



# MUSTANG

## ENERGY CORPORATION

Scale 1:240 Imperial

Well Name: YOUNGER #3  
Surface Location: SE NE SE, Sec. 25, T13S, R20W  
Bottom Location:  
API: 15-051-26974  
License Number: 33922  
Spud Date: 11/15/2019 Time: 4:00 PM  
Region: ELLIS COUNTY  
Drilling Completed: 11/22/2019 Time: 1:40 AM  
Surface Coordinates: 1650' FSL & 330' FEL  
Bottom Hole Coordinates:  
Ground Elevation: 2192.00ft  
K.B. Elevation: 2200.00ft  
Logged Interval: 3150.00ft To: 3925.00ft  
Total Depth: 3925.00ft  
Formation: ARBUCKLE  
Drilling Fluid Type: CHEMICAL

### OPERATOR

Company: MUSTANG ENERGY CORPORATION  
Address: P.O. BOX 1121

Contact Geologist: ROD BRIN  
Contact Phone Nbr: (785)-623-0533  
Well Name: YOUNGER #3  
Location: SE NE SE, Sec. 25, T13S, R20W  
API: 15-051-26974  
Pool: Field: IRVIN  
State: KS Country:

### SURFACE CO-ORDINATES

Well Type: Vertical  
Longitude: -99.485226  
Latitude: 38.889769  
N/S Co-ord: 1650' FSL  
E/W Co-ord: 330' FEL

### LOGGED BY

Company:  
Address: 2717 HICKORY  
HAYS, KS 67601  
Phone Nbr: (785) 639-0721  
Logged By: Geologist Name: CAMERON BRIN

### CONTRACTOR

Contractor: DISCOVERY DRILLING INC.  
Rig #: 4  
Rig Type: MUD ROTARY  
Spud Date: 11/15/2019 Time: 4:00 PM  
TD Date: 11/22/2019 Time: 1:40 AM

**ELEVATIONS**

K.B. Elevation: 2200.00ft  
K.B. to Ground: 8.00ft

Ground Elevation: 2192.00ft


**NOTES**

DUE TO POSITIVE RESULTS IN DST #2 & #3 AND GOOD STRUCTURAL POSITION FROM BKC THROUGH THE ARBUCKLE, DECISION WAS MADE TO RUN 5 1/2" PRODUCTION CASING TO FURTHER EVALUATE THE YOUNGER #3 WELL.

**TOPS COMPARISON**

FORMATION	YOUNGER #3								YOUNGER #1				YOUNGER #2				YOUNGER #10			
	LOG TOPS				SAMPLE TOPS				LOG				LOG				LOG			
	DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	LOG CORR.	SMPL CORR.	DEPTH	DATUM	LOG CORR.	SMPL CORR.	DEPTH	DATUM	LOG CORR.	SMPL CORR.	DEPTH	DATUM	LOG CORR.	SMPL CORR.
	1489	711	1490	710	1490	716	- 5	- 6	1496	718	- 7	- 8	1476	716	- 5	- 6	1504	715	- 4	- 5
ANHYDRITE TOP	1489	711	1490	710	1490	716	- 5	- 6	1496	718	- 7	- 8	1476	716	- 5	- 6	1504	715	- 4	- 5
BASE	1531	669	1533	667	1532	674	- 5	- 7	1538	676	- 7	- 9					1546	673	- 4	- 6
TOPEKA	3201	-1001	3202	-1002	3198	-992	- 9	- 10	3209	-995	- 6	- 7	3186	-994	- 7	- 8	3214	-995	- 6	- 7
HEEBNER SHALE	3444	-1244	3444	-1244	3441	-1235	- 9	- 9	3454	-1240	- 4	- 4	3430	-1238	- 6	- 6	3456	-1237	- 7	- 7
TORONTO	3465	-1265	3467	-1267	3464	-1258	- 7	- 9	3476	-1262	- 3	- 5	3454	-1262	- 3	- 5	3478	-1259	- 6	- 8
LKC	3486	-1286	3487	-1287	3484	-1278	- 8	- 9	3496	-1282	- 4	- 5	3474	-1282	- 4	- 5	3499	-1280	- 6	- 7
BKC	3735	-1535	3736	-1536	3741	-1535	+ 0	- 1	3747	-1533	- 2	- 3	3722	-1530	- 5	- 6	3756	-1537	+ 2	+ 1
MARMATON	3771	-1571	3771	-1571	3778	-1572	+ 1	+ 1	3784	-1570	- 1	- 1	3765	-1573	+ 2	+ 2				
ARBUCKLE	3799	-1599	3800	-1600	3818	-1612	+ 13	+ 12	3806	-1592	- 7	- 8	3805	-1613	+ 14	+ 13	3846	-1627	+ 28	+ 27
TOTAL DEPTH	3925	-1725	3925	-1725	3905	-1699	- 26	- 26	3923	-1709	- 16	- 16	3810	-1618	- 107	- 107	3857	-1638	- 87	- 87

**DST #1 ARBUCKLE (3774-3815)**



## DRILL STEM TEST REPORT

Mustang Energy Corporation **25-13s-20w**

PO Box 1121 Hays KS 67601+1121 **Younger #3**

ATTN: Cameron Brin Job Ticket: 65710 **DST#: 1**

Test Start: 2019.11.20 @ 09:37:00

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**GENERAL INFORMATION:**

Formation: **Arbuckle**  
 Deviated: No Whipstock ft (KB)  
 Time Tool Opened: 11:29:00  
 Time Test Ended: 15:56:00  
 Test Type: Conventional Bottom Hole (Initial)  
 Tester: Benny Mulligan  
 Unit No: 67

Interval: **3774.00 ft (KB) To 3815.00 ft (KB) (TVD)**  
 Total Depth: 3815.00 ft (KB) (TVD)  
 Hole Diameter: 7.88 inches-hole Condition: Fair  
 Reference Elevations: 2200.00 ft (KB)  
 2192.00 ft (CF)  
 KB to GR/CF: 8.00 ft

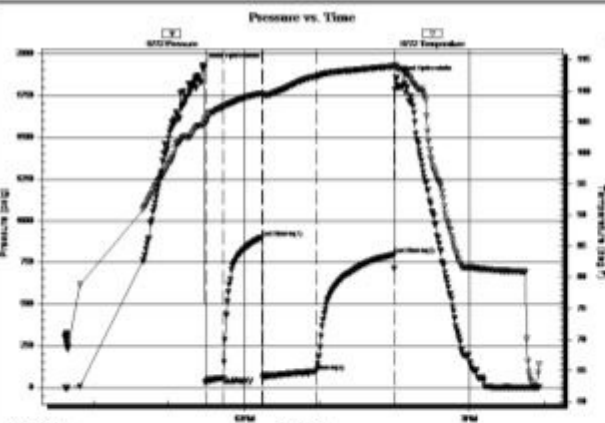
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**Serial #: 6772 Inside**

Press@RunDepth: 97.08 psig @ 3775.00 ft (KB) Capacity: 8000.00 psig  
 Start Date: 2019.11.20 End Date: 2019.11.20 Last Calib.: 2019.11.20  
 Start Time: 09:37:01 End Time: 15:56:00 Time On Btm: 2019.11.20 @ 11:27:30  
 Time Off Btm: 2019.11.20 @ 14:01:09

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**TEST COMMENT:** IF-15- built to 11 1/2 \*  
 ISI-30- no blow back  
 FF-45- BOB 18mins total build of 33 1/2\*  
 FSI-60- weak surface blow back



Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1928.88	104.83	Initial Hydro-static
2	29.09	104.52	Open To Flow (1)
17	57.02	107.47	Shut-in(1)
47	898.53	109.57	End Shut-in(1)
48	62.83	109.37	Open To Flow (2)
91	97.08	112.32	Shut-in(2)
152	794.96	113.94	End Shut-in(2)
154	1850.63	113.92	Final Hydro-static

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**Recovery**

Length (ft)	Description	Volume (bbl)

**Gas Rates**

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





## GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 13:45:10

Time Test Ended: 18:38:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Benny Mulligan

Unit No: 67

Interval: **3825.00 ft (KB) To 3838.00 ft (KB) (TVD)**

Total Depth: 3838.00 ft (KB) (TVD)

Hole Diameter: 7.88 inches-hole Condition: Fair

Reference Elevations: 2200.00 ft (KB)

2192.00 ft (CF)

KB to GR/CF: 8.00 ft

Serial #: **6772**

Inside

Press@RunDepth: 370.61 psig @ 3826.00 ft (KB)

Start Date: 2019.11.21 End Date: 2019.11.21

Start Time: 11:40:01 End Time: 18:38:00

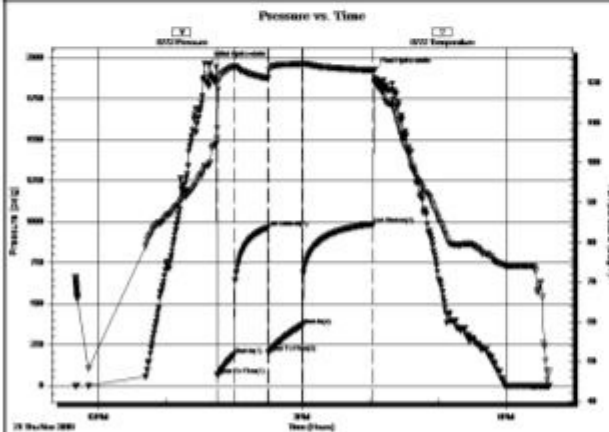
Capacity: 8000.00 psig

Last Calib.: 2019.11.21

Time On Btm: 2019.11.21 @ 13:38:00

Time Off Btm: 2019.11.21 @ 16:03:50

TEST COMMENT: IF-15- BOB 2mins 40secs total build of 42 1/2"  
 ISI-30- 1/4" blow back  
 FF-30- BOB 4mins 40secs total build of 47 1/2"  
 FSI-60- 7 1/2" blow back



## PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1963.65	99.42	Initial Hydro-static
8	66.05	106.16	Open To Flow (1)
23	190.41	124.18	Shut-in(1)
52	963.77	121.24	End Shut-in(1)
53	203.63	121.20	Open To Flow (2)
83	370.61	124.83	Shut-in(2)
145	985.50	123.23	End Shut-in(2)
146	1922.97	123.30	Final Hydro-static

## Recovery

Length (ft)	Description	Volume (bbl)
360.00	W 100%W	4.77
180.00	OSW 2%O 98%W	2.52
120.00	GOCW 20%G 20%O 60%W	1.68
200.00	GCO 20%G 80%O	2.81

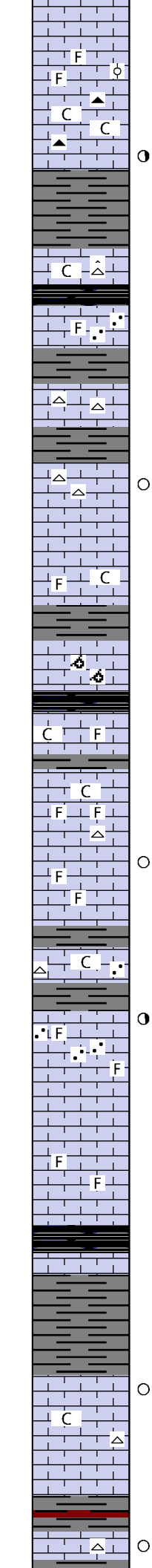
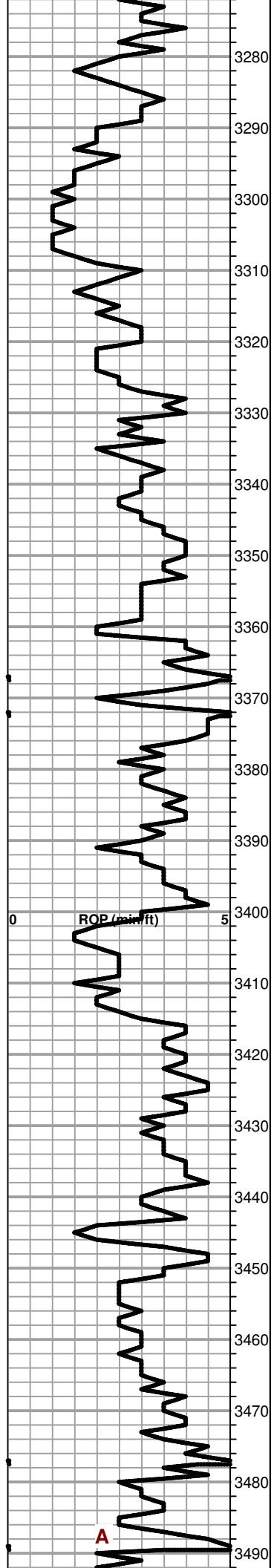
## Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcfd)

## ANHYDRITE







Lm- tan- gray, A/A

Lm- tan- v. fn-fnxln, foss, oolitic

Lm- tan-gray, fnxln, foss, chalky, scat blk chert

Lm- crm-gray, v. fn-fnxln, foss, sli chalky, few scat pcs pr infoss por, 1-3 pcs pr brn stn in foss por, FO droplets upon crush, lt odor

Lm- crm- fnxln, foss, chalky in prt, scat chert

Lm- tan, fnxln, sucrosic, foss, chalky in prt, mostly soft and sandy

Lm- crm- micro-fnxln, cherty throughtout, barren

Lm- crm- micro-fnxln, mostly barren, cherty, mostly dense, v. few scat pcs w/ pr inxln por w/ a few scat vuggs, few scat lt brn stn in por, NSFO, fr odor

Lm- crm, v. fn-fnxln, foss, chalky

Lm- crm- fnxln, foss, oolitic in prt, few sact pcs pr inxln por, pr v. lt brn stn, NSFO, lt odor

Lm- tan, fnxln, foss, few scat inxln-oomoldic por, NSO

Lm- crm- gray, v. fn-fnxln, foss, mostly dnse, chalky in prt

Lm- A/A

Lm- crm-gray, v.fn-fnxln, foss in prt, chalky in prt, cherty in prt

Lm- tan-gray, v. fn-fnxln, foss, few scat pcs w/ pr ppt por, 1-3 pcs pr brn stn, NSFO, v. lt odor

Sh- gray

Lm- crm, v. fn-fnxln, cherty, mostly dnse, sandy in prt, sli chalky in prt, few scat pcs pr inxln por

Lm- crm, fnxln, foss, scat sandy scat pr w/ few fr infoss por, few pcs w/ pr brn stn, slt SFO upon crush, pr-fr odor

Lm- tan, v fn- fnxln, dnse, scat foss

**HEEBNER: SPL 3444' (-1244) LOG 3444' (-1244)**

Sh- blk, carb

**TORONTO: SPL 3467' (-1267) LOG 3465' (-1265)**

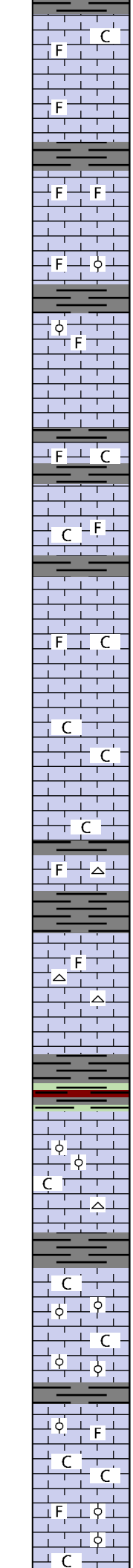
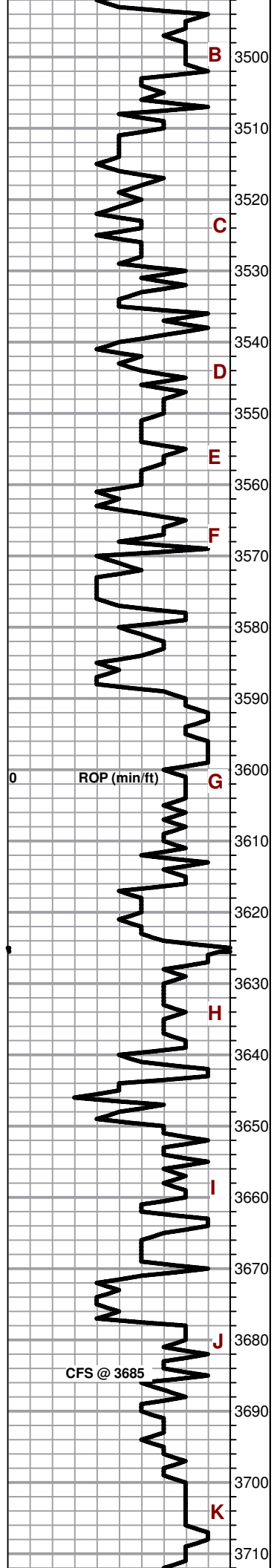
Lm- crm-off wt, vfn-fnxln, chalky in prt, cherty, few scat pcs w/ pr inxln por, few scat pcs w/ blk sticky oil possibly dead

Sh- red-gray

**LKC: SPL 3487' (-1287) LOG 3486' (-1286)**

Lm- crm- wt, foss, sli cherty, few scat pcs w/ pr infoss-inxln

VIS 58  
WT 8.7



por, 1 pc pr. v. lt brn stn in por, NSFO, no odor

Lm- crm-tan, v. fn-fxnln, foss in prt, chalky in prt

Lm- tan- gray, dnse, sli foss

Sh- gray- red

Lm- crm- fnxln, foss, scat pr inxln- infoss por, scat pr lt brn stn, NSFO, lt odor

Lm- crm- fnxln, foss, oolitic in prt dnse

Lm- crm, fnxln, foss, oolitic in prt, few scat pcs pr inxln por, pr v. lt brn stn, NSFO, lt odor

Lm- crm- fnxln, scat foss, chalky in prt, few scat pcs pr inxln-infoss por, 1-3 pcs pr lt brn stn in por, NSFO, no odor

Lm- crm- fnxln, foss, chalky, barren

Lm- crm- fnxln, chalky, foss in prt, barren

Lm- A/A

Lm- A/A, scat foss, scat chert

Lm- crm- v. fnxln-fnxln, scat chert, scat foss, few scat pcs pr inxln por, 1-3 pcs pr lt brn stn, NSFO, no odor

Sh- gray-red-green

Lm- tan- crm- fnxln, oolitic, chalky in prt, sli cherty, scat pr w/ 1-2 pcs fr inxln-infoss por, pr brn- blk sticky stn in por, NSFO, pr odor

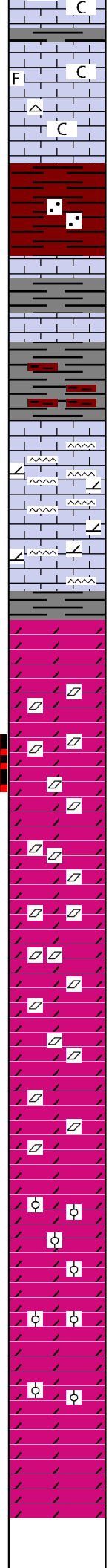
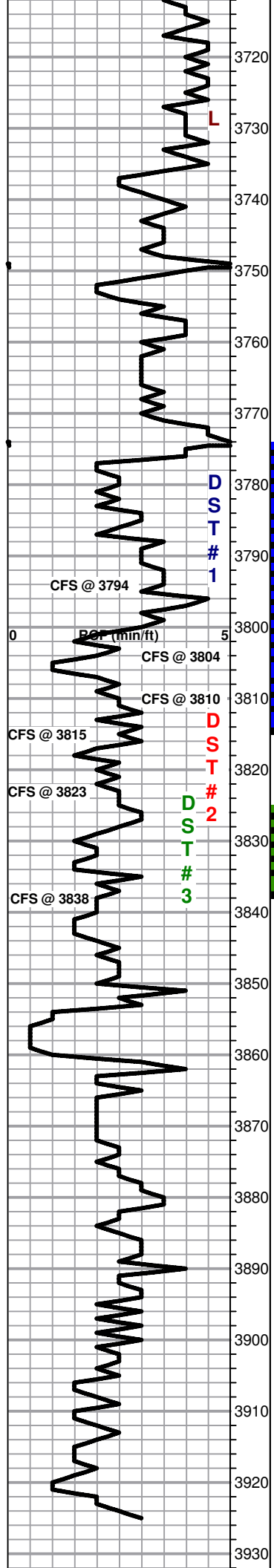
Sh- gray- blk

Lm- crm- fnxln, oolitic, chalky, scat, tight pr infoss por, pr brn stn in por, gassy FO bubbles upon crush, lt odor

Lm- crm- fnxln, chalky, foss, oolitic, scat pr infoss w/ a few pcs fr inxln por, mostly pr w/ a few pcs fr blk-brn stn, v. few FO drops in cup, lt odor

Lm- crm- fnxln, foss, oolitic, chalky, scat dnse, barren

VIS 50  
WT 8.8  
LCM 2 1/2#



Lm- crm- tan, fnxln, scat foss, chalky, scat dnse, barren, some scat chert

**BKC: SPL 3736' (-1536) LOG 3735' (-1535)**

Sh- red, muddy red wash, sandy

Lm- fnxln, crm-brn, foss, scat dnse, scat soft and chalky

**MARMATON: SPL 3771' (-1571) LOG 3771' (-1571)**

Lm- fnxln, crm- dnse

Lm- crm, fnxln, sli dolomitic, sandy, sucrosic, scat pr inxln por, scat pr brn stn, fr FO droplets in cup and upon crush, fr odor, orange chert through

Lm- A/A, 1 pc of dolomite

**ARBUCKLE: SPL 3800' (-1600) 3799' (-1599)**

Dolo-tan, fnxln, sucrosic, mostly tight, mostly pr w/ a few pcs fr inxln por, pr-fr v. lt brn stn, fr FO sheen in cup and spl, fr-gd sulfuric odor, brt yellow flour, fr-gd streaming dry cut

Dolo- tan- fnxln, sucrosic, fn rhombic in prt, fr inxln por w/ scat vuggs, fr lt brn stn, fr-gd FO sheen in spl and in cup, fr-gd sulfuric odor, gd dry cut

Dolo- sucrosic- scat fn-md rhombic xln, fr inxln por w/ scat vuggs, fr brn stn, fr sat, fr-gd FO sheen in cup & spl, pr-fr odor

Dolo- tan-crm, sucrosic-fn w/ a few md pcs rhom xln, v. few scat vuggs, pr w/ few scat fr inxln-few scat oom por, pr-fr brn stn, lt sat, fr SFO, pr-fr odor

Dolo- crm- sucrosic, fn-scat sli coarse rhombic xln, scat vuggs, fr brn stn, fr w/ scat gd sat, fr-gd FO sheen in cup and spl, fr odor

Dolo- tan-crm- sucrosic- fn w/ few md rhom xln, v. few scat vuggs, pr w/ few inxln- few oom por, pr-fr brn stn, lt sat, fr SFO, pr-fr odor

Dolo- crm-wt, sucrosic-fn-md w/ few scat coarse rhombic xln, scat vuggs, fr brn-blk stn, pr-fr sat, fr-gd FO sheen in spl & cup, pr-fr odor

Dolo- crm- wt, sucrosic- fn-md rhom xln, scat vuggs, fr brn- blk stn, most pr w/ few fr sat, pr-fr SFO upon crush, pr odor

Dolo- crm-wt, sucrosic- fn-md rhom xln, few scat vuggs, pr-fr blk stn, most pr sat, pr-fr SFO upon crush, pr odor

Dolo- wt, fnxln, oolitic, mostly barren, few scat pcs pr-fr inxln por, pr blk stn, pr sat, sli SFO, pr odor

Dolo- wt, v. fn-fnxln, oolitic in prt, barren, scat md coarse rhombic xln por, NSO

Dolo- A/A

Dolo- A/A

**RTD: SPL 3925' (-1725) LOG 3925' (-1725)**

VIS 58  
WT 9.0

PIPE STRAP -0.02  
TO BOARD

SURVEY @ 3815' (1 3/4°)

VIS 53  
WT 9.4

VIS 50  
WT 9.3

VIS 60  
WT 9.0

GEO OFF LOCATION  
@ 6:15 A.M  
11/22/2019



