



11 Lewis Drive

Paola, KS 66071

Oil & Gas Well Drilling
Water Wells
Geo-Loop Installation

Phone: 913-557-9083

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WELL LOG

Petroleum Technologies, Inc.

Sawyer #19

API #15-091-24,336

July 15 - July 16, 2014

<u>Thickness of Strata</u>	<u>Formation</u>	<u>Total</u>
14	soil & clay	14
21	shale	35
23	lime	58
9	shale	67
8	lime	75
10	shale	85
22	lime	107
18	shale	125
23	lime	148
6	shale	154
54	lime	208
18	shale	226
7	lime	233
10	shale	243
20	lime	263
3	shale	266
7	lime	273
33	shale	306
2	lime	308
8	shale	316
26	lime	342
8	shale	350
23	lime	373
4	shale	377
15	lime	392 base of the Kansas City
171	shale	563
4	lime	567
4	shale	571
3	lime	574
6	shale	580
7	lime	587
13	shale	600
4	lime	604
40	shale	644
2	lime	646
93	shale	739
8	broken sand	747 brown & grey, light show
1	coal	748
54	shale	802

2	lime	804
39	shale	843
4	limey sand	847
8	limey oil sand	855
8	shale	863
3	broken sand	866
1	coal	867
33	shale	900
13	sandy shale	913 TD

Drilled a 9 7/8" hole to 22.4'

Drilled a 5 5/8" hole to 913'

Set 22.4' of 7" casing cemented with 5 sacks cement.

Set 893' of 2 7/8" 8 round upset tubing including 3 centralizers, 1 float shoe, and 1 clamp.