normal (30-40° core axis) - continuation of fault zone at top of unit lower contact last 10' intact but looks sheared. Dyke (next unit) has chilled intrusive contact against it		

Code	From				To				Recov.	No.	Unit	Description
	10	14	16	20	22	24	26	28				
	15430		15495							117		Qtz-feldspar biot. porphyry. Brn aphanitic matrix where fresh. Extremely altered to clay mass w/ intact texture. Some brn of Tss altered frags in green clay matrix. Altered dyke - 10F class.
L	15495		15540							118		Brn & lesser green slightly calcareous phyllite w/ sparse white Qtz-cs bands. - Some bands w/ epidote. 5B0 biotite.
L	15540		15620							119		Med to dk grey phyllite, non-calcareous, excellent 5mm - 20cm 5D type bands. Most reminiscent of Unit 3A (if any area). One small porphyry section.
L	15620		16410							120		Porphyry dyke. Med grey Qtz-feldspar-hbl-biot porphyry. Similar to above dyke. Groundmass holocrystalline-fine grained. Xenoliths. 3' upper chilled margin w/ more conspicuous biotite. Clin 10E-more than 10F. Only minor Qtz. Hbl shows fibrous (flow?) @ 45° core axis. 616-621' short interval of med grey to dk grey laminarly banded (intermittent) phyllite upper cut of dyke against phyllite? is 45° w/ chilled margins. Banding in phyllite? indicates strong shearing.
L	16410		16536							121		Highly sheared med grey to olive green rock. Combination of 1D, 1E, & 5D rocks caught in shear zone. Resembles T1c fault rock. Internal fibrous 45° CA. Dykes.

intrusive into major fault or the F1E fault? Has elements of 3A - could be 3A sheared out.

Code	From	To	Recov.	No.	Unit	Description
1	10 14	16 20	22 24	26 28	30 34	35
	165136	189100		1212		<p>Laminarly banded medium grey phyllite. Banding caused by lighter grey friable siltstone bands in phyllite. Grey caused by carbon. Contains euhedral rectangular porphyroblasts of andalusite in darker grey micaceous portions - up to 1 cm across. In some cases see original pale grey and otherwise have dark soft pseudomorph of and (chlorite?) and overgrows dominant S₂ fabric so have post S₂ growth.</p> <p>S₂ goes straight through porph. In some cases - several instances see a slight bulging of S₂ around porph. Not a rotated internal inclusion pattern.</p>  <p>Porphy typically have dk grey to black rims of ??? Some minor 3B bands.</p> <p>As go down DDH and porphs become larger & more micaceous. Near bottom of interval readily see biotite as forming clots partly to completely retrograded to chlorite surrounding rims of and. On checking back near top of interval can see minor biotite locally on rims of euhedral andalusite.</p>
L	189100	191100		1213		Sample 1D taken for py in / py out sulphur isotopes

Code	From		To		Recov.	No.	Unit	Description		
	10	14	16	20					22	24
	19110	0	19178	0		1213		Continuation of same andalusite development as described further up DDH. Clots become larger & more numerous. Many appear to be strictly chlorite ± biotite & look flattened on S ₂ fltn. Others consist of clots of andalusite (fresh) surrounded by biotite - these have irregular margins. Begin to see biotite colour in the phyllite matrix. At bottom of interval have muscovite-chlorite clots definitely representing former andalusite. There are some rods have fresh irregular clots of fresh biotite-andalusite.		
L	19178	0	19186	0		1214		Bleached muscovite micaceous chlorite phyllite. Overall weather to a light tan beige. Abundant pale green "flattened" on S ₂ chloritic clots - retrograding of former andalusite. ID4		
L	19186	0	11018			1215		Medium dark green, homogeneous, fine-grained metabasite interbedded w/ ID biotite phyllite/schist. Proportions 60:40. Phyllite/schist has pale green chlorite clots - altered andalusite yet lots of fresh biotite in matrix.		
L			11016	65		1216		ID schist phyllite. Matrix generally greenish chloritic. Contains abundant development of irregular biotite-andalusite clots. Relict green clots. Also matrix biotite.		
	11016	65	11018	10		1217		Dark green metabasite.		

Code	From					To					Recov.	No.	Unit	Description	
	10	14	16	20	22	24	26	28	30	34					35
L	10210		10910									128			1D schist Biotite-chlorite-andalusite schist Chlorite in matrix + clots (relict) Abundant biotite in matrix Abundant small andalusite + biotite forming small green ready to coalesce S2 fabric
L	110910		11110									129			Sampled 1D for py in / py out studies
L	11110		11330									130			Med dark green metabasite locally leopards rock
L	11330		11650									131			Chlorite-musc-biot-andalusite schist w/ green chlorite clots + fresh biotite-andalusite clots. Few minor metabasite interbands. Pink andalusite in gte veins. largely in last 10 feet - leopard rock appearance 5C+
L	11650		11910									132			1D altered Zone of altered & sheared schist Fault at top 45° core axis Mass Mass of chlorite w/ relict andalusite Gradational lower contact to less altered biot-musc + chlorite schist with green clots + fresh biot + andalusite. Biot also in matrix. Chlorite in matrix Unit becomes increasingly sheared & flattened as approach bottom of interval. Last 17' very green, resembles metabasite contains string out biotite & andalusite bands along S2 Schist alteration?? Entire interval green tinged w/ 2 very green subintervals - both w/ schist relicts in it

Is upper
part of the
unit a
strongly sheared
schist w/ glaucous
??

Code	From		To		Recov.		No.		Unit		Description	
	10	14	16	20	22	24	26	28	30	34		35
	111919	0	112145	0					1313			Fault zone Contains carbonaceous phyllite which is extensively fractured & broken, gneiss, 1D altered schist w/ relict clots Fault zones comprise about 60% of unit 1D schist sandwiched between fault zones forming upper & lower intervals Fresh biot and clots present in schist.
L	112145	0	112181	0					1314			Medium grey biot-musc-andalusite ± chlorite schist Biot-and. clots, irregular outline Chlorite locally visible in matrix last remaining 3' locally carbonaceous
L	112181	0	113101	0					1315			Sampled for py in / py out sulphur isotopes 1D2 or 1E
L	113101	0	113134	6					1316			Biotite-muscovite-andalusite ± chlorite schist. Chlorite locally in matrix. Biot-andal. clots developed along S ₂ foliation Biotite also in matrix. No garnet present in these rocks Bottom 9' contains carbonaceous intervals interbedded in last 3' w/ metabasite
L	113134	6	113146	0					1317			Metabasite Med dk green, homogeneous.
L	113146	0	113173	0					1318			Hard (siliceous) dk grey & white striped carbonaceous siliceous phyllite Good dark phyllite separating siliceous white gneiss likeous along S ₂ Has dark soft clots elongate along S ₂ last 3 ft contains hard green calc-silicate bands & minor sphalerite in bands // S ₂ & concentrated in fractures

Code	From		To		Recov.	No.	Unit	Description		
	10	14	16	20					22	24
L	1317	130	1378	5		1319		Black carbonaceous phyllite w/ white & light bluish to yellowish green hard calc-silicate bands. May have very minor sphalerite. Distinctive thin intense light & dark banding locally slightly calcareous - however bulk of calcite consumed by calc-silicate reactions. Light stripes about 50% of rock. Essentially all blue-green amphibole - Along line between yellow calc-silicates & pelite w/ a 9 for carbonaceous.		
L	1378	5	1428	0		1410		Dk med. grey to dk grey carbonaceous phyllite w/ substantial biotite & blue-green actinolite bands & lesser yellowish green diopside / epidote bands. TDI-1397' - dk ^{dk} grey, green & white banded w/ biotite along S ₂ / 1397-1416' Dk med grey w/ green calc-silicate banding w/ biotite along S ₂ / 1416-EUI it is dk grey again. BT along S ₂ folia. One sample has calc-silicate minerals in band grading across the S ₂ folia.		
L	1428	0	1431	0		1411		Zone of Unit #40 (1428) interlayered w/ Unit #39 (1373-1378) white calc-silicate bands at Top & bottom of interval. locally white bands are very calcareous.		
L	1431	0	1457	0		1412		Hard dk grey to black carbonaceous, siliceous phyllite w/ Variably calcareous calc-silicate bands. Bands are green & yellowish green. Yellowish green w/ minerals growing across S ₂ more dominant locally see biotite along S ₂ folia. Green is not blue-green amphibole - looks more like fine grained dk green epidote.		

Interval very hard - some hardness as Unit # 39 (1373-1378)

Code	From	To	Recov.	No.	Unit	Description
	10 14 16 20 22 24 26 28 30 34 35					
L	1141570	1147160		143		Variably calcareous green to yellowish green meta basite Homogeneous but well foliated. Med to dk, slightly bluish tinged green. Has disseminated dk epidote bands & dk chlorite (?) clots
L	1147160	114860		144		Hard, dk grey to black carbonaceous phyllite w/ med green & light green variably calcareous calc-silicate bands & very minor marble. w/ 2 1/2' of chlorite-biotite, soft, noncarbonaceous schist which looks retrogressed
L	114860	115000		145		Sampled? - No note left
L	115000	115110		146		Very hard, dk grey to black carbonaceous siliceous phyllite - could be called a gneiss. Dk grey to black S ₂ folia separating light green lithons. Minor pyrite in green bands. No sphalerite noted.
						This graphitic, siliceous phyllite - ribbon-banded w/ minor sulphides is a logical distal 4A equivalent Should possibly consider units #38 - as possible distal ore facies. This is like Fishhook Ck carbonaceous gneiss/siliceous phyllite and like rocks intersected in DRH on SWIM. Ck that appear to represent horizons below SWIM

At 1501'
8" of white
mass-gneiss
w minor
dissem py
↓
2877

Interval invites comparison to carbonaceous horizon
below GRUM or possible comparison to 3A
C.A.M.C. 1981 - E-3A

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Code	From				To				Recov.				No.				Unit				Description			
	10	14	16	20	22	24	26	28	30	34	35	1	2	3	4	5	6	7	8	9		10	11	12
L	115111	0	115113	5											147									Dk green metabasite similar to those above
L	115113	5	115119	5											148									Hard, light brownish grey siliceous phyllite/micaceous qtzite light purplish brown due to disseminated & foliiform biot. Contains sign. musc. Looks like above graphitic siliceous rocks altered due to proximity of metabasite. Contains thin interlayered calcareous probable altered probable SD equivalent
L	115119	5	115123	0											149									Variably calc. med. green to orangeish beige metabasite & altered carbonated metabasite. Has some dk biotitic bands which may be former schist
L	115123	0	115127	0											150									Dk grey to black fault breccia w/ sections of siliceous phyllite as above Fault @ 45° Core axis Real bad slicks rake 20°, 70°, 90° on fault plane.
L	115127	0	115128	5											151									Orangeish weathering, very light beige, muscovite-qtz-carbonate(?) SD4* analogue. Similar to muscovitic qtzite noted above. Carbonated metabasite?
L	115128	5	115129	5											152									Striped carbonaceous, siliceous phyllite as above
L	115129	5	115130	5											153									Orange-weathering muscovitic qtz-carbonate phyllite SD4* analogue.

Code	From		To		Recov.	No.	Unit	Description		
	10	14	16	20					22	24
L	1151310	5	1151515	5		1514		Carbonaceous, white & black striped, very hard, siliceous phyllite as above. Overall very hard but does contain soft black layers. Exactly as above units (46 1500-1511) Bands of minor disseminated pyrite. Top 2 1/2 ft fault bre w/ frags of this rock & carbonated metabasite in fine rock flour matrix. 1545-1546 bull gtz vein		
L	1151515	5	1151719	0		1515		Altered metabasite Orange-brown weathering carbonated metabasite w/ fuchsite 5D4* w/ 1558-1570 has core of fresh metabasite w/ green colour. Top & bottom of interval has small zone of bleaching in carbonaceous siliceous rocks.		
L	1151719	0	1151918	0		1516		Hard to moderately hard striped black & white siliceous phyllite as above. White stripes 1/2 mm to 5mm 2mm common. Black stripes tend to be thinner - paper thin to 5mm laminated. Same colour & texture as 2A/4A but not as thick.		
L	1151918	0	116025			1517		Some black siliceous phyllite interlayered w/ metabasite & gtz veins. Appears to be termination of the siliceous phyllite-metasite package. To north 1500'-1602.5' forms an obviously related group of rocks. Interval from ~1350 - 1372 is a comparable interval of rock types although striping is slightly coarser in scale.		

Metabasite altered - carbonated

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Code	From		To		Recov.	No.	Unit	Description		
	10	14	16	20					22	24
L	116102	5	116113	5		158		<p>Variably altered musc-chlor-biot schist w/ biotik-andalusite clots. Again see earlier clots "reduced" to dk green chloritic clots. Greener more micaceous bands also have rectangular embedded andalusite. Some compaction w/ r + S₂ - no obvious S₂ rotation. Fracture and in core of dk "altered" margins (dk) First sign of normal ID schist since above siliceous package.</p>		
L	116113	5	116151	5		159		<p>Dk grey to med grey & med dk grey, variably carbonaceous andalusite phyllite/schist w/ intervals of biotite brn showing. Musc-biot-andal. Minor interlayered 504* First 8' carbonaceous w/ calc-sili bands 1622-1623 light brownish grey & biotitic. Contains numerous fine siltstone laminae - slightly finer grained - up to 1cm thick. Last 6' has short very hard intervals. Some interlayered calc-silicate C-S does not cause the extreme hard.</p>		
	116151	5	116163	0		160		<p>Dk med. grey to light olive green calc-silicate phyllite. Varies calcareous. Some light green intervals possibly diopside? Contains large calc-silicate porphy crosscutting S₂ 40% c.s. layers & 60% dk micaceous layers.</p>		
L	116163	0	117117	0		161		<p>Med grey to dk med grey w/ local brownish (biot) or greenish (chloritic) noncalcareous schist. Relict andalusite - only appears largely to be retrogressed. Still get biotik on margins of clots. ID w/ slight alteration overprint.</p>		

more musc-chlorite - no carbon assemblage

Code	From		To		Recov.	No.	Unit	Description		
	10	14	16	20					22	24
L	117117	0	117410	0		1612		Med greenish grey musc-chl ± biot phyllite. Dk greenish grey clots pseudomorphing bio + andal clots. Similar to above interval but more altered - lighter colored but same texture. Get some relict biot-and clots.		
L	117410	0	117412	0		1613		Hard dk grey to black noncalcareous phyllite w/ spy along S ₂ & features. Carbonaceous. Contains thin chert intervals.		
L	117412	0	117511	5		1614		Med grey fault gouge / breccia zone. 45° core axis. ID.		
L	117511	5	119114	5		1615		Variably altered ID schist. Most of interval light to med greenish grey w/ some carbonaceous intervals (1857-1859) & lighter greener zones (1848-1857 & below 1893). Dark mottling after andalusite & biot. Some fresh clotted and-bio in even more altered intervals. And in pt veins. Assemblage musc-chlor-biot ± and ± staurolite. Minor py, spy, sphal - esp in dark zone. Staur begins to appear as small rosette shapes. Has both clots of pseudomorphs and-biot.		
L	119114	5	119219	0		1616		Interbedded interlayered altered metabasite, siliceous calc-silicate, and siliceous carbonaceous ID2 phyllite. Calc-sil interlayered green & brown w/ variably calcareous laminae. Siliceous ID2 clots are flattened in S ₂ - dk - carbonaceous, abnormally hard, but texturally ID. Lower 1/2 unit rich in carbonaceous schist w/ short intervals light greenish grey qtz-musc-chlorite schist - could be altered schist - could be mylonite.		

altered schist - could be mylonite

Probably calc-silicate is further altered schist - possibly mylonite??

Code	From				To				Recov.	No.	Unit	Description
	10	14	16	20	22	24	26	28				
L	11912	19	0	1913	14	0			167			Med green, well foliated homogeneous metabasite
L	11913	14	0	1914	16	0			168			light grey to med grey, moderately hard schist with abundant small andalusite porphyroblast. Seems abnormally hard. Similar to last 3' of unit #66 (). Last 2 1/2' of interval is brn & light green banded rock similar to calc-silicate type rock above. Noncalcareous, hard. Looks like zones that could be altered schist - symmetrical about metabasite
L	11914	16	0	1915	14	0			169			Med, slightly bluish green, slightly foliated, homogeneous metabasite. Surrounded on both sides by jade green & brn striped, hard, calc-silicate looking rock which probably is altered schist (?)
L	11915	14	0	1916	12	0			170			DK grey to black, moderately soft, slightly friable calcareous finely laminated or blocky grey/green phyllite. Some calc-silicate bands. First foot probable alteration as described above. Locally some fine andalusite matrix. Minor py disseminated - 1-2% & some spy
L	11916	12	0	1916	15	5			171			Heterogeneous brn & green irregularly banded schist w/ irregular and-biot clst relicts / thin to thick banded possible diopside-bearing calcareous sections w/ characteristic coarsening large grains superseding SZ / dk med grey, med. soft phyllite massive w/ not pseudomorphs

similar to last unit

Code	From					To					Recov.	No.	Unit	Description	
	10	14	16	20	22	24	26	28	30	34					35
L	1916	5	1919	4	0							1712			Med grey musc-chlorite-biot-andalusite schist. Pater than common 1D - slightly altered. Contains dk green chlorite clots elongate in S ₂ . Fresh and-biot clots often expanded across core to form bands rather than clots. Still 2 generations of clotting. Last complete of 10' containing gradation of clots the coarser 1C type schists. Assemblage is ± rosier coloured staurolite.
L	1919	4	2012	15	5							1713			Dk to med green well foliated generally homogeneous metabasite of minor bands of biotite schist. Generally "fresh" dk green metabasite locally calcareous - especially in biotite zones.
L	2021	5	2105	11	6							1714			Med greenish / bluish grey musc-biot-chlorite-andalusite ± staurolite schist. Biot- mus and clots sometimes have staur locally get streaking of all minerals along S ₄ . See 2 generations of clots - fresh clots in majority. Coarser grained overall - biotite well developed in matrix. Laminar banding in biot & chl-filling characteristic of 1C but still has andal. clots. 1CD
L	2105	11	2101	20	0							1715			Schist as above & below interbedded w/ dk bluish green & brown interbedded calc-silicate. C-5 as 10% of unit. 1 1/2' thick band Green-brown bed of calc-silicates. Similar to CNR 76-01 calc-silicates near bottom of DDH. Schist locally very rich in staurolite.

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Code	From		To		Recov.	No.	Unit	Description		
	10	14	16	20					22	24
L	2101810	0	2101914	5		1716		Greenish grey biot-musc-chlorit-staur-andal; schist lots of staur-like. Fair amt of dk green andalusite clots		
L	2101914	5	2101916	5		1717		Med. green, strongly foliated metabasite/amphibolite w/ radiating actinolite needles on S2. Transversing lenses of light-colored mica along S2. Slightly calcareous. S2 cut by asbestosiform veins.		
L	2101916	5	2111212	5		1718		Med to light greenish grey to brownish grey musc-chlor-biot-and-staur schist. biot retrograded. Dk andalusite clots in muscovite matrix. Staur present in andal-biot clots.		
L	2111212	5	2111413	0		179		Coarsely porphyroblastic schist. Same as above only note that suddenly see abundant garnets. These are commonly quite large. Where were they up the DDH? Retrograded appearance but fresh porphyroblasts of biot-and-garnet-staur.		
L	2114130		211519	0		180		More altered version of above schist (# 79 2122 - 2143). Light beige to off-white muscovite-pt-andal-staur-garnet. Only biot is in andal clots - not in matrix schists. Matrix schist - clots are fresh. Textures indicate some relict. Lower 1/2 of interval thin and interleaved with less altered schist similar to Unit # 79 (2122 - 2143) 6" metabasite at 2154'		

Code	From		To		Recov.		No.		Unit		Description
	10	14	16	20	22	24	26	28	30	34	
			211810	5							Med grey to light grey, med. xline calcite marble w/ some darker grey bands (slightly carbonaceous zones) Interspersed w/ or fine scales tremolite-quartz calc silicates - locally banded but mostly layers - about 10% calc silicate. Intervals of biotite schist - up to 10' long. In center of unit a 3" dark green foliated metabasite. Templing to compare to Venezuela Plateau 3F but foliation not banded (no CDR) no banded calc-sil or glaucophane as noted here.
L		211810	5	231920							1 C0 thinly banded, pervasively S ₂ foliated musc-biot-gar-staur-andal schist with some ghostly clots of med. material locally matrix retrograded to musc-chlorite. And much less obvious. And occurs as abundant smaller grains in bands. Not as conspicuously mottled as above. Banding is based on micaceous + garnet layers. Coarse grained.
L		231920	0	231945							Med. bluish green well foliated amphibolite/metabasite
			241170	0							1 C0 Biot-musc-staur-gar-andal schist Similar to Unit # () schist described above. Some retrograding of biot → chlorite // S ₂ . Minor garnet. Abundant staur. Good IC type schist.