

API #: 30-015-41433

Customer: Lime Rock Resources	Rig: UDI#33	SHE X:
Lease, Well No.: Eagle 34K Federal #65	Job No.: CD-14013	SHE Y:
County or Parish: Eddy County	Location or Area: New Mexico	Mag.Decl.: 7.62

**CHILDRESS
DIRECTIONAL
DRILLING**

Calculated f/ Targets

KBTVD (@ 0° VS)

Dip Angle (+Dn/-Up)

Sensor			
TVD			
N-S			
E-W			

Tie-In Survey Co.:	Minimum Curvature Calculations								Rates / 100' M.D.		Dist f/ Target Line	
Surveying Company: Childress Directional	Proposed Azimuth: 184.08°								Build or	R or -L	Course	Above or
Survey No.	M.D.	INCL	AZML	TVD	N / -S	E / -W	V. SECT.	DLS / 100'	-Drop	-Turn	Length	-Below
Tie-In	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				Right or
												-Left

1	445.00	0.50	71.90	444.99	0.60	1.85	-0.73	0.11				
2	568.00	2.20	222.90	567.97	-0.96	0.75	0.90	2.15				
3	665.00	4.90	211.00	664.77	-5.88	-2.65	6.05	2.87				
4	761.00	8.00	202.30	760.16	-15.57	-7.30	16.05	3.38				
5	857.00	8.30	194.00	855.19	-28.48	-11.51	29.22	1.26				
6	953.00	8.10	189.40	950.21	-41.87	-14.29	42.78	0.71				
7	1049.00	7.40	191.40	1,045.33	-54.61	-16.62	55.65	0.78				
8	1145.00	6.40	175.80	1,140.65	-66.00	-17.45	67.08	2.20				
9	1241.00	6.40	175.40	1,236.05	-76.67	-16.63	77.66	0.05				
10	1338.00	7.10	180.10	1,332.37	-88.06	-16.21	88.99	0.92				
11	1434.00	6.80	181.60	1,427.67	-99.67	-16.38	100.58	0.37				
12	1530.00	6.60	181.30	1,523.01	-110.87	-16.66	111.77	0.21				
13	1627.00	6.70	167.10	1,619.37	-121.96	-15.52	122.75	1.69				
14	1724.00	5.60	150.90	1,715.82	-131.61	-11.96	132.13	2.11				
15	1819.00	3.30	146.30	1,810.52	-137.94	-8.18	138.17	2.45				
16	1915.00	1.90	152.00	1,906.42	-141.64	-5.90	141.70	1.48				
17	2011.00	0.70	153.40	2,002.40	-143.57	-4.89	143.55	1.25				
18	2107.00	0.40	163.40	2,098.39	-144.41	-4.54	144.37	0.33				
19	2204.00	0.40	168.80	2,195.39	-145.07	-4.37	145.01	0.04				
20	2300.00	0.40	167.10	2,291.39	-145.73	-4.23	145.66	0.01				
21	2397.00	0.70	22.00	2,388.38	-145.51	-3.94	145.42	1.09				
22	2493.00	0.80	13.10	2,484.38	-144.31	-3.56	144.20	0.16				
23	2589.00	0.70	9.10	2,580.37	-143.08	-3.32	142.95	0.12				
24	2685.00	0.60	2.00	2,676.36	-142.00	-3.21	141.87	0.13				
25	2781.00	0.60	7.80	2,772.36	-141.00	-3.12	140.86	0.06				
26	2885.00	0.50	355.40	2,876.35	-140.01	-3.09	139.87	0.15				
27	2981.00	0.40	353.60	2,972.35	-139.25	-3.16	139.13	0.11				
28	3078.00	0.30	279.60	3,069.35	-138.88	-3.45	138.77	0.44				
29	3175.00	0.30	297.50	3,166.35	-138.72	-3.92	138.64	0.10				
30	3271.00	0.20	279.20	3,262.34	-138.57	-4.31	138.53	0.13				
31	3367.00	0.20	261.40	3,358.34	-138.57	-4.64	138.55	0.06				
32	3463.00	0.20	229.10	3,454.34	-138.71	-4.93	138.71	0.12				
33	3558.00	0.10	255.90	3,549.34	-138.84	-5.14	138.85	0.13				
34	3655.00	0.00	321.60	3,646.34	-138.86	-5.22	138.88	0.10				
35	3751.00	0.10	357.10	3,742.34	-138.77	-5.23	138.79	0.10				
36	3847.00	0.20	345.70	3,838.34	-138.53	-5.27	138.55	0.11				
37	3943.00	0.10	304.40	3,934.34	-138.32	-5.38	138.35	0.16				
38	4039.00	0.30	290.30	4,030.34	-138.18	-5.69	138.24	0.21				

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39.	4135.00	0.20	272.50	4,126.34'	-138.09'	-6.09'	138.17'	0.13°
40.	4230.00	0.20	238.10	4,221.34'	-138.17'	-6.40'	138.27'	0.12°
41.	4327.00	0.20	220.90	4,318.34'	-138.39'	-6.65'	138.51'	0.06°
42.	4423.00	0.40	177.40	4,414.34'	-138.85'	-6.74'	138.97'	0.30°
43.	4520.00	0.30	186.70	4,511.34'	-139.44'	-6.76'	139.56'	0.12°
44.	4616.00	0.20	203.60	4,607.34'	-139.84'	-6.86'	139.97'	0.13°
45.	4663.00	0.30	221.90	4,654.34'	-140.01'	-6.97'	140.15'	0.27°
<u>PTB</u>	4708.00	0.30	221.90	4,699.33'	-140.18'	-7.13'	140.33'	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