

well file



FORMATION TESTING SERVICE REPORT

15-11-2000-1000

FEDERAL 23-14
LEASE NAME

1
WELL NO.
1
TEST NO.

5680.1 - 5722.1
TESTED INTERVAL

CHAMPLIN PETROLEUM COMPANY
LEASE OWNER/COMPANY NAME



Duncan, Oklahoma 73536



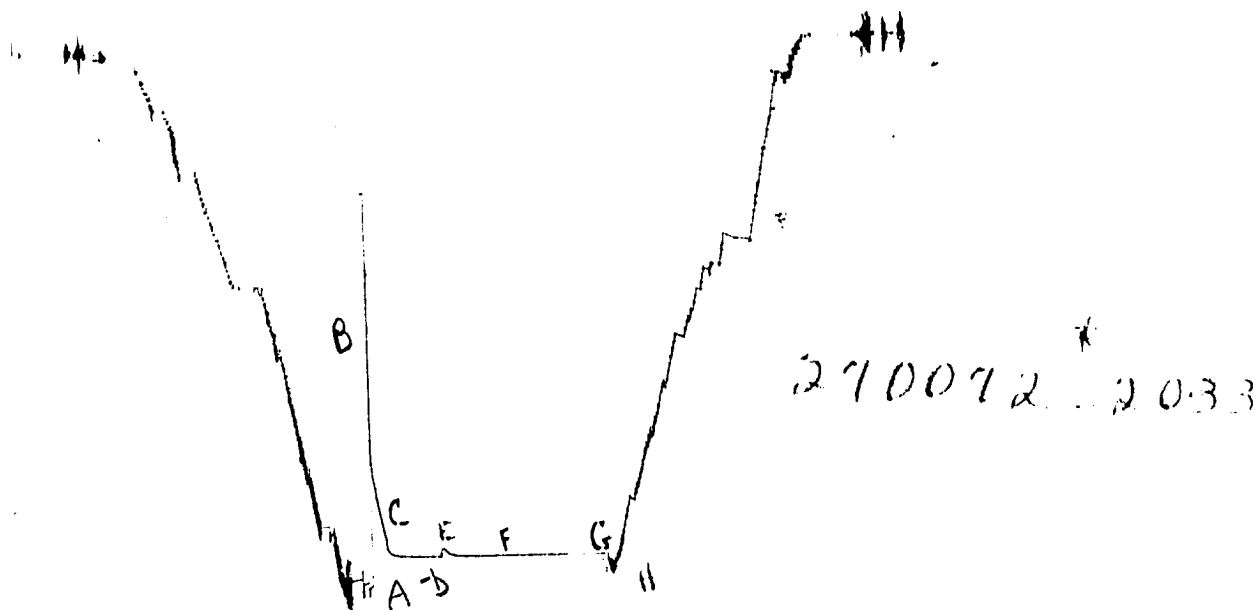
A Halliburton Company

NOMENCLATURE

B	= Formation Volume Factor (Res Vol / Std Vol)	—	
c_t	= System Total Compressibility	(Vol / Vol) / psi	
DR	= Damage Ratio	—	
h	= Estimated Net Pay Thickness	ft	
k	= Permeability	md	
m	{ =	(Liquid) Slope Extrapolated Pressure Plot	psi/cycle
		(Gas) Slope Extrapolated m(P) Plot	MM psi ² /cp/cycle
m(P*)	= Real Gas Potential at P*	MM psi ² /cp	
m(P _i)	= Real Gas Potential at P _i	MM psi ² /cp	
AOF ₁	= Maximum Indicated Absolute Open Flow at Test Conditions	MCFD	
AOF ₂	= Minimum Indicated Absolute Open Flow at Test Conditions	MCFD	
P*	= Extrapolated Static Pressure	Psig	
P _f	= Final Flow Pressure	Psig	
Q	= Liquid Production Rate During Test	BPD	
Q ₁	= Theoretical Liquid Production w/ Damage Removed	BPD	
Q _g	= Measured Gas Production Rate	MCFD	
r _i	= Approximate Radius of Investigation	ft	
r _w	= Radius of Well Bore	ft	
S	= Skin Factor		
t	= Total Flow Time Previous to Closed-in	Minutes	
Δt	= Closed-in Time at Data Point	Minutes	
T	= Temperature Rankine	R	
φ	= Porosity	—	
μ	= Viscosity of Gas or Liquid	cp	
Log	= Common Log		

GAUGE NO: 2032 DEPTH: 5660.0 BLANKED OFF: NO HOUR OF CLOCK: PM

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2589	2629.3			
B	INITIAL FIRST FLOW	554	1600.8	16.0	14.2	F
C	FINAL FIRST FLOW	2257	2391.9			
C	INITIAL FIRST CLOSED-IN	2257	2391.9	60.0	57.7	C
D	FINAL FIRST CLOSED-IN	2483	2486.2			
E	INITIAL SECOND FLOW	2417	2478.1	60.0	60.0	F
F	FINAL SECOND FLOW	2483	2489.9			
F	INITIAL SECOND CLOSED-IN	2483	2489.9	120.0	122.2	C
G	FINAL SECOND CLOSED-IN	2496	2492.2			
H	FINAL HYDROSTATIC	2523	2560.3			



GAUGE NO: 2033 DEPTH: 5719.0 BLANKED OFF: YES HOUR OF CLOCK: 24

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC	2655	2665.2			
B	INITIAL FIRST FLOW	709	1638.7			
C	FINAL FIRST FLOW	2428	2428.5	16.0	14.2	F
C	INITIAL FIRST CLOSED-IN	2428	2428.5			
D	FINAL FIRST CLOSED-IN	2508	2522.3	60.0	57.7	C
E	INITIAL SECOND FLOW	2481	2496.3			
F	FINAL SECOND FLOW	2508	2523.1	60.0	60.0	F
F	INITIAL SECOND CLOSED-IN	2508	2523.1			
G	FINAL SECOND CLOSED-IN	2508	2523.8	120.0	122.2	C
H	FINAL HYDROSTATIC	2562	2606.8			

TICKET NO: 27007200

CLOCK NO: 9756 HOUR: 24


 HALLIBURTON
SERVICES

GAUGE NO: 2032

DEPTH: 5000.0

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	1600.8			
2	2.0	1588.8	-12.0		
3	4.0	1694.4	105.7		
4	6.0	2133.4	439.0		
5	8.0	2218.8	85.4		
6	10.0	2298.9	80.1		
7	12.0	2353.8	54.9		
C 8	14.2	2391.9	38.1		
FIRST CLOSED-IN					
C 1	0.0	2391.9			
2	4.0	2476.7	84.7	3.1	0.657
3	8.0	2481.6	89.7	5.1	0.443
4	12.0	2482.8	90.8	6.5	0.339
5	16.0	2483.4	91.5	7.5	0.275
6	20.0	2483.4	91.5	8.3	0.232
7	24.0	2484.2	92.3	8.9	0.201
8	28.0	2484.2	92.3	9.4	0.178
9	32.0	2484.7	92.8	9.8	0.159
10	36.0	2484.7	92.8	10.2	0.144
11	40.0	2485.3	93.4	10.5	0.132
12	44.0	2485.3	93.4	10.7	0.121
13	48.0	2485.3	93.4	10.9	0.112
14	52.0	2485.3	93.4	11.1	0.105
15	56.0	2485.3	93.4	11.3	0.098
D 16	57.7	2486.2	94.3	11.4	0.095
SECOND FLOW					
E 1	0.0	2478.1			
2	10.0	2484.5	6.4		
3	20.0	2486.6	2.1		
4	30.0	2487.5	0.9		
5	40.0	2487.5	0.0		
6	50.0	2488.5	0.9		
F 7	60.0	2489.9	1.5		
SECOND CLOSED-IN					
F 1	0.0	2489.9			
G 2	122.2	2492.2	2.3	46.2	0.206

REF	MINUTES	PRESSURE	ΔP	$\frac{t \times \Delta t}{t + \Delta t}$	$\log \frac{t + \Delta t}{\Delta t}$

REMARKS:

..75" ADJUSTABLE CHOKE

[illegible]

EQUIPMENT & HOLE DATA

FORMATION TESTED: ENTRADO

NET PAY (ft): 8.0

GROSS TESTED FOOTAGE: 42.0

ALL DEPTHS MEASURED FROM: KELLY BUSHING

CASING PERFS. (ft): _____

HOLE OR CASING SIZE (in): 8.750

ELEVATION (ft): 6317

TOTAL DEPTH (ft): 5722.0

PACKER DEPTH(S) (ft): 5674, 5680

FINAL SURFACE CHOKE (in): 0.063

BOTTOM HOLE CHOKE (in): 0.750

MUD WEIGHT (lb/gal): 9.00

MUD VISCOSITY (sec): 50

ESTIMATED HOLE TEMP. (°F): 160

ACTUAL HOLE TEMP. (°F): 147 @ 5718.0 ft

TICKET NUMBER: 27007200

DATE: 10-5-83 TEST NO: 1

TYPE DST: OPEN HOLE

HALLIBURTON CAMP:
FARMINGTON

TESTER: D. GUNN

WITNESS: J.P. WALKER

DRILLING CONTRACTOR:
FOUR CORNERS # 2

FLUID PROPERTIES FOR RECOVERED MUD & WATER

SOURCE	RESISTIVITY	CHLORIDES
TOP (MUD)	<u>3.220 @ 70 °F</u>	<u>1030</u> ppm
MIDDLE (WATER)	<u>1.540 @ 79 °F</u>	<u>1878</u> ppm
BOTTOM WATER	<u>1.500 @ 88 °F</u>	<u>2060</u> ppm
MUD PIT	<u>5.100 @ 78 °F</u>	<u>575</u> ppm
SAMPLER	<u>1.620 @ 73 °F</u>	<u>2121</u> ppm
	<u> @ °F</u>	<u> </u> ppm

SAMPLER DATA

Pstg AT SURFACE: 10

cu.ft. OF GAS: 0.00

cc OF OIL: 0

cc OF WATER: 2240

cc OF MUD: 0

TOTAL LIQUID cc: 2240

HYDROCARBON PROPERTIES

OIL GRAVITY (°API): @ °F

GAS/OIL RATIO (cu.ft. per bbl):

GAS GRAVITY:

CUSHION DATA

TYPE	AMOUNT	WEIGHT

RECOVERED:

5005 FEET TOTAL RECOVERY CONSISTING OF 300 FEET OF
DRILLING FLUID AND 4705 FEET OF WATER AND SAND

MEASURED FROM
TESTER VALVE

REMARKS:

CLOCK NO: 12118 HOUR: 24



DEPTH: 5719.0

REF	MINUTES	PRESSURE	ΔP	$\frac{1 \times \Delta t}{1 + \Delta t}$	$\log \frac{1 + \Delta t}{\Delta t}$
FIRST FLOW					
B	1	0.0	1638.7		
	2	2.0	2096.5	457.9	
	3	4.0	2168.0	71.5	
	4	6.0	2236.0	67.9	
	5	8.0	2287.2	51.2	
	6	10.0	2337.2	50.0	
	7	12.0	2384.0	46.8	
C	8	14.2	2428.5	44.5	

C	1	0.0	2428.5			
	2	4.0	2501.3	72.9	3.1	0.655
	3	8.0	2511.1	82.6	5.1	0.442
	4	12.0	2514.8	86.4	6.5	0.338
	5	16.0	2517.6	89.2	7.5	0.275
	6	20.0	2518.7	90.2	8.3	0.232
	7	24.0	2519.7	91.2	8.9	0.202
	8	28.0	2521.0	92.5	9.4	0.178
	9	32.0	2521.0	92.5	9.8	0.159
	10	36.0	2521.8	93.3	10.2	0.144
	11	40.0	2521.8	93.3	10.5	0.132
	12	44.0	2522.2	93.7	10.7	0.121
	13	48.0	2522.3	93.9	10.9	0.112
	14	52.0	2522.3	93.9	11.1	0.105
	15	56.0	2522.9	94.4	11.3	0.098
D	16	57.7	2522.3	93.9	11.4	0.095

E	1	0.0	2496.3	
	2	10.0	2509.8	13.5
	3	20.0	2520.3	10.6
	4	30.0	2522.5	2.1
	5	40.0	2523.3	0.8
	6	50.0	2523.3	0.0
F	7	60.0	2523.1	-0.1

F	1	0.0	2523.1			
G	2	122.2	2523.8	0.7	46.2	0.206

[illegible]

REMARKS:

		O.D.	I.D.	LENGTH	DEPTH	
1		DRILL PIPE.....	4.500	3.826	5058.0	
3		DRILL COLLARS.....	6.250	2.250	553.0	
50		IMPACT REVERSING SUB.....	6.000	3.000	1.0	5615.0
3		DRILL COLLARS.....	6.250	2.250	31.0	
5		CROSSOVER.....	6.000	3.000	1.0	
13		DUAL CIP SAMPLER.....	5.030	0.750	7.0	
60		HYDROSPRING TESTER.....	5.000	0.750	5.0	5655.0
80		AP RUNNING CASE.....	5.000	2.250	4.0	5660.0
15		JAR.....	4.750	2.000	7.0	
16		VR SAFETY JOINT.....	5.000	1.000	3.0	
70		OPEN HOLE PACKER.....	7.750	1.530	6.0	5674.0
70		OPEN HOLE PACKER.....	7.750	1.530	6.0	5680.0
20		FLUSH JOINT ANCHOR.....	5.750	3.000	36.0	
81		BLANKED-OFF RUNNING CASE.....	5.750		4.0	5719.0
TOTAL DEPTH					5722.0	

EQUIPMENT DATA

EQUATIONS FOR DST LIQUID WELL ANALYSIS

Transmissibility	$\frac{kh}{\mu} = \frac{162.6 QB}{m}$	$\frac{\text{md-ft}}{\text{cp}}$
Indicated Flow Capacity	$kh = \frac{kh}{\mu} \mu$	md-ft
Average Effective Permeability	$k = \frac{kh}{h}$	md
Damage Ratio	$DR = .183 \frac{P^* - P_f}{m}$	—
Theoretical Potential w / Damage Removed	$Q_1 = Q DR$	BPD
Approx. Radius of Investigation	$r_i = 4.63 \sqrt{kt}$	ft

EQUATIONS FOR DST GAS WELL ANALYSIS

Indicated Flow Capacity	$kh = \frac{1637 Q_g T}{m}$	md-ft
Average Effective Permeability	$k = \frac{kh}{h}$	md
Skin Factor	$S = 1.151 \left[\frac{m(P^*) - m(P_f)}{m} - \text{LOG} \frac{kt}{\phi \mu c_f r_w^2} + 3.23 \right]$	—
Damage Ratio	$DR = \frac{m(P^*) - m(P_f)}{m(P^*) - m(P_f) - 0.87 mS}$	—
Indicated Flow Rate (Maximum)	$AOF_1 = \frac{Q_g m(P^*)}{m(P^*) - m(P_f)}$	MCFD
Indicated Flow Rate (Minimum)	$AOF_2 = Q_g \sqrt{\frac{m(P^*)}{m(P^*) - m(P_f)}}$	MCFD
Approx. Radius of Investigation	$r_i = 0.032 \sqrt{\frac{kt}{\phi \mu c_f}}$	ft