

Formation Testing Service Report

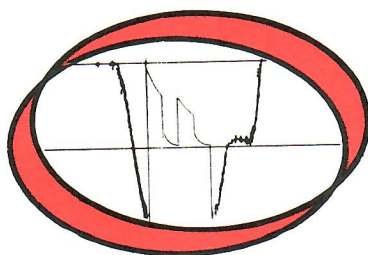
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COLA OIL & GAS CONS. COMM.



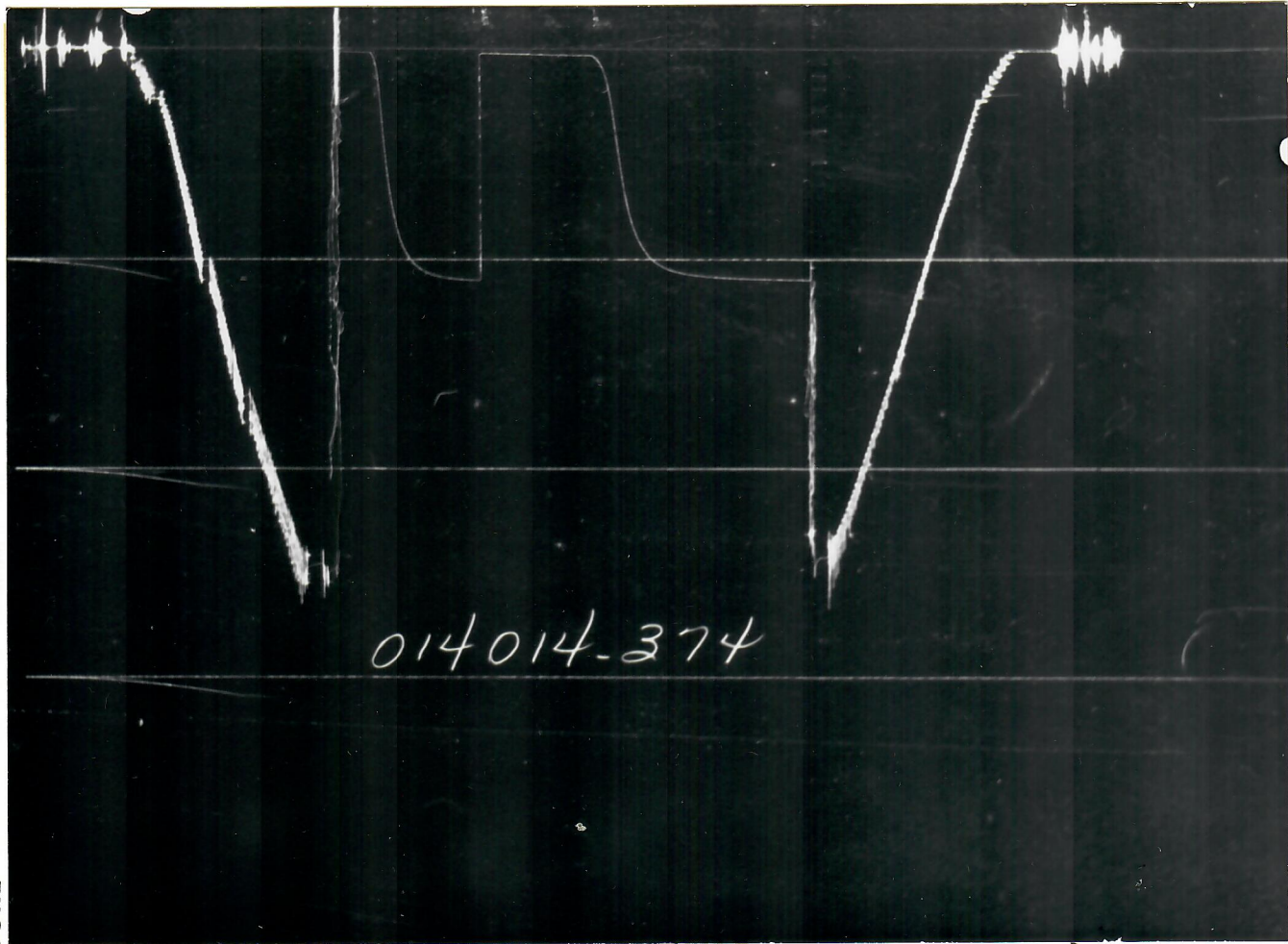
T3

HALLIBURTON SERVICES

DUNCAN, OKLAHOMA

✓

PRESSURE



014014-374

TIME

014014-294

Each Horizontal Line Equal to 1000 p.s.i.

FLUID SAMPLE DATA				Date 9-28-76		Ticket Number 014014	
Sampler Pressure 0 P.S.I.G. at Surface Recovery: Cu. Ft. Gas _____ cc. Oil _____ cc. Water _____ cc. Mud 2200 Tot. Liquid cc. 2200 Gravity _____ ° API @ _____ °F. Gas/Oil Ratio _____ cu. ft./bbl. RESISTIVITY CHLORIDE CONTENT Recovery Water @ _____ °F. _____ ppm Recovery Mud 3.26 @ 50 °F. _____ ppm Recovery Mud Filtrate @ _____ °F. _____ ppm Mud Pit Sample 3.46 @ 80 °F. 500 ppm Mud Pit Sample Filtrate @ _____ °F. _____ ppm Mud Weight 9.3 vis 42 SEC. cp				Kind of Job OPEN HOLE Halliburton District LAMAR Tester MR. PFANNENSTIEL Witness MR. RICHARDSON Drilling Contractor MURFIN DRILLING COMPANY IC EQUIPMENT & HOLE DATA Formation Tested Morrow Middle Elevation 4092' Ft. Net Productive Interval 10' Ft. All Depths Measured From Kelly Bushing Total Depth 5102' Ft. Main Hole/Casing Size 7 7/8" - 8 5/8" Drill Collar Length 488' I.D. 2.25" Drill Pipe Length 4540' I.D. 3.826" Packer Depth(s) 5058' - 5064' Ft. Depth Tester Valve 5042' Ft.			
TYPE AMOUNT Cushion -		Depth Back Pres. Valve		Surface Choke 1/4" BUBBLE		Bottom Choke 3/4"	
Recovered 20 Feet of Mud R/W 3.3 @ 80°							
Recovered Feet of							
Recovered Feet of							
Recovered Feet of							
Recovered Feet of							
Remarks SEE PRODUCTION TEST DATA SHEET.							
TEMPERATURE		Gauge No. 374 Depth: 5043' Ft.		Gauge No. 294 Depth: 5099' Ft.		Gauge No. _____ Depth: _____ Ft.	
Est. _____ °F.		12 Hour Clock Blanked Off NO		12 Hour Clock Blanked Off YES		Hour Clock Blanked Off _____	
5097' @ Actual 128 °F.		Pressures		Pressures		Pressures	
	Field	Office	Field	Office	Field	Office	TIME
Initial Hydrostatic	2471	2455		GAUGE			Tool _____ A.M.
First Period Flow	Initial	13		IMPROPERLY			Opened 15:40 P.M.
	Final	18		ASSEMBLED			Opened _____ A.M.
	Closed in	1099	1098	FOR			Bypass 20:00 P.M.
Second Period Flow	Initial	18		RECORDING			Reported _____
	Final	26	31				Computed _____
	Closed in	1099	1097				Minutes _____
Third Period Flow	Initial						Minutes _____
	Final						
	Closed in						
Final Hydrostatic	2416	2424					

Legal Location
Sec. - Twp. - Rng.

32 - 25S - 45W

Field Area

BARRELL SPRINGS

County

PROWERS

State

COLORADO

Lease Name
DUNCAN

Well No.
1

Test No.
2

Tested Interval
5064' - 5102'

Lease Owner/Company Name
TOM BROWN INCORPORATED

Casing perms. _____ Bottom choke _____ Surf. temp. _____ °F Ticket No. 014014
Gas gravity _____ Oil gravity _____ GOR _____
Spec. gravity _____ Chlorides _____ ppm Res. _____ @ _____ °F

INDICATE TYPE AND SIZE OF GAS MEASURING DEVICE USED.

[illegible]

Gauge No. 374			Depth 5043'			Clock No. 10287			12 hour	Ticket No. 014014					
First Flow Period			First Closed In Pressure			Second Flow Period		Second Closed In Pressure			Third Flow Period		Third Closed In Pressure		
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	$\text{Log} \frac{t + \theta}{\theta}$	PSIG Temp. Corr.
0	.000	13	.000		16	.000	26	.000		31					
1	.127	16	.0407		298	.0747	22*	.0539		152					
2			.0814		748	.1426	25	.1079		601					
3			.1221		941	.2105	27	.1618		883					
4			.1628		1020	.2784	29	.2157		993					
5			.2035		1058	.3463	30	.2697		1039					
6			.2442		1077	.4140	31	.3236		1062					
7			.2849		1087			.3775		1075					
8			.3256		1093			.4315		1081					
9			.3663		1097			.4854		1087					
10			.4070		1098			.5393		1089					
11								.5933		1092					
12								.6472		1093					
13								.7011		1094					
14								.7551		1096					
15								.8090		1097					

Gauge No.		294		Depth		5099'		Clock No.		3247		12 hour			
0															
1															
2			Gauge improperly assembled for recording.												
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															
Reading Interval		6		10		8								Minutes	
REMARKS:		*First interval equal to 11 minutes													



	O. D.	I. D.	LENGTH	DEPTH
Drill Pipe or Tubing				
Reversing Sub	5.75"	2.75"	12"	
Water Cushion Valve				
Drill Pipe	4.5"	3.826"	4540'	
Drill Collars	6.25"	2.25"	488'	
Handling Sub & Choke Assembly	5.87"	3"	56.50"	
Dual CIP Valve				
Dual CIP Sampler	5"	.87"	84.50"	5037'
Hydro-Spring Tester	5"	.75"	60.21"	5042'
Multiple CIP Sampler				
Extension Joint				
AP Running Case	5"	3.06"	49.63"	5043'
Hydraulic Jar	5.03"	1.75"	60"	
VR Safety Joint	5"	1"	33.40"	
Pressure Equalizing Crossover				
Packer Assembly	6.75"	1.53"	69.73"	5058'
Distributor				
Packer Assembly	6.75"	1.53"	69.73"	5064'
Flush Joint Anchor				
Pressure Equalizing Tube				
Blanked-Off B.T. Running Case				
Drill Collars				
Anchor Pipe Safety Joint				
Packer Assembly				
Distributor				
Packer Assembly				
Anchor Pipe Safety Joint				
Side Wall Anchor				
Drill Collars				
Flush Joint Anchor	5"	3.25"	30'	
Blanked-Off B.T. Running Case	5"	2.44"	48.71"	5099'
Total Depth				5102'

NOMENCLATURE

b	= Approximate Radius of Investigation	Feet
b₁	= Approximate Radius of Investigation (Net Pay Zone h ₁)	Feet
D.R.	= Damage Ratio	—
EI	= Elevation	Feet
GD	= B.T. Gauge Depth (From Surface Reference)	Feet
h	= Interval Tested	Feet
h₁	= Net Pay Thickness	Feet
K	= Permeability	md
K₁	= Permeability (From Net Pay Zone h ₁)	md
m	= Slope Extrapolated Pressure Plot (Psi ² /cycle Gas)	psi/cycle
OF₁	= Maximum Indicated Flow Rate	MCF/D
OF₂	= Minimum Indicated Flow Rate	MCF/D
OF₃	= Theoretical Open Flow Potential with/Damage Removed Max.	MCF/D
OF₄	= Theoretical Open Flow Potential with/Damage Removed Min.	MCF/D
P_s	= Extrapolated Static Pressure	Psig.
P_f	= Final Flow Pressure	Psig.
P_{or}	= Potentiometric Surface (Fresh Water *)	Feet
Q	= Average Adjusted Production Rate During Test	bbls/day
Q₁	= Theoretical Production w/Damage Removed	bbls/day
Q_g	= Measured Gas Production Rate	MCF/D
R	= Corrected Recovery	bbls
r_w	= Radius of Well Bore	Feet
t	= Flow Time	Minutes
t_o	= Total Flow Time	Minutes
T	= Temperature Rankine	°R
Z	= Compressibility Factor	—
μ	= Viscosity Gas or Liquid	CP
Log	= Common Log	

* Potentiometric Surface Reference to Rotary Table When Elevation Not Given,
Fresh Water Corrected to 100° F.