

CONFIDENTIAL

15-067-21474 **CONFIDENTIAL**



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Prepared For: **OXY USA Inc**

P.O Box 2528
Liberal KS 67905

ATTN: Vern Schrag

13 27S 35W Grant KS

Ladner F-1

Start Date: 2001.07.07 @ 02:49:22

End Date: 2001.07.07 @ 07:10:37

Job Ticket #: 14220 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

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OCT 07 2002

FROM CONFIDENTIAL

OXY USA Inc

Ladner F-1

13 27S 35W Grant KS

DST # 1

Lower Morrow

2001.07.07



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

OXY USA Inc
P.O Box 2528
Liberal KS 67905

ATTN: Vern Schrag

Ladner F-1

13 27S 35W Grant KS

Job Ticket: 14220

DST#: 1

Test Start: 2001.07.07 @ 02:49:22

GENERAL INFORMATION:

Formation: **Lower Morrow**

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

Time Tool Opened: 00:00:00

Time Test Ended: 07:10:37

Interval: **5078.00 ft (KB) To 5172.00 ft (KB) (TVD)**

Total Depth: **5172.00 ft (KB) (TVD)**

Hole Diameter: **7.78 inches** Hole Condition: **Fair**

Test Type: **Conventional Bottom Hole**

Tester: **Jakki Krekiau**

Unit No: **17**

Reference Elevations: **3036.00 ft (KB)**

3023.00 ft (CF)

KB to GR/CF: **13.00 ft**

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Serial #: **3026**

Inside

Press@RunDepth: psig @ **5079.01 ft (KB)**

Start Date: **2001.07.07**

End Date:

2001.07.07

Start Time: **02:49:24**

End Time:

07:10:37

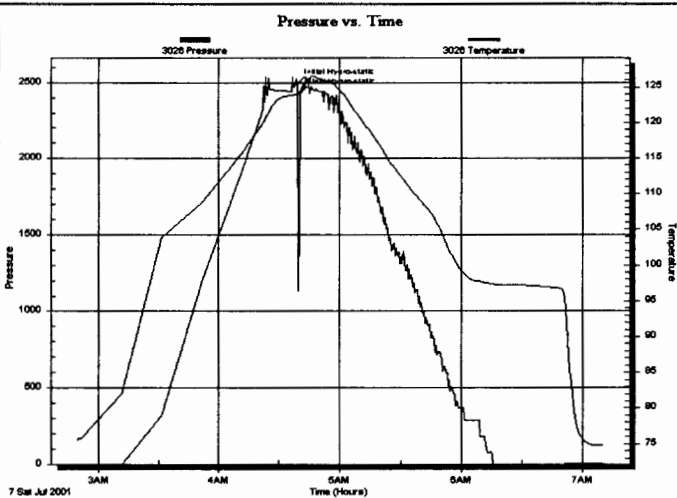
Capacity: **7000.00 psig**

Last Calib.: **2001.01.10**

Time On Btm: **2001.07.07 @ 04:39:07**

Time Off Btm: **2001.07.07 @ 04:40:22**

TEST COMMENT: IF- Packer failed tried again No help



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2491.93	124.06	Initial Hydro-static
2	2430.59	124.37	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
766.00	w atery drilg mud 100%	6.53

Gas Rates

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

DRILL STEM TEST REPORT

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TOOL DIAGRAM

OXY USA Inc

Ladner F-1

P.O Box 2528
Liberal KS 67905

13 27S 35W Grant KS

Job Ticket: 14220

DST#: 1

ATTN: Vern Schrag

Test Start: 2001.07.07 @ 02:49:22

Tool Information

Drill Pipe:	Length: 4454.00 ft	Diameter: 3.80 inches	Volume: 62.48 bbl	Tool Weight: 1800.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 30000.00 lb
Drill Collar:	Length: 631.00 ft	Diameter: 2.75 inches	Volume: 4.64 bbl	Weight to Pull Loose: 90000.00 lb
		Total Volume:	67.12 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	36.00 ft			String Weight: Initial 90000.00 lb
Depth to Top Packer:	5078.00 ft			Final 90000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	94.01 ft			
Tool Length:	123.01 ft			
Number of Packers:	2	Diameter: 6.75 inches		
Tool Comments:				

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Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
S.I. Tool	5.00			5054.00	RELEASED OCT 07 2002 FROM CONFIDENTIAL
Sampler	3.00			5057.00	
HMV	5.00			5062.00	
Jars	5.00			5067.00	
Safety Joint	2.00			5069.00	
Packer	5.00			5074.00	
Packer	4.00			5078.00	29.00 Bottom Of Top Packer
Stubb	1.00			5079.00	
Recorder	0.01	3026	Inside	5079.01	
Perforations	13.00			5092.01	
C.O. Sub	1.00			5093.01	
Blank Spacing	62.00			5155.01	
C.O. Sub	1.00			5156.01	
Perforations	13.00			5169.01	
Bullnose	3.00			5172.01	
				94.01	Bottom Packers & Anchor

Total Tool Length: 123.01



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

OXY USA Inc

Ladner F-1

P.O Box 2528
Liberal KS 67905

13 27S 35W Grant KS

Job Ticket: 14220

DST#: 1

ATTN: Vern Schrag

Test Start: 2001.07.07 @ 02:49:22

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: 45.00 sec/qt

Cushion Volume:

bbl

Water Loss: 9.16 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
766.00	w atery drilg mud 100%	6.529

Total Length: 766.00 ft

Total Volume: 6.529 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

DST Test Number: 1

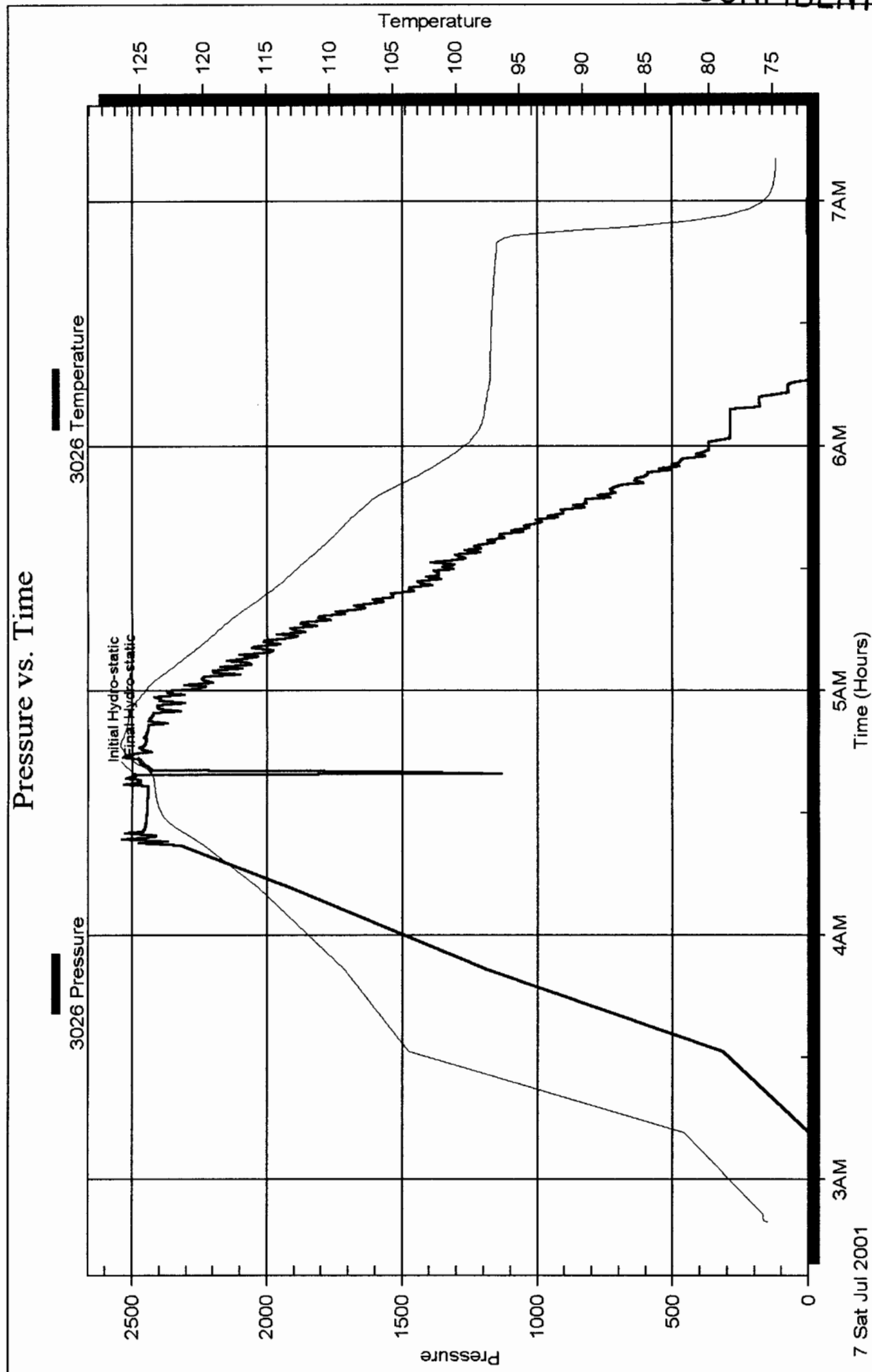
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Inside

Serial #: 3026

Pressure vs. Time



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Ref. No: 14220

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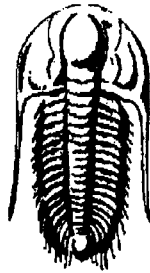
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**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Prepared For: **OXY USA Inc**

P.O Box 2528
Liberal KS 67905

ATTN: Vern Schrag

13 27S 35W Grant KS

Ladner F-1

Start Date: 2001.07.07 @ 08:18:21

End Date: 2001.07.07 @ 20:08:21

Job Ticket #: 14221 DST #: 2

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FROM CONFIDENTIAL

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

OXY USA Inc

Ladner F-1

13 27S 35W Grant KS

DST # 2

Lower Morrow

2001.07.07



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

OXY USA Inc
P.O Box 2528
Liberal KS 67905

ATTN: Vern Schrag

Ladner F-1

13 27S 35W Grant KS

Job Ticket: 14221

DST#: 2

Test Start: 2001.07.07 @ 08:18:21

GENERAL INFORMATION:

Formation: **Lower Morrow**
Deviated: **No** Whipstock:
Time Tool Opened: 10:09:51
Time Test Ended: 20:08:21

ft (KB) **RELEASED**
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Interval: **5033.00 ft (KB) To 5172.00 ft (KB) (TVD)**
Total Depth: **5172.00 ft (KB) (TVD)**
Hole Diameter: **7.78 inches** Hole Condition: **Fair**

Test Type: **Conventional Bottom Hole**
Tester: **Jakki kreklau**
Unit No: **17**

Reference Elevations: **3036.00 ft (KB)**
3023.00 ft (CF)
KB to GR/CF: **13.00 ft**

Serial #: 3026

Inside

Press@RunDepth: **512.58 psig @ 5034.01 ft (KB)**

Start Date: **2001.07.07**

End Date:

2001.07.07

Start Time: **08:18:23**

End Time:

20:08:21

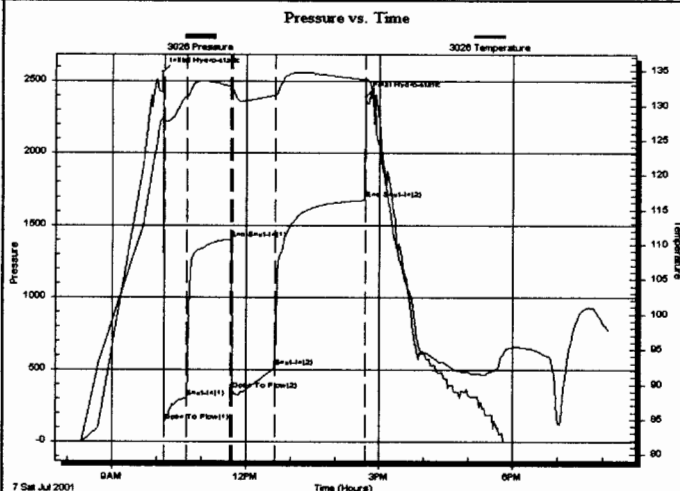
Capacity: **7000.00 psig**

Last Calib.: **2001.01.10**

Time On Btm: **2001.07.07 @ 10:07:51**

Time Off Btm: **2001.07.07 @ 14:41:06**

TEST COMMENT: IF- Strong blow BOB in 4 min
IS- 5 min to bled pressure built up to 14 inches of blow back
FF- BOB as soon as open gas to surface in 10 mins
FSI- built to BOB of blow back thru out FSI



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2561.28	128.10	Initial Hydro-static
2	137.49	128.03	Open To Flow (1)
32	302.79	131.25	Shut-In(1)
92	1400.15	132.80	End Shut-In(1)
94	355.99	132.66	Open To Flow (2)
151	512.58	131.51	Shut-In(2)
273	1673.90	133.77	End Shut-In(2)
274	2391.13	133.79	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
651.00	Gassy oily condensate 20%gas 80%o	4.92
372.00	gassy oily mud 60%oily 30%gas 10%	5.22
372.00	Gassy Oil Mud 70%o 20%m 10%g	5.22

Gas Rates

	Choke(inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.13	1.00	5.76
Last Gas Rate	0.13	19.00	12.50
Max. Gas Rate	0.13	19.00	12.50



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

TOOL DIAGRAM

OXY USA Inc

Ladner F-1

P.O Box 2528
Liberal KS 67905

13 27S 35W Grant KS

Job Ticket: 14221

DST#: 2

ATTN: Vern Schrag

Test Start: 2001.07.07 @ 08:18:21

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Tool Information

Drill Pipe: Length: 4406.00 ft Diameter: 3.80 inches Volume: 61.80 bbl Tool Weight: 1800.00 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: 631.00 ft Diameter: 2.75 inches Volume: 4.64 bbl Weight to Pull Loose: 1200000. lb
Total Volume: 66.44 bbl Tool Chased 0.00 ft
Drill Pipe Above KB: 33.00 ft String Weight: Initial 94000.00 lb
Depth to Top Packer: 5033.00 ft Final 100000.0 lb
Depth to Bottom Packer: ft
Interval between Packers: 139.01 ft
Tool Length: 168.01 ft
Number of Packers: 2 Diameter: 6.75 inches
Tool Comments:

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Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
S.I. Tool	5.00			5009.00	
Sampler	3.00			5012.00	
HMV	5.00			5017.00	
Jars	5.00			5022.00	
Safety Joint	2.00			5024.00	
Packer	5.00			5029.00	29.00 Bottom Of Top Packer
Packer	4.00			5033.00	
Stubb	1.00			5034.00	
Recorder	0.01	3026	Inside	5034.01	
Perforations	17.00			5051.01	
C.O. Sub	1.00			5052.01	
Blank Spacing	93.00			5145.01	
C.O. Sub	1.00			5146.01	
Perforations	23.00			5169.01	
Bullnose	3.00			5172.01	139.01 Bottom Packers & Anchor

Total Tool Length: 168.01

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TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

FLUID SUMMARY

OXY USA Inc

Ladner F-1

P.O Box 2528
Liberal KS 67905

13 27S 35W Grant KS

Job Ticket: 14221

DST#: 2

ATTN: Vern Schrag

Test Start: 2001.07.07 @ 08:18:21

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: 45.00 sec/qt

Cushion Volume:

bbl

Water Loss: 9.18 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
651.00	Gassy oily condensate 20%gas 80%o	4.916
372.00	gassy oily mud 60%oily 30%gas 10%m	5.218
372.00	Gassy Oil Mud 70%o 20%m 10%g	5.218

Total Length: 1395.00 ft

Total Volume: 15.352 bbl

Num Fluid Samples: 1

Num Gas Bombs: 1

Serial #:

Laboratory Name: Caraway

Laboratory Location: Liberal,KS

Recovery Comments:



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

GAS RATES

OXY USA Inc

Ladner F-1

P.O Box 2528
Liberal KS 67905

13 27S 35W Grant KS

Job Ticket: 14221

DST#: 2

ATTN: Vern Schrag

Test Start: 2001.07.07 @ 08:18:21

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Gas Rates Information

Temperature: 59 deg C
Relative Density: 0.65
Z Factor: 0.8

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Gas Rates Table

Flow Period	Elapsed Time	Choke (mm)	Pressure (kPaa)	Gas Rate (m ³ /d)
2	10	0.13	1.00	5.76
2	20	0.13	5.00	7.26
2	30	0.13	8.00	8.38
2	40	0.13	12.00	9.88
2	60	0.13	19.00	12.50

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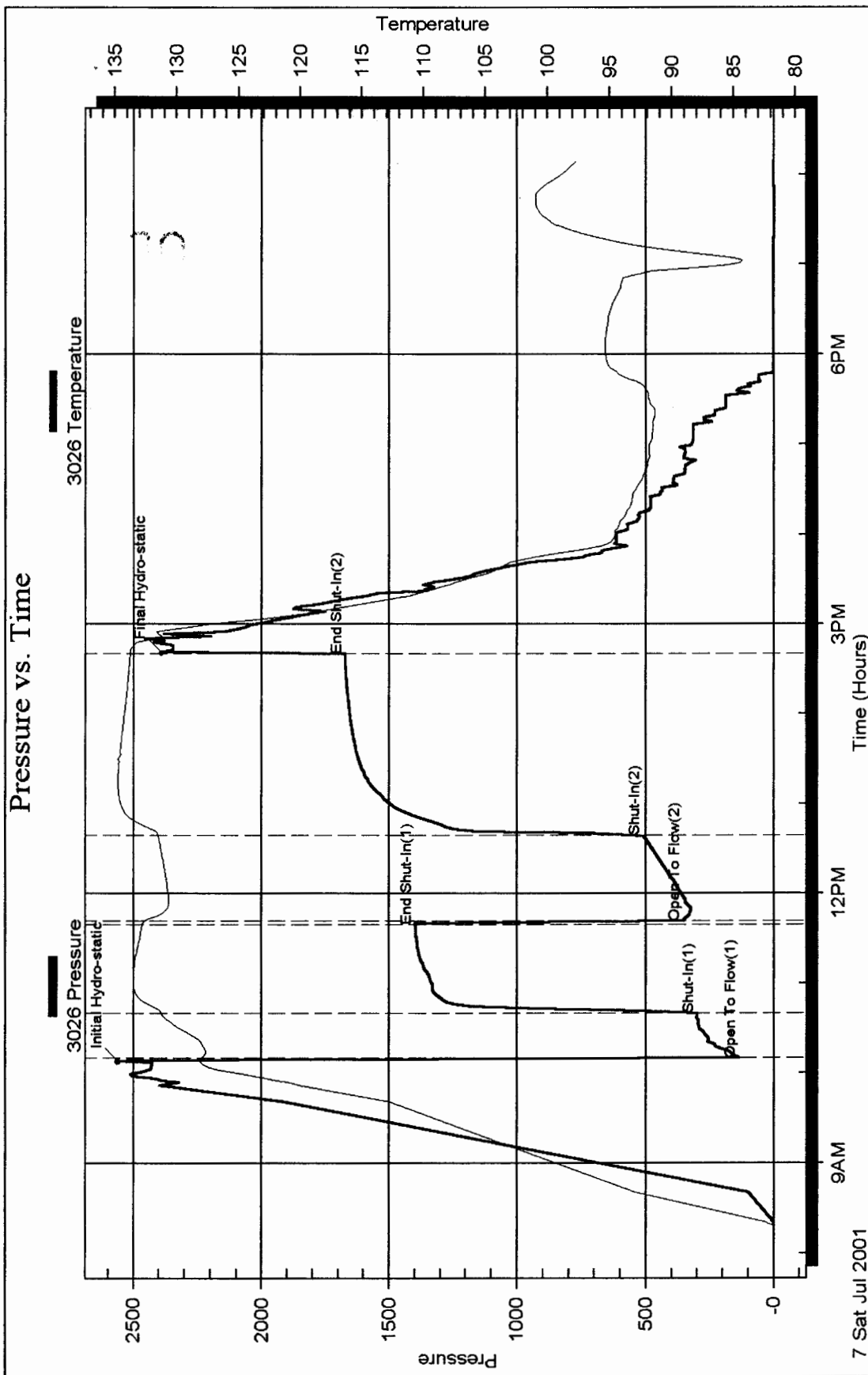
Serial #: 3026

Inside

OXY USA Inc

13 27S 35W Grant KS

DST Test Number: 2



Ref. No: 14221

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CALCULATED RECOVERY ANALYSIS

DST 2

TICKET 14221

SAMPLE #		TOTAL FEET	GAS %	FEET	OIL %	FEET	WATER %	FEET	MUD %	FEET
DRILL	1	372	10	37.2	80	297.6	0	0	20	74.4
PIPE	2	372	30	111.6	60	223.2	0	0	10	37.2
	3	0	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0
	6	0	0	0	0	0	0	0	0	0
WEIGHT	1	0	0	0	0	0	0	0	0	0
PIPE	2	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0
DRILL	1	651	20	130.2	80	520.8	0	0	0	0
COLLARS	2	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0
	4	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0	0	0
TOTAL		1395	0	279	0	1041.6	0	0	0	111.6

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BBL OIL= 9.952488 * HRS OPEN 1.5 = BBL/DAY 159.23981
 BBL WATER= 0 * = 0
 BBL MUD= 1.586952
 BBL GAS = 2.752614

