



DRILL STEM TEST REPORT

Prepared For: **Culbreath Oil and Gas Co. Inc.**

3501 S Yale Ave
Tulsa Ok, 74135+8014

ATTN: Steve Murphy/ Kevin

Riedel #2-5

S5-10s-26w Sheridan,KS

Start Date: 2016.11.14 @ 01:08:30

End Date: 2016.11.14 @ 07:20:00

Job Ticket #: 63498 DST #: 1

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2016.11.17 @ 09:06:52

Culbreath Oil and Gas Co. Inc.
S5-10s-26w Sheridan,KS
Riedel #2-5
DST # 1
LKC 'B'
2016.11.14



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Culbreath Oil and Gas Co. Inc.

S5-10s-26w Sheridan,KS

3501 S Yale Ave
Tulsa Ok, 74135+8014

Riedel #2-5

Job Ticket: 63498

DST#: 1

ATTN: Steve Murphy/ Kevin

Test Start: 2016.11.14 @ 01:08:30

GENERAL INFORMATION:

Formation: **LKC 'B'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:15:45

Time Test Ended: 07:20:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Spencer J. Staab

Unit No: 84

Interval: 3890.00 ft (KB) To 3914.00 ft (KB) (TVD)

Reference Elevations: 2643.00 ft (KB)

Total Depth: 3914.00 ft (KB) (TVD)

2633.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

Serial #: 8353

Inside

Press@RunDepth: 36.59 psig @ 3891.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.11.14

End Date:

2016.11.14

Last Calib.: 2016.11.14

Start Time: 01:08:45

End Time:

07:20:00

Time On Btm: 2016.11.14 @ 03:15:15

Time Off Btm: 2016.11.14 @ 05:44:30

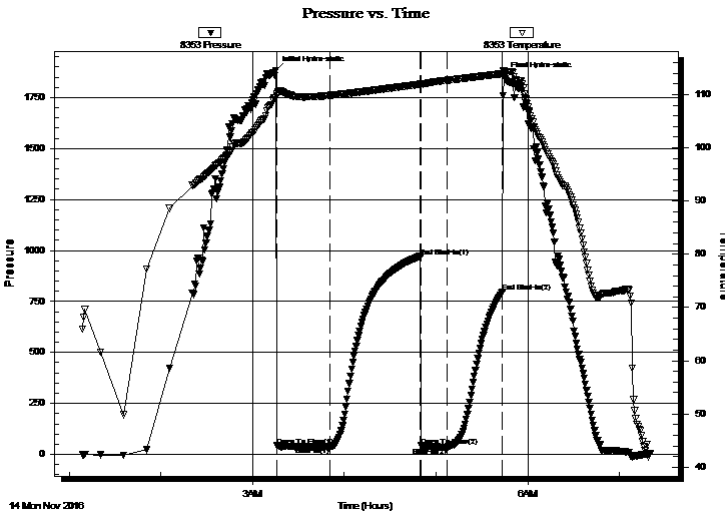
TEST COMMENT: 30-ISI-Weak Blow ; Built to 1 1/4"

60-ISI-No Blow Back

15-FF-No Blow

30-FSI-No Blow Back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1882.69	109.33	Initial Hydro-static
1	42.57	109.68	Open To Flow (1)
35	38.36	109.81	Shut-In(1)
95	967.77	111.92	End Shut-In(1)
95	42.22	111.78	Open To Flow (2)
112	36.59	112.66	Shut-In(2)
149	795.52	113.89	End Shut-In(2)
150	1853.65	114.53	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
25.00	OCM 5% O 95%M	0.35

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

Culbreath Oil and Gas Co. Inc.

S5-10s-26w Sheridan,KS

3501 S Yale Ave
Tulsa Ok, 74135+8014

Riedel #2-5

Job Ticket: 63498

DST#: 1

ATTN: Steve Murphy/ Kevin

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Tester: Spencer J. Staab

Unit No: 84

Interval: 3890.00 ft (KB) To 3914.00 ft (KB) (TVD)

Reference Elevations: 2643.00 ft (KB)

Total Depth: 3914.00 ft (KB) (TVD)

2633.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

Serial #: 9120 Outside

Press@RunDepth: psig @ 3891.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.11.14

End Date:

2016.11.14

Last Calib.:

2016.11.14

Start Time: 01:09:15

End Time:

07:20:15

Time On Btm:

Time Off Btm:

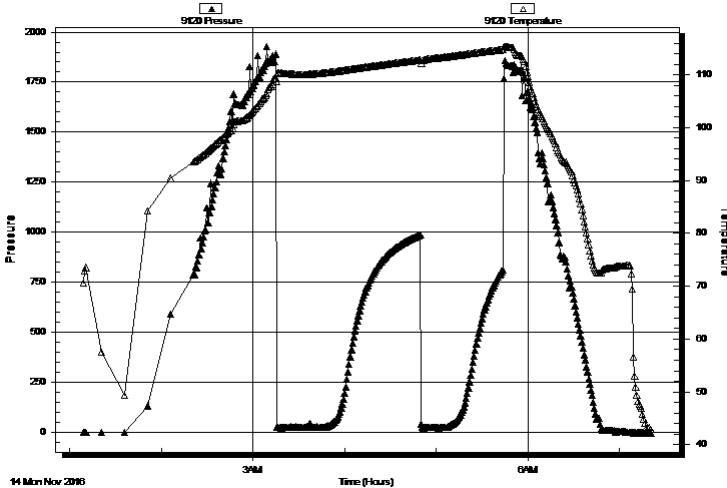
TEST COMMENT: 30-IF-Weak Blow ; Built to 1 1/4"

60-ISI-No Blow Back

15-FF-No Blow

30-FSI-No Blow Back

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
25.00	OCM 5% O 95%M	0.35

Gas Rates

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



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Culbreath Oil and Gas Co. Inc.

S5-10s-26w Sheridan,KS

3501 S Yale Ave
Tulsa Ok, 74135+8014

Riedel #2-5

Job Ticket: 63498

DST#: 1

ATTN: Steve Murphy/ Kevin

Test Start: 2016.11.14 @ 01:08:30

Tool Information

Drill Pipe:	Length: 3876.00 ft	Diameter: 3.80 inches	Volume: 54.37 bbl	Tool Weight: 2500.00 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: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 47000.00 lb
			<u>Total Volume: 54.37 bbl</u>	Tool Chased 8.00 ft
Drill Pipe Above KB:	14.00 ft			String Weight: Initial 46000.00 lb
Depth to Top Packer:	3890.00 ft			Final 46000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	24.00 ft			
Tool Length:	52.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3863.00	
Shut In Tool	5.00			3868.00	
Hydraulic tool	5.00			3873.00	
Jars	5.00			3878.00	
Safety Joint	3.00			3881.00	
Packer	5.00			3886.00	28.00 Bottom Of Top Packer
Packer	4.00			3890.00	
Stubb	1.00			3891.00	
Recorder	0.00	9120	Outside	3891.00	
Recorder	0.00	8353	Inside	3891.00	
Perforations	19.00			3910.00	
Bullnose	4.00			3914.00	24.00 Bottom Packers & Anchor

Total Tool Length: 52.00



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Culbreath Oil and Gas Co. Inc.

S5-10s-26w Sheridan,KS

3501 S Yale Ave
Tulsa Ok, 74135+8014

Riedel #2-5

Job Ticket: 63498

DST#: 1

ATTN: Steve Murphy/ Kevin

Test Start: 2016.11.14 @ 01:08:30

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: 7.19 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
25.00	OCM 5% O 95%M	0.351

Total Length: 25.00 ft Total Volume: 0.351 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Serial #: 8353

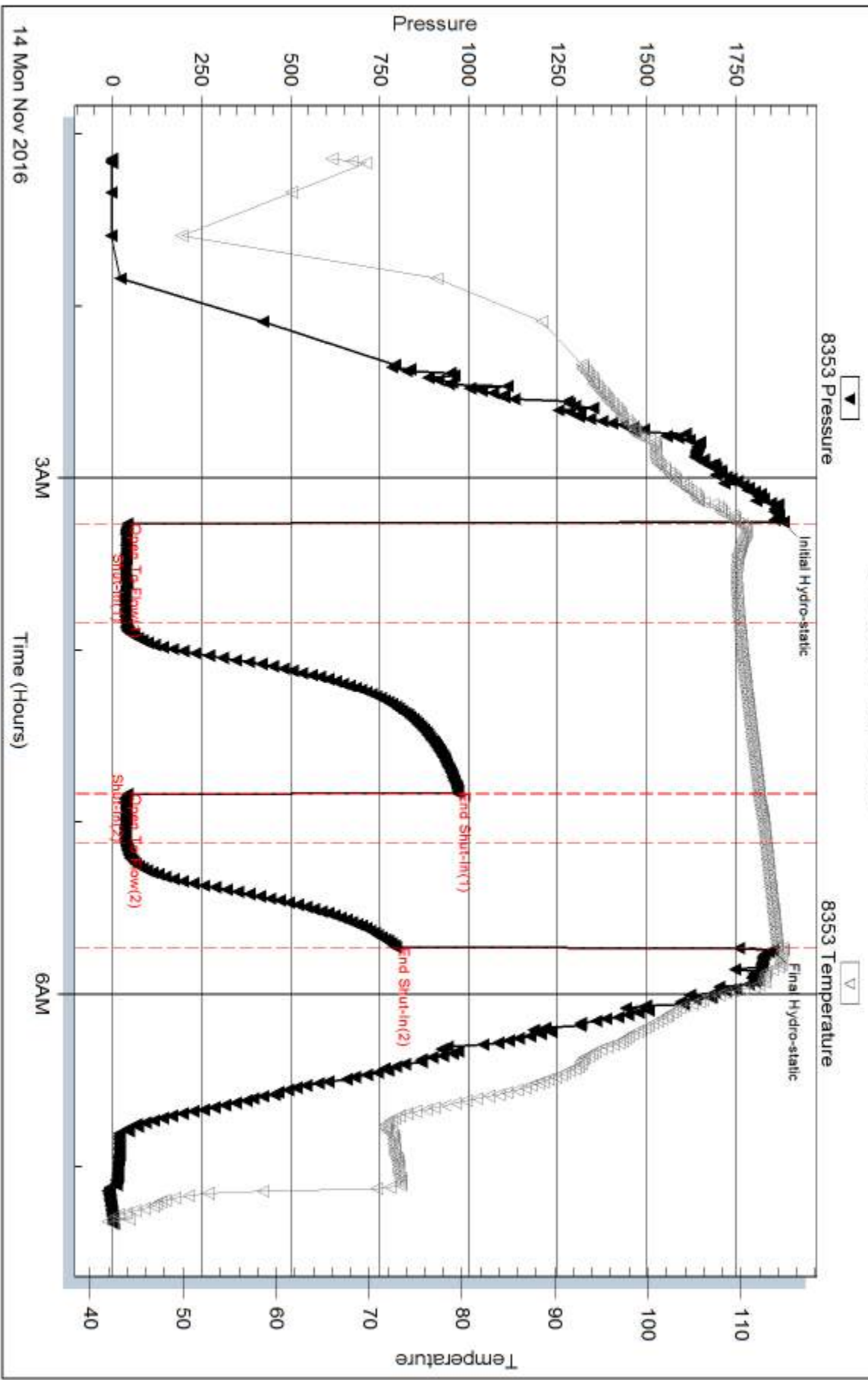
Inside

Culbreath Oil and Gas Co. Inc.

Riedel #2-5

DST Test Number: 1

Pressure vs. Time



Triobite Testing, Inc

Ref. No: 63498

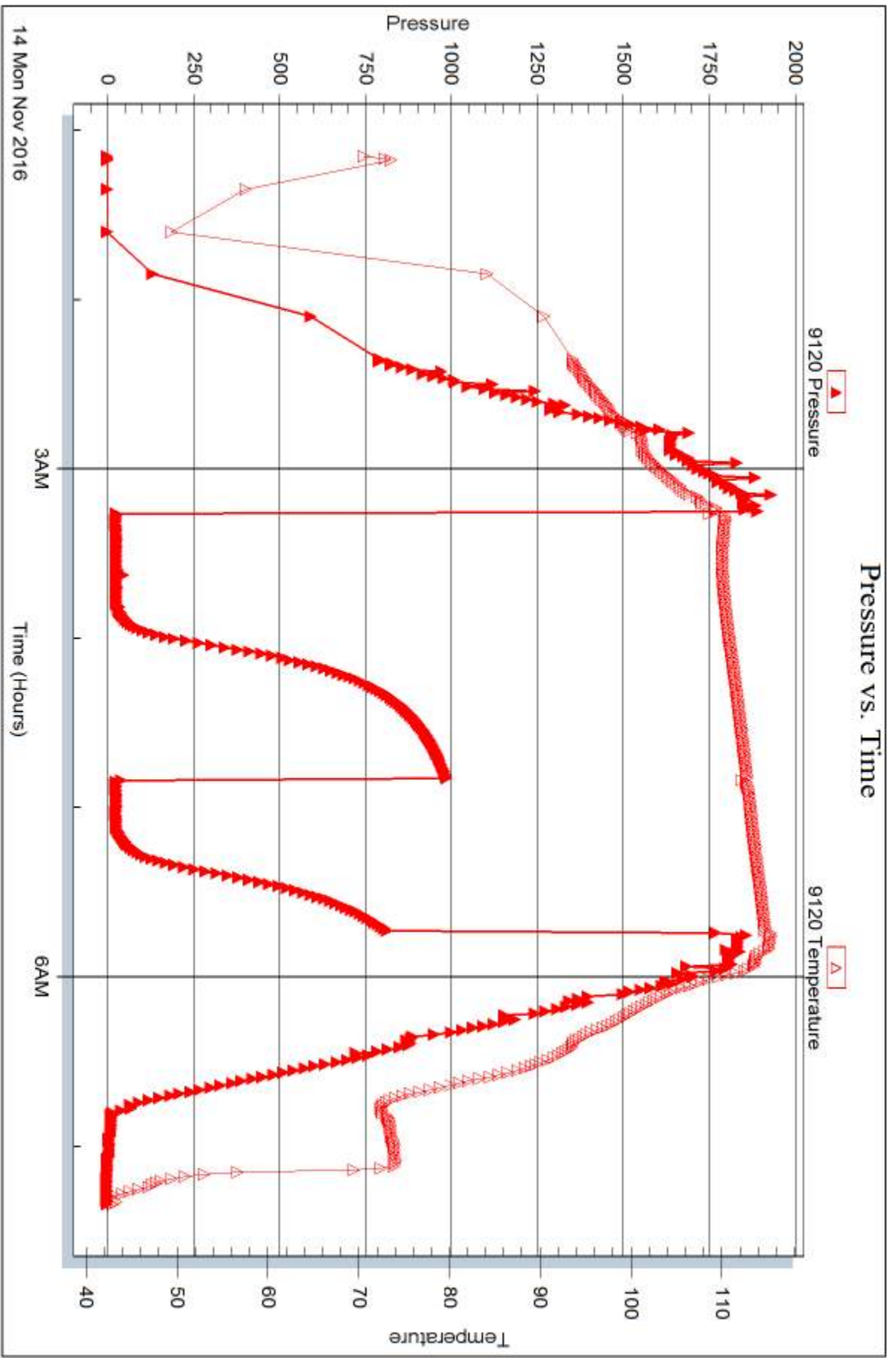
Printed: 2016.11.17 @ 09:06:54

Serial #: 9120

Outside Culbreath Oil and Gas Co. Inc.

Riedel #2-5

DST Test Number: 1



Triobite Testing, Inc

Ref. No: 63498

Printed: 2016.11.17 @ 09:06:54



DRILL STEM TEST REPORT

Prepared For: **Culbreath Oil and Gas Co. Inc.**

3501 S Yale Ave
Tulsa Ok, 74135+8014

ATTN: Steve Murphy/ Kevin

Riedel #2-5

S5-10s-26w Sheridan,KS

Start Date: 2016.11.14 @ 13:46:00

End Date: 2016.11.14 @ 20:55:45

Job Ticket #: 63499 DST #: 2

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2016.11.17 @ 09:06:30

Culbreath Oil and Gas Co. Inc.
S5-10s-26w Sheridan,KS
Riedel #2-5
DST # 2
LKC'D
2016.11.14



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Culbreath Oil and Gas Co. Inc.

S5-10s-26w Sheridan,KS

3501 S Yale Ave
Tulsa Ok, 74135+8014

Riedel #2-5

Job Ticket: 63499

DST#: 2

ATTN: Steve Murphy/ Kevin

Test Start: 2016.11.14 @ 13:46:00

GENERAL INFORMATION:

Formation: **LKC 'D'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 15:34:15

Time Test Ended: 20:55:45

Test Type: Conventional Bottom Hole (Reset)

Tester: Spencer J. Staab

Unit No: 84

Interval: 3910.00 ft (KB) To 3934.00 ft (KB) (TVD)

Reference Elevations: 2643.00 ft (KB)

Total Depth: 3934.00 ft (KB) (TVD)

2633.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

Serial #: 8353

Inside

Press@RunDepth: 39.13 psig @ 3911.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.11.14

End Date:

2016.11.14

Last Calib.:

2016.11.14

Start Time: 13:46:15

End Time:

20:55:45

Time On Btm:

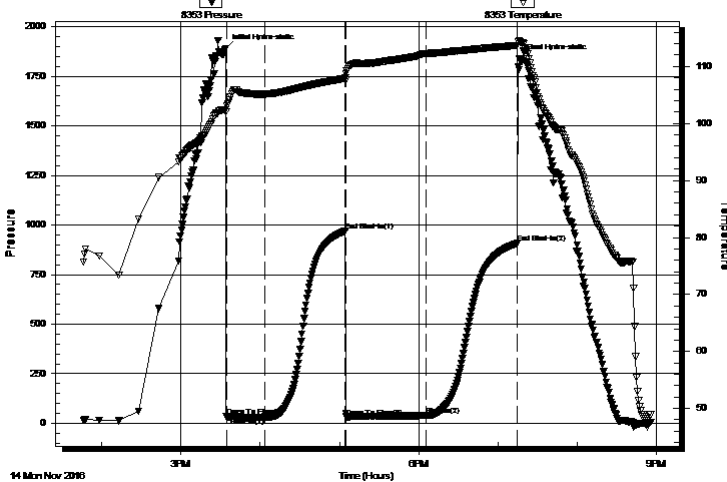
2016.11.14 @ 15:34:00

Time Off Btm:

2016.11.14 @ 19:16:15

TEST COMMENT: 30-IF-Fair Blow ; Built to 4"
60-ISI-Very weak surface blow
60-FF-Fair Blow ; Built to 6"; died back to 5"
60-FSI-Very weak surface blow

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1888.41	102.35	Initial Hydro-static
1	33.97	102.05	Open To Flow (1)
30	32.47	105.15	Shut-In(1)
91	969.48	107.93	End Shut-In(1)
91	32.84	108.69	Open To Flow (2)
152	39.13	112.24	Shut-In(2)
221	908.12	113.71	End Shut-In(2)
223	1840.33	114.50	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Clean Oil 100% O	0.07
35.00	OCM 30% O 70% M	0.49

* Recovery from multiple tests

Gas Rates

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



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Culbreath Oil and Gas Co. Inc.

S5-10s-26w Sheridan, KS

3501 S Yale Ave
Tulsa Ok, 74135+8014

Riedel #2-5

Job Ticket: 63499

DST#: 2

ATTN: Steve Murphy/ Kevin

Test Start: 2016.11.14 @ 13:46:00

GENERAL INFORMATION:

Formation: **LKC 'D'**

Deviated: **No Whipstock:** ft (KB)

Time Tool Opened: 15:34:15

Time Test Ended: 20:55:45

Test Type: **Conventional Bottom Hole (Reset)**

Tester: **Spencer J. Staab**

Unit No: **84**

Interval: **3910.00 ft (KB) To 3934.00 ft (KB) (TVD)**

Reference Elevations: **2643.00 ft (KB)**

Total Depth: **3934.00 ft (KB) (TVD)**

2633.00 ft (CF)

Hole Diameter: **7.88 inches** Hole Condition: **Fair**

KB to GR/CF: **10.00 ft**

Serial #: 9120 Outside

Press@RunDepth: psig @ **3911.00 ft (KB)**

Capacity: **8000.00 psig**

Start Date: **2016.11.14**

End Date: **2016.11.14**

Last Calib.: **2016.11.14**

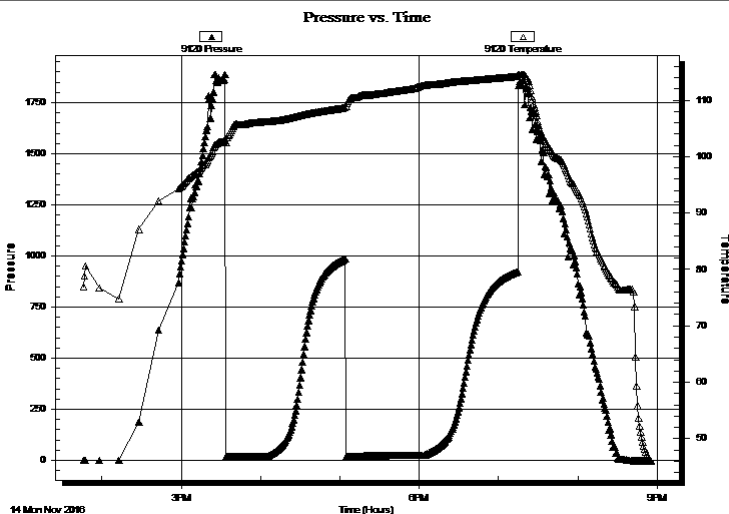
Start Time: **13:46:15**

End Time: **20:55:30**

Time On Btm:

Time Off Btm:

TEST COMMENT: 30-IF-Fair Blow ; Built to 4"
60-ISI-Very weak surface blow
60-FF-Fair Blow ; Built to 6"; died back to 5"
60-FSI-Very weak surface blow



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
5.00	Clean Oil 100% O	0.07
35.00	OCM 30% O 70% M	0.49

Gas Rates

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

* Recovery from multiple tests



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Culbreath Oil and Gas Co. Inc.

S5-10s-26w Sheridan,KS

3501 S Yale Ave
Tulsa Ok, 74135+8014

Riedel #2-5

Job Ticket: 63499

DST#: 2

ATTN: Steve Murphy/ Kevin

Test Start: 2016.11.14 @ 13:46:00

Tool Information

Drill Pipe:	Length: 3911.00 ft	Diameter: 3.80 inches	Volume: 54.86 bbl	Tool Weight:	2500.00 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: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	54000.00 lb
			<u>Total Volume: 54.86 bbl</u>	Tool Chased	5.00 ft
Drill Pipe Above KB:	21.00 ft			String Weight: Initial	48000.00 lb
Depth to Top Packer:	3910.00 ft			Final	50000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	24.00 ft				
Tool Length:	44.00 ft				
Number of Packers:	1	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3891.00	
Shut In Tool	5.00			3896.00	
Hydraulic tool	5.00			3901.00	
Packer	5.00			3906.00	20.00 Bottom Of Top Packer
Packer	4.00			3910.00	
Stubb	1.00			3911.00	
Recorder	0.00	9120	Outside	3911.00	
Recorder	0.00	8353	Inside	3911.00	
Perforations	19.00			3930.00	
Bullnose	4.00			3934.00	24.00 Bottom Packers & Anchor
Total Tool Length:	44.00				



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Culbreath Oil and Gas Co. Inc.

S5-10s-26w Sheridan,KS

3501 S Yale Ave
Tulsa Ok, 74135+8014

Riedel #2-5

Job Ticket: 63499

DST#: 2

ATTN: Steve Murphy/ Kevin

Test Start: 2016.11.14 @ 13:46:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

35 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 1500.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	Clean Oil 100% O	0.070
35.00	OCM 30% O 70% M	0.491

Total Length: 40.00 ft Total Volume: 0.561 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

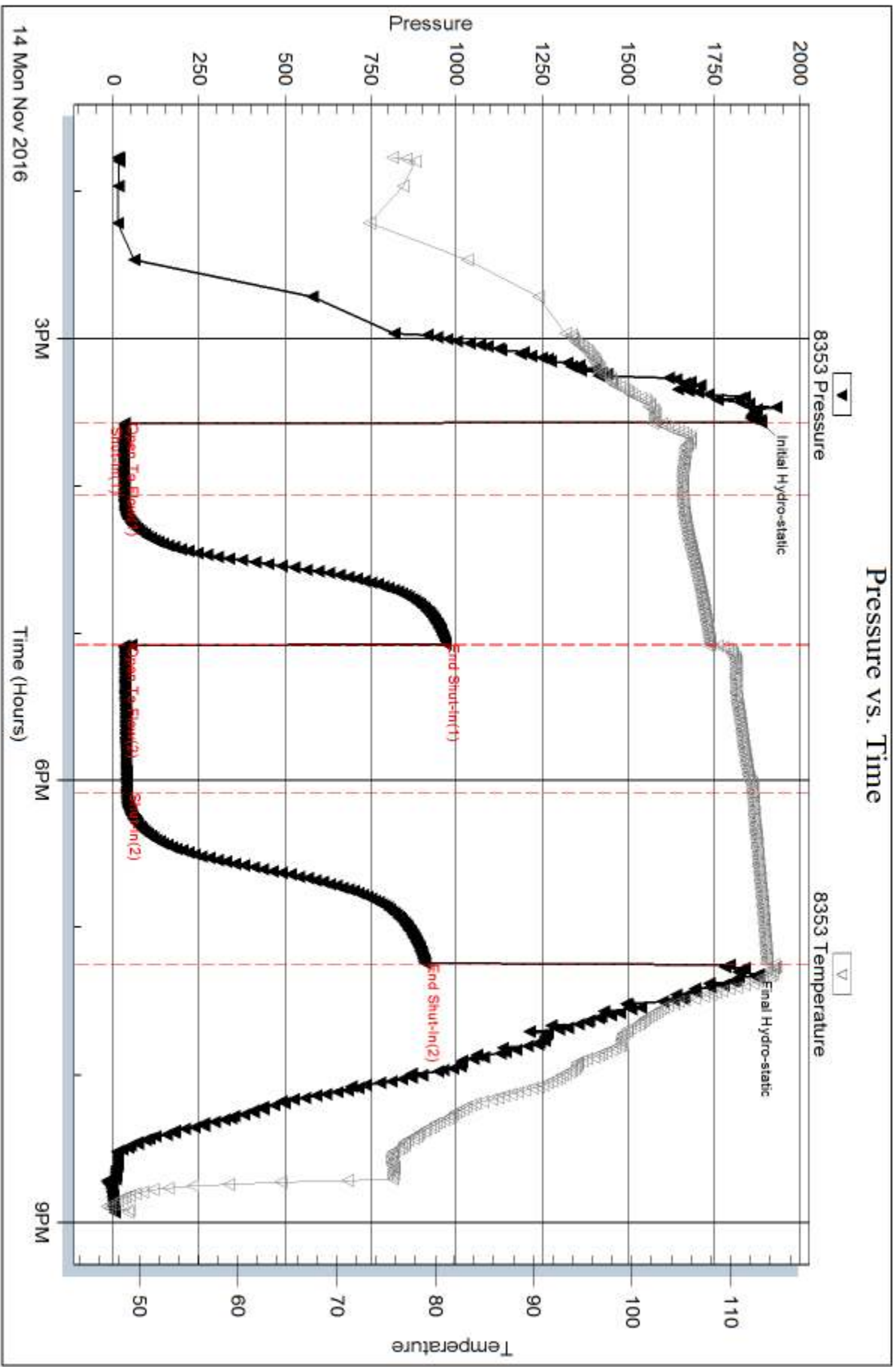
Serial #: 8353

Inside

Culbreath Oil and Gas Co., Inc.

Riedel #2-5

DST Test Number: 2

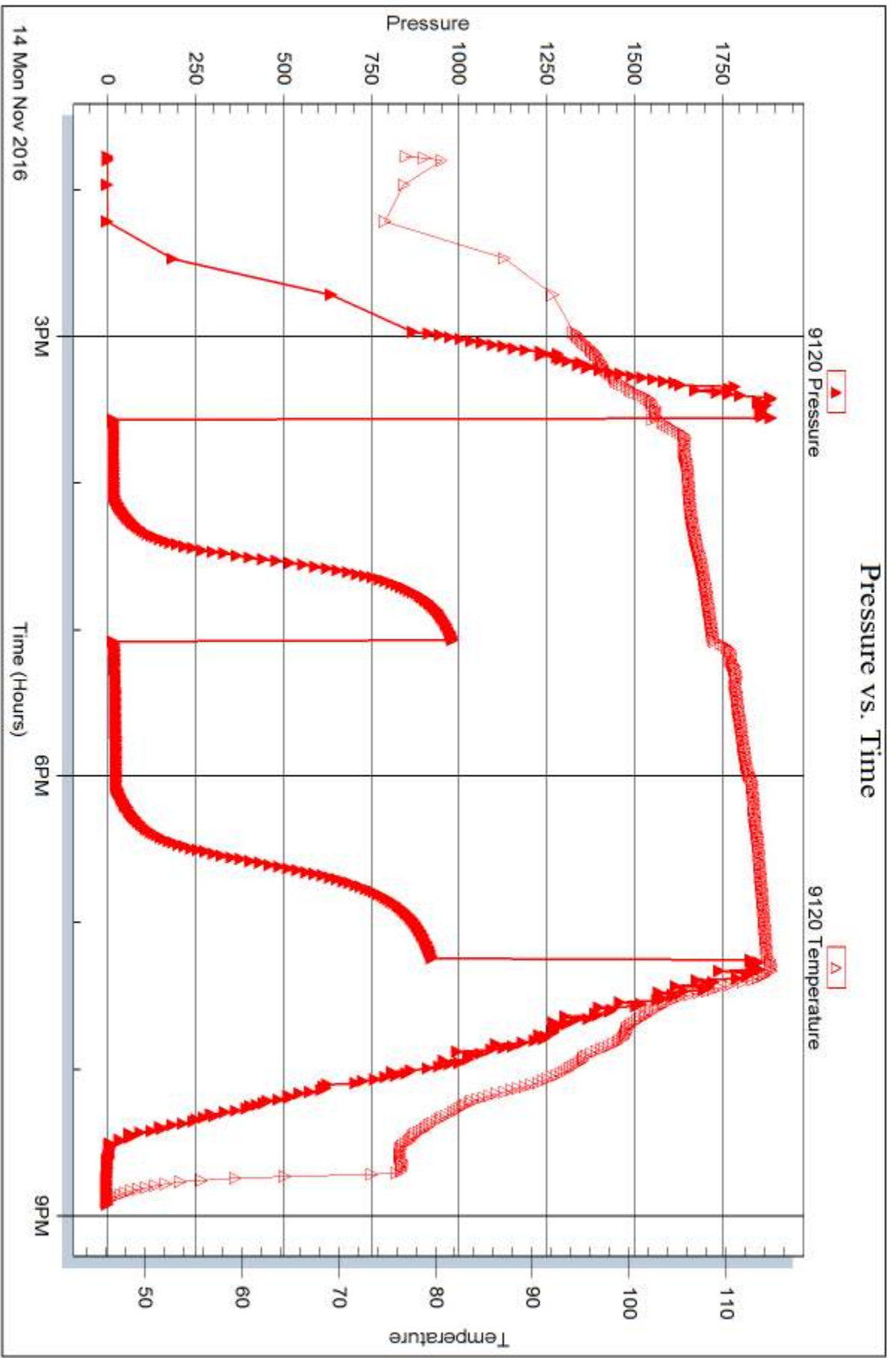


Serial #: 9120

Outside Culbreath Oil and Gas Co. Inc.

Riedel #2-5

DST Test Number: 2



Triobite Testing, Inc

Ref. No: 63499

Printed: 2016.11.17 @ 09:06:31



DRILL STEM TEST REPORT

Prepared For: **Culbreath Oil and Gas Co. Inc.**

3501 S Yale Ave
Tulsa Ok, 74135+8014

ATTN: Steve Murphy/ Kevin

Riedel #2-5

S5-10s-26w Sheridan,KS

Start Date: 2016.11.15 @ 09:24:00

End Date: 2016.11.15 @ 16:43:30

Job Ticket #: 63500 DST #: 3

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2016.11.17 @ 09:06:07

Culbreath Oil and Gas Co. Inc.

S5-10s-26w Sheridan,KS

Riedel #2-5

DST # 3

LKC 'H'

2016.11.15



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Culbreath Oil and Gas Co. Inc.

S5-10s-26w Sheridan,KS

3501 S Yale Ave
Tulsa Ok, 74135+8014

Riedel #2-5

Job Ticket: 63500

DST#: 3

ATTN: Steve Murphy/ Kevin

Test Start: 2016.11.15 @ 09:24:00

GENERAL INFORMATION:

Formation: **LKC 'H'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:24:45

Time Test Ended: 16:43:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Spencer J. Staab

Unit No: 84

Interval: 3992.00 ft (KB) To 4016.00 ft (KB) (TVD)

Reference Elevations: 2643.00 ft (KB)

Total Depth: 3914.00 ft (KB) (TVD)

2633.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

Serial #: 8353

Inside

Press@RunDepth: 77.58 psig @ 3993.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.11.15

End Date:

2016.11.15

Last Calib.:

2016.11.15

Start Time: 09:24:15

End Time:

16:43:30

Time On Btm:

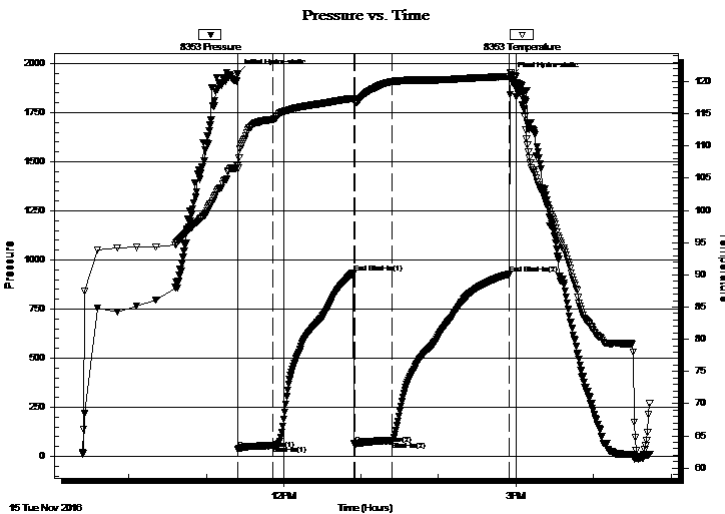
2016.11.15 @ 11:24:30

Time Off Btm:

2016.11.15 @ 14:56:00

TEST COMMENT: 30-IF-BOB in 7 minutes
60-ISI-1/4" Blow Back
30-FF-BOB in 8 minutes
90-FSI-1/4" Blow Back

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1949.62	107.11	Initial Hydro-static
1	37.21	106.57	Open To Flow (1)
27	55.43	114.11	Shut-In(1)
90	934.69	117.39	End Shut-In(1)
91	62.26	116.72	Open To Flow (2)
120	77.58	120.00	Shut-In(2)
211	926.78	120.79	End Shut-In(2)
212	1931.04	121.32	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
65.00	Gassy Clean Oil	0.91
75.00	GMCO 10% G 40%M 50% O	1.05
0.00	1640' 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

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S5-10s-26w Sheridan,KS

3501 S Yale Ave
Tulsa Ok, 74135+8014

Riedel #2-5

Job Ticket: 63500

DST#: 3

ATTN: Steve Murphy/ Kevin

Test Start: 2016.11.15 @ 09:24:00

GENERAL INFORMATION:

Formation: **LKC 'H'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:24:45

Time Test Ended: 16:43:30

Test Type: Conventional Bottom Hole (Reset)

Tester: Spencer J. Staab

Unit No: 84

Interval: **3992.00 ft (KB) To 4016.00 ft (KB) (TVD)**

Reference Elevations: 2643.00 ft (KB)

Total Depth: 3914.00 ft (KB) (TVD)

2633.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

Serial #: 9120

Outside

Press@RunDepth: psig @ 3993.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.11.15 End Date: 2016.11.15

Last Calib.: 2016.11.15

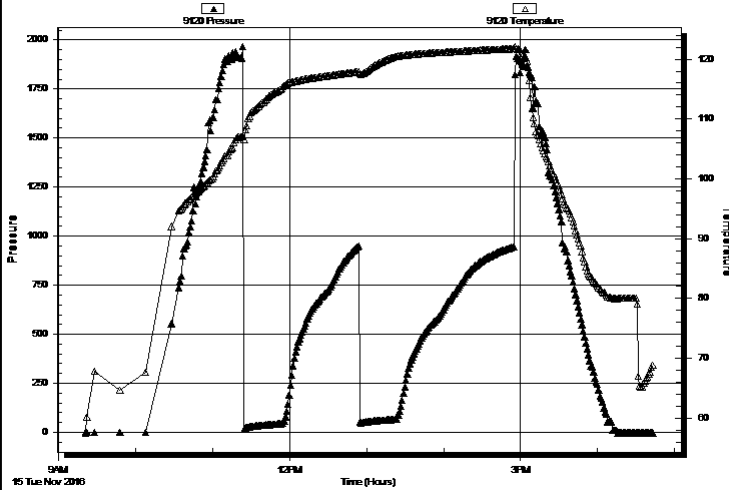
Start Time: 09:21:15 End Time: 16:43:30

Time On Btm:

Time Off Btm:

TEST COMMENT: 30-IF-BOB in 7 minutes
60-ISI-1/4" Blow Back
30-FF-BOB in 8 minutes
90-FSI-1/4" Blow Back

Pressure vs. Time



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
65.00	Gassy Clean Oil	0.91
75.00	GMCO 10% G 40%M 50% O	1.05
0.00	1640' GIP	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

Culbreath Oil and Gas Co. Inc.

S5-10s-26w Sheridan,KS

3501 S Yale Ave
Tulsa Ok, 74135+8014

Riedel #2-5

Job Ticket: 63500

DST#: 3

ATTN: Steve Murphy/ Kevin

Test Start: 2016.11.15 @ 09:24:00

Tool Information

Drill Pipe:	Length: 3994.00 ft	Diameter: 3.80 inches	Volume: 56.03 bbl	Tool Weight:	2500.00 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: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose:	54000.00 lb
			<u>Total Volume: 56.03 bbl</u>	Tool Chased	ft
Drill Pipe Above KB:	22.00 ft			String Weight: Initial	49000.00 lb
Depth to Top Packer:	3992.00 ft			Final	52000.00 lb
Depth to Bottom Packer:	ft				
Interval between Packers:	24.00 ft				
Tool Length:	44.00 ft				
Number of Packers:	1	Diameter: 6.75 inches			

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			3973.00	
Shut In Tool	5.00			3978.00	
Hydraulic tool	5.00			3983.00	
Packer	5.00			3988.00	20.00 Bottom Of Top Packer
Packer	4.00			3992.00	
Stubb	1.00			3993.00	
Recorder	0.00	9120	Outside	3993.00	
Recorder	0.00	8353	Inside	3993.00	
Perforations	19.00			4012.00	
Bullnose	4.00			4016.00	24.00 Bottom Packers & Anchor
Total Tool Length:	44.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Culbreath Oil and Gas Co. Inc.

S5-10s-26w Sheridan,KS

3501 S Yale Ave
Tulsa Ok, 74135+8014

Riedel #2-5

Job Ticket: 63500

DST#: 3

ATTN: Steve Murphy/ Kevin

Test Start: 2016.11.15 @ 09:24:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

40 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
65.00	Gassy Clean Oil	0.912
75.00	GMCO 10% G 40%M 50% O	1.052
0.00	1640' GIP	0.000

Total Length: 140.00 ft Total Volume: 1.964 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

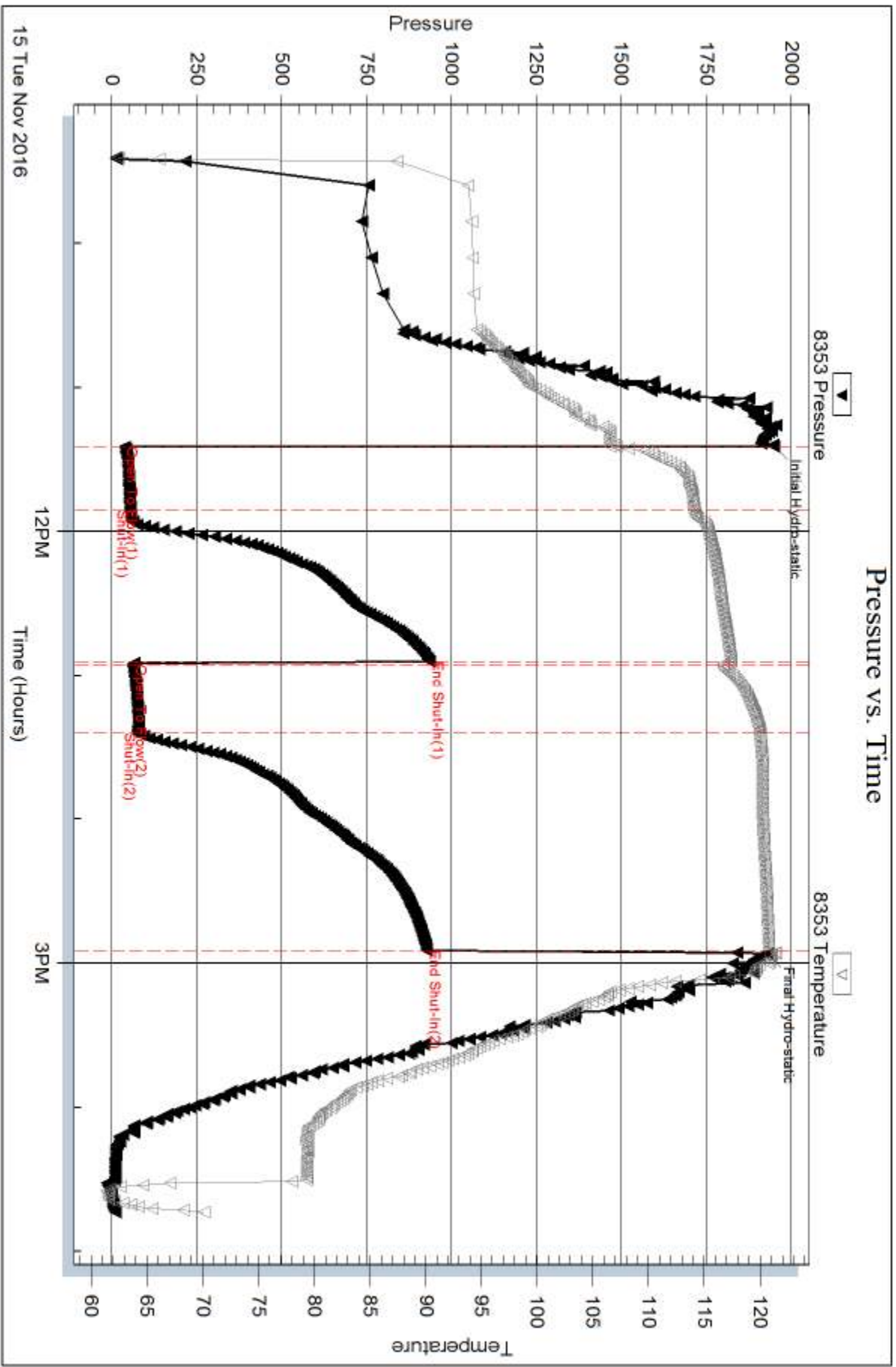
Serial #: 8353

Inside

Culbreath Oil and Gas Co. Inc.

Riedel #2-5

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 63500

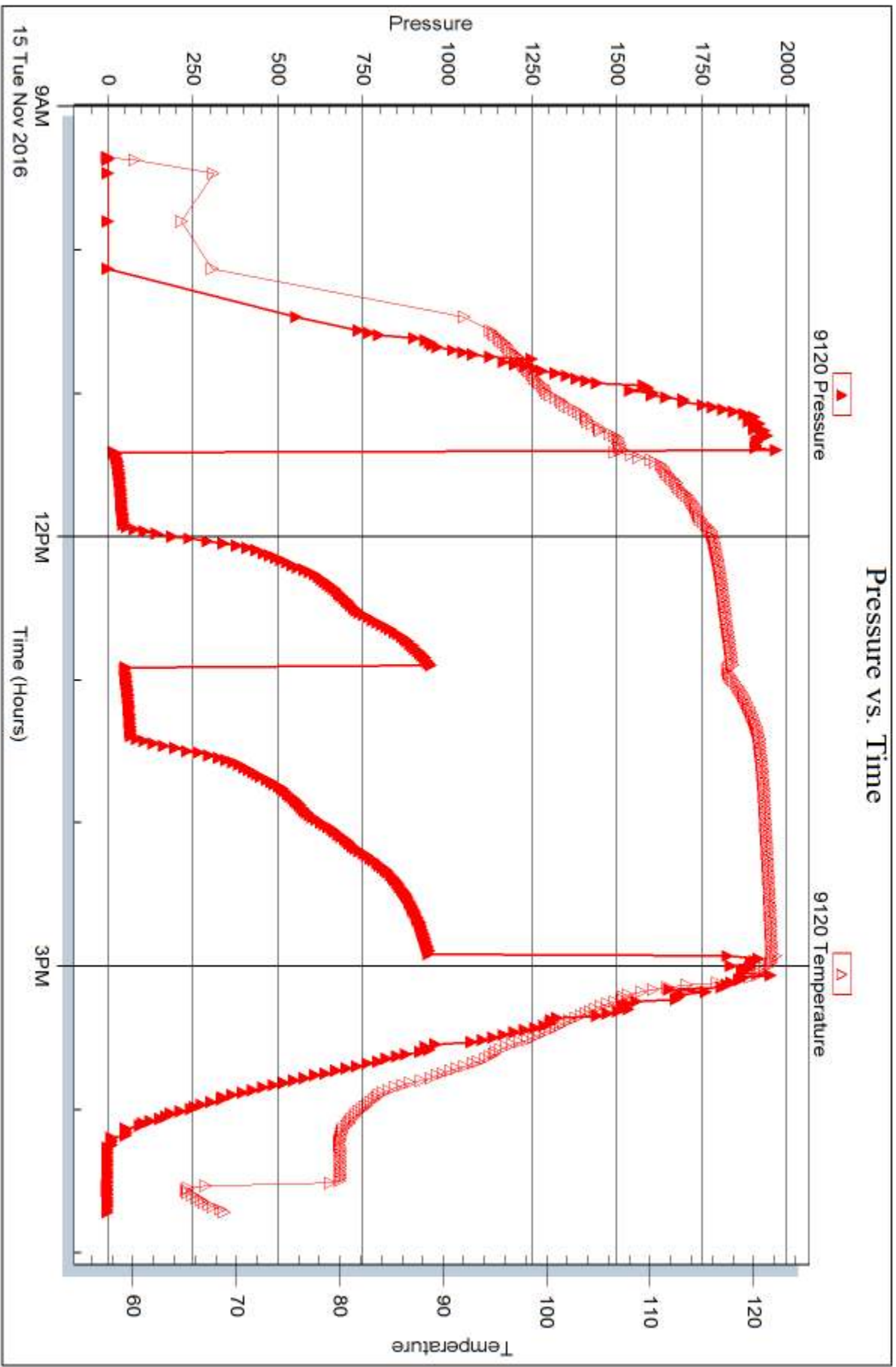
Printed: 2016.11.17 @ 09:06:08

Serial #: 9120

Outside Culbreath Oil and Gas Co. Inc.

Riedel #2-5

DST Test Number: 3



Trilobite Testing, Inc

Ref. No: 63500

Printed: 2016.11.17 @ 09:06:08



DRILL STEM TEST REPORT

Prepared For: **Culbreath Oil and Gas Co. Inc.**

3501 S Yale Ave
Tulsa Ok, 74135+8014

ATTN: Steve Murphy/ Kevin

Riedel #2-5

S5-10s-26w Sheridan,KS

Start Date: 2016.11.16 @ 05:48:00

End Date: 2016.11.16 @ 13:15:00

Job Ticket #: 61860 DST #: 4

Trilobite Testing, Inc
PO Box 362 Hays, KS 67601
ph: 785-625-4778 fax: 785-625-5620

Printed: 2016.11.17 @ 09:05:15

Culbreath Oil and Gas Co. Inc.
S5-10s-26w Sheridan,KS
Riedel #2-5
DST # 4
LKC 'K'
2016.11.16



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Culbreath Oil and Gas Co. Inc.

S5-10s-26w Sheridan,KS

3501 S Yale Ave
Tulsa Ok, 74135+8014

Riedel #2-5

Job Ticket: 61860

DST#: 4

ATTN: Steve Murphy/ Kevin

Test Start: 2016.11.16 @ 05:48:00

GENERAL INFORMATION:

Formation: **LKC 'K'**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:37:45

Time Test Ended: 13:15:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Spencer J. Staab

Unit No: 84

Interval: 4062.00 ft (KB) To 4084.00 ft (KB) (TVD)

Reference Elevations: 2643.00 ft (KB)

Total Depth: 4084.00 ft (KB) (TVD)

2633.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 10.00 ft

Serial #: 8353

Inside

Press@RunDepth: 86.91 psig @ 4063.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2016.11.16

End Date:

2016.11.16

Last Calib.:

2016.11.16

Start Time: 05:48:15

End Time:

13:15:00

Time On Btm:

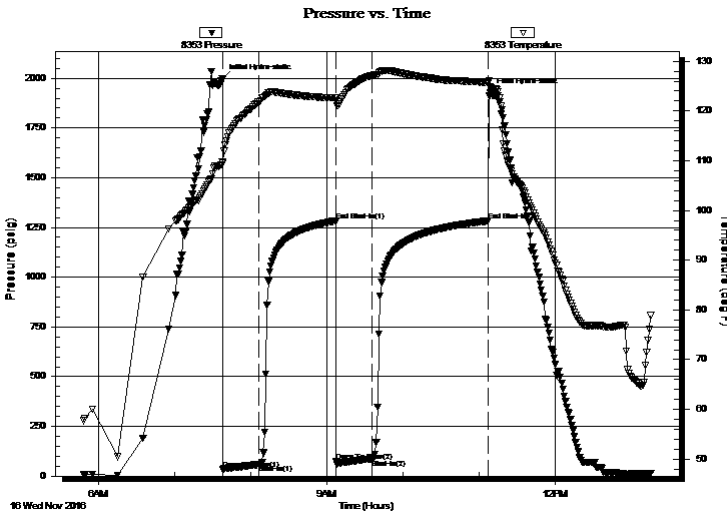
2016.11.16 @ 07:37:30

Time Off Btm:

2016.11.16 @ 11:08:30

TEST COMMENT: 30-IF-Strong Blow ; BOB in 10 minutes
60-ISI-Fair Blow ; Built to 3 3/4"
30-FF-Strong Blow ; BOB in 5 minutes
90-FSI-Fair Blow ; Built to 3"

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1995.70	109.84	Initial Hydro-static
1	34.75	109.47	Open To Flow (1)
29	58.37	121.77	Shut-In(1)
90	1281.35	122.60	End Shut-In(1)
90	71.94	122.11	Open To Flow (2)
118	86.91	127.11	Shut-In(2)
210	1283.36	125.75	End Shut-In(2)
211	1928.62	124.81	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
30.00	Gassy Clean Oil 10% G 90% O	0.42
140.00	MCGO 20%M 30%G 50%O	1.96
0.00	713 GIP	0.00

Gas Rates

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

* Recovery from multiple tests



TRILOBITE TESTING, INC

DRILL STEM TEST REPORT

Culbreath Oil and Gas Co. Inc.
 3501 S Yale Ave
 Tulsa Ok, 74135+8014
 ATTN: Steve Murphy/ Kevin

S5-10s-26w Sheridan,KS
Riedel #2-5
 Job Ticket: 61860 **DST#: 4**
 Test Start: 2016.11.16 @ 05:48:00

GENERAL INFORMATION:

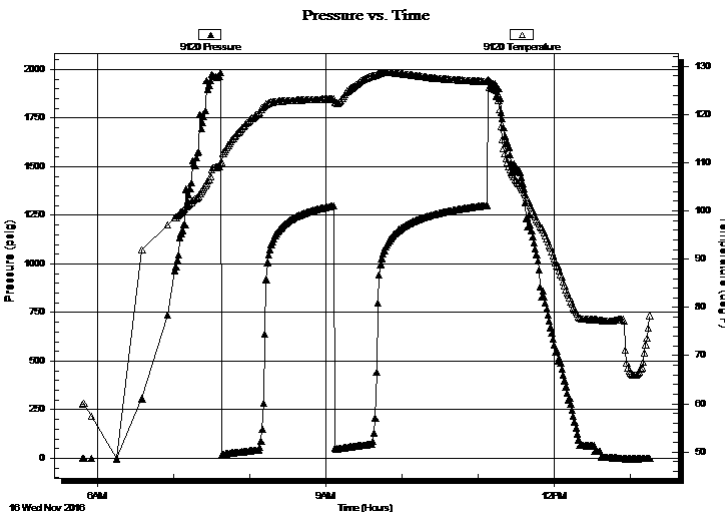
Formation: **LKC 'K'**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 07:37:45
 Time Test Ended: 13:15:00
Interval: 4062.00 ft (KB) To 4084.00 ft (KB) (TVD)
 Total Depth: 4084.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Spencer J. Staab
 Unit No: 84
 Reference Elevations: 2643.00 ft (KB)
 2633.00 ft (CF)
 KB to GR/CF: 10.00 ft

Serial #: 9120 Outside

Press@RunDepth: psig @ 4063.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2016.11.16 End Date: 2016.11.16 Last Calib.: 2016.11.16
 Start Time: 05:48:30 End Time: 13:15:00 Time On Btm:
 Time Off Btm:

TEST COMMENT: 30-IF-Strong Blow ; BOB in 10 minutes
 60-ISI-Fair Blow ; Built to 3 3/4"
 30-FF-Strong Blow ; BOB in 5 minutes
 90-FSI-Fair Blow ; Built to 3"

PRESSURE SUMMARY



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

Recovery

Length (ft)	Description	Volume (bbl)
30.00	Gassy Clean Oil 10% G 90% O	0.42
140.00	MCGO 20%M 30%G 50%O	1.96
0.00	713 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

Culbreath Oil and Gas Co. Inc.

S5-10s-26w Sheridan,KS

3501 S Yale Ave
Tulsa Ok, 74135+8014

Riedel #2-5

Job Ticket: 61860

DST#: 4

ATTN: Steve Murphy/ Kevin

Test Start: 2016.11.16 @ 05:48:00

Tool Information

Drill Pipe:	Length: 4060.00 ft	Diameter: 3.80 inches	Volume: 56.95 bbl	Tool Weight: 2500.00 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: 2.25 inches	Volume: 0.00 bbl	Weight to Pull Loose: 64000.00 lb
			<u>Total Volume: 56.95 bbl</u>	Tool Chased ft
Drill Pipe Above KB:	18.00 ft			String Weight: Initial 48000.00 lb
Depth to Top Packer:	4062.00 ft			Final 50000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	22.00 ft			
Tool Length:	42.00 ft			
Number of Packers:	1	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4043.00	
Shut In Tool	5.00			4048.00	
Hydraulic tool	5.00			4053.00	
Packer	5.00			4058.00	20.00 Bottom Of Top Packer
Packer	4.00			4062.00	
Stubb	1.00			4063.00	
Recorder	0.00	9120	Outside	4063.00	
Recorder	0.00	8353	Inside	4063.00	
Perforations	17.00			4080.00	
Bullnose	4.00			4084.00	22.00 Bottom Packers & Anchor
Total Tool Length:	42.00				



**TRILOBITE
TESTING, INC**

DRILL STEM TEST REPORT

FLUID SUMMARY

Culbreath Oil and Gas Co. Inc.

S5-10s-26w Sheridan,KS

3501 S Yale Ave
Tulsa Ok, 74135+8014

Riedel #2-5

Job Ticket: 61860

DST#: 4

ATTN: Steve Murphy/ Kevin

Test Start: 2016.11.16 @ 05:48:00

Mud and Cushion Information

Mud Type: Gel Chem

Cushion Type:

Oil API:

32 deg API

Mud Weight: 9.00 lb/gal

Cushion Length:

ft

Water Salinity:

ppm

Viscosity: 58.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.59 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 2000.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
30.00	Gassy Clean Oil 10% G 90% O	0.421
140.00	MCGO 20%M 30%G 50%O	1.964
0.00	713 GIP	0.000

Total Length: 170.00 ft

Total Volume: 2.385 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

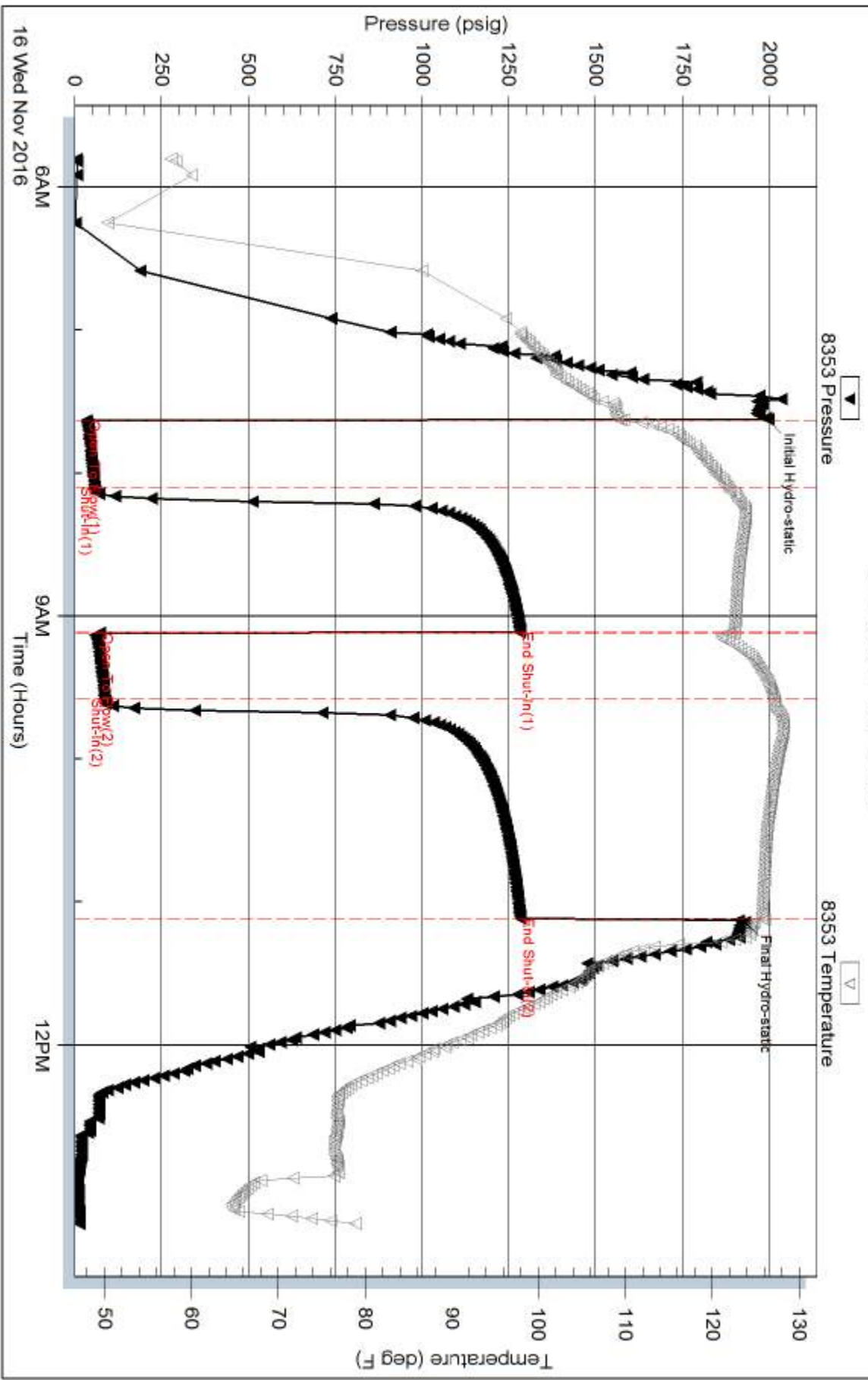
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time

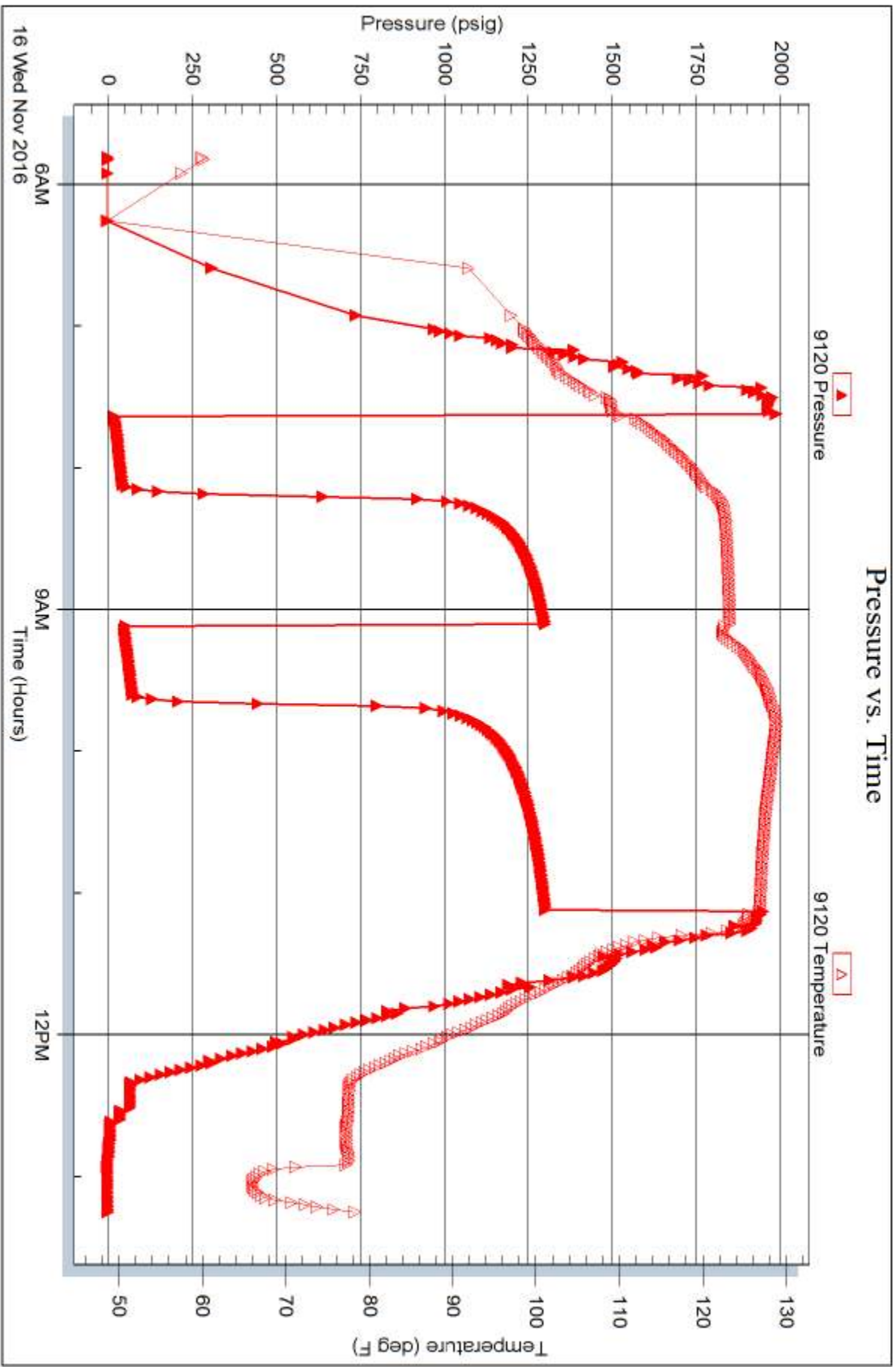


Serial #: 9120

Outside Culbreath Oil and Gas Co. Inc.

Riedel #2-5

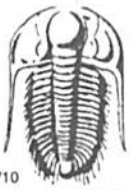
DST Test Number: 4



Trilobite Testing, Inc

Ref. No: 61860

Printed: 2016.11.17 @ 09:05:17



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63498

Well Name & No. Culbreath Oil & Gas Co. Inc. Redel #2-5 Test No. 1 Date 11/13/2016
 Company Culbreath Oil & Gas Co. Inc. Elevation 2643 KB 2633 GL
 Address 3501 S Yale Ave Tulsa OK 74135-8014
 Co. Rep / Geo. Steve Murphy / Kevin Howard Rig Southwind
 Location: Sec. 5 Twp. 10S Rge. 26W Co. Sheridan State KS

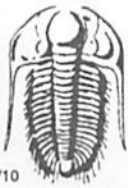
Interval Tested 3890-3914 Zone Tested LKC 'B'
 Anchor Length 24' Drill Pipe Run _____ Mud Wt. 8.6
 Top Packer Depth 3885 Drill Collars Run - Vis 65
 Bottom Packer Depth 3890 Wt. Pipe Run - WL 7.2
 Total Depth 3914 Chlorides 1000 ppm System LCM 3/4 #
 Blow Description D7 - Weak Blow; Built to 1 1/4 inch
DSD - No Blow Back
77 - No Blow
7SD - No Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
<u>25</u>	<u>OCM</u>	<u>5</u>		<u>95</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 25 BHT 114° Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>1882</u>	<input checked="" type="checkbox"/> Test <u>1050</u>	T-On Location <u>23:50</u>
(B) First Initial Flow <u>42</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>01:09 11/14/2016</u>
(C) First Final Flow <u>38</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>03:15</u>
(D) Initial Shut-In <u>967</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>05:50</u>
(E) Second Initial Flow <u>42</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>07:20</u>
(F) Second Final Flow <u>36</u>	<input checked="" type="checkbox"/> Mileage <u>136 RT 118rt 88.50</u>	Comments <u>tool slid 8 ft to bottom</u>
(G) Final Shut-In <u>795</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>1853</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> Ruined Shale Packer _____
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Packer _____
Initial Shut-In <u>60</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Extra Copies _____
Final Flow <u>15</u>	<input type="checkbox"/> Extra Recorder _____	Sub Total <u>0</u>
Final Shut-In <u>30</u>	<input type="checkbox"/> Day Standby _____	Total <u>1463.50</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1463.50</u>	

Approved By _____ Our Representative Spencer J. Staal
 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.
Thank-you!!



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 63499

Well Name & No. Riedel # 2-5 Test No. 2 Date 11/14/2016
 Company Culbreath Oil and Gas Co. Inc. Elevation 2643 KB 2633 GL
 Address 3501 S Yale Ave Tulsa OK 74135 + 8014
 Co. Rep / Geo. Steve Murphy / Kevin Howard Rig Southwind #8
 Location: Sec. 5 Twp. 10S Rge. 26W Co. Sheridan State KS

Interval Tested 3910 - 3934 Zone Tested LKC 'D'
 Anchor Length 24' Drill Pipe Run 3911 Mud Wt. 8.9
 Top Packer Depth 3905 Drill Collars Run - Vis 52
 Bottom Packer Depth 3910 Wt. Pipe Run - WL 7.6
 Total Depth 3934 Chlorides 1500 ppm System LCM 1 1/2#

Blow Description D7 - Fair Blow; Built to 4 inches
DSD - Very weak surface blow back
F7 - Fair Blow; Built to 5 3/4 inches; died back to 5 inches
FSD - Very weak surface blow back

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>Clear Oil</u>	<u>100</u>			
<u>35</u>	<u>OCM</u>	<u>30</u>		<u>70</u>	

Rec Total 40 BHT 114° Gravity 35 API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic 1888 Test 1050 T-On Location 13:03
 (B) First Initial Flow 33 Jars - T-Started 13:46
 (C) First Final Flow 32 Safety Joint - T-Open 15:35
 (D) Initial Shut-In 969 Circ Sub - T-Pulled 19:17
 (E) Second Initial Flow 32 Hourly Standby - T-Out 20:56
 (F) Second Final Flow 39 Mileage 136 RT 88.50 Comments tool slid 5 feet
 (G) Final Shut-In 908 Sampler -
 (H) Final Hydrostatic 1840 Straddle - Ruined Shale Packer -

Initial Open 30 Shale Packer - Ruined Packer -
 Initial Shut-In 60 Extra Packer - Extra Copies -
 Final Flow 60 Extra Recorder - Sub Total 0
 Final Shut-In 60 Day Standby - Total 1138.50
 Accessibility - MP/DST Disc't -
 Sub Total 1138.50

Approved By _____ Our Representative Spencer J. Staub
 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.
 Thankyou!!



TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. **63500**

4/10

Well Name & No. Riedel #2-5 Test No. 3 Date 11/15/2016
 Company Culbreath Oil and Gas Co. Inc. Elevation 2643 KB 2633 GL
 Address 3501 S Yale Ave Tulsa OK 74135 + 8014
 Co. Rep / Geo. Steve Murphy / Kevin Howard Rig Southwind #8
 Location: Sec. 5 Twp. 10s Rge. 26w Co. Sheridan State Ks

Interval Tested 3992-4016 Zone Tested LKC 'H'
 Anchor Length 24' Drill Pipe Run 3994 Mud Wt. 9.0
 Top Packer Depth 3987 Drill Collars Run - Vis 58
 Bottom Packer Depth 3992 Wt. Pipe Run - WL 7.6
 Total Depth 4016 Chlorides 2000 ppm System LCM 1 1/2#

Blow Description 87 - BOB in 7 minutes
DSO - No blow back 1/4 inch Blow Back
77 - BOB in 8 minutes
7SD - 1/4 inch Blow Back

Rec	Feet of	%gas	%oil	%water	%mud
65	Gas Clean Oil	10	90		
75	GMCO	10	50		40
	1640' GIP				

Rec Total 140' BHT 121° Gravity 40 API RW - @ - °F Chlorides - ppm

(A) Initial Hydrostatic <u>1949</u>	<input checked="" type="checkbox"/> Test <u>1150</u>	T-On Location <u>08:35</u>
(B) First Initial Flow <u>37</u>	<input type="checkbox"/> Jars	T-Started <u>09:24</u>
(C) First Final Flow <u>55</u>	<input type="checkbox"/> Safety Joint	T-Open <u>11:27</u>
(D) Initial Shut-In <u>934</u>	<input type="checkbox"/> Circ Sub	T-Pulled <u>14:57</u>
(E) Second Initial Flow <u>62</u>	<input type="checkbox"/> Hourly Standby	T-Out <u>16:46</u>
(F) Second Final Flow <u>77</u>	<input checked="" type="checkbox"/> Mileage <u>136 R7</u> 88.50	Comments
(G) Final Shut-In <u>926</u>	<input type="checkbox"/> Sampler	
(H) Final Hydrostatic <u>1931</u>	<input type="checkbox"/> Straddle	<input type="checkbox"/> Ruined Shale Packer
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer	<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>90</u>	<input type="checkbox"/> Day Standby	Total <u>1238.50</u>
	<input type="checkbox"/> Accessibility	MP/DST Disc't
	Sub Total <u>1238.50</u>	

Approved By _____ Our Representative Spencer J. Staal
 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.
Thank-you!!



4/10

TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 61860

Well Name & No. Riedel #2-5 Test No. 4 Date 11/15/2016
 Company Culbreath Oil and Gas Co. Inc Elevation 2643 KB 2633 GL
 Address 3501 S Yale Ave Tulsa OK 74135 + 8014
 Co. Rep / Geo. Steve Murphy / Kevin Howard Rig Southwind #8
 Location: Sec. 5 Twp. 10s Rge. 26w Co. Sheridan State Ks

Interval Tested 4062-4084 Zone Tested LRC 'K'
 Anchor Length 22' Drill Pipe Run 4060 Mud Wt. 9
 Top Packer Depth 4057 Drill Collars Run - Vis 58
 Bottom Packer Depth 4062 Wt. Pipe Run - WL 7.6
 Total Depth 4084 Chlorides 2000 ppm System LCM 1 1/2#

Blow Description D7 - Strong Blow; BOB in 10 minutes
D50 - Fair Blow; Built to 3 3/4 inches
77 - Strong Blow; BOB in 5 minutes
7SD - Fair Blow;

Rec	Feet of	%gas	%oil	%water	%mud
<u>30</u>	<u>Grassy Clean Oil</u>	<u>10</u>	<u>90</u>		
<u>140</u>	<u>MCGO</u>	<u>30</u>	<u>50</u>		<u>20</u>
	<u>713 GTP</u>	<u>100</u>			

Rec Total 170 BHT 122 Gravity 32 API RW - @ - °F Chlorides - ppm

- (A) Initial Hydrostatic 1995
- (B) First Initial Flow 34
- (C) First Final Flow 58
- (D) Initial Shut-In 1281
- (E) Second Initial Flow 71
- (F) Second Final Flow 86
- (G) Final Shut-In 1283
- (H) Final Hydrostatic 1928

- Test 1150
- Jars
- Safety Joint
- Circ Sub
- Hourly Standby
- Mileage 136R7 88.50
- Sampler
- Straddle
- Shale Packer
- Extra Packer
- Extra Recorder
- Day Standby
- Accessibility

T-On Location 04:13
 T-Started 05:48
 T-Open 07:36
 T-Pulled 11:10
 T-Out 13:14

Initial Open 30
 Initial Shut-In 60
 Final Flow 30
 Final Shut-In 90

Comments _____
 Ruined Shale Packer
 Ruined Packer
 Extra Copies
 Sub Total 0
 Total 1238.50
 MP/DST Disc't _____

Approved By _____ Our Representative Spencer J. Swab
 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.
 Thankyou!!