

NM OIL CONSERVATION
ARTESTA DISTRICT

DEC 08 2016

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State of New Mexico
County of Eddy

I, Donald Leone, certify that; I am employed by Accel Directional; that I did on the day(s) of September 25, 2016 through September 29, 2016 conduct or supervise the taking of MWD survey(s) from a depth of 385' feet to a depth of 4900' feet; that the data is true, correct, complete and within the limitations of the tool set forth by Accel Directional; that I am authorized and qualified to make this report; that this report was conducted at the request of Lime Rock Resources for the Eagle 34K, Well No. Federal 86, API No. 30-015-43863 in Eddy County, New Mexico; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Accel Directional.

Donnie Leone

Donnie Leone
MWD Technician

Job Number: TX-16-004

State/Country: New Mexico

Company: Lime Rock

Declination: □

Lease/Well: Eagle 34K

Grid: □

Location: □

File name: C:\4H.SVY

Rig Name: □

Date/Time: 29-Sep-16 / 10:29

RKB: □

Curve Name: survey

G.L. or M.S.L.: □

MS Energy Services

WINSERVE PROPOSAL REPORT
Minimum Curvature Method
Vertical Section Plane 123.21
Vertical Section Referenced to Wellhead
Rectangular Coordinates Referenced to Wellhead

<i>Measured Depth FT</i>	<i>Incl Angle Deg</i>	<i>Drift Direction Deg</i>	<i>True Vertical Depth</i>	<i>N-S FT</i>	<i>E-W FT</i>	<i>Vertical Section FT</i>	<i>C L O S U R E Distance FT</i>	<i>Direction Deg</i>	<i>Dogleg Severity Deg/100</i>	<i>BUILD RATE Deg/100</i>
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
385.00	1.20	124.40	384.97	-2.28	3.33	4.03	4.03	124.40	.31	.31
417.00	1.20	125.00	416.96	-2.66	3.88	4.70	4.70	124.44	.04	.00
449.00	1.10	128.30	448.96	-3.04	4.39	5.34	5.34	124.70	.37	-.31
481.00	1.70	119.70	480.95	-3.47	5.05	6.12	6.12	124.49	1.98	1.88
513.00	3.00	113.40	512.92	-4.04	6.23	7.42	7.42	122.94	4.14	4.06
544.00	3.30	112.80	543.87	-4.70	7.79	9.10	9.10	121.11	.97	.97
576.00	3.90	108.10	575.81	-5.40	9.68	11.05	11.08	119.15	2.09	1.88
608.00	5.00	106.90	607.71	-6.14	12.05	13.44	13.52	117.01	3.45	3.44
640.00	5.20	107.40	639.59	-6.98	14.76	16.18	16.33	115.30	.64	.63
672.00	5.70	113.00	671.44	-8.04	17.61	19.14	19.36	114.52	2.28	1.56
704.00	6.90	119.90	703.25	-9.61	20.74	22.62	22.86	114.87	4.43	3.75
736.00	7.80	120.00	734.99	-11.66	24.29	26.71	26.94	115.64	2.81	2.81
768.00	10.20	117.90	766.59	-14.07	28.67	31.70	31.94	116.14	7.57	7.50
799.00	12.70	119.50	796.97	-17.03	34.06	37.83	38.09	116.57	8.13	8.06
831.00	14.50	121.10	828.07	-20.83	40.56	45.34	45.60	117.19	5.75	5.63
863.00	16.50	122.30	858.91	-25.33	47.83	53.89	54.12	117.91	6.33	6.25
895.00	18.60	122.60	889.42	-30.51	55.97	63.54	63.75	118.60	6.57	6.56
927.00	18.90	121.10	919.72	-35.94	64.71	73.82	74.02	119.05	1.77	.94
959.00	18.60	119.90	950.02	-41.16	73.57	84.10	84.30	119.22	1.53	-.94
991.00	18.20	119.20	980.38	-46.14	82.36	94.18	94.40	119.26	1.43	-1.25
1023.00	17.90	118.50	1010.81	-50.93	91.04	104.06	104.32	119.22	1.16	-.94
1054.00	17.40	119.20	1040.35	-55.46	99.27	113.43	113.71	119.19	1.75	-1.61
1087.00	15.80	121.80	1071.97	-60.23	107.40	122.85	123.14	119.29	5.34	-4.85
1119.00	13.70	126.00	1102.92	-64.76	114.17	130.99	131.26	119.56	7.36	-6.56

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100	BUILD RATE Deg/100
							Distance FT	Direction Deg		
1150.00	12.20	133.20	1133.13	-69.16	119.53	137.88	138.09	120.05	7.10	-4.84
1182.00	10.70	139.00	1164.49	-73.72	123.94	144.07	144.21	120.74	5.90	-4.69
1214.00	10.30	140.80	1195.96	-78.17	127.70	149.66	149.73	121.47	1.62	-1.25
1247.00	10.00	137.40	1228.44	-82.57	131.50	155.25	155.28	122.12	2.03	-.91
1279.00	9.30	133.60	1259.99	-86.40	135.26	160.49	160.50	122.57	2.96	-2.19
1310.00	8.10	136.40	1290.63	-89.71	138.58	165.08	165.08	122.92	4.10	-3.87
1342.00	6.40	135.20	1322.38	-92.61	141.39	169.02	169.02	123.22	5.33	-5.31
1375.00	4.90	121.10	1355.22	-94.64	143.89	172.22	172.22	123.33	6.16	-4.55
1406.00	3.90	120.20	1386.12	-95.85	145.93	174.60	174.60	123.30	3.23	-3.23
1438.00	3.40	129.40	1418.06	-97.00	147.61	176.63	176.63	123.31	2.40	-1.56
1470.00	3.40	129.90	1450.00	-98.21	149.07	178.52	178.52	123.38	.09	.00
1502.00	3.10	141.50	1481.95	-99.50	150.34	180.28	180.28	123.50	2.25	-.94
1534.00	2.20	172.20	1513.92	-100.79	150.96	181.50	181.51	123.73	5.15	-2.81
1567.00	2.00	188.10	1546.90	-101.98	150.96	182.16	182.18	124.04	1.86	-.61
1599.00	1.40	191.40	1578.88	-102.92	150.81	182.55	182.58	124.31	1.90	-1.88
1631.00	.50	210.20	1610.88	-103.42	150.66	182.70	182.74	124.47	2.94	-2.81
1663.00	.40	217.20	1642.88	-103.63	150.52	182.70	182.75	124.55	.36	-.31
1695.00	.40	222.50	1674.88	-103.80	150.38	182.67	182.73	124.62	.12	.00
1727.00	.40	213.40	1706.88	-103.98	150.24	182.65	182.71	124.69	.20	.00
1759.00	.30	208.30	1738.87	-104.15	150.14	182.66	182.73	124.75	.33	-.31
1791.00	.20	270.20	1770.87	-104.22	150.05	182.62	182.69	124.78	.85	-.31
1823.00	.10	184.20	1802.87	-104.25	149.99	182.59	182.66	124.80	.68	-.31
1855.00	.10	173.50	1834.87	-104.30	149.99	182.62	182.69	124.82	.06	.00
1887.00	.10	165.20	1866.87	-104.36	150.00	182.66	182.73	124.83	.05	.00
1919.00	.10	190.50	1898.87	-104.41	150.00	182.69	182.76	124.84	.14	.00
1951.00	.10	165.20	1930.87	-104.47	150.00	182.72	182.80	124.85	.14	.00
1983.00	.10	190.50	1962.87	-104.52	150.01	182.75	182.83	124.87	.14	.00
2015.00	.10	210.40	1994.87	-104.57	149.99	182.76	182.84	124.89	.11	.00
2047.00	.20	223.00	2026.87	-104.64	149.93	182.76	182.84	124.91	.33	.31
2079.00	.30	326.00	2058.87	-104.61	149.85	182.67	182.75	124.92	1.24	.31
2111.00	.30	230.70	2090.87	-104.59	149.74	182.57	182.65	124.93	1.39	.00
2143.00	.30	237.30	2122.87	-104.69	149.60	182.51	182.60	124.98	.11	.00
2175.00	.30	241.90	2154.87	-104.78	149.46	182.43	182.53	125.03	.08	.00
2207.00	.30	239.20	2186.87	-104.86	149.31	182.36	182.45	125.08	.04	.00
2239.00	.30	95.80	2218.87	-104.91	149.32	182.39	182.49	125.09	1.78	.00
2271.00	.80	72.90	2250.87	-104.85	149.62	182.61	182.70	125.02	1.68	1.56
2303.00	1.10	73.50	2282.87	-104.70	150.13	182.95	183.03	124.89	.94	.94
2335.00	1.10	71.20	2314.86	-104.51	150.71	183.34	183.41	124.74	.14	.00
2367.00	1.10	68.00	2346.85	-104.30	151.29	183.70	183.76	124.58	.19	.00
2399.00	1.10	69.20	2378.85	-104.08	151.86	184.06	184.10	124.42	.07	.00
2432.00	1.10	68.20	2411.84	-103.85	152.45	184.43	184.46	124.26	.06	.00
2464.00	1.20	67.70	2443.84	-103.60	153.05	184.79	184.82	124.10	.31	.31
2559.00	1.30	63.30	2538.81	-102.74	154.93	185.90	185.90	123.55	.15	.11
2661.00	1.30	63.80	2640.79	-101.71	157.00	187.07	187.07	122.94	.01	.00
2757.00	1.80	67.70	2736.75	-100.66	159.37	188.47	188.50	122.28	.53	.52

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100	BUILD RATE Deg/100
2854.00	1.10	145.30	2833.73	-100.85	161.31	190.20	190.24	122.01	1.96	-.72
2950.00	.90	227.40	2929.72	-102.11	161.28	190.87	190.89	122.34	1.38	-.21
3046.00	.60	243.80	3025.71	-102.85	160.28	190.43	190.44	122.69	.38	-.31
3142.00	.60	320.40	3121.70	-102.68	159.50	189.69	189.70	122.77	.77	.00
3238.00	.40	312.30	3217.70	-102.07	158.94	188.88	188.89	122.71	.22	-.21
3334.40	.40	321.70	3314.10	-101.58	158.48	188.23	188.24	122.66	.07	.00
3430.00	.40	309.50	3409.70	-101.10	158.01	187.58	187.59	122.61	.09	.00
3526.00	.40	293.20	3505.69	-100.76	157.45	186.92	186.93	122.62	.12	.00
3622.00	.30	286.10	3601.69	-100.56	156.90	186.35	186.36	122.66	.11	-.10
3717.00	.40	300.20	3696.69	-100.32	156.37	185.78	185.79	122.68	.14	.11
3813.00	.40	293.70	3792.69	-100.02	155.78	185.11	185.12	122.70	.05	.00
3909.00	.30	220.80	3888.69	-100.07	155.31	184.75	184.76	122.80	.44	-.10
4005.00	.90	193.20	3984.68	-101.00	154.97	184.98	184.98	123.09	.68	.63
4101.00	1.00	196.90	4080.67	-102.53	154.55	185.47	185.47	123.56	.12	.10
4197.00	.50	202.70	4176.66	-103.72	154.15	185.78	185.80	123.94	.53	-.52
4293.00	.50	197.70	4272.66	-104.51	153.86	185.97	186.00	124.19	.05	.00
4388.00	.50	202.10	4367.65	-105.29	153.58	186.16	186.20	124.43	.04	.00
4484.00	.40	192.60	4463.65	-106.00	153.35	186.36	186.42	124.65	.13	-.10
4581.00	.40	177.80	4560.65	-106.67	153.29	186.67	186.75	124.83	.11	.00
4676.00	.50	127.90	4655.64	-107.26	153.63	187.28	187.36	124.92	.41	.11
4772.00	.50	41.00	4751.64	-107.20	154.23	187.75	187.83	124.80	.72	.00
4835.00	.50	25.80	4814.64	-106.74	154.53	187.75	187.81	124.63	.21	.00
PTB										
4900.00	.50	25.80	4879.64	-106.23	154.78	187.68	187.73	124.46	.00	.00