HALLIBURTON SERVICES

TICKET NO. 23048300
28-JUN-85
FARMINGTON

FORMATION TESTING SERVICE REPORT

LEASE NAME	NORTHEAST BLANCO UNIT
WELL NO.	213
TEST NO.	1
TESTED INTERVAL	3129.0 - 3233.0
LEASE OWNER/COMPANY NAME	BLACKWOOD - NICHOLS COMPANY, LIMITED
LEGAL LOCATION SEC. - TWP. - RNG.	12-31N-7W
FIELD AREA	S. LOS PINOS FT/PC
COUNTY	SAN JUAN
STATE	NEW MEXICO
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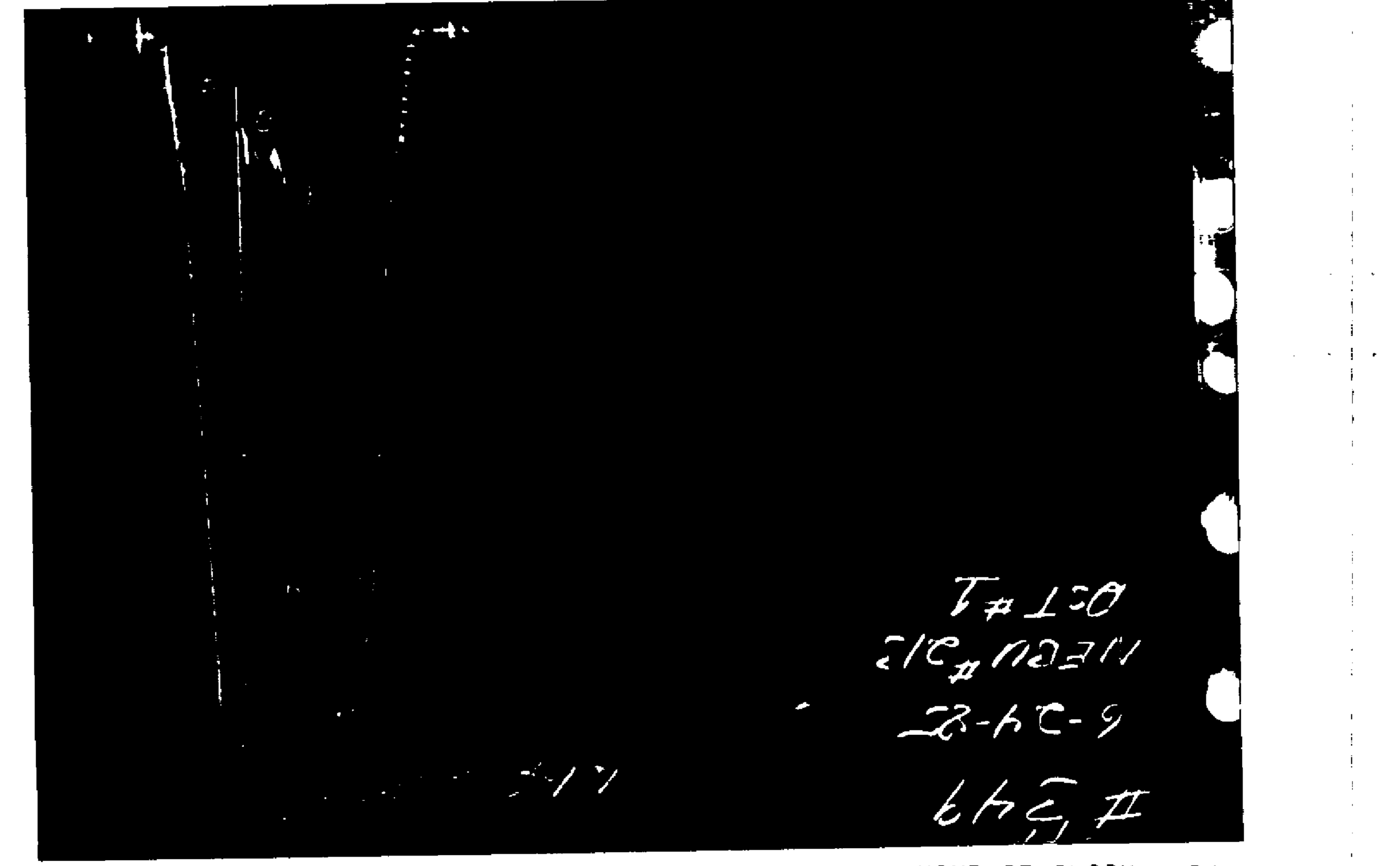
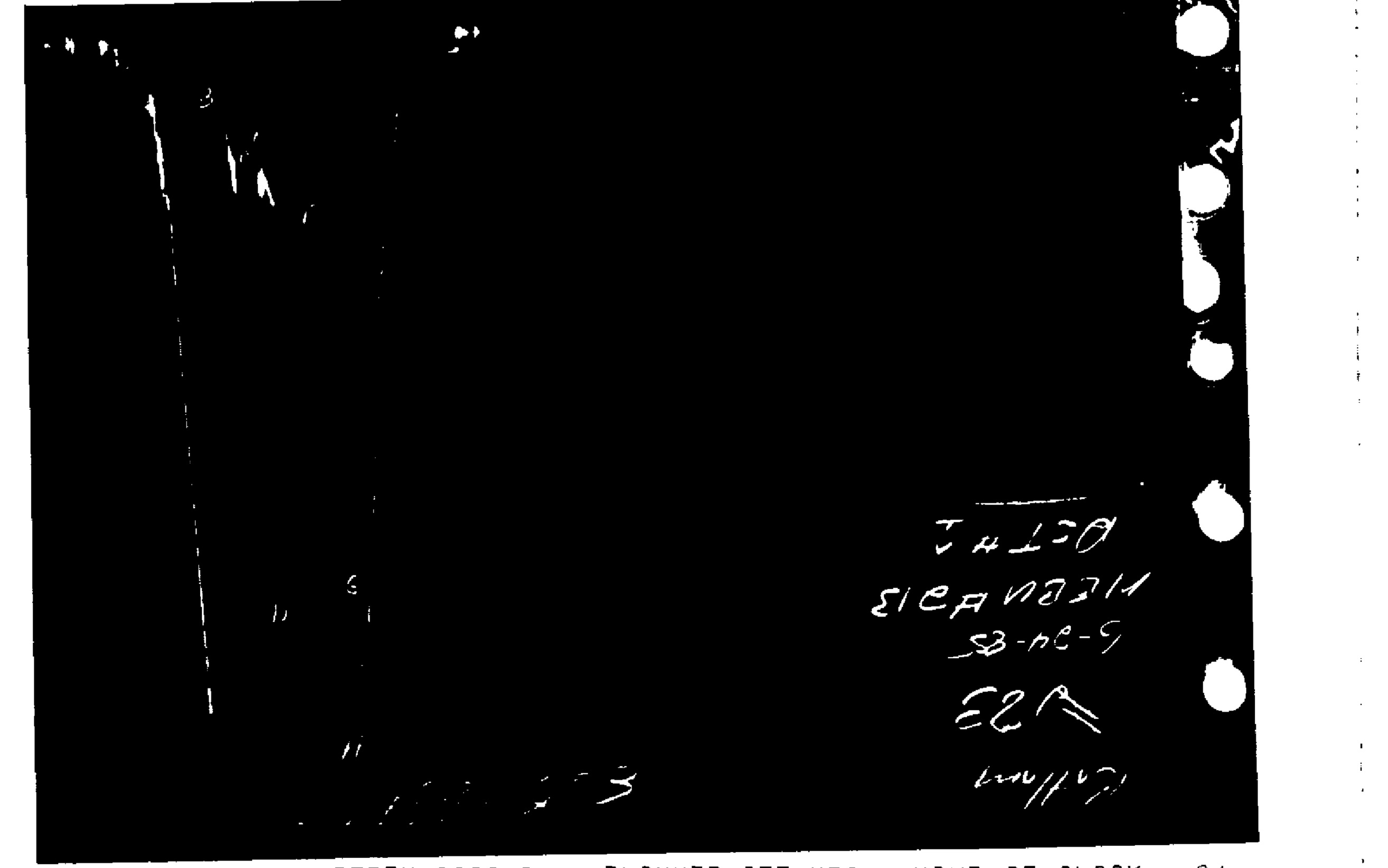


GAUGE NO: 349 DEPTH: 3108.0 BLANKED OFF: NO HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE REPORTED	PRESSURE CALCULATED	TIME REPORTED	TIME CALCULATED	TYPE
A	INITIAL HYDROSTATIC	1930	1958.3			
B	INITIAL FIRST FLOW	132	139.8	16.0	15.1	F
C	FINAL FIRST FLOW	323	309.7			
C	INITIAL FIRST CLOSED-IN	323	309.7	30.0	27.3	C
D	FINAL FIRST CLOSED-IN	1610	1620.4			
E	INITIAL SECOND FLOW	329	356.5	30.0	33.0	F
F	FINAL SECOND FLOW	500	490.2			
F	INITIAL SECOND CLOSED-IN	500	490.2	60.0	57.9	C
G	FINAL SECOND CLOSED-IN	1610	1622.8			
H	FINAL HYDROSTATIC	1930	1925.8			



GAUGE NO: 283 DEPTH: 3230.0 BLANKED OFF: YES HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE REPORTED	PRESSURE CALCULATED	TIME REPORTED	TIME CALCULATED	TYPE
A	INITIAL HYDROSTATIC	2008	2023.6			
B	INITIAL FIRST FLOW	201	202.4	16.0	15.1	F
C	FINAL FIRST FLOW	374	357.8			
C	INITIAL FIRST CLOSED-IN	374	357.8	30.0	27.3	C
D	FINAL FIRST CLOSED-IN	1657	1674.1			
E	INITIAL SECOND FLOW	381	402.4	30.0	33.0	F
F	FINAL SECOND FLOW	534	537.1			
F	INITIAL SECOND CLOSED-IN	534	537.1	60.0	57.9	C
G	FINAL SECOND CLOSED-IN	1670	1673.4			
H	FINAL HYDROSTATIC	2008	1989.3			

EQUIPMENT & HOLE DATA

FORMATION TESTED: UPPER FRUITLAND COAL
NET PAY (ft): 24.0
GROSS TESTED FOOTAGE: 104.0
ALL DEPTHS MEASURED FROM: KELLY BUSHING
CASING PERFS. (ft):
HOLE OR CASING SIZE (in): 7.875
ELEVATION (ft): 6535.0 G.L. 6547' K.B.
TOTAL DEPTH (ft): 3233.0
PACKER DEPTH(S) (ft): 3123, 3129
FINAL SURFACE CHOKE (in): 0.25000 ADJ.
BOTTOM HOLE CHOKE (in): 0.750
MUD WEIGHT (lb/gal): 11.70
MUD VISCOSITY (sec): 49
ESTIMATED HOLE TEMP. (°F): 100
ACTUAL HOLE TEMP. (°F): 110 @ 3229.0 ft

TICKET NUMBER: 23048300
DATE: 6-24-85 TEST NO: 1
TYPE DST: OPEN HOLE
HALLIBURTON CAMP: FARMINGTON
TESTER: GENE ROBERTS
WITNESS: BILL CLARK
DRILLING CONTRACTOR: FOUR CORNERS #10

FLUID PROPERTIES FOR RECOVERED MUD & WATER

SOURCE	RESISTIVITY	CHLORIDES
PIT SAMPLE	2.800 @ 70 °F	ppm
TOP SAMPLE	2.600 @ 84 °F	ppm
MIDDLE SAMPLE	1.200 @ 84 °F	ppm
BOTTOM SAMPLE	1.600 @ 79 °F	ppm
SAMPLER	1.100 @ 79 °F	ppm
	@ °F	ppm

SAMPLER DATA

Psig AT SURFACE: 1250.0
cu.ft. OF GAS: 1.150
cc OF OIL:
cc OF WATER: 1900.0
cc OF MUD:
TOTAL LIQUID cc: 1900.0

HYDROCARBON PROPERTIES

OIL GRAVITY (°API): @ °F
GAS/OIL RATIO (cu.ft. per bbl):
GAS GRAVITY:

CUSHION DATA

TYPE	AMOUNT	WEIGHT

RECOVERED:

1050 FEET OF MUD AND GAS CUT WATER AND COAL FINES

MEASURED FROM TESTER VALVE

REMARKS:

NET PAY IS FROM 3197' TO 3221'.

B.T. #349 WAS STAIR-STEPPING EARLY IN THE FIRST CLOSED IN PRESSURE PERIOD.

REPORTED SAMPLER PRESSURE SHOULD BE CONSIDERED QUESTIONABLE - APPEARS TO HAVE TRAPPED A PORTION OF THE FINAL CLOSED IN PRESSURE.

TYPE & SIZE MEASURING DEVICE: TICKET NO: 23048300

TIME	CHOKE SIZE	SURFACE PRESSURE PSI	GAS RATE MCF	LIQUID RATE BPD	REMARKS
6-24-85					
1020					ON LOCATION-RIG COMING OUT
1115					PICKED UP AND MADE UP TOOLS
1300					TRIPPED IN HOLE
1446	.125"BH	0			OPENED TOOL WITH A WEAK BUT
					INCREASING BLOW
1447		5			STRONG BLOW TO BOTTOM OF BUCKET
1449		8			STRONG BLOW
1451		12			SAME
1453		14			SAME
1455		16			SAME
1457		18			SAME
1459		19			SAME
1501		20.5			SAME
1502		22			CLOSED TOOL - BLED OFF GAS TO
					SURFACE
1532	.25"ADJ.	24 OZ.			OPENED TOOL WITH WEAK BLOW
1537		21 OZ.			PRESSURE DECREASING - WEAK
					BLOW OF GAS
1542		20 OZ.			PRESSURE DROPPING
1547		5 OZ.			SAME
1551		0			SLIGHT BLOW OF GAS
1556		0			
1602		0			CLOSED TOOL
1702					OPENED BYPASS
2043					OUT OF HOLE WITH TOOLS

TICKET NO: 23048300
CLOCK NO: 13741 HOUR: 24
HALLIBURTON SERVICES
GAUGE NO: 349
DEPTH: 3108.0

REF		MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log\frac{t+\Delta t}{\Delta t}$
FIRST FLOW						
B	1	0.0	139.8			
	2	3.0	191.0	51.2		
	3	6.0	260.1	69.2		
	4	9.0	281.9	21.7		
	5	12.0	301.4	19.6		
C	6	15.1	309.7	8.2		
FIRST CLOSED-IN						
C	1	0.0	309.7			
[1]	2	1.7	1551.9	1242.2	1.5	0.997
	3	2.0	1585.7	1276.0	1.8	0.924
	4	4.0	1596.5	1286.8	3.2	0.679
	5	6.0	1603.3	1293.6	4.3	0.545
	6	8.0	1606.1	1296.4	5.2	0.461
	7	10.0	1609.2	1299.5	6.0	0.400
	8	12.0	1612.1	1302.4	6.7	0.354
	9	14.0	1614.3	1304.6	7.3	0.318
	10	16.0	1616.3	1306.6	7.8	0.289
	11	18.0	1617.8	1308.1	8.2	0.265
	12	20.0	1618.8	1309.1	8.6	0.245
	13	22.0	1619.3	1309.6	9.0	0.227
	14	24.0	1619.7	1310.0	9.3	0.212
	15	26.0	1620.3	1310.6	9.6	0.199
D	16	27.3	1620.4	1310.7	9.7	0.191
SECOND FLOW						
E	1	0.0	356.5			
	2	5.0	344.6	-11.9		
	3	10.0	355.6	10.9		
	4	15.0	386.5	31.0		
	5	20.0	426.4	39.9		
	6	25.0	463.1	36.6		
	7	30.0	478.5	15.4		
F	8	33.0	490.2	11.7		
SECOND CLOSED-IN						
F	1	0.0	490.2			
	2	4.0	1568.8	1078.6	3.7	1.111
	3	8.0	1593.6	1103.4	6.9	0.846
	4	12.0	1602.8	1112.6	9.6	0.700
	5	16.0	1608.5	1118.3	12.0	0.603
	6	20.0	1612.1	1121.8	14.1	0.532
	7	24.0	1614.6	1124.4	16.0	0.477
	8	28.0	1616.7	1126.5	17.7	0.434
	9	32.0	1618.1	1127.8	19.2	0.399
SECOND CLOSED-IN - CONTINUED						
	10	36.0	1619.1	1128.8	20.6	0.369
	11	40.0	1620.3	1130.0	21.9	0.343
	12	44.0	1621.4	1131.2	23.0	0.321
	13	48.0	1622.5	1132.3	24.0	0.302
	14	52.0	1622.7	1132.5	25.0	0.284
	15	56.0	1622.9	1132.7	25.9	0.269
G	16	57.9	1622.8	1132.6	26.3	0.263

LEGEND:
[1] STAIR-STEP

REMARKS:
CHART INDICATES POSSIBLE PLUGGING OF THE ANCHOR PIPE PERFORATIONS AND/OR TOOLS DURING THE FLOW PERIODS - READINGS MAY BE SOMEWHAT QUESTIONABLE.

TICKET NO: 23048300
CLOCK NO: 14128 HOUR: 24
HALLIBURTON SERVICES
GAUGE NO: 283
DEPTH: 3230.0

REF		MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log\frac{t+\Delta t}{\Delta t}$
FIRST FLOW						
B	1	0.0	202.4			
	2	3.0	246.8	44.5		
	3	6.1	313.5	66.6		
	4	9.0	329.1	15.6		
	5	12.0	347.7	18.6		
C	6	15.1	357.8	10.1		
FIRST CLOSED-IN						
C	1	0.0	357.8			
	2	2.0	1607.2	1249.5	1.7	0.936
	3	4.0	1636.3	1278.5	3.1	0.681
	4	6.0	1648.7	1290.9	4.3	0.548
	5	8.0	1655.7	1297.9	5.2	0.459
	6	10.0	1660.1	1302.3	6.0	0.399
	7	12.0	1663.3	1305.5	6.7	0.353
	8	14.0	1665.5	1307.7	7.3	0.318
	9	16.0	1667.9	1310.1	7.8	0.289
	10	18.0	1669.6	1311.8	8.2	0.264
	11	20.0	1671.0	1313.2	8.6	0.244
	12	22.0	1672.0	1314.2	9.0	0.227
	13	24.0	1672.9	1315.2	9.3	0.212
	14	26.0	1673.6	1315.9	9.6	0.199
D	15	27.3	1674.1	1316.3	9.7	0.191
SECOND FLOW						
E	1	0.0	402.4			
	2	5.0	392.2	-10.1		
	3	10.0	404.6	12.3		
	4	15.0	437.7	33.1		
	5	20.0	480.0	42.3		
	6	25.0	508.7	28.7		
	7	30.0	530.9	22.1		
F	8	33.0	537.1	6.2		
SECOND CLOSED-IN						
F	1	0.0	537.1			
	2	4.0	1539.7	1002.6	3.7	1.118
	3	8.0	1632.5	1095.4	6.9	0.844
	4	12.0	1646.7	1109.6	9.6	0.700
	5	16.0	1654.7	1117.6	12.0	0.603
	6	20.0	1659.9	1122.8	14.1	0.532
	7	24.0	1662.9	1125.8	16.0	0.478
	8	28.0	1665.3	1128.2	17.7	0.434
	9	32.0	1667.1	1130.0	19.2	0.399
	10	36.0	1668.4	1131.3	20.6	0.369
	11	40.0	1669.8	1132.7	21.8	0.343
SECOND CLOSED-IN - CONTINUED						
	12	44.0	1671.1	1134.0	23.0	0.321
	13	48.0	1672.1	1135.0	24.0	0.302
	14	52.0	1672.9	1135.8	25.0	0.284
	15	56.0	1673.3	1136.2	25.9	0.269
G	16	57.9	1673.4	1136.3	26.3	0.263

REMARKS:
CHARTS INDICATE POSSIBLE PLUGGING OF ANCHOR PIPE PERFORATIONS AND/OR TOOLS DURING FLOWS-READINGS MAY BE SOMEWHAT QUESTIONABLE.

TICKET NO. 23048300

		O.D.	I.D.	LENGTH	DEPTH
1	DRILL PIPE	4.500	3.826	2536.0	
3	DRILL COLLARS	6.500	2.875	496.0	
50	IMPACT REVERSING SUB	6.000	3.000	1.0	3032.0
3	DRILL COLLARS	6.500	2.875	60.0	
5	CROSSOVER	6.000	3.000	1.0	
13	DUAL CIP SAMPLER	5.030	0.870	7.0	
60	HYDROSPRING TESTER	5.000	0.750	5.0	3106.0
80	AP RUNNING CASE	5.000	2.250	5.0	3108.0
15	JAR	5.030	1.750	5.0	
16	VR SAFETY JOINT	5.000	1.000	3.0	
70	OPEN HOLE PACKER	6.750	1.530	6.0	3123.0
70	OPEN HOLE PACKER	6.750	1.530	6.0	3129.0
5	CROSSOVER	6.000	3.000	1.0	
3	DRILL COLLARS	6.500	2.875	61.0	
5	CROSSOVER	6.000	3.000	1.0	
20	FLUSH JOINT ANCHOR	5.750	3.000	35.0	
81	BLANKED-OFF RUNNING CASE	5.750		4.0	3230.0
	TOTAL DEPTH				3233.0

EQUIPMENT DATA