



TRILOBITE TESTING, INC.

DRILL STEM TEST REPORT

Steffen Resources Development

18-30s-7w Kingman Co., Ks.

3500 N Mayfield Rd
Hutchinson, Ks. 67502

Steffen Family 1-19

Job Ticket: 64941

DST#: 2

ATTN: Keith Reavis

Test Start: 2019.09.07 @ 14:13:46

GENERAL INFORMATION:

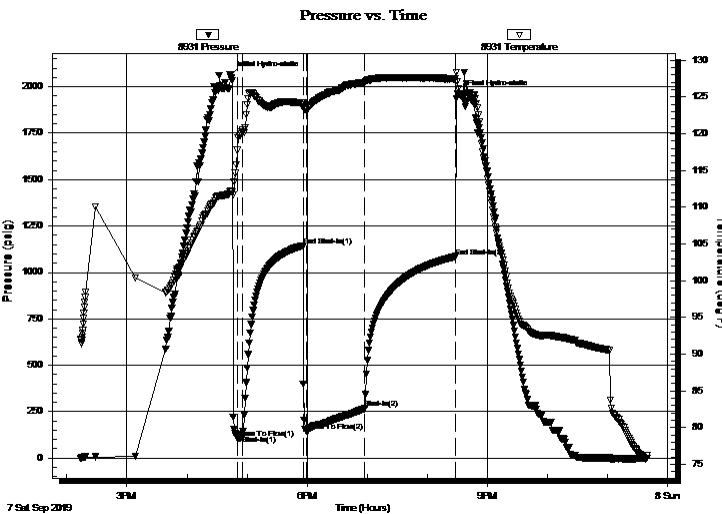
Formation: **Mississippi**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 16:50:01
 Time Test Ended: 23:39:31
 Interval: **4139.00 ft (KB) To 4183.00 ft (KB) (TVD)**
 Total Depth: 4183.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Reset)
 Tester: Matt Smith
 Unit No: 68
 Reference Elevations: 1472.00 ft (KB)
 1465.00 ft (CF)
 KB to GR/CF: 7.00 ft

Serial #: 8931

Inside

Press@RunDepth: 266.85 psig @ 4140.00 ft (KB) Capacity: 8000.00 psig
 Start Date: 2019.09.07 End Date: 2019.09.07 Last Calib.: 2019.09.07
 Start Time: 14:13:51 End Time: 23:39:31 Time On Btm: 2019.09.07 @ 16:43:01
 Time Off Btm: 2019.09.07 @ 20:33:01

TEST COMMENT: IF: Strong Blow . B.O.B. in 30 sec. Built to 405.42".
 IS: No Blow .
 FF: Strong Blow . B.O.B. immediate. Built to 383". G.T.S. in 3 mins. Gauged Gas.
 FS: Strong Blow . Built to 20.36".



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2062.48	112.06	Initial Hydro-static
7	108.23	117.75	Open To Flow (1)
13	122.11	120.47	Shut-In(1)
73	1144.07	124.14	End Shut-In(1)
76	142.99	123.23	Open To Flow (2)
135	266.85	126.88	Shut-In(2)
226	1085.70	127.48	End Shut-In(2)
230	1958.14	125.21	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
124.00	SOMCW 5%o 3%m 92%w	1.74
62.00	GOWCM 55%g 9%o 41%w 45%m	0.87
310.00	GOCM 40%g 30%o 15%w 15%m	4.35
50.00	GOSM 5%g 95%m	0.70

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.13	8.85	8.70
Last Gas Rate	0.25	39.14	84.94
Max. Gas Rate	0.25	39.34	85.25

* Recovery from multiple tests



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Test Start: 2019.09.07 @ 14:13:46

GENERAL INFORMATION:

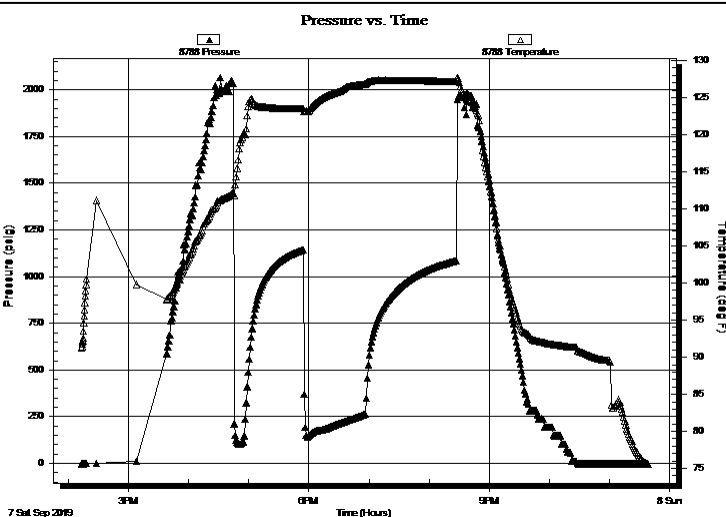
Formation: **Mississippi**
 Deviated: No Whipstock: ft (KB)
 Test Type: Conventional Bottom Hole (Reset)
 Time Tool Opened: 16:50:01
 Tester: Matt Smith
 Time Test Ended: 23:39:31
 Unit No: 68
 Interval: **4139.00 ft (KB) To 4183.00 ft (KB) (TVD)**
 Reference Elevations: 1472.00 ft (KB)
 Total Depth: 4183.00 ft (KB) (TVD)
 1465.00 ft (CF)
 Hole Diameter: 7.88 inches
 Hole Condition: Fair
 KB to GR/CF: 7.00 ft

Serial #: 8788

Outside

Press@RunDepth: psig @ 4140.00 ft (KB)
 Capacity: 8000.00 psig
 Start Date: 2019.09.07
 End Date: 2019.09.07
 Last Calib.: 2019.09.07
 Start Time: 14:13:09
 End Time: 23:38:49
 Time On Btm:
 Time Off Btm:

TEST COMMENT: IF: Strong Blow . B.O.B. in 30 sec. Built to 405.42".
 IS: No Blow .
 FF: Strong Blow . B.O.B. immediate. Built to 383". G.T.S. in 3 mins. Gauged Gas.
 FS: Strong Blow . Built to 20.36".



PRESSURE SUMMARY

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

Recovery

Length (ft)	Description	Volume (bbl)
124.00	SOMCW 5%o 3%w 92%w	1.74
62.00	GOWCM 55%g 9%o 41%w 45%m	0.87
310.00	GOCM 40%g 30%o 15%w 15%m	4.35
50.00	GOSM 5%g 95%m	0.70

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.13	8.85	8.70
Last Gas Rate	0.25	39.14	84.94
Max. Gas Rate	0.25	39.34	85.25

* Recovery from multiple tests



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DRILL STEM TEST REPORT

FLUID SUMMARY

Steffen Resources Development

18-30s-7w Kingman Co., Ks.

3500 N Mayfield Rd
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Steffen Family 1-19

Job Ticket: 64941

DST#: 2

ATTN: Keith Reavis

Test Start: 2019.09.07 @ 14:13:46

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:

90000 ppm

Viscosity: 51.00 sec/qt

Cushion Volume:

bbf

Water Loss: 9.59 in³

Gas Cushion Type:

Resistivity: 6000.00 ohm.m

Gas Cushion Pressure:

psig

Salinity: ppm

Filter Cake: 0.20 inches

Recovery Information

Recovery Table

Length ft	Description	Volume bbf
124.00	SOMCW 5%o 3%m 92%w	1.739
62.00	GOWCM 55%g 9%o 41%w 45%m	0.870
310.00	GOCM 40%g 30%o 15%w 15%m	4.348
50.00	GOSM 5%g 95%m	0.701

Total Length: 546.00 ft Total Volume: 7.658 bbf

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments: RW .036 @ 75 Degrees = 90,000 Chlorides



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GAS RATES

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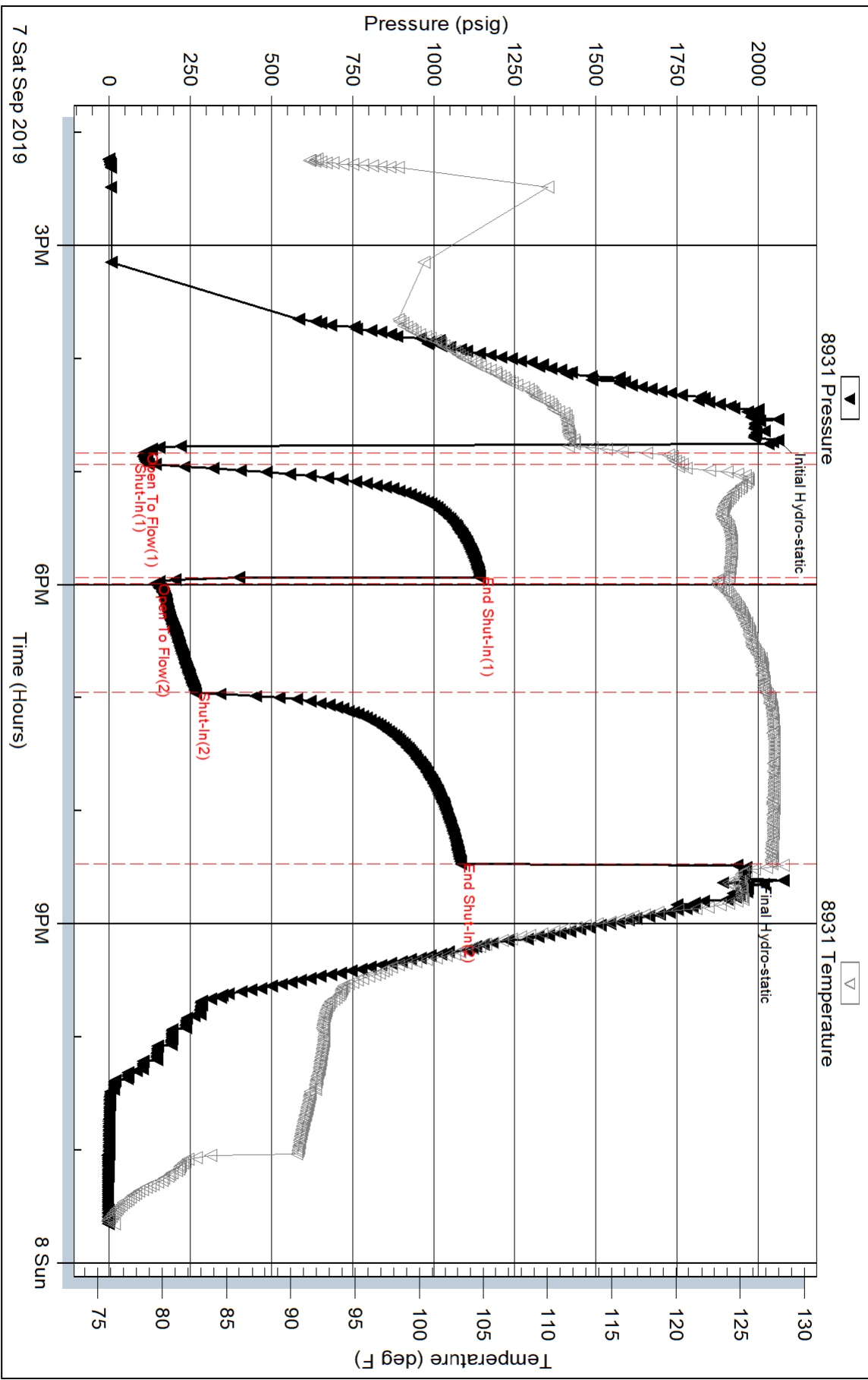
Gas Rates Information

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	0.13	8.85	8.70
2	5	0.13	8.85	8.70
2	10	0.25	39.34	85.25
2	25	0.25	25.58	63.42
2	30	0.25	27.73	66.83
2	35	0.25	29.62	69.84
2	40	0.25	34.10	76.94
2	45	0.25	36.04	80.02
2	50	0.25	38.01	83.14
2	55	0.25	39.14	84.94

Pressure vs. Time



Serial #: 8788

Outside Steffen Resources Development

Steffen Family 1-19

DST Test Number: 2

