30-025-43884

McElvain Energy

Lea County, NM (NAD 83)
EK 31 BS2 Federal Com
#1H

OH

Design: OH Surveys 125'-14752' PTB 14796'

Standard Survey Report

29 September, 2017

PRODIRECTIONAL

Pro Directional
Survey Report

PRODIRECTIONAL

Company:	McElvain Energy	**Local Co-ordinate Reference:**	Well #1H
Project:	Lea County, NM (NAD 83)	**TVD Reference:**	Well @ 3919.00usft (GL:3894' + KB:25' (H&P 262))
Site:	EK 31 BS2 Federal Com	**MD Reference:**	Well @ 3919.00usft (GL:3894' + KB:25' (H&P 262))
Well:	#1H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH Surveys 125'-14752' PTB 14796'	**Database:**	WellPlanner1

Project Lea County, NM (NAD 83)

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site EK 31 BS2 Federal Com

Site Position:		**Northing:**	623,478.10 usft	**Latitude:**	32.7118023
From:	Map	**Easting:**	768,752.30 usft	**Longitude:**	-103.5939484
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.40 °

Well #1H

Well Position	**+N/-S**	0.00 usft	**Northing:**	623,478.10 usft	**Latitude:**	32.7118023
	+E/-W	0.00 usft	**Easting:**	768,752.30 usft	**Longitude:**	-103.5939484
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,894.00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	9/8/2017	6.72	60.77	48,352.20

Design OH Surveys 125'-14752' PTB 14796'

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	180.00

Survey Program **Date** 9/29/2017

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
125.00	1,725.00	VES Gyro (OH)	GYRO-NS-CT	OWSG XYZ Accel with XY Static and Continuous
1,910.00	14,796.00	ProMWD #1 (OH)	MWD+HDGM	OWSG MWD + HRGM

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125.00	0.27	225.35	125.00	-0.21	-0.21	0.21	0.22	0.22	0.00
225.00	0.53	177.54	225.00	-0.83	-0.36	0.83	0.40	0.26	-47.81
325.00	0.57	177.14	324.99	-1.79	-0.31	1.79	0.04	0.04	-0.40
425.00	0.25	170.67	424.99	-2.51	-0.25	2.51	0.32	-0.32	-6.47
525.00	0.17	161.07	524.99	-2.86	-0.17	2.86	0.09	-0.08	-9.60
625.00	0.24	200.44	624.99	-3.20	-0.19	3.20	0.15	0.07	39.37
725.00	0.59	167.62	724.99	-3.90	-0.16	3.90	0.41	0.35	-32.82

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Survey

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825.00	0.60	153.22	824.98	-4.87	0.19	4.87	0.15	0.01	-14.40
925.00	0.56	202.55	924.98	-5.79	0.24	5.79	0.49	-0.04	49.33
1,025.00	0.56	169.81	1,024.97	-6.72	0.14	6.72	0.32	0.00	-32.74
1,125.00	0.47	164.41	1,124.97	-7.59	0.33	7.59	0.10	-0.09	-5.40
1,225.00	0.47	178.69	1,224.96	-8.40	0.45	8.40	0.12	0.00	14.28
1,325.00	0.43	178.73	1,324.96	-9.18	0.47	9.18	0.04	-0.04	0.04
1,425.00	0.27	176.26	1,424.96	-9.79	0.49	9.79	0.16	-0.16	-2.47
1,525.00	0.09	122.18	1,524.96	-10.07	0.58	10.07	0.23	-0.18	-54.08
1,625.00	0.20	139.17	1,624.96	-10.25	0.76	10.25	0.12	0.11	16.99
1,725.00	0.10	158.99	1,724.96	-10.46	0.90	10.46	0.11	-0.10	19.82
1,910.00	0.00	249.30	1,909.96	-10.61	0.96	10.61	0.05	-0.05	0.00
2,004.00	0.30	29.70	2,003.96	-10.40	1.08	10.40	0.32	0.32	0.00
2,099.00	0.30	106.30	2,098.96	-10.25	1.44	10.25	0.39	0.00	80.63
2,193.00	0.00	106.90	2,192.96	-10.32	1.68	10.32	0.32	-0.32	0.00
2,288.00	0.30	57.90	2,287.96	-10.19	1.89	10.19	0.32	0.32	0.00
2,382.00	0.50	64.20	2,381.95	-9.88	2.47	9.88	0.22	0.21	6.70
2,477.00	0.30	61.60	2,476.95	-9.58	3.06	9.58	0.21	-0.21	-2.74
2,571.00	0.60	76.00	2,570.95	-9.34	3.75	9.34	0.34	0.32	15.32
2,666.00	1.00	72.00	2,665.94	-8.97	5.03	8.97	0.42	0.42	-4.21
2,760.00	1.20	68.00	2,759.92	-8.34	6.72	8.34	0.23	0.21	-4.26
2,855.00	0.30	121.00	2,854.91	-8.10	7.85	8.10	1.10	-0.95	55.79
2,949.00	0.20	132.30	2,948.91	-8.34	8.19	8.34	0.12	-0.11	12.02
3,044.00	0.10	102.70	3,043.91	-8.47	8.39	8.47	0.13	-0.11	-31.16
3,138.00	0.20	92.40	3,137.91	-8.49	8.63	8.49	0.11	0.11	-10.96
3,233.00	0.30	145.90	3,232.91	-8.70	8.94	8.70	0.25	0.11	56.32
3,327.00	0.10	67.80	3,326.91	-8.88	9.15	8.88	0.31	-0.21	-83.09
3,422.00	0.20	66.30	3,421.91	-8.78	9.38	8.78	0.11	0.11	-1.58
3,516.00	0.10	321.90	3,515.91	-8.65	9.48	8.65	0.26	-0.11	-111.06
3,611.00	0.00	343.80	3,610.91	-8.58	9.43	8.58	0.11	-0.11	0.00
3,705.00	0.30	11.70	3,704.91	-8.34	9.48	8.34	0.32	0.32	0.00
3,800.00	0.40	13.00	3,799.91	-7.78	9.61	7.78	0.11	0.11	1.37
3,895.00	0.20	344.40	3,894.91	-7.29	9.64	7.29	0.26	-0.21	-30.11
3,989.00	0.30	44.40	3,988.91	-6.96	9.76	6.96	0.28	0.11	63.83
4,084.00	0.80	248.20	4,083.90	-7.03	9.32	7.03	1.14	0.53	-164.42
4,179.00	1.50	248.90	4,178.88	-7.72	7.55	7.72	0.74	0.74	0.74
4,273.00	1.30	247.90	4,272.85	-8.57	5.41	8.57	0.21	-0.21	-1.06
4,367.00	1.20	248.60	4,366.83	-9.33	3.51	9.33	0.11	-0.11	0.74
4,462.00	1.30	246.80	4,461.81	-10.11	1.59	10.11	0.11	0.11	-1.89
4,557.00	1.10	244.90	4,556.79	-10.92	-0.23	10.92	0.21	-0.21	-2.00
4,651.00	0.40	266.30	4,650.78	-11.33	-1.37	11.33	0.79	-0.74	22.77
4,745.00	0.10	43.30	4,744.78	-11.29	-1.64	11.29	0.51	-0.32	145.74
4,840.00	0.30	284.70	4,839.78	-11.17	-1.83	11.17	0.38	0.21	-124.84

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Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,015.00	0.10	25.10	5,014.78	-10.91	-2.21	10.91	0.19	-0.11	57.37
5,110.00	0.00	136.20	5,109.78	-10.84	-2.17	10.84	0.11	-0.11	0.00
5,204.00	0.10	148.50	5,203.78	-10.91	-2.13	10.91	0.11	0.11	0.00
5,298.00	0.20	235.60	5,297.78	-11.07	-2.22	11.07	0.23	0.11	92.66
5,392.00	0.20	237.40	5,391.78	-11.25	-2.49	11.25	0.01	0.00	1.91
5,486.00	0.10	7.20	5,485.78	-11.26	-2.62	11.26	0.29	-0.11	138.09
5,580.00	0.10	75.70	5,579.78	-11.16	-2.53	11.16	0.12	0.00	72.87
5,674.00	0.20	354.20	5,673.78	-10.97	-2.47	10.97	0.22	0.11	-86.70
5,768.00	0.20	289.10	5,767.78	-10.76	-2.64	10.76	0.23	0.00	-69.26
5,862.00	0.10	185.80	5,861.78	-10.78	-2.80	10.78	0.26	-0.11	-109.89
5,956.00	0.10	226.80	5,955.78	-10.92	-2.87	10.92	0.07	0.00	43.62
6,051.00	0.20	332.00	6,050.78	-10.83	-3.01	10.83	0.26	0.11	110.74
6,145.00	0.10	29.40	6,144.78	-10.62	-3.05	10.62	0.18	-0.11	61.06
6,239.00	1.20	220.90	6,238.77	-11.29	-3.65	11.29	1.38	1.17	-179.26
6,333.00	0.20	277.50	6,332.76	-12.01	-4.46	12.01	1.17	-1.06	60.21
6,427.00	0.30	193.80	6,426.76	-12.23	-4.68	12.23	0.36	0.11	-89.04
6,521.00	0.30	210.30	6,520.76	-12.68	-4.86	12.68	0.09	0.00	17.55
6,615.00	0.00	76.50	6,614.76	-12.89	-4.99	12.89	0.32	-0.32	0.00
6,709.00	0.10	219.00	6,708.76	-12.96	-5.04	12.96	0.11	0.11	0.00
6,803.00	0.30	142.60	6,802.76	-13.22	-4.94	13.22	0.31	0.21	-81.28
6,897.00	0.30	148.20	6,896.76	-13.62	-4.66	13.62	0.03	0.00	5.96
6,991.00	0.30	247.00	6,990.76	-13.93	-4.76	13.93	0.48	0.00	105.11
7,085.00	0.20	245.60	7,084.76	-14.09	-5.13	14.09	0.11	-0.11	-1.49
7,179.00	0.40	260.70	7,178.75	-14.21	-5.61	14.21	0.23	0.21	16.06
7,273.00	0.30	253.20	7,272.75	-14.33	-6.17	14.33	0.12	-0.11	-7.98
7,367.00	0.40	204.50	7,366.75	-14.70	-6.54	14.70	0.32	0.11	-51.81
7,461.00	0.50	218.80	7,460.75	-15.32	-6.93	15.32	0.16	0.11	15.21
7,556.00	0.40	250.40	7,555.75	-15.76	-7.50	15.76	0.28	-0.11	33.26
7,650.00	0.60	337.00	7,649.74	-15.41	-8.00	15.41	0.75	0.21	92.13
7,744.00	0.80	330.10	7,743.74	-14.39	-8.52	14.39	0.23	0.21	-7.34
7,839.00	0.80	336.20	7,838.73	-13.21	-9.12	13.21	0.09	0.00	6.42
7,933.00	0.50	317.00	7,932.72	-12.31	-9.67	12.31	0.39	-0.32	-20.43
8,027.00	0.80	278.40	8,026.72	-11.91	-10.60	11.91	0.55	0.32	-41.06
8,122.00	2.20	217.00	8,121.68	-13.27	-12.35	13.27	2.05	1.47	-64.63
8,216.00	3.30	196.00	8,215.58	-17.31	-14.18	17.31	1.57	1.17	-22.34
8,311.00	6.10	189.60	8,310.25	-24.92	-15.78	24.92	2.99	2.95	-6.74
8,406.00	5.90	188.60	8,404.73	-34.73	-17.35	34.73	0.24	-0.21	-1.05
8,500.00	4.90	186.90	8,498.31	-43.49	-18.55	43.49	1.08	-1.06	-1.81
8,594.00	4.30	188.00	8,592.01	-50.96	-19.53	50.96	0.65	-0.64	1.17
8,689.00	3.50	183.00	8,686.79	-57.39	-20.17	57.39	0.91	-0.84	-5.26
8,783.00	4.10	181.70	8,780.58	-63.61	-20.42	63.61	0.64	0.64	-1.38
8,878.00	5.50	183.70	8,875.24	-71.55	-20.82	71.55	1.48	1.47	2.11

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8,972.00	5.50	189.90	8,968.81	-80.48	-21.88	80.48	0.63	0.00	6.60
9,067.00	5.40	183.70	9,063.38	-89.43	-22.95	89.43	0.63	-0.11	-6.53
9,161.00	5.00	183.70	9,157.00	-97.93	-23.50	97.93	0.43	-0.43	0.00
9,256.00	4.00	183.30	9,251.70	-105.37	-23.96	105.37	1.05	-1.05	-0.42
9,380.00	4.20	187.50	9,375.39	-114.19	-24.80	114.19	0.29	0.16	3.39
9,412.00	6.80	204.70	9,407.24	-117.07	-25.75	117.07	9.53	8.13	53.75
9,443.00	10.50	205.00	9,437.88	-121.30	-27.71	121.30	11.94	11.94	0.97
9,475.00	14.00	203.20	9,469.15	-127.50	-30.47	127.50	11.00	10.94	-5.63
9,506.00	17.70	200.20	9,498.96	-135.38	-33.57	135.38	12.22	11.94	-9.68
9,538.00	20.80	197.50	9,529.17	-145.36	-36.96	145.36	10.08	9.69	-8.44
9,570.00	23.50	193.90	9,558.81	-156.98	-40.20	156.98	9.44	8.44	-11.25
9,601.00	26.20	188.30	9,586.94	-169.75	-42.68	169.75	11.55	8.71	-18.06
9,632.00	29.40	183.10	9,614.36	-184.13	-44.08	184.13	12.94	10.32	-16.77
9,664.00	32.40	179.60	9,641.82	-200.55	-44.44	200.55	10.93	9.38	-10.94
9,695.00	35.80	177.80	9,667.48	-217.92	-44.04	217.92	11.44	10.97	-5.81
9,727.00	39.30	177.20	9,692.85	-237.40	-43.18	237.40	11.00	10.94	-1.88
9,758.00	42.80	178.90	9,716.23	-257.74	-42.50	257.74	11.85	11.29	5.48
9,790.00	46.70	180.30	9,738.95	-280.27	-42.35	280.27	12.57	12.19	4.38
9,821.00	50.20	181.10	9,759.51	-303.46	-42.64	303.46	11.45	11.29	2.58
9,853.00	53.60	180.80	9,779.25	-328.63	-43.06	328.63	10.65	10.63	-0.94
9,884.00	56.70	180.30	9,796.96	-354.07	-43.30	354.07	10.09	10.00	-1.61
9,916.00	59.60	178.90	9,813.85	-381.25	-43.10	381.25	9.79	9.06	-4.38
9,947.00	62.50	178.60	9,828.85	-408.36	-42.51	408.36	9.39	9.35	-0.97
9,979.00	65.60	179.10	9,842.85	-437.13	-41.93	437.13	9.79	9.69	1.56
9,998.14	67.64	179.54	9,850.45	-454.69	-41.73	454.69	10.85	10.64	2.28
Sec. 31 330' HL Entry: 9998.14' MD, 9850.45' TVD									
10,010.00	68.90	179.80	9,854.84	-465.71	-41.66	465.71	10.85	10.65	2.22
10,042.00	72.30	180.50	9,865.47	-495.89	-41.74	495.89	10.82	10.63	2.19
10,073.00	75.10	181.70	9,874.17	-525.63	-42.32	525.63	9.77	9.03	3.87
10,105.00	77.40	181.70	9,881.77	-556.70	-43.24	556.70	7.19	7.19	0.00
10,136.00	80.10	181.00	9,887.82	-587.09	-43.95	587.09	8.99	8.71	-2.26
10,168.00	83.20	179.80	9,892.47	-618.75	-44.17	618.75	10.37	9.69	-3.75
10,231.00	87.30	177.90	9,897.68	-681.50	-42.91	681.50	7.17	6.51	-3.02
10,308.00	87.70	177.60	9,901.04	-758.37	-39.89	758.37	0.65	0.52	-0.39
10,402.00	89.50	177.90	9,903.34	-852.27	-36.20	852.27	1.94	1.91	0.32
10,497.00	88.60	177.10	9,904.91	-947.16	-32.06	947.16	1.27	-0.95	-0.84
10,591.00	89.40	177.00	9,906.55	-1,041.02	-27.22	1,041.02	0.86	0.85	-0.11
10,686.00	87.80	177.00	9,908.87	-1,135.86	-22.25	1,135.86	1.68	-1.68	0.00
10,781.00	88.30	177.40	9,912.11	-1,230.69	-17.61	1,230.69	0.67	0.53	0.42
10,875.00	89.10	177.40	9,914.24	-1,324.57	-13.35	1,324.57	0.85	0.85	0.00
10,969.00	88.20	178.00	9,916.45	-1,418.47	-9.58	1,418.47	1.15	-0.96	0.64
11,063.00	88.00	178.20	9,919.57	-1,512.36	-6.46	1,512.36	0.30	-0.21	0.21

Company:	McElvain Energy	**Local Co-ordinate Reference:**	Well #1H
Project:	Lea County, NM (NAD 83)	**TVD Reference:**	Well @ 3919.00usft (GL:3894' + KB:25' (H&P 262))
Site:	EK 31 BS2 Federal Com	**MD Reference:**	Well @ 3919.00usft (GL:3894' + KB:25' (H&P 262))
Well:	#1H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH Surveys 125'-14752' PTB 14796'	**Database:**	WellPlanner1

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,157.00	86.80	179.00	9,923.83	-1,606.24	-4.17	1,606.24	1.53	-1.28	0.85
11,251.00	87.30	178.50	9,928.67	-1,700.09	-2.12	1,700.09	0.75	0.53	-0.53
11,345.00	87.60	178.00	9,932.85	-1,793.95	0.75	1,793.95	0.62	0.32	-0.53
11,439.00	86.60	178.60	9,937.61	-1,887.79	3.53	1,887.79	1.24	-1.06	0.64
11,533.00	87.90	178.20	9,942.12	-1,981.64	6.15	1,981.64	1.45	1.38	-0.43
11,627.00	88.00	178.90	9,945.48	-2,075.55	8.53	2,075.55	0.75	0.11	0.74
11,721.00	88.10	179.60	9,948.68	-2,169.49	9.76	2,169.49	0.75	0.11	0.74
11,816.00	88.50	179.60	9,951.50	-2,264.44	10.42	2,264.44	0.42	0.42	0.00
11,910.00	88.80	179.10	9,953.71	-2,358.41	11.49	2,358.41	0.62	0.32	-0.53
12,004.00	89.40	180.40	9,955.19	-2,452.39	11.90	2,452.39	1.52	0.64	1.38
12,098.00	89.60	179.00	9,956.01	-2,546.39	12.39	2,546.39	1.50	0.21	-1.49
12,192.00	90.80	179.70	9,955.68	-2,640.38	13.46	2,640.38	1.48	1.28	0.74
12,286.00	89.50	181.10	9,955.44	-2,734.37	12.80	2,734.37	2.03	-1.38	1.49
12,380.00	90.40	180.80	9,955.52	-2,828.36	11.24	2,828.36	1.01	0.96	-0.32
12,474.00	90.50	179.70	9,954.78	-2,922.35	10.83	2,922.35	1.18	0.11	-1.17
12,568.00	88.90	180.60	9,955.27	-3,016.35	10.59	3,016.35	1.95	-1.70	0.96
12,662.00	89.70	179.70	9,956.42	-3,110.34	10.34	3,110.34	1.28	0.85	-0.96
12,756.00	89.00	180.50	9,957.49	-3,204.33	10.18	3,204.33	1.13	-0.74	0.85
12,850.00	87.30	180.80	9,960.52	-3,298.27	9.11	3,298.27	1.84	-1.81	0.32
12,944.00	85.80	181.10	9,966.18	-3,392.09	7.56	3,392.09	1.63	-1.60	0.32
13,038.00	85.70	181.60	9,973.14	-3,485.80	5.35	3,485.80	0.54	-0.11	0.53
13,132.00	86.50	182.20	9,979.54	-3,579.53	2.24	3,579.53	1.06	0.85	0.64
13,226.00	88.00	182.80	9,984.05	-3,673.33	-1.86	3,673.33	1.72	1.60	0.64
13,321.00	89.40	183.20	9,986.20	-3,768.17	-6.83	3,768.17	1.53	1.47	0.42
13,415.00	89.60	183.00	9,987.02	-3,862.03	-11.91	3,862.03	0.30	0.21	-0.21
13,510.00	91.00	182.60	9,986.53	-3,956.91	-16.55	3,956.91	1.53	1.47	-0.42
13,604.00	90.30	182.80	9,985.46	-4,050.80	-20.98	4,050.80	0.77	-0.74	0.21
13,698.00	90.70	181.90	9,984.64	-4,144.72	-24.83	4,144.72	1.05	0.43	-0.96
13,792.00	90.60	182.40	9,983.57	-4,238.65	-28.36	4,238.65	0.54	-0.11	0.53
13,887.00	89.70	181.90	9,983.32	-4,333.58	-31.93	4,333.58	1.08	-0.95	-0.53
13,982.00	89.80	181.70	9,983.74	-4,428.53	-34.91	4,428.53	0.24	0.11	-0.21
14,076.00	89.40	181.50	9,984.39	-4,522.49	-37.53	4,522.49	0.48	-0.43	-0.21
14,171.00	88.70	181.70	9,985.97	-4,617.44	-40.19	4,617.44	0.77	-0.74	0.21
14,265.00	86.70	181.50	9,989.74	-4,711.32	-42.81	4,711.32	2.14	-2.13	-0.21
14,360.00	87.40	181.10	9,994.63	-4,806.17	-44.96	4,806.17	0.85	0.74	-0.42
14,454.00	87.60	180.20	9,998.73	-4,900.08	-46.03	4,900.08	0.98	0.21	-0.96
14,549.00	85.50	178.50	10,004.45	-4,994.89	-44.95	4,994.89	2.84	-2.21	-1.79
14,630.84	85.94	178.33	10,010.56	-5,076.47	-42.69	5,076.47	0.57	0.53	-0.21
Sec. 31 330' HL Exit: 14630.84' MD, 10010.56' TVD									
14,643.00	86.00	178.30	10,011.41	-5,088.59	-42.33	5,088.59	0.57	0.53	-0.21
14,738.00	86.20	178.10	10,017.88	-5,183.33	-39.36	5,183.33	0.30	0.21	-0.21
14,752.00	86.30	178.40	10,018.79	-5,197.29	-38.93	5,197.29	2.25	0.71	2.14

Company:	McElvain Energy	**Local Co-ordinate Reference:**	Well #1H
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Site:	EK 31 BS2 Federal Com	**MD Reference:**	Well @ 3919.00usft (GL:3894' + KB:25' (H&P 262))
Well:	#1H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH Surveys 125'-14752' PTB 14796'	**Database:**	WellPlanner1

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
Last Survey: 14752.00' MD, 10018.79' TVD									
14,796.00	86.30	178.40	10,021.63	-5,241.18	-37.70	5,241.18	0.00	0.00	0.00
PTB: 14796.00' MD, 10021.63' TVD									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
9,998.14	9,850.45	-454.69	-41.73	Sec. 31 330' HL Entry: 9998.14' MD, 9850.45' TVD
14,630.84	10,010.56	-5,076.47	-42.69	Sec. 31 330' HL Exit: 14630.84' MD, 10010.56' TVD
14,752.00	10,018.79	-5,197.29	-38.93	Last Survey: 14752.00' MD, 10018.79' TVD
14,796.00	10,021.63	-5,241.18	-37.70	PTB: 14796.00' MD, 10021.63' TVD

Checked By: _____ Approved By: _____ Date: _____

Radial Cement Bond Gamma Ray CCL Log

Company Mcelvain Energy Inc.
Well EK 31 BS2 Federal Com #1H
Field EK Bone Spring
County Lea State New Mexico

Location: API # :

230' FNL & 660 FEL
Section 31

SEC TWP RGE

Other Services

Elevation

Permanent Datum Ground Level Elevation 3894'
Log Measured From KB 25' APD
Drilling Measured From KB

K.B. 3919'
D.F. 3918'
G.L. 3894'

Date	11/15/2017		
Run Number	One		
Depth Driller	14796'		
Depth Logger	10020'		
Bottom Logged Interval	10019'		
Top Log Interval	1800'		
Open Hole Size	7 5/8"		
Type Fluid	Water		
Density / Viscosity	-		
Max. Recorded Temp.	-		
Estimated Cement Top			
Time Well Ready	On Arrival		
Time Logger on Bottom	See Log		
Equipment Number	WL 821		
Location	Hobbs, New Mexico		
Recorded By	R. Utajara		
Witnessed By	Mr. Brian O Dell		

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	13 3/8"	54.5#	Surface	1820'
Prot. String	9 5/8"	40#	Surface	4936'
Production String	5 1/2"	20#	Surface	14776'
Liner				
			Marker Joint	9202'-9221'

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Comments

**********Thank you for using Capitan Corporation**********

Main Pass 5"=100'

Database File:	mcelvain_energy_ek_31_bs2_fed_com_1h.db
Dataset Pathname:	pass7
Presentation Format:	rbl55
Dataset Creation:	Wed Nov 15 11:58:17 2017 by Log 7.0 B1
Charted by:	Depth in Feet scaled 1:240

343	TT (usec)	243
0	GR (GAPI)	150
0	LTEN (lb)	4000
	CCL	

0	Amplitude (mV)	100
	Amplified Amplitude	
0	(mV)	10

-5	AMPS2	150
-5	AMPS3	150
-5	AMPS4	150
-5	AMPS5	150
-5	AMPS6	150
-5	AMPS7	150
-5	AMPS8	150
-5	AMPS1	150

200	VDL	1200
	Free Pipe Gate	

Cement Map: 1 – 80