

15-135-24106

18-17s-24w


**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Grand Mesa Operating

200 E 1st St. Ste. 307
Wichita, Ks. 67202

ATTN: Larry Friend

Humphry # 3-18

Sec18-17-24-Ness-Ks

Job Ticket: 13853

DST#: 1

Test Start: 2000.09.15 @ 18:56:00

GENERAL INFORMATION:

Formation: Ft. Scott

Deviated: No Whipstock: ft (CF)

Time Tool Opened: 20:48:00

Time Test Ended: 00:05:00

Interval: 4232.00 ft (CF) To 4283.00 ft (CF) (TVD)

Total Depth: 4283.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Bottom Hole

Tester: Dan Bangle

Unit No: 11

Reference Elevations:

2397.00 ft (CF)

KB to GR/CF:

Serial #: 3024 Inside

Press@RunDepth: 60.07 kPag @ 4244.01 ft (CF)

Start Date: 2000.09.15

End Date:

2000.09.16

Start Time: 18:54:31

End Time:

02:13:00

Capacity: 49000.00 kPag

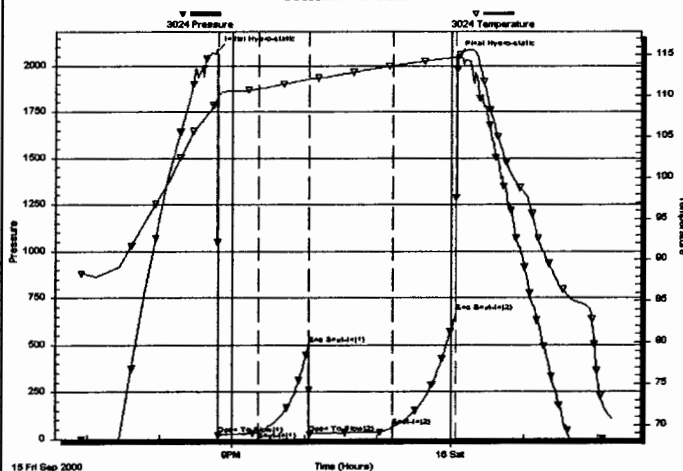
Last Calib.: 2000.09.20

Time On Btm: 2000.09.15 @ 20:47:30

Time Off Btm: 2000.09.16 @ 00:05:30

TEST COMMENT: F- Weak-built to 3/4"
FF-Weak-built to 4 1/2"

Pressure vs. Time



PRESSURE SUMMARY

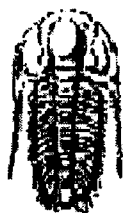
Time (Min.)	Pressure (kPag)	Temp (deg F)	Annotation
113	2081.66	109.80	Initial Hydro-static
114	17.55	109.95	Open To Flow (1)
147	36.13	110.87	Shut-In(1)
189	500.04	112.05	End Shut-In(1)
189	25.98	112.07	Open To Flow (2)
258	60.07	113.70	Shut-In(2)
310	666.87	114.77	End Shut-In(2)
311	2052.48	114.80	Final Hydro-static

Recovery

Length (m)	Description	Volume (m³)
180.00	Gas in pipe	2.25
45.00	Oil cut mud 30% to 70% m	0.63

Gas Rates

	Choke (mm)	Pressure (kPaa)	Gas Rate (m³/d)
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**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Grand Mesa Operating

Humphry # 3-18

200 E 1st St. Ste. 307
Wichita, Ks. 67202

Sec18-17-24-Ness-Ks

Job Ticket: 13853

DST#: 1

ATTN: Larry Friend

Test Start: 2000.09.15 @ 18:56:00

Tool Information

Drill Pipe:	Length: 4192.00 ft	Diameter: 3.80 inches	Volume: 58.80 bbl	Tool Weight: 1000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight set on Packer: 30000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 60000.00 lb
Drill Pipe Above KB:	14.00 ft			Tool Chased 0.00 ft
Depth to Top Packer:	4227.00 ft			String Weight: Initial 50000.00 lb
Depth to Bottom Packer:	ft			Final 50000.00 lb
Interval between Packers:	ft			
Tool Length:	75.01 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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C.O. Sub	1.00			4209.00	
S.I. Tool	5.00			4214.00	
HYD S.I. Tool	5.00			4219.00	
Safety Joint	3.00			4222.00	
Packer	5.00			4227.00	19.00 Bottom Of Top Packer
Packer	5.00			4232.00	
Stubb	1.00			4233.00	
Perforations	5.00			4238.00	
Perforations	5.00			4243.00	
C.O. Sub	1.00			4244.00	
Recorder	0.01	3024	Inside	4244.01	
Blank Spacing	31.00			4275.01	
C.O. Sub	1.00			4276.01	
Perforations	2.00			4278.01	
Recorder	0.00	13254	Outside	4278.01	
Bullnose	5.00			4283.01	56.01 Bottom Packers & Anchor
Total Tool Length:	75.01				

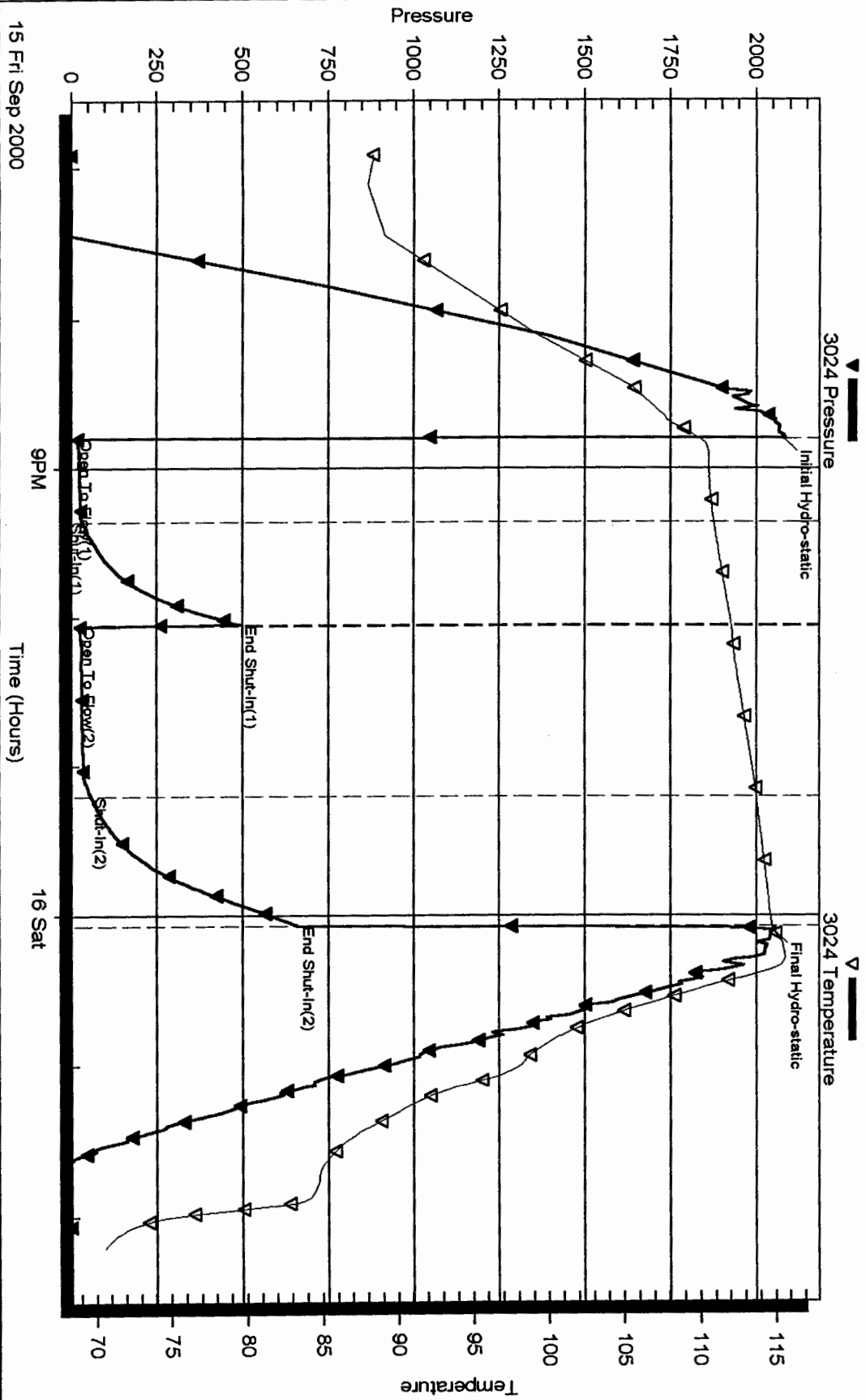
Serial #: 3024

Inside

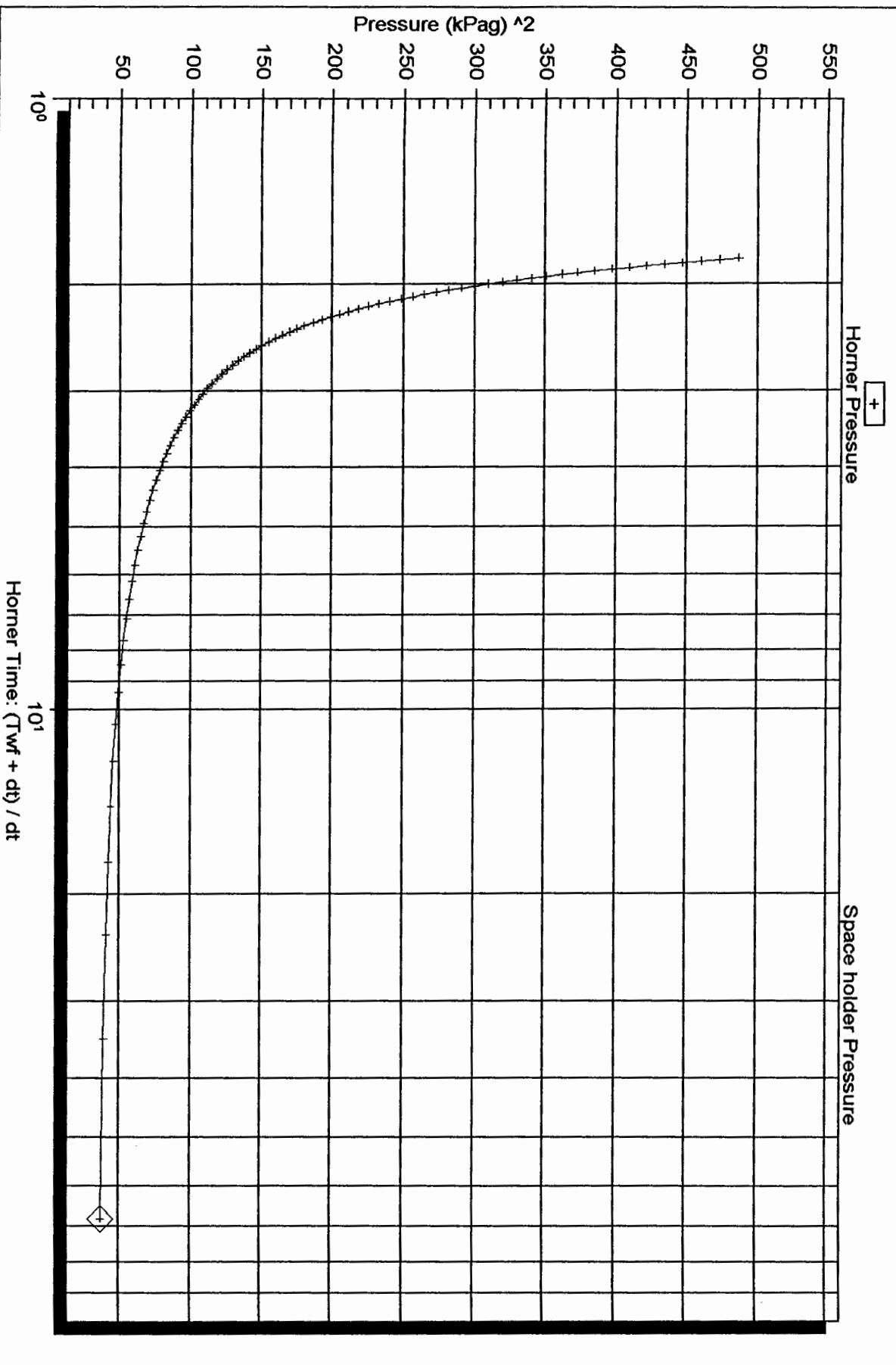
Grand Mesa Operating

Sec18-17-24-Ness-Ks

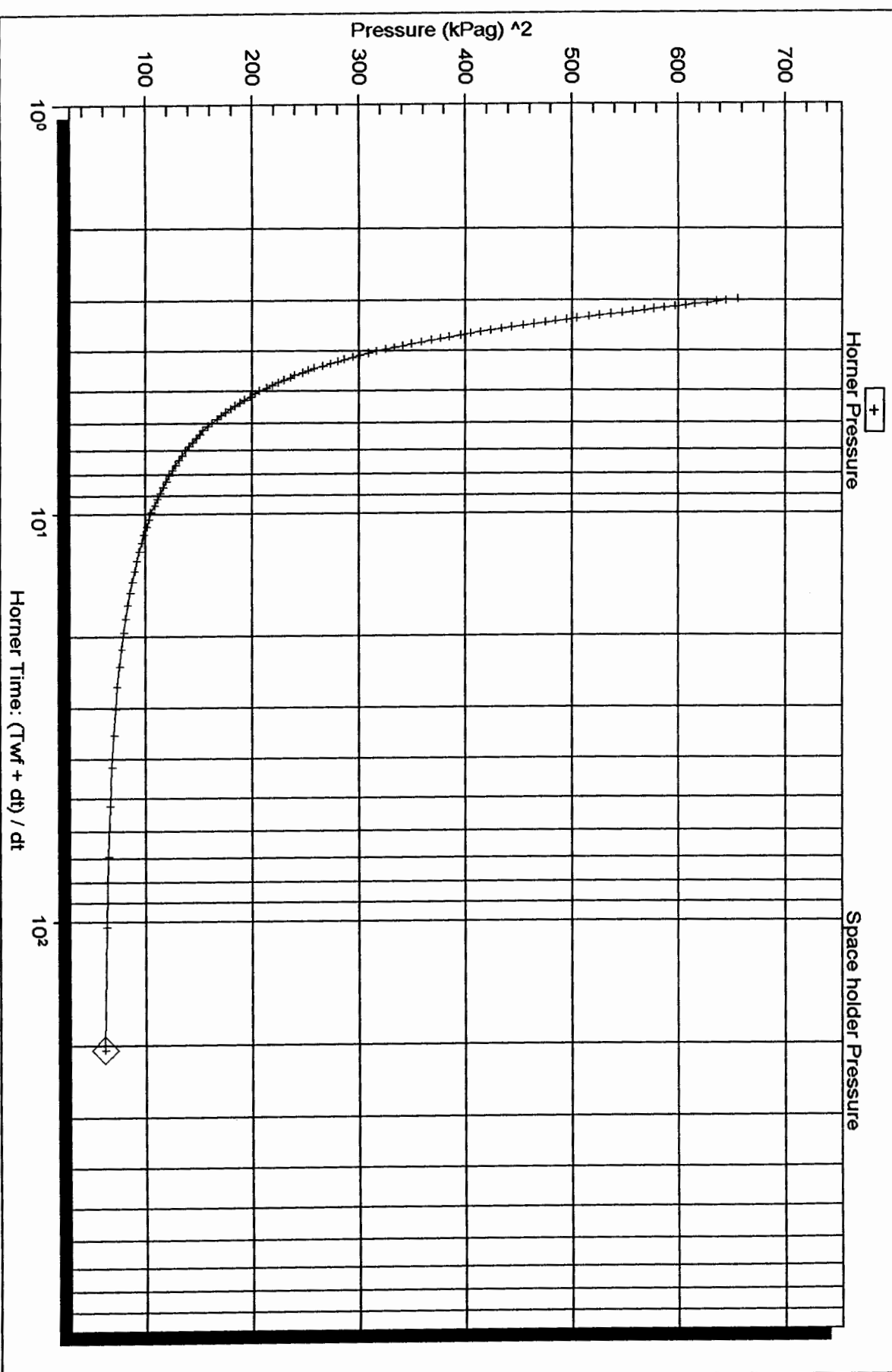
Pressure vs. Time



Horner Plot



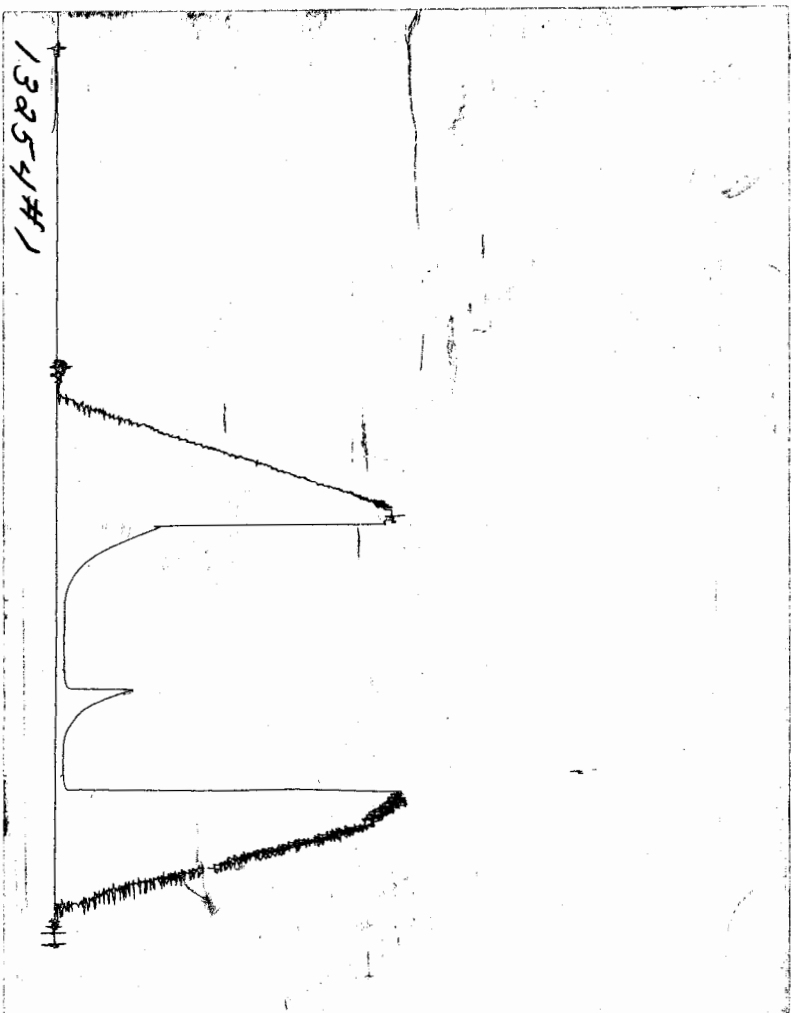
Horner Plot



Serial Number: 3024 (Inside)

Flow Cycle: 2

CHART PAGE



This is a photocopy of the actual AK-1 recorder chart

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

Nº 13853

Test Ticket

Well Name & No.	<u>Humphry #3-18</u>	Test No.	<u>1</u>	Date	<u>9-15-00</u>
Company	<u>Grand Mesa Operating Co</u>	Zone Tested	<u>FT. SCOTT</u>		
Address	<u>300 E. 1st St. Ste 307, Wichita, Ks. 67202</u>	Elevation	<u>2408</u>	KB	<u>2397</u> GL
Co. Rep / Geo.	<u>Larry Friend</u>	Cont.	<u>Discovery #1</u>	Est. Ft. of Pay	<u> </u> Por. <u> </u> %
Location: Sec.	<u>18</u>	Twp.	<u>17</u>	Rge.	<u>24</u> Co. <u>NeSS</u> State <u>Ks</u>
No. of Copies	<u>5</u>	Distribution Sheet (Y, N)	<u>N</u>	Turnkey (Y, N)	<u>N</u> Evaluation (Y, N) <u> </u>

Interval Tested	<u>4232 - 4283</u>	Initial Str Wt./Lbs.	<u>50,000</u>	Unseated Str Wt./Lbs.	<u>50,000</u>
Anchor Length	<u>51</u>	Wt. Set Lbs.	<u>30,000</u>	Wt. Pulled Loose/Lbs.	<u>60,000</u>
Top Packer Depth	<u>4227</u>	Tool Weight	<u>1000</u>		
Bottom Packer Depth	<u>4232</u>	Hole Size — 7 7/8"		Rubber Size — 6 3/4"	
Total Depth	<u>4283</u>	Wt. Pipe Run		Drill Collar Run	<u>30</u>
Mud Wt. <u>9.5</u> LCM	Vis. <u>47</u> WL <u>9.6</u>	Drill Pipe Size	<u>4.5 X H</u>	Ft. Run	<u>4192</u>
Blow Description	<u>I.F. Weak - building to 3/4"</u>				

F.F. Weak - building to 4 1/2"

Recovery — Total Feet	<u>45</u>	GIP	<u>180</u>	Ft. in DC	<u>30</u>	Ft. in DP	<u>15</u>
Rec. <u>45</u>	Feet Of	<u>O.C.M.</u>	%gas	<u>30</u> %oil	%water	<u>70</u> %mud	
Rec. <u> </u>	Feet Of		%gas	%oil	%water	%mud	
Rec. <u> </u>	Feet Of		%gas	%oil	%water	%mud	
Rec. <u> </u>	Feet Of		%gas	%oil	%water	%mud	
Rec. <u> </u>	Feet Of		%gas	%oil	%water	%mud	
BHT <u>115</u>	°F Gravity		°API D@		°F Corrected Gravity		°API
RW <u> </u> @ <u> </u>	°F	Chlorides		ppm Recovery	Chlorides <u>3,000</u>	ppm System	

	AK-1	Alpine					
(A) Initial Hydrostatic Mud	<u>2114</u>	<u>2081</u>	PSI	Recorder No.	<u>3024</u>	T-On Location	<u>17:15</u>
(B) First Initial Flow Pressure	<u>59</u>	<u>17</u>	PSI	(depth)	<u>4244</u>	T-Started	<u>18:56</u>
(C) First Final Flow Pressure	<u>59</u>	<u>36</u>	PSI	Recorder No.	<u>13254</u>	T-Open	<u>20:50</u>
(D) Initial Shut-In Pressure	<u>473</u>	<u>560</u>	PSI	(depth)	<u>4278</u>	T-Pulled	<u>00:05</u>
(E) Second Initial Flow Pressure	<u>59</u>	<u>25</u>	PSI	Recorder No.		T-Out	<u>02:10</u>
(F) Second Final Flow Pressure	<u>59</u>	<u>60</u>	PSI	(depth)		T-Off Location	<u>03:00</u>
(G) Final Shut-in Pressure	<u>627</u>	<u>666</u>	PSI	Initial Opening	<u>30</u>	Test	<u>750</u>
(Q) Final Hydrostatic Mud	<u>2044</u>	<u>2052</u>	PSI	Initial Shut-in	<u>45</u>	Jars	
				Final Flow	<u>60</u>	Safety Joint <u>X</u>	<u>50</u>
				Final Shut-in	<u>60</u>	Straddle	

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.

Approved By Larry Friend

Our Representative Dan Bangle

TOTAL PRICE \$ 1010



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

Grand Mesa Operating

200 E. 1st St. Ste. 307
Wichita, Ks. 67202

ATTN: Larry Friend

Humphry # 3-18

Sec18-17-24-Ness-Ks

Job Ticket: 13854

DST#: 2

Test Start: 2000.09.15 @ 18:56:00

GENERAL INFORMATION:

Formation: **Mississippi**

Deviated: **No** Whipstock: **ft (CF)**

Time Tool Opened: 17:12:11

Time Test Ended: 20:43:00

Test Type: **Conventional Bottom Hole**

Tester: **Dan Bangle**

Unit No: **11**

Interval: **4319.00 ft (CF) To 4370.00 ft (CF) (TVD)**

Total Depth: **4370.00 ft (CF)**

Hole Diameter: **7.88 inches** Hole Condition: **Fair**

Reference Elevations:

2397.00 ft (CF)

KB to GR/CF:

Serial #: **3024** Inside

Press@RunDepth: **176.28 kPag @ 4331.01 ft (CF)**

Start Date: **2000.09.12**

End Date: **2000.09.12**

Start Time: **15:28:12**

End Time: **23:47:11**

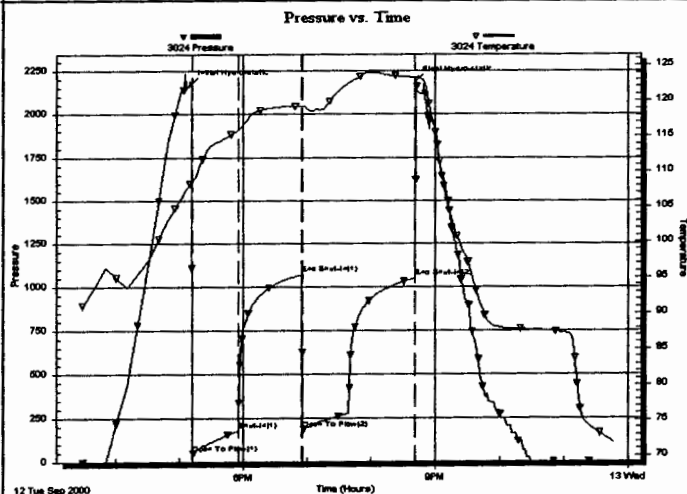
Capacity: **49000.00 kPag**

Last Calib.: **2000.09.20**

Time On Btm: **2000.09.12 @ 17:10:41**

Time Off Btm: **2000.09.12 @ 20:42:41**

TEST COMMENT: **IF-Strong bob in 9 min**
FF-Strong bob in 11 min



PRESSURE SUMMARY

Time (Min.)	Pressure (kPag)	Temp (deg F)	Annotation
103	2171.80	108.42	Initial Hydro-static
104	45.53	108.68	Open To Flow (1)
148	176.28	115.88	Shut-In(1)
207	1071.68	119.27	End Shut-In(1)
208	183.97	119.27	Open To Flow (2)
314	1050.27	123.28	End Shut-In(2)
315	2191.44	123.26	Final Hydro-static

Recovery

Length (m)	Description	Volume (m³)
211.00	Gas in pipe	2.69
397.00	Clean gassy oil 10%g 90%o	5.57
124.00	Mud cut gassy oil 10%g 70%o 20%m	1.74
186.00	Oil cut gassy mud 10%g 30%o 60%m	2.61

Gas Rates

	Choke (mm)	Pressure (kPaa)	Gas Rate (m³/d)
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**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Grand Mesa Operating

Humphry # 3-18

200 E. 1st St. Ste. 307
Wichita, Ks. 67202

Sec18-17-24-Ness-Ks

Job Ticket: 13854

DST#: 2

ATTN: Larry Friend

Test Start: 2000.09.15 @ 18:56:00

Tool Information

Drill Pipe:	Length: 4286.00 ft	Diameter: 3.80 inches	Volume: 60.12 bbl	Tool Weight: 1000.00 lb
Drill Collar:	Length: 30.00 ft	Diameter: 2.25 inches	Volume: 0.15 bbl	Weight set on Packer: 30000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 60000.00 lb
Drill Pipe Above KB:	21.00 ft			Tool Chased 0.00 ft
Depth to Top Packer:	4314.00 ft			String Weight: Initial 51000.00 lb
Depth to Bottom Packer:	ft			Final 52000.00 lb
Interval between Packers:	ft			
Tool Length:	75.01 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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C.O. Sub	1.00			4296.00	
S.I. Tool	5.00			4301.00	
HYD S.I. Tool	5.00			4306.00	
Safety Joint	3.00			4309.00	
Packer	5.00			4314.00	19.00 Bottom Of Top Packer
Packer	5.00			4319.00	
Stubb	1.00			4320.00	
Perforations	5.00			4325.00	
Perforations	5.00			4330.00	
C.O. Sub	1.00			4331.00	
Recorder	0.01	3024	Inside	4331.01	
Blank Spacing	31.00			4362.01	
C.O. Sub	1.00			4363.01	
Perforations	2.00			4365.01	
Recorder	0.00	13254	Outside	4365.01	
Bullnose	5.00			4370.01	56.01 Bottom Packers & Anchor
Total Tool Length:		75.01			

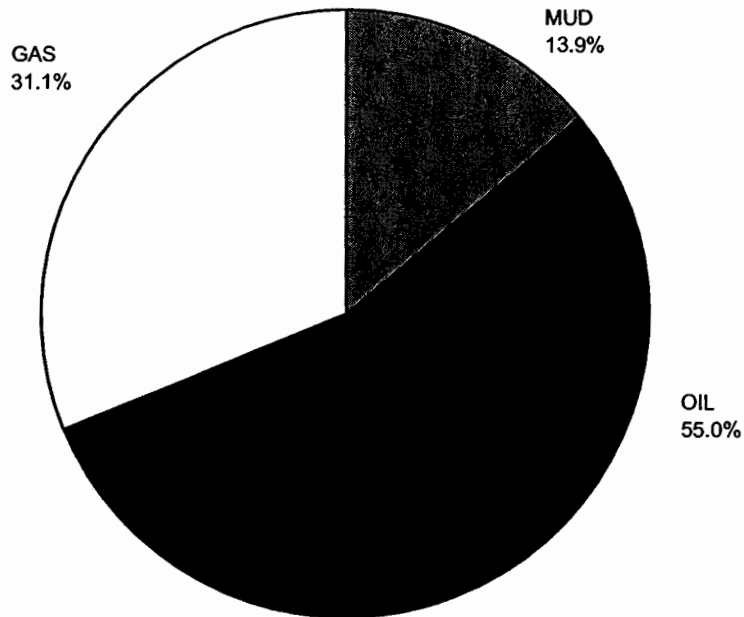
CALCULATED RECOVERY ANALYSIS

DST 2

TICKET 13854

SAMPLE		TOTAL		GAS		OIL		WATER		MUD	
#		FEET	%	FEET	%	FEET	%	FEET	%	FEET	%
DRILL PIPE	1	211	100	211	0	0	0	0	0	0	0
	2	397	10	39.7	90	357.3	0	0	0	0	0
	3	124	10	12.4	70	86.8	0	0	20	24.8	
	4	156	10	15.6	30	46.8	0	0	60	93.6	
	5	0	0	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0	0	0
WEIGHT PIPE	1	0	0	0	0	0	0	0	0	0	0
	2	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0	0
DRILL COLLARS	1	30	10	3	30	9	0	0	60	18	
	2	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0
	4	0	5	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0	0
TOTAL		918	0	281.7	0	499.9	0	0	0	136.4	

BBL OIL=	7.024608	*	HRS OPEN	=	BBL/DAY
BBL WATER=	0	*	1.5	=	112.39373
BBL MUD=	1.771668				0
BBL GAS =	3.977784				



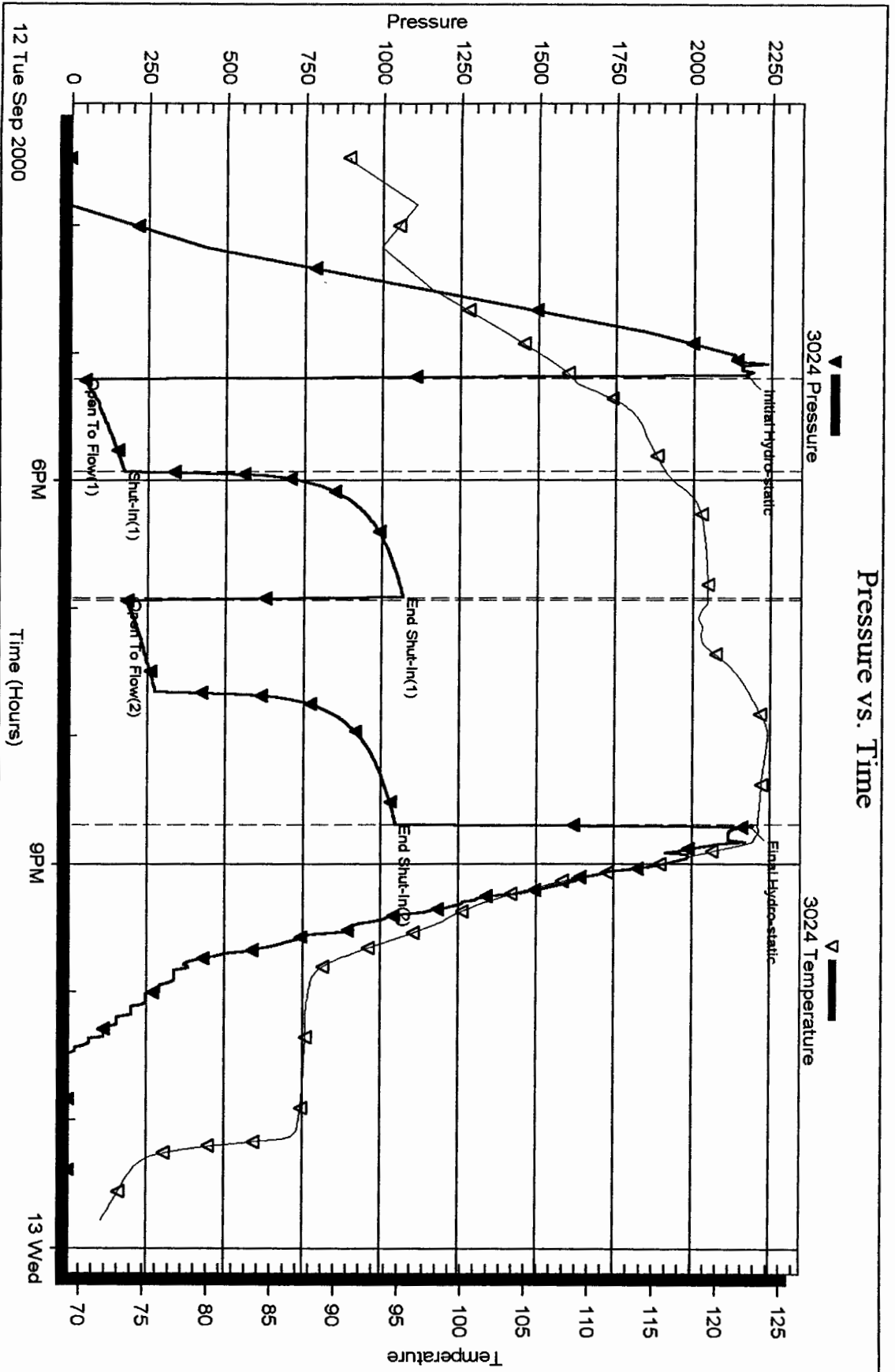
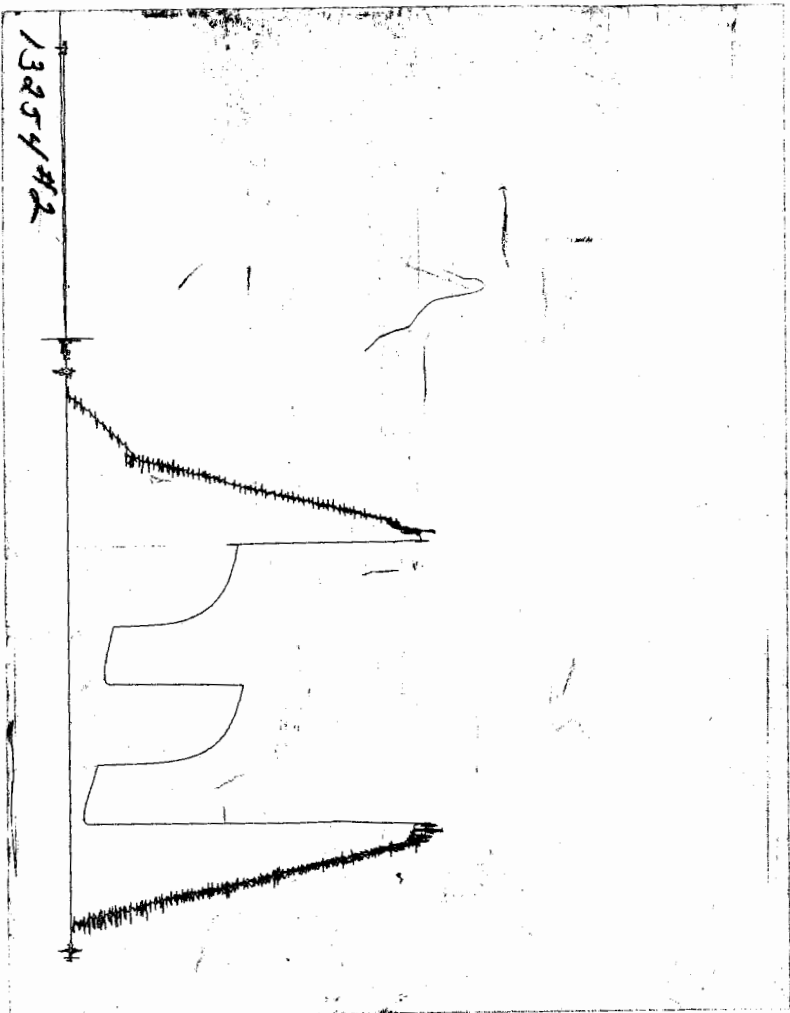


CHART PAGE



This is a photocopy of the actual AK-1 recorder chart

TRILOBITE TESTING L.L.C.

P.O. Box 362 • Hays, Kansas 67601

N^o 13854

Test Ticket

Well Name & No. <u>Humphrey #3-18</u>	Test No. <u>2</u>	Date <u>9-16-00</u>
Company <u>Grand Mesa Operating, Co</u>	Zone Tested <u>Miss</u>	
Address _____	Elevation <u>2405</u>	KB <u>2397</u> GL
Co. Rep / Geo. <u>Larry Friend</u>	Cont. <u>Discovery #1</u>	Est. Ft. of Pay _____ Por. _____ %
Location: Sec. <u>18</u>	Twp. <u>17</u>	Rge. <u>24</u> Co. <u>Ness</u> State <u>Ks</u>
No. of Copies _____	Distribution Sheet (Y, N) _____	Turnkey (Y, N) _____ Evaluation (Y, N) _____

Interval Tested 4319-4370 Initial Str Wt./Lbs. 57000 Unseated Str Wt./Lbs. 52000
Anchor Length 51 Wt. Set Lbs. 30000 Wt. Pulled Loose/Lbs. 60000
Top Packer Depth 4314 Tool Weight 1000
Bottom Packer Depth 4319 Hole Size — 7 7/8" Rubber Size — 6 3/4"
Total Depth 4370 Wt. Pipe Run _____ Drill Collar Run 30
Mud Wt. 9.5 LCM 1# Vis. 50 WL 10.4 Drill Pipe Size 4.5 X 11 Ft. Run 4286
Blow Description I.F. Strong B.O.B. in 9 min.

E.F. Strong B.O.B. in 11 min

Recovery — Total Feet	GIP	Ft. in DC	Ft. in DP
<u>397</u>	<u>211</u>	<u>30</u>	<u>677</u>
Rec. <u>397</u> Feet Of <u>CGSYO</u>	<u>10% gas</u>	<u>90% oil</u>	%water %mud
Rec. <u>124</u> Feet Of <u>MC GSYO</u>	<u>10% gas</u>	<u>70% oil</u>	%water <u>20% mud</u>
Rec. <u>186</u> Feet Of <u>OC GSYM</u>	<u>10% gas</u>	<u>30% oil</u>	%water <u>60% mud</u>
Rec. _____ Feet Of _____	%gas	%oil	%water %mud
Rec. _____ Feet Of _____	%gas	%oil	%water %mud
BHT <u>123</u> °F Gravity _____ °API D@ _____ °F Corrected Gravity <u>37</u> °API			
RW _____ @ _____ °F Chlorides _____ ppm Recovery Chlorides <u>3,500</u> ppm System			

	AK-1	Alpine		
(A) Initial Hydrostatic Mud	<u>2231</u>	<u>2174</u>	PSI Recorder No. <u>3024</u>	T-On Location <u>14:15</u>
(B) First Initial Flow Pressure	<u>82</u>	<u>42</u>	PSI (depth) <u>4331</u>	T-Started <u>15:28</u>
(C) First Final Flow Pressure	<u>165</u>	<u>177</u>	PSI Recorder No. <u>13254</u>	T-Open <u>17:14</u>
(D) Initial Shut-In Pressure	<u>1063</u>	<u>1072</u>	PSI (depth) <u>4365</u>	T-Pulled <u>20:43</u>
(E) Second Initial Flow Pressure	<u>213</u>	<u>183</u>	PSI Recorder No. _____	T-Out <u>23:30</u>
(F) Second Final Flow Pressure	<u>272</u>	<u>277</u>	PSI (depth) _____	T-Off Location <u>24:00</u>
(G) Final Shut-in Pressure	<u>1039</u>	<u>1050</u>	PSI Initial Opening <u>45</u>	Test <u>750</u>
(Q) Final Hydrostatic Mud	<u>2149</u>	<u>2136</u>	PSI Initial Shut-in <u>60</u>	Jars _____
			Final Flow <u>45</u>	Safety Joint <u>X</u> <u>50</u>
			Final Shut-in <u>60</u>	Straddle _____
				Circ. Sub _____
				Sampler _____
				Extra Packer _____
				Elec. Rec. <u>X</u> <u>150</u>
				Mileage <u>60</u> <u>60</u>
				Other _____
				TOTAL PRICE \$ <u>1010</u>

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.

Approved By Larry Friend

Our Representative Don Banfle