



DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration, Inc.**

PO Box 783188
Wichita, KS 67278

ATTN: John Goldsmith

Saline Valley 7D #1

7-12S-36W Logan,KS

Start Date: 2019.12.09 @ 00:04:27

End Date: 2019.12.09 @ 09:43:02

Job Ticket #: 59447 DST #: 1

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

Printed: 2019.12.16 @ 13:33:59



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration, Inc.

7-12S-36W Logan,KS

PO Box 783188
Wichita, KS 67278

Saline Valley 7D #1

ATTN: John Goldsmith

Job Ticket: 59447

DST#: 1

Test Start: 2019.12.09 @ 00:04:27

GENERAL INFORMATION:

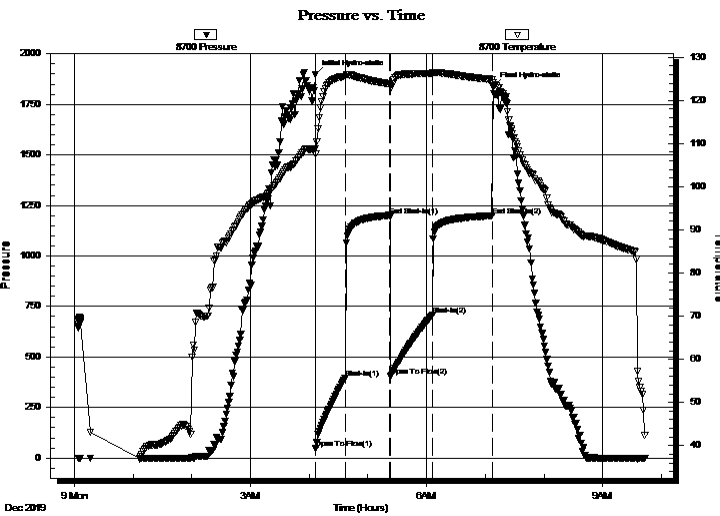
Formation: **LKC "A"**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 04:06:48
 Time Test Ended: 09:43:02
 Interval: **3851.00 ft (KB) To 3876.00 ft (KB) (TVD)**
 Total Depth: 3876.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Brannan Lonsdale
 Unit No: 73
 Reference Elevations: 3100.00 ft (KB)
 3091.00 ft (CF)
 KB to GR/CF: 9.00 ft

Serial #: 8700

Outside

Press@RunDepth: 706.78 psig @ 3852.00 ft (KB)
 Start Date: 2019.12.09 End Date: 2019.12.09
 Start Time: 00:04:28 End Time: 09:43:02
 Capacity: 8000.00 psig
 Last Calib.: 2019.12.09
 Time On Btm: 2019.12.09 @ 04:06:33
 Time Off Btm: 2019.12.09 @ 07:07:48

TEST COMMENT: 30- IF- BOB 3mins. Built to 81.43"
 45- IS- No blow
 45- FF- BOB 4mins. Built to 81.84"
 60- FS- No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1896.48	108.79	Initial Hydro-static
1	49.00	107.60	Open To Flow (1)
30	395.71	125.59	Shut-In(1)
76	1200.47	123.79	End Shut-In(1)
77	405.14	123.26	Open To Flow (2)
120	706.78	126.13	Shut-In(2)
181	1198.16	124.83	End Shut-In(2)
182	1835.88	124.12	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1545.00	MW, 20%M 80%W	20.18

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration, Inc.

7-12S-36W Logan,KS

PO Box 783188
Wichita, KS 67278

Saline Valley 7D #1

Job Ticket: 59447

DST#: 1

ATTN: John Goldsmith

Test Start: 2019.12.09 @ 00:04:27

Tool Information

Drill Pipe:	Length: 3665.00 ft	Diameter: 3.82 inches	Volume: 51.95 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: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 50000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	28.00 ft			String Weight: Initial 47000.00 lb
Depth to Top Packer:	3851.00 ft			Final 47000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	25.00 ft			
Tool Length:	53.00 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			3824.00	
Shut In Tool	5.00			3829.00	
Hydraulic tool	5.00			3834.00	
Jars	5.00			3839.00	
Safety Joint	3.00			3842.00	
Packer	5.00			3847.00	28.00 Bottom Of Top Packer
Packer	4.00			3851.00	
Stubb	1.00			3852.00	
Recorder	0.00	6771	Inside	3852.00	
Recorder	0.00	8700	Outside	3852.00	
Perforations	21.00			3873.00	
Bullnose	3.00			3876.00	25.00 Bottom Packers & Anchor

Total Tool Length: 53.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration, Inc.

7-12S-36W Logan,KS

PO Box 783188
Wichita, KS 67278

Saline Valley 7D #1

Job Ticket: 59447

DST#: 1

ATTN: John Goldsmith

Test Start: 2019.12.09 @ 00:04:27

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:

125000 ppm

Viscosity: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 6.38 in³

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
1545.00	MW, 20%M 80%W	20.179

Total Length: 1545.00 ft Total Volume: 20.179 bbl

Num Fluid Samples: 0

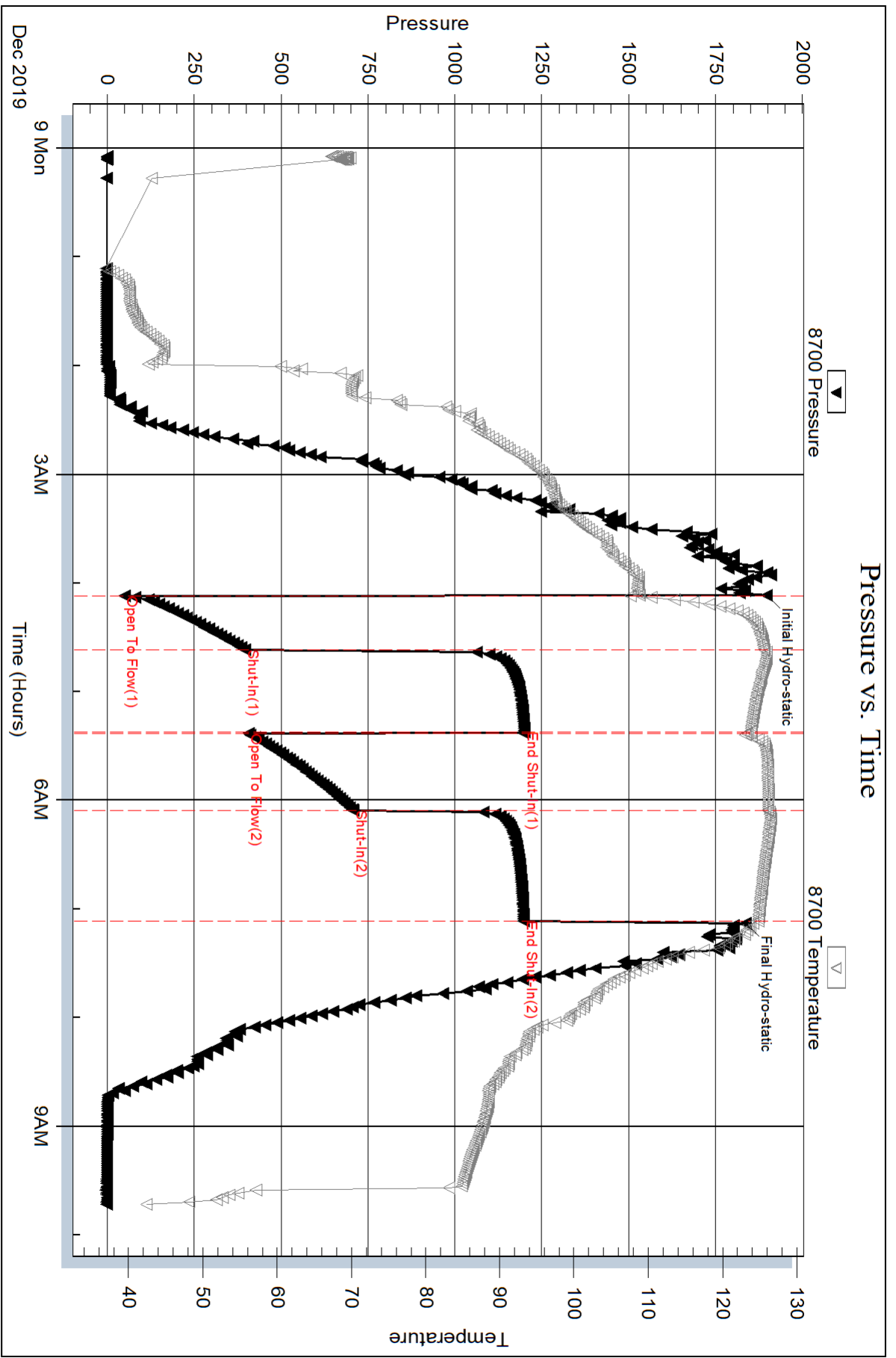
Num Gas Bombs: 0

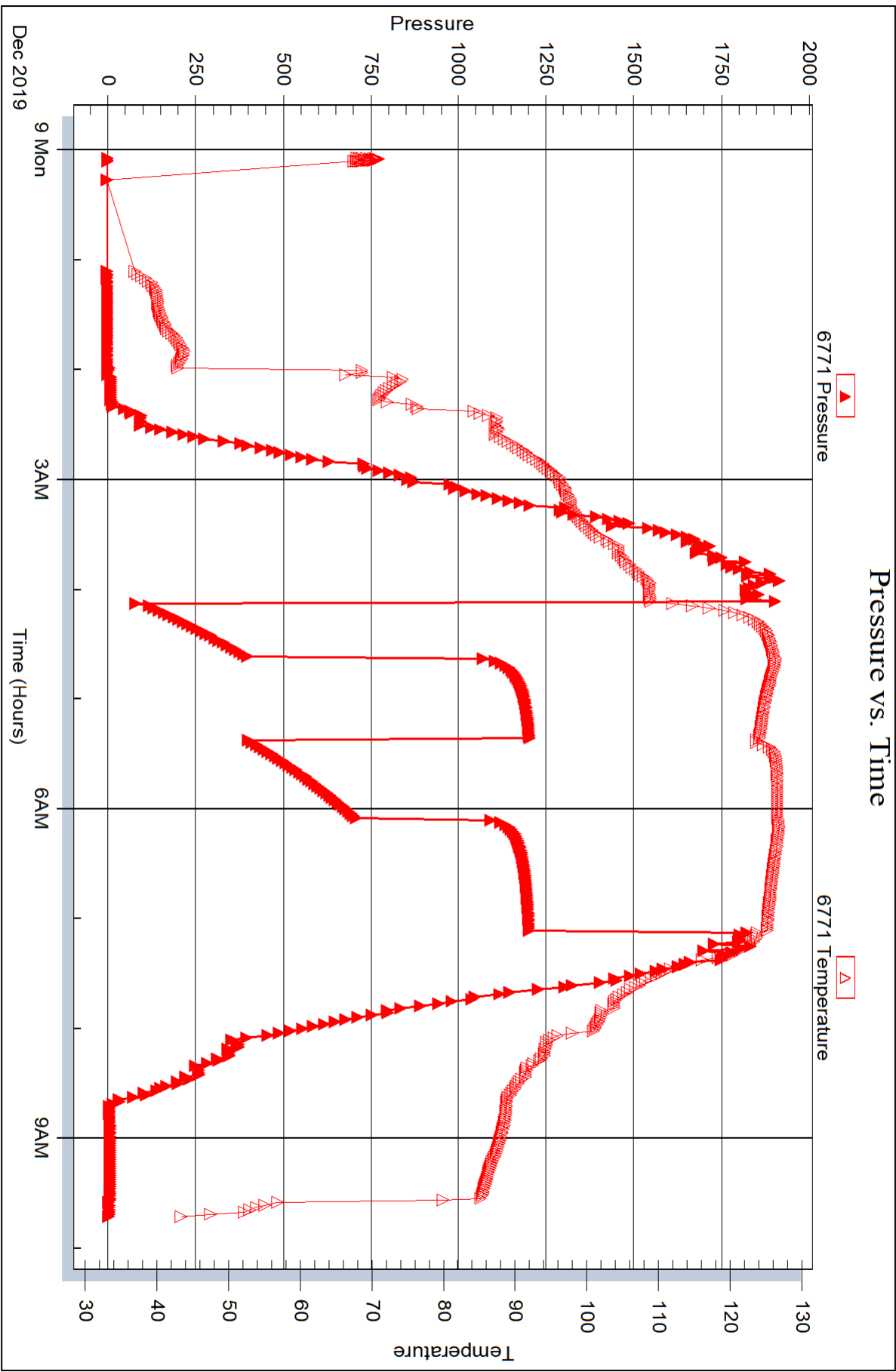
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW: .11@36deg







DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration, Inc.**

PO Box 783188
Wichita, KS 67278

ATTN: John Goldsmith

Saline Valley 7D #1

7-12S-36W Logan,KS

Start Date: 2019.12.11 @ 02:10:55

End Date: 2019.12.11 @ 11:52:00

Job Ticket #: 59449 DST #: 2

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

Printed: 2019.12.16 @ 13:28:03



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration, Inc.

7-12S-36W Logan,KS

PO Box 783188
Wichita, KS 67278

Saline Valley 7D #1

ATTN: John Goldsmith

Job Ticket: 59449

DST#: 2

Test Start: 2019.12.11 @ 02:10:55

GENERAL INFORMATION:

Formation: **Altamont**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 06:24:46

Time Test Ended: 11:52:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Brannan Lonsdale

Unit No: 73

Interval: 4226.00 ft (KB) To 4260.00 ft (KB) (TVD)

Reference Elevations: 3100.00 ft (KB)

Total Depth: 4260.00 ft (KB) (TVD)

3091.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

Serial #: 8700 Outside

Press@RunDepth: 455.52 psig @ 4227.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.12.11

End Date:

2019.12.11

Last Calib.:

2019.12.11

Start Time: 02:10:56

End Time:

11:52:00

Time On Btm:

2019.12.11 @ 06:24:31

Time Off Btm:

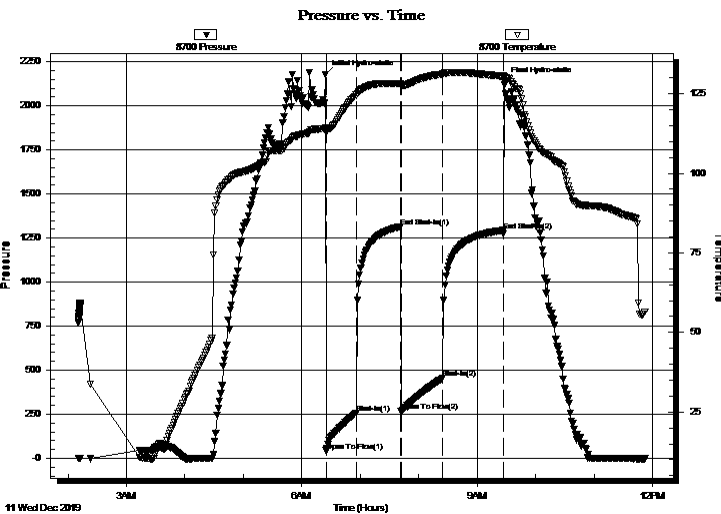
2019.12.11 @ 09:27:46

TEST COMMENT: 30- IF- BOB 8mins. Built to 34.55"

45- IS- No blow

45- FF- BOB 10mins. Built to 41.04"

60- FSI- No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2176.21	114.16	Initial Hydro-static
1	42.40	112.79	Open To Flow (1)
31	257.89	124.59	Shut-In(1)
77	1315.24	128.19	End Shut-In(1)
78	265.46	127.61	Open To Flow (2)
120	455.52	131.17	Shut-In(2)
182	1293.60	130.52	End Shut-In(2)
184	2137.28	130.20	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
960.00	MW, 10%M 90%W	11.89

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration, Inc.

7-12S-36W Logan,KS

PO Box 783188
Wichita, KS 67278

Saline Valley 7D #1

Job Ticket: 59449

DST#: 2

ATTN: John Goldsmith

Test Start: 2019.12.11 @ 02:10:55

Tool Information

Drill Pipe:	Length: 4037.00 ft	Diameter: 3.82 inches	Volume: 57.23 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: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 58000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	25.00 ft			String Weight: Initial 28000.00 lb
Depth to Top Packer:	4226.00 ft			Final 53000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	34.00 ft			
Tool Length:	62.00 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			4199.00	
Shut In Tool	5.00			4204.00	
Hydraulic tool	5.00			4209.00	
Jars	5.00			4214.00	
Safety Joint	3.00			4217.00	
Packer	5.00			4222.00	28.00 Bottom Of Top Packer
Packer	4.00			4226.00	
Stubb	1.00			4227.00	
Recorder	0.00	6771	Inside	4227.00	
Recorder	0.00	8700	Outside	4227.00	
Perforations	30.00			4257.00	
Bullnose	3.00			4260.00	34.00 Bottom Packers & Anchor

Total Tool Length: 62.00



**TRILOBITE
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DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration, Inc.

7-12S-36W Logan,KS

PO Box 783188
Wichita, KS 67278

Saline Valley 7D #1

Job Ticket: 59449

DST#: 2

ATTN: John Goldsmith

Test Start: 2019.12.11 @ 02:10:55

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:

48000 ppm

Viscosity: 56.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4700.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
960.00	MW, 10%M 90%W	11.886

Total Length: 960.00 ft Total Volume: 11.886 bbl

Num Fluid Samples: 0

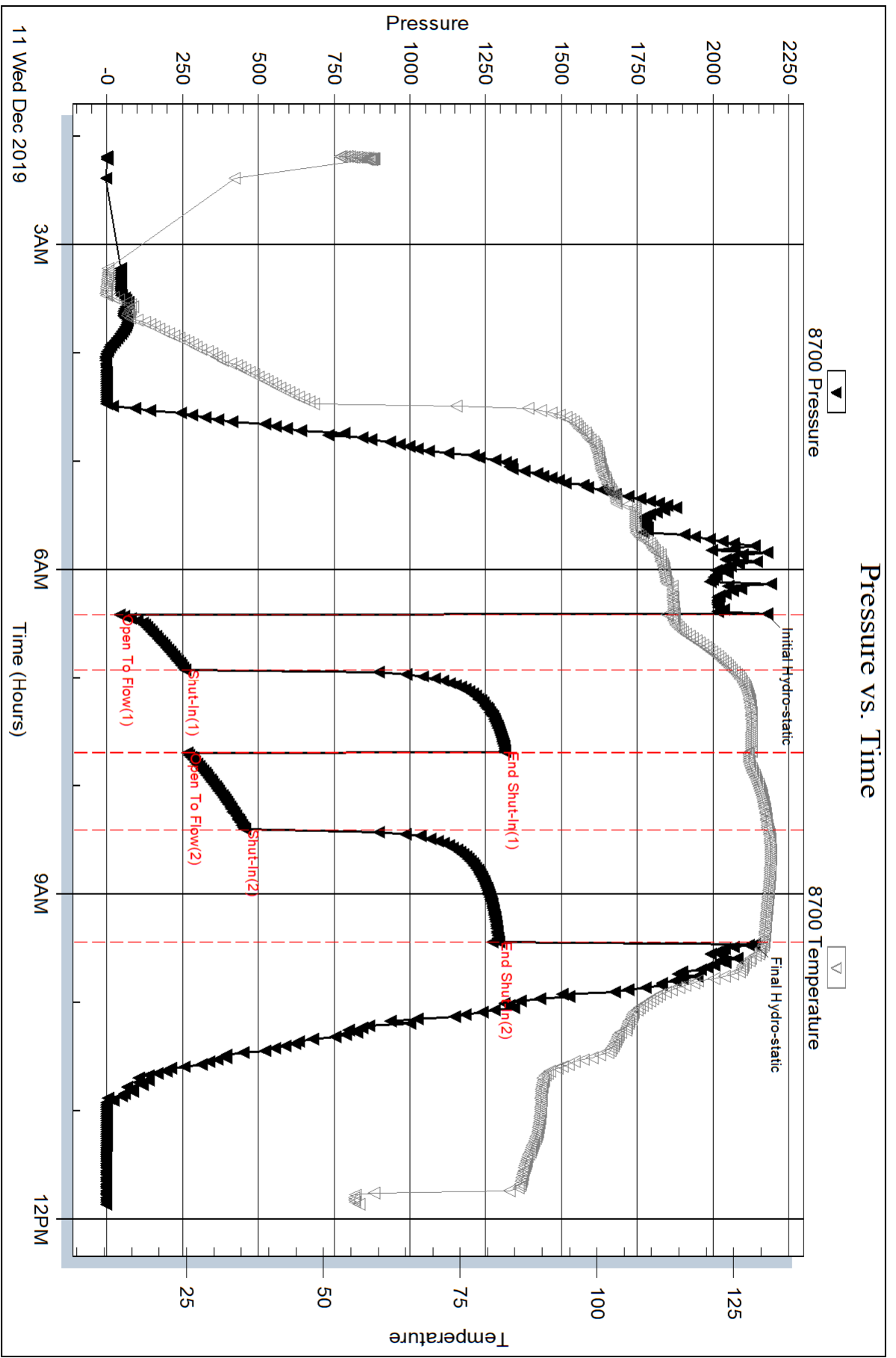
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW: .21@47deg



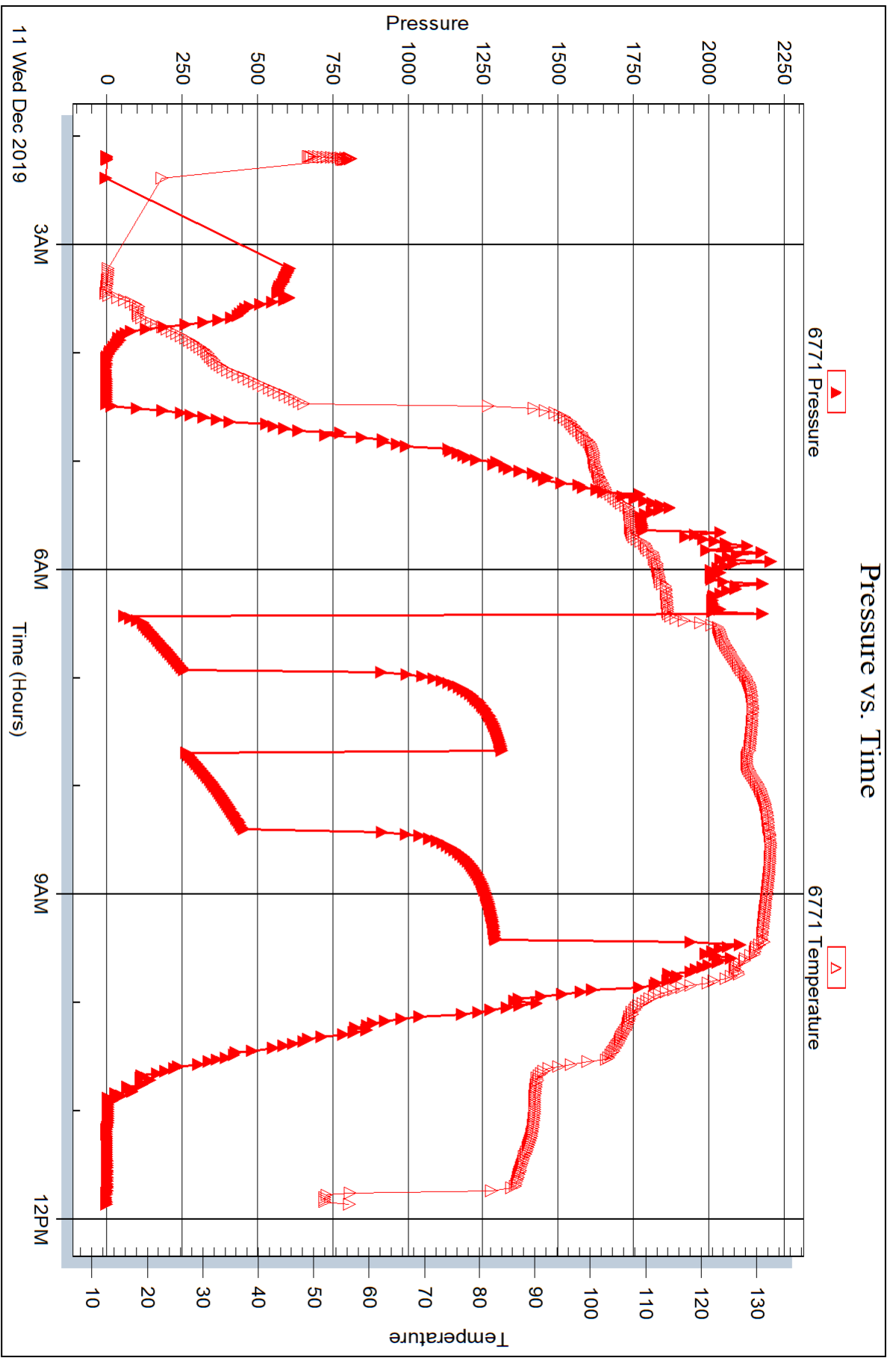
Serial #: 6771

Inside

Ritchie Exploration, Inc.

Saline Valley 7D#1

DST Test Number: 2





DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration, Inc.**

PO Box 783188
Wichita, KS 67278

ATTN: John Goldsmith

Saline Valley 7D #1

7-12S-36W Logan,KS

Start Date: 2019.12.12 @ 11:50:23

End Date: 2019.12.12 @ 18:16:44

Job Ticket #: 59450 DST #: 3

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

Printed: 2019.12.16 @ 13:25:55



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration, Inc.

7-12S-36W Logan,KS

PO Box 783188
Wichita, KS 67278

Saline Valley 7D #1

ATTN: John Goldsmith

Job Ticket: 59450

DST#: 3

Test Start: 2019.12.12 @ 11:50:23

GENERAL INFORMATION:

Formation: **Myrick & Ft. Scott**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 14:20:14
 Time Test Ended: 18:16:44
 Interval: **4318.00 ft (KB) To 4393.00 ft (KB) (TVD)**
 Total Depth: 4393.00 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: 3100.00 ft (KB)
 3091.00 ft (CF)
 KB to GR/CF: 9.00 ft

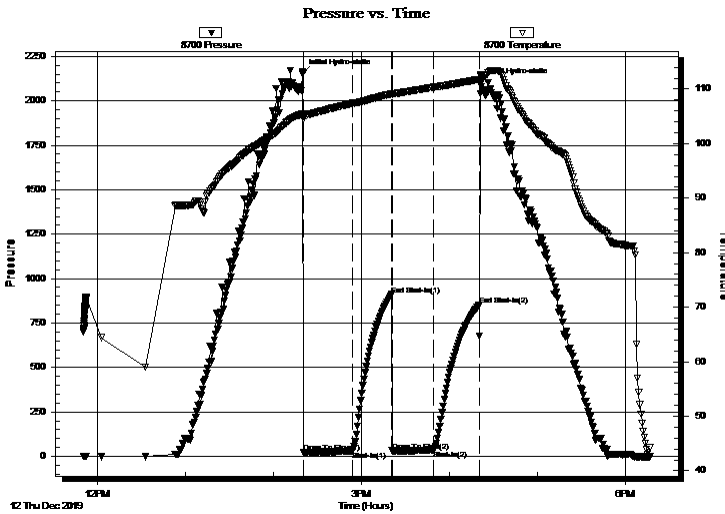
Serial #: 8700

Outside

Press@RunDepth: 33.04 psig @ 4319.00 ft (KB)
 Start Date: 2019.12.12 End Date: 2019.12.12
 Start Time: 11:50:24 End Time: 18:16:44
 Capacity: 8000.00 psig
 Last Calib.: 2019.12.12
 Time On Btm: 2019.12.12 @ 14:19:59
 Time Off Btm: 2019.12.12 @ 16:21:29

TEST COMMENT: 30- IF- 3/4" blow
 30- IS- No blow
 30- FF- No blow
 30- FSI- No blow

PRESSURE SUMMARY



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2154.73	105.47	Initial Hydro-static
1	22.28	104.51	Open To Flow (1)
34	28.98	107.36	Shut-In(1)
61	910.17	109.15	End Shut-In(1)
61	30.63	109.02	Open To Flow (2)
90	33.04	110.34	Shut-In(2)
121	850.84	111.81	End Shut-In(2)
122	2101.40	112.41	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
10.00	M	0.05

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration, Inc.

7-12S-36W Logan,KS

PO Box 783188
Wichita, KS 67278

Saline Valley 7D #1

Job Ticket: 59450

DST#: 3

ATTN: John Goldsmith

Test Start: 2019.12.12 @ 11:50:23

Tool Information

Drill Pipe:	Length: 4136.00 ft	Diameter: 3.82 inches	Volume: 58.63 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: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 70000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	32.00 ft			String Weight: Initial 54000.00 lb
Depth to Top Packer:	4318.00 ft			Final 54000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	75.00 ft			
Tool Length:	103.00 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Length (ft) Serial No. Position Depth (ft) Accum. Lengths

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Change Over Sub	1.00			4291.00	
Shut In Tool	5.00			4296.00	
Hydraulic tool	5.00			4301.00	
Jars	5.00			4306.00	
Safety Joint	3.00			4309.00	
Packer	5.00			4314.00	28.00 Bottom Of Top Packer
Packer	4.00			4318.00	
Stubb	1.00			4319.00	
Recorder	0.00	6771	Inside	4319.00	
Recorder	0.00	8700	Outside	4319.00	
Perforations	6.00			4325.00	
Change Over Sub	1.00			4326.00	
Drill Pipe	63.00			4389.00	
Change Over Sub	1.00			4390.00	
Bullnose	3.00			4393.00	75.00 Bottom Packers & Anchor

Total Tool Length: 103.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration, Inc.

7-12S-36W Logan,KS

PO Box 783188
Wichita, KS 67278

Saline Valley 7D #1

Job Ticket: 59450

DST#: 3

ATTN: John Goldsmith

Test Start: 2019.12.12 @ 11:50:23

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: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4500.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
10.00	M	0.049

Total Length: 10.00 ft

Total Volume: 0.049 bbl

Num Fluid Samples: 0

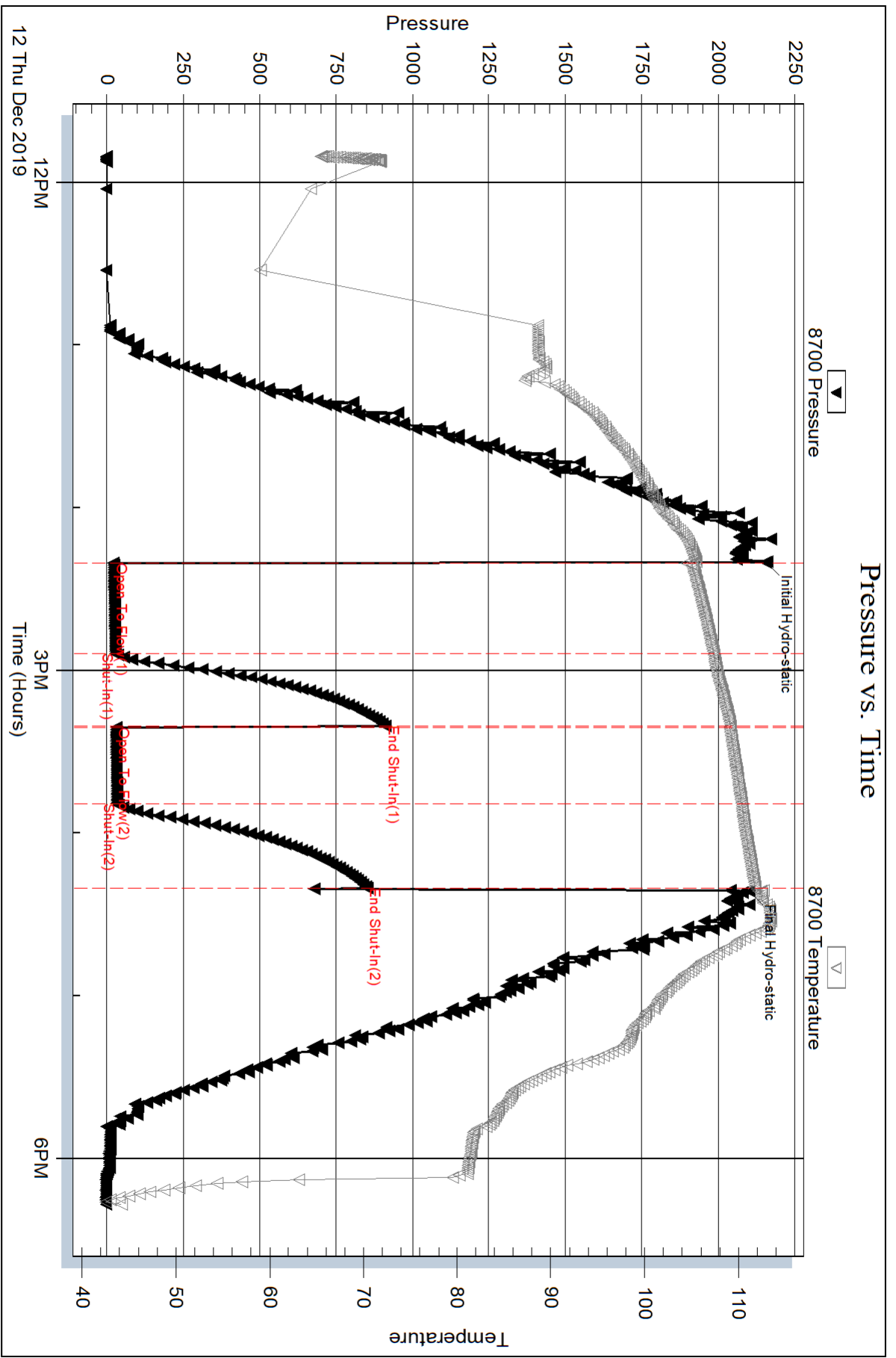
Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:



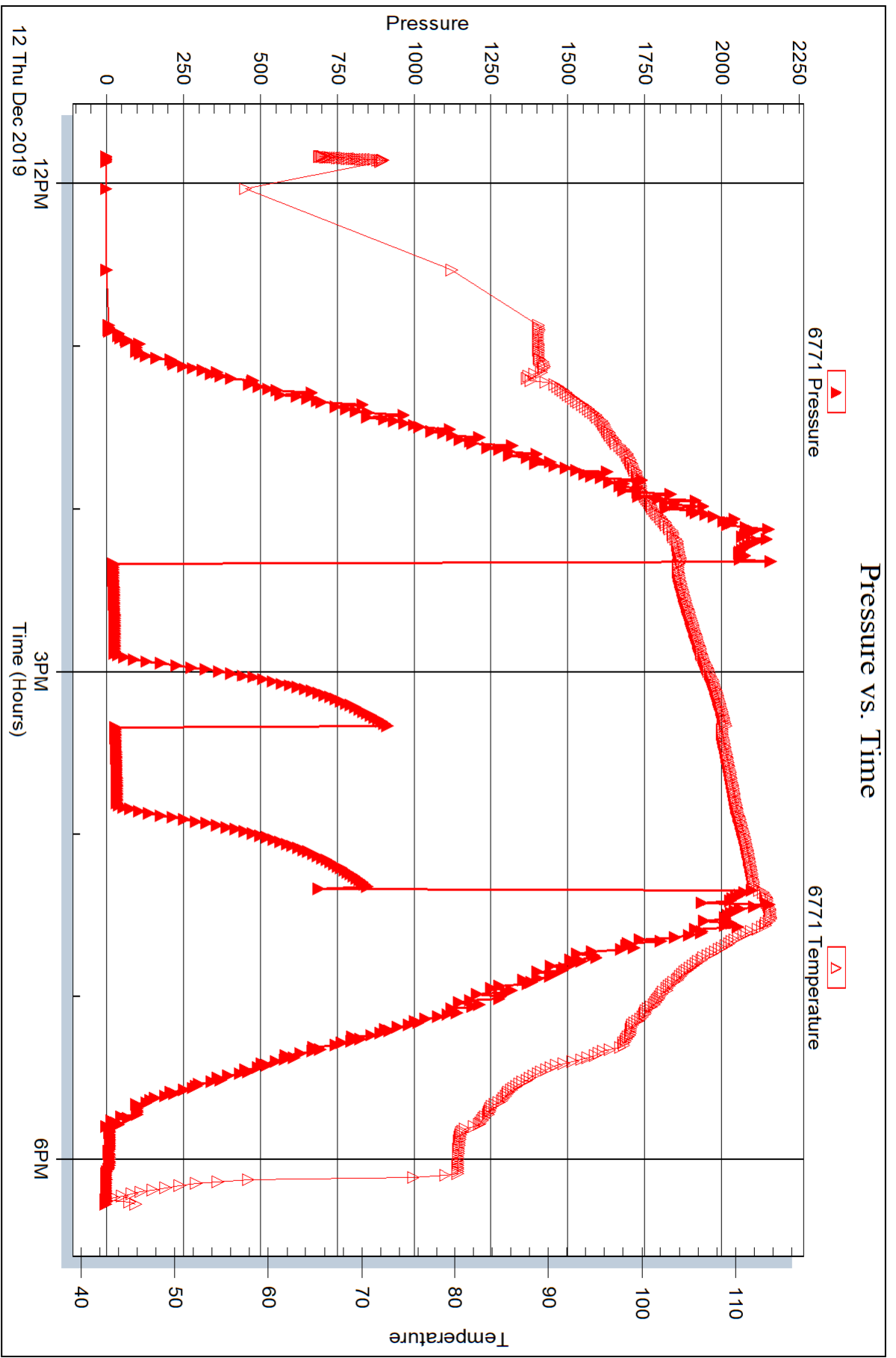
Serial #: 6771

Inside

Ritchie Exploration, Inc.

Saline Valley 7D#1

DST Test Number: 3





DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration, Inc.**

PO Box 783188
Wichita, KS 67278

ATTN: John Goldsmith

Saline Valley 7D #1

7-12S-36W Logan,KS

Start Date: 2019.12.13 @ 05:26:04

End Date: 2019.12.13 @ 12:57:55

Job Ticket #: 66203 DST #: 4

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

Printed: 2019.12.16 @ 13:22:22



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Ritchie Exploration, Inc.

7-12S-36W Logan, KS

PO Box 783188
Wichita, KS 67278

Saline Valley 7D #1

ATTN: John Goldsmith

Job Ticket: 66203

DST#: 4

Test Start: 2019.12.13 @ 05:26:04

GENERAL INFORMATION:

Formation: **Cherokee**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 08:53:55

Time Test Ended: 12:57:55

Test Type: Conventional Bottom Hole (Reset)

Tester: Brannan Lonsdale

Unit No: 73

Interval: 4398.00 ft (KB) To 4460.00 ft (KB) (TVD)

Reference Elevations: 3100.00 ft (KB)

Total Depth: 4460.00 ft (KB) (TVD)

3091.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

Serial #: 8700 Outside

Press@RunDepth: 22.26 psig @ 4399.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2019.12.13

End Date:

2019.12.13

Last Calib.: 2019.12.13

Start Time: 05:26:05

End Time:

12:57:55

Time On Btm: 2019.12.13 @ 08:53:40

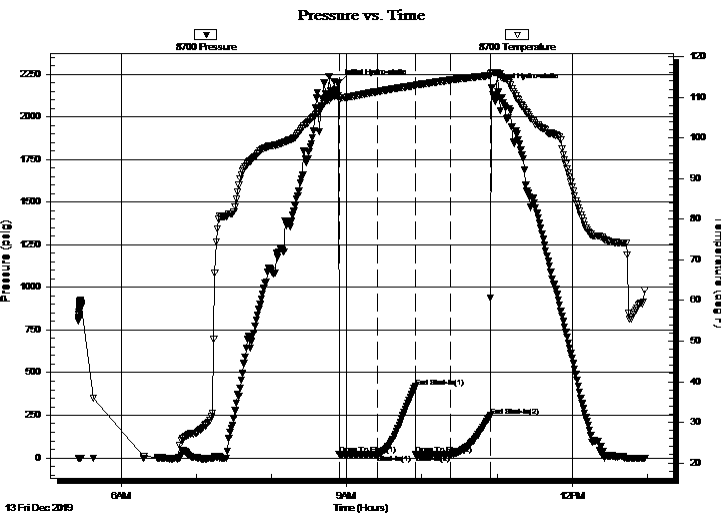
Time Off Btm: 2019.12.13 @ 10:55:55

TEST COMMENT: 30- IF- Slowly built to 3/4"

30- IS- No blow

30- FF- No blow

30- FSI- No blow



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2192.57	110.33	Initial Hydro-static
1	20.67	109.38	Open To Flow (1)
31	21.52	111.39	Shut-In(1)
61	417.09	112.91	End Shut-In(1)
62	22.69	112.92	Open To Flow (2)
90	22.26	114.24	Shut-In(2)
121	247.30	115.36	End Shut-In(2)
123	2171.65	116.01	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
5.00	M	0.02

* Recovery from multiple tests

Gas Rates

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



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

TOOL DIAGRAM

Ritchie Exploration, Inc.

7-12S-36W Logan,KS

PO Box 783188
Wichita, KS 67278

Saline Valley 7D #1

ATTN: John Goldsmith

Job Ticket: 66203

DST#: 4

Test Start: 2019.12.13 @ 05:26:04

Tool Information

Drill Pipe:	Length: 4200.00 ft	Diameter: 3.82 inches	Volume: 59.54 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: 186.00 ft	Diameter: 2.25 inches	Volume: 0.91 bbl	Weight to Pull Loose: 58000.00 lb
			<u>Total Volume: - bbl</u>	Tool Chased 0.00 ft
Drill Pipe Above KB:	16.00 ft			String Weight: Initial 30000.00 lb
Depth to Top Packer:	4398.00 ft			Final 56000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	62.00 ft			
Tool Length:	90.00 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			4371.00	
Shut In Tool	5.00			4376.00	
Hydraulic tool	5.00			4381.00	
Jars	5.00			4386.00	
Safety Joint	3.00			4389.00	
Packer	5.00			4394.00	28.00 Bottom Of Top Packer
Packer	4.00			4398.00	
Stubb	1.00			4399.00	
Recorder	0.00	6771	Inside	4399.00	
Recorder	0.00	8700	Outside	4399.00	
Perforations	24.00			4423.00	
Change Over Sub	1.00			4424.00	
Drill Pipe	32.00			4456.00	
Change Over Sub	1.00			4457.00	
Bullnose	3.00			4460.00	62.00 Bottom Packers & Anchor

Total Tool Length: 90.00



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

FLUID SUMMARY

Ritchie Exploration, Inc.

7-12S-36W Logan,KS

PO Box 783188
Wichita, KS 67278

Saline Valley 7D #1

Job Ticket: 66203

DST#: 4

ATTN: John Goldsmith

Test Start: 2019.12.13 @ 05:26:04

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: 52.00 sec/qt

Cushion Volume:

bbbl

Water Loss: 7.19 in³

Gas Cushion Type:

Resistivity: ohm.m

Gas Cushion Pressure:

psig

Salinity: 4500.00 ppm

Filter Cake: inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
5.00	M	0.025

Total Length: 5.00 ft Total Volume: 0.025 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

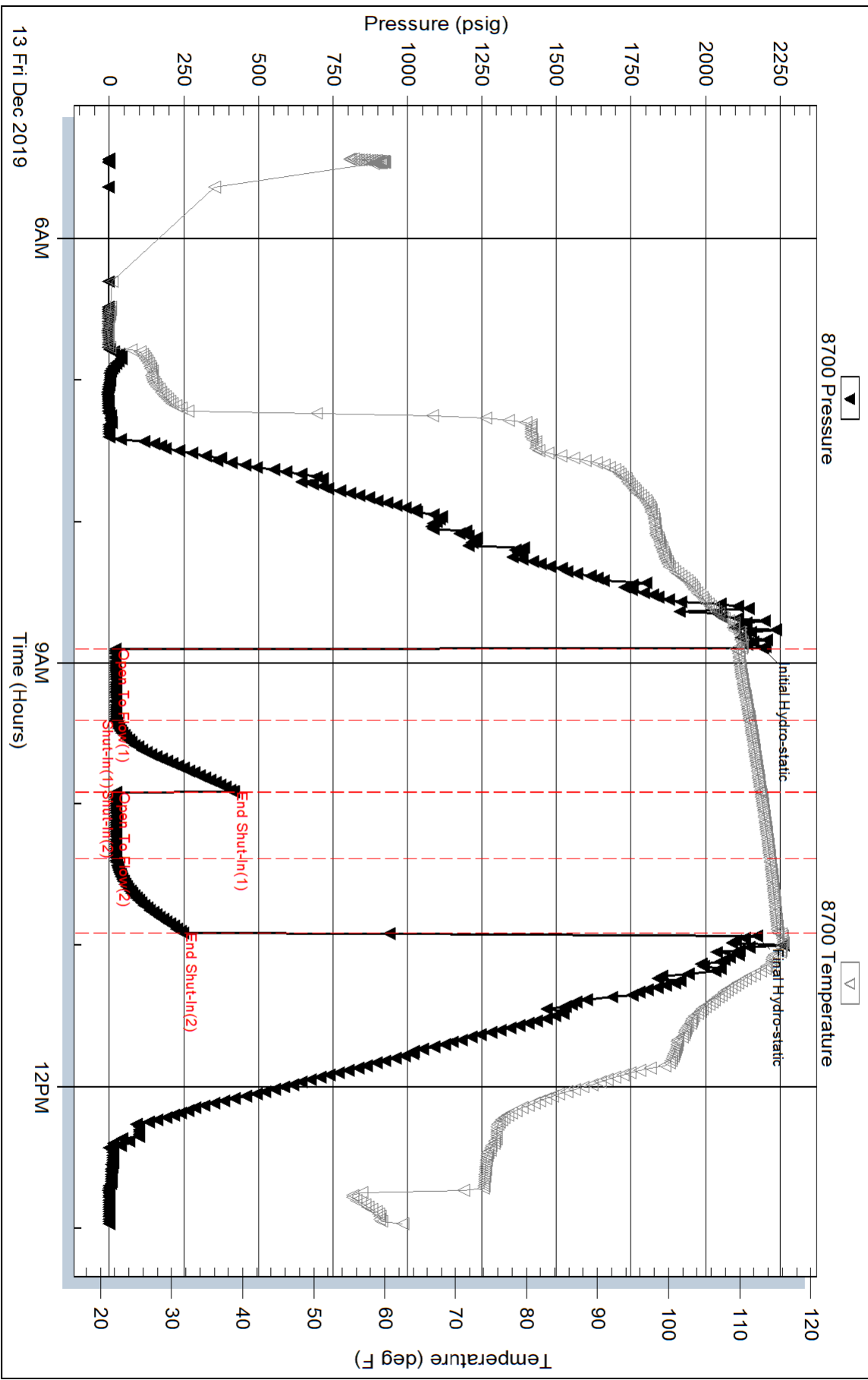
Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

Pressure vs. Time



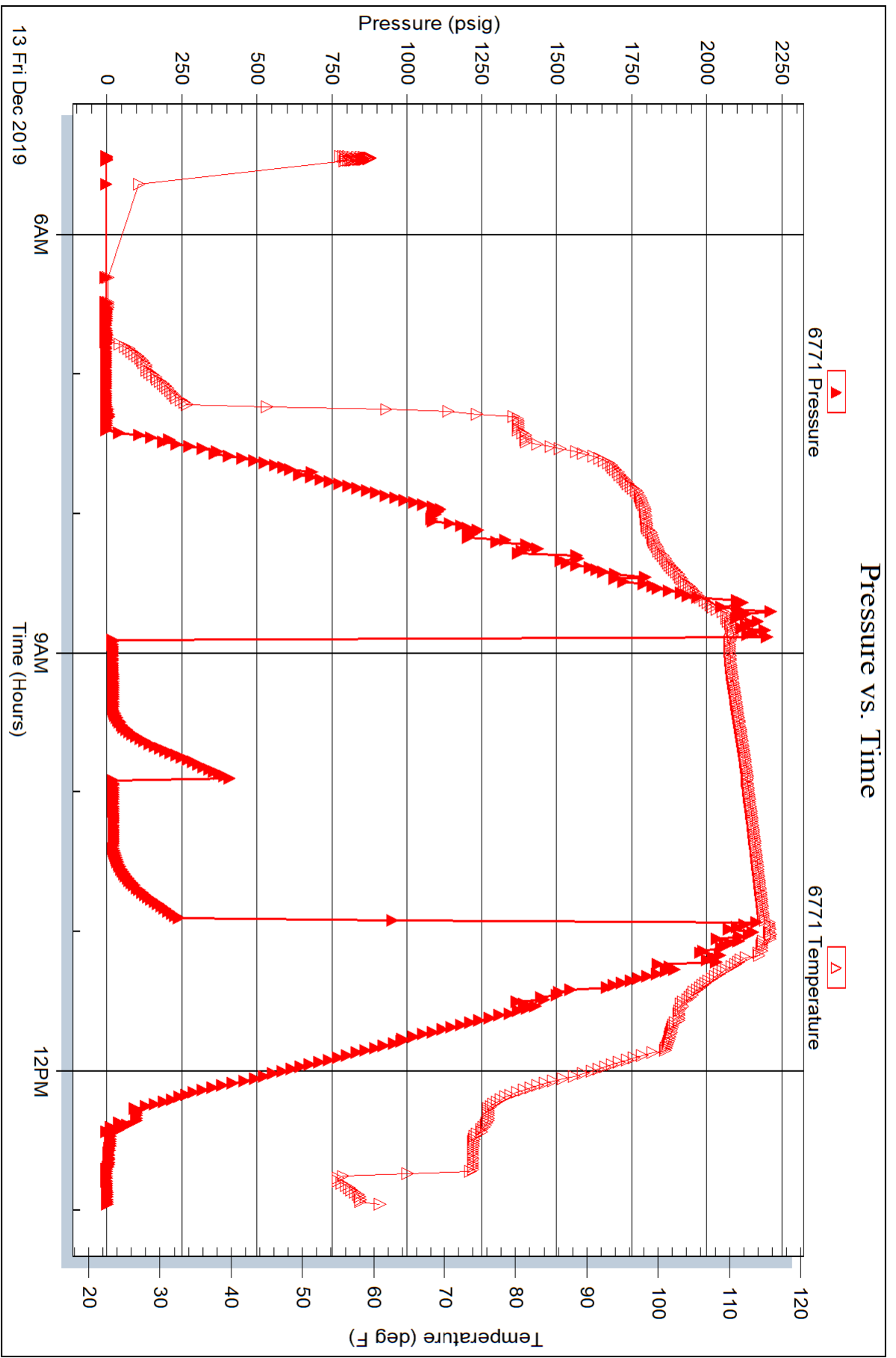
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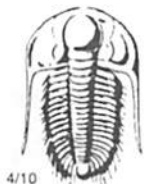
Inside

Ritchie Exploration, Inc.

Saline Valley 7D#1

DST Test Number: 4





TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 59447

Well Name & No. Saline Valley 7D #1 Test No. 1 Date 12/9/19
 Company Ritchie Exploration, Inc. Elevation 3100 KB 3091 GL
 Address 8100 E. 22nd St. N #700, PO Box 283188 Wichita, KS 67278
 Co. Rep / Geo. Goldy Rig WW 12'
 Location: Sec. 7 Twp. 12 S Rge. 36 W Co. Logan State KS

Interval Tested 3851-3876 Zone Tested LKC "A"
 Anchor Length 25' Drill Pipe Run 3665 Mud Wt. 8.7
 Top Packer Depth 3846 Drill Collars Run 186 Vis 56
 Bottom Packer Depth 3851 Wt. Pipe Run WL 6.4
 Total Depth 3876 Chlorides 3,500 ppm System LCM 2#

Blow Description PF- BOB 3mins. Built to 81.43"
FST- No blow
FF- BOB 4mins. Built to 81.84"
FST- No blow

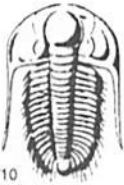
Rec	Feet of	%gas	%oil	%water	%mud
<u>1545</u>	<u>MW</u>			<u>80</u>	<u>20</u>
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 1545' BHT 125° Gravity API RW .11 @ 36° F Chlorides 125,000 ppm

(A) Initial Hydrostatic <u>1896</u>	<input checked="" type="checkbox"/> Test <u>1200</u>	T-On Location <u>2334</u>
(B) First Initial Flow <u>49</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>0004</u>
(C) First Final Flow <u>396</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>0406</u>
(D) Initial Shut-In <u>1200</u>	<input type="checkbox"/> Circ Sub <u> </u>	T-Pulled <u>0706</u>
(E) Second Initial Flow <u>405</u>	<input checked="" type="checkbox"/> Hourly Standby <u>1.25hr</u> <u>125</u>	T-Out <u>0943</u>
(F) Second Final Flow <u>207</u>	<input checked="" type="checkbox"/> Mileage <u>150 RT (Scott)</u>	Comments <u> </u>
(G) Final Shut-In <u>1198</u>	<input type="checkbox"/> Sampler <u> </u>	
(H) Final Hydrostatic <u>1836</u>	<input type="checkbox"/> Straddle <u> </u>	<input type="checkbox"/> Ruined Shale Packer <u> </u>
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer <u> </u>	<input type="checkbox"/> Ruined Packer <u> </u>
Initial Shut-In <u>45</u>	<input type="checkbox"/> Extra Packer <u> </u>	<input type="checkbox"/> Extra Copies <u> </u>
Final Flow <u>45</u>	<input type="checkbox"/> Extra Recorder <u> </u>	Sub Total <u>0</u>
Final Shut-In <u>60</u>	<input type="checkbox"/> Day Standby <u> </u>	Total <u>1800</u>
	<input type="checkbox"/> Accessibility <u> </u>	MP/DST Disc't <u> </u>
	Sub Total <u>1800</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. 59449

Well Name & No. Saline Valley 7P #1 Test No. 2 Date 12/11/19
 Company Ritchie Exploration, Inc. Elevation 3100 KB 3091 GL
 Address 8100 E. 22nd St. N #700, PO Box 783108 Wichita, KS 67278
 Co. Rep / Geo. Goldy Rig ww R
 Location: Sec. 7 Twp. 12 S Rge. 36 W Co. Logan State KS

Interval Tested 4226-4260 Zone Tested Altamont
 Anchor Length 34' Drill Pipe Run 4037 Mud Wt. 9.2
 Top Packer Depth 4221 Drill Collars Run 186 Vis 56
 Bottom Packer Depth 4226 Wt. Pipe Run --- WL 7.2
 Total Depth 4260 Chlorides 4,700 ppm System LCM 2#

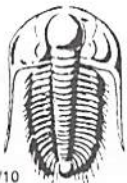
Blow Description IF-BOB 8mins. Built to 34.55"
FST- No blow
FF- BOB 10mins. Built to 41.04"
FST- No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>960</u>	<u>MW</u>			<u>90%</u>	<u>10%</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 960' BHT 131° Gravity --- API RW .21 @ 47° F Chlorides 48,000 ppm
 (A) Initial Hydrostatic 2176 Test 1300 T-On Location 0150
 (B) First Initial Flow 42 Jars 250 T-Started 0210
 (C) First Final Flow 258 Safety Joint 75 T-Open 0624
 (D) Initial Shut-In 1315 Circ Sub _____ T-Pulled 0924
 (E) Second Initial Flow 265 Hourly Standby _____ T-Out 1152
 (F) Second Final Flow 456 Mileage 150 RT (Scott) Comments _____
 (G) Final Shut-In 1294 Sampler _____
 (H) Final Hydrostatic 2137 Straddle _____ Ruined Shale Packer _____
 Shale Packer _____ Ruined Packer _____
 Extra Packer _____ Extra Copies _____
 Initial Open 30 Extra Recorder _____ Sub Total 66.67
 Initial Shut-In 45 Day Standby 1.5d 2h Total 1841.67
 Final Flow 45 Accessibility _____ MP/DST Disc't _____
 Final Shut-In 60 Sub Total 1775

Approved By _____ Our Representative Brannan Lonsdale

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket

NO. 59450

Well Name & No. Saline Valley 2D #1 Test No. 3 Date 12/12/19
 Company Ritchie Exploration, Inc. Elevation 3100 KB 3091 GL
 Address 3100 E 22nd St. N # 700, PO Box 783188 Wichita, KS 67278
 Co. Rep / Geo. Luddy Rig WW R
 Location: Sec. 7 Twp. 12 S Rge. 36 W Co. Logan State KS

Interval Tested 4318 - 4393 Zone Tested Myrick + Ft. Scott
 Anchor Length 75' Drill Pipe Run 4136 Mud Wt. 9.2
 Top Packer Depth 4313 Drill Collars Run 186 Vis 52
 Bottom Packer Depth 4318 Wt. Pipe Run _____ WL 7.2
 Total Depth 4393 Chlorides 4500 ppm System LCM 1#

Blow Description IF - 3/4" blow
ISI - No blow
FF - No blow
FST - No blow

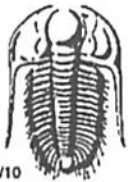
Rec	Feet of	%gas	%oil	%water	%mud
<u>10</u>	<u>M</u>				
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud
Rec	Feet of	%gas	%oil	%water	%mud

Rec Total 10' BHT 112° Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2155</u>	<input checked="" type="checkbox"/> Test <u>1300</u>	T-On Location <u>1124</u>
(B) First Initial Flow <u>22</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>1150</u>
(C) First Final Flow <u>29</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>1420</u>
(D) Initial Shut-In <u>910</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>1620</u>
(E) Second Initial Flow <u>31</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>1817</u>
(F) Second Final Flow <u>33</u>	<input checked="" type="checkbox"/> Mileage <u>150 RT (Scott)</u>	Comments _____
(G) Final Shut-In <u>851</u>	<input type="checkbox"/> Sampler _____	
(H) Final Hydrostatic <u>2101</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>30</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>30</u>	<input type="checkbox"/> Day Standby _____	Total <u>1775</u>
	<input type="checkbox"/> Accessibility _____	MP/DST Disc't _____
	Sub Total <u>1775</u>	

Approved By _____ Our Representative Brannan Lonsdale

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TRILOBITE TESTING INC.

1515 Commerce Parkway • Hays, Kansas 67601

Test Ticket 66203

NO.

Well Name & No. Saline Valley 7D #1 Test No. 4 Date 12/13/19
 Company Ritchie Exploration Elevation 3100 KB 3691 GL
 Address 8100 E. 22nd St. N #700, PO Box 23188 Wichita, KS 67278
 Co. Rep / Geo. John Coldsmitth Rig WW 12
 Location: Sec. 7 Twp 12 S Rge. 36 W Co. Logan State KS

Interval Tested 4398-4460 Zone Tested Cherokee
 Anchor Length 62' Drill Pipe Run 4200 Mud Wt. 9.7
 Top Packer Depth 4393 Drill Collars Run 186 Vis 52
 Bottom Packer Depth 4398 Wt. Pipe Run _____ WL 7.2
 Total Depth 4460 Chlorides 4,500 ppm System LCM 1#

Blow Description IF - Only built to 3 1/4"
FSI - No blow
FF - No blow
FSI - No blow

Rec	Feet of	%gas	%oil	%water	%mud
<u>5</u>	<u>M</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 5' BHT 115° Gravity _____ API RW _____ @ _____ °F Chlorides _____ ppm

(A) Initial Hydrostatic <u>2193</u>	<input checked="" type="checkbox"/> Test <u>1300</u>	T-On Location <u>0458</u>
(B) First Initial Flow <u>21</u>	<input checked="" type="checkbox"/> Jars <u>250</u>	T-Started <u>0526</u>
(C) First Final Flow <u>22</u>	<input checked="" type="checkbox"/> Safety Joint <u>75</u>	T-Open <u>0854</u>
(D) Initial Shut-In <u>417</u>	<input type="checkbox"/> Circ Sub _____	T-Pulled <u>1054</u>
(E) Second Initial Flow <u>23</u>	<input type="checkbox"/> Hourly Standby _____	T-Out <u>1258</u>
(F) Second Final Flow <u>23</u>	<input checked="" type="checkbox"/> Mileage <u>150 RT (Scott) x 2</u>	Comments <u>Stayed 6 nights @ Rodeway Inn in Colley</u>
(G) Final Shut-In <u>247</u>	<input type="checkbox"/> Sampler <u>150+150</u>	<u>Tools loaded 12/15 @ 0830</u>
(H) Final Hydrostatic <u>2172</u>	<input type="checkbox"/> Straddle _____	<input type="checkbox"/> EM Tool _____
Initial Open <u>30</u>	<input type="checkbox"/> Shale Packer _____	<input type="checkbox"/> Ruined Shale Packer _____
Initial Shut-In <u>30</u>	<input type="checkbox"/> Extra Packer _____	<input type="checkbox"/> Ruined Packer _____
Final Flow <u>30</u>	<input type="checkbox"/> Extra Recorder _____	<input type="checkbox"/> Extra Copies _____
Final Shut-In <u>30</u>	<input checked="" type="checkbox"/> Day Standby <u>1.5d 7h</u>	Sub Total <u>800</u>
	<input type="checkbox"/> Accessibility _____	Total <u>2725</u>
	Sub Total <u>1925</u>	MP/DST Disc't _____

Approved By _____ Our Representative Brennan Lousdak

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