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1-16-43W

# GEOLOGIC REPORT

**TXO PRODUCTION CORPORATION**

Edsall "F" #8
1650' FNL & 330' FEL
Section 1, Township 16 South, Range 43 West
Greeley County, Kansas

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RESUME

Edsall "F" #8 1-16-43W

| | |
|---|---|
| **OPERATOR:** | TXO Production Corporation |
| **OTHER INTERESTED PARTIES:** | Texaco, Inc., APCOT-Finadel Joint Venture |
| **WELL NAME & NUMBER:** | Edsall "F" #8 |
| **LOCATION:** | 1650' FNL, 330' FEL, Section 1, Township 16 South, Range 43 West |
| **AREA:** | S.W. Stockholm Field |
| **COUNTY:** | Greeley |
| **STATE:** | Kansas |
| **ELEVATION:** | 3877' K.B. and 3868' G.L. |
| **ENGINEER:** | Tom Brock |
| **GEOLOGIST:** | Bill Berry |
| **SPUD DATE:** | September 21, 1985 at 11:00 P.M. |
| **COMPLETION DATE:** | September 27, 1985 at 11:15 P.M. |
| **HOLE SIZE:** | 12-1/2" 0' to 385'; 7-7/8" 385' to 5300' |
| **CASING:** | 8-5/8" set at 384'; 4-1/2" set at 5300' |
| **CEMENTING COMPANY:** | Halliburton |
| **CONTRACTOR:** | Murfin Drilling Company |
| **EQUIPMENT:** | Rig #21 |
| **TOOLPUSHER:** | Terry McRae |
| **DRILLERS:** | Bill Wynn, Chuck Walters, Glenn Haflinger |
| **DRAWWORKS:** | Ideco H-35 |
| **DERRICK:** | Butler Parks "Double" |

RESUME cont'd. Edsall "7" #8
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| | |
|---|---|
| **PUMP:** | Emsco D 375 |
| **DRILL COLLARS:** | 6-1/4" X 2-1/4" |
| **DRILL PIPE:** | 4-1/2" XH |
| **DRILLING MUD COMPANY:** | Maverick Mud Co. |
| **MUD TYPE:** | Native to 4800';<br>Gel Chemical 4800'-5300' |
| **MUD ENGINEER:** | Rick Garcia |
| **ELECTRIC LOG COMPANY:** | Schlumberger |
| **TYPE LOGS:** | DIL/SFL/GR 384'-5294'<br>LDL/CNL/GR 4750'-5297' and 3800'-4000'<br>BHC/GR 384'-5286' |
| **ENGINEER:** | Jon Musselman |
| **TOTAL DEPTH:** | 5300' Driller; 5300' Logger |
| **DRILLING TIME:** | 6 Days |
| **WELL STATUS:** | Setting 4-1/2" Production Casing |

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## SUMMARY AND CONCLUSION

Edsall "F" #8
1-16-[redacted] 43W

The TXO Production Corporation's Edsall "F" #8 was drilled to a total depth of 5300' in NE SE NE of Section 1, Township 16 South, Range 43 West, Greeley County, Kansas.

This well was a northwest step-out of the Stockholm Field, which is oil productive from a lower Morrow sand. Our control well, the Edsall "G" #1, is located approximately 1320' to the southeast.

Geologic supervision began at 3800' just above the Topeka. The Topeka was topped at 3890', 5' high to our control well. The first zone of interest was at 3920'-3930' with 15% porosity and 100% water saturation. The second zone of interest was seen at 3956'-3976' with sonic porosity showing 11-15% and water saturation calculated at 100%. The third zone in the Topeka that developed porosity was found at 4060'-4065', the BHC revealed 12% porosity and again I calculated water saturation to be 100%. Each of these zones was seen to be clean, chalky limestones, with no shows of hydrocarbons.

The Heebner was found at 4112', flat to the Edsall "G" #1. Two potential zones were observed in the Heebner; the first at 4176'-4180' and the second at 4200'-4206'. Each of these zones had 17% porosity and 100% water saturation. Sample study showed these zones to be limestones that were finely crystalline, with intercrystalline and vugular porosity. Again, no shows of hydrocarbons were seen.



The top of the Lansing was picked at 4216', 3' high to our control well. Nothing with more than 10% porosity and more than 2' thick was observed in the Lansing.

The Marmaton was found at 46[illegible] 2' high to the Edsall "G" #5. Nothing of interest was seen in the Marmaton in this well.

The top of the Morrow was picked at 5022', 9' high to our control well. The lower Morrow sand was found at 5102' with 16' of sand cut. Porosity ranged from 13-20% and water saturation was calculated at 19-34% using an Rw value of .05 ohms. Samples of this sand were not very good with only 5% of one sample having any sand. This sand was predominantly consolidated with fine to medium sized grains. Also observed was a trace of fluorescence, chlorothene cut and live oil staining.

The well was TD'd at 5300', in the Mississippi, and Murfin Rig #21 was preparing to run production casing over the lower Morrow sandstone.

## FORMATION TOPS FROM SAMPLES

Edsall "7" #8

**K.B. Elevation: 3877'** 1-16-43W

| SAMPLE TOPS | DEPTH FROM K.B. | SUB SEA (+ or -) |
|---|---|---|
| **Permian** | | |
| Stone Corral | 2737' | +1140' |
| Foraker | 3546' | +331' |
| **Pennsylvanian** | | |
| Topeka | 3892' | -15' |
| Heebner | 4106' | -229' |
| Lansing | 4216' | -339' |
| Marmaton | 4612' | -735' |
| Ft. Scott | 4688' | -811' |
| Cherokee | 4738' | -861' |
| Atoka | 4860' | -983' |
| Morrow | 5024' | -1147' |
| Lower Morrow S.S. | 5121' | -1244' |
| Lower Morrow L.S. | 5137' | -1260' |
| **Mississippian** | | |
| St. Genevieve | 5186' | -1309' |

## FORMATION TOPS FROM ELECTRIC LOGS

Edsall "7" #8

K.B. Elevation: 3877' 1-16-43W

| E-LOG TOP | DEPTH FROM K.B. | SUB SEA (+ or -) | STRUCTURAL RELATION TO EDSALL "G" #1 SW SW NW SEC. 6, T16S, R42W |
|---|---|---|---|
| **Permian** | | | |
| Stone Corral | 2738' | +1139' | +6' |
| Foraker | 3540' | +337' | +8' |
| **Pennsylvanian** | | | |
| Topeka | 3890' | -13' | +5' |
| Heebner | 4112' | -235' | Flat |
| Lansing | 4216' | -339' | +3' |
| Marmaton | 4610' | -733' | +2' |
| Ft. Scott | 4687' | -810' | +2' |
| Cherokee | 4736' | -859' | -1' |
| Atoka | 4859' | -982' | +5' |
| Morrow | 5022' | -1145' | -9' |
| Lower Morrow S.S. | 5102' | -1225' | -7' |
| Lower Morrow L.S. | 5123' | -1246' | +18' |
| **Mississippian** | | | |
| St. Genevieve | 5180' | -1303' | -11' |

Edsall "7" #8
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## DAILY DRILLING CHRONOLOGY

| DATE | ACCUM. FOOTAGE | FOOTAGE-24 HOURS | RIG ACTIVITY |
|---|---|---|---|
| 9/21/85 | 0' | 0' | 7:00 A.M. Move rig, spud @ 11:00 P.M., run CSG, W.O.C. |
| 9/22/85 | 385' | 385' | 7:00 A.M. W.O.C., drill, lost circ. @ 1550', drill, trip F/bit, drill |
| 9/23/85 | 1950' | 1565' | 7:00 A.M. Drill, survey |
| 9/24/85 | 3345' | 1395' | 7:00 A.M. Drill |
| 9/25/85 | 4155' | 810' | 7:00 A.M. Drill, trip F/bit, drill |
| 9/26/85 | 4600' | 445' | 7:00 A.M. Drill |
| 9/27/85 | 5000' | 400' | 7:00 A.M. Drill, C.F.S., short trip, T.O.H. F/logs |
| 9/28/85 | 5300' | 300' | 7:00 A.M. Logger hit bridge, T.I.H. to knock out bridge, run E-logs, prepare to run prod. csg. |

Edsall "A" #8
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## BIT RECORD

| NO. | MAKE | TYPE | SIZE | IN | OUT | FOOTAGE | HOURS |
|---|---|---|---|---|---|---|---|
| 1 | STC | DSJ | 12-1/4" | 0' | 385' | 385' | 1 |
| 1 | Reed | RT | 7-7/8" | 385' | 1840' | 1455' | 9-3/4 |
| 2 | Reed | HS-51 | 7-7/8" | 1840' | 4395' | 2555' | 57 |
| 3 | HTC | J-33RR | 7-7/8" | 4395' | 5300' | 905' | 50-1/2 |

Eckard "Y" #8
1-16-43N

## MUD RECORD

| 1985 Date | Depth | Wt. | F.Vis. | P.Vis. | Yield | pH | Filtr | CK | Alka | Chlo | Cal-cium | Cum. Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/23 | 2193' | 8.6 | 27 | 2 | 1 | 7.0 | NC | 1/32 | | 300 | 180 | $ 452.58 |
| 9/24 | 3524' | 9.4 | 27 | 2 | 1 | 7.0 | NC | 1/32 | | 81,000 | 1680 | $ 452.58 |
| 9/25 | 4286' | 9.3 | 30 | 3 | 6 | 7.0 | NC | 2/32 | | 55,000 | 880 | $ 925.95 |
| 9/26 | 4693' | 8.9 | 32 | 3 | 6 | 8.5 | 40 | 2/32 | | 17,000 | 160 | $2,380.45 |
| 9/26 | 4891' | 9.0 | 40 | 9 | 14 | 10.0 | 8.8 | 2/32 | | 14,000 | 40 | $2,380.45 |
| 9/27 | 5111' | 9.1 | 46 | 10 | 15 | 11.0 | 9.0 | 2/32 | | 14,000 | 40 | $5,029.02 |
| 9/28 | 5300' | 9.1 | 62 | 11 | 17 | 11.0 | 8.8 | 2/32 | | 15,000 | 100 | $5,029.02 |

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## DRILLING FUNCTIONS

| DEPTH | W.O.B. | R.P.M. | P.P. | DEVIATION |
|---|---|---|---|---|
| 385' | All | 90/100 | 600 | 1/2° |
| 1840' | 35,000 | 75/80 | 1000 | MR |
| 2148' | 35,000 | 75 | 1000 | 2° |
| 4395' | 35,000 | 60/65 | 1000 | 1-1/4° |
| 5300' | 35,000 | 60 | 800 | 2° |

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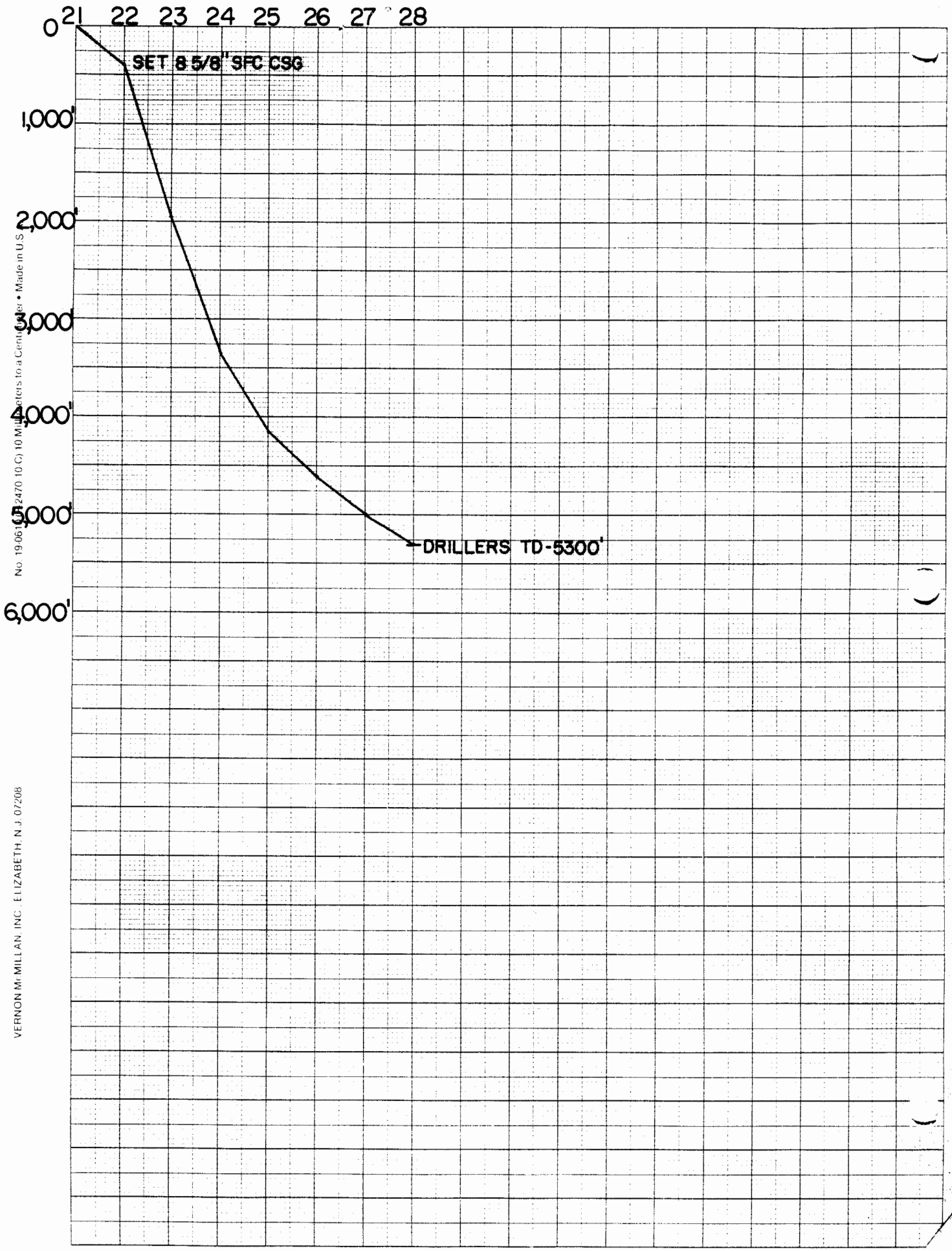
# PENETRATION RATE/TIME CHART

19-0610 (R-2470-10-C) 10 Millimeters to a Centimeter SEPTEMBER, 1985




No. 19-0610 (R-2470-10-C) 10 Millimeters to a Centimeter • Made in U.S.A.

VERNON McMILLAN, INC. ELIZABETH, N.J. 07208

Edsall "7" #8
-16-43W

## LITHOLOGY (NOT LAGGED)

| | |
|---|---|
| 3810' - 40' | Sh red-org, occ dk gy, mas, occ sl calc. Ls buff-tan, micxl, cln, dns |
| 3840' - 70' | Sh red, gy-dk gy, mas-sb fis, occ sl calc. Ls wh-buff-gy, micxl, occ sl chky, cln-sl arg, dns |
| 3870' - 3900' | Ls buff-lt gy, tan, micxl, occ vfxl, occ sl arg, dns sh cont red & dk gy |
| 3900' - 30' | Sh gy-dk gy, mas-sb fis, occ calc. Occ ls buff-lt gy, tan, micxl, occ crpxl, cln, dns |
| 3930' - 60' | Pred ls buff-tan, micxl-crpxl, cln, dns. Sh cont gy-dk gy |
| 3960' - 90' | Ls buff-tan, micxl-vfxl, occ crpxl, occ wh & sl chky, cln, dns. **Tr p intxl por.** Sh lt-dk gy, mas, sl calc |
| 3990' - 4020' | Ls wh-buff-lt gy, occ tan, micxl-vfxl, occ sl chky, occ crpxl, cln, dns-**occ p-fr intxl**, cont occ sh |
| 4020' - 50' | Ls wh-buff-tan, micxl-vfxl, cln, **occ p intxl por.** Occ sh gy-dk gy, mas, occ calc |
| 4050' - 80' | Ls wh-buff-tan, micxl-vfxl, occ crpxl, occ sl chky, cln, **occ p pp & intxl por.** Occ sh gy-dk gy-blk, mas, occ carb |
| 4080' - 4110' | Ls wh-buff, micxl-vfxl, cln, dns. Cont occ sh |
| 4110' - 40' | Ls buff, micxl-crpxl, occ vfxl, cln, dns. |
| 4140' - 70' | Ls buff-tan, micxl-vfxl, occ crpxl, cln, occ **p-fr intxl por.** Sl incr sh dk gy, mas, occ blk & carb |
| 4170' - 4200' | Ls crm-tan, micxl-crpxl, occ vf-fxl, occ lith, **occ p intxl w/tr fr vug por.** Sh blk & carb |
| 4200' - 30' | Ls crm-tan, micxl-crpxl, cln, dns |
| 4230' - 60' | Ls buff-tan, micxl-crpxl, cln, dns. Occ sh lt-dk gy, mas-sb fis, occ calc. Poor smpls 4230'-4530' |

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**LITHOLOGY cont'd.**

| | |
|---|---|
| 4260' - 90' | Ls buff-tan, occ lt gy, micxl-crpxl, occ vfxl, cln, **tr w/p intxl por.** Cont occ sh |
| 4290' - 4320' | Ls buff-gy, micxl-crpxl, cln-sl arg, dns-**occ g vug por, occ p intxl por.** Occ sh gy-dk gy, mas |
| 4320' - 50' | Ls buff-gy-tan, micxl-crpxl, occ vf-fxl, cln-occ sl arg, pred dns **tr w/p intxl por** |
| 4350' - 80' | Ls buff-gy, micxl-crpxl, occ sl chky, occ vfxl, cln-sl arg, **occ p-fr vug por w/some intxl por.** Cont occ gy-dk gy sh |
| 4380' - 4410' | Ls buff-lt gy, micxl-crpxl, occ sl arg, dns. Occ sh dk gy-blk, mas, sl slty, occ calc |
| 4410' - 40' | Ls buff, occ tan, micxl, occ crpxl, cln, dns. Cont occ sh |
| 4440' - 70' | Ls buff-gy, micxl-crpxl, occ sl mot, occ f ool, cln-arg, **tr w/fr vug por & p intxl por** |
| 4470' - 4530' | Incr sh dk gy-blk, mas-sb fis, carb, occ calc. Ls lt gy, micxl-crpxl, sl mot, sl arg, dns |
| 4530' - 60' | Ls buff, frm-hd, micxl-crpxl, cln, dns |
| 4560' - 90' | Ls buff-lt gy, frm-hd, micxl-crpxl, occ sl mot, pred cln, dns. Occ sh dk gy-blk, mas-sb fis, sl slty, occ sl calc, occ sl carb |
| 4590' - 4620' | Ls buff-lt gy, micxl, occ vfxl, cln, **occ vp intxl por.** Occ sh |
| 4620' - 50' | Ls buff-lt gy, occ tan, micxl-vfxl, occ crpxl, cln, dns. Sl incr sh gy-dk gy, occ blk, mas, occ sl slty, occ calc |
| 4650' - 80' | Sh dk gy-blk, mas, occ splty, occ sl slty, occ carb. Ls gy, occ tan, micxl-crpxl, occ lith, occ sdy, arg, dns |
| 4680' - 4710' | Sh dk gy-blk, mas-sb plty. Abnt ls gy, occ tan, micxl-crpxl, occ gran, arg, dns |
| 4710' - 40' | Ls gy-dk gy, occ tan-lt brn, hd, crpxl, arg, dns. Cont abnt sh |