

**Colt Energy, Inc.**  
**Geological Report**

Well: **Pendley #22-i**

**Draft 05/27/2015**

1990 FSL, 65 FEL

Section 22-T26S-R14E

Woodson Co., KS

API # 15-207-29220

Elevation: 935 est. based on surrounding surveyed locations.

Drilling Contractor: Andrew King (Op. Lic. #34953), dba BAR Drilling, LLC

Spud: 05/18/2015

Surface Casing: 11.75" bore hole, 8.625" set at 42.5', cmtd w/12 sx of Portland

Under Surface: 05/19/2015

Drilling fluid: water "native mud" and a little polymer

Production bore hole: 6.75"

Rotary Total Depth (RTD): 1397' (05/21/2015)

Geophysical E-Log(s): CDL and IES by Osage Wireline (05/21/15)

Production Casing: 1389' of 4 1/2", 10.5#/ft., includes 4' cmt pup jt., cmtd w/145sx,(05/2/15)

Production Casing: Ran in hole by: BAR Drilling, LLC (05/21/15)

*5/21/15*

<b>Formation/Member</b>	<b>DL/Spl Tops</b>	<b>E-Log (Rdd)</b>	<b>Datum (MSL)</b>
Top Lansing Ls	208	207	728
Base Lansing Ls	476	472	463
Top Kansas City Ls	555	550	385
Stark Sh	No Call	640	295
Hushpuckney Sh	No Call	681	254
Base Ks City	No Call	710	225
"Old Drillers Log" B. KC	726	726	209
South Mound Sh	No Call	819	116
"Weiser" Ss Zone	No Call	900	35
Un-named Coal (Mulberry?)	No Call	960	-25
Pawnee Ls	No Call	968	-33
Myric Station Ls	No Call	981	-46
Anna (Lexington Coal Zone) Sh	No Call	985	-50
Ft. Scott ("Oswego") Ls	1011	1010	-75
Little Osage (Summit Coal Zone) Sh	1030	1029	-94
Excello Sh	1043	1043	-108
Mulky Coal	No Call	1047	-112

<b>Formation/Member</b>	<b>DL/Spl Tops</b>	<b>E-Log (Rdd)</b>	<b>Datum (MSL)</b>
Squirrel Sand	1054	1058	-123
Squirrel Sand	No Call	----	----
Bevier Coal	No Call	1112	-177
Verdigris Ls	1132	1125	-190
Croweburg ("V") Sh	1134	1127	-192
Croweburg Coal	No Call	----	----
Fleming Coal	1168	1167	-232
Mineral Coal	1189	1184	-249
Scammon Coal	1200	1200	-265
"Lower" Cattleman Ss	No Call	----	----
Un-named Carbonaceous Zone	1226	1230	-295
Un-named Carbonaceous Zone	No Call	1234	----
Bartlesville Ss	1240	1245	-310
Bartlesville Ss	----	1268	-333
Bartlesville Ss	----	1330	-395
Bartlesville Ss	----	1338	-403
Un-named Coal (Neutral?)	No Call	1371	-436
Un-named Coal (Rowe?)	No Call	----	----
Riverton Coal	1390	----	-455
Mississippi	1397	----	-462
Rotary Total Depth	1398	----	----
E-log TD	----	1397	----

**The following report is based on microscopic examination of rotary drill cuttings collected on location while drilling, a core taken from the Bartlesville Sand Zone, and a series of open hole logs; depths have been corrected back to the open hole log measurements unless noted.**

**Note:** Drill cuttings were collected, "bagged", and microscopically examined from: 1050 to 1110 and 1290 to 1398. The core slot of 1242-1289 was reamed and samples collected for microscopic examination and then collected at 10' intervals from 1290 to 1398 TD.

**Note:** Bulk density readings were taken from the 5" CDL Section from the Compensated Density Sidewall Neutron Log suite, per the direction of Osage Wireline Engineer Waylon Lowery. Reason given was that the 25" HR CDL Section has filters removed for esthetic reasons (log signature) and gives a "more optimistic" value for bulk density reading. Therefore, the readings recorded in this report when compared with previous bulk density readings within the Big Sandy field may appear lower as a result of using the 5" CDL section.

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### **Major Zones of Interest**

**Mulberry Coal, 960-962.** No samples, log shows 2 feet +/- of coal with a peak bulk density of 1.94.

**Anna Shale (Lexington Coal Zone), 985-987.** No samples, log designates black shale with a bulk density reading of 2.33.

**Little Osage Shale (Summit Coal Zone), 1029-1031.** No samples, log designates black shale with a peak bulk density of 2.21.

**Excello Shale, 1043-1045.** No samples, log indicates black shale with a peak bulk density of 2.25.

**Mulky Coal, 1047-1049.** No samples, log shows 2 feet +/- of coal with a peak bulk density of 1.66. The log also indicates a significant washout beneath the coal which may impact the accuracy of the bulk density reading and possibly the thickness.

**Squirrel Sand, 1054-1074.** Sandstone, with interbedded shale beds. Sandstone from 1057-1074. Sandstone; very light gray, very light grayish tan, silt to fine grain, few medium to coarse grain, sub-rounded to sub-angular, poorly to very poorly sorted, poorly consolidated, loose grains to very friable clusters. Fair to very good porosity, scattered shale brakes, good odor, and good to excellent show of free oil.

**Bevier Coal, 1112-1113.** No samples, log shows 1 foot +/- of coal with a peak bulk density of 2.04.

**Croweburg Shale, 1127-1129.** No samples, log shows 2 feet +/- of black shale with a peak bulk density of 1.76. The log also indicates a significant washout which may impact the accuracy of the bulk density reading and possibly the thickness.

**Fleming Coal, 1167-1169.** No samples, log indicates 2 feet +/- of coal with a peak bulk density of 1.78.

**Mineral Coal, 1184-1185.** No samples, log indicates 1 foot +/- of coal with a peak bulk density of 1.97.

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**Scammon Coal, 1200-1202.** No samples, log indicates 2 feet +/- of coal with a peak bulk density of 1.76.

**“Lower” Cattleman Sand Zone, 1202-1206.** No samples, log indicates 4 feet of possible sand development. No odor and no oil (sheen) was observed on pit during drilling activities.

**Un-named Carbonaceous Zone (Tebo?), 1230-1232.** No samples, log indicates 2 feet +/- with a peak bulk density of 2.40.

**Un-named Coal (beneath Tebo Shale), 1234-1236.** No samples, log indicates 2 feet +/- of coal with a peak bulk density of 1.82.

## **Bartlesville Sand:**

**1242-1282.** Sandstone; tans to light browns, silt to mostly fine grain, sub-angular to angular, poorly sorted, well consolidated, firm to very firm, fair to very good porosity, trace shaley, micaceous, good to very good odor, fair fluorescence (for the area), good to excellent show of free oil, and scattered gas bubbles.

**Un-named Coal (one of the Neutrals / “AW” or “BW”?), 1371-1373.** Coal, 20-30+% were “floaters”, no shows of gas with trace of pyrite. Log indicates 2 feet +/- of coal with a peak bulk density of 1.98.

**Un-named Coal (Riverton?), 1390-1391.** Not logged. Drill cuttings indicated a black coal. No gas was observed in sample cuttings.

**Mississippi(an) (Not Logged), 1397-1398.** Limestone; light tan to buff, dense, mostly coarse crystalline, poor to very poor porosity, no shows.

## **Summary:**

Due to shows of oil found in the Bartlesville Sand and the review of the open hole logs, the decision was made to run production casing to further test this sand for commercial production.

End Report:

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Deborah L. Ballard  
For: Colt Energy, Inc.