

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name SHANKLE 2-9 Test No. 1 Date 5/23/93
Company BEREXCO INC Zone MORROW
Address 970 FOURTH FINANCIAL CNTR WICHITA KS 67202 Elevation 3294
Co. Rep./Geo. ED GRIEVES Cont. BEREDCO RIG #4 Est. Ft. of Pay 10
Location: Sec. 9 Twp. 23S Rge. 37W Co. KEARNY State KS

Interval Tested	<u>4746-4756</u>	Drill Pipe Size	<u>4.5" XH</u>
Anchor Length	<u>10</u>	Wt. Pipe I.D. - 2.7 Ft. Run	<u> </u>
Top Packer Depth	<u>4741</u>	Drill Collar - 2.25 Ft. Run	<u>650</u>
Bottom Packer Depth	<u>4746</u>	Mud Wt.	<u>9.6</u> lb/Gal.
Total Depth	<u>4756</u>	Viscosity	<u>48</u> Filtrate <u>9.6</u>

Tool Open @ 1:30 AM Initial Blow STRONG BLOW - BOTTOM OF BUCKET IN 1 1/2 MINUTES
BOTTOM OF BUCKET BLOW BACK
Final Blow STRONG BLOW - BOTTOM OF BUCKET IN 3 MINUTES - GAS TO SURFACE IN 35
BLOW DECREASED AFTER 30 MINUTES BUT STAYED FAIR TO GOOD THROUGHOUT

Recovery - Total Feet 1070 Flush Tool? NO
3650 FEET OF GAS IN PIPE
Rec. 640 Feet of CLEAN GASSY OIL 10%GAS/90%OIL
Rec. 90 Feet of SLIGHTLY MUD CUT GASSY OIL 15%GAS/75%OIL/10%MUD
Rec. 170 Feet of MUD & WATER CUT GASSY OIL 15%GAS/35%OIL/20%H2O/30%MUD
Rec. 85 Feet of MUDDY WATER 50%WATER/50%MUD
Rec. 85 Feet of SLIGHTLY MUDDY WATER 90%WATER/10%MUD

BHT 121 °F Gravity 32 °API @ 60 °F Corrected Gravity 32 °API
RW 0.14 @ 60 °F Chlorides 70000 ppm Recovery Chlorides 1650 ppm System

(A) Initial Hydrostatic Mud 2162.3 PSI AK1 Recorder No. 13337 Range 3975

(B) First Initial Flow Pressure 220.3 PSI @ (depth) 4748 w / Clock No. 31152

(C) First Final Flow Pressure 232.1 PSI AK1 Recorder No. 10333 Range 4075

(D) Initial Shut-in Pressure 434.8 PSI @ (depth) 4753 w / Clock No. 27556

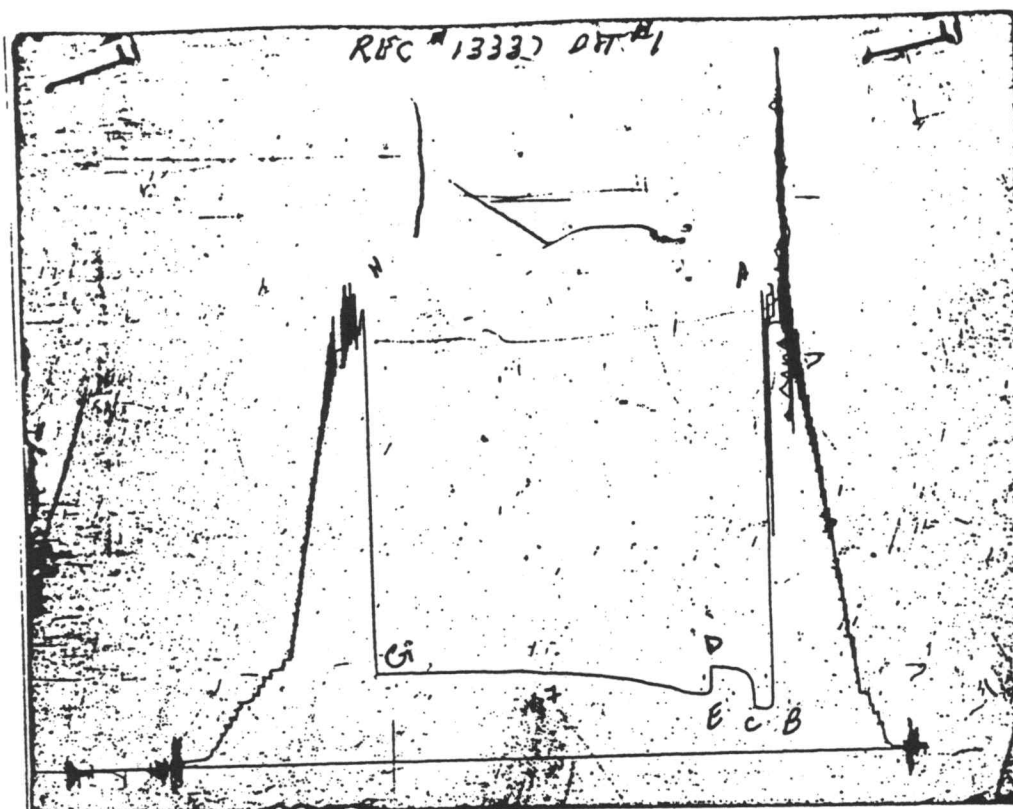
(E) Second Initial Flow Pressure 298.3 PSI AK1 Recorder No. Range

(F) Second Final Flow Pressure 418.1 PSI @ (depth) w / Clock No.

(G) Final Shut-in Pressure 434.8 PSI Initial Opening 15 Final Flow 120

(H) Final Hydrostatic Mud 2131.8 PSI Initial Shut-in 30 Final Shut-in 120

CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	2150	2162.3
(B) FIRST INITIAL FLOW PRESSURE	215	220.3
(C) FIRST FINAL FLOW PRESSURE	224	232.1
(D) INITIAL CLOSED-IN PRESSURE	437	434.8
(E) SECOND INITIAL FLOW PRESSURE	295	298.3
(F) SECOND FINAL FLOW PRESSURE	424	418.1
(G) FINAL CLOSED-IN PRESSURE	436	434.8
(H) FINAL HYDROSTATIC MUD	2120	2131.8

COMPUTER OIL EVALUATION BY TRILOBITE TESTING, L.L.C.

BEREXICO INC

SHANKLE 2-9

DST 1

9 23S 37W

KEARNY KS

ELEVATION:	3294	KB	EST. PAY	10	FT
DATUM:	-1455		ZONE TESTED:	MORROW	
TEST INTERVAL:	4746-4756		TIME INTERVALS:	15-30-120-120	
RECORDER DEPTH:	4748		VISCOSITY:	5.67	CP
BOTTOM HOLE TEMP:	121		HOLE SIZE:	7.875	IN

CUBIC FEET OF GAS IN PIPE:	291				
TOTAL FEET OF RECOVERY:	1070.00	CORRECTED PIPE FILLUP:	1159.467		
TOTAL BARRELS OF RECOVERY:	9.15	CORR. BARRELS OF RECOVERY:	10.416	BBL	
BARRELS IN DRILL PIPE:	5.97	API GRAVITY:	32		
BARRELS IN WEIGHT PIPE:	0.00	FLUID GRADIENT:	0.375		
BARRELS IN DRILL COLLARS:	3.18				
GAS OIL RATIO:	31.85	CU.FT/BBL			
BUBBLE POINT PRESSURE:	261				
UNCORRECTED INITIAL PRODUCTION:			97.61	BBL	
INITIAL PRODUCTION CORRECTED TO FINAL FLOW PRESSURE:			111.11	BBL/DAY	
INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE:			61.423		

INITIAL SLOPE	86.30087	PSI/CYCL	FINAL SLOPE	5.725169	PSI/CYCLE
INITIAL P*	450.00	PSI	FINAL P*	436.6742	PSI

TRANSMISSIBILITY	3155.60	(MD.-FT./CP.)
PERMEABILITY	1788.97	(MD.)
INDICATED FLOW CAPACITY	17889.66	(MD.FT)
PRODUCTIVITY INDEX	3.57	(BARREL/DAY/PSI)
DAMAGE RATIO	0.06	
RADIUS OF INVESTIGATION	491.44	(FT,)
POTENTIOMETRIC SURFACE	-441.35	(FT.)
DRAWDOWN FACTOR	2.961	(%)

INITIAL FLOW

RECORDER #13337

DST # 1

TIME(MIN)	PRESSURE <>PRESSURE
3	220.3 220.3
6	222.3 2.0
9	225.2 2.9
12	229.2 4.0
15	232.1 2.9

FINAL FLOW

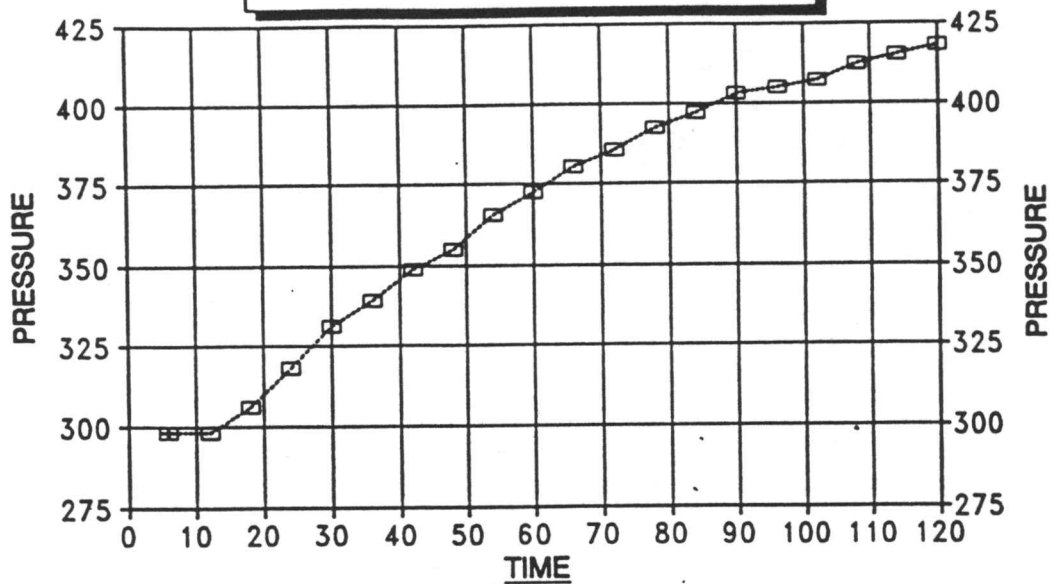
RECORDER #13337

DST # 1

TIME(MIN)	PRESSURE <> PRESSURE
6	298.3 298.3
12	298.3 0.0
18	306.2 7.9
24	318.1 11.9
30	331.1 13.0
36	338.9 7.8
42	348.8 9.9
48	354.7 5.9
54	365.6 10.9
60	372.5 6.9
66	380.4 7.9
72	385.4 5.0
78	392.3 6.9
84	397.2 4.9
90	403.2 6.0
96	405.1 1.9
102	407.1 2.0
108	412.1 5.0
114	415.1 3.0
120	418.1 3.0

DELTA T DELTA P

FINAL FLOW / DST #1



—□— SHANKLE 2-9

INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE:

61.423

SHANKLE 2-9
INITIAL

DST #1
SHUTIN
15 INITIAL FLOW TIME

SLOPE 86.3 PSI/CYCLE
P* 450.00 PSI

TIME(MIN)	Pws (psi)	Log Horn T	<> PRESSURE	Horn T
3	368.5	0.778	368.5	6
6	397.2	0.544	28.7	4
9	408.1	0.426	10.9	3
12	417.1	0.352	9.0	2
15	421.9	0.301	4.8	2
18	424.9	0.263	3.0	2
21	427.9	0.234	3.0	2
X 24	431.8	0.211	3.9	2
27	433.8	0.192	2.0	2
X 30	434.8	0.176	1.0	2

SHANKLE 2-9
FINAL

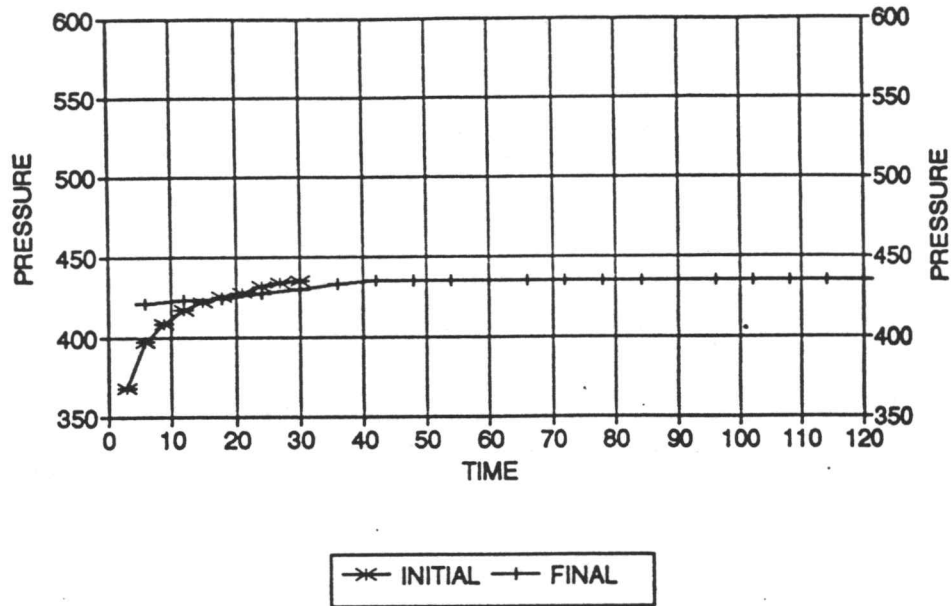
DST #1
SHUTIN
135 TOTAL FLOW TIME

SLOPE 5.7 PSI/CYCLE
P* 436.7 PSI

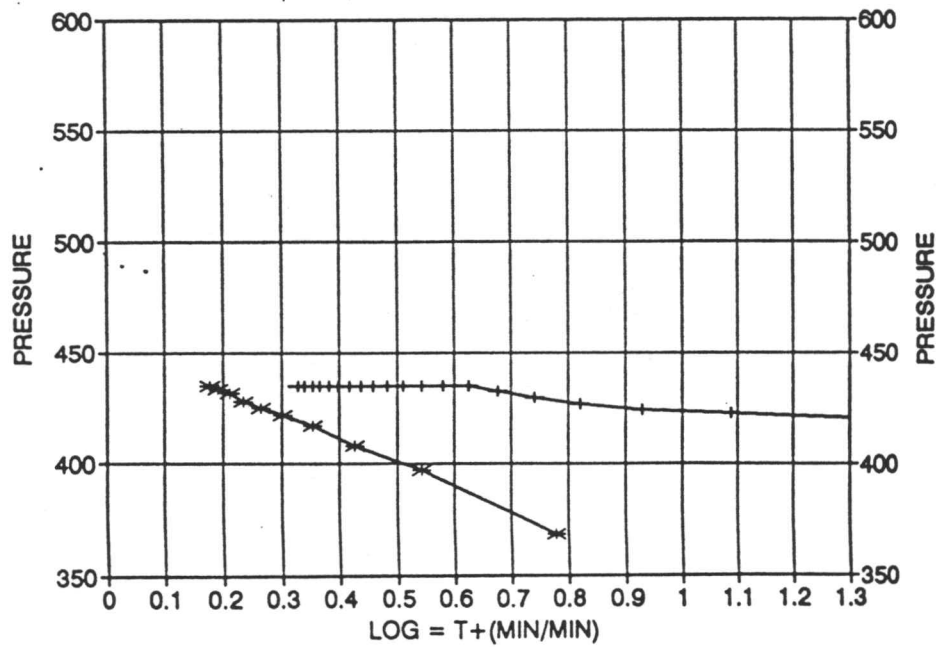
	Pws (psi)	Log Horn T	<> PRESSURE	Horn T
6	420.9	1.371	420.9	24
12	422.9	1.088	2.0	12
18	423.9	0.929	1.0	9
24	426.9	0.821	3.0	7
30	429.8	0.740	2.9	6
X 36	432.8	0.677	3.0	5
42	434.8	0.625	2.0	4
48	434.8	0.581	0.0	4
54	434.8	0.544	0.0	4
60	434.8	0.512	0.0	3
66	434.8	0.484	0.0	3
72	434.8	0.459	0.0	3
78	434.8	0.436	0.0	3
84	434.8	0.416	0.0	3
90	434.8	0.398	0.0	3
96	434.8	0.381	0.0	2
102	434.8	0.366	0.0	2
108	434.8	0.352	0.0	2
114	434.8	0.339	0.0	2
X 120	434.8	0.327	0.0	2

SHANKLE 2-9 / DST #1

DELTA T DELTA P



HORNER PLOT



CALCULATED RECOVERY ANALYSIS

DST	1			TICKET #	5385				
SAMPLE	TOTAL	GAS		OIL		WATER		MUD	
#	FEET	%	FEET	%	FEET	%	FEET	%	FEET
DRILL 1	3650	100	3650		0		0		0
PIPE 2	420	10	42	90	378		0		0
3			0		0		0		0
4			0		0		0		0
5			0		0		0		0
6			0		0		0		0
WEIGHT 1			0		0		0		0
PIPE 2			0		0		0		0
3			0		0		0		0
4			0		0		0		0
DRILL 1	220	10	22	90	198		0		0
COLLAR 2	90	15	13.5	75	67.5		0	10	9
3	170	15	25.5	35	59.5	20	34	30	51
4	85		0		0	50	42.5	50	42.5
5	85		0		0	90	76.5	10	8.5
TOTAL	4720		3753		703		153		111

			HRS OPEN	BBL/DAY
BBL OIL=	6.96441	*	2.25	74.28704
BBL WATER=	0.74817	*		7.98048
BBL MUD=	0.54279			
BBL GAS =	52.79853			

