

DRILL STEM TEST REPORT

Prepared For: **Bowers Drilling,co.inc.**

400 N.Woodlawn #16
Wichita,Ks.67208

ATTN: Jim Musgrove

27-32S-13w Barber co

Kelly #3

Start Date: 2001.09.05 @ 06:12:13

End Date: 2001.09.05 @ 16:32:13

Job Ticket #: 14988 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Bowers Drilling,co.inc.

400 N.Woodlaw n #16
Wichita,Ks.67208

ATTN: Jim Musgrove

Kelly #3

27-32S-13w Barber co

Job Ticket: 14988

DST#: 1

Test Start: 2001.09.05 @ 06:12:13

GENERAL INFORMATION:

Formation: **Douglas Sd.**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 09:39:43

Time Test Ended: 16:32:13

Test Type: Conventional Bottom Hole

Tester: Darren L.Amerine

Unit No: 19

Interval: **3883.00 ft (KB) To 3909.00 ft (KB) (TVD)**

Total Depth: 3909.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Poor

Reference Elevations: 1679.00 ft (KB)

1671.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 3302 Inside

Press@RunDepth: 123.83 psig @ 3884.00 ft (KB)

Start Date: 2001.09.05 End Date: 2001.09.05

Start Time: 06:12:15 End Time: 16:32:13

Capacity: 7000.00 psig

Last Calib.: 2001.09.05

Time On Btm: 2001.09.05 @ 09:36:43

Time Off Btm: 2001.09.05 @ 13:52:13

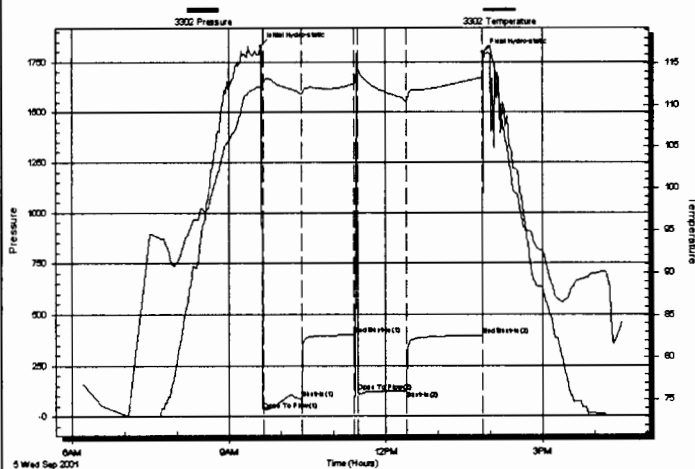
TEST COMMENT: IF:Strong blow b.o.b in 90 sec. GTS in 11 mins.gauge gas.

IS:Bled down n for 15 mins. no blow back.

FF:Strong blow b.o.b in 10 sec.gauge gas.

FS:Bled down n for 20 mins.built back to 1/4" in H2O bucke

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1827.61	112.14	Initial Hydro-static
3	31.15	112.52	Open To Flow (1)
47	86.66	111.28	Shut-In (1)
108	399.81	112.58	End Shut-In (1)
112	117.94	114.67	Open To Flow (2)
167	123.83	110.34	Shut-In (2)
255	396.76	113.25	End Shut-In (2)
256	1796.69	114.91	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
3677.00	01 - Gas	50.45
205.00	Gas cut mud 4%gas 96% mud	2.88

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.25	16.50	49.02
Last Gas Rate	0.50	46.00	407.44
Max. Gas Rate	0.25	62.00	121.20



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

TOOL DIAGRAM

Bowers Drilling,co.inc.

Kelly #3

400 N.Woodlawn #16
Wichita,Ks.67208

27-32S-13w Barber co

Job Ticket: 14988

DST#: 1

ATTN: Jim Musgrove

Test Start: 2001.09.05 @ 06:12:13

Tool Information

Drill Pipe:	Length: 3760.00 ft	Diameter: 3.80 inches	Volume: 52.74 bbl	Tool Weight: 2100.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose: 110000.0 lb
			Total Volume: 53.35 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	29.00 ft			String Weight: Initial 58000.00 lb
Depth to Top Packer:	3883.00 ft			Final 58000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	26.00 ft			
Tool Length:	54.00 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			3856.00	
S.I. Tool	5.00			3861.00	
HMV	5.00			3866.00	
Jars	5.00			3871.00	
Safety Joint	2.00			3873.00	
Packer	5.00			3878.00	28.00 Bottom Of Top Packer
Packer	5.00			3883.00	
Stubb	1.00			3884.00	
Recorder	0.00	3302	Inside	3884.00	
Anchor	22.00			3906.00	
Recorder	0.00	13769	Outside	3906.00	
Bullnose	3.00			3909.00	26.00 Bottom Packers & Anchor

Total Tool Length: 54.00



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Bowers Drilling,co.inc.

Kelly #3

400 N.Woodlaw n #16
Wichita,Ks.67208

27-32S-13w Barber co

Job Ticket: 14988

DST#: 1

ATTN: Jim Musgrove

Test Start: 2001.09.05 @ 06:12:13

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: 44.00 sec/qt

Cushion Volume:

bbl

Water Loss: 14.15 in³

Gas Cushion Type:

Resistivity: 1.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 2500.00 ppm

Filter Cake: 0.32 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
3677.00	01 - Gas	50.449
205.00	Gas cut mud 4%gas 96%mud	2.876

Total Length: -996117.00 ft

Total Volume: 53.325 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

GAS RATES

Bowers Drilling,co.inc.

Kelly #3

400 N.Woodlawn #16
Wichita,Ks.67208

27-32S-13w Barber co

Job Ticket: 14988

DST#: 1

ATTN: Jim Musgrove

Test Start: 2001.09.05 @ 06:12:13

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	16	0.25	16.50	49.02
1	16	0.25	16.50	49.02
1	21	0.25	36.00	79.95
1	26	0.25	50.00	102.16
1	31	0.25	62.00	121.20
1	36	0.50	40.00	366.97
1	41	0.50	31.00	306.25
1	45	0.50	33.00	319.75
2	10	0.50	36.00	339.98
2	20	0.50	41.00	373.71
2	30	0.50	42.00	380.46
2	50	0.50	46.00	407.44
2	60	0.50	46.00	407.44

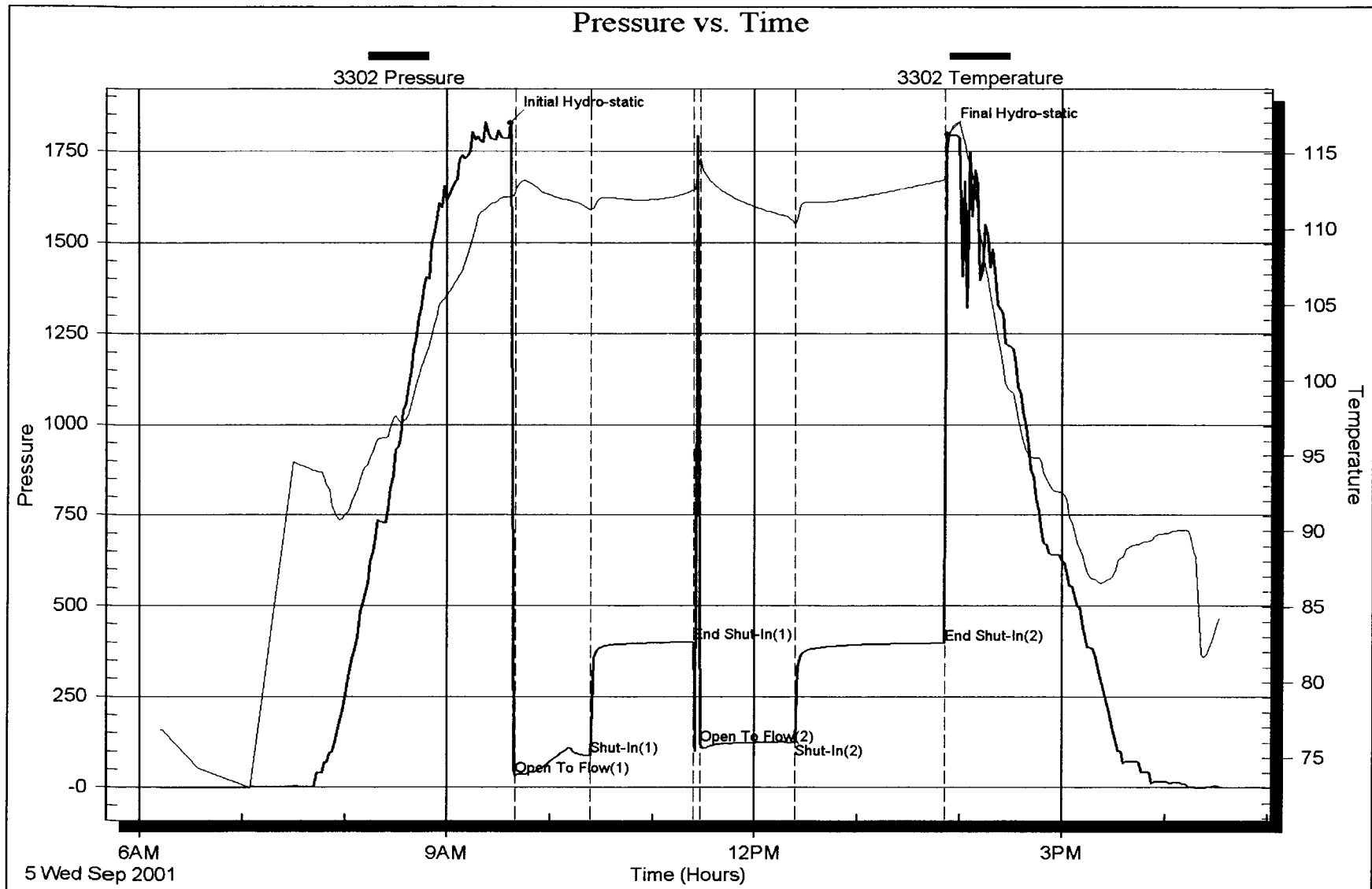
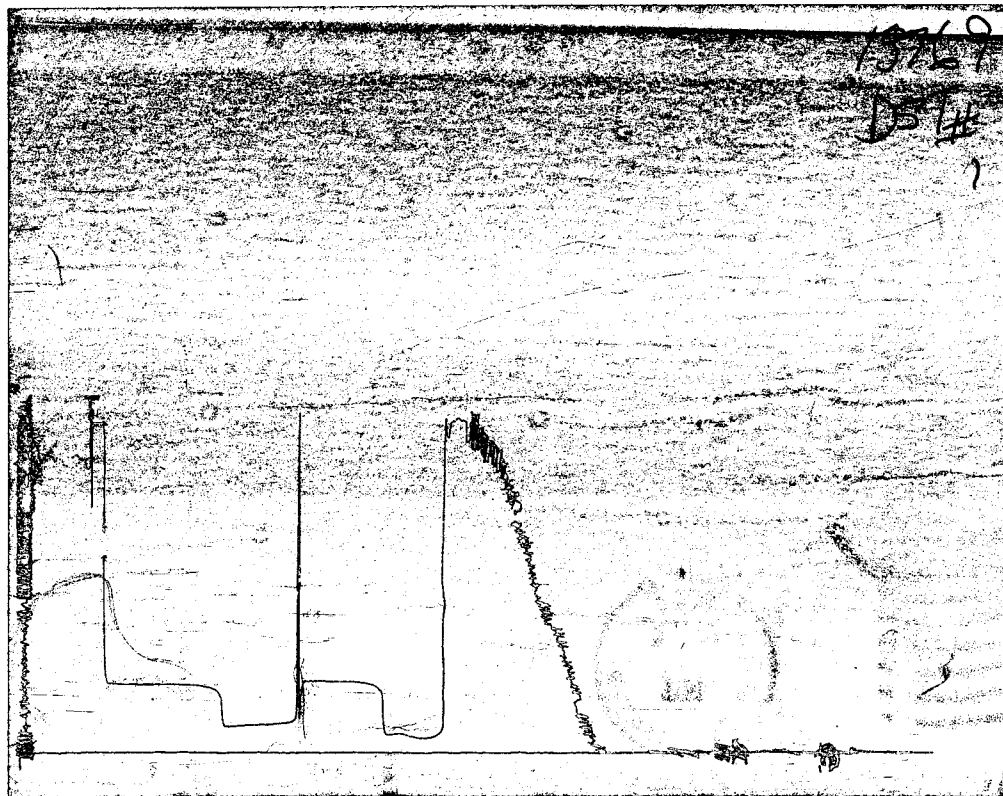


CHART PAGE

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





GAS VOLUME REPORT

Kelly #3
WELL N

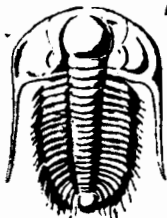
WELL NAME AND NO

1. Douglas Sol

DST NO

GTS in 11 mins.

Remarks:



TRILOBITE TESTING INC.

P.O. Box 362 • Hays, Kansas 67601

No 14988

Test Ticket

Well Name & No. <u>B-3 Kelly</u>	Test No. <u>#1</u>	Date <u>09/05/01</u>
Company <u>Bowers Drilling Co. Inc</u>	Zone Tested <u>Douglas. Sd</u>	
Address <u>400 N Woodlawn #16 Wichita, Ks.</u>	Elevation <u>1679</u> KB <u>167</u> GL	
Co. Rep / Geo. <u>Jim Musgrave</u>	Cont. <u>Val Energy #2</u>	Est. Ft. of Pay <u> </u> Por. <u> </u> %
Location: Sec. <u>27</u> Twp. <u>32S</u> Rge. <u>13W</u>	Co. <u>Barber</u> State <u>KS</u>	
No. of Copies <u>5</u>	Distribution Sheet (Y, N) <u> </u>	Turnkey (Y, N) <u> </u> Evaluation (Y, N) <u> </u>

Interval Tested <u>3883-3909</u>	Initial Str Wt./Lbs. <u>58,000</u>	Unseated Str Wt./Lbs. <u>58,000</u>
Anchor Length <u>26'</u>	Wt. Set Lbs. <u>20,000</u>	Wt. Pulled Loose/Lbs. <u>118,000</u>
Top Packer Depth <u>3878'</u>	Tool Weight <u>2100</u>	
Bottom Packer Depth <u>3883'</u>	Hole Size — 7 7/8" <u>✓</u>	Rubber Size — 6 3/4" <u>✓</u>
Total Depth <u>3909</u>	Wt. Pipe Run <u>N/A</u>	Drill Collar Run <u>124.0</u>
Mud Wt. <u>8.8</u> LCM <u> </u> Vis. <u>44</u> WL <u>14.2</u>	Drill Pipe Size <u>4 1/2 X 4</u>	Ft. Run <u>3760.0</u>
Blow Description <u>IF Strong blow built to b.o.b in 9 sec. 675 in 1 min. Gauge</u> <u>ISI Bled down for 15 mins. No slow back.</u> <u>FF Strong blow b.o.b in 10 sec Gauge Test.</u> <u>FST Bled down for 20 mins.</u>		

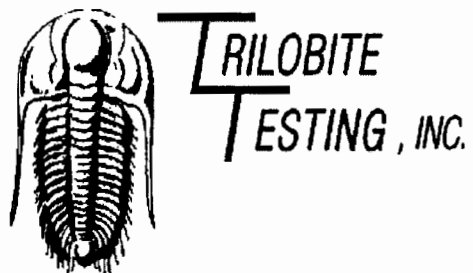
Recovery — Total Feet <u>210</u>	GIP <u>3677'</u>	Ft. in DC <u>124</u>	Ft. in DP <u>86</u>
Rec. <u>210'</u>	Feet Of <u>SGCM</u>	4 %gas %oil <u>Trace</u> %water <u>86</u> %mud	
Rec. <u>3677'</u>	Feet Of <u>GTD</u>	② %gas %oil <u>Trace</u> %water <u>86</u> %mud	
Rec. <u> </u>	Feet Of <u> </u>	%gas %oil %water %mud	
Rec. <u> </u>	Feet Of <u> </u>	%gas %oil %water %mud	
Rec. <u> </u>	Feet Of <u> </u>	%gas %oil %water %mud	
BHT <u>113</u> °F Gravity <u> </u> °API D@ <u> </u>	°F Corrected Gravity <u> </u> °API		
RW <u> </u> @ <u> </u> °F Chlorides <u> </u> ppm Recovery	Chlorides <u>2500</u> ppm System		

(A) Initial Hydrostatic Mud	AK-1 <u>Alpine</u>	PSI Recorder No. <u>3302</u>	T-On Location <u>0500</u>
(B) First Initial Flow Pressure	<u>31</u>	PSI (depth) <u>3884'</u>	T-Started <u> </u>
(C) First Final Flow Pressure	<u>87</u>	PSI Recorder No. <u>13769</u>	T-Open <u>0920</u>
(D) Initial Shut-In Pressure	<u>400</u>	PSI (depth) <u>3906'</u>	T-Pulled <u>1335</u>
(E) Second Initial Flow Pressure	<u>118</u>	PSI Recorder No. <u> </u>	T-Out <u>1632</u>
(F) Second Final Flow Pressure	<u>124</u>	PSI (depth) <u> </u>	T-Off Location <u> </u>
(G) Final Shut-in Pressure	<u>397</u>	PSI Initial Opening <u>45</u>	Test <u>✓ 700</u>
(Q) Final Hydrostatic Mud	<u>1797</u>	PSI Initial Shut-in <u>60</u>	Jars <u>✓ 200</u>
		Final Flow <u>60</u>	Safety Joint <u>✓ 50</u>
		Final Shut-in <u>90</u>	Straddle <u> </u>
			Circ. Sub <u> </u>
			Sampler <u> </u>
			Extra Packer <u> </u>
			Elec. Rec. <u>✓ 150</u>
			Mileage <u>45</u>
			Other <u>3hrs 90</u>
			TOTAL PRICE \$ <u>1235</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 Jim Musgrave

Our Representative Dan Reed



DRILL STEM TEST REPORT

Prepared For: **Bowers Drilling,co.inc.**

400 N.Woodlawn #16
Wichita,Ks.67208

ATTN: Jim Musgrove

27-32S-13w Barber co

Kelly #3

Start Date: 2001.09.07 @ 15:29:41

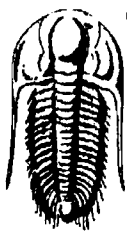
End Date: 2001.09.08 @ 00:01:11

Job Ticket #: 14989 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Bowers Drilling,co.inc.

400 N.Woodlaw n #16
Wichita,Ks.67208

ATTN: Jim Musgrove

Kelly #3

27-32S-13w Barber co

Job Ticket: 14989

DST#: 2

Test Start: 2001.09.07 @ 15:29:41

GENERAL INFORMATION:

Formation: **Mississippian**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:10:41

Time Test Ended: 00:01:11

Test Type: Conventional Bottom Hole

Tester: Darren L.Amerine

Unit No: 19

Interval: **4442.00 ft (KB) To 4476.00 ft (KB) (TVD)**

Total Depth: 4476.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 1679.00 ft (KB)

1671.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 3302

Inside

Press@RunDepth: 38.08 psig @ 4443.00 ft (KB)

Start Date: 2001.09.07

End Date:

2001.09.08

Start Time: 15:29:43

End Time:

00:01:11

Capacity: 7000.00 psig

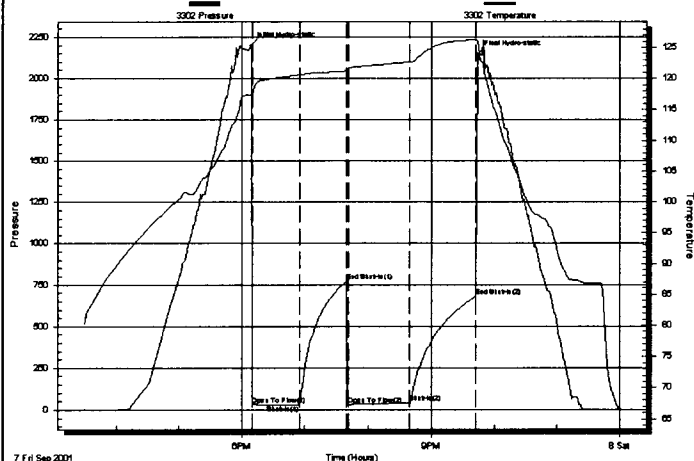
Last Calib.: 2001.09.07

Time On Btm: 2001.09.07 @ 18:08:41

Time Off Btm: 2001.09.07 @ 21:43:41

TEST COMMENT: F:Fair blow b.o.b in 75 sec.
IS:Bled down n for 20 mins.no blow back.
FF:Strong blow b.o.b in 15 sec.GTS gauge gas.
FS:Bled down n for 12 mins.no blow back.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2195.99	117.34	Initial Hydro-static
2	31.41	117.61	Open To Flow (1)
47	30.41	120.62	Shut-In (1)
91	770.17	121.24	End Shut-In (1)
93	26.18	121.48	Open To Flow (2)
151	38.08	122.67	Shut-In (2)
214	679.23	126.24	End Shut-In (2)
215	2146.02	126.12	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
4387.00	01 - Gas	60.41
60.00	GCM 10%gas 90%mud	0.84

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.13	1.00	5.76
Last Gas Rate	0.13	5.00	7.26
Max. Gas Rate	0.13	5.00	7.26



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Bowers Drilling,co.inc.

Kelly #3

400 N.Woodlaw n #16
Wichita,Ks.67208

27-32S-13w Barber co

Job Ticket: 14989

DST#: 2

ATTN: Jim Musgrove

Test Start: 2001.09.07 @ 15:29:41

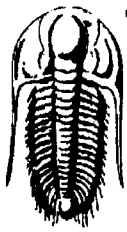
Tool Information

Drill Pipe:	Length: 4323.00 ft	Diameter: 3.80 inches	Volume: 60.64 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: 124.00 ft	Diameter: 2.25 inches	Volume: 0.61 bbl	Weight to Pull Loose:	70000.00 lb
		Total Volume:	61.25 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:	33.00 ft			String Weight: Initial	60000.00 lb
Depth to Top Packer:	4442.00 ft			Final	60000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	34.00 ft				
Tool Length:	62.00 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			4415.00	
S.I. Tool	5.00			4420.00	
HMV	5.00			4425.00	
Jars	5.00			4430.00	
Safety Joint	2.00			4432.00	
Packer	5.00			4437.00	28.00 Bottom Of Top Packer
Packer	5.00			4442.00	
Stubb	1.00			4443.00	
Recorder	0.00	3302	Inside	4443.00	
Anchor	30.00			4473.00	
Recorder	0.00	13769	Outside	4473.00	
Bullnose	3.00			4476.00	34.00 Bottom Packers & Anchor

Total Tool Length: 62.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Bowers Drilling,co.inc.

Kelly #3

400 N.Woodlaw n #16
Wichita,Ks.67208

27-32S-13w Barber co

Job Ticket: 14989

DST#: 2

ATTN: Jim Musgrove

Test Start: 2001.09.07 @ 15:29:41

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: 46.00 sec/qt

Cushion Volume:

bbl

Water Loss: 10.17 in³

Gas Cushion Type:

Resistivity: 1.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: 6200.00 ppm

Filter Cake: 0.32 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
4387.00	01 - Gas	60.408
60.00	GCM 10%gas 90%mud	0.842

Total Length: 4447.00 ft

Total Volume: 61.250 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

Bowers Drilling,co.inc.

Kelly #3

400 N.Woodlaw n #16
Wichita,Ks.67208

27-32S-13w Barber co

Job Ticket: 14989

DST#: 2

ATTN: Jim Musgrove

Test Start: 2001.09.07 @ 15:29:41

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 (m³/d)
2	5	0.13	1.00	5.76
2	10	0.13	3.00	6.51
2	15	0.13	3.50	6.70
2	20	0.13	4.50	7.07
2	25	0.13	4.50	7.07
2	30	0.13	4.50	7.07
2	35	0.13	4.50	7.07
2	40	0.13	4.50	7.07
2	45	0.13	4.75	7.17
2	50	0.13	5.00	7.26
2	55	0.13	5.00	7.26
2	60	0.13	5.00	7.26

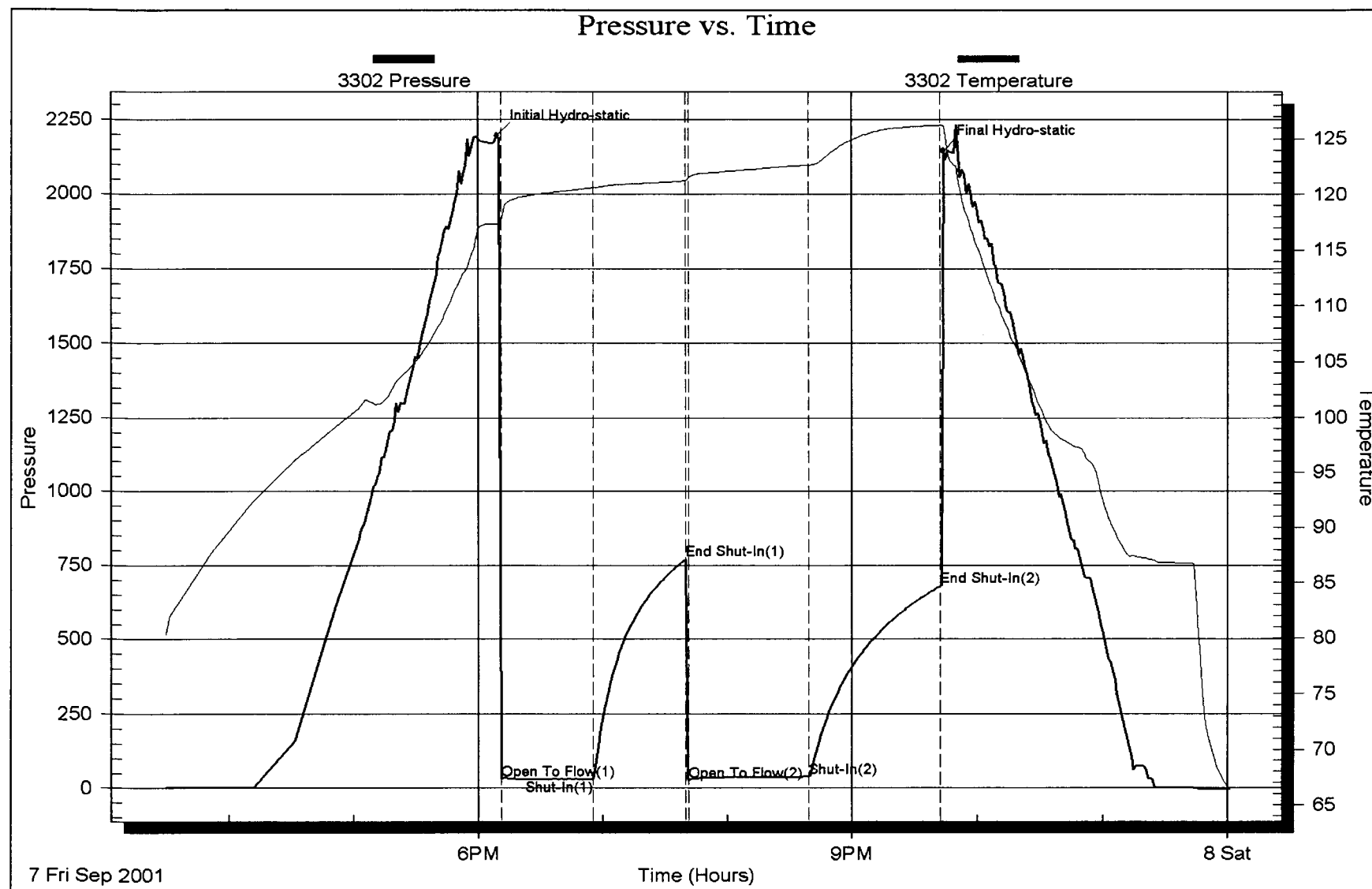
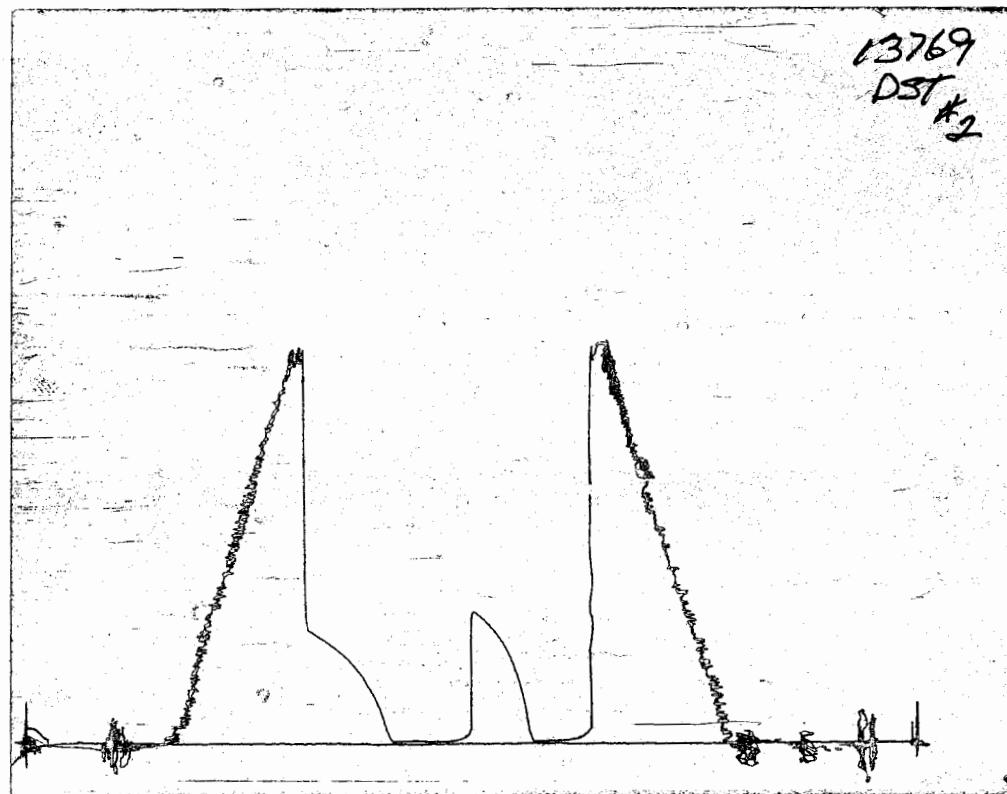


CHART PAGE

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



**TRILOBITE
TESTING L.L.C.**

P.O. Box 362 • Hays, Kansas 67601 • (913) 625-4778

GAS VOLUME REPORT

OPERATOR

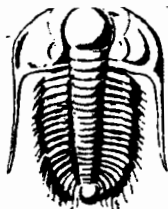
WELL NAME AND NO.

DST NO

615 When Tool opened on final Flow

[illegible]

Remarks:



TRILOBITE TESTING INC.

P.O. Box 362 • Hays, Kansas 67601

No 14989

Test Ticket

Well Name & No.	<u>Kelly #3</u>	Test No.	<u>#2</u>	Date	<u>09/07/61</u>
Company	<u>Bowers Drilling Co Inc.</u>	Zone Tested	<u>Mississippian</u>		
Address	<u>400 N. Woodlawn #16 Wichita Ks 67228</u>	Elevation	<u>1679</u>	KB	<u>1671</u> GL
Co. Rep / Geo.	<u>Jim Musgrave</u>	Cont.	<u>Val Energy #2</u>	Est. Ft. of Pay	<u> </u> Por. <u> </u> %
Location: Sec.	<u>27</u>	Twp.	<u>32 S</u>	Rge.	<u>13 W</u>
		Co.	<u>Barber</u>	State	<u>Ks</u>
No. of Copies	<u>5</u>	Distribution Sheet (Y, N)	<u> </u>	Turnkey (Y, N)	<u> </u>
		Evaluation (Y, N)	<u> </u>		

Interval Tested	<u>4442' - 4476'</u>	Initial Str Wt./Lbs.	<u>60000</u>	Unseated Str Wt./Lbs.	<u>60000</u>
Anchor Length	<u>34'</u>	Wt. Set Lbs.	<u>20000</u>	Wt. Pulled Loose/Lbs.	<u>70000</u>
Top Packer Depth	<u>4437'</u>	Tool Weight	<u>2100</u>		
Bottom Packer Depth	<u>4442'</u>	Hole Size — 7 7/8"	<u>✓</u>	Rubber Size — 6 3/4"	<u>✓</u>
Total Depth	<u>4476'</u>	Wt. Pipe Run	<u>N/A</u>	Drill Collar Run	<u>124.0</u>
Mud Wt.	<u>9.1</u> LCM <u>2#</u> Vis. <u>46</u> WL <u>10.2</u>	Drill Pipe Size	<u>4 1/2 XH</u>	Ft. Run	<u>4323.0</u>

Blow Description IF: Fair blow d.o.b in 75 sec.
TSI: Blod down for 20 mins No blow back
FF: Strong blow d.o.b in 15 sec. 6TS Gauge Gas.
FST: Blod down for 20 mins No blow back.

Recovery — Total Feet	<u>60</u>	GIP	<u>4387'</u>	Ft. in DC	<u>60</u>	Ft. in DP	<u> </u>
Rec.	<u>60</u>	Feet Of	<u>6CM</u>	10 %gas	%oil	%water	<u>90</u> %mud
Rec.	<u>4387'</u>	Feet Of	<u>67P</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
BHT	<u>126°</u>	°F Gravity		°API D@		°F Corrected Gravity	
RW		@		°F Chlorides		ppm Recovery	
				Chlorides	<u>6200</u>	ppm System	

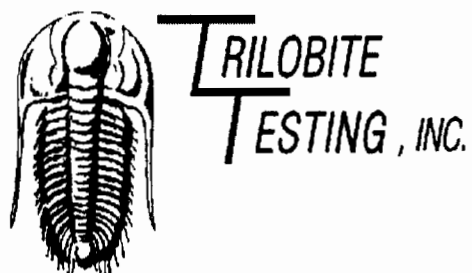
(A) Initial Hydrostatic Mud	AK-1	Alpine	<u>2196</u>	PSI Recorder No.	<u>3302</u>	T-On Location	<u>1430</u>
(B) First Initial Flow Pressure			<u>31</u>	PSI (depth)	<u>4443'</u>	T-Started	<u>1510</u>
(C) First Final Flow Pressure			<u>30</u>	PSI Recorder No.	<u>13269</u>	T-Open	<u>1250</u>
(D) Initial Shut-In Pressure			<u>770</u>	PSI (depth)	<u>4473'</u>	T-Pulled	<u>2120</u>
(E) Second Initial Flow Pressure			<u>26</u>	PSI Recorder No.		T-Out	<u>0001</u>
(F) Second Final Flow Pressure			<u>38</u>	PSI (depth)		T-Off Location	<u>9100</u>
(G) Final Shut-in Pressure			<u>679</u>	PSI Initial Opening	<u>75</u>	Test	<u>✓ 800</u>
(Q) Final Hydrostatic Mud			<u>2146</u>	PSI Initial Shut-in	<u>45</u>	Jars	<u>✓ 200</u>
				Final Flow	<u>60</u>	Safety Joint	<u>✓ 50</u>
				Final Shut-in	<u>60</u>	Straddle	

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Approved By

Our Representative

10:30
Elec. Rec. ✓ 150
Mileage 45
Other 1 hr 30
TOTAL PRICE \$ 1275



DRILL STEM TEST REPORT

Prepared For: **Bowers Drilling,co.inc.**

400 N.Woodlawn #16
Wichita,Ks.67208

ATTN: Jim Musgrove

27-32S-13w Barber co

Kelly #3

Start Date: 2001.09.08 @ 19:05:12

End Date: 2001.09.09 @ 03:06:27

Job Ticket #: 14929 DST #: 3

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Bowers Drilling,co.inc.

400 N.Woodlawn #16
Wichita,Ks.67208

ATTN: Jim Musgrove

Kelly #3

27-32S-13w Barber co

Job Ticket: 14929

DST#: 3

Test Start: 2001.09.08 @ 19:05:12

GENERAL INFORMATION:

Formation: **Douglass**

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

Time Tool Opened: 21:06:12

Time Test Ended: 03:06:27

Test Type: **Conventional Straddle**

Tester: **Lanny Saloga**

Unit No: **14**

Interval: **3900.00 ft (KB) To 3910.00 ft (KB) (TVD)**

Total Depth: **4531.00 ft (KB) (TVD)**

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

Reference Elevations: **1679.00 ft (KB)**

1671.00 ft (CF)

KB to GR/CF: **8.00 ft**

Serial #: 3289 **Inside**

Press@RunDepth: **111.44 psig @ 3902.00 ft (KB)**

Start Date: **2001.09.08**

End Date:

2001.09.09

Start Time: **19:05:17**

End Time:

03:06:26

Capacity: **7000.00 psig**

Last Calib.: **1899.12.30**

Time On Btm: **2001.09.08 @ 20:58:42**

Time Off Btm: **2001.09.09 @ 00:12:57**

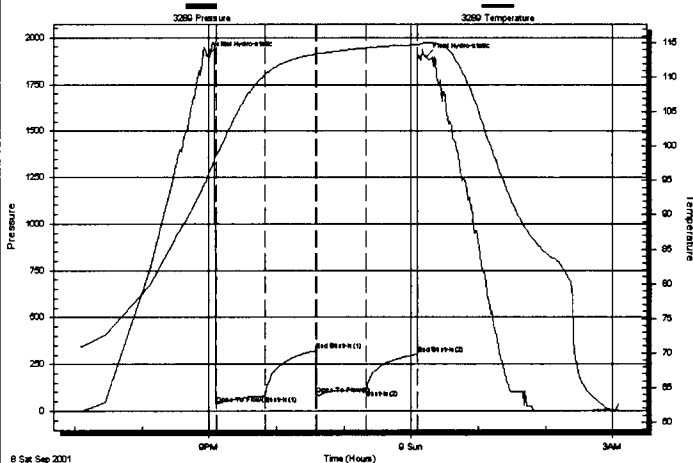
TEST COMMENT: **IF: Strong OBB in 2 min.**

IS: No blow-back.

FF: Weak 1/2" built to strong OBB in 9 min.

FS: No blow-back. "Bottom packer held."

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1903.93	95.52	Initial Hydro-static
8	38.50	98.60	Open To Flow (1)
52	81.15	110.40	Shut-In(1)
96	322.32	113.36	End Shut-In(1)
98	86.20	113.45	Open To Flow (2)
142	111.44	114.29	Shut-In(2)
187	303.44	114.73	End Shut-In(2)
195	1897.58	115.05	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	Gassy Wtr 3%G 97%W	0.59
60.00	Sli G&WcM 3%G 11%W 86%M	0.30
30.00	Thin Mud 100%M	0.38
0.00	590 ft. GIP	0.00
0.00	RW 0.30 at 53 F. 31,000 FPM.	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Bowers Drilling,co.inc.

Kelly #3

400 N.Woodlawn #16
Wichita,Ks.67208

27-32S-13w Barber co

Job Ticket: 14929

DST#: 3

ATTN: Jim Musgrove

Test Start: 2001.09.08 @ 19:05:12

Tool Information

Drill Pipe:	Length: 3696.00 ft	Diameter: 3.80 inches	Volume: 51.85 bbl	Tool Weight: 12000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 184.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 4000.00 lb
			Total Volume: 52.75 bbl	Tool Chased ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 70000.00 lb
Depth to Top Packer:	3900.00 ft			Final 71000.00 lb
Depth to Bottom Packer:	3910.00 ft			
Interval between Packers:	10.00 ft			
Tool Length:	658.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		
Tool Comments:				

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
C.O. Sub	1.00			3874.00	
S.I. Tool	5.00			3879.00	
HMV	5.00			3884.00	
Jars	5.00			3889.00	
Safety Joint	2.00			3891.00	
Packer	4.00			3895.00	27.00 Bottom Of Top Packer
Packer	5.00			3900.00	
Stubb	1.00			3901.00	
Perforations	1.00			3902.00	
Recorder	0.00	3289	Inside	3902.00	
Perforations	5.00			3907.00	
Blank Off Sub	0.00			3907.00	
T.C.	3.00			3910.00	10.00 Tool Interval
Packer	1.00			3911.00	
Stubb	1.00			3912.00	
Perforations	26.00			3938.00	
C.O. Sub	1.00			3939.00	
Blank Spacing	589.00			4528.00	
Recorder	0.00	10242	Inside	4528.00	
C.O. Sub	1.00			4529.00	
Bullnose	2.00			4531.00	621.00 Bottom Packers & Anchor
Total Tool Length:		658.00			



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Bowers Drilling,co.inc.

Kelly #3

400 N.Woodlaw n #16
Wichita,Ks.67208

27-32S-13w Barber co

Job Ticket: 14929

DST#: 3

ATTN: Jim Musgrove

Test Start: 2001.09.08 @ 19:05:12

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:

31000 ppm

Viscosity: 49.00 sec/qt

Cushion Volume:

bbl

Water Loss: 10.15 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 6200.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
120.00	Gassy Wtr 3%G 97%W	0.590
60.00	Sli G&WcM 3%G 11%W 86%M	0.295
30.00	Thin Mud 100%M	0.384
0.00	590 ft. GIP	0.000
0.00	RW 0.30 at 53 F. 31,000 PPM.	0.000

Total Length: 210.00 ft

Total Volume: 1.269 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

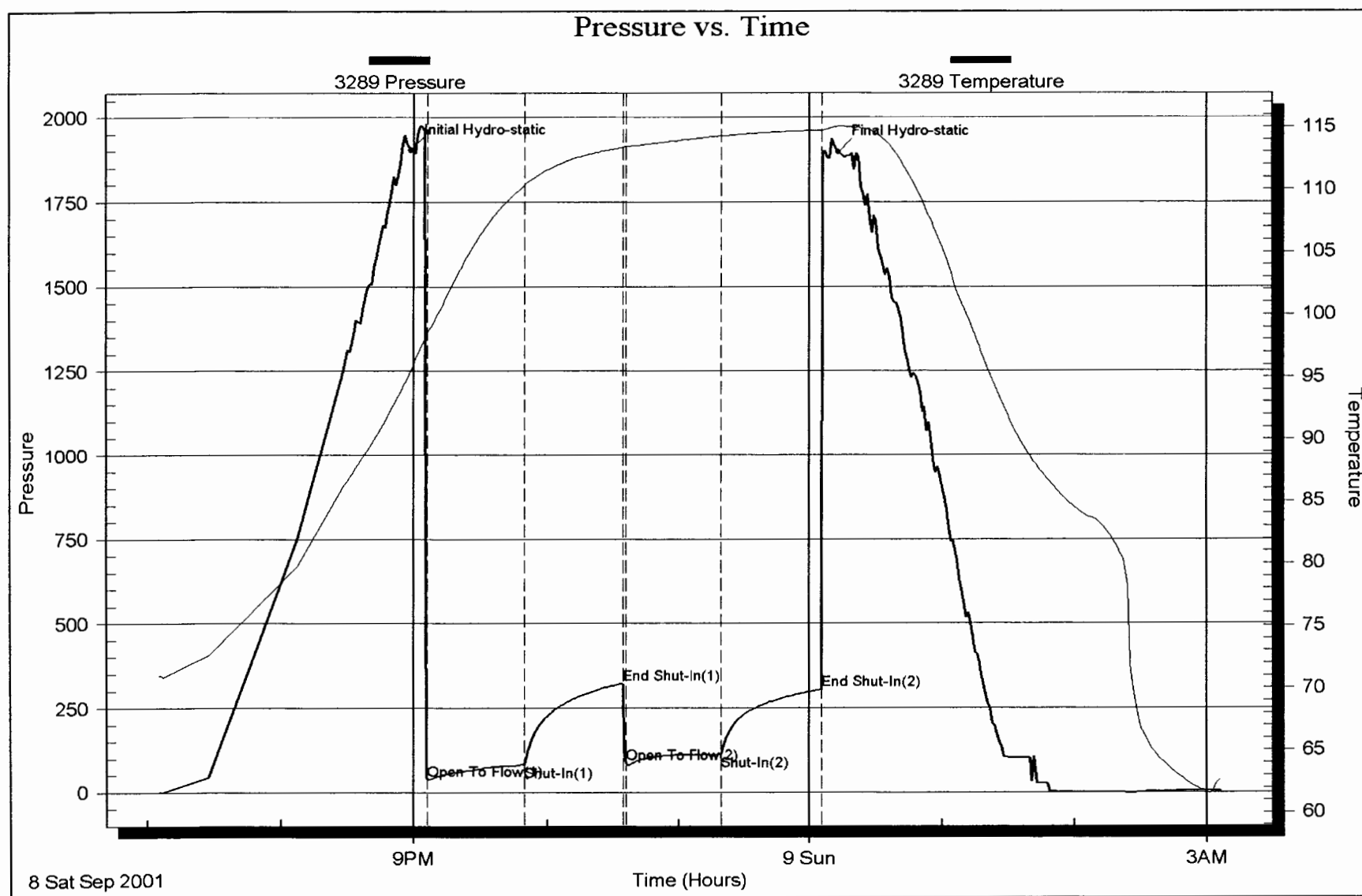
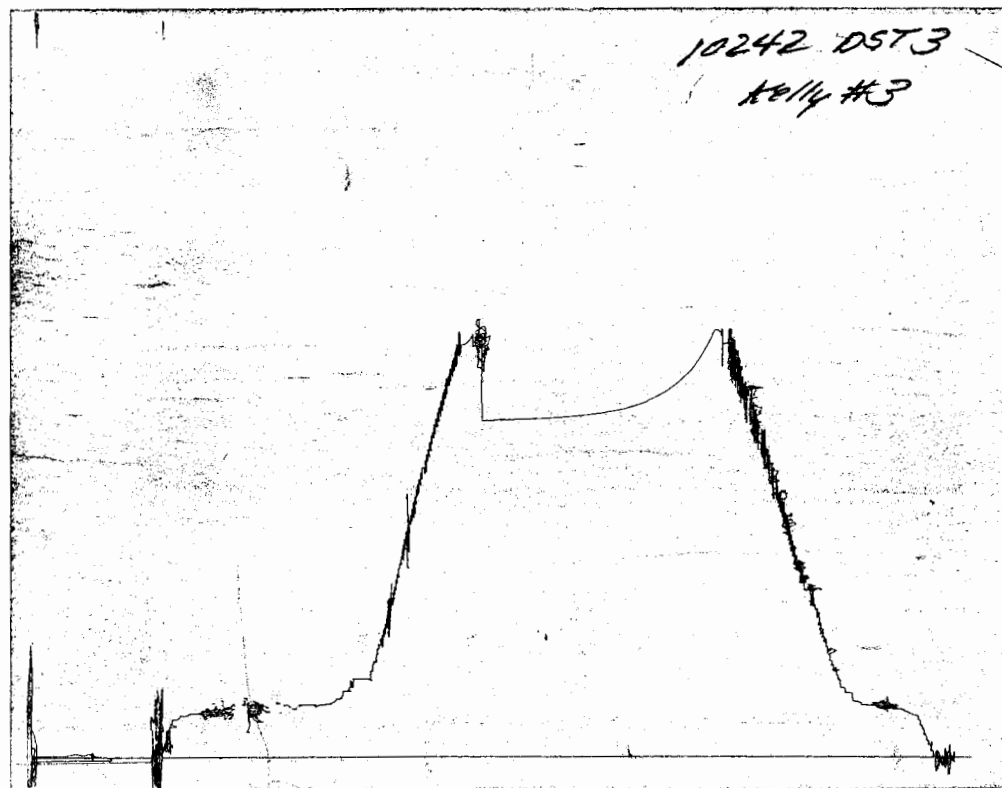
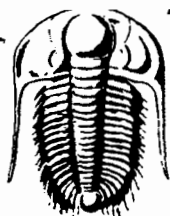


CHART PAGE

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





TRILOBITE TESTING INC.

P.O. Box 362 • Hays, Kansas 67601

No 14929

Test Ticket

Well Name & No. <u>Kelly #3</u>	Test No. <u>83</u>	Date <u>9-8-2001</u>
Company <u>Bowers Drilling Co. Inc.</u>	Zone Tested <u>Douglass</u>	
Address <u>Wichita KS. 67208</u>	Elevation <u>1679</u> KB <u>1669</u> GL	
Co. Rep / Geo. <u>Jim Musgrave</u>	Cont. <u>Val Reg 2</u>	Est. Ft. of Pay <u> </u> Por. <u> </u> %
Location: Sec. <u>27</u> Twp. <u>32 S.</u> Rge. <u>13 W.</u>	Co. <u>Barber</u>	State <u>KS.</u>
No. of Copies <u>Reg</u> Distribution Sheet (Y, N) <u>N</u>	Turnkey (Y, N) <u>N</u>	Evaluation (Y, N) <u> </u>

Interval Tested 3900-3910 Initial Str Wt./Lbs. 70,000 Unseated Str Wt./Lbs. 76,000
 Anchor Length 10' Tail=621 Tail=27' Wt. Set Lbs. 30,000 Wt. Pulled Loose/Lbs. 4,000
 Top Packer Depth 3885 Tool Weight 12,000
 Bottom Packer Depth 3900 STPK=3910 Hole Size — 7 7/8" Rubber Size — 6 3/4"
 Total Depth 4531 Wt. Pipe Run Drill Collar Run 184
 Mud Wt. 9.2 LCM 2# Vis. 49 WL 10.2 Drill Pipe Size 4 1/2 KH. Ft. Run 3696 7' up
 Blow Description Strong OBB in 2 min. I.F.P.
No blow-back. I.S.T.P.
Work 1/2" built to strong OBB in 9 min. F.F.P.
No blow-back. F.S.T.P.

Recovery — Total Feet	GIP	Ft. in DC	Ft. in DP
Rec. <u>30</u> Feet Of <u>Thin Mud</u>	<u>590</u>	<u>184</u>	<u>26</u>
Rec. <u>60</u> Feet Of <u>5 1/2" W & G. M.</u>	<u>3</u>	%gas	%oil
Rec. <u>120</u> Feet Of <u>Gassy Wt.</u>	<u>3</u>	%gas	%oil
Rec. <u> </u> Feet Of <u> </u>	<u> </u>	%gas	%oil
Rec. <u> </u> Feet Of <u> </u>	<u> </u>	%gas	%oil

BHT 114 °F Gravity °API D@ °F Corrected Gravity °API
 RW 0.30 @ 53 °F Chlorides 34,000 ppm Recovery Chlorides 6,200 ppm System

	AK-1	Alpine
(A) Initial Hydrostatic Mud	<u>1903</u> PSI	Recorder No. <u>3289</u> "19:05" T-On Location <u>5:15 P.M.</u>
(B) First Initial Flow Pressure	<u>38</u> PSI	(depth) <u>3902</u> T-Started <u>7:05 P.M.</u>
(C) First Final Flow Pressure	<u>81</u> PSI	Recorder No. <u> </u> T-Open <u>9:05 P.M.</u>
(D) Initial Shut-In Pressure	<u>322</u> PSI	(depth) <u> </u> T-Pulled <u>12:05 A.M.</u>
(E) Second Initial Flow Pressure	<u>86</u> PSI	Recorder No. <u>10242</u> T-Out <u>3:15 A.M.</u>
(F) Second Final Flow Pressure	<u>111</u> PSI	(depth) <u>4528</u> T-Off Location <u> </u>
(G) Final Shut-in Pressure	<u>303</u> PSI	Initial Opening <u>45</u> Test <u>800</u> ✓
(Q) Final Hydrostatic Mud	<u>1897</u> PSI	Initial Shut-in <u>45</u> Jars <u>200</u> ✓
		Final Flow <u>45</u> Safety Joint <u>150</u> ✓
		Final Shut-in <u>45</u> Straddle <u>250</u> ✓
		Circ. Sub <u> </u>
		SHALE PKT Sampler <u>150</u> ✓
		Extra Packer <u>150</u> ✓
		Elec. Rec. <u>150</u> ✓
		Mileage <u>45.50</u> ✓
		Other <u>1.30 H.C.</u> ✓

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Approved By Jim Musgrave

Our Representative Jimmy S. Salazar

TOTAL PRICE \$ 1830.00

1825