FORM No. H.E. 443

CORE NO LONGER AVAILABLE

DRILLING RECORD

AREA: PIEMAN.			
LOCATION: SOPHIA PRESSURE TUNNEL.			
GEOLOGICAL PLAN:	SURVEY PLAN: S369855 2/3		
DATES (a) DRILLED: APRIL '66.	(b) WATER TABLE: 21-4-'66.		
METHOD: D.D E 1000	DIAMETER: Nxc, Nx, Nm, Bx, Bm.		
SITE REMARKS: AT PEG A121 + 35'			

POSITION				
CO-ORDINATES:	E:	N:		
ON LINE: F.P.15 / F.P.14	BEARING: 0° 00'	AT CH.		
AT STN: F.P. 15	BEARING: 178° 57'	DIST: 32'		

LEVEL		
SURFACE	COLLAR	WATER TABLE
	881	128' down hole

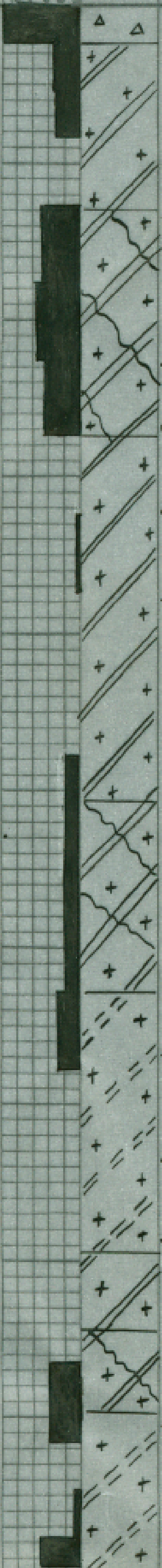
INCL.		
HOLE DRILLED	ANGLE FROM HORIZONTAL	DIRECTION
~~VERT~~/~~HOR~~/INC.	53	209°

HOLE No. 6639

FILE No.

SHEET 1 OF 3 SHEETS

W - Weathered. Py - Pyrite. Sl - Slickensides. Ch - Chlorite. O - Open.



DEPTH	CORE LENGTH	CASING	JOINTS No. Per Foot	FLUID RETURN
0 (0.8)	3"–8"	N	W	BROWN
5			W	
10	1"–3" two 5", one 7".	B	2.6 at least	
15			4.0 at least. W	
20			W	
25			4.2 at least. W. 6.0 at least	
30	1"–6" two 12"		W. 2.6 at least	
35			W. 3.4	
40			W. 4.2	
45			W. 3.6	
50	1"–2", one 3", 4" & 5"		3.4 W	
55			4.4 at least	
60 (19.2)	1"–4"		W. 3.4 at least	
65	2"–6"		5.0 at least	
70	1"–4"		Ch Sl. 2.6 Sl Py	
75	3"–5"		Sl O ce. 3.2 Sl Py	
80 (24.1)	1"–3", four 4"		W. 4.0 W	
85	up to 2"		3.6 W. Py	
90 (27.2)	1"–8"		3.0 at least. W ? Sl?	
95	up to 3", one 4"		Ch. 2.5 Ch Py W. W	
100				

INTERVAL	REMARKS
0'0" – 2'6"	No core; driller reports sand, Soil and talus in road cut adjacent.
2'6" – 62'11."	Weathered & jointed granitic rock types, "Murchison Granite". Except for minor exceptions the rock is oxidised brown between joints but is hard. The joints are in general thin but coated with limonite. Core loss is attributed to thicker weathered joints and softer rock between joints.
62'11" – 79'3"	Partly sound, rock type as above with thin weathered joints coated with limonite. Some pyrite mineralization and slickensides as indicated, possible fault zone. Rock between joints is not oxidised but appears to be altered in part, ? chloritised?
79'3" – 89'4"	As for interval 2'6" – 62'11".
89'4" – 123'7".	As for interval 62'11" – 79'3" but limonite coated joints less abundant in part. Possible faulting in part.

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DRILLING RECORD

AREA: PIEMAN		POSITION	CO-ORDINATES:	E:	N:
LOCATION: SOPHIA PRESSURE TUNNEL			ON LINE: F.P. 15 / F.P. 14.	BEARING: 0° 00'	AT CH:
GEOLOGICAL PLAN:	SURVEY PLAN: S 369855 2/3		AT STN: F.P. 15	BEARING: 178° 57'	DIST: 32'
DATES (a) DRILLED: April '66	(b) WATER TABLE: 21-4-'66	LEVEL	SURFACE	COLLAR	WATER TABLE
METHOD: DD. E1000.	DIAMETER: Nxc, Nx, Nm, Bx, Bm.			881	128' down hole.
SITE REMARKS: At Peg A121 + 35'		INCL.	HOLE DRILLED	ANGLE FROM HORIZONTAL	DIRECTION
			~~VERT~~/~~HOR~~/INC.	53°	209°

HOLE No. 6639

FILE No.

SHEET 2 OF 3 SHEETS

DEPTH | CORE DRAWN | CORE LENGTH | CASING | RECOVERY % (20 40 60 80 100) | GRAPHIC LOG | JOINTS No. Per Foot. | FLUID RETURN | GROUND WATER | WATER PRESSURE TESTS LEAKAGE | REMARKS

REMARKS: W – Weathered. Sph – Sphalerite. C – Carbonate. Py – Pyrite. Q – Quartz. O – Open. Sl – Slickensides. Chalco – Chalcopyrite. Ch – Chlorite.

Depth	Core length	Casing	Joints No. per foot / features	Water pressure tests	Remarks
100'–105'	up to 3"	BMLC	0.3" Clay, Py, W		
105'–112'	up to 3"		Py Sl; 2.6 Ch Sl; W Sl; 4.0 C		
112'–117'	1" – 6"		Py; Ch Sl; 3.6 W		
117'–119'	up to 4"		Ch; Q O		
119'–124'	up to 3" one 4"		Sl; 5.0 W O; W Ch; 5.6 1" Clay		
124'–160'	8" — 20" a few < 8" some 33" at least		Py O Q C; 0.8; 0.8 Ch; Ch Q; 0.6 Q Py W Ch; 1.0; 1.4; Ch C; 1.2 Py Ch; Ch	100 p.s.i. 2.4 gpm; 100 p.s.i. 1.6 gpm; 100 p.s.i. 1.4 gpm	123'7" – 184'0" Mainly sound rock type as above with thin joints and pink siliceous phases resembling fine quartzite, up to 12" long.
160'–178'	2" — 10" one 12" one 18"		1.0; 1.0 C Ch; 1.3; Ch; 1.2 Ch Ch; 2.0 Ch	100 p.s.i. 1.2 gpm; 100 p.s.i. 1.2 gpm	184'0" – 229'2" Rock type as above partly altered (chloritised ?) with broken zones as indicated. Rock is in general unoxidised & contains fresh sulphide mineralization, pyrite, chalcopyrite & sphalerite as indicated. Joints are generally thin but some contain chlorite and/or quartz up to 0.3" & 0.7" respectively, some have been leached and are open. Slickensides are present and are attributed to possible faulting. Core loss attributed to grinding and softer rock. At 199' Seismic Velocity 12,600 ft/Sec.
178'–184'	4" – 15" one 20"	Bx	C Q; Ch; 0.6 Ch		
184'–191'	2" – 6" one 9"		1.0 Ch Sl Py Sl; Ch Sl; 2.0 at least 0.1" Clay Q (altered)	100 p.s.i. 0.8 gpm	
191'–200'	1½" 2" – 4", 5, 6, 11"	BMLC	Py Sl O; Chalco Sph Ch; 3.4 Py Q O Sph; 2.0 Py Q (altered)	100 p.s.i. 8.4 gpm (to 201'6"); 100 p.s.i. 3.4 gpm (to 201')	← TB 1071 (Mineralized sericitized quartz porphyry).

37.7 (at 123'7")

56.1 (at 184')

60.6 (at 200')

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DRILLING RECORD

AREA: PIEMAN		POSITION: CO-ORDINATES:	E:	N:	HOLE No. 6639
LOCATION: SOPHIA PRESSURE TUNNEL.		ON LINE: F.P. 15 / F.P. 14	BEARING: 0° 00'	AT CH:	
GEOLOGICAL PLAN:	SURVEY PLAN: 5369855 2/3.	AT STN: F.P. 15	BEARING: 178° 57'	DIST: 32'	FILE No.
DATES (a) DRILLED: APRIL 1966	(b) WATER TABLE: 21-4-'66	LEVEL: SURFACE	COLLAR 881	WATER TABLE 128' down hole.	
METHOD: DD. E1000	DIAMETER: Nxc, Nx, Nm, Bx, Bm.	INCL.: HOLE DRILLED ~~VERT./HOR.~~/INC.	ANGLE FROM HORIZONTAL 53°	DIRECTION 209°	SHEET 3 OF 3 SHEETS
SITE REMARKS: At peg A121 + 35'					

Legend: W - Weathered. Sph - Sphalerite. C - Carbonate. Py - Pyrite. Q - Quartz. O - Open. Sl - Slickensides. Chalco - Chalcopyrite. Ch - Chlorite.

DEPTH	CORE LENGTH	GRAPHIC LOG	JOINTS No. Per Foot		WATER PRESSURE TESTS LEAKAGE
61.0 — 200'	2'-4"			Sph Py, Chalco, Ch Q, Sph	181'6" ↑
61.9	<3"	altered			100 p.s.i. 1.2 gpm
205'	1½"-6", 6"-12"		3.0 at least	Py Sph, Py, Py O Q, Q Py	
210'	1"-6"		3.0	Py Ch, Sl, Sl Ch	
215'	<3", 4"	altered	3.0 at least	Py, Ch	50 p.s.i. 4.2 gpm
220'	<3 + 8"	altered	4.0	W, W	
225'	up to 4"	altered	4.0	Ch Py, O	50 p.s.i. 5.89 gpm
69.9		altered	4.5	Ch Py, W	
230'	1'-6"			W Py	100 p.s.i. 4.6 gpm
235'	2"-6" (8")		2.4	W	
240'	1"-5" (8")		4.0	Ch, W	100 p.s.i. 3.6 gpm
73.8 – 74.1	12" (<3)		3.5 at least	Py	
245'			3.5	? Sl, Ch	
250'	1"-4"		3.5	Ch, Sl Ch, 0.1" clay C, Ch	100 p.s.i. 1.2 gpm
255'			4.2	Py	
260'	1"-5"		3.6	Py W, W	100 p.s.i. 0.4 gpm
265'	2"-6" two 9"		3.8	Ch, Py Ch, W	
270'	12", 1"-3"		3.8	W, Py Ch	100 p.s.i. 4.4 gpm
275'	1"-4"		5.8	O Ch, W	
85.8 — 280'	1"-6" one 11"		2.6	Ch	100 p.s.i. 2.0 gpm
285'					
290'					
295'					
300'					

Overall test (about 200'–281'): 100 p.s.i. 8.4 gpm.

REMARKS:

200' – 203' abundant sphalerite (zinc sulphide)

229'2" – 281'6" With the exception of broken zones due to jointing, mainly sound rock type as above. The joints are thin, some contain chlorite, few are weathered. There are a few slickensides as indicated. The rock between joints is not oxidised, but appears to have been altered in part. ?chloritization? 242' – 243' Evidence of grinding core loss attributed to this.

Hole completed 281'6".

Logged by R.P. MATHER.