

DRILL STEM TEST REPORT

Prepared For: **Raymond Oil Co.**

P.O. Box 48788
Wichita, KS 67201

ATTN: Clarke Sandberg

6/32/13W

Dugan Trust B-2

Start Date: 2005.03.14 @ 00:13:31

End Date: 2005.03.14 @ 10:41:44

Job Ticket #: 21783 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

Raymond Oil Co.

Dugan Trust B-2

P.O. Box 48788
Wichita, KS 67201

6/32/13W

Job Ticket: 21783

DST#: 1

ATTN: Clarke Sandberg

Test Start: 2005.03.14 @ 00:13:31

GENERAL INFORMATION:

Formation: **mississippi**

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

Time Tool Opened: 03:11:29

Time Test Ended: 10:41:44

Test Type: **Conventional Bottom Hole**

Tester: **Dustin Rash**

Unit No: **17**

Interval: **4495.00 ft (KB) To 4539.00 ft (KB) (TVD)**

Reference Elevations: **1510.00 ft (KB)**

Total Depth: **4539.00 ft (KB) (TVD)**

1500.00 ft (CF)

Hole Diameter: **7.88 inches** Hole Condition: **Good**

KB to GR/CF: **10.00 ft**

Serial #: 6770 Inside

Press@RunDepth: **221.24 psig @ 4498.00 ft (KB)**

Capacity: **7000.00 psig**

Start Date: **2005.03.14**

End Date:

2005.03.14

Last Calib.:

1899.12.30

Start Time: **00:13:31**

End Time:

10:41:44

Time On Btm:

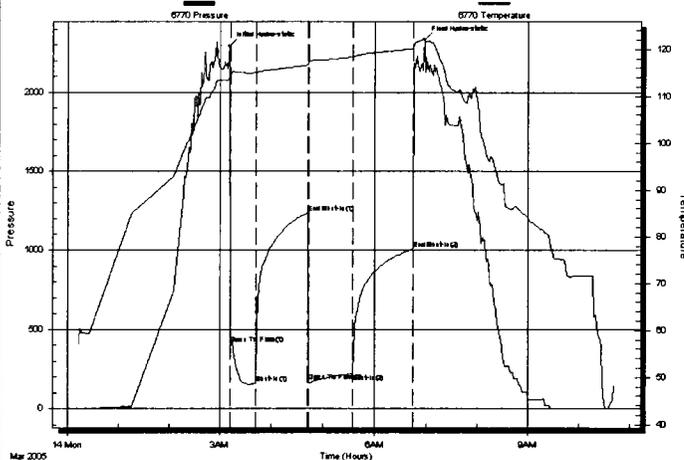
2005.03.14 @ 03:10:14

Time Off Btm:

2005.03.14 @ 06:57:44

TEST COMMENT: F-Strong Building Blow . BOB in 2 min.
IS-Blow back present. Built to 8 inches.
FF-Strong blow . BOB ASAO.
FSI-Blow back present. BOB in 38 min.

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2292.48	114.05	Initial Hydro-static
2	410.02	114.39	Open To Flow (1)
32	156.11	114.98	Shut-In(1)
92	1236.45	116.61	End Shut-In(1)
93	171.90	117.37	Open To Flow (2)
144	221.24	118.33	Shut-In(2)
216	1009.48	120.08	End Shut-In(2)
228	2332.55	121.88	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
496.00	mud/oil/w ater	5.03

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.13	7.00	8.01
Last Gas Rate	0.13	1.00	5.76
Max. Gas Rate	0.13	7.00	8.01



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Raymond Oil Co.

Dugan Trust B-2

P.O. Box 48788
Wichita, KS 67201

6/32/13W

Job Ticket: 21783

DST#: 1

ATTN: Clarke Sandberg

Test Start: 2005.03.14 @ 00:13:31

Tool Information

Drill Pipe:	Length: 4266.00 ft	Diameter: 3.80 inches	Volume: 59.84 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 28000.00 lb
Drill Collar:	Length: 212.00 ft	Diameter: 2.25 inches	Volume: 1.04 bbl	Weight to Pull Loose: 20000.00 lb
			<u>Total Volume: 60.88 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4495.00 ft			Final 66000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	44.00 ft			
Tool Length:	71.00 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			4469.00	
Shut In Tool	5.00			4474.00	
Hydraulic tool	5.00			4479.00	
Jars	5.00			4484.00	
Safety Joint	2.00			4486.00	
Packer	5.00			4491.00	27.00 Bottom Of Top Packer
Packer	4.00			4495.00	
Stubb	1.00			4496.00	
Perforations	2.00			4498.00	
Recorder	0.00	6770	Inside	4498.00	
Change Over Sub	1.00			4499.00	
Drill Pipe	31.00			4530.00	
Change Over Sub	1.00			4531.00	
Perforations	5.00			4536.00	
Recorder	0.00	10993	Inside	4536.00	
Bullnose	3.00			4539.00	44.00 Bottom Packers & Anchor
Total Tool Length:	71.00				



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FLUID SUMMARY

Raymond Oil Co.

Dugan Trust B-2

P.O. Box 48788
Wichita, KS 67201

6/32/13W

Job Ticket: 21783

DST#: 1

ATTN: Clarke Sandberg

Test Start: 2005.03.14 @ 00:13:31

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:	88000 ppm
Viscosity: 47.00 sec/qt	Cushion Volume: bbl		
Water Loss: 4.00 in ³	Gas Cushion Type:		
Resistivity: 0.11 ohm.m	Gas Cushion Pressure: psig		
Salinity: 2500.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
496.00	mud/oil/w ater	5.026

Total Length: 496.00 ft Total Volume: 5.026 bbl

Num Fluid Samples: 1 Num Gas Bombs: 1 Serial #:

Laboratory Name: Caraway Laboratory Location: Liberal, KS

Recovery Comments: Flammable



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

GAS RATES

Raymond Oil Co.

Dugan Trust B-2

P.O. Box 48788
Wichita, KS 67201

6/32/13W

Job Ticket: 21783

DST#: 1

ATTN: Clarke Sandberg

Test Start: 2005.03.14 @ 00:13:31

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	10	0.13	7.00	8.01
1	10	0.13	7.00	8.01
1	20	0.13	2.00	6.14
1	30	0.13	1.00	5.76
2	5	0.13	2.00	6.14
2	10	0.13	1.00	5.76
2	20	0.13	1.00	5.76
2	30	0.13	1.00	5.76
2	40	0.13	1.00	5.76

Serial #: 6770

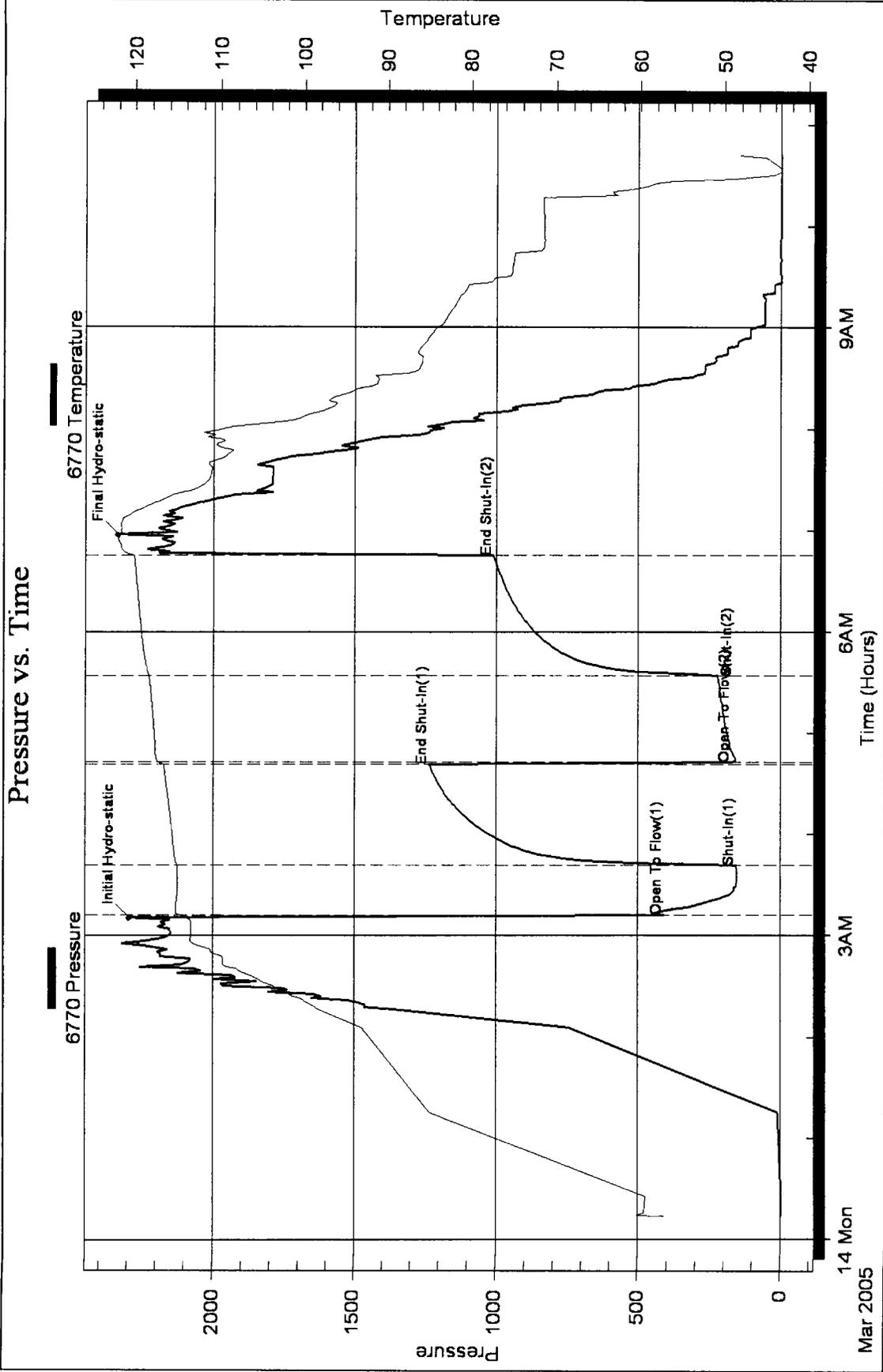
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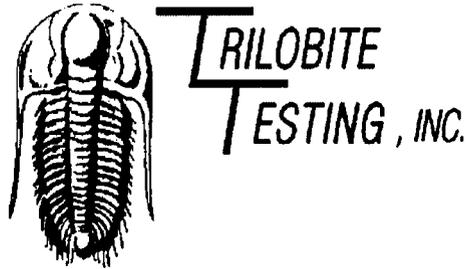
Raymond Oil Co.

632/13W

DST Test Number: 1

Pressure vs. Time





DRILL STEM TEST REPORT

Prepared For: **Raymond Oil Co.**

P.O. Box 48788
Wichita, KS 67201

ATTN: Clarke Sandberg

6/32/13W

Dugan Trust B-2

Start Date: 2005.03.16 @ 02:17:11

End Date: 2005.03.16 @ 14:21:41

Job Ticket #: 21873 DST #: 2

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



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TESTING, INC**

DRILL STEM TEST REPORT

Raymond Oil Co.

Dugan Trust B-2

P.O. Box 48788
Wichita, KS 67201

6/32/13W

Job Ticket: 21873

DST#: 2

ATTN: Clarke Sandberg

Test Start: 2005.03.16 @ 02:17:11

GENERAL INFORMATION:

Formation: **Miss.**

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

Time Tool Opened: 04:41:26

Time Test Ended: 14:21:41

Test Type: Conventional Straddle

Tester: Davy Cline

Unit No: 24

Interval: **4487.00 ft (KB) To 4515.00 ft (KB) (TVD)**

Total Depth: 4850.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Poor

Reference Elevations: 1510.00 ft (KB)

1500.00 ft (CF)

KB to GR/CF: 10.00 ft

Serial #: 6753

Inside

Press@RunDepth: 200.13 psig @ 4498.00 ft (KB)

Start Date: 2005.03.16

End Date: 2005.03.16

Start Time: 02:17:12

End Time: 14:21:41

Capacity: 7000.00 psig

Last Calib.: 2005.03.16

Time On Btm: 2005.03.16 @ 04:38:11

Time Off Btm: 2005.03.16 @ 11:42:41

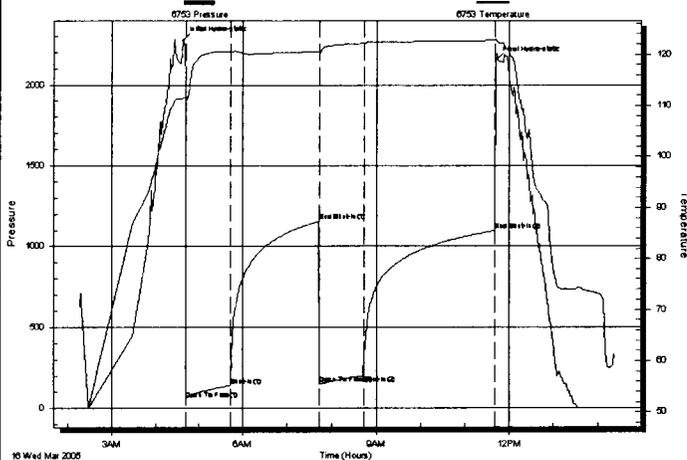
TEST COMMENT: F: Strong blow . BOB 2min. 30sec. GTS 49 min. See gas rates.

IS: Bled off. No blow .

FF: Strong blow . BOB Immediately. See gas rates.

FS: Bled off. Weak surface blow .

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2273.09	111.51	Initial Hydro-static
4	58.08	111.01	Open To Flow (1)
65	141.44	120.47	Shut-In(1)
185	1154.71	120.53	End Shut-In(1)
186	150.27	120.28	Open To Flow (2)
245	200.13	122.15	Shut-In(2)
424	1097.90	122.71	End Shut-In(2)
425	2151.27	122.97	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
93.00	G&SOCM 30%g 10%o 25%w 35%m	0.76
124.00	G&SOCM 50%g 10%o 25%w 15%m	1.27
62.00	G&VSOCWM 30%g 5%o 50%w 15%m	0.64
121.00	G&VSOCWM 8%g 2%o 75%w 15%m	1.24
0.00	Gas in all fluid free pipe	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.13	5.50	7.45
Last Gas Rate	0.13	8.75	8.66
Max. Gas Rate	0.13	8.75	8.66



**TRILOBITE
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DRILL STEM TEST REPORT

TOOL DIAGRAM

Raymond Oil Co.

Dugan Trust B-2

P.O. Box 48788
Wichita, KS 67201

6/32/13W

Job Ticket: 21873

DST#: 2

ATTN: Clarke Sandberg

Test Start: 2005.03.16 @ 02:17:11

Tool Information

Drill Pipe:	Length: 4385.00 ft	Diameter: 3.25 inches	Volume: 44.99 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: 90.00 ft	Diameter: 2.88 inches	Volume: 0.73 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: 45.72 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 62000.00 lb
Depth to Top Packer:	4487.00 ft			Final 62000.00 lb
Depth to Bottom Packer:	4515.00 ft			
Interval between Packers:	28.00 ft			
Tool Length:	392.00 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			4460.00	
Shut In Tool	5.00			4465.00	
Hydraulic tool	5.00			4470.00	
Jars	5.00			4475.00	
Safety Joint	2.00			4477.00	
Packer	5.00			4482.00	28.00 Bottom Of Top Packer
Packer	5.00			4487.00	
Stubb	1.00			4488.00	
Perforations	10.00			4498.00	
Recorder	0.00	6753	Inside	4498.00	
Perforations	14.00			4512.00	
Recorder	0.00	13400	Outside	4512.00	
Blank Off Sub	3.00			4515.00	28.00 Tool Interval
Packer	1.00			4516.00	
Stubb	1.00			4517.00	
Perforations	14.00			4531.00	
Change Over Sub	1.00			4532.00	
Blank Spacing	315.00			4847.00	
Change Over Sub	1.00			4848.00	
Recorder	0.00	10330	Outside	4848.00	
Bullnose	3.00			4851.00	336.00 Bottom Packers & Anchor

Total Tool Length: 392.00



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6/32/13W

Job Ticket: 21873

DST#: 2

ATTN: Clarke Sandberg

Test Start: 2005.03.16 @ 02:17:11

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:

bbbl

Water Loss: 10.39 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5000.00 ppm

Filter Cake: 0.20 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
93.00	G&SOCM 30%g 10%o 25%w 35%m	0.756
124.00	G&SOCM 50%g 10%o 25%w 15%m	1.272
62.00	G&VSOCMM 30%g 5%o 50%w 15%m	0.636
121.00	G&VSOCMM 8%g 2%o 75%w 15%m	1.242
0.00	Gas in all fluid free pipe	0.000

Total Length: 400.00 ft

Total Volume: 3.906 bbl

Num Fluid Samples: 1

Num Gas Bombs: 0

Serial #: DC

Laboratory Name: Caraway

Laboratory Location: Liberal, KS

Recovery Comments:



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DRILL STEM TEST REPORT

GAS RATES

Raymond Oil Co.

Dugan Trust B-2

P.O. Box 48788
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6/32/13W

Job Ticket: 21873

DST#: 2

ATTN: Clarke Sandberg

Test Start: 2005.03.16 @ 02:17:11

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	60	0.13	5.50	7.45
2	10	0.13	2.50	6.33
2	20	0.13	4.00	6.89
2	30	0.13	5.00	7.26
2	40	0.13	6.50	7.82
2	50	0.13	7.50	8.20
2	60	0.13	8.75	8.66

Pressure vs. Time

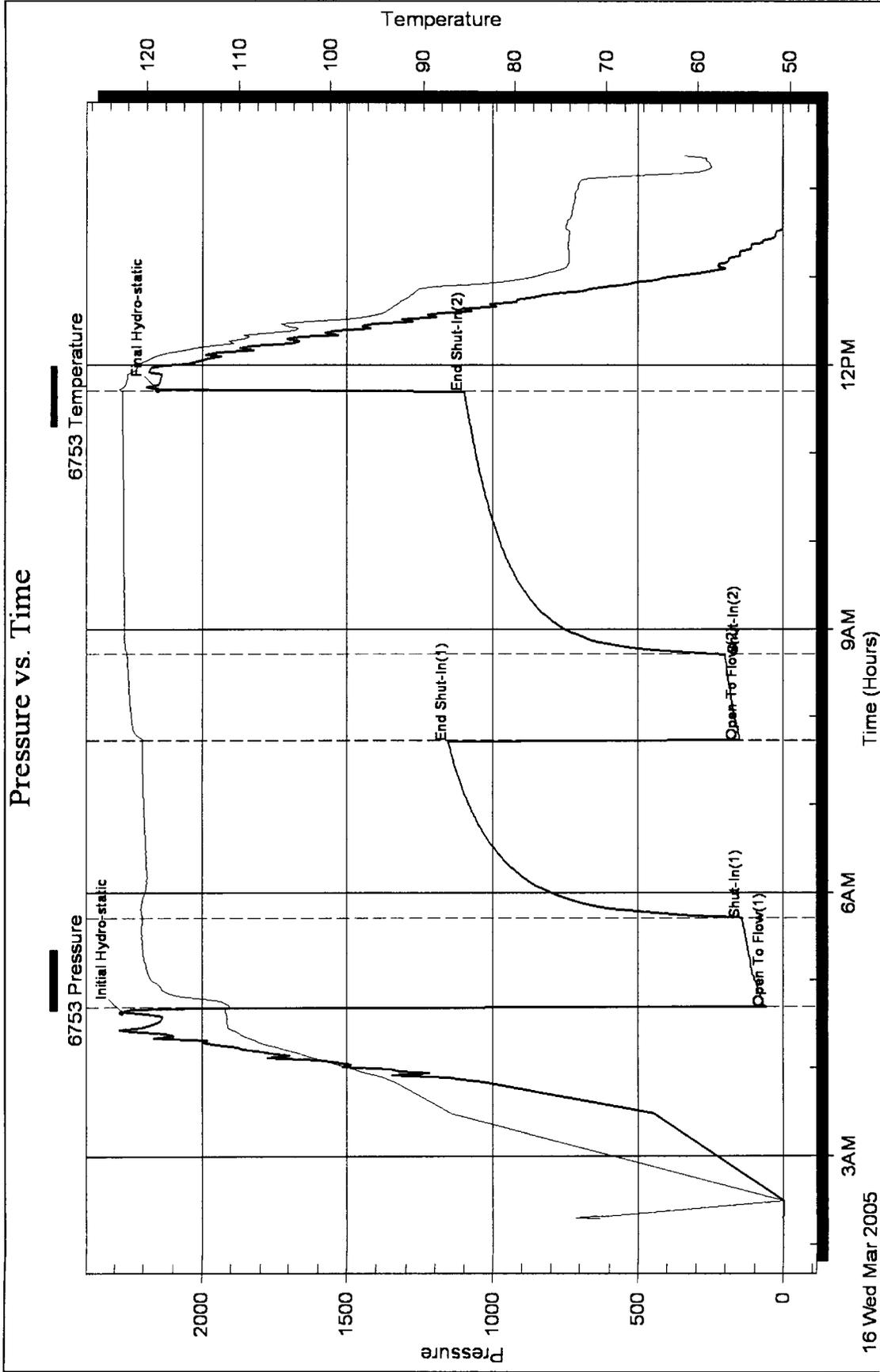


CHART PAGE

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

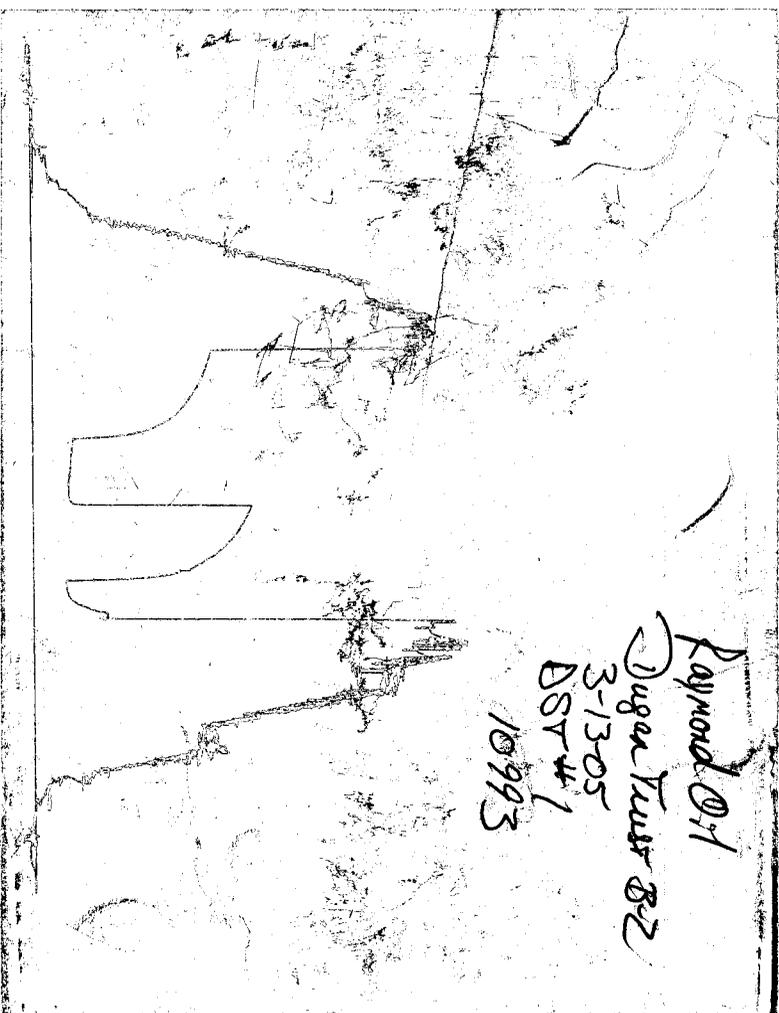


CHART PAGE

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

