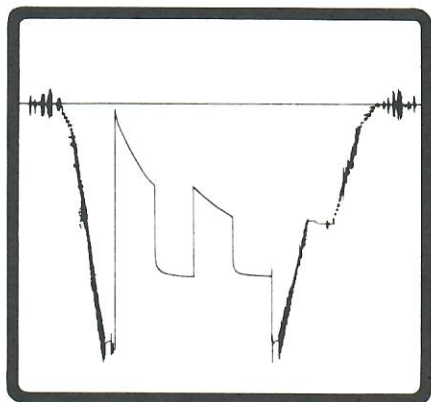




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COLO. OIL & GAS CONS. COMM.



FORMATION TESTING SERVICE REPORT



Duncan, Oklahoma 73536

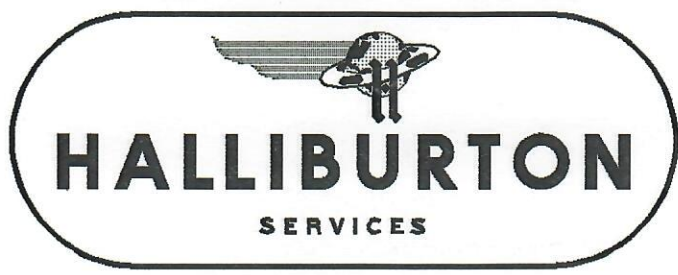


A Halliburton Company

NOMENCLATURE

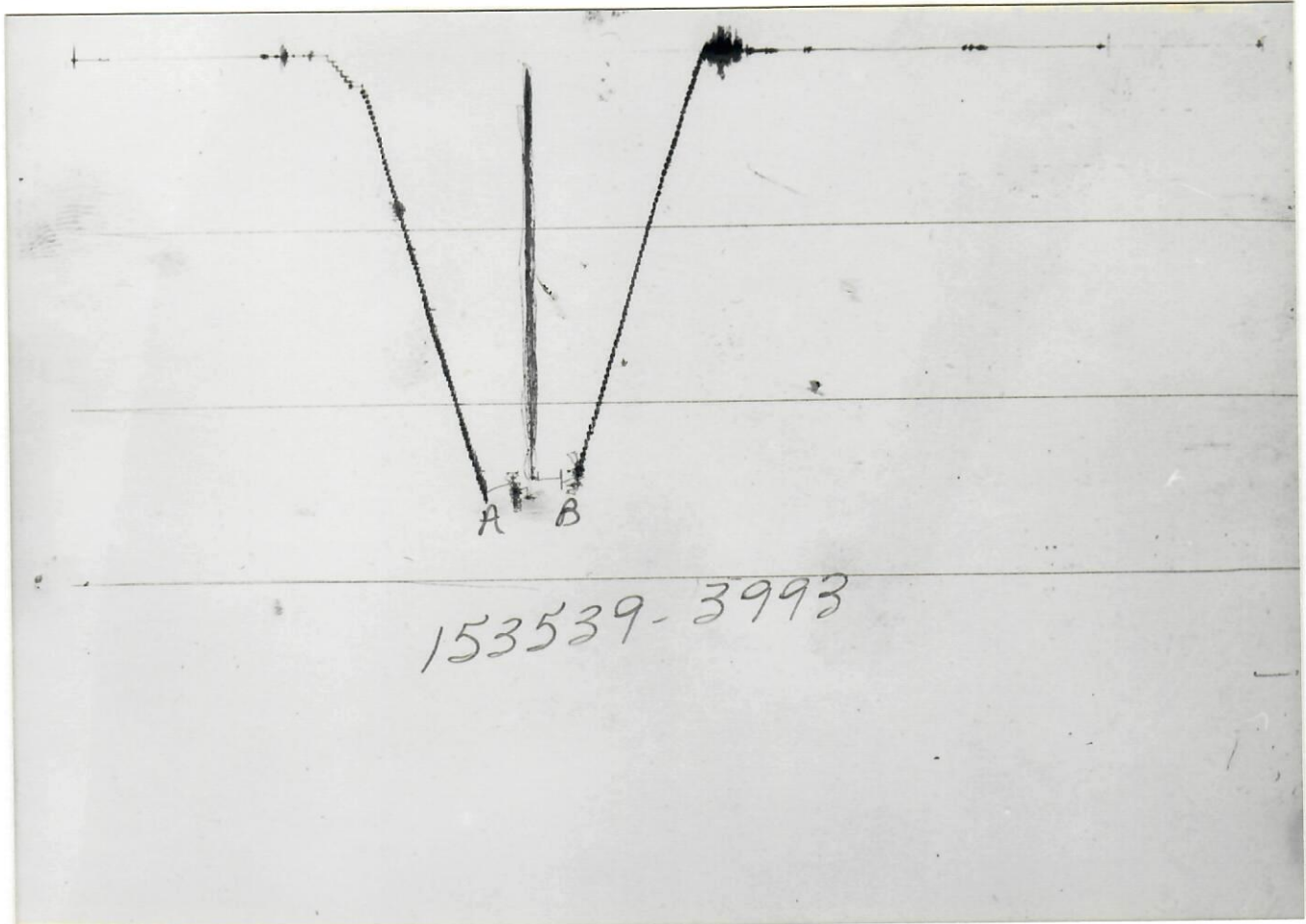
B	= Formation Volume Factor (Res Vol / Std Vol)	—
C_t	= System Total Compressibility	(Vol / Vol) / psi
DR	= Damage Ratio	—
h	= Estimated Net Pay Thickness	Ft
k	= Permeability	md
m	{ = (Liquid) Slope Extrapolated Pressure Plot	psi/cycle
		(Gas) Slope Extrapolated $m(P)$ Plot
		MM psi ² /cp/cycle
$m(P^*)$	= Real Gas Potential at P^*	MM psi ² /cp
$m(P_f)$	= Real Gas Potential at P_f	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	

TALBERT		2	1	5146.0 - 5182.0	TXO PRODUCTION CORPORATION	
LEASE NAME		WELL NO.	TEST NO.	TESTED INTERVAL	LEASE OWNER/COMPANY NAME	
LEGAL LOCATION SEC. - TWP. - RNG.	18-16S-41W	FIELD AREA	STOCKHOLM	COUNTY	CHEYENNE	STATE COLORADO IC



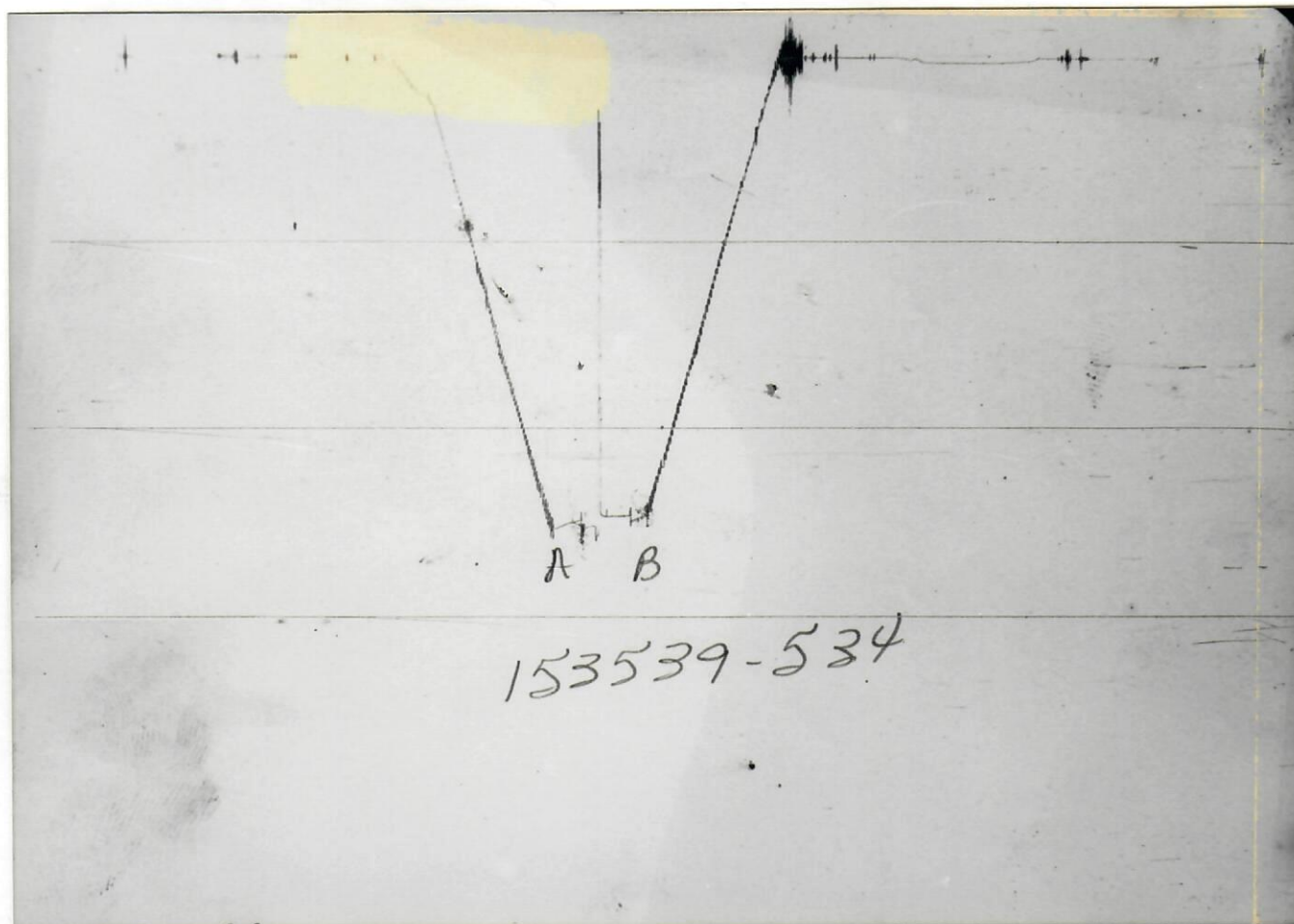
TICKET NO. 15353900
06-JUN-86
LAMAR

FORMATION TESTING SERVICE REPORT



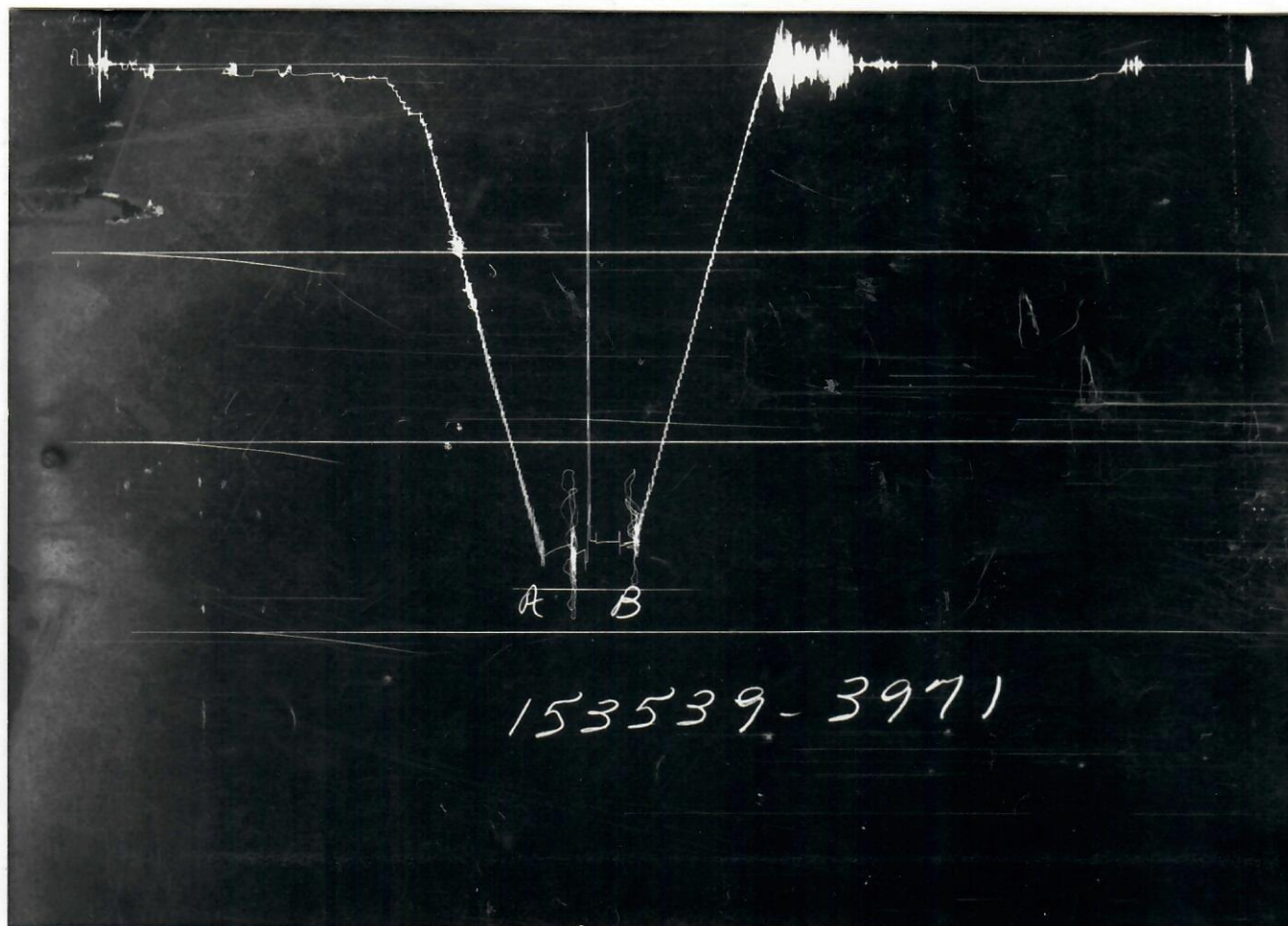
GAUGE NO: 3993 DEPTH: 5123.0 BLANKED OFF: NO HOUR OF CLOCK: 12

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC		2455.5			
B	FINAL HYDROSTATIC		2428.3			



GAUGE NO: 534 DEPTH: 5179.0 BLANKED OFF: YES HOUR OF CLOCK: 12

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC		2489.9			
B	FINAL HYDROSTATIC		2464.8			



GAUGE NO: 3971 DEPTH: 5297.0 BLANKED OFF: YES HOUR OF CLOCK: 12

ID	DESCRIPTION	PRESSURE		TIME		TYPE
		REPORTED	CALCULATED	REPORTED	CALCULATED	
A	INITIAL HYDROSTATIC		2535.6			
B	FINAL HYDROSTATIC		2522.1			

EQUIPMENT & HOLE DATA

FORMATION TESTED: MORROW
 NET PAY (ft): 15.0
 GROSS TESTED FOOTAGE: 36.0
 ALL DEPTHS MEASURED FROM: KELLY BUSHING
 CASING PERFS. (ft): _____
 HOLE OR CASING SIZE (in): 7.875
 ELEVATION (ft): 3941.0 KELLY BUSHING
 TOTAL DEPTH (ft): 5300.0
 PACKER DEPTH(S) (ft): 5138, 5146, 5182
 FINAL SURFACE CHOKE (in): 0.25000
 BOTTOM HOLE CHOKE (in): 0.750
 MUD WEIGHT (lb/gal): 9.20
 MUD VISCOSITY (sec): 55
 ESTIMATED HOLE TEMP. (°F): 145
 ACTUAL HOLE TEMP. (°F): 136 @ 5295.0 ft

TICKET NUMBER: 15353900

DATE: 5-30-86 TEST NO: 1

TYPE DST: OFF BTM. STRADDLE

HALLIBURTON CAMP:
LAMAR

TESTER: L. E. PAINTER

WITNESS: TOM BROCK

DRILLING CONTRACTOR:
MURFIN DRILLING RIG #23

FLUID PROPERTIES FOR RECOVERED MUD & WATER

SOURCE	RESISTIVITY	CHLORIDES
_____	_____ @ _____ °F	_____ ppm
_____	_____ @ _____ °F	_____ ppm
_____	_____ @ _____ °F	_____ ppm
_____	_____ @ _____ °F	_____ ppm
_____	_____ @ _____ °F	_____ ppm
_____	_____ @ _____ °F	_____ ppm

SAMPLER DATA

Pstg AT SURFACE: _____
 cu.ft. OF GAS: _____
 cc OF OIL: _____
 cc OF WATER: _____
 cc OF MUD: _____
 TOTAL LIQUID cc: _____

HYDROCARBON PROPERTIES

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

CUSHION DATA

TYPE	AMOUNT	WEIGHT
_____	_____	_____
_____	_____	_____

RECOVERED:






























370 FEET OF MUD

MEASURED FROM
TESTER VALVE

REMARKS:

- [1] AMOUNT OF COLLARS AND PIPE RUN ABOVE THE REVERSING SUB WAS NOT REPORTED.
- [2] PACKER SEAT FAILED.

TICKET NO. 15353900

		O.D.	I.D.	LENGTH	DEPTH
1		DRILL PIPE.....	4.500	3.826	
3		DRILL COLLARS.....	6.200	2.250	
50		IMPACT REVERSING SUB.....	5.750	2.750	1.0
5		CROSSOVER.....	5.750	2.750	0.7
11		HANDLING SUB & CHOKE ASSEMBLY...	5.750	3.870	4.7
13		DUAL CIP SAMPLER.....	5.750	0.870	7.0
60		HYDROSPRING TESTER.....	5.000	0.750	5.0
80		AP RUNNING CASE.....	5.000	2.250	4.1
15		JAR.....	5.000	1.750	5.0
16		VR SAFETY JOINT.....	5.000	1.000	2.8
17		PRESSURE EQUALIZING CROSSOVER...	5.000	1.000	1.0
70		OPEN HOLE PACKER.....	6.750	1.530	5.8
5		CROSSOVER.....	5.750		0.8
5		CROSSOVER.....	5.750		0.8
70		OPEN HOLE PACKER.....	6.750	1.530	5.8
20		FLUSH JOINT ANCHOR.....	5.000	2.250	20.0
17		PRESSURE EQUALIZING CROSSOVER...	5.000	1.000	1.0
22		BLANK ANCHOR.....	5.000	2.250	6.2
17		PRESSURE EQUALIZING CROSSOVER...	5.000	2.250	1.0
81		BLANKED-OFF RUNNING CASE.....	5.000	2.250	4.1
70		OPEN HOLE PACKER.....	6.750	1.530	5.8
5		CROSSOVER.....	5.750	2.500	1.0
5		CROSSOVER.....	5.500	2.500	0.7
3		DRILL COLLARS.....	6.200	2.250	90.1
5		CROSSOVER.....	5.750	2.500	1.0
5		CROSSOVER.....	5.750	2.750	0.7
20		FLUSH JOINT ANCHOR.....	5.000	2.250	15.0
83		HT-500 TEMPERATURE CASE.....	5.000		1.5
81		BLANKED-OFF RUNNING CASE.....	5.000		4.1
TOTAL DEPTH					5300.0

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
Skin Factor	$S = 1.151 \left[\frac{P^* - P_f}{m} - \text{LOG} \left(\frac{k(t/60)}{\phi \mu c_f r_w^2} \right) + 3.23 \right] \text{---}$	
Damage Ratio	$DR = \frac{P^* - P_f}{P^* - P_f - 0.87 mS}$	---
Theoretical Potential w / Damage Removed	$Q_1 = Q DR$	BPD
Approx. Radius of Investigation	$r_i = 0.032 \sqrt{\frac{k(t/60)}{\phi \mu c_f}}$	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	$S = 1.151 \left[\frac{m(P^*) - m(P_f)}{m} - \text{LOG} \left(\frac{k(t/60)}{\phi \mu c_f r_w^2} \right) + 3.23 \right] \text{---}$	---
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	$r_i = 0.032 \sqrt{\frac{k(t/60)}{\phi \mu c_f}}$	ft

TEMPERATURE

RECORDER

CHART



10° each circle