

DRILL STEM TEST REPORT

Prepared For: **Bow Creek Oil Company**

1304 Eisenhower
Hays, KS 67601

ATTN: Lyle Herrman

Skolout #1-25

25-1s-35w Rawlins,KS

Start Date: 2014.08.13 @ 06:07:58

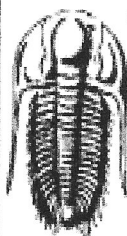
End Date: 2014.08.13 @ 21:36:28

Job Ticket #: 58394 DST #: 1

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

Printed: 2014.08.20 @ 17:16:13

Bow Creek Oil Company 25-1s-35w Rawlins,KS Skolout #1-25 DST # 1 LKC "A" 2014.08.13



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Bow Creek Oil Company

1304 Eisenhower
Hays, KS 67601

ATTN: Lyle Herrman

25-1s-35w Rawlins, KS

Skolout #1-25

Job Ticket: 58394

DST#: 1

Test Start: 2014.08.13 @ 06:07:58

GENERAL INFORMATION:

Formation: **LKC "A"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:16:58

Time Test Ended: 21:36:28

Interval: **4073.00 ft (KB) To 4106.00 ft (KB) (TVD)**

Total Depth: 4106.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Test Type: Conventional Bottom Hole (Initial)

Tester: Brannan Lonsdale

Unit No: 62

Reference Elevations: 3179.00 ft (KB)

3169.00 ft (CF)

KB to GR/CF: 10.00 ft

Serial #: 8651

Inside

Press@RunDepth: 32.76 psig @ 4074.00 ft (KB)

Start Date: 2014.08.13

End Date:

2014.08.13

Capacity: 8000.00 psig

Last Calib.: 2014.08.13

Start Time: 06:07:59

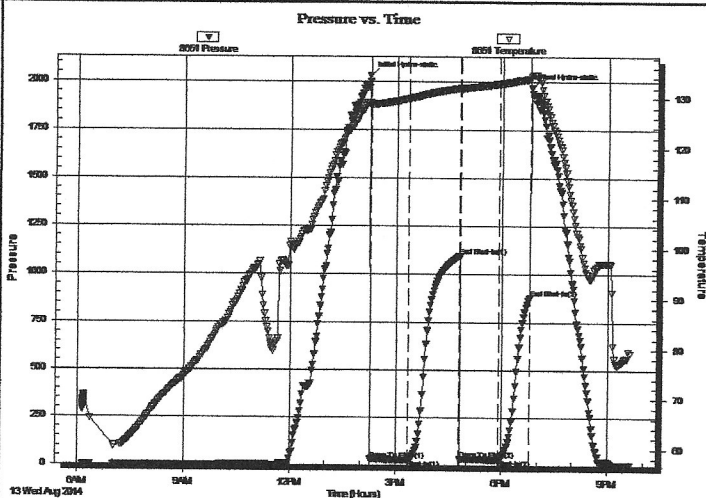
End Time:

21:36:28

Time On Btm: 2014.08.13 @ 14:14:58

Time Off Btm: 2014.08.13 @ 18:48:28

TEST COMMENT: 60- IF- Surface blow built very slowly to 1"
60- IS- No blow
60- FF- Surface blow
60- FS- No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2032.65	128.99	Initial Hydro-static
2	31.46	128.69	Open To Flow (1)
66	29.54	129.90	Shut-In(1)
153	1096.05	132.05	End Shut-In(1)
154	31.99	131.72	Open To Flow (2)
219	32.76	132.90	Shut-In(2)
272	878.95	133.87	End Shut-In(2)
274	1968.94	134.50	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	MCO, 20%M 80%O	0.27

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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Bow Creek Oil Company

ATTN: Lyle Herrman

Skolout #1-25

Job Ticket: 58394

Test Start: 2014.08.13 @ 06:07:58

Formation: LKC "A"

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:16:58

Time Test Ended: 21:36:28

Test Type: Conventional Bottom Hole (Initial)

Tester: Brannan Lonsdale

Unit No: 62

Interval: 4073.00 ft (KB) To 4106.00 ft (KB) (TVD)

Total Depth: 4106.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 3179.00 ft (KB)

3169.00 ft (CF)

KB to GR/CF: 10.00 ft

Serial #: 8655 **Outside**

Press@RunDepth: psig @ 4074.00 ft (KB)

Start Date: 2014.08.13 End Date: 2014.08.13

Start Time: 06:07:59 End Time: 21:33:58

Capacity: 8000.00 psig

Last Calib.: 2014.08.13

Time On Btm:

Time Off Btm:

TEST COMMENT: 60- IF- Surface blow built very slowly to 1"

60- IS- No blow

60- FF- Surface blow

60- FSL No blow



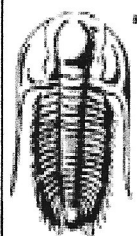
Recovery

Gas Rates

Trilobite Testing, Inc

Ref. No: 58394

Printed: 2014.08.20 @ 17:16:14



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

TOOL DIAGRAM

Bow Creek Oil Company

25-1s-35w Rawlins,KS

1304 Eisenhower
Hays, KS 67601

Skolout #1-25

Job Ticket: 58394

DST#: 1

ATTN: Lyle Herrman

Test Start: 2014.08.13 @ 06:07:58

Tool Information

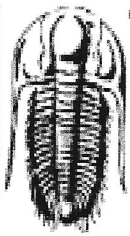
Drill Pipe:	Length: 4068.00 ft	Diameter: 3.75 inches	Volume: 55.57 bbl	Tool Weight: 2500.00 lb
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 inches	Volume: - bbl	Weight set on Packer: 25000.00 lb
Drill Collar:	Length: 0.00 ft	Diameter: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 75000.00 lb
		Total Volume:	- bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial 51000.00 lb
Depth to Top Packer:	4073.00 ft			Final 56000.00 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

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4047.00	
Shut In Tool	5.00			4052.00	
Hydraulic tool	5.00			4057.00	
Jars	5.00			4062.00	
Safety Joint	2.00			4064.00	
Packer	5.00			4069.00	27.00 Bottom Of Top Packer
Packer	4.00			4073.00	
Stubb	1.00			4074.00	
Recorder	0.00	8651	Inside	4074.00	
Recorder	0.00	8655	Outside	4074.00	
Perforations	29.00			4103.00	
Bullnose	3.00			4106.00	33.00 Bottom Packers & Anchor

Total Tool Length: 60.00



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

FLUID SUMMARY

Bow Creek Oil Company

25-1s-35w Rawlins,KS

1304 Eisenhower
Hays, KS 67601

Skolout #1-25

Job Ticket: 58394

DST#: 1

ATTN: Lyle Herrman

Test Start: 2014.08.13 @ 06:07:58

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: 50.00 sec/qt

Cushion Volume:

bbl

Water Loss: 9.18 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
20.00	MCO, 20%M 80%O	0.273

Total Length: 20.00 ft

Total Volume: 0.273 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8651

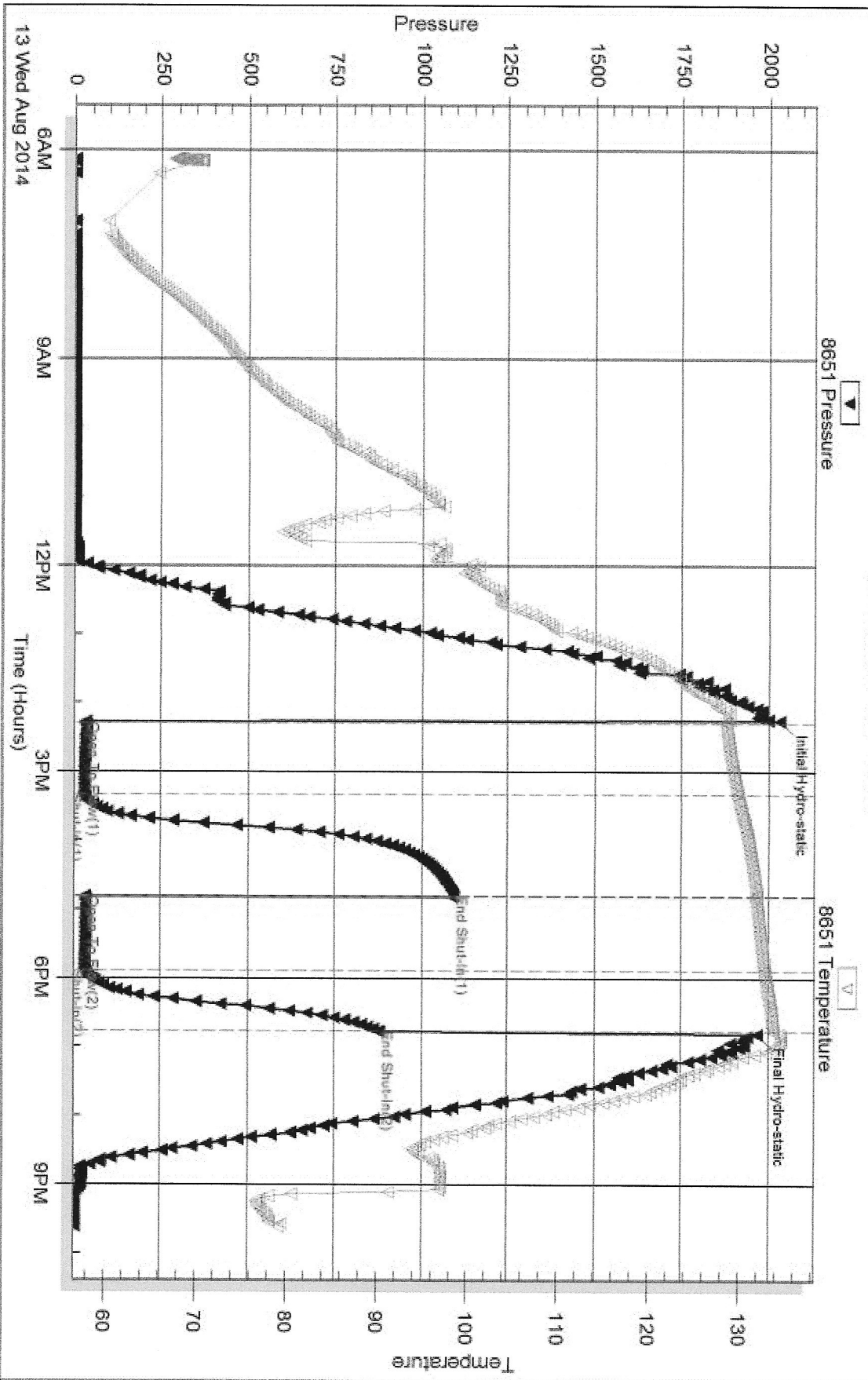
Inside

Bow Creek Oil Company

Skidout #1-25

DST Test Number: 1

Pressure vs. Time

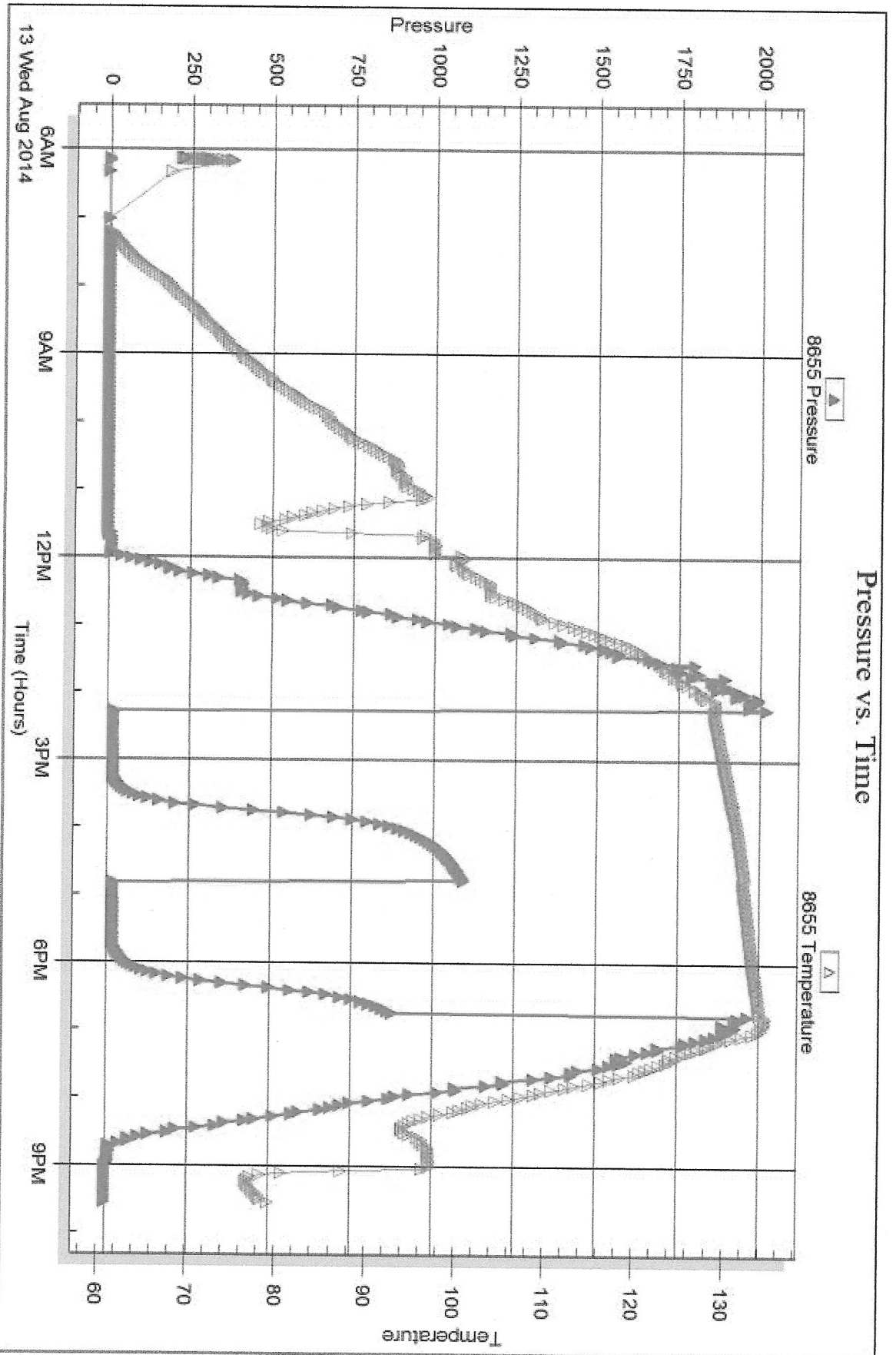


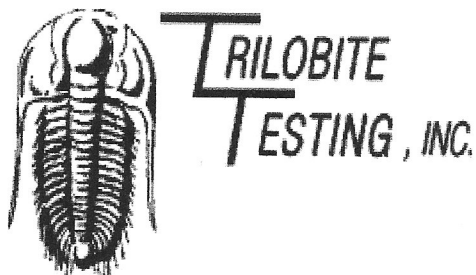
Serial #: 8655

Outside Bow Creek Oil Company

Skolout #1-25

DST Test Number: 1





DRILL STEM TEST REPORT

Prepared For: **Bow Creek Oil Company**

1304 Eisenhower
Hays, KS 67601

ATTN: Lyle Herrman

Skolout #1-25

25-1s-35w Rawlins,KS

Start Date: 2014.08.15 @ 00:37:19

End Date: 2014.08.15 @ 14:24:49

Job Ticket #: 58395 DST #: 2

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

Printed: 2014.08.20 @ 17:15:23

Bow Creek Oil Company

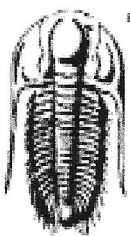
25-1s-35w Rawlins,KS

Skolout #1-25

DST # 2

LKC "H-J"

2014.08.15



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

Bow Creek Oil Company

25-1s-35w Rawlins,KS

1304 Eisenhower
Hays, KS 67601

Skolout #1-25

Job Ticket: 58395

DST#: 2

ATTN: Lyle Herrman

Test Start: 2014.08.15 @ 00:37:19

GENERAL INFORMATION:

Formation: **LKC "H-J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:17:19

Time Test Ended: 14:24:49

Test Type: Conventional Bottom Hole (Reset)

Tester: Brannan Lonsdale

Unit No: 62

Interval: **4200.00 ft (KB) To 4330.00 ft (KB) (TVD)**

Total Depth: 4330.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Poor

Reference Elevations: 3179.00 ft (KB)

3169.00 ft (CF)

KB to GR/CF: 10.00 ft

Serial #: 8651

Inside

Press@RunDepth: 181.76 psig @ 4201.00 ft (KB)

Start Date: 2014.08.15 End Date: 2014.08.15

Start Time: 00:37:20 End Time: 14:24:49

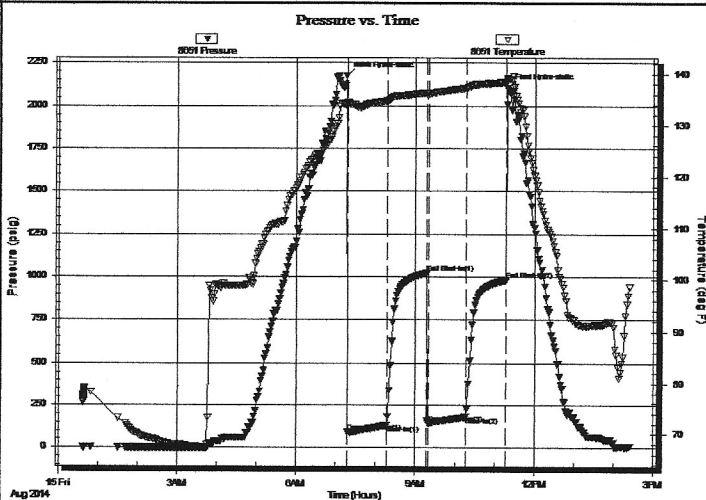
Capacity: 8000.00 psig

Last Calib.: 2014.08.15

Time On Btm: 2014.08.15 @ 07:15:49

Time Off Btm: 2014.08.15 @ 11:18:49

TEST COMMENT: 60- IF- BOB 18 mins
60- IS- 1/8" blow back
60- FF- BOB 15 mins
60- FS- Surface blow died in 44 mins



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2174.30	134.02	Initial Hydro-static
2	90.10	134.13	Open To Flow (1)
61	132.50	134.82	Shut-In(1)
122	1021.21	136.42	End Shut-In(1)
124	143.68	136.21	Open To Flow (2)
181	181.76	137.31	Shut-In(2)
242	982.69	138.47	End Shut-In(2)
243	2106.47	138.72	Final Hydro-static

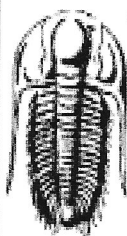
Recovery

Length (ft)	Description	Volume (bbl)
310.00	CGO, 15%G 85%O	4.23
0.00	375 GIP	0.00

* Recovery from multiple tests

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

Bow Creek Oil Company

1304 Eisenhower
Hays, KS 67601

ATTN: Lyle Herrman

25-1s-35w Rawlins, KS

Skolout #1-25

Job Ticket: 58395

DST#: 2

Test Start: 2014.08.15 @ 00:37:19

GENERAL INFORMATION:

Formation: **LKC "H-J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:17:19

Time Test Ended: 14:24:49

Interval: **4200.00 ft (KB) To 4330.00 ft (KB) (TVD)**

Total Depth: **4330.00 ft (KB) (TVD)**

Hole Diameter: 7.88 inches Hole Condition: Poor

Test Type: Conventional Bottom Hole (Reset)

Tester: Brannan Lonsdale

Unit No: 62

Reference Elevations: 3179.00 ft (KB)

3169.00 ft (CF)

KB to GR/CF: 10.00 ft

Serial #: 8655

Outside

Press@RunDepth: psig @ 4201.00 ft (KB)

Start Date: 2014.08.15

End Date:

2014.08.15

Capacity: 8000.00 psig

Last Calib.:

2014.08.15

Start Time: 00:37:02

End Time:

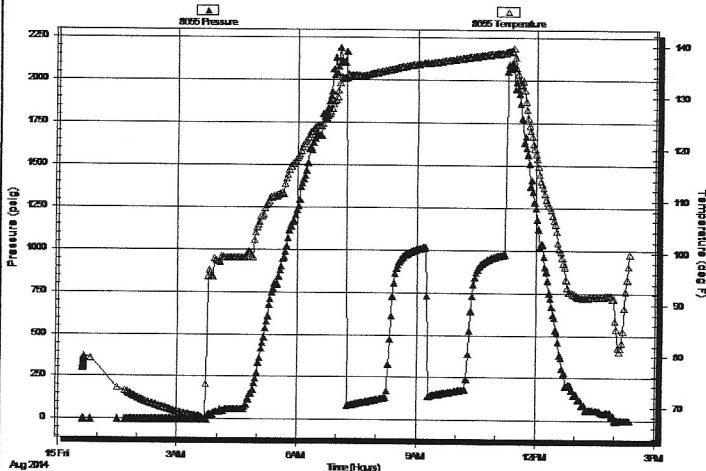
14:21:31

Time On Btm:

Time Off Btm:

TEST COMMENT: 60- IF- BOB 18 mins
60- IS- 1/8" blow back
60- FF- BOB 15 mins
60- FS- Surface blow died in 44 mins

Pressure vs. Time



PRESSURE SUMMARY

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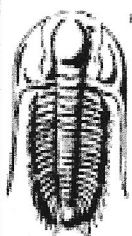
Recovery

Length (ft)	Description	Volume (bbl)
310.00	CGO, 15%G 85%O	4.23
0.00	375 GIP	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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* Recovery from multiple tests



TRILOBITE
TESTING, INC

DRILL STEM TEST REPORT

TOOL DIAGRAM

Bow Creek Oil Company

25-1s-35w Rawlins, KS

1304 Eisenhower
Hays, KS 67601

Skolout #1-25

Job Ticket: 58395

DST#: 2

ATTN: Lyle Herrman

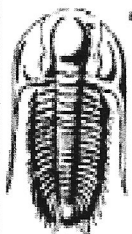
Test Start: 2014.08.15 @ 00:37:19

Tool Information

Drill Pipe:	Length: 4191.00 ft	Diameter: 3.75 inches	Volume: 57.25 bbl	Tool Weight:	2000.00 lb	
Heavy Wt. Pipe:	Length: ft	Diameter: 2.75 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:	65000.00 lb	
			Total Volume:	- bbl	Tool Chased	0.00 ft
Drill Pipe Above KB:	11.00 ft			String Weight: Initial	54000.00 lb	
Depth to Top Packer:	4200.00 ft			Final	58000.00 lb	
Depth to Bottom Packer:	ft					
Interval between Packers:	130.00 ft					
Tool Length:	150.00 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			4181.00	
Shut In Tool	5.00			4186.00	
Hydraulic tool	5.00			4191.00	
Packer	5.00			4196.00	20.00 Bottom Of Top Packer
Packer	4.00			4200.00	
Stubb	1.00			4201.00	
Recorder	0.00	8651	Inside	4201.00	
Recorder	0.00	8655	Outside	4201.00	
Perforations	6.00			4207.00	
Change Over Sub	1.00			4208.00	
Drill Pipe	92.00			4300.00	
Change Over Sub	1.00			4301.00	
Perforations	26.00			4327.00	
Bullnose	3.00			4330.00	130.00 Bottom Packers & Anchor

Total Tool Length: 150.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Bow Creek Oil Company

25-1s-35w Rawlins, KS

1304 Eisenhower
Hays, KS 67601

Skolout #1-25

Job Ticket: 58395

DST#: 2

ATTN: Lyle Herrman

Test Start: 2014.08.15 @ 00:37:19

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

33 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 48.00 sec/qt

Cushion Volume:

bbl

Water Loss: 7.98 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 500.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
310.00	CGO, 15%G 85%O	4.235
0.00	375 GIP	0.000

Total Length: 310.00 ft

Total Volume: 4.235 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

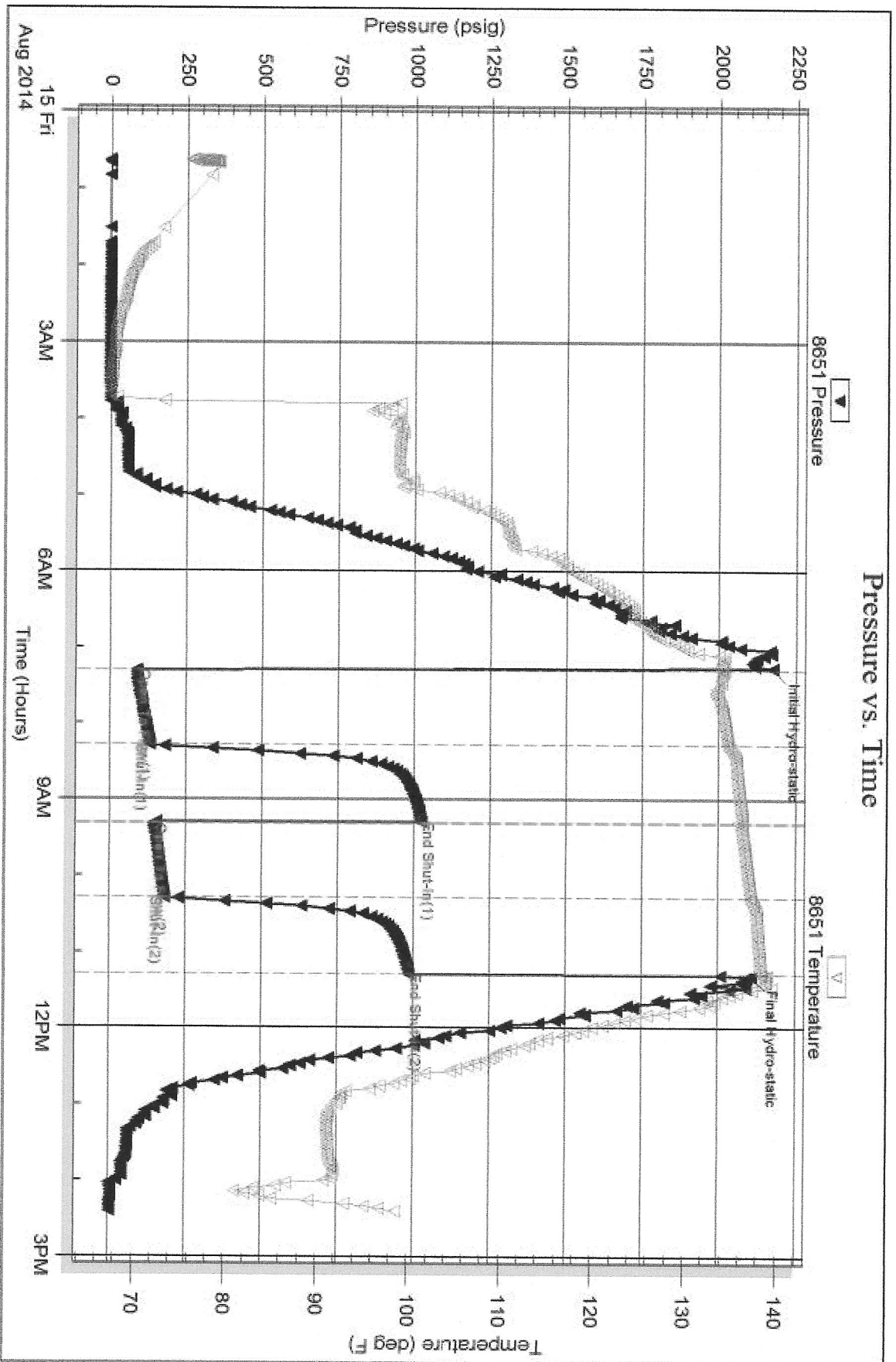
Serial #: 8651

Inside

Bow Creek Oil Company

Skolout #1-25

DST Test Number: 2

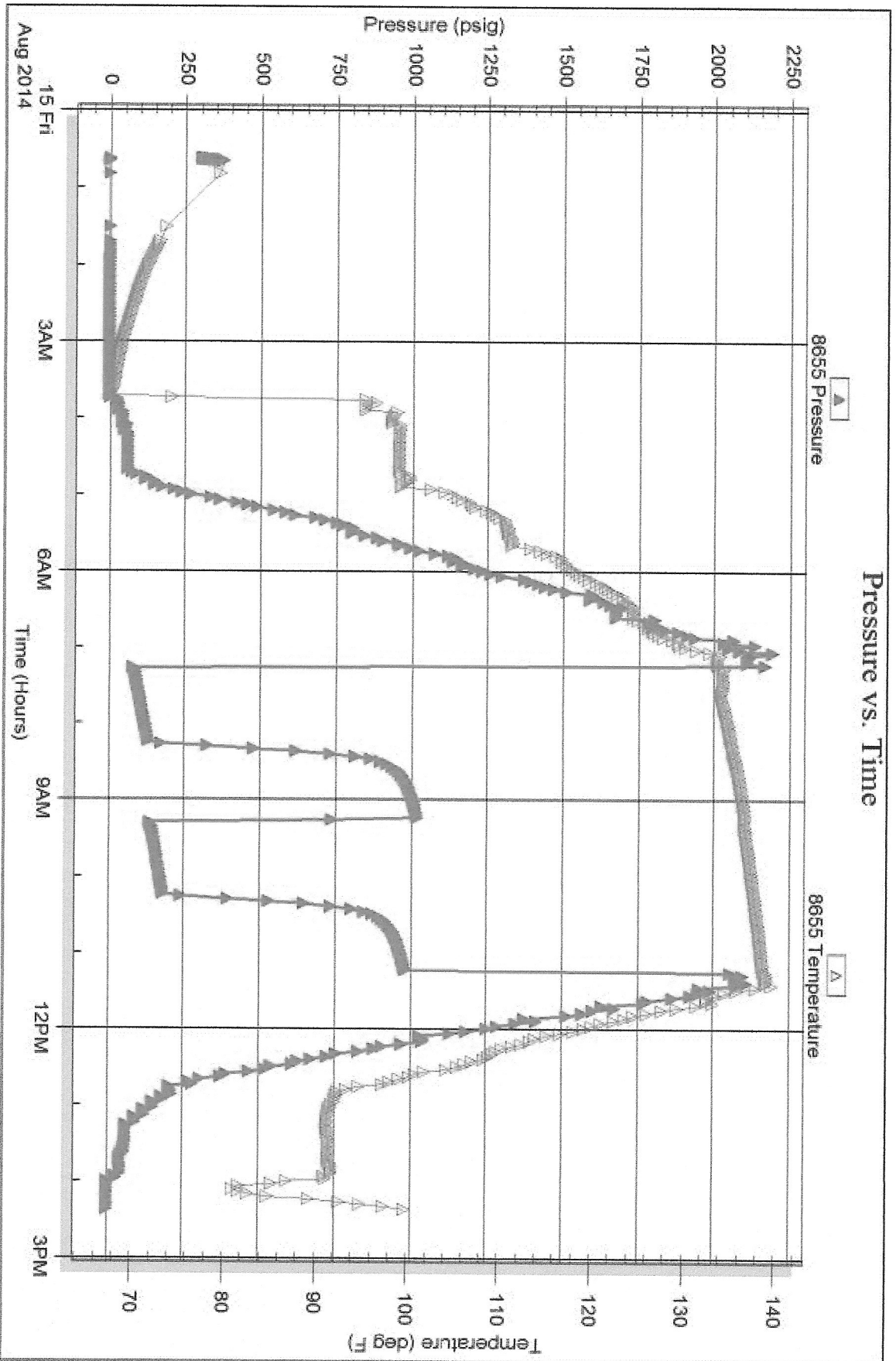


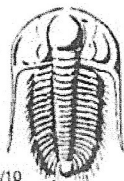
Serial #: 8655

Outside Bow Creek Oil Company

Skidout #1-25

DST Test Number: 2





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 58394

Well Name & No. Skolant #1-25 Test No. 1 Date 8/13/14
 Company Bow Creek Oil Company Elevation 3179 KB 3169 GL
 Address 1304 Eisenhower Hays, KS 67601
 Co. Rep / Geo. Lyle Herman Rig Val #7
 Location: Sec. 25 Twp. 15 Rge. 35W Co. Rawlins State KS

Interval Tested 4073-4106 Zone Tested LKC "A"
 Anchor Length 33' Drill Pipe Run 4068 Mud Wt. 9.0
 Top Packer Depth 4068 Drill Collars Run Vis 50
 Bottom Packer Depth 4073 Wt. Pipe Run WL 9.2
 Total Depth 4106 Chlorides 1,000 ppm System LCM 2#

Blow Description IF - Surface blow built very slowly to 1"
ISI - No blow
PF - Surface blow
FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>20</u>	<u>MCO</u>		<u>80</u>		<u>20</u>
Rec	Feet of	%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

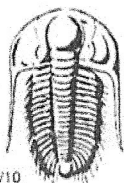
Rec Total 20' BHT 134° Gravity API RW @ °F Chlorides ppm

(A) Initial Hydrostatic <u>2033</u>	☒ Test <u>1250</u>	T-On Location <u>0600</u>
(B) First Initial Flow <u>31</u>	☒ Jars <u>Remove</u>	T-Started <u>0608</u>
(C) First Final Flow <u>30</u>	☒ Safety Joint <u>Remove</u>	T-Open <u>1416</u>
(D) Initial Shut-In <u>1096</u>	☐ Circ Sub <u> </u>	T-Pulled <u>1816</u>
(E) Second Initial Flow <u>32</u>	☒ Hourly Standby <u>5.5h 550</u>	T-Out <u>2136</u>
(F) Second Final Flow <u>33</u>	☒ Mileage <u>318 RT</u>	Comments <u>Stayed @</u>
(G) Final Shut-In <u>829</u>	☐ Sampler <u> </u>	<u>It'll Do Motel in</u>
(H) Final Hydrostatic <u>1969</u>	☐ Straddle <u> </u>	<u>Atwood, KS</u>

Initial Open <u>60</u>	☐ Shale Packer <u> </u>	☐ Ruined Shale Packer <u> </u>
Initial Shut-In <u>60</u>	☐ Extra Packer <u> </u>	☐ Ruined Packer <u> </u>
Final Flow <u>60</u>	☐ Extra Recorder <u> </u>	Sub Total <u> </u>
Final Shut-In <u>60</u>	☐ Day Standby <u> </u>	Total <u> </u>
	☒ Accessibility <u>???</u>	MP/DST Disc't <u> </u>
	Sub Total <u> </u>	

Approved By Our Representative Brannan 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. 58395

Well Name & No. Skolont #1-25 Test No. 2 Date 8/15/14
 Company Bow Creek Oil Company Elevation 3179 KB 3169 GL
 Address 304 Eisenhower Hays, KS 67601
 Co. Rep / Geo. Lyle Herrman Rig Val #7
 Location: Sec. 25 Twp. 15 Rge. 35 W Co. Rawlins State KS

Interval Tested 4200 - 4330 Zone Tested LKC "H-J"
 Anchor Length 130' Drill Pipe Run 4191 Mud Wt. 9.1
 Top Packer Depth 4195 Drill Collars Run — Vis 48
 Bottom Packer Depth 4200 Wt. Pipe Run — WL 8.0
 Total Depth 4330 Chlorides 500 ppm System LCM 3rd

Blow Description IF- BOB 18 mins
ISI- 1/8" Blowback
FF- BOB 15 mins
PSI- Surface flow died in 44 mins

Rec	Feet of	%gas	%oil	%water	%mud
<u>310</u>	<u>640</u>	<u>15</u>	<u>85</u>		
Rec	Feet of <u>375' CIP</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 310' BHT Gravity 33 API RW — @ — °F Chlorides — ppm

(A) Initial Hydrostatic <u>2174</u>	☒ Test <u>250</u>	T-On Location <u>2020 2020</u>
(B) First Initial Flow <u>90</u>	☐ Jars	T-Started <u>0037</u>
(C) First Final Flow <u>133</u>	☐ Safety Joint	T-Open <u>0717</u>
(D) Initial Shut-In <u>1021</u>	☐ Circ Sub	T-Pulled <u>1117</u>
(E) Second Initial Flow <u>144</u>	☒ Hourly Standby <u>4.5h</u> <u>450</u>	T-Out <u>1424</u>
(F) Second Final Flow <u>182</u>	☒ Mileage <u>318 RT</u> <u>88rt 136.40</u>	Comments <u>Stayed 2 nights</u>
(G) Final Shut-In <u>983</u>	☐ Sampler	<u>@ It'll be Motel in</u>
(H) Final Hydrostatic <u>2106</u>	☐ Straddle	<u>Atwood KS</u>

Initial Open <u>60</u>	☐ Shale Packer	☐ Ruined Shale Packer
Initial Shut-In <u>60</u>	☐ Extra Packer	☐ Ruined Packer
Final Flow <u>60</u>	☐ Extra Recorder	Sub Total <u>100.00</u>
Final Shut-In <u>60</u>	☒ Day Standby <u>1d 3h</u>	Total
	☒ Accessibility	MP/DST Disc't

Sub Total

Approved By

Our Representative

Brannan Lonsdale

Trilobite Testing Inc. shall not be liable for damaged or 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.