

Air Drilling Specialist
Oil & Gas Wells

THORNTON AIR ROTARY, LLC
Office Phone: 620-879-2073

PO Box 449
Caney, KS 67333

Date Started	3/28/2011
Date Completed	3/29/2011

Well No.	Operator	Lease	A.P.I #	County	State
15J-29	Layne Energy Operating	Ratzlaff	15-205-27924-00-00	Wilson	Kansas

1/4	1/4	1/4	Sec.	Twp.	Rge.
			29	30	14

Driller	Type/Well	Cement Used	Casing Used	Depth	Size of Hole
Billy	Oil	8	42.8' 8 5/8	1337	6 3/4

Formation Record

0-10	DIRT	893-924	LIME (PAWNEE)	1206-1221	SHALE
10-18	CLAY	924-928	BLK SHALE (LEXINGTON)	1221-1222	COAL
18-126	SHALE	928-931	LIME	1222-1240	SHALE
126-171	LIME	931-934	BLK SHALE	1240-1250	RED SHALE
171-190	SHALE	934-974	SHALE	1250-1285	SHALE
190-363	LMY SHALE	974-996	LIME (OSWEGO)	1285-1286	COAL
363-366	LIME	996-1003	BLK SHALE (SUMMIT)	1286-1319	SHALE
366-400	SANDY SHALE	1003-1009	LIME	1319-1324	MISS. CHAT (MISS.)
400-420	SAND (DAMP)	1009-1014	BLK SHALE (MULKEY)	1324-1337	BROWN LIME
420-421	COAL	1014-1015	COAL	1337	GAS TEST-16#, 1/4", MCF-40.9
421-475	LMY SHALE	1015-1019	LIME	1337	TD
475-496	LIME	1019-1061	SHALE		
496-501	BLACK SHALE	1061-1062	COAL		
501-507	SHALE	1062-1078	SHALE		
507-590	LIME / 546 - WATER	1078-1080	LIME (V-LIME)		
590-599	BLACK SHALE	1080-1082	SHALE		
599-672	LIME	1082-1083	COAL (CROWBERG)		
611	GAS TEST -SLIGHT BLOW	1083-1090	SANDY SHALE		
672-681	BLACK SHALE	1090-1122	SHALE		
681-745	SHALE	1122-1123	COAL (MINERAL)		
745-771	SANDY SHALE	1123-1146	SHALE		
771-783	LIME	1137	GAS TEST-2#, 1/4", MCF-12.7		
783-794	LMY SHALE	1146-1153	SANDY SHALE/LITE OIL ODOR		
794-806	SAND	1153-1160	SHALE		
806-816	SANDY SHALE	1160-1161	COAL		
816-855	SHALE	1161-1170	SHALE		
855-859	SANDY SHALE	1170-1175	BROWN SAND /OIL ODOR		
859-864	SAND / OIL ODOR	1175-1177	COAL (WEIR)		
864-892	SANDY SHALE	1177-1198	SHALE		
892-893	COAL (MULBERRY)	1198-1206	SAND		