

API #30-015-41638

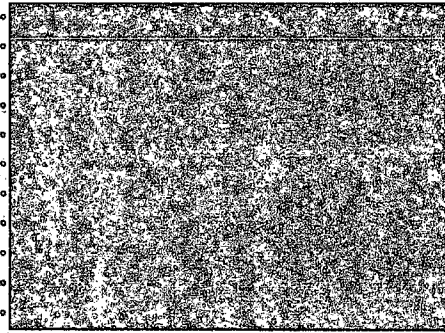
Customer: Lime Rock Resources	Rig: UDI #33	SHL X:
Lease, Well: 50 Union 30 G State #2	Job No.: CD-13104	SHL Y:
County or Parish: Eddy County	Location or Area: Artesian NM	Mag.Decl.: 7.66



Calculated // Targets	Sensor
KBTVD (@ 0' VS)	TVD
Dip Angle (+Dn/-Up)	N-S
	E-W

Tie-In Survey Co.:						Minimum Curvature Calculations			Rates / 100' M.D.		Dist // Target Line		
Surveying Company: Childress Directional						Proposed Azimuth: 0.51°			Build or	R or -L	Course	Above or	Right or
Survey No.	M.D.	INCL	AZM	TVD	N / -S	E / -W	V. SECT.	DLS / 100'	-Drop	-Turn	Length	-Below	-Left
Tie-In	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
1.	455.00	-0.60	133.70	454.99'	-1.65'	1.72'	-1.63'	0.13°					
2.	533.00	1.60	20.10	532.98'	-0.91'	2.39'	-0.88'	2.46°					
3.	627.00	3.80	10.80	626.87'	3.39'	3.43'	3.42'	2.38°					
4.	723.00	5.60	10.10	722.55'	11.12'	4.84'	11.17'	1.88°					
5.	819.00	8.90	358.20	817.77'	23.16'	5.43'	23.21'	3.76°					
6.	916.00	10.70	359.00	913.35'	39.67'	5.04'	39.71'	1.86°					
7.	1012.00	10.30	0.10	1,007.74'	57.18'	4.90'	57.20'	0.47°					
8.	1108.00	9.60	357.80	1,102.30'	73.74'	4.81'	73.78'	0.84°					
9.	1204.00	8.90	356.40	1,197.05'	89.15'	3.83'	89.18'	0.77°					
10.	1301.00	9.10	359.70	1,292.86'	104.31'	3.32'	104.34'	0.57°					
11.	1397.00	8.80	0.10	1,387.89'	119.25'	3.30'	119.27'	0.32°					
12.	1493.00	7.70	0.50	1,482.69'	133.02'	3.38'	133.05'	1.15°					
13.	1589.00	7.30	359.60	1,577.87'	145.55'	3.38'	145.58'	0.43°					
14.	1685.00	5.50	1.90	1,673.27'	156.25'	3.49'	156.27'	1.89°					
15.	1782.00	-1.60	348.90	1,770.07'	162.23'	3.38'	162.25'	4.08°					
16.	1878.00	0.90	337.80	1,866.04'	164.24'	2.84'	164.26'	0.77°					
17.	1974.00	1.00	336.50	1,962.03'	165.71'	2.22'	165.72'	0.11°					
18.	2070.00	0.40	284.70	2,058.02'	166.56'	1.56'	166.57'	0.85°					
19.	2166.00	0.70	104.50	2,154.02'	166.50'	1.80'	166.51'	1.15°					
20.	2262.00	0.80	104.30	2,250.01'	166.18'	3.02'	166.21'	0.10°					
21.	2359.00	0.70	107.70	2,347.00'	165.84'	4.24'	165.87'	0.11°					
22.	2455.00	0.80	107.20	2,443.00'	165.46'	5.44'	165.50'	0.10°					
23.	2551.00	0.80	95.70	2,538.99'	165.20'	6.75'	165.25'	0.17°					
24.	2647.00	1.00	102.80	2,634.97'	164.94'	8.23'	165.01'	0.24°					
25.	2744.00	1.10	169.20	2,731.96'	163.84'	9.23'	163.92'	1.19°					
26.	2840.00	1.60	213.30	2,827.94'	161.82'	8.67'	161.89'	1.16°					
27.	2936.00	1.50	214.60	2,923.90'	159.66'	7.22'	159.72'	0.11°					
28.	3033.00	1.50	203.80	3,020.87'	157.46'	5.99'	157.50'	0.29°					
29.	3134.00	0.60	237.10	3,121.85'	155.98'	5.01'	156.00'	1.04°					
30.	3230.00	0.70	258.70	3,217.84'	155.67'	4.01'	155.60'	0.27°					
31.	3326.00	0.60	256.00	3,313.84'	155.33'	2.95'	155.35'	0.11°					
32.	3422.00	0.50	263.60	3,409.83'	155.17'	2.04'	155.18'	0.13°					
33.	3519.00	0.70	241.40	3,506.83'	154.84'	1.10'	154.84'	0.31°					
34.	3615.00	0.80	236.40	3,602.82'	154.18'	0.03'	154.18'	0.12°					
35.	3711.00	0.60	313.60	3,698.82'	154.16'	-0.89'	154.14'	0.92°					
36.	3807.00	0.90	324.60	3,794.81'	155.12'	-1.69'	155.10'	0.35°					
37.	3903.00	0.40	14.90	3,890.80'	156.06'	-2.04'	156.03'	0.74°					

38.	4000.00	0.50	45.50	3,987.80'	156.68'	-1.65'	156.66'	0.26°
39.	4096.00	0.50	62.70	4,083.79'	157.17'	-0.98'	157.15'	0.16°
40.	4192.00	0.40	61.10	4,179.79'	157.52'	-0.32'	157.51'	0.10°
41.	4288.00	0.40	60.90	4,275.79'	157.85'	0.27'	157.84'	0.00°
42.	4385.00	0.40	67.20	4,372.79'	158.14'	0.88'	158.14'	0.05°
43.	4481.00	0.60	66.50	4,468.78'	158.55'	1.60'	158.56'	0.23°
44.	4577.00	0.40	132.90	4,564.78'	158.60'	2.27'	158.61'	0.66°
45.	4673.00	0.40	160.60	4,660.78'	158.05'	2.63'	158.07'	0.20°
46.	4769.00	0.40	173.20	4,756.78'	157.41'	2.78'	157.42'	0.09°
47.	4855.00	0.40	177.60	4,842.77'	156.81'	2.82'	156.83'	0.04°
PTB	4900.00	0.40	177.60	4,887.77'	156.49'	2.84'	156.51'	0.00°



The above survey data is true and correct, complete and within the limitations of the tool as set forth by Childress Directional Drilling, LLC, that I am authorized and qualified to make this report; that this survey was conducted at the request of Lime Rock Resources; that I reviewed these MWD Surveys and find they conform to the principles and procedures as set forth by Childress Directional Drilling.

Regards,

Art Poffenroth
MWD Manager
Childress Directional Drilling, LLC