

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

T.T. Production Inc
Rt. 1 Box 91
Haviland KS 67059

Well name#:	Miller #5	Date:	6/10/2002
Location#:	25-27s-18w	Ticket #:	15725
		DST#	1

General Informaion:

Formation:	LKC	Test Type:	Conventional	BHT:	
Interval:	4147-4157	Tester:	Darren Amerine	OIL API:	
Total Depth:	4158	Elevation:	2163 ft(KB)	H2O Salinity:	
Hole Diameter:	7 7/8"		2158 ft(CF)		
Start Data:	6/4/2002	Tool Weight:	2100	Mud Type:	Chemical
Start Time:	7:00:00	Weight Set on Packers:	20000	Mud Weight:	9
Time tool opened:	8:27:00	Weight to Pull Loose:	65000	Viscosity:	48
Time Off Btm:	11:27:00	Initial String Weight:	53000	Water Loss:	9.6
End Date:	6/4/02	Final String Weight:	53000	Resistivity:	-
End Time:	12:30	Drill Pipe Length:	3894	Salinity:	3000
		Drill Collar Length:	248		

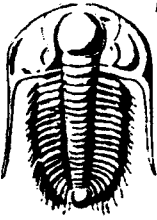
Test Comment:

IF: Strong Blow bottom of bucket in 15 sec
 ISl: Bled down for 10 min - Built back to 1/2" in bucket
 FF: Strong blow bottom of bucket in 15 sec
 FSI: Bled down for 10 min - no blow back

Recovery	15	Ft in DP	15
Length(ft):	Description:		
862	Gas in pipe		
15	Slight gas cut mud 10%gas 90%mud		

Gas Volume Report

Recorder #:	10991	Open	Min:	Ins. Of water	Orifice	MCF/D
Pressure Summary:	Time:(min)			PSIG	size	
Initial Hydro-static:	2065					
Open to Flow (1):	35	30				
Shut-in (1):	29					
End Shut-in (1):	1035	60				
Open to Flow (2):	42	30				
Shut-in (2):	52					
End Shut-in (2):	947	60				
Final Hydro-static:	1976					



TRILOBITE TESTING INC.

P.O. Box 362 • Hays, Kansas 67601

No 15725

Test Ticket

Well Name & No. Miller #5 Test No. 41 Date 06/04/02
 Company T.T. Production, Inc. Zone Tested LTC
 Address Route 1, Box 91, Haviland, KS. 67059 Elevation 2163 KB 2158 GL
 Co. Rep / Geo. Jeff Christian Cont. Mallard Est. Ft. of Pay Por. %
 Location: Sec. 25 Twp. 27S Rge. 18W Co. kiowa State KS
 No. of Copies 5 Distribution Sheet (Y, N) Turnkey (Y, N) Evaluation (Y, N)

Interval Tested 4147' - 4158' Initial Str Wt./Lbs. 53000 Unseated Str Wt./Lbs. 53000
 Anchor Length 11' Wt. Set Lbs. 20000 Wt. Pulled Loose/Lbs. 65000
 Top Packer Depth 4142' Tool Weight 2100
 Bottom Packer Depth 4147' Hole Size — 7 7/8" Rubber Size — 6 3/4"
 Total Depth 4158' Wt. Pipe Run N/A Drill Collar Run 248.45
 Mud Wt. 9.0 LCM 0 Vis. 48 WL 96 Drill Pipe Size 4 1/2 x 11 Ft. Run 3894.55

Blow Description IF: Strong blow b.o.b.in 15 sec.
ISI: Bled down for 10 mins. Built back to 1/2" in 120 bucket
FF: Strong blow b.o.b.in 15 sec.
EST: Bled down for 10 mins. No blow back

Recovery — Total Feet	GIP	Ft. in DC	Ft. in DP
<u>15'</u>	<u>862'</u>	<u>15'</u>	<u>N/A</u>
Rec. <u>15'</u> Feet Of <u>56CM</u>		<u>10%</u> gas	<u>90%</u> mud
Rec. <u>862'</u> Feet Of <u>GIP</u>		% gas	% oil
Rec. <u> </u> Feet Of <u> </u>		% gas	% oil
Rec. <u> </u> Feet Of <u> </u>		% gas	% oil
Rec. <u> </u> Feet Of <u> </u>		% gas	% oil

BHT °F Gravity °API D@ °F Corrected Gravity °API
 RW @ °F Chlorides ppm Recovery Chlorides 3000 ppm System

	AK-1	Alpine	PSI Recorder No.	T-On Location
(A) Initial Hydrostatic Mud	<u>1966</u>		<u>10991</u>	<u>0600</u>
(B) First Initial Flow Pressure	<u>21</u>		(depth) <u>4150'</u>	T-Started <u>0700</u>
(C) First Final Flow Pressure	<u>21</u>		PSI Recorder No. <u>13269</u>	T-Open <u>0827</u>
(D) Initial Shut-in Pressure	<u>1023</u>		PSI (depth) <u>4155'</u>	T-Pulled <u>1127</u>
(E) Second Initial Flow Pressure	<u>21</u>		PSI Recorder No. <u> </u>	T-Out <u>1230</u>
(F) Second Final Flow Pressure	<u>21</u>		PSI (depth) <u> </u>	T-Off Location <u>1330</u>
(G) Final Shut-in Pressure	<u>938</u>		PSI Initial Opening <u>30</u>	Test <u> </u>
(Q) Final Hydrostatic Mud	<u>1966</u>		PSI Initial Shut-in <u>60</u>	Jars <u> </u>
			Final Flow <u>30</u>	Safety Joint <u> </u>
			Final Shut-in <u>60</u>	Straddle <u> </u>
				Circ. Sub <u> </u>
				Sampler <u> </u>
				Extra Packer <u> </u>
				Elec. Rec. <u> </u>
				Mileage <u>39</u>
				Other <u> </u>
				TOTAL PRICE \$ <u>839</u>

TRILOBITE TESTING INC. 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 Jeff Christian
 Our Representative Barren Mein

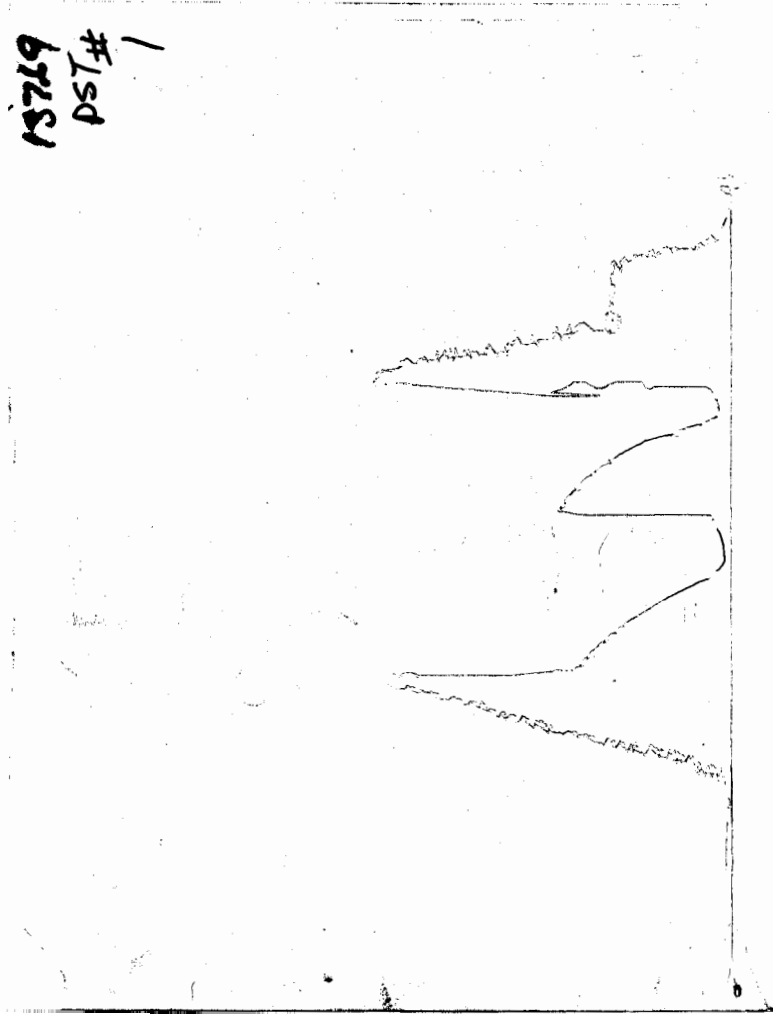
TOTAL PRICE \$ 839

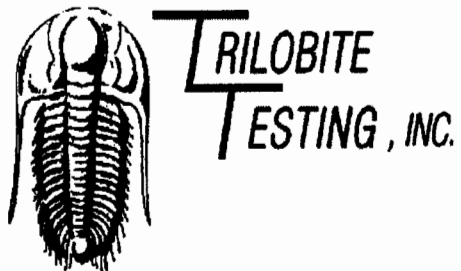
CHART PAGE

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

15769
DST# 1

Well Name	Miller	
DST Number	1	
Recorder Number	10991	
A:	1.944	2065
B:	.033	35
C:	.028	29
D:	.971	1035
E:	.040	42
F:	.049	52
G:	.889	947
Q:	1.860	1976





DRILL STEM TEST REPORT

Prepared For: **T.T. Production, Inc.**

Route 1 Box 91
Haviland, Kansas.
67059

ATTN: Jeff Christian

25--27S--18W

Miller #5

Start Date: 2002.06.06 @ 00:12:04

End Date: 2002.06.06 @ 08:53:34

Job Ticket #: 15726 DST #: 2

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

T.T. Production, Inc.
Route 1 Box 91
Haviland, Kansas.
67059
ATTN: Jeff Christian

Miller #5
25-27S-18W
Job Ticket: 15726 **DST#: 2**
Test Start: 2002.06.06 @ 00:12:04

GENERAL INFORMATION:

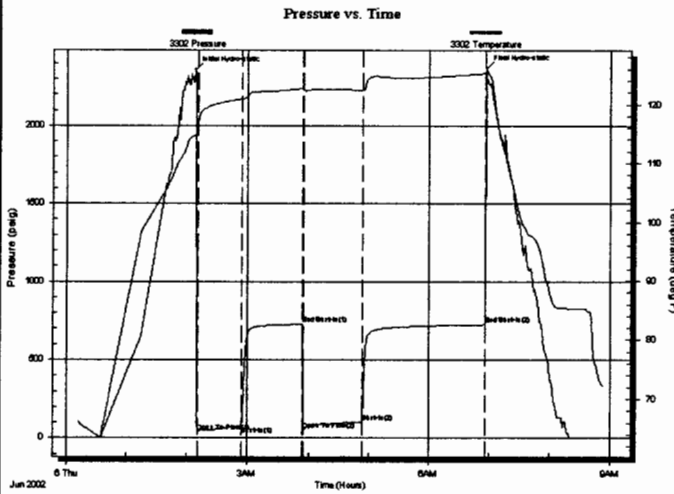
Formation: **Mississippian**
Deviated: **No** Whipstock: ft (KB)
Time Tool Opened: 02:10:34
Time Test Ended: 08:53:34
Interval: **4670.00 ft (KB) To 4720.00 ft (KB) (TVD)**
Total Depth: **4720.00 ft (KB) (TVD)**
Hole Diameter: **7.88 inches** Hole Condition: Fair
Test Type: Conventional Bottom Hole
Tester: Darren L. Amerine
Unit No: 19
Reference Elevations: 2163.00 ft (KB)
2158.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 3302

Inside

Press@RunDepth: 98.24 psig @ 4673.00 ft (KB) Capacity: 7000.00 psig
Start Date: 2002.06.06 End Date: 2002.06.06 Last Calib.: 2002.06.06
Start Time: 00:12:06 End Time: 08:53:34 Time On Btm: 2002.06.06 @ 02:08:19
Time Off Btm: 2002.06.06 @ 06:57:19

TEST COMMENT: F: Strong blow b.o.b in 30 sec. GTS in 15 mins. Gauged gas.
IS: Bled down for 10 mins built back to 3" in Bucket
FF: Strong blow b.o.b in 15 sec.
FS: Bled down for 10 mins. no blow back.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2357.19	114.71	Initial Hydro-static
3	41.38	116.67	Open To Flow (1)
46	77.89	120.88	Shut-In(1)
106	725.45	122.69	End Shut-In(1)
107	53.18	122.38	Open To Flow (2)
166	98.24	122.40	Shut-In(2)
289	724.29	125.27	End Shut-In(2)
289	2368.83	125.86	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
4460.00	01 - Gas	60.30
185.00	GCM	2.60

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.25	5.50	31.57
Last Gas Rate	0.25	50.00	102.16
Max. Gas Rate	0.25	50.00	102.16



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

T.T. Production, Inc.

Miller #5

Route 1 Box 91
Haviland, Kansas.
67059

25-27S-18W

Job Ticket: 15726

DST#: 2

ATTN: Jeff Christian

Test Start: 2002.06.06 @ 00:12:04

Tool Information

Drill Pipe:	Length: 4397.55 ft	Diameter: 3.80 inches	Volume: 61.69 bbl	Tool Weight:	2100.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	20000.00 lb
Drill Collar:	Length: 248.45 ft	Diameter: 2.25 inches	Volume: 1.22 bbl	Weight to Pull Loose:	62000.00 lb
			<u>Total Volume: 62.91 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	4.00 ft			String Weight: Initial	58000.00 lb
Depth to Top Packer:	4670.00 ft			Final	58000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	50.00 ft				
Tool Length:	78.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
C.O. Sub	1.00			4643.00	
S.I. Tool	5.00			4648.00	
HMV	5.00			4653.00	
Jars	5.00			4658.00	
Safety Joint	2.00			4660.00	
Packer	5.00			4665.00	28.00 Bottom Of Top Packer
Packer	5.00			4670.00	
Stubb	1.00			4671.00	
Anchor	2.00			4673.00	
Recorder	0.00	3302	Inside	4673.00	
Anchor	15.00			4688.00	
Recorder	0.00	10991	Outside	4688.00	
Blank Spacing	30.00			4718.00	
Bullnose	2.00			4720.00	50.00 Bottom Packers & Anchor

Total Tool Length: 78.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

T.T. Production, Inc.

Miller #5

Route 1 Box 91
Haviland, Kansas.
67059

25-27S-18W

Job Ticket: 15726

DST#: 2

ATTN: Jeff Christian

Test Start: 2002.06.06 @ 00:12:04

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 48.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.99 in³

Gas Cushion Type:

Resistivity: 0.10 ohm.m

Gas Cushion Pressure:

psig

Salinity: 6000.00 ppm

Filter Cake: 0.32 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
4460.00	01 - Gas	60.299
185.00	GCM	2.595

Total Length: 4645.00 ft

Total Volume: 62.894 bbl

Num Fluid Samples: 1

Num Gas Bombs: 0

Serial #:

Laboratory Name: Caraway

Laboratory Location: Liberal KS

Recovery Comments:



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

GAS RATES

T.T. Production, Inc.

Miller #5

Route 1 Box 91
Haviland, Kansas.
67059

25-27S-18W

Job Ticket: 15726

DST#: 2

ATTN: Jeff Christian

Test Start: 2002.06.06 @ 00:12:04

Gas Rates Information

Temperature: 59 deg C
Relative Density: 0.65
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (mm)	Pressure (kPaa)	Gas Rate (m ³ /d)
1	20	0.25	5.50	31.57
1	25	0.25	6.50	33.16
1	30	0.25	9.00	37.12
1	35	0.25	12.00	41.88
1	40	0.25	17.00	49.81
1	45	0.25	20.00	54.57
2	10	0.25	27.00	65.68
2	20	0.25	41.00	87.89
2	30	0.25	45.00	94.23
2	40	0.25	50.00	102.16
2	50	0.25	49.00	100.58
2	60	0.25	50.00	102.16

Serial #: 3302

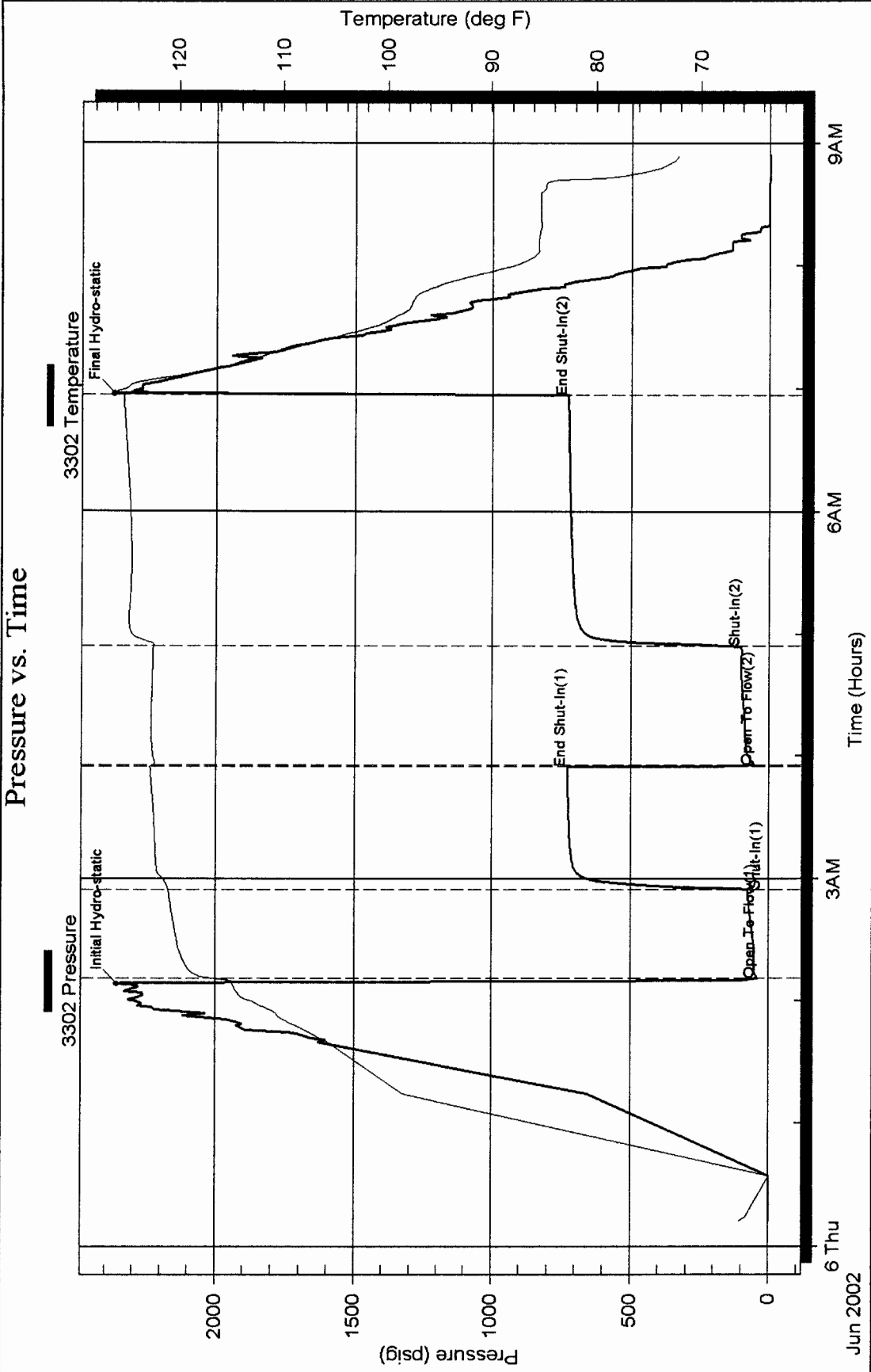
Inside

T.T. Production, Inc.

25--27S--18W

DST Test Number: 2

Pressure vs. Time



Ref. No: 15726

Printed: 2002.06.10 @ 15:22:41 Page 6

Trilobite Testing, Inc

CHART PAGE

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

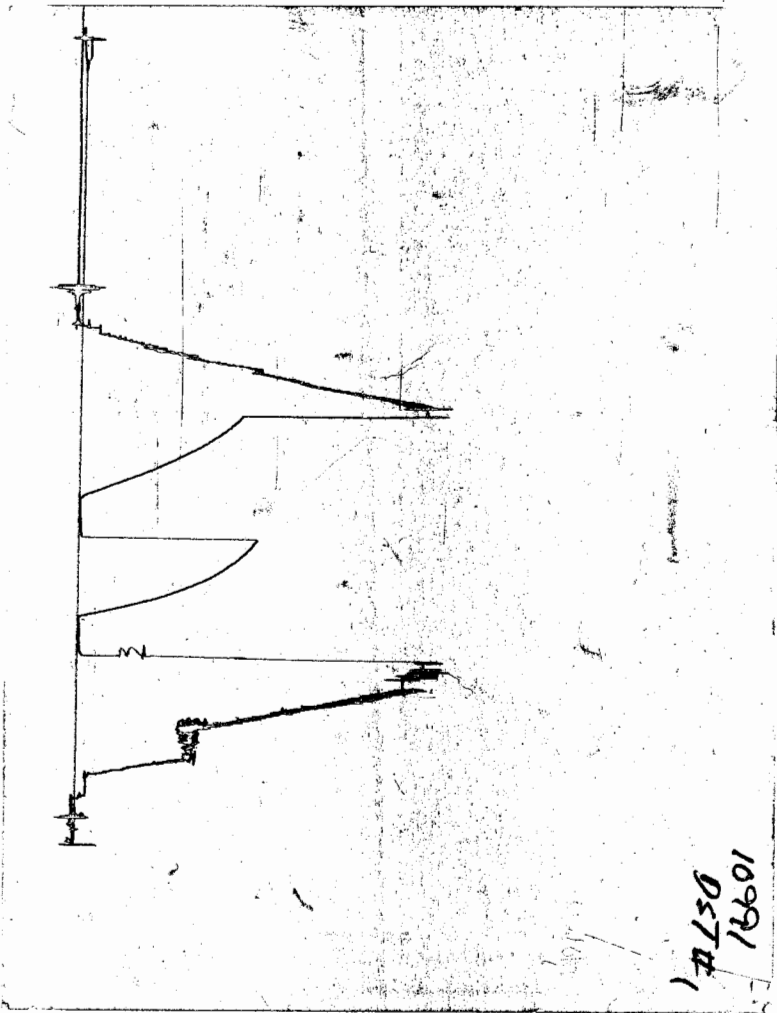
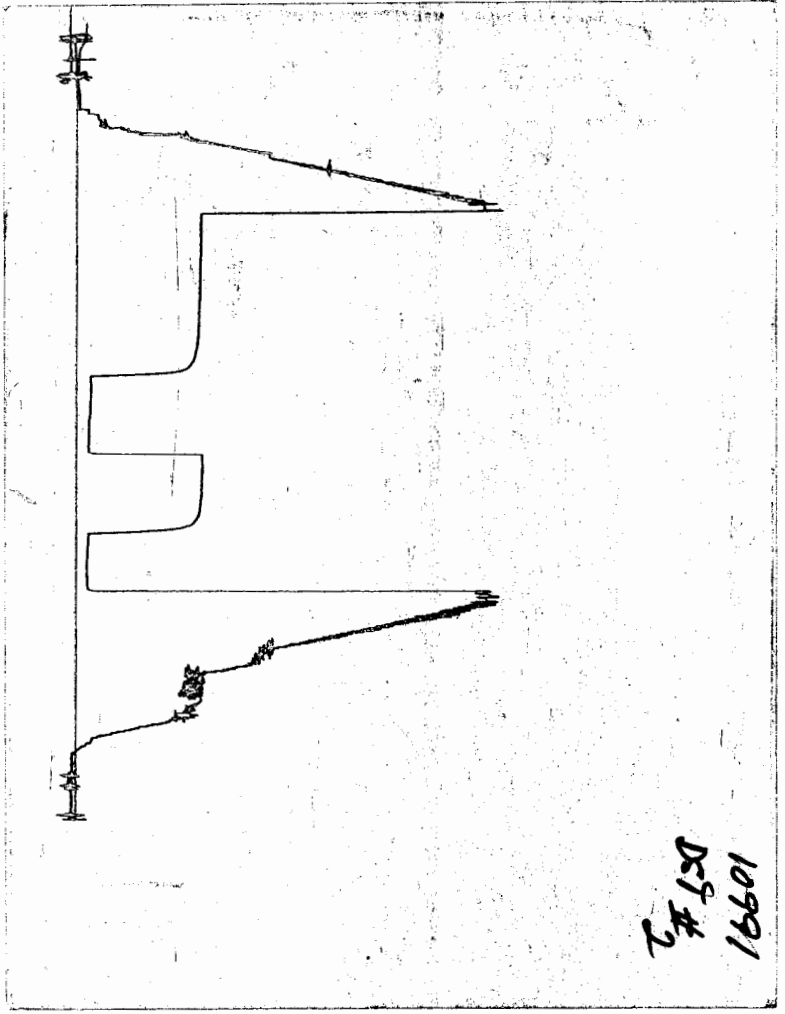
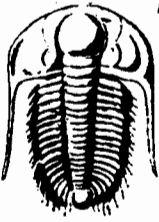


CHART PAGE
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TRILOBITE TESTING INC.

P.O. Box 362 • Hays, Kansas 67601

No 15726

Test Ticket

Well Name & No. Miller #5 Test No. #2 Date 6-6-02
 Company T.T. Production, Inc Route 1 Zone Tested Miss.
 Address P.O. Box 91 Haviland, KS 67059 Elevation 2163 KB 2158 GL
 Co. Rep / Geo. Jeff Christian Cont. Mallard Est. Ft. of Pay Por. %
 Location: Sec. 25 Twp. 27S Rge. 18W Co. kiowa State KS
 No. of Copies 5 Distribution Sheet (Y, N) Turnkey (Y, N) Evaluation (Y, N)

Interval Tested 4670' - 4720' Initial Str Wt./Lbs. 58000 Unseated Str Wt./Lbs. 58000
 Anchor Length 50' Wt. Set Lbs. 20000 Wt. Pulled Loose/Lbs. 62000
 Top Packer Depth 4665' Tool Weight 2100
 Bottom Packer Depth 4670' Hole Size — 7 7/8" ✓ Rubber Size — 6 3/4" ✓
 Total Depth 4720' Wt. Pipe Run N/A Drill Collar Run 248.45
 Mud Wt. 9.2 LCM 0 Vis. 48 WL 10.0 Drill Pipe Size 4 1/2 x H Ft. Run 4427.55

Blow Description IF Strong blow b.o.b in 30 sec. GTS in 15 mins Gauge Gas.
ISI Bled down for 10 mins. built back to 3" in H2O bucket.
FF Strong blow b.o.b in 15 sec. Gauge Gas
F5I Bled down for 10 mins.

Recovery — Total Feet 185 GIP 4480 Ft. in DC 185 Ft. in DP N/A
 Rec. 185 Feet Of 56CM 10% gas %oil %water 90 %mud
 Rec. 4460 Feet Of 67P %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 125.0 °F Gravity °API D@ °F Corrected Gravity °API
 RW @ °F Chlorides ppm Recovery Chlorides 6900 ppm System

	AK-1	Alpine	PSI	Recorder No.	T-On Location
(A) Initial Hydrostatic Mud		<u>2357</u>		<u>3302</u>	<u>0000</u> 9:15
(B) First Initial Flow Pressure		<u>41</u>		(depth) <u>4673'</u>	T-Started <u>0012</u>
(C) First Final Flow Pressure		<u>75</u>		Recorder No. <u>10991</u>	T-Open <u>0233</u> 8:53
(D) Initial Shut-In Pressure		<u>725</u>		(depth) <u>4688'</u>	T-Pulled <u>0718</u>
(E) Second Initial Flow Pressure		<u>53</u>		Recorder No. <u> </u>	T-Out <u>0853</u>
(F) Second Final Flow Pressure		<u>98</u>		(depth) <u> </u>	T-Off Location <u>0915</u>
(G) Final Shut-in Pressure		<u>724</u>		Initial Opening <u>45</u>	Test <u>✓ 800</u>
(Q) Final Hydrostatic Mud		<u>2369</u>		Initial Shut-in <u>60</u>	Jars <u>✓ 200</u>
				Final Flow <u>60</u>	Safety Joint <u>✓ 50</u>
				Final Shut-in <u>120</u>	Straddle <u> </u>

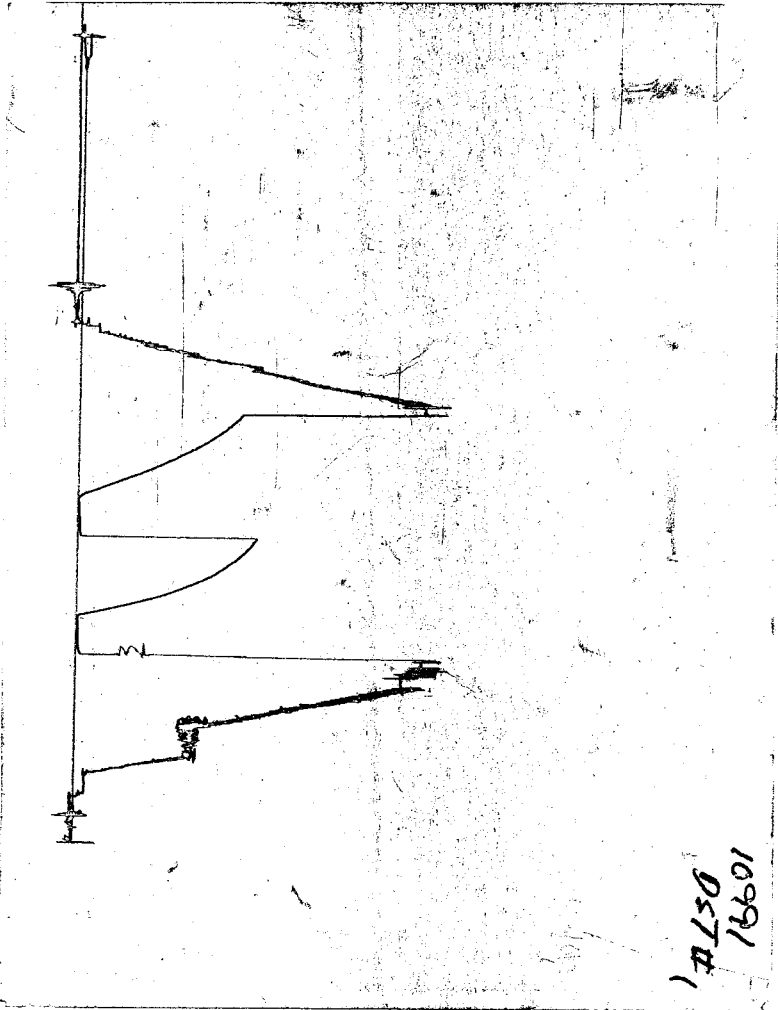
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Approved By Jeff Christian
 Our Representative Darrell J. Casner

Extra Packer
 Elec. Rec. ✓ 150
 Mileage 39
 Other
 TOTAL PRICE \$ 1239

CHART PAGE

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



NATURAL GAS ANALYSIS REPORT

Sampled by:

Trilobite Testing, Inc.
Hays, Kansas
Scott City, Kansas
Phone: 800-728-5369
Fax: 785-625-5620

Analyzed by:

Caraway Analytical, Inc
P. O. Box 2137
Liberal, Kansas 67905
Phone: 620-624-5389
Fax: 620-626-7108

Lab Number: 20022632

Analyzed: 06/11/02

Sample From: Miller 5 DST 2

Pressure:

Producer: T. T. Production, Inc.

Temperature:

Date: Location: 25-27-18

Time:
Sampler:
Source:

County: Kiowa
State: Kansas
Formation: Miss

	Mole %	GPM
Helium	He: 0.203	0.000
Hydrogen	H2: 0.017	0.000
Oxygen	O2: 0.000	0.000
Nitrogen	N2: 2.268	0.000
Carbon Dioxide	CO2: 0.113	0.000
Methane	C1: 91.024	0.000
Ethane	C2: 3.286	0.879
Propane	C3: 1.097	0.302
Iso Butane	iC4: 0.170	0.056
Normal Butane	nC4: 0.343	0.108
Iso Pentane	iC5: 0.113	0.041
Normal Pentane	nC5: 0.146	0.053
Hexanes Plus	C6+: 1.220	0.532

TOTAL: 100.000 1.971

Z Fact: 0.9975

SP.GR.: 0.6368

BTU (SAT): 1080.9 @ 14.73 psia

BTU (DRY): 1100.0 @ 14.73 psia

OCTANE RATING: 123.6

COMMENTS:

0.000