



Image Ratio	$DR = \frac{P_s}{P_t} = 0.67$	ft
pretical Potential amage Removed	$Q = QDR$	BPD
rox. Radius of estimation	$r = 0.032 \sqrt{k 0.001}$	ft

DRILL STEM TEST REPORT

HALLIBURTON RESERVOIR SERVICES



A Halliburton Company

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MAR 27 1990

OIL CON. DIV.
DIST. 3

BLACKHODD AND NICHOLS COMPANY, LIMITED
LEGERE : NEBU
WELL NO. : 472
TEST NO. : 2

TICKET NO. 00695400
22-FEB-90
FARMINGTON.

NEBU
LEGERE MARK
WELL NO. 472
TEST NO. 2
BLACKHODD AND NICHOLS COMPANY, LIMITED
STATE NEW MEXICO SM

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	1791	1763.7			
B	INITIAL FIRST FLOW	26	17.4	10.0	10.1	F
C	INITIAL FIRST CLOSED-IN	20	16.2			
D	INITIAL FIRST CLOSED-IN	176	172.2	30.0	30.0	C
E	INITIAL SECOND FLOW	13	14.0	60.0	60.3	F
F	INITIAL SECOND FLOW	13	15.5			
G	INITIAL SECOND CLOSED-IN	13	15.5	180.0	179.7	C
H	INITIAL SECOND CLOSED-IN	1121	1129.4			
H	INITIAL HYDROSTATIC	1791	1757.0			

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	1816	1787.2			
B	INITIAL FIRST FLOW	40	31.8	10.0	10.1	F
C	INITIAL FIRST FLOW	33	31.9			
D	INITIAL FIRST CLOSED-IN	33	31.9	30.0	30.0	C
E	INITIAL FIRST CLOSED-IN	187	191.8			
F	INITIAL SECOND FLOW	33	30.1	60.0	60.3	F
G	INITIAL SECOND FLOW	33	33.4			
H	INITIAL SECOND CLOSED-IN	33	33.4	180.0	179.7	C
H	INITIAL SECOND CLOSED-IN	1145	1152.5			
H	INITIAL HYDROSTATIC	1816	1781.1			

EQUIPMENT & HOLE DATA		TICKET NUMBER: 00695400	
FORMATION TESTED: P.C.		DATE: 2-9-90 TEST NO: 2	
NET PAY (ft): 30.0 (3256-3286.1)		TYPE DST: OPEN HOLE	
GROSS TESTED FOOTAGE: 23.0		FIELD CAMP: FARMINGTON	
ALL DEPTHS MEASURED FROM: KELLY BUSHING		HOLE OR CASING SIZE (in): 5.250	
CASING PERFS. (ft):		ELEVATION (ft): 6449.0	
HOLE OR CASING SIZE (in): 5.250		TOTAL DEPTH (ft): 3286.0	
TOTAL DEPTH (ft): 3286.0		Packer Depth (ft): 3257.3283	
Packer Depth (ft): 3257.3283		FINAL SURFACE CHOKER (in): 0.750	
BOTTOM HOLE CHOKER (in): 0.750		MUD WEIGHT (lb/gal): 10.40	
MUD WEIGHT (lb/gal): 10.40		MUD VISCOSITY (sec): 58	
ESTIMATED HOLE TEMP. (°F): 104.8		ACTUAL HOLE TEMP. (°F): 104.8	
ACTUAL HOLE TEMP. (°F): 104.8		FLUID PROPERTIES FOR RECOVERED MUD & WATER	
FLUID PROPERTIES FOR RECOVERED MUD & WATER		RESISTIVITY CHLORIDES	
SOURCE		P-1g AT SURFACE: 7.0	
cu. ft. of GAS: 220 ppm		cc of OIL: 145 ppm	
cc of OIL: 145 ppm		cc of MUD: 2240.0	
cc of MUD: 2240.0		TOTAL LIQUID cc: 2240.0	
TOTAL LIQUID cc: 2240.0		CUSHION DATA	
CUSHION DATA		TYPE AMOUNT HEIGHT	
MEASURED FROM TESTER VALVE			

TIME	CHOKER SIZE	SURFACE PRESSURE PSI	GAS RATE MCF	LIQUID RATE BPD	REMARKS
2-9-90					
1437					ON LOCATION
1930					RETURNED WITH CORRECT TOLLS
2032					PICKED UP TOLLS
2110					TRIPPED IN HOLE
2255					OPENED TOLL
2300	BH	6.02			
2305	BH	6.02			
2335	BH	13.02			CLOSED TOLL
2340	BH	9.02			OPENED TOLL
2345		7.5 02.			
2350		7.02.			
2355		7.02.			
2-9-90					
7	12.0	68.5	50.4	5.5 0.254	
8	14.0	68.5	50.4	5.5 0.254	
9	16.0	68.5	50.4	5.5 0.254	
10	18.0	68.5	50.4	5.5 0.254	
11	20.0	68.5	50.4	5.5 0.254	
12	22.0	68.5	50.4	5.5 0.254	
13	24.0	68.5	50.4	5.5 0.254	
14	26.0	68.5	50.4	5.5 0.254	
15	28.0	68.5	50.4	5.5 0.254	
16	30.0	68.5	50.4	5.5 0.254	
0005		7.02.			
0015		8.02.			
0025		9.02.			
0035	BH	8.02.			
0044					CASING AND WAITED FOR DRYLIGHT
1030					TAPPED OUT
					JOB COMPLETED

TICKET NO: 00695400

CLOCK NO: 10445 HOUR: 12

GRUPE NO: 349

DEPTH: 3242.0

MINUTES	PRESSURE	MP	11.11	11.11
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FIRST FLOW

B	1	0.0	17.4	-1.6		
2	2.0	16.2	0.4			
3	4.0	15.2	0.0			
4	6.0	14.2	0.0			
5	8.0	13.2	0.0			
6	10.1	12.2	0.0			

FIRST CLOSED-IN

F	1	0.0	16.2	5.5	1.7	0.716
2	10.0	21.7	2.0	13.5	2.9	0.546
3	20.0	26.8	2.0	12.0	3.9	0.464
4	30.0	32.0	2.0	10.5	4.6	0.354
5	40.0	47.7	31.5	4.5	0.254	
6	50.0	56.8	40.7	5.0	0.303	
7	60.0	66.5	50.4	5.5	0.264	
8	70.0	77.0	60.8	5.9	0.235	
9	80.0	86.7	71.5	6.2	0.212	
10	90.0	96.7	81.5	6.5	0.187	
11	100.0	110.2	94.0	6.7	0.177	
12	22.0	121.7	105.5	6.9	0.164	
13	24.0	134.4	118.2	7.1	0.152	
14	26.0	147.6	131.4	7.3	0.142	
15	28.0	160.0	143.6	7.4	0.132	
16	30.0	172.2	156.0	7.5	0.120	

SECOND FLOW

F	1	0.0	14.0	-0.5		
2	10.0	10.0	13.8	1.2		
3	20.0	20.0	14.8	0.0		
4	30.0	30.0	14.8	0.0		
5	40.0	40.0	15.4	0.6		
6	50.0	50.0	15.4	0.0		
7	60.0	60.0	15.3	0.2		

SECOND CLOSED-IN

B	1	0.0	15.5	8.8	0.904	
2	10.0	140.2	124.7	15.6	0.654	
3	20.0	247.1	231.5	21.0	0.525	
4	30.0	346.6	327.0	25.5	0.441	
5	40.0	445.0	418.4	29.2	0.381	
6	50.0	544.0	507.4	32.4	0.337	
7	60.0	642.3	605.8	35.1	0.302	
8	70.0	740.6	709.1	37.4	0.274	
9	80.0	838.9	812.3	39.5	0.251	
10	90.0	937.2	905.6	41.3	0.231	
11	100.0	1035.5	1000.0	43.0	0.211	

SECOND CLOSED-IN - CONTINUED

B	12	110.0	985.7	870.2	42.9	0.215
13	120.0	929.4	913.9	44.4	0.200	
14	130.0	859.9	854.3	46.7	0.188	
15	140.0	790.0	790.0	48.9	0.177	
16	150.0	1042.0	1025.2	47.9	0.167	
17	160.0	1014.4	1068.8	48.5	0.159	
18	170.0	1104.4	1088.8	49.8	0.150	
19	179.7	1120.4	1112.8	50.6	0.144	

TICKET NO: 00695400

CLOCK NO: 10444 HOUR: 12

GRUPE NO: 28

DEPTH: 3282.

REF	MINUTES	PRESSURE	AP	11.11	11.11	11.11	11.11
FIRST FLOW							
B	1	0.0	31.8	-1.7			
2	2.0	30.1	0.4				
3	4.0	28.9	0.0				
4	6.0	27.6	0.0				
5	8.0	26.4	0.0				
6	10.1	25.1	0.0				
FIRST CLOSED-IN							
C	1	0.0	31.9	7.3	1.7	0.778	
2	2.0	29.1	0.0				
3	4.0	26.9	15.1	2.9	0.544		
4	6.0	24.9	23.0	3.7	0.429		
5	8.0	23.0	30.9	4.5	0.361		
6	10.0	21.6	37.6	5.0	0.301		
7	12.0	19.2	43.7	5.5	0.264		
8	14.0	16.8	49.9	5.9	0.235		
9	16.0	14.5	56.1	6.2	0.211		
10	18.0	11.8	62.3	6.5	0.193		
11	20.0	9.0	68.5	6.8	0.174		
12	22.0	6.0	74.7	6.9	0.164		
13	24.0	3.0	80.9	7.1	0.152		
14	26.0	0.0	87.1	7.3	0.142		
15	28.0	0.0	93.3	7.4	0.133		
16	30.0	19.1	159.9	7.5	0.126		
SECOND FLOW							
E	1	0.0	36.1	1.5			
2	10.0	31.6	0.0				
3	20.0	31.1	0.0				
4	30.0	28.8	0.3				
5	40.0	26.9	0.1				
6	50.0	23.4	0.0				
SECOND CLOSED-IN							
F	1	0.0	33.4	8.8	0.906		
2	10.0	137.5	124.1	15.6	0.654		
3	20.0	266.8	253.4	21.0	0.525		
4	30.0	396.5	383.1	25.5	0.441		
5	40.0	526.2	512.8	29.2	0.381		
6	50.0	655.9	642.5	32.4	0.337		
7	60.0	785.6	772.2	35.1	0.302		
8	70.0	915.3	901.9	37.4	0.274		
9	80.0	1045.0	1031.6	39.5	0.251		
10	90.0	1174.7	1161.3	41.3	0.231		
11	100.0	1304.4	1291.0	43.0	0.211		

REMARKS:

REF	MINUTES	PRESSURE	A
SECOND FLOW - CONTINUED			
12	110.0	907.7	8
13	120.0	952.0	9
14	130.0	993.2	9
15	140.0	1031.3	9
16	150.0	1065.6	10
17	160.0	1101.1	10
18	170.0	1136.2	10
19	179.7	1125.5	11

TICKET NO. 00695400		0.0.		1.0.		LENGTH		DEPTH	
0									
P		11.11		11.11		11.11		11.11	
1	14.3	42.9	0.215						
	16.6	44.4	0.200						
	18.9	45.7	0.188						
3	21.3	46.8	0.177						
	23.6	47.9	0.167						
	25.9	48.9	0.158						
50	28.2	49.6	0.150						
	30.5	50.6	0.144						
3	32.8								
	35.1								
	37.4								
13	39.7								
	42.0								
80	44.3								
	46.6								
80	48.9								
	51.2								
15	53.5								
	55.8								
16	58.1								
	60.4								
70	62.7								
	65.0								
70	67.3								
	69.6								
20	71.9								
	74.2								
81	76.5								
	78.8								
TOTAL DEPTH									
3996.0									

1	DRILL PIPE.....	3.500	2.764	2982.0	
3	DRILL COLLARS.....	5.500	2.000	208.0	
50	THREEP REVERSING SUB.....	5.000	2.120	1.0	3177.0
3	DRILL COLLARS.....	5.500	2.250	58.0	
13	DRILL CIP SHUTTER.....	5.000	0.870	7.0	
80	HEADSPRING TESTER.....	5.000	0.750	5.0	3240.0
80	6P RUNNING CRSE.....	5.000	2.250	4.0	3242.0
15	JAR.....	5.036	1.750	5.0	
16	VR SAFETY JOINT.....	5.000	1.000	3.0	
70	OPEN HOLE PROCTER.....	5.500	1.530	6.0	3257.0
70	OPEN HOLE PROCTER.....	5.500	1.530	6.0	3263.0
20	FLUSH JOINT ANCHOR.....	5.000	2.500	16.0	
81	BIKED-OFF RUNNING CRSE.....	5.000		5.0	3269.0

EQUIPMENT DATA		TICKET NO. 00695400	
		0.0. I.D. LENGTH DEPTH	
DRILL PIPE		3.500	2.764
DRILL COLLARS		5.500	2.000
IMPACT TACKLING SUB		5.000	2.120
DRILL COLLARS		5.500	2.250
DRILL CTR. SHANK		5.000	0.810
HYDROGRAPHIC TESTER		5.000	0.750
PI. RUNNING CRSE		5.000	2.250
W. SILENT JOINT		5.030	1.750
OPEN HOLE CRSE		5.000	1.000
OPEN HOLE CRSE		5.500	1.530
OPEN HOLE CRSE		5.500	1.530
FLUSH JOINT RANDBUR		5.000	1.500
BLANKED OFF RUNNING CRSE		5.000	5.0
TOTAL DEPTH		3286.0	3286.0