

Air Drilling Specialist
Oil & Gas Wells

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

PO Box 449
Caney, KS 67333

Date Started	10/25/2011
Date Completed	10/27/2011

Well No.	Operator	Lease	A.P.I.#	County	State
14-20	Layne Energy Operating	Oliver	15-125-32139-00-00	Montgomery	Kansas

1/4	1/4	1/4	Sec.	Twp.	Rge.
			20	32	14 E

Driller	Type/Well	Cement Used	Casing Used	Depth	Size of Hole
Brantley		4	21.8' 8 5/8	1458	6 3/4

Formation Record

0-6	DIRT	884-886	BLACK SHALE	1287	GAS TEST - SAME
6-11	CLAY	886-908	LIME (PAWNEE)	1397-1400	SANDY LIME
11-23	SHALE	908-977	SHALE	1400-1430	CHAT (MISS.)
23-35	LIME	912	G.T.- SLIGHT BLOW	1430-1447	BROWN LIME/LOTS OF WATER
35-91	SHALE	977-1005	LIME (OSWEGO)	1447-1458	GRAY LIME
91-188	LMY SHALE	1005-1014	BLK SHALE (SUMMIT)	1458	GAS TEST-SAME 25 MCF
188-195	SAND (DAMP)	1012	G.T.- 7#, 1/4" = 25 MCF	1458	TD
195-318	LMY SHALE	1014-1033	LIME		
318-336	LIME / WET	1033-1037	BLK SHALE (EXCELLO)		
336	WENT TO WATER	1037-1039	COAL (MULKY)		
336-368	SAND	1039-1049	LIME		
368-405	SANDY SHALE	1049-1078	SHALE		
405-419	SHALE	1061	GAS TEST - SAME		
419-494	LIME	1078-1080	LIME (V-LIME)		
494-523	SHALE	1080-1082	SHALE		
523-536	SANDY SHALE	1082-1083	COAL (CROWBERG)		
536-566	SAND	1083-1125	SHALE		
566-671	SHALE	1087	GAS TEST - SAME		
671-700	LIME	1112	GAS TEST - SAME		
700-706	SHALE	1125-1126	COAL (MINERAL)		
706-730	SAND	1126-1130	SHALE		
730-742	SHALE	1130-1155	SAND		
742-753	LIME	1137	GAS TEST - SAME		
753-756	SHALE	1155-1156	COAL		
756-772	LIME	1156-1162	SANDY SHALE		
772-790	SHALE	1162-1252	SHALE		
790-806	SAND (WIESER) / LT ODOR	1252-1254	COAL		
806-830	GOOD ODOR	1254-1266	SHALE		
830-843	SAND / LT ODOR	1266-1267	COAL		
843-884	SHALE	1267-1397	SHALE		