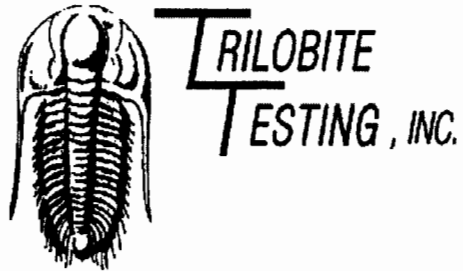


15-065-22881



DRILL STEM TEST REPORT

Prepared For: **A&A Production**

P O Box 100
Hill City Ks 67642

ATTN: Andy Anderson

31-7s-23w Graham

Bethel B-1

Start Date: 2003.02.16 @ 09:45:00

End Date: 2003.02.16 @ 16:26:59

Job Ticket #: 16901 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

A&A Production

Bethel B-1

31-7s-23w Graham

DST # 1

LKC

2003.02.16



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

A&A Production

Bethel B-1

P O Box 100
Hill City Ks 67642

31-7s-23w Graham

Job Ticket: 16901

DST#: 1

ATTN: Andy Anderson

Test Start: 2003.02.16 @ 09:45:00

GENERAL INFORMATION:

Formation: **LKC**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:34:59

Time Test Ended: 16:26:59

Test Type: Conventional Bottom Hole

Tester: Ray Schwager

Unit No: 16

Interval: **3611.00 ft (KB) To 3655.00 ft (KB) (TVD)**

Reference Elevations: 2285.00 ft (KB)

Total Depth: 3655.00 ft (KB) (TVD)

2280.00 ft (CF)

Hole Diameter: 7.85 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 6668

Inside

Press@RunDepth: 368.20 psig @ 3612.01 ft (KB)

Capacity: 7000.00 psig

Start Date: 2003.02.16

End Date: 2003.02.16

Last Calib.: 2003.02.16

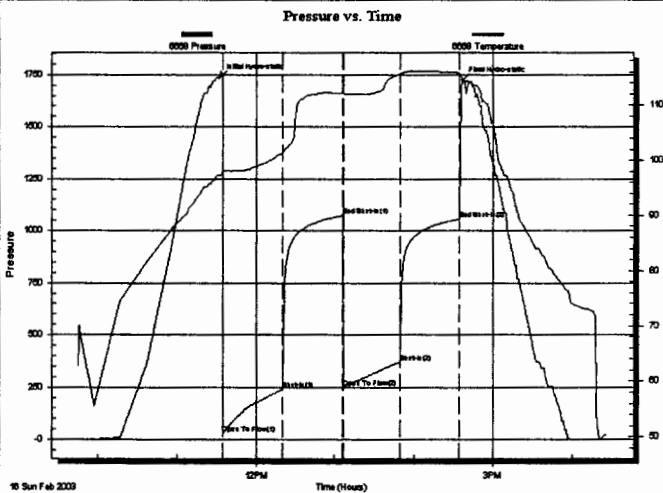
Start Time: 09:45:00

End Time: 16:26:59

Time On Btm: 2003.02.16 @ 11:32:29

Time Off Btm: 2003.02.16 @ 14:36:29

TEST COMMENT: FP-w k to strg in 10 min
FFP-w k to strg in 35 min
Times 45-45-45-45



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1733.15	97.25	Initial Hydro-static
3	28.42	98.01	Open To Flow (1)
48	240.55	101.46	Shut-In (1)
94	1073.46	112.18	End Shut-In (1)
95	249.44	112.03	Open To Flow (2)
137	368.20	115.48	Shut-In (2)
182	1056.29	115.78	End Shut-In (2)
184	1721.90	114.53	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
150.00	MW w/show of oil	2.10
600.00	water RW .16 @50F	8.42

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

A&A Production

Bethel B-1

P O Box 100
Hill City Ks 67642

31-7s-23w Graham

Job Ticket: 16901

DST#: 1

ATTN: Andy Anderson

Test Start: 2003.02.16 @ 09:45:00

Tool Information

Drill Pipe:	Length: 3610.00 ft	Diameter: 3.80 inches	Volume: 50.64 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 50.64 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	20.00 ft			String Weight: Initial 42000.00 lb
Depth to Top Packer:	3611.00 ft			Final 46000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	44.02 ft			
Tool Length:	65.02 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			3591.00	
Shut In Tool	5.00			3596.00	
Hydraulic tool	5.00			3601.00	
Packer	5.00			3606.00	21.00 Bottom Of Top Packer
Packer	5.00			3611.00	
Stubb	1.00			3612.00	
Recorder	0.01	6668	Inside	3612.01	
Perforations	40.00			3652.01	
Recorder	0.01	11085	Outside	3652.02	
Bullnose	3.00			3655.02	44.02 Bottom Packers & Anchor
Total Tool Length:	65.02				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

A&A Production

Bethel B-1

P O Box 100
Hill City Ks 67642

31-7s-23w Graham

Job Ticket: 16901

DST#: 1

ATTN: Andy Anderson

Test Start: 2003.02.16 @ 09:45:00

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:

68000 ppm

Viscosity: 44.00 sec/qt

Cushion Volume:

bbf

Water Loss: 5.58 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
150.00	MW w/show of oil	2.104
600.00	water RW .16 @50F	8.416

Total Length: 750.00 ft Total Volume: 10.520 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 6668

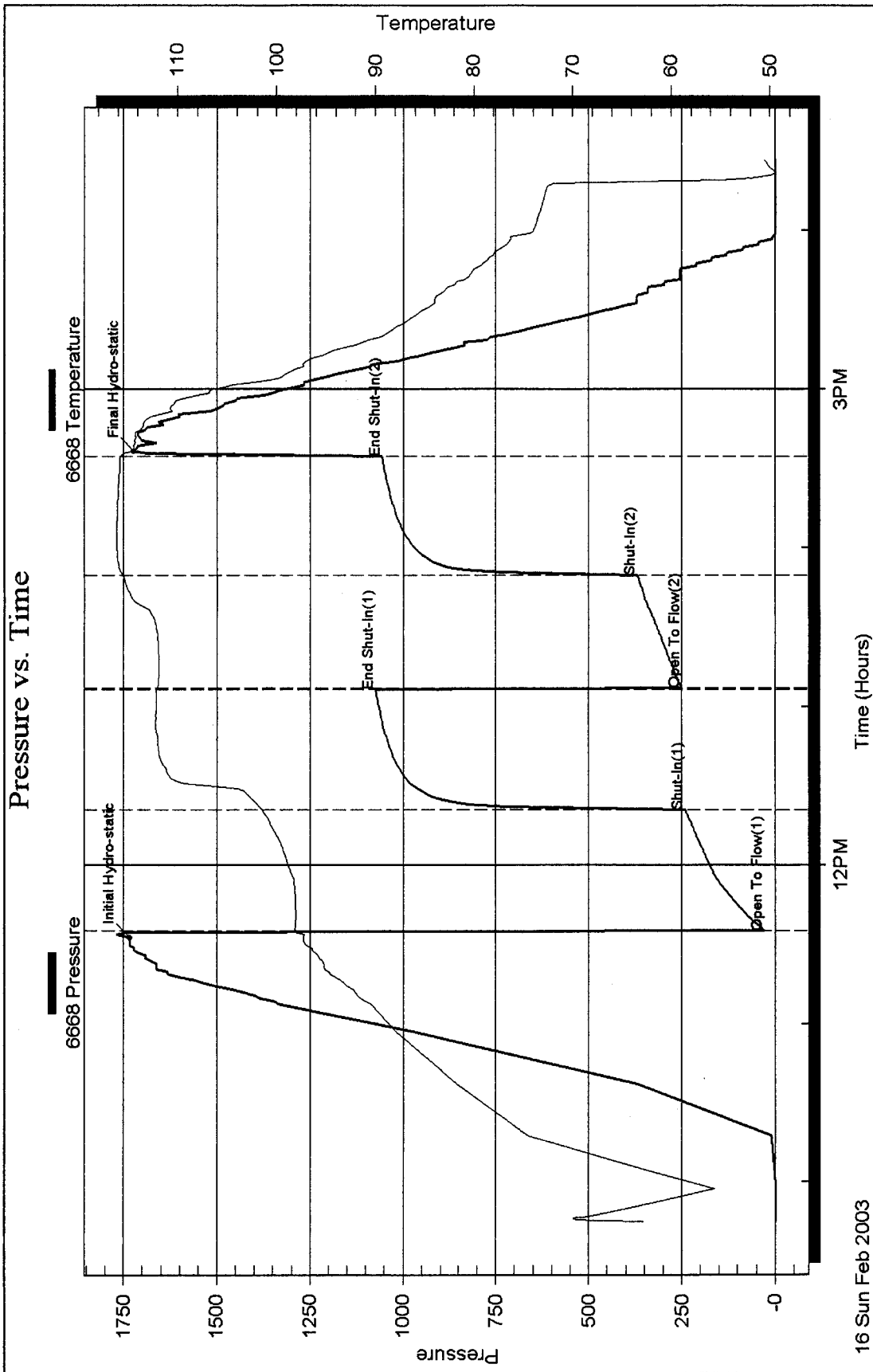
Inside

A&A Production

31-7s-23w Graham

DST Test Number: 1

Pressure vs. Time



16 Sun Feb 2003



DRILL STEM TEST REPORT

Prepared For: **A&A Production**

P O Box 100
Hill City Ks 67642

ATTN: Andy Anderson

31-7s-23w Graham

Bethel B-1

Start Date: 2003.02.17 @ 04:31:02

End Date: 2003.02.17 @ 16:28:01

Job Ticket #: 16902 DST #: 2

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

A&A Production

Bethel B-1

31-7s-23w Graham

DST # 2

LKC

2003.02.17



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

A&A Production

Bethel B-1

P O Box 100
Hill City Ks 67642

31-7s-23w Graham

Job Ticket: 16902

DST#: 2

ATTN: Andy Anderson

Test Start: 2003.02.17 @ 04:31:02

GENERAL INFORMATION:

Formation: **LKC**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:16:31

Time Test Ended: 16:28:01

Test Type: Conventional Bottom Hole

Tester: Ray Schwager

Unit No: 16

Interval: **3715.00 ft (KB) To 3750.00 ft (KB) (TVD)**

Reference Elevations: 2285.00 ft (KB)

Total Depth: 3750.00 ft (KB) (TVD)

2280.00 ft (CF)

Hole Diameter: 7.85 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 6668

Inside

Press@RunDepth: 23.12 psig @ 3716.01 ft (KB)

Capacity: 7000.00 psig

Start Date: 2003.02.17

End Date:

2003.02.17

Last Calib.: 2003.02.17

Start Time: 04:31:02

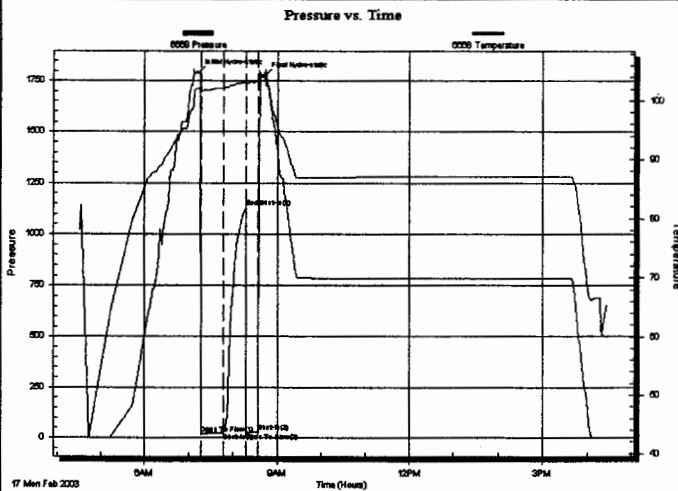
End Time:

16:28:01

Time On Btm: 2003.02.17 @ 07:12:31

Time Off Btm: 2003.02.17 @ 08:42:31

TEST COMMENT: FP-vy w k bl died in 20 min
FFP-no bl flushed tool



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1789.61	102.08	Initial Hydro-static
4	19.56	101.61	Open To Flow (1)
35	23.12	102.10	Shut-In(1)
65	1133.51	103.16	End Shut-In(1)
65	24.89	102.89	Open To Flow (2)
81	28.50	103.26	Shut-In(2)
90	1775.96	104.39	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
30.00	SOCM 1%oil 99%mud	0.42

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

A&A Production

Bethel B-1

P O Box 100
Hill City Ks 67642

31-7s-23w Graham

Job Ticket: 16902

DST#: 2

ATTN: Andy Anderson

Test Start: 2003.02.17 @ 04:31:02

Tool Information

Drill Pipe:	Length: 3704.00 ft	Diameter: 3.80 inches	Volume: 51.96 bbl	Tool Weight:	2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer:	25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose:	60000.00 lb
			<u>Total Volume: 51.96 bbl</u>	Tool Chased	0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial	41000.00 lb
Depth to Top Packer:	3715.00 ft			Final	41000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	35.02 ft				
Tool Length:	56.02 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			3695.00	
Shut In Tool	5.00			3700.00	
Hydraulic tool	5.00			3705.00	
Packer	5.00			3710.00	21.00 Bottom Of Top Packer
Packer	5.00			3715.00	
Stubb	1.00			3716.00	
Recorder	0.01	6668	Inside	3716.01	
Perforations	31.00			3747.01	
Recorder	0.01	11085	Outside	3747.02	
Bullnose	3.00			3750.02	35.02 Bottom Packers & Anchor
Total Tool Length:	56.02				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

A&A Production

Bethel B-1

P O Box 100
Hill City Ks 67642

31-7s-23w Graham

Job Ticket: 16902

DST#: 2

ATTN: Andy Anderson

Test Start: 2003.02.17 @ 04:31:02

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: 5.57 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: 1.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	SOCM 1%oil 99%mud	0.421

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:

Serial #: 6668

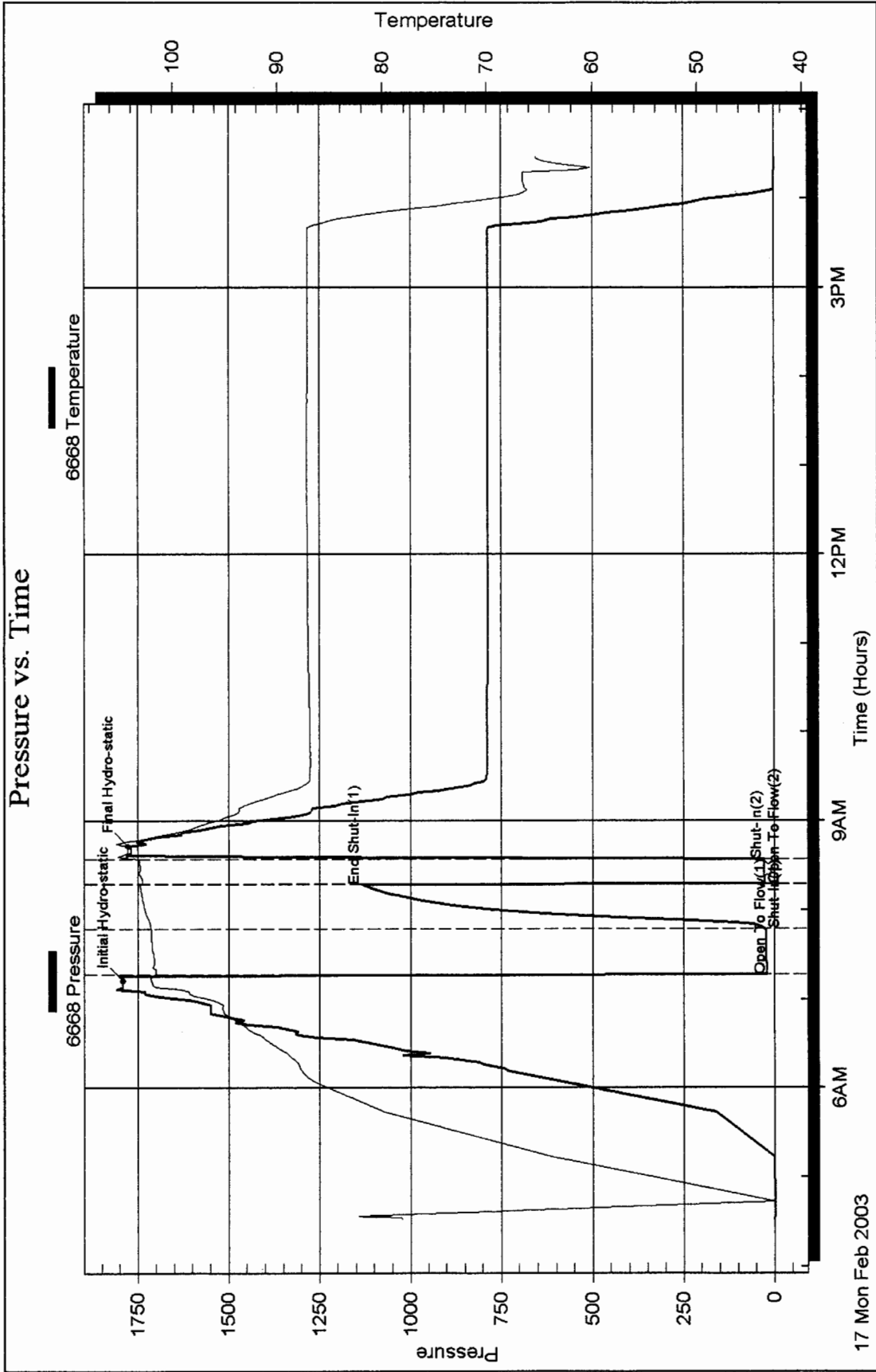
Inside

A&A Production

31-7s-23w Graham

DST Test Number: 2

Pressure vs. Time



17 Mon Feb 2003

Trilobite Testing, Inc

Ref. No: 16902

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