



DRILL STEM TEST REPORT

Prepared For: **Bruce Oil Company LLC**

1704 Limestone Rd
McPherson KS 67460+6500

ATTN: Bob Peterson

Anne Marie #1

5-9S-12W Osborne,KS

Start Date: 2019.07.05 @ 23:54:00

End Date: 2019.07.06 @ 06:04:02

Job Ticket #: 66281 DST #: 1

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

Printed: 2019.07.08 @ 14:42:50



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Bruce Oil Company LLC
 1704 Limestone Rd
 McPherson KS 67460+6500
 ATTN: Bob Peterson

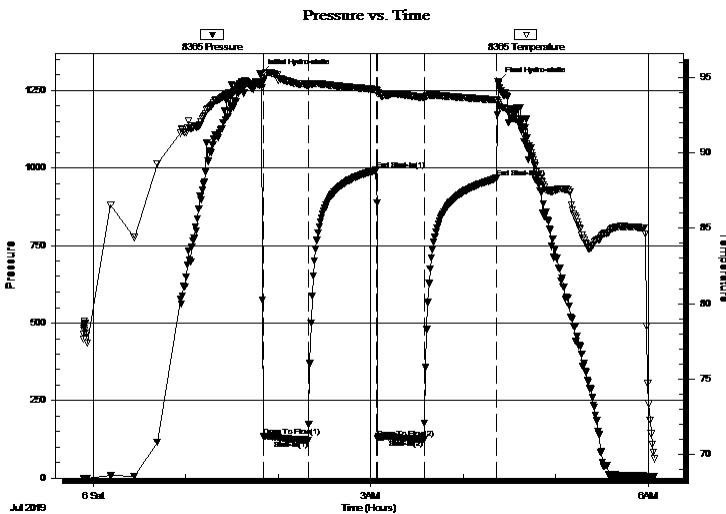
5-9S-12W Osborne, KS
Anne Marie #1
 Job Ticket: 66281 **DST#: 1**
 Test Start: 2019.07.05 @ 23:54:00

GENERAL INFORMATION:

Formation: **Topeka**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 01:50:17 Tester: Ken Swinney
 Time Test Ended: 06:04:02 Unit No: 72
 Interval: **2668.00 ft (KB) To 2694.00 ft (KB) (TVD)** Reference Elevations: 1703.00 ft (KB)
 Total Depth: 2694.00 ft (KB) (TVD) 1698.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Poor KB to GR/CF: 5.00 ft

Serial #: 8365 Inside
 Press@RunDepth: 124.98 psig @ 2669.00 ft (KB) Capacity: psig
 Start Date: 2019.07.05 End Date: 2019.07.06 Last Calib.: 2019.07.06
 Start Time: 23:54:01 End Time: 06:04:02 Time On Btm: 2019.07.06 @ 01:49:17
 Time Off Btm: 2019.07.06 @ 04:22:32

TEST COMMENT: IF 30 Minutes/ Tool slide 12 feet/ BOB in 20 sec. no build after slide/ Bleed of pressure/ Flush blow to 1/4 inch
 ISI 45 Minutes/ No blow back
 FF 30 Minutes/ Few bubbles at open then dead
 FS 45 Minutes/ No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1304.35	94.71	Initial Hydro-static
1	133.65	94.79	Open To Flow (1)
31	122.20	94.50	Shut-In(1)
75	992.81	94.19	End Shut-In(1)
76	129.28	93.96	Open To Flow (2)
106	124.98	93.72	Shut-In(2)
153	966.69	93.52	End Shut-In(2)
154	1276.57	93.33	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
195.00	Mud 100%	1.04

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Bruce Oil Company LLC
1704 Limestone Rd
McPherson KS 67460+6500
ATTN: Bob Peterson

5-9S-12W Osborne, KS

Anne Marie #1

Job Ticket: 66281

DST#: 1

Test Start: 2019.07.05 @ 23:54:00

GENERAL INFORMATION:

Formation: **Topeka**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:50:17

Time Test Ended: 06:04:02

Test Type: Conventional Bottom Hole (Initial)

Tester: Ken Swinney

Unit No: 72

Interval: 2668.00 ft (KB) To 2694.00 ft (KB) (TVD)

Reference Elevations: 1703.00 ft (KB)

Total Depth: 2694.00 ft (KB) (TVD)

1698.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Poor

KB to GR/CF: 5.00 ft

Serial #: 6755 Outside

Press@RunDepth: 972.36 psig @ 2670.00 ft (KB)

Capacity: psig

Start Date: 2019.07.05

End Date:

2019.07.06

Last Calib.:

2019.07.06

Start Time: 23:54:01

End Time:

06:04:02

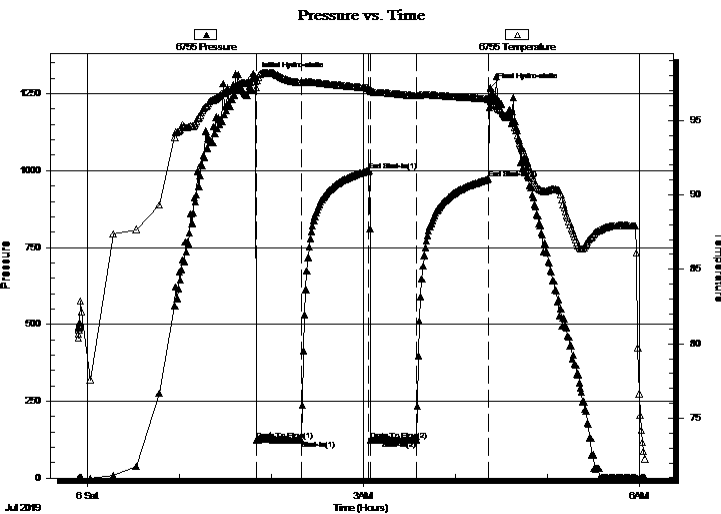
Time On Btm:

2019.07.06 @ 01:49:17

Time Off Btm:

2019.07.06 @ 04:22:47

TEST COMMENT: IF 30 Minutes/ Tool slide 12 feet/ BOB in 20 sec. no build after slide/ Bleed of pressure/ Flush blow to 1/4 inch
ISI 45 Minutes/ No blow back
FF 30 Minutes/ Few bubbles at open then dead
FS 45 Minutes/ No blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1306.74	97.58	Initial Hydro-static
1	122.63	97.21	Open To Flow (1)
30	123.23	97.53	Shut-In(1)
75	998.93	97.15	End Shut-In(1)
76	124.39	96.93	Open To Flow (2)
106	123.38	96.65	Shut-In(2)
153	972.36	96.42	End Shut-In(2)
154	1270.52	96.32	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
195.00	Mud 100%	1.04

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Bruce Oil Company LLC
1704 Limestone Rd
McPherson KS 67460+6500
ATTN: Bob Peterson

5-9S-12W Osborne, KS
Anne Marie #1
Job Ticket: 66281 **DST#: 1**
Test Start: 2019.07.05 @ 23:54:00

Tool Information

Drill Pipe:	Length: 2459.00 ft	Diameter: 3.80 inches	Volume: 34.49 bbl	Tool Weight: 2000.00 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: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 42000.00 lb
			<u>Total Volume: 35.40 bbl</u>	Tool Chased 12.00 ft
Drill Pipe Above KB:	4.00 ft			String Weight: Initial 36000.00 lb
Depth to Top Packer:	2668.00 ft			Final 36000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	26.00 ft			
Tool Length:	53.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
-------------------------	--------------------	-------------------	-----------------	-------------------	-----------------------

Shut-In Tool	5.00			2646.00	
Hydraulic tool	5.00			2651.00	
Jars	5.00			2656.00	
Safety Joint	2.00			2658.00	
Top Packer	5.00			2663.00	
Packer	5.00			2668.00	27.00 Bottom Of Top Packer
Recorder	1.00	8365	Inside	2669.00	
Recorder	1.00	6755	Outside	2670.00	
Anchor	21.00			2691.00	
Bullnose	3.00			2694.00	26.00 Anchor Tool
Total Tool Length:	53.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Bruce Oil Company LLC
1704 Limestone Rd
McPherson KS 67460+6500
ATTN: Bob Peterson

5-9S-12W Osborne, KS
Anne Marie #1
Job Ticket: 66281 **DST#: 1**
Test Start: 2019.07.05 @ 23:54:00

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: 62.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.18 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 3500.00 ppm			
Filter Cake: 2.00 inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
195.00	Mud 100%	1.041

Total Length: 195.00 ft Total Volume: 1.041 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments:

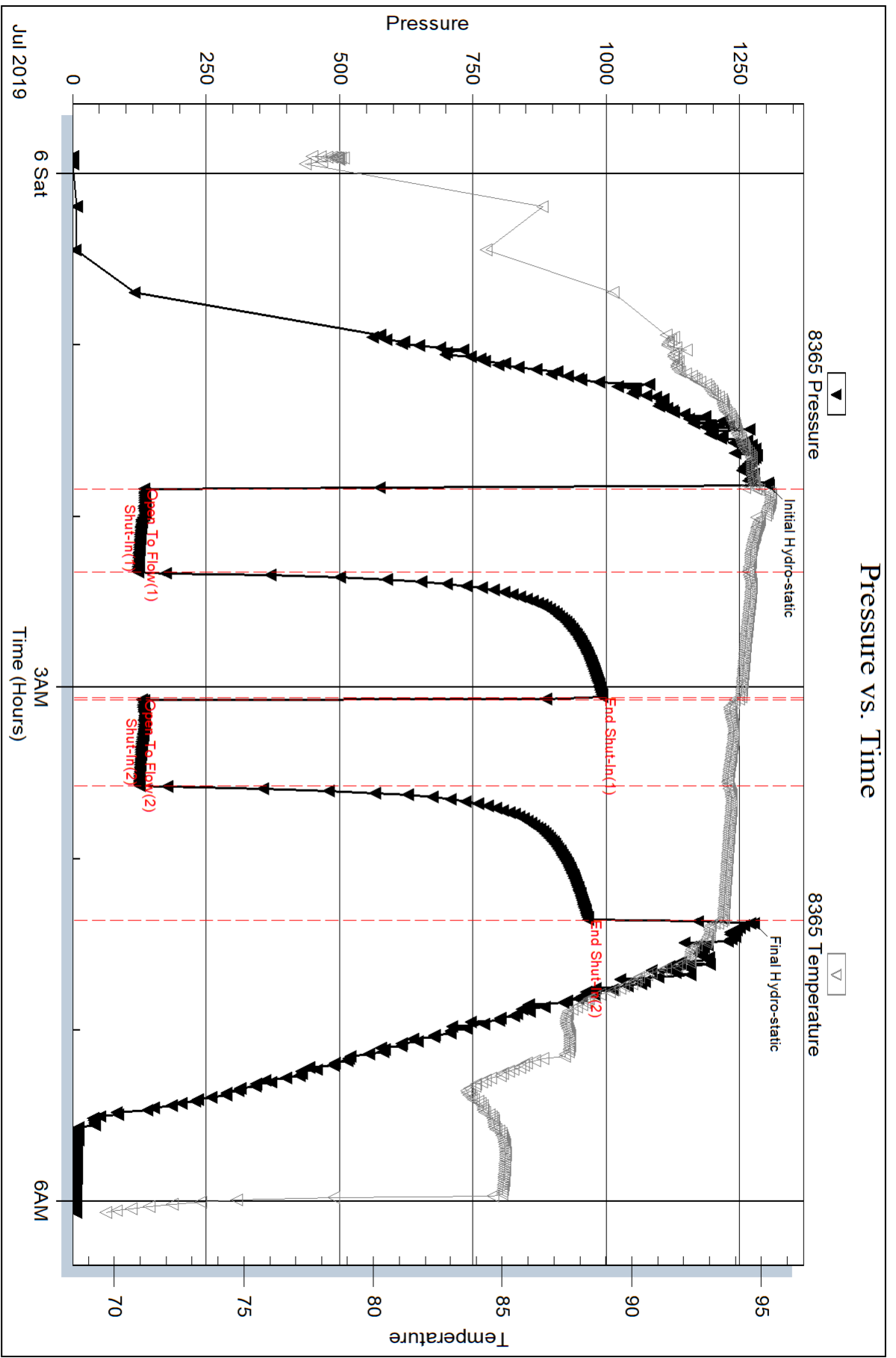
Serial #: 8365

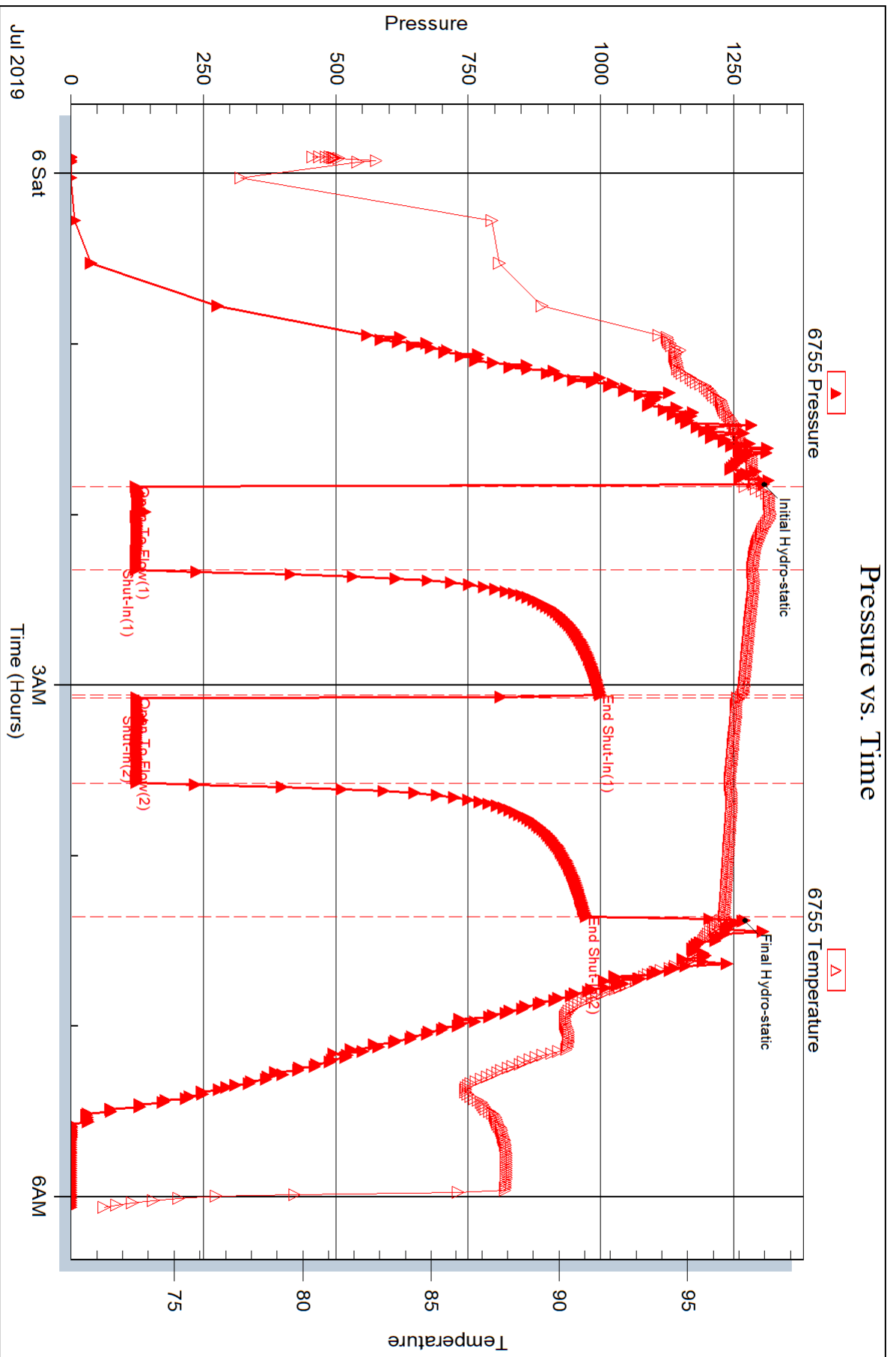
Inside

Bruce Oil Company LLC

Anne Marie #1

DST Test Number: 1







DRILL STEM TEST REPORT

Prepared For: **Bruce Oil Company LLC**

1704 Limestone Rd
McPherson KS 67460+6500

ATTN: Bob Peterson

Anne Marie #1

5-9S-12W Osborne,KS

Start Date: 2019.07.06 @ 21:56:00

End Date: 2019.07.07 @ 04:14:02

Job Ticket #: 66282 DST #: 2

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

Printed: 2019.07.08 @ 14:40:56



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Bruce Oil Company LLC
 1704 Limestone Rd
 McPherson KS 67460+6500
 ATTN: Bob Peterson

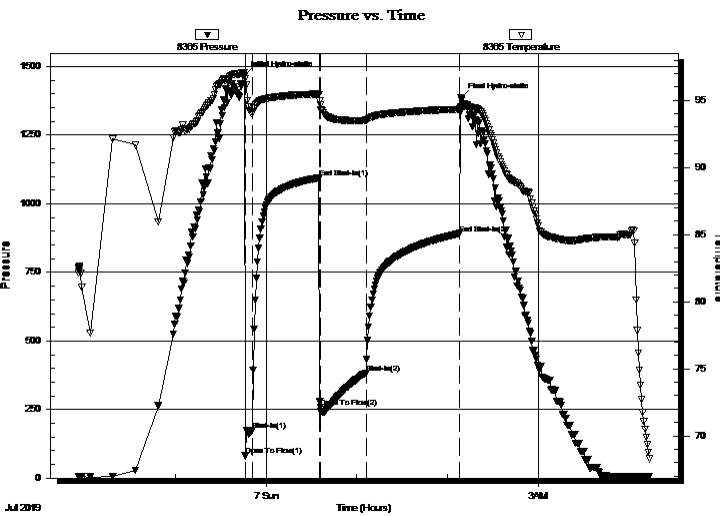
5-9S-12W Osborne, KS
Anne Marie #1
 Job Ticket: 66282 **DST#: 2**
 Test Start: 2019.07.06 @ 21:56:00

GENERAL INFORMATION:

Formation: **LKC A**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 23:46:02
 Time Test Ended: 04:14:02
 Interval: **2917.00 ft (KB) To 2950.00 ft (KB) (TVD)**
 Total Depth: 2950.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney
 Unit No: 72
 Reference Elevations: 1703.00 ft (KB)
 1698.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8365 Inside
 Press@RunDepth: 383.66 psig @ 2918.00 ft (KB) Capacity: psig
 Start Date: 2019.07.06 End Date: 2019.07.07 Last Calib.: 2019.07.07
 Start Time: 21:56:01 End Time: 04:14:02 Time On Btm: 2019.07.06 @ 23:45:32
 Time Off Btm: 2019.07.07 @ 02:09:02

TEST COMMENT: IF 5 Minutes/ Blow to BOB in 1 min 10 sec/ Total build 28 inches
 ISI 45 Minutes/ light surface blow back
 FF 30 Minutes/ Blow to BOB in 1 min 15 sec/ Total build 84 inches
 FSI 60 Minutes/ Blow back built to 7 inches



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1467.96	97.08	Initial Hydro-static
1	81.90	96.63	Open To Flow (1)
6	175.35	94.02	Shut-In(1)
50	1094.30	95.42	End Shut-In(1)
51	257.39	94.64	Open To Flow (2)
81	383.66	93.51	Shut-In(2)
143	891.41	94.36	End Shut-In(2)
144	1385.24	94.51	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
992.00	VSOCMW / O 5% M 5% W 90%	12.22
62.00	SOCMW / O 10% M 30% W 60%	0.87
30.00	GO/ G 5% W 95%	0.42
0.00	93 feet GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Bruce Oil Company LLC
1704 Limestone Rd
McPherson KS 67460+6500
ATTN: Bob Peterson

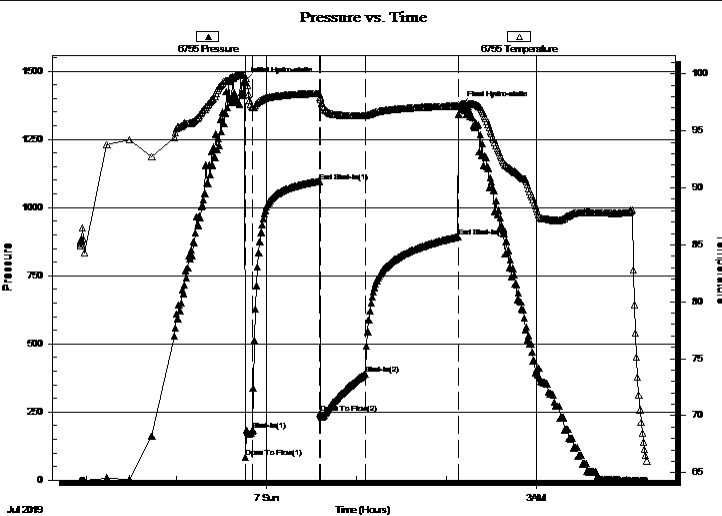
5-9S-12W Osborne, KS
Anne Marie #1
Job Ticket: 66282 **DST#: 2**
Test Start: 2019.07.06 @ 21:56:00

GENERAL INFORMATION:

Formation: **LKC A**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 23:46:02
Time Test Ended: 04:14:02
Interval: **2917.00 ft (KB) To 2950.00 ft (KB) (TVD)**
Total Depth: 2950.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Ken Swinney
Unit No: 72
Reference Elevations: 1703.00 ft (KB)
1698.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 6755 Outside
Press@RunDepth: 892.50 psig @ 2919.00 ft (KB) Capacity: psig
Start Date: 2019.07.06 End Date: 2019.07.07 Last Calib.: 2019.07.07
Start Time: 21:56:01 End Time: 04:14:02 Time On Btm: 2019.07.06 @ 23:45:17
Time Off Btm: 2019.07.07 @ 02:09:02

TEST COMMENT: IF 5 Minutes/ Blow to BOB in 1 min 10 sec/ Total build 28 inches
ISI 45 Minutes/ light surface blow back
FF 30 Minutes/ Blow to BOB in 1 min 15 sec/ Total build 84 inches
FSI 60 Minutes/ Blow back built to 7 inches



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1463.38	99.95	Initial Hydro-static
1	83.58	99.21	Open To Flow (1)
6	182.08	97.03	Shut-In(1)
50	1096.37	98.25	End Shut-In(1)
51	246.40	97.95	Open To Flow (2)
81	388.54	96.32	Shut-In(2)
143	892.50	97.21	End Shut-In(2)
144	1374.42	97.32	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
992.00	VSOCMW / O 5% M 5% W 90%	12.22
62.00	SOCMW / O 10% M 30% W 60%	0.87
30.00	GO/ G 5% W 95%	0.42
0.00	93 feet GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Bruce Oil Company LLC
1704 Limestone Rd
McPherson KS 67460+6500
ATTN: Bob Peterson

5-9S-12W Osborne, KS
Anne Marie #1
Job Ticket: 66282 **DST#: 2**
Test Start: 2019.07.06 @ 21:56:00

Tool Information

Drill Pipe:	Length: 2713.00 ft	Diameter: 3.80 inches	Volume: 38.06 bbl	Tool Weight: 2000.00 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: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 38000.00 lb
		Total Volume: 38.97 bbl		Tool Chased 0.00 ft
Drill Pipe Above KB:	9.00 ft			String Weight: Initial 36000.00 lb
Depth to Top Packer:	2917.00 ft			Final 37000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	33.00 ft			
Tool Length:	60.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
------------------	-------------	------------	----------	------------	----------------

Shut-In Tool	5.00			2895.00	
Hydraulic tool	5.00			2900.00	
Jars	5.00			2905.00	
Safety Joint	2.00			2907.00	
Top Packer	5.00			2912.00	
Packer	5.00			2917.00	27.00 Bottom Of Top Packer
Recorder	1.00	8365	Inside	2918.00	
Recorder	1.00	6755	Outside	2919.00	
Anchor	28.00			2947.00	
Bullnose	3.00			2950.00	33.00 Anchor Tool
Total Tool Length:	60.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Bruce Oil Company LLC
1704 Limestone Rd
McPherson KS 67460+6500
ATTN: Bob Peterson

5-9S-12W Osborne, KS
Anne Marie #1
Job Ticket: 66282 **DST#: 2**
Test Start: 2019.07.06 @ 21:56:00

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:	27000 ppm
Viscosity: 52.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.58 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 6200.00 ppm			
Filter Cake: 2.00 inches			

Recovery Information

Recovery Table

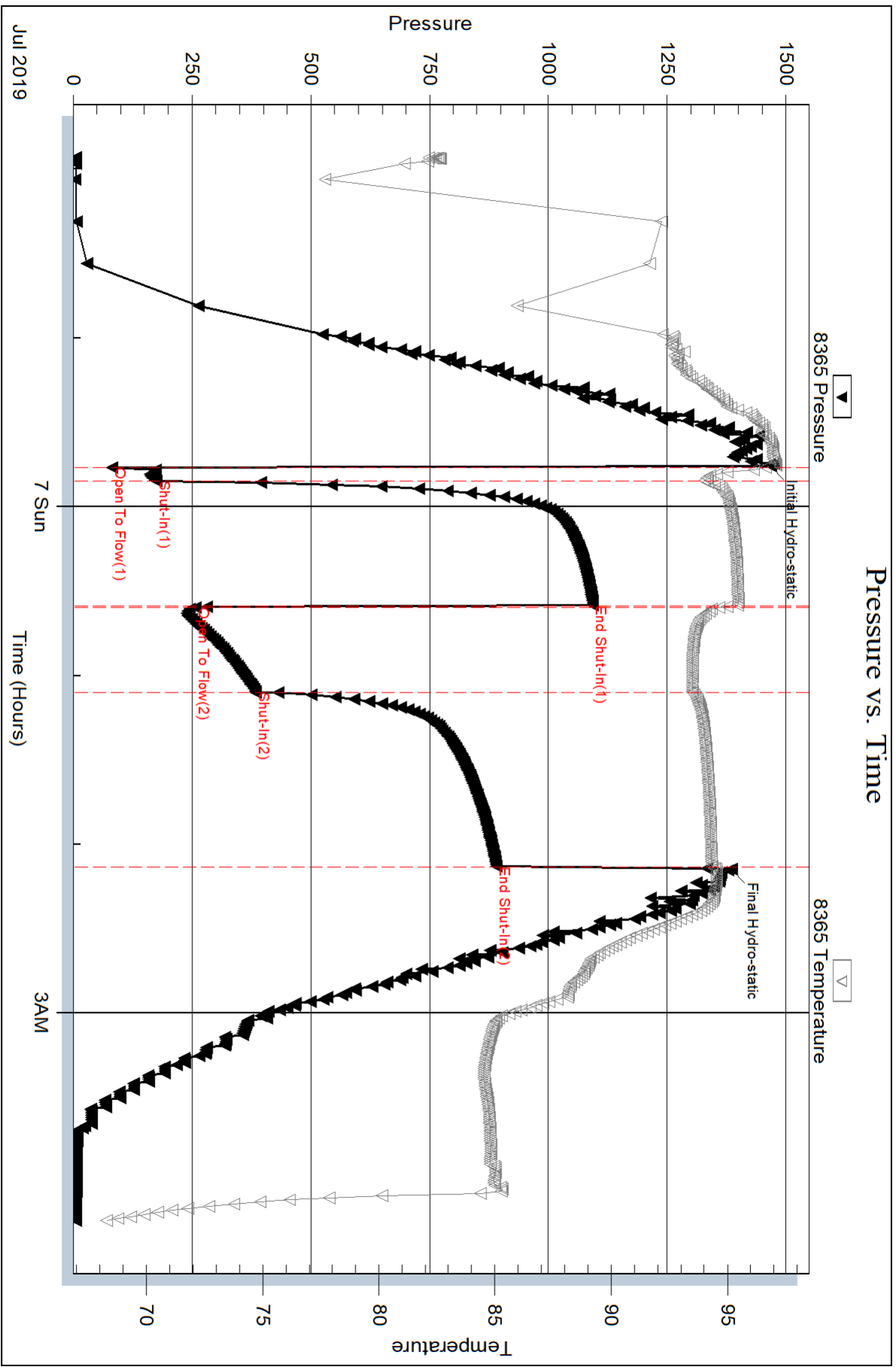
Length ft	Description	Volume bbl
992.00	VSOCMW / O 5% M 5% W 90%	12.221
62.00	SOCMW / O10% M 30% W 60%	0.870
30.00	GO/ G 5% W 95%	0.421
0.00	93 feet GIP	0.000

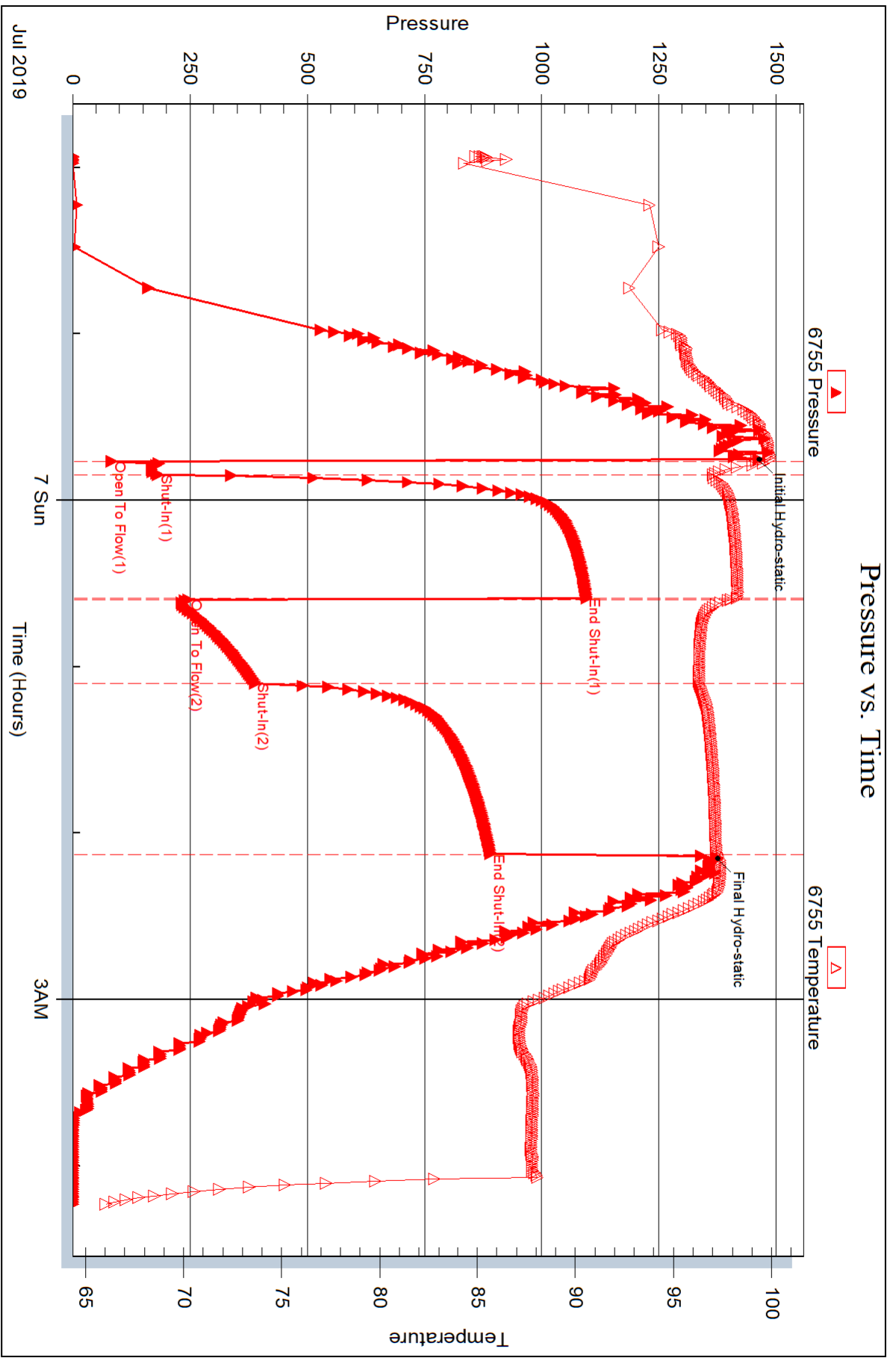
Total Length: 1084.00 ft Total Volume: 13.512 bbl

Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:

Laboratory Name: Laboratory Location:

Recovery Comments: Recovery Resistivity .247 ohms @ 68 deg.







DRILL STEM TEST REPORT

Prepared For: **Bruce Oil Company LLC**

1704 Limestone Rd
McPherson KS 67460+6500

ATTN: Bob Peterson

Anne Marie #1

5-9S-12W Osborne,KS

Start Date: 2019.07.07 @ 10:14:00

End Date: 2019.07.07 @ 15:30:02

Job Ticket #: 66283 DST #: 3

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

Printed: 2019.07.08 @ 14:37:36



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Bruce Oil Company LLC
 1704 Limestone Rd
 McPherson KS 67460+6500
 ATTN: Bob Peterson

5-9S-12W Osborne, KS
Anne Marie #1
 Job Ticket: 66283 **DST#: 3**
 Test Start: 2019.07.07 @ 10:14:00

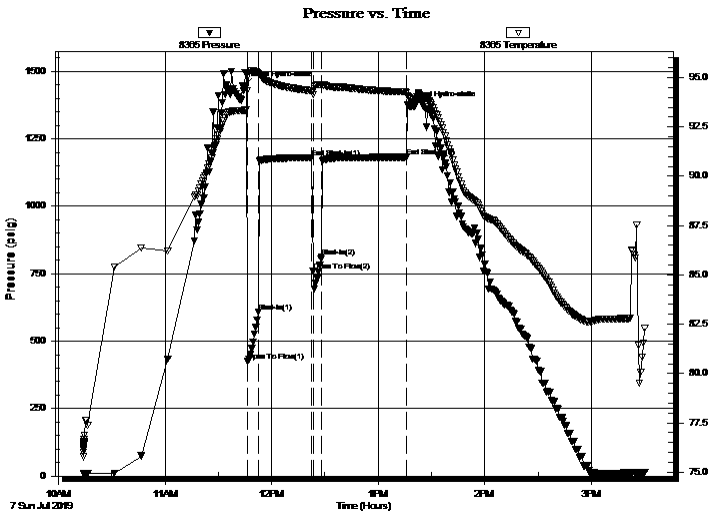
GENERAL INFORMATION:

Formation: **LKC B**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 11:46:32 Tester: Ken Swinney
 Time Test Ended: 15:30:02 Unit No: 72
 Interval: **2958.00 ft (KB) To 2970.00 ft (KB) (TVD)** Reference Elevations: 1703.00 ft (KB)
 Total Depth: 2970.00 ft (KB) (TVD) 1698.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 5.00 ft

Serial #: 8365 Inside
 Press@RunDepth: 812.98 psig @ 2959.00 ft (KB) Capacity: psig
 Start Date: 2019.07.07 End Date: 2019.07.07 Last Calib.: 2019.07.07
 Start Time: 10:14:01 End Time: 15:30:02 Time On Btm: 2019.07.07 @ 11:44:47
 Time Off Btm: 2019.07.07 @ 13:17:02

TEST COMMENT: IF 5 Minutes/ Blow to BOB in 30 sec. Total build 155 inches
 ISI 30 Minutes/ Light surface blow back
 FF 5 Minutes/ Blow to BOB in 30 sec Total build 127 inches
 FSI 45 Minutes/ Light surface blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1447.80	93.34	Initial Hydro-static
2	424.60	94.33	Open To Flow (1)
8	606.49	95.20	Shut-In(1)
38	1180.01	94.32	End Shut-In(1)
39	759.57	94.15	Open To Flow (2)
44	812.98	94.62	Shut-In(2)
91	1181.68	94.24	End Shut-In(2)
93	1372.95	94.01	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
341.00	MW/ Muddy Water/ M 30% W 70%	3.62
1054.00	MCW/ M 5% W 95%	14.78

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Bruce Oil Company LLC
 1704 Limestone Rd
 McPherson KS 67460+6500
 ATTN: Bob Peterson

5-9S-12W Osborne, KS
Anne Marie #1
 Job Ticket: 66283 **DST#: 3**
 Test Start: 2019.07.07 @ 10:14:00

GENERAL INFORMATION:

Formation: **LKC B**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 11:46:32
 Time Test Ended: 15:30:02
 Interval: **2958.00 ft (KB) To 2970.00 ft (KB) (TVD)**
 Total Depth: 2970.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ken Swinney
 Unit No: 72
 Reference Elevations: 1703.00 ft (KB)
 1698.00 ft (CF)
 KB to GR/CF: 5.00 ft

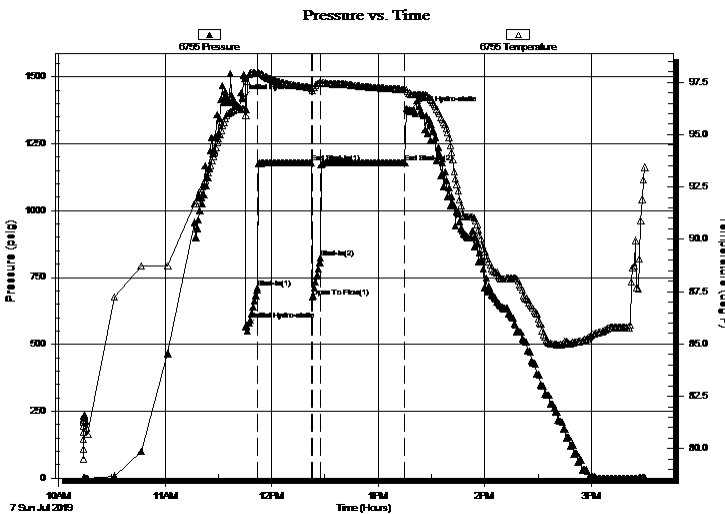
Serial #: 6755

Outside

Press@RunDepth: 1179.99 psig @ 2960.00 ft (KB) Capacity: psig
 Start Date: 2019.07.07 End Date: 2019.07.07 Last Calib.: 2019.07.07
 Start Time: 10:14:01 End Time: 15:30:02 Time On Btm: 2019.07.07 @ 11:43:47
 Time Off Btm: 2019.07.07 @ 13:17:17

TEST COMMENT: IF 5 Minutes/ Blow to BOB in 30 sec. Total build 155 inches
 ISI 30 Minutes/ Light surface blow back
 FF 5 Minutes/ Blow to BOB in 30 sec Total build 127 inches
 FSI 45 Minutes/ Light surface blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1417.11	96.20	Initial Hydro-static
2	565.45	95.91	Initial Hydro-static
9	711.47	97.92	Shut-In(1)
39	1179.26	97.20	End Shut-In(1)
40	677.19	97.11	Open To Flow (1)
44	822.65	97.47	Shut-In(2)
92	1179.99	97.15	End Shut-In(2)
94	1374.80	96.97	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
341.00	MW/ Muddy Water/ M 30% W 70%	3.62
1054.00	MCW/ M 5% W 95%	14.78

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Bruce Oil Company LLC
1704 Limestone Rd
McPherson KS 67460+6500
ATTN: Bob Peterson

5-9S-12W Osborne, KS
Anne Marie #1
Job Ticket: 66283 **DST#: 3**
Test Start: 2019.07.07 @ 10:14:00

Tool Information

Drill Pipe:	Length: 2839.00 ft	Diameter: 3.80 inches	Volume: 39.82 bbl	Tool Weight: 2000.00 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: 128.00 ft	Diameter: 2.25 inches	Volume: 0.63 bbl	Weight to Pull Loose: 45000.00 lb
			<u>Total Volume: 40.45 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	36.00 ft			String Weight: Initial 36000.00 lb
Depth to Top Packer:	2958.00 ft			Final 42000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	12.00 ft			
Tool Length:	39.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut-In Tool	5.00			2936.00	
Hydraulic tool	5.00			2941.00	
Jars	5.00			2946.00	
Safety Joint	2.00			2948.00	
Packer - Shale	5.00			2953.00	
Packer	5.00			2958.00	27.00 Bottom Of Top Packer
Recorder	1.00	8365	Inside	2959.00	
Recorder	1.00	6755	Outside	2960.00	
Anchor	7.00			2967.00	
Bullnose	3.00			2970.00	12.00 Anchor Tool
Total Tool Length:	39.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Bruce Oil Company LLC
1704 Limestone Rd
McPherson KS 67460+6500
ATTN: Bob Peterson

5-9S-12W Osborne, KS
Anne Marie #1
Job Ticket: 66283 **DST#: 3**
Test Start: 2019.07.07 @ 10:14:00

Mud and Cushion Information

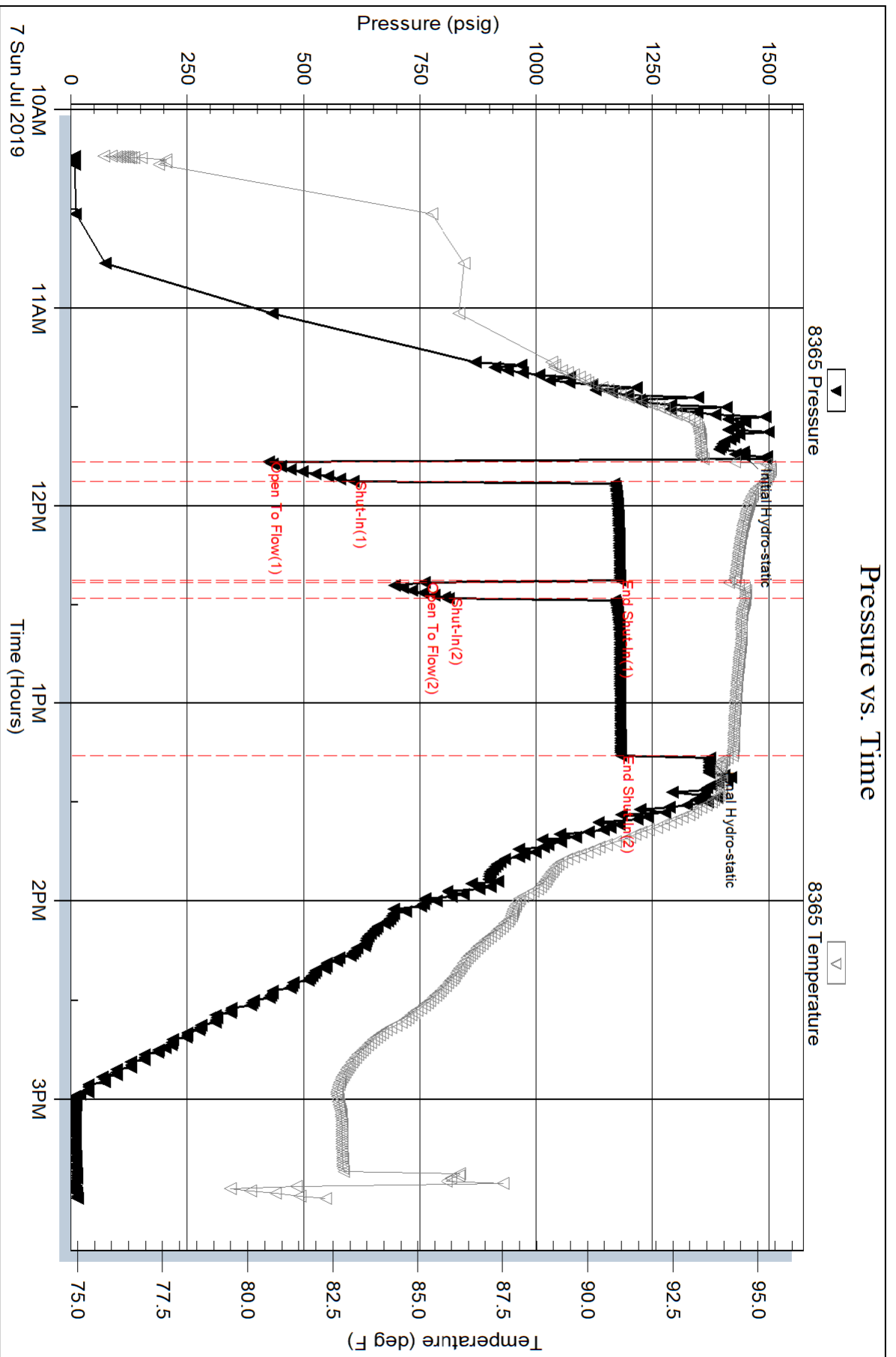
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	90000 ppm
Viscosity: 52.00 sec/qt	Cushion Volume: bbl		
Water Loss: 7.59 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 6200.00 ppm			
Filter Cake: 2.00 inches			

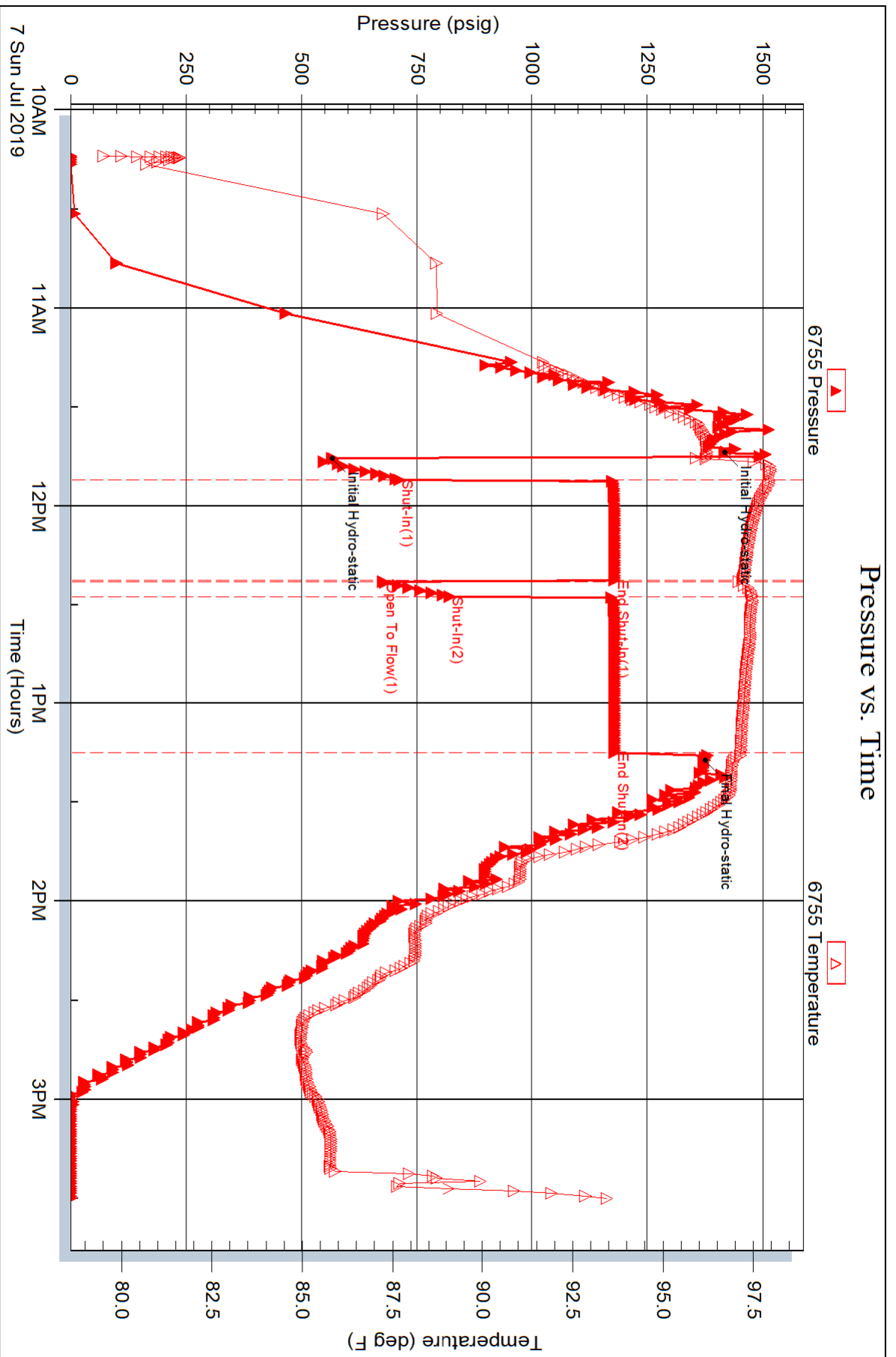
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
341.00	MW/ Muddy Water/ M 30% W 70%	3.617
1054.00	MCW/ M 5% W 95%	14.785

Total Length: 1395.00 ft Total Volume: 18.402 bbl
Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
Laboratory Name: Laboratory Location:
Recovery Comments: Recovery Resistivity .065 ohms @ 90 deg







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket 66281

NO.

Well Name & No. Anne Marie #1 Test No. 1 Date 6 JUL 19
 Company Bruce Oil Company LLC Elevation 1703 KB 1698 GL
 Address 1704 Limestone RD McPherson KS 67460+6500
 Co. Rep / Geo. Bob Peterson Rig Murfin Rig 8
 Location: Sec. 5 Twp 9S Rge. 12W Co. Osborne State KS

Interval Tested 2668-2694 Zone Tested Topeka
 Anchor Length 26 Drill Pipe Run 2459 Mud Wt. 8.7
 Top Packer Depth 2663 Drill Collars Run 186 Vis 62
 Bottom Packer Depth 2668 Wt. Pipe Run _____ WL 7.2
 Total Depth 2694 Chlorides 3500 ppm System LCM 2#

Blow Description IF Tool slide 12 feet BOB in 20 seconds no build after slide / Bleed pressure
ISF No bobback Flush tool 1/4 inch build
FF Few bubbles at open then dead
FSI No blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>195</u>	<u>mud</u>				<u>100%</u>
____	____	____	____	____	____
____	____	____	____	____	____
____	____	____	____	____	____

Rec Total 195 BHT 95 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>1304</u>	<input checked="" type="checkbox"/> Test <u>1200</u>	T-On Location <u>11:29 pm</u>
(B) First Initial Flow <u>133</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>11:54 pm</u>
(C) First Final Flow <u>122</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>1:48 am</u>
(D) Initial Shut-In <u>992</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>4:18 am</u>
(E) Second Initial Flow <u>129</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>6:05 am</u>
(F) Second Final Flow <u>124</u>	<input checked="" type="checkbox"/> Mileage <u>128</u> 128	Comments _____
(G) Final Shut-In <u>966</u>	<input type="checkbox"/> Sampler _____	_____
(H) Final Hydrostatic <u>1276</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> EM Tool _____
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Shale Packer _____
Initial Shut-In <u>45</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>45</u>	<input type="checkbox"/> Day Standby _____	Sub Total <u>0</u>
	<input type="checkbox"/> Accessibility _____	Total <u>1653</u>
	Sub Total <u>1653</u>	MP/DST Disc't _____

Approved By _____ Our Representative [Signature]

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 66282

NO.

Well Name & No. Anne Marie #1 Test No. 2 Date 6 JUL 19
 Company Bruce Oil Company LLC Elevation 1703 KB 1698 GL
 Address 1704 Limestone Rd McPherson Kansas 67460+6500
 Co. Rep / Geo. Bob Peterson Rig Murphy Rig 8
 Location: Sec. 5 Twp 9S Rge. 12W Co. Osborne State KS

Interval Tested 2917-2950 Zone Tested Lansing/Kansas City zone A
 Anchor Length 33 Drill Pipe Run 2713 Mud Wt. 9.0
 Top Packer Depth 2912 Drill Collars Run 186 Vis 5-2
 Bottom Packer Depth 2917 Wt. Pipe Run — WL 7.6
 Total Depth 2950 Chlorides 6200 ppm System LCM 24

Blow Description IF Blow to BOB in 1min 15 sec / Total build 28 inches
ISI Light surface blow back
FF Blow to BOB 1min 15 sec / Total build 84 inches
FSI Blow back built to 7 inches

Rec	Feet of	%gas	%oil	%water	%mud
<u>992</u>	<u>VSOCMW</u>	<u>5</u>	<u>90</u>	<u>5</u>	
<u>62</u>	<u>SOCMW</u>	<u>10</u>	<u>60</u>	<u>30</u>	
<u>30</u>	<u>GO</u>	<u>5</u>	<u>95</u>		
<u>93</u>	<u>GIP</u>	<u>100</u>			

Rec Total BHT 95 Gravity API RW 247 @ 68 °F Chlorides 27000 ppm
 (A) Initial Hydrostatic 1467 Test 1200 T-On Location 9:16 pm
 (B) First Initial Flow 81 Jars 250 T-Started 9:56 pm
 (C) First Final Flow 175 Safety Joint 75 T-Open 11:46 pm
 (D) Initial Shut-In 1094 Circ Sub _____ T-Pulled 2:06 am
 (E) Second Initial Flow 257 Hourly Standby _____ T-Out 4:15 am
 (F) Second Final Flow 383 Mileage 128 128 Comments _____
 (G) Final Shut-In 891 Sampler _____
 (H) Final Hydrostatic 1385 Straddle _____
 Shale Packer _____
 Extra Packer _____
 Extra Recorder _____
 Day Standby _____
 Accessibility _____

Initial Open 5 EM Tool _____
 Initial Shut-In 45 Ruined Shale Packer _____
 Final Flow 30 Ruined Packer _____
 Final Shut-In 60 Extra Copies _____
 Sub Total 0
 Total 1653
 Sub Total 1653 MP/DST Disc't _____

Approved By _____ Our Representative _____

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 66283

NO.

Well Name & No. Anne Marie #1 Test No. 3 Date 7 JUL 19
 Company Bruce O. I Company LLC Elevation 1703 KB 1698 GL
 Address 1704 Limestone Rd McPhearson KS 67460+6500
 Co. Rep / Geo. Bob Peterson Rig Murfin Rig 8
 Location: Sec. 5 Twp 9S Rge. 12W Co. Osborne State KS

Interval Tested 2958-2970 Zone Tested Lansing/Kansas City zone B
 Anchor Length 12 Drill Pipe Run 2839 Mud Wt. 9.0
 Top Packer Depth 2953 Drill Collars Run 186 Vis 52
 Bottom Packer Depth 2958 Wt. Pipe Run - WL 7.6
 Total Depth 2970 Chlorides 6200 ppm System LCM 2#

Blow Description IF Blow to BOB 30 sec. Total build 155 inches
ISF Light surface blow back
FF Blow to BOB in 30 sec. Total build 127 inches
FSI Light surface blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>341</u>	<u>MW</u>			<u>70%</u>	<u>30%</u>
<u>1064</u>	<u>MCW</u>			<u>95%</u>	<u>5%</u>

Rec Total 1395 BHT 94 Gravity API RW 1.065 @ 90 ° F Chlorides 90000 ppm

- (A) Initial Hydrostatic 1447
- (B) First Initial Flow 424
- (C) First Final Flow 606
- (D) Initial Shut-In 1180
- (E) Second Initial Flow 759
- (F) Second Final Flow 812
- (G) Final Shut-In 1181
- (H) Final Hydrostatic 1372

Initial Open 5
 Initial Shut-In 30
 Final Flow 5
 Final Shut-In 45

- Test 1200
- Jars 250
- Safety Joint 75
- Circ Sub
- Hourly Standby
- Mileage 128 128
- Sampler
- Straddle
- Shale Packer
- Extra Packer
- Extra Recorder
- Day Standby
- Accessibility
- Sub Total 1653

T-On Location 9:07 am
 T-Started 10:14 am
 T-Open 11:46 am
 T-Pulled 1:11 pm
 T-Out 3:31 pm

Comments _____

 EM Tool
 Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 0
 Total 1653
 MP/DST Disc't _____

Approved By _____ Our Representative [Signature]

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.