

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
750				J3	C	1	8												
		1		J4	A	1	8												
		60		J4	C	0	4						14						J4 C 34° 2 @ 0° to 6.
				J2	C	43							60						
				J2	C	23													
				J2	C	30													
				J2	C	27													
		10		J2	C	42													
		72		J3	C	49	2	@ 210° to B					22						
				J3	C	15	1	@ 260° to B					72						
				J2	C	14	1	> 20											
				J2	C	-	1	> 20											
				J1	W	47	3	@ 165° to B											
				J2	W	32	2	@ 220° to B											J1 W 42° 2 @ 180° to B
				J1	W	30	1	@ 145° to B											J3 C - > 20
		0		B3	C	56	1						47						
		60		J1	W	07	1	@ 150° to B					60						
				J1	W	14	2	@ 175° to B											
				J2	W	00	2												
				J2	W	30	1	@ 225° to B											
				J2	W	57	1												
				J1	B	65	3	@ 165° to B											
				J3	C	-	1	> 20											
		2		J3	C	34	2						51						
		60		J3	C	-	1	> 20					60						
				J1	W	60	3	@ 220° to B											
				J2	W	44	2												J4 C 0 2
				J1	W	35	1												
				J1	B	28	1						23						
		2		J3	W	26	1						60						
		60		J2	W	40	5	@ 180° to B											
				J4	L	-	1	> 20											

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DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
975				J1	W	50	g @ 110° to B											
		60		J1	W	40	1 @ 200° to B											J3 C - 5
				J4	C	0	2											
				J4	C	56	5 @ 180° to B											
				J2	C	30	3 @ 180° to B											
				J4	C	-	720											
980				J2	C	50	2 J3 C - 7											
		60		J4	C	0	1											
				J1	C	42	2											
				J3	C	24	1											
				J2	C	23	3 @ 180° to B											
				J2	C	45	6 @ 160° to B											
				J4	C	-	720											
985				J2	W	43	1 @ 75° to B Bedding @ 33°											J2 C 45 13
				J4	C	0	1											@ 150° to B
				B2	W	37	1											J3 C - 5
				J1	W	45	1											J3 C 90 2
				J2	W	12	1 @ 90° to B											
				J2	W	34	1 @ 90° to B											
				J2	W	30	3 @ 130° to B											
990				J2	C	35	2											J4 C - 10
				J2	C	23	1											J3 C - 5
				J2	W	57	1											J4 C 10 1
				J3	C	17	1											
				J2	C	25	1/10											
				J4	C	25	1											
				J4	C	0	1											
995				J2	C	25	2 J4 C 37 1											
				J2	W	45	1 J2 C - ∞											
				J3	C	90	1											
				J4	W	39	1											
				J2	C	70	1											
				J4	C	36	3											
				J2	C	40	2											
1000				J2	W	37	1											

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DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
1000				J ₂ C 38		3	J ₃ C - 10											
		0/60		J ₁ W 40		1												
				B ₂ C 60		2												
				J ₂ C 08		4												
				J ₂ C 50		1												
				J ₂ C 10		1												
1005				J ₂ C 20		2												
		0/60		J ₁ W 43		1												
				D ₁ B 55		1												
				B ₃ C 52		2												
1010				J ₂ C 53		1	180° to B											
		0/60		J ₁ B 40		2	180° to B											
				J ₁ W 62		3	180° to B											
				J ₄ W 0		1												
				J ₂ C 40		4												
				J ₁ W 33		4												
1015				J ₂ C 37		1	@ 270° to B Bedding @ 37°											
				J ₂ W 36		2	B ₁ B 53 1											
		1/60		J ₁ W 57		2	J ₁ W 26 2											
				J ₂ C 25		1	@ 180° to B											
				J ₁ C 40		1	@ 180° to B											
				J ₂ C 27		2	@ 85° to B											
				J ₄ W 0		1												
1020				J ₂ C 20		1												
				J ₃ C 20		2												
		0/60		S ₂ C 05		1												
				B ₁ B 48		1	@ 270° to B											
				J ₂ C 04		1	@ 180° to B											
				J ₂ W 30		2	@ 180° to B											
1025				J ₁ B 22		1	@ 0° to B Bedding @ 48°											

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DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA CORE	BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION					4	3	2	75	50	25	15	10	5	
1025		0		J ₂ C		23	1 @ 175° to B													
				J ₂ W		42	1													J ₂ C 40 1
				J ₂ C		0	1													@ 175° to B
				J ₂ C		30	1													J ₂ C - 10
1030		0		J ₁ B		55	2 @ 180° to B													J ₃ C - 5
				J ₂ C		42	2													
				B ₁ B		45	5													
				B ₂ B		45	15													
				J ₁ W		35	1	@ 170° to B												
				J ₁ C		22	1													
1035		0		J ₃ C		22	1	Bedding @ 35°												J ₂ W 77 4
				J ₂ W		15	1													@ 180° to B
				B ₂ C		54	1													B ₂ C 35 1
				J ₂ C		30	1													J ₂ C - 20
				J ₄ C		-	20													
				J ₂ W		40	2	@ 180° to B												B ₁ S 44 4
1040		1/60		J ₂ C		37	2	@ 190° to B												J ₄ C - ∞
				J ₄ C		37	4	@ 180° to B												BRECCIA
				J ₄ W		45	2	@ 280° to B												J ₂ C 44° 2
				J ₂ C		52	1	@ 190° to B												@ 200° to B
				J ₂ C		14	1	@ 180° to B												J ₂ C 62° 3
				J ₄ C		14	2	@ 180° to B												C 90° to B
				J ₃ C		-	8													
								BEDDING @ 52° INCLINATION												B ₄ W 55° 1
1045		2/60		B ₂ C		52	10													J ₄ W 6° 1
				J ₄ W		0	1													J ₂ C 30° 3
				J ₄ C		0	4													@ 180° to B
				J ₄ C		-	∞	BRECCIA												
				J ₄ W		-	∞	BRECCIA												J ₃ C - 12
1050		0/60		B ₂ C		55	6													J ₂ C 38° 1
				B ₂ C		49	2													@ 0° to B
				B ₄ C		54	8													J ₁ S 28° 2
				J ₄ C		0	3													@ 220° to B

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DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BREGIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5		
1050				J4	W	27	1 @ 255° TO B													
			0/60	J2	W	40	2 @ 180° TO B													J3 C - 9
				J4	W	40	1 @ 180° TO B													B1 S 53 1
							BEDDING @ 54° INCLINATION													J2 C 28° 2
			0/60	B2	C	54	6													@ 180° TO B
1055				B2	C	50	3								40					B1 S 51° 2
				J4	W	39	4 @ 180° TO B								60					J4 C 24° 3
				J4	C	36	2 @ 180° TO B													@ 180° TO B
				J2	W	38	1 @ 180° TO B													J4 C 24° 3
																				@ 180° TO B
			3/60	J3	C	-	5													J4 S 20° 3
				B2	C	51	3													J4 W 60° 1
				B2	C	47	2													@ 195° TO B
1060				J4	W	22	6 @ 180° TO B								25					J4 S 76° 2
				J4	W	30	2 @ 180° TO B								60					@ 90° TO B
				J1	S	24	2													J2 C 40° 2
																				J1 S 53° 2
			0/60	B2	C	52	12													@ 190° TO B
				J4	W	48	2 @ 180° TO B													J4 W 55° 3
				J1	S	42	2 @ 200° TO B													@ 190° TO B
1065				J4	W	42	5 @ 200° TO B								34					J4 W 0° 2
				J1	S	3	1 @ 0° TO B								60					
				J2	C	52	2 @ 180° TO B													
			1/60	B2	C	52	3													B2 C 54 3
				J2	W	36	1 @ 220° TO B													J4 W 40° 1
1070				J4	W	0°	1													@ 150° TO B
				J4	W	36	2 @ 220° TO B								47					
				J4	W	22	4 @ 190° TO B								60					
				B3	C	55	2													
			0/60	B1	B	60	4													J2 W 22 1
				J2	C	50	2 @ 200° TO B								40					@ 180° TO B
				J1	B	23	1													J4 W 10 4
1075				B1	B	47	1								60					J2 C 90 2

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DEPTH 1075	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOLGE BROKEN CORE	HARDNESS 4 3 2			ROCK QUALITY DESIGNATION 75 50 25			NATURAL FRACTURE FREQUENCY 15 10 5			PERMEABILITY
	TYPE	INFILLING	INCLINATION																
1080	1/60			B ₁ B 48 J ₁ BW 25 J ₄ C J ₄ W J ₁ S 62 B ₁ B 43	B C W S B	48 25 - - 62 43	6 1 @ 120° to B 20 2 @ 185° to B 1											J ₃ C 20 2	
1085	0/60			B ₁ B 50 J ₁ S 41 J ₁ S 60 J ₃ S 20 J ₁ S 50 J ₂ W 53 J ₁ B 40	B S S S S W B	50 41 60 20 50 53 40	1 @ 200° to B 1 1 1 4 1					45 50		12			J ₁ S 66 J ₁ W 23		
1090	1/60			B ₃ C 55 B ₂ B 51 J ₂ C 37 J ₁ B 58 J ₃ C 62	C B C B C	55 51 37 58 62	Bedding @ 55° 1 @ 180° to B 3 5					75 60		720			J ₄ C 0 2 J ₃ C - 5		
1095	0/60			B ₁ B 47 J ₄ C 0 J ₁ S 62 J ₄ C 0 J ₂ C 21 J ₃ C 58 J ₁ S 46	B C S C C C S	47 0 62 0 21 58 46	6 1 @ 0° to B 1 1 1 3					24 60							
1100	2/60			B ₂ C 53 B ₁ S 51 J ₁ S 25 J ₄ W 0	C S S W	53 51 25 0	6 4 1 1					18 60		720			J ₁ S 20 1 J ₁ S 22 1 @ 180° to B J ₄ W + 18		

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DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
1100																			
1105		0	60	J ₃ C 77 J ₃ C 96 B ₂ C 43 J ₇ C 05 J ₄ C 06 B ₂ C 44 J ₁ S 22		3 2 2 1 1 1 2	J ₃ - C 50 1						75 60						
1110		0	60	B ₂ C 54 J ₄ W 08 J ₂ W 08 J ₄ C 08 J ₇ C 42 J ₂ C -		2 2 1 1 4 10	@ 150° to B						25 60		20				
1115		0	60	B ₁ B 54 B ₂ C 54 B ₁ B 54 J ₂ C 09 J ₄ W 06 J ₃ C - H ₁ S -		12 2 6 1 1 10	Bedding @ 54° @ 150° to B						34 60		> 20				
1120		0	60	J ₁ S 86 J ₁ S 58 J ₂ W 17 J ₄ S 0 J ₁ S 65 B ₁ B 44 J ₂ C 38		1 1 1 1 2 1 1	@ 0° to B @ 190° to B						11 60		> 20				J ₂ C 40 1 @ 180° to B J ₂ C 44 1 @ 190° to B B ₂ C 38 1 J ₃ C 58 > 20 J ₂ C - > 20
1125		0	60	J ₁ S 53 J ₃ C 63 B ₂ B 47 J ₃ C 90 J ₃ C 05		1 1 1 2 1	Bedding @ 47° @ 270° to B						15 60		> 20				J ₄ W 05 1 J ₁ B 57 1 @ 190° to B B ₁ C 47 16 J ₃ C - 10

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DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
1125				J ₁	S	72	1 @ 10° to B												
1130	8 60			J ₁ J ₃ J ₂ J ₂ J ₃ J ₁ J ₃	SB C B B C B C	42 09 60 17 - 54 53	1 @ 155° to B Bedding @ 38° 1 @ 170° to B 1 @ 180° to B - - 1 2					16 60			>20			J ₃ C 90.1 J ₃ C 36.1 J ₂ C 12.1 J ₂ B 28.1 J ₂ BW 27.1	
1135																			
1140																			
1145																			
1150																			

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DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
25																			
-30																			
-35							TRICONE												
-40																			
-45																			
50	2	60		J ₂ A, B ₁ J ₁	C B A B	20 83 78 35	2 2 7 1 ↓ TO 52'												

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DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
50				J ₁ S 22 J ₃ C 22 J ₃ C 22			1 @ 48 1/2												
55				J ₃ C 03 B ₃ B 87 J ₃ C 290 J ₃ C 123 I ₁ C 97 J ₂ } C-B J ₃ } B ₃ }			>>20												
60				J ₁ W 04 J ₂ C 58 J ₃ C 90 J ₃ W 20 J ₄ C 05 J ₁ W 90 J ₃ C -			1 3 2 1 2 10												
65				J ₃ W 04 B ₂ C 83 J ₃ C 50 J ₂ W 0			1 1 1 1												
70				J ₂ W 0 B ₃ C 70 J ₃ C 72 B ₃ C 84 B ₁ W 79 B ₂ C 80 B ₂ W 07 J ₃ C 55 J ₁ C 19			1 1 1 1 1 1 1 1 1												
75																			

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DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	20	10	5	
75				B ₂	B	82	1 > J ₁ 185 B ₂												
				J ₁	W	16													
				J ₃	C	21													
				J ₂	C	50	141												
				J ₁	W	01	2+1												
80				J ₂	W	60													
				B ₂	C	75													
				B ₂	C	78													
				J ₁	W	33	1 > J ₁ 215 B ₂												
				J ₃	C	12													
				J ₃	C	05													
85				B ₂	C	76	15												
				B ₄	W	78	142												
				J ₂	C	42	1 J ₂ 150 B ₂												
				J ₁	C	10	1 J ₁ 265 B ₂												
				J ₄	C	10													
				J ₃	C														
				J ₃	C	07													
90				J ₂	C	02	1 J ₂ 000 B ₂												
				J ₁	C	09	1 J ₁ 255 B ₂												
				J ₄	C	03													
				J ₁	W	08	1 J ₁ 185 B ₂												
				J ₂	C	00													
				J ₁	B	47													
95				J ₁	W	0													
				B ₂	B	79													
				B ₂	B	80	2												
				J ₃	W	15													
				J ₃	C-W		~20												
100				B ₄	W	75	2 BEDDING @ 70° INCLINATION												

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DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA / GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
100	0	60		J ₁ W 20	2 @ 0° TO B														
				B ₁ S 65	1 @ 100'														
				B ₂ C 68	5														
				J ₂ C 10	1														
				J ₂ C 20	2														
105	0	60		S ₂ C 20	3 @ 90° TO B														
				B ₂ C 70	8														
				B ₃ C 65	5														
				B ₄ W 45	3														
				J ₄ W 20	1 @ 90 TO B														
110	0	60		S ₄ B 90	1 @ 90° B														
				B ₂ C 80	4														
				B ₃ C 75	3														
				B ₄ C 70	1														
				J ₂ C 30	1 @ 100° B														
115	0	60		B ₂ C 78	6														
				B ₄ W 76	2														
				J ₄ C 0	1														
				J ₃ C	2														
120	1/12			J ₃ B	∞														
				J ₁ C 36	1 @ 280° TO B														
				B ₂ C 80	15														
	10	72		J ₁ S 52	4 @ 0° TO B														
				J ₄ C 50	5														
125				J ₁ S 4	1														

BEDDING INCLINATION @ 78°

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DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
125				B ₂	B	80	2												
				S ₂	C	20	2 @ 90° to B												
				S ₃	C	0°	2												
				B ₂	C	70°	3												
				S ₂ /W		45	2 @ 0° to B												
130																			
				B ₂	E/S	80	3												
				S ₁	E/S	0	1												
				B ₁	S	70	2												
				S ₂	S	30	2 @ 0° to B												
				J ₁	C	11	1 @ 180° to B												
				J ₂	C	40	2												
				J ₃	C		3												
				J ₂	C	0	2												
				J ₂	B	20	1 @ 180° to B												
				B ₂	B	80	∞												
				J ₃	B		∞												
				J ₂	B	30	3 @ 90° to B												
				B ₄	B	78	∞												
				B ₂	B	82	∞												
				J ₂	B	11	3												
				J ₃	B		∞												
				J ₃	B		∞												
				B ₂	B	68	∞												
				J ₂	B	50	∞												
150																			

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DATE: July 14
PROJECT No. _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY	PERMEABILITY
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25		
150	0	60		J2	B	42	3									
				J2	B	0	2			①			0		20	
				J3	B		∞						0			
155	MISSING INTERVAL															
				J3	B		∞			①			0		20	
				B2	B	78	4			①			0			
				J2	B	0	2						0		20	
				J3	B		∞						0			
160	4	48		J1	S	11	2						0		20	J4 S - ∞
				B	W	51	4						0			J3 C 10
				J1	W	30	2						0			B1 S 80 2
				J2	C	0	1						0			
				J4	C		∞						0			
				J1	S	0	1						15		20	
165	0	60		J1	S	51	3						15		20	
				J2	C	45	7						60			
				J2	C	20	3						60			
				J4	W		∞						60			
				J3	C		∞						60			
				J3	C		4						17		20	
170	4	60		B2	C	72	5						17		20	
				J1	S	1	1						60			
				J2	C	4	2						60			
				J4	W	0	10						60			
				J4	W		∞						60			
175	3	60		J1	S	11	2						24		20	
				J1	S	45	2						24			
				B2	C	76	4						60			
				J4	W		1						60			

LOGGED BY: AT

DATE: JULY 18

PROJECT No.

Golder Associates

Hole No. 278

SHEET 6 OF

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
175				J4 J3	W C		BRECCIA											
180	2	60		J1 J2 B2 S1 S1 J3 J4	C C C S S C W	0 22 30 11 28 33 8	4 5 6 6 3 8 BRECCIA											
185	2	48		B2 S2 S4 S3 S2	C C C C C	78 56 20 -9 8	6 4 2 -1 -1 270 to B 180 to B											
190	0	60		S1 S1 B2 S3	W W C C	4 27 84 2	12 12 6 2 Bedding inclination 84°											
195	1	60		S3 B2 S1 S1 S1 S2 S2 S4 S2 B2 B2	W C W S S C W W C C C	78 51 0 45 62 68 19 20 23 74 80	5 5 1 1 1 1 1 3 2 8 3											
200																		

LOGGED BY: HH
DATE: July 19
PROJECT No. _____

Golder Associates

Hole No. 278
SHEET 7 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY	PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	
200				B ₂	C	80	10										
	15			S ₂	B	30	2							24		20	
	60			S ₃	B		8							60			
205				S ₃	B	7	8										
	6			S ₂	B	52	7										
	48			B ₂	B	74	8							0		20	
210				S ₃	B		8										
	7			B ₂	B	69	8										
	60			S ₂	B	49	2							14		20	
215				B ₂	B	70	8										
	5			S ₃	B		8										
	60			S ₂	B	39	2							8		20	
				B ₄		69	8							60			
220				S ₃	B		8										
	4			B ₂	B	74	8										
	60			S ₄		0	2							0		20	

LOGGED BY: AK
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Golder Associates

Hole No. 278
SHEET 8 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
225	17	60		S ₃ B	B	83	8												
230	12	48		B ₂ B J ₂ B S ₃ B	B	88 55	8 2 8												
235	12	60		B ₂ C S ₂ C S ₄ W S ₄ C S ₃ C	C	72 27 8 1 8	5 2 @ 0° to B 1 @ 90° to B 1 8												
240	4	36		B ₂ C B ₂ C S ₃ C B ₂ B J ₂ B	C	86 78 74 73	2 2 6 5 1 @ 190° to B	S ₄ W 11 - 28 @ 260° to B											
245	6	60		B ₂ C B ₃ C J ₃ B S ₂ W B ₂ C	C	80 83 88 84 70	8 8 8 1 @ 0° to B 2												
250		60		S ₃ B B ₂ C S ₄ W S ₁ C S ₂ W	B	80 80 33 74	8 10 1 2 @ 340° to B 1 @ 180° to B												

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Golder Associates

Hole No. 278
SHEET 9 OF

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
250	0	60																
255	4	60		B ₂ S ₂ S ₁ S ₁	C C C C	78 40 46 33	5 2 @ 180° to B 2 @ 88° to B 1 @ 270° to B					33 60						
260	5	60		S ₄ S ₄ B ₂ S ₂ S ₂ S ₃	C C C C C C	0 15 77 64 52	3 1 @ 180° to B 5 2 @ 120° to B 1 5					23 60						
265	0	60		B ₂ S ₂ S ₃	C C B	70 54	6 4 @ 280° to B ∞					34 60		20				
270	6	60		B ₂ S ₃ S ₄ S ₄ S ₃ S ₂	C C C C C C	80 6 #0 22 3 26	2 2 1 @ 180° to B 3 1 @ 0° to B					48 60						
275	0	60		S ₄ S ₄ B ₂	C C C	22 74 74	3 @ 300° to B 1 3 Bedding @ 74°					56 60						

LOGGED BY: SH
DATE: JULY 18

Hole No. 278

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
275	0	60		S4	C	0	1						52						
				S4	W	36	1 @ 300° to B						60						
				B2	C	80	9												
				B3	C	75	4												
280	0	60		B4	W	80	1						45						
													60						
				B2	C	76	4												
				B2	C	80	2												
285	0	60		S2	C	13	1 @ 180° to B												
				B4	W	79	2						53						
				S3	C	40	3						60						
				B2	C	76	7												
				S2	C	70	1 @ 90° to B												
290	0	60		S4	W	16	2 @ 20° to B						56						
													60						
				B2	C	80	6												
				B4	W	76	1												
295	0	60		S4	W	8	1 @ 150° to B						60						
													60						
				B2	C	80	4												
				B2	C	75	3												
				B4	W	74	1						54						
300	0	60		S4	W	0	2						60						

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DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY	PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25		
300																
305	0	60		B ₂	C	72	-9						53			
				S ₂	C	68	-1 @ 20° to B						60			
310	0	60		B ₂	C	72	-9									
				B ₃	C	80	-2									
				S ₄	W	20	-1 @ 320° to B						36			
				S ₄	W	11	1 @ 140° to B						60			
				S ₄	C	0	3									
				S ₁	C	63	1 @ 0° to B									
315	6	60		B ₂	C	82	5									
				B ₂	C	78	2									
				S ₂	C	0	1						40			
				S ₄	E	0	1						60			
				S ₂	C	40	2 @ 180° to B									
				S ₃	C		6									
320	3	60		B ₂	C	76	-8									
				B ₂	C	71	-3									
				B ₂	C	62	-2									
				S ₃	C	29	-1 @ 200° to B						28			
				S ₄	C	0	3									
				S ₄	C	9	4 @ 280° to B						60			
				S ₁	C		∞ Breccia									
325	0	60		B ₂	C	78	-7									
				B ₂	C	68	-2									
				S ₄	C	0	-1									
				S ₂	C	42	-2 @ 0° to B									
				S ₁	A	11	-2 @ 0° to B									

LOGGED BY: AT
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Golder Associates

Hole No. 278
SHEET 12 OF

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
325	0	60		S ₃	C		2							38					
				S ₁	C	24	-1 @ 20° to B							60					
				S ₄	C	24	-4 @ 20° to B												
	0	60		B ₂	B	72	-7							32					
330				S ₄	C	27	-3 @ 270° to B							60					
				S ₂	C	10	-2 @ 180° to B												
				S ₁	F	11	-1 @ 270° to B												
				S ₃	C		2												
				B ₂	C	73	-5												
				B ₄	B	73	-4												
	3	60		B ₂	C	80	-3							22					
335				S ₂	C	36	-1 @ 250° to B							60					
				S ₄	C	36	-2 @ 250° to B												
				S ₄	C	25	-8												
							Bedding @ 73°												
				B ₂	C	76	-9												
				B ₁	S	78	-1												
	4	60		B ₂	B	80	-4							30					
340				S ₄	C	8	-1							60					
				B ₂	C	71	-6												
				S ₄	C	0	-4												
	0	60		B ₂	B	61	-3							47					
345				S ₄	C	20	-2 @ 310° to B							60					
				S ₁	F	30	-1 @ 180° to B												
	8	24		B ₂	C	74	-5							10					
				S ₃	C	90	-1							24					
350				B ₂	C	78	5												

LOGGED BY: AH
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Golder Associates

Hole No. 278
SHEET 13 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
350	0	36		S1 C		19-2							30						
				S2 C		19-1							36						
				S4 C		11-1	290° to B						35						
				S4 C									60						
				S4 C									60						
355	0	60		S4 C		67-2							60						
				S1 S		40-2													
				B2 B		68													
				S2 C		50-3													
				S3 C															
				B2 C		76-9													
				S1 S		65-1	2185° to B												
				S4 E		11-2							33						
360	0	60		S4 E									60						
				S2 C		30-1	290° to B												
				B2 C		88-2													
				B2 C		80-7													
				B4 B		78-6							15						
				B2 B		68-3							60						
365	4	60		J2 C		52-2													
				J4 W		0-2													
				J4 C		0-1													
				B2 C		76-6													
				S2 C		51-2	@ 180° to B						49						
370	0	60											60						
				B2 C		80-2													
				B2 C		76-6													
				J2 C		33-1	@ 0° to B												
				J4 C		21-1	@ 220° to B												
375	0	60		J4 C		30-1	@ 90° to B						56						

B2 C 67 2
 J2 C 30° 2
 @ 60° to B
 J4 W 120°
 @ 180° to B

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Golder Associates

Hole No. 278
 SHEET 14 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY		PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	5	10	
375	9/60			J1	W	20	4 @ 80° TO B										
				J1	S	38	1 @ 100° TO B										
				B2	C	76	9										
				B2	C	77	2										
				J1	S	65	1										
380	0/60			B2	C	70	2										
				J2	C	40	1 @ 180° TO B										
				J4	C	22	1 @ 0° TO B										
				B2	C	77	6										
				J3	C	80	2										
385	0/48			J3	C		2										
				J4	C	0	1										
				J4	W	0	1										
				B2	C	80	2										
				B2	C	74	3	Bedding @ 76° INCLINATION									
390	0/60																
				B2	C	78	3										
				B2	C	63	1										
				J2	C	38	1 @ 190° TO B										
395	0/60			J4	W	38	1 @ 180° TO B										
				B3	C	68	3										
				B2	C	61	4										
				J3	C	6	2										
				J4	W	0	1										
400	16/72			B3	C	80	2										

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Golder Associates

Hole No. 276
SHEET 15 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY	PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25		
400															505		
405		0	60	B ₂ C	C	61 2											
				B ₂ C	C	79 3											
				J ₂ C	C	28 1 @ 0° TD B											
				B ₄ W	W	66 1											
410		0	60	B ₂ C	C	80 2											
				B ₂ C	C	70 2											
				J ₄ W	W	28 1 @ 290° TD B											
				J ₂ C	C	30 2 @ 230° TD B											
				J ₃ C	C	3											
415		0	60	J ₂ C	C	45 2 @ 270° TD B											
				J ₂ C	C	33 1 @ 250° TD B											
				J ₄ C	C	33 1 @ 250° TD B											
				B ₂ C	C	78 2											
				S ₄ W	W	48 2 @ 270° TD B											
				B ₂ C	C	58 2											
420		1	60	J ₂ C	C	30 -1											
				J ₂ C	C	32 -4											
				J ₂ C	C	49 -3											
				J ₁ S	S	52 -2											
				S ₃ C	C	3											
425		3	60	S ₄ W	W	45 -1											
				S ₂ C	C	45 -1											
				S ₂ C	C	50 -3											
				S ₃ C	C	-3											

LOGGED BY: GAH
DATE: July 19/79
PROJECT No. _____

Golder Associates

Hole No. 278
SHEET 16 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY	PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25		
425				B ₂	C	70-2								15/105		
430	0/60			B ₂	C	72-5										
				B ₄	W	72-8										
				B ₂	C	80-1										
								Bedding @ 72°								
435	12/60			B ₂	C	78-5										
				B ₃	C	75-3										
				B ₄	C	75-2										
440	6/60			B ₂	C	72-23										
				B ₂	C	78-2										
				J ₄	W	33-4 @ 75° to B										
				J ₄	C	33-2 @ 75° to B										
445	18/60															
				B ₂	C	72-18										
				B ₂	C	77-4										
				J ₃	B	-∞										
				J ₄	W	0-4										
				J ₃	C	2										
450	4/12 39/60			B ₂	C	80-5										
				J ₂	C	30-2 @ 0° to B										
				B ₂	C	90-19										

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Golder Associates

Hole No. 278
SHEET 17 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY	PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25		
450																
455							MISSING CORE									
460		1			S ₂ S ₁ S ₁ S ₄ B ₂	U S M S C	22 33 52 42 68	-2 -1 -1 -2 -4	S ₃ , C, 89, 3 B ₄ , C, 83, 4				9 3 6			
465		0			B ₂ B ₂ S ₂ S ₄ T ₄	C C C C C	70 78 18 40 8	-3 -5 -1	∅ 55° to B 2 @ 300° TO B 1 @ 300° TO B				5 4 6 0			
470		0			T ₂ T ₄ T ₂ T ₄ B ₂	W W C C C	11 11 40 40 80	1 2 3 2 6	@ 280° TO B @ 280° TO B @ 280° TO B @ 280 TO B BEDDING @ 80° INCLINATION				5 6 0			
475		0			B ₂ B ₂ T ₂ T ₂	C C C C	74 82 12 38	2 5 2 1	@ 300° TO B @ 300 TO B				5 6 0			

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Golder Associates

Hole No. 215
 SHEET 18 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY	PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25		
500																	
505		6	60	B ₂	B	80-24											
				B ₂	B	72-3											
				S ₂	B	34-1 @ 90° to B											
				S ₂	B	40-1 @ 270° to B											
				S ₂	C	17-4 @ 180° to B											
				S ₄	C	0-2											
				B ₂	B	64-5											
570		0	60	S ₂	C	30-1 @ 300° to B											
				S ₄	C	30-2 @ 300° to B											
				B ₁	C	80-1											
				S ₃	C	-2											
				S ₄	C	∞											
				S ₄	C	22-5 @ 270° to B											
				S ₂	C	43-1 @ 162° to B											
515		0	60	B ₂	C	74-6											
				B ₂	C	80-2											
				S ₃	C	3											
				S ₂	C	42-1 @ 290° to B											
				S ₄	C	∞											
				S ₂	C	30-1 @ 90° to B											
				S ₄	C	40-2 @ 270° to B											
520		0	60	S ₄	C	11-3 @ 20° to B											
				B ₂	C	70-3											
				B ₂	C	8°											
				S ₄	C	∞											
				S ₄	C	27-3 -0° to B											
				S ₂	C	27-3 -0° to B											
525		0	60	B ₁	C	75-3											
				B ₂	C	78-3											

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Golder Associates

Hole No. 278
SHEET 20 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY	PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25		
525				S4	C	6	-1 @ 180° to B										
		0	10	S3	C		2										
				S4	W		∞										
		0		S4	W	11	-1 270°										
530		0	60	B2	C	68	-6						36			20	
				B1	S	38	-5						60				
				B4	C	38											
				S4	C	0											
				S1	S	40	-2 @ 270° to B										
		6		B2	C	64	-6										
				S2	C	51	-4						14			20	
535		6	60	S3	B		∞						60				
				B1	S	69	-3										
				S1	S	90	-2 @ 270° to B										
				S3	B		∞										
		15		B2	B	80	-6										
540			60	S2	B	60	-2						0			20	
													60				
		0	12	B2	B	76	-6										
				S2	B	30	-1 @ 270° to B / S3, B, ∞							3/12			20
		0		B2	C	76	-6										
				S3	C		∞						18				
545		0	48	B3	C	90	-5									20	
				B4	W	73	-1						48				
				B4	C	70	-3										
				S4	C	30	-1 @ 320° to B										
				S1	S	60	-3										
		12		S1	S	40	-1 @ 320° to B							0			20
550			60	B1	S	69	-1						60				
				B2	C	72	-10										
							Bedding @ 76°										

LOGGED BY: _____
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Golder Associates

Hole No. 278
SHEET 21 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY	PERMEABILITY
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25		
550				S3	B		∞									
555	6/60			B2	C	80	-4							20		
				B2	B	73	-9									
				B2	C	76	-2									
				S4	C	0	-1									
				S4	C	11	-2									
560	0/60			S3	B		∞							20		
				S2	B	60	3									
				S3	B		∞									
565	12/60			S3	B		∞							20		
				B2	C	78	-4									
				B3	C	80	-2									
570	0/60			S4	C	2	-2 @ 270° to B							20		
				B2	C	80	-9 @ 270° to B									
				S4	C	40	-6 @ 270° to B									
				S1	S	3	-1 @ 180° to B									
				S2	C	21	-1 @ 180° to B									
575	0/60			B2	C	80	-5 @ 90° to B							20		
				S4	C	15	-2 @ 90° to B									
				B4	C	77	-∞									

Bedding @ 82°

LOGGED BY: _____
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Golder Associates

Hole No. 278
 SHEET 22 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY	PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25		
575	0	0															
580	0	0		S4	C	0	2								20		
				B2	C	78	15										
				B3	C	68	2										
				B4	C	80	0										
				B2	C	62	3										
				B2	C	74	4										
				B3	C	80	2										
				S3	C		2										
585	0	36		B2	C	80	4										
				B2	C	70	5										
				B3	C	/	3										
				S4	C	/	0										
590				B2	C	80	4										
				S4	C	14	-1	2 180° to B									
				S4	C	34	-1	2 180° to B									
				S2	B	45	-3										
				S3	B		-3										
595				S2	B	48	-4	2 180° to B									
				S4	B	48	-3	2 180° to B									
				B2	B	78	-10										
				S4	B	0	-3										
				S2	B	40	-1	2 0 to B									
				S3	B												
600	0	0															

LOGGED BY: RA
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PROJECT No. _____

Golder Associates

Hole No. 278
SHEET 23 OF 26

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SCALE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
600	0	36		S ₃ B			88												
				B ₂ B		78	88												
				S ₂ B		66	1 @ 180° to B												
				B ₂ B		76	88												
				S ₃ B			88												
605		12																	
		60																	
				B ₂ C		80	2												
				B ₂ C		74	1												
				B ₂ B		80	5												
610		3		S ₂ W		3	1 @ 20° to B												
		60		S ₃ B			2												
				S ₄ W		3	2												
				B ₂ C		79	9												
				S ₂ C		30	1 @ 340° to B												
615		0																	
		60																	
				S ₂ C		0	2	Bedding @ 78° inclination											
				B ₃ C		80	12												
				B ₂ C		77	4												
620		0		I ₂ C		22	1 @ 90° to B												
		60		I ₄ C		0	2												
				I ₃ C			3												
				B ₂ C		77	4												
				I ₂ C		11	3 @ 80° to B												
625		0		I ₂ C		30	1 @ 320° to B												
		60																	

LOGGED BY: KA
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Golder Associates

Hole No. 278
SHEET 24 OF 26

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
625				J4	C	0	3												
			60	J4	C	3	1 @ 270° TO B												
				J3	C		2												
				J2	C	0	1												
				J4	C	0	3												
			0	B2	C	80	2						40						
630			60	B2	C	77	2						60						
				J2	C	23	2 @ 188° TO B												
				B3	C	72	1												
				J4	C	22	1 @ 180° TO B												
				B2	C	80	4												
				B2	C	78	2												
				J2	C	22	1 @ 190° TO B												
635			60	J4	C	20	3 @ 180° TO B							54					
				J2	C	33	1 @ 180° TO B							60					
				J4	C	0	3												
				B2	C	78	6												
640			60	J4	C	12	1 @ 80° TO B							58					
				J4	C	6	1 @ 270° TO B							60					
				J2	C	28	1 @ 190° TO B												
				J4	C	28	1 @ 190° TO B												
				B2	C	80	2												
				B2	C	72	3												
				J4	C	0	2												
645			60	J3	C	44	1 @ 320° TO B							60					
				J4	C	26	2 @ 260° TO B							60					
				J2	C	3	1 @ 0° TO B												
				B2	C	77	3												
				B2	C	70	1							46					
650			60	B3	C	75	2							60					
				J2	C	19	4 @ 220° TO B												

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Golder Associates

Hole No. 278
SHEET 25 OF 26

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CORUSE	BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY	PERMEABILITY		
	25	50	75	TYPE	INFILLING	INCLINATION					4	3	2	75	50	25	11		105	
650	0	60		J4	C	0	1													
				J2	C	30	2 @ 0° TO B													
				J3	C		2													
655	0	60		B2	C	64	1													
				B2	C	79	5													
				J4	C	3	3 @ 180° TO B													
				J3	C	0	1													
				J3	C	22	1													
660	2	60		J2	C	11	2 @ 160° TO B													
				B2	C	69	1													
				B2	C	78	4													
				J3	C	30	1 @ 270° TO B													
				J4	C	0	2													
665	0	60		J2	C	11	2 @ 160° TO B													
				B2	C	69	1													
				B2	C	78	4													
670	0	60		B2	C	78	8													
				B2	C	70	5													
675				TD. 6.72'																

LOGGED BY: RA
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Golder Associates

Hole No. 278
 SHEET 26 OF 26

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOOSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
50																			
55							TRICONE												
60																			
65							GRAVEL												
70							SOIL GRAVEL												
75							GRAVEL												

DDH-279

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Golder Associates

Hole No. DDH 279
 SHEET 1 OF 31

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
75																		
		54	66				GRAVEL											
80		48	66				GRAVEL											
85		54	66				GRAVEL											
90		51	52				GRAVEL											
95		50	72				GRAVEL											
100																		

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Golder Associates

Hole No. 279
 SHEET 2 OF 31

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CORUSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
100							GRAVEL												
105		50	60				GRAVEL												
110		12	30				GRAVEL contains mod. silt and fine sandstone												
115		2	30				GRAVEL												
120		12	24				GRAVEL												
125							TRICONE												

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Golder Associates

Hole No. 279

SHEET 3 OF 31

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5		
125							TRICONE													
				J2	C	03	TOP 6" GRAVEL													
130		0	30	J4	C	0													J3 C - >20	
				J3	C	90	J2 @ 150° to B													
				J2	W	77	T2 @ 17° to B													
				B1	B	73														
				J2	C	12	@ 270° to B													
135		0	48	J2	W	20	@ 195° to B Bedding @ 68°													
				J2	W	71	@ 160° to B													
				J3	C	10														
				J3	C	50														
				J3	W	08	@ 180° to B													
				J1	C	11	J3 C - 5													
140			0	J3	C	20	J1 B 25													
				J4	C	03	J2 C 20													
				J4	C	0	J3 C - 10													
				J3	C	30	@ 265° to B													
				J2	W	30														
				B1	B	50														
				B1	B	42														
				B1	B	25														
145		4	60	B1	B	68	6 } VARIATION of incl. DUE TO cross bedding													
				B1	B	74														
				B1	B	80														
				B1	B	67														
				B1	B	72														
				J4	W	22		@ 180° to B												
				J2	W	10														
				B1	B	77														
				B1	C	73	J4 C 03													
				J3	W	25	@ 150° to B J3 C - >20													
				B1	C	65														
				J3	C	16														
150				J4	W	0														

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Golder Associates

Hole No. 279
SHEET 4 OF 31

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
150																			
155		60		B ₃	C	73	2												
				B ₁	B	72	7												
				B ₃	C	72	2												
				J ₃	W	77	1	@ 175° to B											
				J ₄	C	0	1												
				B ₄	C	77	1	> 20 m coal											
				J ₁	C	15	1												
				J ₂	C	36	1	J ₂ c - > 20											
160		60		B ₇	C	70	3	@ 180° to B											
				J ₂	C	17	2												
				B ₁	B	75	2	(cross bedding)											
				J ₃	W	07	2	(cross bedding)											
				B ₂	B	65	1	(cross bedding)											
				J ₁	C	77	1												
				B ₃	C	77	1												
				J ₄	C	22	1												
				J ₃	C	23	1												
165		60		B ₁	B	73	2	@ 170° to B											
				B ₂	C	75	1												
				J ₃	W	13	1												
				J ₄	C	0	5												
				J ₂	C	06	1												
				J ₄	W	50	1												
				J ₃	C	65	2												
170		66		J ₃	C	90	2												
				J ₄	C	08	2												
				J ₄	C	-	2												
				B ₃	C	98	1	@ 0° to B											
				J ₁	B	52	2												
				B ₁	B	73	4												
				B ₂	C	77	3												
				J ₄	C	58	2												
				J ₄	C	0	2												
175		60		B ₂	B	70	1	@ 180° to B											
				J ₃	C	50	1	@ 0° to B											
				J ₃	C	39	1												
				J ₁	W	26	1	@ 165° to B											
				B ₄	B	77	7												

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Golder Associates

Hole No. 299
SHEET 5 OF 31

DEPTH	PERCENT CORE LOSS				FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
	25	50	75		TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5		
175																					
180		0		60	B ₂	C	60	4												J ₃ C 40° 1	
					B ₁	S	62	2												J ₁ S 54° 1	
					B ₂	C	70	3												@ 200° TO B	
					J ₄	W	0	1 @ 90° TO B												B ₂ C 73° 2	
					J ₄	C	30	1 @ 110° TO B													
					J ₂	W	20	1 @ 270° TO B													
185		3		63	B ₂	C	68	6												B ₁ S 65° 1	
					B ₂	C	72	3													
					J ₄	W	20	2 @ 180° TO B													
					B ₃	C	70	3													
					J ₄	W	11	1 @ 180° TO B													
					BEDDING @ 68° INCLINATION																
190		0		60	B ₂	C	65	3												B ₃ C 70° 2	
					J ₂	W	14	1 @ 160° TO B													
					J ₂	W	9	1 @ 180° TO B													
					J ₄	W	15	1 @ 180° TO B													
					BEDDING @ 65° INCLINATION																
195		1		60	B ₃	C	80	2												J ₄ W - 8	
					B ₂	C	68	2												BRECCIA	
					B ₄	B	65	720												J ₂ C 3° 1	
					J ₄	B	-	720												@ 180° TO B	
					B ₂	C	70	3												J ₂ C 40° 2	
					B ₂	B	65	6												@ 150° TO B	
200		1		60	J ₄	C	0	4												B ₁ S 72 2	
					J ₄	W	71	3												J ₂ C 11 3	
					J ₂	C	27	5 @ 270° TO B												@ 180° TO B	
					J ₁	S	37	3 @ 200° TO B												J ₃ C - 6	

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Golder Associates

Hole No. 279
SHEET 6 OF 31

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOOSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5		
200							1 @ 0° TO B													
							4 @ 110° TO B													
							720													
							3													
							1 @ 180° TO B													
							2 @ 180° TO B													
205							3													
							8													
							3													
							3													
							BEDDING @ 76° INCLINATION													
							1													
							3													
							720													
							2													
210							2													
							1													
							J3 B - 720													
							3													
							2													
							720													
							BEDDING @ 65° INCLINATION													
215							4													
							2													
							2													
							1													
							3													
							720													
220							1													
							6													
							2													
							3													
							720													
225							2													
							8													

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Golder Associates

Hole No. 279
SHEET 7 OF 31

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY		
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5			
225				J4	S	0	4														
			24	J4	W	20	6 @ 190° TO B													J4 W 11° 3 @ 180° TO B	
				B2	C	74	3														
			8	J4	B	-	> 20														
				J3	B	-	> 20														
230			63	J1	S	11	2 @ 190° TO B														
				B2	B	70	2														
				B2	C	68	2													J1 S 39° 1 @ 180° TO B	
			5	B1	S	65	4														
				J4	B	-	> 20														
235			60	J3	B	-	> 20													J4 S 20° 2	
				J4	W	10	3 @ 210° TO B														
				J2	C	40	1 @ 210° TO B														
				J4	S	-	> 20														
				J3	C	-	> 20														
			2	J4	C	-	> 20														
240			52	B1	S	62	3													J1 S 51° 2	
				J1	S	32	1														
				BEDDING @ 62° INCLINATION																	
				B2	C	62	6														
				J4	C	-	> 20														
				B1	S	69	2														
245			65	J4	W	52	1 @ 210° TO B														
				J4	W	46	3 @ 90° TO B														
				J4	W	27	4 @ 210° TO B														
				B2	C	60	3														
			6	J4	W	42	2 @ 170° TO B														
250			60	J4	W	37	2 @ 150° TO B														

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Golder Associates

Hole No. 279

SHEET 8 OF 31

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOOSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
250																			
251 ³				R ₁	G	63	Z												
255		2/61		J ₁	W	24													
256 ⁴				J ₂	W	28													
				J ₃	W	32													
				J ₄	W	36													
				J ₅	W	40													
				J ₆	W	44													
				J ₇	W	48													
				J ₈	W	52													
				J ₉	W	56													
				J ₁₀	W	60													
				J ₁₁	W	64													
				J ₁₂	W	68													
				J ₁₃	W	72													
				J ₁₄	W	76													
				J ₁₅	W	80													
				J ₁₆	W	84													
				J ₁₇	W	88													
				J ₁₈	W	92													
				J ₁₉	W	96													
				J ₂₀	W	100													
260				J ₂₁	W	104													
263 ⁴				J ₂₂	W	108													
265				J ₂₃	W	112													
267 ³				J ₂₄	W	116													
270				J ₂₅	W	120													
				J ₂₆	W	124													
				J ₂₇	W	128													
				J ₂₈	W	132													
				J ₂₉	W	136													
				J ₃₀	W	140													
275				J ₃₁	W	144													

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Golder Associates

Hole No. 279
 SHEET 9 OF 31

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
275				J ₂	C	40	J ₁ c 0											
		1/60		J ₂	S	45	J ₂ c 50											
				J ₂	S	45	J ₂ w 30											
				J ₂	S	40	J ₂ w 35						0/60					
				J ₂	S	35	J ₂ w 35											
280				J ₂	S	35	J ₁ c 24											
				J ₂	S	35	J ₂ c 45											
				B ₂	B	63												
		2/60		J ₂	B	55	@ 90° to B											
				J ₂	B	60							0/60					
				J ₂	C	55												
				J ₂	C	-												
285				J ₂	C	70												
				J ₂	C	47												
		3/60		J ₁	W	42							0/60					
				J ₂	C	-												
290				J ₂	C	-							0/60					
		6/4																
				J ₂	C	-							0/60					
295				J ₂	C	-							0/60					
		16/40																
				J ₂	C	-												
				J ₂	C	-							0/60					
300				J ₂	C	-							0/60					

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Golder Associates

Hole No. 279
 SHEET 10 OF 31

DEPTH	PERCENT CORE LOSS				FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CORUSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75		TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
300					J ₃	B	24	2												
				2/42	J ₃	C	-	2												
				14/48	J ₃	C	-	0												
					J ₃	C	40	3												
					J ₃	C	53	3												
310				0/48	J ₃	B	64	2												
					J ₃	C	-	0												
					J ₃	C	-	0												
315				3/60	J ₃	C	-	0												
					J ₄	C	0	4												
					J ₃	C	50	1												
					J ₃	C	23	1												
320				4/60	J ₃	C	73	2												
					J ₃	C	42	2												
					J ₄	C	0	4												
					J ₃	C	53	3												
					J ₄	C	0	2												
					J ₃	C	21	5												
325				0/48	J ₃	C	-	2												

Bedding @ 5' 20"
 J₃ C - 720
 J₂ W - 720
 @ 1050 to 13

LOGGED BY: _____
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Golder Associates

Hole No. 279
 SHEET 11 OF 31

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA / CORE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
275				J4															
280				J4															
290				J4															
300		9/15		J4															
310				J4															
320				J4															
330				J4															
340				J4															
345				J4															
350				J4															
355				J4															
360				J4															
370				J4															
380				J4															
390				J4															
400				J4															
410				J4															
420				J4															
430				J4															
440				J4															
450				J4															
460				J4															
470				J4															
480				J4															
490				J4															
500				J4															
510				J4															
520				J4															
530				J4															
540				J4															
550				J4															
560				J4															
570				J4															
580				J4															
590				J4															
600				J4															
610				J4															
620				J4															
630				J4															
640				J4															
650				J4															
660				J4															
670				J4															
680				J4															
690				J4															
700				J4															
710				J4															
720				J4															
730				J4															
740				J4															
750				J4															
760				J4															
770				J4															
780				J4															
790				J4															
800				J4															
810				J4															
820				J4															
830				J4															
840				J4															
850				J4															
860				J4															
870				J4															
880				J4															
890				J4															
900				J4															

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Golder Associates

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
350																			
355																			
360																			
365																			
370																			
375																			

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Golder Associates

Hole No. 279

SHEET 13 OF 31

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
275				J ₃	C	60												
300		6		J ₃	C	10												
325		2		J ₃	C		8 in coal											
345		12					100% core loss											
365		1		B ₁	C	70	3											
385		58		J ₃	C		8 in coal											
395							100% core loss											
405																		
425																		
445				J ₃	C		8 in coal											
460																		

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DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CORROSION BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
400																			
402																			
403							100% CORE LOSS												
405		2				30 75					①		16						
408																			
410		10				2													
412		44				2	COAL								12				
415		0				10							17						
417																			
420		1											16						
425		48											49						
430		75					TUBE NOT LOCKED						0						
435		0				70							0						
		54				93							54						

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Golder Associates

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
425			0/54															
430			8/60	J3	B	-	720											B2 C 70° 3
				J4	C	11	4											B2 C 65° 2
				J2	C	9	2											J4 C - 720
				J2	C	20	1											
				J3	C	-	∞											
435			0/60	J1	S	48	1											B2 C 72° 5
				B1	S	69	1											J3 B - ∞
				J4	W	0	4											J3 C - 12
				J2	C	11	3											J2 C 3° 1
				J4	C	0	3											
								BEDDING @ 66° INCLINATION										
440			0/60	J2	C	52	1											J3 C - 720
				B4	C	67	8											J4 W 0° 2
				J4	C	11	2											
				B2	C	70	2											J2 C 30° 4
				B2	C	66	3											J4 C 4° 3
				J2	C	30	6											J3 C - 720
				B2	C	59	2											
445			1/60	J2	C	46	3											
				J1	S	46	4											
				J4	S	-	6											
				J4	C	-	720											
				J4	B	-	∞											B4 B - ∞
				J3	B	-	∞											
450			2/60	J4	C	-	720											

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DATE: Aug 15/78
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Golder Associates

Hole No. 279
SHEET 16 OF 31

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOLGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
450			2/60	J1	S	40	2												
				B2	C	68	2												
				J4	B	-	8												
				J3	B	-	8												J4 C - 720
455			6/60	J2	C	8	1						0/60						
				J4	C	51	3												
				B4	C	62	2												
				B2	C	64	1												
				J1	C	57	1 @ 45° to B												
				J1	S	6	1												J2 C 20° 2
460			0/60	B2	C	60	2						22/60						J2 C 41° 1
				B1	S	57	5												
				J4	S	-	>20												
				J4	C	-	>20												
				J4	W	-	>20												J2 W 20° 1
				J2	C	42	2												J2 C 40° 3
465			0/60	B2	C	56	2						17/60						
				B1	S	55	1												
				J1	S	50	2 @ 260° to B												
				J3	C	-	>20												
				B1	S	52	3												
				J1	S	44	4 @ 180° to B							4/60					
470			0/60	B1	S	50	2												
				B1	C	66	9												
				J4	C	6	1												
				J2	C	20	1 @ 180° to B												
				B1	C	56	10												
				J2	W	09	1 @ 180° to B							15/60					
				J4	C	18	1 @ 180° to B												
475			0/60	J2	W	20	2 @ 175° to B												

LOGGED BY: AT
 DATE: Nov 16/76
 PROJECT No. _____

Golder Associates

Hole No. 279
 SHEET 17 OF 31

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5		
475			0/60	J ₄	C	0														
				J ₂	C	09														
				J ₁	C	30														
				B ₃	C	40														
				J ₂	C	02														
				B ₁	C	45														
480			6/0	B ₁	S	48														
				J ₃	C	0														
				J ₁	C	37														
				J ₃	C	30														
				J ₃	C	45														
				B ₁	C	25														
				J ₃	C	30														
				J ₃	C	0														
				J ₃	C	-														
				B ₁	B	45														
				J ₃	C	-														
485			0/60	B ₁	B	45														
				J ₃	C	30														
				J ₁	C	12														
				J ₃	C	25														
				J ₃	C	30														
				J ₃	C	0														
				J ₃	C	-														
				B ₁	B	45														
				J ₃	C	-														
490			20/60	J ₁	B	70														
				J ₄	C	0														
				J ₃	C	-														
495			2/60	J ₁	B	70														
				J ₄	C	0														
				J ₃	C	-														
500			6/60	J ₃	C	-														

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DATE: _____
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Golder Associates

Hole No. 279
SHEET 18 OF 31

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
500																			
505		2																	
				J4	B	-	80												
				J3	B	-	80												
				J5	B	40	2												
				J2	B	32	1												
				J2	C	16	3												
				J4	W	16	2												
				J1	S	35	1												
				B1	S	69	2												
				J1	S	80	1 @ 180° TO B												
510		0		J3	C	-	>20												
				J4	S	-	>20												
				J1	S	2	5												
				B11	B	70	8												
				J4	B	-	8												
				J4	B	-	8												
515		0		B2	B	68	10												
				J4	C	0	3												
				J4	S	-	6												
				J2	C	12	2												
				J4	C	0	3												
520		3		J4	C	13	3												
				B4	C	70	8												
				B2	C	66	2												
				J4	C	-	>20												
525		0		J3	C-W	-	>>20 → Broken core (mudstone)												

J3 C - 4
 J2 B 80° 3
 B2 B 78° 8

J4 C - >20
 J4 C 27° 2
 J2 C 33° 4
 J2 W 8° 1
 J3 C - >20

LOGGED BY: _____
 DATE: Aug 15/58
 PROJECT No. _____

Golder Associates

Hole No. 279
 SHEET 19 OF 31

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5		
525		0	60																	
530		1	60	J ₂ J ₁ J ₂ B ₂ J ₂ J ₄ J ₃	C C C C C C C	57 12 18 78 17 0 -	3 1 1 1 1 4 20													
535		1/2	60	B ₃ J ₄ B ₁ J ₄ J ₃ J ₃	C W B C C C	90 23 78 0 25 -	2 2 13 2 1 20													
540		1	60	B ₁ B ₂ B ₂ B ₄ J ₂ J ₃ J ₃ J ₄	B C B C C C C C	60 60 72 80 12 15 90 0	1 1 3 1 1 1 2													
545		1	60	B ₁ B ₁ J ₃ B ₂ B ₁ B ₃ J ₂ B ₃	B B C B B C W C	57 75 90 67 56 56 20 60	5 2 1 3 1 1 2													
550		1	60	J ₁ B ₂ B ₂ B ₁	B C B B	30 72 69 80	1 1 2 2													

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Golder Associates

Hole No. 279
SHEET 20 OF 31

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
550				J ₃	C	-	710											
				J ₃	C	80	1						4				> 20	
				B ₂	C	82	W	B ₄ - B 60 4										
				B ₃	C	80	5											
				B ₂	C	70	W	@ 180° to B					8				> 20	
555				J ₂	C	15	W											
				J ₄	C	-	4											
				J ₃	C	-	> 20											
				J ₂	C	30	1	@ 185° to B										
				J ₂	C	-	0	in coal										
			0/60	J ₃	C	21	1											
				J ₃	C	20	1	J ₃ c - 0						10			> 20	
560				J ₃	C	35	1	(in mudstone)										
				J ₃	C	45	1											
				J ₃	C	36	W											
				J ₂	C	31	W											
				J ₂	C	31	W											
			1/60	J ₃	C	-	∞	562 - 564' brecc mudstone										
				B ₃	C	58	2	Bedding @ 58° @										
			60	J ₂	C	32	1	@ 0° to B										
565				J ₂	C	24	1	564 1/2' (in fine siltstone)										
				J ₂	C	60	1											
				B ₂	C	70	2											
				B ₂	C	25	1	@ 270° to B										
				B ₂	C	55	2											
			1/60	J ₂	C	47	2	@ 200° to B										
				J ₂	C	40	1											
				B ₂	C	62	2						4				> 20	
570				J ₃	C	90	4						60					
				J ₃	C	-	> 20											
				J ₃	C	20	3											
			1/60	J ₂	C	35	2											
				J ₂	C	57	1											
575				J ₂	C	63	1	@ 180° to B										

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Golder Associates

Hole No. 279

SHEET 21 OF 31

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
575		1/60		B ₂	C	54	J ₄ W O Z					9/60						
				B ₂	C	65	>10											
				J ₂	C	1	>20											
				B ₂	C	72												
				J ₃	C	50	7											
580		1/60		J ₂	C	37	4											
				J ₄	C	07	1 @ 180° to B ₃											
				J ₃	C	1	>20											
				B ₃	C	72	>10											
				B ₂	C	57	5											
585		1/60		J ₃	C	1	0											
												20/60						
				J ₃	C	1	0 (in both coal + mudstone)											
590		1/60																
				J ₂	C	37	7											
				J ₁	C	40	1											
				J ₀	S	09	1											
595		4/60		J ₂	C	1	>20											
				J ₃	C	1												
				J ₄	C	0	2											
				J ₁	C	47	7											
				J ₀	C	0	2	J ₃ C → W 720										
				J ₁	W	22	1											
600		6/60		J ₂	C	40	3											

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Golder Associates

Hole No. 279
SHEET 22 OF 31

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG BRECCIA/GOUGE <input checked="" type="checkbox"/> BROKEN CORE <input checked="" type="checkbox"/>	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5		
600																			
605		0	60										4°						J2 C 30° 3 J1 S 32° 1 J4 C 0° 2 J3 C - >20
610		7	60																J1 S 54° 1
615		1	54																J3 C - >20
620		4	48				Bedding @ 30 @ 622 ft						30	54					J4 C 38° 8 B2 W 68 2 B4 W 68 3 J4 C 0 1
625		1	68				Bedding @ 40°						6	4					J3 C 05 1 J4 W 17 2 J3 C - >20 B3 C 50 >5

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Golder Associates

Hole No. 279
 SHEET 23 OF 31

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
625																			
			8											4/60			>20		
630			8	J ₂ B ₁ B ₂ B ₁ J ₁ J ₂ B ₂ B ₃ C	W B C C B C C C	18 38 38 40 30 43 42 50	3 @ 25° to B - 4 1 @ 180° to B 1 @ 270° to B							17/60			(17)		J ₃ C - 3
635			60/21	B ₂ J ₄ B ₂ J ₁ J ₂ J ₃ J ₃ J ₂ C	C C C S C C C C	40 08 42 20 64 50 18 60 17	3 @ 180° to B 1 @ 180° to B 2 @ 90° to B 2 @ 190° to B	J ₃ C - >20						15/60			>20		
640 640 ^g			10/32	J ₂ D ₂ J ₂ B ₁	W C C C	67 45 55 47	4 @ 90° to B 2 @ 140° to B	J ₂ C 50 1 @ 30° to B J ₃ C 20 1 J ₃ C - 2						26/22			13		
645			64	J ₂ B ₂ J ₂ J ₃ J ₂ J ₂ C	W C C C W W	42 29 62 60 50 28 50	2 @ 90° to B 1 @ 90° to B 3 @ 270° to B 1 @ 180° to B							34/64			>20		J ₂ W 42 1 @ 180° to B B ₂ C 25 1 J ₁ B 90 1 J ₃ C - 5
650			6/55	B ₁ J ₂ J ₃ J ₂ J ₂ B	C W C S C B	30 44 90 25 27 0	1 @ 180° to B 1 @ 270° to B							8/65			>20		J ₃ C - >20

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Golder Associates

Hole No. 279
SHEET 24 OF 31

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
650																		
655		0/47		B ₁	S	51	4											J ₁ S 35° 1
				J ₁	S	46	3	@ 280° TO B										J ₁ S 49° 2
				B ₁	B	32	4					18/47						@ 180° TO B
				B ₁	C	38	2											J ₃ C - 8
				J ₄	C	8	4	@ 180° TO B										J ₄ C 12° 4
				B ₁	C	40	1											J ₁ S 42° 1
				B ₂	F	51	1											@ 290° TO B
				B ₄	F	51	2											B ₄ S 45° 6
				B ₂	C	48	1											J ₃ C - 7
				B ₁	S	39	5											J ₄ C 8° 3
				J ₁	S	14	2											J ₄ W 49° 2
				J ₁	S	50	2	@ 200° TO B										@ 350° TO B
660		0/60		J ₁	C	22	2	@ 70° TO B										J ₃ C - 4
								BEDDING @ 38° - 48° INCLINATION										J ₄ C 08° 1
				B ₁	S	48	3											J ₃ C 25° 1
				J ₄	W	60	2	@ 160° TO B										J ₂ C 46° 2
				J ₁	S	26	1	@ 190° TO B										@ 30° TO B
				J ₄	C	68	2	@ 180° TO B										
665		0/60		B ₄	C	49	5											
				J ₂	W	48	5	@ 255° TO B										
				B ₂	C	23	1											
				B ₁	S	42	10	[difference in incl of bed. due to x-bedding]										
				J ₁	S	07	2											
				B ₁	B	22	3											
				B ₄	B	22	1											
				B ₁	S	37	4											
670				B ₁	B	22	18											
				J ₃	C	30	2											
				J ₁	B	58	3	@ 270° TO B										
				J ₃	C	-	>10											
				J ₃	W	52	1	@ 90° TO B										
675		1/54																

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Golder Associates

Hole No. 279
SHEET 25 OF 31

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA CORE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
675				J ₃	W	10													
		1/2		J ₃	C	50													
		60		J ₃	C	-													
				J ₃	C	90													
				J ₂	C	46	1 @ 90° to B	Bedding @ 13° incl.											
				J ₂	C	43	1 @ 170° to B	@ 67 1/2											
680		0	54	B ₁	B	29	1 @ 180°												
				J ₂	C	53	1 @ 170° to B												
				J ₂	C	25	1 @ 170° to B												
				J ₃	C	-	4												
				J ₂	C	59	1 @ 158° to B												
		12	54	J ₂	C	54	3 @ 110° to B												
685				J ₃	C	-	0 in coal	COAL											
				J ₂	W	23	2 @ 235° to B												
				B ₁	B	45													
				B ₂	C	43													
				J ₁	C	12	1 @ 250° to B												
				B ₁	B	52													
				B ₂	C	50													
				J ₂	C	90	2 @ 180° to B												
				J ₂	C	45													
				B ₁	C	42	3 @ 270° to B												
				J ₂	W	35													
				B ₂	C	43	2 @ 180° to B												
				J ₂	C	37													
				J ₂	C	16	2 @ 180° to B												
				J ₂	C	35													
				J ₃	C	-	> 24												
				J ₃	C	90	2												
				B ₁	B	41		J ₁ B 77 2											
				J ₂	W	42	1 @ 110° to B	J ₁ C 0 2											
				J ₂	S	0		J ₂ C - 720											
				J ₁	B	63	1 @ 180° to B												
700			1																

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Golder Associates

Hole No. 279
SHEET 26 OF 31

J₃ C 311
J₂ C 70 2
J₃ C 50 #6
J₂ C 20 1
J₂ C 62 2

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CORUSE BROKEN CORE			HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5				
700																					
		63																			
705		0																			
		60																			
710		0																			
		63																			
715		1																			
		60																			
720		1																			
		60																			
725		60																			
		1/2																			
		60																			

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Golder Associates

Hole No. 279
SHEET 27 OF 31

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5		
725		1/2	60																	
730		0	60				Bedding @ 57° incl @ 200° to B @ 160° to B @ 270° to B @ 175° to B @ 180° to B @ 185° to B												B ₁ B 53 1 J ₃ B 50 1 J ₁ B 64 1 J ₂ W 22 1 J ₁ B 60 2 J ₄ C 0 3 B ₄ B 54 1	
735		0 1/2	60				@ 180° to B @ 180° to B													J ₁ W 14 1 @ 180° to B J ₁ S 15 1 @ 180° B ₁ B 52 1 B ₃ B 52 2 J ₃ C - 110
740		0	60				Bedding @ 39° incl @ 742' @ 740 ft													B ₂ B 47 6 J ₂ C 14 1 @ 185° to B J ₂ C 12 1 J ₄ C 10 1 J ₄ C 5 1
745		1/2	60																	
750		1	60				Bedding @ 52° incl @ 180° to B @ 180° to B													J ₄ C 90 2 J ₃ C - 0 (in breccia coal)

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Golder Associates

Hole No. 279
 SHEET 28 OF 31

DEPTH	PERCENT CORE LOSS				FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CORRE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
	25	50	75		TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5		
750																					
		60																			
					J ₂	B	12	2 @ 0° TO B													
					B ₂	B	56	2													B ₂ C 56° 1
					J ₄	B	-	720													J ₄ W 53° 3
755		3			B ₃	B	-	720													@ 180° TO B
		60			J ₂	C	53	1 @ 180° TO B													B ₂ B 52° 2
					B ₂	C	44	2													J ₃ C ~90° 4
					B ₂	C	47	9													J ₃ C - 5
					B ₂	C	42	4													B ₂ C 43° 1
					B ₂	C	40	3													J ₁ S 80° 1
760		0			B ₄	C	43	8													@ 160° TO B
		60			J ₂	C	68	1 @ 190° TO B													
									Bedding @ 45° inclination												
					J ₂	C	68	2 @ 190° TO B													
					B ₂	C	47	7													J ₂ C 67° 1
					J ₄	S	3	1 @ 20° TO B													@ 170° TO B
					J ₁	S	80	1 @ 0° TO B													B ₂ C 56° 2
					J ₄	C	-	720	BRECCIA												B ₄ C 50 6
					J ₃	B	-	∞													J ₃ C - 7
770		6																			
		48																			
					J ₃	C	-	∞	IN COAL												
					J ₂	C	22	1													
					B ₁	B	63	1													
					B ₄	B	63	1													
775		5			J ₂	C	46	1 @ 200° TO B													
		54																			

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Golder Associates

Hole No. 279
SHEET 29 OF 31

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
775				J ₃	C	50	2												
			1/60	J ₂	W	48	2												
				J ₂	W	22	2												
				J ₂	C	21	2												
				J ₄	C	68	1												
				J ₃	C	20	1												
780				J ₃	C	-	∞	→ brecc SST											
			0/60	J ₂	C	50	2	Bedding @ 72° incl											
				J ₂	C	31	1												
				B ₂	C	70	1												
				J ₃	C	38	1												
				J ₂	W	52	1	@ 260° to B											
				J ₂	C	29	1	@ 110° to B											
				J ₂	W	53	1	@ 180° to B											
785				J ₂	C	40	1	@ 135° to B											
			1/60	B ₁	W	72	2	@ 100° to B											
				J ₂	C	21	2												
				J ₄	C	21	2												
				J ₂	C	54	2												
				J ₃	C	90	1												
				J ₂	W	53	3	@ 170° to B											
				B ₂	C	62	1												
790				J ₂	W	20	2	@ 180° to B											
			1/2/60	J ₂	L	30	1	@ 290° to B											
				B ₂	B	75	4												
				B ₁	B	73	3												
				J ₂	C	40	3												
				J ₄	C	0	1												
				J ₂	C	34	2	@ 180° to B											
795				J ₃	C	30	1												
			1/60	J ₄	W	9	2												
				B ₂	B	72	2												
				J ₂	W	10	2												
				J ₂	L	12	2												
				J ₃	C	-	∞												
800				J ₄	C	12	3												

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Golder Associates

Hole No. 279
SHEET 30 OF 31

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION	NATURAL FRACTURE FREQUENCY	PERMEABILITY	
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2				75
800															
			0/60	J4	C	-	> 20.								J3 C - > 20
				B2	C	40	2								B2 C 69° 1
				J2	C	23	2					6			
				J4	C	30	2					60			B2 C 66° 1
				J4	C	8	1								
				J4	W	8	2								
805				J4	C	43	2								J4 Q 0° 3
				J4	C	20	2 @ 185° TO B								
			0/60	B2	C	71	1					40			B4 C 68° 2
				J4	C	35	2 @ 180° TO B					60			J2 C 57° 1
				J2	C	34	5 @ 180° TO B								@ 190° TO B
				J2	C	21	1 @ 190° TO B								J4 C 10° 2
810				J2	F	30	1 @ 170° TO B								B2 C 68° 1
				J2	C	30	2 @ 170° TO B								J2 C 43° 2
			0/60	B2	C	63	7					20			@ 185° TO B
				J2	C	22	1					60			J4 C 3° 1
				J2	C	40	3 @ 195° TO B								J3 C - 6
				J4	C	42	8 @ 180° TO B								
815				J2	C	65	3 @ 300° TO B								
				J2	C	63	9 @ 320° TO B								
			0/60	B3	C	84	2					30			
				J2	C	27	1 @ 180° TO B					60			
				B3	C	80	2								
820				J2	C	24	4 @ 270° TO B								
			0/60	B3	C	83	2								
				J3	C	-	3								
825															

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TD - 8251

Golder Associates

Hole No. 279

SHEET 31 OF 31

DDH-282

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DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	70	5	
100							TRICONED ↓											
105	0	48		B ₂ S ₂ S ₄	C C C	80 45 0	-5 -2 @ 0° to B -1						43 48					
110	4	48		B ₂ S ₄ S ₂ S ₂ S ₄ S ₄	U 3 3 U U 3	80 15 15 38 22 0	-4 @ 30° to B -1 @ 30° to B -2 @ 0° to B -2 @ 180° to B -2 @ 50° to B -1 @ 0° to B						23 48					
115	0	60		B ₂ B ₃ S ₂ S ₄ S ₄	C C C C 3	64 85 76 0 11	-4 @ 180° to B -3 -1 @ 180° to B -2 @ 190° to B -1 @ 190° to B						52 60					
120	0	60		B ₂ S ₂ S ₄ S ₁ S ₃	U 3 3 5 0	72 27 27 49 0	-3 @ 120° to B -3 -2 @ 80° to B -2 -2						75 60					
125	0	60		B ₂ S ₃ S ₂ S ₄	C U U U	70 8 18	-3 @ 90° to B -1 @ 90° to B -5 @ 90° to B						30 60			20		

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Golder Associates

Hole No. 282
 SHEET 1 OF 39

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOLGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
125	0	60		S ₂	S	48	-4 @ 280° to B												
				S ₃	C	40	-1												
				S ₄	C	40	-2												
				S ₃	B														
				B ₂	C	76	-2												
				B ₂	C	80	-8												
				B ₂	B	80	∞												
130	0	60		S ₂	C	33	2 @ 90° to B												
				S ₄	E	33	2 @ 90° to D												
				S ₄	C	0	∞												
				S ₄	C	11	-6 @ 270° to B												
				B ₂	C	74	-11												
				B ₂	C	78	-2												
				S ₂	E	28	-1 @ 90° to B												
135	0	60		S ₃	D		1												
				S ₄	C	30	-1 @ 270° to B												
				B ₂	C	72	-2												
				B ₂	C	80	-7												
				B ₂	C	76	-3												
				B ₃	C	89	-3												
140	0	60																	
				B ₂	C	77	-10												
				B ₂	C	82	-3												
				B ₃	C	80	-3												
				S ₃	B		-5												
145	6	60																	
				B ₂	B	72	-2												
				B ₂	C	72	-5												
				S ₄	E	20	-2 @ 90° to B												
150	6	60																	
				B ₂	B	72	-2												
				B ₂	C	72	-5												
				S ₄	E	20	-2 @ 90° to B												

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Golder Associates

Hole No. 282
SHEET 2 OF 39



DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
150				S4	C	0	-1												
155	0	60		S4	C	40	-8	S2, W, 40, 2d @ 290° S2, C, 150, 2d @ 90° B	[Hatched]										
			S2	C	40	-3													
			B1	S	72	-1													
			B3	C	80	-6													
			B4	C	69	-2													
			S4	C	15	-3 @ 90° to B													
			S2	C	3	-1 @ 90° to B													
			S3	C	27	-1 @ 180° to B													
160	0	60		B2	C	80	-8	S4, C, 0°, 1d. S3, C, 1, 8	[Hatched]										
			S2	S	20	-1 @ 90° to B													
			S2	S	27	-2 @ 180° to B													
			B3	C	90	-1													
			S3	B		-6													
			B2	C	72	-2													
			S2	C	34	-1 @ 300° to B													
			B4	C	80	-10													
165	6	60		B2	C	70	-4	[Hatched]											
			B2	C	80	-2													
			S2	C	27	-1 @ 110° to B													
			S2	C	40	-3 @ 180° to B													
			B2	C	67	-2													
			S4	C	0	-3													
			S3	C	8	-1 @ 0° to B													
170	0	60		B2	C	67	-10	[Hatched]											
			S1	S	11	-3													
			S1	S	80	-2													
			B1	S	70	-1													
			S2	C	22	-1 @ 140° to B													
			S4	C	40	-3 @ 160° to B													
			S3	C		-4													
175	0	60		S1	S	51	-4 @ 150° to B	[Hatched]											
			S4	C	20	-2 @ 60° to B													
			B2	C	76	-4													
			S1	S	0	-1													

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Golder Associates

Hole No. 282
SHEET 3 OF 39

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
175		0	60	B ₁	U	80	2												
				S ₂	U	40	3												
				S ₂	U	11	1												
				S ₂	U		8												
				B ₂	C	69	8												
				B ₂	C	76	2												
				S ₁	S	56	-2												
				B ₃	U	66	-1												
				S ₂	U	50	-2												
				S ₂	U	30	-2												
				S ₂	U	0	-2												
				S ₂	U	89	-2												
				S ₂	U	39	-2												
				S ₄	C	0	-1												
				S ₄	C	0	-2												
				S ₂	C	33	-2												
				B ₂	C	69	-2												
				S ₄	C	11	-2												
				S ₁	S	60	-2												
				S ₁	S	8	-1												
				S ₄	C	8	-3												
				B ₂	C	80	-7												
				B ₃	C	84	-2												
				S ₂	C	18	-2												
				S ₃	C	1	-8												
				B ₂	C	64	-2												
				S ₂	C	78	-2												
				S ₄	C	0	-1												
				B ₁	S	60	-3												
				S ₄	E	0	-2												
				B ₄	E	59	-1												
				B ₂	C	64	-2												
				B ₂	C	70	-3												
				S ₂	C	22	-2												
				S ₄	W	8	-3												
				B ₂	C	66	-6												
				S ₁	S	38	-1												
				S ₃	C	1	-8												
200				S ₃	C	27	-1												

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DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
200				J4	C	30	1 @ 320° to B												
				B2	C	74	-4												
				B1	S	70	-1												
		3		S2	C	42	-1 @ 80° to B												
		60		J4	W	0	-1												
205				J2	C	45	-1 @ 160° to B												
				B3	C	90	-1												
				B4	C	72	-3												
				J1	S	18	1												
				J3	C	30	2H												
				B2	C	74	2+1												
		0		J2	C	0	1												
		60		J2	C	0	2												
210				J4	C	29	1												
				B2	C	72	b												
				B2	C	72	12												
				J1	W	11	1 @ 270° to B												
				J3	C	12	1 @ 210° to B												
		0		J4	W	11	1 @ 250° to B												
215				J1	C	47	1 @ 210° to B												
		60		J1	S	21	1 @ 150° to B												
				J1	W	29	2H												
		3		B2	C	77	4												
		24		B3	C	58	1												
				B2	C	74	4+2												
				B1	B	76	1	J1 W 182											
220				J1	S	34	1 @ 230° to B	B3 C 78 2											
		0		J1	C	32	1+1	J4 CW - 18											
		48		J1	W	1	2												
				J1	C	22	2												
				J1	C	80	2												
				J1	W	05	2	J3 → J1 W - 720											
		12		J1	B	37	1												
		60		B1	B	80	1	J1 190 B1											
				J1	C	31	1	J1 150 B1											
225				J4	C	31	1												

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Golder Associates

Hole No. 282
 SHEET 5 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
225																			
230	6																		
	60			B ₁	B	80	5												
				J ₂	C	42	1 @ 350 to B												
				J ₃	C	0	H												
				J ₂	C	28													
				J ₁	C	37	3 @ 315 to B												
				J ₃	C	-	∞												
	3			B ₁	B	81	7												
	12			B ₁	B	79	13 Bedding inclination @ 80°												
235				J ₂	B	4	1 @ 270° to B												
				B ₂	C	80	2												
				J ₂	W	1	1 @ 270° to B												
				J ₁	S	36	1 @ 230° to B (@ 235°)												
				J ₄	C	36	1 @ 230° to B												
				J ₃	C	10	1 @ 180° to B												
				B ₃	C	90	3												
				J ₂	C	69	1												
240				B ₄	W	81	4												
				B ₁	B	78	4												
				J ₁	S/W	63	1												
				J ₃	B	-	∞												
				B ₂	B	76	10												
				J ₃	C	-	∞												
				J ₃	C	90	3												
245				B ₄	B	81	∞												
				B ₁	B	72	10												
				J ₂	B	12	1 @ 265° to B.												
				J ₁	W	17	1 @ 0° to B.												
250				J ₃	C	12	1 @ 240° to B.												
				J ₃	C	25													

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DATE: July 24
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Golder Associates

Hole No. 282
SHEET 6 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY				
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5					
250	/	/	20/60																				
255	2/60			T3	C		∞	/	/														
				B4	B	69	1													①	5/60	> 20	
				T3	C	90	1																
				B1	B	67	3																
				B1	S	79	3																
260	2/60			B1	S	83	2	/	/														
				B2	B	80	∞																
				B2	B	74	9																
				B3	C	72	2																
265	0/60			B2	C	74	1	/	/														
				B1	B	76	1																
				B1	B	78	12																
270	0/60			T2	W	28	1 @ 190 to 6	/	/														
				T3	C	-	∞																
				B1	B	72	10																
				B4	B	72	2																
				T1	B	50	3																
275	0/60			B2	B	40	4	/	/														
				B2	B	72	9																
				T3	C/B		∞																
275	0/60			B1	B	81	10	/	/														
				T3	B		∞																
				T4	B	0	2																

T1 S 51° 1

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Golder Associates

Hole No. 282
 SHEET 2 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY		
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5			
275		0	60	B ₂	B	72	5														
280	1	60	J ₂	B	3	1 @ 335° TO B															
			B ₁	B	72	20															
			J ₂	C	21	1 @ 180° TO B															
			B ₄	B	74	∞															
			J ₄	B	0	2															
285	0	60	J ₃	B	-	∞															
			B ₁	B	81	4															
			B ₂	B	67	2															
			J ₄	C	22	1															
			B ₁	B	81	5															
			J ₂	C	41	1															
290	1	60	J ₂	B	34	1 @ 200° TO B															
			B ₂	B	73	∞															
			J ₂	C	31	1 @ 200° TO B.															
			B ₄	B	74	∞															
			J ₂	B	47	1 C 200° TO B															
			J ₂	B	4	1															
295	1	48	J ₃	B	-	∞															
			J ₁	B	48	1 @ 0° TO B.															
			J ₂	C	10	1															
			B ₁	B	78	10															
			B ₃	B	80	∞															
300	3	60	J ₄	W	52	2 C 310 TO B															
			B ₁	B	80	7															
			J ₂	C	60	1 @ 320° TO B															
			B ₂	C	83	4															
			J ₃	C	14	1															

B₃ B 77° ∞

J₃ C 29° 1
 @ 180° TO B.
 J₁ W 32° 1
 @ 180° TO B
 J₃ C - 4

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Golder Associates

Hole No. 282
 SHEET 8 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY		
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	1	5			
300		7	160	B ₃	B	78	10														
305	0	60	B ₂	B	80	2	@ 110° to B														
			J ₁	C	41	1															
			B ₂	C	76	5															
			B ₃	C	88	6	@ 180° to B														
			J ₁	C	11	1															
310	3	60	B ₄	C	80	6															
			J ₃	C	63	1															
			R ₂	E	75	1															
			R ₄	E	75	1															
			B ₂	C	76	3															
315	0	60	B ₂	C	82	6	Bedding @ 80° @ 180 to bedding @ 0° to bedding														
			B ₁	S	40	2															
			J ₂	C	73	1															
			B ₂	C	90	4															
320 321 324	2	63	B ₂	C	74	9	J ₄ C 0 4 B ₂ C 80 3 J ₃ C 90 2														
			J ₂	C	0	1															
			J ₄	C	0	2															
			B ₁	S	80	1															@ 160° to B
			J ₁	S	42	2															
325	4	63	B ₁	S	76	2															
			J ₃	S	86	2															
			J ₁	S	82	2															
			J ₁	S	62	1															@ 0° to B
			B ₂	C	78	4															@ 0° to B
J ₂	C	16	1																		
325			B ₂	C	80	3	@ 0° to B														
			J ₁	S	68	2															

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Golder Associates

Hole No. 282
SHEET 9 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CORROSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
325																			
326 1/2	4	63		J4 J4 J3	EE	74 10 50	1 @ 020° to B						43 63						
				J1	S	56	2 @ 330° to B												
				B1	S	53	4												
				J2	C	24	2 @ 050° to B						45						
				J4	C	24	2 @ 090° to B												
330	5	60		J2	C	22	2 @ 300° to B						60						
				J4	W	22	4 @ 300° to B (4)												
				B2	C	82	J4 S 45 @ 180 to B												
331 3/4				B2	B	82	J1 S 35 @ 180 to B												
							J3 C 45												
				J1	S	60	J4 C 24 1 @ 0° to B												
				B1	S	74	J3 C - 2												
				J1	S	58							42						
335		63		J1	S	47							68						
				B2	C	79													
				B1	W	80													
				J1	S	58	1 @ 348 to B												
				B2	A	80													
				J2	C	40	2 @ 270° to B												
				B1	S	78							33						
340		60		J3	C	49							60						
				J1	S	60													
				J4	C	20	1 @ 050° to B												
				B1	S	65	J4 W 15 2 @ 270 B												
				B2	C	77	J3 C 80 1 @ 270 B												
				B2	C	80	J2 C 90 2												
				J2	W	10	1 @ 270 to B						45						
345		60		J1	S	50	1 @ 270 to B						60						
				J1	S	35	1 @ 090 to B												
				J1	S	32	1 @ 180 to B												
				J2	C	41	1 @ 180 to B												
				B2	C	70	J2 E 40 @ 180 B												
				J2	C	14	3 @ 000 to B J4 C 26 @ 00 B												
				J3	C	-	B2 B 74 @						46						
				J4	C	0	J2 C 20 @ 0 B						60						
350	2	60		J2	C	12	1 @ 250 to B												

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Golder Associates

Hole No. 282
 SHEET 10 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
350	2																		
	20																		
355	2			J ₁	S	60	5 @ 060 to B.												
	60			B ₂	C	80	3												
				J ₃	B	-	8												
				B ₃	S	80	3												
				S ₁	S	36	1 @ 270 to B												
360	3			B ₂	B	80	8												
	72			J ₂	B	60	4												
				J ₂	B	34	2												
				J ₄	B	0	2												
				J ₃	B	-	8												
365	2			J ₃	C	-	8												
	24			J ₁	S	4	2												
				J ₁	S	20	3												
	3			J ₁	S	47	2	J ₁ S 05											
	36			J ₁	S	26	1	J ₁ S 21											
				J ₁	S	21	1	J ₁ S 26											
				J ₁	S	18	1	J ₁ S 27											
				J ₁	S	62	1	J ₁ S 28											
				J ₁	S	08	4												
370	2			J ₁	S	06	1												
	48			J ₁	S	52	1												
				J ₁	S	11	2												
				J ₄	S	-	12	BRECCIA											
				J ₁	S	05	2												
	4			J ₄	S	-	8	J ₁ S 26°											
	57			J ₁	S	0	2	B ₁ S 26°											
				J ₁	S	6	3	J ₁ S 53°											
375				J ₁	S	30	2	@ 0° TO B											

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Golder Associates

Hole No. 282
SHEET 11 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5		
375				J1	S	64	1												
				J1	S	43	1												
		2		J1	S	22	6 @ 330° TO 8												
		24		J1	S	29	1 @ 0° TO 8												
				B1	S	78	2												
380				B1	S	76	4												
		24		J1	S	36	2 @ 0° TO 8												
		42		J1	S	6	2												
				J1	S	41	5												
				J1	S	32	2												
		1		B1	S	78	8												
		36		J3	C	-	8												
385		60		J2	C	30	1												
390				MISSING CORE															
				MISSING CORE															
395		36		J4	S	-	8												
		48		J3	C	-	8												
				J3	B	-	8												
		3		J3	C	-	8												
				J3	B	-	8												
400		60		J1	S	62	1												
				J1	S	9	1												

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Hole No. 282

SHEET 12 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5		
400				B ₁ T ₁	S	62 52	3 2													
405	2			B ₁ T ₁ T ₁ B ₁ T ₂	S	68 52 47 72 32	7 2 2 1 1	T ₁ S 52° 1 @ 10° TO B. T ₁ S 23° 2 @ 30° TO B. T ₄ S — B @ 350° TO B.					12 60						B ₁ S 79° 1 B ₁ S 76° 2 T ₁ S 28° 1 T ₁ S 22° 1 B ₁ S 78° 2	
410				T ₁ T ₁ T ₃ B ₁ T ₄	S	50 29 90 81 —	1 1 1 1 —	T ₁ S 05° 1 B ₁ S 70° 1 B ₁ S 72° 1 T ₁ S 59° 1 @ 90° TO B						36					T ₁ S 29° 2 @ 130° TO B T ₁ S 39° 1 T ₁ S 11° 2	
				T ₁ B ₁ T ₁ T ₄	S	22 70 47 —	2 1 2 —	T ₁ S 39° 2 @ 85° TO B												T ₁ S 60° 2 T ₁ S 40° 1 T ₁ S 01° 1 T ₁ S 66° 2
415				T ₃ T ₄ B ₂ T ₂	B	— — — 60	— — — ~20													
420	1			T ₃ B ₂ T ₄ T ₁ T ₄	B	— — — 47 27	— — — 1 4	T ₁ S 43° 1 B ₁ S 66° 2 B ₁ S 64° 1 T ₁ S 52° 1 T ₃ C 72° 1												T ₁ S 27° 2 B ₁ S 63° 1 T ₂ W 51° 1 T ₄ W 52° 1 T ₁ S 59° 1
				T ₁ T ₄ B ₁ T ₁	S	43 45 66 22	3 1 2 1	T ₄ S — >20												T ₁ S 52° 3 T ₁ S 56° 2 T ₃ B — ∞
425																				

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Golder Associates

Hole No. 282
SHEET 13 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
425																			
430	0	55		J3 C		-	B, C 66° 1												J1 S 60° 1
				J1 C		51													J1 S 47° 1
				J1 C		52													J1 C 03° 1
				J2 C		42													J4 W 66° 4
				J4 B		-													J4 W 70° 8
				B1 S		70													
				J1 S		30	B, S 52° 3												J1 S 48° 2
				J1 S		20													@ 250° to B
				J1 S		55	@ 115 to B												J1 S 32° 1
				J4 W		20													@ 180° to B
				J1 S		90	J3 C - 2												J1 S 32° 2
				B2 C		52	J2 S 22° 2												@ 150° to B
435							Bedding @ 52° inclined												
				J1 S		28													
				B4 S		50													
				J3 C		90													
				J3 B		-													
440				J4 B		-													
				J3 B		-													
				J2 B		30													
				B2 C		50													
				J2 B		20													
445				J3 B		-													
				J1 S		16	@ 0° to B												J4 C 06° 3
				J1 S		23	@ 270° to B												@ 210° to B
				B1 S		53													J3 C - 9
				B2 S		-													J4 C 0° 1
				B3 S		62													
				J1 S		60	@ 180° to B												
450				J1 S		22	@ 270° to B												

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Golder Associates

Hole No. 282
SHEET 14 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS 4 3 2			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION						75	50	25	15	10	5	
450				J4	S	30	1											
	1	3	4	J4	S	22	2											
				J4	S	10	1											
				J4	S	10	1											
455				J4	S	26	2											
				J4	S	08	1											
				J4	S	22	1											
				J4	S	02	1											
				J4	S	02	1											
				J4	B	-	8											
				J1	S	02	1											
				B2	B	60	2											
460				J1	S	33	1											
				J1	S	52	2											
				B1	S	66	4											
				J4	S	-	0											
				B4	B	76	1											
				B2	B	70	2											
465				J2	B	60	1											
				J3	B	-	8											
				J3	B	-	8											
				B1	S	60	1											
470				J1	S	25	1											
				J3	B	-	8											
				J3	B	-	8											
				J1	S	58	2											
				J4	S	22	4											
475				B2	C	80	4											
				J4	S	-	8											

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Golder Associates

Hole No. 282
 SHEET 15 OF

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
475																		
		4/44		J ₁	C	80	1						4					
		6/30		J ₁	C	80	1						75					
480		0/30		J ₁	C	51	2						0					
				B ₂	C	70	3						30					
				B ₂	C	80	1						14					
				B ₁	C	66	1						30					
				B ₂	C	80	6						34					
				B ₂	C	84	2						60					
485		4/60		J ₄	S	80	2						34					
				B ₃	C	80	2						60					
				B ₃	C	70	2						60					
				B ₁	C	80	2						60					
				J ₁	S	18	2						60					
490		0/60		J ₁	S	42	3						27					
				J ₄	S	20	2						60					
				B ₁	C	72	1						60					
				B ₁	C	72	6						60					
				B ₁	S	60	1						60					
				B ₄	S	60	13						60					
495		1/60		J ₂	C	62	1						30					
				J ₁	S	60	2						60					
				B ₁	C	80	4						60					
				B ₁	S	60	2						60					
				B ₂	C	30	4						23					
				B ₂	C	80	4						60					
500		0/60		J ₄	C	07	2						60					
				J ₁	C	01	1						60					

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Golder Associates

Hole No. 282
SHEET 16 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
500				J ₂	W	60	1 @ 90° to B J ₂ C - 4												
				J ₃	W	60	6												
				J ₄	S	54	2 @ 0° to B												
				B ₁	S	70	4 J ₄ W 40°												
				B ₂	S	70	1 J ₄ C 02°												
				B ₃	S	80	2 J ₄ C 30°												
505				B ₂	C	72	3												
				J ₂	C	50	2												
				J ₂	C	45	2												
				J ₄	C	0	1												
				B ₂	C	68	3 bedding @ 68°												
				J ₂	C	4	4												
510				J ₄	C	71	1 @ 90° to bed												
				B ₁	C	70	2												
				B ₄	W	68	3												
				B ₂	C	79	2												
				B ₁	S	72	6												
				J ₁	C	22	1												
				J ₃	C	90	1												
515				J ₃	C	62	1 @ 250° to B												
				B ₃	C	70	1												
				B ₂	C	70	2												
				J ₁	C	04	1 @ 90° to B												
				J ₁	S	59	2												
520				J ₃	C	90	2												
				B ₁	B	69	1												
				B ₁	B	78	2												
				B ₁	B	75	4												
				J ₁	B	40	3												
525				J ₃	B	90	6												
				J ₃	B	-	∞												

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Golder Associates

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DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY	PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25		
525				B ₁	S	82	7										
		0		J ₂	C	20	1 @ 130° TO B.										
		60		J ₂	C	38	1 @ 180° TO B.										
530		2		B ₁	B	72	2										
		60		J ₂	C	22	1 @ 0° TO B.										
				J ₂	B	49	2										
				J ₃	C	33	3										
				J ₁	S	48	1 @ 0° TO B.										
				B ₂	B	72	3										
				B ₁	B	70	4										
535		1		J ₁	C	54	10										
		60		B ₂	C	72	8										
				B ₄	C	70	∞										
				J ₁	C	52	4										
				B ₁	B	70	6										
				J ₁	B	58	5										
540		3		J ₃	C	-	∞										
		60		B ₄	B	70	10										
				J ₃	B	90	12										
				B ₂	B	69	9										
				B ₄	B	69	2										
				J ₁	C	60	1 @ 180° TO B.										
545		2		B ₃	B	80	7										
		58		B ₂	B	60	5										
				J ₁	B	20	1 @ 180° TO B.										
				J ₂	B	11	3 @ 90° TO B.										
				B ₄	C	60	∞										
				J ₃	B	-	∞										
546 ¹²																	
550		4		B ₂	B	70	4										
		62		J ₃	B	-	∞										
				J ₂	B	30	2 @ 180° TO B.										
				B ₂	C	74	2										
				B ₁	S	70	2										

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Hole No. 282
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DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
550																			
555		60		B ₂ J ₂ B ₃ J ₄ B ₃ J ₃ B ₃	B C C B C C C	78 20 80 30 82 40 30	12 3 @ 160 to B ∞ 4 2 @ 90 to B 4							17 60		>20			
560		60		J ₂ B ₂ B ₂ B ₄ J ₄ B ₄	C C B C C W	12 70 72 70 0 70	1 @ 100° to B 2 6 6 1 1							40 60		17			
565		50		B ₂ B ₂ B ₂ J ₁ J ₄	C B C S W	71 68 80 49 18	4 2 2 1 @ 270° to B 11 @ 50 to B							40 60		20			
570		90		B ₂ B ₁ B ₂ J ₁ B ₁ J ₁ B ₄	C S C S S S S	60 62 80 24 70 42 66	2 5 2 1 @ 0° to B 2 1 2						34 60		(16)		J ₄ C 20 1 @ 320° to B		
575		50		B ₂ B ₂ J ₄ J ₂	B C W B	68 70 0 40	14 2 1 2 @ 180 to B						12 60		>20				

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Hole No. 282
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DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
575				B ₂	S	62	2 @ 30° to B												
				J ₂	C	52	2 @ 60° to B												
				B ₄	C	80	2 @ 60° to B												
				B ₂	C	72	6												
				J ₂	C	40	1												
				J ₂	C	24	3 @ 100° to B												
580	1			J ₂	C	24	4												
	60			J ₂	C	40	2 @ 320° to B												
				B ₁	S	70	2												
				B ₄	W	73	1												
				B ₃	C	87	2												
				B ₃	C	74	3												
				B ₄	W	69	1												
585	0			J ₂	C	52	1 @ 180° to B												
	60			B ₄	C	58	1												
				B ₁	C	69	4	Bedding @ 65°											
				B ₂	C	78	1												
				B ₃	C	50	2												
590	1			J ₂	C	57	1 @ 180° to B												
	60			B ₃	C	80	1												
				J ₃	C	30	1 @ 0° to B												
				B ₃	C	90	2												
				J ₂	C	15	1 @ 270° to B												
				B ₂	C	70	3												
595	0			B ₃	C	70	2												
	60			B ₄	C	70	1												
				B ₂	C	72	2												
				J ₃	B	—	∞												
				J ₂	B	27	1 @ 160° to B												
600	4			B ₂	B	70	3												
	60																		

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Hole No. 282
 SHEET 20 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS 4 3 2			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY		
				TYPE	INFILLING	INCLINATION						75	50	25	15	10	5			
600	4/60	B ₃	B	63	3															
		B ₂	B	57	3															
		B ₁	S	54	1															
		B ₂	C	65	6															
		B ₂	B	70	5															
605	2/60	J ₁	S	40	1	@ 0° to B														
		J ₂	B	11	1															
		J ₂	B	27	1															
		J ₂	B	70	4															
		J ₂	B	1	0															
		B ₂	C	66	2															
		B ₂	C	70	7															
		J ₄	C	02	1	@ 90° to B														
610	9/60	J ₄	B	1	0															
		J ₃	C	90	3															
		B ₁	S	62	1															
		B ₁	S	77	1															
		B ₂	C	67	5	Bedding @ 67°														
		B ₄	W	70	2															
		B ₂	C	70	3															
615	0/60	J ₄	C	0	3	@ 20° to D														
		J ₁	C	20	1	@ 90° to B														
		J ₁	S	42	1															
		B ₃	C	84	3															
		B ₂	C	80	2	@ 90° to B														
620	0/60	J ₂	C	38	2															
		J ₄	C	0	3															
		B ₂	B	74	1															
		B ₁	C	74	3															
		B ₂	C	70	2	@ 180° to B														
		J ₄	C	74	1	@ 0° to B														
625	0/60	J ₄	W	74	1															
		J ₂	C	59	1															

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DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/POUCHE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
625		0		B3	C	88	3												
		60		J2	C	40	1												
630		1		J2	C	30	1 @ 150 to B												
		60		B2	C	66	3												
				J2	C	44	1 @ 260 to B												
				J1	SB	21	2 @ 150 to B												
				J3	C	-	6												
				J4	C	22	2 @ 220 to B												
635		0		B4	W	70	1 @ 340 to B												
		60		J4	C	11	5 @ 340 to B												
				J2	C	48	2												
				B1	S	69	2												
				B2	B	63	1												
				B3	C	80	4												
640		2		J2	C	16	1 @ 150 to B												
		60		B2	C	69	5												
				B3	C	70	2												
				J3	C	40	1 @ 0 to B												
				J4	C	42	1												
				B4	C	70	3												
645		1		B1	B	81	5												
		60		J3	C	20	2												
				B3	C	60	1												
				J2	C	23	2												
				J4	C	27	2												
				J3	C	90	1												
650		1		J3	C	22	1												
		60		B3	W	76	1												
				J2	C	0	1												
				J3	C	84	1												
				B1	C	82	1												

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 SHEET 22 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
650				B ₃	C	90	1												
			60	J ₃	C	90	1					39							
				J ₃	C	-	10					60							
				J ₃	C	90	2												
				B ₃	B	63	1												
			60	B ₃	B	76	1												
655				B ₃	B	66	1					50							
				J ₂	C	41	1 @ 340° to B					60							
				J ₃	C	-	∞												
				J ₃	C	87	1												
			0	B ₃	C	77	1												
			60	J ₁	B	47	1 @ 30 to B												
660				J ₃	L	52	1					48							
				B ₂	C	74	2 @ 100 to B					60							
				B ₂	B	82	2												
			0	B ₁	B	76	3												
665			60									53							
												60							
				B ₃	B	57	1	Bedding @ 63											
				B ₂	B	72	1												
			0	J ₁	B	49	1 @ 0° to B												
670			60	J ₃	C	50	1					38							
				B ₂	C	76	1					60							
				J ₃	C	63	1												
				J ₃	C	90	3												
			1	B ₁	BW	78	1	@ 10° to B				45							
675			60	J ₄	B	56	1	@ 180° to B				60							
				B ₁	B	64	1	@ 180° to B											

B₁ B 82 1
 B₁ B 78 B
 J₁ C w 1
 @ 215° to B
 B₁ B 78 1
 B₁ B 74 1
 J₄ C 0 1
 J₃ C 94 2

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Hole No. 82
 SHEET 23 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5		
675	1	60																		
680	1	60		J ₃	C	50	2													
			B ₄	C	72	3														
			B ₂	C	70	1														
			J ₃	C	95	2														
			J ₄	C	02	1														
			J ₃	C	03	1														
685	0	60		B ₂	B	45	1													
			J ₃	C	50	1														
			J ₂	C	71	1														
			B ₄	C	72	1														
			J ₄	C	0	1														
			B ₁	C	60	1														
			B ₁	B	87	1														
690	0	60		B ₃	B ₁	70	2													
			B ₁	B	80	1														
			B ₂	B	72	1														
			J ₄	C	0	1														
			J ₃	C	1	10														
			J ₂	C	50	1														
695	0	60		B ₁	BW	75	1													
			J ₄	C	90	1														
			J ₂	W	42	1 @ 280° to B														
			B ₃	BW	90	1														
			B ₁	SW	79	1														
			B ₁	S	72	6														
700	2	60		B ₁	BW	72	4													
			J ₄	W	10	1 @ 80° to B														
			J ₃	W	66	1 @ 90° to B														
			B ₂	W	70	3														
			J ₂	W	1	20														

J₃ c 161
 @ 20° to B
 J₁ BW 62 2

J₃ c 03 4
 B₂ c 73 4
 J₃ c - 10

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DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5		
700	0	60																		
				B ₁	B	73	8													
705	0	60		B ₃	C	70	1													
				J ₄	C	15	1													
				J _B	C	46	2	Bedding @ 65°												
				J ₄	C	40	2													
710	0	60		B ₁	B	65	9													
				J ₄	SW	35	1													
				J ₃	BW	68	1													
				B ₁	B	72	7													
715	0	60		J ₂	BW	20	1													
				J ₁	SW	38	1													
				J ₄	C	90	1													
				J ₁	SW	12	2													
				J ₃	W	03	1													
720	1	60		J ₁	W	42	1													
				J ₃	C	90	5													
				J ₁	W	15	1													
				J ₁	W	-	720													
				J ₃	C	-	720													
				B ₂	C	62	5													
				J ₂	W	14	1													
725	54			J ₃	C	-	720													

J₃ W 18 1
 J₄ W 18 1
 J₄ C 16 2
 J₃ W 31 2
 J₁ W - 5

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Golder Associates

Hole No. 282
 SHEET 25 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/POSSIBLE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
725																			
							BEDDING @ 76° INCLINATION												
730				I4	C	0	6												I4 S 0° 2
				I2	C	14	2 @ 280° TO B.												I1 S 40° 1
				B4	W	74	1												B1 S 70° 1
				I4	W	0	3												B3 C 80° 3
				I1	S	15	2 @ 0° TO B.												I3 C - 8
				B2	C	70	7												I3 C - 4
				I4	W	52	1 @ 0° TO B												
735				B2	C	82	2												
				I2	C	24	1 @ 320° TO B												
				I2	C	48	3 @ 0° TO B												
				B2	C	73	5												
				B3	C	84	2												I4 W 30° 1
				B4	W	70	2												@ 350° TO B
740				I4	W	20	2 @ 240° TO B												
741 3/4				I2	C	28	1 @ 270° TO B												
				B3	C	88	3												
				B1	S	72	2												B4 W 77° 1
				I1	S	62	1 @ 180° TO B												I4 W 50° 1
745				I4	C	0	2												@ 0° TO B.
				I2	C	4	3 @ 0° TO B												I3 C - 3
746 3/4				I1	S	8	1 @ 270° TO B												
				B2	C	76	3												I3 C - 4
				B2	B	74	6												B4 C 74° 1
750																			

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Hole No. 282
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DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
750																			
751 3/4	4			B3	B	70	2												
	60			B4	B	72	3						27						T4 B 0° 1
				T1	S	62	1 @ 0° to B.												
	10			B2	B	77	12												
755	63			B2	B	83	4												
				T3	B	-	∞												
				B3	C	88	2												
				B2	C	90	10												
	8			B2	B	68	2												
760	60			B2	B	74	4												
				T4	B	0	1												
				B4	B	90	∞												
				T3	B	-	∞												
	1			B3	C	80	∞												
	34			B2	B	83	10												T2 B 45° 1
765				T4	B	0	2												T1 S 52° 2
				B2	C	76	4												B1 S 80° 1
	0			B2	C	65	1												T1 S 30° 1
	55			B2	C	82	3												B4 C 83° 1
				B3	C	80	3												B4 C 80° 2
768 1/2				B4	W	64	1												
770	1			B1	S	70	1	BEDDING @ 74°											
	60			B2	C	84	3	INCLINATION											
				T4	C	0	2												
				B3	C	80	4												
774 1/2				T3	C	52	1												
775																			

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Hole No. 282
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DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY		
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5			
775				B1	S	74	6														
		6		B2	C	80	5														
		65		B3	C	80	10														
				J1	S	40	1														
				J4	C	0	1														
780				J3	C	-	7														
				B2	C	68	1	BEDDING INCLINATION @ 70°													
				B3	C	79	3														
		0		J1	S	48	2														
		60		J4	S	-	4														
				J3	C	50	2														
				J4	C	0	2														
785				B2	C	67	12														
				B1	B	73	4														
		0		J3	C	90	4														
		60		J4	C	90	2														
790				B2	C	85	2														
				B1	B	84	4														
		0		J3	C	90	1														
		20		J3	C	-	15														
				B2	B	78	4														
				B1	B	77	3														
795				J3	B	90	3														
				B1	B	77	12														
		16		B2	B	76	1														
		60		J1	S	33	1	@ 10° to B													
				B1	S	70	1	@ 320 to B													
				J1	S	55	1														
800				J1	S	52	1														

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Golder Associates

Hole No. 282
SHEET 28 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GAUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
800				B	B	75	8						52 60			8			
805				B ₁ B ₂ B ₃ J ₃	B C B C	67 67 67 90	7 2 1 1						27 48			11			
810				J ₃	C	-	∞ → in coal						0			>20			
815				J ₃	C	-	∞ → in coal						0			>20			
815				J ₃ B ₂ B ₂ B ₂	C C C C	33 88 64 78	1 1 2 4	J ₃ C - ∞ → in coal					6 36			>20			
820				B ₁ B ₂ J ₄ B ₁ J ₃	C C W S C	88 74 08 60 90	1 1 1 2 3	@ 130 to B					45 48			8			
825				B ₁ B ₂ B ₃	C B C	78 76 62	2 2 1						34 47						

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Hole No. 282
 SHEET 25 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CORUSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
825																			
830				B ₂	C	74	2												
				B ₁	B	73	5												
				J ₃	C	03	4							54					
				J ₃	C	90	1							63					
830																			
830				B ₁	B	71	3												
				B ₃	B	80	1							55					
				B ₁	B	73	1							60					
				B ₃	C	59	1												
835																			
835				J ₃	C	90	3												
				B ₁	B	79	3												
840																			
				J ₄	C	0	1												
				B ₂	C	80	7												
				J ₃	C	90	1							30					
845																			
				J ₂	C	78	7												
850																			

LOGGED BY: _____
DATE: _____
PROJECT No. _____

Golder Associates

Hole No. 282
SHEET 30 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION 75 50 25			NATURAL FRACTURE FREQUENCY 15 10 5			PERMEABILITY
				TYPE	INFILLING	INCLINATION												
850	18 54	B ₂ C 74 4 B ₁ B 75 9 J ₁ B 72 1 @ 180 to B J ₃ C - 10																
855	17 48	B ₃ C 74 5 J ₃ C - 8																
860	0	B ₃ C 72 5 J ₃ C - 8																
865	3 60	B ₁ C 75 20 J ₃ C - 20 J ₄ C 15 1																
870	24 60	B ₂ C 73 720 J ₃ C - 8 J ₃ C 90 5																
875	16 80	B ₃ C 58 1 J ₃ W 27 1 @ 180 to B J ₁ W 62 1 @ 90 to B J ₂ C 20 24 J ₃ C 34 1													J ₃ C 16 1 J ₃ W 10 2 J ₃ C 40 1 J ₃ C - 2			

LOGGED BY: _____
 DATE: _____
 PROJECT No. _____

Golder Associates

Hole No. 282
 SHEET 1 OF 07

DEPTH 674	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
				J ₂	C	10	5										J ₂ C 40° 1	
				J ₂	C	2	1										J ₄ C 11° 1	
				B ₂	C	80	4										J ₂ C 30° 2	
880	2			J ₄	C	0	2						36					
	63			J ₃	C	-	8						63					
				J ₂	C	22	2											
				B ₁	S	68	2										J ₂ C 11° 2	
				J ₁	S	72	1 @ 150° TO B.										J ₃ C - 8	
885	0			J ₂	C	22	1 @ 90° TO B.						34				J ₂ C 42° 1	
	63			J ₂	C	27	2 @ 100° TO B.						63				@ 110° TO B.	
				J ₄	C	0	8										J ₄ W 38° 2	
				J ₄	C	74	2 @ 75° TO B.										@ 110° TO B.	
				J ₂	C	8	8										J ₃ C - 10	
				B ₂	C	70	5										B ₃ C 80. 4	
				J ₁	S	2	1											
890	1			J ₄	C	0	4						20					
	60			J ₄	C	30	1 @ 250° TO B.						60					
				J ₂	C	23	2 @ 270° TO B.											
				J ₂	C	0	4 @ 90° TO B.											
				J ₄	C	0	3											
895	3			B ₂	C	66	1											
	60			J ₂	C	40	1 @ 180° TO B.							37				
				J ₃	C	-	4							60				
				J ₂	F	3	1 @ 190° TO B.											
				J ₁	S	9	1 @ 90° TO B.											
				B ₁	S	68	1											
				J ₂	C	50	3 @ 140° TO B.							58				
900	1			J ₁	S	40	1 @ 0° TO E.							60				
	60																	

LOGGED BY: JH
DATE: July 27/78
PROJECT No. _____

Gold Associates

Hole No. 282
SHEET 32 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOLGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
500			1/60	J4	C	10	2												
							Bedding @ 68° inclination												
905			2/60	J4	C	0	3												
				J2	C	11	2 @ 200° TO B												
				J2	C	30	2 @ 30° TO B												
				B2	C	70	3												
				J4	C	20	3 @ 200° TO B												
				J2	C	28	1 @ 270° TO B												
910			0/60	J2	C	9	1												
				J2	C	18	1 @ 180° TO B												J4 C 20° 1 @ 270° TO B
				J4	C	20	4 @ 180° TO B												
				J4	C	0	5												
				B2	C	70	6												
							Bedding @ 71° inclination												
915			0/60	J4	C	0	3												J2 C 50° 1 @ 170° TO B
				B2	C	72	6												
				J2	C	6	2 @ 90° TO B												
				B2	B	73	1												
				J2	C	10	2 @ 180° TO B												
920			0/60	B2	C	69	7												J2 C 6° 1 @ 270° TO B
				B2	C	72	3												
				J2	C	28	2 @ 270° TO B												J4 C 8° 3 @ 270° TO B
				J2	C	33	1 @ 330° TO B												
				J2	C	11	2 @ 270° TO B												J3 C - 5
925			4/60	J1	S	0	1												J3 C - ∞
				J1	S	4	3												J1 C 40 2 @ 90° TO B
				J2	C	2	8												
				J4	C	0	8												

LOGGED BY: AT
DATE: July 27/78
PROJECT No. _____

Golder Associates

Hole No. 282
SHEET 33 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
925				B ₂	C	70	6											
	4			J ₂	C	30	1 @ 180° to B						11					
	60			J ₂	C	06	1 @ 270° Bedding @ 75°											
				J ₁	S	03	# @ 270° to B											
				B ₂	C	80							0					
				J ₃	C	-	>20						36					
930				J ₁	W	06	1											
				B ₂	C	86	5	J ₃ C - 5										
				B ₁	B	86	2											
	1			J ₁	C	03	1						24					
	48			J ₂	C	17	1 @ 210°						78					
				J ₂	C	10	4											
935				B ₂	C	74	1											
				B ₂	B	72	4											
	0			J ₃	C	05	2						6					
	48			J ₄	C	-	8						11					
				J ₃	C	-	>20											
				B ₁	B	69	2											
				B ₁	S	57	2											
940				J ₁	S	46	1											
	0			J ₂	C	49	1						30					
	48			J ₃	C	20	3						48					
				J ₂	C	56	2											
				B ₂	C	77	1											
				B ₁	B	63	1											
945				J ₃	C	90	2											
	0			B ₂	C	72	2						38					
	60			J ₃	B	90	1						60					
				B ₂	C	70	1											
				B ₃	C	50	5											
950				B ₂	C	61	2						50					
	0												60					

LOGGED BY: H
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 PROJECT No.

Golder Associates

Hole No. 282
 SHEET 44 OF 08

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOLGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
950																			
955		2	60																
				B ₂	C	72	2												
				J ₃	C	90	1												
				B ₁	B	72	4												
				J ₃	C	90	4												
				J ₃	C	-	20												
960		0	60																
				B ₂	C	70	12												
				J ₃	C	-	8												
				B ₁	B	76	1												
				J ₂	W	21	@ 0° to B												
965		0	60																
				B ₂	C	77	11												
				J ₃	C	-	2												
				J ₃	C	96	1												
				J ₄	C	-	>20												
970		0	60																
				B ₂	C	78	9												
975		0	60																
				B ₁	B	75	2												
				B ₂	C	75	12												

LOGGED BY: _____
 DATE: _____
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Golder Associates

Hole No. 282
 SHEET 35 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
975																		
980		12	60	B ₁ B ₂ J ₃	B B C	78 80 -	5 720 ∞					0	60		720			
985		0	60	B ₃ J ₃ B ₄ J ₄	C C C C	- 30 82 0	∞ 3 3 1					21	60		520			
990		0	60	J ₂ J ₁ J ₂ J ₃	W W C C	20 64 23 90	3 1 2 1					2	60		7			
995		0	60	B ₂ B ₁ J ₄	C B M	70 72 05	6 1 1	Bedding @ 70° @ 10° to B				58	60		8			
1000		0	60	B ₂ J ₄ J ₃	C C C	73 0 50	4 1 4					52	60		9			

LOGGED BY: _____
 DATE: _____
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Golder Associates

Hole No. 282
 SHEET 36 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
1000																			
1005	0/60			J2 C 20	2	@ 210° TO B.													
				B3 C 80	8														
				B2 C 64	2														
				B2 C 72	7														
				J4 C -		∞ BRECCIA.													
				J4 C 12	2	@ 90° TO B													
				J1 S 30	1	@ 150° TO B													
				J2 C 24	1	@ 10° TO B													
1010	1/60			B2 C 70	9														
				J4 C -		∞ BRECCIA													
				J4 C 0	4														
				J2 C 0	2														
1015	0/60			B3 C 80	8														
				B2 C 68	2														
				B2 C 72	5														
				J4 C/F -		∞ Breccia													
				J2 C 2	1	@ 0° TO B													
				B2 C 67	2														
				B2 C 72	8														
1020	1/60			J4 C 0	3														
				J4 C 11	1	@ 10° TO B													
				J4 C -		8 Breccia zone													
				J2 C 12	2	@ 180° TO B													
				J2 S 5	1	@ 0° TO B													
				J2 C 40	2	@ 80° TO B													
1025	0/60			J4 C 0	2														

LOGGED BY: AT
DATE: July 28/78
PROJECT No. _____

Golder Associates

Hole No. 282
SHEET 37 OF 39

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GRAUSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
1025	0	0	0	B ₂	C	70	2												
	0	0	0	J ₃	C	50	2 @ 0° TO B												
				B ₂	C	77	2												
				B ₃	C	83	2												
1030	0	0	0	J ₄	C	0	2												
				J ₄	Q	48	2 @ 220° TO B												
				B ₂	C	80	2												
				J ₃	C	10	1												
1035	0	0	0	B ₃	C	90	1												
				B ₃	C	90	6												
1040	0	0	0																
				B ₃	C	88	7												
				J ₂	C	15	1 @ 90° TO B												
1045	0	0	0	J ₄	C	15	1 @ 90° TO B												
				J ₂	C	27	2 @ 190° TO B												
				J ₂	C	22	2 @ 80° TO B												
				J ₁	S	31	2 @ 30° TO B												
1050	6	6	6	J ₁	S	50	1 @ 0° TO B												

LOGGED BY: CH
DATE: July 28/70
PROJECT No. _____

Golder Associates

Hole No. 282
SHEET 38 OF 39

J₂ C 42° 1
@ 240° TO B
B₄ Q 70° 2

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE	HARDNESS 4 3 2	ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 15 10 5	PERMEABILITY
				TYPE	INFILLING	INCLINATION							
1050				J	S	15	2 @ 0° TO B						
				J	C	40	1 @ 0° TO B						
1055							TD. 1052'						
1060													

LOGGED BY: XH
DATE: July 28/78
PROJECT No. _____

Golder Associates

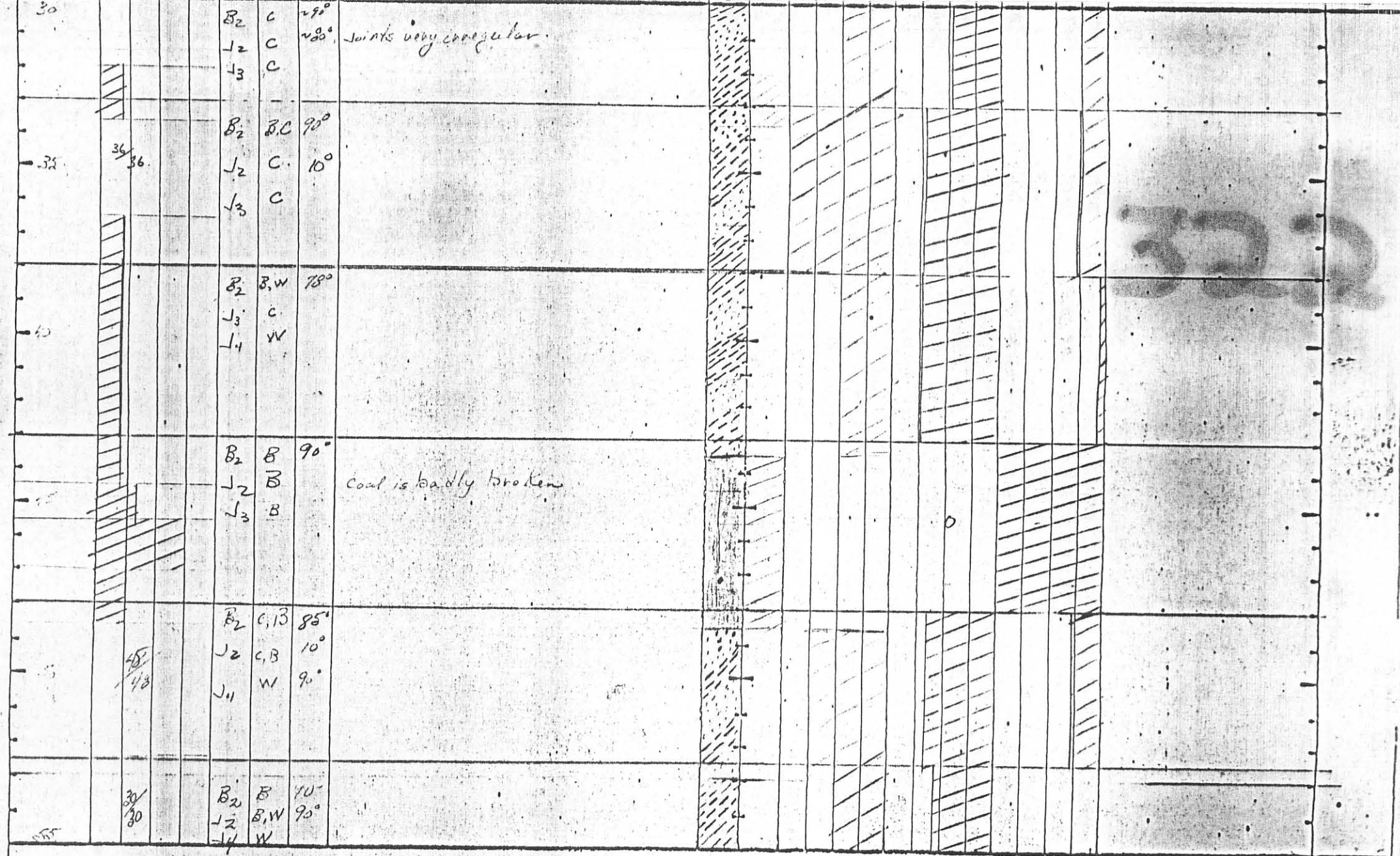
Hole No. 282
SHEET 39 OF 39

DEPTH	CONE LOSS			TYPE	INFILL	INCLINATION	REMARKS	GRAPHIC	BRECCIA BROKEN	HARDNESS			QUALITY			FRACTURE			PERMEABILITY
	25	50	75							4	3	2	75	50	25	15	10	5	
5							0.8												DDH-283
10		26	36		B ₂ J ₄ J ₃	B W C ₁ d.	90° 17°												322
15		13	43		B ₂ J ₃ J ₄	B C W	90° 5°												
20					B ₂ J ₃	C ₁ B C	90°												
25					B ₂ J ₂ J ₃	B B C ₁ B	90° 60°												
30																			

LOGGED BY: ZL
 DATE: 14 7/78
 PROJECT No.

Golder Associates

Hole No. 283
 SHEET 1 OF 4



LOGGED BY: _____
 DATE: _____
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Golder Associates

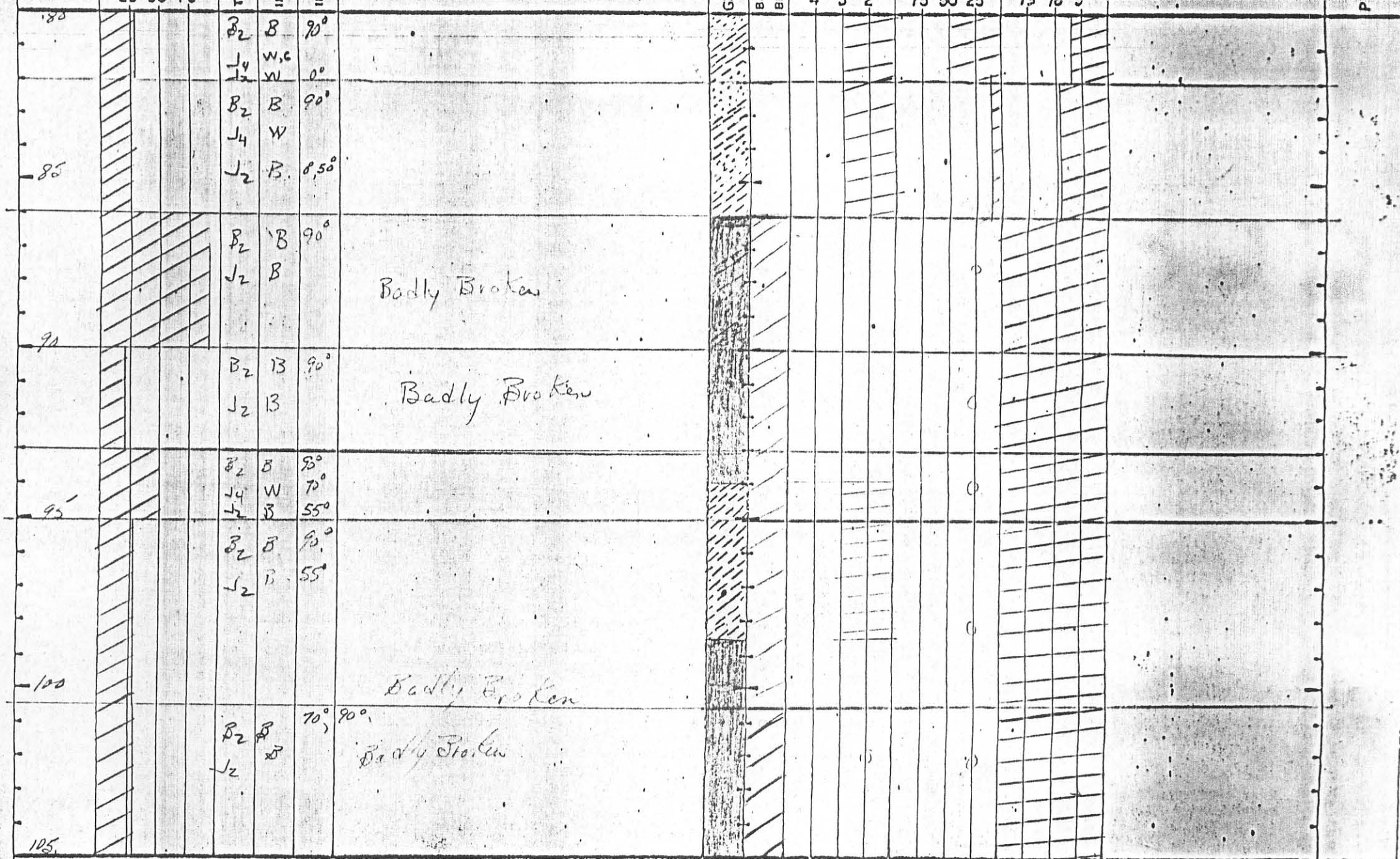
Hole No. _____
 SHEET 2 OF 4

DE	LOSS			TYPE	INFILL	INCLIN	REMARKS	GRAPH	BRECCIA	BROKEN	DESIGNATION			FREQUENCY			PERM	
	25	50	75								4	3	2	75	50	25		15
50				B ₂ J ₂	B B, W	70° 10°												
60				B ₂ J ₂ J ₃	B B C	90° 70°												
65		60/60		B ₂ J ₂ J ₄	B B, W W	90° 20°												
70		40/40		B ₂ J ₄	B W	90, 75° 35°												
75		60/0		B ₂ J ₂ J ₄	B B W	90° 20°												
		17/12		J ₄ B ₂	W B	58°												
80				B ₂ J ₂	B B	70° 20°												

LOGGED BY: MRS.
 DATE: 11.4.21/78
 PROJECT No. _____

Golder Associates

Hole No. 204-722
 SHEET 8 OF 41



LOGGED BY: M.R.S.
 DATE: Oct 31/78
 PROJECT No. _____

Golder Associates

Hole No. DDH #283
 SHEET 4 OF 41

DEPT	CORE LOSS			TYPE	INFILLING	INCLINATN	AND REMARKS	GRAPHIC	BRECCIA/ BROKEN C	HARDNESS			QUALITY DESIGNATION			FRACTURE FREQUENCY			PERMEA
	25	50	75							4	3	2	75	50	25	15	10	5	
105																			
				B ₂	B	90°													
				J ₂	B														
				B ₂	B	90°													
				J ₂	B														
115				B ₂	B	90°													
				J ₂	B	44°													
				B ₂	B	90°													
				J ₄	W	20°													
				B ₂	C, B	90°													
				J ₂	B	50°													
125																			
				B ₂	C	90°													
				J ₄	W	10°													
130																			

LOGGED BY: MRS
 DATE: 7/20/78
 PROJECT No. _____

Golder Associates

Hole No. DDH-288
 SHEET 5 OF 41

DEP	CORE LOSS			TYPE	INFILLING	INCLINAT	AND REMARKS	GRAPHIC BRECCIA BROKEN C	HARDNESS			QUALITY DESIGNATION			FRACTURE FREQUENCY			PERMEA
	25	50	75						4	3	2	75	50	25	15	10	5	
130																		
135		60/60		B ₂ J ₃	C C	90°												
140		60/60		B ₂ J ₄	C, B W	90°												
145		60/60		B ₂	C	90°												
150		60/60		B ₂ J ₄ J ₃	C W C	90° 10°												
155		60/60		B ₂ J ₃	B C	70° 20°												

LOGGED BY: 1125
 DATE: 7/15/78
 PROJECT No. _____

Goldier Associates

Hole No. DDH# 283
 SHEET 6 OF 41

DEPT	CORE LOSS			TYPE	INFILLING	INCLINATIC	AND REMARKS	GRAPHIC	BRECCIA/GO BROKEN CO	HARDNESS			QUALITY DESIGNATION			FRACTURE FREQUENCY			PERMEAB
	25	50	75							4	3	2	75	50	25	15	10	5	
150																			
160		60/61		B ₂ J ₄ J ₂	B W B.	30° 45° 45°													
165		60/60		B ₂ J ₄	B W	90° 20°													
170		60/60		B ₂ J ₂	B B _W	30° 30°													
175		0/00		B ₂ J ₂	B C	90° 65°													
180		60/60		B ₂ J ₂	B C	90° 10°													

LOGGED BY: MRS
 DATE: Nov 1178
 PROJECT No. _____

Golder Associates

Hole No. DDH #295
 SHEET 7 OF 41

DEPTH	LOSS			TYPE	INFILL	INCLINA	REMARKS	GRAPHIC	BRECCIA BROKEN	HARDNESS			QUALITY			FRACTURE			PERMEA
	25	50	75							4	3	2	75	50	25	15	10	5	
150																			
185		61	60		B ₂	B	90°												
190		61	60		J ₄	W	85° 10°												
195		61	60		B ₂	B	15° 85°												
200		60	60		B ₂	B	21° 80° 80°												
215					B ₂	B	80° 90°												

LOGGED BY:
 DATE:
 PROJECT No.

Golder Associates

Hole No.
 SHEET 8 OF 41

DEPTH	PERCENT CORE LOSS			TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA / BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABIL	
	25	50	75							4	3	2	75	50	25	15	10	5		
205																				
210				B ₂	B _C	90°		[Hatched Pattern]												
				J ₂	C	20°														
				J ₃	C															
215				B ₂	B	30°		[Hatched Pattern]												
		60		J ₃	C															
220				B ₂	B	30°		[Hatched Pattern]												
		60		J ₄	W															
225				B ₂	B	85°		[Hatched Pattern]												
		60		J ₃	C															
230				B ₂	B	90°		[Hatched Pattern]												
				J ₂	C	20°														
		60		J ₃	C															

LOGGED BY: MRS
 DATE: 11/2/78
 PROJECT No. _____

Golder Associates

Hole No. 177-202
 SHEET 9 OF 41

DEP	CORE LOSS			TYPE	INFILLING	INCLINAT	REMARKS	GRAPHIC	BRECCIA BROKEN	DESIGNATION			FREQUENCY			PERM
	25	50	75							4	3	2	75	50	25	
230																
235																
240																
245																
250																
255																

LOGGED BY: _____
 DATE: _____
 PROJECT No. _____

Golder Associates

Hole No. _____
 SHEET 10 OF 41

DE	LOSS			TYPE	INFILL	INCLIN	REMARKS	GRAPH	BRECCI	BROKE	DESIGNATION FREQUENCY						PERR
	25	50	75								4	3	2	75	50	25	
100																	
200					E	20°											
				W		40°											
					B	20°											
				B		5°											
					B	90°											
	6/60			B		65°; 20°											
				B		90°											
				B		45°											

LOGGED BY: _____
 DATE: _____
 PROJECT No. _____

Golder Associates

Hole No. _____
 SHEET 11 OF 41

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BREGG'S LOG BROKEN CORE %	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
280																			
285				B ₂ J ₂ J ₂	B B W.	90° 45° 10°													
290				B ₂ J ₃ J ₂	B C B	90° 75°													
295		60%		B ₂ J ₄	B W	90° 10°	285° to B.												
300		60%		B ₂ J ₄	B W	90° 70°													
305		60%		B ₂	B	90°													

LOGGED BY: MRS
 DATE: Nov 6/78
 PROJECT No. _____

Golder Associates

Hole No. DDH 283

SHEET 12 OF 41

DEPTH	PERCENT CORE LOSS			TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COB	BROKEN COB	HARDNESS			QUALITY DESIGNATION			FRACTURE FREQUENCY			PERMEABILITY		
	25	50	75								4	3	2	75	50	25	15	10	5			
305																						
310				B ₂	B	90°																
				J ₂	C	10°																
				J ₃	C																	
				J ₂	B	60°																
315				B ₂	C, B	90°	175°															
				J ₄	W	20, 80°																
				J ₂	C	20°																
320				B ₂	B	90°																
				J ₂	B	65°																
325				B ₂	B	90°																
				J ₂	B	80°																
330				B ₂	B	90°																
				J ₂	B	80°																
				J ₂	B	60°																

LOGGED BY: M.R.
 DATE: 7/10/79
 PROJECT No. _____

Golder Associates

Hole No. 204-23
 SHEET 13 OF 41

DEP	CORE LOSS			TYPE	INFILLING	INCLINAT	AND REMARKS	GRAPHIC	BRECCIA/BROKEN	HARDNESS			QUALITY DESIGNATION			FRACTURE FREQUENCY			PERME
	25	50	75							4	3	2	75	50	25	15	10	5	
330																			
335		60	60		B ₂	B	90°												
					J ₂	W	20°												
					J ₂	W	0°												
340					B ₂	C	90°												
					J ₄	W	0, 90°												
					J ₃	C													
					J ₂	C	10°												
345		60	60		B ₂	C	90°												
					J ₄	W	15°												
350		20	60		B ₂	C	10, 80°												
					J ₄	F, W	25°												
355		10	60		B ₂	C	10, 70°												
					J ₄	W	70°												
					J ₃	C	25°												

LOGGED BY: MRS
 DATE: Nov. 7/78
 PROJECT No. _____

Golder Associates

Hole No. DD#283
 SHEET 14 OF 41

DEPT	CORE LOSS			TYPE	INFILLING	INCLINATION	AND REMARKS	GRAPHIC	BRECCIA/CO BROKEN CO	HARDNESS			QUALITY DESIGNATION			FRACTURE FREQUENCY			PERMEAB
	25	50	75							4	3	2	75	50	25	15	10	5	
355																			
360		60/60		B ₂	C, B	80°													
365		60/60		B ₂ L ₂	B, C C	85°, 80° 40°													
370		60/60		B ₂	C	80°													
375		60/60		B ₂	C	80°													
380		60/60		B ₂ L ₂	C C	75° 0°													

LOGGED BY: HRS
 DATE: Nov 14 1988
 PROJECT No. _____

Golder Associates

Hole No. DDH-333
 SHEET 15 OF 41

DEP	CORE LOSS			TYPE	INFILLING	INCLINAT	AND REMARKS	GRAPHIC	BRECCIA/BROKEN CC	HARDNESS			QUALITY DESIGNATION			FRACTURE FREQUENCY			PERMEAB
	25	50	75							4	3	2	75	50	25	15	10	5	
380																			
385		60		B ₂	C	80°													
390		60		B ₂	C	80°													
405		60		B ₂	B	90°, 30°													
		60		J ₂	B	45°, 20°													
		60		J ₄	W	90°													
400		60		B ₂	B	90°													
		60		J ₄	W	90°, 80°													
		60		J ₂	B	45°													
415		60		B ₂	B	90°													
		60		J ₂	B	25°													
		60		J ₄	W	20°													

LOGGED BY: MPS
 DATE: Oct 9, 1978
 PROJECT No. _____

Golder Associates

Hole No. 00
 SHEET 16 OF 41

DEP	CORE LOSS			TYPE	INFILLING	INCLINATION	AND REMARKS	GRAPHIC	BRECCIA/CO BROKEN CO	HARDNESS			QUALITY DESIGNATION			FRACTURE FREQUENCY			PERMEABILITY
	25	50	75							4	3	2	75	50	25	15	10	5	
405																			
410				B ₂	B	90°													
				I ₂	B	30°, 40°													
				I ₃	B														
415				B ₂	B	90°													
				I ₂	B	45°													
				I ₃	B, C														
420				B ₂	B	90°													
				I ₄	W	10°													
425				B ₂	B	90°													
				I ₂	B	60°													
				I ₂	C, W	30°, 0°													
430				B ₂	C	90°													
				I ₃	C														
				I ₂	B, W	35°													

LOGGED BY: MRS
 DATE: 11/9/78
 PROJECT No. _____

Golder Associates

Hole No. DDH 233
 SHEET 17 OF 41

DEPTH	PERCENT CORE LOSS			TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COBBLES BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75							4	3	2	75	50	25	15	10	5	
430																			
435		60		B ₂ J ₂ J ₃	B, C C.	90° 45°													
440		60		B ₂ J ₄ J ₂	B W B.	90° 0° 60°													
445		60		B ₂ J ₄ J ₂	B W B,W	95° 0° 30°													
450		60		B ₂ B ₂ J ₄	B B W	80° 90° 0°													
455		60		B ₂ J ₄	B W	35, 90° 0°													

LOGGED BY: MRS
 DATE: Nov. 4/78
 PROJECT No. 1

Golder Associates

Hole No. 227
 SHEET 18 OF 41

DEPTH	PERCENT CORE LOSS			TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75							4	3	2	75	50	25	15	10	5	
455																			
460				B ₂	B	90°													
				J ₂	P, W	30°													
				J ₂	C	0°													
				J ₃	C														
465				J ₃	C														
				B ₂	B	75°													
470				J ₂	C	0°													
		60/60		B ₂	B	75°													
				J ₂	B, C	20°													
475				J ₃	B														
		60/60		B ₂	B	75°													
480																			
				B ₂	B	80°													
				J ₂	B	45°													
485				J ₃	B														

LOGGED BY: DAVE
 DATE: 14/1/82
 PROJECT No.

Golder Associates

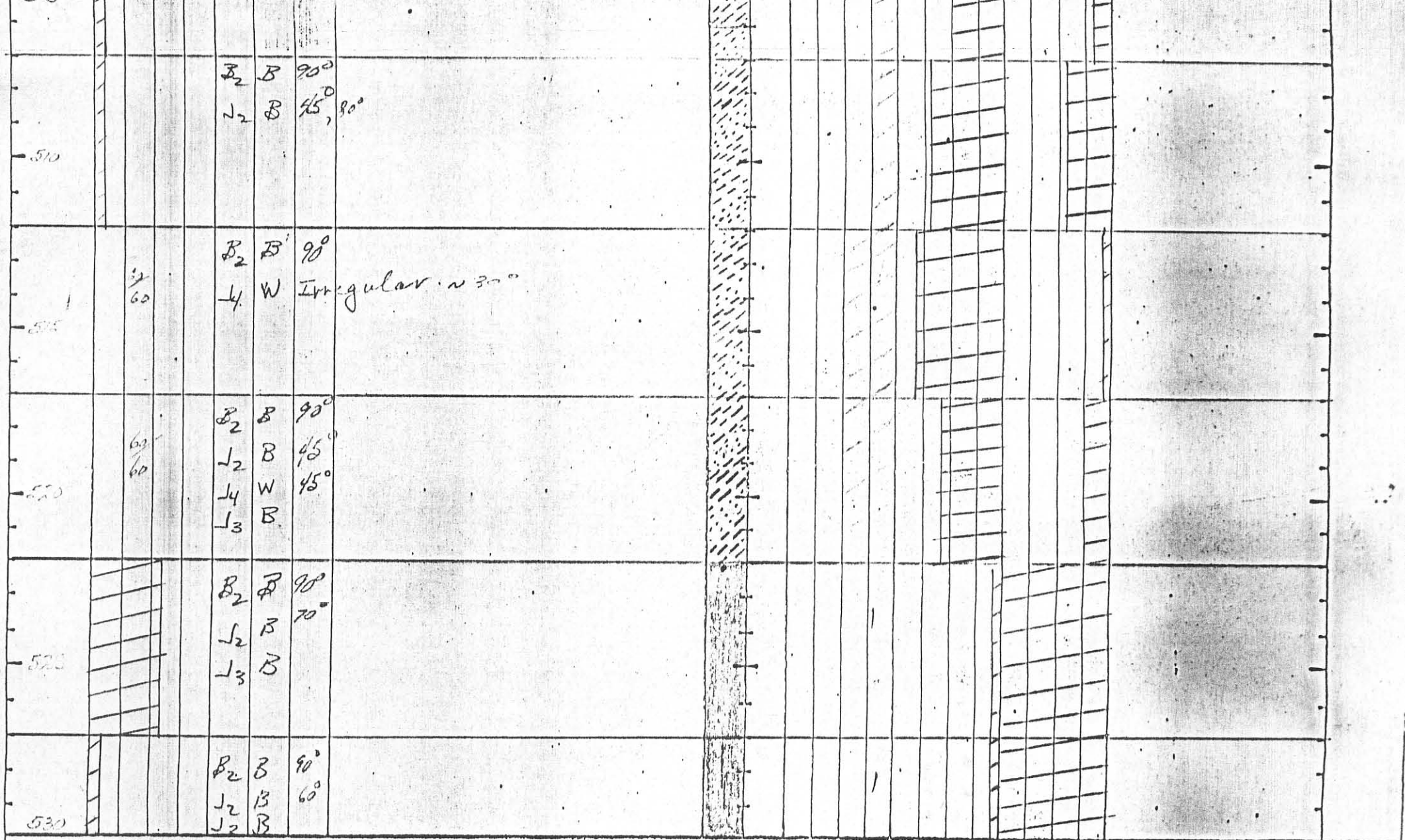
Hole No. 204#233
 SHEET 19 OF 41

DEPTH	25 50 75			TYP	INFI	INCL	REMARKS	GRAP	BREC	BROK	DESIGNATION			FREQUENCY			PERM	
	4	3	2								75	50	25	15	10	5		
480																		
485				B ₂	B	45°												
				J ₂	B	45°												
				J ₂	B	5°												
				J ₃	B													
490				B ₂	B	1°												
				J ₂	B	45°												
				J ₃	B													
495			60/60	B ₂	B	90°												
				J ₂	B	45°												
				J ₃	B													
500				B ₂	B	90°												
				J ₂	B	45°												
				J ₃	B													
505				B ₂	B	90°												
				J ₂	B	30°												
				J ₄	W	90°												

LOGGED BY: MRS.
 DATE: 7/14/18
 PROJECT No. _____

Golder Associates

Hole No. DDH#283
 SHEET 20 OF 41



LOGGED BY: MRS
 DATE: 1/11/73
 PROJECT No. _____

Golder Associates

Hole No. DD4-233
 SHEET 31 OF 41

DEPTH	CORE LOSS			TYPE	INFILLING	INCLINATION	AND REMARKS	GRAPHIC	BRECCIA/CO BROKEN CO	HARDNESS			QUALITY DESIGNATION			FRACTURE FREQUENCY			PERMEABILITY
	25	50	75							4	3	2	75	50	25	15	10	5	
350																			
525				B ₂	B	90°													
				J ₃	B														
540				B ₂	B	90°													
				J ₂	B	55°, 70°													
				J ₂	B, W	45°													
				J ₄	W														
545				B ₂	B	90°													
				J ₂	B	45°													
				J ₄	W	30°													
550		60		B ₂	B	90°													
		60		J ₂	B	40°, 70°													
555				B ₂	B	90°													
				J ₄	W	25°													

LOGGED BY: MR
 DATE: 11/14/83
 PROJECT No. _____

Golder Associates

Hole No. DDH # 183
 SHEET 22 OF 41

DEPTH	PERCENT CORE LOSS			TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA / BROKEN CORE	HARDNESS			QUALITY DESIGNATION			FRACTURE FREQUENCY			PERMEAB
	25	50	75							4	3	2	75	50	25	15	10	5	
550																			
560		60/60		B ₂ L ₄	B W	90° 0°													
		60/60		B ₂ L ₂	B B	90° 35°													
		60/60		B ₂ L ₂	B B	90° 35°													
		60/60		B ₂ L ₂	B C	90° 0°													
580		60/60		B ₂ L ₄	B W	90° 0°													

LOGGED BY: MKS
 DATE: Nov 6 1973
 PROJECT No: _____

Golder Associates

Hole No. DDH 23
 SHEET 23 OF 41

DEPT	CORE LOSS			TYPE	INFILLING	INCLINATION	AND REMARKS	GRAPHIC BRECCIA/ BROKEN CO	HARDNESS			QUALITY DESIGNATION			FRACTURE FREQUENCY			PERMEAB
	25	50	75						4	3	2	75	50	25	15	10	5	
580																		
585		60			B ₂	B	90°											
		60			B ₂	B	70°											
		60			B ₂	B	70°											
590		60			B ₂	B	90°											
		60			B ₂	B	90°											
595		60			B ₂	B	90°											
		60			B ₂	B	90°											
600		60			B ₂	B	90°											
		60			B ₂	B	55°											
605		60			B ₂	B	90°											
		60			B ₂	B	70°											
		60			B ₂	B	0°											

LOGGED BY: NRS
 DATE: Nov 16 1978
 PROJECT No. _____

Goldier Associates

Hole No. DDH #13
 SHEET 24 OF 41

	25	50	75	T	E	E		GF	BF	BF	4	3	2	75	50	25	15	10	5	PI
605																				
610				B ₂	B	70°														
				J ₄	W	15°, 0°, 45°														
				J ₃	B.															
				J ₂	B, F	Irregular.														
615				B ₂	B	90°, 90°														
				J ₂	B	60°														
				J ₃	B															
620				B ₂	B	90°														
				J ₂	B	65°														
625				B ₂	B	90°														
				J ₂	B	65°														
				J ₄	W	70°														
630				B ₂	B	90°														
				J ₂	W, S	70°														
				J ₄	W	90°, 70°														

LOGGED BY: HRS
 DATE: Nov 16, 78
 PROJECT No. _____

Golder Associates

Hole No. 283
 SHEET 25 OF 41

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
630																			
640				B ₂	B	20°													
645				J ₂	B	70°													
650				J ₃	B	75°													
655				B ₃	B	20°													
660				J ₂	B	40°													
665				J ₄	W	70°	irregular												
670				B ₂	B	20°													
675				J ₂	B	70°													
680				J ₄	W	0°													
685				B ₂	B	20°													
690				J ₂	B	10°													
695				B ₂	B	90°													
700				J ₄	W														
705				J ₃	C														

LOGGED BY: MRS
DATE: _____

Hole No. 004-1203

DEPTH	PERCENT CORE LOSS			TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75							4	3	2	75	50	25	15	10	5	
650																			
685		60			B ₂ J ₂	B B	90° 60, 70°												
690		60			B ₂ J ₂	B B	90° 90°												
695		60			B ₂ J ₂	B B	90° 45°												
700		60			B ₂ J ₂	C C	90° 110°, 65°												
705		60			B ₂	C	90°, 70°												

LOGGED BY: W.P.

DATE: Nov 27 1968

PROJECT No. _____

Golder Associates

Hole No. 0311-23

SHEET 28 OF 41

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG BRECCIA / GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
705																		
				B ₂	C	90°												
710		60	45															
				B ₂	C	90°												
715		25	30															
				B ₂	B	90°												
		60	60	L ₂	B, W	25°												
720																		
				B ₂	B	90°												
				L ₂	B	0°												
725		40	60	B ₂	B	70°												
				B ₂	B	90°												
		60	60	L ₂	B	80°												
730																		

LOGGED BY: MRS
 DATE: Nov 20 2011
 PROJECT No. _____

Golder Associates

Hole No. DDA 418
 SHEET 29 OF 41

DEPTH	CORE LOSS			TYPE	INFILLING	INCLINATION	REMARKS	GRAPHIC LOG	BRECCIA/COOL BROKEN COR	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75							4	3	2	75	50	25	15	10	5	
730																			
735		60/60		B ₂	B	30°													
740		60/60		B ₂ B ₂ J ₂	B B C	30° 70° 15°	215° to B												
745		60/60		B ₂ J ₂	B C	90° 100°													
750		60/60		B ₂ J ₂ J ₂	B B B	90° 55° 5°													
755		60/60		B ₂ B ₂ J ₄	B B W	90° 70° 80°													

LOGGED BY: MRS
 DATE: Nov 20/88
 PROJECT No.

Goldier Associates

Hole No. DD-#2-3
 SHEET 30 OF 41

DEPTH	PERCENT CORE LOSS			TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA / GROUND BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75							4	3	2	75	50	25	15	10	5	
755																			
760				B ₂	B	90°													
				B ₂	B	60°													
				J ₂	B	10°													
765				R	R	90°													
				J ₂	B	45°													
				B ₂	B	60°													
				J ₂	B	0°													
770				B ₂	B	90°													
				J ₂	B	45°													
				B	B														
775				R	R	90°													
				J ₂	B	45°													
				J ₃	B														
780				A ₂	B	90°													
				J ₄	W	90°													
				J ₁	R	0-70°													

LOGGED BY: J.P.
 DATE: 10/10/8
 PROJECT No.

Golder Associates

Hole No. NT-15
 SHEET 31 OF 41

DEPTH	PERCENT CORE LOSS			TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/BLOCKS BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75							4	3	2	75	50	25	15	10	5	
780																			
785	60	60		B ₂ J ₂ J ₄	B B F	90° 70° 90°	(pyrite)												
790	60	60		B ₂ J ₄ J ₄	B W W	70° 70° 30°	180° to B												
795	60	60		B ₂ J ₂ J ₂	B C W	85° 10° 30°	250° to B												
800	60	60		B ₂ J ₂ J ₂	B C W	90° 60° 65°													
810				B ₂ J ₄ J ₂	B W B	90° 75° 65°	20°												

LOGGED BY: PLS
 DATE: Nov. 22, 198
 PROJECT No. _____

Golder Associates

Hole No. 2217
 SHEET 32 OF 41

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
				TYPE	INFILTRATION	INCLINATION			4	3	2	75	50	25	15	10	5		
800																			
810				B ₂	B	90°													
				J ₄	C	45°													
				J ₄	W	10, 10°													
				B ₂	B	90°													
				J ₂	B	70°													
				B ₂	B	90°													
				J ₃	B	70°													
				B ₂	B	90°													
				J ₃	B	70°													
				J ₂	B	70°													
				J ₃	B	90°													
				B ₂	B, W	90°													
				J ₄	W	70°													

LOGGED BY: MRS
DATE: Nov 23/78

Hole No. 200-10

DEPTH	PERCENT CORE LOSS			TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA / GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75							4	3	2	75	50	25	15	10	5	
820																			
835		60	60	B ₂ J ₂	B _{5C} C	90° 20°													
845		60	60	B ₂ J ₂	B B	85° 55°													
855		30	30	B ₂ J ₄	B W	90° 20°													
870		60	60	B ₂ J ₂	B B	90° 70°													
885				B ₂ J ₄ J ₂	B W B	90° 60° 35°													

LOGGED BY: MRS
 DATE: Nov 23/19
 PROJECT No. _____

Golder Associates

Hole No. _____
 SHEET 37 OF 41

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE/BROKEN CORE %	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
532																			
860		60/60		B ₂ J ₂ J ₄	B B B	80° 60° 60, 20°													
865		60/60		B ₂ J ₄	S W	50° 55°	155° to B												
870		60/60		B ₂ J ₂	B B	20°													
875				B ₂ J ₂	B B	90°													
880				B ₂ J ₂	B B	90°													

LOGGED BY: MRS
 DATE: Nov. 29, 1978
 PROJECT No. _____

Golder Associates

Hole No. DDH 293
 SHEET 35 OF 41

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
880																		
885		60		B ₂	B	90°												
		60		J ₂	B	90°												
				J ₃	C	15°												
				B ₂	B	90°												
				J ₂	B	55°												
				J ₂	W	60°												
				B ₂	CB	90°												
				J ₄	W	15°												
				J ₂	B	15°												
				J ₂	W	15°												
				B ₂	B	80°												
				J ₄	W	15°	110° to 2°											
				J ₂	C	15°												
		60		B ₂	B	80°												
		60		J ₂	C	50°												
				J ₂	C	15°	70° to B (Trace P ₁)											

LOGGED BY: MRS
DATE: Nov 29, 1978
PROJECT No. _____

Golder Associates

Hole No. DDH 283
SHEET 2 OF 4

DEPTH	PERCENT CORE LOSS			TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75							4	3	2	75	50	25	15	10	5	
405																			
900																			
905																			
920																			
925																			
930																			

LOGGED BY: MRS
 DATE: Nov 30/93
 PROJECT No. _____

Goldier Associates

Hole No. 1008-53
 SHEET 27 OF 41

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
930																		
935		60		B ₂	B	90°												
		60		J ₂	W	50°												
940				B ₂	B	90°												
				J ₄	W	15°												
				J ₂	B	30°												
945				B ₂	B	80°, 90°												
				J ₂	E	250°												
				J ₂	B													
950				B ₂	B	90°												
				J ₂	B		Badly Broken											
955		60		B ₂	B	90°, 100°, 110°												
		60		J ₂	C	00°												
				J ₂	B	70°												

LOGGED BY: MRS
 DATE: Dec 4/18
 PROJECT No. _____

Golder Associates

Hole No. DDH-203
 SHEET 38 OF 41

DEPTH	PERCENT CORE LOSS			TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75							4	3	2	75	50	25	15	10	5	
				B ₂	B	90°													
				J ₂	B	0°													
				B ₂	B	90°													
				J ₂	CW	0°													
				J ₂	C	30°													
				J ₄	W	5°													
				B ₂	B	90°													
				J ₄	W	0°													
				J ₂	B	70°													
				J ₄	W	10°													
				B ₂	B	0°													
				J ₂	B		Belly Break												

LOGGED BY: _____
 DATE: _____
 PROJECT No. _____

Golder Associates

Hole No. 1424
 SHEET 39 OF 41

DE	LOSS			TYPE	INFILL	INCLIN	REMARKS	GRAPH	BRECC	BROKE	DESIGNATION			FREQUENCY			PERM	
	25	50	75								75	50	25	15	10	5		
980																		
985				B ₂	B	30°												
990		60	60	B ₂	B	30°, 30°												
995		60	60	B ₂	B	20°, 80°												
1000		60	60															
1005		60	60															
1010		60	60															

LOGGED BY: MAS
 DATE: Dec 5/93
 PROJECT No.

Golder Associates

Hole No. DDH-15
 SHEET 40 OF 41

DEP	CORE LOSS			TYPE	INFILLING	INCLINATIO	AND REMARKS	GRAPHIC BRECCIA/CO BROKEN CO	HARDNESS			QUALITY DESIGNATION			FRACTURE FREQUENCY			PERMEAB	
	25	50	75						4	3	2	75	50	25	15	10	5		
							Remains of rock of Ferric Shell has not been logged.												

LOGGED BY: MRS
 DATE: Dec 5/79
 PROJECT No. _____

Goldier Associates

Hole No. _____
 SHEET _____ OF _____

DDH 284

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CORRE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
50.0							O.B.												
55.0		60		J4	BC	82° 30°	225° to Bdg.												
60		60		J4	C	82° 30°	225° to Bdg. 125° to Bdg.												
65		60		J4	W	30°	0° to Bdg.												
70		60		J2	B	80° 30°	Broken core with irreg. fract.												
				J2	B	50°													
				J3	B														
75		60		J2	B	90° 77°	Broken core w/ irreg. fract.												
				J3	B														

DDH-284
322

LOGGED BY: WIR
DATE: 10-30-79

Hole No. DDH-284

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY		
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5
75																		
80		60			B ₂ B ₂	B B	90° 80°											
85		60			B ₂ J ₂	B B	90° 80°											
90		60			B ₂	B	90°											
95		60			B ₂ J ₂ J ₂	B B BW	90° 70°	crumbled coal										
100		60			B ₂ J ₂ J ₃	B BW B	90° 55°	Broken Coal										

LOGGED BY: MR
DATE: Nov 30/99

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
100																		
105		60					Broken coal Broken core w/ irregular Fractures											
110							Broken coal Irregular											
115							Broken coal Irregular											
120		60					Broken core w/ irregular Fractures											
125		60					Broken core w/ irregular Fractures											

LOGGED BY: MRS
DATE: _____

Hole No. 2-281
SHEET 3 OF 20

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABIL
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
125																			
130		60/60		B ₂ J ₄ J ₂ J ₂ J ₃	B U C B,W B,C	90° 30° 0° 60°	Broken core with irregular fractures												
135				J ₃ J ₄ B ₂ J ₂	C W B B	30° 90° to B. 45° 90°	Broken core with irregular fractures												
140				B ₂ J ₃	B C,B	90°	Broken core with irregular fractures.												
145		60/60		B ₂ B ₂ J ₂ J ₃	B B B,W B	80° 90° 40°	Broken core with irregular fractures												
150		60/60		B ₂ J ₃ J ₂	B B,C B	90° 40°	Broken core with irregular fractures												

LOGGED BY: NR'S
DATE: Feb 2/79
PROJECT No. _____

Golder Associates

Hole No. 102-44
SHEET A OF 30

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG BRECCIA BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
150																		
155		60	60	J4	w	10°	60° dip Bedding Broken core with many fractures											
				J3	B													
				B2	B	90°												
				J2	B	30°												
160				B2	B	170												
				J2	w	80°												
				J4	w	220°	315° to Edg.											
165				B2	B	92°												
				J3	C		Broken core of grey flint.											
170				J3	C	160												
				B2	B	92°												
				J4	w	0-10°												
175				B2	B	85°												
				J4	w	0-25°	Variable.											
				J2	C	50°												

LOGGED BY: MRS

DATE: July 2/79

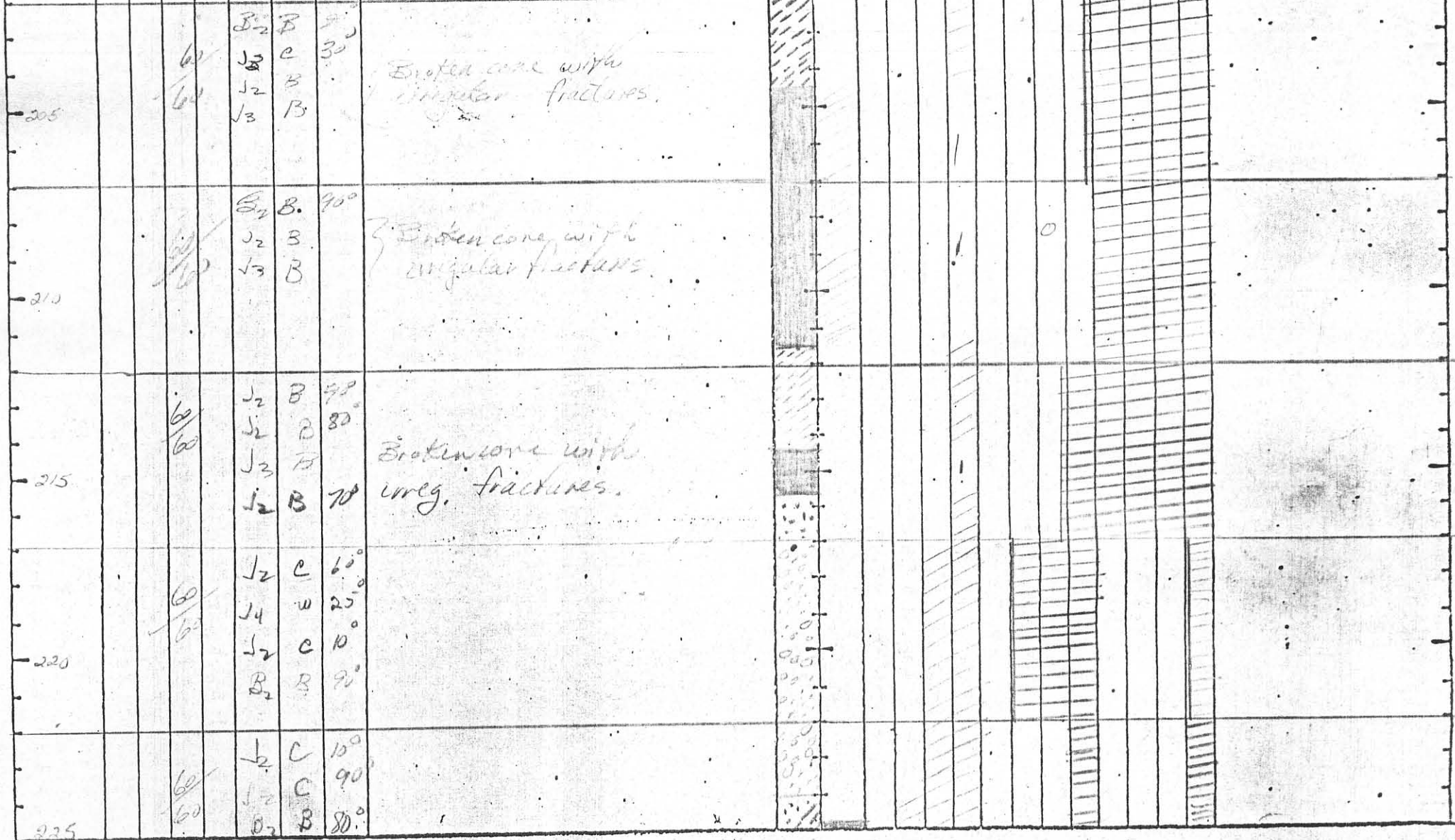
Hole No. 100 # 254

DEPTH	PERCENT CORE LOSS				FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
	1	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5		
175					J ₂	C	~10°	slightly conoidal.												
180		60	60		F ₂	B	90°	Irreg. fract. Broken core with irregular fractures												
					J ₄	W	30°													
					J ₂	B	30°													
					B ₂	B	~70°													
185		60	60		F ₂	B	90°	Broken core with irregular fractures												
					J ₂	B														
					J ₃	B														
190		60	60		F ₂	B	85°	Broken core with irregular fractures												
					J ₂ , J ₃	B														
					J ₂	B	70°													
195		60	60		B ₂	B	~70°	Broken core with irregular fractures												
					J ₂	B														
					J ₃	B														
200		60	60		B ₂	B	90°	Broken core with irregular fractures												
					J ₂	B														
					J ₃	B														

LOGGED BY: MRS

DATE: Feb 5/79

PROJECT No: _____



LOGGED BY: MRS
 DATE: Feb 5/79
 PROJECT No. _____

Goldier Associates

Hole No. 284
 SHEET 2 OF _____

230	60 50	J ₂ J ₄ B ₂	K W B	65° 20° 70°	230° to B					
235	60 60	B ₂ J ₂ J ₃ J ₂	B C C B	70° 34° 85°	Broken core with irreg fractures.					
240	60 60	J ₂ J ₃	B C	70° 	Broken core with irregular fractures					
245	60 60	J ₂ J ₂ J ₂ J ₄	B C C W	80° 10° 15° 	Irreg.					
250	60 60	J ₂ J ₂ J ₂ J ₄	B B B W	90° 95° 10, 40° 						

LOGGED BY: MA
 DATE: Feb 5 1979
 PROJECT No. _____

Golder Associates

Hole No. 284
 SHEET 9 OF

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOOSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
250				J ₂	C		Broken core with irregular fractures												
255		62	62	J ₂	B	80°													
				J ₂	B	40°													
				J ₂	W	45°													
				B ₂	C	60°													
260				B ₂	B	20°													
				J ₄	W	85°													
				J ₂	B	55°													
				J ₂	Q	0°													
265		60	60	B ₂	B	70°													
				J ₂	C	20°	Broken core with irregular fractures												
				J ₃	C														
270		60	60	B ₂	B	90°													
				J ₄	W	70°	Broken core with irregular fractures												
				J ₃	C														
275		60	60	J ₂	B	85°													
				J ₄	W	Irregular													
				J ₃	B		Broken core with irregular fractures												

LOGGED BY: MRS
DATE: Feb 6 1979

Hole No. 204

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5		
275																			
280		60		J ₂	B	60°													
				J ₂	B	75°													
				J ₂	B	70°													
				J ₄	W	75°													
				J ₄	W	20°													
285		60		J ₂	B	30°	Broken core with irregular fractures.												
				J ₃	C	55°													
				J ₂	B	70°													
				J ₄	W	70°													
290		60		J ₂	B	90°	Broken core with irregular fractures.												
				J ₂	B	70°													
				J ₃	B														
295		7		B ₂	BC	78°													
		60		J ₂	C	40°													
300		60		B ₂	B	90°	Broken core with irregular fractures.												
				J ₂	B	70°													
				J ₃	B														

LOGGED BY: MRS
DATE: 2.6.79

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
290																			
305		60	60			B ₂ B 85° J ₂ B 40° J ₂ C 0° J ₃ B J ₂ C 90°	Broken core with irregular fractures												
310		60	60			B ₂ B 60° J ₂ B 45° J ₄ W 20° J ₂ C 53° J ₃ C	Broken core with irregular fractures												
315		60	60			B ₂ B 80° J ₂ B 60° J ₃ B 50° J ₃ C J ₂ C 100° J ₂ C 90°	Broken core with irregular fractures												
320		60	60			B ₂ B 80, 85° J ₂ B 88° J ₄ W 90, 60, 70°													
325		60	60			J ₃ C J ₂ B 60° B ₂ B 80° B ₂ B 80°	Broken core with irregular fractures												

LOGGED BY: NPS
DATE: 2.6.8/79

Hole No. 780

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5		
330				B ₂	B	75°													
				J ₂	B	65°													
				J ₂	C	30°													
				J ₂	B	70°													
335				J ₂	B	90°	Broken core w/ irregular fractures												
				J ₂	B	75°													
				J ₄	W	75°													
				J ₃	B														
				J ₂	B	30°													
340				B ₂	B	90°	Broken core w/ irreg. fract.												
				J ₂	B	73°													
				J ₃	C	190°													
				J ₄	W	70°													
345				B ₂	B	70°	Broken core w/ irreg. fractures												
				J ₂	B	85°													
				J ₃	E														
				J ₂	B	77°													
350				B ₂	B	73°	Broken core w/ irreg. fract.												
				J ₂	B	190°													
				J ₃	C														

LOGGED BY: MCS

DATE: Feb 27 79

PROJECT No.

Goldier Associates

Hole No. 284

SHEET 13 OF

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
355				J ₄	W	90°													
				J ₄	W	65°													
		60		B ₂	B	90													
		60		J ₃	C	60													
				J ₂	W, B	40													
				J ₂	B	40													
				B ₂	B	90°													
				J ₂	B, W	30°													
360				J ₂	B	15	Broken core w/ irreg. fract.												
				J ₃	C	40													
				J ₂	B	42													
				J ₄	W	30°													
				J ₃	C		Broken core with irregular fractures												
		40		B ₂	B	78°													
		40		J ₄	W	30													
365				J ₄	W, F	Irreg													
				J ₃	C		Broken core w/ irreg. fractures												
				J ₂	B, W	30°	shattered.												
				J ₂	B	80°													
370				J ₂	B	47°													
				J ₄	W	Frags													
				J ₂	B	53°													
				B ₂	B	60°													
375				J ₂	C		Broken core w/ irreg. fractures												

LOGGED BY: MRS
DATE: Feb 9 1979

Hole No. 284

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOOSE BROKEN CORE (%)	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5		
375																				
380				J ₂	B	45°														
				B ₂	B	70°														
				B ₂	B	72°														
				J ₂	C	62°														
385				B ₂	B	70°	Broken core with irregular fractures.													
				J ₃	C	62°														
				J ₃	C	62°														
				J ₂	B	64°														
390				B ₂	B	3°	Broken core with irregular fractures.													
				J ₂	B	55°														
				J ₂	B	67°														
				J ₃	B	73°														
395				J ₂	B	57°	Broken core with irregular fractures.													
				J ₂	B	70°														
				J ₂	B	60°														
				J ₃	B															
400				J ₃	C		Broken core with irregular fractures.													
				J ₂	B	46°														
				J ₂	C	30°														

LOGGED BY: MPS
DATE: Feb 8/79

Hole No. 274

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
400				J2	B	55°												
				J4	W	80, 53°												
				J2	C		Broken core with irregular fractures											
		69		J2	B	64°												
405		60		J2	B	78°												
				J2	C	87°												
				J2	C	5°												
				J2	B	73°												
				J3	C		Broken core with irregular fractures											
		69		J2	B	54°												
				B2	C	75°												
410				J4	W	82°	n 11 bedding here											
				J4	W	Irreg												
				J4	W	Irreg												
		69		J4	W	60°	n 11 bedding											
				J2	B	55°												
415		60		J2	C	60°	Broken core with irregular fractures											
				J2	C	60°												
				J4	W	55°	n 11 bedding 70° to bedding											
		69		J4	W	85°												
				J4	W	70°												
420		60		J2	B	62°												
				J2	B	68°												
				J2	B	60°												
				J2	B	60°												
		69		J4	W	60°												
425		60		J2	B	60°												

LOGGED BY: MRS
DATE: 7/19/79
PROJECT No: _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5		
120				L ₂	B	60°	11 Bdg Broken core with irregular fractures												
				L ₂	B	25°													
				H	W	70°													
				J ₃	C	10°													
				B ₂	B	70°													
130				B ₂	B	70°													
				J ₁	C	35°													
				L ₂	B	60°													
				J ₂	B, W	25°													
				H	W	55°													
				L ₂	B	55°													
140				J ₂	B	50°													
				J ₄	W	60°													
				J ₂	B	35°													
				J ₂	B	30°													
				J ₂	B, W	60°													
150				J ₃	B	Broken core with irregular fractures													
				J ₃	B, C		25°												
				B ₂	B		70°												
				J ₄	W		40°	100° to Bdg.											
160				J ₄	W	From 5' 90° to Bedding													
				J ₄	W, F		45°												
				B ₂	B		65°												

LOGGED BY: MRS
DATE: Feb. 9, 79

Hole No. 284

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA / BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
				J ₁	C	15°													
				J ₂	C	60°													
				J ₂	C	20°													
				J ₂	C	70°													
				J ₂	C	0°													
				J ₂	C	15°													
				J ₂	C	15°													
				J ₂	C	51°													
				J ₃	C	80°	Broken core with irregular fracture												
				J ₂	C	68°													
				J ₂	C	62°													
				J ₁	W	40°													

LOGGED BY: HVS
DATE: 9-27-79

Hole No. 214

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE/BROKEN CORE %	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
475				B ₁	B	51°													
				J ₂	C	18°													
				J ₃	C	90°													
480		60		B ₂	B	48°													
		60		J ₃	B	61°													
				J ₁															
				J ₃	B	48°													
485		60		J ₃	B	70°	180°												
				J ₁	C	90°													
				B ₂	C	53°													
				J ₃	C	90°													
490				J ₁	W	72°													
				B ₂	C	58°													
				J ₂	C	78°													
495				J ₁	W														
500																			

LOGGED BY: MRS
DATE: Feb 9 79

Hole No. 72

Golden Associates

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE %	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
500																			
505				J ₁	W	58°													
				B ₁	B	72°													
				J ₃	C	90°													
							Broken core												
				B ₂	B	76°													
				J ₂	C	30°													
510																			
							Bdg - 53° → 66°												
				J ₁	0°														
				J ₂	C	66°	180° to Bdg												
515				B ₁	B	53°													
				B ₂	C	64°													
							Bdg 60°												
				J ₁	C	47°													
				J ₂	C	96°													
520				B ₂	B	53°													
				B ₁	B	58°													
				J ₁	W	46°													

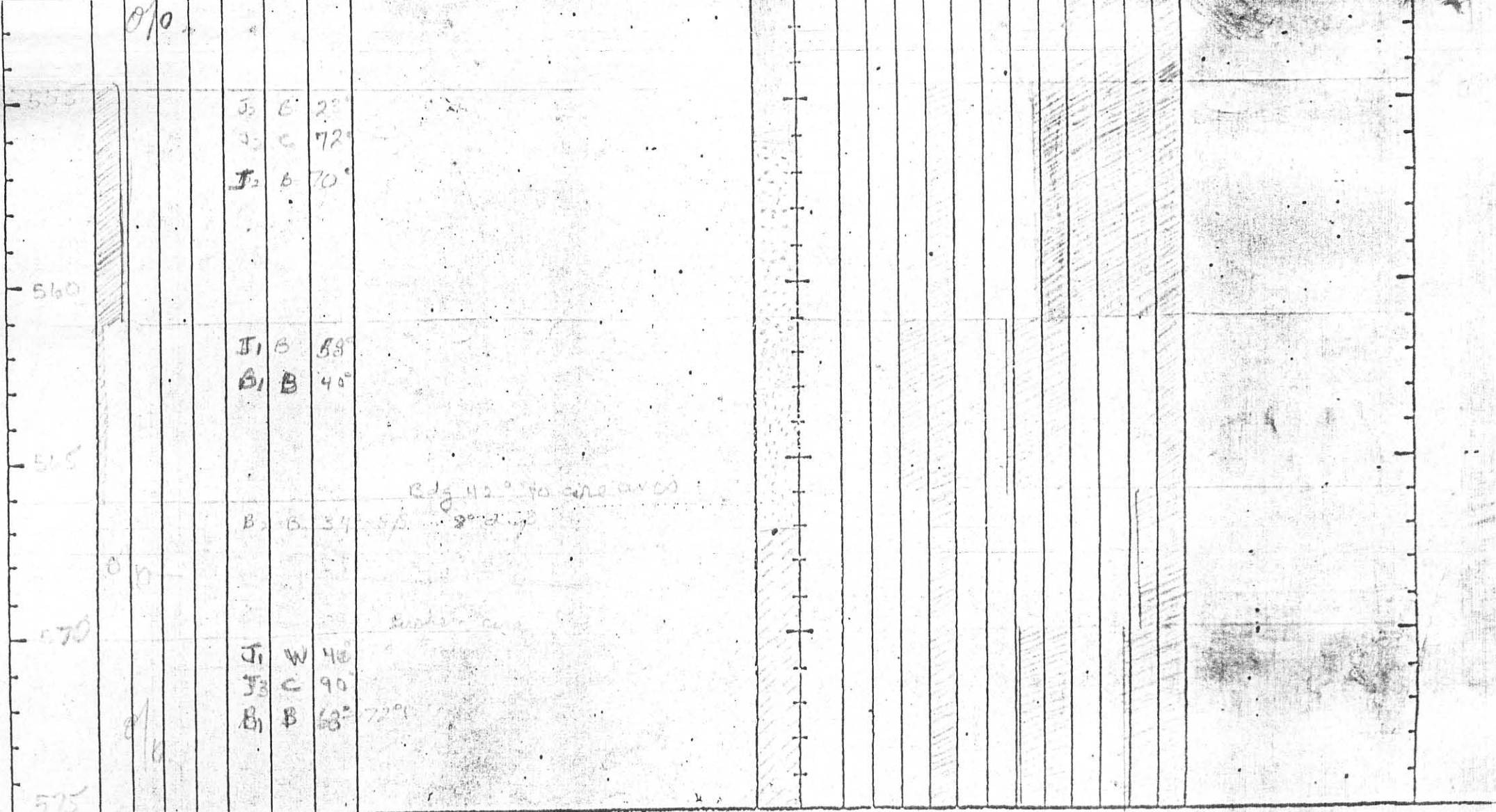
LOGGED BY: _____
DATE: _____

Hole No. 134

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOOSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
525																			
				B ₂	C	60°													
				B ₃	C	90°													
530																			
				B ₂	C	50°													
				B ₁	W	50°													
				J ₄	W	32°	→ 63°												
535				J ₂	C	74°	275° to Body												
				B ₂	B	49°													
				J ₂	B	70°	Body 58°												
				J ₂	B	62°													
540																			
				J ₂	C	71°													
				J ₄	W	30°													
545																			
				J ₂	C	52°													
				B ₂	B	58°													
550							some very likely fractures												

LOGGED BY: _____
DATE: _____

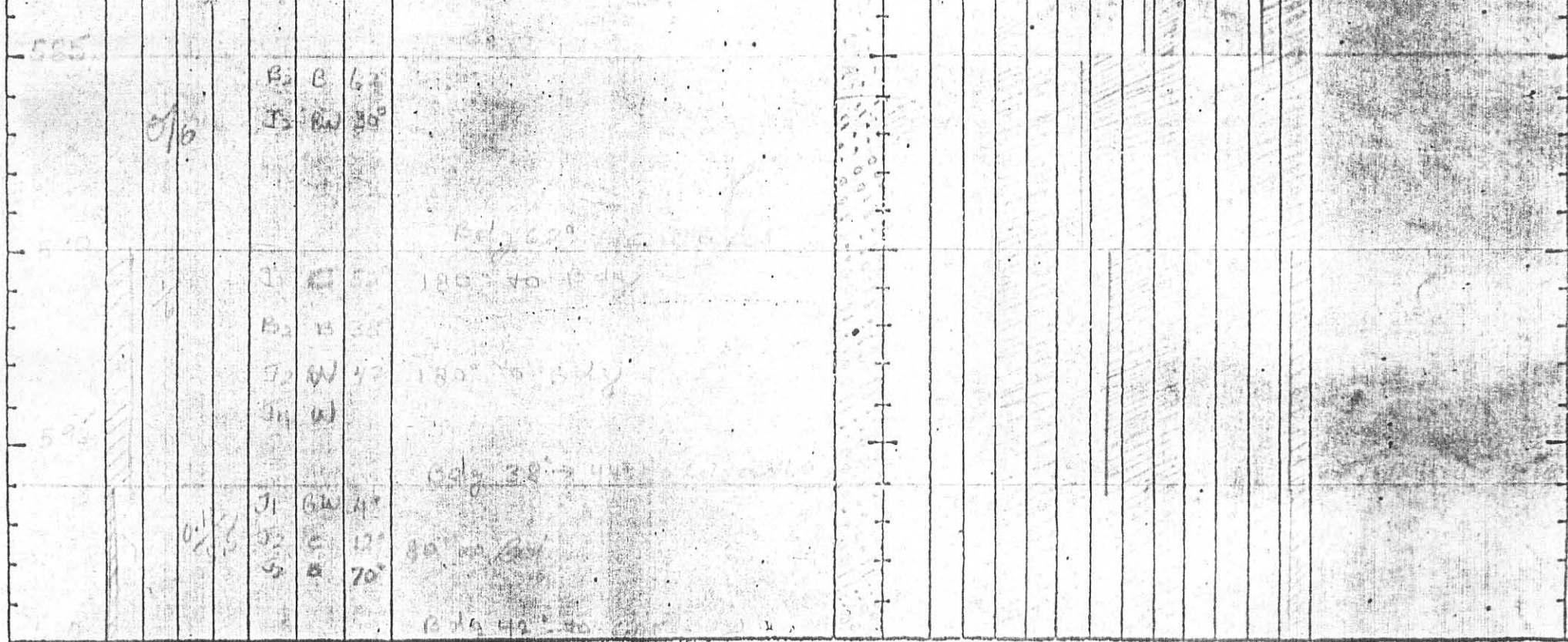
Hole No. 284



LOGGED BY: DTM
 DATE: March 79
 PROJECT No. _____

Golder Associates

Hole No. 284
 SHEET 22 OF _____



LOGGED BY: DTM
 DATE: March 79
 PROJECT No. _____

Golder Associates

Hole No. 284
 SHEET 23 OF

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
000																			
50'																			
100'																			
150'																			
200'																			
250'																			
300'																			
350'																			
400'																			
450'																			
500'																			

LOGGED BY: DYM
DATE: March 79

Hole No. 264

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CRAVE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5		
60				J ₂	B	41°	some broken core with various angles of fracture dipping 12°													
				J ₁	W	42°														
				J ₁	C	33°														
				J ₂	BA	0°														
				J ₂	B	38°	some broken core with various angles of fracture													
				B ₁	B	57°														
				B ₁	W	48°														
							broken core - various angles of fracture													
				J ₁	W	60°														
				J ₁	W	37°														
				J ₁	W	42°														
				J ₁	B	68°														
				J ₁	B	30°														
				J ₁	W	15°														
				J ₁	W	47°														
				J ₁	C	65°														

LOGGED BY: DTM
DATE: March 179

Hole No. 289

9/7

B₂ B 51'
J₂ C 28' 15' to Edg.

Edg. 50' to core axis.

crusted coal

2/5

B₂ B 63'
J₂ B 47'

Core fairly well broken
with numerous bits of pebbles

2/6

A₂ B 70'

Core is fairly well broken

LOGGED BY: DYM
DATE: March 1979

#26 Hole No. 284

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CORRE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5		
				B		57°	some broken core & many angles of fractures													
	0%			B ₁	B	67°	180° to Bdg 195° to Bdg Bdg with some dills Bdg with some dills													
	10%			S ₁	C	13°														
				S ₂	C	28°														
				S ₁	C	18°														
				S ₂	C	50°														
				S ₁	C	20°														
	0%			B	B	87°														
			4 1/5	S ₁	C	90°														
				S ₂	C	45°	135° to Bdg.													
				S ₃	C	34°	150° to Bdg.													
							Bdg with some dills													

LOGGED BY: _____

DATE: _____

H27 Hole No. _____

DEPT	CORE LOSS			TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA FOOT	BROKEN COR	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
	25	50	75								4	3	2	75	50	25	15	10	5		
700				B	C	60°															
702				B ₃	B	63°	105° to Bdg.														
				B ₅	C	12°	170° to Bdg.														
							Bdg 42° to core axis														
704				B ₂	B	47°															
				B ₂	C	8°	100° to Bdg.														
706				B ₂	B	78°															
				B ₂	B	57°															
				B ₂	C	63°															
				B ₁	W																
							Broken core numerous angular fracture														
							Bdg 67° to core axis														
720				B ₁	B	31°															
				B ₁	B	20°															
				B ₁	W	22°	some broken core with numerous angular fracture														
				B ₁	W																
				B ₁	W	55°															
				B ₂	B	47°															
				B ₁	C	18°	320° to edge														
				B ₁	N	42°	Bdg 47° to core axis														

LOGGED BY: _____
DATE: _____

1728 Hole No. 284

DEPTH	LOSS			TYPE	INFILLING	INCLINATION	REMARKS AND	GRAPHIC	BRECCIA/BROKEN C.	HARDNESS			QUANTITY			FRACTURE FREQUENCY			PERCENTAGE
	25	50	75							4	3	2	75	50	25	15	10	5	
730				B ₂	B	52°													
735				B ₃	B	57°													
740				B ₄	C	90°													
745				B ₄	W														
750				B ₅	P	67°	some crushed coal												
755				B ₅	W														
760				B ₅	B	70°	some crushed coal												
765				B ₅	B	72°													

LOGGED BY: _____
DATE: _____

#129 Hole No. 287

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
				S ₂	B	30°												
				S ₂	B	28°							14					
				S ₂	B	47°-52°							100					
							END OF GEOTECHNICAL LOG											

LOGGED BY: _____

R 30 OF #30 Hole No. _____

RH-1120

322

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
0							Tricone												
-5																			
-10							J ₄ WF 59 1+1												
-12							J ₄ WF 59 1+1												
-13							J ₃ C 30 2												
-14							J ₃ F 30 3+2												
-15							J ₂ F 27 1												
-16							J ₁ WF 08 1												
-17							J ₂ W 02 1												
-18							B ₂ BF 73 6												
-19							J ₄ WF 08 1												
-20							B ₂ BF 77 3+1												
-21							J ₃ CF 50 5												
-22							B ₂ C 82 2												
-23							J ₁ WF 30 1												
-24							J ₁ W 65 1												
-25							B ₂ BF 88 2												
-26							J ₃ AF 90 3												
-27							B ₂ C 87 1												
-28							J ₄ F 22 1												
-29							J ₃ C 90 1												
-30							B ₂ F 83 2+2												
-31							J ₁ F 17 1												
-32							J ₂ F 19 1												
-33							S ₂ C 02 1												

12/120 = 10%

28/120

intersect @ 92°

intersect @ 112° @ 17 1/2'

Bedding @ 74° @ 27'

To 28'

21/120

42/120

> 20

> 20

LOGGED BY: Keith Kasar
 DATE: JUNE 21 / 79
 PROJECT NO. _____

Golder Associates

Hole No. 1120
 SHEET 1 OF 60

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOOSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY	PERMEABILITY	
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25			
50				J4	W	14	1+2	Bedding @ 73°										
				J1	FW	14	2											
				J2	A	60	1											
				J1	W	19	1											
				B1	B	74	4											
-55				J3	C	-	3+2+2											
				J3	C		∞											
				J1	F	30	4											
				J1	F	0	1											
-60		2/0		B2	C	72	2											
				B1	F	74	11											
				J4	F	32	1											
-65																		
				J1	F	32	3											
				B2	C	74	∞											
				B3	C		∞											
-70		1/60		J1	F	3	1											
				B1	F	30	7											
				J3	B		∞	Bedding inclination @ 70°										
				B2	B	70	7											
75				J2	C	20	1											

LOGGED BY: AT
DATE: June 21/78
PROJECT No. _____

Golder Associates

Hole No. 1120
SHEET 3 OF 60

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS	ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY		
	25	50	75	TYPE	INFILLING	INCLINATION					4	3	2	75	50	25		20	11
75				J3	C		∞ CALCITE INFILLING IN BRECCIA.												
	18			J4	W								12						
	72			B2	C	75		8					72						
				J4	W	28		1											
-80																			
	1			J2	B	51	2												
	24			B2	B	79	8												
				J3	B		3												
				J2	B	48	∞												
-85	2			B2	B	76	∞												
	94			J2	B	2	1												
				J2	B	13	4												
				J3	B		∞												
-90	6			B2	B	68	∞												
	48			J2	B	55	6												
				J2	B	12	1												
				J3	B		∞												
-95				B2	C	73	8												
				J3	C		∞												
	10			J2	C	60	4												
	120																		
100																			

LOGGED BY: AK
DATE: JUNE 21/78
PROJECT No. _____

Golder Associates

Hole No. 1120
SHEET 4 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
100	10																		
105				J ₂	C	14	3												
				B ₂	C	76	13												
				J ₃	C		6												
110				J ₂	C	66	2												
				J ₂	C	88	2												
115				J ₂	C	48	9	Bedding @ 74°											
				B ₂	C	74	2												
				J ₃	C		4												
				J ₃	C		∞	SLKS @ 123'											
				B ₂	B	70	21												
120				J ₂	C	22	2	bedding @ 70°											
				J ₁	W			Breccia											
				J ₁	S	60	2	inclination											
125																			

LOGGED BY: GH
DATE: June 21/78
PROJECT No. _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CONGLOMERATE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY				PERMEABILITY		
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	20	15	10	5			
126																						
-130	3	120	1	B ₂	C	72	18	Bedding inclination @ 72°												>20		
				J ₃	C		6															
				J ₄	W	22	3															
				J ₄	W	0	1															>20
				J ₂	C	22	1															
-135																						
-140	2	12		B ₂	C	82	12															
				J ₄	C	14	1															
				J ₃	C		1															
				J ₂	C	14	1															
				J ₂	C	58	1															
				J ₂	C	88	5															
				J ₁	C	42	1															
				J ₃	C		4															
-145	12			J ₃	B	87	3															
				J ₂	B	45	1															
				J ₂	B	2	2															
				B ₁	B	79	9	> intersect @ 146 @ 117°														
				J ₂	C	42	1															
				J ₁	C	46																
150				B ₁	R	78	3+1															

LOGGED BY: CH
DATE: June 21/71
PROJECT No. _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG BRECCIA/GOLGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 15 10 5	PERMEABILITY	
				TYPE	INFILLING	INCLINATION			4	3	2				
150				J ₂ <		52	Bedding @ 62° @ 150' intersect @ 74° @ 152'								
				J ₁ SW		68									
				J ₁ B		58									
				J ₂ C		48									
				J ₂ C		50									
				B ₁ BW		53									
				J ₁ W		23									
				B ₁ MB		83									
155				B ₁ BW		50									
				B ₁ B		78	Bedding @ 76° (variable)								
				B ₁ B		70									
				B ₁ B		75									
				B ₁ B		72									
160				J ₂ BA		30									
				J ₃ C		~90									
				B ₂ B		76	B ₁ B 73 1								
				B ₁ A		82	B ₂ AB 79 1+1								
				J ₄ W		13	B ₁ B 63 1								
				B ₂ B		72	J ₃ C 50 1								
				B ₂ B		86									
165				J ₂ W		26									
				B ₁ B		76									
				J ₁ W		31									
				B ₁ B		73									
				J ₃ C		50									
				B ₃ B		81									
170				B ₁ B		77									
				B ₁ B		59									
				B ₂ B		74									
				B ₂ B		67									
				J ₂ WA		19									
175				B ₁ B		70									

LOGGED BY: KIK
DATE: JUNE 23
PROJECT No. _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	20	15	10	
175																			
		18																	
180				J ₂	C	24	1												
				B ₂	C	76	12												
				J ₂	C	8	1												
		2		J ₃	C		8	PLANT FOSSELS @ 181'											
		96																	
185				J ₂	C	6	1	Bedding inclination @ 65°											
				J ₄	W	4													
				J ₃	C		8												
		1		B ₂	C	64	7												
		72		J ₂	C	54	1												
190																			
				J ₃	C		6												
		3		J ₂	C	69	5												
		36		J ₂	C	3	2												
				B ₂	C	72	2												
195				J ₃	C		8												
				B ₂	C	73	11												
		2		J ₂	C	8	2												
		96		J ₂	L	37	2												
200																			

LOGGED BY: AT

DATE: JUNE 23/78

PROJECT No

Golden Associates

Hole No. 1120

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	0	10	5	
200																			
		2/96																	
-205		12/72		J3	C	8													
				B2	C	80	2						37						
				J4	C	0	1						72						
				B2	C	74	4												
-210		15/108		J1	C	0	1												
				J3	C	6	6												
				B2	C	74	5						49		720				
				J2	C	20	1						108						
				J4	A	∞													
-215																			
		8/36		J2	C	0	4												
				J3	C	∞													
				J2	C	30	2												
-220				J2	C	12													
		3/18		J2	C	2							18						
				J3	C	∞							48						
-225				J3	C	∞													

LOGGED BY: AK
DATE: JUNE 23
PROJECT No. _____

Golder Associates

Hole No. 1120
SHEET 9 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOLGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
225				J ₂	C	40	2												
			12/24	J ₁	C→A	-	>20												
230	20%			J ₁	C	10	1	B ₁ C 65 2											
				J ₁	C	43	1	J ₂ C - >20											
				J ₁	C	12	3	J ₂ C 64 1 >87°											
			1%	J ₁	C	22	2	J ₂ C 28 1											
				J ₁	C	43	3	J ₃ C-R - ∞											
				J ₁	C	52	3+3	J ₃ C 81 1											
				J ₁	C	38	3												
				J ₂	C	3803	1												
235				B ₁	C	73	1												
				B ₂	C	74	1	J ₄ C 38 1											
			6/96	J ₁	W	03	1	J ₃ C - 2											
				J ₃	C	40	1	J ₃ C 46 1											
				J ₂	C	-	1+1	B ₂ B 67 1											
				J ₁	W	30	1												
240				J ₂	C	50	1												
				J ₂	C	26	1												
				J ₂	C	60	1												
				J ₂	C	78	1												
				J ₃	C	05	1+1												
				J ₃	C	30	1												
245			10%	J ₂	W	09	1+1												
				B ₁	SB	74	1 @ 243'	Bedding @ 65° (variable)											
				J ₂	W	0	2												
				J ₃	C	-	2												
				J ₂	W	09	1												
				J ₃	C	290	1+2												
				B ₂	C	82	1												
250				J ₁	W	07	1												
				B ₁	B	11	1	↓ to 253'											

LOGGED BY: KK
DATE: 11/15/23
PROJECT No. _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY		PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	
250				B ₂ C 62			J ₁ W 20 N											
	1			P ₁ B1 66			J ₂ C 09 N											
				J ₃ C 77			S ₁ W 17 1											
				B ₃ C 64														
255				J ₁ W 12			J ₁ W 06 3											
				J ₁ W 13			J ₂ C 09 1											
	1			J ₂ C -			B ₁ C 71 1											
				B ₃ C 66														
				B ₃ C 58														
				B ₃ B 80														
260				J ₁ W 10														
				J ₁ W 14														
				J ₂ C 31														
				B ₁ B 74														
				B ₂ B 62														
				B ₁ C 80														
265				J ₃ C -														
				J ₃ C -														
				B ₁ C 85														
				J ₃ C -														
				J ₃ P 48														
265				S ₁ C 44														
270				J ₂ P 87														
				J ₂ P 65														
				J ₁ S 62														
				J ₃ C-B -														
275				S ₁ C 20														
				S ₂ C 04														

LOGGED BY: KK
DATE: JUN 26
PROJECT No. _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
275																			
276.8																			
280																			
285																			
290																			
295																			
300																			

LOGGED BY: KL
DATE: JUNE 10
PROJECT No. _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY				PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	20	15	10	5	
300				J3	C	∞														
	3			F1	S	~20	SLKS @ 302'													
	60			B2	C	72	SLKS @ 305'													
305				J1	S	67														
				J1	C	4														
				J1	C	90	SLKS @ 307'													
	2			J3	C	∞														
	48			J1	S	38	Bedding @ 76° inclination													
310				J1	S	~60														
				B2	C	76														
				J4	C	11	SLKS @ 312'													
				J4	W	36														
				J1	W	57														
				J3	C	∞														
315	1			J1	S	15														
	84			B2	A	71														
				B2	B	65	SLKS @ 318'-319'													
	0			J1	S	∞														
	48			J4	W	32														
320				J4	W	82														
				J3	C	∞														
				J4	W	∞	← BRECCIA													
	4			J1	C	14														
	60			J4	W	54														
				J4	W	30														
325				J3	C	4														

LOGGED BY: ATT

DATE: June 26

PROJECT No. _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SCOUR BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY	PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25		
325				B ₂	C	64	5										
				B ₂	A	74	18	Bedding inclination @ 74°	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /
				J ₄	W	14	2										
				J ₄	W	35	2	SLKS @ 326'									
330	0			J ₄	C	80	2										
	84			J ₁	S		2										
				J ₃	C		4										
				J ₄	W	24	1		/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /
				J ₄	W	19	2		/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /
335	1			B ₂	C		∞		/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /
	60			J ₃	C		∞		/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /
				J ₄	C	22	1		/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /
				B ₂	C	72	3		/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /
				J ₃	B		∞	SLKS @ 346'	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /
340				J ₁	C	14	1										
				J ₂	C	45	2		/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /
				B ₂	C	76	3		/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /
	12			J ₁	S	22	1		/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /
	108			J ₄	W	88	1		/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /
345				J ₄	C	14	1		/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /
				J ₁	W	08	1		/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /
				B ₁	BA	72	2		/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /
				B ₂	W	45	1+1+1		/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /
350	19			B ₁	BN	66	5		/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /
									/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /	/ / /

LOGGED BY: JH
DATE: June 26/78
PROJECT No. _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COUSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY	PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25		
350				J ₂	W	25	1	B ₁ B 75 4									
		1%		B ₁	B	52	3	B ₂ C 76 2									
				B ₂	B	86	2	J ₃ C - <20									
				J ₂	C	-	3										
				J ₁	W	28	1										
				B ₁	W	72	1										
				J ₂	W	0	1										
355				B ₁	B	61	6 + 3										
		2%		J ₂	W	0	1										
				B ₂	B	57	2										
				J ₂	W	47	1										
				J ₁	SB	0	1 + 2										
360				J ₄	W	-	5										
				J ₃	C	-	<20										
		6/30		J ₄	W	0	<10	Bedding @ 66° @									
				B ₁	B	73	9	362' (variable)									
				J ₁	W	0	1										
				J ₂	C	-	<20										
365				B ₁	B	62°	6	Bedding @ 62°									
		2-5%		B ₁	B	67	6										
				B ₂	B	62	4										
				J ₄	W	0	3										
				J ₃	C	-	<20										
370				J ₁	W	23	1	Bedding @ 71°									
				B ₁	B	86	1	(variable)									
				B ₁	B	67	21										
				B ₂	W	48	1										
				J ₄	C	04	1										
				J ₄	C	12	1										
				J ₂	C	-	10										

LOGGED BY: KL

DATE: JUNE 26

PROJECT No. _____

Golder Associates

Hole No. 1120

SHEET 15 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY	PERMEABILITY	
				TYPE	INFILLING	INCLINATION			4	3	2				
375															
		1/36													
380		2%		J ₂ C 17 2 J ₂ C 0 1 B ₁ BW 74 4+5 B ₁ BA 81 1+2 B ₁ BW 61 1 B ₂ C 81 2 B ₁ B 84 1 J ₃ C 20 3+2 B ₂ B 69 1 B ₂ C 82 2+2+2 B ₁ B 82 2+2+18 J ₁ C 17 1 J ₂ C 2 1											
385															
390				B ₁ B 86 9 B ₁ B 77 4 J ₁ C 14 1 J ₁ C 42 1 B ₁ B 57 3 B ₁ C 72 1 B ₁ B 74 2 B ₂ B 72 13 B ₃ BW 43 1 J ₂ W 17 1 J ₃ C 1 220 J ₂ C 12 1	Bedding @ 13° @ 392	J ₄ W 28 2 J ₄ C 12 1									
395		18/132													
400		12/108		B ₂ C 60 3 J ₃ B 31 1			↓ TO 407								

24
132) 32000
32 32000
24 264
32 560
28

LOGGED BY: JK
DATE: JUNE 76
PROJECT No: _____

DEPTH 1/25	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOLGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY	PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25		
	1	0		B ₁	B	76	5										
				J ₁	B	60	1										
				J ₁	B	64	1										
				J ₁	CBW	-	∞										
430	3			B ₂	C	75	17	SLKS @ 434'									
				J ₄	C	0	1	Bedding @ 74° INCLINATION									
				J ₄	C	21	1										
				J ₁	S	25	1										
				J ₂	C	46	2										
435				B ₂	C	71	7	SLKS @ 435.5'									
				J ₃	B		∞										
				J ₁	C	85	2										
				J ₂	C	46	2										
				J ₁	S	38	1										
440				J ₄	C	12	2										
				J ₄	W	15	3										
				J ₃	C		∞										
				B ₁	W	62	1										
445				J ₂	C	32	2										
				B ₂	C	70	4										
				J ₃	C		7	SLKS @ 452'									
				J ₂	C	38	3										
450				B ₂	A	68	4	Bedding @ INCLINATION 72°									

LOGGED BY: AT

DATE: JUN 26/78

PROJECT No.

Golder Associates

Hole No. 1120

SHEET 18 OF

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY		PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	105	
400				B ₁	B	64	4	J ₄ C 0 1										
				J ₂	B	44	1	J ₃ C - 8										
				J ₄	W	0	3											
				J ₂	C	14	1											
				J ₂	C	04	1											
405				B ₂	B	74	3											
				S ₁	BW	37	5											
				J ₄	W	40	1											
				B ₂	C	49	2											
				B ₁	C	75	7	Broken coal										
		12/24		J ₁	C	07	1	B ₁ B 78 5										
410		3/36		J ₃	B	32	1	J ₃ C - 2 → brecc coal										
				J ₂	B	63	1											
				B ₁	B	58	1											
				B ₁	B	49	1											
				B ₁	B	75	12	J ₂ C 04 1										
				J ₂	C	55	1											
		19/10		B ₁	B	80	1											
415				J ₂	B	78	1											
				B ₁	B	84	4											
				J ₂	BW	59	3											
				B ₁	B	64	1											
				B ₂	C	63	1											
420		17/72		J ₂	A	21	1											
				J ₃	C	-	∞											
				B ₁	C	73	5	in coal										
				J ₁	C	39	1											
425		1/0		J ₂	B	45	2											

LOGGED BY: KK

DATE: JUNE 27

PROJECT No.

Golder Associates

Hole No. 1120

SHEET 17 OF

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CORUSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	0	15	10	
450	2	72		J4	C	80	1					41							
				J1	S	40						72							
455	0	48		J1	W	55	2	J1 (55°) ⊥ B2 (56°)				14							
				J3	C	∞	∞					18							
				B2	C	56	7												
				J2	C	38	2												
				B4	C	60	3												
460	12	96		J4	W	38	5	Bedding @ inclination of 52°											
				J3	C	∞	∞												
				J2	C	11	1												
				B2	C	50	6					54							
				J4	W	60	2					96							
465				J3	C	∞	∞												
				B2	C	52	2												
				B2	A	58	7												
470	20	120		J4	W	∞	∞	BRECCIA.				45							
				J4	C	80	1												
				J2	C	22	1												
475																			

LOGGED BY: JAH
DATE: JUNE 26/88
PROJECT No. _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY				PERMEABILITY	
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	10	15	10	5		
475	3	36		I ₃	B	50	6														
				B ₂	B	76	11														
				I ₂	B	76	3														
				I ₄	B	80	8														
480	1	48		I ₂	C	10	1														
				I ₄	E	82	2														
				I ₄	E	78	2														
				B ₂	B	40	1														
				I ₁	S	70	1														
				I ₁	S	22	1														
				I ₄	E	8	8														
				I ₄	E	38	2														
485		60		I ₁	S	52	4														
				I ₃	C	8	8														
				I ₂	C	8	3														
490	30	84		I ₁	S	33	2														
				I ₃	C	8	8														
				I ₁	S	8	8														
				I ₄	E	0	0														
				I ₄	E	72	3														
495		24		I ₁	S	8	8														
		48		I ₃	C	8	8														
				I ₂	C	0	3														
				I ₁	S	22	1														
500	18	36		B ₁	B	40	5														
				J ₁	BW	20	1														
				J ₂	BW	1	>20														

LOGGED BY: GH

DATE: JUNE 27/78

PROJECT No. _____

Golder Associates

Hole No. DDH 1120

SHEET 20 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COUSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25				
500		1/36		J ₁	C	0	1							0		>20			
		12/456		J ₁	BW	51	1							0		>20			
				J ₁	W	46	3							0		>20			
				J ₃	BW	-	8							0		>20			
505		2%		J ₁	S	-	>20							0		>20			
		2%		J ₂	C	02	1							0		>20			
				J ₁	S	-	>20							0		>20			
510				J ₂	C	0	1	J ₂ C 41 1											
				J ₃	C	43	1	J ₁ S 28 1 @ 510											
				J ₁	B ₃	57	1	J ₃ C - 4											
				J ₃	C	53	2												
515		1%		J ₄	W	43	2							46/120		>20			
				J ₁	W	72	1												
				J ₁	C	60	1												
				J ₂	W	53	1												
				J ₃	C	26	1												
				J ₂	C	03	1												
				J ₁	SW	63	1 @ 517'												
520				J ₂	W	32	1												
				J ₄	W	44	1												
				J ₂	C	07	1												
				J ₁	W	63	1+1+1												
		1%		J ₂	W	53	1+1												
				J ₁	S	47	1 @ 523'							12/72		>20			
525				J ₁	B ₁	46	1												
				J ₂	W	74	2												
				J ₂	C	68	1+1												

LOGGED BY: KIC
DATE: JUNE 27
PROJECT No. _____

↓ TO 526'

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
525	1	9	0	J ₃	C	-	>10												
		2	0	J ₂	C	17	2												
				J ₄	C	17	4												
				J ₄	W	62	2												
				J ₁	S	0	1 @ 529'												
				J ₃	C	-	~10												
530		2	0	J ₁	C	10	2												
				J ₂	W	86	1												
				J ₃	C-W	-	>20												
				J ₄	W	-	~10												
535				J ₄	W	28	1												
				J ₄	W	-	4												
				J ₂	W	73	1												
				J ₁	W	57	2												
				J ₁	W	52	1												
				J ₁	W	48	6												
				J ₄	W	22	1												
540				J ₂	C	13	1												
				J ₁	S	26	1 @ 540'												
				J ₁	W	22	1												
				J ₁	C	17	1												
				J ₂	C	13	1												
				J ₃	C-W	-	>20												
545		15	90	J ₂	C	78	2												
				J ₃	C	71	1												
				J ₄	C	03	1												
				J ₂	W	44	2												
				J ₃	C-W	-	>20												
550																			

↓ To 551 1/2'

LOGGED BY: KIK
 DATE: JUNE 27 1971
 PROJECT No. _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY	PERMEABILITY
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25		
550																
551 1/2																
555	14/90			B ₂ C 67 2			@ 552 1/2'									
				J ₁ SW 18 3			@ 553 1/2'					35/90		(20)		
				J ₁ S 38 2												
				J ₃ C 40 1												
				J ₂ W 42 1			> intersect @ 93°									
				J ₂ W 41 1												
				J ₃ C 46 1			J ₃ C - 3									
				J ₁ S 27 1												
				J ₄ BE 20 3												
				J ₁ S 10			@ 561'									
560				J ₁ SW -			> 10 559-562' bedding horizontal									
	24/96			B ₁ B 72 12			@ 567'					21/96		> 20		
				J ₃ C 22 1+2+1												
				J ₄ C 04 1												
565				B ₂ C 90 3			@ 566-567'									
				J ₃ W 0 1												
				B ₁ B 50 1												
				J ₄ E 30 2												
570	1-3/6			J ₄ W 0 5								17/108		> 20		
				J ₃ C 23 3												
				J ₂ E 0 1												
				J ₁ W 1 2												
				J ₃ C 1 2												
575							TO 576									

LOGGED BY: KK
DATE: JUNE 27
PROJECT No. _____

Golder Associates

Hole No. 1120
SHEET 23 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	10	5		
575																			
-580				J2	C	13	1												
				J2	C	50	4												
				B2	C	76	6												
	1			J4	W	90	2						84						
	108			J4	W	42	1						108						
				J4	W	11	2												
				J2	C	60	3												
				J4	W	0	2												
-585				J1	S	58	1	← @ 589'											
				J4	W		∞	BRECCIA.											
				J3	C		6												
	3			B2	C	76	3	Bedding @ 75°											
-590	84			J2	C	9	1	INCLINATION											
				J2	C	34	1												
				J4	W	22	2												
				B2	A	80	2												
	2			J3	C		2						28						
-595	36												36						
				J4	W	62	1												
				B4	W	80	2												
	1			J2	C	14	1						110						
	120			J4	C	14	3						120						
600																			

LOGGED BY: AH
DATE: JUNE 27
PROJECT No. _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5	PERMEABILITY	
				TYPE	INFILLING	INCLINATION				4	3	2				
600				J3	C		6 Bedding @ 72° inclined									
	1			B2	C	82		1					110			
	120			B2	C	72		2					120			
605				J1	S	72	} @ 607									
				J1	S	18		1								
				J3	C			6								
610	1			J2	C	11	2					108	>20			
	120			J2	W	14	1					120				
				J4	C	11	4									
				B2	A	82	6									
615				J2	C	11	3									
				J4	C	15	2									
	2			B2	C	77	12					81				
	120			J3	C		8					120	>20			
620				J2	C	42	2									
625																

LOGGED BY: JUNE 27
DATE: HP
PROJECT No. _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 20 15 10 5			PERMEABILITY	
				TYPE	INFILLING	INCLINATION			4	3	2		20	15	10		5
625				J ₁	C	90	1	Bedding @ 78° INCLINATION.	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	
			B ₂	C	76	15											
			J ₂	C	22	2											
			J ₄	C	20	4											
630		0 120	J ₂	C	10	2											
			J ₃	C		9											
			J ₁	S	46	1											
			J ₁	S	28	1											
							@ 634' + < 112° BETWEEN THEM.										
635			J ₃	C		5											
		2 60	J ₂	C	42	1											
			B ₂	A	72	6											
640																	
			B ₂	C	78	4											
		2 84	J ₃	C		∞											
			J ₂	C	42	2											
645			J ₁	S		∞	← ON R. FRAGMENTS.										
			J ₂	C	0	1											
			J ₂	C	46	2											
		1 84	J ₃	C		∞											
650			J ₂	C	11	1											

LOGGED BY: XH
DATE: June 27/58
PROJECT No. _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS 4 3 2			ROCK QUALITY DESIGNATION 75 50 25			NATURAL FRACTURE FREQUENCY 10 5			PERMEABILITY														
				TYPE	INFILLING	INCLINATION						75	50	25	10	5																
650				B ₂	C	72	2	Bedding @ 72° inclination	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]													
			J ₄	W	30	2	[Hatched]													[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]		
			J ₂	C	48	2																									[Hatched]	[Hatched]
-655				J ₄	W	10	3	SLKS @ 655'	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]													
			J ₃	C		4	[Hatched]	[Hatched]												[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]		
			J ₁	S	30	2																									[Hatched]	[Hatched]
			B ₂	C	70	3	[Hatched]	[Hatched]												[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]		
			J ₄	W	40	1																									[Hatched]	[Hatched]
-660			J ₄	W	82	1	[Hatched]	[Hatched]												[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]		
			B ₂	C	73	12			Bedding Inclination @ 73°	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]												[Hatched]	[Hatched]
			J ₄	W	24	1	SLKS @ 660.2'	[Hatched]	[Hatched]											[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]			
			J ₂	C	18	1																								[Hatched]		
			J ₂	W	32	2	[Hatched]	[Hatched]	[Hatched]											[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]			
-665			J ₁	S		4																								(Breccia.)		
			J ₂	C	19	2	[Hatched]	[Hatched]	[Hatched]											[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]			
			B ₂	C	71	4				[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]											[Hatched]	[Hatched]	[Hatched]
-670			B ₁	B	78	~20	[Hatched]	[Hatched]	[Hatched]											[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]			
			J ₁	B	05	1				[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]											[Hatched]	[Hatched]	[Hatched]
			B ₁	B	57	3																										
			J ₃	C	-	>20				[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]											[Hatched]	[Hatched]	[Hatched]
675			B ₂	B	78	1	[Hatched]	[Hatched]	[Hatched]											[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]			

LOGGED BY: [Signature]
DATE: JUNE 22/78
PROJECT No. [Blank]

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
675																			
680		4	108	J ₂ BW 52		1	J ₄ W 231												
				B ₁ B 80		5	B ₂ B 83 1												
				B ₁ B 54		1	B ₁ B 75 6+5						11						
				J ₂ W 21		1	J ₃ C - 5						108						
				B ₂ B 77		1+2+2													
				J ₁ WB 12		1													
				B ₂ C 55		1													
				J ₁ W 09		1+1													
				B ₂ C 70		1													
				J ₁ W 05		1													
685		6	54	J ₂ BW 10		1+1	J ₁ C 45 1												
				B ₂ B 85		2+1	J ₃ W 32 2												
				J ₂ WB 24		1	B ₁ B 77 2												
				J ₁ B 08		1	J ₃ C - >10						5						
				J ₃ SW 45		1 @ 684 1/2'							84						
				B ₁ B 75		1 @ 685'													
				B ₁ S 61															
				B ₂ C 80															
				B ₁ B 57															
690				J ₃ C 15		1	Bedding @ 61°												
				J ₃ C -		3 @ 292'	@ 695'												
				J ₁ S 46		1													
				J ₂ C 45		1+1													
				T ₂ W 0		1													
695		3	10	B ₁ S 61		1 @ 695'													
				J ₂ C 62		2+1													
				B ₁ B 52		5													
				J ₃ C 0		1													
				J ₃ C -		1-10													
700																			

LOGGED BY: HR

DATE: June 28, 1971

PROJECT No. _____

Golden Associates

Hole No. 1120

SHEET 79

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5		
700				B ₁	B	36	2+1	Bedding @ 36 @ 700 J ₂ E 14 2												
				J ₂	C	32	1													
				J ₄	C	22	1													
				J ₃	C	25	1													
				J ₃	C	12	1													
				J ₂	C	-	1+1+1+3													
705				J ₁	W	15	1													
				B ₁	C	62	2													
				J ₄	C	21	1													
				B ₃	C	47	1													
				B ₁	B	67	1													
710				J ₃	W	-	5													
				B ₂	C	64	2+1													
				B ₂	C	83	4+1													
				B ₂	C	68	1													
				B ₂	C	77	3													
715																				
				B ₂	C	77	1													
				B ₂	C	68	1													
720				J ₁	W	36	1													
				B ₂	C	76	2													
				J ₂	C	-	5													
725																				

↓ TO 727

LOGGED BY: KK
 DATE: JUNE 28
 PROJECT No. _____

Golder Associates

Hole No. 1120
 SHEET 29 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GRAVE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	20	15	10	
725																			
730		6																	
		96		J ₂	C	8	3												
				J ₄	W	12	2												
				J ₃	C		8												
				B ₂	C	81	6						79						
				J ₂	C	45							96					720	
				J ₂	C	32	2												
				J ₄	W	23	1												
735				J ₂	C	12	2												
		0		J ₄	W	8	1												
		48		J ₃	C		9							35					
				B ₂	C	79	2							48					
740				J ₁	W	11	1												
				B ₂	C	70	9												
				J ₃	C		6											20	
		4		J ₂	C	8	1							61					
				J ₂	C	40	2												
745		96		J ₄	C	27	1							96					
		0		J ₃	C		∞												
				J ₁	S	16													
750		48		B ₂	B	76	∞							0				720	
														48					

BEDDING INCLINATION @ 82°

SLKS @ 747'

LOGGED BY: RAH
 DATE: JUNE 28/78
 PROJECT NO. _____

Golder Associates

Hole No. 1120
 SHEET 30 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS	ROCK QUALITY DESIGNATION	NATURAL FRACTURE FREQUENCY	PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION							
750				J ₂	B	27	2			①			
755	14 48			J ₃	C		∞	/			0	70	
				J ₁	C	30	2						
760	2 72			B ₂	C	78	2	/			0	70	
				J ₂	B	11	1						
				B ₂	B	74	7						
				J ₃	B		∞						
765	7 36			J ₄	B		∞	/			0	70	
				J ₄	B	48	6						
				B ₂	B	65	2						
770	8 108			J ₂	B	72	3	/		①	0	70	
				J ₄	B	0	1						
				B ₂	B	72	23						
				J ₁	S	7	1						
				J ₃	C		∞						
775				J ₄	C	11	1	/			21	70	
			J ₄	C	20	2							
			J ₂	C	60	1							

SCLRS @ 774'

LOGGED BY: alt
 DATE: JUNE 28/78
 PROJECT No. _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY	PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25		
775				B ₁	S	84	3 @ 775-776'										
				B ₁	B	80	5+6+4										
				B ₂	C	77	6										
				J ₃	C	-	>20										
780				J ₄	B	81	4										
785				B ₁	B	67	10										
				B ₂	C	79	2										
				B ₁	B	55	1										
				B ₁	B	76	3										
				J ₄	C	-	>10										
				J ₅	C-B	-	8										
790				B ₁	B	82	10 + 5										
				B	S	76	2 @ 751'										
				J ₁	D	51	2										
				J ₁	B	41	>5										
				J ₃	B	30	2										
795				J ₁	B	22	2										
				B ₁	C	64	>20										
				J ₃	C-B	-	>20										
800																	

LOGGED BY: KK
DATE: Nov 28/78
PROJECT No.

↓ To 307'

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
800				J ₁ B		46	1												
				J ₁ B		43	1												
			6/20	B ₁ B		64	2												
				J ₃ C		50	2												
				B ₂ C		55	1												
				B ₁ B		67	1												
805				B ₂ B		72	3												
				J ₃ C		09	1												
				B ₁ B		75	1												
				J ₃ C		90	3+2+2												
810		100%		B ₂ C	CRS	79	2+3+2												
		Recovery		J ₂ C		07	1												
				J ₂ W		23	1												
				J ₃ C		-	2												
815																			
				B ₁ B		67	1												
				B ₂ C		77	1+												
				B ₁ B		73	1												
820		20%		J ₃ C		90	1												
				J ₃ B		90	2												
				J ₁ Sh		33	@ 821'												
				J ₁ W		32	1												
				B ₁ B		76	6												
825				B ₂ W		72	1												
				B ₁ C		18	1												

LOGGED BY: KK
DATE: JUNE 29 / 78
PROJECT No. _____

Golder Associates

Hole No. 1120
SHEET 23 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	5	10	5		
825			29%																
830			< 1%	J ₃ C 20 J ₁ Sw 37 J ₁ S 55 J ₃ C 0 J ₂ C 09 J ₁ W 71 J ₁ S 43 J ₂ C 12	1 2 2 1 1 1 1	1 1 1 1 1 1 1	1 @ 827' B ₁ B 70 2+2 B ₄ W 70 1 J ₁ B 40 1 J ₃ C - 5 J ₁ B 24 1												
835			1%	J ₃ C 61 B ₄ W 64 J ₃ C - S ₂ W 03 J ₂ C 11	1 1 1 1 1	1 1 1 1 1	4+ > 20 T+1												
840			12/84	J ₁ S 36 J ₃ C 190 S ₂ C 19 B ₃ B 67 B ₁ B 62 J ₁ S 12 J ₃ C 20 J ₁ C 26 J ₃ C 14 J ₂ C 10 J ₃ C 290 B ₄ W 67	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1	1 @ 840' 8 1+2+1 2 @ 845'												
845			< 1%																
850																			

LOGGED BY: KK
DATE: JUNE 29, 1951
PROJECT No. _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
850				B ₁	B	68	2												
		41%		R ₁	B	62	1												
				J ₃	C	72	1+1												
				J ₃	C	-	10												
855				J ₃	C	~90	4+2+2+5												
				B ₁	B	90	5+1												
				B ₂	B	~90	2+1+1+2												
				J ₁	BW	27	1							6/120					
			1%	B ₁	B	67	1												
				B ₄	W	67	1												
860				J ₁	WB	40	1												
				J ₂	B	29	1												
				B ₂	B	69	1												
				J ₃	C	-	>20 → brecc coal												
865				B ₁	B	82	18												
				B ₄	B	80	6												
				B ₂	C	80	5												
			4/96	J ₃	C	04	1							28/36					
				B ₁	B	79	1												
				J ₁	S	52	2 @ 870'												
				J ₁	B	63	1												
870				B ₂	B	79	1												
				J ₂	C	0	1												
875				B ₁	B	88	6+10												
			1%	B ₂	B	~90	1+1+7												
				J ₁	S	38	@ 873'												
				J ₁	R	49	1												
				J ₁	C	70	1												
							int @ 1190												
							↓ TO 881												

LOGGED BY: KK
DATE: JUNE 29, 1971
PROJECT No. _____

Golder Associates

Hole No. 1120
SHEET 25 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	20	10	5	
75																			
880		1%											53				>20		
885		11/60		J2	B	24	2						5				720		
				J3	B		∞						60						
				J2	B	30	4												
				B2	B	74	6												
				B2	B	84	2												
				J4	B	40	1												
890				J4	C	3	2												
				J4	C	14	5												
				B2	C	79	2												
				B2	C	73	1						102						
		2/120		B4	W	80	1						120						
				J2	C	42	2												
895				J4	W	28	1												
				J4	W	16	4												
				J4	W	0	2							46					
		4/60		J3	C		2												
				B2	C	68	1												
900				J2	C	86	2						60						

Bedding @ 68°
Inclination

LOGGED BY: _____

DATE: _____

PROJECT No. _____

Golder Associates

Hole No. 1120

SHEET 36 OF _____

DEPTH	PERCENT CORE LOSS				FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75		TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
500																				
-905		2			J ₂	C	0	1												
					J ₂	C	12	2												
					J ₃	C		∞												
					J ₄	C	11	3												
					B ₂	C	64	2												
					B ₂	C	79	7												
					J ₄	W	9	2												
-910																				
					B ₂	C	68	1												
					B ₂	B	84	1												
					J ₁	W	17	2												
					B ₂	B	28	1												
					J ₃	C	75	1+1												
					B ₂	B	77	1+2+2												
					J ₃	C	0	1												
					J ₃	C	-	8+1+2												
					J ₃	C	08	1												
					J ₂	C	03	1												
					B ₁	B	84	1												
					J ₄	W	0	1												
					J ₂	C	290	14												
					J ₃	C	0	1												
					J ₃	C	-	1												
925																				

LOGGED BY: Ud...
DATE: July 4 - July 6
PROJECT No. _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
925				J ₂	C	20	1												
				J ₃	C	-	3 + 5												
				J ₃	C	51	1												
930																			
				B ₁	B	79	2 >	J ₁ 305 B ₁											
				J ₁	W	12	1												
				J ₂	C	12	1												
935				J ₃	C	50	2 + 1												
				B ₂	C	80	1 >	J ₂ 397 B ₂											
				J ₂	C	75	1												
				J ₁	W	12	2												
				J ₄	W	67	1												
				J ₂	C	31	1												
940				J ₁	B	21	1												
				S ₃	C	53	1												
				B ₃	C	42	1												
				J ₁	W	07	1	J ₁ 175 B ₄ (B ₄ incl 74°)											
				B ₂	C	73	1												
				J ₃	C	-	1 + 2												
				J ₂	C	12	2												
945				B ₃	B	-	1												
				B ₂	C	72	1												
				B ₁	B	74	1												
				S ₃	C	70	1 + 1 + 2 = 2												
				J ₁	W	12	1 >	J ₁ 320 B ₁											
				B ₁	B	73	1												
950				J ₁	W	97	1												

100% Recovery

LOGGED BY: KK
 DATE: July 6
 PROJECT No. _____

Golder Associates

Hole No. 1120
 SHEET 38 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
950																			
955				J ₂ C 07		1													
				J ₃ C -		1+2													
				J ₄ W 01		1													
				B ₂ B 83		1													
				B ₁ B 85		1													
				B ₁ BW 81		2	J ₁ 305 B ₁												
				J ₁ W 36		1													
				J ₃ C 05		1													
				J ₃ C 10		1													
				B ₂ C 83		6													
960				J ₃ C 90		2													
				J ₂ C 75		1													
				B ₁ B 83		1	J ₂ 175 B ₁												
				B ₂ W 83		2													
				B ₁ B 85		1+1													
965				B ₂ B 85		1	J ₄ W 18.1 → J ₄ 180 B ₄												
				J ₃ C 20		1	J ₄ W 841 → 1140 beld.												
				J ₃ C -		1	<20 → broken core												
				J ₂ W 20		1													
				B ₁ B 85		1	J ₁ 000 B ₁												
				J ₁ B 83		1													
				B ₁ B 84		2+1													
				J ₃ C -		1													
970				B ₁ B 74		1	J ₄ 350 B ₁												
				J ₄ C 22		1													
				J ₃ W ~10		1													
				B ₁ BW 87		2													
				J ₃ C -		2													
975				J ₂ C		4													

LOGGED BY: KK
 DATE: July 6
 PROJECT No. _____

Golder Associates

Hole No. 1120
 SHEET 39 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	10	15	20	
975		2	60	J4	C	3	2							45					
				J2	C	31	2							60					
				J1	W	30	1												
				B2	C	70	2												
				B4	W	82	3												
980		1	60	J3	W	70	1												
				J2	C	43	2							52		20			
				J2	C	32	2							60					
				B2	C	72	6												
				J4	C	0	5												
985		0	60	J1	C	8	2												
				J4	C	10	3												
				B2	C	68	2							55					
				J3	C		4							60					
				J4	C	40	1												
990		0	60	J1	C	1	1	Bedding @ 77° inclination											
				J3	C		3												
				B2	C	77	5							48					
				B2	B	72	2							60					
				J4	C	11	4												
				J2	C	65	1												
995		10	60	J4	C	20	2												
				B2	A	78	5							19		20			
				J1	A	45	2							60					
				J4	C	0	4												
				J3	C		0												
1000				J3	C		∞												

LOGGED BY: EH
DATE: July 6/78
PROJECT No. _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY				PERMEABILITY	
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	20	15	10	5		
1000	0	60		B ₂	C	88	1						42								
				B ₂	C	79	7						60				7	20			
				J ₁	C	0	1														
				J ₂	B	56	3														
				J ₄	C	8	2														
1005		60		J ₄	C		∞														
				J ₂	C	40	2						11				7	20			
				J ₂	C	8	1						60								
				J ₁	S	30	2														
				J ₃	C		∞														
1060		60		J ₂	C	8	2														
				J ₃	C		6														
				B ₂	C	70	3						51								
				J ₁	C	52	3						60				7	20			
				J ₂	C	30	2														
				J ₄	W		∞														
1015		0	60	B ₂	C	70	4														
				J ₂	C	20	3														
				J ₂	C	60	2						42								
				J ₃	C		3						60								
				J ₄	C	0	2														
				J ₂	C	52	1														
1020		60		J ₄	C	0	2														
				J ₄	C	22	1														
				J ₂	C	69	2														
				J ₃	C		2														
				B ₂	B	73	1						58								
				B ₂	C	72	2						60								
1025																					

LOGGED BY: HH
DATE: Jun 6/75
PROJECT No. _____

Golder Associates

Hole No. DDH 1120
SHEET 41 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			Fractures Cont.	PERMEABILITY	
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5			
1025				B ₁	B	62	> J ₂ 320 B ₁												J ₁ B 30 1 B ₄ B 72 2 J ₁ B 53 1 B ₁ B 72 1		
			nil	J ₂	B	46							33								
				B ₂	B	62							60								
				J ₃	B	79															
				J ₃	B	53															
				J ₃	B	-	1+1+3														
-1030			< 1%	J ₁	B	41	3													J ₃ B 250 2	
				J ₂	B	-	2+1														B ₁ B 74 1
				J ₃	C	34	1+						30								B ₂ B 62 2
				B ₁	B	62	1						60								B ₁ B 50 2
				J ₁	B	61	1														J ₃ C - 2
				B ₁	B	83	1														
-1035			< 1%	B ₁	B	70	1+2+1														B ₁ B 75 1
				B ₂	B	71	1														J ₁ B 53 1
				B ₁	B	72	2						30								J ₁ B 27 1
				J ₃	B	48	1+2						60								J ₂ B 150 2
				B ₁	B	72	> J ₂ 120 B ₁														J ₁ B - 3
				J ₂	C	80															
				B ₁	B	52	1														
-1040			1/60	B ₁	B	62	1														B ₁ B 78 3+2
				B ₂	C	52	1						20								J ₂ C - 1
				B ₁	B	76	1														J ₁ W 06 1
				J ₃	C	70	1						60								(J ₂ 265 B ₁)
				B ₂	C	69	> J ₂ 300 B ₂														
				J ₂	C	19	1														
				J ₂	B	30	1														
				J ₂	C	55	1														
-1045			100% Recovered	B ₁	B	77	1														
				J ₃	C	90	1														
				B ₁	DW	71	1														
				B ₁	B	79	1														
				B ₁	B	50	1														
				J ₃	B	73	1														
1050			5/60	B ₁	B	73	1														J ₂ 150 B ₁
				J ₃	C	27	1														

LOGGED BY: HK

DATE: 10/1/74

PROJECT No: 1170

Hole No. 1170

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
1050				J ₂ J ₁ J ₂	C C C	1 04 -	1+ 2 <20°					25 60			>20				
1055			Nil	B ₂ J ₂ B ₃ J ₁ J ₂ B ₁	C W C BW W W B	41 0 79 34 12 23 72	1+1 1 2 1 1 1/2					25 60			>20				
1060			Nil	B ₁ J ₃ B ₂ B ₃ J ₁	C C C C B	77 50 77 72 22	1+1+1 1+2+2 1 2 1	Silt - mud stone contact @ 78°				45 60			12				
1065			2/6	J ₁ B ₁ B ₁ J ₁ B ₃ J ₂	C B B W C C	05 85 81 12 - -	1 1 1 1 3 2+10					3 60							
1070			4/6	B ₂ J ₁ B ₁ J ₂ B ₁ J ₃	C W B B W W	85 31 68 70 68 12	1 1 1 1 2 @ 1065 1	J ₁ 320 B ₂ J ₂ 50 B ₁				28 60			720	J ₁ W 06 1 B ₂ B 76 2 J ₂ C 68 1 J ₃ C 50 5 J ₃ C - 5			
1075			3/46	B ₁ B ₂ B ₂	B C C	80 80 70	48 2 1	Bedding @ 80°					35 48						

LOGGED BY: KK

DATE: July 10

PROJECT No

Golden Associates

Hole No. _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRISQ/SOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY		
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5			
1075		3/4	48																		
		2%		B ₁	S	70	1 @ 1076'														
				J ₃	C	-	5														
1080				B ₁	C	-	} highly broken coal cannot measure inclinations														
				J ₁	C	-															
				B ₁	C	-	} highly broken coal cannot measure inclinations														
				J ₁	C	-															
1085				B ₁	B	61	1 J, 180 B ₁														
				J ₁	C	62															
				B ₁	B	81	>10														
				J ₃	C	-															
1090				B ₁	B	76	>20														
				J ₁	C	40	1 J, 260 B ₁														
				J ₂	B	20	1 J, 340 B ₁														
				J ₃	C	-	∞														
1095				B ₁	B	64	8														
				B ₄	B	85	1														
				B ₁	B	68	2														
				B ₁	B	82	6														
1100				B ₁	B	85	13 J, 160 B ₁														

LOGGED BY: _____
DATE: July 10
PROJECT No. _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	75	50	25	15	10	5		
1100				B ₁	B	72	1+3												
				B ₂	C	74	2												
				J ₃	C	-	∞												
				B ₁	B	73	6												
1105				B ₁	B	70	1												
				B ₂	C	76	1+4												
				J ₁	W	19	1	J ₁ 075 B ₁ → cross bedding											
				B ₁	B	75	1												
				B ₂	B	82	1												
				B ₂	B	87	1												
1110				J ₂	C	-	8+4+1												
				B ₁	BS	60	1												
				J ₁	C	02	1	J ₁ 180 B ₁											
				B ₂	C	80	1												
1115				J ₂	C	24	2	J ₂ 160 B ₄ B ₄ @ 72° (variable)											
				B ₁	S	64	3	@ 1113'											
				B ₁	B	64		* bedding @ 63°											
				J ₂	W	15	2	(J ₂) 165 B ₁											
				J ₁	W	15	2	(J ₁) 165 B ₁											
1120				J ₁	W	21	1	J ₁ 210 B ₁ 3' core											
				B ₁	B	72	2												
				J ₂	W	20	2												
				J ₃	C	90	2	2+2+2 cross bedding											
				J ₁	W	20	1												
				J ₃	W	20	1												
1125				J ₂	W	75	1	Cross bedding											
				J ₃	C	76	1+2												
				B ₁	B	78	2+2												
				B ₂	C	72	2												
				J ₄	W	07	1												

J₃ C ~ 30 #
 (B₂ C 75 1
 J₁ W 17 1
 (J₁ 175 B₂)
 J₁ W 17 1
 J₁ 130 B₄

J₂ C 24 2
 (J₂ 175 B₄*)
 J₂ C 15 1
 B₄ C 77 2+3
 B₁ (J₂ 190 B₂)
 B₁ B 73 =

LOGGED BY: _____
 DATE: July 10
 PROJECT No. _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA / GROUND BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	20	15	10	
1125	5	60											5 60			16			
1130	2	60											22 60		>20				
1135	Nil												9 60		720				
1140	0	60											28 60		720				
1145	10	36											4 36		720				
	6	48											4 48		720				
1150	4	36											0		720				

LOGGED BY: JH
 DATE: JULY 10/78
 PROJECT No.

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5		
1150	4	36		B ₂	B	78	8													
				B ₂	B	79	3													
				S ₃	C	-	∞													
1155	2	60		B ₁	B	72	1													
				J ₃	C	290	2+1	Bedding @ 72° @ 115°												J ₃ C ~90.6
				B ₂	B	73	1													J ₂ C - ∞
				B ₂	B	81	1	J ₂ 195 B ₂												
				J ₃	B	30	1													
				B ₁	B	77	3													
1160	3	50		S ₃	C	290	2+1+2													
				J ₃	C	-	1+4													
				B ₂	B	80	1													
				J ₁	B	49	1													
				B ₂	C	70	1													
				J ₁	C	16	1													
1165				J ₁	W	16	1	J ₁ 155 B ₂												
				B ₂	B	74	1													
				J ₃	C	290	2+2+2+2+2 (12)													
				B ₂	B	70	1	J ₁ 185 B ₂												
				J ₁	W	20	1													
				B ₁	B	74	1	J ₃ 255 B ₁												
				J ₃	B	35	1													
				J ₃	B	290	1													
				J ₂	C	55	1													
				J ₁	W	19	1													
1170				B ₂	C	72	1	J ₁ 105 B ₂												
				J ₁	W	14	1													
				B ₂	C	68	1	J ₂ 170 B ₂												
				J ₂	C	42	1													
1175				B ₂	B	76	1													
				J ₃	C	290	1+1													
				B ₂	B	80	1													
				J ₁	B	65	1	J ₁ 100 B ₁												
				B ₁	B	77	1													

LOGGED BY: KK

DATE: July 10/78

PROJECT No.

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY		PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	
1175				J ₁ J ₂	C C	26 90							26 60		(14)			
-1180				B ₂ J ₃ B ₂ B ₂ B ₁ B ₂ J ₁ J ₄ J ₁ J ₁ J ₁ B ₂ B ₁ B ₂	B C C C BS C W W S B S C B C	76 90 79 78 72 72 20 20 40 47 50 72 75 75	1+2+2+2+1 Bedding @ 70° @ 1178' 2 @ 1183 (no reference bedding) 1 @ 1184'						105 170		> 20			
-1185				J ₃ J ₂ J ₁ B ₁ J ₁ B ₂ B ₁ B ₂	C W W B W B C C	90 16 21 74 72 17 74	1+2+2+1+2 Bedding @ 72° @ 1190' 1+1 J ₁ 150 B ₁						22 60		(15)	J ₃ C - 2 J ₁ W 24 (J ₁ 130 B ₄) J ₁ C 221		
-1190				J ₂ J ₃ J ₂ R ₃ B ₂ B ₂ B ₂ J ₂	C C C C B C C C	27 20 90 73 77 72 74 21	1+2+2+1+5+5 1+1 2 J ₂ 155 B ₂						26 60		> 20	B ₂ B 80 J ₃ C 021		
-1195				B ₂ J ₁ J ₂ B ₁	B C W B	78 90 22 46	3+1+3+3+4 B ₄ @ 81° J ₂ 145 B ₄ TO 1202'							32 60		> 20	B ₂ B 78 B ₂ B 72	
1200																		

LOGGED BY: JK
DATE: July 10/78
PROJECT No. _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	20	15	10	
1200																			
1205		2																	
		60		B ₂	C	84	2												
				B ₂	C	72	3												
				J ₄	W	-	∞	BRECCIA INFILLING											
				J ₄	W	18	2	@ 190° TO B											
				J ₁	W	18	2	@ 195° TO B											
				J ₃	C	-	3												
1210		0		J ₁	C	33	1	@ 170° TO B											
		60		J ₄	W	20	1	@ 20° TO B											
				B ₂	C	77	4												
				J ₃	C	-	4												
1215		1		J ₃	C	-	3	BEDDING INCLINATION @ 68°											
		60		B ₂	C	70	2												
				J ₄	W	18	1	@ 180° TO B											
				J ₁	C	11	2	@ 200° TO B											
				J ₄	C	11	2	@ 190° TO B											
				J ₄	W	11	3	@ 170° TO B											
				B ₄	W	67	1												
1220		0		B ₂	C	72	2												
		60		J ₄	W	42	2												
				J ₁	W	33	1	@ 160° TO B											
				J ₄	C	32	3	@ 160° TO B											
				J ₃	C	-	4												
				B ₂	B	70	1												
1225		0		B ₂	C	72	6												
		60		B ₂	C	84	2												
				J ₄	C	20	2												

LOGGED BY: JH
DATE: July 10/76
PROJECT No. _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
1225				J ₃	C	-	5												
1230		2	60	J ₃	C	-	8												
				B ₂	C	70	6						0						
				J ₄	B	0	1												
				B ₂	B	71	∞												
				J ₂	B	35	1 @ 0° TO B												
				J ₁	S	-	∞ BRECCIA FRAGMENTS												
1235		35	60	J ₁	B	30	1												
				B ₂	B	80	∞						0						
				J ₃	B	-	∞												
1240		0	60	B ₂	B	78	13												
				J ₂	B	61	1 @ 0° TO B												
				J ₂	B	48	2 @ 0° TO B												
				J ₃	B	-	3												
				B ₄	B	76	4												
				J ₄	B	20	1 @ 180° TO B												
1245		3	60	J ₃	B	-	∞												
				B ₂	B	72	∞												
1250		2	60	B ₂	B	78	16												
				J ₂	B	67	4 @ 0° TO B												
				J ₄	B	20	3 @ 180° TO B												

LOGGED BY: XH

DATE: JULY 12/78

PROJECT No. _____

Golder Associates

Hole No. 1120

SHEET 50 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
1250	2	60		J3 J4	B B	- 42	2 @ 150° TO B.												
1255	3	60		J1 J2 B2 D1 J1 B2 J3	C C B B C C C	29 17 80 76 29 72 -	1 1 5 5 1 1 8					17 60							
1260	4	60		B1 J1 B1 J1 J3	C S B S C-S	81 56 82 24 -	2 1 @ 1259 1/2 3 1 @ 1255 0					6 0							
1265	6	60		J2 B2 J3	B B C	44 80 -	1 10 20					16 60							
1270	1	60		B1 J2 B1 J2 J2 J3	B C B C W B B	75 27 79 17 18 76 -	1 1 5 2 1 2 0	J2 175 B1				5 60							
1275	N/A			B1 J2 B2 J1	B W C W	76 16 78 15	1 1 2 1	J2 170 B1				4 60						J3 C → W - J3 C ngd	20 2

LOGGED BY: KK
DATE: JULY 12/78
PROJECT No. _____

DEPTH	PERCENT CORE LOSS 25 50 75	FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
		TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
1275	Nil											4 60		520			
-1280	0 60	J2 J1 B2 J4 J3	C C C C C	38 20 3 79 22 4	1 @ 170° TO B							54 60		16			
-1285	0 60	J1 J4 J1 B2 J4 J2	C C W C C C	24 25 18 77 8 0	5 @ 180° TO B 12 @ 180° TO B 2 4 5 @ 84° TO B 1							34 60		720			
-1290	0 60	J2 J4 J2 B2 J3 J4	C W C C C C	9 12 22 74 8 0	1 @ 0° TO B. 4 @ 180° TO B 3 @ 15° TO B. 7 Bedding Inclination 8 @ 74° 2							35 60		720			
1295	0 60	J4 J3 B2 J2 J1 B4	W C C C C W	3 5 78 18 6 82	1 @ 140° TO B. 5 6 2 @ 180° TO B 4 @ 170° TO B 1							52 60		19			
1300	0 60	B2 J1 J4 J1	C W W C	76 7 7 0	6 1 @ 175° TO B 9 @ 180° TO B 1							44 60		720			

LOGGED BY: SH
DATE: July 12/78
PROJECT No. _____

Golder Associates

Hole No. 1120
SHEET 52 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY		PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	
1300	0	60		J4	C	22	4 @ 150° TO B											
				J1	C	20	1 @ 180° TO B											
				J3	C	-	5											
1305	1	60		J1	C	12	2 Bedding inclination @ 74°											
				J4	C	0	1											
				J3	B		∞											
				B2	C	74	5											
				J4	W	30	1											
	0	24		B2	B	78	∞											
				J3	B		∞											
				J2	B	52	1 @ 180° TO B											
1310	0	60		B2	C	78	10											
				J2	C	11	2											
				J3	C	27	1											
				J4	C	11	1											
				J3	C		3											
1315	0	60		B2	C	79	8											
				B3	C	~80	6											
				J4	C	0	1											
1320	0	60		B2	B	80	32											
				J3	B	-	8											
				J2	B	26	2 @ 10° TO B											
1325	9	75																

LOGGED BY: VH

DATE: JULY 13/78

PROJECT No.

Golden Associates

Hole No. 1120

53

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOOSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25				
1325																			
1330		1/2											35 170		>20				
1335		Nil											6 60		>20				
1340		0											0		>20				
1345		1/60											18 60		>20				
1350		0											24 60		(14)				

LOGGED BY: KK

DATE: JULY 13

PROJECT No. _____

J₂ 55 B₁ 1'
J₂ 50 C 1+3
J₂ W 10 1

↓ to 1351'

→ Cross bedding

@ 1331'

J₂ 235 B₂

J₂ 150 B₂

J₂ 190 B₂

J₂ 155 B₂

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
1350																			
-1355																			
-1360																			
-1362																			
-1370																			
1375																			

LOGGED BY: LF

DATE: July 12 1974

PROJECT No

Golden Associates

Hole No. 1120

SHEET 55 OF

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
1375	<	1%											10/60		720				
1380	<	1%		B ₁ J ₃ J ₃ J ₃	B C C C	86 80 07 16	4 7+2						43/60		(15)				
1385	<	1%		J ₂ J ₂ J ₂ J ₂ J ₂ J ₂ J ₂	C E C B C E E	190 05 01 81 290 08 04	1 1 1+1+2 1 1 1 3						33/60		(13)				
1390	<	1%		B ₁ J ₃ J ₃ J ₃	B C C C	74 02 290 05	9 1 2+2 1	crossbedded						7/48		(15)			
1395	to	60		J ₂ J ₂ J ₂ J ₂ J ₂ J ₂ J ₂	C C C B E C C	08 22 18 72 1 20 16	1+1 1 1 2 1 1 5	crossbedding					10/60		(13)				
1400	3/60			B ₁ J ₂ B ₁ B ₂ J ₁ J ₂	B C B C E E C	74 30 73 62 40 44	1 1 1+4 1+1+4 1 1 >10	J ₂ 060 B ₁ J ₁ 006 B ₁					31/60		>20				

LOGGED BY: KIK
DATE: July 12/74
PROJECT No. _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/SOUSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
1400		2	50	B ₁ J ₂ J ₂ J ₃ T ₄ J ₃	B C C C C C	64 30 24 - 90 0	8 1 4 >10 4 1							5 60					
1405		2	60	J ₁ I ₁ B ₁ I ₄ B ₂ B ₂	C C F C+B C B	4 0 79 - 78 77	2 @ 180° TO B 1 @ 90° TO B ∞ BRECCIA 4 2							20 60					
1410		2	60	B ₂ B ₃ I ₄ I ₄	C C C C	71 - 20 0	3 2 7 @ 250° TO B. 2							58 60					
1415		0	60	J ₁ B ₁ I ₄ B ₂ J ₃ I ₄ I ₄	S S W C C C C	50 67 - 7 - 10 0	1 @ 0° TO B. @ 1419' 1 @ 1419' ∞ BRECCIA 6 3 @ 160° TO B						28 60						
1420		0	60	J ₁ I ₄ I ₄ I ₂ I ₄ I ₁ J ₃	C C C C C W C	0 0 12 13 3 30	1 3 6 @ 195° TO B 2 @ 190° TO B. 1 @ 260° TO B 1 @ 180° TO B						26 60						

LOGGED BY: AK
DATE: JULY 13/78
PROJECT No: _____

Hole No. 1120

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY					PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	20	15	10	5		
1425																					
1430				B ₂	C	62	7														
				I ₄	W	0	5														
				I ₄	C	0	3														
				I ₄	C	20	4 @ 150° TO B.														
				I ₂	W	0	2														
				I ₃	C		10														
1435				I ₂	C	20	1														
				B ₂	B	56	1														
				B ₂	C	69	4														
				I ₄	W	40	3														
				I ₄	W	0	3														
				I ₃	C		6														
1440				I ₂	C	2	1														
				B ₂	B	76	3														
				B ₂	B	69	1														
				I ₃	B		8														
				I ₄	C	6	1														
1445				I ₃	B	-	8														
				B ₂	B	70	3														
				I ₂	B	11	8														
				I ₄	B	20	8														
				I ₃	B		8														
				B ₂	B	74	3														
1450																					

LOGGED BY: HL
DATE: JULY 13/78

Hole No. 1120
SHEET 58

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5		
1450	0	48		J3	B	∞														
				J2	B	76	4				(7)			0	48			> 20		
-1455	2	48		B2	B	66	6				(1)			7	48			> 20		
				J2	B	6	1													
				J3	B	∞														
				J4	B	22	3													
-1460	24	84		J4	B	22	∞													
				J2	B	22	1 @ 0° TO B				(1)			10	84			> 20		
				B2	B	73	∞													
				J2	B	52	4													
				J3	B	∞														
-1465	0	60		J2	B	50	5													
				B2	B	62	8				(1)			0	60			> 20		
				J3	B	∞														
				J4	B	27	∞ @ 0° TO B.													
-1470				B4	B	67	∞													
				J4	B	0	3													
	9	60		J2	B	55	4				(1)			0	60			> 20		
				B2	B	70	∞													
				J3	B	∞														
1475																				

LOGGED BY:
DATE: Jan 13/78
PROJECT No:

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25					
1475				B2	C	70	11	Bidding @ 74° INCLINATION.												
			5	B2	C	78	2													
			60	J3	C		4													
				J4	C	0	1													
				B4	C	70	3													
-1480			0	B2	C	72	10	1 @ 22° TO B. (@ 1480')												
			36	J4	C	40	5													
				J2	S	42	1													
				J3	C	-	5													
-1485																				
-1490																				
-1495																				
1500																				

T.D. 1482'

LOGGED BY: AK
DATE: July 13/78
PROJECT No. _____

Goldier Associates

Hole No. 1120

60 of 60

RH-1121

322

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	20	15	10		5
20				J1	C	53	1													
	2	7		B3	C	84	3						35							
				J1	C	15	1						72							
				J4	W	17	1													
25				B1	C	73	2													
				J1	C	9	1													
	2	2		J1	C	60	2						7/36				720			
				B3	C	82	0													
30				J1	C	45	3													
	2	7		B3	C	85	0						9/96				720			
				J4	C	3	1													
				J4	C	15	2													
35				B1	C	72	2													
				B3	C	70	4						28/108				12			
	<2	9		J1	W	20	2													
				J3	C	88	4													
40																				
45																				

LOGGED BY: X.F.H.
 DATE: May 10/78
 PROJECT No. _____

Golder Associates

Hole No. DDH 1121
 SHEET 1 OF 62

3/5 x 60

522

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	20	10	5	
45		1%																	
50		2%		B3	C	73	0										12		
			J1	C	35	1		J1 9° @ ~ ⊥ J1 35°											
			J1	W	9	2													
	J4	W	10	2															
55		25%		B3	C		0												
		1%		J1	C	22	1												
			B3	C	80	0													
			B1	C	72	1													
	J1		W	28	2														
60		2%		J1	C	2	1												
			J3	C		0													
65		< 1%		J4	W	19	1												
			J4	W	22	2													
			J1	W	21	1													
			J3	C	80	2													
			B3	C	53	1													
70																			

LOGGED BY: CH
 DATE: MAY 10/78
 PROJECT No. _____

Golder Associates

Hole No. DDH 1121
 SHEET 2 OF 62

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	20	15	10	
70				B2	C	73	1												
		29		J3	C	24	2						56				5		
				B1	A	70	2						72						
75																			
				B4	W	75	1												
				J3	C	30	3												
80		12		J1	W	22	1						99				14		
				B3	C		9						120						
				B1	W	63	1												
85																			
				J1	W	23	3												
				J4	W	20	3												
				J1									120						
90		17		B3	C	72	3						120				7		
95																			

LOGGED BY: AT
 DATE: May 11/78
 PROJECT No. _____

Golder Associates

Hole No. TDH 11Z1
 SHEET 3 OF 62

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	015	10	5	
75																		
				B ₁	W	72	2											
				J ₁	W	30	1											
100			2%	B ₃	C	68	5					101			9			
				J ₄	C	35	1					120						
105																		
				J ₄	W	42	2											
				J ₄	W	28	2											
110			5%	J ₂	W	30	1					103			11			
				J ₁	W	20	1					120						
				J ₁	F	32	1											
				B ₃	C	85	4											
115				J ₄	W	28	8											
				J ₁	W	30	3					82			5			
			2%	B ₃	C	75	2					108						
				B ₁	C	69	2											
120																		

LOGGED BY: AH
DATE: MAY 11/76
PROJECT No. _____

Golder Associates

Hole No. 1121
SHEET 4 OF 67

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	10	5	1	
120																			
		27%																	
125		1/6.5		B ₃	C	∞													
				B ₂	C	70	4.							24					
				J ₂	C	18	2							78					
				J ₄	W	32	1									720			
130		1/7		J ₂	C	52	13	~45° BETWEEN											
				J ₂	C	65	12	TWO SETS OF JOINTS						0					
				B ₄	C		∞							81					
135																			
		27%		B ₄	C	∞													
				J ₂	C	55	3							17					
140				B ₂	C	60	9							63					
		5/66		B ₄	C	∞													
145																			

LOGGED BY: AT
DATE: MAY 11/78
PROJECT No. _____

Golder Associates

Hole No. 1121
SHEET 5 OF 62

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY					PERMEABILITY				
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	20	15	10	5	0					
145																									
150		5		B4	C	∞								0											
				B2	C	66	6							4											
				B2	A	64	6																		
		2		J4	W	9	2							47											
155				J4	C		6							72											
				B1	A	67	2	SLK																	
				J1	W	52	1	SLK						24											
160				J1	W	36	5							60											
				B3	C		2																		
		2		B3	C	70	4							33											
165				J2	C	28	2							60											
170														44											
														120											

LOGGED BY:
DATE: May 17 78
PROJECT No.

Golder Associates

Hole No. 1121
SHEET OF 62

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	20	15	10	
170				B4	W	64	2											
				J1	W	22	6											
	27			B1	A	65	1 SLK @ 168'						44				720	
				B3	C		∞											
175																		
				B3	C		∞											
				B1	A	68	5											
180	19			J1	W	20	1						90				720	
				J4	W		1						120					
185																		
	22			B1	A	68	3											
				B3	C	80	2						27				5	
													36					
190				B3	C		∞	SLKS ON SOME FRAGMENTS.									720	
	59																	
195																		

LOGGED BY: HH
DATE: May 15/78
PROJECT No. _____

Golder Associates

Hole No. 1121
SHEET 7 OF 62

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	20	15	10	
195			59.0																
200		2 1/6		J ₂	C	26	3												
				J ₂	C	48	3												
				B ₁	C	68	1					57							
				B ₃	C		10					107							
205				B ₃	C		∞												
				J ₂	C	22	1												
				J ₂	C	4	1					95							
210		2 1/6										123							720
215				F ₁	W/A	8	2	SKS											
				B ₃	C		∞												720
220												53							
												84							

LOGGED BY: zH
DATE: May 15/78
PROJECT No. _____

Golder Associates

Hole No. 1121
SHEET 8 OF 62

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	10	15	5	
220									<input checked="" type="checkbox"/>										
	27																		
				J ₂	C	13	2												
225				J ₄	W	20	1												
	22			B ₂	C	54	1						108						
				B ₃	C		11						120						
230																			
				J ₂	C	9	3												
235				J ₄	C	12	1												
	19			B ₁	A	66	1	SLKS					114						
				B ₃	C		8						120						
240																			
	29																		
245													108						
													114						

LOGGED BY: SH
 DATE: May 15/78
 PROJECT No. _____

Golder Associates

Hole No. 1121
 SHEET 9 OF 62

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	20	10	5	
245				B ₁	A	64	5												
	2%			J ₄	C	19	1							108					
				B ₃	A/C		4							114		1			
250				J ₃	C		1												
				J ₂	C	21	2												
255	1%			B ₄	W	78	1							68		720			
				B ₃	C		∞							90					
				J ₄	A	24	1												
	1%			J ₂	C	21	4							47		720			
				J ₃	C		∞							84					
265				B ₁	B	72	2												
				B ₁	C	75	1												
	2%																		
270																			

LOGGED BY: AT
 DATE: May 15/78
 PROJECT No. _____

Golder Associates

Hole No. 1121
 SHEET 10 OF 62

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	10	5	2	
270				B ₁	C	75	1												
	29%			B ₂	C	75	5					93							
				J ₁	C	11	2					120			16				
275				J ₂	C	16	5												
				J ₄	A	18	3												
				J ₄	A	12	2												
280	39%			J ₃	C		8					38			720				
				B ₁	B	80	2	← SLKS - @ 278'				72							
				J ₂	C	14	3												
				J ₄	C		8												
285	19%			J ₂	C	13	2					18			720				
				J ₄	C	14	1					60							
				B ₂	B	75	8												
290	26%																		
				B ₂	B	70	8												
	27%			B ₂	B	82	5					12			720				
295				B ₂	B	82	5					60							

LOGGED BY: SH
DATE: MAY 18/76
PROJECT No. _____

Golder Associates

Hole No. 1121
SHEET 11 OF 62

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	75	10	5	
295		22																	
-300		26		B ₂	B	72	∞												
-305		19		B ₁	B	51	2												
				B ₄	B	48	1												
				J ₂	C	28	2												
				J ₃	C	90	3												
				J ₂	W	24	2												
				J ₂	B	90	7												
310		21		J ₁	W	14	1												
				J ₃	C	90	4												
				J ₂	B	90	6												
				B ₁	B	68	3												
				B ₄	B	82	11												
				J ₃	B	-	8												
-315																			
				J ₁	S	71	2												
				J ₂	C	90	5												
				B ₂	C	79	9												
320		26		J ₂	B	-	8												

LOGGED BY: AK
DATE: May 16/78
PROJECT No. _____

Golder Associates

Hole No. 1121
SHEET 12 OF 62

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY	PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25		
320				J ₂	C	20	3									
	2%			J ₃	W	1	8		(3)			50/6		720		
-325				J ₃	C	90	11									
	1%			J ₁	W	29	3									
				B ₃	B	70	6									
				J ₄	C	87	4		(3)							
-330				J ₃	B	90	0	@ 331' SIKs				48/102		720		
				B ₄	C	53	2									
				B ₂	B	64	10									
-335	3%			J ₁	W	19	3	SIK @ 324 1/2'	(3)			35/90		720		
				J ₂	C	90	7									
				J ₁	S	32°	1									
				J ₄	C	21°	2									
				J ₃	B	90	8	SIK @ 340 - 340 1/2'								
	2%			J ₂	C	90	2	SIK @ 343 1/2'	(2)							
				J ₁	W	29	5							720		
				J ₄	W	90	2									
				B ₁	C	65	3	to ↓ 347'								

12
28
96

12
17
24

LOGGED BY: KK
DATE: MAY 23 1974
PROJECT No. _____

Golder Associates

Hole No. 1121
SHEET 13 OF 62

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY	PERMEABILITY		
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25				
	3%			J ₄	C	28	2												
				J ₁	W	14	9												
350			2%	B ₁	C	68	5												
				J ₃	C	90	5												
				J ₄	C	25	3												
				J ₄	C	90	3												
355																			
				J ₃	C	90	3												
				J ₁	C	90	2												
360			1%	J ₁	W	27	3												
				B ₁	C	58	1												
				B ₁	C	64	2												
				J ₃	C	15	1												
				J ₃	W	40	2												
				J ₁	C	40	1												
365				J ₁	B	10	1												
				B ₁	C	72	7												
				J ₃	C	90	2												
				B ₁	C	70	3												

LOGGED BY: KK
DATE: May 24 1978
PROJECT No. _____

Golder Associates

Hole No. 1121
SHEET 14 OF 62

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY		PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	0.5	
375	14	132		J ₁	W	15	5										
				J ₃	C	87	9										
				B ₁	C	76	3										
				J ₄	C	24	2						64				
				J ₃	C	90	4		(4)				132				
				B ₂	C	72	1										
380																	
				J ₁	W	13	7										
				J ₂	C	87	8										
				B ₂	C	65	2						62				
				B ₂	C	78	11										
				J ₂	C	90	4										
390				J ₁	W	15	3						25				
				J ₄	W	10	5						46				
				B ₄	C	71	10										
				S ₄	C	0	4										

LOGGED BY: KL
 DATE: May 29
 PROJECT No. _____

Golder Associates

Hole No. 1121
 SHEET 15 OF 62

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	20	15	10	
395				B ₃	C	5													
		27		J ₂	C	52	4						62					13	
				J ₁	W	19	1						84						
400				B ₄	W	54	2												
				J ₄	W	15	1												
				J ₁	B	87	2	SLKS @ 409											
				B ₃	C		3						116						
405		19		B ₂	C	74	4	Balding @ 66°					120				10		
				J ₄	W	17	1												
410																			
				B ₁	B	75	4												
			37	B ₃	C		4						64						
				J ₁	C	51	1						72				11		
415				J ₄	W	20	2												
				F ₁	C	72	2	SLKS @ 419											
				J ₃	C	53	1												

LOGGED BY: gth
 DATE: Mar 04
 PROJECT No. _____

Golder Associates

Hole No. _____
 SHEET _____ OF 62

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY		PERMEABILITY	
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	0	10		5
420				J ₁	W	8	2	Belling @ 76°										
		176		B ₁	B	80	3						87					
				B ₃	C		2						108			10		
425																		
				B ₃	C		8				①							
		12"		J ₁	C	10	1					19						
		46"		J ₄	C	10	1					84			7			
430				B ₂	C	75	5				①							
				B ₄	C	74	3											
		3		B ₃	C		8				①	6			7			
435		42										42						
		19		B ₃	C		8				①	0			7			
440				B ₂	C	51	5											
				B ₄	W	45	1											
		2		J ₁	C	21	1				④	6			7			
		10		J ₂	W	19	1					30						
				J ₃	C													
445																		

∞ → 1st 10" is highly fractured
↓ To 447

LOGGED BY: W.K.
DATE: May 24/78
PROJECT No. _____

Golder Associates

Hole No. 1121
SHEET 17 OF 62

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
445							CONT from 435 1/2'												
450																			
455																			
460																			
465																			
470																			

LOGGED BY: VV
DATE: May 24/78
PROJECT No. _____

Golder Associates

Hole No. 1121
SHEET 18 OF 62

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5		
470				J ₁	C	90	2												
		2%		J ₁	S	87	1						25				15		
				J ₁	S	30	1	→ 468' → 467'					60						
								↓ from 467'											
				J ₁	W	28	3												
475				B ₂	C	42	2												
		1%		B ₁	B	72	7												
				J ₁	B	90	4						73				20		
				J ₄	B	14	1						108						
				B ₄	B	78	1												
480				J ₂	C	90	2												
				B ₁	B	75	4												
		1%		J ₁	W	19	5	→ Two faulting pattern same BAC but opposite orientation → caused 1' broken core											
485				J ₂	C	37	1						42				16		
				J ₄	W	23	6						72						
				J ₁	B	31	1												
		1%		B ₁	B	53	1						40				11		
490				J ₁	W	22	5						72						
				J ₄	W	21	3												
				J ₂	W	26	1												
				J ₂	W	29	1												
495		< 1%		B ₁	B	61	17						80				22		
								↓ TO 503'											

LOGGED BY:
DATE: May 24 1979
PROJECT No.

Golder Associates

Hole No. 1121
SHEET 19 OF 62

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
495				J ₁	W	24	Z											
				J ₄	W	22	17											
500			1%															
				J ₁	W	25	8	→ Broken core 505' to 510 1/2' caused by intersecting J ₁ (same BAC diff orient)										
505			1%	B ₁	B	61	9	→ Broken core 507' - 508' caused by J ₁ intersect B ₁										
				J ₄	W	22	2											
510				J ₁	W	11	6											
			4" / 60 ~ 5%	B ₁	S	52	1	→ AT 517'										
515				B ₁	C	52	4	→ intersection of B ₁ & J ₁ AT 517' - 518' caused broken core										
				J ₁	W	21	5	@ 518' J ₁ + J ₄ intersect										
			1%	J ₄	W	11	Z	↓ TO 527										

LOGGED BY: KK
DATE: May 25 1968
PROJECT No. _____

Golder Associates

Hole No. 11721
SHEET 20 OF 62

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
520				B ₁	B+S	56	g											
							↓ from 518' Slits at 522 → 523' (7 in all) @ 519 1/2' breccia core											
525							intersecting S, & J ₁ caused broken core at 526-527'											
				J ₁	W	16	1											
				B ₁	C	63	1											
530				J ₂	C	20	5											
				B ₁	B	14	4											
				J ₄	C	17	1											
535																		
				B ₁	S	72	4											
540																		
				J ₂	C	40	6											
				J ₃	C	60	6											
				B ₁	C	69	11											
				J ₁	W	11	6											
545																		

LOGGED BY: KK
DATE: May 25/78
PROJECT No. _____

Golder Associates

Hole No. 1121
SHEET 21 OF 62

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
545							↓ from 542'												
	1%																		
550	< 1%			J ₁	W	12	3												
				J ₄	W	12	2												
				B ₂	C	64	2												
				J ₃	C	90	3												
551 3/4				J ₁	S	33	1	→ 550 1/2'						21/57					
				B ₁	C	56	2												
	< 1%			B ₁	C	64	3												
				J ₁	C	90	2												
555				J ₂	C	-	2							46/63				11	
				J ₁	C	22	2												
				B ₂	C	56	4												
				B ₁	C	58	1												
560	1%			B ₁	B	66	2											> 20	
				B ₂	C	72	2												
				B ₄	C	74	1							3/53					
				B ₂	C	-	0	→ Broken CORE contains large number of B ₂ pieces											
565				B ₁	C	72	6												
	< 1%			J ₄	W	08	4												
				J ₂	W	11	1							54/84				15	
				J ₁	W	11	3												
				J ₁	C	12	1												
								↓ TO 571 1/2'											

LOGGED BY: KK

DATE: May 25/78

PROJECT No. _____

Golder Associates

Hole No. 1121

SHEET 22 OF 62

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COURSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
570							↓ from 564 1/2												
575		1%		B ₁	W	76	2												
				B ₄	W	78	3												
				B ₂	C	75	8								36				
					B										65				
580				B ₁	C	72	3	SLKS @ 579.2'											
				B ₄	W	75	7	Bedding @ 72°											
				J ₂	C	13	1												
				B ₃	C		7												
				J ₁	W	53	1												
585				J ₄	W	55	3												
				J ₇	C		2												
				F ₁	W	42	4	with SLKS @ 589'											
					B														
590				J ₄	W	43	7	Bedding @ 55°											
				J ₃	C		3												
				J ₈	W	16	2												
				B ₂	C	56	2												
				J ₁	C	19	2												
595				J ₂	C	38	4	↓ To 597'											

LOGGED BY: KK
DATE: May 25/78
PROJECT No. _____

Golder Associates

Hole No. 1121
SHEET 22 OF 62

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5		
595				B ₁	S	64	Broken core caused by intersecting J ₁ & J ₂	[Hatched]	3 1/2	[Hatched]	[Hatched]	0	42	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	
		2/42	B ₂	C	22														
				J ₁	W	21	J ₂ W - ∞	[Hatched]	3 1/2	[Hatched]	[Hatched]	0	30	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]
		1/0	B ₁	S	58	Broken core													
600				B ₂	C	64		[Hatched]	3 1/2	[Hatched]	[Hatched]	0	30	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]
			J ₁	W	23														
				J ₁₁	S	43	→ 602'	[Hatched]	3 1/2	[Hatched]	[Hatched]	0	54	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]
			B ₁	C	62														
				J ₁	S	40	Bedding @ 62°	[Hatched]	3 1/2	[Hatched]	[Hatched]	0	54	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]
			J ₁₄	S	24	→ 602 1/2'	J ₂ W - ∞												
605				J ₁	S	53	→ 604 - 605'	[Hatched]	3 1/2	[Hatched]	[Hatched]	0	120	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]
			J ₁	S	42	→ 605 → 606 1/2'													
				J ₁₄	N	45	NOTE: intersecting joints throughout interval; angle of intersection ≈ 50° (J ₁ , J ₂ , J ₁₄)	[Hatched]	3 1/2	[Hatched]	[Hatched]	0	120	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]
		6" ~ 5%	J ₁	C	54	→ 608 - 609'													
610				B ₁	S	62	Bedding @ 62°	[Hatched]	3 1/2	[Hatched]	[Hatched]	0	120	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]
		1/20	J ₁	C	17														
				J ₂	C	18		[Hatched]	3 1/2	[Hatched]	[Hatched]	0	120	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]
			J ₁₄	C	29														
				B ₁	C	61		[Hatched]	3 1/2	[Hatched]	[Hatched]	0	120	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]
			B ₁	S	58	→ 612 - 614'													
				J ₁	W	24		[Hatched]	3 1/2	[Hatched]	[Hatched]	0	120	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]
			J ₁	W	46														
615				J ₂	W	22		[Hatched]	3 1/2	[Hatched]	[Hatched]	0	120	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]
		1/6	J ₁₄	W	42														
				J ₁₄	C	42		[Hatched]	3 1/2	[Hatched]	[Hatched]	0	120	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]
			J ₁₄	C	42														
620				J ₃	C	-	→ broken core	[Hatched]	3 1/2	[Hatched]	[Hatched]	0	120	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]	[Hatched]

LOGGED BY: KK
DATE: Nov 26
PROJECT No. _____

Golder Associates

Hole No. 1121
SHEET 24 OF 62

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
620				J ₁	S	42	3	→ 622 - 622 1/2'											
		18		J ₁	S	17	3	→ 624 1/2'											
		54		J ₃	C	20	1				(3)		16	54		720			
				J ₄	C	25	1												
				J ₃	C	-	∞	→ broken core											
625				J ₁	S	30	3												
	6"			J ₁	S	07	8	→ 625 - 625 1/2'											
	54			J ₁	B	40	1						2	54		20			
				J ₁	C	24	2	→ 629 1/2'											
				B ₁	S	46	2	→ 629'											
				J ₄	C	42	2												
630				B ₁	B	63	5												
	8"			J ₁	S	26	1	629 - 629 1/2'											
	72			J ₁	S	35	2		Bedding @ 63° BAC					119	72		720		
				J ₁	B	-	-												
				B ₁	B	53	2	∞ - in coal and mudstone											
				B ₂	B	58	2	Parting											
635				J ₁	E	73	1	631 1/2 - 632'											
				J ₁	W	24	6												
				J ₁	W	49	5												
				J ₂	C	80	2												
				J ₃	W	39	2												
640				J ₄	W	26	4												
				J ₄	W	46	3												
				J ₃	W	-	2												
				J ₂	C	78	2												
644		41%		J ₁	B	36	1	↓ to 650 1/2'											

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DATE: May 26
PROJECT No. _____

Golder Associates

Hole No. 121
SHEET 25 OF 62

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	0	5		
645				J ₁	S	36	1 → 644' ↓ from 644'												
				J ₁	C	52	} intersect at 645½' ∠ 95°												
				B ₁	C	52													
				J ₁	C	52		1 } ∠ 96° 646½'											
				B ₁	C	52													
650				J ₁	W	32	2												
				B ₂	W	67	2												
				B ₁	B	52	3 Bedding @ 74°												
				B ₁	B	48	1 } @ 651' ∠ 97°												
				J ₁	C	26													
				J ₁	B	64	2 → 651½' + 655'												
655				B ₁	B	74													
				J ₁	W	37	2												
				J ₁	S	56	3 → 652'												
				B ₁	SB	44	3 → 665'-666'												
				J ₁	S	46	17 } 664½' ∠ 81°												
660				J ₁	S	56													
				R ₁	C	63	3												
				J ₁	C	18	1												
				J ₁	C	90	1 @ 662 breccia coal												
				J ₁	W	16	1												
665				J ₁	S	40	1 → 662'												
				B ₂	B	42	2												
				J ₁	C	31	3 Bedding @ 68°												
				J ₁	W	14	2												
				J ₁	W	34	6												
670				J ₁	C	80	1												

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Golder Associates

Hole No. 1121
SHEET 26 OF 62

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY				PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	10	15	10	5	
670		< 1%		B ₁	SB	64	1 → 671												
				J ₁	w	14	3 → intersecting along bedding												
675		2%		J ₁	W	13	1 Bedding @ 66° with												
				J ₁	W	6	1 JOINTS (J ₁ @ 58°) @ an												
				J ₁	CSE	56	4 angle of 76°												
				B ₁	C	66	2												
				J ₄	W	22	5												
680				J ₄	W	02	2	Bedding @ 54°											
			1%	J ₁	C	24	1												
				B ₂	C	52	10												
				B ₃	C		2												
685																			
								CALCITE INFILLING IN BRECCIA ZONE											
				B ₁	B	58	1	Bedding @ 57°											
690		1%		B ₂	C	56	9												
				J ₄	W	2	1												
				J ₄	W	18	3												
				B ₄	W	60	2												
695																			

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Golder Associates

Hole No. 1121
SHEET 21 OF 62

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY				PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	10	5	5	10	
695				B ₂	C	58	5 Bedding @ 58°													
			< 10%	J ₄	W	0	1													
				J ₄	W	21	5													
				B ₄	W	51	1													
700				B ₃	C		3													
				B ₂	C	58	4													
			< 12%	B ₄	W	55	2													
705				J ₄	W	20	2													
				B ₂	C	53	12													
				B ₄	W	54	1													
710			12/111	J ₄	W	22	14													
				J ₁	W	21	2													
				B ₃	C		3													
715																				
				B ₁	S	52	3													
				B ₂	S	51	5													
			< 11%	J ₁	W	32	5													
				B ₁	S	52	4													
720																				

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@ 1101°

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Hole No. 1121
SHEET 28 OF 62

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY	PERMEABILITY
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25		
720				B ₁	S	32	6-722 ¹ / ₂ -724 ↓ from 716.5'									
			1%	J ₄	W	02	Z									
				J ₄	W	31	S									
725				B ₁	S	48	12 → 724 - 728'									
				J ₁	C	42	1# Bedding @ 48°									
			1 1/8%	J ₁	W	33	1# J ₁ intersecting B ₁ @ 722'									
				B ₁	S	48	2 → 727-729' ^ 84°									
				J ₄	W	22	6 # J ₁ intersecting B ₁ @ 725' ^ 30°									
730				B ₁	S	46	6 → 729 ¹ / ₂ → 730'									
			1/8%	J ₄	W	36	12									
				J ₁	W	14	2									
735				B ₁	S	46	4 → 730-736' → Brecc caused by intersection of J ₁ & J ₂ & B ₁									
				J ₄	W	-	∞ J ₁ distal @ 44° J ₁ normal									
				J ₂	W	-	∞ + diff to count									
740				B ₁	S	46	5 736 → 740 ¹ / ₂									
			1%	J ₂	W	-	∞ intersection of B ₁ & J ₂ → Breccia									
745				B ₁	S	44	8 bedding @ 44°									
			1/5%	J ₂	W	36	4									
				J ₁	W	40	3 J ₁ & B ₁ intsect at 97°									
				J ₄	W	40	4									
745																

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Golder Associates

Hole No. 1121
SHEET 25 OF 62

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION						75	50	25	15	10	5	
745							Bedding @ 410' ↓ from 740'					37 71						
750				J ₁	C	29	3											
				J ₁	W	21	2											
				J ₃	C	06	3					34						
				B ₁	C	52	4					34						
				J ₄	W	06	2											
				J ₁	S	19	2 → @ 752'											
755				J ₁	W	36	1 → @ 752'											
				J ₁	W	39	2											
				J ₁	S	28	1 @ 760'											
				B ₁	C	57	9											
				J ₁	C	45	1					66						
				J ₁	W	32	1 > intersecting at 754'					9						
760				J ₂	C	45	1					34						
				J ₁	S	20	1 @ 761'											
				B ₁	S	64	4 @ 762 1/2'											
				J ₁	S	25	3 @ 763' to 766 1/2'											
				J ₂	C	30	2 intersecting J ₁ at 764 and 764 1/2'					54						
				J ₃	C	—	0											
				J ₁	B	42	0 > intersecting at 767'											
				J ₂	C	45	1					17						
				J ₄	C	25	2					54						
				J ₂	C	0	1											

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Golder Associates

Hole No. 1121
SHEET 30 OF 62

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY	PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25		
710				J ₃	C	-	0 → breccia core (coal)						15/21		>20		
				J ₁	S	19	3 @ 773'										
	5%			J ₁	C	87									>20		
				J ₁	C	32											
				J ₃	C	-	8										
775	5%			J ₃	C	-	0								>20		
	3/6	15/6					Broken core - coal										
				J ₁	C	19											
780	2%			J ₁	C	32	3								>20		
				J ₃	C	-	20										
				B ₁	C	58	3										
				J ₁	C	30											
785	2%			B ₂	C	15	20										
				B ₁	C	75	4										
	1/4			J ₃	C	-	0								>20		
790	25%			B ₁	S	62	2										
							NO RECOVERY										
							THE TUBE										
							CORE										
							FELL OUT OF										
							OF										
795				J ₂	W	04	Z										
							↓ TO 795										

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DATE: May 30

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Golder Associates

Hole No. 1121

SHEET 31 OF 62

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
795	<	1%		J ₂ W 27 J ₂ C 75 J ₂ W 50 J ₁ W 0	2 8 1 2		↓ from 794 Intersection causing broken core					5 48						
800	<	1%		J ₂ U 42 B ₁ S 55 B ₁ S 52 J ₃ W 10 B ₁ S 50 B ₁ B 48 B ₂ B 65 S ₂ C 78	3 6 1 2 8 1 1 1		798 to 800' } 2 intersect @ 795' 8 at 803' at 800'					12 72		16				
805	<	1 1/8		J ₁ C 0 B ₁ S 45 B ₂ C 55 B ₃ C 35 S ₂ B 65	1 2 1 2 1		804 - 804 1/2' bedding @ 65°					11 36		7				
810	<	1 1/8		B ₃ C 68 J ₃ U 75 J ₃ C 42 B ₁ C 66 J ₁ B 38 B ₄ C 62 J ₄ W 40 J ₁ S 40 J ₁ S 62 J ₂ C 80 J ₁ C 48	1 1 2 5 1 2 2 1 1 3 2		@ 812' @ 811'					39 36		20				
815				J ₁ S 30 B ₁ S 52 J ₁ S 62 J ₃ W 0 J ₁ W 21	1 1 1 1 1		@ 816' @ 817' - 818 1/2'					10 6		6				
820							broken core caused by intersecting B ₁ + J ₁											

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Golder Associates

Hole No. 1121
SHEET 32 OF 62

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
820				J ₁	W	13	1 # Bedding @ 50'												
				J ₁	W	42													
				B ₁	B+S	50	1 @ 825'												
				B ₁	B+S	50	1 @ 822'												
				J ₃	C	90	1												
825																			
826'10"																			
				J ₃	<	23	1												
				J ₁	S	46	1 @ 827'												
				J ₁	W	50	3] intersect @ 827 1/2'												
830				J ₂	W	30	1												
				B ₁	S	50	1 @ 828'												
				J ₁	S	42	1 @ 828 1/2'												
				J ₁	W	30	2	B ₃ C 62 1											
				B ₂	C	85	1	B ₁ W 60 3											
				B ₂	C	60	1	J ₁ W 12 3											
				B ₁	S	50	1 @ 831'												
835								@ 835 SIKK											
				B ₁	B	42	3												
				J ₁	S	20	1 836'												
				J ₁	S	20	4 @ 835 - 837 1/2'												
				J ₃	C	90	1												
				J ₂	C	80	1												
840																			
				J ₂	C	80	1												
				J ₁	S	25	1 843'												
				B ₂	C	70	2												
845																			

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Golder Associates

Hole No. 1121
SHEET 33 OF 62

117P
01/17

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
845				J ₁	S	30	1 @ 845 ↓ from 842												
				J ₁	S	30	1 @ 847												
				B ₂	C	70	2												
				J ₂	W	40	3												
850				J ₄	C	23	1												
				B ₂	C	60	3												
				J ₃	C	90	1												
				J ₁	S	30	3 @ 852'												
				J ₄	W	32	1												
				J ₂	W	30	7												
855				J ₂	W	22	2												
				J ₁	S	41	1 @ 857'												
				B ₁	S	55	3 857' intersecting												
				J ₁	W	40	2												
				J ₁	W	40	2 @ 859'												
				J ₁	S	58	1												
860				J ₁	W	30	1												
				J ₁	Slu	25	@ 860'												
				B ₁	B	50	3												
				J ₁	W	70	2												
				J ₃	C	80	3												
865				J ₁	S	20	@ 866'												
				J ₁	W	20	3												
				J ₁	W	45	2												
				J ₃	C	30	1												

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Golder Associates

Hole No. 1121
 SHEET 34 OF 62

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
870				J ₁	W	33	4											
		1%		J ₁	C	24	2											
				J ₁	S	40	1 @ 872'						15/60		(12)			
				B ₄	W	49	1											
				J ₃	W	-	4											
875				B ₄	W	63	1											
		1%		J ₁	Q	70	→ silica crystals → soln migrates up fault zone @ 876'						14/54		(12)			
				J ₁	S	50												
				J ₁	W	40	3											
				J ₃	W	15												
				J ₁	W	34	3	J ₁ C 24 2										
880				J ₁	W	40	1											
		1%		B ₂	C	7	8											
				J ₃	C	40	3						19/87		(15)			
				J ₂	K	25	1											
				J ₂	C	40	3											
885				B ₃	C	80	3											
				B ₄	W	70	1 @ 883'											
				J ₃	S	15												
890		22/75		B ₁	B	70	2	Bedding @ 70°										
				J ₂	C	68	6											
				J ₃	W	90	3											
				B ₂	C	60	2											
				J ₂	C	20	1											
				B ₄	W	50	3											
895		5%		J ₄	W	45	1											
				B ₂	C	4	1	↓ TO 897										

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Golder Associates

Hole No. 1121
SHEET 35 OF 62

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
895																			
900																			
905																			
910																			
915																			
920																			

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Golder Associates

Hole No. 1121
SHEET 36 OF 62

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
920				J ₄ C 44														
			12/42	J ₃ C 82			@ 423'											
				J ₃ S 34			→ fractured core (coal)											
				J ₃ C 1														
925			4%	J ₃ W 23			2 Copp. orientation											
				B S 47			@ 928' (J ₃ + B ₁ intersect)											
				B ₁ W 45			Bedding @ 55°											
				J ₁ W 47			(variable)											
				B ₂ B 56														
				J ₂ C 1														
930			1%	B ₂ W 57			bedding @											
				B ₁ B 47			44-57° (variable)											
				J ₁ S 09			@ 931											
				B ₁ S 42			@ 923											
				J ₃ C 30			B ₁ B 36 2											
				J ₃ C 33			J ₃ W - 3											
				B ₁ C 32			@ 934'											
				J ₄ C 47														
935			2%	B ₁ W 44			bedding @ 44°											
				B ₁ C 52														
				J ₁ W 18														
				J ₂ C 53														
				J ₄ C 52														
				J ₄ W 27														
				J ₄ W 57														
940				B ₁ B 49			bedding @ 49°											
				J ₃ C 30														
			1%	J ₃ W 32			broken core caused											
				J ₄ C 40			by intersection											
				J ₄ W 60			of B ₁ + J ₃											
				J ₄ W 40														
945				J ₄ W 48														

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Golder Associates

Hole No. 1121
SHEET 37 OF 62

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY	PERMEABILITY	
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25			
545							↓ from 94c										
			< 1%														
950				J ₁ C 51	4	} bedding @ 59° intersections resulting in broken core											
				J ₁ C 31	8												
				J ₄ W 28	2												
				J ₂ W 28	3												
				J ₃ C 71	2												
				J ₁ W -	2	} broken core 952½-953											
				B ₁ C +	1												
				J ₁ S 37	1		@ 953½										
955			2%	J ₁ W 34	3												
				J ₃ C 0	3												
				B ₁ W 32	3												
				B ₁ B 80	1												
				B ₁ W 42	2												
				B ₁ B 43	5												
				J ₁ W 34	5												
960			1%	J ₂ C 28	2												
				J ₃ C -	1												
				J ₃ C 90	1												
965			3' 4½'	J ₃ C -	∞	brecc coal											
970			< 1%	B ₁ W 61	10												
				J ₁ W 42	2												
				J ₄ W 62	4												
				J ₂ C 78	2												
				J ₃ C 90	1												

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Golder Associates

Hole No. 1121
SHEET 38 OF 62

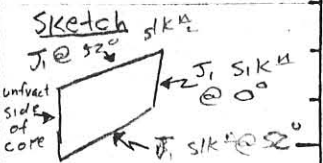
DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY	PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25		
970																	
		12%															
975		2%		J4	W	74	7	[Shaded area]	[Hatched area]	[Hatched area]	[Hatched area]	24 78	[Hatched area]	[Hatched area]	[Hatched area]	[Hatched area]	
			B1	C	41	20	Bedding inclination @ 41°										
			J1	C	∞	∞											
			J3	C	22	3											
980		2%		J2	C	52	6	[Shaded area]	[Hatched area]	[Hatched area]	[Hatched area]	8 78	[Hatched area]	[Hatched area]	[Hatched area]	[Hatched area]	
			J4	W	74	3	∞ (Breccia)										
			J1	C	∞	∞											
			J3	C		5											
985		1%		J2	C	52	8	[Shaded area]	[Hatched area]	[Hatched area]	[Hatched area]	0 40	[Hatched area]	[Hatched area]	[Hatched area]	[Hatched area]	
			J1	C	12	1	J1 @ 7.4° to J2										
			J4	W	52	2											
			J3	C		8											
990		1%		J1	W	56	4	[Shaded area]	[Hatched area]	[Hatched area]	[Hatched area]	0	[Hatched area]	[Hatched area]	[Hatched area]	[Hatched area]	
			J1	C	44	3	J4 C 39 2 } merged J4 C 74 2 } @ 114°										
			J2	W	37	2											
			J1	C	25	2											
			B1	B	59	3											
993 1/2		50/70 = 62%		J3	C	-	∞	[Shaded area]	[Hatched area]	[Hatched area]	[Hatched area]	0	[Hatched area]	[Hatched area]	[Hatched area]	[Hatched area]	
995																	

LOGGED BY: HH
DATE: May 31
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Golder Associates

Hole No. 1121
SHEET 39 OF 62

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
995							Brecc coal											
1000							@ 1000' J ₁ S 11 @ 1000'											
1005							J ₃ C - ∞											
1005 1/2							@ 1001' 1 @ 1002' @ 1001'											
1010							B ₁ @ 132 to J ₃											
1010							J ₁ S 17 @ 1011											
1015							* intersects B ₁ @ 82°											
1015							Bedding @ 34°											
1020							B ₂ W 34 1											



LOGGED BY: KK
 DATE: JUNE 2
 PROJECT No. _____

Golder Associates

Hole No. 1121
 SHEET 40 OF 62

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION 75 50 25			NATURAL FRACTURE FREQUENCY 15 10 5			PERMEABILITY
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
1020				B ₁	S	37	2 1022' J ₁ S 47 = 1025											
		12/51		B ₁	C	32	2 @ 38° J ₁ S 22 = 1023											
				J ₁	WS	55	J ₁ @ 1021' J ₂ @ 90° 2											
				B ₁	WS	34	J ₁ @ 1024 int @ 124° J ₂ W 38 =											
				J ₁	WS	21												
1025				J ₁	W	57	7											
				J ₁	S	62	1 @ 1029'											
				J ₁	S	75	1 @ 1023'											
		2/0		B ₁	S	44	1 @ 1024 1/2					21/84						
				J ₂	W	0	4											
				J ₂	W	86	4											
1030				J ₁	W	51	2 } intersecting resulting											
				B ₁	B	38	3 } in broken core											
				B ₁	BS	32	1 "											
				J ₁	C	52	5											
1035		1/0		J ₁	W	62	2											
				J ₂	C	90	1					45/60						
				J ₁	W	66	3											
				J ₁	W	51	4											
				J ₁	C	20	2					35/60						
1040		1/0		J ₂	C	90	1											
				J ₂	C	40	1											
				J ₁	SE	52	1											
				J ₁	SE	50	1											
				J ₄	W	56	5											
				J ₁	W	53	4											
				J ₂	C	90	1											
				J ₂	C	92	1											
1045				J ₂	W	32	1											

LOGGED BY: KK
DATE: June 2
PROJECT No. _____

Golder Associates

Hole No. 1121
SHEET 41 OF 62

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CORUSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
1045																			
1050			1%	J ₂ J ₁ J ₄ J ₂ J ₁	W W W W W	68 72 70 70 1	2 4+z 3 4 2								22 60		17		
1055			1%	B ₂ J ₄ B ₁ B ₁	W W W S	37 55 39 34	2 6 5 1 @ 1057'								37 60		14		
1060			1%	B ₁ J ₄ J ₃ J ₁ J ₂	W W C S W	37 53 90 27 90	6 3 1 1 @ 1059' 4								7 60		15		
1065			1%	J ₂ B ₁ B ₁ J ₃ B ₃ J ₁	W S W C W W	70 32 42 90 42 50	1 1 1 1 @ 1062 1/2' 2	J ₄ W 22 2						41 60		7			
1070			2%	B ₁ J ₁ B ₄ J ₃	W W W W	34 30 32 1	4 } @ 1065' A 92° + } to 1072' 3 } 3 } 3 } ↓ TO 1072'							14 60					

LOGGED BY: KK
DATE: JUNE 2
PROJECT No. _____

Golder Associates

Hole No. 1121
SHEET 42 OF 62

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY				PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	20	15	10	5	
1070																			
		2%																	
1075				J1	W	46	6												
				B3	C		5												
		2%		J4	W	30	3												
				J1	S	50	1	← SLKS @ 1072.2'											
1080				J1	S	20	1	← SLKS @ 1083'											
		< 1%		J3	C		4	Bedding INCLINATION ~ 40'											
				J2	C	56	10	QUITE VARIABLE.											
				B4	W	41	2												
1085				J2	C	0	1												
		17%		J2	C	66	3												
				J2	C	52	3												
				B2	C	44	1												
1090				J3	C		∞												
		4%		J4	W	62	3												
				J2	C	83	4												
				B1	S	32	1												
				J2	C	64	8												
				B4	W	38	1												
1095																			

LOGGED BY: GH
 DATE: June 2/78
 PROJECT No. _____

Golder Associates

Hole No. 1121
 SHEET 43 OF 62

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 15 10 5			PERMEABILITY	
				TYPE	INFILLING	INCLINATION			4	3	2		15	10	5		
1095																	
1100		22		J2	ST	∞	Bedding inclination @ 38°										
			B1	B	37	3											
			J1	Φ	53	6											
			J2	W	47	5											
1105		< 12		J1	Φ	43	4										
			J2	C	46	3											
			J1	Φ	34	1											
			J4	W	70	2											
			B4	W	27	4											
1110		22		J3	C		5										
			J2	W	32	3	Bedding inclination @ 40°										
			J4	W	40	3											
			J1	S	28	2		← @ 1112' + 1113'									
1115		26		J4	W	65	5										
			J2	W	68	3											
			J3	C		4											
			B1	C	30	1											
			J4	W	38	6											
1120		41		J1	W	73	2										

LOGGED BY: KH
DATE: JUNE 2
PROJECT No. _____

Golder Associates

Hole No. 1121
SHEET 44 OF 62

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5		
1120				B ₁	S	31	3 @ 1119 1/2 intersects J ₁ at 72°													
		1/0		J ₁	W	40	1 @ 1119							8/36						
				J ₁	W	39	3 @ 1120 J ₄ W 56 5													
1125		2/0		J ₁	W	44	4													
				J ₃	C	12	4							15/60						
				J ₁	W	34	1	broken core (intersection)												
				J ₁	W	-	3													
1130		2/0		B ₁	S	32	2 @ 1131 bedding @ 42°													
				J ₁	W	47	2													
				J ₁	S	55	1 @ 1128							23/60						
				J ₁	S	31	1													
				B ₄	C	35	7	J ₃ C 90 1												
				B ₄	W	12	3													
1135		2/4 = 50%		B ₁	C	42	2							0/36						
				J ₁	W	50	3	intersect @ 1133 - 1135												
				J ₁	W	17	3													
				B ₁	S	42	5	1135 - 1138 1/2												
		2/0		J ₁	W	28	5	intersect @ 1137 93°						18/60						
				J ₄	W	51	2													
1140		2/0		B ₁	SB	42	13	int @ 1142 Bedding @ 42						3 1/2						
				J ₂	W	39	1	54°						24/60						
				J ₄	W	54	4													
				J ₃	W	-	2													

LOGGED BY: KK
DATE: JUNE 2
PROJECT No. _____

Golder Associates

Hole No. 1121
SHEET 45 OF 5

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5		
1145				B ₁	SB	42	3												
				J ₁	W	59	3												
			1%	J ₄	W	16	1												
				J ₄	W	42	1												
				J ₂	C	62	1												
1150				B ₄	B	42	4												
				B ₁	S+B	48	20												
			1%	J ₁	S	50	3												
				J ₃	C	-	∞ - Brecc coal												
1155				B ₁	SB	54	14												
			2%	J ₂	C	21	2												
				J ₃	E	-	3												
				J ₁	S	16	1 @ 1157'												
				J ₁	W	"	2												
1160			1/4	J ₁	S	62	1 @ 1162'												
				B ₁	SB	32	10												
				J ₁	S	21	2 @ 104°												
				J ₁	S	62	1												
				B ₁	SB	45	4												
				J ₃	E	30	2												
1165			5'	J ₃	C	-	∞ - brecc coal												
				B ₁	S+B	62	∞ → brecc coal												
1170			1%																

LOGGED BY: KK
DATE: JUNE 7
PROJECT No. _____

Golder Associates

Hole No. 1121
SHEET 46 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	20	10	5	
1170	<12																		
1175	12 60			B ₂ J ₁ B ₃	B B B	70 28 ∞	∞ 3 ∞				①		4 60				>20		
1180	3 54			J ₃ J ₄ B ₂	B W B	∞ 90 68	∞ 1 ∞				①		0				>20		
1185	5 40			J ₃	B		∞				①		0				>20		
1190	1 36			J ₂ J ₃	B B	22 ∞	2 ∞				①		0				>20		
1195	8 48			J ₁ J ₃	B B	30 ∞	∞ ∞				①		0				>20		
1195	15 36			B ₂ J ₃	B B	72 ∞	∞ ∞				①		0				>20		

LOGGED BY: XH
DATE: June 2/78
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Golder Associates

Hole No. 1121
SHEET 47 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
1175				J1	B	20	∞												
	19			J3	B		∞												
	48																		
1200				J3	B		∞												
	11			J2	B	18	3												
	54			B2	B	43	∞												
1205				J3	B		∞												
	29			J2	B	72	∞												
				J3	B		∞												
	4			J2	B	70	∞												
1210																			
	58																		
				J3	B		∞												
	4			J2	C	90	4												
1215																			
	27																		
	2			J3	B		∞												
	33			J2	C	90	∞												
				J1	S	30	1												
	23			J2	B	69	2												
1220				J3	C	90	2												
	48																		

LOGGED BY: SH
DATE: JUNE 7
PROJECT No. _____

Golder Associates

Hole No. 1121
SHEET 48 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5		
1220				J3	C	∞														
1225	8/96			B2	B	72	8	Bedding @ 72° inclination						17/80	720					
				J3	C	∞														
				J4	C	90	1													
				J4	W	90	1													
1230	3/53			B2	B	75	6	Bedding @ 75°						38/53	12					
				J3	C	4														
				J4	W	90	1													
				J4	C	18	1													
1235	17/6			J4	W	0	1	Bedding inclination @ 47°						32/54						
				B4	W	47	2													
				J3	C	3														
				B1	A	46	5													SLKS @ 1238'
1240	14/72			B2	B	61	5	Bedding inclination @ 62°						40/72						
				J1	A	38	3													
				J3	C	3														
1245				J	W	36	7	Bedding @ 56° (Highly variable)												

LOGGED BY: HT
DATE: JUNE 2/78
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Golder Associates

Hole No. 1121
SHEET 49 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5		
1245				B ₁	SAB	74	2												
			C 1%	J ₁	AB	38	1												
				J ₂	W	31	2												
1250			0%	J ₂	W	07	4												
				J ₂	W	47	1												
				J ₁	C	12	1												
				B ₁	S	62	1												
1255			1%	B ₁	S	74	1												
				J ₂	A	22	1												
				J ₁	C	57	1												
				B ₁	B	68	10												
				J ₁	S	-	10												
				B ₁	C	57	6												
				B ₂	C	58	1												
1260			1%	J ₂	W	29	2												
				B ₁	SB	46	6												
			4/36	J ₄	W	-	1												
				B ₂	C	58	1												
1265				B ₃	C	58	1												
				B ₂	A	68	7												
				J ₁	W	33	4												
			1%	J ₃	C	90	1												
				B ₄	W	48	1												
1270				J ₄	C	30	1												

LOGGED BY: KK
DATE: JUNE 6
PROJECT No. _____

Golder Associates

Hole No. 1121
SHEET 50 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5		
1270				B ₁	A	58	6 > intersect @ 1270-1275												
				B ₁	W	61													
		1%		J ₁	W	28													
				J ₂	C	0													
1275				B ₂	C	68	Bedding @ 61 J ₂ C 32 2												
		1%		B ₁	S	61		@ 1276											
				J ₂	C	03													
				J ₁	C	15													
				J ₂	W	36													
1280				B ₁	A	61	@ 1281												
		1%		B ₁	S	52													
				J ₁	W			4											
				B ₁	S	53	@ 1284-1285												
1285				J ₂	C	64	Slikenides @ 1288' @ varying angles 25 to 40° → broken core ~ 5 planes												
		1%		J ₂	A	29													
				J ₂	W	0													
				J ₂	W	32													
				J ₂	W	47													
1290				J ₂	W	0	2+1	Intersecting B ₁ + J ₁ @ 1292 1/2' to 1293' producing broken core.											
		1%		B ₁	B	52	4+2												
				J ₁	W	16	2												
				B ₂	B	47	4												
				J ₃	C	90	1												
				J ₃	W	0	1												
1295			1%	J ₂	W	40	3*	↓ TO 1299											

LOGGED BY: KK
 DATE: JUNE 7
 PROJECT No. _____

Golder Associates

Hole No. 1121
 SHEET 51 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY					PERMEABILITY
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	1	5	10	5		
1295				B ₁	B	48	2 Bedding @ 39°					25								
		1%		B ₂	B	52						60								
				J ₃	C	50														
				J ₄	C	50	3 Intersects (J ₂ A 36°) @													
				J ₁	C	57	2													
				J ₂	C	44	1 * J ₂ intersects B ₁ @ 74°													
1300		4/60		B ₁	B C	45	6 @ 1299 → 1301'													
				B ₁	C	51	10													
				J ₃	C	-	∞ - brecc coal													
1305		10/60		B ₁	C	44	6													
				J ₃	C	-	∞ → brecc coal													
1310		12/45		B ₁	C	52	→ Shows bedding but crumbles when touched.													
				J ₃	C	-	∞ → brecc coal													
312 3/4				J ₃	C	-	∞ brecc coal													
1315		4/51																		
				B ₁	B	61	8 + 3 + 3													
				J ₂	W	17	2													
				J ₁	SW	10	1 @ 1322'													
1320				J ₃	C	1	1 TO 1322'													

LOGGED BY: KK
DATE: June 7
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Golder Associates

Hole No. 1121
SHEET 52 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
1320		10/60										0/50						
1325		10/60	B ₁	B	60	13						16/60						
1330		2/10	B ₁ J ₂	B C	60 90	19 3						24/60			>20			
1335		0	B ₁ B ₁ B ₂ J ₂ J ₁ J ₄	BS BS B B W C	68 52 72 33 19 73	2 @ 1333 7 @ 1334 → 1336 2 1 > intersect @ 34° 2 → intersect @ 107°	Bedding @ 61° @ 1337					37/60			15			
1340		1/6	J ₄ J ₂ B ₁ J ₂ B ₂	C C B C B	21 22 64 90 75	3 1 5 2 1						38/60			16			
1345		1/10	B ₁ J ₂ B ₁	A C B	71 62 67	11 1342 → 1345 1 2 1345-1347 ↓ TO 1347						33/60						

LOGGED BY: KIC
DATE: JUNE 8
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Golder Associates

Hole No. 1121
SHEET 55 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
1345				B ₂	B	82	2												
				J ₃	C	90	1												
				J ₃	C	16	1												
1350			1%	J ₂	W	10	1	→ extending from 1347 to 1350											
				B ₁	C	76	1	} broken core	J ₁	S	21	1							
				B ₁	W	51	5		B ₂	B	73	1							
				J ₁	W	39	1		J ₂	W	11	1							
				J ₂	W	38	1		B ₁	BS	64	2							
				B ₃	C	57	1		J ₂	C	72	2							
1355			1%	B ₁	B	53	9	@ 1353' 110°											
				J ₃	C	33	1	J ₃	C	-	2								
				J ₁	W	08	1	J ₂	W	34	2								
				J ₂	C	21	1												
				J ₂	W	16	1												
				B ₄	W	56	1												
1360			1%	J ₁	B	31	1	J ₁	W	08	1								
				J ₁	B	08	1	J ₂	W	44	1								
				J ₁	C	32	3	J ₂	C	20	1								
				B ₁	B	68	3												
				J ₂	C	37	1												
				J ₃	C	50	1												
1365			46/36	J ₁	B	36	2	J ₁	B	45	1								
				J ₁	B	10	2	J ₂	B	29	1								
				J ₁	B	16		J ₃	C	-	> 10								
1370			3 4/16	J ₁	B	51	4	J ₃	B	-	∞								
				B ₁	C	47	2												
				J ₂	B	22	1												
				J ₁	B	57	1												
				B ₂	B	54	1												
				J ₂	B	70	1												

LOGGED BY: KIC
DATE: JUNE 4
PROJECT No. _____

Golder Associates

Hole No. 1121
SHEET 54 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY		PERMEABILITY	
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10		5
1370	< 1%			B ₂	B	52	6	92°	J ₁ S 47 1 @ 1376									
				J ₃	C	—	8		J ₂ B 38 1									
				J ₄	C	26	1		J ₃ B → C — 8									
1375	< 1%			B ₂	B	37	6		1372 1/2 → 1376									
				B ₁	B	53	3		1376 → 1377 1/2									
				J ₁	B	65	1											
				J ₃	C	05	1											
				J ₄	W	67	1											
1380	< 1%			B ₂	B	68	3		J ₂ B - Z									
				J ₂	B	41	1											
				J ₂	B	32	1											
				J ₃	B	40	1											
				J ₃	B	80	1											
				J ₄	W	52	4											
1385	6/60			B ₂	B	71	1		J ₄ C 47 1									
				J ₃	C	90	2		J ₄ W 12 1									
				J ₁	W	10	2		130° @ 1386									
				J ₂	C	44	1											
				J ₂	C	32	1											
				J ₂	W	20	1											
1390	3/60			B ₁	C	63	5		1387 → 1390									
				B ₂	B	72	3											
				J ₁	B	38	1		@ 1392 J ₄ W 19 2									
				B ₁	B	58	5		J ₂ W 37 1									
				J ₁	W	10	1											
1395	5%			J ₂	C	12	1											
				J ₃	C	90	1											
				B ₁	B	52	4		↓ TO 1397									

LOGGED BY: KK
DATE: JUNE 1964
PROJECT No. _____

Golder Associates

Hole No. 1121
SHEET 25 OF _____

DEPTH	PERCENT CORE LOSS				FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY					PERMEABILITY
	25	50	75		TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	20	15	10	5		
1355					J ₂	B	0	1													
		5			J ₂	B	-	1													
					J ₁	W	52	2	Bedding inclination @ 38°												
					J ₃	C		8													
1400		5			J ₁	S	35	2													
		60			J ₄	W	84	2													
					B ₁	A	48	2													
					J ₃	B		∞													
					B ₂	B	46	4													
1405		12			J ₂	B	5	2													
		60																			
					J ₃	B		∞													
					J ₃	B		∞													
1410		36																			
		60																			
					J ₃	B		∞													
					J ₂	B	78	∞													
1415		30			J ₂	B	22	1													
		64																			
					J ₂	B	90	1													
1420		7			J ₂	B	72	∞													
		56																			

LOGGED BY: XH
DATE: JUNE 8/78
PROJECT No. _____

Golder Associates

Hole No. 1121
SHEET 56 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY				PERMEABILITY
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	20	15	10	5	
1420				J ₃	B		8					0							
1425		2	60	J ₁	S	20	2												
				J ₃	B		8												
1430		8	60	J ₂	B	90	1												
				B ₂	B	52	8												
				J ₃	B		8												
1435		20	60	J ₂	B	5	1												
				J ₃	B		8												
1440		22	60	J ₂	B	45	1												
				J ₂	B	52	4												
				J ₃	B		8												
1445		3	60	J ₃	B		8												

LOGGED BY: XH
DATE: JUNE 8/78
PROJECT No. _____

Golder Associates

Hole No. 1121
SHEET 57 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY	PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25		
1445	3	60							①			○		>20		
1450	4	60		J ₃	C	- ∞			①			○		>20		
1455	5	0		B ₁ J ₃	C	72 - ∞	10 → bedding joints preserved in coal		①			○		>20		
1460	5	0		J ₃	C	- ∞			①			○		>20		
	5	0		B ₁ J ₂	BS WS	76 16	>5 > intersecting → broken core		③			○		>20		
1465	10-15	0		J ₃	WBS	- ∞			③			○		>20		
1470	5-10	0		B ₁ J ₃	B CB	78 -	5 ∞					○		>20		

LOGGED BY: KK
DATE: JUNE 9
PROJECT No. _____

Golder Associates

Hole No. 1121
SHEET 58 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY	PERMEABILITY
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25		
1470																
1470 ¹²																
		5%														
				B ₁	B	72	14									
				J ₁	W	05	3									
				J ₁	B	43	2									
1475				J ₃	C	-	∞									
1475 ¹⁰																
		5-10%		B ₁	B	76	5									
				J ₂	BW	51	2									
				B ₄	B	76	2									
1480				J ₃	CB	-	∞									
		5%		B ₁	B	74	>4									
				J ₃	BC	-	∞									
1485		5%		J ₂	BW	22	1									
				B ₁	B	82	>15									
				B ₁	B	57	3									
				J ₃	C	-	∞									
1490		5%		J ₃	C	-	∞									
		5%		J ₃	C	-	∞									
1495																

Bedding @ 75°

Bedding Variable
57 - 82°

↓ TO 1496 1/2

LOGGED BY: SK
 DATE: JUNE 8
 PROJECT No. _____

Golder Associates

Hole No. 4021
 SHEET 59 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
1435																		
	5%																	
1500	8/51			J ₃	C	-	∞											
	2%			B ₂ J ₁ J ₁	B W B	63 39 03	2 3 2											
1505	2%			B ₁ J ₁ B ₂ J ₄ J ₁ J ₂	B C C C WB C	61 71 61 14 28 80	4 3 2 1-1 2 2											
1510	< 1%			B ₁	B	72-82	7											
1515	5%			J ₁ B ₁ J ₂ J ₁ J ₄	W B W C B C	19 82 0 37 36 18	1 4+1 1 1 3 7											
1520	< 1%			J ₂ J ₁ J ₁ B ₁	W B B B	23 52 66 82	5 1 1 4+3	J ₂ W 37 2 B ₁ B 69 2 B ₂ W 26 2 ↓ TO 1527										

LOGGED BY: KK
DATE: JUNE 5
PROJECT No. _____

Golder Associates

Hole No. 1121
SHEET 60 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION 75 50 25	NATURAL FRACTURE FREQUENCY 15 10 5	PERMEABILITY
				TYPE	INFILLING	INCLINATION			4	3	2			
1520	<1%			J ₃	C	-	<5					0/50	>20	
1525	5%			J ₂	W	21	3					5/60		
			B ₁	B	60	4	} intersecting giving broken core.							
			J ₁	C	0	2								
			J ₄	C	05	1								
			J ₃	C	-	<5								
1530	5%			B ₁	B	71	5					0		>20
			J ₁	W	04	1+2	} broken core							
			J ₂	B	36	2								
			J ₂	B	05	3								
			J ₃	C	-	∞								
1535	2%			B ₁	B	66	22					7/60		>20
			J ₁	B	13	4	} intersect at 115°							
			J ₁	W	07	3								
			J ₄	C	32	3+1								
			J ₄	C	53	-								
			J ₂	C	39	1								
1540	5%			B ₁	B	63	18					8/60		>20
			J ₂	C	12	1	} Bedding varies from 57 → 90°							
			B ₄	W	62	8								
			J ₃	B	90	2								
			J ₁	B	37	3								
1545	5%			B ₁	B	62	8					29/60		>20
			J ₁	C	11	1+1 (w)	} J ₃ C - >10							
			J ₂	C	10	1								
			B ₂	W	57	2								

LOGGED BY: KIK
DATE: JUNES
PROJECT No. _____

Golder Associates

Hole No. 1121
SHEET 61 OF 62

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
1545																		
		5%																
1550		2%		J ₁ W 41 J ₁ C 15 B ₁ B 70 J ₁ W 68 S ₄ W 0		3 2+3 2+3 5 1	> 89° @ 1550' and 1551-1522' (broken core)											
1555		2%		J ₁ W 68 J ₁ W 28 J ₃ C 90 J ₂ W 0 J ₂ C 42 J ₁ B 0		1 4 4 3 3 3	109° < 86°	J ₄ B 22 2 J ₃ B 5 - 4 B ₁ B 62 4 J ₁ B 32 2										
1560		< 1%		J ₂ W 31 J ₁ W 09 J ₄ W 11 J ₁ W 24 J ₂ W 62		3 3 4 2 1	> 96°											
		< 1%		B ₁ C 74 S ₂ W 26 S ₃ W -		2 2 2												
1565				B ₁ C 41 J ₂ C 72 J ₂ C 67 J ₃ C 90		1 1 1 1	> 105° < 62°	J ₁ W 05 1 J ₂ W 18 1 J ₃ C - 10 J ₄ W 67 6										
1578				J ₁ W 37 J ₂ W 17		1 1	12 2 + 3	J ₄ C 0 2										

LOGGED BY: KIC
DATE: JUNE 8
PROJECT No. _____

Golder Associates

Hole No. 121
SHEET 62 OF 62

322

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY		
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5
60																	
65					C		Highly powdered coal										
70																	
75																	
80																	
85																	

RH-1122

Highly powdered coal

COAL

coal sample #26251

LOGGED BY: N. B. O.
 DATE: Sept 13/78.
 PROJECT No. _____

Golder Associates

Hole No. 1122
 SHEET L OF 56

322

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5		
85							powderized coal													
90																				
95				B2	C	45	315° to B.													
				S1	W	25														
				S2	C	53														
100																				
105																				
110																				

sample #26252

sample #26253

LOGGED BY: N. Ball
 DATE: Sept 13/78
 PROJECT No. _____

Golder Associates

Hole No. 1122
 SHEET 2 OF 56

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY (frac./ft)			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
110																		
		60	60	J2	S	10	6	mostly broken core.					36	60	19	5		
			J4	W	15	1												
			B2	C	54	4												
			J1	C	40	1												
			J2	C	75	5												
115																		
		40	48	J2	S	35	4	170° to B.					30	48	24	4		
			J2	W	15	2												
			J2	C	53	7												
			J2	C	78	6												
120																		
		70	56	J2	S	30	4	mostly broken core.					18	36	25	3		
			B2	C	54	5												
			J1	C	40	2												
			J2	C	74	5												
125																		
		60	60	B2	S	55	8	270° to B					36	60	48	5		
			J2	C	35	5												
			J1	C	15	2												
130																		
								140° to B.					16	60	40	5		
			J1	W	20	2												
			J2	C	48	4												
			B2	C	60	3												
			J2	S	77	5												
135																		
		60	60	B2	S	60	5	00 to B					22	60	10	5		
			J2	S	82	7												
			J2	C	22													

LOGGED BY: N. Ball
DATE: Sept 13/78
PROJECT No. _____

Golder Associates

Hole No. 1122
SHEET 3 OF 56

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			Frac/ft. NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
135																			
140		12/41		J2	C	40	2	mostly broken core	[diagonal hatching]										
			B2	C	55	5													
			J2	C	12	1													
			J2	S	75	3													
145		60/60		J2	C	46	1	110° to B	[diagonal hatching]										
			B2	S	68	7													
			J2	W	22	3													
			J2	W	10	1													
150		60/60		B9	S	67		240° to B	[diagonal hatching]										
			J2	C	55														
		30/30		J2	C	30	7	170° to B	[diagonal hatching]										
			J2	C	70	3													
			B9		55														
155				B9	C	30		120° to B	[diagonal hatching]										
			B2	C	40	1													
			J4	C	38	4													
			J1	C	38	4													
			B2	W	58	2													
			J2	C	32	1	170° to B												
		24/24						broken core	[diagonal hatching]										
160		36/36							[diagonal hatching]										

LOGGED BY: AL BARR

DATE: Sept 14/78

PROJECT No: _____

Golder Associates

Hole No. 1122

SHEET 1 OF 56

DEPTH	PERCENT CORE LOSS			TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
	25	50	75							4	3	2	75	50	25	15	10	5		
160				J2	C+B	23	1													
	36			J2	B	67	4													
	36			J2	C	82	2	190° to B.							17					
				B2		65									26					
	36			J2	C	35	3	120° to B irregular												
	36			J2	C+W	75	4								13					
				J4	C	60	1													
165				J2	B+S	73	5													
	36			J2	B+S	57	3													
	36			J1	W	48	1								10					
				J2	B	72	2													
				J1	C	40	4													
170				J2	S	27	2													
				J2	S	32	2	160° to B												
				J4	C	26	2	220° to B												
	60			B9		71														
	60			B2	B+S	70	4								15					
175				J2	S+B	30	10								60					
				J2	C	30	2													
				J2	S	60	2													
	60			B2	C	78	4								10					
180				J1	W	55	1								60					
				J2	W+C	8-10	3													
								numerous irregular calcite stringers												
								highly fractured gouge material to 183.5												
	60			J1	W	50														
				J2	C	65														
				B2	C	45									27					
185				B2	C	52									60					

LOGGED BY: N. Ball
 DATE: Sept 13/78
 PROJECT No. _____

Golder Associates

Hole No. 1122
 SHEET 5 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CORRECTION BROKEN CORE S	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILING	INCLINATION				4	3	2	75	50	25	15	10	5	
185		50		J1	W	50	2 180° to B												
		60		B2	B+S	50													
		43		J1	W	24	2 225° to B.												
		45		B2	B+S	55													
190				J1	W	34													
				J1	S	46													
				J2	W	40	1 170° to B.												
				B2	B	64													
				J2	C	45													
				J1	C	20	8 170° to B.												
195				B9	C	55													
				B2	C	65													
				J1	C	10	4 80° to B.												
				B9		63													
				B2	B+S	77													
200				J2	C	16	4 215° to B.												
				B2	B	70													
				B9		70													
205				J2	C	42	5												
				B9		67													
				J2	C	30	2 170° to B.												
				J2	C	31	3 150° to B.												
210				B2	W	60	3												

LOGGED BY: N. Ball
DATE: Sept 19/78
PROJECT No. _____

Golder Associates

Hole No. 1122
SHEET 6 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COLLIER BROWN CORE S	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
235		60	100																
240		60	60	B2	C B+S	65-75	mostly broken core 240-42: many irregular well healed fractures in a zone of plastic def'm.	B						60					
245		40	14	B2	C B	78 64	-irregular, discontinuous fracturing -some cross bedding in siltstone section												
250		60	60	B2	B	62	mostly broken core							90					sample #26254
255		63	14 01	B2 B9	B+S	64 61								0					sample #26255
260		51	20											0					sample #26256

LOGGED BY: N. Ball
 DATE: 2/27/73
 PROJECT No. _____

Golder Associates

Hole No. _____
 SHEET 8 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
260																			
265				J2	C	45-55	1	irregular fractures.											
				B2		59													
				J2	B+S	46	1	series of irregular fractures.											
270				J2	C	30	1												
								-much broken core.											
				B12	B	53		-occurs in upper mudstone portion.											
				B4	C	20	2	245° to B											
275				B1	C	30	1	180° to B.											
				B9		46	∞												
				J2	B+S	27		-in lower mudstone portion											
				B2	B+S	54	5												
								-mostly broken core.											
280				B2	B+S	50	3												
								irregular fractures.											
								-mostly broken core.											
285																			

LOGGED BY: N.D. W.
DATE: 5/20/78
PROJECT No. _____

Golder Associates

Hole No. 1122
SHEET 2 OF _____

DEPTH	PERCENT CORE LOSS			TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COY. BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABIL
	25	50	75							4	3	2	75	50	25	15	10	5	
185				J4	W	30	250° to B												
			30/26	B2	C	58													
				B2		59													
200			45/28	B9		55	00° to B												
				J2	B	45	270° to B												
				J4	W	13													
				B2	B ¹⁵	54													
295			60/50	B2	P ³²	60													
				B9		45-70													
				J2	W	26													
360			60/60	B4	W	72													
				B9		65-70													
							- soft sed. def'm (minor) (often long bedding planes)												
305			60/40	B2	C	77													
							- much irregular fracturing (J2-type)												
310			60/60	B2	C	67													
				J2	W	5													

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Golder Associates

Hole No. 1122
SHEET 10 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
310																			
		60																	
315		60		B2 J2	B+S Cor B	62 75-85	5 -- series of irregular, near-horizontal, fractures.												
320		60		B2 J2 T1 B9	B.S. C W	63 35 27 62	5 235° to B. B. 150° to B. - block mudstone containing small, non-oriented carbonaceous flakes.												
325		60		B2 J2 B9	B W or C	71 21-30 72	4 - various angles to B. - limited slumping.												
330		51		J1 B2 or J2 J1	W C W	34 71 24	2 - assoc. with irregular stringers 3 soft sed. def'm @ ~330'												
335		63		B9 B2 J1	B+S W	74 74 32	5 170° to B. more intense soft sed. def'm @ ~333-336'												

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 DATE: Sept 21/78
 PROJECT No. 1

Golder Associates

Hole No. 1122
 SHEET 11 OF

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE S	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
335																			
				B2 B9 J1 J2	C C C	63 29	2 4	170° to B											
340																			
				B2 J2 B9	C C	58 55	3	180° to B											
345																			
				J1 J2 B9	W	38- 45		B. generally ~ 180° to B.											
350																			
				B9 B2 J2 J2	B+S C W	56 55 30 28	6 1 2	180° to B. 190° to B.											
355																			
				B2 J2	B W	60- 61	6	130° to B (approx) -irregular calcite stringers											
360																			

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 DATE: Sept 22/78
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Golder Associates

Hole No. 1122
 SHEET 12 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE S	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5		
360																				
365			60	B2 J1	B W	62 31	5 5	240° to B												
								-well healed, calcite-filled fractures at ~363 (irregular)												
370			57 57	B2 J1	B+S W	63 28	3 1	~170° to B												
								-some slumping evident @ 369-371												
375			60	J2 B9 B2	W C	20 68	2 9	120° to B												
								-slumping evident												
380			60 60	B2 B9 J2	B W	65 64 20 40	2	160° to B 190° to B												
385			60	J2 B2 J2	W B or C W	5-10 69 30	2' 9 4	-healed calcite stringers -slump features throughout 145° to B												

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Hole No. 1122
SHEET 13 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
385																			
390																			
395																			
400																			
405																			
410																			

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Golder Associates

Hole No. 1122
 SHEET 14 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
410																			
415																			
420																			
425																			
430																			
435																			

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 DATE: Sept 26/78
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Hole No. 1122
 SHEET 15 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
435																			
440				J2	C	20	260° to P.												
				B9		69													
445							-powderized coal												
							-powderized coal												
450							-powderized coal												
							-powderized coal												
455							-powderized coal												
							-broken, carbonaceous, shaly mudstone	B											
460							-powderized coal												

Sample #26259

Sample #26260

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Golder Associates

Hole No. 1122
 SHEET 16 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CORUSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
460																			
465		60	60				- powdered coal											Sample #26260	
																		Sample #26261	
			13/12				- Carbonaceous, shaley mudstone	B											
470							- powdered coal											Sample #26262	
475			30				- broken, carbonaceous shaley mudstone - coal 476 → 476.8'	B										Sample #26263	
480			60			B2 B 60 J4 W 34 B9 60	210° to B												
							- much broken core												
485			60			J2 W 20 B2 B 60													
							- irregular calcite stringers												

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 DATE: Sept 28/73
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Golder Associates

Hole No. 1122
 SHEET 17 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE/BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
485																			
		60	60																
490		60	60	B2 J2 J4	C	64	4 180° to B												
				B9		64-70	- some cross bedding.												
495		60	60	J4 B2	W B	23 62	205° to B												
							- cross bedding + calcite stringers - mostly broken core.												
500		60	60	J4 B2 B9 J2	W C	25 63 62-70 35	180° to B												
505		60	60	B2 B9 J2	C	62 60-65 33	210° to B												
							- minor slumping.												
510		60	60	B2 J2 J4 J2 J4 B9	C C W	61 59 27 64	150° to B 170° to B												

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 DATE: Oct 2/78
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Golder Associates

Hole No. 1122
 SHEET 13 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5		
510																			
		62	60																
515							-broken core.	B										Sample #26264	
520				B2	B	55	uneven fracture surfaces. ~150° to B.												
				J2	C	35		3											
				B9		54-60													
525		48	43	J2	C	35	6 uneven surfaces. ~165° to B.												
				B9		50-60													
				B2	C	58	3												
				B2	B	44	1												
530		18	13	J2	C	24	8 ~150° to B.	B											
				J4		58-74													
				B9															
535		60	60	B2	B or C	55	3												
				J2	C	28	3 180° to B												
				J2	B	46	3												
				J2	B+S	20													

LOGGED BY: NB
 DATE: Oct 5/78
 PROJECT No: _____

Golder Associates

Hole No. 1122
 SHEET 19 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
535				J2	Cor W	32	6 205° to B												
		60	60	B9		45	∞ -cross bedding at lower end.												
540		48	48	B2	B	47	140° to B												
				J2	W	24													
				B2	C	65	7												
545		60	60				-broken core with many irregular drill induced (?) fractures. -abundant carbonaceous plant remains in mudstone												
550		48	48	J2 J4	Cor W	28	3 ~150° to B.												
				B9		58- 64													
				B2	B+S	50	-most fractures uneven -carbonaceous partings.												
555																			
560							-broken core -irregular carbonaceous, slickensided fractures												

Sample #26265

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Golder Associates

Hole No. 1122
 SHEET 20 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
560																			
		16			B2 B1	B	62	5											
		43			J2	C	38												
565					F1		38-40												
		48			J2	W	21												
		43			B9		65												
					J2	B+S	38												
570					J2	C _B	0-15	3											
		42			J4	W	60	3											
		42																	
					J2	B+S	40												
					B2 ^(?)	C	49												
575					B2	B	64												
		5A																	
		5A																	
					B4	B	52	5											
					J2	C	50	2											
					J2	B+S	22												
580					J2	B	34												
		30																	
		30																	
585					J2	C	38	5											

↑ sample #26266 ↓

LOGGED BY: NB
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Golder Associates

Hole No. 1122
SHEET 21 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
585				B4	B	69													
		5A	5A	B9		62													
				J2	C	33	180° to B.												
590		36	36	B2	B	50													
				J2	C	33	180° to B												
				J2	W	30	- soft sed. def. hi.												
				J2	W	31	60° to B.												
		48	48	J1	W	36	2 180° to B.												
595				B9		58-70	- broken core. - soft sed. def. m. - xtline calcite infilling common. - irregular calcite stringers												
		30	30	J2	C	37	3 ~ 140° to B.												
				B9		72													
				J2	W	10-12	3												
600		48	48	J2	W	28	2 165° to B												
				J2	W	15													
				B2	C	54													
605		60	60	B2	C	63													
				J4	C	37													
				J2	W	28	3 160° to B.												
				J4															
				B2	C	55	4												
610		60	60	J2	W	00													
				B2	B	60	5												
				J2	W	22-30	4 170° to B.												

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Hole No. 1122
SHEET 22 OF 24

DEPTH	PERCENT CORE LOSS			TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/POOR BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75							4	3	2	75	50	25	15	10	5	
610																			
615																			
620																			
625																			
630																			
635																			

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Golder Associates

Hole No. 1122
 SHEET 23 OF 23

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COBBLES/BROKEN CORE (%)	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5		
635																				
640							-coal interbedded w/carbonaceous mudstone.													
645																				
650																				
655																				
660																				

-coal interbedded w/carbonaceous mudstone.

72/72

B2 B+S 40-50 5

-mostly broken core.

1/2

J2 C 55

140° to B

48/48

-mostly broken core.

65/60

B2 or J2 W+S 50-55 5
J2 B 40 2
J2 C 00

180° to above B2 or J2.

sample # 26267

sample # 26268

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Hole No. 1122
SHEET 24 OF 1

DEPTH	PERCENT CORE LOSS			TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CORALS/BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75							4	3	2	75	50	25	15	10	5	
660				B2	C	58													
			60/60	J2	C	50	3 180° to B												
				B2		13-60	micro stamping												
665			60/60	J2	W	72													
				J1	W	37	180° to B												
				J2	B+S	22													
				B1+															
				B2	B	45	7. carbonaceous partings												
				J2	B+S	57	5												
670							- much broken core												
			18/18				Coal												
				J2	C	00-10													
			42/42	J2	B+S	50	- much broken core and irregular fracturing												
675																			
			42/42	B2	B+S	55-60													
				B4	cor B	55-60	- irregular calcite-filled fractures												
680				B2	B	45													
			36/36				- broken core and irregular fractures - slickensides quite common												
				B2	B	60	5												
				J2	B+S	25	3												
685				J2	C	18													

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Golder Associates

Hole No. 1122
SHEET 25 OF

DEPTH	PERCENT CORE LOSS			TYPE			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75		INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
685				J2	B+S	35	2												
				J2	C	46													
				B9		73													
690		48	48																
				B2	C	59													
				B2	S	65													
		48	43																
				B2 or J2	C	70													
695		30	30																
				J2	C	45													
				B9		13													
		54	EA	J2	C	48													
700																			
				J2	B+S	45													
				J2	W	46													
				B2 or J2	B	55													
				J1	W	8+10													
				J2	C	65													
				J1	W	25	5												
		60	60	J2	C	73	3												
710																			

37
8-23-78
0.710
62

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Golder Associates

Hole No. 1122
SHEET 26 OF 1

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BREGGIA CORRECTION BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
710																			
		60	0																
715		60	60	J1	W	22	1	265° to B.											
				B9		26													
				J2	C	70	2	165° to B.											
				J2	C	71-78	6												
720		60	60	J2	C	51													
				J2	S	27													
				J2	C	38													
				J1	B	28													
				J1	C	46	2	180° to B.											
				B9		35		-well-sorted, calcite-filled irregular fractures @ 721'-722'											
				J2	B+S	43		00° to B.)											
				B9		32													
725		60	60	B2	W	30													
				J2	C	70		200° to B.											
				B2	B	27		carbonaceous parting.											
				B9		38-45		-cross bedding present.											
				B2	B	35													
				J2	W,B+S	67		very irregular plane.											
730		60	60	B2	B	45	3												
				B1	B	38	2												
				B2	B,S	41													
				J1	W	13		270° to B.											
				B2	W,B+S	33													
735		51	54					-much irregular fracturing -entirely broken section.											

3.15
20.700

15.
18/200
158

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Hole No. 1122
SHEET 27 OF 1

DEPTH	PERCENT CORE LOSS			TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75							4	3	2	75	50	25	15	10	5	
735																			
740		60	60	J1	W	46	~65° to B												
				J2	W	49													
				B9		40-50													
							-mostly broken core.												
745		8	60	J2	W	35	2 ~200° to B												
				J3	C	65-70	4												
							-mostly broken core at lower end of section -very abundant well-healed, irregular, calcite filled fractures: 743' → 745'												
750		60	60	B2	B	58	3												
				J2	W	47	2 very irregular plane												
							-mostly broken core												
755		60	60	B2	W	18	2												
				B2 or J2	C	40	4												
				J1	W	42	2 180° to												
760		66	66	B9	W	34													
				B1	W	35													
				J1	W	56	155° to B												
				J2	C	50													

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Hole No. 1122
 SHEET 28 OF 30

735
 740
 745
 750
 755
 760
 221 700.0
 66/66
 155° to B

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COCCED/BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
760																			
765				J2	B+S	22													
				J2	B+S	40	2												
770																			
775				BZ	B	40	3												
				B9		40-45													
				J2	B	31	2												
780				J2	C	45													
				J4	W	26	3												
				J2	W	53													
785				J2	W	50	6												
				J4	W	38													
				J2	C	65													
				J1	W	47													
				B1	W	40													
				B2	C	42													

32
 0 200
 35
 11500
 2300
 15000

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Hole No. 1122
 SHEET 29 OF 1

DEPTH	PERCENT CORE LOSS			TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CORROSION BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75							4	3	2	75	50	25	15	10	5	
785																			
		60					45° to B.												
		60		B1	W	43													
				J2	W	30													
				B9		40													
				B2	C	25													
				B9		30-40													
790		AB		J2	C	59	Z 140° to B												
		AB		J4	C	30	180° to B												
				J2	C	55	2 150° to B												
				B9		40-45													
795		60		J1	W	42	2 110° to B												
		60																	
				J2	W+S	52													
		48		J2	B,S	3-10	2 ~80° to B												
		48		J2	W	36	180° to B												
800				J2	W,S	14	~95° to B												
				B9		35-40													
				J2	C	43	2												
				J2	B	11													
805		AB					-much broken core.												
		48																	
				J2	C	43	145° to B.												
				B9		29													
				B1	W	37													
				J2	B+S	11	~180° to B.												
810																			

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Hole No. 1122
 SHEET 30 OF 30

722
 131303
 126
 13
 78

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
810				B9		22													
				J2	C	50	80° to E												
				J2	C	30													
				J2	C	60	60° to E												
815		42	18	J2	W	40													
							-mostly broken core and irregular fractures.												
				J1	B ₂ W	25	180° to B												
				B9		42													
820		18	45	J2	C	70													
				B9		41													
				J2	C	35	~180° to B												
				B2	B ₁₅	37													
				J2	C	64	B												
825		60	60	J2	C	39	~180° to B												
				B9		32													
				B2	B	45°													
				J2	B	50°	170° to E												
				J4	W	25°	90° to E												
830		60	60				Core badly broken; many irregular fractures.												
				B2	B	45°													
				J2	WB	80°	290° to E												
				J2	W	150°	305° to E												
835							core broken w/ some irregular fract.												

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 PROJECT NO. _____

Golder Associates

Hole No. 1122
 SHEET 31 OF 31

DEP	CORE LOSS			TYPE	INFILLING	INCLINATION	AND REMARKS	GRAPHIC LOG	BRECCIA/COOL BROKEN COR	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABIL
	25	50	75							4	3	2	75	50	25	15	10	5	
835				B ₂	B	50°													
		60		J ₂	SW	15°	~ 200' to B												
		60		J ₂	E	70°													
				J ₄	W	15°	Badly broken w/ irreg. fract.												
840				J ₂	SB	30°, 40°													
				J ₄	W	70°	irregular												
							Badly broken w/ irreg. fract.												
845				J ₂	B	20°, 0°													
				J ₄	W		Irreg.												
							Badly broken w/ irreg. fract.												
850				J ₂	CW	60°, 20°													
				J ₄	W	55°													
				J ₃	C		Badly broken w/ irreg. fract.												
		60		B ₂	B	40°													
		60		J ₂	C	0°													
855				J ₂	B	50°	~ 210' to B												
							Broken core at base of pack												
				B ₂	B	60°													
				J ₂	C	50°	0° to B												
860				J ₄	W	40°	Broken core w/ irreg. fract.												

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 DATE: Dec 5/78
 PROJECT No. _____

Golder Associates

Hole No. 1122
 SHEET 32 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABIL
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
860																			
				J ₂ W		35°	Broken core in irreg. fract.												
				J ₂ B/W		40°													
				J ₂ C			Irreg. fract., Badly Broken												
865				J ₂ C		70°	160° to B, Irreg. fractures, Broken core.												
				B ₂ B		55°													
				J ₂ B		0°													
870				J ₂ B		60°	Broken core, Irreg. fract.												
				J ₄ W		45°													
875				J ₂ B		60°	Irreg. fractures, Broken core.												
				J ₂ B		60°													
880				J ₂ C		60°, 70°	Irreg. fract., Broken core												
				J ₂ C		50°, 60°													
885				J ₄ W		30°													

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DATE: Dec 6, 1978

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Hole No. 1122
SHEET 33 OF

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA / GOUGE / BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
885				J ₂	B	60°													
890		45/48		J ₂	C	55°	0° Broken core w/ irreg. fract.												
895		52/54		J ₂	B	30°	Badly broken w/ irregular fractures												
				J ₂	B		Badly broken w/ irreg. fract.												
900		42/48		J ₂	C _B	60°, 80°	Badly broken w/ irreg. fractures.												
				J ₂	B	60°	Badly broken w/ irreg. fract.												
905				J ₂	B	45°, 90°	Badly broken w/ irreg. fractures												
910				J ₂	B	45°, 80°	Badly broken w/ irreg. fractures												

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 DATE: Dec 1st 78
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Golder Associates

Hole No. DDH 432
 SHEET 1 OF 1

DEPTH	PERCENT CORE LOSS			TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/BLOCKS BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABIL
	25	50	75							4	3	2	75	50	25	15	10	5	
910				J ₂	C	55°	Broken core w/ irreg. fractures	00											
				J ₂	B	5, 7°	Broken core w/ irreg. fractures	00											
915				J ₂	B	55°	Broken core w/ irreg. fract.	00											
				J ₂	B	45°	Broken core w/ irreg. fractures	00											
				J ₂	B, w	70°	Broken core w/ irreg. fractures	00											
920				J ₂	B, w	45°	Broken core w/ irreg. fractures	00											
				J ₂	B	60°, 70°, 20°, 80°, 45°	Broken core w/ irreg. fract.	00											
925				J ₂	B	0°, 70°, 20°	Broken core w/ irregular fractures.	00											
				J ₂	B	0°, 70°, 20°	Broken core w/ irregular fractures.	00											
930				J ₂	C, B, w	15, 20, 80°	Badly broken w/ irregular fractures	00											
				J ₂	B, C, w	~80°	Badly broken w/ irreg. fractures	00											
935				J ₂	B, C, w	~80°	Badly broken w/ irreg. fractures	00											

LOGGED BY: MRS
 DATE: DEC 7 1978
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Golder Associates

Hole No. DDH #283
 SHEET 35 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
835																			
		51/51		J ₂	B	40°, 70°, 60°	Abundant irregular fractures.												
940		42/42		J ₂	B	70°													
				J ₂	C, B, W	45°	180° to B												
				J ₂	B, W	60°	180° to B												
				J ₂	W	0-10°	Badly broken 942.5 - 943.5												
945		57/57		B ₂	B	50°													
				J ₂	B	60°	180° to B. Few irreg. fract.												
950				J ₂	C, W	60°	180° to B												
				J ₂	B	65°	Broken core 950 - 951.5 Irreg. fract.												
955		60/60		J ₂	C, B	40°													
				J ₂	C	30°	Irreg. fract.												
				J ₂	C	235°													
				J ₂	C	65°	Badly Broken core w/ irreg. fractures												
960		36/36		B ₂	B	90°													

LOGGED BY: MRS
 DATE: Dec. 8, 1978
 PROJECT No. _____

Goldier Associates

Hole No. DDH 1172
 SHEET 36 OF _____

DEPTH	PERCENT CORE LOSS			TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA / CORE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABIL
	25	50	75							4	3	2	75	50	25	15	10	5	
960				J ₂	B	40°	25° 55'												
				J ₂	W	10°													
965				J ₂	B		Broken core												
				J ₂	B	30°													
				J ₃	C	50°	Irreg. fract.												
970				J ₂	B		Broken core - Irreg. fract.												
975																			
980				J ₂	B	40°	Broken core Irreg. fractures												
				J ₂	B	30°													
				J ₂	B	70°	Broken core - Irregular fractures												
985				B ₂	B	40°													
				J ₂	B	38°	Irreg. fractures												

LOGGED BY: NRS.
DATE: Dec. 8/78
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Golder Associates

Hole No. DDH # 1123
SHEET 27 OF

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5		
985																				
				J ₂	B	60°	Broken Core - Irregular Fractures													
990				J ₂	B	60°	Broken Core													
		48/		J ₂	B	55°														
		48/		J ₂	B	75°														
				J ₂	B, W	70°														
995				J ₂	B	45°	Broken Core													
				J ₂	B, W	20, 60°	Broken Core - Irreg. fractures Rubble													
1000				J ₃	C															
				J ₂	B	45, 70°	Broken Core - Irregular fractures													
1005		48/		J ₂	W, C	55°, 45°														
				J ₂	B, W	80°														
		60/		J ₂	B	50°														
				J ₄	W	Irreg.														
1010				J ₄	W, F	50°, 0°														

LOGGED BY: MRS
 DATE: Dec. 13/78
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Golder Associates

Hole No. DDH 1122
 SHEET 28 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION	NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2		75	50	25	
1010																
1015				J ₂	B, W	65°	Broken Core									
				J ₄	W, F	55°, 70°	Irreg. Fract.									
1020		60/60		J ₂	B, W	50°, 10°, 10°, 80°	Broken Core 1019-1021'									
1025		60/60		J ₂	B, W	45°, 30°	Some irreg. fractures									
				J ₄	W	Irreg.										
1030		60/60		J ₂	B	58°, 70°, 55°, 65°	Some irreg. fractures limonite & calcite veins.									
				J ₄	W, F	50°										
1035		60/60		J ₂	B	75°, 55°	Broken core with irreg. fract.									
				J ₄	W	50°										

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Golder Associates

Hole No. DDH #1123
SHEET 39 OF _____

DEPTH	PERCENT CORE LOSS			TYPE	INFILLING	INCLINATION	DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75							4	3	2	75	50	25	15	10	5	
1035																			
		48		J ₂	B	45°	Few irreg. fractures.												
1040		48		J ₂ J ₄	B, W W, F	30°, 50° Irreg.	Broken core of irreg. fracture limb & cable veins.												
1045		48		J ₂ J ₂	B B, W	70° 10°	Broken core w/ irreg. fractures.												
1050		48		J ₂ J ₂	B B, W	80° 65°	Broken core, irreg. fract.												
1055		60		J ₂ J ₂	B, W B	80° 70°	Irreg. fract.												
1060		60		J ₂ J ₂ J ₂	B B, W C, W	55° 30° 50°	Broken core with irreg. fract. 140° & 225° to B.												

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Goldier Associates

Hole No. DDH 1122
 SHEET 40 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5		
1060																				
1065		48	48	B ₂	B	80°	0° to B													
			J ₂	B,W	60°															
			J ₄	W	20°															
1070		48	48	B ₂	B,W	60°	0°, 10° Broken core, irreg. fract.													
			J ₂	G,W	70°															
			J ₂	B,W	50°															
1075		24	24	J ₂	B,W	30°	10° Broken core, irreg. fract.													
			J ₂	B,W	55°															
			J ₄	W	Irreg.															
1080				J ₂	B	45°	Broken core with irregular fractures.													
			J ₄	W	Irreg.															
			J ₄	W,F	Irreg.															
1085		60	60	J ₂	B,W	45°	Broken core with irregular fractures.													
			J ₄	W,F	Irreg.															

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DATE: Dec 18, 78
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Golder Associates

Hole No. 004 # 422
SHEET 4 OF

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
1085																			
1090				J ₂	B		Coal - crumbled core.				1		0						
1095		60	60	J ₂	B		Coal - crumbled core				1		0						
1100		60	60	J ₂	B		Coal - crumbled core				1		0						
1105		54	54	J ₂	B		Coal - crumbled core	[Graphic Log]			1		0						
				J ₂	B		Badly broken core												
				J ₂	B, W	250, 40°, 65°	Irreg												
1110		48	48	B ₂	B	60°	Broken core	[Graphic Log]											
				J ₂	B														

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Golder Associates

Hole No. DDH #1122
 SHEET 42 OF _____

DEPTH 1110	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG BRECCIA/CORRE BROKEN CORE	HARDNESS 4 3 2			ROCK QUALITY DESIGNATION 75 50 25			NATURAL FRACTURE FREQUENCY 15 10 5			PERMEABILITY	
	TYPE	INFILLING	INCLINATION																
				J ₄	W	Ir	regular - network												
1115		60 60		J ₂	R	70°	Badly broken core; crumbled coal Broken core; irregular fractures												
				J ₂	B	70°													
				J ₄	W	Ir		regular											
1120		36 36		J ₂	B		Broken core " " → rubble.												
				J ₂	C														
1125		36 36		B ₂	B	60°	Badly broken core; irreg. fract.												
				J ₂	B, W, F.C.														
1130				B ₂	B	60°	Badly broken core; irreg. fract.												
				J ₄	W	Ir													
				J ₂	B		Coal - crumbled core.												
1135				J ₂	B		Coal - crumbled core.												

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Hole No. DDH 1122
SHEET 42 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
1135																		
1140				J ₂	B		Coal - crumbled core.											
1145				J ₂	B		Broken & crumbled core											
1150				J ₄ W J ₂ B,W J ₄ W,F		35° 45° 65°	140° 15' E. (in gneiss) Core broken in places.											
1155				J ₂ J ₃	B,W C	15° C	Core broken with irregular fract.											
1160				J ₃ J ₂ J ₄ W,F B ₂	C C W,F C	30° 25° 15°	Core broken w/ irreg. fract. Magnesite 190° 15' E.											

LOGGED BY: MRS
 DATE: Dec 19 1978
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Golder Associates

Hole No. ADH # 1122
 SHEET 44 OF 1

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG BRECCIA/CORRECTION BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
1160		36		J ₂	B, W	35°												
		36		J ₄	W	30°	1160-1165											
1165		60		B ₂	B, W	70°	Broken core with some irreg. fractures.											
				J ₂	B	20°												
				J ₃	C		Broken core w/ irreg. fractures.											
		48		J ₄	W	30°												
1170		48		J ₂	B	30°												
		36		B ₂	C	70°	Broken core.											
		36		J ₂	SW	0°												
1175		60		B ₂	B	55°, 70°												
		60		J ₂	C	35°												
				J ₄	W	50°												
				J ₄	W	10°	165° to B.											
				B ₂	W, B	70°												
1180				B ₂	B, W	70°												
				J ₂	W	160°	Irreg. fract. Badly broken core in part.											
1185				B ₂	B	90°												

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 DATE: Dec. 10, 38
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Golder Associates

Hole No. DDN 115
 SHEET 115 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/GOUGE/BROKEN CORE (%)	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
1185		48 48			J ₂ B, W	25°	Irreg. fract.	[Hatched pattern]	[Hatched pattern]										
				J ₄ W	45°														
				J ₂ W	55°														
1190		48 48			B ₂ B	50°	Irreg. fract.	[Hatched pattern]	[Hatched pattern]										
				J ₂ B	10°														
				J ₂ B, W	55°														
				J ₄ W, I	80°														
				J ₂ B	48°														
1195		60 60			B ₂ B	10°	Some Irreg. fract.	[Hatched pattern]	[Hatched pattern]										
				J ₂ B	70°														
				J ₄ W, I	15°														
1200		60 60			J ₂ B	60°	90°, 80°, 25°, 45°	[Hatched pattern]	[Hatched pattern]										
				J ₂ B, W	50°														
				J ₄ W, I	35°														
1205		60 60			B ₂ C, B	65°	20° Some Irreg. fract.	[Hatched pattern]	[Hatched pattern]										
				J ₂ C	45°														
				J ₂ B, W	35°														
1210		48 48			B ₂ B	75°	Broken core 1110-1112	[Hatched pattern]	[Hatched pattern]										
				J ₂ B, W	30°														

LOGGED BY: MRS
 DATE: Dec. 9/79
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Goldier Associates

Hole No. DDH #1122
 SHEET 46 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COBBLES BROKEN CORE %	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
1210																			
1215				J ₂	C	55°													
				J ₂	C	70°													
				J ₂	C	70°													
				J ₂	B	45°													
				J ₂	C	70°													
				J ₂	C	50°													
				J ₂	C	55°													
1220				J ₂	C	40°	Broken core with irregular fractures.												
				J ₂	C	60°													
				J ₂	C	50°													
1225				J ₂	C	60°													
				J ₂	C	50°													
1230				J ₂	C	50°	Broken core.												
				J ₂	C	30°													
				J ₂	C	20°													
1235				J ₂	C	80°													

LOGGED BY: MRS
 DATE: Jan 11/79
 PROJECT No. _____

Goldier Associates

Hole No. 107-122
 SHEET 17 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG BRECCIA/COXES BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION			4	3	2	75	50	25	15	10	5	
1235																		
1240		36			B ₂ J ₂ L ₂	C C C	50° 60° 80°											
1245		60			B ₂ J ₂ L ₂ L ₂	B GW BW C	50° 0° 55° 90°	Broken core w/ irreg. fract.										
1250		60			J ₂ J ₂ J ₂ J ₄	B BW B W	30° 70° 50° 75°	Broken core w/ irregular fractures										
1255		60			J ₂ J ₄	B Qtz	45° 50°	Broken core w/ irregular fractures										
1260		60			J ₂ J ₂ J ₄	B B W	40° 35° 0-90°	Broken core w/ irreg. fractures. Ineq.										

LOGGED BY: MRS
 DATE: Jan 10, 1979
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Golder Associates

Hole No. DDH# 1122
 SHEET 48 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COARSE BROKEN CORE S	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5		
1262																				
		12	52	J ₂	0	30°	Broken core w/ irregular fractures													
				J ₂	0	35°														
1265																				
		6		B ₂	W	70°	150° to B. Broken core, irreg. fractures													
				J ₂	C	70°														
				J ₂	C	60°														
1270				J ₂	C	60°														
				J ₄	C	80°														
		6		B ₂	C	50°	Broken core, irreg. fractures													
				J ₂	C	70°														
				J ₂	W	75°														
1275																				
		60		B ₂	W	75°	Frang. fract.													
				J ₂	C	70°														
				J ₂	C	75°														
				J ₄	W	75°														
1280																				
				B ₂	W	90°	Broken core w/ irregular fractures													
		6		J ₂	C	25°														
				J ₄	W	30°														
1285																				

LOGGED BY: MRS
 DATE: Jan 16/79
 PROJECT No. _____

Goldier Associates

Hole No. DDH-100
 SHEET 12 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CORRECTION BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
1285																			
		60			B ₂	B	75°												
		50			B ₂	B	20°												
					J ₂	W	10°												
1290																			
		60			B ₂	B	50°	70°											
		50			J ₂	0	30°												
					J ₄	W	0°	Irreg.											
1295																			
		60			B ₂	B	50°												
		50			J ₄	W	30°	Irreg.											
					J ₂	W	25°												
1300																			
		60			B ₂	B	75°												
		50			F ₁	B	15°	0° to B; fault gouge											
					J ₄	W	0°	Irreg.											
1305																			
		60			J ₂	C	50°												
		50			B ₂	B	80°												
					J ₄	W	0°	Irreg.											
1310																			

LOGGED BY: MRS
 DATE: Jan 17, 1979
 PROJECT No. _____

Goldier Associates

Hole No. 12-7122
 SHEET 50 OF _____

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA / GOUGE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
1310																			
1315		60					180° 40° E 180° 10° E Some broken core w/ irregular fractures												
1320		60																	
1325		60																	
1330		60					Broken core w/ irregular fractures irregular network												
1335		50					Broken core w/ irreg. fractures												

LOGGED BY: MRS
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Golder Associates

Hole No. DDH 132
SHEET 51 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/COBBLE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
1340		69	60	B ₂	B	70°	Some broken core with irregular fractures												
				B ₂	B	90°													
				J ₂	B	20°													
				J ₂	B	60°													
1345		60	60	J ₂	B	110°	Badly broken core with irregular fractures. Coal is crumpled.												
				J ₂	B		Crinoidal coal 5' thick.												
1350		48	48	B ₂	B	90°	Crinoidal coal & broken core w/ irregular fractures												
				J ₂	C	55°													
				J ₂	C	80°													
1355		60	60	B ₂	B	90°	Badly broken core with irregular fractures. Probable fault zone @ 1355' filled w/ partly consolidated talus.												
				J ₂	C	85°													
				J ₂	C, W	85°													
				B ₂	B	70°													
				J ₄	W	150°													
1360		60	60	B ₂	B	90°	Broken core w/ irreg. fractures.												
				B ₂	B	65°													
				J ₂	C, W	20°													
				J ₂	C, W	45°													

LOGGED BY: MRS
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DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA/CORAL/ BROKEN CORE S	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY	
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5		
1360																				
1365		60/60		J ₂	B	70°	Broken core w/ irregular fractures													
				J ₃	C,W	-														
				J ₂	W	50°														
1370		60/60		B ₂	B	70°	Broken core w/ irregular fractures													
				J ₃	C															
				J ₂	B,W	90°														
1375		60/60		J ₃	C,W		Broken core w/ irregular fractures.													
				B ₂	B	75°														
				J ₂	W,C	45, 90°														
				J ₄	W	70°														
1380		60/60		J ₂	B,W	45, 65°	Some broken core with irregular fractures													
				B ₂	B	65°														
				J ₂	B,W	40°														
				J ₃	C,W															
1385		60/60		B ₂	B	70°	Broken core with irregular fractures.													
				J ₃	C,B	-														
				J ₂	B	60°														

LOGGED BY: NK'S
 DATE: Jan 29, 1979
 PROJECT No. _____

Golder Associates

Hole No. 222
 SHEET 53 OF _____

DEPTH	PERCENT CORE LOSS			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA / CORE BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
	25	50	75	TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
1385																			
1390				J ₁	C, B		Broken core w/ irregular fractures												
				J ₂	B	80°													
				B ₂	B	80°													
				J ₂	B	40°													
				J ₄	W	30°													
				B ₂	B ₁ U	70°													
				B ₂	B	80°													
				J ₂	B	55°													
1325				J ₃	C, B		Broken core w/ irregular fractures												
				B ₂	B	75°													
				J ₂	B	65°													
		48		J ₃	E		Broken core w/ irreg. fractures												
1400		48		J ₄	W	30°													
				J ₂	B	26°	Broken core w/ irregular fractures												
				J ₄	W	90°													
		60		J ₂	B, W	20°													
				J ₂	B	70°													
1405				J ₃	C														
				J ₂	B	45°	Broken core w/ irregular fractures												
				J ₄	W	- Irreg.													
		60		J ₂	B	75°													
1410				J ₃															

LOGGED BY: MRS

DATE: Nov 29, 79

Hole No. 1122 P. 51

DEPTH	PERCENT CORE LOSS 25 50 75			FRACTURES			DESCRIPTION AND REMARKS	GRAPHIC LOG	BRECCIA BROKEN CORE	HARDNESS			ROCK QUALITY DESIGNATION			NATURAL FRACTURE FREQUENCY			PERMEABILITY
				TYPE	INFILLING	INCLINATION				4	3	2	75	50	25	15	10	5	
1435																			
1440							Remainder of hole to 1564' is in 'Fennie Formation'												

LOGGED BY: MRS
29179

Hole No. 1122 P.56