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McElvain Energy

Lea County, NM (NAD 83)
EK 30 BS2 Federal Com
#2H

OH

Design: OH Surveys 125'-14810' PTB 14860'

Standard Survey Report

31 October, 2017





Pro Directional Survey Report



Company:	McElvain Energy	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD 83)	TVD Reference:	Well @ 3919.00usft (GL:3894' + KB:25' (H&P 262))
Site:	EK 30 BS2 Federal Com	MD Reference:	Well @ 3919.00usft (GL:3894' + KB:25' (H&P 262))
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH Surveys 125'-14810' PTB 14860'	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 30 BS2 Federal Com			
Site Position:		Northing:	623,529.00 usft	Latitude:	32.7119416
From:	Map	Easting:	768,784.00 usft	Longitude:	-103.5938442
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.40 °

Well	#2H					
Well Position	+N/-S	0.00 usft	Northing:	623,503.60 usf	Latitude:	32.7118721
	+E/-W	0.00 usft	Easting:	768,768.20 usf	Longitude:	-103.5938961
Position Uncertainty		0.00 usft	Wellhead Elevation:	usf	Ground Level:	3,894.00 usf

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	10/12/2017	6.72	60.77	48,342.00

Design	OH Surveys 125'-14810' PTB 14860'				
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	359.48	

Survey Program	Date 10/31/2017				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
125.00	1,736.00	VES Gyro (OH)	GYRO-NS-CT	OWSG XYZ Accel with XY Static and Continuous	
1,911.00	14,860.00	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	0.28	320.66	125.00	0.24	-0.19	0.24	0.22	0.22	0.00	
225.00	0.23	247.41	225.00	0.35	-0.53	0.35	0.31	-0.05	-73.25	
325.00	0.25	326.24	325.00	0.45	-0.84	0.46	0.31	0.02	78.83	
425.00	0.19	344.82	425.00	0.79	-1.01	0.80	0.09	-0.06	18.58	
525.00	0.01	318.98	525.00	0.96	-1.05	0.97	0.18	-0.18	-25.84	
625.00	0.22	243.54	625.00	0.88	-1.23	0.89	0.22	0.21	-75.44	
725.00	0.22	246.38	725.00	0.72	-1.58	0.73	0.01	0.00	2.84	



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Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH Surveys 125'-14810' PTB 14860'	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)	
825.00	0.03	295.42	825.00	0.65	-1.78	0.67	0.20	-0.19	49.04	
925.00	0.22	317.17	925.00	0.81	-1.93	0.82	0.19	0.19	21.75	
1,025.00	0.20	215.00	1,025.00	0.80	-2.16	0.82	0.33	-0.02	-102.17	
1,125.00	0.13	186.40	1,124.99	0.55	-2.28	0.57	0.11	-0.07	-28.60	
1,225.00	0.15	72.38	1,224.99	0.47	-2.16	0.49	0.24	0.02	-114.02	
1,325.00	0.23	65.95	1,324.99	0.60	-1.86	0.61	0.08	0.08	-6.43	
1,425.00	0.20	181.56	1,424.99	0.50	-1.68	0.52	0.36	-0.03	115.61	
1,525.00	0.18	1.23	1,524.99	0.49	-1.68	0.50	0.38	-0.02	179.67	
1,625.00	0.16	310.28	1,624.99	0.73	-1.78	0.75	0.15	-0.02	-50.95	
1,725.00	0.20	351.44	1,724.99	1.00	-1.91	1.01	0.13	0.04	41.16	
1,736.00	0.21	20.93	1,735.99	1.03	-1.91	1.05	0.95	0.09	268.09	
1,911.00	0.10	26.80	1,910.99	1.47	-1.73	1.49	0.06	-0.06	3.35	
2,005.00	0.40	253.50	2,004.99	1.45	-2.00	1.47	0.50	0.32	-141.81	
2,100.00	1.70	256.60	2,099.97	1.03	-3.69	1.06	1.37	1.37	3.26	
2,194.00	3.90	255.10	2,193.86	-0.12	-8.14	-0.04	2.34	2.34	-1.60	
2,289.00	6.30	258.00	2,288.47	-2.03	-16.36	-1.88	2.54	2.53	3.05	
2,383.00	8.70	261.20	2,381.66	-4.19	-28.43	-3.93	2.59	2.55	3.40	
2,478.00	9.90	264.40	2,475.41	-6.09	-43.66	-5.69	1.37	1.26	3.37	
2,572.00	10.40	265.20	2,567.94	-7.59	-60.16	-7.04	0.55	0.53	0.85	
2,667.00	11.10	264.90	2,661.27	-9.12	-77.81	-8.41	0.74	0.74	-0.32	
2,761.00	10.40	265.80	2,753.62	-10.54	-95.29	-9.68	0.77	-0.74	0.96	
2,856.00	9.10	262.20	2,847.25	-12.19	-111.28	-11.18	1.51	-1.37	-3.79	
2,950.00	9.00	262.10	2,940.08	-14.21	-125.93	-13.07	0.11	-0.11	-0.11	
3,045.00	9.70	263.10	3,033.82	-16.19	-141.24	-14.91	0.76	0.74	1.05	
3,139.00	8.40	264.20	3,126.64	-17.84	-155.93	-16.42	1.40	-1.38	1.17	
3,234.00	7.70	262.00	3,220.71	-19.42	-169.13	-17.89	0.80	-0.74	-2.32	
3,328.00	7.70	264.10	3,313.86	-20.95	-181.63	-19.30	0.30	0.00	2.23	
3,423.00	7.70	266.90	3,408.00	-21.95	-194.32	-20.18	0.39	0.00	2.95	
3,517.00	7.70	268.40	3,501.16	-22.46	-206.90	-20.58	0.21	0.00	1.60	
3,612.00	7.90	269.30	3,595.28	-22.72	-219.79	-20.72	0.25	0.21	0.95	
3,706.00	8.80	260.30	3,688.28	-24.01	-233.34	-21.89	1.69	0.96	-9.57	
3,801.00	9.40	257.10	3,782.09	-26.97	-248.07	-24.71	0.83	0.63	-3.37	
3,896.00	9.20	264.50	3,875.84	-29.43	-263.19	-27.04	1.28	-0.21	7.79	
3,990.00	9.40	266.30	3,968.61	-30.64	-278.33	-28.12	0.38	0.21	1.91	
4,085.00	9.20	267.30	4,062.36	-31.50	-293.66	-28.83	0.27	-0.21	1.05	
4,180.00	8.60	266.40	4,156.22	-32.31	-308.33	-29.51	0.65	-0.63	-0.95	
4,274.00	9.10	264.80	4,249.10	-33.42	-322.75	-30.49	0.59	0.53	-1.70	
4,368.00	9.80	264.50	4,341.82	-34.86	-338.12	-31.79	0.75	0.74	-0.32	
4,463.00	10.70	264.80	4,435.30	-36.43	-354.95	-33.21	0.95	0.95	0.32	
4,558.00	9.70	264.90	4,528.80	-37.95	-371.70	-34.57	1.05	-1.05	0.11	
4,652.00	8.00	265.30	4,621.68	-39.19	-386.11	-35.68	1.81	-1.81	0.43	
4,746.00	8.00	263.90	4,714.76	-40.42	-399.13	-36.79	0.21	0.00	-1.49	



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Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH Surveys 125'-14810' PTB 14860'	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)
4,841.00	8.70	263.70	4,808.76	-41.91	-412.85	-38.16	0.74	0.74	-0.21
4,870.00	8.80	264.50	4,837.42	-42.36	-417.23	-38.57	0.54	0.34	2.76
5,011.00	9.20	265.50	4,976.68	-44.28	-439.21	-40.29	0.30	0.28	0.71
5,105.00	8.80	264.50	5,069.52	-45.56	-453.86	-41.44	0.46	-0.43	-1.06
5,199.00	8.80	265.30	5,162.42	-46.84	-468.18	-42.59	0.13	0.00	0.85
5,294.00	8.60	266.00	5,256.32	-47.93	-482.51	-43.55	0.24	-0.21	0.74
5,388.00	8.40	267.20	5,349.29	-48.75	-496.38	-44.25	0.28	-0.21	1.28
5,482.00	8.50	268.10	5,442.27	-49.32	-510.18	-44.69	0.18	0.11	0.96
5,576.00	8.30	269.00	5,535.26	-49.67	-523.90	-44.91	0.25	-0.21	0.96
5,670.00	7.90	271.30	5,628.33	-49.64	-537.15	-44.76	0.55	-0.43	2.45
5,764.00	7.60	271.20	5,721.47	-49.36	-549.82	-44.37	0.32	-0.32	-0.11
5,858.00	7.50	271.90	5,814.65	-49.03	-562.17	-43.92	0.14	-0.11	0.74
5,953.00	7.20	272.50	5,908.87	-48.56	-574.31	-43.35	0.33	-0.32	0.63
6,047.00	6.80	273.10	6,002.17	-48.01	-585.75	-42.69	0.43	-0.43	0.64
6,141.00	7.70	269.00	6,095.42	-47.81	-597.61	-42.39	1.10	0.96	-4.36
6,235.00	7.80	268.60	6,188.56	-48.08	-610.28	-42.54	0.12	0.11	-0.43
6,328.00	7.20	265.90	6,280.76	-48.65	-622.40	-43.00	0.75	-0.65	-2.90
6,422.00	6.60	263.40	6,374.08	-49.69	-633.64	-43.94	0.71	-0.64	-2.66
6,516.00	8.00	264.20	6,467.32	-50.98	-645.52	-45.11	1.49	1.49	0.85
6,610.00	9.90	263.10	6,560.17	-52.61	-660.05	-46.61	2.03	2.02	-1.17
6,704.00	9.50	261.00	6,652.83	-54.79	-675.73	-48.66	0.57	-0.43	-2.23
6,798.00	9.30	259.50	6,745.56	-57.39	-690.86	-51.12	0.34	-0.21	-1.60
6,893.00	8.80	260.70	6,839.38	-59.96	-705.58	-53.56	0.56	-0.53	1.26
6,987.00	7.90	259.70	6,932.38	-62.28	-719.03	-55.75	0.97	-0.96	-1.06
7,081.00	9.10	259.40	7,025.35	-64.80	-732.70	-58.15	1.28	1.28	-0.32
7,176.00	8.80	259.40	7,119.19	-67.52	-747.22	-60.74	0.32	-0.32	0.00
7,270.00	8.20	258.80	7,212.16	-70.15	-760.87	-63.24	0.65	-0.64	-0.64
7,364.00	7.40	259.60	7,305.29	-72.54	-773.40	-65.52	0.86	-0.85	0.85
7,459.00	6.80	260.30	7,399.56	-74.59	-784.96	-67.47	0.64	-0.63	0.74
7,554.00	7.80	263.90	7,493.79	-76.22	-796.91	-68.99	1.16	1.05	3.79
7,648.00	7.30	263.10	7,586.98	-77.62	-809.18	-70.27	0.54	-0.53	-0.85
7,743.00	6.20	263.20	7,681.32	-78.95	-820.27	-71.51	1.16	-1.16	0.11
7,837.00	6.80	262.00	7,774.71	-80.33	-830.82	-72.78	0.65	0.64	-1.28
7,931.00	7.60	262.50	7,867.97	-81.91	-842.49	-74.26	0.85	0.85	0.53
8,026.00	8.30	260.60	7,962.06	-83.85	-855.49	-76.09	0.79	0.74	-2.00
8,121.00	7.00	260.00	8,056.21	-85.98	-867.95	-78.10	1.37	-1.37	-0.63
8,215.00	6.00	256.70	8,149.60	-88.10	-878.38	-80.13	1.14	-1.06	-3.51
8,310.00	5.30	255.80	8,244.14	-90.32	-887.46	-82.26	0.74	-0.74	-0.95
8,404.00	5.00	253.20	8,337.76	-92.57	-895.59	-84.44	0.40	-0.32	-2.77
8,498.00	3.90	247.60	8,431.48	-94.97	-902.47	-86.78	1.26	-1.17	-5.96
8,593.00	3.30	247.10	8,526.29	-97.27	-907.98	-89.02	0.63	-0.63	-0.53
8,687.00	2.70	248.30	8,620.16	-99.14	-912.52	-90.85	0.64	-0.64	1.28



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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
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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)
8,782.00	2.50	250.30	8,715.06	-100.67	-916.55	-92.34	0.23	-0.21	2.11
8,876.00	2.20	254.30	8,808.98	-101.85	-920.22	-93.49	0.36	-0.32	4.26
8,970.00	1.90	256.60	8,902.92	-102.69	-923.47	-94.31	0.33	-0.32	2.45
9,065.00	1.90	254.30	8,997.87	-103.49	-926.52	-95.07	0.08	0.00	-2.42
9,159.00	1.60	263.30	9,091.83	-104.06	-929.33	-95.62	0.43	-0.32	9.57
9,254.00	1.30	266.70	9,186.80	-104.28	-931.72	-95.82	0.33	-0.32	3.58
9,348.00	1.00	304.90	9,280.78	-103.87	-933.46	-95.39	0.86	-0.32	40.64
9,430.00	1.20	283.00	9,362.76	-103.27	-934.88	-94.78	0.56	0.24	-26.71
9,474.00	1.40	271.20	9,406.75	-103.15	-935.87	-94.65	0.76	0.45	-26.82
9,506.00	3.00	311.00	9,438.73	-102.59	-936.89	-94.09	6.63	5.00	124.38
9,537.00	5.80	339.30	9,469.64	-100.60	-938.06	-92.08	11.17	9.03	91.29
9,569.00	9.40	350.80	9,501.35	-96.50	-939.05	-87.98	12.16	11.25	35.94
9,600.00	13.00	351.60	9,531.76	-90.55	-939.96	-82.02	11.62	11.61	2.58
9,632.00	15.80	355.10	9,562.75	-82.65	-940.86	-74.11	9.16	8.75	10.94
9,663.00	19.10	359.60	9,592.32	-73.37	-941.25	-64.82	11.49	10.65	14.52
9,695.00	22.40	0.60	9,622.24	-62.03	-941.23	-53.49	10.37	10.31	3.13
9,726.00	25.60	359.00	9,650.56	-49.43	-941.28	-40.88	10.53	10.32	-5.16
9,758.00	28.70	357.40	9,679.03	-34.84	-941.75	-26.29	9.95	9.69	-5.00
9,789.00	31.20	355.60	9,705.89	-19.39	-942.70	-10.84	8.57	8.06	-5.81
9,820.00	34.40	354.90	9,731.94	-2.66	-944.10	5.91	10.39	10.32	-2.26
9,852.00	38.20	354.80	9,757.73	16.20	-945.80	24.79	11.88	11.88	-0.31
9,884.00	41.30	352.40	9,782.33	36.53	-948.09	45.13	10.81	9.69	-7.50
9,915.00	44.10	353.10	9,805.11	57.38	-950.74	66.01	9.16	9.03	2.26
9,946.00	47.00	353.90	9,826.82	79.37	-953.24	88.02	9.53	9.35	2.58
9,978.00	50.90	353.90	9,847.83	103.36	-955.81	112.03	12.19	12.19	0.00
10,009.00	55.80	356.00	9,866.33	128.13	-957.98	136.82	16.71	15.81	6.77
10,041.00	60.70	356.90	9,883.16	155.28	-959.66	163.98	15.50	15.31	2.81
10,061.99	64.29	356.63	9,892.85	173.86	-960.71	182.57	17.14	17.10	-1.31
330' Hardline Entry ("FTP"): 10061.99' MD									
10,072.00	66.00	356.50	9,897.06	182.93	-961.26	191.64	17.14	17.10	-1.25
10,104.00	71.70	355.80	9,908.60	212.69	-963.26	221.43	17.93	17.81	-2.19
10,135.00	77.00	356.00	9,916.96	242.46	-965.40	251.21	17.11	17.10	0.65
10,167.00	82.30	355.30	9,922.71	273.83	-967.79	282.61	16.70	16.56	-2.19
10,230.00	90.70	354.50	9,926.55	336.41	-973.37	345.23	13.39	13.33	-1.27
10,324.00	91.50	355.20	9,924.75	430.01	-981.81	438.90	1.13	0.85	0.74
10,419.00	91.90	356.90	9,921.93	524.74	-988.35	533.69	1.84	0.42	1.79
10,513.00	91.70	0.50	9,918.97	618.65	-990.48	627.62	3.83	-0.21	3.83
10,608.00	92.10	359.90	9,915.82	713.60	-990.15	722.56	0.76	0.42	-0.63
10,702.00	92.60	359.60	9,911.97	807.52	-990.56	816.48	0.62	0.53	-0.32
10,770.00	93.10	358.90	9,908.59	875.43	-991.45	884.39	1.26	0.74	-1.03
10,864.00	93.90	1.00	9,902.85	969.25	-991.53	978.21	2.39	0.85	2.23
10,958.00	92.80	2.50	9,897.36	1,063.04	-988.66	1,071.97	1.98	-1.17	1.60



Pro Directional Survey Report



Company:	McElvain Energy	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD 83)	TVD Reference:	Well @ 3919.00usft (GL:3894' + KB:25' (H&P 262))
Site:	EK 30 BS2 Federal Com	MD Reference:	Well @ 3919.00usft (GL:3894' + KB:25' (H&P 262))
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH Surveys 125'-14810' PTB 14860'	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)
11,052.00	92.10	2.80	9,893.34	1,156.85	-984.32	1,165.74	0.81	-0.74	0.32
11,146.00	90.60	2.50	9,891.12	1,250.72	-979.98	1,259.57	1.63	-1.60	-0.32
11,240.00	89.60	0.50	9,890.96	1,344.69	-977.52	1,353.50	2.38	-1.06	-2.13
11,335.00	91.10	0.50	9,890.38	1,439.68	-976.69	1,448.48	1.58	1.58	0.00
11,429.00	90.70	359.00	9,888.90	1,533.66	-977.10	1,542.47	1.65	-0.43	-1.60
11,523.00	92.30	359.30	9,886.44	1,627.62	-978.49	1,636.43	1.73	1.70	0.32
11,617.00	91.10	358.60	9,883.65	1,721.56	-980.21	1,730.38	1.48	-1.28	-0.74
11,711.00	89.10	358.20	9,883.49	1,815.52	-982.84	1,824.36	2.17	-2.13	-0.43
11,805.00	89.70	358.70	9,884.47	1,909.48	-985.38	1,918.34	0.83	0.64	0.53
11,899.00	88.00	358.20	9,886.36	2,003.42	-987.92	2,012.30	1.89	-1.81	-0.53
11,993.00	88.30	359.60	9,889.40	2,097.35	-989.73	2,106.25	1.52	0.32	1.49
12,086.00	89.60	358.50	9,891.10	2,190.32	-991.27	2,199.22	1.83	1.40	-1.18
12,180.00	90.70	357.80	9,890.85	2,284.27	-994.30	2,293.20	1.39	1.17	-0.74
12,274.00	91.10	357.80	9,889.38	2,378.19	-997.91	2,387.14	0.43	0.43	0.00
12,368.00	92.00	357.80	9,886.83	2,472.08	-1,001.52	2,481.07	0.96	0.96	0.00
12,463.00	92.80	357.80	9,882.86	2,566.93	-1,005.16	2,575.94	0.84	0.84	0.00
12,557.00	91.80	357.40	9,879.08	2,660.77	-1,009.09	2,669.82	1.15	-1.06	-0.43
12,651.00	92.50	357.00	9,875.56	2,754.59	-1,013.68	2,763.67	0.86	0.74	-0.43
12,746.00	91.10	356.40	9,872.57	2,849.38	-1,019.15	2,858.51	1.60	-1.47	-0.63
12,840.00	89.80	356.10	9,871.84	2,943.17	-1,025.30	2,952.36	1.42	-1.38	-0.32
12,935.00	90.90	355.70	9,871.25	3,037.93	-1,032.09	3,047.17	1.23	1.16	-0.42
13,029.00	91.70	355.30	9,869.12	3,131.61	-1,039.46	3,140.92	0.95	0.85	-0.43
13,123.00	90.80	355.40	9,867.07	3,225.28	-1,047.08	3,234.65	0.96	-0.96	0.11
13,218.00	90.90	356.30	9,865.66	3,320.02	-1,053.95	3,329.45	0.95	0.11	0.95
13,313.00	90.90	357.90	9,864.17	3,414.88	-1,058.76	3,424.35	1.68	0.00	1.68
13,407.00	91.20	359.50	9,862.45	3,508.84	-1,060.89	3,518.32	1.73	0.32	1.70
13,501.00	92.40	359.20	9,859.49	3,602.79	-1,061.96	3,612.28	1.32	1.28	-0.32
13,596.00	91.30	359.10	9,856.43	3,697.72	-1,063.37	3,707.22	1.16	-1.16	-0.11
13,690.00	91.90	359.10	9,853.80	3,791.68	-1,064.84	3,801.18	0.64	0.64	0.00
13,785.00	92.10	359.20	9,850.49	3,886.61	-1,066.25	3,896.12	0.24	0.21	0.11
13,879.00	93.00	358.90	9,846.31	3,980.50	-1,067.81	3,990.03	1.01	0.96	-0.32
13,974.00	91.70	359.00	9,842.41	4,075.40	-1,069.55	4,084.94	1.37	-1.37	0.11
14,068.00	90.70	359.50	9,840.44	4,169.37	-1,070.78	4,178.92	1.19	-1.06	0.53
14,163.00	90.90	359.40	9,839.12	4,264.36	-1,071.69	4,273.91	0.24	0.21	-0.11
14,257.00	91.40	359.50	9,837.23	4,358.34	-1,072.59	4,367.89	0.54	0.53	0.11
14,352.00	90.00	0.30	9,836.07	4,453.32	-1,072.76	4,462.88	1.70	-1.47	0.84
14,446.00	89.90	0.10	9,836.15	4,547.32	-1,072.43	4,556.87	0.24	-0.11	-0.21
14,541.00	89.90	0.01	9,836.32	4,642.32	-1,072.34	4,651.87	0.10	0.00	-0.10
14,635.00	89.90	359.90	9,836.48	4,736.32	-1,072.42	4,745.86	0.11	0.00	-0.11
14,691.44	89.96	359.72	9,836.55	4,792.76	-1,072.61	4,802.30	0.33	0.11	-0.32
330' Hardline Exit ("LTP"): 14691.44' MD									
14,730.00	90.00	359.60	9,836.56	4,831.32	-1,072.83	4,840.86	0.33	0.11	-0.32



Pro Directional Survey Report



Company:	McElvain Energy	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD 83)	TVD Reference:	Well @ 3919.00usft (GL:3894' + KB:25' (H&P 262))
Site:	EK 30 BS2 Federal Com	MD Reference:	Well @ 3919.00usft (GL:3894' + KB:25' (H&P 262))
Well:	#2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH Surveys 125'-14810' PTB 14860'	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)
14,810.00	89.50	359.80	9,836.91	4,911.32	-1,073.25	4,920.86	0.67	-0.63	0.25
Last Survey: 14810.00' MD, 9836.91' TVD									
14,860.00	89.50	359.80	9,837.35	4,961.32	-1,073.43	4,970.86	0.00	0.00	0.00
PTB: 14860.00' MD, 9837.35' TVD									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,061.99	9,892.85	173.86	-960.71	330' Hardline Entry ("FTP"): 10061.99' MD
14,691.44	9,836.55	4,792.76	-1,072.61	330' Hardline Exit ("LTP"): 14691.44' MD
14,810.00	9,836.91	4,911.32	-1,073.25	Last Survey: 14810.00' MD, 9836.91' TVD
14,860.00	9,837.35	4,961.32	-1,073.43	PTB: 14860.00' MD, 9837.35' TVD

Checked By: _____	Approved By: _____	Date: _____
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Radial Cement Bond Gamma Ray CCL Log

Company
Well
Field
County
State

McElvain Energy Inc.
EK 30 BS2 Federal Com #2H
EK Bone Spring
Lea
New Mexico

Company **McElvain Energy Inc.**
Well **EK 30 BS2 Federal Com #2H**
Field **EK Bone Spring**
County **Lea** State **New Mexico**

Location: API # :
230' FNL & 660 FEL
Section 31
SEC TWP RGE
Permanent Datum Ground Level Elevation 3894'
Log Measured From KB 25' APD
Drilling Measured From KB

Other Services
Elevation
K.B. 3919'
D.F. 3918'
G.L. 3894'

Date	11/15/2017		
Run Number	One		
Depth Driller	14748'		
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	9278'+ to 9301'-

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

RECEIVED
JAN 08 2017
HOBBS OCD
*****Thank you for using Capitan Corporation*****



Main Pass 5' = 100'

Database File: c:\warrior\data\mcelvain_energy_ek_30_bs2_fed_com_2h_rbl\mcelvain_energy_ek_30_bs2_fed_com_2h_r
 Dataset Pathname: pass10.1
 Presentation Format: rbl55
 Dataset Creation: Wed Nov 15 19:54:18 2017 by Calc SCH 120430
 Charted by: Depth in Feet scaled 1:240

343	TT (usec)	243	0	Amplitude (mV)	100	-5	AMPS2	150	200	VDL	1200	Cement Map
0	GR (GAPI)	150		Amplified Amplitude		-5	AMPS3	150				1
0	LTEN (lb)	4000	0	(mV)	10	-5	AMPS4	150		Free Pipe Gate		80
						-5	AMPS5	150				
						-5	AMPS6	150				
						-5	AMPS7	150				
						-5	AMPS8	150				
						-5	AMPS1	150				

