



DRILL STEM TEST REPORT

Bird Dog Oil LLC

17-22s-13w Stafford

1601 Broadway Suite 200
Denver, Colorado 80202

Keller Gates #1-17

Job Ticket: 01061

DST#: 1

ATTN: Justen Carter

Test Start: 2018.12.31 @ 12:18:00

GENERAL INFORMATION:

Formation: **Kansas City "A-D"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 14:20:00

Time Test Ended: 19:21:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Gene Budig

Unit No: 1

Interval: 3428.00 ft (KB) To 3474.00 ft (KB) (TVD)

Total Depth: 3474.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 1912.00 ft (KB)

1904.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 91716 Outside

Press@RunDepth: 839.86 psig @ 3468.74 ft (KB)

Start Date: 2018.12.31

End Date: 2018.12.31

Capacity: 5000.00 psig

Last Calib.: 2018.12.31

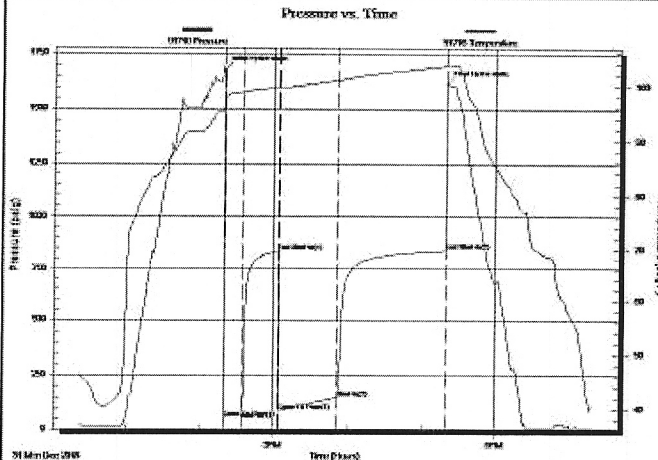
Start Time: 12:18:00

End Time: 19:19:59

Time On Blm: 2018.12.31 @ 14:19:30

Time Off Blm: 2018.12.31 @ 17:19:30

TEST COMMENT: 1st Opening 15 Minutes Weak building blow built to 5 inches into the water
1st Shut-In 30 Minutes
2nd Opening 45 Minutes weak building blow built to 9 inches into the water
2nd Shut-In 90 Minutes



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1679.82	96.78	Initial Hydro-static
1	51.39	97.71	Open To Flow (1)
15	78.03	98.89	Shut-In(1)
45	838.27	99.89	End Shut-In(1)
45	81.23	99.89	Open To Flow (2)
92	147.45	101.13	Shut-In(2)
180	839.86	103.69	End Shut-In(2)
180	1615.89	103.72	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
90.00	slightly muddy water 15% Mud 85% Water	0.72
120.00	Slightly muddy water 10% Mud 90% Water	0.95

Gas Rates

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



DRILL STEM TEST REPORT

Bird Dog Oil LLC

17-22s-13w Stafford

1801 Broadway Suite 200
Denver, Colorado 80202

Keller Gates #1-17

Job Ticket: 01062

DST#: 2

ATTN: Justen Carter

Test Start: 2019.01.01 @ 02:03:00

GENERAL INFORMATION:

Formation: Kansas City "E & F"

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:51:00

Time Test Ended: 09:02:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Gene Budig

Unit No: 1

Interval: 3470.00 ft (KB) To 3496.00 ft (KB) (TVD)

Total Depth: 3496.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 1912.00 ft (KB)

1904.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 91716

Outside

Press@RunDepth: 223.75 psig @ 3491.00 ft (KB)

Start Date: 2019.01.01

End Date: 2019.01.01

Start Time: 02:03:00

End Time: 09:01:30

Capacity: 5000.00 psig

Last Calib.: 2019.01.01

Time On Bltn: 2019.01.01 @ 03:51:00

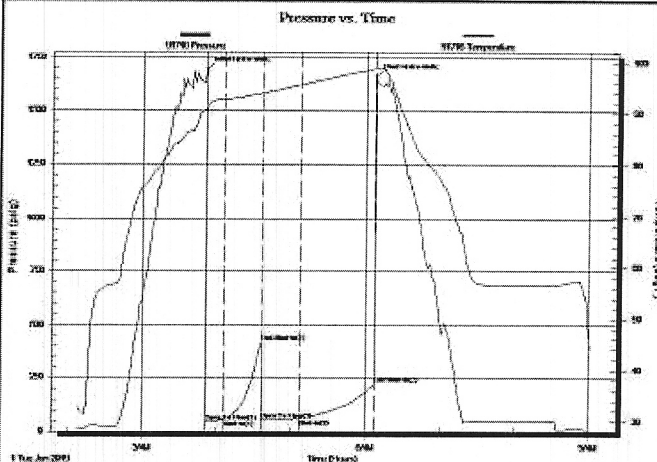
Time Off Bltn: 2019.01.01 @ 06:07:00

TEST COMMENT: 1st Opening 15 minutes weak blow for 5 minutes and died

1 Shut-in 30 minutes

2nd opening 30 minutes very weak blow for 4 minutes & decreased to intermittent blow 4 minutes and died

2nd Shut-in minutes



PRESSURE SUMMARY

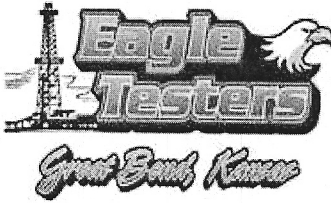
Time (Mn.)	Pressure (psig)	Temp (deg F)	Annotation
0	1697.84	90.97	Initial Hydro-static
1	46.58	91.15	Open To Flow (1)
15	54.73	92.61	Shut-In (1)
45	418.88	93.92	End Shut-In (1)
45	55.36	93.95	Open To Flow (2)
76	59.75	95.60	Shut-In (2)
136	223.75	98.76	End Shut-In (2)
136	1663.46	98.81	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
30.00	oil cut mud 90%Mud 10%Oil	0.24

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mc/K)



DRILL STEM TEST REPORT

Bird Dog Oil LLC

17-22s-13w Stafford

1801 Broadway Suite 200
Denver, Colorado 80202

Keller Gates #1-17

Job Ticket: 01063

DST#: 3

ATTN: Justen Carter

Test Start: 2019.01.01 @ 22:24:00

GENERAL INFORMATION:

Formation: **Kansas City "H-I-J"**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 23:58:00

Time Test Ended: 08:46:00

Test Type: Conventional Bottom Hole (Reset)

Tester: Gene Budig

Unit No: 1

Interval: 3536.00 ft (KB) To 3592.00 ft (KB) (TVD)

Total Depth: 3496.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 1912.00 ft (KB)

1904.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 91716

Outside

Press@RunDepth: 825.92 psig @ 3586.76 ft (KB)

Start Date: 2019.01.01

End Date:

2019.01.02

Capacity: 5000.00 psig

Last Calib.: 2019.01.02

Start Time: 22:28:30

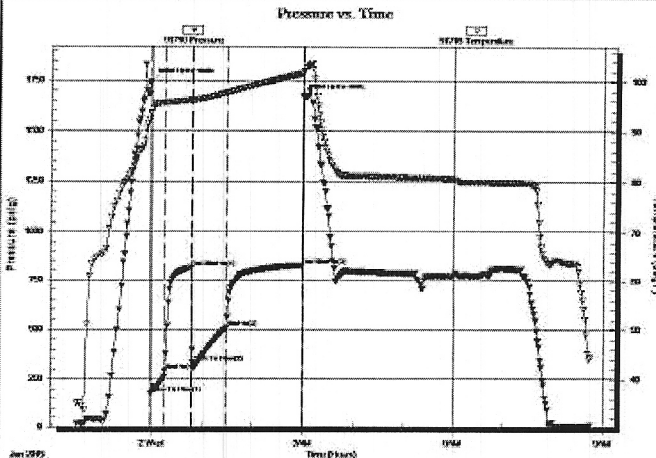
End Time:

08:45:30

Time On Btm: 2019.01.01 @ 23:57:30

Time Off Btm: 2019.01.02 @ 02:59:30

TEST COMMENT: 1st Opening 15 Minutes Strong blow bottom of the bucket in 1 minute
1st Shut-In 30 Minutes Gas to surface
2nd Opening 45 Minutes Strong blow gas to surface SEE GAS FLOW REPORT
2nd Shut-In 90 Minutes strong blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1746.08	93.53	Initial Hydro-static
1	177.10	93.70	Open To Flow (1)
18	287.88	95.65	Shut-In (1)
50	814.94	96.28	End Shut-In (1)
51	329.23	96.28	Open To Flow (2)
91	506.88	97.71	Shut-In (2)
182	825.92	101.59	End Shut-In (2)
182	1669.67	101.61	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
1750.00	Clean Gassy oil 35% Gas 65% Oil	23.03

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.13	39.00	19.99
Last Gas Rate	0.13	0.01	5.39
Max. Gas Rate	0.13	39.00	19.99

* Recovery from multiple tests



DRILL STEM TEST REPORT

Bird Dog Oil LLC

17-22s-13w Stafford

1801 Broadway Suite 200
Denver, Colorado 80202

Keller Gates #1-17

Job Ticket: ew

DST#: 4

ATTN: Justen Carter

Test Start: 2019.01.03 @ 03:04:00

GENERAL INFORMATION:

Formation: viola

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 04:34:00

Time Test Ended: 08:43:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Gene Budig

Unit No: 1

Interval: 3698.00 ft (KB) To 3760.00 ft (KB) (TVD)

Total Depth: 3760.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition: Fair

Reference Elevations: 1912.00 ft (KB)

1904.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 91716 Outside

Press@RunDepth: 293.77 psig @ 3754.77 ft (KB)

Start Date: 2019.01.03

End Date:

2019.01.03

Capacity: 5000.00 psig

Last Calib.: 2019.01.03

Start Time: 03:04:00

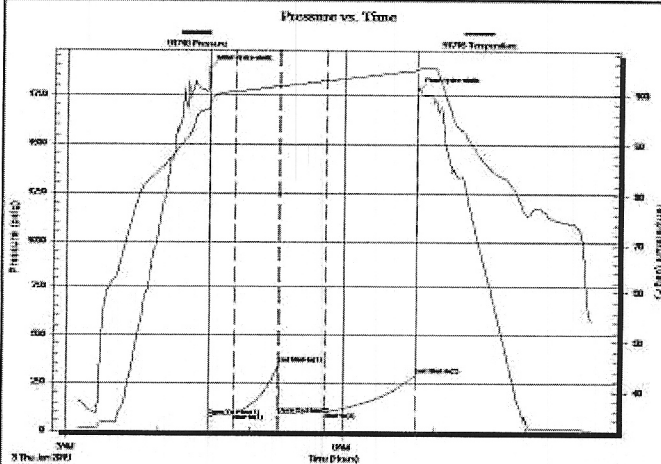
End Time:

08:43:30

Time On Blm: 2019.01.03 @ 04:33:00

Time Off Blm: 2019.01.03 @ 06:48:00

TEST COMMENT: 1st Opening 15 Minutes weak building blow built to 4 inches into the water
1st Shut-In 30 Minutes
2nd Opening 30 Minutes weak steady 2 inch blow
2nd Shut-In 60 Minutes



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1885.65	97.70	Initial Hydro-static
1	72.51	98.21	Open To Flow (1)
16	85.21	100.52	Shut-In(1)
46	347.54	101.69	End Shut-In(1)
46	89.31	101.70	Open To Flow (2)
76	97.86	102.76	Shut-In(2)
135	293.77	104.80	End Shut-In(2)
135	1776.18	104.87	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
70.00	Drilling Mud	0.56

Gas Rates

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



DRILL STEM TEST REPORT

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17-22s-13w Stafford

1801 Broadway Suite 200
Denver, Colorado 80202

Keller Gates #1-17

Job Ticket: 01065

DST#: 5

ATTN: Justen Carter

Test Start: 2019.01.03 @ 17:08:00

GENERAL INFORMATION:

Formation: Simpson
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 19:00:00
Time Test Ended: 22:46:00

Test Type: Conventional Bottom Hole (Initial)
Tester: Gene Budig
Unit No: 1

Interval: 3756.00 ft (KB) To 3810.00 ft (KB) (TVD)
Total Depth: 3810.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair

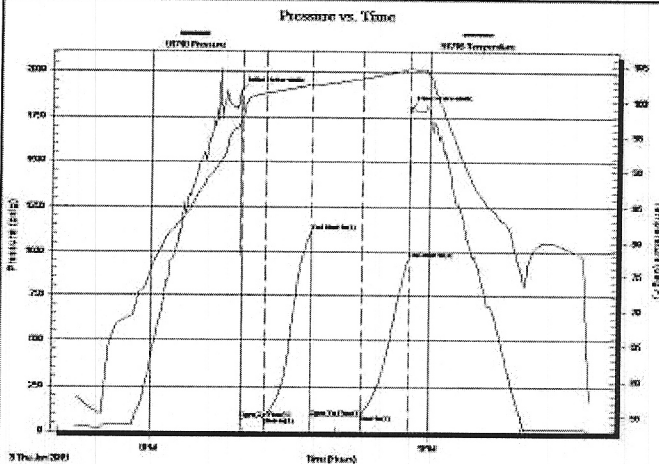
Reference Elevations: 1912.00 ft (KB)
1904.00 ft (CF)
KB to GR/CF: 8.00 ft

Serial #: 91716 Outside

Press@RunDepth: 966.66 psig @ 3804.77 ft (KB)
Start Date: 2019.01.03 End Date: 2019.01.03
Start Time: 17:08:00 End Time: 22:44:29

Capacity: 5000.00 psig
Last Calib.: 2019.01.03
Time On Btm: 2019.01.03 @ 18:58:00
Time Off Btm: 2019.01.03 @ 20:47:00

TEST COMMENT: 1st Opening 15 Minutes weak blow built to 2 1/2 inches
1st Shut-In 30 Minutes
2nd Opening 30 Minutes weak blow built to 1 1/2 inches decreased to 1 1/4 inch into the water
2nd Shut-In 30 Minutes



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1895.96	97.28	Initial Hydro-static
1	66.95	97.52	Open To Flow (1)
16	77.16	101.26	Shut-In (1)
46	1111.31	102.48	End Shut-In (1)
46	79.39	102.48	Open To Flow (2)
78	90.88	103.28	Shut-In (2)
109	966.66	104.56	End Shut-In (2)
109	1800.83	104.59	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
60.00	Drilling Mud	0.48

Gas Rates

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



DRILL STEM TEST REPORT

Bird Dog Oil LLC
 1801 Broadway Suite 200
 Denver, Colorado 80202
 ATTN: Justen Carter

17-22s-13w Stafford
Keller Gates #1-17
 Job Ticket: 01066 DST#: 6
 Test Start: 2019.01.04 @ 07:45:00

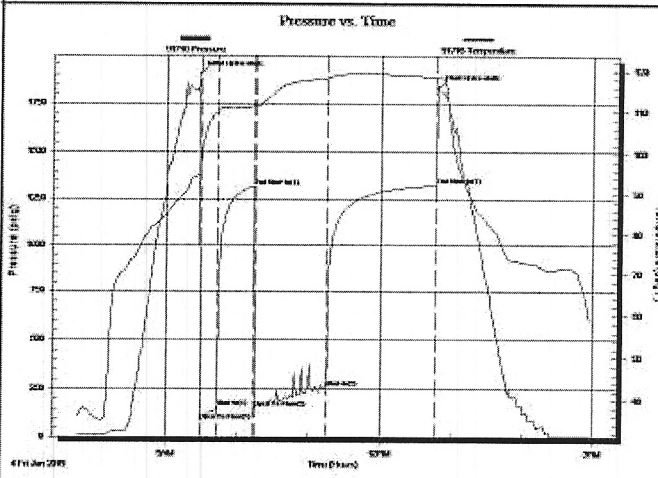
GENERAL INFORMATION:

Formation: **Arbuckle**
 Deviated: **No** Whipstock: **ft (KB)**
 Time Tool Opened: **09:32:00**
 Time Test Ended: **15:03:00**
 Interval: **3756.00 ft (KB) To 3832.00 ft (KB) (TVD)**
 Total Depth: **3832.00 ft (KB) (TVD)**
 Hole Diameter: **7.88 inches** Hole Condition: **Fair**
 Test Type: **Conventional Bottom Hole (Initial)**
 Tester: **Gans Budig**
 Unit No: **1**
 Reference Elevations: **1912.00 ft (KB)**
1904.00 ft (CF)
 KB to GRVCF: **8.00 ft**

Serial #: 91716

Outside
 Press@RunDepth: **1324.19 psig @ 3826.77 ft (KB)**
 Start Date: **2019.01.04** End Date: **2019.01.04** Capacity: **5000.00 psig**
 Start Time: **07:45:00** End Time: **14:58:59** Last Calib.: **2019.01.04**
 Time On Bltn: **2019.01.04 @ 09:28:00**
 Time Off Bltn: **2019.01.04 @ 12:48:00**

TEST COMMENT: 1st Opening 15 minutes fair blow built to 8 1/2 inches into the water
 1st Shut-In 30 Minutes no blow back
 2nd Opening 60 Minutes built to the bottom of a 5 gallon bucket in 27 Minutes
 2nd Shut-In 90 Minutes no blow back



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1900.33	96.03	Initial Hydro-static
1	88.98	96.94	Open To Flow (1)
15	158.36	109.91	Shut-In(1)
46	1317.26	111.34	End Shut-In(1)
47	156.50	111.34	Open To Flow(2)
107	255.89	118.32	Shut-In(2)
199	1324.19	118.46	End Shut-In(2)
200	1834.14	118.44	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
390.00	Muddy Gassy Frothy Oil	3.96
0.00	w could not seperate when ground out	0.00

Gas Rates

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



DRILL STEM TEST REPORT

Bird Dog Oil LLC

17-22s-13w Stafford

1801 Broadway Suite 200
Denver, Colorado 80202

Keller Gates #1-17

Job Ticket: 0167

DST#: 7

ATTN: Justen Carter

Test Start: 2019.01.04 @ 20:30:00

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 22:06:00

Time Test Ended: 12:32:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Gene Budig

Unit No: 1

Interval: 3832.00 ft (KB) To 3837.00 ft (KB) (TVD)

Total Depth: 3837.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches Hole Condition:

Reference Elevations: 1912.00 ft (KB)

1904.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: 91716 Outside

Press@RunDepth: 1378.83 psig @ 3832.00 ft (KB)

Start Date: 2019.01.04

End Date:

2019.01.05

Capacity: 5000.00 psig

Last Calib.: 2019.01.05

Start Time: 20:30:00

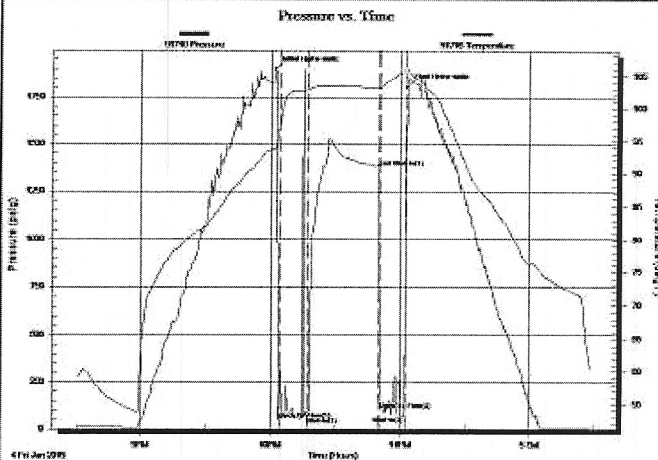
End Time:

00:28:30

Time On Blm: 2019.01.04 @ 22:02:00

Time Off Blm: 2019.01.04 @ 23:03:00

TEST COMMENT: 1st opening 15 Minutes weakblow for 5 minutes and died flushed tool weak surge no help
1st shut-in 30 minutes
2nd opening 10 minutes no blow came out of the hole



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1900.47	93.74	Initial Hydro-static
2	49.24	96.67	Open To Flow (1)
15	64.45	102.96	Shut-In (1)
48	1378.83	103.22	End Shut-In (1)
49	101.17	103.22	Open To Flow (2)
60	69.85	105.89	Shut-In (2)
61	1808.02	106.16	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
20.00	drilling mud	0.16

Gas Rates

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