

TRILOBITE TESTING, L.L.C.

P.O. Box 362 • Hays, Kansas 67601

15-163-23218
5-98-17w
ORIGINAL

Drill-Stem Test Data

Well Name FISHER #1 Test No. 1 Date 4/19/93
 Company HORIZONTAL DEVELOPMENT & PRODUCTION Zone LKC 'C-D'
 Address 277 TOWN & COUNTRY VILLAGE PALO ALTO CALIF Elevation 2016
 Co. Rep./Geo. RICK HALL Cont. EMPHASIS #6 Est. Ft. of Pay _____
 Location: Sec. 5 Twp. 9S Rge. 17W Co. ROOKS State KS

Interval Tested 3188-3240 Drill Pipe Size 4.5" XH
 Anchor Length 52 Wt. Pipe I.D. - 2.7 Ft. Run _____
 Top Packer Depth 3183 Drill Collar - 2.25 Ft. Run _____
 Bottom Packer Depth 3188 Mud Wt. 9.0 lb/Gal.
 Total Depth 3240 Viscosity 46 Filtrate 8.0

Top Open @ 11:52 AM Initial Blow WEAK 1/4" BLOW BUILDING TO 2 3/4"
 Final Blow VERY WEAK SURFACE BLOW BUILDING TO 3 1/2"

NEEDS
KANSAS CORPORATION COMMISSION

Recovery - Total Feet 62 Flush Tool? NO

AUG 02 1996

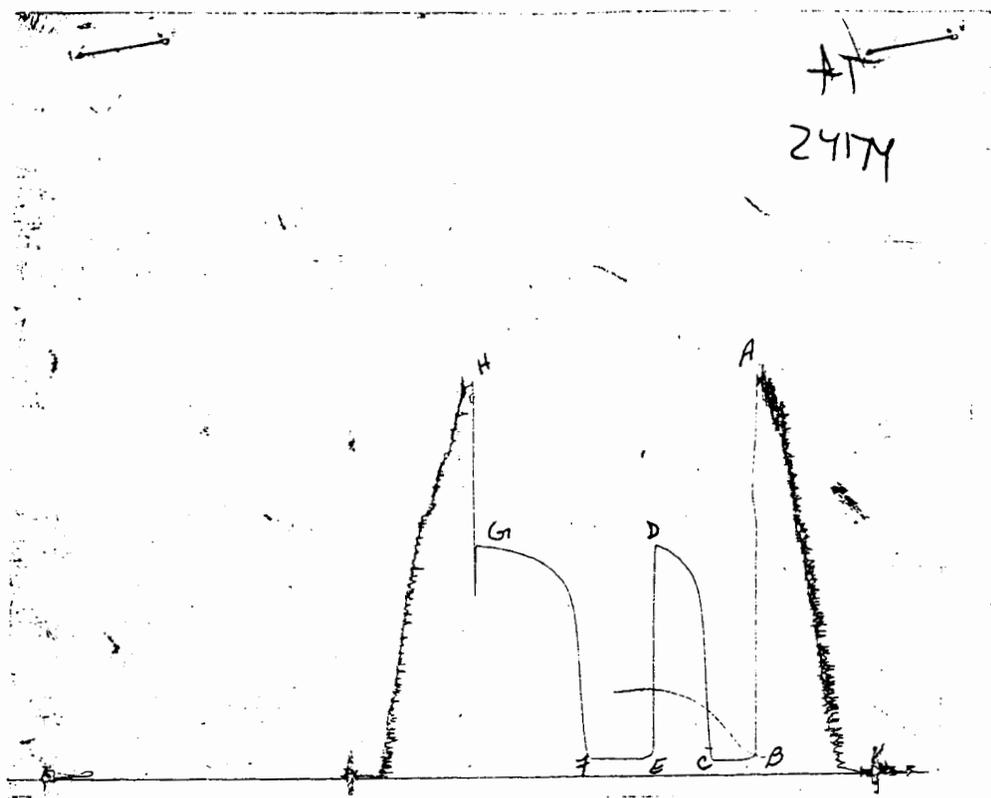
Rec. 5 Feet of CLEAN OIL
 Rec. 57 Feet of SLIGHTLY OIL CUT MUD 5%OIL/95%MUD
 Rec. _____ Feet of _____
 Rec. _____ Feet of _____
 Rec. _____ Feet of _____

CONSERVATION DIVISION
WICHITA, KS

BHT 97 °F Gravity 38 °API @ 50 °F Corrected Gravity 39 °API
 RW 0.51 @ 50 °F Chlorides 19000 ppm Recovery Chlorides 4000 ppm System

(A) Initial Hydrostatic Mud 1551.1 PSI AK1 Recorder No. 22150 Range 3925
 (B) First Initial Flow Pressure 31.6 PSI @ (depth) 3192 w / Clock No. 30401
 (C) First Final Flow Pressure 35.4 PSI AK1 Recorder No. 24174 Range 3050
 (D) Initial Shut-in Pressure 881.8 PSI @ (depth) 3236 w / Clock No. 25814
 (E) Second Initial Flow Pressure 50.8 PSI AK1 Recorder No. _____ Range _____
 (F) Second Final Flow Pressure 52.6 PSI @ (depth) _____ w / Clock No. _____
 (G) Final Shut-in Pressure 884.7 PSI Initial Opening 30 Final Flow 45
 (H) Final Hydrostatic Mud 1545.2 PSI Initial Shut-in 45 Final Shut-in 90

Our Representative PAUL SIMPSON



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	1567	1551.1
(B) FIRST INITIAL FLOW PRESSURE	44	31.6
(C) FIRST FINAL FLOW PRESSURE	52	35.4
(D) INITIAL CLOSED-IN PRESSURE	903	881.8
(E) SECOND INITIAL FLOW PRESSURE	59	50.8
(F) SECOND FINAL FLOW PRESSURE	67	52.6
(G) FINAL CLOSED-IN PRESSURE	911	884.7
(H) FINAL HYDROSTATIC MUD	1552	1545.2

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

ORIGINAL

Test Ticket

№ 5722

Well Name & No. Fisher #1 Test No. 1 Date 4-19-93
 Company Horizontal Development & Production Zone Tested LKC 'C-D'
 Address 277 Town & Country Village Palo Alto CA Elevation _____
 Co. Rep./Geo. Rick Hall Cont. Emphasis #6 Est. Ft. of Pay _____
 Location: Sec. 5 Twp. 9s Rge. 17w Co. Rooks State Ks
 No. of Copies _____ Distribution Sheet _____ Yes _____ No _____ Turnkey _____ Yes _____ No _____ Evaluation _____

Interval Tested 3188-3240 Drill Pipe Size 4 1/2 XH
 Anchor Length 52 Top Choke — 1" Bottom Choke — 3/4"
 Top Packer Depth 3183 Hole Size — 7 7/8" Rubber Size — 6 3/4"
 Bottom Packer Depth 3188 Wt. Pipe I.D. — 2.7 Ft. Run _____
 Total Depth 3240 Drill Collar — 2.25 Ft. Run _____
 Mud Wt. 9.0 lb/gal. Viscosity 46 Filtrate 8.0
 Tool Open @ 11:52 AM Initial Blow Weak 1/4" blow building to 2 3/4"
 Final Blow 1/4 weak surface blow building to 3 1/2"

Recovery — Total Feet	Feet of Gas In Pipe	Flush Tool?
Rec. <u>5</u> Feet Of <u>cl oil</u>	%gas _____ %oil _____ %water _____ %mud _____	
Rec. <u>57</u> Feet Of <u>SOCM</u>	%gas <u>5</u> %oil _____ %water _____ %mud <u>95</u>	
Rec. _____ Feet Of _____	%gas _____ %oil _____ %water _____ %mud _____	
Rec. _____ Feet Of <u>water in tool</u>	%gas _____ %oil _____ %water _____ %mud _____	
Rec. _____ Feet Of _____	%gas _____ %oil _____ %water _____ %mud _____	

BHT 97 °F Gravity 38 °API @ 50 °F Corrected Gravity 39 °API
 RW .51 @ 50 °F Chlorides 19000 ppm Recovery Chlorides 4000 ppm System
 (A) Initial Hydrostatic Mud 1567 PSI AK1 Recorder No. 22150 Range 3925
 (B) First Initial Flow Pressure 44 PSI @ (depth) 3192 w/Clock No. 30401
 (C) First Final Flow Pressure 52 PSI AK1 Recorder No. 24174 Range 3050
 (D) Initial Shut-In Pressure 903 PSI @ (depth) 3236 w/Clock No. 25814
 (E) Second Initial Flow Pressure 59 PSI AK1 Recorder No. _____ Range _____
 (F) Second Final Flow Pressure 67 PSI @ (depth) _____ w/Clock No. _____
 (G) Final Shut-In Pressure 911 PSI Initial Opening 30 Test X
 (H) Final Hydrostatic Mud 1552 PSI Initial Shut-In 45 Jars _____
 Final Flow 45 Safety Joint _____
 Final Shut-In 90 Straddle _____
 Circ. Sub _____
 Sampler _____
 Extra Packer _____

Approved By _____
 OUR Representative _____

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. ORIGINAL

P.O. Box 362 • Hays, Kansas 67601

Drill-Stem Test Data

Well Name FISHER #1 Test No. 2 Date 4/20/93
Company HORIZONTAL DEVELOPMENT & PRODUCTION Zone LKC 'G-I'
Address 277 TOWN & COUNTRY VILLAGE PALO ALTO CALIF Elevation 2016
D. Rep./Geo. RICK HALL Cont. EMPHASIS #6 Est. Ft. of Pay 4
Location: Sec. 5 Twp. 9S Rge. 17W Co. ROOKS State KS

Interval Tested 3235-3345 Drill Pipe Size 4.5" XH
Anchor Length 110 Wt. Pipe I.D. - 2.7 Ft. Run _____
Top Packer Depth 3230-3235 Drill Collar - 2.25 Ft. Run 59
Bottom Packer Depth 3345 Mud Wt. 9.0 lb/Gal.
Total Depth 3459 Viscosity 48 Filtrate 7.2

Well Open @ 3:41 PM Initial Blow 1" BLOW BUILDING TO BOTTOM OF BUCKET IN 25 MINUTES
(SURFACE BLOW ON SHUTIN)
Final Blow 1" BLOW BUILDING TO BOTTOM OF BUCKET IN 30 MINUTES
(1" BLOW BACK ON SHUTIN)

Recovery - Total Feet 150 Flush Tool? NO

150 Feet of GAS IN PIPE
15 Feet of CLEAN GASSY OIL 20%GAS/80%OIL
15 Feet of GAS HEAVY OIL WATER CUT MUD 20%GAS/25%OIL/15%WATER/40M
60 Feet of SLIGHTLY OIL CUT WATER MUD 10%OIL/40%WATER/50%MUD
60 Feet of OIL CUT MUDDY WATER 5%OIL/65%WATER/30%MUD

Temp 102 °F Gravity 38 °API @ 70 °F Corrected Gravity 37 °API
Viscosity 0.31 @ 47 °F Chlorides 34000 ppm Recovery Chlorides 4000 ppm System

Initial Hydrostatic Mud 1700.2 PSI AK1 Recorder No. 22150 Range 3925

First Initial Flow Pressure 96.6 PSI @ (depth) 3239 w / Clock No. 30401

First Final Flow Pressure 104.8 PSI AK1 Recorder No. 24174 Range 3050

Initial Shut-in Pressure 837.7 PSI @ (depth) 3340 w / Clock No. 25814

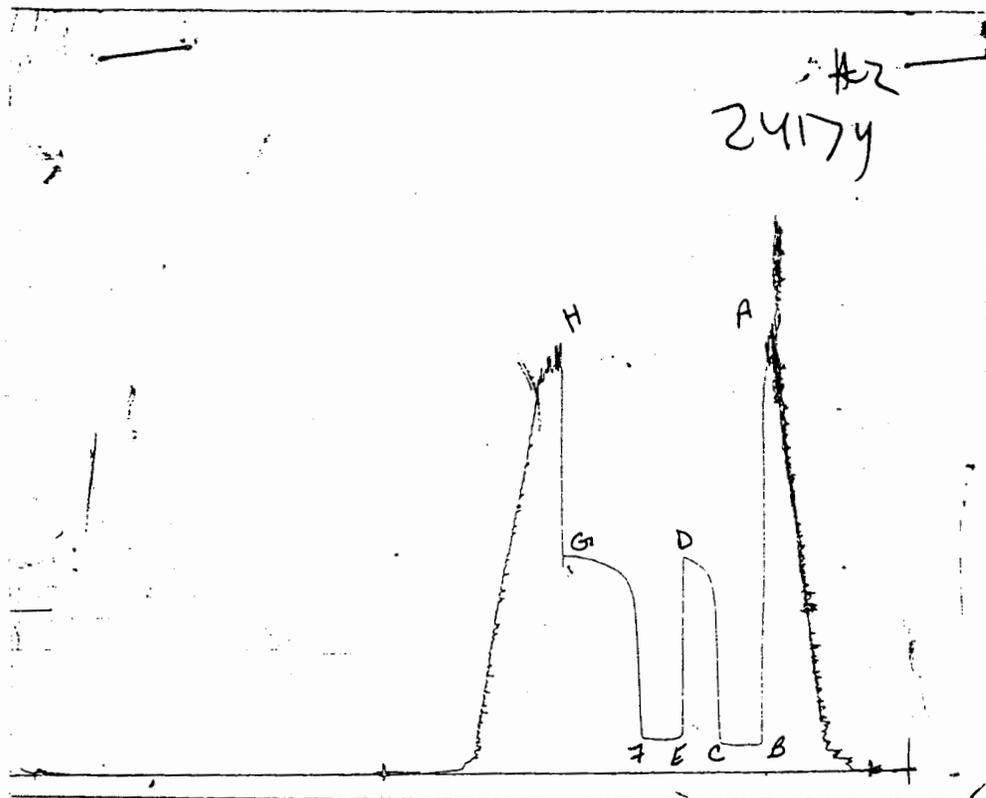
Second Initial Flow Pressure 128.1 PSI AK1 Recorder No. 11058 Range 4475

Second Final Flow Pressure 128.8 PSI @ (depth) 3458 w / Clock No. 31154

Final Shut-in Pressure 844.5 PSI Initial Opening 30 Final Flow 30

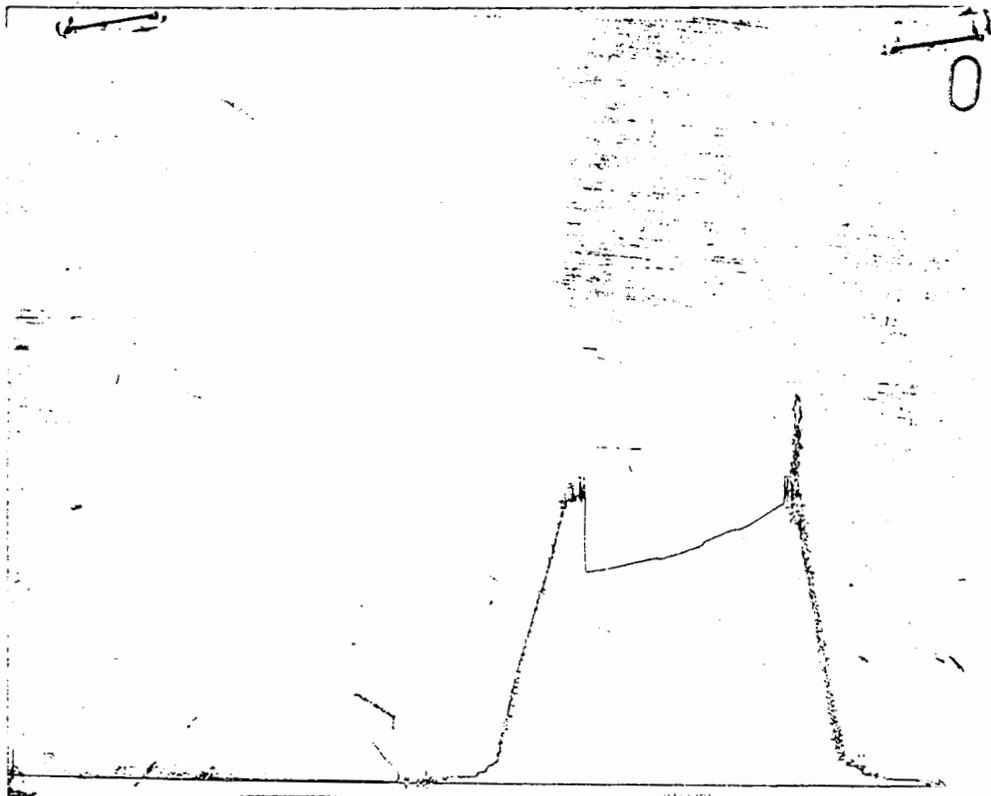
Final Hydrostatic Mud 1676.8 PSI Initial Shut-in 30 Final Shut-in 60

Representative PAUL SIMPSON



This is an actual photograph of recorder chart

	FIELD READING	OFFICE READING
(A) INITIAL HYDROSTATIC MUD	1696	1700.2
(B) FIRST INITIAL FLOW PRESSURE	97	96.6
(C) FIRST FINAL FLOW PRESSURE	104	104.8
(D) INITIAL CLOSED-IN PRESSURE	835	837.7
(E) SECOND INITIAL FLOW PRESSURE	127	128.1
(F) SECOND FINAL FLOW PRESSURE	134	128.8
(G) FINAL CLOSED-IN PRESSURE	842	844.5
(H) FINAL HYDROSTATIC MUD	1674	1676.8



This is an actual photograph of recorder chart

FIELD
READING

OFFICE
READING

- (A) INITIAL HYDROSTATIC MUD
- (B) FIRST INITIAL FLOW PRESSURE
- (C) FIRST FINAL FLOW PRESSURE
- (D) INITIAL CLOSED-IN PRESSURE
- (E) SECOND INITIAL FLOW PRESSURE
- (F) SECOND FINAL FLOW PRESSURE
- (G) FINAL CLOSED-IN PRESSURE
- (H) FINAL HYDROSTATIC MUD

ORIGINAL

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

HORIZONTAL DEVELOPME FISHER #1 DST 2
5 9S 17W ROOKS KS

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ELEVATION:          2016 KB          EST. PAY          4 FT
DATUM:              -1224          ZONE TESTED:     LKC 'G-I'
TEST INTERVAL:      3235-3345      TIME INTERVALS:  30-30-30-60
RECORDER DEPTH:     3239          VISCOSITY:       7.613 CP
BOTTOM HOLE TEMP:   102          HOLE SIZE:       7.875 IN
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CUBIC FEET OF GAS IN PIPE:          12
TOTAL FEET OF RECOVERY:             150.00 CORRECTED PIPE FILLUP:          353.846
TOTAL BARRELS OF RECOVERY:          1.58 CORR. BARRELS OF RECOVERY:      4.469 BBL
BARRELS IN DRILL PIPE:              1.29 API GRAVITY:                  37
BARRELS IN WEIGHT PIPE:             0.00 FLUID GRADIENT:                0.364
BARRELS IN DRILL COLLARS:           0.29
GAS OIL RATIO:                      7.57 CU.FT/BBL
BUBBLE POINT PRESSURE:               63
UNCORRECTED INITIAL PRODUCTION:                                37.98 BBL
INITIAL PRODUCTION CORRECTED TO FINAL FLOW PRESSURE:          107.26 BBL/DAY
INITIAL PRODUCTION CORRECTED TO PSEUDO STEADY FLOW STATE:     42.468
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INITIAL SLOPE          287.64 PSI/CYCL FINAL SLOPE          86.02 PSI/CYCLE
INITIAL P*            931 PSI          FINAL P*            870 PSI
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TRANSMISSIBILITY          202.75 (MD.-FT./CP.)
PERMEABILITY              385.86 (MD.)
INDICATED FLOW CAPACITY   1543.45 (MD.FT)
PRODUCTIVITY INDEX        0.23 (BARREL/DAY/PSI)
DAMAGE RATIO              1.58
RADIUS OF INVESTIGATION   152.16 (FT.)
POTENTIOMETRIC SURFACE    794.53 (FT.)
DRAWDOWN FACTOR           6.552 (%)
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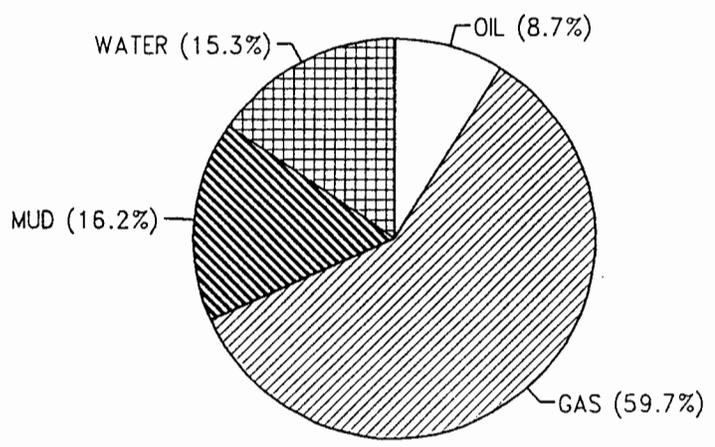
ORIGINAL

CALCULATED RECOVERY ANALYSIS

DST # 2 TICKET # 5723

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD	
		%	FEET	%	FEET	%	FEET	%	FEET
DRILL 1	150	100	150		0	0	0	0	0
PIPE 2	15	20	3	80	12		0		0
3	15	20	3	25	3.75	15	2.25	40	6
4	60		0	10	6	40	24	50	30
5	1		0	5	0.05	65	0.65	30	0.3
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	59		0	5	2.95	65	38.35	30	17.7
COLLAR 2			0		0		0		0
3			0		0		0		0
4			0		0		0		0
5			0		0		0		0
TOTAL	300		156		24.75		65.25		54

	HRS OPEN	BBL/DAY
BBL OIL=	0.3244215 *	1 7.786116
BBL WATER=	0.5700495 *	13.681188
BBL MUD=	0.602739	
BBL GAS =	2.21832	



ORIGINAL

INITIAL FLOW

RECORDER # 22150 DST # 2

TIME(MIN) PRESSURE <> PRESSURE

TIME(MIN)	PRESSURE	<> PRESSURE
3	96.6	96.6
6	97.3	0.7
9	99.6	2.3
12	98.1	-1.5
15	96.6	-1.5
18	97.3	0.7
21	98.8	1.5
24	101.1	2.3
27	102.6	1.5
30	104.8	2.2

FINAL FLOW

RECORDER # 22150 DST # 2

TIME(MIN) PRESSURE <> PRESSURE

TIME(MIN)	PRESSURE	<> PRESSURE
3	121.3	121.3
6	121.3	0
9	121.3	0
12	121.3	0
15	121.3	0
18	122.1	0.8
21	122.1	0
24	122.8	0.7
27	125.1	2.3
30	128.8	3.7

ORIGINAL

FISHER #1
INITIAL

DST #2
SHUTIN

30 TOTAL FLOW TIME

Slope 287.64 psi/cycle
P * 931 psi

	TIME(MIN)	Pws (psi)	Log Horn T	<> PRESSURE	Horn T
	3	473.1	1.041	473.1	11
	6	717.4	0.778	244.3	6
	9	764.7	0.637	47.3	4
	12	786.7	0.544	22.0	4
	15	799.7	0.477	13.0	3
	18	811.1	0.426	11.4	3
X	21	820.2	0.385	9.1	2
	24	828.6	0.352	8.4	2
X	27	837.7	0.325	9.1	2

FISHER #1
F AL

DST #2
SHUTIN

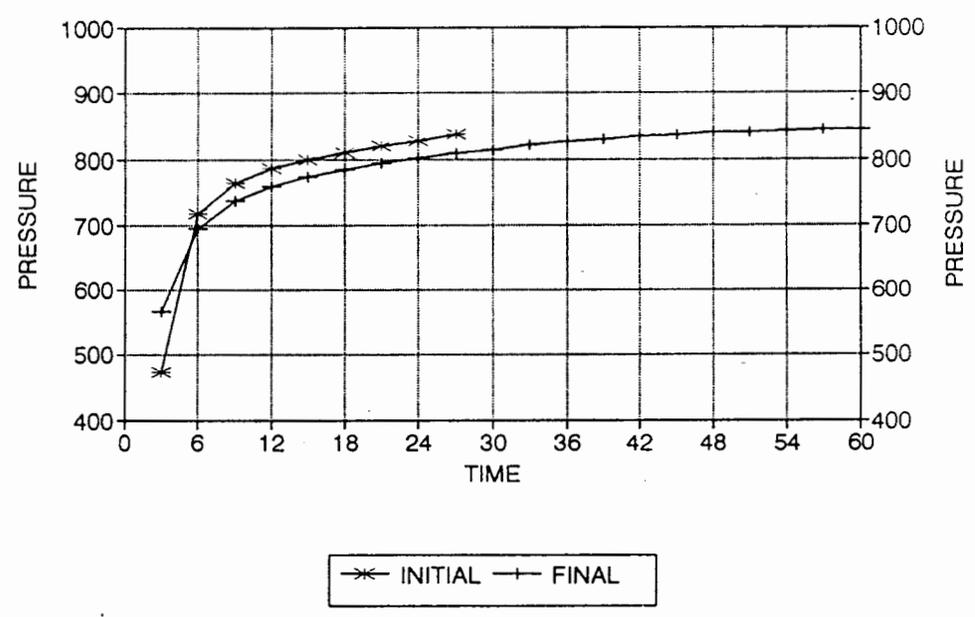
60 TOTAL FLOW TIME

Slope 86.02 psi/cycle
P * 870 psi

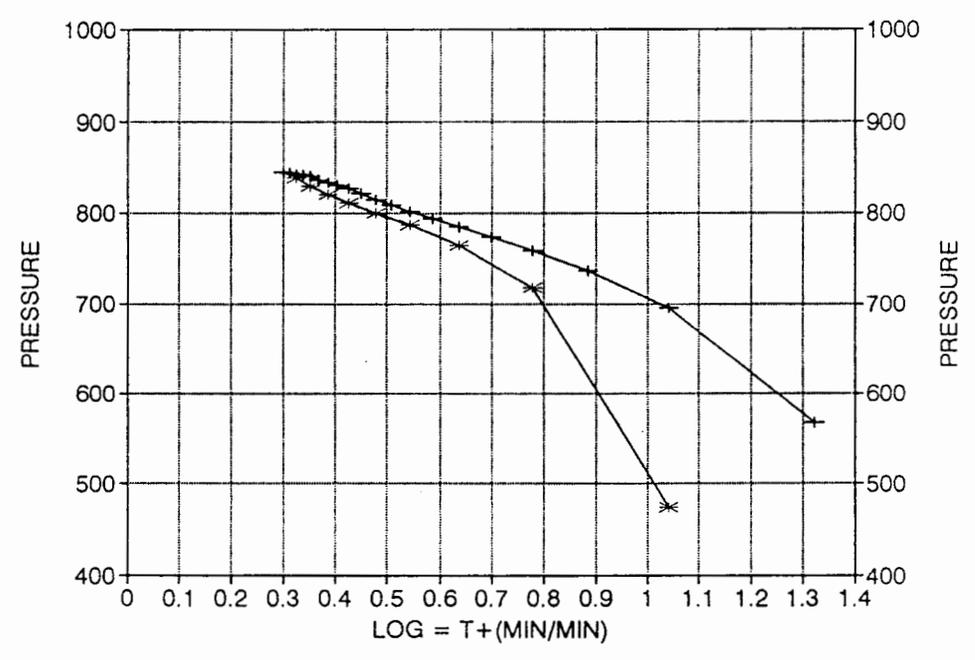
		Pws (psi)	Log Horn T	<> PRESSURE	Horn T
	3	566.3	1.322	566.3	21
	6	695.4	1.041	129.1	11
	9	736.5	0.885	41.1	8
	12	758.6	0.778	22.1	6
	15	773.8	0.699	15.2	5
	18	785.2	0.637	11.4	4
	21	794.3	0.586	9.1	4
	24	801.9	0.544	7.6	4
	27	808.1	0.508	6.2	3
	30	814.1	0.477	6.0	3
	33	821.1	0.450	7.0	3
	36	826.3	0.426	5.2	3
	39	830.1	0.405	3.8	3
	42	833.9	0.385	3.8	2
	45	836.2	0.368	2.3	2
X	48	840.1	0.352	3.9	2
	51	841.5	0.338	1.4	2
	54	843.1	0.325	1.6	2
	57	843.8	0.312	0.7	2
X	60	844.5	0.301	0.7	2

ORIGINAL

FISHER #1 / DST #2 DELTA T DELTA P



HORNER PLOT



TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

ORIGINAL

15-163-23218

No 5723

Test Ticket

Send Reports & Bill to: 2535 Marsh Lane #1208 Carrollton, TX 75006

Well Name & No. <u>Fisher #1</u>	Test No. <u>2</u>	Date <u>4-20-93</u>
Company <u>HDP</u>	Zone Tested <u>LKLG-2</u>	
Address <u>227 T&C Village Pkwy Cg</u>	Elevation <u>KB 2016</u>	
Co. Rep. / Geo. <u>Rick Hall / Mike Stenberg</u>	cont. <u>Empress #6</u>	Est. Ft. of Pay <u>4</u>
Location: Sec. <u>5</u>	Twp. <u>9S</u>	Rge. <u>17W</u>
	Co. <u>Rooks</u>	State <u>Ky</u>
No of Copies <u>4</u>	Distribution Sheet <u>Yes</u>	No Turnkey <u>Yes</u>
		No Evaluation <u>No</u>

Interval Tested <u>3235-3345</u>	Drill Pipe Size <u>4 1/2 XA</u>
Anchor Length <u>110</u>	Top Choke - 1" _____ Bottom Choke - 1/4" _____
Top Packer Depth <u>3230-3235</u>	Hole Size - 7 7/8" _____ Rubber Size - 6 3/4" _____
Bottom Packer Depth <u>3345</u>	Wt. Pipe I.D. - 2.7 Ft. Run _____
Total Depth <u>3459</u>	Drill Collar - 2.25 Ft. Run <u>59</u>
Mud Wt. <u>9.0</u> lb/gal.	Viscosity <u>48</u> Filtrate <u>7.2</u>
Tool Open @ <u>3:41 PM</u>	Initial Blow <u>1" blow building to bottom of bucket in 25 minutes (surface blow on shut-in)</u>
Final Blow <u>1" blow building to bottom of bucket in 30 minutes (1" blow back on shut-in)</u>	
Recovery - Total Feet <u>150</u>	Feet of Gas In Pipe <u>150</u> Flush Tool? _____
Rec. <u>15</u> Feet Of <u>cl gassy</u>	<u>20</u> % gas <u>80</u> % oil _____ % water _____ % mud
Rec. <u>15</u> Feet Of <u>Gr. HO+WCM</u>	<u>20</u> % gas <u>25</u> % oil <u>15</u> % water <u>40</u> % mud
Rec. <u>60</u> Feet Of <u>SOCWCM</u>	% gas <u>10</u> % oil <u>40</u> % water <u>50</u> % mud
Rec. <u>60</u> Feet Of <u>MW</u>	% gas <u>45</u> % oil <u>05</u> % water <u>30</u> % mud
Rec. _____ Feet Of _____	% gas _____ % oil _____ % water _____ % mud

BHT <u>102</u> °F Gravity <u>38</u>	°API @ <u>70</u>	°F Corrected Gravity <u>37</u>	°API _____
RW <u>31</u> @ <u>47</u> °F	Chlorides <u>34,000</u> ppm	Recovery Chlorides <u>4000</u>	ppm System _____
(A) Initial Hydrostatic Mud <u>1696</u>	PSI	AK1 Recorder No. <u>22150</u>	Range <u>3925</u>
(B) First Initial Flow Pressure <u>97</u>	PSI	@ (depth) <u>3239</u>	w/Clock No. <u>30401</u>
(C) First Final Flow Pressure <u>104</u>	PSI	AK1 Recorder No. <u>24174</u>	Range <u>3050</u>
(D) Initial Shut-In Pressure <u>835</u>	PSI	@ (depth) <u>3340</u>	w/Clock No. <u>25814</u>
(E) Second Initial Flow Pressure <u>127</u>	PSI	AK1 Recorder No. <u>11058</u>	Range <u>4475</u>
(F) Second Final Flow Pressure <u>134</u>	PSI	@ (depth) <u>3458</u>	w/Clock No. <u>31154</u>
(G) Final Shut-In Pressure <u>842</u>	PSI	Initial Opening <u>30</u>	Test <u>6</u>
(H) Final Hydrostatic Mud <u>1674</u>	PSI	Initial Shut-In <u>30</u>	Jars _____

Final Flow <u>30</u>	Safety Joint _____
Final Shut-In <u>60</u>	Straddle <u>X</u>
	Circ. Sub _____
	Sampler _____
	Extra Packer <u>X</u>

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Approved by Rick Hall