

329342

MCCO AUST 6 Oct 1955 Title: 05:01

NB#15 Smith F2; ~226m; 6

HYDRAULICS CALCULATIONS

PLASTIC VISCOSITY	25.00 cP
YIELD POINT	18.00 lb/cft ²
POWER LAW k	.7263
POWER LAW n	.6612
DEPTH	2326.00 m (9272')
VERTICAL DEPTH	2325.70 m
DEPTH OF RETURNS	2319.00 m
CUTTINGS BULK DENSITY	2.50 spc grv
MUD DENSITY	9.40 lb/gal
ACTIVE SURFACE MUD VOLUME	392 bbl
FLOW RATE	615 gal/min
BOOSTER FLOW	0 gal/min
PUMP PRESSURE	2950 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	46.2	212.9	LAMINAR	.2
104.55	1651.4	1546.9	12.347/ 5.000	118.4	293.2	LAMINAR	21.2
1651.4	2512.3	860.87	12.250/ 5.000	120.6	295.1	LAMINAR	12.2
2512.2	2679.7	167.33	12.250/ 5.000	120.6	295.1	LAMINAR	2.4
2679.5	2326.0	146.35	12.250/ 8.000	175.3	396.9	LAMINAR	6.3

Annulus Diam	Pipe j.d.	Pipe o.d.	Pipe 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

MUD HYDROSTATIC	9.38 lb/gal
FLOW CONTRIBUTION	.09 lb/gal
CUTTINGS CONTRIBUTION	.05 lb/gal
EQUIVALENT CIRCULATING DENSITY	9.52 lb/gal

SURFACE PRESSURE LOSS	45 psi	NOZZLE VELOCITY	437.8 ft/sec
PIPEBORE PRESSURE LOSS	1326 psi	HYDRAULIC POWER	577.6 hp
ANNULAR PRESSURE LOSS	42 psi	JET IMPACT FORCE	1311.0 lbs
BIT PRESSURE LOSS	1609 psi	% OF PRESS LOSS AT BIT	53
TOTAL CALC. PRESS LOSS	3022 psi		

VOLUMES:	gal	bbl	Strokes	Minutes @ 124 s.p.m.
1) Pipe Capacity	6512	155	1313	10.6
2) Pipe Displacement	3984	95	803	6.5
3) Total Annulus	49293	1174	9938	80.1 ← LAG
4) Mud in active pits	16447	392	3316	26.7
Circulation (1) + (3)	55805	1329	11251	90.7
Total Volume (1)+(2)+(3)	59789	1424	12054	97.1
Total Mud Circulation	72252	1720	14567	117.4
HOLE OUT OF GAUGE:				
CIRCULATION CORRECTION FACTOR =	1.0564			
Corrected Annulus	52440	1249	10573	85.2 ← LAG
Corrected Hole	62936	1498	12699	102.3

