



Mewbourne Oil Company

Eddy County, New Mexico

Section 23-24-24S-28E Queen 23-24 W2oP Fed Com 2H

Queen 23-24 W2op Fed Com 2H

Original Hole

30-015-44248

Design: Original Hole

Standard Survey Report

18 October, 2017





Microsoft Survey Report



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Queen 23-24 W2op Fed Com 2H
Project:	Eddy County, New Mexico	TVD Reference:	2955 + 27 @ 2982.0usft (Patterson 250)
Site:	Section 23-24-24S-28E Queen 23-24 W2oP Fed Com 2H	MD Reference:	2955 + 27 @ 2982.0usft (Patterson 250)
Well:	Queen 23-24 W2op Fed Com 2H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Stryker_EDM

Project	Eddy County, New Mexico		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Section 23-24-24S-28E Queen 23-24 W2oP Fed Com 2H		
Site Position:		Northing:	435,758.70 usft
From:	Map	Easting:	584,775.80 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 11' 51.795 N
		Longitude:	104° 3' 33.369 W
		Grid Convergence:	0.15 °

Well	Queen 23-24 W2op Fed Com 2H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	2,982.0 usft
		Latitude:	32° 11' 51.795 N
		Longitude:	104° 3' 33.369 W
		Ground Level:	2,955.0 usft

Wellbore	Original Hole		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	7/14/2017	7.17	59.96	47,866.02491138

Design	Original Hole		
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Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	69.21

Survey Program	Date 10/18/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
189.0	681.0	Rig Survey (Original Hole)	MWD
723.0	18,640.0	MWD Survey (Original Hole)	MWD
			Description
			MWD v3:standard declination
			MWD v3:standard declination

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
189.0	0.70	40.00	189.0	0.9	0.7	1.0	0.37	0.37	0.00
311.0	0.30	61.00	311.0	1.6	1.5	2.0	0.36	-0.33	17.21
433.0	0.40	102.00	433.0	1.7	2.2	2.6	0.22	0.08	33.61
558.0	0.50	93.00	558.0	1.6	3.2	3.5	0.10	0.08	-7.20
681.0	0.70	78.00	681.0	1.7	4.4	4.7	0.21	0.16	-12.20
681.0' MD Survey Depth									
723.0	0.80	98.30	723.0	1.7	5.0	5.3	0.67	0.24	48.33
784.0	0.70	60.30	784.0	1.8	5.7	6.0	0.82	-0.16	-62.30

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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)
845.0	0.70	89.30	845.0	2.0	6.4	6.7	0.57	0.00	47.54
907.0	1.10	142.90	907.0	1.5	7.2	7.2	1.43	0.65	86.45
967.0	0.70	146.20	967.0	0.8	7.7	7.5	0.67	-0.67	5.50
1,028.0	1.00	172.90	1,027.9	-0.1	8.0	7.4	0.80	0.49	43.77
1,095.0	1.00	198.30	1,094.9	-1.2	7.9	6.9	0.66	0.00	37.91
1,158.0	0.80	205.00	1,157.9	-2.1	7.5	6.3	0.36	-0.32	10.63
1,221.0	1.10	206.00	1,220.9	-3.1	7.1	5.5	0.48	0.48	1.59
1,285.0	1.10	216.60	1,284.9	-4.1	6.4	4.6	0.32	0.00	16.56
1,349.0	1.00	211.90	1,348.9	-5.1	5.8	3.6	0.21	-0.16	-7.34
1,412.0	1.10	218.90	1,411.9	-6.0	5.1	2.6	0.26	0.16	11.11
1,475.0	1.10	222.70	1,474.9	-6.9	4.3	1.6	0.12	0.00	6.03
1,538.0	1.30	230.20	1,537.9	-7.8	3.3	0.3	0.40	0.32	11.90
1,602.0	1.50	238.00	1,601.8	-8.7	2.1	-1.2	0.43	0.31	12.19
1,665.0	0.40	254.00	1,664.8	-9.2	1.2	-2.2	1.78	-1.75	25.40
1,729.0	0.10	323.60	1,728.8	-9.3	0.9	-2.4	0.59	-0.47	108.75
1,793.0	0.20	44.20	1,792.8	-9.1	1.0	-2.3	0.33	0.16	125.94
1,856.0	0.50	90.90	1,855.8	-9.1	1.3	-2.0	0.62	0.48	74.13
1,920.0	0.80	112.80	1,919.8	-9.2	2.0	-1.4	0.60	0.47	34.22
1,983.0	1.20	119.60	1,982.8	-9.7	3.0	-0.7	0.66	0.63	10.79
2,047.0	0.30	18.40	2,046.8	-9.9	3.6	-0.1	2.02	-1.41	-158.13
2,174.0	0.70	340.50	2,173.8	-8.9	3.5	0.1	0.39	0.31	-29.84
2,267.0	0.80	78.90	2,266.8	-8.2	3.9	0.8	1.22	0.11	105.81
2,361.0	1.90	108.90	2,360.8	-8.6	6.0	2.6	1.35	1.17	31.91
2,454.0	0.50	120.00	2,453.8	-9.3	7.8	4.0	1.52	-1.51	11.94
2,515.0	0.40	269.90	2,514.8	-9.4	7.9	4.0	1.43	-0.16	245.74
2,643.0	1.40	288.50	2,642.7	-8.9	5.9	2.4	0.80	0.78	14.53
2,737.0	1.40	280.40	2,736.7	-8.3	3.7	0.5	0.21	0.00	-8.62
2,830.0	1.00	277.40	2,829.7	-8.0	1.8	-1.2	0.44	-0.43	-3.23
2,924.0	1.20	273.00	2,923.7	-7.9	0.0	-2.8	0.23	0.21	-4.68
3,017.0	0.90	279.00	3,016.7	-7.7	-1.7	-4.3	0.34	-0.32	6.45
3,111.0	1.10	282.90	3,110.6	-7.4	-3.3	-5.7	0.22	0.21	4.15
3,204.0	1.20	277.10	3,203.6	-7.1	-5.1	-7.3	0.16	0.11	-6.24
3,298.0	1.20	286.80	3,297.6	-6.7	-7.1	-9.0	0.22	0.00	10.32
3,391.0	0.30	132.30	3,390.6	-6.5	-7.8	-9.6	1.59	-0.97	-166.13
3,484.0	0.50	146.30	3,483.6	-7.0	-7.4	-9.4	0.24	0.22	15.05
3,578.0	0.20	159.10	3,577.6	-7.5	-7.1	-9.3	0.33	-0.32	13.62
3,671.0	0.40	158.30	3,670.6	-8.0	-6.9	-9.3	0.22	0.22	-0.86
3,765.0	0.40	218.20	3,764.6	-8.6	-7.0	-9.6	0.42	0.00	63.72
3,858.0	0.40	196.80	3,857.6	-9.1	-7.3	-10.1	0.16	0.00	-23.01
3,952.0	1.80	42.50	3,951.6	-8.3	-6.4	-9.0	2.31	1.49	-164.15
4,045.0	1.50	35.80	4,044.5	-6.3	-4.7	-6.6	0.38	-0.32	-7.20
4,138.0	0.70	207.00	4,137.5	-5.8	-4.3	-6.0	2.36	-0.86	184.09

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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)
4,232.0	1.00	203.30	4,231.5	-7.1	-4.9	-7.0	0.32	0.32	-3.94
4,325.0	1.20	209.40	4,324.5	-8.7	-5.7	-8.4	0.25	0.22	6.56
4,419.0	1.00	190.40	4,418.5	-10.3	-6.3	-9.5	0.44	-0.21	-20.21
4,512.0	0.90	194.00	4,511.5	-11.8	-6.6	-10.4	0.13	-0.11	3.87
4,606.0	0.60	189.00	4,605.5	-13.0	-6.9	-11.0	0.33	-0.32	-5.32
4,699.0	0.80	359.10	4,698.5	-12.9	-6.9	-11.1	1.50	0.22	182.90
4,792.0	0.60	355.80	4,791.4	-11.7	-7.0	-10.7	0.22	-0.22	-3.55
4,886.0	0.30	359.50	4,885.4	-11.0	-7.0	-10.5	0.32	-0.32	3.94
4,979.0	0.30	248.20	4,978.4	-10.8	-7.3	-10.6	0.53	0.00	-119.68
5,073.0	0.50	29.30	5,072.4	-10.6	-7.3	-10.6	0.81	0.21	150.11
5,166.0	0.60	3.00	5,165.4	-9.7	-7.1	-10.1	0.29	0.11	-28.28
5,260.0	0.90	0.60	5,259.4	-8.5	-7.0	-9.6	0.32	0.32	-2.55
5,354.0	0.50	334.80	5,353.4	-7.4	-7.2	-9.4	0.53	-0.43	-27.45
5,447.0	0.40	326.60	5,446.4	-6.8	-7.5	-9.5	0.13	-0.11	-8.82
5,540.0	0.40	335.70	5,539.4	-6.2	-7.9	-9.5	0.07	0.00	9.78
5,634.0	0.20	289.00	5,633.4	-5.8	-8.2	-9.7	0.32	-0.21	-49.68
5,727.0	0.20	242.40	5,726.4	-5.9	-8.4	-10.0	0.17	0.00	-50.11
5,820.0	0.20	62.70	5,819.4	-5.9	-8.4	-10.0	0.43	0.00	-193.23
5,914.0	0.50	108.30	5,913.4	-5.9	-7.9	-9.5	0.41	0.32	48.51
6,007.0	0.50	126.70	6,006.4	-6.3	-7.2	-9.0	0.17	0.00	19.78
6,101.0	0.70	108.10	6,100.4	-6.7	-6.3	-8.3	0.29	0.21	-19.79
6,194.0	1.10	104.30	6,193.4	-7.1	-4.9	-7.1	0.43	0.43	-4.09
6,287.0	1.10	93.90	6,286.4	-7.4	-3.2	-5.6	0.21	0.00	-11.18
6,381.0	0.90	79.20	6,380.4	-7.3	-1.5	-4.0	0.34	-0.21	-15.64
6,474.0	0.90	41.60	6,473.4	-6.6	-0.3	-2.7	0.62	0.00	-40.43
6,568.0	0.90	15.20	6,567.3	-5.4	0.3	-1.6	0.44	0.00	-28.09
6,661.0	0.80	331.10	6,660.3	-4.1	0.2	-1.2	0.69	-0.11	-47.42
6,755.0	1.80	330.90	6,754.3	-2.2	-0.8	-1.6	1.06	1.06	-0.21
6,848.0	0.30	56.10	6,847.3	-0.8	-1.3	-1.5	1.94	-1.61	91.61
6,942.0	0.70	78.10	6,941.3	-0.6	-0.6	-0.7	0.46	0.43	23.40
7,035.0	0.90	38.80	7,034.3	0.1	0.5	0.5	0.61	0.22	-42.26
7,128.0	1.80	52.00	7,127.3	1.6	2.1	2.5	1.02	0.97	14.19
7,222.0	1.50	89.30	7,221.2	2.5	4.5	5.1	1.16	-0.32	39.68
7,316.0	1.10	96.40	7,315.2	2.4	6.6	7.0	0.46	-0.43	7.55
7,409.0	0.40	98.30	7,408.2	2.3	7.8	8.1	0.75	-0.75	2.04
7,503.0	0.60	159.30	7,502.2	1.8	8.3	8.4	0.57	0.21	64.89
7,596.0	1.40	177.40	7,595.2	0.2	8.5	8.0	0.91	0.86	19.46
7,690.0	0.70	323.50	7,689.2	-0.5	8.2	7.5	2.15	-0.74	155.43
7,783.0	0.90	132.40	7,782.2	-0.5	8.4	7.7	1.71	0.22	181.61
7,877.0	0.90	171.40	7,876.1	-1.8	9.1	7.9	0.64	0.00	41.49
7,970.0	1.50	212.10	7,969.1	-3.5	8.5	6.7	1.08	0.65	43.76
8,064.0	0.60	153.50	8,063.1	-5.0	8.1	5.8	1.38	-0.96	-62.34
8,157.0	0.60	165.10	8,156.1	-5.9	8.5	5.8	0.13	0.00	12.47

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8,250.0	0.40	175.90	8,249.1	-6.7	8.6	5.7	0.24	-0.22	11.61
8,344.0	0.50	217.10	8,343.1	-7.3	8.4	5.2	0.35	0.11	43.83
8,438.0	1.20	265.90	8,437.1	-7.7	7.2	3.9	1.01	0.74	51.91
8,531.0	2.00	246.40	8,530.1	-8.5	4.7	1.4	1.03	0.86	-20.97
8,625.0	1.00	242.10	8,624.0	-9.5	2.5	-1.1	1.07	-1.06	-4.57
8,718.0	0.10	178.70	8,717.0	-10.0	1.7	-1.9	1.03	-0.97	-68.17
8,811.0	0.30	179.50	8,810.0	-10.3	1.8	-2.0	0.22	0.22	0.86
8,905.0	0.40	219.50	8,904.0	-10.8	1.5	-2.4	0.27	0.11	42.55
8,998.0	0.60	234.50	8,997.0	-11.3	0.9	-3.1	0.26	0.22	16.13
9,092.0	0.50	233.80	9,091.0	-11.9	0.2	-4.0	0.11	-0.11	-0.74
9,185.0	0.60	240.60	9,184.0	-12.3	-0.5	-4.9	0.13	0.11	7.31
9,279.0	0.70	249.00	9,278.0	-12.8	-1.5	-5.9	0.15	0.11	8.94
9,373.0	0.80	243.40	9,372.0	-13.3	-2.6	-7.2	0.13	0.11	-5.96
9,466.0	0.80	236.60	9,465.0	-13.9	-3.7	-8.4	0.10	0.00	-7.31
9,559.0	0.70	230.60	9,558.0	-14.6	-4.7	-9.6	0.14	-0.11	-6.45
9,653.0	0.50	193.30	9,652.0	-15.4	-5.3	-10.4	0.46	-0.21	-39.68
9,746.0	1.30	170.10	9,745.0	-16.8	-5.2	-10.8	0.93	0.86	-24.95
9,840.0	1.50	176.10	9,838.9	-19.1	-4.9	-11.4	0.26	0.21	6.38
9,933.0	1.00	195.80	9,931.9	-21.1	-5.1	-12.2	0.70	-0.54	21.18
10,001.0	1.10	225.50	9,999.9	-22.1	-5.7	-13.2	0.80	0.15	43.68
10,055.0	1.10	160.00	10,053.9	-23.0	-5.9	-13.7	2.20	0.00	-121.30
10,086.0	4.00	116.40	10,084.9	-23.8	-4.8	-12.9	10.62	9.35	-140.65
10,117.0	7.90	108.40	10,115.7	-24.9	-1.8	-10.5	12.83	12.58	-25.81
10,148.0	12.00	102.50	10,146.2	-26.3	3.4	-6.2	13.61	13.23	-19.03
10,179.0	15.20	99.20	10,176.3	-27.6	10.5	0.0	10.62	10.32	-10.65
10,211.0	18.00	98.30	10,207.0	-29.0	19.6	8.0	8.79	8.75	-2.81
10,242.0	20.90	100.90	10,236.2	-30.7	29.7	16.9	9.76	9.35	8.39
10,273.0	24.40	103.70	10,264.8	-33.3	41.4	26.9	11.81	11.29	9.03
10,304.0	27.20	105.40	10,292.7	-36.7	54.4	37.9	9.34	9.03	5.48
10,335.0	29.70	105.60	10,320.0	-40.7	68.7	49.8	8.07	8.06	0.65
10,366.0	33.20	105.90	10,346.4	-45.0	84.2	62.8	11.30	11.29	0.97
10,397.0	37.10	106.20	10,371.8	-50.0	101.4	77.0	12.59	12.58	0.97
10,429.0	39.40	105.10	10,396.9	-55.3	120.5	93.0	7.50	7.19	-3.44
10,460.0	40.70	105.80	10,420.6	-60.6	139.7	109.1	4.44	4.19	2.26
10,491.0	40.80	106.00	10,444.1	-66.2	159.1	125.3	0.53	0.32	0.65
10,522.0	43.90	103.60	10,467.0	-71.5	179.3	142.3	11.28	10.00	-7.74
10,553.0	47.40	101.50	10,488.7	-76.3	201.0	160.8	12.28	11.29	-6.77
10,584.0	51.10	100.30	10,508.9	-80.7	224.0	180.8	12.29	11.94	-3.87
10,616.0	55.60	101.90	10,528.0	-85.7	249.2	202.6	14.62	14.06	5.00
10,647.0	60.20	103.10	10,544.5	-91.4	274.8	224.5	15.20	14.84	3.87
10,678.0	66.00	104.40	10,558.5	-98.0	301.7	247.3	19.08	18.71	4.19
10,709.0	70.90	104.80	10,569.9	-105.2	329.6	270.8	15.85	15.81	1.29

Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Queen 23-24 W2op Fed Com 2H
Project:	Eddy County, New Mexico	TVD Reference:	2955 + 27 @ 2982.0usft (Patterson 250)
Site:	Section 23-24-24S-28E Queen 23-24 W2oP Fed Com 2H	MD Reference:	2955 + 27 @ 2982.0usft (Patterson 250)
Well:	Queen 23-24 W2op Fed Com 2H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Stryker_EDM

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)
10,740.0	73.70	104.80	10,579.3	-112.8	358.1	294.8	9.03	9.03	0.00
10,755.0	74.80	105.10	10,583.4	-116.5	372.1	306.5	7.58	7.33	2.00
10,822.0	76.40	106.20	10,600.1	-134.0	434.5	358.7	2.87	2.39	1.64
10,853.0	78.30	104.50	10,606.8	-142.0	463.7	383.1	8.14	6.13	-5.48
10,884.0	80.40	104.30	10,612.6	-149.6	493.2	408.0	6.80	6.77	-0.65
10,915.0	82.70	105.20	10,617.1	-157.4	522.9	433.0	7.96	7.42	2.90
10,947.0	83.80	104.80	10,620.9	-165.6	553.6	458.7	3.65	3.44	-1.25
10,978.0	85.10	104.50	10,623.9	-173.4	583.4	483.9	4.30	4.19	-0.97
11,009.0	88.10	105.80	10,625.7	-181.5	613.3	508.9	10.54	9.68	4.19
11,040.0	86.80	105.00	10,627.1	-189.7	643.1	533.9	4.92	-4.19	-2.58
11,041.1	86.80	105.01	10,627.2	-190.0	644.2	534.8	1.07	-0.11	1.06
LP Queen 23-24 W2OP Fed Com 2H									
11,134.0	86.70	106.00	10,632.4	-214.8	733.6	609.6	1.07	-0.11	1.06
11,227.0	89.00	106.10	10,635.9	-240.5	822.9	683.9	2.48	2.47	0.11
<u>11,320.0</u>	89.40	104.50	10,637.2	<u>-265.0</u>	<u>912.6</u>	759.1	1.77	0.43	-1.72
11,322.7	89.36	104.38	10,637.3	-265.7	915.1	761.2	4.64	-1.60	-4.36
First Legal Take Point									
11,414.0	87.90	100.40	10,639.4	-285.3	1,004.3	837.6	4.64	-1.60	-4.36
11,507.0	90.00	99.80	10,641.1	-301.6	1,095.9	917.4	2.35	2.26	-0.65
11,601.0	88.30	96.70	10,642.5	-315.1	1,188.9	999.6	3.76	-1.81	-3.30
11,694.0	88.90	95.10	10,644.8	-324.6	1,281.3	1,082.7	1.84	0.65	-1.72
11,787.0	87.00	88.80	10,648.1	-327.8	1,374.2	1,168.3	7.07	-2.04	-6.77
11,881.0	87.50	86.40	10,652.6	-323.9	1,468.0	1,257.4	2.61	0.53	-2.55
11,974.0	88.90	88.20	10,655.6	-319.5	1,560.8	1,345.8	2.45	1.51	1.94
12,067.0	90.90	87.70	10,655.7	-316.2	1,653.7	1,433.8	2.22	2.15	-0.54
12,161.0	89.40	88.10	10,655.5	-312.7	1,747.7	1,522.9	1.65	-1.60	0.43
12,254.0	88.70	90.50	10,657.0	-311.6	1,840.7	1,610.2	2.69	-0.75	2.58
12,348.0	87.40	89.20	10,660.2	-311.3	1,934.6	1,698.1	1.96	-1.38	-1.38
12,443.0	88.00	93.70	10,664.0	-313.7	2,029.5	1,785.9	4.77	0.63	4.74
12,536.0	89.40	95.50	10,666.2	-321.2	2,122.1	1,869.9	2.45	1.51	1.94
12,630.0	86.70	92.20	10,669.4	-327.5	2,215.8	1,955.3	4.53	-2.87	-3.51
12,723.0	89.80	94.60	10,672.2	-333.0	2,308.6	2,040.1	4.21	3.33	2.58
12,817.0	88.20	90.60	10,673.8	-337.3	2,402.5	2,126.3	4.58	-1.70	-4.26
12,910.0	91.60	93.20	10,674.0	-340.4	2,495.4	2,212.1	4.60	3.66	2.80
13,004.0	89.40	90.00	10,673.2	-343.0	2,589.4	2,299.0	4.13	-2.34	-3.40
13,097.0	88.30	89.10	10,675.0	-342.3	2,682.3	2,386.2	1.53	-1.18	-0.97
13,190.0	87.70	88.80	10,678.3	-340.6	2,775.3	2,473.7	0.72	-0.65	-0.32
13,284.0	88.10	91.50	10,681.7	-340.8	2,869.2	2,561.4	2.90	0.43	2.87
13,377.0	90.00	93.60	10,683.3	-344.9	2,962.1	2,646.7	3.04	2.04	2.26
13,471.0	86.90	92.20	10,685.8	-349.7	3,055.9	2,732.8	3.62	-3.30	-1.49
13,564.0	89.00	93.60	10,689.1	-354.4	3,148.7	2,817.9	2.71	2.26	1.51
13,658.0	87.50	91.40	10,692.0	-358.5	3,242.6	2,904.2	2.83	-1.60	-2.34
13,751.0	88.80	89.80	10,695.0	-359.5	3,335.5	2,990.7	2.22	1.40	-1.72

Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Queen 23-24 W2op Fed Com 2H
Project:	Eddy County, New Mexico	TVD Reference:	2955 + 27 @ 2982.0usft (Patterson 250)
Site:	Section 23-24-24S-28E Queen 23-24 W2oP Fed Com 2H	MD Reference:	2955 + 27 @ 2982.0usft (Patterson 250)
Well:	Queen 23-24 W2op Fed Com 2H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Stryker_EDM

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)
13,845.0	87.30	88.40	10,698.2	-358.0	3,429.4	3,079.1	2.18	-1.60	-1.49
13,938.0	88.90	87.70	10,701.3	-354.8	3,522.3	3,167.0	1.88	1.72	-0.75
14,032.0	87.70	86.60	10,704.1	-350.2	3,616.2	3,256.4	1.73	-1.28	-1.17
14,125.0	89.50	88.40	10,706.4	-346.1	3,709.1	3,344.7	2.74	1.94	1.94
14,218.0	89.70	88.10	10,707.0	-343.3	3,802.0	3,432.6	0.39	0.22	-0.32
14,312.0	88.00	85.50	10,708.9	-338.0	3,895.8	3,522.2	3.30	-1.81	-2.77
14,406.0	89.50	88.00	10,710.9	-332.7	3,989.6	3,611.8	3.10	1.60	2.66
14,499.0	87.10	88.10	10,713.7	-329.5	4,082.5	3,699.7	2.58	-2.58	0.11
14,592.0	88.70	90.40	10,717.1	-328.3	4,175.5	3,787.0	3.01	1.72	2.47
14,686.0	89.00	91.70	10,719.0	-330.0	4,269.4	3,874.3	1.42	0.32	1.38
14,779.0	87.70	93.00	10,721.7	-333.8	4,362.3	3,959.7	1.98	-1.40	1.40
14,873.0	88.70	94.20	10,724.6	-339.7	4,456.1	4,045.3	1.66	1.06	1.28
14,966.0	90.30	94.10	10,725.4	-346.5	4,548.8	4,129.6	1.72	1.72	-0.11
15,060.0	89.50	91.30	10,725.6	-350.9	4,642.7	4,215.8	3.10	-0.85	-2.98
15,153.0	87.70	88.40	10,727.9	-350.7	4,735.7	4,302.8	3.67	-1.94	-3.12
15,247.0	88.20	87.00	10,731.2	-346.9	4,829.5	4,391.9	1.58	0.53	-1.49
15,340.0	88.00	88.10	10,734.3	-342.9	4,922.4	4,480.1	1.20	-0.22	1.18
15,433.0	88.40	88.70	10,737.2	-340.3	5,015.3	4,567.9	0.78	0.43	0.65
15,526.0	87.90	87.80	10,740.2	-337.5	5,108.2	4,655.8	1.11	-0.54	-0.97
15,620.0	89.20	89.70	10,742.6	-335.4	5,202.2	4,744.3	2.45	1.38	2.02
15,713.0	87.40	87.20	10,745.4	-332.9	5,295.1	4,832.1	3.31	-1.94	-2.69
15,807.0	90.00	87.20	10,747.5	-328.3	5,388.9	4,921.5	2.77	2.77	0.00
15,900.0	89.90	88.30	10,747.6	-324.7	5,481.9	5,009.6	1.19	-0.11	1.18
15,993.0	89.00	86.80	10,748.5	-320.7	5,574.8	5,097.9	1.88	-0.97	-1.61
16,086.0	89.80	88.60	10,749.5	-317.0	5,667.7	5,186.1	2.12	0.86	1.94
16,180.0	89.70	90.30	10,749.9	-316.1	5,761.7	5,274.3	1.81	-0.11	1.81
16,273.0	87.80	88.50	10,751.9	-315.1	5,854.6	5,361.5	2.81	-2.04	-1.94
16,366.0	90.80	92.40	10,753.0	-315.8	5,947.6	5,448.2	5.29	3.23	4.19
16,461.0	88.00	89.80	10,754.0	-317.7	6,042.6	5,536.3	4.02	-2.95	-2.74
16,556.0	89.20	89.90	10,756.4	-317.4	6,137.5	5,625.2	1.27	1.26	0.11
16,651.0	89.70	91.40	10,757.3	-318.5	6,232.5	5,713.6	1.66	0.53	1.58
16,746.0	88.00	89.10	10,759.2	-318.9	6,327.5	5,802.2	3.01	-1.79	-2.42
16,841.0	88.40	89.70	10,762.2	-317.9	6,422.4	5,891.4	0.76	0.42	0.63
16,937.0	89.50	93.60	10,763.9	-320.7	6,518.4	5,980.1	4.22	1.15	4.06
17,032.0	88.50	95.10	10,765.6	-327.9	6,613.1	6,066.0	1.90	-1.05	1.58
17,127.0	89.70	93.00	10,767.1	-334.6	6,707.8	6,152.2	2.55	1.26	-2.21
17,222.0	89.80	91.00	10,767.5	-337.9	6,802.7	6,239.8	2.11	0.11	-2.11
17,317.0	89.60	90.30	10,768.0	-339.0	6,897.7	6,328.2	0.77	-0.21	-0.74
17,413.0	88.40	88.90	10,769.7	-338.3	6,993.7	6,418.2	1.92	-1.25	-1.46
17,507.0	87.20	88.70	10,773.3	-336.3	7,087.6	6,506.7	1.29	-1.28	-0.21
17,603.0	89.20	90.30	10,776.3	-335.5	7,183.6	6,596.7	2.67	2.08	1.67
17,698.0	87.30	90.40	10,779.2	-336.1	7,278.5	6,685.2	2.00	-2.00	0.11
17,793.0	88.40	91.70	10,782.7	-337.8	7,373.4	6,773.4	1.79	1.16	1.37

Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Queen 23-24 W2op Fed Com 2H
Project:	Eddy County, New Mexico	TVD Reference:	2955 + 27 @ 2982.0usft (Patterson 250)
Site:	Section 23-24-24S-28E Queen 23-24 W2oP Fed Com 2H	MD Reference:	2955 + 27 @ 2982.0usft (Patterson 250)
Well:	Queen 23-24 W2op Fed Com 2H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Stryker_EDM

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)
17,889.0	88.40	91.50	10,785.4	-340.5	7,469.3	6,862.1	0.21	0.00	-0.21
17,983.0	90.50	92.50	10,786.3	-343.8	7,563.3	6,948.7	2.47	2.23	1.06
18,078.0	86.20	90.30	10,789.1	-346.1	7,658.2	7,036.6	5.08	-4.53	-2.32
18,174.0	89.80	94.30	10,792.4	-350.0	7,754.0	7,124.9	5.60	3.75	4.17
18,269.0	89.10	96.10	10,793.3	-358.6	7,848.6	7,210.2	2.03	-0.74	1.89
18,363.0	91.70	98.70	10,792.7	-370.7	7,941.8	7,293.1	3.91	2.77	2.77
18,459.0	87.80	96.60	10,793.1	-383.4	8,036.9	7,377.5	4.61	-4.06	-2.19
18,553.0	87.30	97.90	10,797.1	-395.3	8,130.1	7,460.4	1.48	-0.53	1.38
18,573.0	91.10	99.50	10,797.4	-398.3	8,149.9	7,477.8	20.61	19.00	8.00
18,640.0	89.70	99.50	10,796.9	-409.4	8,215.9	7,535.6	2.09	-2.09	0.00

18640.0' MD Projected to Bit - PBHL Queen 23-24 W2OP Fed Com 2H

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
681.0	681.0	1.7	4.4	681.0' MD Survey Depth
18,640.0	10,796.9	-409.4	8,215.9	18640.0' MD Projected to Bit



November 28, 2017

NM OIL CONSERVATION
ARTESIA DISTRICT

APR 05 2018

RECEIVED

New Mexico Energy, Minerals and Natural Resources Department
Attn: Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

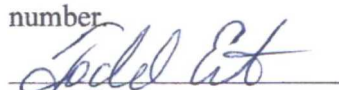
Attn: Jackie Lathan

Re: Mewbourne Oil Company
Queen 23 24 W2OP Federal Com #002H
Purple Sage; Wolfcamp (Gas)
Eddy County, New Mexico
API# 30-015-44248

Enclosed please find the original and one (1) copy of the survey performed on the reference well by STRYKER ENERGY DIRECTIONAL SERVICES, L.L.C. Other information required by your office is as follows:

<u>Name & Title</u>	<u>Drainhole No.</u>	<u>Survey Depths</u>	<u>Dates Performed</u>	<u>Type Survey</u>
David Calabrese	Original Hole	723ft. to 18,573ft.	09-29-17 to 10-18-17	MWD Survey

A certified plat on which the bottom-hole location is oriented to both surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number


Todd Estes

Enclosures

CC:

Mewbourne Oil Company
Attn: Frosty Lathan
P.O. Box 5720
Hobbs, NM 88241

Mewbourne Oil Company
Attn: Robin Terrell
P.O. Box 5720
Hobbs, NM 88241

NMEMaNRD\Mewbourne Oil Company\Queen 23 24 W2OP Federal Com#2H\M171097

STRYKER ENERGY DIRECTIONAL SERVICES, L.L.C.
P.O. Box 1250
Montgomery, TX 77356
Office (936) 582-7296 * Fax (936)-588-4163



November 28, 2017

Survey Certification Report

STATE OF TEXAS

COUNTY OF Montgomery

I, Todd Estes, certify that I am employed by STRYKER ENERGY DIRECTIONAL SERVICES, L.L.C., and that I did on the day(s) of September 29, 2017, through October 18, 2017 conduct or supervise the taking of a SEDS Original Hole MWD Survey from a depth of 723 feet to a depth of 18,573 feet; that I am authorized and qualified to make this report; that this survey was conducted at the request of Mewbourne Oil Company, for the Queen 23 24 W2OP Federal Com #002H well, API # **30-015-44248** in Eddy County, New Mexico; and that I have reviewed this report and find that it conforms to the principles as set forth by STRYKER ENERGY DIRECTIONAL SERVICES, L.L.C.

Todd Estes

STRYKER ENERGY DIRECTIONAL SERVICES, L.L.C.

STRYKER ENERGY DIRECTIONAL SERVICES, L.L.C.
P.O. Box 1250
Montgomery, TX 77356
Office (936) 582-7296 * Fax (936)-588-4163



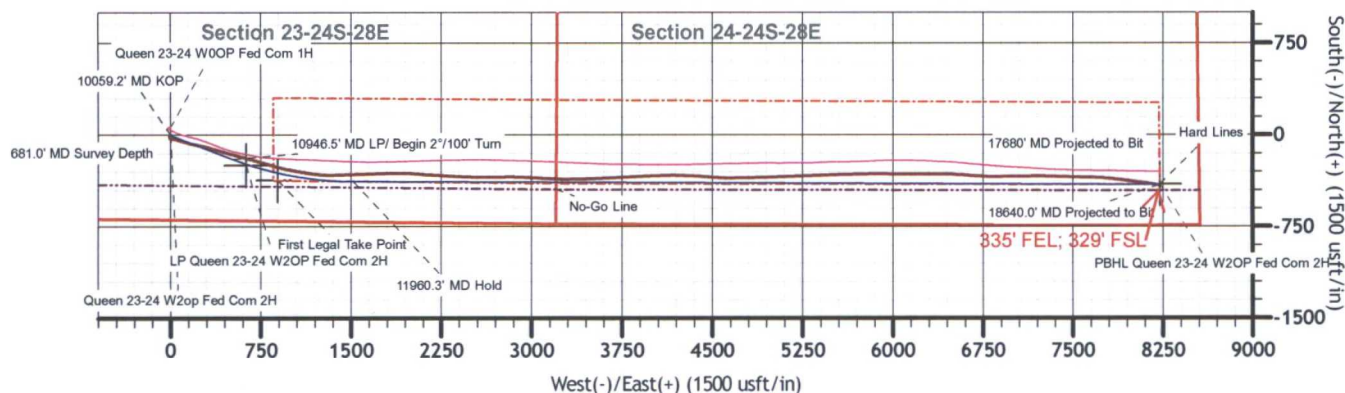
COMPANY: Mewbourne Oil Company
WELL: Queen 23-24 W2op Fed Com 2H
COUNTY: Eddy County, New Mexico
DATUM: NAD 1927 (NADCON CONUS)
RIG: Patterson Patterson 250



GRID CORRECTION: To convert a Magnetic Direction to a Grid Direction, Add 7.02°

OFFICE: 936.582.7296

GEODETIC ZONE: New Mexico East 3001 2955 + 27 @ 2982.0usft (Patterson 250) GROUND ELEVATION: 2955.0										Slot
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude					
0.0	0.0	435758.70	584775.80	32° 11' 51.795 N	104° 3' 33.369 W					
PLAN SECTIONS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	10059.2	0.00	0.00	10059.2	0.0	0.0	0.00	0.00	0.0	
3	10946.5	88.73	110.50	10632.0	-196.2	524.8	10.00	110.50	533.8	
4	11960.3	88.73	90.22	10654.7	-377.5	1516.6	2.00	-90.22	1533.3	
5	18670.8	88.73	90.22	10803.0	-403.1	8225.4	0.00	0.00	8235.3	PBHL Queen 23-24 W2OP Fed Com 2H



SHL 750' FSL; 2175' FWL
Section 23-24S-28E
PBHL 450' FSL; 330' FEL
Section 24-24S-28E

