

AMOCO AUST. Tilana No.1
 Date : 27 Oct 85 Time : 04:46

329263

NB#20: 3841m: 27 Oct '85.

HYDRAULICS CALCULATIONS

PLASTIC VISCOSITY 20.00 cP
 YIELD POINT 19.00 lb/cft²
 POWER LAW k .9784
 POWER LAW n .5972
 DEPTH 3840.00 m (12599')
 VERTICAL DEPTH 3839.60 m
 DEPTH OF RETURNS 3831.50 m
 CUTTINGS BULK DENSITY 2.50 spc grv
 MUD DENSITY 9.90 lb/gal
 ACTIVE SURFACE MUD VOLUME 444 bbl
 FLOW RATE 596 gal/min
 BOOSTER FLOW 0 gal/min
 PUMP PRESSURE 2980 psi
 PUMP gal/stk 4.96 gal/stk
 BIT NOZZLES 14, 14, 14

CALCULATED RESULTS:

FROM m	TO m	LENGTH m	ANNULUS/PIPE in	ANN VELO. ft/min	CRIT VELO ft/min	FLOW REGIME	PRESS LOSS psi
0.00	104.55	104.55	18.750/ 5.000	44.7	223.0	LAMINAR	.3
104.55	1651.4	1546.9	12.347/ 5.000	114.6	294.0	LAMINAR	22.5
1651.4	3526.3	1874.9	12.250/ 5.000	116.8	295.7	LAMINAR	28.2
3526.2	3693.7	167.38	12.250/ 5.000	116.8	295.7	LAMINAR	2.5
3693.6	3840.0	146.35	12.250/ 8.000	169.7	373.7	LAMINAR	6.3

MUD HYDROSTATIC 9.88 lb/gal
 FLOW CONTRIBUTION .09 lb/gal
 CUTTINGS CONTRIBUTION .05 lb/gal
 EQUIVALENT CIRCULATING DENSITY 10.02 lb/gal

SURFACE PRESSURE LOSS 45 psi NOZZLE VELOCITY 424.0 ft/sec
 PIPEBORE PRESSURE LOSS 1480 psi HYDRAULIC POWER 552.5 hp
 ANNULAR PRESSURE LOSS 60 psi JET IMPACT FORCE 1294.9 lbs
 BIT PRESSURE LOSS 1589 psi % OF PRESS LOSS AT BIT 50
 TOTAL CALC. PRESS LOSS 3173 psi

VOLUMES:	gal	bbl	Strokes	Minutes @ 120 s.p.m.
1) Pipe Capacity	8993	214	1813	15.1
2) Pipe Displacement	5000	119	1008	8.4
3) Total Annulus	66162	1575	13339	111.0 ← LAG
4) Mud in active pits	18665	444	3763	31.3
Circulation (1) + (3)	75156	1789	15152	126.1
Hole Volume (1)+(2)+(3)	80156	1908	16160	134.5
Total Mud Circulation	93821	2234	18915	157.4
HOLE OUT OF GAUGE:				
CIRCULATION CORRECTION FACTOR =	1.0631			
Corrected Annulus	70906	1688	14296	119.0 ← LAG
Corrected e.	84900	2021	17117	142.4

Annulus Diam	Pipe j.d.	o.d.	i.d.
18.750	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	8.000	8.000	2.875

