

TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Prepared For: **Bear Petroleum, LLC**

PO Box 438
Haysville, KS 67060

ATTN: Rod Andersen

Ryan #1

15-22S-20W Pawnee,KS

Start Date: 2018.03.01 @ 10:44:50

End Date: 2018.03.01 @ 18:08:56

Job Ticket #: 63410 DST #: 1

Trilobite Testing, Inc

1515 Commerce Parkway Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2018.03.02 @ 08:16:02



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Bear Petroleum, LLC
 PO Box 438
 Haysville, KS 67060
 ATTN: Rod Andersen

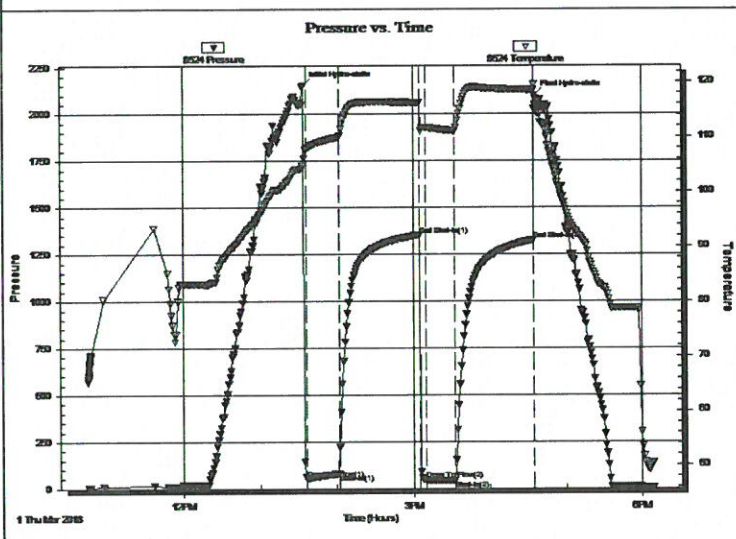
15-22S-20W Pawnee, KS
Ryan #1
 Job Ticket: 63410 **DST#: 1**
 Test Start: 2018.03.01 @ 10:44:50

GENERAL INFORMATION:

Formation: **Miss**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 13:36:26
 Time Test Ended: 18:08:56
 Interval: **4316.00 ft (KB) To 4348.00 ft (KB) (TVD)**
 Total Depth: 4348.00 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: 2197.00 ft (KB)
 2192.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8524 Outside
 Press@RunDepth: 40.19 psig @ 4345.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2018.03.01 End Date: 2018.03.01 Last Calib.: 2018.03.01
 Start Time: 10:44:51 End Time: 18:08:56 Time On Btm: 2018.03.01 @ 13:34:11
 Time Off Btm: 2018.03.01 @ 16:35:11

TEST COMMENT: 30- IF- BOB 10 secs
 60- IS- Very weak surface blow GTS in 4 min
 30- FF- BOB instantly
 60- FS- No blow



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2153.06	104.70	Initial Hydro-static
3	54.31	107.79	Open To Flow (1)
28	78.13	109.97	Shut-In(1)
91	1353.72	116.27	End Shut-In(1)
96	45.30	111.68	Open To Flow (2)
119	40.19	111.06	Shut-In(2)
181	1327.07	118.52	End Shut-In(2)
181	2099.58	115.87	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
30.00	M	0.43
0.00	GTS 34 mins (TSTM)	0.00

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Bear Petroleum, LLC

15-22S-20W Pawnee, KS

PO Box 438
Haysville, KS 67060

Ryan #1

Job Ticket: 63410

DST#: 1

ATTN: Rod Andersen

Test Start: 2018.03.01 @ 10:44:50

Tool Information

Drill Pipe:	Length: 4306.00 ft	Diameter: 3.82 inches	Volume: 61.04 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: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 72000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 71000.00 lb
Depth to Top Packer:	4316.00 ft			Final 71000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	32.00 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
Change Over Sub	1.00			4289.00	
Shut In Tool	5.00			4294.00	
Hydraulic tool	5.00			4299.00	
Jars	5.00			4304.00	
Safety Joint	3.00			4307.00	
Packer	5.00			4312.00	28.00 Bottom Of Top Packer
Packer	4.00			4316.00	
Stubb	1.00			4317.00	
Perforations	28.00			4345.00	
Recorder	0.00	6771	Inside	4345.00	
Recorder	0.00	8524	Outside	4345.00	
Bullnose	3.00			4348.00	32.00 Bottom Packers & Anchor

Total Tool Length: 60.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Bear Petroleum, LLC

15-22S-20W Pawnee, KS

PO Box 438
Haysville, KS 67060

Ryan #1

Job Ticket: 63410

DST#: 1

ATTN: Rod Andersen

Test Start: 2018.03.01 @ 10:44:50

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: bbl		
Water Loss: 7.99 in ³	Gas Cushion Type:		
Resistivity: ohm.m	Gas Cushion Pressure: psig		
Salinity: 2500.00 ppm			
Filter Cake: inches			

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	M	0.425
0.00	GTS 34 mins (TSTM)	0.000

Total Length: 30.00 ft Total Volume: 0.425 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

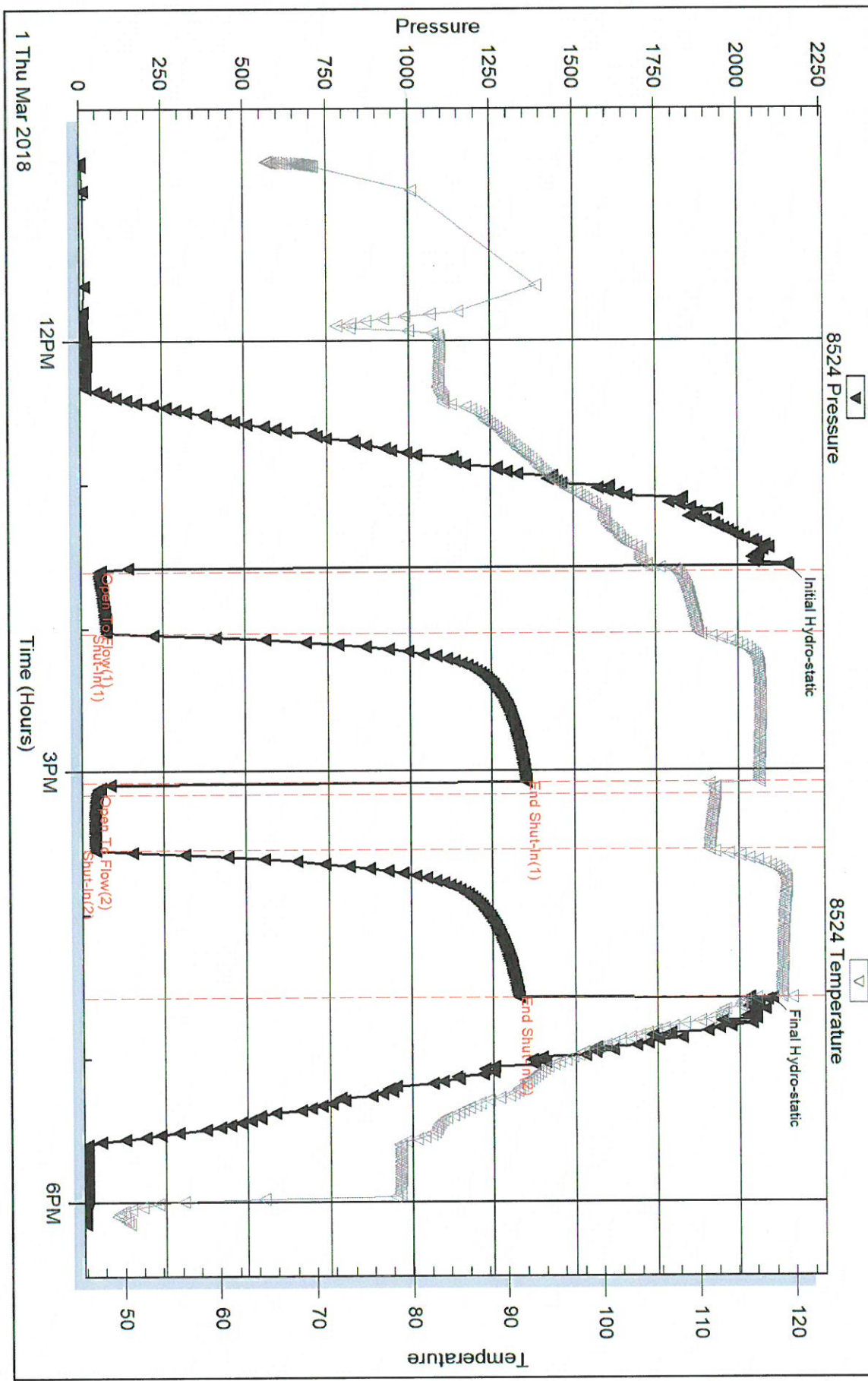
Serial #: 8524

Outside Bear Petroleum, LLC

Ryan #1

DST Test Number: 1

Pressure vs. Time



Trilobite Testing, Inc

Ref. No: 63410

Printed: 2018.03.02 @ 08:16:03

Serial #: 6771

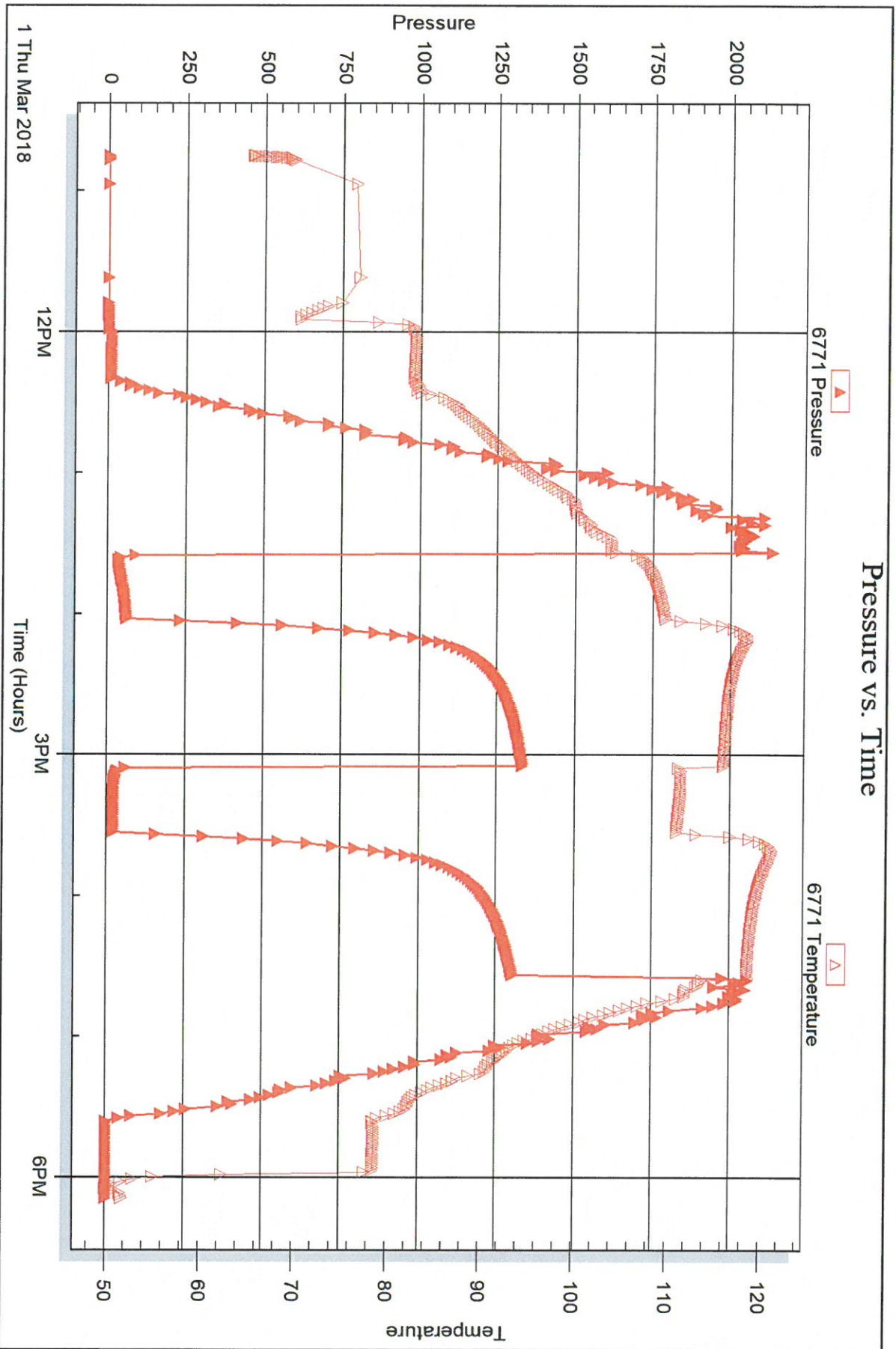
Inside

Bear Petroleum, LLC

Ryan #1

DST Test Number: 1

Pressure vs. Time





DRILL STEM TEST REPORT

Prepared For: **Bear Petroleum, LLC**

PO Box 438
Haysville, KS 67060

ATTN: Rod Andersen

Ryan #1

15-22S-20W Pawnee,KS

Start Date: 2018.03.01 @ 23:46:57

End Date: 2018.03.02 @ 06:16:18

Job Ticket #: 63411 DST #: 2

Trilobite Testing, Inc

1515 Commerce Parkway Hays, KS 67601

ph: 785-625-4778 fax: 785-625-5620

Printed: 2018.03.02 @ 10:17:38



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Bear Petroleum, LLC

15-22S-20W Pawnee, KS

PO Box 438
Haysville, KS 67060

Ryan #1

Job Ticket: 63411

DST#: 2

ATTN: Rod Andersen

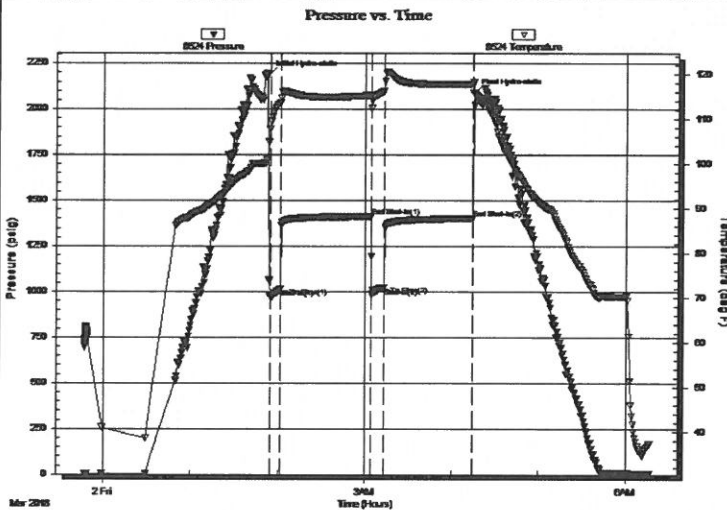
Test Start: 2018.03.01 @ 23:46:57

GENERAL INFORMATION:

Formation: **Miss**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 01:54:33
 Time Test Ended: 06:16:18
 Interval: **4351.00 ft (KB) To 4378.00 ft (KB) (TVD)**
 Total Depth: 4378.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Brannan Lonsdale
 Unit No: 73
 Reference Elevations: 2197.00 ft (KB)
 2192.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 8524 **Outside**
 Press@RunDepth: 1021.60 psig @ 4375.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2018.03.01 End Date: 2018.03.02 Last Calib.: 2018.03.02
 Start Time: 23:46:58 End Time: 06:16:18 Time On Btm: 2018.03.02 @ 01:53:18
 Time Off Btm: 2018.03.02 @ 04:14:48

TEST COMMENT: 10- IF- BOB 10 secs. GTS 2 mins
 60- IS- No blow
 10- FF- BOB instantly
 60- FS- No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2187.97	101.34	Initial Hydro-static
2	973.08	107.78	Open To Flow (1)
8	1014.88	113.61	Shut-In(1)
71	1412.45	115.31	End Shut-In(1)
72	985.88	112.53	Open To Flow (2)
80	1021.60	116.26	Shut-In(2)
141	1402.85	117.82	End Shut-In(2)
142	2089.04	118.14	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	GSMCO, 10%G 5%M 85%O	0.28
0.00	GTS	0.00

* Recovery from multiple tests

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	1.00	140.00	4438.82
Last Gas Rate	1.00	155.00	4870.05



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Bear Petroleum, LLC

15-22S-20W Pawnee, KS

PO Box 438
Haysville, KS 67060

Ryan #1

Job Ticket: 63411

DST#: 2

ATTN: Rod Andersen

Test Start: 2018.03.01 @ 23:46:57

GENERAL INFORMATION:

Formation: **Miss**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 01:54:33

Time Test Ended: 06:16:18

Test Type: Conventional Bottom Hole (Reset)

Tester: Brannan Lonsdale

Unit No: 73

Interval: **4351.00 ft (KB) To 4378.00 ft (KB) (TVD)**

Reference Elevations: 2197.00 ft (KB)

Total Depth: 4378.00 ft (KB) (TVD)

2192.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 6771 Inside

Press@RunDepth: psig @ 4375.00 ft (KB)

Start Date: 2018.03.01 End Date: 2018.03.02

Start Time: 23:46:24 End Time: 06:15:44

Capacity: 8000.00 psig

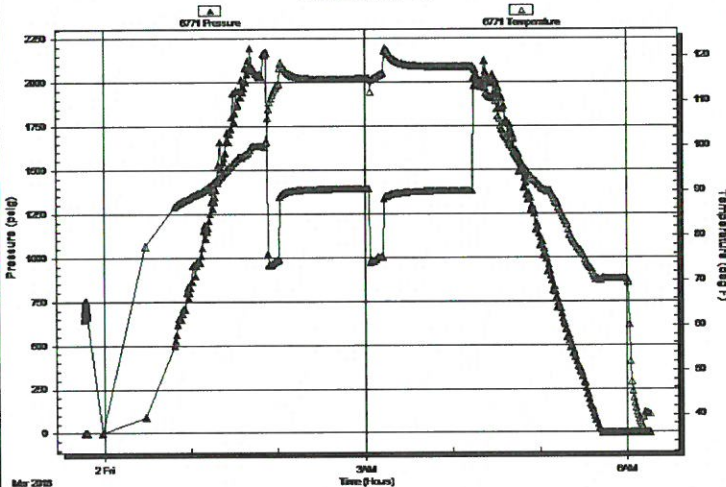
Last Calib.: 2018.03.02

Time On Btm:

Time Off Btm:

TEST COMMENT: 10- IF- BOB 10 secs. GTS 2 mins
60- IS- No blow
10- FF- BOB instantly
60- FS- No blow

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
20.00	GSMCO, 10%G 5%M 85%O	0.28
0.00	GTS	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	1.00	140.00	4438.82
Last Gas Rate	1.00	155.00	4870.05

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Bear Petroleum, LLC

15-22S-20W Pawnee, KS

PO Box 438
Haysville, KS 67060

Ryan #1

Job Ticket: 63411

DST#: 2

ATTN: Rod Andersen

Test Start: 2018.03.01 @ 23:46:57

Tool Information

Drill Pipe:	Length: 4338.00 ft	Diameter: 3.82 inches	Volume: 61.49 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: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 73000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	15.00 ft			String Weight: Initial 71000.00 lb
Depth to Top Packer:	4351.00 ft			Final 72000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	27.00 ft			
Tool Length:	55.00 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			4324.00	
Shut In Tool	5.00			4329.00	
Hydraulic tool	5.00			4334.00	
Jars	5.00			4339.00	
Safety Joint	3.00			4342.00	
Packer	5.00			4347.00	28.00 Bottom Of Top Packer
Packer	4.00			4351.00	
Stubb	1.00			4352.00	
Perforations	23.00			4375.00	
Recorder	0.00	6771	Inside	4375.00	
Recorder	0.00	8524	Outside	4375.00	
Bullnose	3.00			4378.00	27.00 Bottom Packers & Anchor

Total Tool Length: 55.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Bear Petroleum, LLC

15-22S-20W Pawnee, KS

PO Box 438
Haysville, KS 67060

Ryan #1

Job Ticket: 63411

DST#: 2

ATTN: Rod Andersen

Test Start: 2018.03.01 @ 23:46:57

Mud and Cushion Information

Mud Type: Gel Chem	Cushion Type:	Oil API: 38 deg API
Mud Weight: 9.00 lb/gal	Cushion Length: ft	Water Salinity: ppm
Viscosity: 56.00 sec/qt	Cushion Volume: bbl	
Water Loss: 7.98 in ³	Gas Cushion Type:	
Resistivity: ohm.m	Gas Cushion Pressure: psig	
Salinity: 2500.00 ppm		
Filter Cake: inches		

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	GSMCO, 10%G 5%M 85%O	0.284
0.00	GTS	0.000

Total Length: 20.00 ft Total Volume: 0.284 bbl

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

Laboratory Name: Laboratory Location:

Recovery Comments:



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

GAS RATES

Bear Petroleum, LLC

15-22S-20W Pawnee, KS

PO Box 438
Haysville, KS 67060

Ryan #1

Job Ticket: 63411

DST#: 2

ATTN: Rod Andersen

Test Start: 2018.03.01 @ 23:46:57

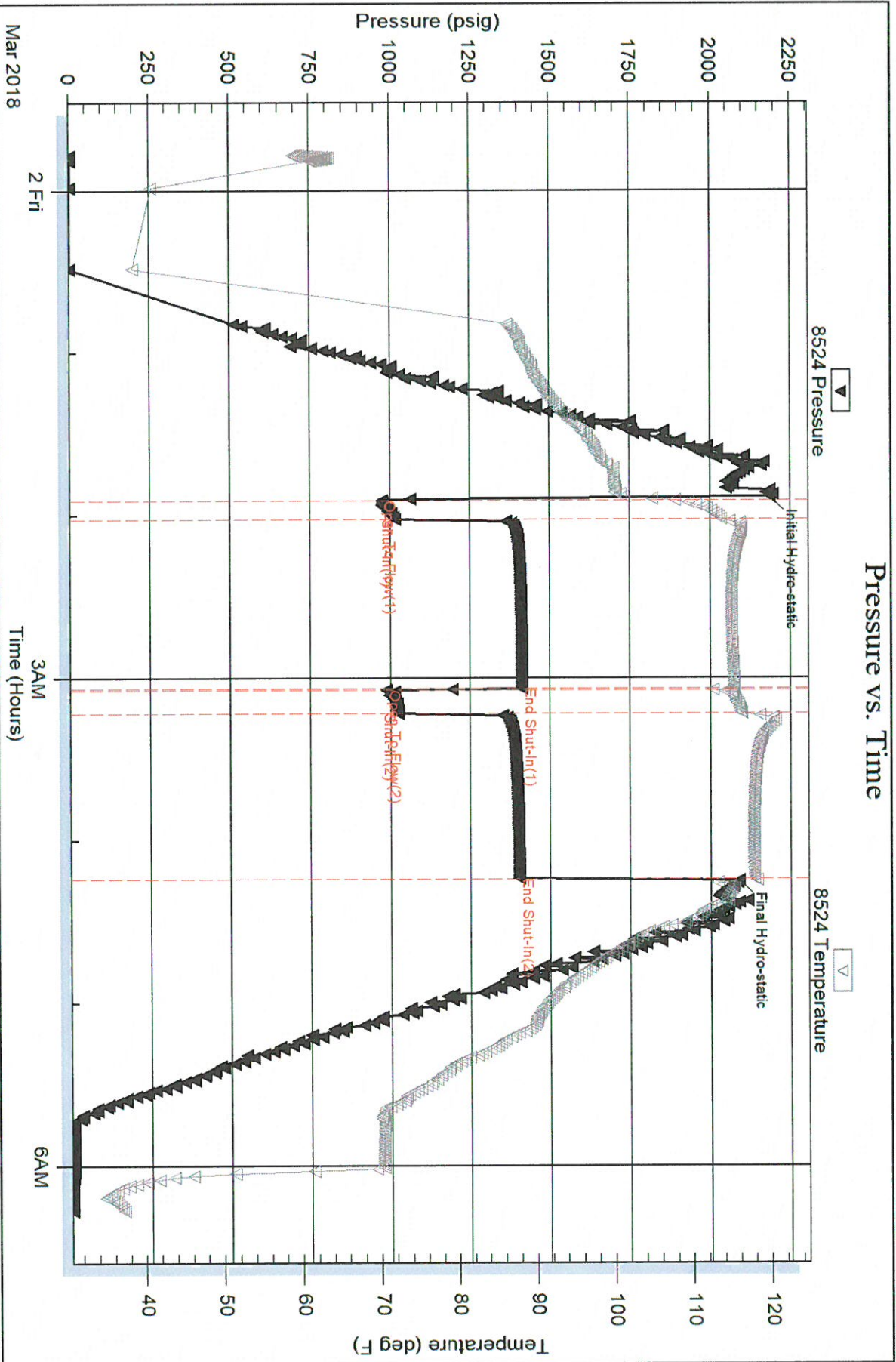
Gas Rates Information

Temperature: 59 (deg F)
Relative Density: 0.65
Z Factor: 0.8

Gas Rates Table

Flow Period	Elapsed Time	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
2	5	1.00	140.00	4438.82
2	10	1.00	155.00	4870.05

Pressure vs. Time



Serial #: 6771

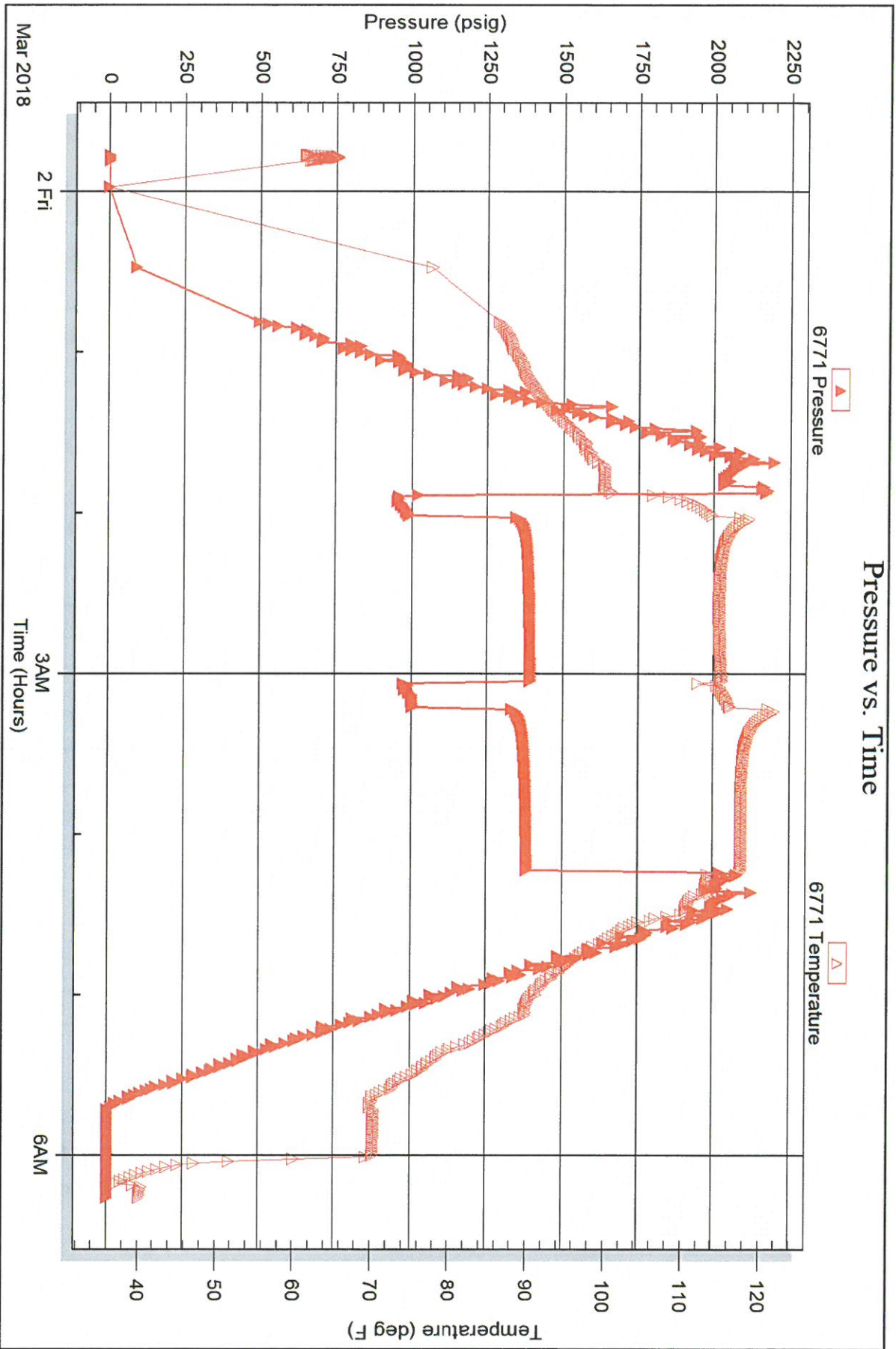
Inside

Bear Petroleum, LLC

Ryan #1

DST Test Number: 2

Pressure vs. Time





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63410

Well Name & No. Ryan #1 Test No. 1 Date 3/1/18
 Company Bear Petroleum, LLC Elevation 2197 KB 2192 GL
 Address PO Box 438 Haysville, KS 67060
 Co. Rep / Geo. Rod Andersen Rig Royal #1
 Location: Sec. 15 Twp 22 Rge. 20 Wdo. Pawnee State KS

Interval Tested 4316-4348 Zone Tested MISS
 Anchor Length 32' Drill Pipe Run 4306 Mud Wt. 8.9
 Top Packer Depth 4311 Drill Collars Run --- Vis 56
 Bottom Packer Depth 4316 Wt. Pipe Run --- WL 8.0
 Total Depth 4348 Chlorides 2,500 ppm System LCM 1 1/2"

Blow Description IF-BOB 10secs
ISF - Very weak surface blow (GTS 4mins into bleedoff)
FF-BOB instantly
AST - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>M</u>				
	<u>GTS 34mins (TSTM)</u>				

Rec Total 30' BHT 119° Gravity --- API RW --- @ --- °F Chlorides --- ppm

(A) Initial Hydrostatic <u>2153</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>1030</u>
(B) First Initial Flow <u>54</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>1044</u>
(C) First Final Flow <u>78</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>1334</u>
(D) Initial Shut-In <u>1354</u>	<input type="checkbox"/> Circ Sub <u>---</u>	T-Pulled <u>1634</u>
(E) Second Initial Flow <u>45</u>	<input type="checkbox"/> Hourly Standby <u>---</u>	T-Out <u>1808</u>
(F) Second Final Flow <u>40</u>	<input checked="" type="checkbox"/> Mileage <u>128 RT</u> 94rt	Comments <u>---</u>
(G) Final Shut-In <u>1327</u>	<input type="checkbox"/> Sampler <u>---</u>	
(H) Final Hydrostatic <u>2100</u>	<input type="checkbox"/> Straddle <u>---</u>	
	<input type="checkbox"/> Shale Packer <u>---</u>	
	<input type="checkbox"/> Extra Packer <u>---</u>	
	<input type="checkbox"/> Extra Recorder <u>---</u>	
	<input type="checkbox"/> Day Standby <u>---</u>	
	<input type="checkbox"/> Accessibility <u>---</u>	

Initial Open 30
 Initial Shut-In 60
 Final Flow 30
 Final Shut-In 60

Sub Total 0
 Total 1569
 MP/DST Disc't ---

Approved By _____ Our Representative Brannan Lonsdale

Triobite 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. 63411

Well Name & No. Ryan #1 Test No. 2 Date 3/2/18
 Company Bear Petroleum, LLC Elevation 2197 KB 2192 GL
 Address PO Box 438 Haysville, KS 67060
 Co. Rep / Geo. Rod Andersen Rig Royal #1
 Location: Sec. 15 Twp 22 S Rge. 20 W Co. Pawnee State KS

Interval Tested 4351-4378 Zone Tested MISS
 Anchor Length 27' Drill Pipe Run 4338 Mud Wt. 8.9
 Top Packer Depth 4346 Drill Collars Run — Vis 56
 Bottom Packer Depth 4351 WI. Pipe Run — WL 8.0
 Total Depth 4378 Chlorides 3,500 ppm System LCM 1 1/2

Blow Description IF- BOB 10 secs GTS 2 mins
ISI- No blow
FF- BOB instantly
FST- No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>20</u>	<u>ASMCO</u>	<u>10</u>	<u>85</u>	<u>5</u>	<u>—</u>
Rec	Feet of <u>GTS</u>	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 20' BHT 118° Gravity 38 API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>2188</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>2335</u>
(B) First Initial Flow <u>973</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>2346</u>
(C) First Final Flow <u>1015</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>0153</u>
(D) Initial Shut-In <u>1412</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>0413</u>
(E) Second Initial Flow <u>986</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>0615</u>
(F) Second Final Flow <u>1022</u>	<input checked="" type="checkbox"/> Mileage <u>128 RT</u> 94	Comments <u>Stayed 1 night @ Country Inn in Larned, KS</u>
(G) Final Shut-In <u>1403</u>	<input type="checkbox"/> Sampler	<input type="checkbox"/> Ruined Shale Packer
(H) Final Hydrostatic <u>2089</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Packer

Initial Open <u>10</u>	<input type="checkbox"/> Shale Packer	<input type="checkbox"/> Extra Copies
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer	Sub Total <u>0</u>
Final Flow <u>10</u>	<input type="checkbox"/> Extra Recorder	Total <u>1569</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby	MP/DST Disc't
	<input type="checkbox"/> Accessibility	
	Sub Total <u>1569</u>	

Approved By _____ Our Representative Brannan Lonsdale

Triobite 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.

