



DRILL STEM TEST REPORT

Prepared For: **Palmer Oil**
PO Box 399
Garden City KS 67846

ATTN: Kevin Timsen

Brookover #8-5

8-25s-32w Finney,KS

Start Date: 2014.02.15 @ 10:57:15

End Date: 2014.02.15 @ 17:21:15

Job Ticket #: 56745 DST #: 1

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

Printed: 2014.02.18 @ 13:20:02



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Palmer Oil
PO Box 399
Garden City KS 67846
ATTN: Kevin Timsen

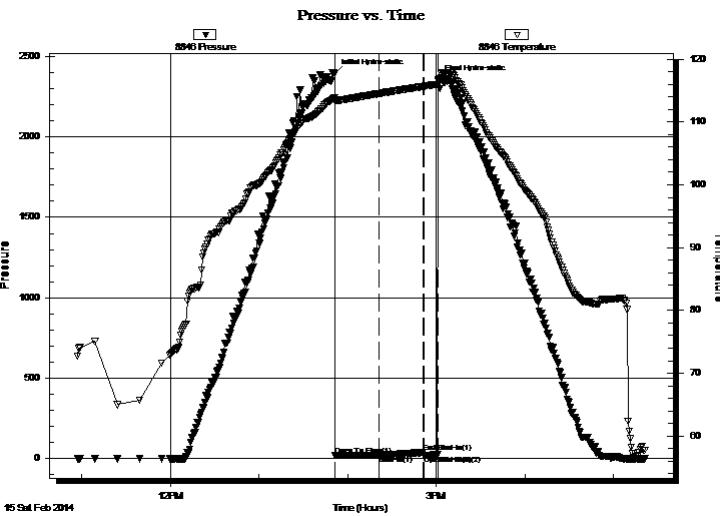
8-25s-32w Finney,KS
Brookover #8-5
Job Ticket: 56745 **DST#: 1**
Test Start: 2014.02.15 @ 10:57:15

GENERAL INFORMATION:

Formation: **Morrow**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 13:51:30
Time Test Ended: 17:21:15
Interval: **4804.00 ft (KB) To 4874.00 ft (KB) (TVD)**
Total Depth: 4874.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition:
Test Type: Conventional Bottom Hole (Initial)
Tester: Mike Roberts
Unit No: 65
Reference Elevations: 2899.00 ft (KB)
2888.00 ft (CF)
KB to GR/CF: 11.00 ft

Serial #: 8846 **Inside**
Press@RunDepth: 22.37 psig @ 4806.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.02.15 End Date: 2014.02.15 Last Calib.: 2014.02.15
Start Time: 10:57:15 End Time: 17:21:15 Time On Btm: 2014.02.15 @ 13:51:15
Time Off Btm: 2014.02.15 @ 15:01:30

TEST COMMENT: IF: Built to 1/8" blow and died in 20 min.
IS: No return blow
FF: No blow
FS: Pulled test



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2392.10	113.84	Initial Hydro-static
1	19.03	113.36	Open To Flow (1)
30	22.37	114.52	Shut-In(1)
60	38.88	115.67	End Shut-In(1)
61	22.47	115.69	Open To Flow (2)
70	22.78	116.02	Shut-In(2)
71	2354.34	116.58	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	mud 100% m	0.02

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Palmer Oil
PO Box 399
Garden City KS 67846
ATTN: Kevin Timsen

8-25s-32w Finney,KS
Brookover #8-5
Job Ticket: 56745 **DST#: 1**
Test Start: 2014.02.15 @ 10:57:15

Tool Information

Drill Pipe:	Length: 4563.00 ft	Diameter: 3.80 inches	Volume: 64.01 bbl	Tool Weight: 1500.00 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: 241.00 ft	Diameter: 2.25 inches	Volume: 1.19 bbl	Weight to Pull Loose: 90000.00 lb
			<u>Total Volume: 65.20 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial 72000.00 lb
Depth to Top Packer:	4804.00 ft			Final 72000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	81.00 ft			
Tool Length:	109.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			4777.00	
Shut In Tool	5.00			4782.00	
Hydraulic tool	5.00			4787.00	
Jars	5.00			4792.00	
Safety Joint	3.00			4795.00	
Packer	5.00			4800.00	28.00 Bottom Of Top Packer
Packer	4.00			4804.00	
Stubb	1.00			4805.00	
Perforations	1.00			4806.00	
Recorder	0.00	8846	Inside	4806.00	
Recorder	0.00	8737	Outside	4806.00	
Change Over Sub	1.00			4807.00	
Blank Spacing	62.00			4869.00	
Change Over Sub	1.00			4870.00	
Perforations	10.00			4880.00	
Bullnose	5.00			4885.00	81.00 Bottom Packers & Anchor
Total Tool Length:	109.00				



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FLUID SUMMARY

Palmer Oil
PO Box 399
Garden City KS 67846
ATTN: Kevin Timsen

8-25s-32w Finney,KS
Brookover #8-5
Job Ticket: 56745 **DST#: 1**
Test Start: 2014.02.15 @ 10:57:15

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	0 ppm
Viscosity: 48.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.37 in ³	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 1800.00 ppm			
Filter Cake: 2.00 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	mud 100% m	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments:

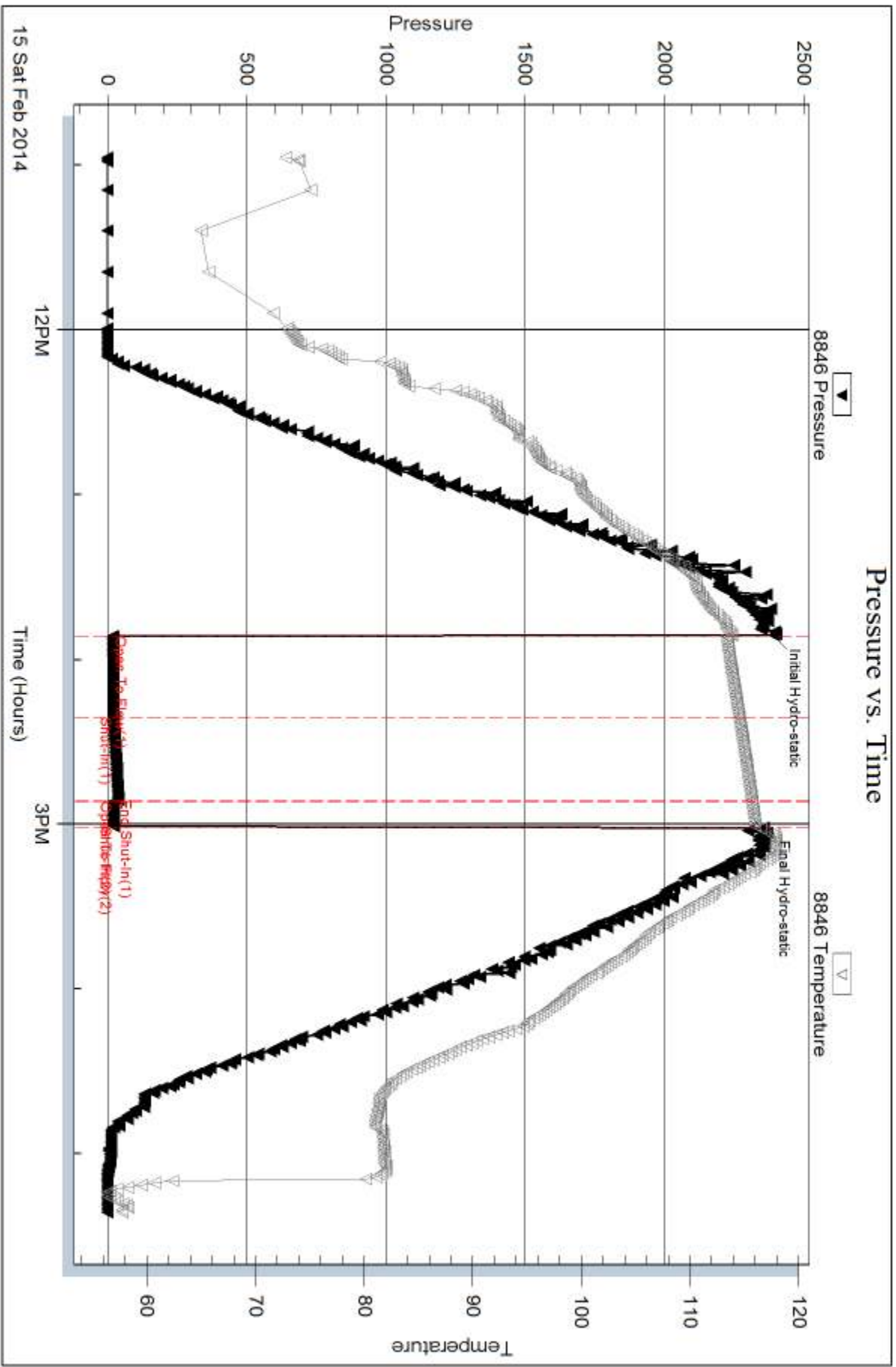
Serial #: 8846

Inside

Palmer Oil

Brookover #8-5

DST Test Number: 1

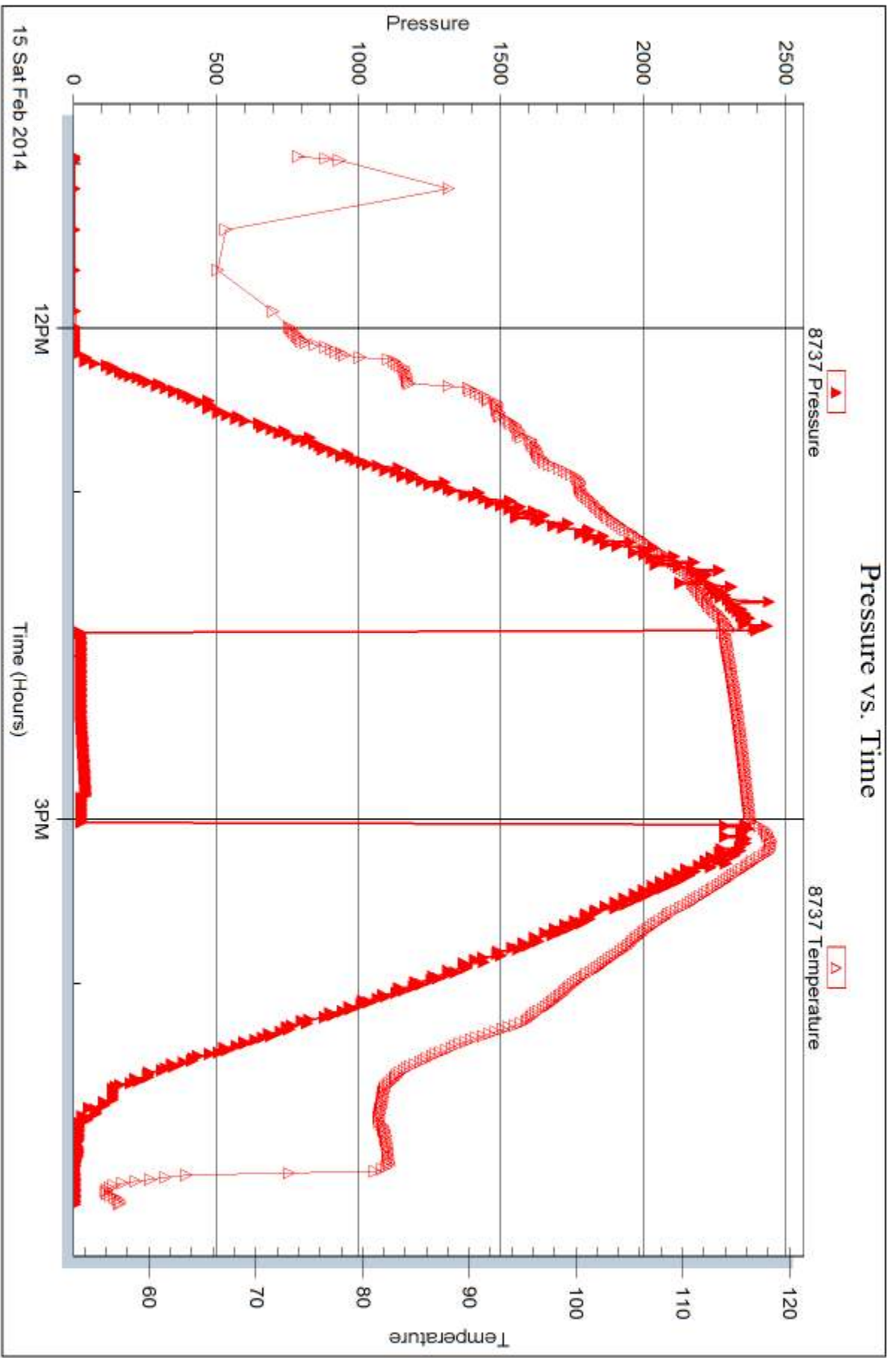


Serial #: 8737

Outside Palmer Oil

Brookover #8-5

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 56745

Printed: 2014.02.18 @ 13:20:04



DRILL STEM TEST REPORT

Prepared For: **Palmer Oil**
PO Box 399
Garden City KS 67846

ATTN: Kevin Timsen

Brookover #8-5

8-25s-32w Finney,KS

Start Date: 2014.02.16 @ 08:00:15
End Date: 2014.02.16 @ 16:12:45
Job Ticket #: 56746 DST #: 2

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

Printed: 2014.02.18 @ 13:19:16



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Palmer Oil
PO Box 399
Garden City KS 67846
ATTN: Kevin Timsen

8-25s-32w Finney,KS
Brookover #8-5
Job Ticket: 56746 **DST#: 2**
Test Start: 2014.02.16 @ 08:00:15

GENERAL INFORMATION:

Formation: **Morrow**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 10:09:00
Time Test Ended: 16:12:45
Interval: **4803.00 ft (KB) To 4905.00 ft (KB) (TVD)**
Total Depth: 4905.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Reset)
Tester: Mike Roberts
Unit No: 65
Reference Elevations: 2899.00 ft (KB)
2888.00 ft (CF)
KB to GR/CF: 11.00 ft

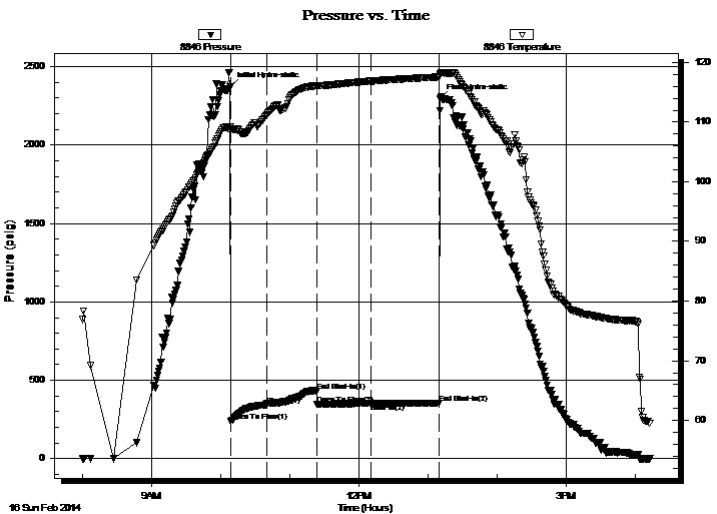
Serial #: 8846

Inside

Press@RunDepth: 352.78 psig @ 4807.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2014.02.16 End Date: 2014.02.16 Last Calib.: 2014.02.16
Start Time: 08:00:15 End Time: 16:12:45 Time On Btm: 2014.02.16 @ 10:08:15
Time Off Btm: 2014.02.16 @ 13:10:30

TEST COMMENT: IF:BOB in 1 min.
IS:Return blow built to 1/2" blow
FF:Built to 6" blow
FS:Return blow built to 1" blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2372.48	109.13	Initial Hydro-static
1	240.18	108.80	Open To Flow (1)
32	343.94	111.16	Shut-In(1)
75	430.94	116.08	End Shut-In(1)
76	348.43	116.07	Open To Flow (2)
122	352.78	116.85	Shut-In(2)
182	354.64	117.56	End Shut-In(2)
183	2296.32	118.05	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
61.00	ocgm 10%o 10%g 80%m	0.30
180.00	ocgm 10%o 30%g 60 %m	0.89
186.00	ocgm 10%o 40%g 50% m	2.61
124.00	ocm 2%o 98%m	1.74
62.00	mud 100%m	0.87

* Recovery from multiple tests

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (MMcf/d)
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**TRILOBITE
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DRILL STEM TEST REPORT

TOOL DIAGRAM

Palmer Oil
PO Box 399
Garden City KS 67846
ATTN: Kevin Timsen

8-25s-32w Finney,KS
Brookover #8-5
Job Ticket: 56746 **DST#: 2**
Test Start: 2014.02.16 @ 08:00:15

Tool Information

Drill Pipe:	Length: 4555.00 ft	Diameter: 3.80 inches	Volume: 63.89 bbl	Tool Weight: 1500.00 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: 241.00 ft	Diameter: 2.25 inches	Volume: 1.19 bbl	Weight to Pull Loose: 100000.0 lb
			<u>Total Volume: 65.08 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial 76000.00 lb
Depth to Top Packer:	4803.00 ft			Final 80000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	102.00 ft			
Tool Length:	130.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Change Over Sub	1.00			4776.00	
Shut In Tool	5.00			4781.00	
Hydraulic tool	5.00			4786.00	
Jars	5.00			4791.00	
Safety Joint	3.00			4794.00	
Packer	5.00			4799.00	28.00 Bottom Of Top Packer
Packer	4.00			4803.00	
Stubb	1.00			4804.00	
Perforations	3.00			4807.00	
Recorder	0.00	8846	Inside	4807.00	
Recorder	0.00	8737	Outside	4807.00	
Change Over Sub	1.00			4808.00	
Blank Spacing	94.00			4902.00	
Change Over Sub	1.00			4903.00	
Bullnose	2.00			4905.00	102.00 Bottom Packers & Anchor

Total Tool Length: 130.00



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PO Box 399
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ATTN: Kevin Timsen

8-25s-32w Finney,KS
Brookover #8-5
Job Ticket: 56746 **DST#: 2**
Test Start: 2014.02.16 @ 08:00:15

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API:	0 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	0 ppm
Viscosity: 55.00 sec/qt	Cushion Volume: bbl		
Water Loss: 6.38 in ³	Gas Cushion Type:		
Resistivity: 0.00 ohm.m	Gas Cushion Pressure: psig		
Salinity: 2000.00 ppm			
Filter Cake: 2.00 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
61.00	ocgm 10%o 10%g 80%m	0.300
180.00	ocgm 10%o 30%g 60 %m	0.885
186.00	ocgm 10%o 40%g 50% m	2.609
124.00	ocm 2%o 98%m	1.739
62.00	mud 100%m	0.870

Total Length: 613.00 ft Total Volume: 6.403 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:

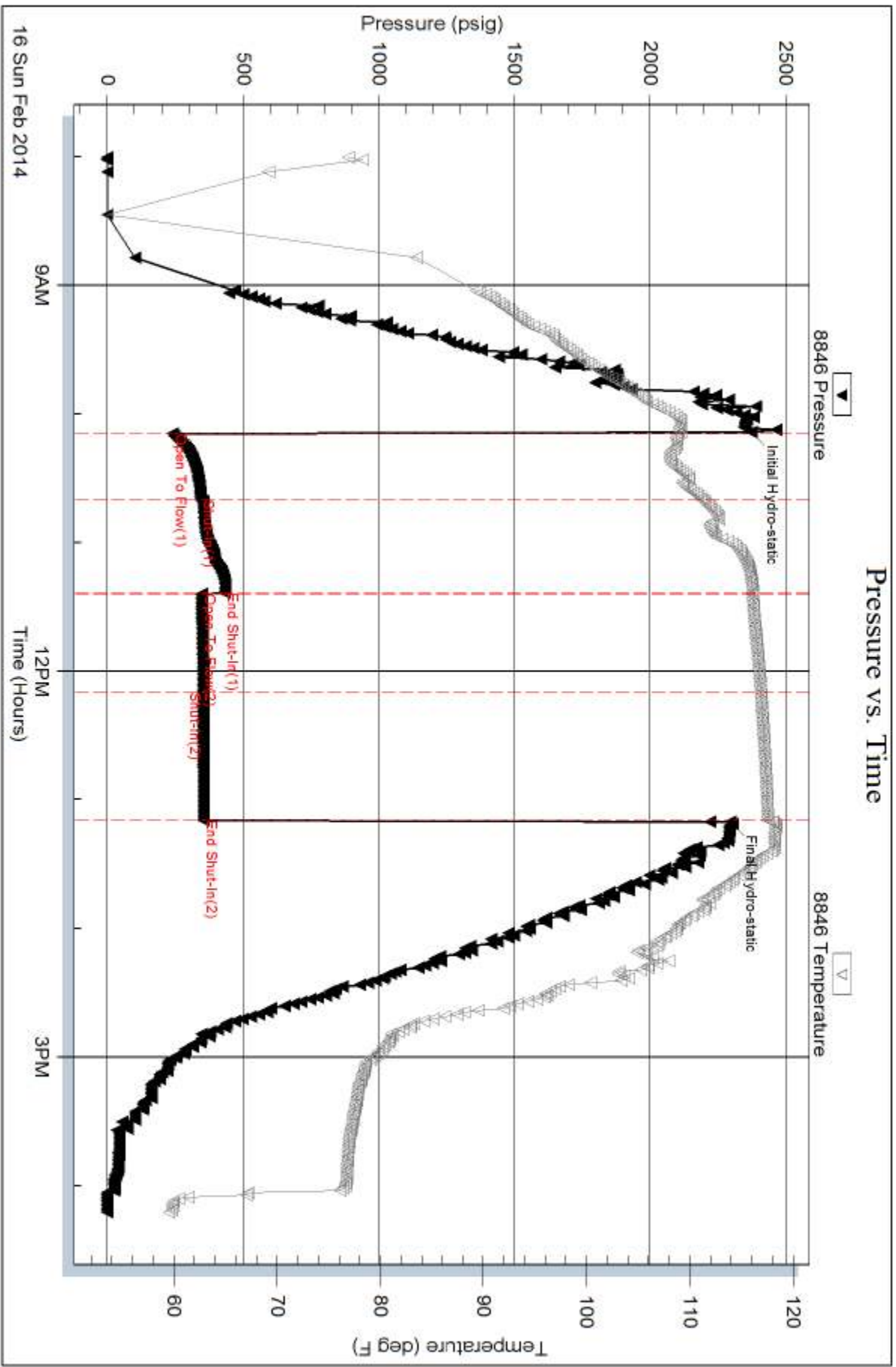
Serial #: 8846

Inside

Palmer Oil

Brookover #8-5

DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 56746

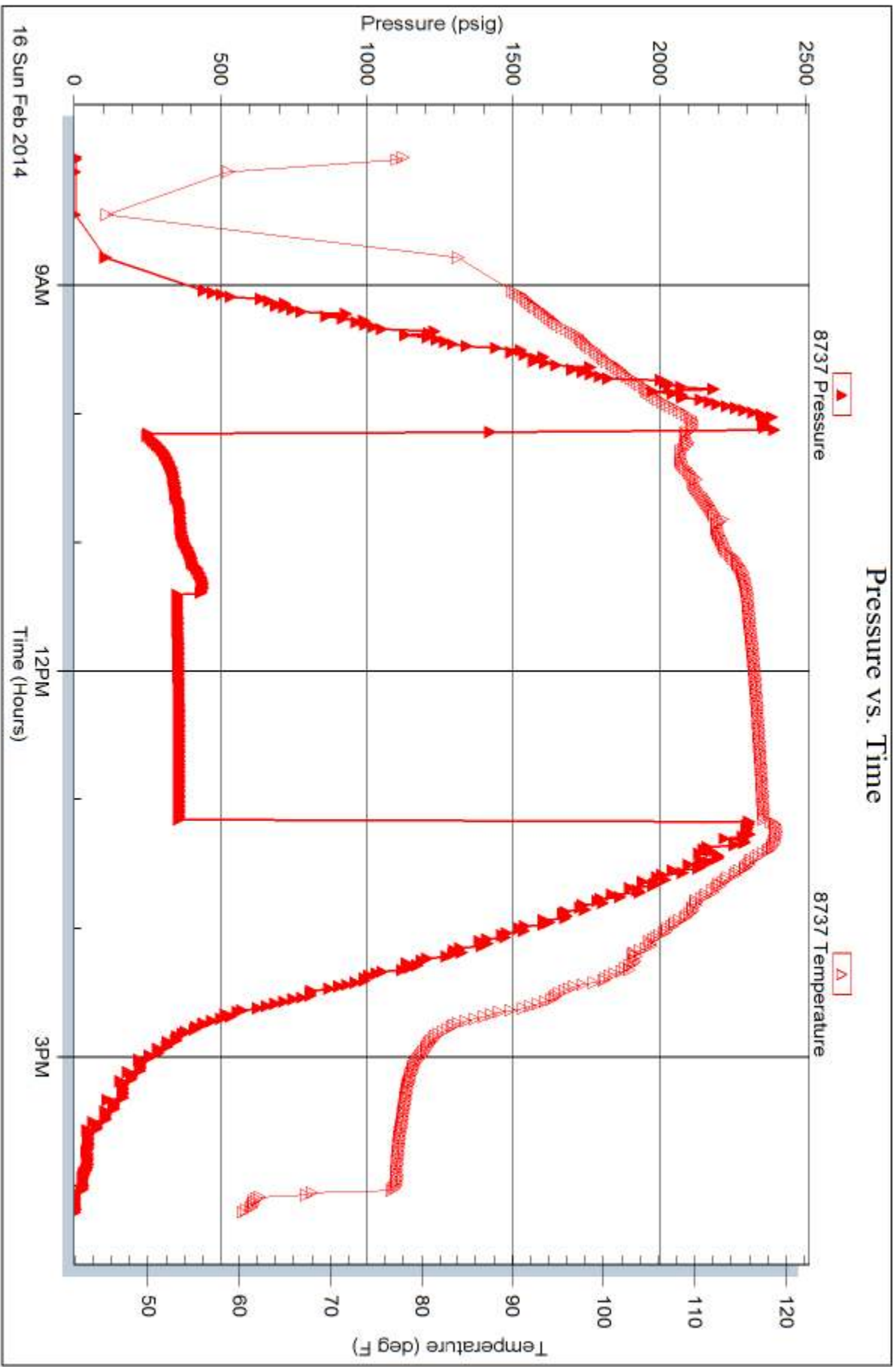
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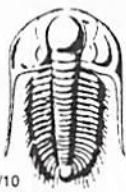
Serial #: 8737

Outside Palmer Oil

Brookover #8-5

DST Test Number: 2





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 56745

Well Name & No. Brookover ~~#~~ #8-5 Test No. 1 Date 2-15-14
 Company Palmer Oil Elevation 2899 KB 2888 GL
 Address 3118 N. Cummings Rd P.O. Box 399 Garden City KS 67846
 Co. Rep / Geo. Kevin T. mson Rig Duke #5
 Location: Sec. 8 Twp. 25 Rge. 32 Co. Finney State KS

Interval Tested 4804-4874 Zone Tested Morrow
 Anchor Length 70 Drill Pipe Run 4563 Mud Wt. 9.4
 Top Packer Depth ~~4799~~ Drill Collars Run 241 Vis 48
 Bottom Packer Depth 4804 Wt. Pipe Run 0 WL 6.4
 Total Depth 4874 Chlorides 1800 ppm System LCM 2
 Blow Description IF: Built to 1/8" Blow & Died in 20 Min
IS: NO Return Blow
FF: NO Blow
FS: Pulled Test

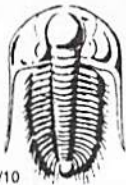
Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>MUD 100% to 101</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 5 BHT 120 Gravity — API RW — @ — ° F Chlorides — ppm

(A) Initial Hydrostatic <u>2392</u>	<input checked="" type="checkbox"/> Test <u>1250</u>	T-On Location <u>08:20</u>
(B) First Initial Flow <u>19</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>10:57</u>
(C) First Final Flow <u>22</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>13:51</u>
(D) Initial Shut-In <u>38</u>	<input checked="" type="checkbox"/> Circ Sub <u>NC</u>	T-Pulled <u>15:01</u>
(E) Second Initial Flow <u>22</u>	<input checked="" type="checkbox"/> Hourly Standby <u>2 wait on short trip</u>	T-Out <u>17:21</u>
(F) Second Final Flow <u>Pulled</u>	<input checked="" type="checkbox"/> Mileage <u>88 RT 136.40/-</u>	Comments _____
(G) Final Shut-In <u>Pulled</u>	<input type="checkbox"/> Sampler _____	_____
(H) Final Hydrostatic <u>2354</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Packer _____
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Extra Copies _____
Final Flow <u>10</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Shut-In <u>Pulled</u>	<input type="checkbox"/> Day Standby _____	Total <u>1711.40</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1711.40</u>	

Approved By _____ Our Representative Mike Rohut

Trilobite Testing Inc. shall not be liable for damaged 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.



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 56746

Well Name & No. Brookover #8-5 Test No. 2 Date 2-16-14
 Company Palmer Oil Elevation 2899 KB 2888 GL
 Address 3118 Cummings Rd. P.O. Box 399 Garden City KS 67846
 Co. Rep / Geo. Kevin Timson Rig Duke #5
 Location: Sec. 8 Twp. 25 Rge. 32 Co. Finney State KS

Interval Tested 4803-4905 Zone Tested Morrow
 Anchor Length 102 Drill Pipe Run 4555 Mud Wt. 9.3
 Top Packer Depth 4798 Drill Collars Run 241 Vis 55
 Bottom Packer Depth 4803 Wt. Pipe Run φ WL 6.4
 Total Depth 4905 Chlorides 2000 ppm System LCM 2

Blow Description IF: BOB in 1 Min
IS: Return Built to 1/2" Blow
FF: Built to 6" Blow
FS: Return Blow Built to 1" Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>62</u>	<u>MUD</u>			<u>100</u>	
<u>124</u>	<u>OCM</u>		<u>2</u>	<u>98</u>	
<u>186</u>	<u>DCgm</u>	<u>40</u>	<u>10</u>	<u>50</u>	
<u>180</u>	<u>OCgm</u>	<u>30</u>	<u>10</u>	<u>60</u>	
<u>61</u>	<u>OCgm</u>	<u>10</u>	<u>10</u>	<u>80</u>	

Rec Total 613 BHT 117 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 2372 Test 1250 T-On Location 07:10
 (B) First Initial Flow 240 Jars 250 T-Started 08:00
 (C) First Final Flow 343 Safety Joint 75 T-Open 10:07
 (D) Initial Shut-In 430 Circ Sub NC T-Pulled 13:07
 (E) Second Initial Flow 348 Hourly Standby T-Out 14:12
 (F) Second Final Flow 352 Mileage BBRT 136.40/- Comments _____
 (G) Final Shut-In 354 Sampler _____
 (H) Final Hydrostatic 2294 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Extra Recorder _____ Sub Total 0
 Day Standby _____ Total 1711.40
 Accessibility _____ MP/DST Disc't _____

Initial Open 30
 Initial Shut-In 45
 Final Flow 45
 Final Shut-In 60
 Sub Total 1711.40

Approved By _____ Our Representative Mike Roberts

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