

MOCCO AUST, Tilana No. 1
 Date: 29 Sep 85 Time: 04:43

HYDRAULICS CALCULATIONS

PLASTIC VISCOSITY 22.33 cP
 YIELD POINT 13.90 lb/ft²
 POWER LAW k .3033
 POWER LAW n .6323
 DEPTH 2324.30 m (7626')

VERTICAL DEPTH 2324.19 m
 DEPTH OF RETURNS 2319.73 m
 CUTTINGS BULK DENSITY 2.10 spc grv
 MUD DENSITY 9.12 lb/gal
 ACTIVE SURFACE MUD VOLUME 236 bbl
 FLOW RATE 618 gal/min
 BOOSTER FLOW 7 gal/min
 PUMP PRESSURE 2337 psi
 PUMP gal/stk 4.96 gal/stk
 BIT NOZZLES 15, 15, 15

CALCULATED RESULTS:

FROM	TO	LENGTH	ANNULUS/PIPE	AVN VELO.	CRIT VELO	FLOW	PRESS LOSS
m	m	m	in	ft/min	ft/min	REGIME	psi
0.00	104.55	104.55	13.750/ 5.000	46.4	221.7	LAMINAR	.3
104.55	1651.4	1546.9	12.347/ 5.000	113.8	299.2	LAMINAR	21.4
1651.4	2313.6	359.17	12.250/ 5.000	121.1	371.0	LAMINAR	5.1
2313.6	2173.0	167.33	12.250/ 5.000	121.1	371.0	LAMINAR	2.4
2177.3	2324.3	146.35	12.250/ 3.000	176.0	393.0	LAMINAR	6.2

Annulus	Pipe		
Dian	j.d.	o.d.	i.d.
13.750	6.375	5.000	4.276
12.347	6.375	5.000	4.276
12.250	6.375	5.000	4.276
12.250	6.375	5.000	3.000
12.250	3.000	3.000	2.875

MUD HYDROSTATIC 9.10 lb/gal
 FLOW CONTRIBUTION .09 lb/gal
 CUTTINGS CONTRIBUTION .03 lb/gal
 EQUIVALENT CIRCULATING DENSITY 9.23 lb/gal

SURFACE PRESSURE LOSS 44 psi NOZZLE VELOCITY 333.0 ft/sec
 PIPEBORE PRESSURE LOSS 1393 psi HYDRAULIC POWER 430.6 hp
 ANNULAR PRESSURE LOSS 35 psi JET IMPACT FORCE 1117.2 lbs
 BIT PRESSURE LOSS 1194 psi % OF PRESS LOSS AT BIT 53
 TOTAL CALC. PRESS LOSS 2366 psi

VOLUMES:	gal	bbl	Strokes	Minutes @ 125 s.p.m.
1) Pipe Capacity	5284	126	1065	8.6
2) Pipe Displacement	3431	83	702	5.6
3) Total Annulus	40946	975	8255	66.3 ← LAG
4) Mud in active pits	11995	236	2413	19.4
Circulation (1) + (2)	46230	1101	9321	74.9
Hole Volume (1)+(2)+(3)	49712	1134	10023	80.4
Total Mud Circulation	53226	1336	11739	94.2
HOLE OUT OF GAUGE:				
CIRCULATION CORRECTION FACTOR =	1.0195			
Corrected Annulus	41300	995	8427	67.6 ← LAG
Corrected Hole	50566	1204	10195	81.9

