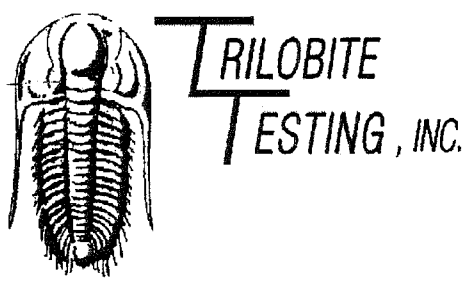


15-195-22295



### DRILL STEM TEST REPORT

Prepared For: **Production Drilling, Inc,**  
P.O.Box 680  
Hays, Ks. 67601

ATTN: Aven Weaverling

**5-14s-21w**

**Flax # 6**

Start Date: 2005.07.23 @ 23:08:11  
End Date: 2005.07.24 @ 04:23:11  
Job Ticket #: 22717                      DST #: 1

*15-195-22295-00-00*  
*E2 W2 NE*  
*1400 FNL 1630 FEL*

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

Production Drilling, Inc,

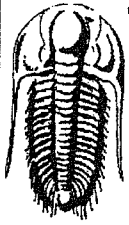
Flax # 6

5-14s-21w

DST # 1

L.Kc.

2005.07.23



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

Production Drilling, Inc.

Flax # 6

P.O.Box 680  
Hays, Ks. 67601

5-14s-21w

Job Ticket: 22717

DST#: 1

ATTN: Aven Weaving

Test Start: 2005.07.23 @ 23:08:11

## GENERAL INFORMATION:

Formation: **L.Kc.**

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

Time Tool Opened: 00:53:41

Time Test Ended: 04:23:11

Test Type: Conventional Bottom Hole

Tester: John Schmidt

Unit No: 31

Interval: **3590.00 ft (KB) To 3650.00 ft (KB) (TVD)**

Total Depth: 3650.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 2243.00 ft (KB)

2235.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 8018

Inside

Press@RunDepth: 19.11 psig @ 3595.00 ft (KB)

Start Date: 2005.07.23

End Date:

2005.07.24

Capacity: 7000.00 psig

Last Calib.: 2005.07.24

Start Time: 23:08:12

End Time:

04:23:11

Time On Btm: 2005.07.24 @ 00:52:41

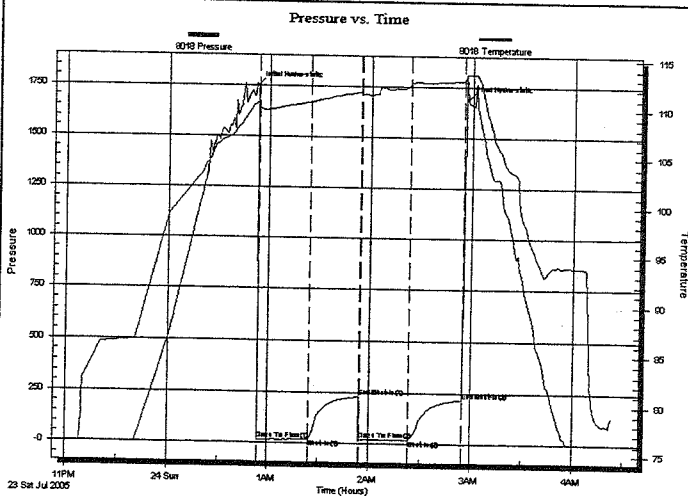
Time Off Btm: 2005.07.24 @ 02:57:11

TEST COMMENT: F-Weak Dead in 12 min.

FF-Dead

ISI-Dead

FSI-Dead



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1750.38	110.64	Initial Hydro-static
1	15.83	110.17	Open To Flow (1)
32	16.91	110.69	Shut-In(1)
61	229.34	111.74	End Shut-In(1)
62	16.97	111.62	Open To Flow (2)
91	19.11	112.59	Shut-In(2)
123	218.31	112.94	End Shut-In(2)
125	1687.40	113.55	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
10.00	D.Mud few oil spots	0.14

## Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

TOOL DIAGRAM

Production Drilling, Inc,

Flax # 6

P.O.Box 680  
Hays, Ks. 67601

5-14s-21w

Job Ticket: 22717

DST#: 1

ATTN: Aven Weaverling

Test Start: 2005.07.23 @ 23:08:11

### Tool Information

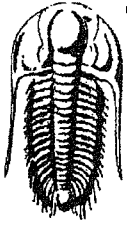
Drill Pipe:	Length: 3578.00 ft	Diameter: 3.80 inches	Volume: 50.19 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: 50.19 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	8.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	3590.00 ft			Final 48000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	60.00 ft			
Tool Length:	80.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

### Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3571.00	
Shut In Tool	5.00			3576.00	
Hydraulic tool	5.00			3581.00	
Packer	4.00			3585.00	20.00 Bottom Of Top Packer
Packer	5.00			3590.00	
Stubb	1.00			3591.00	
Perforations	3.00			3594.00	
Change Over Sub	1.00			3595.00	
Recorder	0.00	8018	Inside	3595.00	
Blank Spacing	31.00			3626.00	
Change Over Sub	1.00			3627.00	
Recorder	0.00	11084	Outside	3627.00	
Perforations	20.00			3647.00	
Bullnose	3.00			3650.00	60.00 Bottom Packers & Anchor

**Total Tool Length: 80.00**



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Production Drilling, Inc,

Flax # 6

P.O.Box 680  
Hays, Ks. 67601

5-14s-21w

Job Ticket: 22717

DST#: 1

ATTN: Aven Weaverling

Test Start: 2005.07.23 @ 23:08:11

**Mud and Cushion Information**

Mud Type: Gel Chem

Mud Weight: 8.00 lb/gal

Viscosity: 48.00 sec/qt

Water Loss: 7.98 in<sup>3</sup>

Resistivity: ohm.m

Salinity: ppm

Filter Cake: inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API:

Water Salinity: deg API

ppm

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
10.00	D.Mud few oil spots	0.140

Total Length: 10.00 ft      Total Volume: 0.140 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

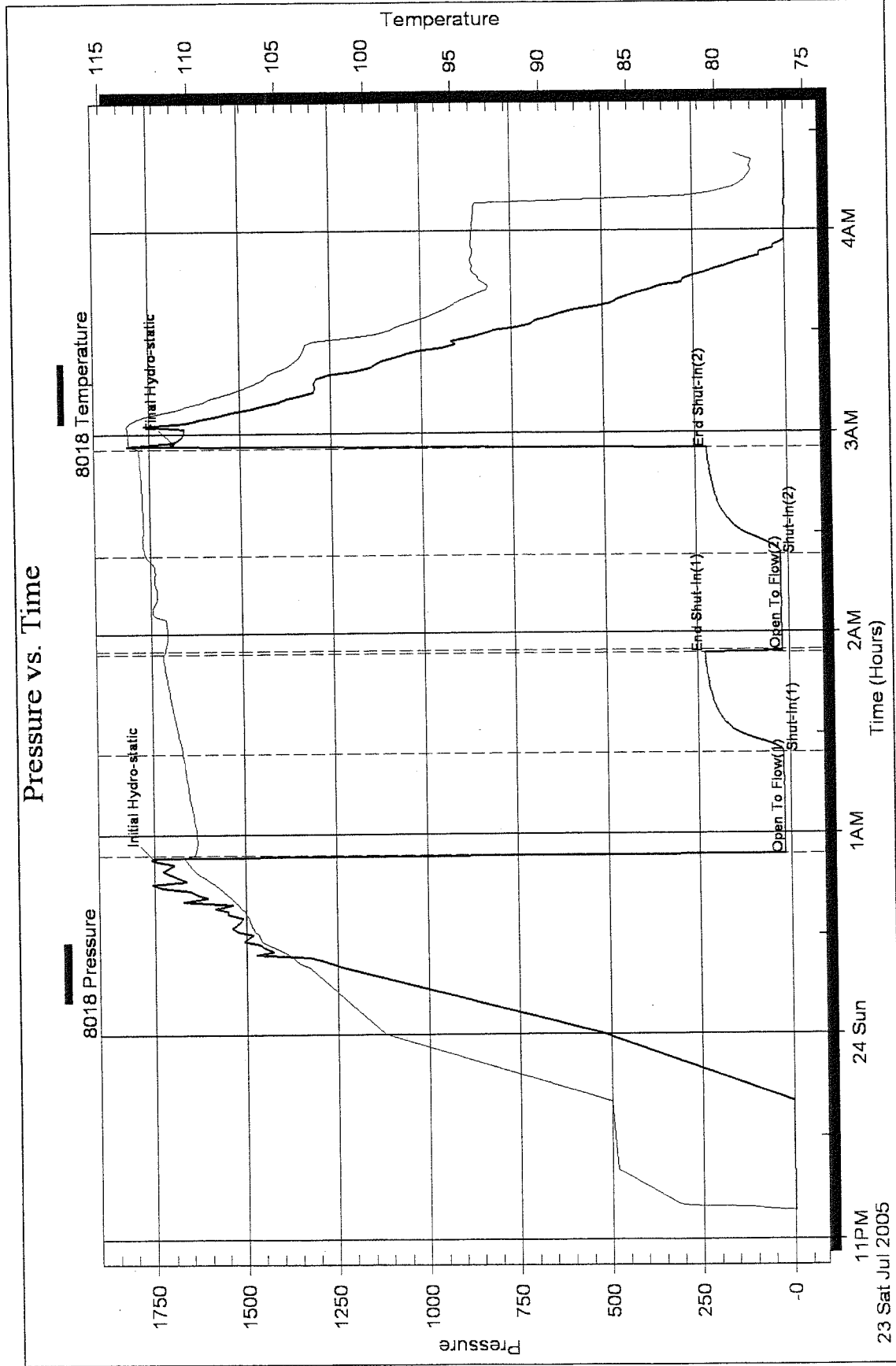
Serial #:

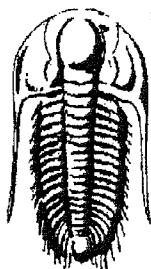
Laboratory Name:

Laboratory Location:

Recovery Comments:

### Pressure vs. Time





**TRILOBITE**  
**TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Production Drilling, Inc,**

P.O.Box 680  
Hays, Ks. 67601

ATTN: Aven Weaverling

**5-14s-21w**

**Flax # 6**

Start Date: 2005.07.24 @ 21:11:42

End Date: 2005.07.25 @ 02:21:12

Job Ticket #: 22718                      DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Production Drilling, Inc,

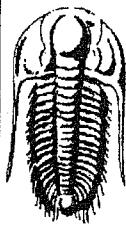
Flax # 6

5-14s-21w

DST # 2

L.Kc.-H,I,J

2005.07.24



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Production Drilling, Inc,

**Flax # 6**

P.O.Box 680  
Hays, Ks. 67601

**5-14s-21w**

ATTN: Aven Weaverling

Job Ticket: 22718

**DST#: 2**

Test Start: 2005.07.24 @ 21:11:42

## GENERAL INFORMATION:

Formation: **L.Kc.-H,I,J**  
 Deviated: **No Whipstock:** ft (KB)  
 Time Tool Opened: 22:51:12  
 Time Test Ended: 02:21:12

Test Type: **Conventional Bottom Hole**  
 Tester: **John Schmidt**  
 Unit No: **31**

Interval: **3722.00 ft (KB) To 3793.00 ft (KB) (TVD)**  
 Total Depth: **3793.00 ft (KB) (TVD)**  
 Hole Diameter: **7.88 inches** Hole Condition: **Fair**

Reference Elevations: **2243.00 ft (KB)**  
**2235.00 ft (CF)**  
 KB to GR/CF: **8.00 ft**

**Serial #: 8018**

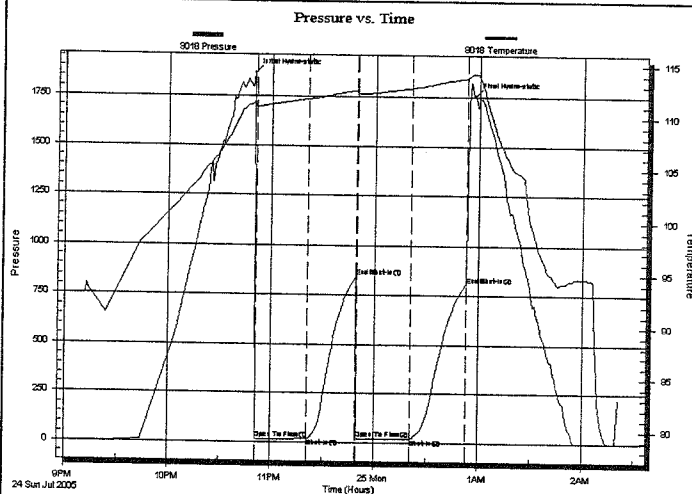
**Inside**

Press@RunDepth: **20.72 psig @ 3727.00 ft (KB)**  
 Start Date: **2005.07.24** End Date: **2005.07.25**  
 Start Time: **21:11:43** End Time: **02:21:12**

Capacity: **7000.00 psig**  
 Last Calib.: **2005.07.25**  
 Time On Btm: **2005.07.24 @ 22:50:12**  
 Time Off Btm: **2005.07.25 @ 00:57:12**

TEST COMMENT: **IF-Weak Dead in 10 min.**  
**FF-Dead**

**ISI-Dead**  
**FSI-Dead**



## PRESSURE SUMMARY

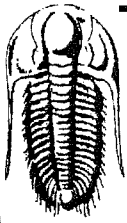
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1867.14	111.33	Initial Hydro-static
1	14.44	110.83	Open To Flow (1)
31	17.58	111.74	Shut-In(1)
59	841.77	112.59	End Shut-In(1)
60	17.49	112.07	Open To Flow (2)
91	20.72	112.77	Shut-In(2)
123	804.66	113.80	End Shut-In(2)
127	1756.48	114.21	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
10.00	D.Mud	0.14

## Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE TESTING, INC.**

# DRILL STEM TEST REPORT

TOOL DIAGRAM

Production Drilling, Inc.

Flax # 6

P.O.Box 680  
Hays, Ks. 67601

5-14s-21w

Job Ticket: 22718

DST#: 2

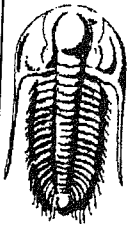
ATTN: Aven Weaverling

Test Start: 2005.07.24 @ 21:11:42

**Tool Information**

Drill Pipe:	Length: 3735.00 ft	Diameter: 3.80 inches	Volume: 52.39 bbl	Tool Weight:	2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	55000.00 lb
			<u>Total Volume: 52.39 bbl</u>	Tool Chased:	0.00 ft
Drill Pipe Above KB:	33.00 ft			String Weight: Initial	48000.00 lb
Depth to Top Packer:	3722.00 ft			Final	48000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	71.00 ft				
Tool Length:	91.00 ft				
Number of Packers:	2	Diameter: 6.75 inches			
Tool Comments:					

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3703.00	
Shut In Tool	5.00			3708.00	
Hydraulic tool	5.00			3713.00	
Packer	4.00			3717.00	20.00 Bottom Of Top Packer
Packer	5.00			3722.00	
Stubb	1.00			3723.00	
Perforations	3.00			3726.00	
Change Over Sub	1.00			3727.00	
Recorder	0.00	8018	Inside	3727.00	
Blank Spacing	31.00			3758.00	
Change Over Sub	1.00			3759.00	
Recorder	0.00	11084	Outside	3759.00	
Perforations	31.00			3790.00	
Bullnose	3.00			3793.00	71.00 Bottom Packers & Anchor
<b>Total Tool Length:</b>	<b>91.00</b>				



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

## FLUID SUMMARY

Production Drilling, Inc,

Flax # 6

P.O.Box 680  
Hays, Ks. 67601

5-14s-21w

ATTN: Aven Weaverling

Job Ticket: 22718

DST#: 2

Test Start: 2005.07.24 @ 21:11:42

### Mud and Cushion Information

Mud Type: Gel Chem

Mud Weight: 8.00 lb/gal

Viscosity: 48.00 sec/qt

Water Loss: 7.98 in<sup>3</sup>

Resistivity: ohm.m

Salinity: ppm

Filter Cake: inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API: deg API

Water Salinity: ppm

### Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	D.Mud	0.140

Total Length: 10.00 ft      Total Volume: 0.140 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

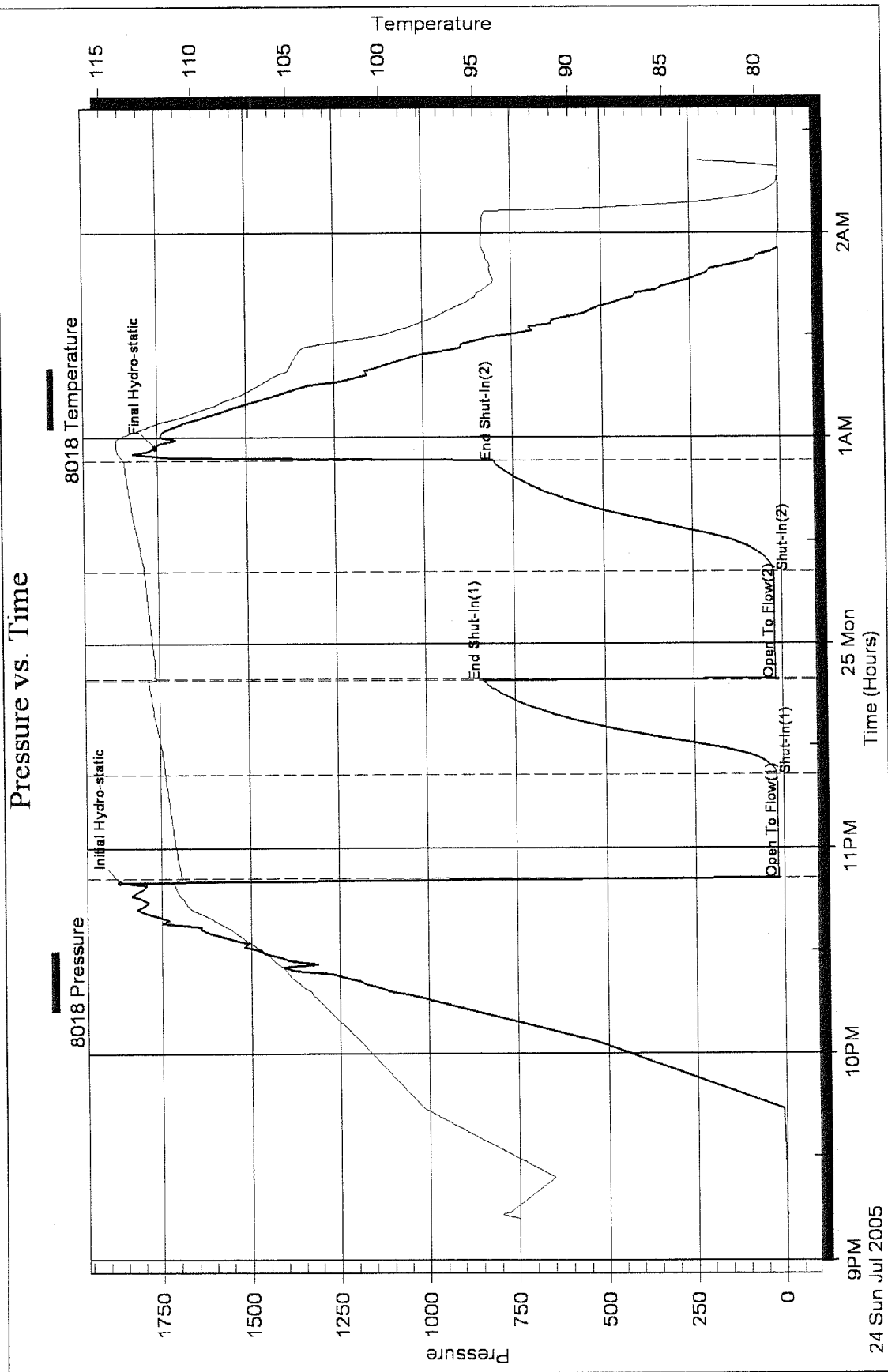
Laboratory Name:

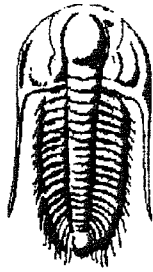
Laboratory Location:

Serial #:

Recovery Comments:

### Pressure vs. Time





**TRILOBITE  
TESTING, INC.**

## DRILL STEM TEST REPORT

Prepared For: **Production Drilling, Inc,**

P.O.Box 680  
Hays, Ks. 67601

ATTN: Aven Weaverling

**5-14s-21w**

**Flax # 6**

Start Date: 2005.07.25 @ 22:30:55

End Date: 2005.07.26 @ 05:34:55

Job Ticket #: 22719                      DST #: 3

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

Production Drilling, Inc.

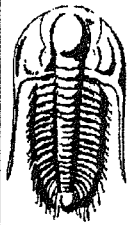
Flax # 6

5-14s-21w

DST # 3

Cherokee Sand

2005.07.25



**TRILOBITE  
TESTING, INC.**

# DRILL STEM TEST REPORT

Production Drilling, Inc.,

Flax # 6

P.O. Box 680  
Hays, Ks. 67601

5-14s-21w

Job Ticket: 22719

DST#: 3

ATTN: Aven Weaverling

Test Start: 2005.07.25 @ 22:30:55

## GENERAL INFORMATION:

Formation: **Cherokee Sand**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:18:25

Test Type: Conventional Bottom Hole

Tester: John Schmidt

Time Test Ended: 05:34:55

Unit No: 31

Interval: **3973.00 ft (KB) To 4004.00 ft (KB) (TVD)**

Reference Elevations: 2243.00 ft (KB)

Total Depth: 3650.00 ft (KB) (TVD)

2235.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: **8018**

Inside

Press@RunDepth: 62.45 psig @ 3976.00 ft (KB)

Capacity: 7000.00 psig

Start Date: 2005.07.25

End Date: 2005.07.26

Last Calib.: 2005.07.26

Start Time: 22:30:56

End Time: 05:34:55

Time On Btm: 2005.07.26 @ 00:16:55

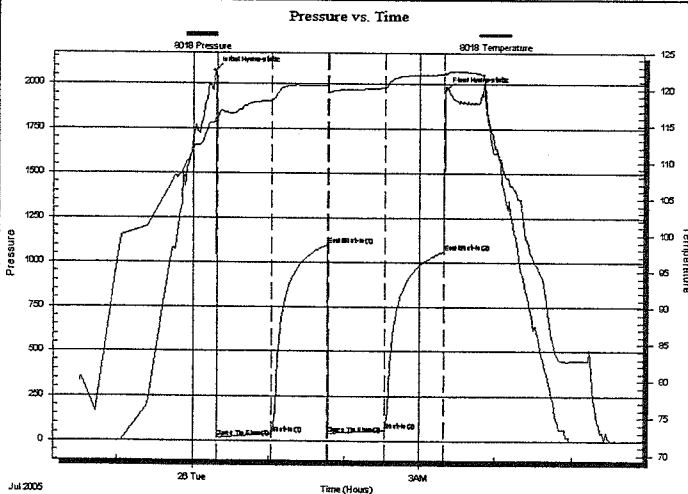
Time Off Btm: 2005.07.26 @ 03:19:55

TEST COMMENT: IF-Weak to good built to 8" in.

ISI-Dead

FF-Weak to good built to 7" in.

FSI-Dead



## PRESSURE SUMMARY

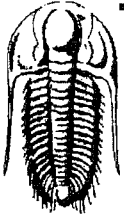
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2071.91	115.57	Initial Hydro-static
2	17.00	115.69	Open To Flow (1)
45	38.88	118.42	Shut-In(1)
90	1098.57	120.47	End Shut-In(1)
91	40.61	119.58	Open To Flow (2)
135	62.45	120.21	Shut-In(2)
182	1061.04	122.02	End Shut-In(2)
183	1962.05	122.38	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
60.00	Muddy oil 30%mud-70%oil	0.84
70.00	Clean oil	0.98
0.00	180 gas in pipe	0.00

## Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)



**TRILOBITE  
TESTING, INC.**

**DRILL STEM TEST REPORT**

**TOOL DIAGRAM**

Production Drilling, Inc.

Flax # 6

P.O.Box 680  
Hays, Ks. 67601

5-14s-21w

Job Ticket: 22719

DST#: 3

ATTN: Aven Weaverling

Test Start: 2005.07.25 @ 22:30:55

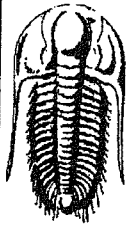
**Tool Information**

Drill Pipe:	Length: 3958.00 ft	Diameter: 3.80 inches	Volume: 55.52 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.70 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 55.52 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 49000.00 lb
Depth to Top Packer:	3973.00 ft			Final 49000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	31.00 ft			
Tool Length:	51.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3954.00	
Shut In Tool	5.00			3959.00	
Hydraulic tool	5.00			3964.00	
Packer	4.00			3968.00	20.00 Bottom Of Top Packer
Packer	5.00			3973.00	
Stubb	1.00			3974.00	
Perforations	2.00			3976.00	
Recorder	0.00	8018	Inside	3976.00	
Perforations	25.00			4001.00	
Recorder	0.00	11084	Outside	4001.00	
Bullnose	3.00			4004.00	31.00 Bottom Packers & Anchor

**Total Tool Length: 51.00**



**TRILOBITE  
TESTING, INC**

**DRILL STEM TEST REPORT**

**FLUID SUMMARY**

Production Drilling, Inc,

**Flax # 6**

P.O.Box 680  
Hays, Ks. 67601

**5-14s-21w**

ATTN: Aven Weaverling

Job Ticket: 22719

**DST#: 3**

Test Start: 2005.07.25 @ 22:30:55

**Mud and Cushion Information**

Mud Type: Gel Chem

Mud Weight: 8.00 lb/gal

Viscosity: 48.00 sec/qt

Water Loss: 7.98 in<sup>3</sup>

Resistivity: ohm.m

Salinity: ppm

Filter Cake: inches

Cushion Type:

Cushion Length: ft

Cushion Volume: bbl

Gas Cushion Type:

Gas Cushion Pressure: psig

Oil API: deg API

Water Salinity: ppm

**Recovery Information**

Recovery Table

Length ft	Description	Volume bbl
60.00	Muddy oil 30% mud-70% oil	0.842
70.00	Clean oil	0.982
0.00	180 gas in pipe	0.000

Total Length: 130.00 ft      Total Volume: 1.824 bbl

Num Fluid Samples: 0      Num Gas Bombs: 0      Serial #:

Laboratory Name:      Laboratory Location:

Recovery Comments:

Serial #: 8018

Inside

Production Drilling, Inc.

5--14s--21w

DST Test Number: 3

### Pressure vs. Time

