

Results of Directional Survey

API number:	30-025-01374		
OGRID:		Operator:	LIME ROCK RESOURCES A LP
		Property:	DENIUS FEDERAL # 1

surface	ULSTR:	I	33	T 17S	R 33E
			1980	FSL	990 FEL

BH Loc	ULSTR:	K	34	T 17S	R 33E
			2287	FSL	1723 FWL

Top Perf/OH	ULSTR:	I	33	T 17S	R 33E
		8349	2261	FSL	872 FEL

Bot Perf/OH	ULSTR:	K	34	T 17S	R 33E
		11185	2287	FSL	1723 FWL

	MD	N/S	E/W	VD
	8314	278.70	113.68	8305.39
TOP PERFS/OH	8349	281.12	118.48	8339.95
	8407	285.12	126.43	8397.23
	11056	302.25	2583.63	8663.99
BOT PERFS/OH	11185	307.11	2712.53	8663.99
	11120	304.66	2647.58	8663.99

NEXT TO LAST	11056	302.25	2583.63	8663.99
LAST READING	11120	304.66	2647.58	8663.99
TD	11185	307.11	2712.53	8663.99

Surface Location	1980	FS	990	FE
Projected BHL	2287	FS	1723	FW
Location of				
Top Perfs/OH	2261	FS	872	FE
Bottom Perfs/OH	2287	FS	1723	FW

SUMMARY of Subsurface Locations

Surface Location	I-33-17S-33E	1980	FS	990	FE	Vert. Depth
Top Perfs/OH	I-33-17S-33E	2261	FS	872	FE	8339.95
Bottom Perfs/OH	K-34-17S-33E	2287	FS	1723	FW	8663.99
Projected TD	K-34-17S-33E	2287	FS	1723	FW	8663.99

PathFinder Energy Services, Inc.

LIME ROCK RESOURCES
DENIUS FED #1
LEA COUNTY, NEW MEXICO
Rig:UNITED #41
PathFinder Office Supervisor: FRANCISCO SINISTERRA
PathFinder Field Engineers: JAY FULTON
SEAN STONER

Survey Report
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Survey Horiz. Reference:WELLHEAD
Ref Coordinates: LAT:32.47.21.2856 N LON:103.39.44.1756 W
GRID Reference:NAD27 new mexico east Transverse Mercator
Ref GRID Coord: X: 706226.1600 Y: 651492.7200
North Aligned To:GRID NORTH
Total Magnetic Correction: 7.44° EAST TO GRID
Vertical Section Plane: 89.59
Survey Vert. Reference: 14.00' Rotary Table To Ground
Altitude:4085.00' Ground To MSL

Survey Calculations by RX4 using Minimum Curvature

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft)	Closure Dist (ft)	Dir (deg)	DLS (dg/100ft)
TIE-IN PROVIDED BY GYRODATA DIRECTIONAL SURVEYS @ 8300' MD.									
8314.00	5.31	57.12	8305.39	0.00	115.67	278.70 N 113.68 E	300.99@	22.19	0.00
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.									
8407.00	12.40	65.93	8397.23	93.00	128.46	285.12 N 126.43 E	311.89@	23.91	7.74
8438.00	16.97	71.60	8427.21	31.00	135.82	287.90 N 133.76 E	317.46@	24.92	15.44
8467.00	21.54	65.37	8454.58	29.00	144.71	291.46 N 142.62 E	324.49@	26.07	17.26
8499.00	26.91	76.04	8483.77	32.00	157.12	295.66 N 155.01 E	333.83@	27.67	21.59
8531.00	32.10	82.91	8511.61	32.00	172.62	298.46 N 170.49 E	343.72@	29.74	19.34
8563.00	33.41	92.12	8538.54	32.00	189.88	299.18 N 187.74 E	353.21@	32.11	16.09
8595.00	34.03	98.11	8565.17	32.00	207.54	297.59 N 205.41 E	361.60@	34.62	10.57
8626.00	34.29	103.40	8590.82	31.00	224.60	294.35 N 222.50 E	368.98@	37.09	9.62
8658.00	34.29	105.26	8617.26	32.00	242.03	289.89 N 239.97 E	376.32@	39.62	3.27
8688.00	32.98	104.74	8642.24	30.00	258.05	285.58 N 256.01 E	383.54@	41.88	4.47
8719.00	31.57	100.65	8668.45	31.00	274.16	281.94 N 272.15 E	391.86@	43.99	8.38
8751.00	46.25	104.45	8693.29	32.00	293.66	277.48 N 291.69 E	402.59@	46.43	46.46
8783.00	61.73	102.87	8712.05	32.00	318.70	271.42 N 316.77 E	417.15@	49.41	48.54
8815.00	76.77	102.49	8723.35	32.00	347.77	264.87 N 345.88 E	435.65@	52.56	47.01
8847.00	88.90	100.18	8727.33	32.00	378.80	258.65 N 376.95 E	457.16@	55.54	38.57
8878.00	89.43	94.23	8727.79	31.00	409.51	254.77 N 407.69 E	480.75@	58.00	19.27
8910.00	90.75	91.20	8727.74	32.00	441.45	253.25 N 439.65 E	507.38@	60.06	10.33
8941.00	91.01	89.64	8727.26	31.00	472.45	253.03 N 470.65 E	534.35@	61.74	5.10
8973.00	91.28	89.42	8726.62	32.00	504.44	253.29 N 502.64 E	562.85@	63.26	1.09
9005.00	92.07	88.39	8725.69	32.00	536.42	253.90 N 534.62 E	591.85@	64.60	4.06
9037.00	92.33	88.23	8724.46	32.00	568.39	254.84 N 566.58 E	621.26@	65.78	0.95
9068.00	92.42	88.00	8723.17	31.00	599.35	255.86 N 597.54 E	650.01@	66.82	0.80
9100.00	92.15	88.52	8721.90	32.00	631.32	256.83 N 629.50 E	679.87@	67.80	1.83
9131.00	92.59	88.78	8720.61	31.00	662.29	257.56 N 660.46 E	708.91@	68.70	1.65

SUR: I-33-17s-33e, 1980/S & 990/E
BHL K-34-17s-33e, 2287 / S & 1723 / W
API # 30-025-01374

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Survey Report

LIME ROCK RESOURCES
DENIUS FED #1
LEA COUNTY, NEW MEXICO
RIG:UNITED #41

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
9163.00	92.15	89.00	8719.29	32.00	694.26	258.18 N	692.43 E	739.00@	69.55	1.54
9194.00	92.33	88.46	8718.08	31.00	725.23	258.87 N	723.40 E	768.32@	70.31	1.84
9226.00	91.89	88.08	8716.90	32.00	757.20	259.83 N	755.36 E	798.80@	71.02	1.82
9257.00	91.45	87.98	8716.00	31.00	788.18	260.90 N	786.33 E	828.48@	71.64	1.45
9288.00	91.89	87.37	8715.09	31.00	819.15	262.16 N	817.29 E	858.31@	72.22	2.43
9320.00	92.59	87.25	8713.84	32.00	851.10	263.66 N	849.23 E	889.22@	72.75	2.22
9352.00	92.15	87.83	8712.52	32.00	883.05	265.03 N	881.17 E	920.17@	73.26	2.27
9415.00	92.33	87.96	8710.06	63.00	945.97	267.34 N	944.08 E	981.20@	74.19	0.35
9478.00	92.59	88.20	8707.35	63.00	1008.89	269.45 N	1006.99 E	1042.42@	75.02	0.56
9542.00	92.86	87.43	8704.31	64.00	1072.79	271.89 N	1070.87 E	1104.85@	75.75	1.27
9605.00	92.86	86.65	8701.17	63.00	1135.65	275.14 N	1133.71 E	1166.62@	76.36	1.24
9669.00	93.47	87.23	8697.63	64.00	1199.48	278.55 N	1197.52 E	1229.49@	76.91	1.32
9731.00	93.74	88.64	8693.74	62.00	1261.33	280.78 N	1259.35 E	1290.27@	77.43	2.31
9794.00	93.21	89.59	8689.92	63.00	1324.21	281.75 N	1322.23 E	1351.91@	77.97	1.72
9857.00	91.80	89.52	8687.16	63.00	1387.15	282.24 N	1385.17 E	1413.63@	78.48	2.24
9920.00	91.71	89.71	8685.23	63.00	1450.12	282.66 N	1448.13 E	1475.46@	78.96	0.33
9983.00	91.80	89.48	8683.30	63.00	1513.09	283.10 N	1511.10 E	1537.39@	79.39	0.39
10046.00	91.71	89.86	8681.38	63.00	1576.06	283.47 N	1574.07 E	1599.39@	79.79	0.62
10109.00	91.71	90.17	8679.50	63.00	1639.03	283.45 N	1637.04 E	1661.40@	80.18	0.49
10172.00	91.63	90.54	8677.66	63.00	1702.00	283.06 N	1700.02 E	1723.42@	80.55	0.60
10235.00	91.19	89.89	8676.11	63.00	1764.97	282.82 N	1763.00 E	1785.54@	80.89	1.25
10299.00	90.92	89.58	8674.93	64.00	1828.96	283.12 N	1826.98 E	1848.79@	81.19	0.64
10362.00	90.48	88.65	8674.16	63.00	1891.96	284.09 N	1889.97 E	1911.20@	81.45	1.63
10425.00	90.13	88.77	8673.83	63.00	1954.95	285.51 N	1952.95 E	1973.71@	81.68	0.59
10488.00	90.22	88.17	8673.63	63.00	2017.94	287.19 N	2015.93 E	2036.29@	81.89	0.96
10551.00	91.63	89.23	8672.62	63.00	2080.92	288.62 N	2078.90 E	2098.84@	82.10	2.80
10614.00	91.01	88.91	8671.16	63.00	2143.90	289.65 N	2141.88 E	2161.37@	82.30	1.11
10678.00	90.92	88.17	8670.09	64.00	2207.88	291.28 N	2205.85 E	2225.00@	82.48	1.16
10741.00	91.28	88.73	8668.88	63.00	2270.85	292.98 N	2268.81 E	2287.65@	82.64	1.06

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
10803.00	91.10	88.94	8667.59	62.00	2332.83	294.24 N	2330.79 E	2349.29@	82.81	0.45
10867.00	91.01	88.34	8666.41	64.00	2396.81	295.76 N	2394.76 E	2412.95@	82.96	0.95
10930.00	91.01	87.95	8665.30	63.00	2459.78	297.80 N	2457.72 E	2475.69@	83.09	0.62
10994.00	90.66	87.96	8664.37	64.00	2523.75	300.08 N	2521.67 E	2539.46@	83.21	0.55
11056.00	90.04	88.03	8663.99	62.00	2585.72	302.25 N	2583.63 E	2601.25@	83.33	1.01
11120.00	89.96	87.65	8663.99	64.00	2649.70	304.66 N	2647.58 E	2665.05@	83.44	0.61
STRAIGHT LINE PROJECTION TO BIT @ 11185' MD.										
11185.00	89.96	87.65	8664.03	65.00	2714.66	307.33 N	2712.53 E	2729.88@	83.54	0.00