

**CONFIDENTIAL**

**Earl Sutor #11 – API #15-163-24321-00009**

90'E E/2 NW SE

**Elevation:** 2228' GL

E/2 E/2 NW SE Sec. 12-10S-20W

2236' KB

1980' FSL & 1560' FEL

Rooks County, KS

	Earl Sutor #11							
Estimated Tops	Samples		Log Tops					
Zone:	Depth	(Datum)	Depth	(Datum)	Depth	(Datum)	Depth	(Datum)
Anhydrite	1651	(+585)						
Base Anhydrite	1689	(+547)						
Topeka	3224	(-988)						
Oread	3370	(-1134)						
Plattsmouth								
Heebner	3431	(-1195)						
Lansing	3468	(-1232)						
Stark	3649	(-1413)						
B/KC	3681	(-1446)						
Arbuckle	3764	(-1528)						
RTD	3768	(-1532)						

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## DST #1

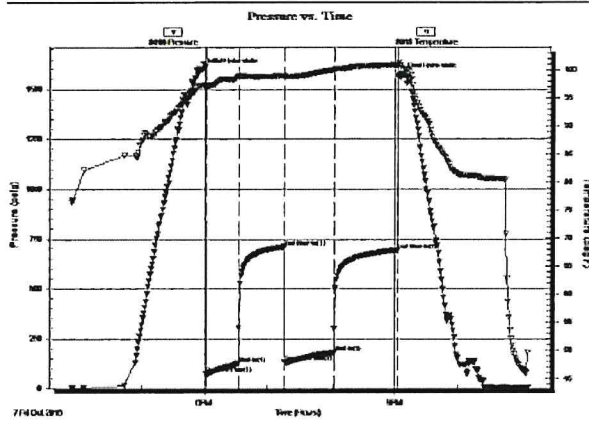
### GENERAL INFORMATION:

Formation: Oread / Plattsmouth  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 18:01:25  
 Time Test Ended: 23:07:39  
 Interval: 3350.00 ft (KB) To 3413.00 ft (KB) (TVD)  
 Total Depth: 3413.00 ft (KB) (TVD)  
 Hole Diameter: 7.85 inches Hole Condition: Poor  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Ray Schwager  
 Unit No: 77  
 Reference Elevations: 2236.00 ft (KB)  
 2228.00 ft (CF)  
 KB to GR/CF: 8.00 ft

### Serial #: 8018

Inside  
 Press@RunDepth: 179.27 psig @ 3356.00 ft (KB)  
 Start Date: 2016.10.07 End Date: 2016.10.07  
 Start Time: 15:51:00 End Time: 23:07:39  
 Capacity: 8000.00 psig  
 Last Calib.: 2016.10.07  
 Time On Btm: 2016.10.07 @ 17:57:40  
 Time Off Btm: 2016.10.07 @ 21:06:39

TEST COMMENT: 30-IFP-wk to a gd bl 1/2" to 7" bl  
 45-ISIP-no bl  
 45-FFP-wk to a fr bl 1/4" to 5" bl  
 60-FSIP-no bl



### PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1596.95	97.23	Initial Hydro-static
4	74.17	96.96	Open To Flow (1)
35	125.83	98.83	Shut-In(1)
79	708.56	98.96	End Shut-In(1)
79	130.48	98.76	Open To Flow (2)
124	179.27	100.00	Shut-In(2)
185	692.85	100.90	End Shut-In(2)
189	1570.52	100.26	Final Hydro-static

### Recovery

Length (ft)	Description	Volume (bbl)
186.00	Water	1.32
144.00	WW40%W60%Mw/show of oil	1.16
0.00	Fluid sample in tool 1%O10%M89%W	0.00

### Gas Rates

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

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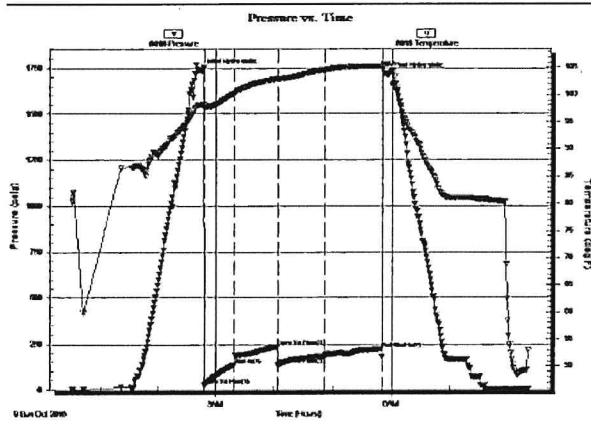
## DST #2

### GENERAL INFORMATION:

Formation: LKC H-L  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 02:48:27  
 Time Test Ended: 08:22:11  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Ray Schwager  
 Unit No: 77  
 Interval: 3584.00 ft (KB) To 3687.00 ft (KB) (TVD)  
 Total Depth: 3413.00 ft (KB) (TVD)  
 Hole Diameter: 7.85 inches  
 Hole Condition: Fair  
 Reference Elevations: 2236.00 ft (KB)  
 2228.00 ft (CF)  
 KB to GR/CF: 8.00 ft

**Serial #: 8018** Inside  
 Press@RunDepth: 134.27 psig @ 3590.00 ft (KB)  
 Start Date: 2016.10.09 End Date: 2016.10.09  
 Start Time: 00:30:17 End Time: 08:22:11  
 Capacity: 8000.00 psig  
 Last Calib.: 2016.10.09  
 Time On Btm: 2016.10.09 @ 02:45:27  
 Time Off Btm: 2016.10.09 @ 05:56:26

**TEST COMMENT:** 30-IFP-w k to a gd bl 1/2" to 9" bl  
 45-ISIP-no bl bk  
 45-FFP-w k bl thru-out 1/4" to 3" bl  
 60-FSIP-no bl bk



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1734.38	98.11	Initial Hydro-static
3	23.94	97.52	Open To Flow (1)
34	134.27	100.19	Shut-In (1)
79	234.46	102.87	Open To Flow (2)
79	135.59	102.84	Open To Flow (3)
126	182.53	104.56	Shut-In (2)
185	221.72	105.18	End Shut-In (1)
191	1716.02	105.64	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
186.00	SOCMW 3%O30%M67%W	1.32
124.00	SOCMW 3%O40%M57%W	0.88
35.00	SOCWM 2%O40%W48%M	0.49
0.00	Tool Sample 5%O45%W50%M	0.00

Gas Rates			
	Choke (inches)	Pressure (psig)	Gas Rate (Mc/d)

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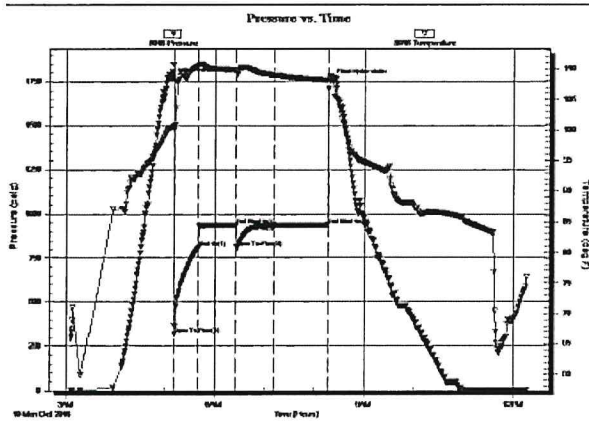
## DST #3

### GENERAL INFORMATION:

Formation: Arbuckle  
 Deviated: No Whipstock: ft (KB)  
 Time Tool Opened: 05:11:48  
 Time Test Ended: 12:15:33  
 Interval: 3667.00 ft (KB) To 3768.00 ft (KB) (TVD)  
 Total Depth: 3768.00 ft (KB) (TVD)  
 Hole Diameter: 7.85 inches Hole Condition: Fair  
 Test Type: Conventional Bottom Hole (Reset)  
 Tester: Ray Schwager  
 Unit No: 77  
 Reference Elevations: 2236.00 ft (KB)  
 2228.00 ft (CF)  
 KB to GR/CF: 8.00 ft

Serial #: 8018 Inside  
 Press@RunDepth: 934.64 psig @ 3673.00 ft (KB)  
 Start Date: 2016.10.10 End Date: 2016.10.10  
 Start Time: 03:05:38 End Time: 12:15:33  
 Capacity: 8000.00 psig  
 Last Calib.: 2016.10.10  
 Time On Btm: 2016.10.10 @ 05:09:03  
 Time Off Btm: 2016.10.10 @ 08:20:17

TEST COMMENT: 30-IFP-strg bl in 30 sec  
 45-ISIP-surface bl bk  
 45-FFP-strg bl in 2 min  
 60-FSIP-surface bl bk



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1763.83	100.40	Initial Hydro-static
3	319.64	100.45	Open To Flow (1)
33	810.95	110.49	Shut-In(1)
77	935.89	109.80	End Shut-In(1)
78	814.07	109.73	Open To Flow (2)
124	934.64	108.94	Shut-In(2)
188	936.79	108.16	End Shut-In(2)
192	1754.57	108.67	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
372.00	Water	3.07
186.00	HO&GCW 10%G30%O60%W	2.61
434.00	GWO 20%G20%W60%O	6.09
806.00	GW&MCO20%G10%W20%M50%O	11.31
410.00	HO&GCM20%G30%O50%M	5.75
0.00	80'GIP	0.00

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