



DRILL STEM TEST REPORT

Prepared For: **Brungardt Oil & Leasing, Inc.**

PO Box 871
Russell, KS 67665

ATTN: Brad Hutchison

Kathleen #1

33-12S-14W Russell,KS

Start Date: 2017.06.30 @ 12:59:24

End Date: 2017.06.30 @ 18:49:30

Job Ticket #: 63276 DST #: 1

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

Printed: 2017.07.03 @ 10:33:08



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Brungardt Oil & Leasing, Inc.

33-12S-14W Russell, KS

PO Box 871
Russell, KS 67665

Kathleen #1

Job Ticket: 63276

DST#: 1

ATTN: Brad Hutchison

Test Start: 2017.06.30 @ 12:59:24

GENERAL INFORMATION:

Formation: **LKC "A-C"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:27:30

Time Test Ended: 18:49:30

Test Type: Conventional Bottom Hole (Initial)

Tester: Brannan Lonsdale

Unit No: 73

Interval: **2745.00 ft (KB) To 2830.00 ft (KB) (TVD)**

Reference Elevations: 1597.00 ft (KB)

Total Depth: 2830.00 ft (KB) (TVD)

1589.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 8.00 ft

Serial #: 8524 Outside

Press@RunDepth: 49.89 psig @ 2746.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.06.30

End Date: 2017.06.30

Last Calib.: 2017.06.30

Start Time: 12:59:25

End Time: 18:49:30

Time On Btm: 2017.06.30 @ 15:27:00

Time Off Btm: 2017.06.30 @ 17:30:15

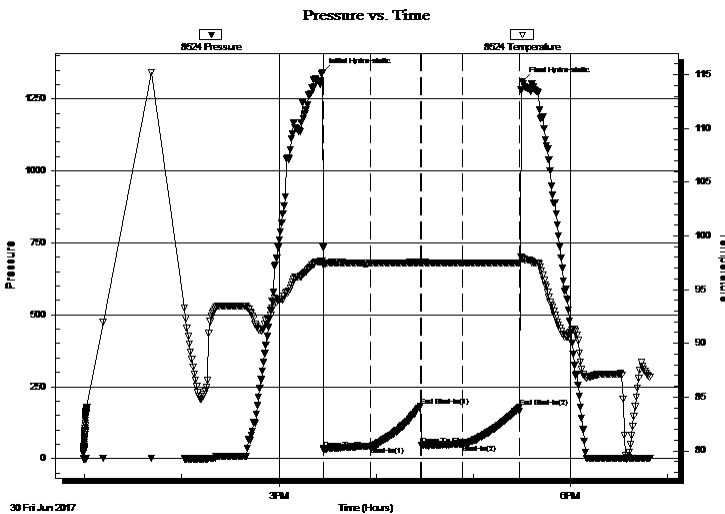
TEST COMMENT: 30- IF- Quickly built to 2 1/2" in 4 mins. Maintained 2 1/2" blow throughout

30- IS- No blow

30- FF- Weak blow built very slowly to 1"

30- FSI- No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1342.04	97.67	Initial Hydro-static
1	33.31	97.32	Open To Flow (1)
30	43.10	97.48	Shut-In(1)
61	181.52	97.52	End Shut-In(1)
61	46.29	97.51	Open To Flow (2)
87	49.89	97.49	Shut-In(2)
122	177.63	97.50	End Shut-In(2)
124	1310.96	97.91	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
93.00	SOCM, 5%O 95%M	0.68

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Brungardt Oil & Leasing, Inc.

33-12S-14W Russell, KS

PO Box 871
Russell, KS 67665

Kathleen #1

Job Ticket: 63276

DST#: 1

ATTN: Brad Hutchison

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Tester: Brannan Lonsdale

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Total Depth: 2830.00 ft (KB) (TVD)

1589.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 8.00 ft

Serial #: 6838

Inside

Press@RunDepth: psig @ 2746.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.06.30

End Date:

2017.06.30

Last Calib.:

2017.06.30

Start Time: 12:59:14

End Time:

18:49:19

Time On Btm:

Time Off Btm:

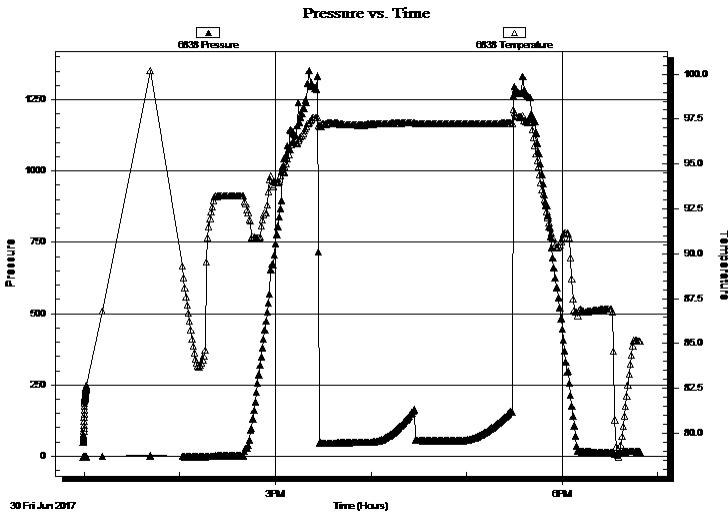
TEST COMMENT: 30- IF- Quickly built to 2 1/2" in 4 mins. Maintained 2 1/2" blow throughout

30- IS- No blow

30- FF- Weak blow built very slowly to 1"

30- FSI- No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
93.00	SOCM, 5%O 95%M	0.68

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Brungardt Oil & Leasing, Inc.

33-12S-14W Russell,KS

PO Box 871
Russell, KS 67665

Kathleen #1

Job Ticket: 63276

DST#: 1

ATTN: Brad Hutchison

Test Start: 2017.06.30 @ 12:59:24

Tool Information

Drill Pipe:	Length: 2440.00 ft	Diameter: 3.82 inches	Volume: 34.59 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 310.00 ft	Diameter: 2.75 inches	Volume: 2.28 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 62000.00 lb
			<u>Total Volume: 36.87 bbl</u>	Tool Chased 4.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 44000.00 lb
Depth to Top Packer:	2745.00 ft			Final 44000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	85.00 ft			
Tool Length:	105.00 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			2726.00	
Shut In Tool	5.00			2731.00	
Hydraulic tool	5.00			2736.00	
Packer	5.00			2741.00	20.00 Bottom Of Top Packer
Packer	4.00			2745.00	
Stubb	1.00			2746.00	
Recorder	0.00	6838	Inside	2746.00	
Recorder	0.00	8524	Outside	2746.00	
Perforations	16.00			2762.00	
Change Over Sub	1.00			2763.00	
Drill Pipe	63.00			2826.00	
Change Over Sub	1.00			2827.00	
Bullnose	3.00			2830.00	85.00 Bottom Packers & Anchor

Total Tool Length: 105.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

Brungardt Oil & Leasing, Inc.

33-12S-14W Russell,KS

PO Box 871
Russell, KS 67665

Kathleen #1

Job Ticket: 63276

DST#: 1

ATTN: Brad Hutchison

Test Start: 2017.06.30 @ 12:59:24

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

33 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5800.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
93.00	SOCM, 5%O 95%M	0.683

Total Length: 93.00 ft Total Volume: 0.683 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

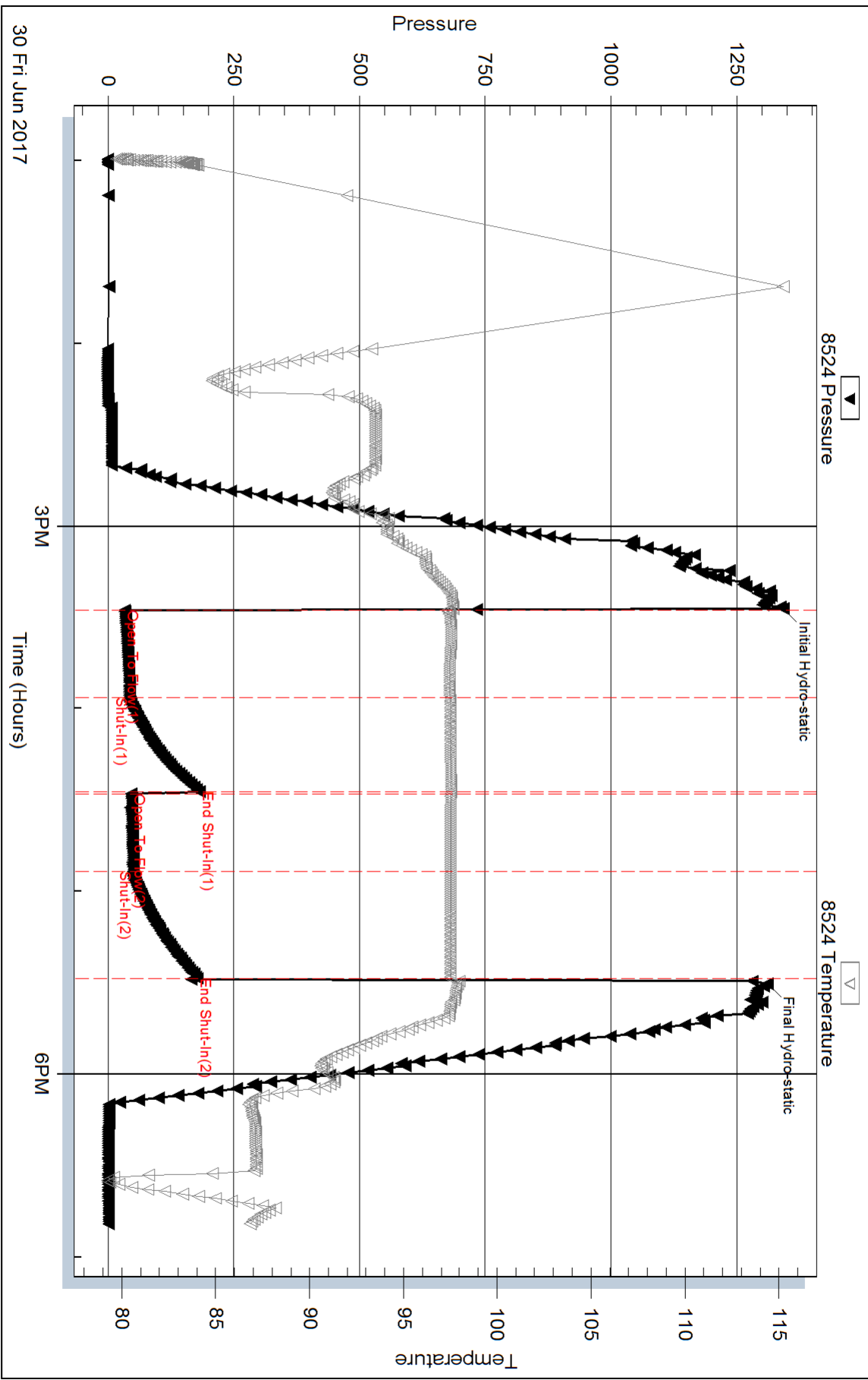
Serial #: 8524

Outside Brungardt Oil & Leasing, Inc.

Kathleen #1

DST Test Number: 1

Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 63276

Printed: 2017.07.03 @ 10:33:09

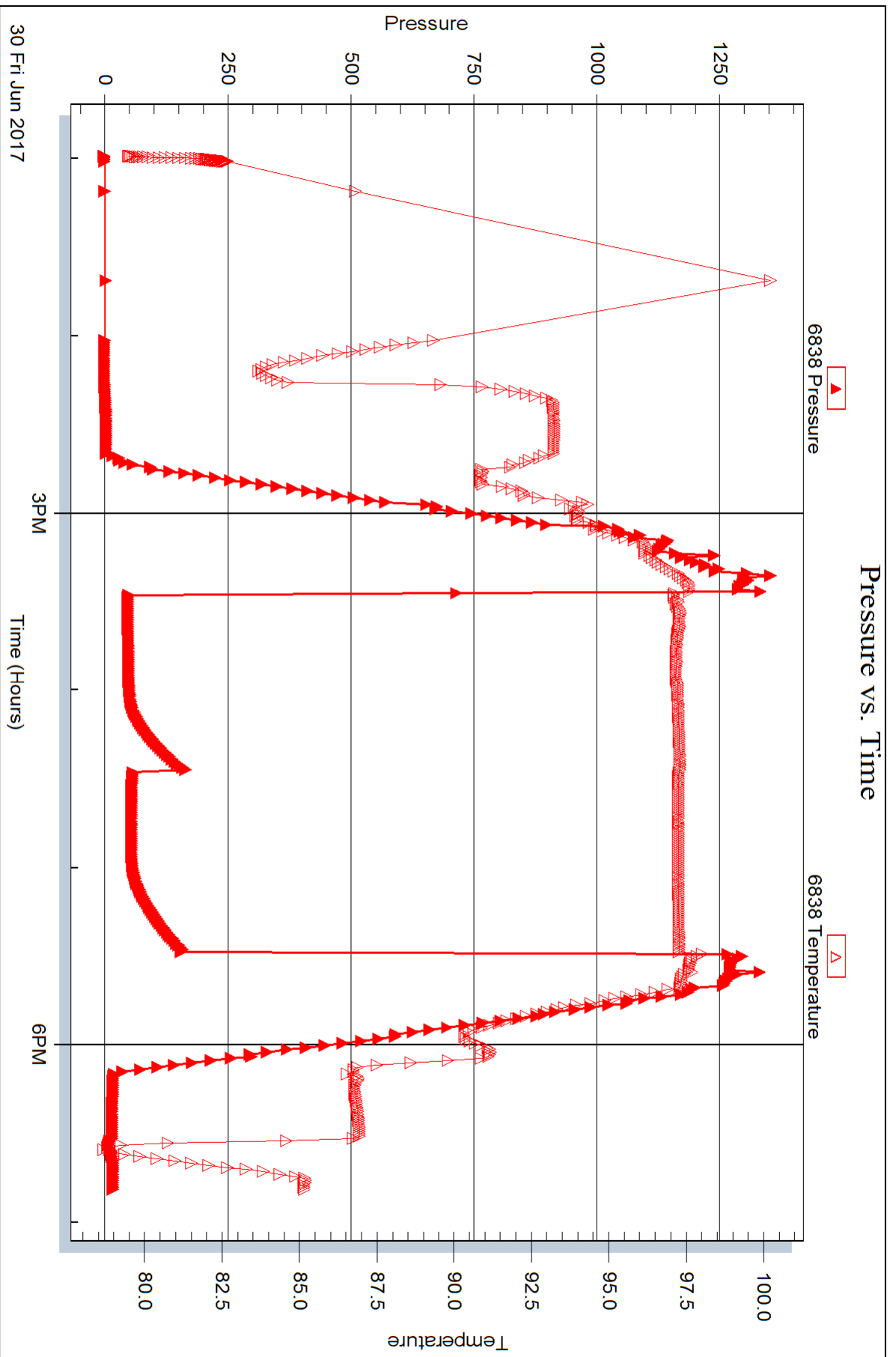
Serial #: 6838

Inside

Brungardt Oil & Leasing, Inc.

Kathleen #1

DST Test Number: 1



Trilobite Testing, Inc

Ref. No: 63276

Printed: 2017.07.03 @ 10:33:09



DRILL STEM TEST REPORT

Prepared For: **Brungardt Oil & Leasing, Inc.**

PO Box 871
Russell, KS 67665

ATTN: Brad Hutchison

Kathleen #1

33-12S-14W Russell,KS

Start Date: 2017.07.01 @ 05:45:00

End Date: 2017.07.01 @ 10:41:51

Job Ticket #: 63277 DST #: 2

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

Printed: 2017.07.03 @ 10:31:57



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Brungardt Oil & Leasing, Inc.

33-12S-14W Russell, KS

PO Box 871
Russell, KS 67665

Kathleen #1

Job Ticket: 63277

DST#: 2

ATTN: Brad Hutchison

Test Start: 2017.07.01 @ 05:45:00

GENERAL INFORMATION:

Formation: **LKC "H-J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:27:51

Time Test Ended: 10:41:51

Test Type: Conventional Bottom Hole (Reset)

Tester: Brannan Lonsdale

Unit No: 73

Interval: 2900.00 ft (KB) To 2980.00 ft (KB) (TVD)

Reference Elevations: 1597.00 ft (KB)

Total Depth: 2980.00 ft (KB) (TVD)

1589.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 8.00 ft

Serial #: 8524 Outside

Press@RunDepth: 25.43 psig @ 2901.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.07.01

End Date:

2017.07.01

Last Calib.: 2017.07.01

Start Time: 05:45:01

End Time:

10:41:51

Time On Btm: 2017.07.01 @ 07:27:36

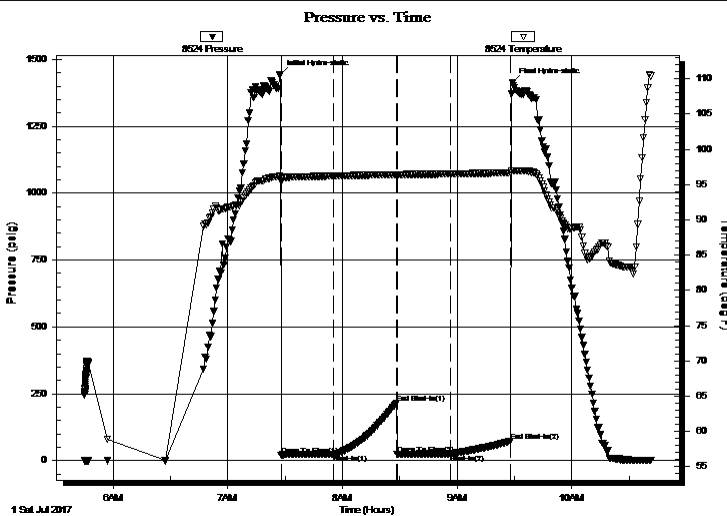
Time Off Btm: 2017.07.01 @ 09:28:51

TEST COMMENT: 30- IF- 1" blow slow ly died back to surface blow

30- IS- No blow

30- FF- No blow

30- FSI- No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1444.04	96.09	Initial Hydro-static
1	19.45	95.49	Open To Flow (1)
28	23.45	96.23	Shut-In(1)
61	213.93	96.43	End Shut-In(1)
61	23.91	96.39	Open To Flow (2)
89	25.43	96.53	Shut-In(2)
121	72.66	96.67	End Shut-In(2)
122	1411.80	97.00	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
15.00	M	0.11

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Brungardt Oil & Leasing, Inc.

33-12S-14W Russell,KS

PO Box 871
Russell, KS 67665

Kathleen #1

ATTN: Brad Hutchison

Job Ticket: 63277

DST#: 2

Test Start: 2017.07.01 @ 05:45:00

GENERAL INFORMATION:

Formation: **LKC "H-J"**
 Deviated: **No** Whipstock: **ft (KB)**
 Time Tool Opened: 07:27:51
 Time Test Ended: 10:41:51

Test Type: **Conventional Bottom Hole (Reset)**
 Tester: **Brannan Lonsdale**
 Unit No: **73**

Interval: 2900.00 ft (KB) To 2980.00 ft (KB) (TVD)
 Total Depth: **2980.00 ft (KB) (TVD)**
 Hole Diameter: **7.88 inches** Hole Condition: **Poor**

Reference Elevations: **1597.00 ft (KB)**
1589.00 ft (CF)
 KB to GR/CF: **8.00 ft**

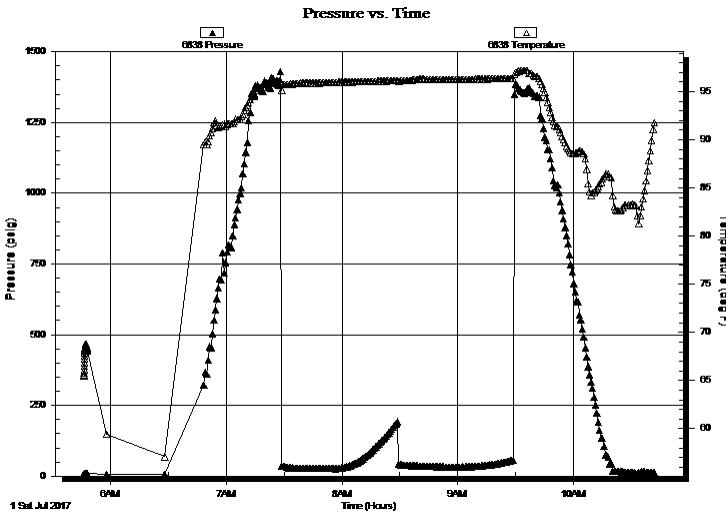
Serial #: 6838 Inside

Press@RunDepth: **psig @ 2901.00 ft (KB)**
 Start Date: **2017.07.01** End Date: **2017.07.01**
 Start Time: **05:45:57** End Time: **10:42:47**

Capacity: **8000.00 psig**
 Last Calib.: **2017.07.01**
 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30- IF- 1" blow slow ly died back to surface blow
 30- IS- No blow
 30- FF- No blow
 30- FSI- No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation

Recovery

Length (ft)	Description	Volume (bbl)
15.00	M	0.11

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
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DRILL STEM TEST REPORT

TOOL DIAGRAM

Brungardt Oil & Leasing, Inc.

33-12S-14W Russell,KS

PO Box 871
Russell, KS 67665

Kathleen #1

Job Ticket: 63277

DST#: 2

ATTN: Brad Hutchison

Test Start: 2017.07.01 @ 05:45:00

Tool Information

Drill Pipe:	Length: 2597.00 ft	Diameter: 3.82 inches	Volume: 36.81 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 310.00 ft	Diameter: 2.75 inches	Volume: 2.28 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 56000.00 lb
			<u>Total Volume: 39.09 bbl</u>	Tool Chased 3.00 ft
Drill Pipe Above KB:	27.00 ft			String Weight: Initial 47000.00 lb
Depth to Top Packer:	2900.00 ft			Final 47000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	80.00 ft			
Tool Length:	100.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		
Tool Comments:				

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			2881.00	
Shut In Tool	5.00			2886.00	
Hydraulic tool	5.00			2891.00	
Packer	5.00			2896.00	20.00 Bottom Of Top Packer
Packer	4.00			2900.00	
Stubb	1.00			2901.00	
Recorder	0.00	6838	Inside	2901.00	
Recorder	0.00	8524	Outside	2901.00	
Perforations	11.00			2912.00	
Change Over Sub	1.00			2913.00	
Drill Pipe	63.00			2976.00	
Change Over Sub	1.00			2977.00	
Bullnose	3.00			2980.00	80.00 Bottom Packers & Anchor

Total Tool Length: 100.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Brungardt Oil & Leasing, Inc.

33-12S-14W Russell,KS

PO Box 871
Russell, KS 67665

Kathleen #1

Job Ticket: 63277

DST#: 2

ATTN: Brad Hutchison

Test Start: 2017.07.01 @ 05:45:00

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: 50.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.78 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 5800.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
15.00	M	0.110

Total Length: 15.00 ft Total Volume: 0.110 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

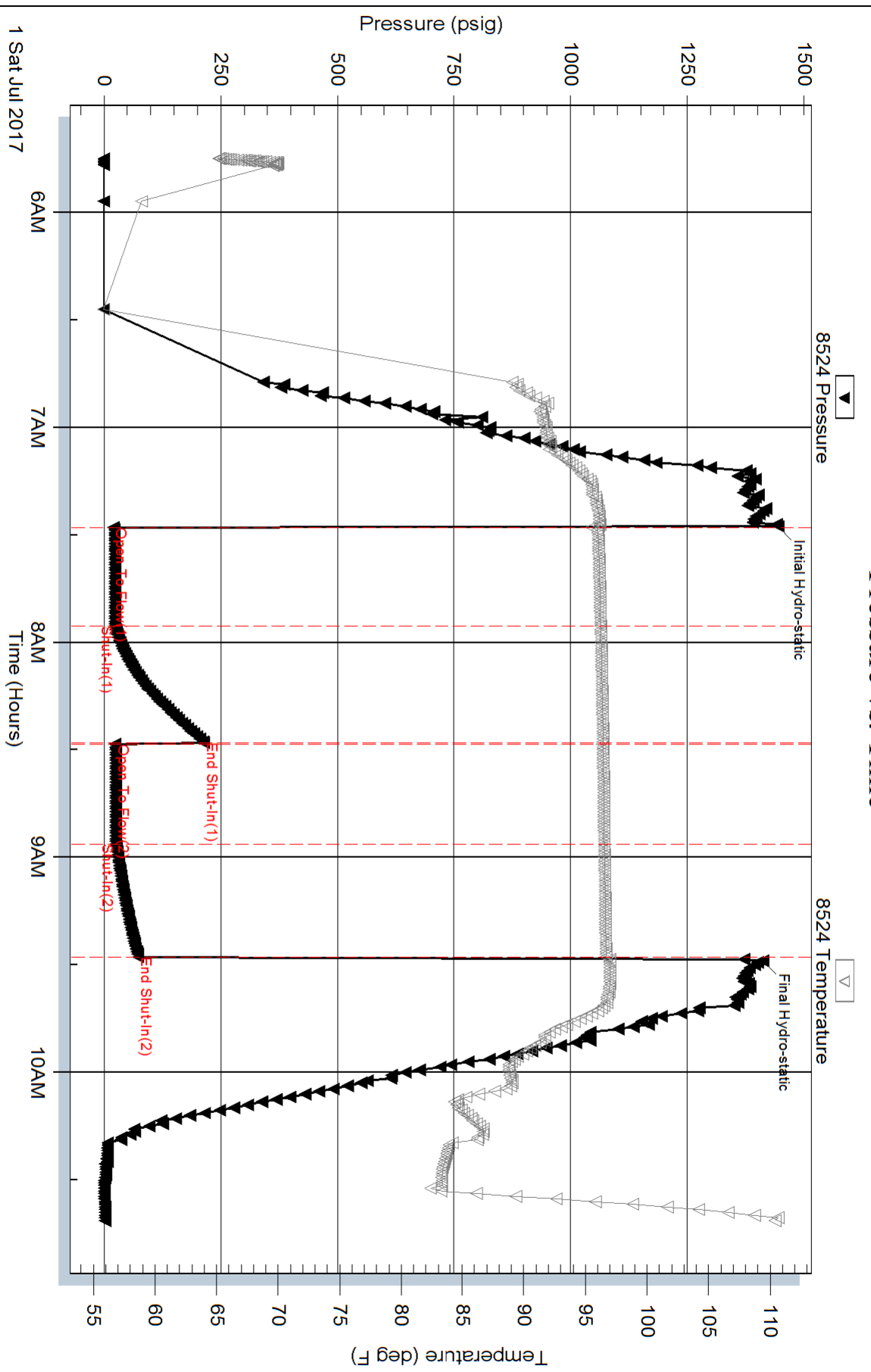
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



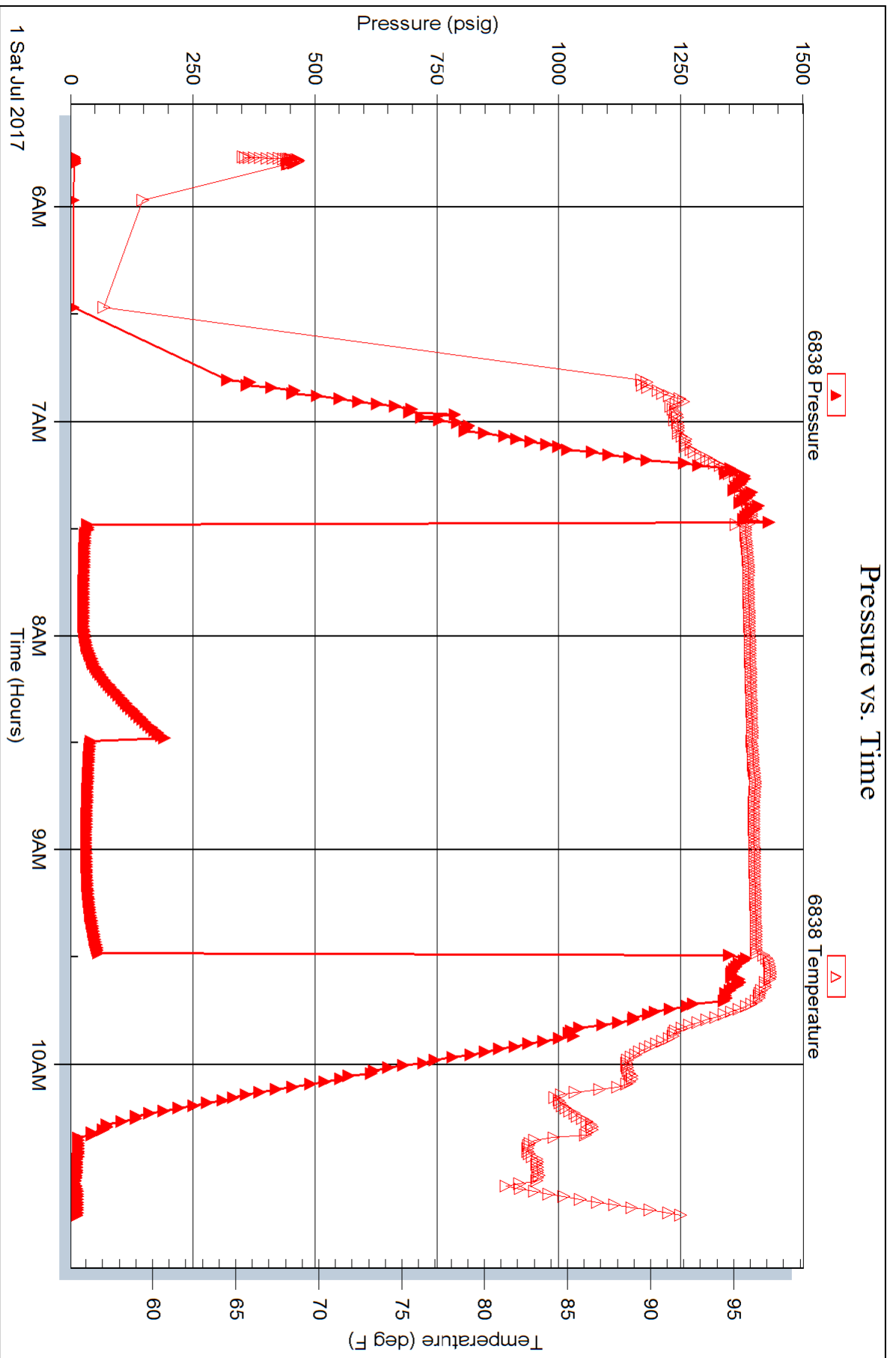
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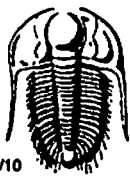
Inside

Brungardt Oil & Leasing, Inc.

Kathleen #1

DST Test Number: 2





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63276

Well Name & No. Kathleen #1 Test No. 1 Date 6/30/97
 Company Brungardt Oil + Leasing, Inc Elevation 1397 KB 1389 GL
 Address 213 W. 17th St. PO Box 871 Russell, KS 67665
 Co. Rep / Geo. Brad Hutchison Rig Discovery #2
 Location: Sec. 33 Twp. 12 S Rge. 14 W Co. Russell State KS

Interval Tested 2745-2830 Zone Tested LKC "A-C"
 Anchor Length 85' Drill Pipe Run 2440 Mud Wt. 9.0
 Top Packer Depth 2740 Drill Collars Run 3105 Vis 50
 Bottom Packer Depth 2745 Wt. Pipe Run WL 6.8
 Total Depth 2830 Chlorides 5800 ppm System LCM 2nd

Blow Description IF - Quickly built to 2 1/2". Maintained 2 1/2" blow
ISI - No blow
FF - Weak blow built very slowly to 1"
PSI - No blow

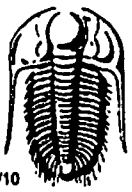
Rec	Feet of	%gas	%oil	%water	%mud
<u>93</u>	<u>SOCNA</u>		<u>5</u>		<u>95</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 93' BHT 98° Gravity 33 API RW @ °F Chlorides ppm

(A) Initial Hydrostatic 1342 Test 1050 T-On Location 1245
 (B) First Initial Flow 33 Jars T-Started 1259
 (C) First Final Flow 43 Safety Joint T-Open 1527
 (D) Initial Shut-In 182 Circ Sub T-Pulled 1727
 (E) Second Initial Flow 46 Hourly Standby T-Out 1849
 (F) Second Final Flow 50 Mileage 66 RT 49.50 Comments
 (G) Final Shut-In 178 Sampler
 (H) Final Hydrostatic 1311 Straddle
 Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Initial Open 30 Shale Packer
 Initial Shut-In 30 Extra Packer
 Final Flow 30 Extra Recorder
 Final Shut-In 30 Day Standby
 Accessibility
 Sub Total 1099.50 Total 1099.50 MP/DST Disc't

Approved By Our Representative Brannan Lonsdale

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. 63277

Well Name & No. Kathleen #1 Test No. 2 Date 7/1/17
 Company Brungardt Oil & Leasing, Inc. Elevation 1597 KB 1589 GL
 Address 213 W. 7th St. PO Box 871 Russell, KS 67665
 Co. Rep / Geo. Brad Hutchison Rig Discovery #2
 Location: Sec. 33 Twp. 12 S Rge. 14 W Co. Russell State KS

Interval Tested 2900-2980 Zone Tested _____
 Anchor Length 80' Drill Pipe Run 2597 Mud Wt. 9.0
 Top Packer Depth 2895 Drill Collars Run _____ Vis 50
 Bottom Packer Depth 2900 Wt. Pipe Run 310 WL 6.8
 Total Depth 2980 Chlorides 5800 ppm System LCM 2#
 Blow Description IF- 1" blow slowly died back to surface blow
ISF- No blow
FF- No blow
FSI- No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>15</u>	<u>M</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 15' BHT 97° Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>1444</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>0530</u>
(B) First Initial Flow <u>19</u>	<input type="checkbox"/> Jars _____	T-Started <u>0545</u>
(C) First Final Flow <u>23</u>	<input type="checkbox"/> Safety Joint _____	T-Open <u>0728</u>
(D) Initial Shut-In <u>214</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>0928</u>
(E) Second Initial Flow <u>24</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>1042</u>
(F) Second Final Flow <u>25</u>	<input checked="" type="checkbox"/> Mileage <u>66 RT</u> 49.50	Comments _____
(G) Final Shut-In <u>23</u>	<input type="checkbox"/> Sampler _____	_____
(H) Final Hydrostatic <u>1412</u>	<input type="checkbox"/> Straddle _____	_____
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Shale Packer _____
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Ruined Packer _____
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder _____	<input type="checkbox"/> Extra Copies _____
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby _____	Sub Total <u>0</u>
	<input type="checkbox"/> Accessibility _____	Total <u>1099.50</u>
	Sub Total <u>1099.50</u>	MP/DST Disc't _____

Approved By _____ Our Representative Braman Lonsdale

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.