

DRILL STEM TEST REPORT

Prepared For: **Hess Oil Company**

PO Box 1009
McPherson, KS 67460

ATTN: Jamie Hess

7-16s-22w Ness KS

Ruby#1

Start Date: 2002.03.26 @ 13:53:54

End Date: 2002.03.26 @ 21:46:53

Job Ticket #: 15543 DST #: 1

Trilobite Testing, Inc

PO Box 362 Hays, KS 67601

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

Hess Oil Company

Ruby#1

7-16s-22w Ness KS

DST # 1

Cher Sd

2002.03.26



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Hess Oil Company
PO Box 1009
McPherson, KS 67460
ATTN: Jamie Hess

Ruby#1
7-16s-22w Ness KS
Job Ticket: 15543 **DST#: 1**
Test Start: 2002.03.26 @ 13:53:54

GENERAL INFORMATION:

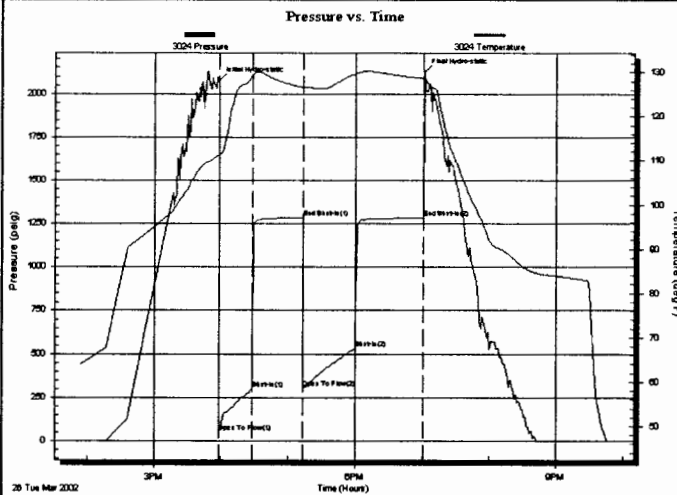
Formation: **Cher Sd**
Deviated: **No** Whipstock: ft (KB)
Time Tool Opened: 15:58:23
Time Test Ended: 21:46:53
Interval: **4315.00 ft (KB) To 4400.00 ft (KB) (TVD)**
Total Depth: 4400.00 ft (KB) (TVD)
Hole Diameter: 7.85 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole
Tester: Ray Schwager
Unit No: 16
Reference Elevations: 2440.00 ft (KB)
2435.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 3024

Inside

Press@RunDepth: 533.65 psig @ 4318.01 ft (KB) Capacity: 7000.00 psig
Start Date: 2002.03.26 End Date: 2002.03.26 Last Calib.: 2002.03.26
Start Time: 13:53:54 End Time: 21:46:53 Time On Btm: 2002.03.26 @ 15:57:53
Time Off Btm: 2002.03.26 @ 19:01:53

TEST COMMENT: IFF-weak to strong in 7 min
FFP-weak to strong in 12 min
times 30-45-45-60
got a weak surface blow on shut-in



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2074.75	111.33	Initial Hydro-static
1	47.87	111.42	Open To Flow (1)
30	300.31	129.27	Shut-In (1)
75	1283.11	126.63	End Shut-In (1)
76	303.58	126.62	Open To Flow (2)
122	533.65	129.63	Shut-In (2)
183	1282.09	128.62	End Shut-In (2)
184	2127.26	128.59	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
135.00	water RW .35 @ 46F	0.66
185.00	SOCMW 4%oil 86%water 10%mud	1.64
310.00	HO&GCMW 25%gas 30%oil 40%water	54.35d
310.00	HO&GCM 6%gas 35%oil 9%water 50% mud	4.35
270.00	MGO 5%gas 50%oil 10%water 35%mud	3.79

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Hess Oil Company
PO Box 1009
McPherson, KS 67460
ATTN: Jamie Hess

Ruby#1
7-16s-22w Ness KS
Job Ticket: 15543 **DST#: 1**
Test Start: 2002.03.26 @ 13:53:54

Tool Information

Drill Pipe:	Length: 4065.00 ft	Diameter: 3.80 inches	Volume: 57.02 bbl	Tool Weight: 2800.00 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: 240.00 ft	Diameter: 2.25 inches	Volume: 1.18 bbl	Weight to Pull Loose: 75000.00 lb
			<u>Total Volume: 58.20 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 66000.00 lb
Depth to Top Packer:	4315.00 ft			Final 71000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	85.02 ft			
Tool Length:	113.02 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
C.O. Sub	1.00			4288.00	
S.I. Tool	5.00			4293.00	
HMV	5.00			4298.00	
Jars	5.00			4303.00	
Safety Joint	2.00			4305.00	
Packer	5.00			4310.00	28.00 Bottom Of Top Packer
Packer	5.00			4315.00	
Stubb	1.00			4316.00	
Perforations	1.00			4317.00	
C.O. Sub	1.00			4318.00	
Recorder	0.01	3024	Inside	4318.01	
Blank Spacing	60.00			4378.01	
C.O. Sub	1.00			4379.01	
Recorder	0.01	11085	Outside	4379.02	
Perforations	18.00			4397.02	
Bullnose	3.00			4400.02	85.02 Bottom Packers & Anchor
Total Tool Length:	113.02				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Hess Oil Company
PO Box 1009
McPherson, KS 67460
ATTN: Jamie Hess

Ruby#1
7-16s-22w Ness KS
Job Ticket: 15543 **DST#: 1**
Test Start: 2002.03.26 @ 13:53:54

Mud and Cushion Information

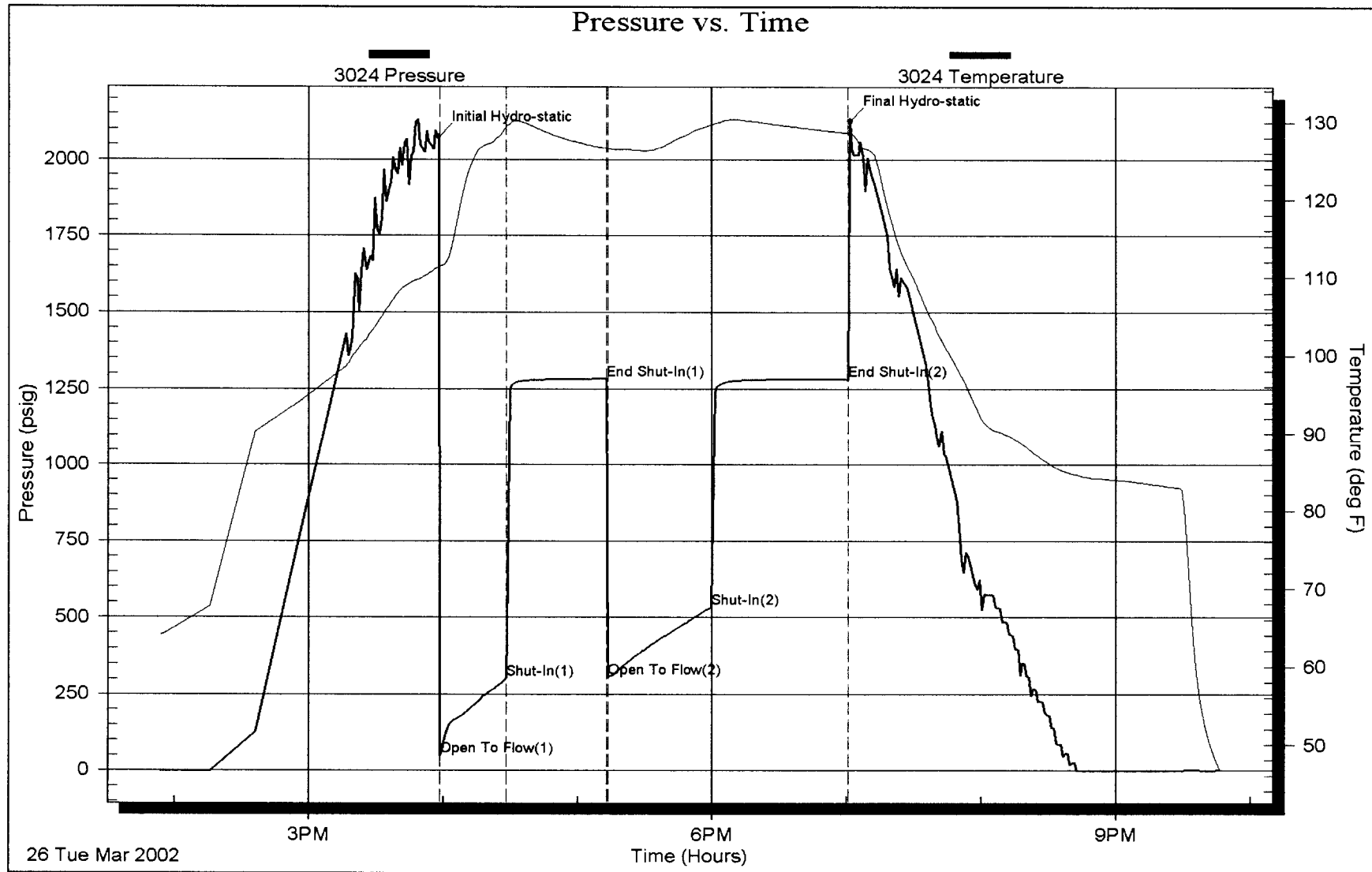
Mud Type: Gel Chem	Cushion Type:	Oil API: 36 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: 32000 ppm
Viscosity: 44.00 sec/qt	Cushion Volume: bbl	
Water Loss: 9.37 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 2000.00 ppm		
Filter Cake: 2.00 inches		

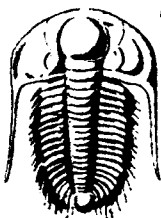
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
135.00	water RW .35 @ 46F	0.664
185.00	SOCMW 4%oil 86%water 10%mud	1.639
310.00	HO&GCMW 25%gas 30%oil 40%water 5%ml	4.348
310.00	HO&GCM 6%gas 35%oil 9%water 50%mud	4.348
270.00	MGO 5%gas 50%oil 10%water 35%mud	3.787

Total Length: 1210.00 ft Total Volume: 14.786 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:





TRILOBITE TESTING INC.

P.O. Box 362 • Hays, Kansas 67601

No 15543

Test Ticket

Well Name & No. Ruby #1 Test No. 1 Date 3-26-02
 Company Hess Oil Co Zone Tested Cher 5d.
 Address P.O. Box 1009 McPherson, Ks 67460 Elevation 2440 KB 2435 GL
 Co. Rep / Geo. Jamie Hess Cont. MALLARD rig 1 Est. Ft. of Pay - Por. - %
 Location: Sec. 7 Twp. 16^s Rge. 22^w Co. Ness State Ks
 No. of Copies Reg Distribution Sheet (Y, N) _____ Turnkey (Y, N) _____ Evaluation (Y, N) _____

Interval Tested 4315-4400 Initial Str Wt./Lbs. 66000 Unseated Str Wt./Lbs. 71000
 Anchor Length 85 Wt. Set Lbs. 25000 Wt. Pulled Loose/Lbs. 75000
 Top Packer Depth 4310 Tool Weight 2800
 Bottom Packer Depth 4315 Hole Size — 7 7/8" yes Rubber Size — 6 3/4" yes
 Total Depth 4400 Wt. Pipe Run - Drill Collar Run 240
 Mud Wt. 9.1 LCM - Vis. 44 WL 9.4 Drill Pipe Size 4 1/2 X H Ft. Run 4065
 Blow Description IFP - WEAK TO A STRONG BLOW IN 7 MIN
FFP - WEAK TO A STRONG BLOW IN 12 MIN

1210' Total Fluid

Recovery — Total Feet	DP	GIP	Ft. in DC	Ft. in DP
<u>270</u>	<u>MDG</u>	<u>-</u>	<u>240</u>	<u>970</u>
<u>310</u>	<u>HO+6CM.</u>		<u>5 %gas 50 %oil</u>	<u>10 %water 35 %mud</u>
<u>310</u>	<u>HO+6CMW</u>		<u>6 %gas 35 %oil</u>	<u>9 %water 50 %mud</u>
<u>185</u>	<u>50CMW</u>		<u>25 %gas 30 %oil</u>	<u>40 %water 5 %mud</u>
<u>135</u>	<u>WATER</u>		<u>%gas 4 %oil</u>	<u>86 %water 10 %mud</u>

BHT 128 °F Gravity 36 °API D@ 60 °F Corrected Gravity 36 °API
 RW .35 @ 46 °F Chlorides 32000 ppm Recovery Chlorides 2000 ppm System

	AK-1	Alpine	PSI Recorder No.	T-On Location
(A) Initial Hydrostatic Mud		<u>2032</u>	<u>3024</u>	<u>1245</u>
(B) First Initial Flow Pressure		<u>47</u>	(depth) <u>4318</u>	T-Started <u>1353</u>
(C) First Final Flow Pressure		<u>300</u>	PSI Recorder No. <u>11085</u>	T-Open <u>1550</u>
(D) Initial Shut-In Pressure		<u>1283</u>	(depth) <u>4379</u>	T-Pulled <u>1850</u>
(E) Second Initial Flow Pressure		<u>303</u>	PSI Recorder No. <u>-</u>	T-Out <u>2141</u>
(F) Second Final Flow Pressure		<u>533</u>	(depth) <u>-</u>	T-Off Location <u>0330</u>
(G) Final Shut-in Pressure		<u>1282</u>	PSI Initial Opening <u>30</u>	Test <u>800</u>
(Q) Final Hydrostatic Mud		<u>2014</u>	PSI Initial Shut-in <u>45</u>	Jars <u>200</u>
			Final Flow <u>45</u>	Safety Joint <u>50</u>
			Final Shut-in <u>60</u>	Straddle _____

TRILOBITE TESTING INC. SHALL NOT BE LIABLE FOR DAMAGE OF ANY KIND OF THE PROPERTY OR PERSONNEL OF THE ONE FOR WHOM A TEST IS MADE, OR FOR ANY LOSS SUFFERED OR SUSTAINED, DIRECTLY OR INDIRECTLY, THROUGH THE USE OF ITS EQUIPMENT, OR ITS STATEMENTS OR OPINION CONCERNING THE RESULTS OF ANY TEST. TOOLS LOST OR DAMAGED IN THE HOLE SHALL BE PAID FOR AT COST BY THE PARTY FOR WHOM THE TEST IS MADE.

Approved By Jamie Hess

Our Representative Ray Schwager Thank you

Circ. Sub _____
 Sampler _____
 Extra Packer _____
 Elec. Rec 150
 Mileage 45
 Other _____
 TOTAL PRICE 1245

Ruby #1
CALCULATED RECOVERY ANALYSIS

DST 1

TICKET 15543

SAMPLE #	TOTAL FEET	GAS		OIL		WATER		MUD		
		%	FEET	%	FEET	%	FEET	%	FEET	
DRILL	1	270	5	13.5	50	135	10	27	35	94.5
PIPE	2	310	6	18.6	35	108.5	9	27.9	50	155
	3	310	25	77.5	30	93	40	124	5	15.5
	4	80	0	0	4	3.2	86	68.8	10	8
	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	105	0	0	4	4.2	86	90.3	10	10.5
COLLARS	2	135	0	0	0	0	0	0	100	135
	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		1210	0	109.6	0	343.9	0	338	0	418.5

BBL OIL =	4.851072	*	HRS OPEN	1.25	=	BBL/DAY	93.14058
BBL WATER =	3.963861	*			=		76.10613
BBL MUD =	4.593555						
BBL GAS =	1.558512						

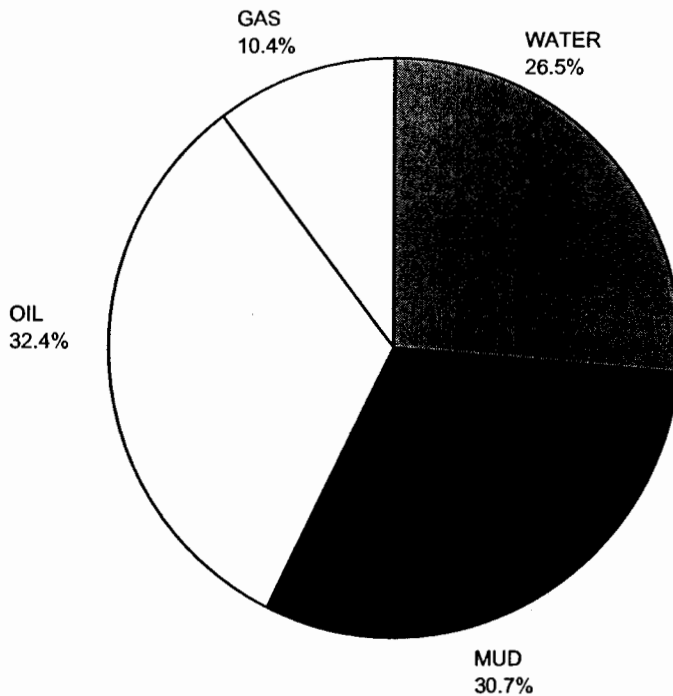


CHART PAGE

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

