



DRILL STEM TEST REPORT

Prepared For: **Charter Energy Inc**

PO Box 252
Great Bend KS 67530-0252

ATTN: Jim Musgrove

Hager #1

17-19s-10w Rice,KS

Start Date: 2018.05.04 @ 19:40:34

End Date: 2018.05.05 @ 00:21:28

Job Ticket #: 63867 DST #: 1

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

Printed: 2018.05.07 @ 09:29:21

Charter Energy Inc
17-19s-10w Rice,KS
Hager #1
DST # 1
LKC "G"
2018.05.04



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Charter Energy Inc
 PO Box 252
 Great Bend KS 67530-0252
 ATTN: Jim Musgrove

17-19s-10w Rice, KS
Hager #1
 Job Ticket: 63867 **DST#: 1**
 Test Start: 2018.05.04 @ 19:40:34

GENERAL INFORMATION:

Formation: **LKC "G"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 20:52:14
 Time Test Ended: 00:21:28
 Interval: **3080.00 ft (KB) To 3098.00 ft (KB) (TVD)**
 Total Depth: 3098.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Ray Schwager
 Unit No: 77
 Reference Elevations: 1776.00 ft (KB)
 1771.00 ft (CF)
 KB to GR/CF: 5.00 ft

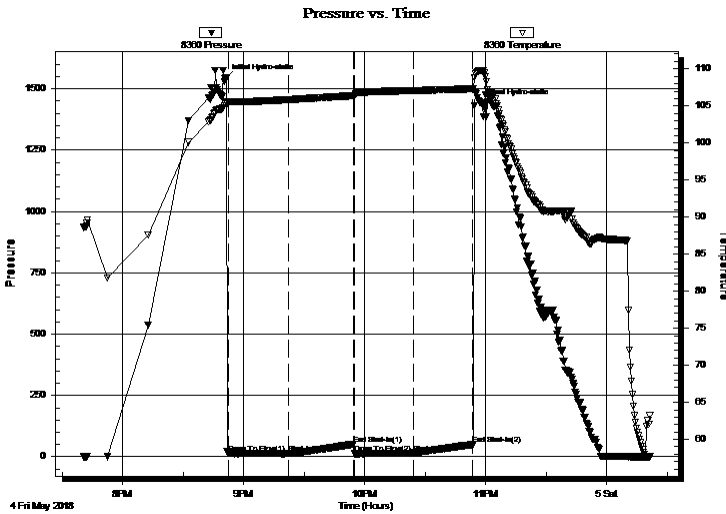
Serial #: 8360

Inside

Press@RunDepth: 15.53 psig @ 3081.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2018.05.04 End Date: 2018.05.05 Last Calib.: 2018.05.05
 Start Time: 19:40:34 End Time: 00:21:28 Time On Btm: 2018.05.04 @ 20:50:44
 Time Off Btm: 2018.05.04 @ 22:57:44

TEST COMMENT: 30-IFP-w k blow thru-out 1/2" to 1 1/4" blow
 30-ISIP-no blow
 30-FFP-w k blow thru-out 1/4" to 1" blow
 30-FSIP-no blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1541.70	105.38	Initial Hydro-static
2	16.46	105.50	Open To Flow (1)
32	13.59	105.86	Shut-In(1)
64	51.32	106.38	End Shut-In(1)
64	12.48	106.41	Open To Flow (2)
94	15.53	107.07	Shut-In(2)
123	50.11	107.32	End Shut-In(2)
127	1439.45	109.79	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	VSOCM 1%O99%M	0.14
0.00	50' GIP	0.00

Gas Rates

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



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DRILL STEM TEST REPORT

Charter Energy Inc
 PO Box 252
 Great Bend KS 67530-0252
 ATTN: Jim Musgrove

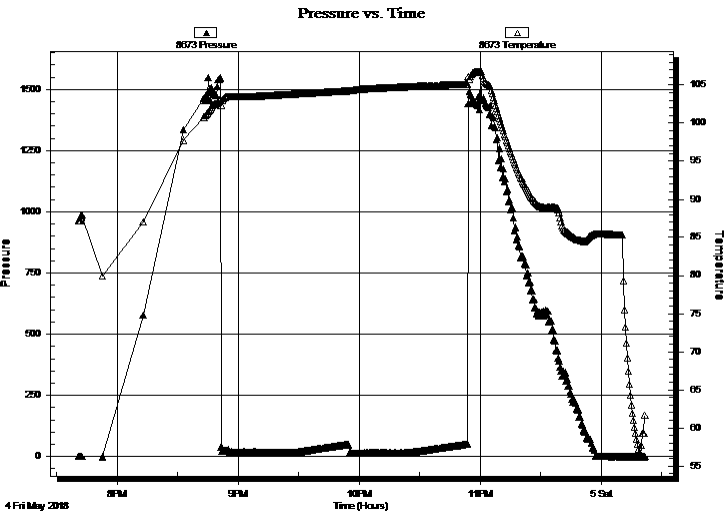
17-19s-10w Rice, KS
Hager #1
 Job Ticket: 63867 **DST#: 1**
 Test Start: 2018.05.04 @ 19:40:34

GENERAL INFORMATION:

Formation: **LKC "G"**
 Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Initial)
 Time Tool Opened: 20:52:14 Tester: Ray Schwager
 Time Test Ended: 00:21:28 Unit No: 77
Interval: 3080.00 ft (KB) To 3098.00 ft (KB) (TVD) Reference Elevations: 1776.00 ft (KB)
 Total Depth: 3098.00 ft (KB) (TVD) 1771.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 5.00 ft

Serial #: 8673 Outside
 Press@RunDepth: psig @ 3081.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2018.05.04 End Date: 2018.05.05 Last Calib.: 2018.05.05
 Start Time: 19:40:52 End Time: 00:21:46 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30-IFP-w k blow thru-out 1/2" to 1 1/4" blow
 30-ISIP-no blow
 30-FFP-w k blow thru-out 1/4" to 1" blow
 30-FSIP-no blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
10.00	VSOCM 1%O99%M	0.14
0.00	50' GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Charter Energy Inc
 PO Box 252
 Great Bend KS 67530-0252
 ATTN: Jim Musgrove

17-19s-10w Rice, KS
Hager #1
 Job Ticket: 63867 **DST#: 1**
 Test Start: 2018.05.04 @ 19:40:34

Tool Information

Drill Pipe:	Length: 3069.00 ft	Diameter: 3.80 inches	Volume: 43.05 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 60000.00 lb
			<u>Total Volume: 43.05 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	10.00 ft			String Weight: Initial 50000.00 lb
Depth to Top Packer:	3080.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	18.00 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
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Change Over Sub	1.00			3060.00	
Shut In Tool	5.00			3065.00	
Hydraulic tool	5.00			3070.00	
Packer	5.00			3075.00	21.00 Bottom Of Top Packer
Packer	5.00			3080.00	
Stubb	1.00			3081.00	
Recorder	0.00	8360	Inside	3081.00	
Recorder	0.00	8673	Outside	3081.00	
Perforations	14.00			3095.00	
Bullnose	3.00			3098.00	18.00 Bottom Packers & Anchor
Total Tool Length:	39.00				



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DRILL STEM TEST REPORT

FLUID SUMMARY

Charter Energy Inc
 PO Box 252
 Great Bend KS 67530-0252
 ATTN: Jim Musgrove

17-19s-10w Rice,KS
Hager #1
 Job Ticket: 63867 **DST#: 1**
 Test Start: 2018.05.04 @ 19:40:34

Mud and Cushion Information

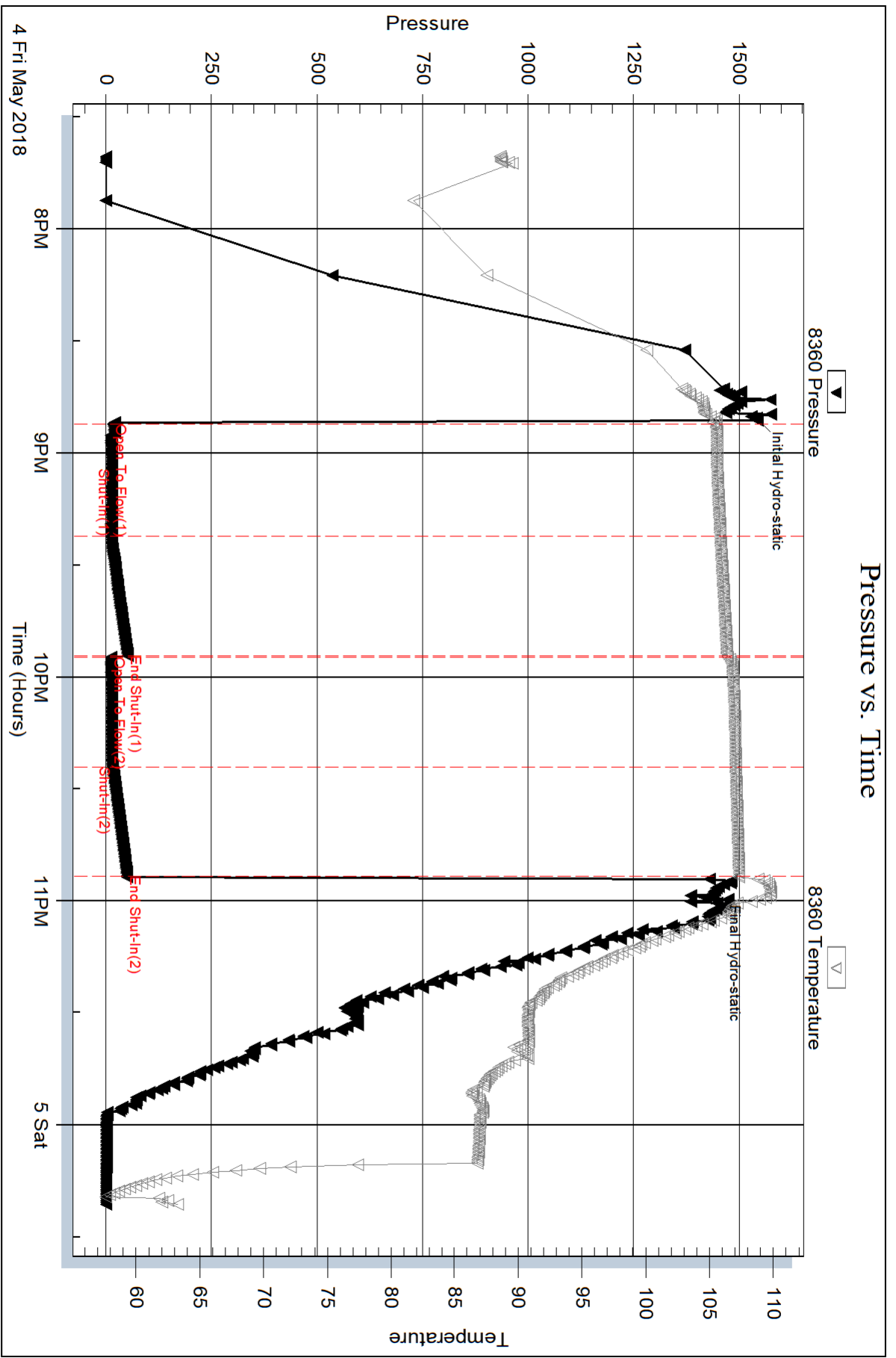
Mud Type: Gel Chem	Cushion Type:	Oil API:	deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity:	ppm
Viscosity: 58.00 sec/qt	Cushion Volume: bbl		
Water Loss: 10.14 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 7000.00 ppm			
Filter Cake: 1.00 inches			

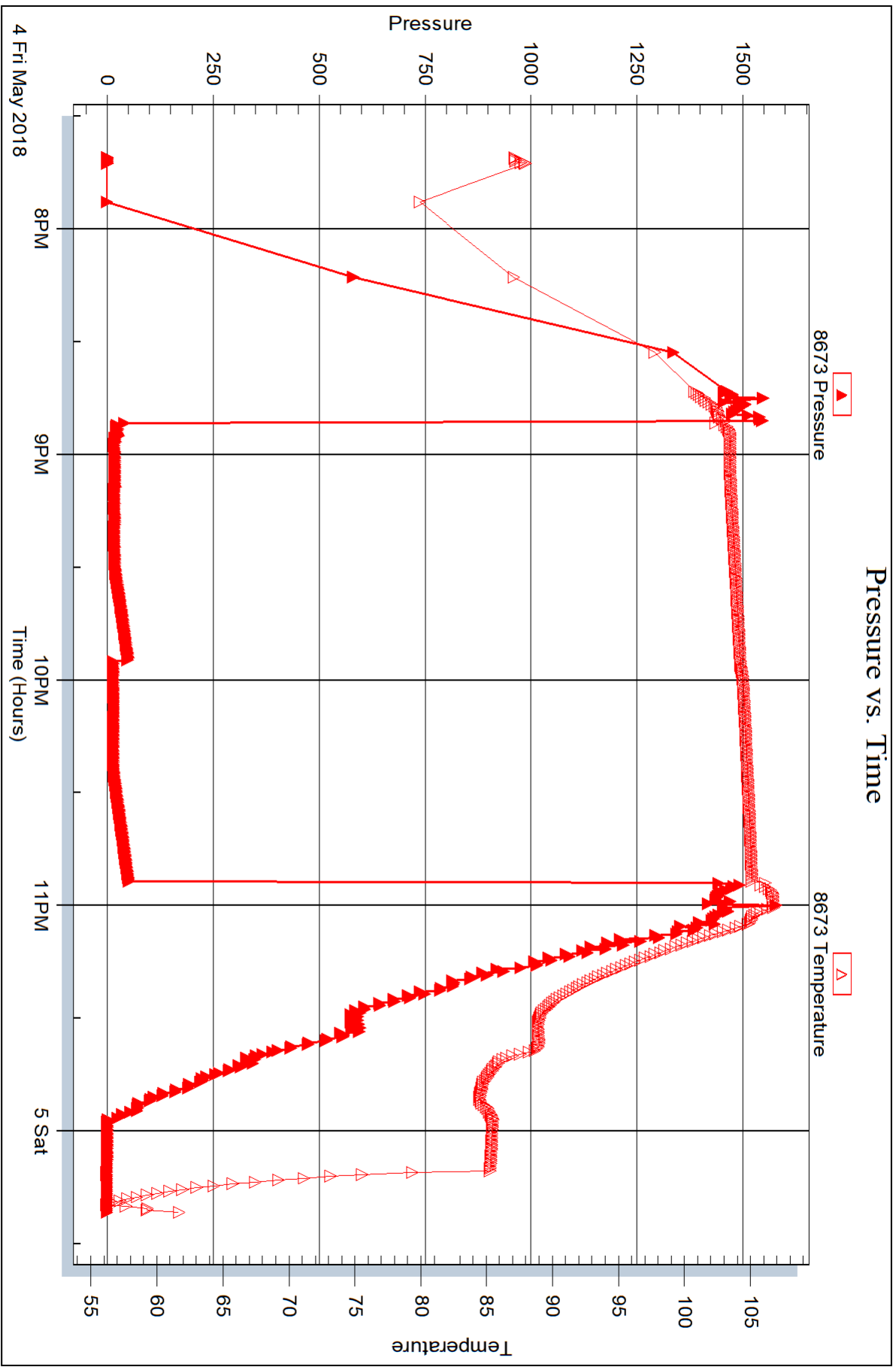
Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	VSOCM 1%O99%M	0.140
0.00	50' GIP	0.000

Total Length: 10.00 ft Total Volume: 0.140 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:







DRILL STEM TEST REPORT

Prepared For: **Charter Energy Inc**

PO Box 252
Great Bend KS 67530-0252

ATTN: Jim Musgrove

Hager #1

17-19s-10w Rice,KS

Start Date: 2018.05.05 @ 21:55:55

End Date: 2018.05.06 @ 04:22:49

Job Ticket #: 63868 DST #: 2

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

Printed: 2018.05.07 @ 09:29:00



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Charter Energy Inc
 PO Box 252
 Great Bend KS 67530-0252
 ATTN: Jim Musgrove

17-19s-10w Rice, KS
Hager #1
 Job Ticket: 63868 **DST#: 2**
 Test Start: 2018.05.05 @ 21:55:55

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 23:33:35
 Time Test Ended: 04:22:49
 Interval: **3261.00 ft (KB) To 3323.00 ft (KB) (TVD)**
 Total Depth: 3323.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Ray Schwager
 Unit No: 77
 Reference Elevations: 1776.00 ft (KB)
 1771.00 ft (CF)
 KB to GR/CF: 5.00 ft

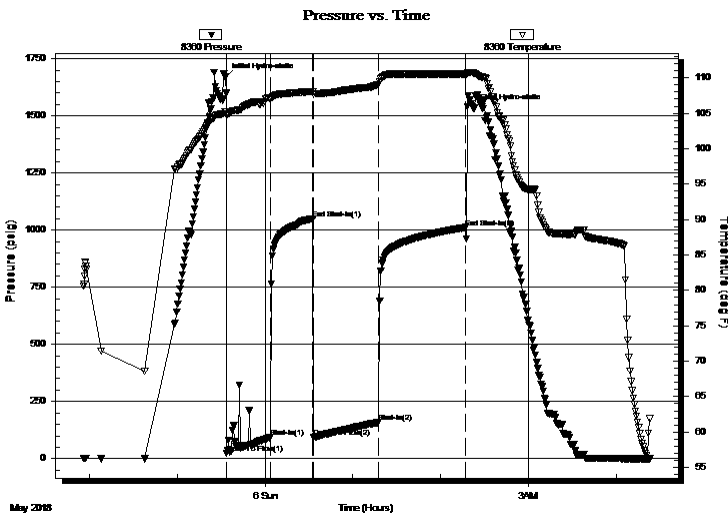
Serial #: 8360

Inside

Press@RunDepth: 159.13 psig @ 3267.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2018.05.05 End Date: 2018.05.06 Last Calib.: 2018.05.06
 Start Time: 21:55:55 End Time: 04:22:49 Time On Btm: 2018.05.05 @ 23:32:35
 Time Off Btm: 2018.05.06 @ 02:22:19

TEST COMMENT: 30-IFP-w eak to BOB in 15 min
 30-ISIP-no blow back
 45-FFP-w eak to BOB in 14 min
 60-FSIP-no blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1669.05	105.16	Initial Hydro-static
1	24.20	104.75	Open To Flow (1)
31	94.18	107.11	Shut-In(1)
60	1050.11	108.04	End Shut-In(1)
61	92.09	107.70	Open To Flow (2)
105	159.13	109.09	Shut-In(2)
165	1011.27	110.52	End Shut-In(2)
170	1530.81	110.64	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
62.00	SMGO 20%G5%M75%O	0.87
92.00	GMO 40%G10%M50%O	1.29
310.00	CO	4.35
0.00	340' GIP	0.00

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Charter Energy Inc
 PO Box 252
 Great Bend KS 67530-0252
 ATTN: Jim Musgrove

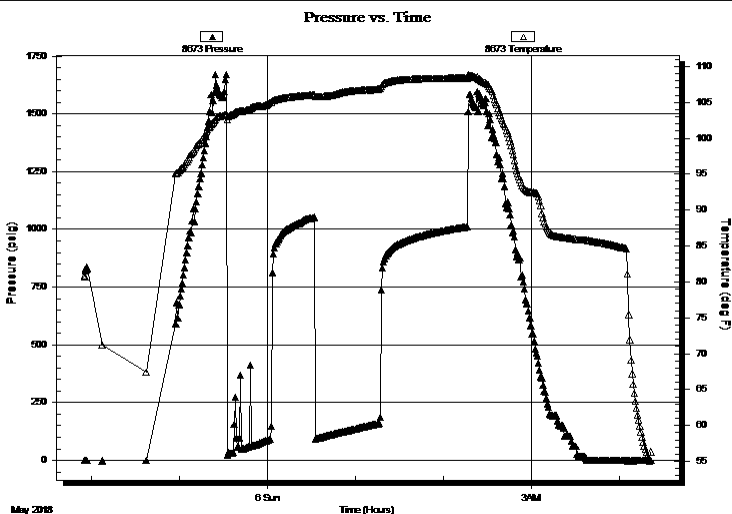
17-19s-10w Rice, KS
Hager #1
 Job Ticket: 63868 **DST#: 2**
 Test Start: 2018.05.05 @ 21:55:55

GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 23:33:35 Tester: Ray Schwager
 Time Test Ended: 04:22:49 Unit No: 77
Interval: 3261.00 ft (KB) To 3323.00 ft (KB) (TVD) Reference Elevations: 1776.00 ft (KB)
 Total Depth: 3323.00 ft (KB) (TVD) 1771.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Fair KB to GR/CF: 5.00 ft

Serial #: 8673 Outside
 Press@RunDepth: psig @ 3267.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2018.05.05 End Date: 2018.05.06 Last Calib.: 2018.05.06
 Start Time: 21:55:24 End Time: 04:22:03 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30-IFP-weak to BOB in 15 min
 30-ISIP-no blow back
 45-FFP-weak to BOB in 14 min
 60-FSIP-no blow back



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
62.00	SMGO 20%G5%M75%O	0.87
92.00	GMO 40%G10%M50%O	1.29
310.00	CO	4.35
0.00	340' GIP	0.00

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
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DRILL STEM TEST REPORT

TOOL DIAGRAM

Charter Energy Inc
 PO Box 252
 Great Bend KS 67530-0252
 ATTN: Jim Musgrove

17-19s-10w Rice, KS
Hager #1
 Job Ticket: 63868 **DST#: 2**
 Test Start: 2018.05.05 @ 21:55:55

Tool Information

Drill Pipe:	Length: 3262.00 ft	Diameter: 3.80 inches	Volume: 45.76 bbl	Tool Weight: 2200.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight to Pull Loose: 65000.00 lb
			<u>Total Volume: 45.76 bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 52000.00 lb
Depth to Top Packer:	3261.00 ft			Final 55000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	62.00 ft			
Tool Length:	83.00 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			3241.00	
Shut In Tool	5.00			3246.00	
Hydraulic tool	5.00			3251.00	
Packer	5.00			3256.00	21.00 Bottom Of Top Packer
Packer	5.00			3261.00	
Stubb	1.00			3262.00	
Perforations	5.00			3267.00	
Recorder	0.00	8360	Inside	3267.00	
Recorder	0.00	8673	Outside	3267.00	
Blank Spacing	33.00			3300.00	
Perforations	20.00			3320.00	
Bullnose	3.00			3323.00	62.00 Bottom Packers & Anchor

Total Tool Length: 83.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

Charter Energy Inc
 PO Box 252
 Great Bend KS 67530-0252
 ATTN: Jim Musgrove

17-19s-10w Rice,KS
Hager #1
 Job Ticket: 63868 **DST#: 2**
 Test Start: 2018.05.05 @ 21:55:55

Mud and Cushion Information

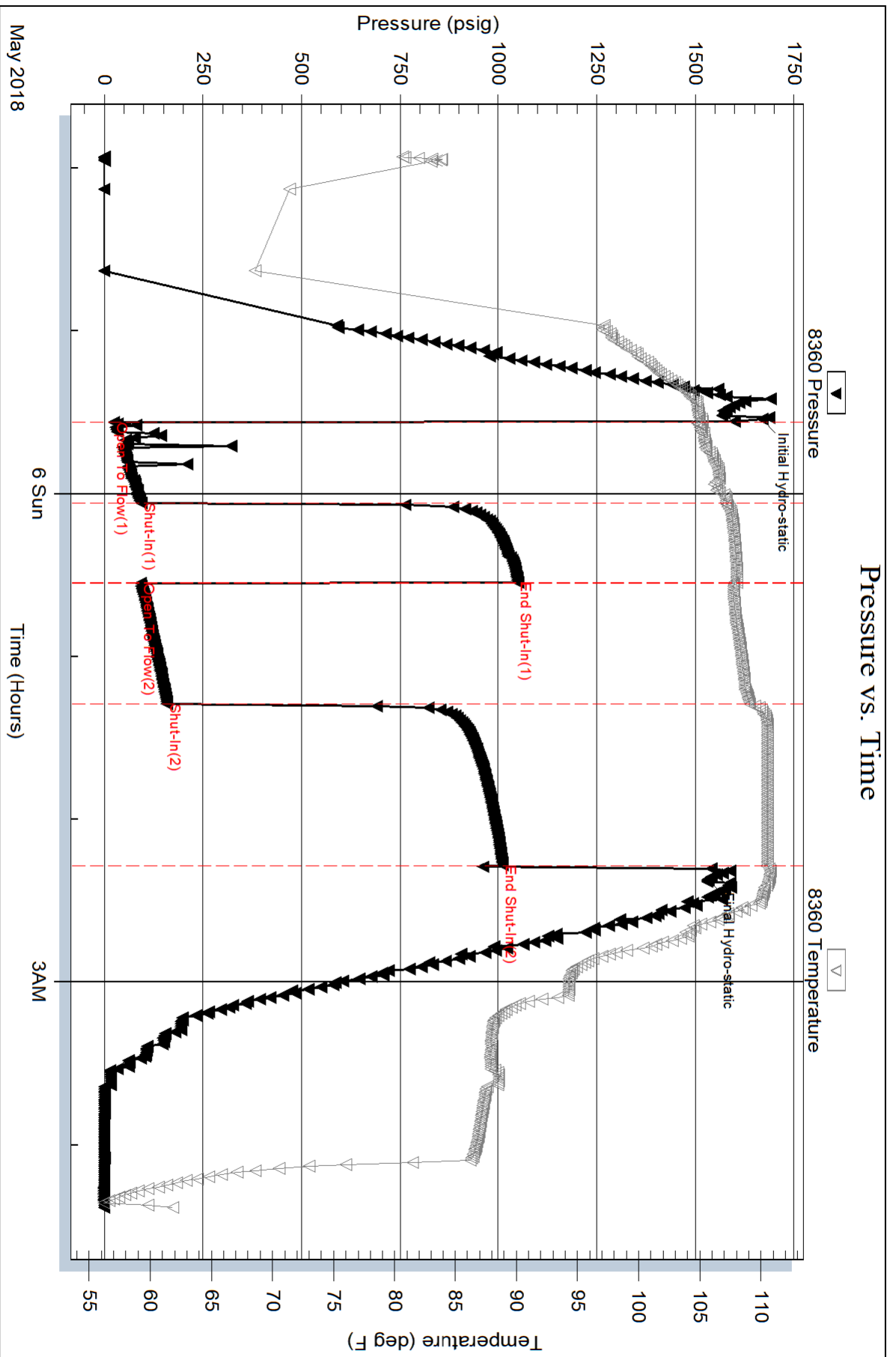
Mud Type: Gel Chem	Cushion Type:	Oil API: 41 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 54.00 sec/qt	Cushion Volume: bbl	
Water Loss: 10.54 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 10100.00 ppm		
Filter Cake: 1.00 inches		

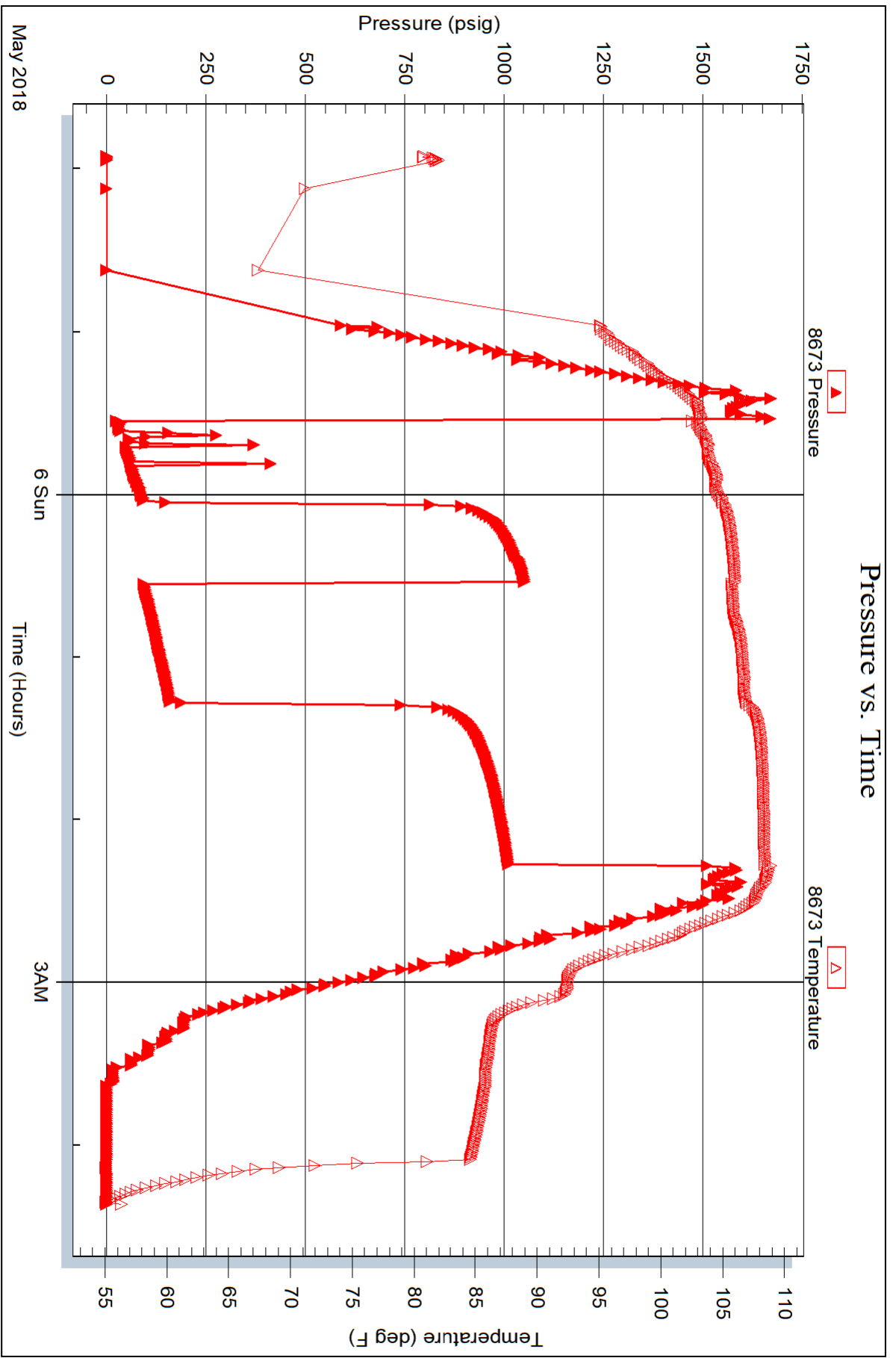
Recovery Information

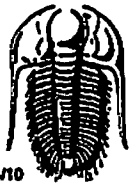
Recovery Table

Length ft	Description	Volume bbl
62.00	SMGO 20%G5%M75%O	0.870
92.00	GMO 40%G10%M50%O	1.291
310.00	CO	4.348
0.00	340' GIP	0.000

Total Length: 464.00 ft Total Volume: 6.509 bbl
 Num Fluid Samples: 0 Num Gas Bombs: 0 Serial #:
 Laboratory Name: Laboratory Location:
 Recovery Comments:







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63867

Well Name & No. Hager #1 Test No. 1 Date 5-4-18
 Company CHARTER Energy Inc Elevation 1770 KB 1785 GL
 Address PO Box 252 Great Bend, Ks 67530-0252
 Co. Rep / Geo. Jim Musgrove Rig Royalrig 1
 Location: Sec. 17 Twp 19^s Rge. 10^w Co. Rice State Ks

Interval Tested 3080-3098 Zone Tested LKC 'G'
 Anchor Length 18 Drill Pipe Run 3069 Mud Wt. 9.2
 Top Packer Depth 3075 Drill Collars Run — Vis 58
 Bottom Packer Depth 3080 Wt. Pipe Run — WL 10.2
 Total Depth 3098 Chlorides 7000 ppm System LCM TR.

Blow Description IFP - WEAK Blow thru-out 1/2" to 1 1/4" Blow
TSTP - NO BLOW
FFP - WEAK Blow thru-out 1/4" to 1" Blow
FSTP - NO BLOW

Rec	Feet of	%gas	%oil	%water	%mud
<u>50</u>	<u>GIP</u>				
<u>10</u>	<u>V60CM</u>		<u>1</u>		<u>99</u>

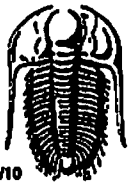
Rec Total 10 BHT 107 Gravity — API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic 1541 Test 1050 T-On Location 1720
 (B) First Initial Flow 16 Jars — T-Started 1940
 (C) First Final Flow 13 Safety Joint — T-Open 2050
 (D) Initial Shut-In 51 Circ Sub — T-Pulled 2250
 (E) Second Initial Flow 12 Hourly Standby — T-Out 0021
 (F) Second Final Flow 15 Mileage 42rt Comments —
 (G) Final Shut-In 50 Sampler —
 (H) Final Hydrostatic 1439 Straddle — Ruined Shale Packer —
 Shale Packer — Ruined Packer —

Initial Open 30 Extra Packer — Extra Copies —
 Initial Shut-In 30 Extra Recorder — Sub Total 0
 Final Flow 30 Day Standby — Total 1092
 Final Shut-In 30 Accessibility — MP/DST Disc't —
 Sub Total 1092

Approved By _____ Our Representative RAUSCHWAGNER THANK YOU

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. 63868

Well Name & No. Hager #1 Test No. 2 Date 5-5-18
 Company CHARTER Energy Inc Elevation 1770 KB 1765 GL
 Address PO Box 252 Great Bend, Ks 67530-0252
 Co. Rep / Geo. Jim Musgrove Rig Royal rig 1
 Location: Sec. 17 Twp 19^s Rge. 10^w Co. Rice State Ks

Interval Tested 3261-3323 Zone Tested Arbuckle
 Anchor Length 62 Drill Pipe Run 3262 Mud Wt. 9.4
 Top Packer Depth 3256 Drill Collars Run - Vis 54
 Bottom Packer Depth 3261 Wt. Pipe Run - WL 10.6
 Total Depth 3323 Chlorides 10100 ppm System LCM TR.

Blow Description IFP - WEAK TO BOBIN 15 MIN
ISIP - NO BLOW BACK
FFP - WEAK TO BOBIN 14 MIN
FSTP - NO BLOW BACK

Rec	Feet of	%gas	%oil	%water	%mud
<u>340</u>	<u>GIP</u>				
<u>310</u>	<u>CO</u>				
<u>92</u>	<u>M60</u>	<u>40</u>	<u>50</u>		<u>10</u>
<u>62</u>	<u>SM60</u>	<u>20</u>	<u>75</u>		<u>5</u>
<u>464</u>	<u>BHT 110</u>				

Rec Total 464 BHT 110 Gravity 41 API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 11669 Test 1050 T-On Location 2100
 (B) First Initial Flow 24 Jars _____ T-Started 2155
 (C) First Final Flow 94 Safety Joint _____ T-Open 2330
 (D) Initial Shut-In 1050 Circ Sub _____ T-Pulled 0215
 (E) Second Initial Flow 92 Hourly Standby _____ T-Out 0422
 (F) Second Final Flow 159 Mileage 42 Comments _____
 (G) Final Shut-In 1011 Sampler _____
 (H) Final Hydrostatic 1530 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 30 Extra Recorder _____ Sub Total 0
 Initial Shut-In 30 Day Standby _____ Total 1092
 Final Flow 45 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 60 Sub Total 1092

Approved By _____ Our Representative RAY SCHWAGN Thank you
 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.