



DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating, Inc.**

PO Box 86
Plainville, KS 67663

ATTN: Aaron Young

Maddy #1-5

5-8S-18W Rooks,KS

Start Date: 2017.05.11 @ 12:43:29

End Date: 2017.05.11 @ 21:53:34

Job Ticket #: 63187 DST #: 1

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

Printed: 2017.05.12 @ 15:02:17



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

H&C Oil Operating, Inc.

5-8S-18W Rooks, KS

PO Box 86
Plainville, KS 67663

Maddy #1-5

Job Ticket: 63187

DST#: 1

ATTN: Aaron Young

Test Start: 2017.05.11 @ 12:43:29

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:39:50

Time Test Ended: 21:53:34

Test Type: Conventional Bottom Hole (Initial)

Tester: Brannan Lonsdale

Unit No: 73

Interval: 3372.00 ft (KB) To 3385.00 ft (KB) (TVD)

Reference Elevations: 1925.00 ft (KB)

Total Depth: 3385.00 ft (KB) (TVD)

1917.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8524 Outside

Press@RunDepth: 64.08 psig @ 3382.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.05.11 End Date: 2017.05.11

Last Calib.: 2017.05.11

Start Time: 12:43:30 End Time: 21:53:34

Time On Btm: 2017.05.11 @ 15:39:35

Time Off Btm: 2017.05.11 @ 20:11:50

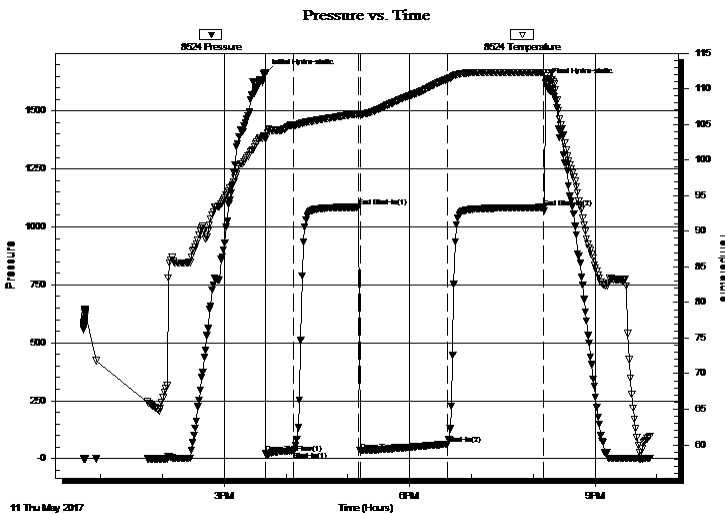
TEST COMMENT: 30- IF- Slowly built to 4"

60- IS- No blow

90- FF- BOB 74 mins

90- FSI- No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1662.65	103.34	Initial Hydro-static
1	21.60	102.94	Open To Flow (1)
28	34.35	104.88	Shut-In(1)
91	1085.22	106.50	End Shut-In(1)
93	34.57	106.35	Open To Flow (2)
178	64.08	111.37	Shut-In(2)
271	1083.52	112.25	End Shut-In(2)
273	1622.28	111.76	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
50.00	SOCMW, 5%O 30%M 65%W	0.41
25.00	SWSMCO, 5%W 5%M 90%O	0.35
30.00	CO	0.43
0.00	15' GIP	0.00

Gas Rates

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



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DRILL STEM TEST REPORT

H&C Oil Operating, Inc.

5-8S-18W Rooks, KS

PO Box 86
Plainville, KS 67663

Maddy #1-5

ATTN: Aaron Young

Job Ticket: 63187

DST#: 1

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Formation: **Arbuckle**

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Time Test Ended: 21:53:34

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Total Depth: 3385.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Bottom Hole (Initial)

Tester: Brannan Lonsdale

Unit No: 73

Reference Elevations: 1925.00 ft (KB)

1917.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 6838

Inside

Press@RunDepth: psig @ 3382.00 ft (KB)

Start Date: 2017.05.11

End Date: 2017.05.11

Start Time: 12:43:44

End Time: 21:53:48

Capacity: 8000.00 psig

Last Calib.: 2017.05.11

Time On Btm:

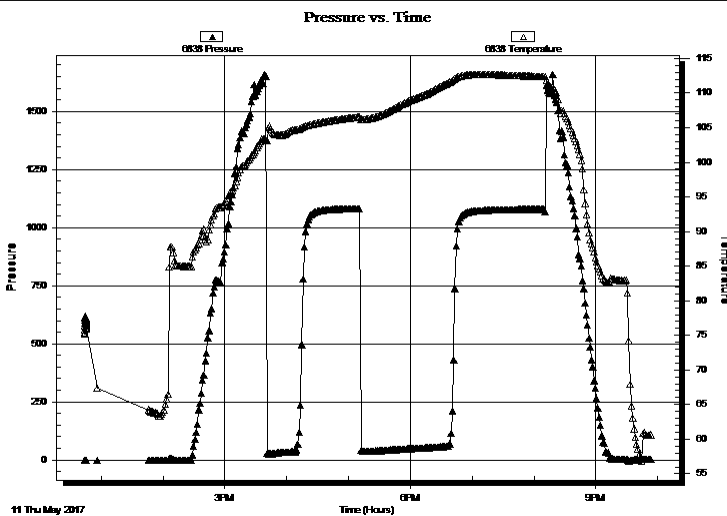
Time Off Btm:

TEST COMMENT: 30- IF- Slow ly built to 4"

60- ISI- No blow

90- FF- BOB 74 mins

90- FSI- No blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
50.00	SOCMW, 5%O 30%M 65%W	0.41
25.00	SWSMCO, 5%W 5%M 90%O	0.35
30.00	CO	0.43
0.00	15' GIP	0.00

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Oil Operating, Inc.

5-8S-18W Rooks, KS

PO Box 86
Plainville, KS 67663

Maddy #1-5

Job Ticket: 63187

DST#: 1

ATTN: Aaron Young

Test Start: 2017.05.11 @ 12:43:29

Tool Information

Drill Pipe:	Length: 3318.00 ft	Diameter: 3.82 inches	Volume: 47.03 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 32.00 ft	Diameter: 2.25 inches	Volume: 0.16 bbl	Weight to Pull Loose: 44000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	5.00 ft			String Weight: Initial 42000.00 lb
Depth to Top Packer:	3372.00 ft			Final 43000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	13.00 ft			
Tool Length:	40.00 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			3346.00	
Shut In Tool	5.00			3351.00	
Hydraulic tool	5.00			3356.00	
Jars	5.00			3361.00	
Safety Joint	2.00			3363.00	
Packer	5.00			3368.00	27.00 Bottom Of Top Packer
Packer	4.00			3372.00	
Stubb	1.00			3373.00	
Perforations	9.00			3382.00	
Recorder	0.00	6838	Inside	3382.00	
Recorder	0.00	8524	Outside	3382.00	
Bullnose	3.00			3385.00	13.00 Bottom Packers & Anchor

Total Tool Length: 40.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating, Inc.

5-8S-18W Rooks,KS

PO Box 86
Plainville, KS 67663

Maddy #1-5

Job Ticket: 63187

DST#: 1

ATTN: Aaron Young

Test Start: 2017.05.11 @ 12:43:29

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

28 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

48000 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1800.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
50.00	SOCMW, 5%O 30%M 65%W	0.413
25.00	SWSMCO, 5%W 5%M 90%O	0.354
30.00	CO	0.425
0.00	15' GIP	0.000

Total Length: 105.00 ft

Total Volume: 1.192 bbl

Num Fluid Samples: 0

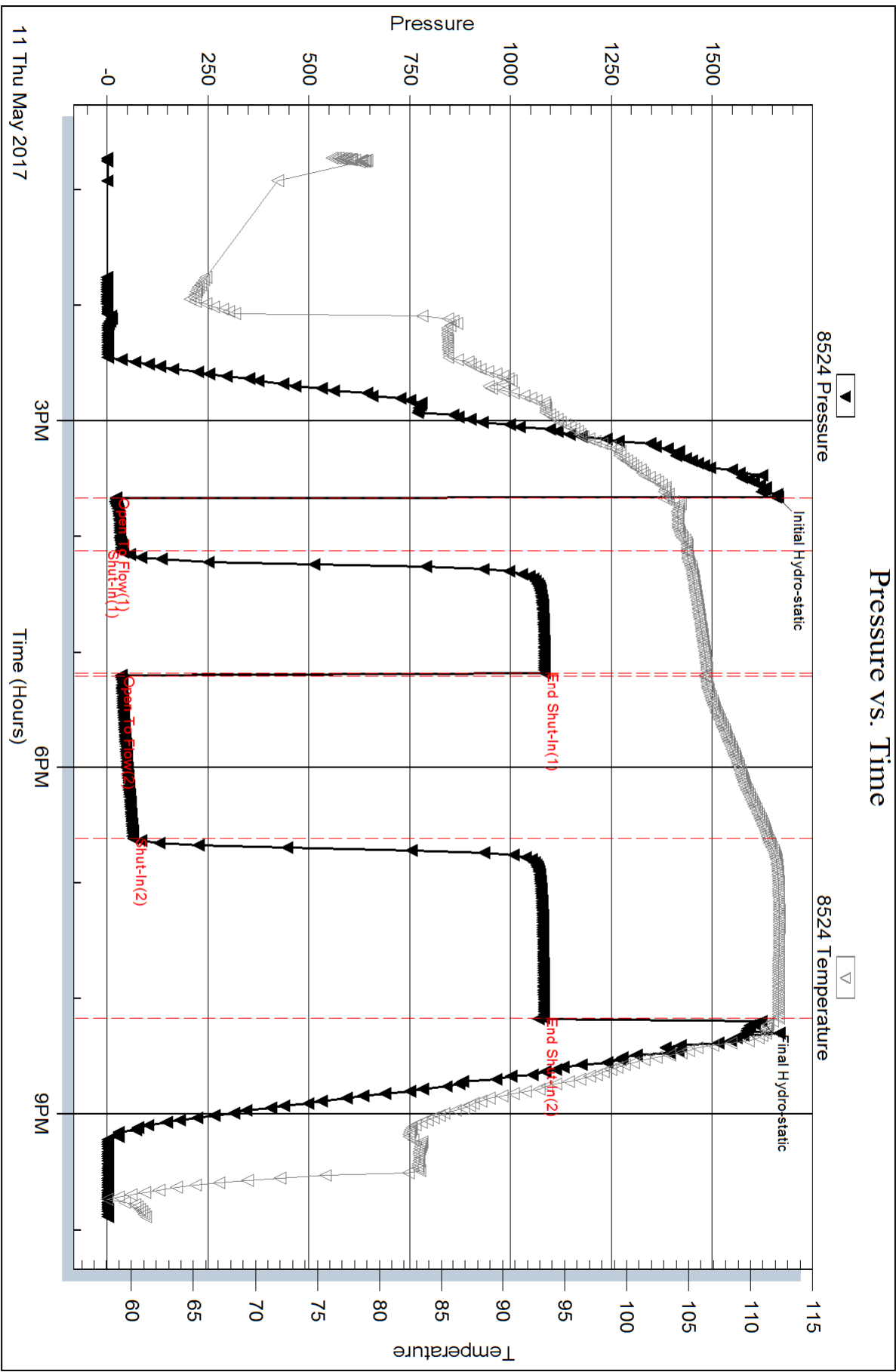
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW: .15@64deg



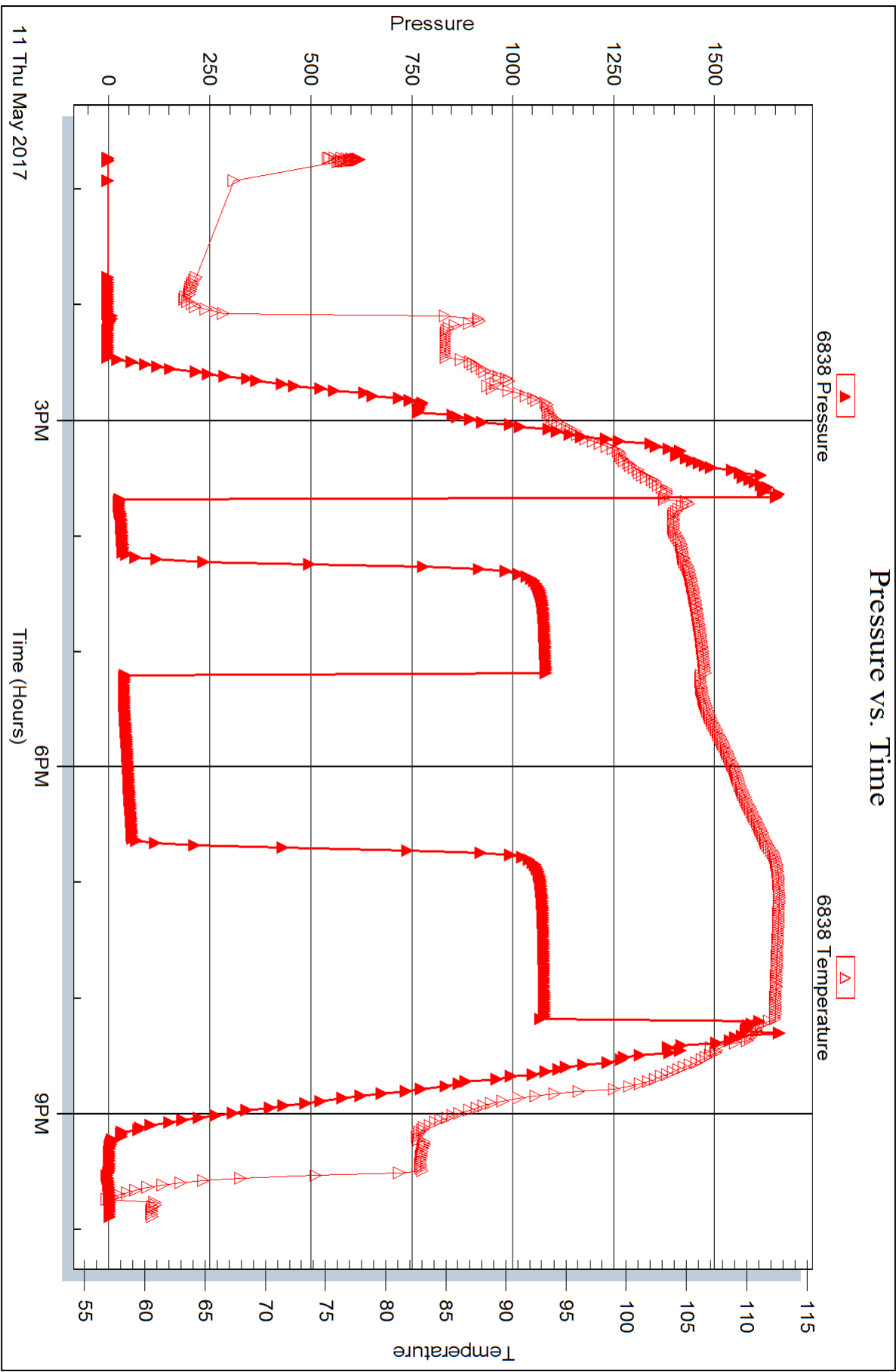
Serial #: 6838

Inside

H&C Oil Operating, Inc.

Maddy #1-5

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **H&C Oil Operating, Inc.**

PO Box 86
Plainville, KS 67663

ATTN: Aaron Young

Maddy #1-5

5-8S-18W Rooks,KS

Start Date: 2017.05.12 @ 04:11:12

End Date: 2017.05.12 @ 12:28:03

Job Ticket #: 63188 DST #: 2

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

Printed: 2017.05.12 @ 14:56:30



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

H&C Oil Operating, Inc.

5-8S-18W Rooks,KS

PO Box 86
Plainville, KS 67663

Maddy #1-5

Job Ticket: 63188

DST#: 2

ATTN: Aaron Young

Test Start: 2017.05.12 @ 04:11:12

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:41:03

Time Test Ended: 12:28:03

Test Type: Conventional Bottom Hole (Reset)

Tester: Brannan Lonsdale

Unit No: 73

Interval: 3386.00 ft (KB) To 3400.00 ft (KB) (TVD)

Reference Elevations: 1925.00 ft (KB)

Total Depth: 3400.00 ft (KB) (TVD)

1917.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 8.00 ft

Serial #: 8524 Outside

Press@RunDepth: 335.40 psig @ 3397.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.05.12

End Date: 2017.05.12

Last Calib.: 2017.05.12

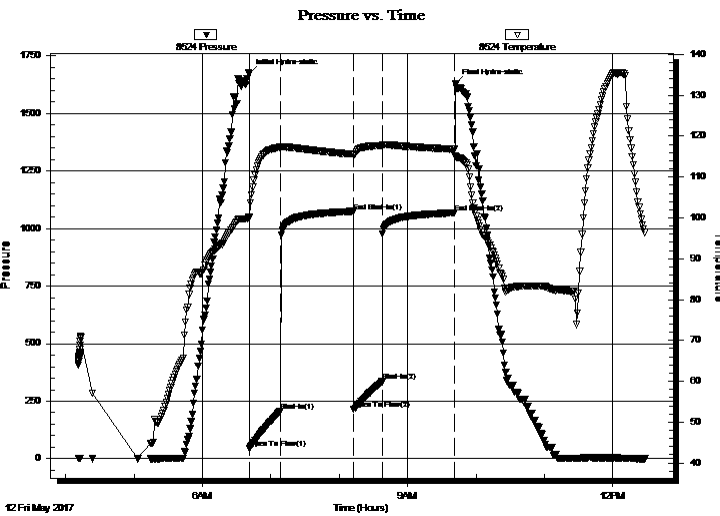
Start Time: 04:11:13

End Time: 12:28:03

Time On Btm: 2017.05.12 @ 06:40:48

Time Off Btm: 2017.05.12 @ 09:42:18

TEST COMMENT: 30- IF- BOB 4 mins
60- IS- Surface blow throughout
30- FF- BOB 7 mins
60- FS- Surface blow throughout



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1672.25	100.10	Initial Hydro-static
1	45.91	100.05	Open To Flow (1)
28	207.38	117.29	Shut-In(1)
92	1074.66	115.60	End Shut-In(1)
92	213.85	115.34	Open To Flow (2)
117	335.40	117.73	Shut-In(2)
181	1068.55	116.79	End Shut-In(2)
182	1631.15	114.96	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
314.00	MW, 90%W 10%M	4.15
377.00	SOCMW, 10%O 75%W 15%M	5.34
30.00	CO	0.43
0.00	32' GIP	0.00

* Recovery from multiple tests

Gas Rates

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



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5-8S-18W Rooks, KS

Maddy #1-5

Job Ticket: 63188

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Hole Diameter: 7.88 inches Hole Condition: Fair

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1917.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 6838

Inside

Press@RunDepth: psig @ 3397.00 ft (KB)

Start Date: 2017.05.12

End Date:

2017.05.12

Capacity: 8000.00 psig

Last Calib.:

2017.05.12

Start Time:

04:11:23

End Time:

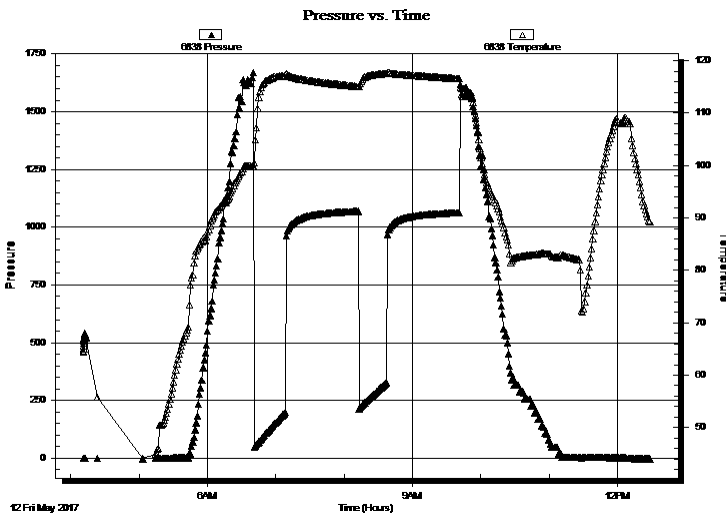
12:28:13

Time On Btm:

Time Off Btm:

TEST COMMENT: 30- IF- BOB 4 mins
60- ISL- Surface blow throughout
30- FF- BOB 7 mins
60- FSL- Surface blow throughout

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
314.00	MW, 90%W 10%M	4.15
377.00	SOCMW, 10%O 75%W 15%M	5.34
30.00	CO	0.43
0.00	32' GIP	0.00

* Recovery from multiple tests

Gas Rates

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



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DRILL STEM TEST REPORT

TOOL DIAGRAM

H&C Oil Operating, Inc.

5-8S-18W Rooks, KS

PO Box 86
Plainville, KS 67663

Maddy #1-5

Job Ticket: 63188

DST#: 2

ATTN: Aaron Young

Test Start: 2017.05.12 @ 04:11:12

Tool Information

Drill Pipe:	Length: 3350.00 ft	Diameter: 3.82 inches	Volume: 47.49 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 32.00 ft	Diameter: 2.25 inches	Volume: 0.16 bbl	Weight to Pull Loose: 47000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	23.00 ft			String Weight: Initial 42000.00 lb
Depth to Top Packer:	3386.00 ft			Final 45000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	14.00 ft			
Tool Length:	41.00 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			3360.00	
Shut In Tool	5.00			3365.00	
Hydraulic tool	5.00			3370.00	
Jars	5.00			3375.00	
Safety Joint	2.00			3377.00	
Packer	5.00			3382.00	27.00 Bottom Of Top Packer
Packer	4.00			3386.00	
Stubb	1.00			3387.00	
Perforations	10.00			3397.00	
Recorder	0.00	6838	Inside	3397.00	
Recorder	0.00	8524	Outside	3397.00	
Bullnose	3.00			3400.00	14.00 Bottom Packers & Anchor

Total Tool Length: 41.00



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DRILL STEM TEST REPORT

FLUID SUMMARY

H&C Oil Operating, Inc.

5-8S-18W Rooks,KS

PO Box 86
Plainville, KS 67663

Maddy #1-5

Job Ticket: 63188

DST#: 2

ATTN: Aaron Young

Test Start: 2017.05.12 @ 04:11:12

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

26 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

60000 ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.79 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1800.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbbl
314.00	MW, 90%W 10%M	4.155
377.00	SOCMW, 10%O 75%W 15%M	5.344
30.00	CO	0.425
0.00	32' GIP	0.000

Total Length: 721.00 ft Total Volume: 9.924 bbl

Num Fluid Samples: 0

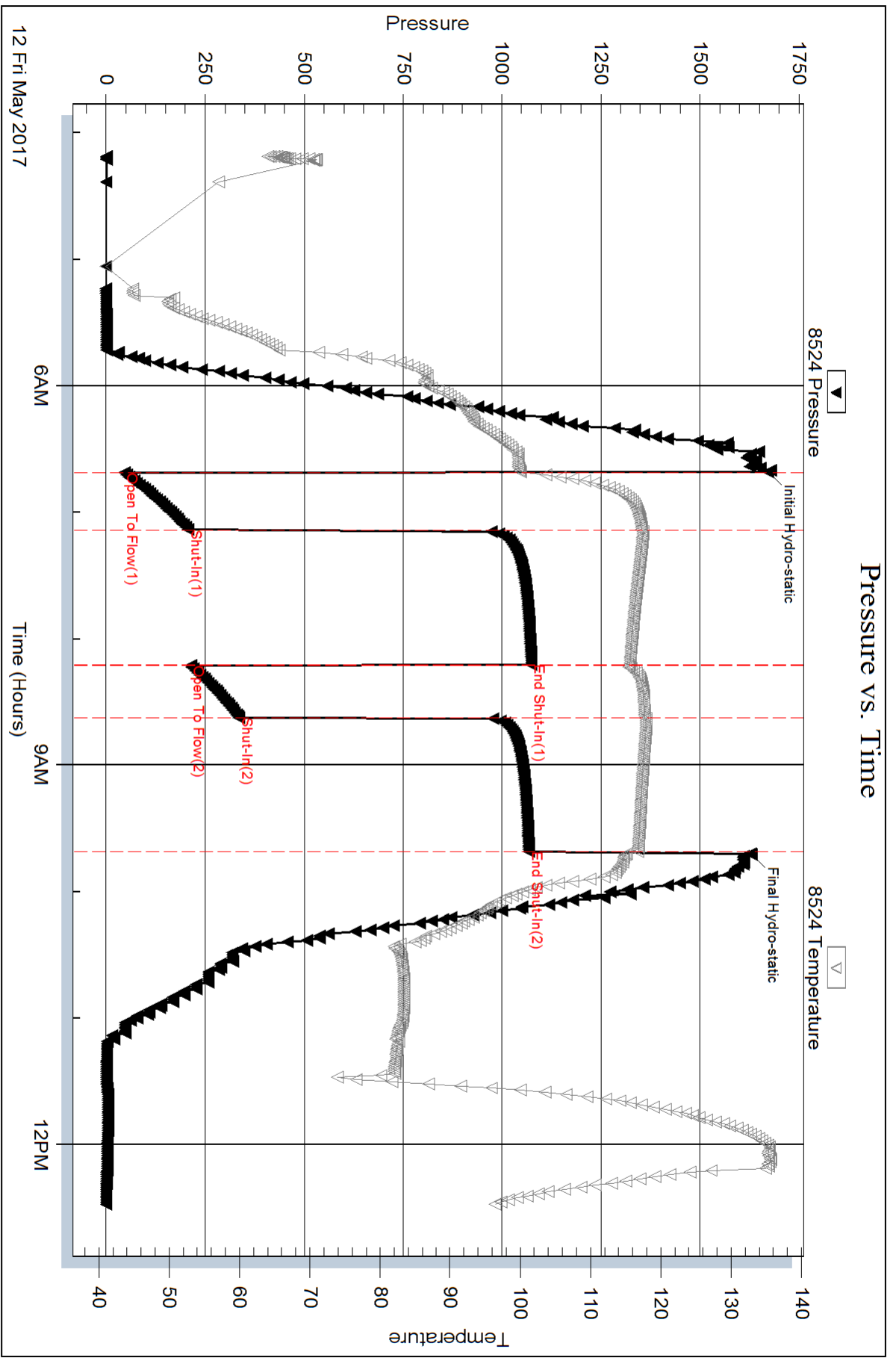
Num Gas Bombs: 0

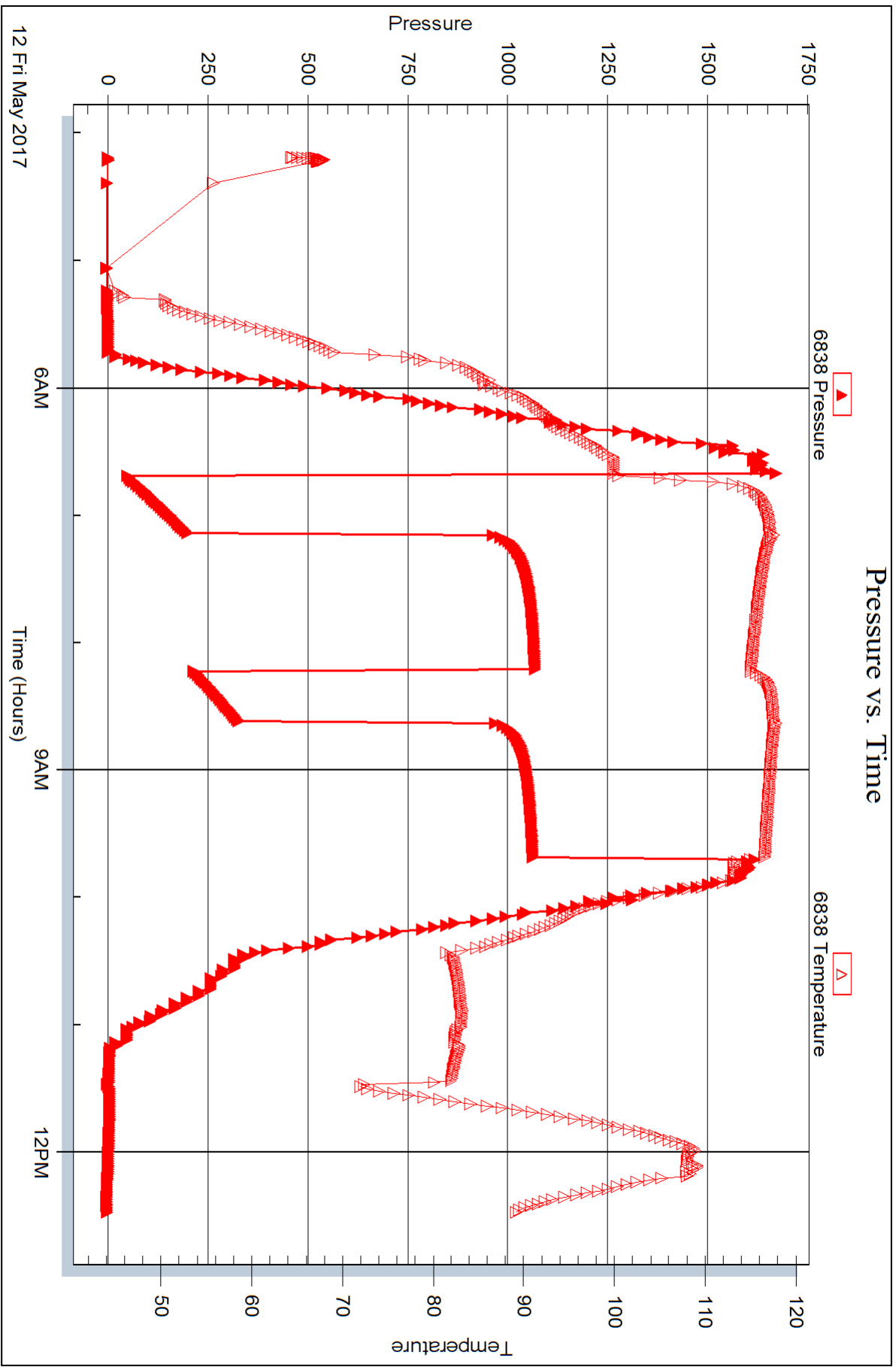
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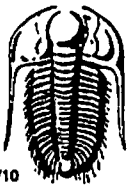
Laboratory Name:

Laboratory Location:

Recovery Comments: RW: .11@69deg







TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63187

Well Name & No. Maddy #1-5 Test No. 1 Date 5/11/17
 Company H+C Oil Operating, Inc. Elevation 1925 KB 1917 GL
 Address PO Box 86 Plainville, KS 67663
 Co. Rep / Geo. Aaron Young Rig Discovery #4
 Location: Sec. 5 Twp. 8 S Rge. 18 W Co. Recker State KS

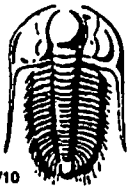
Interval Tested 2372-3385 Zone Tested Arbuckle
 Anchor Length 13' Drill Pipe Run 3318 Mud Wt. 9.0
 Top Packer Depth 3367 Drill Collars Run 32 Vis 52
 Bottom Packer Depth 3372 Wt. Pipe Run --- WL 68
 Total Depth 3385 Chlorides 1800 ppm System LCM 2A
 Blow Description IF - Built slowly to 4"
PSI - No blow
FF - BOB 74 mins
FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>50</u>	<u>SOCM.W</u>		<u>5</u>	<u>65</u>	<u>30</u>
<u>25</u>	<u>S4SMCO</u>		<u>90</u>	<u>5</u>	<u>5</u>
<u>30</u>	<u>CO</u>				
	<u>15' QIP</u>				

Rec Total 105' BHT 28 ^{112°} Gravity 28 API RW .15 @ 64 °F Chlorides 48,000 ppm

(A) Initial Hydrostatic <u>1663</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>1100</u>
(B) First Initial Flow <u>22</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>1243</u>
(C) First Final Flow <u>34</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>1539</u>
(D) Initial Shut-In <u>1085</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>2009</u>
(E) Second Initial Flow <u>35</u>	<input checked="" type="checkbox"/> Hourly Standby	T-Out <u>2153</u>
(F) Second Final Flow <u>64</u>	<input checked="" type="checkbox"/> Mileage <u>82 RT</u> 61.50	Comments
(G) Final Shut-In <u>1084</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1622</u>	<input type="checkbox"/> Straddle	
	<input checked="" type="checkbox"/> Shale Packer <u>250</u>	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>30</u>	<input type="checkbox"/> Extra Packer	<input type="checkbox"/> Ruined Packer
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Recorder	Sub Total <u>0</u>
Final Flow <u>90</u>	<input type="checkbox"/> Day Standby	Total <u>1686.50</u>
Final Shut-In <u>90</u>	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1686.50</u>	

Approved By _____ Our Representative Branner 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. 63188

Well Name & No. Maddy #1-5 Test No. 2 Date 5/12/17
 Company H+C Oil Operations, Inc. Elevation 1925 KB 1917 GL
 Address PO Box 86 Plainville, KS 67663
 Co. Rep / Geo. Aaron Young Rig Discovery #4
 Location: Sec. 5 Twp. 8 S Rge. 18 W Co. Rooks State KS

Interval Tested 3385-3400 Zone Tested Arbuckle
 Anchor Length 14' Drill Pipe Run 3350 Mud Wt. 9.0
 Top Packer Depth 3381 Drill Collars Run 32 Vis 52
 Bottom Packer Depth 3386 Wt. Pipe Run WL 6.8
 Total Depth 3400 Chlorides 1,800 ppm System LCM 2nd

Blow Description IF- BOB 4mins
FSI- Surface blow throughout
FF- BOB 7mins
FSI- Surface blow throughout

Rec	Feet of	%gas	%oil	%water	%mud
<u>314</u>	<u>MW</u>		<u>90</u>	<u>10</u>	
<u>377</u>	<u>SOCMW</u>		<u>10</u>	<u>75</u>	<u>15</u>
<u>30</u>	<u>CO</u>				
<u> </u>	<u>32' ATP</u>				
<u> </u>	<u> </u>				

Rec Total 721' BHT 117° Gravity 26 API RW .11 @ 69 °F Chlorides 60,000 ppm

(A) Initial Hydrostatic 1672 Test 1050 T-On Location 0405
 (B) First Initial Flow 46 Jars 250 T-Started 0411
 (C) First Final Flow 207 Safety Joint 75 T-Open 0641
 (D) Initial Shut-In 1075 Circ Sub T-Pulled 0941
 (E) Second Initial Flow 214 Hourly Standby T-Out 1228
 (F) Second Final Flow 335 Mileage 82 RT 61.50 Comments
 (G) Final Shut-In 1069 Sampler
 (H) Final Hydrostatic 1631 Straddle

Shale Packer 250 Ruined Shale Packer
 Extra Packer Ruined Packer
 Extra Recorder Extra Copies
 Initial Open 30 Day Standby Sub Total 0
 Initial Shut-In 60 Accessibility Total 1686.50
 Final Flow 30 Sub Total 1686.50 MP/DST Disc't
 Final Shut-In 60 Sub Total 1686.50

Approved By Our Representative Brian 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.