



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N Water Ste 300
Wichita KS 67202-1216

ATTN: Clayton Erickson

Ken #3-17

17-1s-35w Rawlins,KS

Start Date: 2017.07.10 @ 07:33:00

End Date: 2017.07.10 @ 13:54:00

Job Ticket #: 64047 DST #: 1

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

Printed: 2017.07.17 @ 09:20:05



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Murfin Drilling Co Inc
250 N Water Ste 300
Wichita KS 67202-1216
ATTN: Clayton Erickson

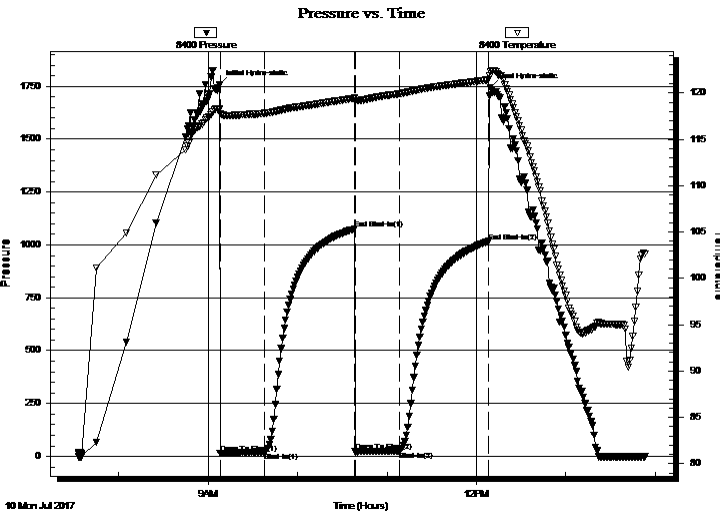
17-1s-35w Rawlins,KS
Ken #3-17
Job Ticket: 64047 **DST#: 1**
Test Start: 2017.07.10 @ 07:33:00

GENERAL INFORMATION:

Formation: **Foraker**
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 09:08:00
Time Test Ended: 13:54:00
Interval: **3645.00 ft (KB) To 3699.00 ft (KB) (TVD)**
Total Depth: 3699.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Jim Svaty
Unit No: 76
Reference Elevations: 3181.00 ft (KB)
3176.00 ft (CF)
KB to GR/CF: 5.00 ft

Serial #: 8400 Outside
Press@RunDepth: 25.56 psig @ 3648.00 ft (KB) Capacity: 8000.00 psig
Start Date: 2017.07.10 End Date: 2017.07.10 Last Calib.: 2017.07.10
Start Time: 07:33:01 End Time: 13:53:30 Time On Btm: 2017.07.10 @ 09:07:30
Time Off Btm: 2017.07.10 @ 12:09:30

TEST COMMENT: 30-IFP- 1/4". Blow Died Back in 21 min.
60-ISIP- No Blow
30-FFP- No Blow
60-FSIP- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1756.12	118.25	Initial Hydro-static
1	15.76	117.78	Open To Flow (1)
31	20.66	117.80	Shut-In(1)
91	1074.53	119.42	End Shut-In(1)
91	22.12	119.04	Open To Flow (2)
121	25.56	119.91	Shut-In(2)
181	1016.13	121.41	End Shut-In(2)
182	1743.60	122.27	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Oil Speck Mud 1%o 99%m	0.02

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co Inc

17-1s-35w Rawlins,KS

250 N Water Ste 300
Wichita KS 67202-1216

Ken #3-17

Job Ticket: 64047

DST#: 1

ATTN: Clayton Erickson

Test Start: 2017.07.10 @ 07:33:00

Tool Information

Drill Pipe:	Length: 3450.00 ft	Diameter: 3.80 inches	Volume: 48.39 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 184.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: 49.29 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial 46000.00 lb
Depth to Top Packer:	3645.00 ft			Final 46000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	54.00 ft			
Tool Length:	82.00 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			3618.00	
Shut In Tool	5.00			3623.00	
Hydraulic tool	5.00			3628.00	
Jars	5.00			3633.00	
Safety Joint	2.00			3635.00	
Packer	5.00			3640.00	28.00 Bottom Of Top Packer
Packer	5.00			3645.00	
Stubb	1.00			3646.00	
Perforations	2.00			3648.00	
Recorder	0.00	6668	Inside	3648.00	
Recorder	0.00	8400	Outside	3648.00	
Perforations	15.00			3663.00	
Change Over Sub	1.00			3664.00	
Blank Spacing	31.00			3695.00	
Change Over Sub	1.00			3696.00	
Bullnose	3.00			3699.00	54.00 Bottom Packers & Anchor
Total Tool Length:	82.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co Inc

17-1s-35w Rawlins,KS

250 N Water Ste 300
Wichita KS 67202-1216

Ken #3-17

Job Ticket: 64047

DST#: 1

ATTN: Clayton Erickson

Test Start: 2017.07.10 @ 07:33:00

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: 65.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.57 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 4.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Oil Speck Mud 1%o 99%m	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

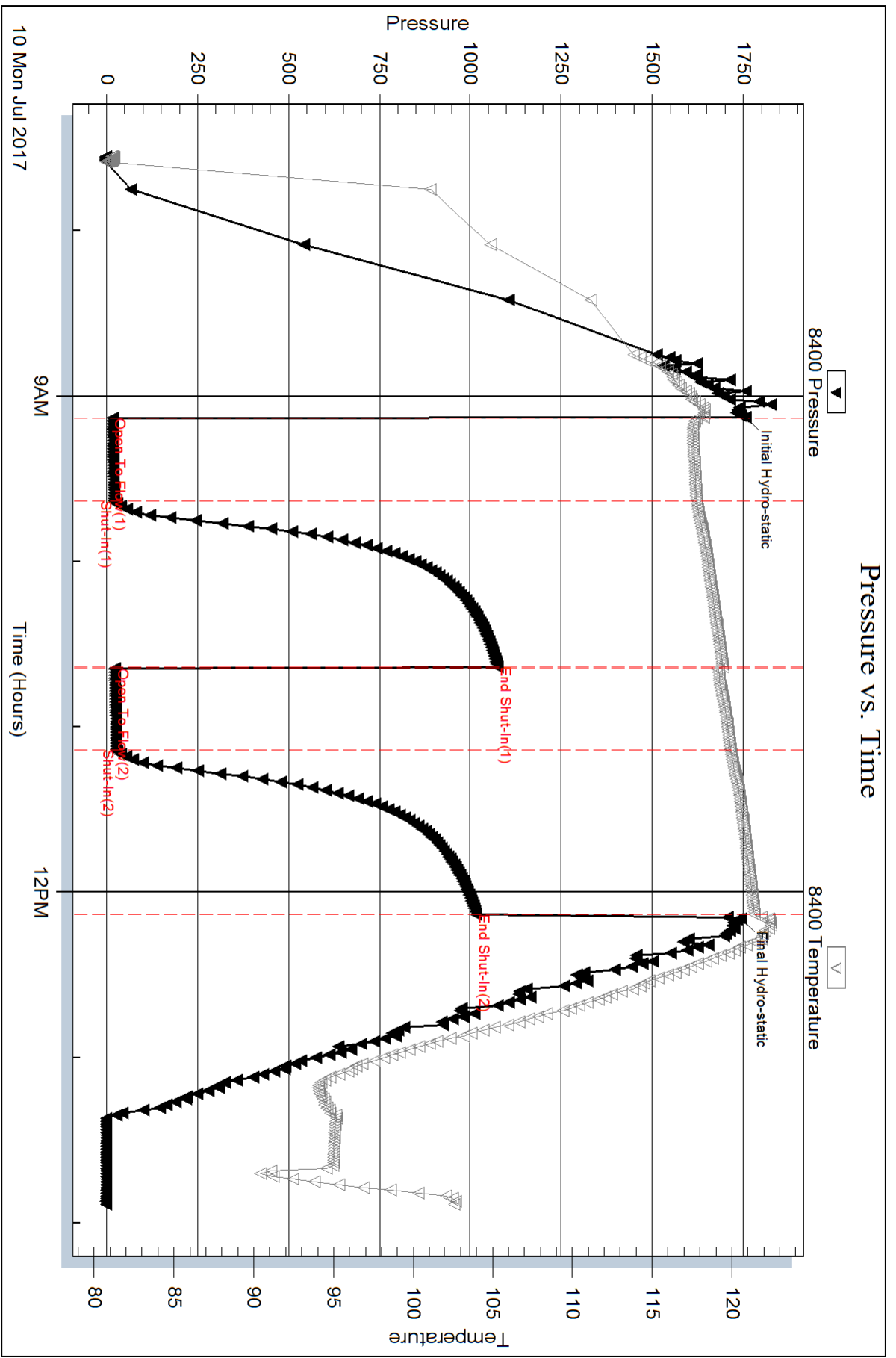
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



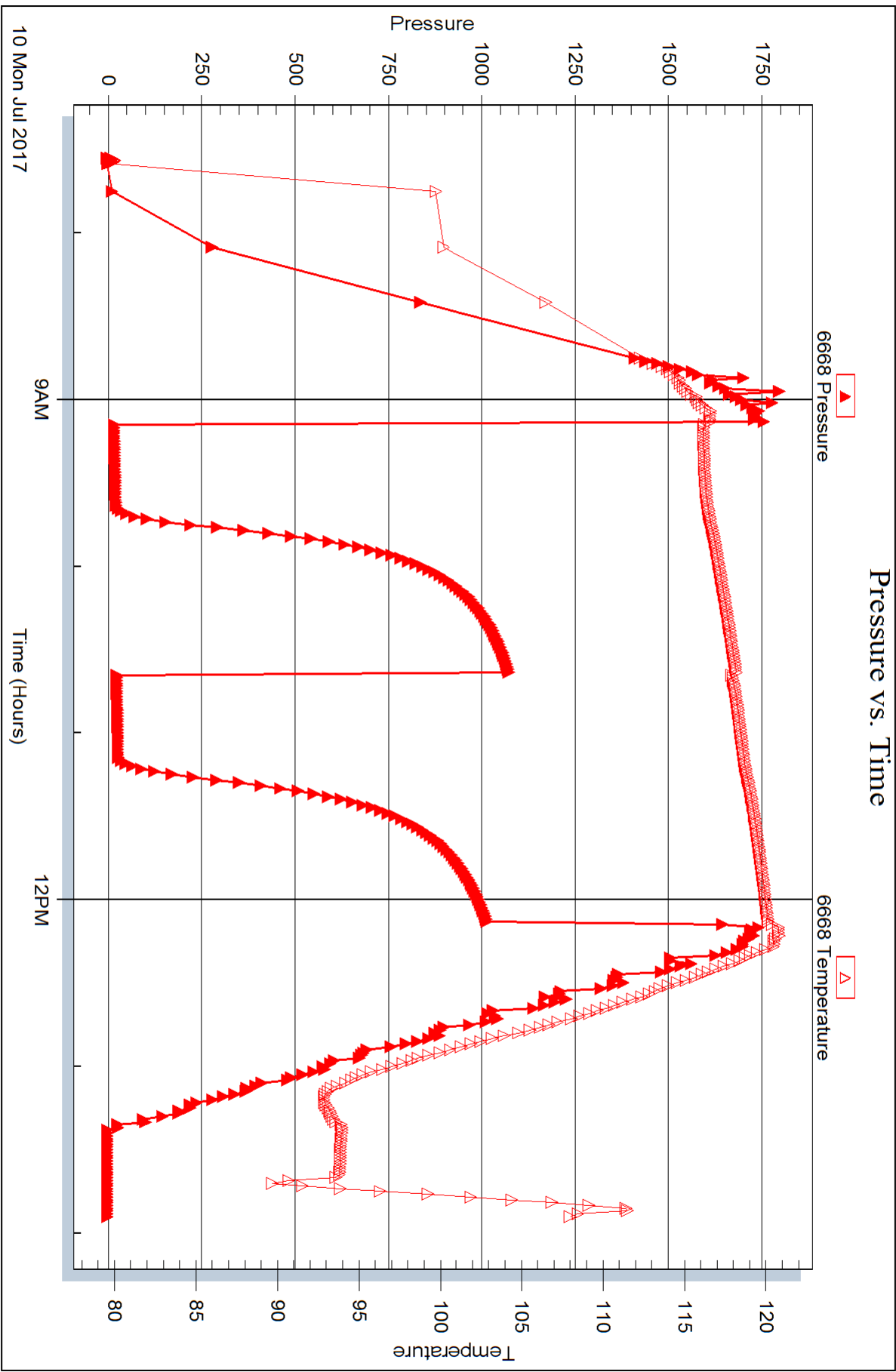
Serial #: 6668

Inside

Murfin Drilling Co Inc

Ken #3-17

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N Water Ste 300
Wichita KS 67202-1216

ATTN: Clayton Erickson

Ken #3-17

17-1s-35w Rawlins,KS

Start Date: 2017.07.12 @ 02:30:00

End Date: 2017.07.12 @ 09:55:00

Job Ticket #: 64048 DST #: 2

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

Printed: 2017.07.17 @ 09:19:40

Murfin Drilling Co Inc
17-1s-35w Rawlins,KS
Ken #3-17
DST # 2
LKC " A - D "
2017.07.12



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co Inc
 250 N Water Ste 300
 Wichita KS 67202-1216
 ATTN: Clayton Erickson

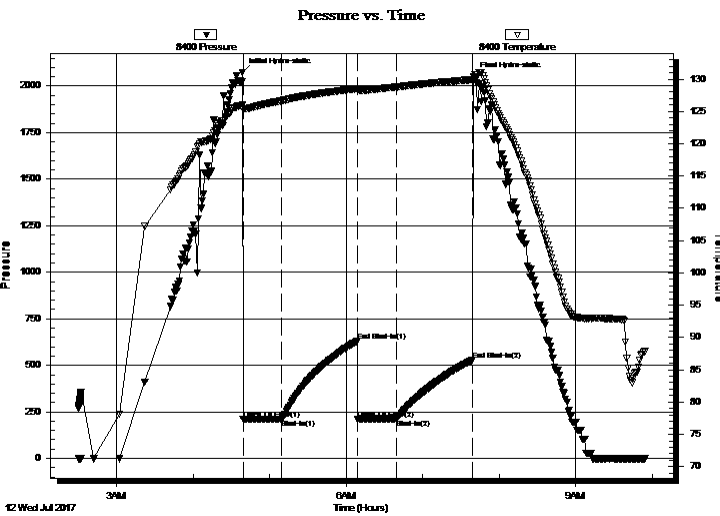
17-1s-35w Rawlins,KS
Ken #3-17
 Job Ticket: 64048 **DST#: 2**
 Test Start: 2017.07.12 @ 02:30:00

GENERAL INFORMATION:

Formation: **LKC " A - D "**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 04:39:00
 Time Test Ended: 09:55:00
 Interval: **4045.00 ft (KB) To 4180.00 ft (KB) (TVD)**
 Total Depth: 4180.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Jim Svaty
 Unit No: 76
 Reference Elevations: 3181.00 ft (KB)
 3176.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8400 Outside
 Press@RunDepth: 212.17 psig @ 4052.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.07.12 End Date: 2017.07.12 Last Calib.: 2017.07.12
 Start Time: 02:30:01 End Time: 09:54:30 Time On Btm: 2017.07.12 @ 04:38:30
 Time Off Btm: 2017.07.12 @ 07:40:00

TEST COMMENT: 30-IFP- Surface Blow Building to 3/4" In 10 min. Died Back in 15 min.
 60-ISIP- No Blow
 30-FFP- No Blow
 60-FSIP- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2073.39	125.94	Initial Hydro-static
1	209.54	125.29	Open To Flow (1)
31	210.89	126.64	Shut-In(1)
90	630.29	128.51	End Shut-In(1)
91	210.68	128.35	Open To Flow (2)
121	212.17	128.77	Shut-In(2)
181	528.53	129.91	End Shut-In(2)
182	2050.67	130.43	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
375.00	Mud 100%	3.58
0.00	Show of Oil in Tool	0.00

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co Inc

17-1s-35w Rawlins,KS

250 N Water Ste 300
Wichita KS 67202-1216

Ken #3-17

Job Ticket: 64048

DST#: 2

ATTN: Clayton Erickson

Test Start: 2017.07.12 @ 02:30:00

Tool Information

Drill Pipe:	Length: 3863.00 ft	Diameter: 3.80 inches	Volume: 54.19 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 184.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 55.09 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	30.00 ft			String Weight: Initial 56000.00 lb
Depth to Top Packer:	4045.00 ft			Final 56000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	135.00 ft			
Tool Length:	163.00 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			4018.00	
Shut In Tool	5.00			4023.00	
Hydraulic tool	5.00			4028.00	
Jars	5.00			4033.00	
Safety Joint	2.00			4035.00	
Packer	5.00			4040.00	28.00 Bottom Of Top Packer
Packer	5.00			4045.00	
Stubb	1.00			4046.00	
Perforations	5.00			4051.00	
Change Over Sub	1.00			4052.00	
Recorder	0.00	6668	Inside	4052.00	
Recorder	0.00	8400	Outside	4052.00	
Blank Spacing	94.00			4146.00	
Change Over Sub	1.00			4147.00	
Perforations	30.00			4177.00	
Bullnose	3.00			4180.00	135.00 Bottom Packers & Anchor
Total Tool Length:	163.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co Inc

17-1s-35w Rawlins,KS

250 N Water Ste 300
Wichita KS 67202-1216

Ken #3-17

Job Ticket: 64048

DST#: 2

ATTN: Clayton Erickson

Test Start: 2017.07.12 @ 02:30:00

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: 56.00 sec/qt

Cushion Volume:

bbf

Water Loss: 5.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 4.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
375.00	Mud 100%	3.584
0.00	Show of Oil in Tool	0.000

Total Length: 375.00 ft Total Volume: 3.584 bbf

Num Fluid Samples: 0

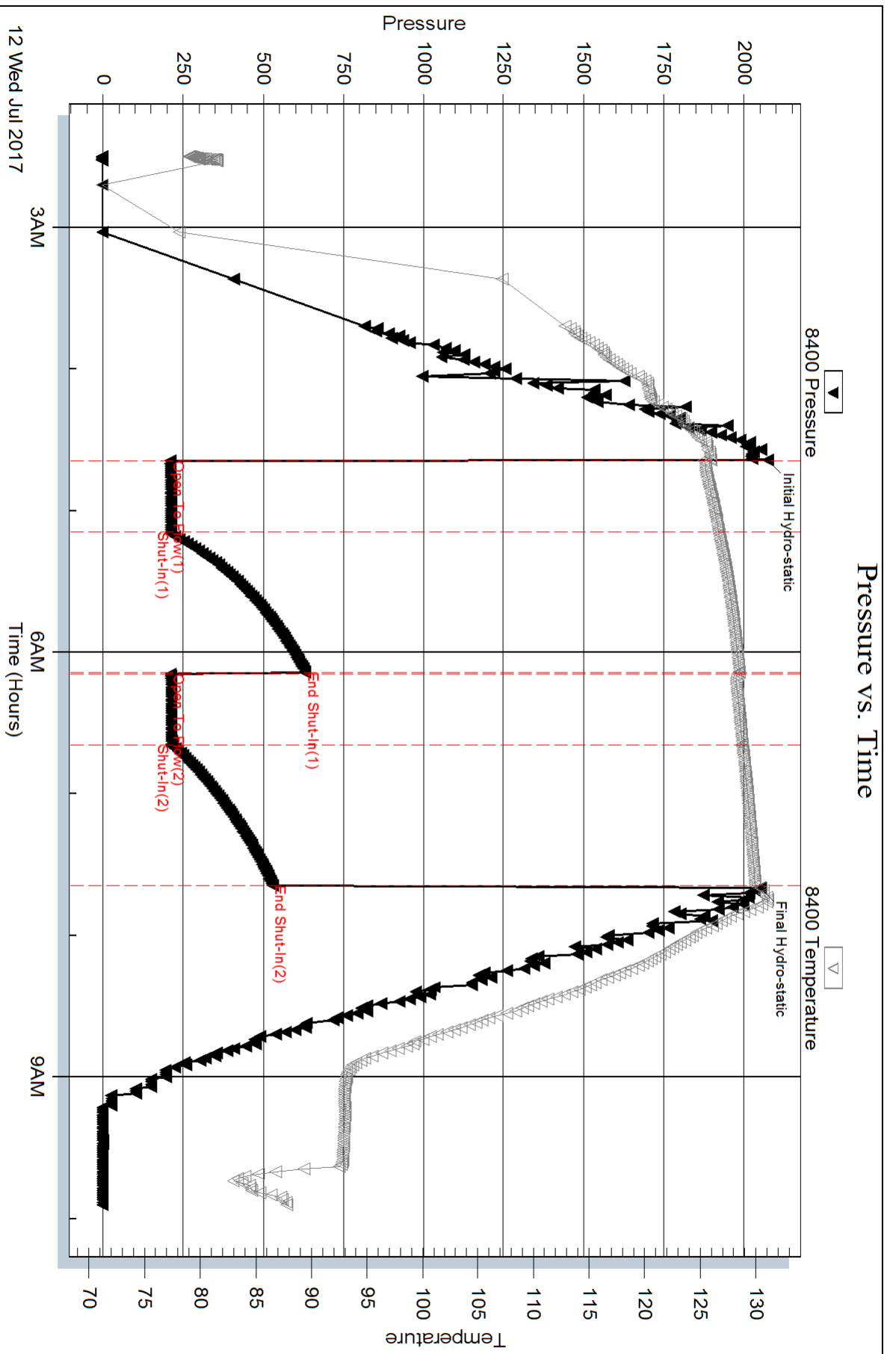
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: Hit Bridge on the way in....



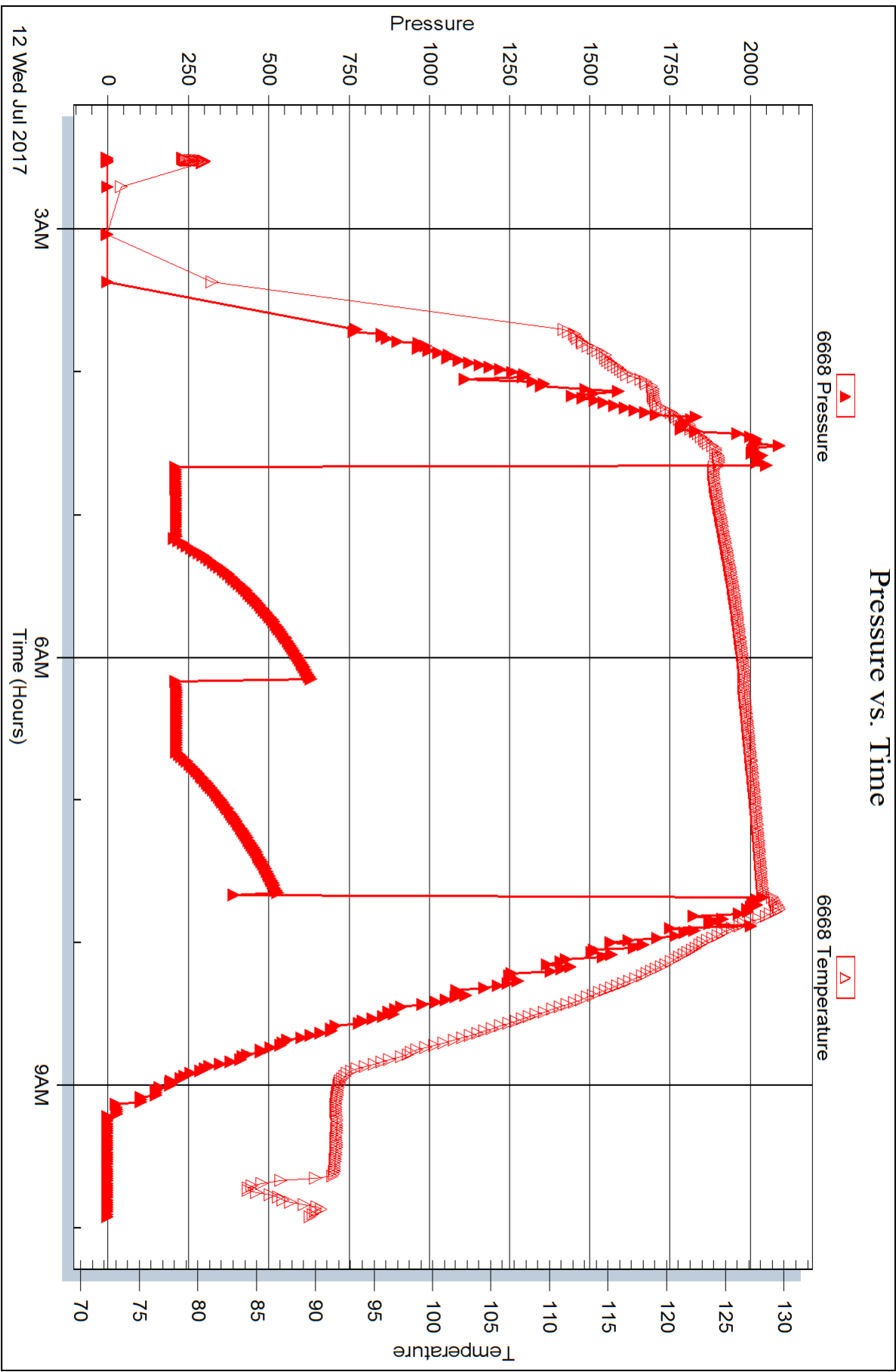
Serial #: 6668

Inside

Murfin Drilling Co Inc

Ken #3-17

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N Water Ste 300
Wichita KS 67202-1216

ATTN: Clayton Erickson

Ken #3-17

17-1s-35w Rawlins,KS

Start Date: 2017.07.12 @ 20:12:00

End Date: 2017.07.13 @ 04:22:00

Job Ticket #: 64049 DST #: 3

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

Printed: 2017.07.17 @ 09:19:18



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co Inc
 250 N Water Ste 300
 Wichita KS 67202-1216
 ATTN: Clayton Erickson

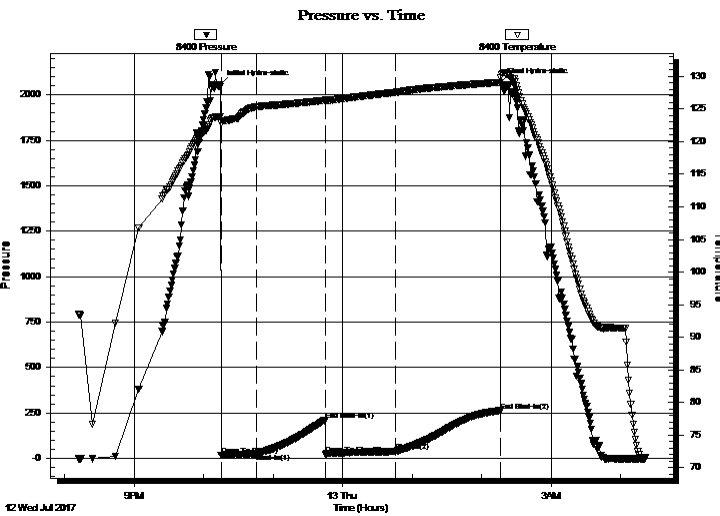
17-1s-35w Rawlins,KS
Ken #3-17
 Job Ticket: 64049 **DST#: 3**
 Test Start: 2017.07.12 @ 20:12:00

GENERAL INFORMATION:

Formation: **LKC " G "**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 22:15:00
 Time Test Ended: 04:22:00
 Interval: **4172.00 ft (KB) To 4235.00 ft (KB) (TVD)**
 Total Depth: 4235.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Jim Svaty
 Unit No: 76
 Reference Elevations: 3181.00 ft (KB)
 3176.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8400 Outside
 Press@RunDepth: 38.50 psig @ 4175.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.07.12 End Date: 2017.07.13 Last Calib.: 2017.07.13
 Start Time: 20:12:01 End Time: 04:21:30 Time On Btm: 2017.07.12 @ 22:14:30
 Time Off Btm: 2017.07.13 @ 02:16:30

TEST COMMENT: 30-IFP- Surface Blow Building to 2"
 60-ISIP- No Blow
 60-FFP- Weak Surface Blow in 7 min. Building to 1 1/4"
 90-FSIP- No Blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2055.53	123.82	Initial Hydro-static
1	17.30	122.82	Open To Flow (1)
32	26.53	125.34	Shut-In(1)
91	211.48	126.33	End Shut-In(1)
91	23.40	126.27	Open To Flow (2)
152	38.50	127.54	Shut-In(2)
242	261.43	129.08	End Shut-In(2)
242	2067.78	129.80	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
50.00	OCM 30%o 70%m	0.25

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co Inc

17-1s-35w Rawlins,KS

250 N Water Ste 300
Wichita KS 67202-1216

Ken #3-17

Job Ticket: 64049

DST#: 3

ATTN: Clayton Erickson

Test Start: 2017.07.12 @ 20:12:00

Tool Information

Drill Pipe:	Length: 3988.00 ft	Diameter: 3.80 inches	Volume: 55.94 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 184.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 56.84 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial 56000.00 lb
Depth to Top Packer:	4172.00 ft			Final 56000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	63.00 ft			
Tool Length:	91.00 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			4145.00	
Shut In Tool	5.00			4150.00	
Hydraulic tool	5.00			4155.00	
Jars	5.00			4160.00	
Safety Joint	2.00			4162.00	
Packer	5.00			4167.00	28.00 Bottom Of Top Packer
Packer	5.00			4172.00	
Stubb	1.00			4173.00	
Perforations	1.00			4174.00	
Change Over Sub	1.00			4175.00	
Recorder	0.00	6668	Inside	4175.00	
Recorder	0.00	8400	Outside	4175.00	
Blank Spacing	31.00			4206.00	
Change Over Sub	1.00			4207.00	
Blank Spacing	25.00			4232.00	
Bullnose	3.00			4235.00	63.00 Bottom Packers & Anchor
Total Tool Length:	91.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co Inc

17-1s-35w Rawlins,KS

250 N Water Ste 300
Wichita KS 67202-1216

Ken #3-17

Job Ticket: 64049

DST#: 3

ATTN: Clayton Erickson

Test Start: 2017.07.12 @ 20:12:00

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: 45.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.39 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 3.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
50.00	OCM 30%o 70%m	0.246

Total Length: 50.00 ft Total Volume: 0.246 bbl

Num Fluid Samples: 0

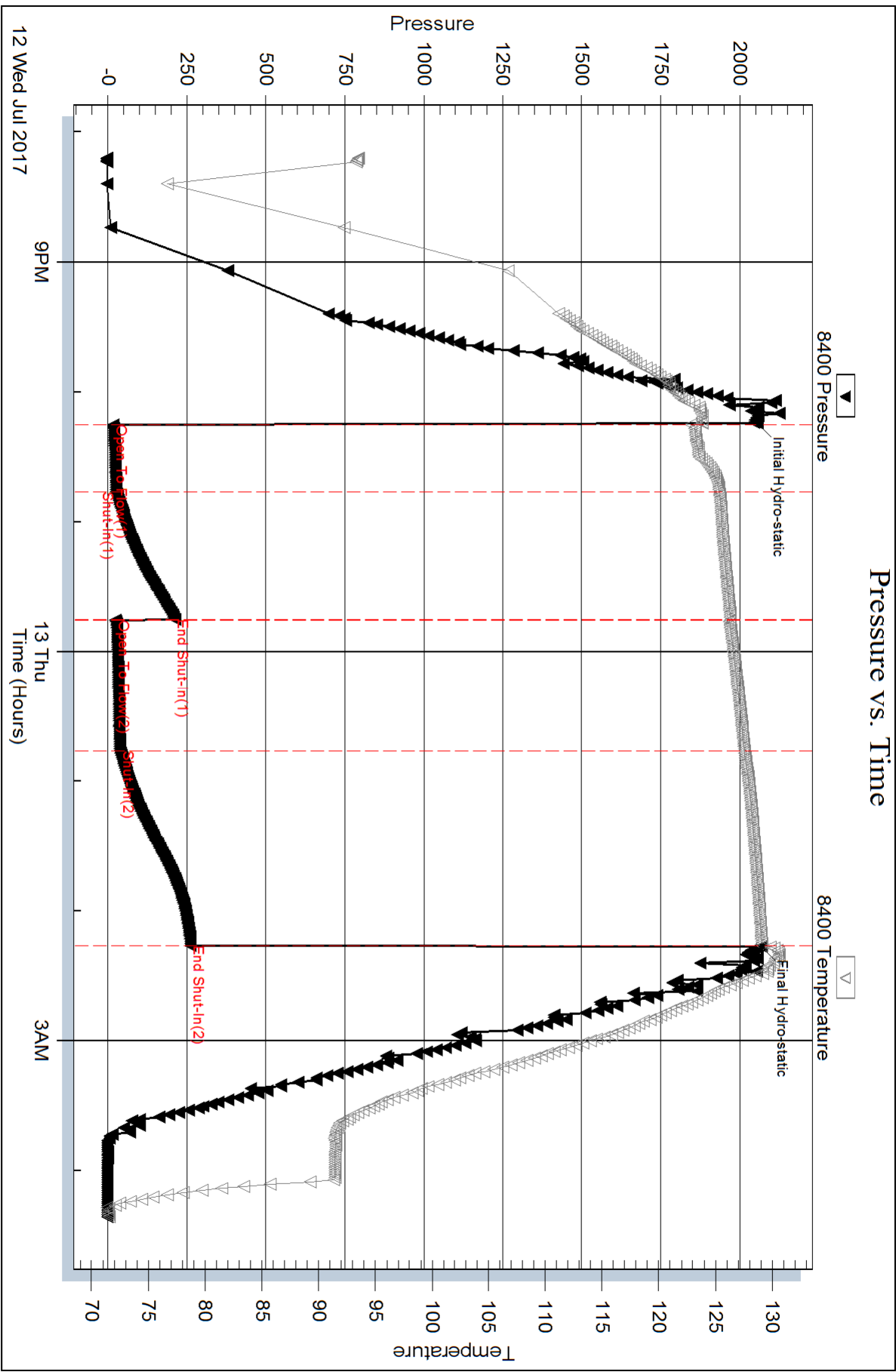
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



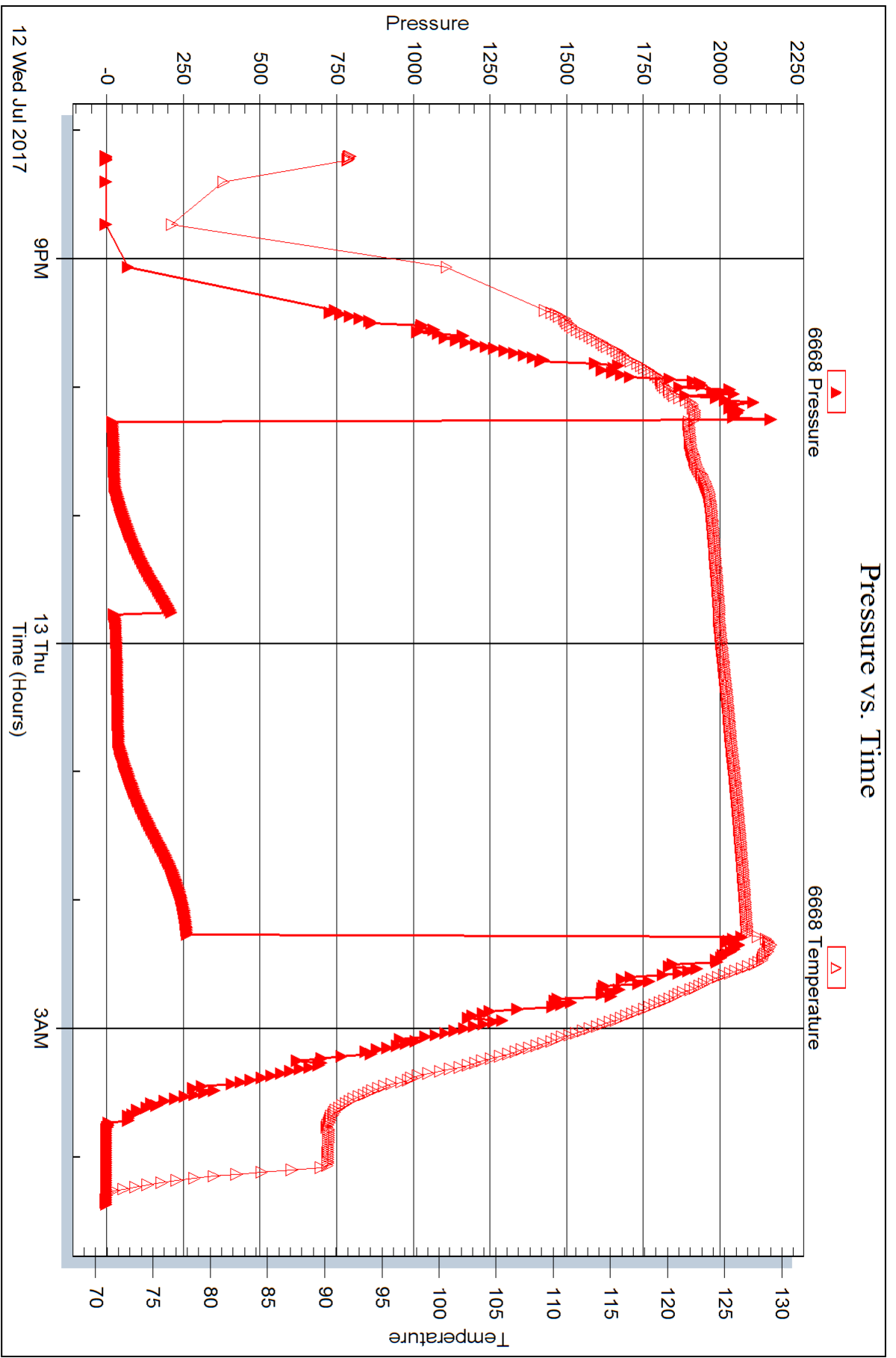
Serial #: 6668

Inside

Murfin Drilling Co Inc

Ken #3-17

DST Test Number: 3



Triobite Testing, Inc

Ref. No: 64049

Printed: 2017.07.17 @ 09:19:19



DRILL STEM TEST REPORT

Prepared For: **Murfin Drilling Co Inc**

250 N Water Ste 300
Wichita KS 67202-1216

ATTN: Clayton Erickson

Ken #3-17

17-1s-35w Rawlins,KS

Start Date: 2017.07.13 @ 15:20:00

End Date: 2017.07.13 @ 23:53:00

Job Ticket #: 64050 DST #: 4

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

Printed: 2017.07.17 @ 09:04:53



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Murfin Drilling Co Inc
 250 N Water Ste 300
 Wichita KS 67202-1216
 ATTN: Clayton Erickson

17-1s-35w Rawlins,KS
Ken #3-17
 Job Ticket: 64050 **DST#: 4**
 Test Start: 2017.07.13 @ 15:20:00

GENERAL INFORMATION:

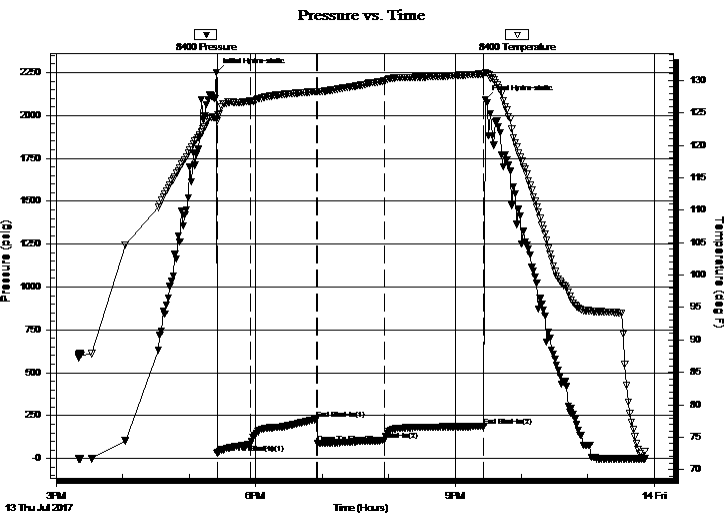
Formation: **LKC " G - J "**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 17:25:00 Tester: Jim Svaty
 Time Test Ended: 23:53:00 Unit No: 76
 Interval: **4226.00 ft (KB) To 4324.00 ft (KB) (TVD)** Reference Elevations: 3181.00 ft (KB)
 Total Depth: 4324.00 ft (KB) (TVD) 3176.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 5.00 ft

Serial #: 8400

Outside

Press@RunDepth: 107.44 psig @ 4232.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2017.07.13 End Date: 2017.07.13 Last Calib.: 2017.07.13
 Start Time: 15:20:01 End Time: 23:52:30 Time On Btm: 2017.07.13 @ 17:24:30
 Time Off Btm: 2017.07.13 @ 21:27:30

TEST COMMENT: 30-IFP- BOB in 11 min.
 60-ISIP- Surface Blow in 1min. Building to 1" In 20 min. Died Back in 36 min.
 60-FFP- BOB in 22 min.
 90-FSIP- Surface Blow in 30sec. Building to 1 1/4". In 18 min. Died Back in 30 min.



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2250.80	124.46	Initial Hydro-static
1	31.84	123.75	Open To Flow (1)
31	81.99	126.84	Shut-In(1)
91	228.53	128.31	End Shut-In(1)
92	89.28	128.27	Open To Flow (2)
152	107.44	129.91	Shut-In(2)
242	186.38	131.00	End Shut-In(2)
243	2092.60	131.23	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
122.00	OCM 40%o 60%m	0.60
122.00	GCO 20%g 80%o	1.15
0.00	445 GIP	0.00

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Murfin Drilling Co Inc

17-1s-35w Rawlins,KS

250 N Water Ste 300
Wichita KS 67202-1216

Ken #3-17

Job Ticket: 64050

DST#: 4

ATTN: Clayton Erickson

Test Start: 2017.07.13 @ 15:20:00

Tool Information

Drill Pipe:	Length: 4021.00 ft	Diameter: 3.80 inches	Volume: 56.40 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 2.75 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 184.00 ft	Diameter: 2.25 inches	Volume: 0.90 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 57.30 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	7.00 ft			String Weight: Initial 54000.00 lb
Depth to Top Packer:	4226.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	98.00 ft			
Tool Length:	126.00 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			4199.00	
Shut In Tool	5.00			4204.00	
Hydraulic tool	5.00			4209.00	
Jars	5.00			4214.00	
Safety Joint	2.00			4216.00	
Packer	5.00			4221.00	28.00 Bottom Of Top Packer
Packer	5.00			4226.00	
Stubb	1.00			4227.00	
Perforations	4.00			4231.00	
Change Over Sub	1.00			4232.00	
Recorder	0.00	6668	Inside	4232.00	
Recorder	0.00	8400	Outside	4232.00	
Blank Spacing	63.00			4295.00	
Change Over Sub	1.00			4296.00	
Blank Spacing	25.00			4321.00	
Bullnose	3.00			4324.00	98.00 Bottom Packers & Anchor
Total Tool Length:	126.00				



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Murfin Drilling Co Inc

17-1s-35w Rawlins,KS

250 N Water Ste 300
Wichita KS 67202-1216

Ken #3-17

Job Ticket: 64050

DST#: 4

ATTN: Clayton Erickson

Test Start: 2017.07.13 @ 15:20:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

30 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 73.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 5.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 600.00 ppm

Filter Cake: 4.00 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
122.00	OCM 40%o 60%m	0.600
122.00	GCO 20%g 80%o	1.147
0.00	445 GIP	0.000

Total Length: 244.00 ft Total Volume: 1.747 bbl

Num Fluid Samples: 0

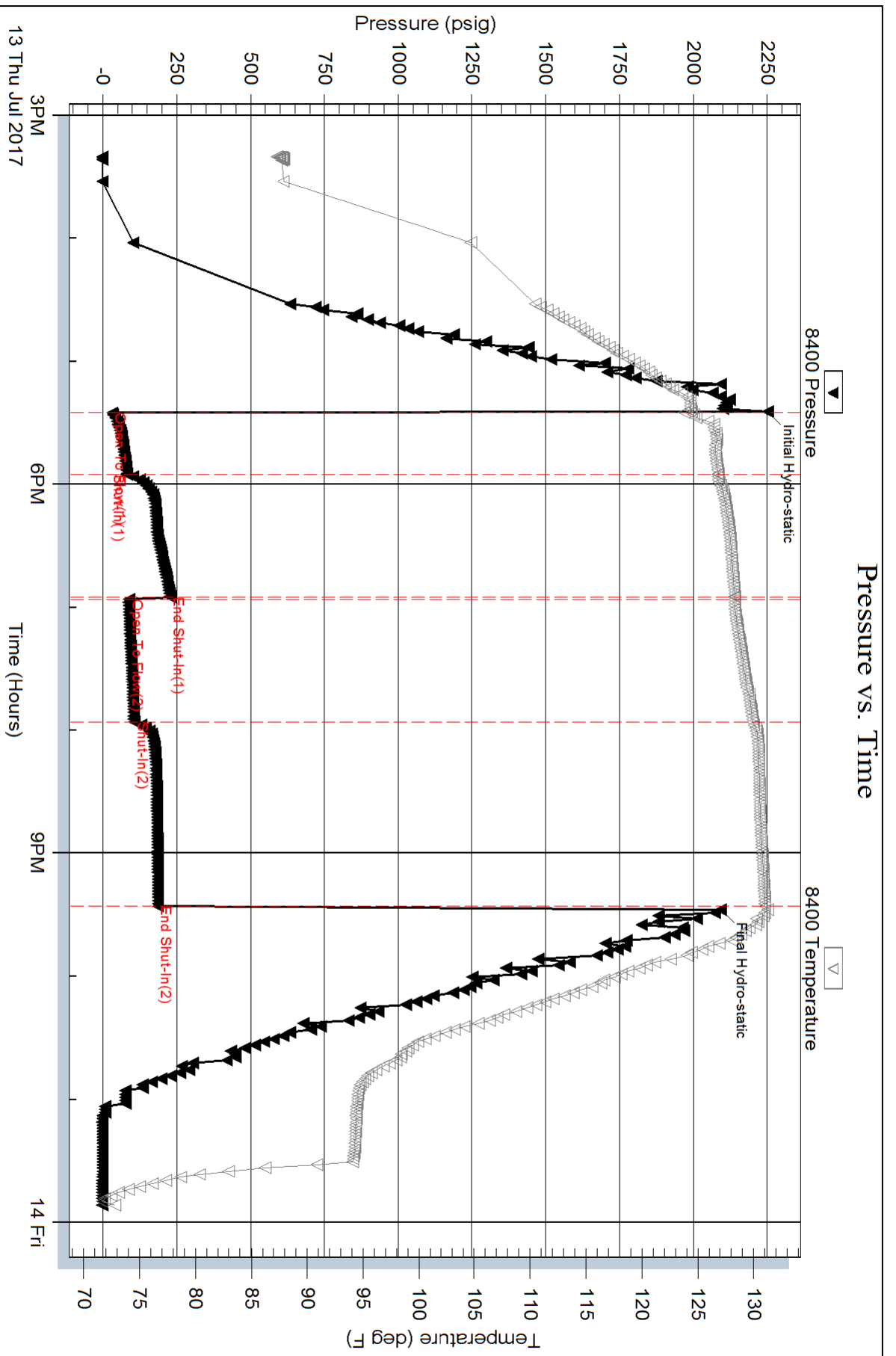
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



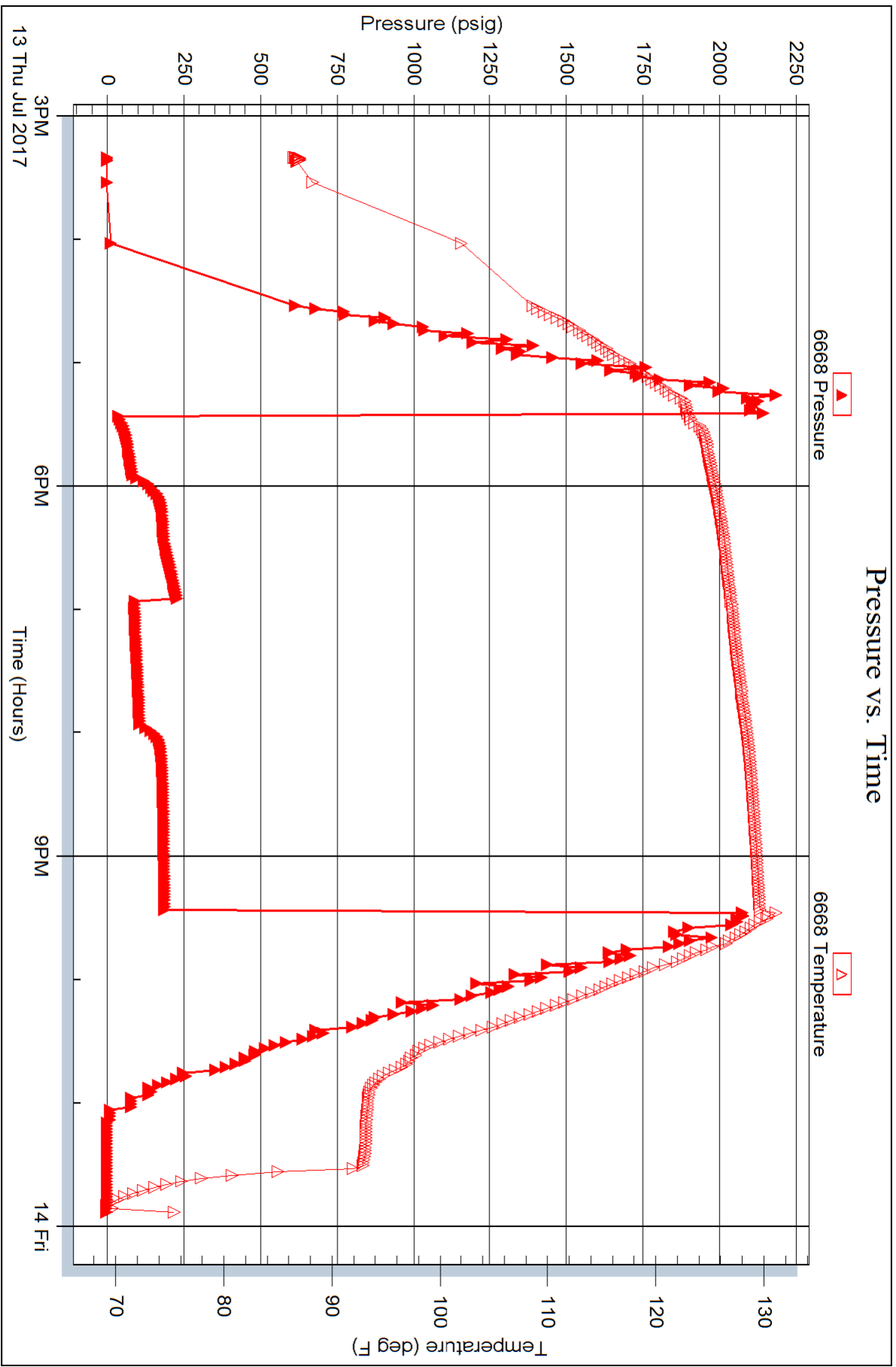
Serial #: 6668

Inside

Murfin Drilling Co Inc

Ken #3-17

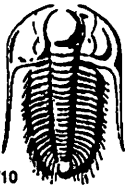
DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 64050

Printed: 2017.07.17 @ 09:04:54



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 64047

4/10

Well Name & No. Ken 3-17 Test No. 1 Date 7-10-17
 Company Murfin Drilling Co. Inc Elevation 3181 KB 3176 GL
 Address 250 N. Water Ste 300 Wichita KS 67202-1216
 Co. Rep / Geo. Clayton Erickson Rig Murfin 7
 Location: Sec. 17 Twp. 15 Rge. 35W Co. Rawl's State KS

Interval Tested 3645-3699 Zone Tested Foraker
 Anchor Length 54 Drill Pipe Run 3450 Mud Wt. 8.8
 Top Packer Depth 3640 Drill Collars Run 184 Vis 65
 Bottom Packer Depth 3645 Wt. Pipe Run 0 WL 5.6
 Total Depth 3699 Chlorides 600 ppm System LCM 4

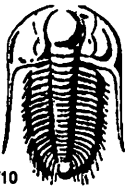
Blow Description IFP - 1/4 in Blow Dried Back in 2 min.
ISIP - No Blow
FFP - No Blow
FSIP - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>Oil Speck Mud</u>	<u>1</u>		<u>99</u>	
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 122 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>1756</u>	<input checked="" type="checkbox"/> Test 1050	T-On Location <u>06:40</u>
(B) First Initial Flow <u>15</u>	<input checked="" type="checkbox"/> Jars 250	T-Started <u>07:33</u>
(C) First Final Flow <u>20</u>	<input checked="" type="checkbox"/> Safety Joint 75	T-Open <u>09:08</u>
(D) Initial Shut-In <u>1074</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>12:08</u>
(E) Second Initial Flow <u>22</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>13:54</u>
(F) Second Final Flow <u>25</u>	<input checked="" type="checkbox"/> Mileage <u>80.25 107 RT</u>	Comments _____
(G) Final Shut-In <u>1016</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1743</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>30</u>	<input checked="" type="checkbox"/> Shale Packer 250	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Extra Copies
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby	Total <u>1705.25</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't _____
	Sub Total <u>1705.25</u>	

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

NO. 64048

Well Name & No. Ken 3-17 Test No. 2 Date 7-12-17
 Company Murfin Drilling Co. Inc Elevation 3181 KB 3176 GL
 Address 250 N. Water St Ste 300 Wichita KS 67202-1216
 Co. Rep / Geo. Clayton Erickson Rig Murfin 7
 Location: Sec. 17 Twp. 15 Rge. 35W Co. Rawlins State KS

Interval Tested 4045-4180 Zone Tested LKC "A-D"
 Anchor Length 135 Drill Pipe Run 3863 Mud Wt. 8.8
 Top Packer Depth 4040 Drill Collars Run 184 Vis 56
 Bottom Packer Depth 4045 Wt. Pipe Run 0 WL 6
 Total Depth 4180 Chlorides 600 ppm System LCM 4

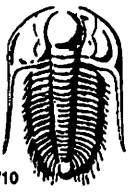
Blow Description IFP - Surface Blow Built to 3/4" In 10 min. Died Back 15 min
ISIP - No Blow
FFP - No Blow
FSIP - No Blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>375</u>	<u>MUD</u>			<u>100</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of <u>Hit Bridge on way in.</u>	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 375 BHT 130 Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2073</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>00:34</u>
(B) First Initial Flow <u>209</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>02:30</u>
(C) First Final Flow <u>210</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>04:40</u>
(D) Initial Shut-In <u>630</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>07:40</u>
(E) Second Initial Flow <u>210</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>09:55</u>
(F) Second Final Flow <u>212</u>	<input checked="" type="checkbox"/> Mileage <u>80.25</u>	Comments _____
(G) Final Shut-In <u>528</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>2050</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____
Initial Open <u>30</u>	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<input type="checkbox"/> Ruined Packer _____
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Extra Copies _____
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby _____	Total <u>1805.25</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1805.25</u>	

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

NO. 64049

4/10

Well Name & No. Ken 3-17 Test No. 3 Date 7-12-17
 Company Murfin Drilling Co. Inc Elevation 3181 KB 3176 GL
 Address 250 N. Water St. 300 W. 17th St. KS. 67202-1216
 Co. Rep / Geo. Clayton Erickson Rig Murfin 7
 Location: Sec. 17 Twp. 15 Rge. 35W Co. Rawlins State KS

Interval Tested 4172-4235 Zone Tested LKC "u"
 Anchor Length 63 Drill Pipe Run 3988 Mud Wt. 9.1
 Top Packer Depth 4167 Drill Collars Run 184 Vis 45
 Bottom Packer Depth 4172 Wt. Pipe Run 0 WL 6.4
 Total Depth 4235 Chlorides 600 ppm System LCM 3

Blow Description I FP - Surface Blow Building to 2 in.
I SIP - No Blow
F FP - Weak Surface Blow in 7 min. Building to 1 1/4 in.
F SIP - No Blow

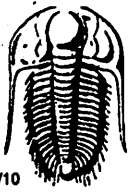
Rec	Feet of	%gas	%oil	%water	%mud
<u>50</u>	<u>0 CM</u>	<u>30</u>		<u>70</u>	
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 50 BHT 130 Gravity _____ API RW _____ @ _____ ° F Chlorides _____ ppm

(A) Initial Hydrostatic <u>20.55</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>19:16</u>
(B) First Initial Flow <u>17</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>20:12</u>
(C) First Final Flow <u>26</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>22:16</u>
(D) Initial Shut-In <u>211</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>02:16</u>
(E) Second Initial Flow <u>23</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>04:22</u>
(F) Second Final Flow <u>38</u>	<input checked="" type="checkbox"/> Mileage <u>80.25</u>	Comments _____
(G) Final Shut-In <u>261</u>	<input type="checkbox"/> Sampler _____	_____
(H) Final Hydrostatic <u>2067</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____
Initial Open <u>30</u>	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<input type="checkbox"/> Ruined Packer _____
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Extra Copies _____
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby _____	Total <u>1805.25</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1805.2</u>	

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

NO. 64050

Well Name & No. Ken 3-17 Test No. 4 Date 7-13-17
 Company Murfin Drilling Co. Inc. Elevation 3181 KB 3176 GL
 Address 250 N. Water St. 300 Wichita KS 67202-1216
 Co. Rep / Geo. Clayton Erickson Rig Murfin 7
 Location: Sec. 17 Twp. 15 Rge. 35W Co. Rawlins State KS

Interval Tested 4226-4324 Zone Tested LKC "2-5"
 Anchor Length 98 Drill Pipe Run 4021 Mud Wt. 9.1
 Top Packer Depth 4221 Drill Collars Run 184 Vis 73
 Bottom Packer Depth 4226 Wt. Pipe Run 2 WL 5.6
 Total Depth 4324 Chlorides 600 ppm System LCM 4

Blow Description I FP - BOB in 16 min.
ISIP Surface Blow in 1 min. Building to line 20 min. Died Back 3 min.
FP - BOB in 22 min.

FSIP - Surface Blow in 30 sec. Building to 1 1/4 in. 1 min. Died Back 30 min.

Rec	Feet of	%gas	%oil	%water	%mud
<u>122</u>	<u>OCM</u>	<u>40</u>		<u>60</u>	
<u>122</u>	<u>2 CO</u>	<u>20</u>	<u>80</u>		
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 244 BHT 132 Gravity 30 API RW @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2250</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>14:10</u>
(B) First Initial Flow <u>31</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>15:20</u>
(C) First Final Flow <u>81</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>17:26</u>
(D) Initial Shut-In <u>228</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>21:26</u>
(E) Second Initial Flow <u>89</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>23:53</u>
(F) Second Final Flow <u>107</u>	<input checked="" type="checkbox"/> Mileage <u>160.50 X 2</u>	Comments _____
(G) Final Shut-In <u>186</u>	<input type="checkbox"/> Sampler _____	_____
(H) Final Hydrostatic <u>2092</u>	<input type="checkbox"/> Straddle _____	_____

Initial Open <u>30</u>	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<input type="checkbox"/> Ruined Shale Packer _____
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Ruined Packer _____
Final Flow <u>60</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Day Standby _____	Total <u>1885.50</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc _____
	Sub Total <u>1885.50</u>	

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.