



DRILL STEM TEST REPORT

Prepared For: **Black Diamond Oil, Inc.**

PO Box 641
Hays KS 67601

ATTN: Jeff Lawler

Hughes #1

21-8s-27w Sheridan,KS

Start Date: 2015.01.08 @ 15:20:00

End Date: 2015.01.08 @ 22:54:30

Job Ticket #: 53836 DST #: 1

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2015.01.12 @ 09:05:49



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Black Diamond Oil, Inc.

21-8s-27w Sheridan,KS

PO Box 641
Hays KS 67601

Hughes #1

Job Ticket: 53836

DST#: 1

ATTN: Jeff Lawler

Test Start: 2015.01.08 @ 15:20:00

GENERAL INFORMATION:

Formation: **Ft. Scott**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 17:39:15

Time Test Ended: 22:54:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Brett Dickinson

Unit No: 59

Interval: 4210.00 ft (KB) To 4255.00 ft (KB) (TVD)

Reference Elevations: 2587.00 ft (KB)

Total Depth: 4255.00 ft (KB) (TVD)

2582.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8957 Inside

Press@RunDepth: 24.36 psig @ 4211.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.08 End Date: 2015.01.08

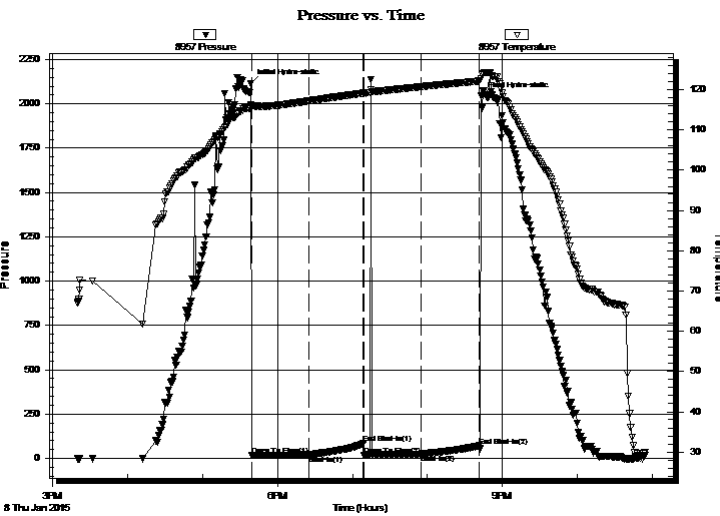
Last Calib.: 2015.01.08

Start Time: 15:20:05 End Time: 22:54:29

Time On Btm: 2015.01.08 @ 17:38:45

Time Off Btm: 2015.01.08 @ 20:43:00

TEST COMMENT: IF-1/4" blow died in 25 min
IS- No blow
FF- No blow Flush tool No blow
FS- No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2114.52	116.20	Initial Hydro-static
1	16.35	115.70	Open To Flow (1)
46	19.89	117.18	Shut-In(1)
90	83.65	119.11	End Shut-In(1)
91	19.34	119.12	Open To Flow (2)
136	24.36	120.73	Shut-In(2)
183	71.00	122.12	End Shut-In(2)
185	2042.93	122.83	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	VSOCM 2%O 98%M	0.10

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond Oil, Inc.

21-8s-27w Sheridan,KS

PO Box 641
Hays KS 67601

Hughes #1

Job Ticket: 53836

DST#: 1

ATTN: Jeff Lawler

Test Start: 2015.01.08 @ 15:20:00

Tool Information

Drill Pipe:	Length: 4089.00 ft	Diameter: 3.80 inches	Volume: 57.36 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 55000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	19.00 ft			String Weight: Initial 40000.00 lb
Depth to Top Packer:	4210.00 ft			Final 40000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	45.00 ft			
Tool Length:	65.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4195.00	
Hydraulic tool	5.00			4200.00	
Packer	5.00			4205.00	20.00 Bottom Of Top Packer
Packer	5.00			4210.00	
Packer - Shale	0.00			4210.00	
Stubb	1.00			4211.00	
Recorder	0.00	8957	Inside	4211.00	
Recorder	0.00	8736	Outside	4211.00	
Perforations	7.00			4218.00	
Change Over Sub	1.00			4219.00	
Drill Pipe	32.00			4251.00	
Change Over Sub	1.00			4252.00	
Bullnose	3.00			4255.00	45.00 Bottom Packers & Anchor

Total Tool Length: 65.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond Oil, Inc.

21-8s-27w Sheridan,KS

PO Box 641
Hays KS 67601

Hughes #1

Job Ticket: 53836

DST#: 1

ATTN: Jeff Lawler

Test Start: 2015.01.08 @ 15:20:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 10.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 9.18 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	VSOCM 2%O 98%M	0.098

Total Length: 20.00 ft Total Volume: 0.098 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

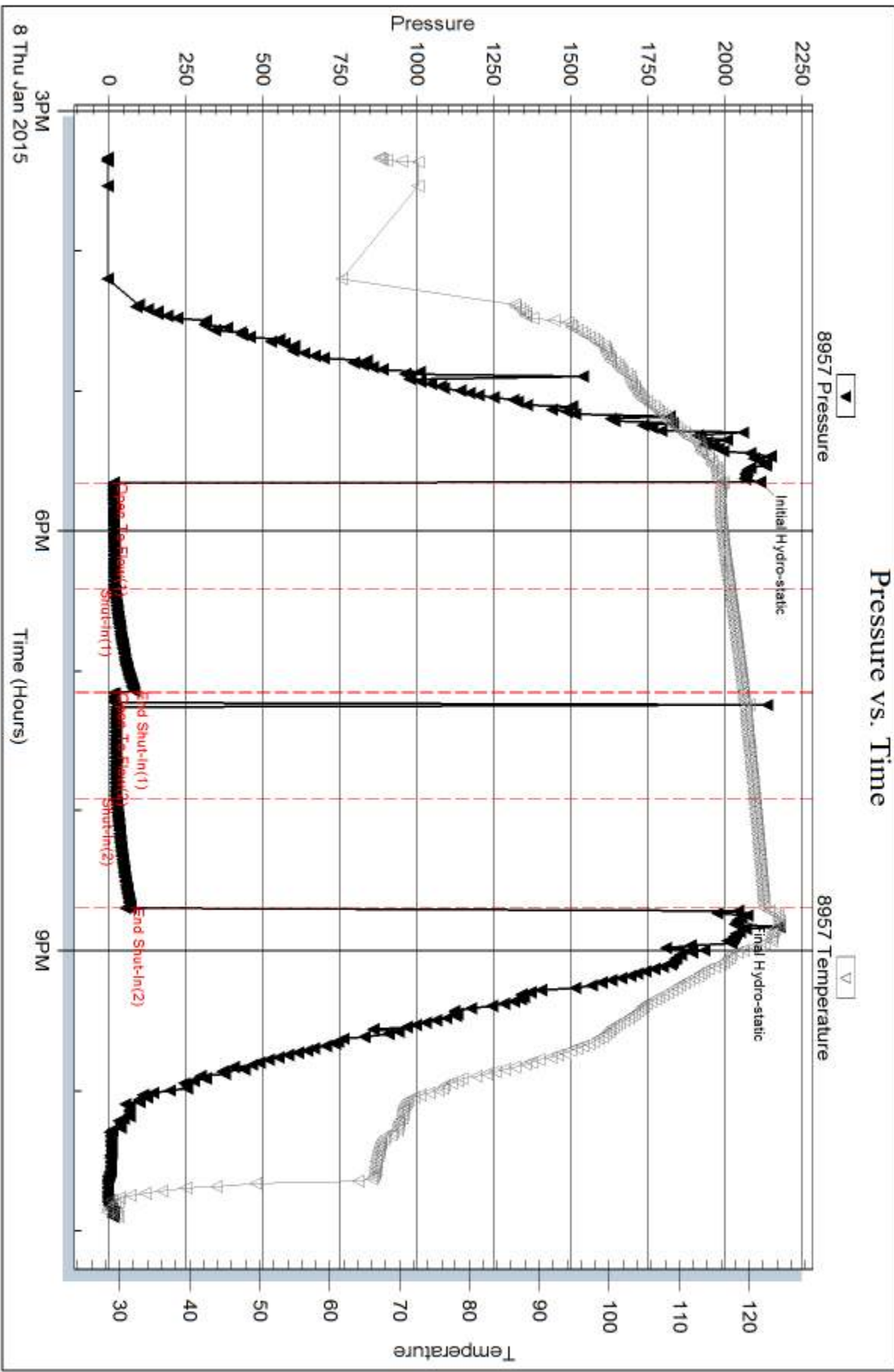
Serial #: 8957

Inside

Black Diamond Oil, Inc.

Hughes #1

DST Test Number: 1

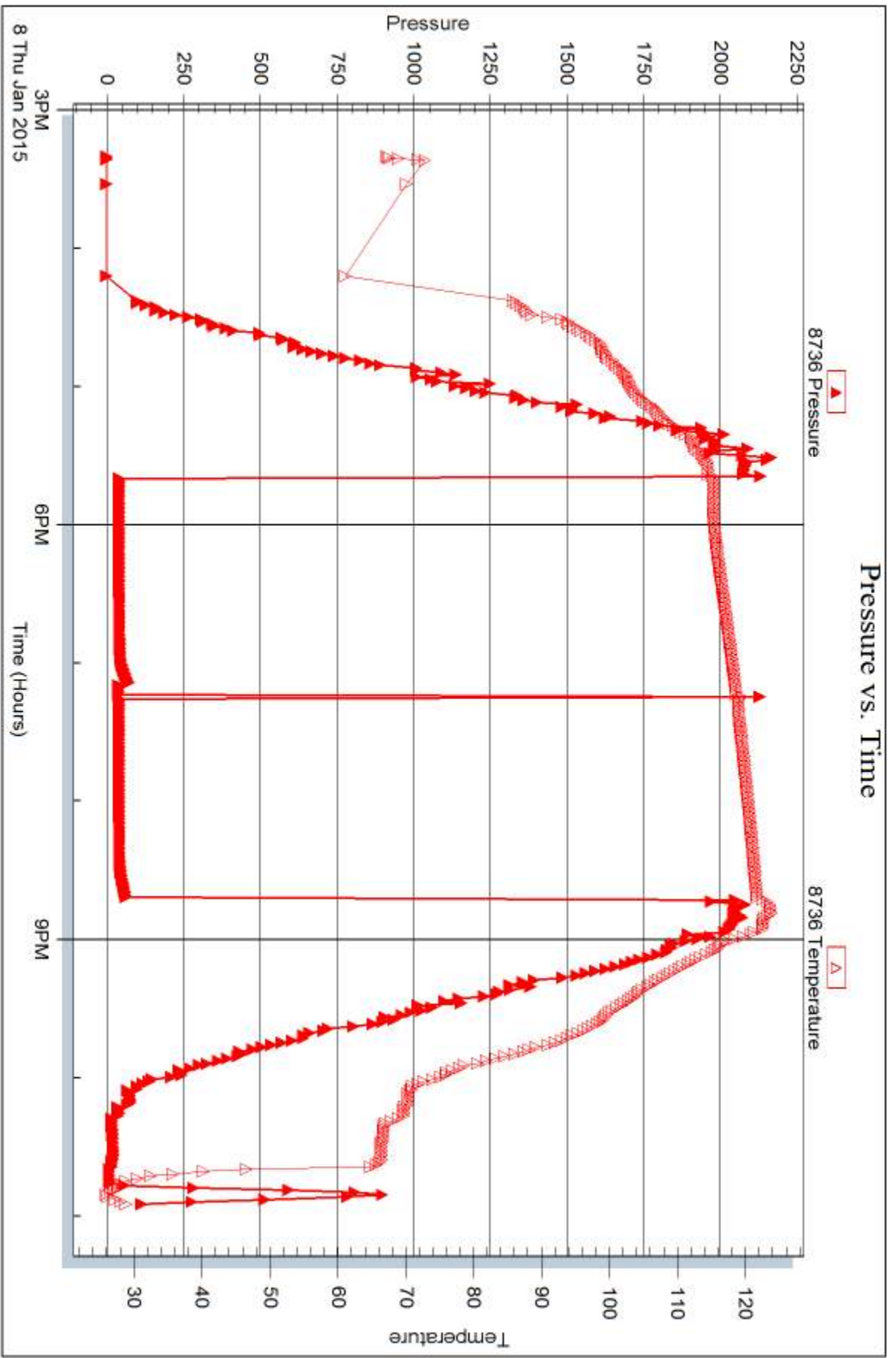


Serial #: 8736

Outside Black Diamond Oil, Inc.

Hughes #1

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 53836

Printed: 2015.01.12 @ 09:05:50



DRILL STEM TEST REPORT

Prepared For: **Black Diamond Oil, Inc.**

PO Box 641
Hays KS 67601

ATTN: Jeff Lawler

Hughes #1

21-8s-27w Sheridan,KS

Start Date: 2015.01.09 @ 18:50:00

End Date: 2015.01.10 @ 04:28:45

Job Ticket #: 53837 DST #: 2

Trilobite Testing, Inc
1515 Commerce Parkway Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

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TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Black Diamond Oil, Inc.

21-8s-27w Sheridan,KS

PO Box 641
Hays KS 67601

Hughes #1

Job Ticket: 53837

DST#: 2

ATTN: Jeff Lawler

Test Start: 2015.01.09 @ 18:50:00

GENERAL INFORMATION:

Formation: **KC "E-J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 21:22:30

Time Test Ended: 04:28:45

Test Type: Conventional Straddle (Reset)

Tester: Brett Dickinson

Unit No: 59

Interval: 3827.00 ft (KB) To 3971.00 ft (KB) (TVD)

Reference Elevations: 2587.00 ft (KB)

Total Depth: 4400.00 ft (KB) (TVD)

2582.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 8957

Inside

Press@RunDepth: 112.33 psig @ 3828.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2015.01.09

End Date:

2015.01.10

Last Calib.: 2015.01.10

Start Time: 18:50:05

End Time:

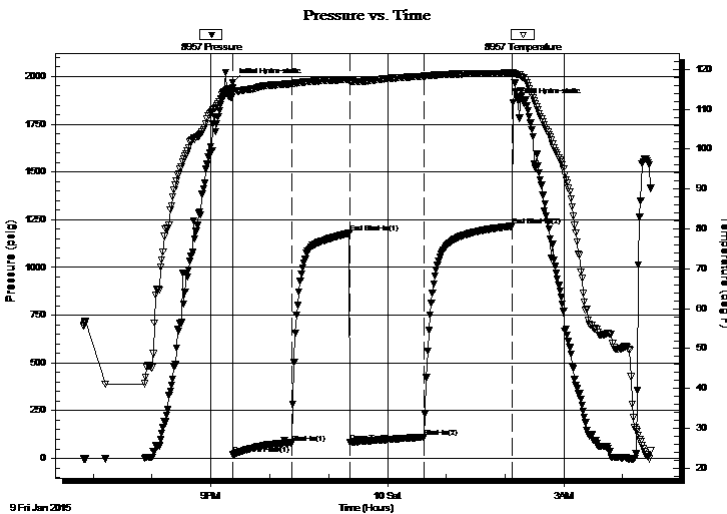
04:28:45

Time On Btm: 2015.01.09 @ 21:22:00

Time Off Btm: 2015.01.10 @ 02:08:30

TEST COMMENT: IF-6" blow
IS-No blow
FF-5" blow
FS-No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1967.97	115.33	Initial Hydro-static
1	19.29	114.46	Open To Flow (1)
61	81.69	116.40	Shut-In(1)
120	1181.22	117.47	End Shut-In(1)
120	84.96	116.85	Open To Flow (2)
196	112.33	118.31	Shut-In(2)
286	1216.38	119.09	End Shut-In(2)
287	1863.31	119.27	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
180.00	MCW 60%W 40%M	1.43
30.00	Mud	0.42

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Black Diamond Oil, Inc.

21-8s-27w Sheridan,KS

PO Box 641
Hays KS 67601

Hughes #1

Job Ticket: 53837

DST#: 2

ATTN: Jeff Lawler

Test Start: 2015.01.09 @ 18:50:00

Tool Information

Drill Pipe:	Length: 3700.00 ft	Diameter: 3.80 inches	Volume: 51.90 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.70 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 120.00 ft	Diameter: 2.25 inches	Volume: 0.59 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	13.00 ft			String Weight: Initial 40000.00 lb
Depth to Top Packer:	3827.00 ft			Final 41000.00 lb
Depth to Bottom Packer:	3971.00 ft			
Interval between Packers:	144.00 ft			
Tool Length:	586.00 ft			
Number of Packers:	3	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
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Shut In Tool	5.00			3812.00	
Hydraulic tool	5.00			3817.00	
Packer	5.00			3822.00	20.00 Bottom Of Top Packer
Packer	5.00			3827.00	
Packer - Shale	0.00			3827.00	
Stubb	1.00			3828.00	
Recorder	0.00	8957	Inside	3828.00	
Recorder	0.00	8736	Outside	3828.00	
Perforations	1.00			3829.00	
Change Over Sub	1.00			3830.00	
Drill Pipe	124.00			3954.00	
Change Over Sub	1.00			3955.00	
Perforations	12.00			3967.00	
Blank Spacing	4.00			3971.00	144.00 Tool Interval
Packer	5.00			3976.00	
Perforations	2.00			3978.00	
Recorder	0.00	8934	Below	3978.00	
Change Over Sub	1.00			3979.00	
Drill Pipe	410.00			4389.00	
Change Over Sub	1.00			4390.00	
Bullnose	3.00			4393.00	422.00 Bottom Packers & Anchor

Total Tool Length: 586.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Black Diamond Oil, Inc.

21-8s-27w Sheridan,KS

PO Box 641
Hays KS 67601

Hughes #1

Job Ticket: 53837

DST#: 2

ATTN: Jeff Lawler

Test Start: 2015.01.09 @ 18:50:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

deg API

Mud Weight: 10.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 53.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 8.78 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
180.00	MCW 60%W 40%M	1.432
30.00	Mud	0.421

Total Length: 210.00 ft Total Volume: 1.853 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8957

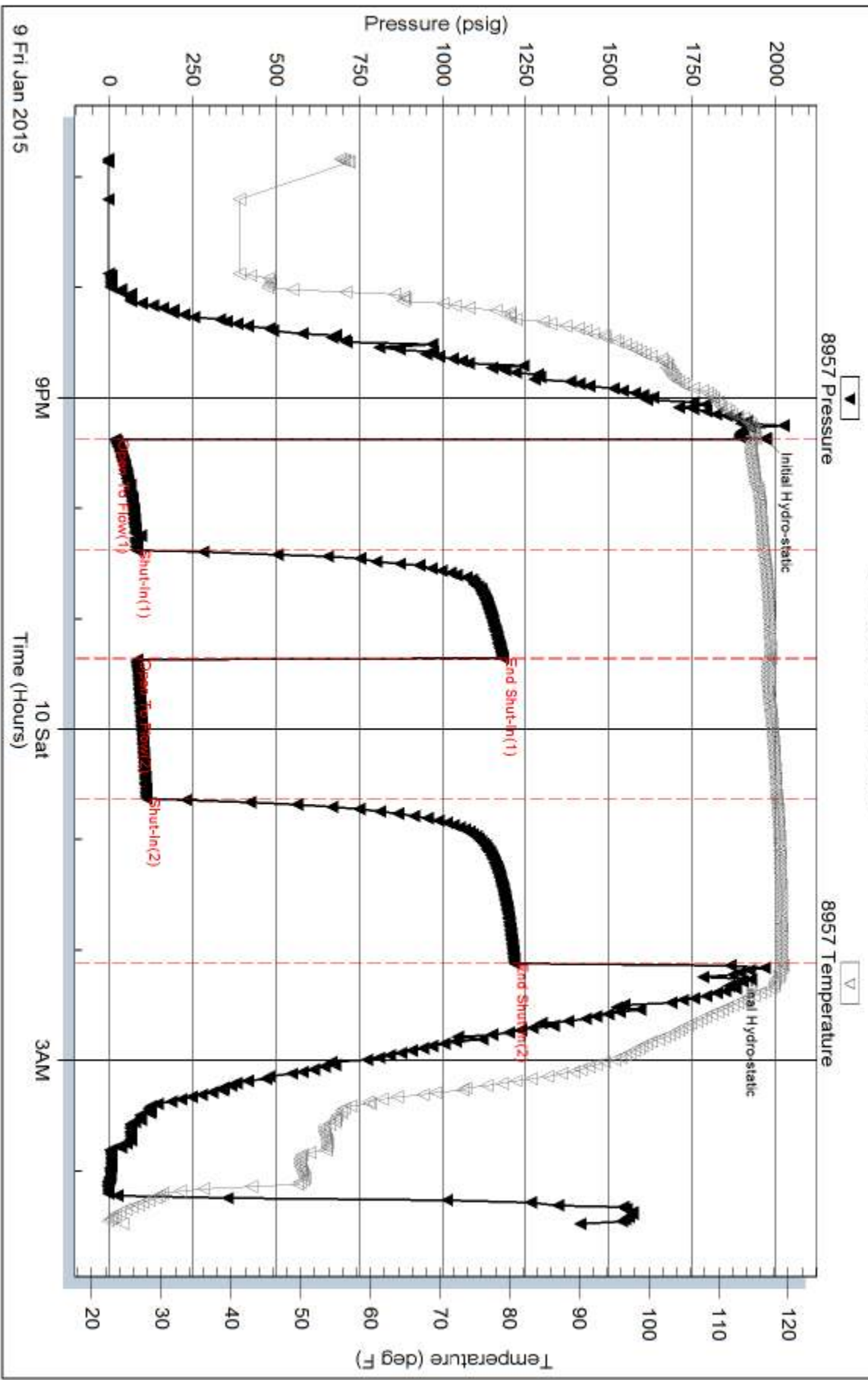
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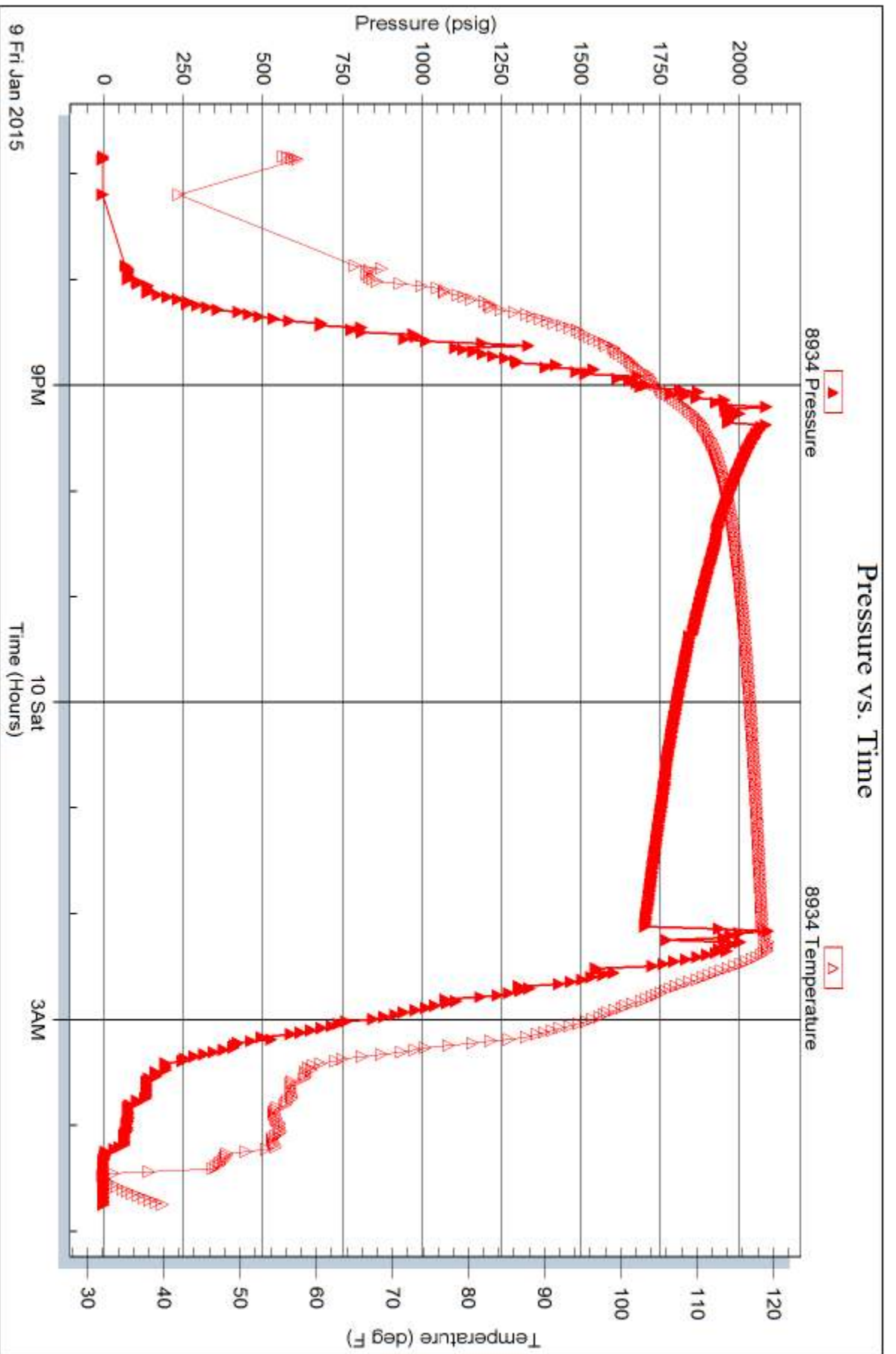
Black Diamond Oil, Inc.

Hughes #1

DST Test Number: 2

Pressure vs. Time



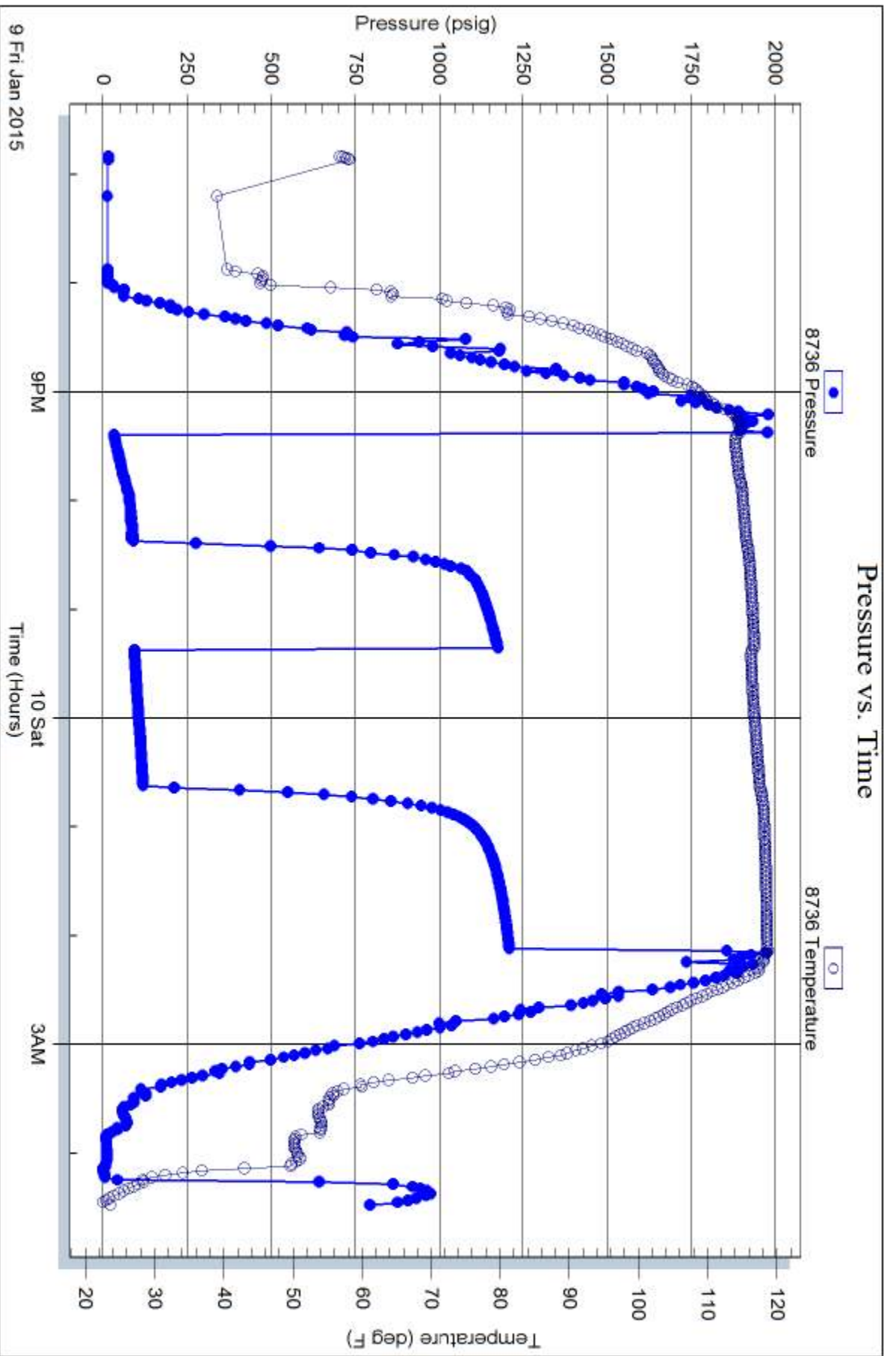


Serial #: 8736

Outside Black Diamond Oil, Inc.

Hughes #1

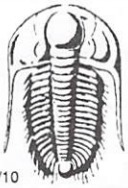
DST Test Number: 2



Trilobite Testing, Inc

Ref. No: 53837

Printed: 2015.01.12 @ 09:05:13



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 53836

4/10

Well Name & No. Hughes #1 Test No. 1 Date 1/8/15
 Company Black Diamond Oil, Inc. Elevation 2587 KB 2582 GL
 Address PO Box 641 Hays KS 67601
 Co. Rep / Geo. Jeff Lawler Rig W.W. #6
 Location: Sec. 21 Twp. 8s Rge. 27w Co. Sheridan State KS

Interval Tested 4210 - 4255 Zone Tested Ft. Scott
 Anchor Length 45 Drill Pipe Run _____ Mud Wt. 9.6
 Top Packer Depth 4205 Drill Collars Run 120 Vis 50
 Bottom Packer Depth 4210 Wt. Pipe Run _____ WL 9.2
 Total Depth 4255 Chlorides 1,000 ppm System LCM 2#

Blow Description IF - 1/4 in blow died in 25 min
ISI - No blow
FF - No blow flush tool No blow
FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>20</u>	<u>VSOCM</u>		<u>2</u>		<u>98</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 20 BHT 122 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic 2,115 Test 1150 T-On Location 15:00
 (B) First Initial Flow 16 Jars _____ T-Started 15:20
 (C) First Final Flow 20 Safety Joint _____ T-Open 17:40
 (D) Initial Shut-In 64 Circ Sub _____ T-Pulled 20:40
 (E) Second Initial Flow 19 Hourly Standby _____ T-Out 22:55
 (F) Second Final Flow 24 Mileage 164rt 86rt 86 Comments _____
 (G) Final Shut-In 71 Sampler _____
 (H) Final Hydrostatic 2,043 Straddle _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____

Initial Open 45 Shale Packer 250
 Initial Shut-In 45 Extra Packer _____
 Final Flow 45 Extra Recorder _____
 Final Shut-In 45 Day Standby _____
 Accessibility _____
 Sub Total 1486 MP/DST Disc't _____

Approved By _____ Our Representative Beth Dickinson

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. 53837

Well Name & No. Hughes #1 Test No. 2 Date 1/9/15
 Company Black Diamond Oil, Inc. Elevation 2587 KB 2582 GL
 Address PO Box 641 Hays KS 67601
 Co. Rep / Geo. Jeff Lawler Rig WW #6
 Location: Sec. 21 Twp. 8s Rge. 27w Co. Sheridan State KS

Interval Tested 3827 - 3971 Zone Tested KC "E-J"
 Anchor Length 144 Drill Pipe Run _____ Mud Wt. ~~9.5~~
 Top Packer Depth 3822, 3827 Drill Collars Run 120 Vis 53
 Bottom Packer Depth 3971 Wt. Pipe Run — WL 8.8
 Total Depth _____ Chlorides _____ ppm System LCM 2#

Blow Description IF - 6in blow
ISI - No blow
FF - 5in blow
FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>Mud</u>				
<u>180</u>	<u>MCW</u>		<u>60</u>	<u>40</u>	
____	____				
____	____				
____	____				

Rec Total 210 BHT _____ Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic	<u>1,968</u>
(B) First Initial Flow	<u>19</u>
(C) First Final Flow	<u>82</u>
(D) Initial Shut-In	<u>1,181</u>
(E) Second Initial Flow	<u>85</u>
(F) Second Final Flow	<u>112</u>
(G) Final Shut-In	<u>1,216</u>
(H) Final Hydrostatic	<u>1,863</u>

- Test 1050
- Jars _____
- Safety Joint _____
- Circ Sub _____
- Hourly Standby _____
- Mileage 164rt 86rt 86
- Sampler _____
- Straddle 600
- Shale Packer 250
- Extra Packer _____
- Extra Recorder _____
- Day Standby _____
- Accessibility _____
- Sub Total 1986

T-On Location 17:40
 T-Started 18:50
 T-Open 21:22
 T-Pulled 2:07
 T-Out 4:30
 Comments _____
 Ruined Shale Packer _____
 Ruined Packer _____
 Extra Copies _____
 Sub Total 0
 Total 1986
 MP/DST Disc't _____

Initial Open 60
 Initial Shut-In 60
 Final Flow 75 90
 Final Shut-In _____

Approved By _____

Our Representative Brett Dickinson

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.