15-23s-13w

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Popp Operating Inc.**

Po Box 187
Hoisington, KS. 67544

ATTN: Jim Musgrove

15-23-13-Stafford

Ward #2

Start Date: 2004.07.25 @ 01:09:57
End Date: 2004.07.25 @ 08:01:42
Job Ticket #: 19516 DST #: 1

API 15-185-23264-00-00

Popp Operating Inc. Ward #2 15-23-13-Stafford E DST #1 LKC 2004.07.25

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

DRILL STEM TEST REPORT

TRILOBITE TESTING, INC.

Popp Operating Inc.

Po Box 187
Hoisington, KS. 67544

ATTN: Jim Musgrove

Ward #2

15-23-13-Stafford

Job Ticket: 19516 **DST#: 1**

Test Start: 2004.07.25 @ 01:09:57

GENERAL INFORMATION:

Formation: **LKC**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 02:49:37
Time Test Ended: 08:01:42

Test Type: Conventional Bottom Hole
Tester: Jason McLemore
Unit No: 24

Interval: 3439.00 ft (KB) To 3510.00 ft (KB) (TVD)
Total Depth: 3510.00 ft (KB) (TVD)
Hole Diameter: 7.80 inches Hole Condition: Good

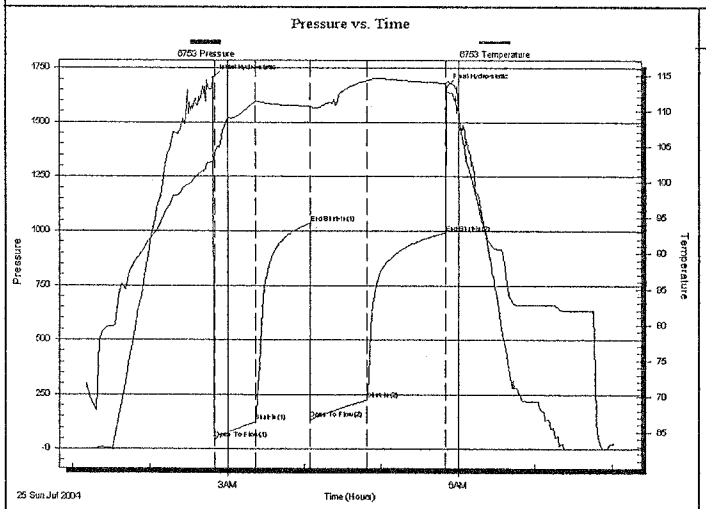
Reference Elevations: 1889.00 ft (KB)
1879.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 6753 **Inside**

Press@RunDepth: 224.14 psig @ 3444.00 ft (KB)
Start Date: 2004.07.25 End Date: 2004.07.25
Start Time: 01:10:27 End Time: 08:01:42

Capacity: 7000.00 psig
Last Calib.: 1899.12.30
Time On Btm: 2004.07.25 @ 02:48:37
Time Off Btm: 2004.07.25 @ 05:50:36

TEST COMMENT: IFP- Strong Blow , BOB in 1 min.
ISI-Blow back Built to 2"
FFP- Strong Blow , BOB in 2 min.
FSI- Blow back Built to 8"



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1703.07	102.94	Initial Hydro-static
1	43.43	103.81	Open To Flow (1)
33	123.28	111.39	Shut-In(1)
76	1035.49	110.70	End Shut-In(1)
77	137.63	110.59	Open To Flow (2)
121	224.14	114.30	Shut-In(2)
182	992.26	113.95	End Shut-In(2)
182	1660.40	114.07	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	Muddy Water	1.68
330.00	Mud W/Oil Specs	4.63

Gas Rates

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

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Popp Operating Inc.

Po Box 187
Hoisington, KS. 67544

ATTN: Jim Musgrove

Ward #2

15-23-13-Stafford

Job Ticket: 19516 DST#: 1

Test Start: 2004.07.25 @ 01:09:57

Tool Information

Drill Pipe:	Length:	3450.00 ft	Diameter:	3.80 inches	Volume:	48.39 bbl	
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	2.25 inches	Volume:	0.00 bbl	
Drill Collar:	Length:	0.00 ft	Diameter:	2.25 inches	Volume:	0.00 bbl	
					Total Volume:	48.39 bbl	

Drill Pipe Above KB:	32.00 ft
Depth to Top Packer:	3439.00 ft
Depth to Bottom Packer:	ft
Interval betw een Packers:	71.00 ft
Tool Length:	92.00 ft
Number of Packers:	2 Diameter: 6.75 inches

Tool Weight:	3000.00 lb
Weight set on Packer:	25000.00 lb
Weight to Pull Loose:	44000.00 lb
Tool Chased	0.00 ft
String Weight: Initial	39000.00 lb
Final	40000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			3419.00		
Shut In Tool	5.00			3424.00		
Hydraulic tool	5.00			3429.00		
Packer	5.00			3434.00	21.00	Bottom Of Top Packer
Packer	5.00			3439.00		
Stubb	1.00			3440.00		
Perforations	3.00			3443.00		
Change Over Sub	1.00			3444.00		
Recorder	0.00	6753	Inside	3444.00		
Blank Spacing	31.00			3475.00		
Change Over Sub	1.00			3476.00		
Perforations	31.00			3507.00		
Recorder	0.00	13252	Outside	3507.00		
Bullnose	3.00			3510.00	71.00	Bottom Packers & Anchor
Total Tool Length:	**92.00**					

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Popp Operating Inc.

Po Box 187
Hoisington, KS. 67544

ATTN: Jim Musgrove

Ward #2

15-23-13-Stafford

Job Ticket: 19516 **DST#: 1**

Test Start: 2004.07.25 @ 01:09:57

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:	53000 ppm
Viscosity:	47.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	9.37 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	7000.00 ppm				
Filter Cake:	inches				

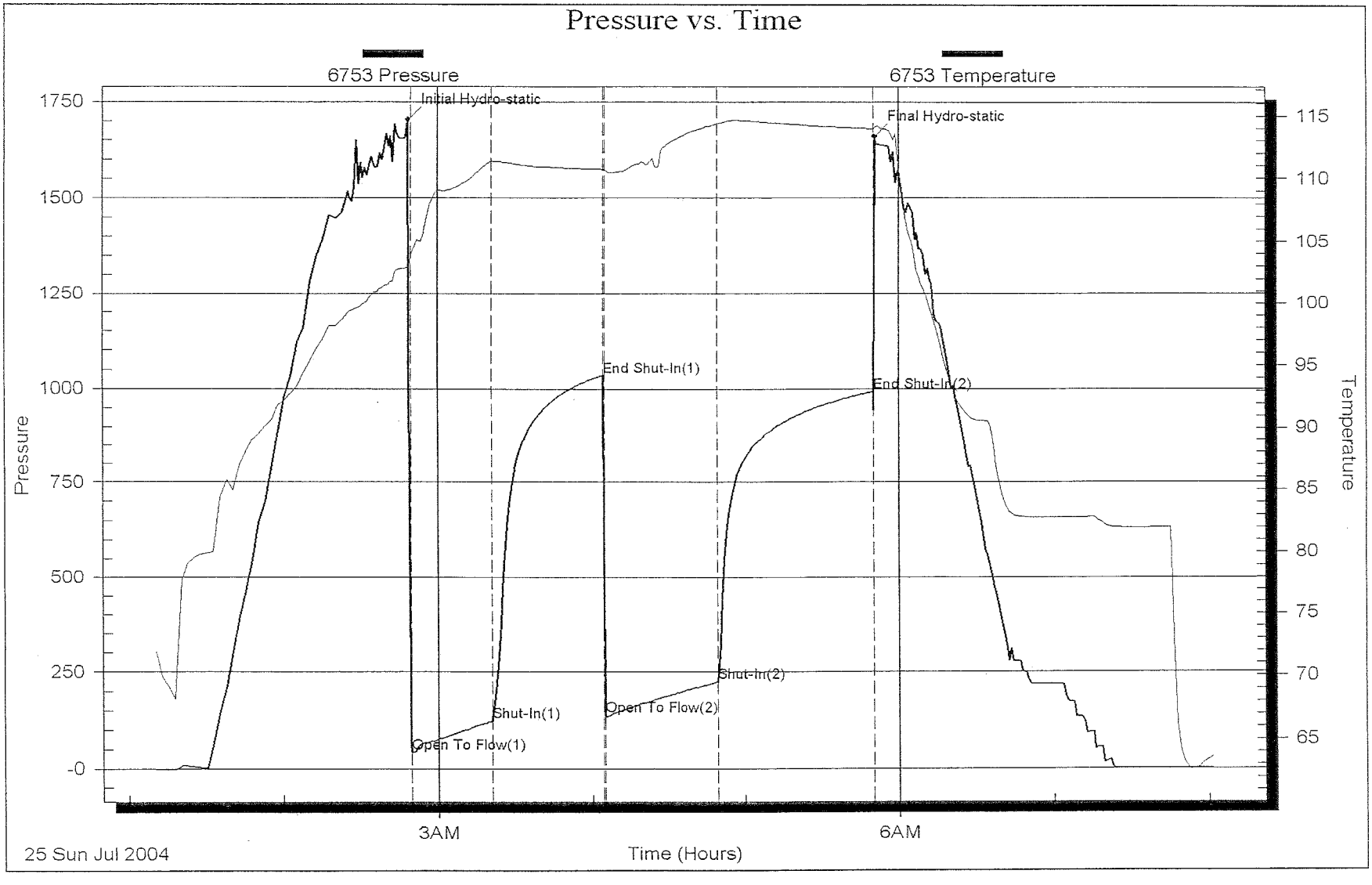
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
120.00	Muddy Water	1.683
330.00	Mud W/Oil Specs	4.629

Total Length: 450.00 ft Total Volume: 6.312 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:


Pressure vs. Time
6753 Pressure
6753 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Shut-In(1)
Shut-In(2)
Open To Flow(1)
Open To Flow(2)
1750
1500
1250
1000
750
500
250
-0
Pressure
115
110
105
100
95
90
85
80
75
70
65
Temperature
3AM
6AM
25 Sun Jul 2004
Time (Hours)

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Popp Operating Inc.**

Po Box 187
Hoisington, KS. 67544

ATTN: Jim Musgrove

15-23-13-Stafford

Ward #2

Start Date: 2004.07.25 @ 19:50:25
End Date: 2004.07.26 @ 01:58:55
Job Ticket #: 19517 DST #: 2

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

DRILL STEM TEST REPORT

TRILOBITE TESTING, INC.

Popp Operating Inc.

Po Box 187
Hoisington, KS. 67544

ATTN: Jim Musgrove

Ward #2

15-23-13-Stafford

Job Ticket: 19517 **DST#: 2**

Test Start: 2004.07.25 @ 19:50:25

GENERAL INFORMATION:

Formation: **LKC**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 21:13:25
Time Test Ended: 01:58:55

Test Type: Conventional Bottom Hole
Tester: Jason McLemore
Unit No: 24

Interval: 3546.00 ft (KB) To 3647.00 ft (KB) (TVD)
Total Depth: 3647.00 ft (KB) (TVD)
Hole Diameter: 7.80 inches Hole Condition: Good

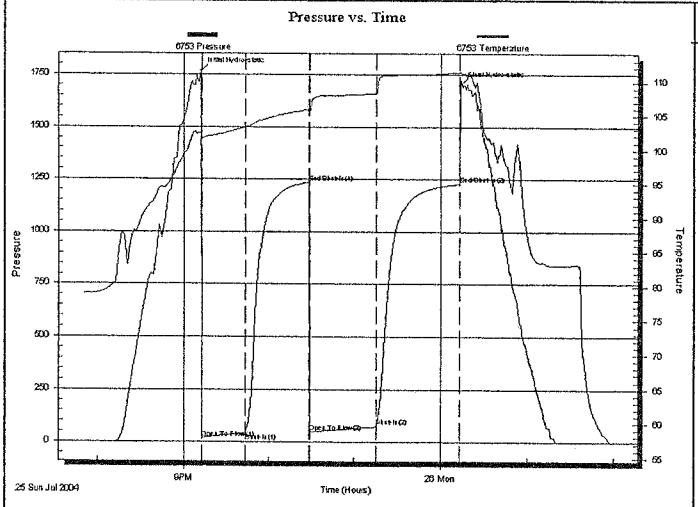
Reference Elevations: 1889.00 ft (KB)
1879.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 6753 **Inside**

Press@RunDepth: 73.43 psig @ 3551.00 ft (KB)
Start Date: 2004.07.25 End Date: 2004.07.26
Start Time: 19:50:55 End Time: 01:58:55

Capacity: 7000.00 psig
Last Calib.: 1899.12.30
Time On Btm: 2004.07.25 @ 21:12:45
Time Off Btm: 2004.07.26 @ 00:13:34

TEST COMMENT: IFP-Fair Blow , Built to 9"
ISI-No Blow back
FFP-Weak Blow ,Built to 4"
FSI- No Blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1764.49	102.33	Initial Hydro-static
1	17.29	101.73	Open To Flow (1)
31	43.58	103.31	Shut-In(1)
76	1234.85	105.91	End Shut-In(1)
76	48.73	105.60	Open To Flow (2)
123	73.43	108.30	Shut-In(2)
181	1228.39	111.35	End Shut-In(2)
181	1699.00	111.50	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
115.00	Mud W/ Oil Spot in Tool	1.61

Gas Rates

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

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Popp Operating Inc.

Po Box 187
Hoisington, KS. 67544

ATTN: Jim Musgrove

Ward #2

15-23-13-Stafford

Job Ticket: 19517 DST#: 2

Test Start: 2004.07.25 @ 19:50:25

Tool Information

Drill Pipe:	Length:	3542.00 ft	Diameter:	3.80 inches	Volume:	49.68 bbl	Tool Weight:	3600.00 lb
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	2.25 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:	45000.00 lb
					Total Volume:	49.68 bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:		17.00 ft					String Weight: Initial	40000.00 lb
Depth to Top Packer:		3546.00 ft					Final	40000.00 lb
Depth to Bottom Packer:		ft						
Interval between Packers:		101.00 ft						
Tool Length:		122.00 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			3526.00		
Shut In Tool	5.00			3531.00		
Hydraulic tool	5.00			3536.00		
Packer	5.00			3541.00	21.00	Bottom Of Top Packer
Packer	5.00			3546.00		
Stubb	1.00			3547.00		
Perforations	3.00			3550.00		
Change Over Sub	1.00			3551.00		
Recorder	0.00	6753	Inside	3551.00		
Blank Spacing	62.00			3613.00		
Change Over Sub	1.00			3614.00		
Perforations	30.00			3644.00		
Recorder	0.00	13252	Outside	3644.00		
Bullnose	3.00			3647.00	101.00	Bottom Packers & Anchor
Total Tool Length:	**122.00**					

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Popp Operating Inc.

Po Box 187
Hoisington, KS. 67544

ATTN: Jim Musgrove

Ward #2

15-23-13-Stafford

Job Ticket: 19517 **DST#: 2**

Test Start: 2004.07.25 @ 19:50:25

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:	43.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	11.17 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	9000.00 ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

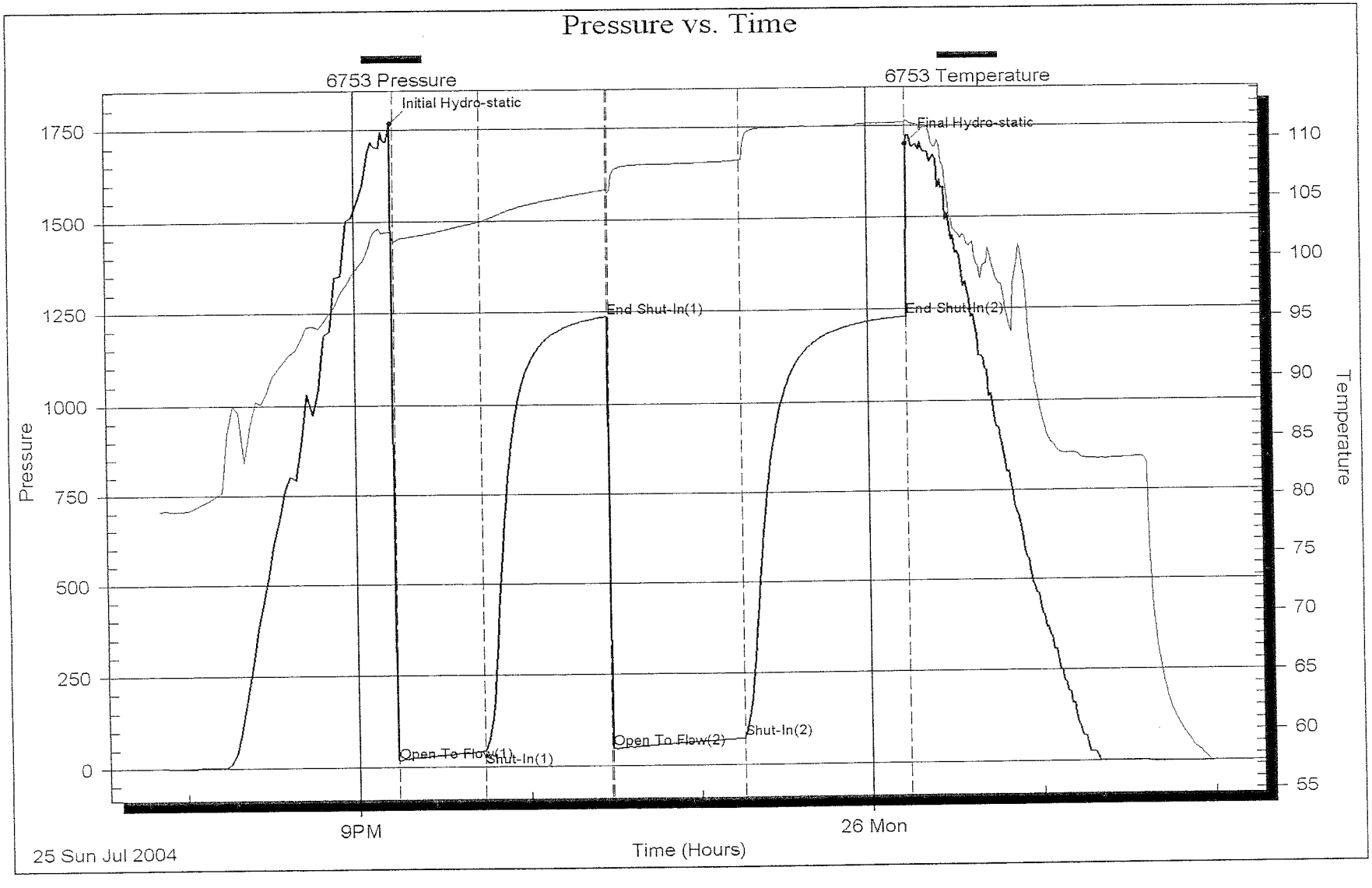
Length ft	Description	Volume bbl
115.00	Mud W/ Oil Spot in Tool	1.613

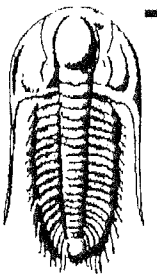
Total Length: 115.00 ft Total Volume: 1.613 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments:


Pressure vs. Time
6753 Pressure
6753 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Open To Flow(1)
Shut-In(1)
Open To Flow(2)
Shut-In(2)
Pressure
Temperature
Time (Hours)
9PM
26 Mon
25 Sun Jul 2004
1750
1500
1250
1000
750
500
250
0
110
105
100
95
90
85
80
75
70
65
60
55



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Popp Operating Inc.**

Po Box 187
Hoisington, KS. 67544

ATTN: Jim Musgrove

15-23-13-Stafford

Ward #2

Start Date: 2004.07.26 @ 15:14:55
End Date: 2004.07.26 @ 21:14:45
Job Ticket #: 19518 DST #: 3

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

DRILL STEM TEST REPORT

TRILOBITE TESTING, INC.

Popp Operating Inc.

Po Box 187
Hoisington, KS. 67544

ATTN: Jim Musgrove

Ward #2

15-23-13-Stafford

Job Ticket: 19518 **DST#: 3**

Test Start: 2004.07.26 @ 15:14:55

GENERAL INFORMATION:

Formation: **Viola**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 16:33:55
Time Test Ended: 21:14:45

Test Type: Conventional Bottom Hole
Tester: John Schmidt
Unit No: 24

Interval: 3717.00 ft (KB) To 3766.00 ft (KB) (TVD)
Total Depth: 3766.00 ft (KB) (TVD)
Hole Diameter: 7.80 inches Hole Condition: Good

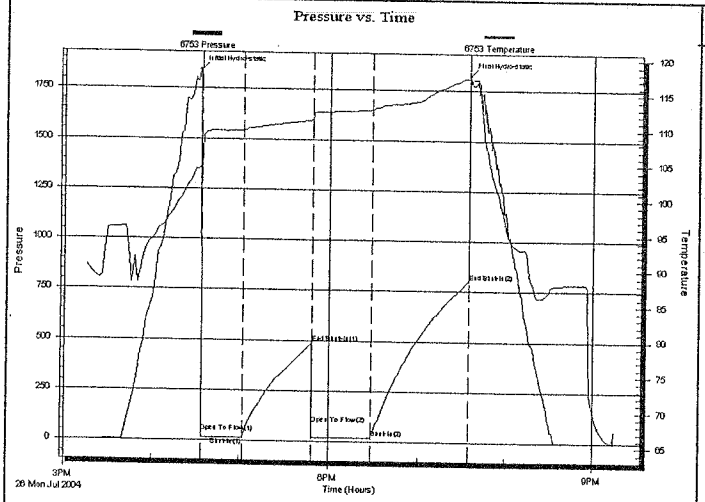
Reference Elevations: 1889.00 ft (KB)
1879.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 6753 **Inside**

Press@RunDepth: 21.15 psig @ 3721.00 ft (KB)
Start Date: 2004.07.26 End Date: 2004.07.26
Start Time: 15:15:25 End Time: 21:14:45

Capacity: 7000.00 psig
Last Calib.: 2004.07.26
Time On Btm: 2004.07.26 @ 16:33:15
Time Off Btm: 2004.07.26 @ 19:34:25

TEST COMMENT: IF-Strong B.O.B.in 1 min.
FF-Strong B.O.B.in 5 Sec.
ISI-Strong B.O.B.in15 min.
FSI-Dead



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1843.25	104.75	Initial Hydro-static
1	40.92	104.33	Open To Flow (1)
30	17.46	109.69	Shut-In(1)
76	488.57	111.27	End Shut-In(1)
76	85.18	111.03	Open To Flow (2)
116	21.15	112.75	Shut-In(2)
181	800.37	117.34	End Shut-In(2)
182	1821.00	118.28	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
30.00	Drilling Mud	0.42
0.00	3610 gas in pipe	0.00

Gas Rates

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

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Popp Operating Inc.

Po Box 187
Hoisington, KS. 67544

ATTN: Jim Musgrove

Ward #2

15-23-13-Stafford

Job Ticket: 19518 DST#: 3

Test Start: 2004.07.26 @ 15:14:55

Tool Information

Drill Pipe:	Length:	3700.00 ft	Diameter:	3.80 inches	Volume:	51.90 bbl
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	2.25 inches	Volume:	0.00 bbl
Drill Collar:	Length:	0.00 ft	Diameter:	2.25 inches	Volume:	0.00 bbl
					Total Volume:	51.90 bbl

Drill Pipe Above KB:	4.00 ft
Depth to Top Packer:	3717.00 ft
Depth to Bottom Packer:	ft
Interval betw een Packers:	49.00 ft
Tool Length:	70.00 ft
Number of Packers:	2 Diameter: 6.75 inches

Tool Weight:	2200.00 lb
Weight set on Packer:	25000.00 lb
Weight to Pull Loose:	55000.00 lb
Tool Chased	0.00 ft
String Weight: Initial	41000.00 lb
Final	41000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			3697.00		
Shut In Tool	5.00			3702.00		
Hydraulic tool	5.00			3707.00		
Packer	5.00			3712.00	21.00	Bottom Of Top Packer
Packer	5.00			3717.00		
Stubb	1.00			3718.00		
Perforations	2.00			3720.00		
Change Over Sub	1.00			3721.00		
Recorder	0.00	6753	Inside	3721.00		
Blank Spacing	31.00			3752.00		
Change Over Sub	1.00			3753.00		
Perforations	10.00			3763.00		
Recorder	0.00	13252	Outside	3763.00		
Bullnose	3.00			3766.00	49.00	Bottom Packers & Anchor
Total Tool Length:	**70.00**					

TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

FLUID SUMMARY

Popp Operating Inc.

Po Box 187
Hoisington, KS. 67544

ATTN: Jim Musgrove

Ward #2

15-23-13-Stafford

Job Ticket: 19518 **DST#: 3**

Test Start: 2004.07.26 @ 15:14:55

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:	bbl		
Water Loss:	8.78 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	10000.00 ppm				
Filter Cake:	inches				

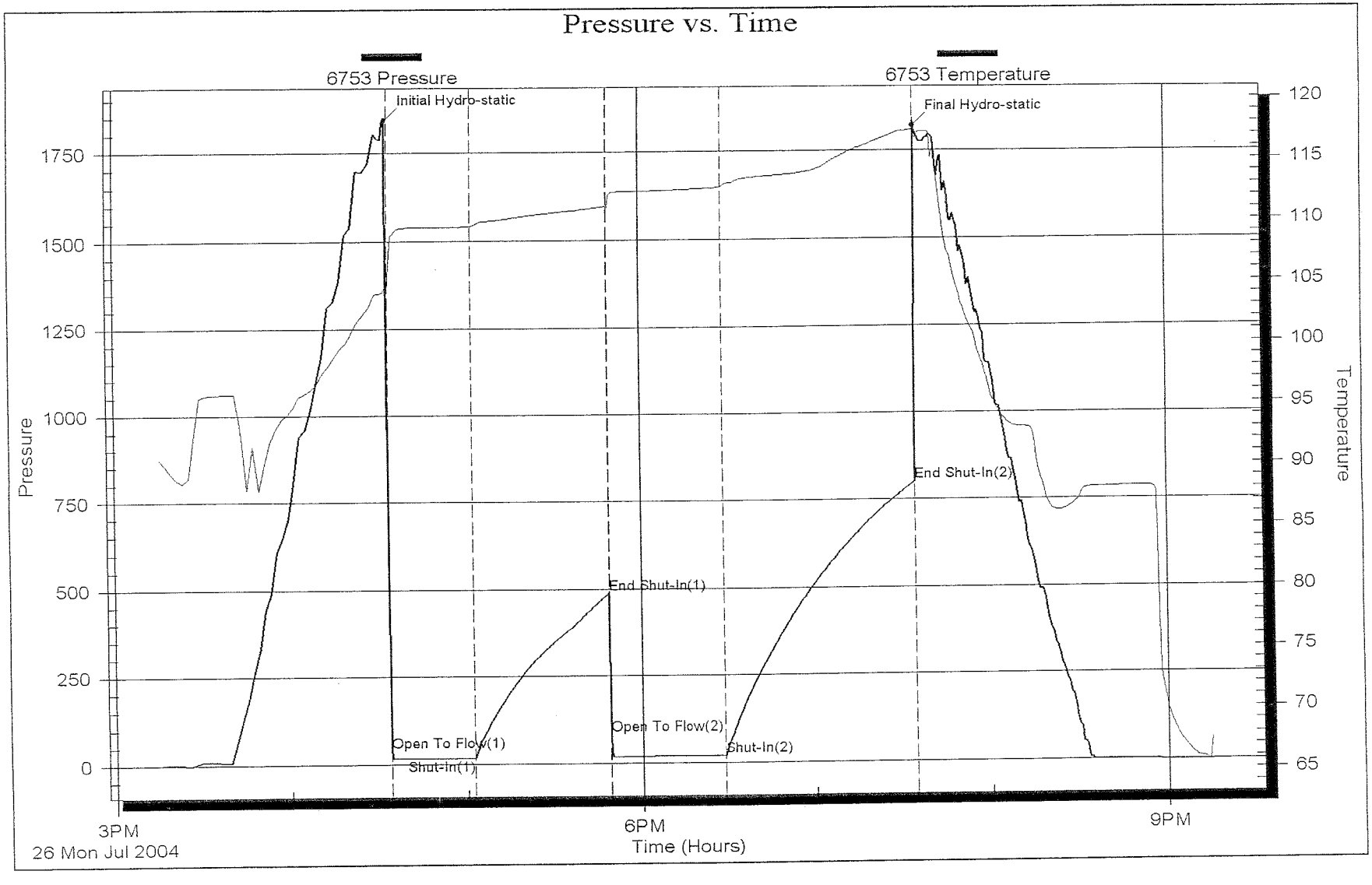
Recovery Information

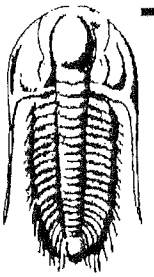
Recovery Table

Length ft	Description	Volume bbl
30.00	Drilling Mud	0.421
0.00	3610 gas in pipe	0.000

Total Length: 30.00 ft Total Volume: 0.421 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:


Pressure vs. Time
6753 Pressure
6753 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(2)
End Shut-In(1)
Open To Flow(1)
Shut-In(1)
Open To Flow(2)
Shut-In(2)
Pressure
Temperature
1750
1500
1250
1000
750
500
250
0
120
115
110
105
100
95
90
85
80
75
70
65
3PM
26 Mon Jul 2004
6PM
9PM
Time (Hours)



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Popp Operating Inc.**

Po Box 187
Hoisington, KS. 67544

ATTN: Jim Musgrove

15-23-13-Stafford

Ward #2

Start Date: 2004.07.27 @ 05:24:08
End Date: 2004.07.27 @ 11:44:32
Job Ticket #: 19519 DST #: 4

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

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Popp Operating Inc.

Po Box 187
Hoisington, KS. 67544

ATTN: Jim Musgrove

Ward #2

15-23-13-Stafford

Job Ticket: 19519 **DST#: 4**

Test Start: 2004.07.27 @ 05:24:08

GENERAL INFORMATION:

Formation: **Simpson**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 07:02:28
Time Test Ended: 11:44:32

Test Type: Conventional Bottom Hole
Tester: John Schmidt
Unit No: 24

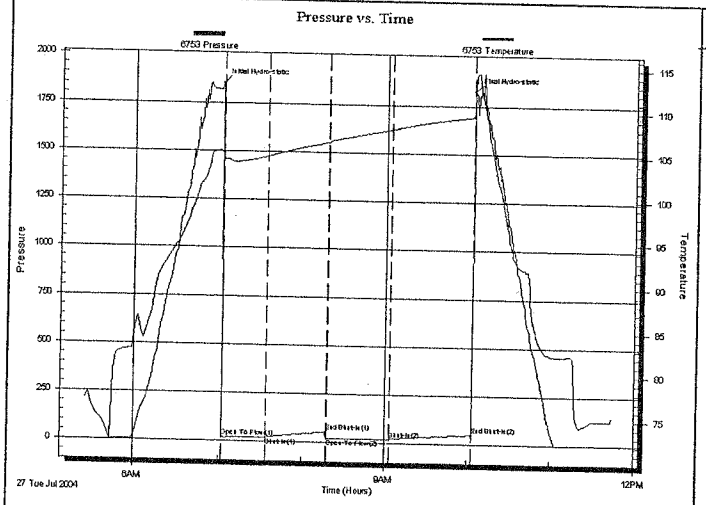
Interval: **3750.00 ft (KB) To 3805.00 ft (KB) (TVD)**
Total Depth: 3805.00 ft (KB) (TVD)
Hole Diameter: 7.80 inches Hole Condition: Fair

Reference Elevations: 1889.00 ft (KB)
1879.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 6753 **Inside**
Press@RunDepth: 23.76 psig @ 3754.00 ft (KB)
Start Date: 2004.07.27 End Date: 2004.07.27
Start Time: 05:24:38 End Time: 11:44:32

Capacity: 7000.00 psig
Last Calib.: 2004.07.27
Time On Btm: 2004.07.27 @ 07:01:38
Time Off Btm: 2004.07.27 @ 10:03:38

TEST COMMENT: IF-Weak built to 4" in. ISI-Dead
FF-Weak built to 1&1/2" in. FSI-Dead



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1850.49	105.16	Initial Hydro-static
1	20.47	104.72	Open To Flow (1)
32	22.74	104.69	Shut-In(1)
76	53.96	106.33	End Shut-In(1)
77	21.11	106.37	Open To Flow (2)
122	23.76	107.91	Shut-In(2)
182	50.34	109.47	End Shut-In(2)
182	1827.21	112.59	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	Drilling mud few spots oil in tool	0.28
0.00	100 gas in pipe	0.00

Gas Rates

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

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Popp Operating Inc.

Po Box 187
Hoisington, KS. 67544

ATTN: Jim Musgrove

Ward #2

15-23-13-Stafford

Job Ticket: 19519 **DST#: 4**

Test Start: 2004.07.27 @ 05:24:08

Tool Information

Drill Pipe:	Length:	3733.00 ft	Diameter:	3.80 inches	Volume:	52.36 bbl	
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	2.25 inches	Volume:	0.00 bbl	
Drill Collar:	Length:	0.00 ft	Diameter:	2.25 inches	Volume:	0.00 bbl	
					Total Volume:	52.36 bbl	

Drill Pipe Above KB:	4.00 ft
Depth to Top Packer:	3750.00 ft
Depth to Bottom Packer:	ft
Interval betw een Packers:	55.00 ft
Tool Length:	76.00 ft
Number of Packers:	2 Diameter: 6.75 inches

Tool Weight:	2200.00 lb
Weight set on Packer:	25000.00 lb
Weight to Pull Loose:	70000.00 lb
Tool Chased	0.00 ft
String Weight: Initial	43000.00 lb
Final	43000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			3730.00		
Shut In Tool	5.00			3735.00		
Hydraulic tool	5.00			3740.00		
Packer	5.00			3745.00	21.00	Bottom Of Top Packer
Packer	5.00			3750.00		
Stubb	1.00			3751.00		
Perforations	2.00			3753.00		
Change Over Sub	1.00			3754.00		
Recorder	0.00	6753	Inside	3754.00		
Blank Spacing	32.00			3786.00		
Change Over Sub	1.00			3787.00		
Perforations	15.00			3802.00		
Recorder	0.00	13252	Outside	3802.00		
Bullnose	3.00			3805.00	55.00	Bottom Packers & Anchor
Total Tool Length:	**76.00**					

TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

FLUID SUMMARY

Popp Operating Inc.

Po Box 187
Hoisington, KS. 67544

ATTN: Jim Musgrove

Ward #2

15-23-13-Stafford

Job Ticket: 19519 **DST#: 4**

Test Start: 2004.07.27 @ 05:24:08

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:	47.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	9.37 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	7000.00 ppm				
Filter Cake:	inches				

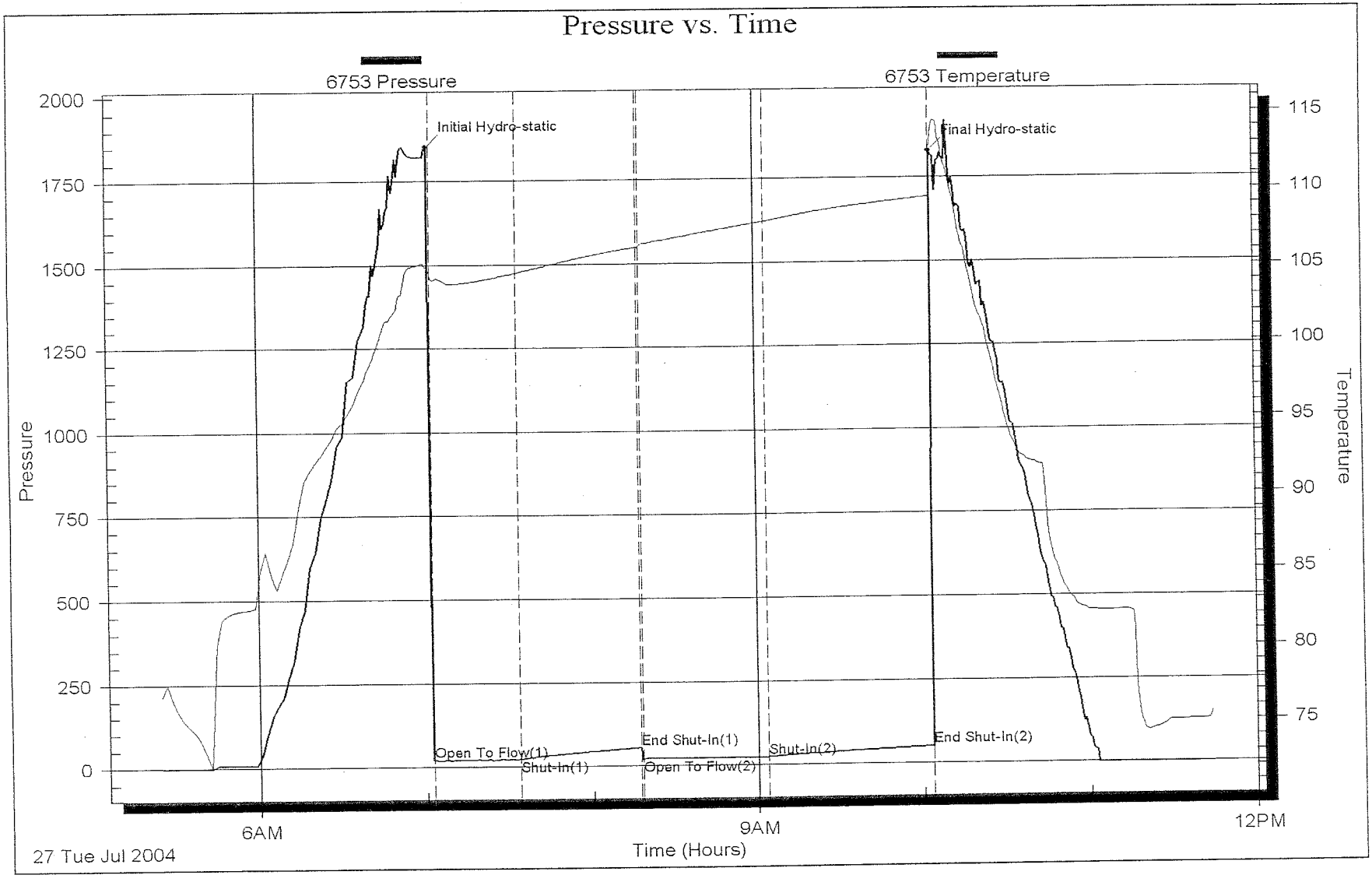
Recovery Information

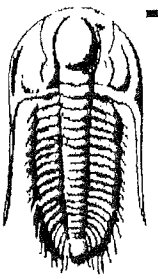
Recovery Table

Length ft	Description	Volume bbl
20.00	Drilling mud few spots oil in tool	0.281
0.00	100 gas in pipe	0.000

Total Length: 20.00 ft Total Volume: 0.281 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:


Pressure vs. Time
6753 Pressure
6753 Temperature
Initial Hydro-static
Final Hydro-static
Open To Flow(1)
Shut-In(1)
End Shut-In(1)
Open To Flow(2)
Shut-In(2)
End Shut-In(2)
Pressure
Temperature
Time (Hours)
6AM
9AM
12PM
27 Tue Jul 2004
2000
1750
1500
1250
1000
750
500
250
0
115
110
105
100
95
90
85
80
75



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Popp Operating Inc.**

Po Box 187
Hoisington, KS. 67544

ATTN: Jim Musgrove

15-23-13-Stafford

Ward #2

Start Date: 2004.07.27 @ 18:52:36
End Date: 2004.07.28 @ 01:50:06
Job Ticket #: 19520 DST #: 5

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

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Popp Operating Inc.

Po Box 187
Hoisington, KS. 67544

ATTN: Jim Musgrove

Ward #2

15-23-13-Stafford

Job Ticket: 19520 **DST#: 5**

Test Start: 2004.07.27 @ 18:52:36

GENERAL INFORMATION:

Formation: **Arbuckle**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 20:33:06
Time Test Ended: 01:50:06

Test Type: Conventional Bottom Hole
Tester: John Schmidt
Unit No: 24

Interval: 3759.00 ft (KB) To 3823.00 ft (KB) (TVD)
Total Depth: 3823.00 ft (KB) (TVD)
Hole Diameter: 7.80 inches Hole Condition: Fair

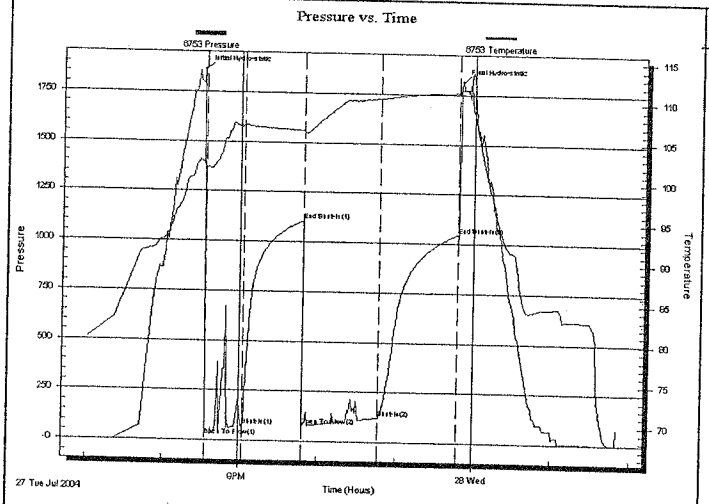
Reference Elevations: 1889.00 ft (KB)
1879.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 6753 **Inside**

Press@RunDepth: 122.03 psig @ 3763.00 ft (KB)
Start Date: 2004.07.27 End Date: 2004.07.28
Start Time: 19:02:36 End Time: 01:50:06

Capacity: 7000.00 psig
Last Calib.: 2004.07.28
Time On Btm: 2004.07.27 @ 20:32:06
Time Off Btm: 2004.07.27 @ 23:50:06

TEST COMMENT: IF-Fair to strong B.O.B. in 28" min.
FF-Good blow built to 9" in.
ISI-Dead
FSI-Weak Surface blow.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1861.06	102.19	Initial Hydro-static
1	22.70	101.59	Open To Flow (1)
31	72.86	106.97	Shut-In(1)
77	1105.02	106.40	End Shut-In(1)
77	78.77	106.13	Open To Flow (2)
135	122.03	110.39	Shut-In(2)
196	1046.65	111.20	End Shut-In(2)
198	1812.93	111.54	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
220.00	OCM-25%oil-75%mud	3.09
0.00	250-gas in pipe	0.00

Gas Rates

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

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

Popp Operating Inc.

Po Box 187
Hoisington, KS. 67544

ATTN: Jim Musgrove

Ward #2

15-23-13-Stafford

Job Ticket: 19520 DST#: 5

Test Start: 2004.07.27 @ 18:52:36

Tool Information

Drill Pipe:	Length:	3762.00 ft	Diameter:	3.80 inches	Volume:	52.77 bbl
Heavy Wt. Pipe:	Length:	0.00 ft	Diameter:	2.25 inches	Volume:	0.00 bbl
Drill Collar:	Length:	0.00 ft	Diameter:	2.25 inches	Volume:	0.00 bbl
					Total Volume:	52.77 bbl

Drill Pipe Above KB:	24.00 ft
Depth to Top Packer:	3759.00 ft
Depth to Bottom Packer:	ft
Interval betw een Packers:	64.00 ft
Tool Length:	85.00 ft
Number of Packers:	2 Diameter: 6.75 inches

Tool Weight:	2200.00 lb
Weight set on Packer:	25000.00 lb
Weight to Pull Loose:	65000.00 lb
Tool Chased	0.00 ft
String Weight: Initial	43000.00 lb
Final	43000.00 lb

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths	
Change Over Sub	1.00			3739.00		
Shut In Tool	5.00			3744.00		
Hydraulic tool	5.00			3749.00		
Packer	5.00			3754.00	21.00	Bottom Of Top Packer
Packer	5.00			3759.00		
Stubb	1.00			3760.00		
Perforations	2.00			3762.00		
Change Over Sub	1.00			3763.00		
Recorder	0.00	6753	Inside	3763.00		
Blank Spacing	31.00			3794.00		
Change Over Sub	1.00			3795.00		
Perforations	25.00			3820.00		
Recorder	0.00	13252	Outside	3820.00		
Bullnose	3.00			3823.00	64.00	Bottom Packers & Anchor
Total Tool Length:	**85.00**					

TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

Popp Operating Inc.

Po Box 187
Hoisington, KS. 67544

ATTN: Jim Musgrove

Ward #2

15-23-13-Stafford

Job Ticket: 19520 **DST#: 5**

Test Start: 2004.07.27 @ 18:52:36

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:	47.00 sec/qt	Cushion Volume:	bbl		
Water Loss:	9.37 in³	Gas Cushion Type:			
Resistivity:	ohm.m	Gas Cushion Pressure:	psig		
Salinity:	7000.00 ppm				
Filter Cake:	inches				

Recovery Information

Recovery Table

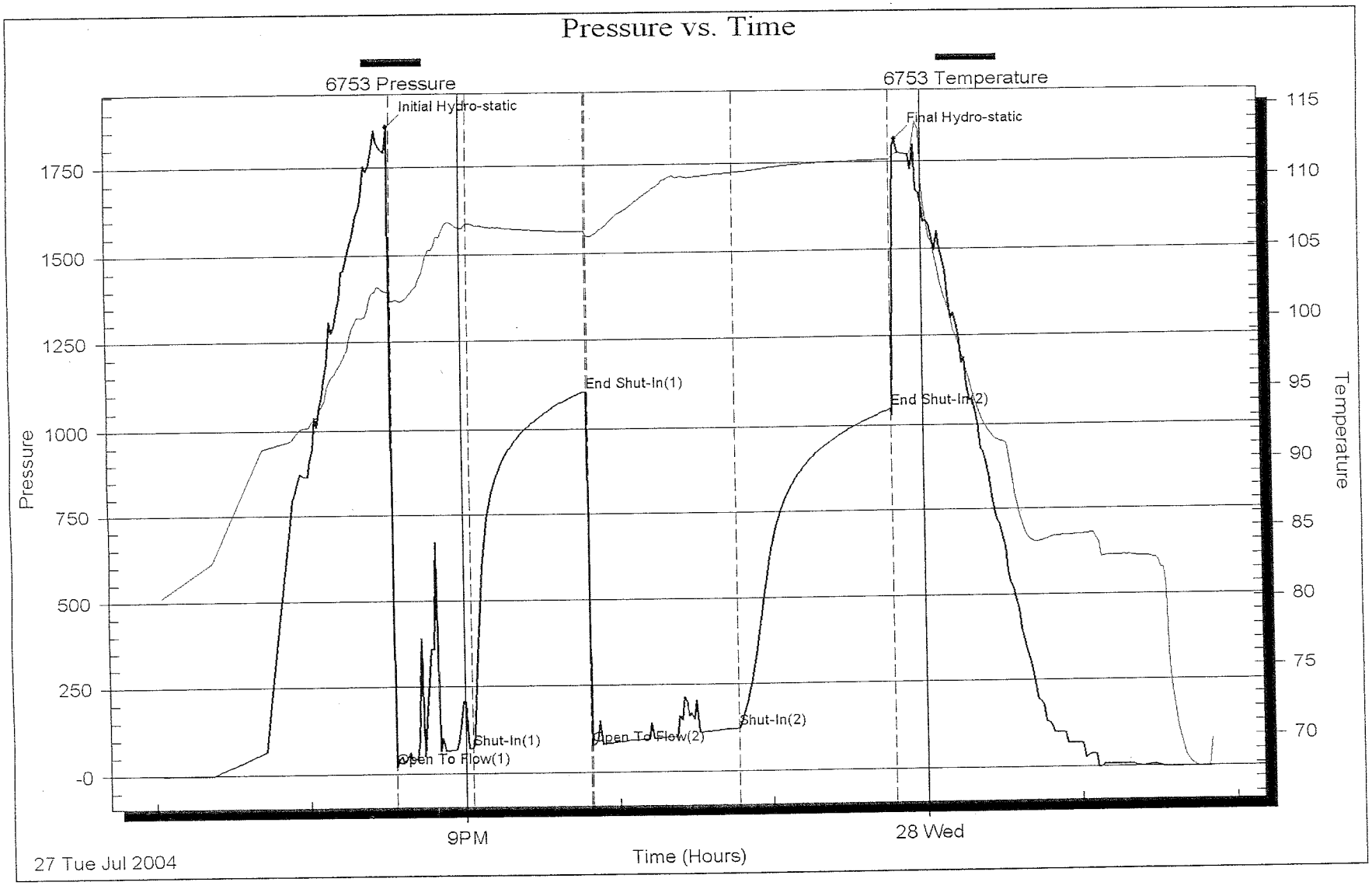
Length ft	Description	Volume bbl
220.00	OCM-25%oil-75%mud	3.086
0.00	250-gas in pipe	0.000

Total Length: 220.00 ft Total Volume: 3.086 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments:


Pressure vs. Time
6753 Pressure
6753 Temperature
Initial Hydro-static
Final Hydro-static
End Shut-In(1)
End Shut-In(2)
Shut-In(1)
Open To Flow(1)
Open To Flow(2)
Shut-In(2)
Pressure
Temperature
1750
1500
1250
1000
750
500
250
-0
115
110
105
100
95
90
85
80
75
70
9PM
28 Wed
27 Tue Jul 2004
Time (Hours)

TRILOBITE TESTING INC.

P.O. Box 362 • Hays, Kansas 67601

No. 19516

Test Ticket

Well Name & No. Ward #2 Test No. 1 Date 7-24-04

Company Popp Operating Inc Zone Tested "A-F"

Address Po Box 187, Hoisington, Ks. 67544 Elevation 1889 KB 1879 GL

Co. Rep / Geo. Jim Musgrove Cont. Discovery #2 Est. Ft. of Pay ____ Por. ____ %

Location: Sec. 15 Twp. 23 Rge. 13 Co. Stafford State Ks

No. of Copies Reg Disbtribution Sheet (Y, N) ____ Turnkey (Y, N) ____ Evaluation (Y, N) ____

Interval Tested 3439-3510 Initial Str Wt./Lbs. 39,000 Unseated Str Wt/Lbs. 40,000

Anchor Length 71' Wt. Set Lbs. 25,000 Wt. Pulled Loose/Lbs. 44,000

Top Packer Depth 3434 Tool Weight 3,000

Bottom Packer Depth 3439 Hole Size 7 7/8" ✓ Rubber Size 6 3/4" ✓

Total Depth 3510 Wt. Pipe Run 0 Drill Collar Run 0

Mud Wt. 9.0 LCM 1½ Vis. 47 WL 9.4 Drill Pipe Size 4½XH Ft. Run 3450

Tool Description IFP - Strong Blow, BOB in 1 min.
ISI - Blowback Built to 2"
FFP - Strong Blow, BOB in 2 min
FSI

Recovery - Total Feet 450 GIP 1290 Ft. in DC ____ Ft. in DP ____

330	Feet of Mud w/oil specs	%gas	%oil	%water	%mud	
120	Feet of Muddy Water	%gas	%oil 85	%water 15	%mud	
	Feet of	%gas	%oil	%water	%mud	
	Feet of	%gas	%oil	%water	%mud	
	Feet of	%gas	%oil	%water	%mud	

MFT 114 °F Gravity ____ °API D @ ____ °F Corrected Gravity ____ °API

Rm .150 @ 57 °F Chlorides 53,000 ppm Recovery ____ Chlorides 7,000 ppm System

	AK-1	Alpine				
Initital Hydrostatic Mud		1703	PSI	Recorder No.	6753	Test ✓ 900
First Initial Flow Pressure		43	PSI	(depth)	3444	Elec. Rec. ✓
First Final Flow Pressure		123	PSI	Recorder No.	13252	Jars
Initial Shut-In Pressure		1035	PSI	(depth)	3507	Safety Jt.
Second Initial Flow Pressure		138	PSI	Recorder No.		Circ Sub
Second Final Flow Pressure		224	PSI	(depth)		Sampler
Final Shut-In Pressure		992	PSI	**Initial Opening**	30	Straddle
Final Hydrostatic Mud		1660	PSI	Initial Shut-In	45	Ext. Packer
				Final Flow	45	Shale Packer
				Final Shut-In	60	Mileage 56 SM 1 way 49.30
				T-On Location	22:40	Sub Total: 949.30
				T-Started	1:09	Std. By
				T-Open	2:48	Other
				T-Pulled	5:48	Total:
				T-Out	8:00	

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/ KIND OF THE PROPERTY OR PERSONNEL OF THE ONE FOR
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ECTLY OR INDIRECTLY, THROUGH THE USE OF ITS EQUIPMENT,
ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF
/ TEST. TOOLS LOST OR DAMAGED IN THE HOLE SHALL BE PAID
R AT COST BY THE PARTY FOR WHOM THE TEST IS MADE.

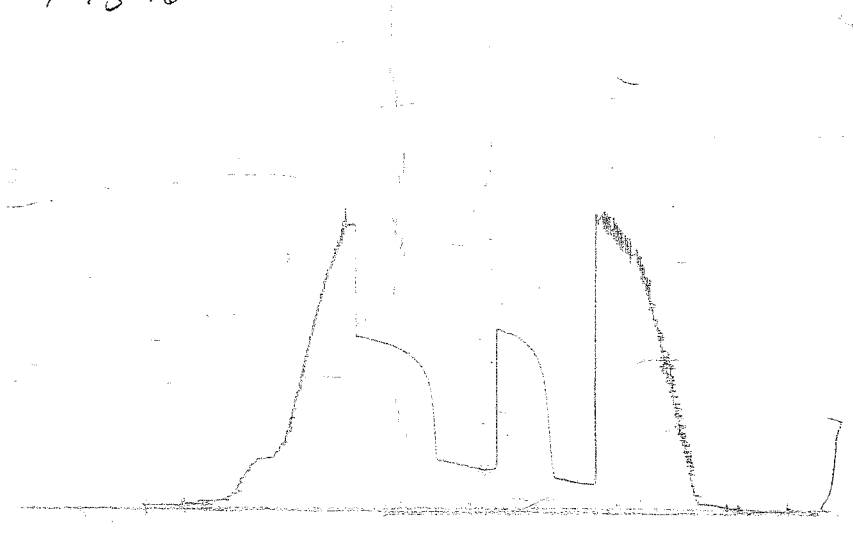
Approved By ____

Our Representative Jason McLemore

CHART PAGE

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

Popp Operating Inc.
Ward #2
DST #1
19516



TRILOBITE TESTING INC.

P.O. Box 362 • Hays, Kansas 67601

№ 19517

Test Ticket

ll Name & No. Ward #2 Test No. 2 Date 7-25-07

mpany Poco Operating, Inc Zone Tested LKC

dress Po Box 187 Hoisington, Ks. 67544 Elevation 1889 KB 1879 GL

. Rep / Geo. Jim Musgrove Cont. Discovery #2 Est. Ft. of Pay _____ Por. _____ %

cation: Sec. 15 Twp. 23 Rge. 13 Co. Stafford State KS

. of Copies Reg Disbtribution Sheet (Y, N) _____ Turnkey (Y, N) _____ Evaluation (Y, N) _____

rval Tested 3546 - 3647 Initial Str Wt./Lbs. 40,000 Unseated Str Wt/Lbs. 40,000

hor Length 101' Wt. Set Lbs. 25,000 Wt. Pulled Loose/Lbs. 45,000

Packer Depth 3541 Tool Weight 3600

:om Packer Depth 3546 Hole Size 7 7/8" ✓ Rubber Size 6 3/4" ✓

l Depth 3647 Wt. Pipe Run 0 Drill Collar Run 0

l Wt. 9.2 LCM 1# Vis. 43 WL 11.2 Drill Pipe Size 4½XH Ft. Run 3542

N Description IFP - Fair Blow Built to 9"

ISI - No Blowback

FFP - Weak Blow Built to 4"

FST - No Blow back

:overy - Total Feet 115 GIP _____ Ft. in DC _____ Ft. in DP _____

:. 115 Feet of Mud W/oil spot in %gas %oil %water %mud

:. _____ Feet of tool %gas %oil %water %mud

:. _____ Feet of _____ %gas %oil %water %mud

:. _____ Feet of _____ %gas %oil %water %mud

:. _____ Feet of _____ %gas %oil %water %mud

T 111 °F Gravity _____ °API D @ _____ °F Corrected Gravity _____ °API

/ _____ @ _____ °F Chlorides _____ ppm Recovery _____ Chlorides 9,000 ppm System

	AK-1	Alpine				
Initital Hydrostatic Mud		1764 PSI	Recorder No.	6753	Test ✓	900
First Initial Flow Pressure		17 PSI	(depth)	3551	Elec. Rec. ✓	
First Final Flow Pressure		44 PSI	Recorder No.	13252	Jars	
Initial Shut-In Pressure		1235 PSI	(depth)	3644	Safety Jt.	
Second Initial Flow Pressure		49 PSI	Recorder No.		Circ Sub	
Second Final Flow Pressure		73 PSI	(depth)		Sampler	
Final Shut-In Pressure		1228 PSI	**Initial Opening**	30	Straddle	
Final Hydrostatic Mud		1699 PSI	Initial Shut-In	45	Ext. Packer	
			Final Flow	45	Shale Packer	
			Final Shut-In	60	Mileage 34 1 way	99.30
			T-On Location	18:45	Sub Total:	249.30
			T-Started	19:50	Std. By	
			T-Open	21:17	Other	
			T-Pulled	00:17	Total:	
			T-Out	2:00		

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Y KIND OF THE PROPERTY OR PERSONNEL OF THE ONE FOR
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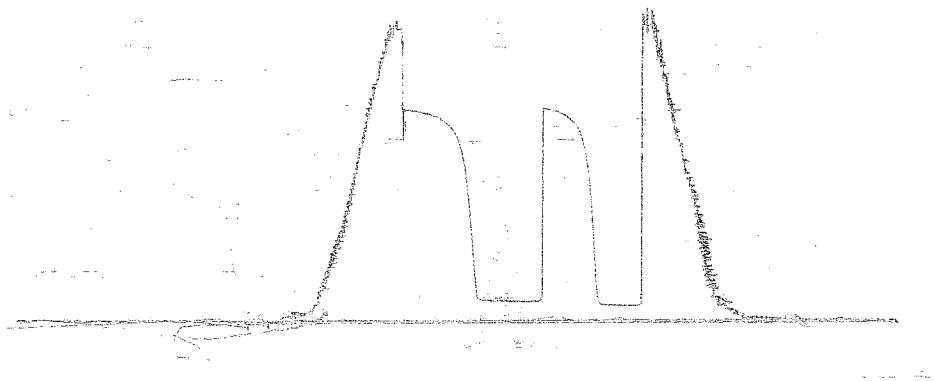
proved By _____

ir Representative Jason McLemore

CHART PAGE

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Popp Operating
Ward #2
DST #2
IG 517



TRILOBITE TESTING INC.

P.O. Box 362 • Hays, Kansas 67601

№ 19518

Test Ticket

ll Name & No. WARD #2 Test No. # 3 Date 7-26-04

mpany POPP OPERATING, INC. Zone Tested VIOLA

dress Elevation 1889 KB 1879 GL

. Rep / Geo. JIM MUSGROVE Cont. DISCOVERY #2 Est. Ft. of Pay Por. %

cation: Sec. 15 Twp. 23S Rge. 13W Co. STAFFORD State KS

. of Copies Disbtribution Sheet (Y, N) Turnkey (Y, N) Evaluation (Y, N)

rval Tested 3717 To 3766 Initial Str Wt./Lbs. 41,000 Unseated Str Wt/Lbs. 41,000

hor Length 49' Wt. Set Lbs. 25,000 Wt. Pulled Loose/Lbs. 55,000

Packer Depth 3712 Tool Weight 2200

om Packer Depth 3717 Hole Size 7 7/8" ✓ Rubber Size 6 3/4" ✓

l Depth 3766 Wt. Pipe Run 0 Drill Collar Run 0

l Wt. 9.0 LCM 1# Vis. 48 WL 8.8 Drill Pipe Size 4½ XH Ft. Run 3700

w Description IF- STRONG BOB IN 1-MIN. ISI - STRONG B.O.B. 15-MIN.
FF STRONG B.O.B. 5-SEC, FSI - DEAD

covery - Total Feet 30 GIP 3610 Ft. in DC 0 Ft. in DP 30

30 Feet of DRILLING MUD %gas %oil %water %mud

Feet of %gas %oil %water %mud

Feet of %gas %oil %water %mud

Feet of %gas %oil %water %mud

Feet of %gas %oil %water %mud

T 118 °F Gravity — °API D @ — °F Corrected Gravity — °API

— @ — °F Chlorides — ppm Recovery — Chlorides 10,000 ppm System

	AK-1	Alpine				
nitital Hydrostatic Mud		1843 PSI	Recorder No.	6753	Test	B. HOLE
First Initial Flow Pressure		40 PSI	(depth)	3721	Elec. Rec.	✓
First Final Flow Pressure		17 PSI	Recorder No.	13252	Jars	
Initial Shut-In Pressure		488 PSI	(depth)	3763	Safety Jt.	
Second Initial Flow Pressure		85 PSI	Recorder No.		Circ Sub	
Second Final Flow Pressure		21 PSI	(depth)		Sampler	
Final Shut-In Pressure		800 PSI	**Initial Opening**	30	Straddle	
Final Hydrostatic Mud		1821 PSI	Initial Shut-In	45	Ext. Packer	
			Final Flow	45	Shale Packer	
			Final Shut-In	60	Mileage	84 1-WAY
			T-On Location	14:30	Sub Total:	
			T-Started	15:14	Std. By	
			T-Open	16:33	Other	
			T-Pulled	19:34	Total:	
			T-Out	21:14		

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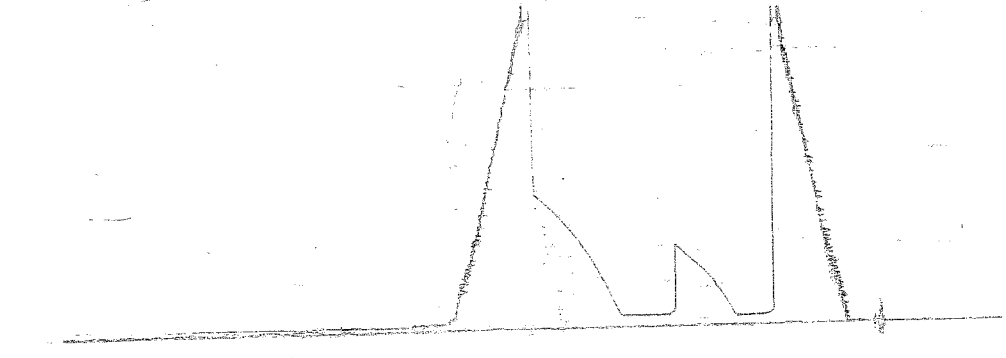
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r Representative John J. Schmidt

CHART PAGE

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13252
DST #3



TRILOBITE TESTING INC.

P.O. Box 362 • Hays, Kansas 67601

№ 19519

Test Ticket

ll Name & No. WARD #2 Test No. #4 Date 7-27-04

mpany POPP OPERATING Zone Tested SIMPSON

dress Elevation 1889 KB 1879 GL

. Rep / Geo. JIM MUSGROVE Cont. DISCOVERY #2 Est. Ft. of Pay Por. %

cation: Sec. 15 Twp. 23S Rge. 13W Co. STAFFORD State KS.

. of Copies Disbtribution Sheet (Y, N) Turnkey (Y, N) Evaluation (Y, N)

rval Tested 3750 To 3805 Initial Str Wt./Lbs. 43,000 Unseated Str Wt/Lbs. 43,000

hor Length 55' Wt. Set Lbs. 25,000 Wt. Pulled Loose/Lbs. 70,000

Packer Depth 3745 Tool Weight 2200

om Packer Depth 3750 Hole Size 7 7/8" ✓ Rubber Size 6 3/4" ✓

l Depth 3805 Wt. Pipe Run 0 Drill Collar Run 0

l Wt. 9.0 LCM 1# Vis. 48 WL 8.8 Drill Pipe Size 4½ XH Ft. Run 3733

w Description I.F. - WEAK BUILT TO 4" IN I.S.I. - DEAD F.F. - WEAK

covery - Total Feet 20 GIP 100 Ft. in DC 0 Ft. in DP 20

. 20 Feet of DRILLING MUD %gas %oil %water %mud

. Feet of FEW OIL SPOTS %gas %oil %water %mud

. Feet of IN TOOL %gas %oil %water %mud

. Feet of %gas %oil %water %mud

. Feet of %gas %oil %water %mud

T 109 °F Gravity — °API D @ — °F Corrected Gravity — °API

/ — @ — °F Chlorides — ppm Recovery — Chlorides 10,000 ppm System

	AK-1	Alpine				
Initital Hydrostatic Mud		1850 PSI	Recorder No.	6753	Test	B. HOLE
First Initial Flow Pressure		20 PSI	(depth)	3754	Elec. Rec.	✓
First Final Flow Pressure		22 PSI	Recorder No.	13752	Jars	
Initial Shut-In Pressure		53 PSI	(depth)	3802	Safety Jt.	
Second Initial Flow Pressure		21 PSI	Recorder No.		Circ Sub	
Second Final Flow Pressure		23 PSI	(depth)		Sampler	
) Final Shut-In Pressure		50 PSI	**Initial Opening**	30	Straddle	
) Final Hydrostatic Mud		1827 PSI	Initial Shut-In	45	Ext. Packer	
			Final Flow	45	Shale Packer	
			Final Shut-In	60	Mileage	84 - 1 - WAY
			T-On Location	04:45	Sub Total:	
			T-Started	05:24	Std. By	
			T-Open	07:02	Other	
			T-Pulled	10:03	Total:	
			T-Out	11:44		

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proved By

ır Representative John J. Schmidt

CHART PAGE

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

13252
DST #4

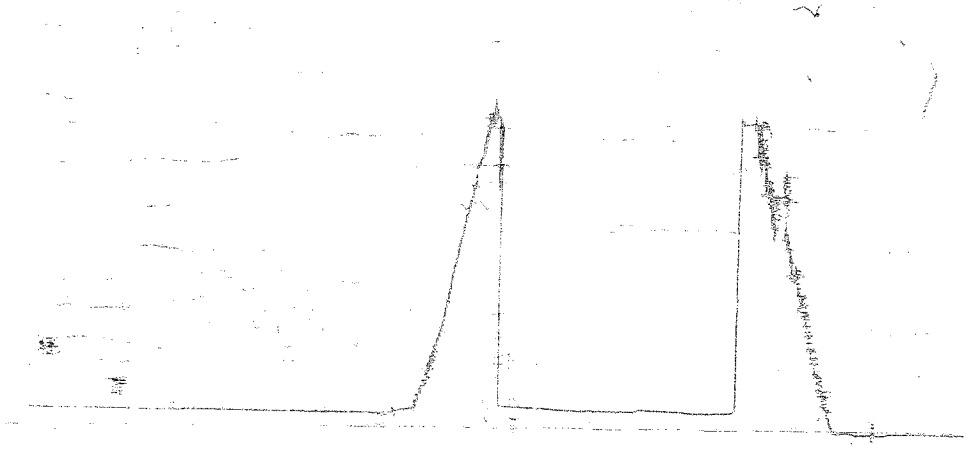


CHART PAGE

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

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DST #5

