

# TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Drill-Stem Test Data

Well Name FURTHMYER #1 Test No. 1 Date 5/26/93  
Company PELICAN HILL OIL & GAS INC Zone ARBUCKLE  
Address 2139 AVENIDA ESPADA SAN CLEMENTE CA 92672 Elevation 1800  
Co. Rep./Geo. RANDY KILIAN Cont. ALLEN #3 Est. Ft. of Pay \_\_\_\_\_  
Location: Sec. 22 Twp. 14S Rge. 15W Co. RUSSELL State KS

Interval Tested 3198-3217 Drill Pipe Size 4.5" XH  
Anchor Length 19 Wt. Pipe I.D. - 2.7 Ft. Run \_\_\_\_\_  
Top Packer Depth 3193 Drill Collar - 2.25 Ft. Run 381  
Bottom Packer Depth 3198 Mud Wt. 9.3 lb/Gal.  
Total Depth 3217 Viscosity 49 Filtrate 11.2

Tool Open @ 7:32 PM Initial Blow 1/4" BLOW DECREASING AND DIED IN 14 MINUTES

Final Blow NO BLOW

Recovery - Total Feet 2 Flush Tool? NO

Rec. 2 Feet of MUD  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_

BHT 99 °F Gravity \_\_\_\_\_ °API @ \_\_\_\_\_ °F Corrected Gravity \_\_\_\_\_ °API  
RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm Recovery Chlorides \_\_\_\_\_ ppm System

(A) Initial Hydrostatic Mud 1646.9 PSI AK1 Recorder No. 22150 Range 3925

(B) First Initial Flow Pressure 35.1 PSI @ (depth) 3201 w / Clock No. 8179

(C) First Final Flow Pressure 35.1 PSI AK1 Recorder No. 24174 Range 3050

(D) Initial Shut-in Pressure 35.1 PSI @ (depth) 3214 w / Clock No. 31154

(E) Second Initial Flow Pressure 35.1 PSI AK1 Recorder No. \_\_\_\_\_ Range \_\_\_\_\_

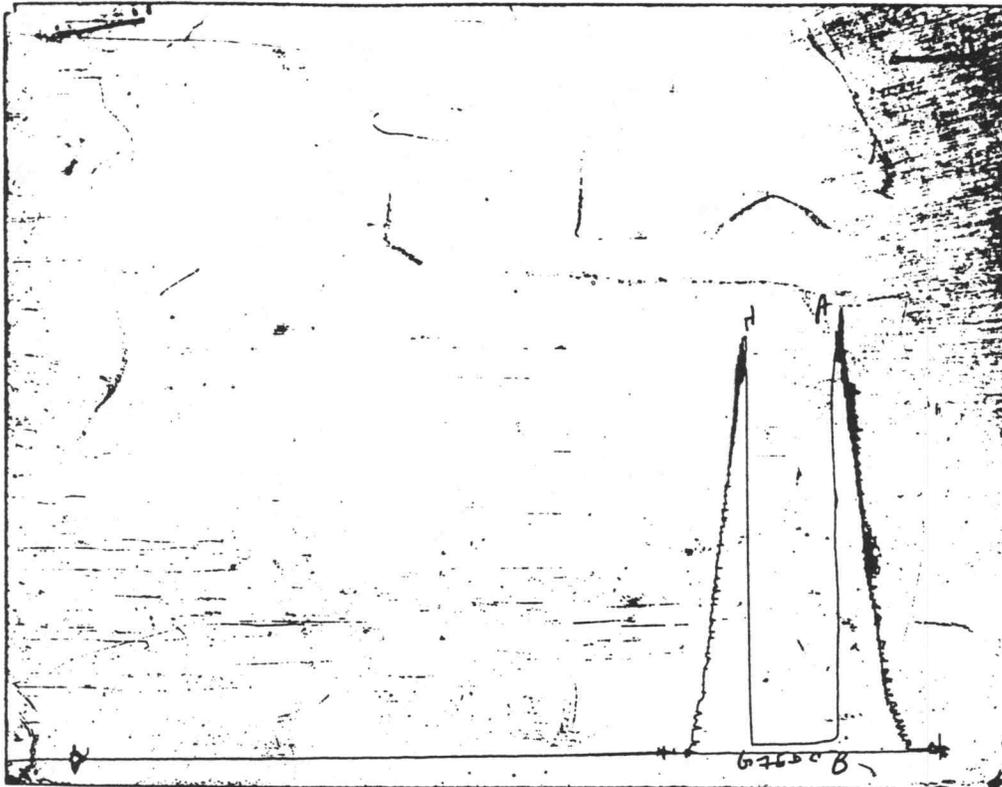
(F) Second Final Flow Pressure 35.1 PSI @ (depth) \_\_\_\_\_ w / Clock No. \_\_\_\_\_

(G) Final Shut-in Pressure 35.1 PSI Initial Opening 15 Final Flow 10

(H) Final Hydrostatic Mud 1628.4 PSI Initial Shut-in 20 Final Shut-in 20

Our Representative PAUL SIMPSON

# CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	1636	1646.9
(B) FIRST INITIAL FLOW PRESSURE	30	35.1
(C) FIRST FINAL FLOW PRESSURE	30	35.1
(D) INITIAL CLOSED-IN PRESSURE	30	35.1
(E) SECOND INITIAL FLOW PRESSURE	30	35.1
(F) SECOND FINAL FLOW PRESSURE	30	35.1
(G) FINAL CLOSED-IN PRESSURE	30	35.1
(H) FINAL HYDROSTATIC MUD	1621	1628.4

# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Test Ticket

No 5742

Well Name & No. Fourth Myer Test No. 1 Date 5-26-93  
 Company Helicon Hill Oil & Gas, Inc Zone Tested Arbuckle  
 Address 2139 Avenida Espartero San Clemente CA Elevation 92672  
 Co. Rep./Geo. Randy Kilian Cont. Allen #3 Est. Ft. of Pay \_\_\_\_\_  
 Location: Sec. 22 Twp. 14s Rge. 15w Co. Russell State Ks  
 No. of Copies \_\_\_\_\_ Distribution Sheet \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_ Turnkey \_\_\_\_\_ Yes \_\_\_\_\_ No \_\_\_\_\_ Evaluation \_\_\_\_\_

Interval Tested 3198 - 3217 Drill Pipe Size 4 1/2 XH  
 Anchor Length 19 Top Choke — 1" \_\_\_\_\_ Bottom Choke — 3/4" \_\_\_\_\_  
 Top Packer Depth 3193 Hole Size — 7 7/8" \_\_\_\_\_ Rubber Size — 6 3/4" \_\_\_\_\_  
 Bottom Packer Depth 3198 Wt. Pipe I.D. — 2.7 Ft. Run \_\_\_\_\_  
 Total Depth 3217 Drill Collar — 2.25 Ft. Run 381  
 Mud Wt. 9.3 lb/gal. Viscosity 49 Filtrate 11.2  
 Tool Open @ 7:32 Initial Blow 14" blow decreasing to 14  
minutes  
 Final Blow no blow

Recovery — Total Feet	Feet of Gas in Pipe	Flush Tool?
Rec. <u>2</u> Feet Of <u>Mud</u>	% gas _____ % oil _____ % water _____ % mud _____	
Rec. _____ Feet Of _____	% gas _____ % oil _____ % water _____ % mud _____	
Rec. _____ Feet Of _____	% gas _____ % oil _____ % water _____ % mud _____	
Rec. _____ Feet Of _____	% gas _____ % oil _____ % water _____ % mud _____	
Rec. _____ Feet Of _____	% gas _____ % oil _____ % water _____ % mud _____	

BHT 99 °F Gravity \_\_\_\_\_ °API @ \_\_\_\_\_ °F Corrected Gravity \_\_\_\_\_ °API

RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm Recovery Chlorides \_\_\_\_\_ ppm System

(A) Initial Hydrostatic Mud 1636 PSI AK1 Recorder No. 24174 Range 3925  
 (B) First Initial Flow Pressure 30 PSI @ (depth) 3201 w/Clock No. 8179  
 (C) First Final Flow Pressure 30 PSI AK1 Recorder No. 22150 Range 3050  
 (D) Initial Shut-In Pressure 30 PSI @ (depth) 3214 w/Clock No. 31154  
 (E) Second Initial Flow Pressure 30 PSI AK1 Recorder No. \_\_\_\_\_ Range \_\_\_\_\_  
 (F) Second Final Flow Pressure 30 PSI @ (depth) \_\_\_\_\_ w/Clock No. \_\_\_\_\_  
 (G) Final Shut-In Pressure 30 PSI Initial Opening 15 Test 1000  
 (H) Final Hydrostatic Mud 1621 PSI Initial Shut-In 20 Jars \_\_\_\_\_

Final Flow 10 Safety Joint \_\_\_\_\_  
 Final Shut-In 20 Straddle \_\_\_\_\_  
 Circ. Sub \_\_\_\_\_  
 Sampler \_\_\_\_\_

Approved By [Signature]  
 Our Representative [Signature]  
 Printcraft Printers - Hays, KS  
 Extra Packer \_\_\_\_\_  
 Other \_\_\_\_\_  
 TOTAL PRICE \$ \_\_\_\_\_

TRILOBITE TESTING L.L.C. SHALL NOT BE LIABLE FOR DAMAGE OF ANY KIND OF THE PROPERTY OR PERSONNEL OF THE ONE FOR WHOM A TEST IS MADE, OR FOR ANY LOSS SUFFERED OR SUSTAINED, DIRECTLY OR INDIRECTLY, THROUGH THE USE OF ITS EQUIPMENT, OR ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF ANY TEST. TOOLS LOST OR DAMAGED IN THE HOLE SHALL BE PAID FOR AT COST BY THE PARTY FOR WHOM THE TEST IS MADE.

# TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Drill-Stem Test Data

Well Name FURTHMYER #1 Test No. 2 Date 5/27/93  
Company PELICAN HILL OIL & GAS INC Zone ARBUCKLE  
Address \_\_\_\_\_ Elevation 1800  
Co. Rep./Geo. RANDY KILIAN Cont. ALLEN #3 Est. Ft. of Pay 10  
Location: Sec. 22 Twp. 14S Rge. 15W Co. RUSSELL State KS

Interval Tested 3198-3221 Drill Pipe Size 4.5" XH  
Anchor Length 23 Wt. Pipe I.D. - 2.7 Ft. Run \_\_\_\_\_  
Top Packer Depth 3193 Drill Collar - 2.25 Ft. Run 381  
Bottom Packer Depth 3198 Mud Wt. 9.3 lb/Gal.  
Total Depth 3221 Viscosity 53 Filtrate \_\_\_\_\_

Tool Open @ 3:10 AM Initial Blow 1/4" BLOW BUILDING TO BOTTOM OF BUCKET IN 25 MINUTES  
BLOW BACK BUILT TO 2"  
Final Blow 2" BLOW BUILDING TO BOTTOM OF BUCKET IN 12 MINUTES  
BLOW BACK BUILT TO 1 1/2"

Recovery - Total Feet 175 Flush Tool? NO

Rec. 365 Feet of GAS IN PIPE  
Rec. 120 Feet of CLEAN GASSY OIL 20%GAS/80%OIL  
Rec. 55 Feet of GASSY OIL CUT MUD 5%GAS/10%OIL/85%MUD  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_  
Rec. \_\_\_\_\_ Feet of \_\_\_\_\_

BHT 98 °F Gravity 37 °API @ 80 °F Corrected Gravity 35 °API  
RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm Recovery Chlorides \_\_\_\_\_ ppm System

(A) Initial Hydrostatic Mud 1678.6 PSI AK1 Recorder No. 22150 Range 3925

(B) First Initial Flow Pressure 42.2 PSI @ (depth) 3201 w / Clock No. 31154

(C) First Final Flow Pressure 51.1 PSI AK1 Recorder No. 24174 Range 3050

(D) Initial Shut-in Pressure 1080.8 PSI @ (depth) 3217 w / Clock No. 25814

(E) Second Initial Flow Pressure 76.4 PSI AK1 Recorder No. \_\_\_\_\_ Range \_\_\_\_\_

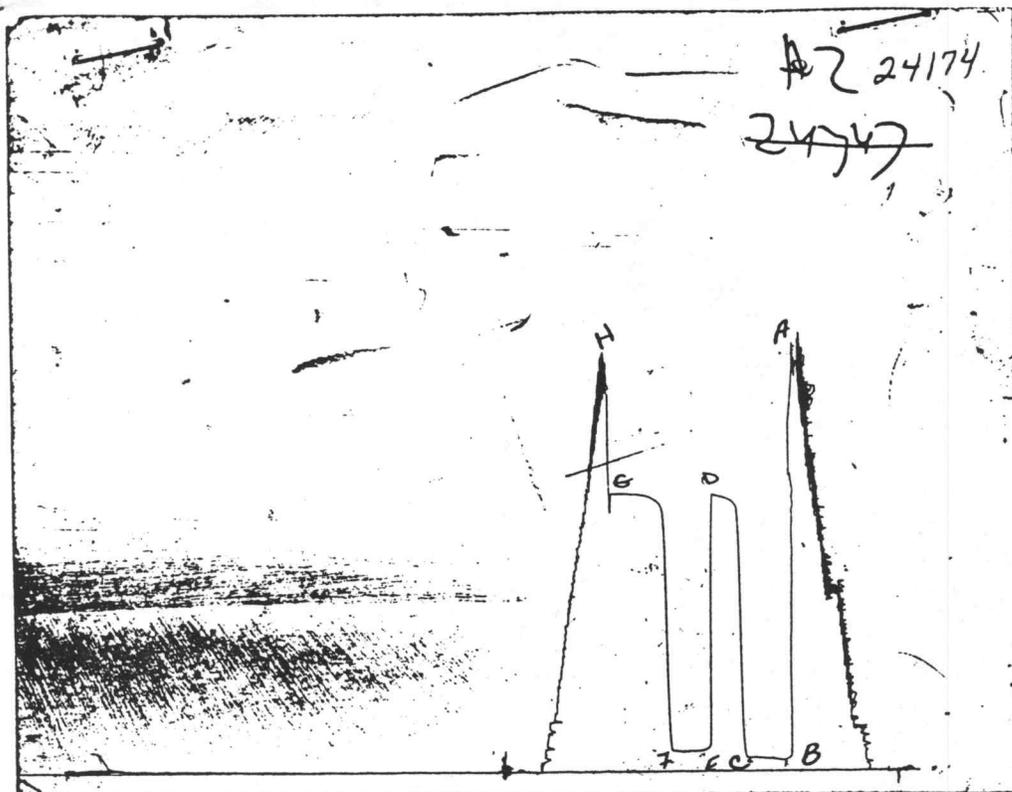
(F) Second Final Flow Pressure 79.4 PSI @ (depth) \_\_\_\_\_ w / Clock No. \_\_\_\_\_

(G) Final Shut-in Pressure 1086.1 PSI Initial Opening 30 Final Flow 30

(H) Final Hydrostatic Mud 1622.9 PSI Initial Shut-in 30 Final Shut-in 45

Our Representative PAUL SIMPSON

CHART PAGE



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	1668	1678.6
(B) FIRST INITIAL FLOW PRESSURE	30	42.2
(C) FIRST FINAL FLOW PRESSURE	44	51.1
(D) INITIAL CLOSED-IN PRESSURE	1085	1080.8
(E) SECOND INITIAL FLOW PRESSURE	67	76.4
(F) SECOND FINAL FLOW PRESSURE	74	79.4
(G) FINAL CLOSED-IN PRESSURE	1085	1086.1
(H) FINAL HYDROSTATIC MUD	1613	1622.9

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

PELICAN HILL OIL & GAS INC

FURTHMYER #1

DST 2

22 14S 15W RUSSELL KS

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*****
ELEVATION:          1800 KB      EST. PAY          10 FT
DATUM:              -1418      ZONE TESTED:     ARBUCKLE
TEST INTERVAL:      3198-3221  TIME INTERVALS:  30-30-30-45
RECORDER DEPTH:     3217      VISCOSITY:       9.35 CP
BOTTOM HOLE TEMP:   98        HOLE SIZE:       7.875 IN
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*****
CUBIC FEET OF GAS IN PIPE:          18
TOTAL FEET OF RECOVERY:             175.00 CORRECTED PIPE FILLUP:          215.761
TOTAL BARRELS OF RECOVERY:          0.86 CORR. BARRELS OF RECOVERY:      1.051 BBL
BARRELS IN DRILL PIPE:              0.00 API GRAVITY:                   35
BARRELS IN WEIGHT PIPE:             0.00 FLUID GRADIENT:                 0.368
BARRELS IN DRILL COLLARS:           0.86
GAS OIL RATIO:                      21.46 CU.FT/BBL
BUBBLE POINT PRESSURE:              160
UNCORRECTED INITIAL PRODUCTION:                                           20.54 BBL
INITIAL PRODUCTION CORRECTED TO FINAL FLOW PRESSURE:                       25.23 BBL/DAY
INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE:                  9.567
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*****
INITIAL SLOPE          108.77388 PSI/CYCL FINAL SLOPE          55.3423041 PSI/CYCLE
INITIAL P*            1116.10 PSI      FINAL P*            1106.46468 PSI
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*****
TRANSMISSIBILITY          74.13 (MD.-FT./CP.)
PERMEABILITY              69.32 (MD.)
INDICATED FLOW CAPACITY  693.24 (MD.FT)
PRODUCTIVITY INDEX       0.08 (BARREL/DAY/PSI)
DAMAGE RATIO             3.40
RADIUS OF INVESTIGATION  64.49 (FT,)
POTENTIOMETRIC SURFACE  1148.89 (FT.)
DRAWDOWN FACTOR         0.863 (%)
*****
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INITIAL FLOW

RECORDER #24174

DST # 2

TIME(MIN)	PRESSURE	<>PRESSURE
3	42.2	42.2
6	42.2	0.0
9	45.1	2.9
12	47.4	2.3
15	48.1	0.7
18	48.1	0.0
21	49.6	1.5
24	51.1	1.5
27	51.1	0.0
30	51.1	0.0

FINAL FLOW

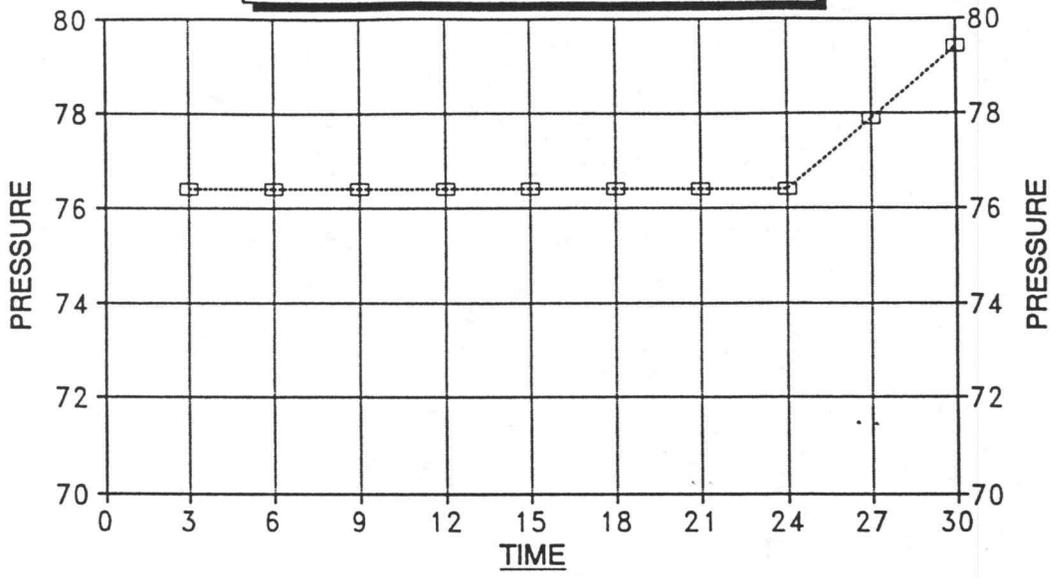
RECORDER #24174

DST # 2

TIME(MIN)	PRESSURE	<> PRESSURE
3	76.4	76.4
6	76.4	0.0
9	76.4	0.0
12	76.4	0.0
15	76.4	0.0
18	76.4	0.0
21	76.4	0.0
24	76.4	0.0
27	77.9	1.5
30	79.4	1.5

# DELTA T DELTA P

FINAL FLOW / DST #2



—□— FURTHMYER #1

INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE:

9.567

FURTHMYER #1  
INITIAL

DST #2  
SHUTIN  
30 INITIAL FLOW TIME

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SLOPE 108.8 PSI/CYCLE  
P\* 1116.10 PSI  
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		Log	<>		
TIME(MIN)	Pws (psi)	Horn T	PRESSURE	Horn T	
	3	72.7	1.041	72.7	11
	6	580.9	0.778	508.2	6
	9	1040.1	0.637	459.2	4
	12	1055.9	0.544	15.8	4
X	15	1064.2	0.477	8.3	3
	18	1069.5	0.426	5.3	3
	21	1073.2	0.385	3.7	2
	24	1077.1	0.352	3.9	2
X	27	1080.8	0.325	3.7	2

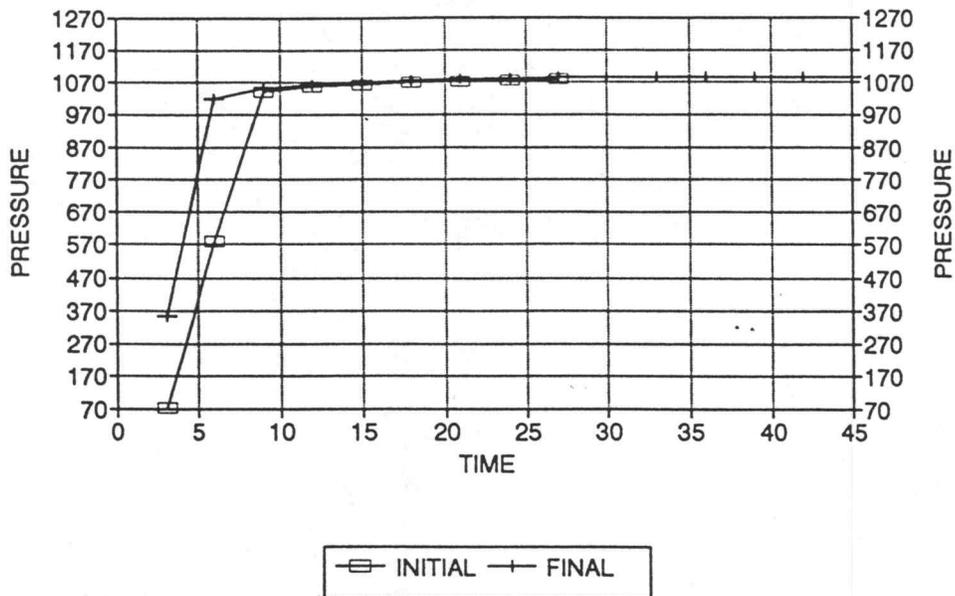
FURTHMYER #1  
FINAL

DST #2  
SHUTIN  
60 TOTAL FLOW TIME

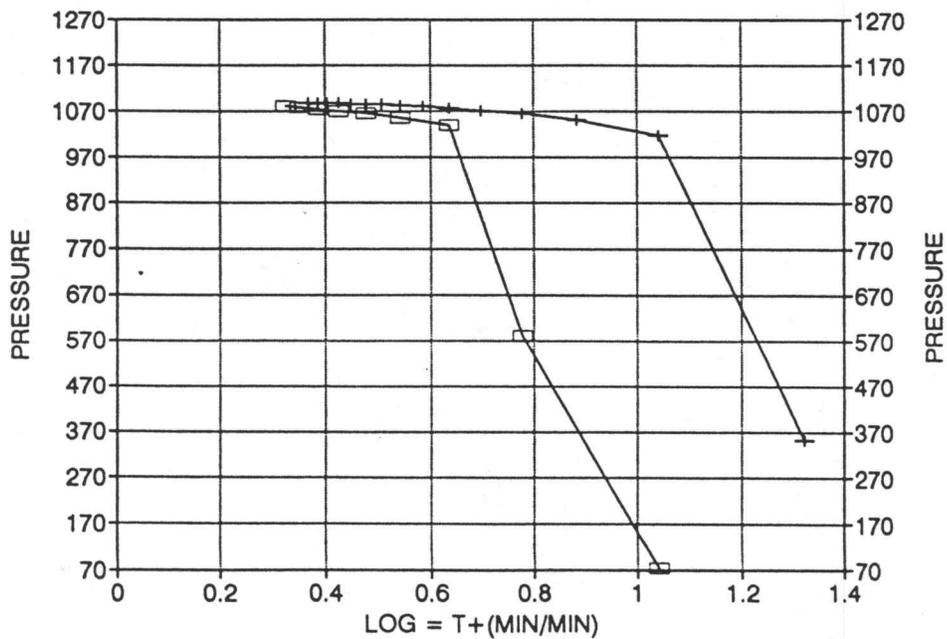
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SLOPE 55.3 PSI/CYCLE  
P\* 1106.5 PSI  
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		Log	<>		
	Pws (psi)	Horn T	PRESSURE	Horn T	
	3	351.7	1.322	351.7	21
	6	1017.3	1.041	665.6	11
	9	1051.3	0.885	34.0	8
X	12	1063.4	0.778	12.1	6
	15	1071.1	0.699	7.7	5
	18	1076.3	0.637	5.2	4
	21	1080.8	0.586	4.5	4
	24	1082.3	0.544	1.5	4
	27	1084.6	0.508	2.3	3
	30	1084.6	0.477	0.0	3
	33	1084.6	0.450	0.0	3
	36	1086.1	0.426	1.5	3
	39	1086.1	0.405	0.0	3
	42	1086.1	0.385	0.0	2
X	45	1086.1	0.368	0.0	2

# FURTHMYER #1 / DST #2 DELTA T DELTA P



# HORNER PLOT



CALCULATED RECOVERY ANALYSIS

DST

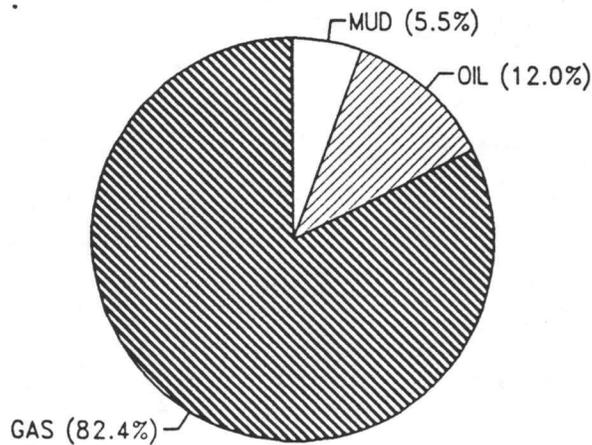
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TICKET #

5743

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD	
		%	FEET	%	FEET	%	FEET	%	FEET
DRILL 1	159	100	159		0		0		0
PIPE 2			0		0		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	206	100	206		0		0		0
COLLAR 2	120	20	24	80	96		0		0
3	55	5	2.75	10	5.5		0	85	46.75
4			0		0		0		0
5			0		0		0		0
TOTAL	540		391.75		101.5		0		46.75

	BBL OIL=	BBL WATER=	BBL MUD=	BBL GAS =	HRS OPEN	BBL/DAY
	0.496335	0	0.2286075	3.3991275	1	11.91204
	*	*				0



# TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

## Test Ticket

No 5743

Well Name & No. <u>Furthmyer #1</u>	Test No. <u>2</u>	Date <u>5-27-93</u>
Company <u>Pelican Hill - Oil &amp; Gas, Inc</u>	Zone Tested <u>Arbuckle</u>	
Address _____	Elevation <u>1800</u>	
Co. Rep./Geo. <u>Randy Kilian</u>	cont. <u>Allen #3</u>	Est. Ft. of Pay <u>10'</u>
Location: Sec. <u>22</u>	Twp. <u>14s</u>	Rge. <u>15w</u> Co. <u>Russell</u> State <u>Ks</u>
No. of Copies <u>5</u>	Distribution Sheet _____	Yes _____ No _____ Turnkey _____ Yes _____ No <input checked="" type="checkbox"/> Evaluation

Interval Tested 3198-3221 Drill Pipe Size 4 1/2" XH

Anchor Length 23 Top Choke — 1" \_\_\_\_\_ Bottom Choke — 1/4" \_\_\_\_\_

Top Packer Depth 3193 Hole Size — 7 7/8" \_\_\_\_\_ Rubber Size — 6 3/4" \_\_\_\_\_

Bottom Packer Depth 3198 Wt. Pipe I.D. — 2.7 Ft. Run \_\_\_\_\_

Total Depth 3221 Drill Collar — 2.25 Ft. Run 381

Mud Wt. 9.3 lb/gal. Viscosity 53 Filtrate \_\_\_\_\_

Tool Open @ 3:10 AM Initial Blow 1/4" blow building to bottom of bucket in 25 minutes (blow back built to 2")

Final Blow 2" blow building to bottom of bucket in 12 minutes (blow back built to 1 1/2")

Recovery — Total Feet 125 Feet of Gas in Pipe 365 Flush Tool? \_\_\_\_\_

Rec. <u>120</u>	Feet Of	<u>clgy oil</u>	<u>20</u> %gas	<u>80</u> %oil	%water	%mud
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Rec. <u>55</u>	Feet Of		<u>5</u> %gas	<u>10</u> %oil	%water	<u>85</u> %mud
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Rec. _____	Feet Of		%gas	%oil	%water	%mud
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Rec. _____	Feet Of		%gas	%oil	%water	%mud
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Rec. _____	Feet Of		%gas	%oil	%water	%mud
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BHT 98 °F Gravity 37 °API @ 80 °F Corrected Gravity 35 °API

RW \_\_\_\_\_ @ \_\_\_\_\_ °F Chlorides \_\_\_\_\_ ppm Recovery Chlorides \_\_\_\_\_ ppm System

(A) Initial Hydrostatic Mud 1668 PSI AK1 Recorder No. 22150 Range 3925

(B) First Initial Flow Pressure 30 PSI @ (depth) 3201 w/Clock No. 31154

(C) First Final Flow Pressure 44 PSI AK1 Recorder No. 24174 Range 3050

(D) Initial Shut-In Pressure 1085 PSI @ (depth) 3217 w/Clock No. 25814

(E) Second Initial Flow Pressure 67 PSI AK1 Recorder No. \_\_\_\_\_ Range \_\_\_\_\_

(F) Second Final Flow Pressure 74 PSI @ (depth) \_\_\_\_\_ w/Clock No. \_\_\_\_\_

(G) Final Shut-In Pressure 1085 PSI Initial Opening 30 Test A 1000

(H) Final Hydrostatic Mud 1613 PSI Initial Shut-In 30 Jars \_\_\_\_\_

Final Flow 30 Safety Joint \_\_\_\_\_

Final Shut-In 45 Straddle \_\_\_\_\_

Approved By Randy Kilian Circ. Sub \_\_\_\_\_

Our Representative Randy Kilian Sampler \_\_\_\_\_

Extra Packer \_\_\_\_\_  
Other eval 50  
TOTAL PRICE \$ 650