

30-025-44496



Mewbourne Oil Company

Lea County N.M.

Section 22-26S-32E Red Hills West 22 W0DM Fed Com

Red Hills West 22 W0DM Fed Com #4H

Original Hole

Design: Original Hole

Standard Survey Report

06 April, 2018



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Red Hills West 22 W0DM Fed Com #4H
Project:	Lea County N.M.	TVD Reference:	3144 + 27 @ 3171.0usft (Patterson 242)
Site:	Section 22-26S-32E Red Hills West 22 W0DM Fed Com	MD Reference:	3144 + 27 @ 3171.0usft (Patterson 242)
Well:	Red Hills West 22 W0DM Fed Com #4H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Stryker_EDM

Project	Lea County N.M.		
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 22-26S-32E Red Hills West 22 W0DM Fed Com				
Site Position:		Northing:	377,072.20 usft	Latitude:	32° 2' 5.794 N
From:	Map	Easting:	706,027.70 usft	Longitude:	103° 40' 6.495 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.35 °

Well	Red Hills West 22 W0DM Fed Com #4H					
Well Position	+N/-S	0.0 usft	Northing:	377,072.20 usft	Latitude:	32° 2' 5.794 N
	+E/-W	0.0 usft	Easting:	706,027.70 usft	Longitude:	103° 40' 6.495 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	27.0 usft	Ground Level:	3,144.0 usft

Wellbore	Original Hole				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	2/8/2018	6.92	59.86	47,751.17395884

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	193.66

Survey Program		Date 4/6/2018			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	570.0	Phoenix Gyro Survey #1 (Original Hole)	SRG-GYRO-MS	surface readout gyro multishot	
757.0	16,670.0	Survey #2 (Original Hole)	MWD	MWD v3:standard declination	

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
100.0	0.12	184.06	100.0	-0.1	0.0	0.1	0.12	0.12	0.00
200.0	0.53	203.45	200.0	-0.6	-0.2	0.7	0.42	0.41	19.39
300.0	0.54	215.96	300.0	-1.4	-0.7	1.6	0.12	0.01	12.51
400.0	0.59	185.69	400.0	-2.3	-1.0	2.5	0.30	0.05	-30.27
500.0	0.47	179.88	500.0	-3.3	-1.0	3.4	0.13	-0.12	-5.81
570.0	0.30	124.71	570.0	-3.6	-0.9	3.8	0.55	-0.24	-78.81
570' MD Phoenix Tech Gyro									
757.0	0.30	181.60	757.0	-4.4	-0.5	4.4	0.15	0.00	30.42

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Well:	Red Hills West 22 W0DM Fed Com #4H	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)
947.0	0.70	237.80	947.0	-5.5	-1.5	5.7	0.31	0.21	29.58
1,137.0	1.00	248.70	1,137.0	-6.8	-4.0	7.5	0.18	0.16	5.74
1,328.0	1.30	238.40	1,327.9	-8.5	-7.4	10.0	0.19	0.16	-5.39
1,518.0	1.50	225.30	1,517.9	-11.4	-11.0	13.7	0.20	0.11	-6.89
1,710.0	2.10	227.30	1,709.8	-15.5	-15.4	18.7	0.31	0.31	1.04
1,896.0	2.30	235.30	1,895.6	-20.0	-21.0	24.3	0.20	0.11	4.30
2,082.0	2.70	235.10	2,081.4	-24.6	-27.6	30.4	0.22	0.22	-0.11
2,269.0	3.30	234.70	2,268.2	-30.2	-35.6	37.8	0.32	0.32	-0.21
2,455.0	3.60	238.90	2,453.9	-36.3	-45.0	45.9	0.21	0.16	2.26
2,641.0	3.30	276.70	2,639.5	-38.7	-55.3	50.7	1.21	-0.16	20.32
2,828.0	3.60	307.00	2,826.2	-34.6	-65.4	49.0	0.98	0.16	16.20
3,014.0	3.70	308.20	3,011.8	-27.3	-74.7	44.2	0.07	0.05	0.65
3,201.0	4.00	355.30	3,198.5	-17.1	-80.0	35.5	1.65	0.16	25.19
3,388.0	3.60	67.50	3,385.1	-8.4	-75.1	25.9	2.40	-0.21	38.61
3,574.0	4.10	79.10	3,570.7	-4.9	-63.2	19.6	0.50	0.27	6.24
3,760.0	1.20	11.50	3,756.5	-1.7	-56.3	14.9	2.05	-1.56	-36.34
3,947.0	1.00	45.10	3,943.5	1.4	-54.7	11.6	0.36	-0.11	17.97
4,133.0	1.50	67.80	4,129.5	3.4	-51.3	8.8	0.37	0.27	12.20
4,319.0	0.70	327.50	4,315.4	5.3	-49.7	6.6	0.95	-0.43	-53.92
4,337.0	1.10	327.90	4,333.4	5.6	-49.8	6.4	2.22	2.22	2.22
4,414.0	2.40	300.50	4,410.4	7.0	-51.6	5.4	1.96	1.69	-35.58
4,507.0	3.70	293.00	4,503.3	9.2	-56.1	4.3	1.46	1.40	-8.06
4,693.0	3.90	294.90	4,688.9	14.2	-67.3	2.1	0.13	0.11	1.02
4,880.0	3.50	296.90	4,875.5	19.4	-78.2	-0.4	0.22	-0.21	1.07
5,067.0	3.00	287.60	5,062.2	23.5	-87.9	-2.1	0.39	-0.27	-4.97
5,254.0	4.90	291.10	5,248.7	27.9	-100.0	-3.4	1.02	1.02	1.87
5,440.0	4.40	291.50	5,434.1	33.3	-114.1	-5.4	0.27	-0.27	0.22
5,627.0	4.70	288.10	5,620.5	38.3	-128.1	-7.0	0.22	0.16	-1.82
5,814.0	4.40	293.20	5,806.9	43.5	-141.9	-8.8	0.27	-0.16	2.73
5,999.0	3.90	288.80	5,991.4	48.4	-154.4	-10.5	0.32	-0.27	-2.38
6,186.0	3.90	291.50	6,178.0	52.7	-166.3	-12.0	0.10	0.00	1.44
6,371.0	3.70	282.00	6,362.6	56.3	-178.0	-12.7	0.36	-0.11	-5.14
6,558.0	3.80	284.80	6,549.2	59.1	-189.9	-12.6	0.11	0.05	1.50
6,744.0	3.80	279.30	6,734.8	61.7	-202.0	-12.3	0.20	0.00	-2.96
6,931.0	5.00	289.90	6,921.2	65.5	-215.8	-12.7	0.77	0.64	5.67
7,119.0	5.00	292.60	7,108.5	71.4	-231.0	-14.8	0.13	0.00	1.44
7,306.0	4.60	286.50	7,294.9	76.7	-245.7	-16.5	0.35	-0.21	-3.26
7,493.0	3.90	281.00	7,481.4	80.0	-259.2	-16.5	0.43	-0.37	-2.94
7,679.0	4.00	304.00	7,666.9	84.9	-270.8	-18.5	0.85	0.05	12.37
7,866.0	3.70	305.30	7,853.5	92.0	-281.1	-23.0	0.17	-0.16	0.70
8,053.0	3.80	301.20	8,040.1	98.7	-291.3	-27.1	0.15	0.05	-2.19
8,240.0	3.20	302.70	8,226.8	104.7	-301.0	-30.7	0.32	-0.32	0.80

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Well:	Red Hills West 22 W0DM Fed Com #4H	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)
8,427.0	3.00	298.50	8,413.5	109.9	-309.7	-33.6	0.16	-0.11	-2.25
8,613.0	2.90	309.90	8,599.2	115.2	-317.6	-36.9	0.32	-0.05	6.13
8,799.0	2.80	294.30	8,785.0	120.1	-325.3	-39.9	0.42	-0.05	-8.39
8,986.0	3.60	288.90	8,971.7	123.9	-335.0	-41.2	0.46	0.43	-2.89
9,172.0	5.00	291.90	9,157.2	128.8	-348.1	-42.9	0.76	0.75	1.61
9,358.0	4.60	289.90	9,342.5	134.4	-362.6	-44.9	0.23	-0.22	-1.08
9,544.0	3.60	307.30	9,528.1	140.4	-374.3	-48.1	0.85	-0.54	9.35
9,731.0	2.80	313.60	9,714.8	147.1	-382.3	-52.7	0.47	-0.43	3.37
9,917.0	3.10	300.20	9,900.5	152.8	-389.9	-56.4	0.40	0.16	-7.20
10,103.0	2.70	298.40	10,086.3	157.4	-398.1	-58.9	0.22	-0.22	-0.97
10,289.0	3.60	267.20	10,272.0	159.2	-407.8	-58.4	1.02	0.48	-16.77
10,476.0	4.50	266.40	10,458.5	158.5	-421.0	-54.6	0.48	0.48	-0.43
10,663.0	1.90	262.00	10,645.2	157.6	-431.4	-51.2	1.40	-1.39	-2.35
10,850.0	0.70	35.80	10,832.2	158.1	-433.8	-51.1	1.30	-0.64	71.55
11,037.0	0.50	290.30	11,019.2	159.3	-433.9	-52.3	0.51	-0.11	-56.42
11,224.0	1.80	243.50	11,206.2	158.3	-437.3	-50.5	0.80	0.70	-25.03
11,317.4	2.26	247.06	11,299.5	156.9	-440.3	-48.5	0.51	0.49	3.82
B.B. Red Hills West 22 W0DM Fed Com 4H									
11,366.0	2.50	248.40	11,348.1	156.1	-442.1	-47.3	0.51	0.50	2.75
11,395.0	3.00	249.80	11,377.0	155.6	-443.4	-46.5	1.74	1.72	4.83
11,426.0	3.60	211.70	11,408.0	154.5	-444.7	-45.1	7.18	1.94	-122.90
11,456.0	6.80	180.60	11,437.9	151.9	-445.2	-42.5	13.85	10.67	-103.67
11,487.0	12.00	167.60	11,468.4	146.9	-444.5	-37.8	18.02	16.77	-41.94
11,519.0	17.40	163.20	11,499.4	139.1	-442.5	-30.7	17.22	16.88	-13.75
11,551.0	20.50	162.90	11,529.6	129.2	-439.4	-21.7	9.69	9.69	-0.94
11,582.0	22.70	164.20	11,558.5	118.2	-436.2	-11.9	7.26	7.10	4.19
11,613.0	25.80	164.20	11,586.7	106.0	-432.7	-0.8	10.00	10.00	0.00
11,644.0	29.10	163.50	11,614.2	92.3	-428.7	11.6	10.70	10.65	-2.26
11,675.0	32.80	164.60	11,640.8	76.9	-424.4	25.5	12.07	11.94	3.55
11,706.0	35.60	165.90	11,666.5	60.1	-419.9	40.8	9.33	9.03	4.19
11,738.0	39.10	167.00	11,691.9	41.2	-415.4	58.1	11.13	10.94	3.44
11,769.0	43.10	167.70	11,715.2	21.3	-410.9	76.3	12.99	12.90	2.26
11,800.0	47.60	169.20	11,737.0	-0.3	-406.5	96.3	14.92	14.52	4.84
11,831.0	51.60	170.40	11,757.1	-23.5	-402.4	117.9	13.24	12.90	3.87
11,862.0	54.30	171.50	11,775.8	-47.9	-398.5	140.7	9.16	8.71	3.55
11,893.0	57.50	173.20	11,793.2	-73.4	-395.1	164.6	11.28	10.32	5.48
11,924.0	60.60	174.80	11,809.1	-99.8	-392.3	189.6	10.94	10.00	5.16
11,955.0	64.50	176.40	11,823.4	-127.2	-390.2	215.8	13.39	12.58	5.16
11,972.0	66.80	177.30	11,830.4	-142.7	-389.4	230.6	14.36	13.53	5.29
11,992.4	68.67	177.78	11,838.1	-161.5	-388.5	248.7	9.44	9.19	2.34
LP Red Hills West 22 W0DM Fed Com 4H									
12,047.0	73.70	179.00	11,855.7	-213.2	-387.1	298.6	9.44	9.20	2.24
12,078.0	77.00	178.10	11,863.6	-243.2	-386.3	327.5	11.01	10.65	-2.90

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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)
12,109.0	80.70	177.90	11,869.6	-273.6	-385.3	356.8	11.95	11.94	-0.65
12,203.0	91.50	178.90	11,876.0	-367.2	-382.7	447.2	11.54	11.49	1.06
12,296.0	91.10	180.30	11,873.8	-460.1	-382.0	537.4	1.57	-0.43	1.51
12,390.0	90.30	180.70	11,872.7	-554.1	-382.8	628.9	0.95	-0.85	0.43
12,483.0	90.30	181.60	11,872.2	-647.1	-384.7	719.7	0.97	0.00	0.97
12,577.0	87.30	183.00	11,874.2	-741.0	-388.5	811.8	3.52	-3.19	1.49
12,670.0	86.80	178.00	11,879.0	-833.9	-389.3	902.2	5.40	-0.54	-5.38
12,764.0	88.40	178.70	11,882.9	-927.7	-386.6	992.8	1.86	1.70	0.74
12,857.0	91.10	178.60	11,883.3	-1,020.7	-384.4	1,082.6	2.91	2.90	-0.11
12,950.0	90.40	178.60	11,882.1	-1,113.7	-382.1	1,172.4	0.75	-0.75	0.00
13,043.0	89.70	178.30	11,882.0	-1,206.6	-379.6	1,262.1	0.82	-0.75	-0.32
13,137.0	91.40	178.60	11,881.1	-1,300.6	-377.1	1,352.8	1.84	1.81	0.32
13,230.0	91.10	179.20	11,879.1	-1,393.5	-375.3	1,442.7	0.72	-0.32	0.65
13,323.0	90.40	178.80	11,877.9	-1,486.5	-373.7	1,532.7	0.87	-0.75	-0.43
13,417.0	89.70	179.40	11,877.8	-1,580.5	-372.2	1,623.7	0.98	-0.74	0.64
13,510.0	88.80	180.20	11,879.0	-1,673.5	-371.9	1,714.0	1.29	-0.97	0.86
13,603.0	90.40	182.80	11,879.6	-1,766.4	-374.3	1,804.9	3.28	1.72	2.80
13,695.0	89.70	182.50	11,879.6	-1,858.3	-378.5	1,895.2	0.83	-0.76	-0.33
13,788.0	88.40	180.10	11,881.1	-1,951.3	-380.6	1,986.0	2.93	-1.40	-2.58
13,881.0	88.50	180.80	11,883.6	-2,044.3	-381.4	2,076.5	0.76	0.11	0.75
13,973.0	88.00	180.40	11,886.4	-2,136.2	-382.3	2,166.1	0.70	-0.54	-0.43
14,066.0	91.50	179.80	11,886.8	-2,229.2	-382.5	2,256.5	3.82	3.76	-0.65
14,159.0	89.10	176.10	11,886.3	-2,322.1	-379.2	2,346.0	4.74	-2.58	-3.98
14,251.0	89.80	180.60	11,887.2	-2,414.0	-376.5	2,434.7	4.95	0.76	4.89
14,344.0	92.00	181.10	11,885.8	-2,507.0	-377.9	2,525.3	2.43	2.37	0.54
14,437.0	91.00	180.80	11,883.3	-2,600.0	-379.5	2,616.0	1.12	-1.08	-0.32
14,530.0	91.40	181.20	11,881.4	-2,692.9	-381.1	2,706.8	0.61	0.43	0.43
14,623.0	91.10	181.60	11,879.4	-2,785.9	-383.3	2,797.6	0.54	-0.32	0.43
14,716.0	88.50	178.90	11,879.7	-2,878.9	-383.8	2,888.1	4.03	-2.80	-2.90
14,809.0	87.10	178.60	11,883.3	-2,971.8	-381.7	2,977.9	1.54	-1.51	-0.32
14,901.0	89.30	178.90	11,886.1	-3,063.7	-379.7	3,066.7	2.41	2.39	0.33
14,994.0	89.60	180.00	11,887.0	-3,156.7	-378.8	3,156.9	1.23	0.32	1.18
15,087.0	89.80	180.70	11,887.5	-3,249.7	-379.4	3,247.4	0.78	0.22	0.75
15,180.0	89.60	180.80	11,888.0	-3,342.7	-380.6	3,338.0	0.24	-0.22	0.11
15,273.0	90.00	181.80	11,888.3	-3,435.7	-382.7	3,428.8	1.16	0.43	1.08
15,366.0	89.90	179.10	11,888.4	-3,528.6	-383.5	3,519.4	2.91	-0.11	-2.90
15,459.0	89.90	179.80	11,888.6	-3,621.6	-382.6	3,609.5	0.75	0.00	0.75
15,553.0	88.90	180.20	11,889.6	-3,715.6	-382.6	3,700.9	1.15	-1.06	0.43
15,646.0	89.40	181.90	11,890.9	-3,808.6	-384.3	3,791.6	1.91	0.54	1.83
15,739.0	91.30	182.20	11,890.4	-3,901.5	-387.6	3,882.7	2.07	2.04	0.32
15,833.0	91.70	178.70	11,887.9	-3,995.5	-388.3	3,974.2	3.75	0.43	-3.72
15,926.0	91.60	179.60	11,885.2	-4,088.4	-386.9	4,064.2	0.97	-0.11	0.97
16,019.0	88.80	176.50	11,884.9	-4,181.4	-383.8	4,153.7	4.49	-3.01	-3.33

Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Red Hills West 22 W0DM Fed Com #4H
Project:	Lea County N.M.	TVD Reference:	3144 + 27 @ 3171.0usft (Patterson 242)
Site:	Section 22-26S-32E Red Hills West 22 W0DM Fed Com	MD Reference:	3144 + 27 @ 3171.0usft (Patterson 242)
Well:	Red Hills West 22 W0DM Fed Com #4H	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)
16,113.0	87.50	176.90	11,887.9	-4,275.2	-378.4	4,243.6	1.45	-1.38	0.43
16,206.0	88.40	177.20	11,891.3	-4,368.0	-373.6	4,332.6	1.02	0.97	0.32
16,300.0	89.30	175.90	11,893.2	-4,461.8	-367.9	4,422.5	1.68	0.96	-1.38
16,393.0	89.80	176.70	11,893.9	-4,554.6	-361.9	4,511.2	1.01	0.54	0.86
16,485.0	90.40	178.10	11,893.7	-4,646.5	-357.8	4,599.5	1.66	0.65	1.52
16,578.0	90.20	178.40	11,893.2	-4,739.4	-354.9	4,689.2	0.39	-0.22	0.32
16,620.0	90.30	178.70	11,893.1	-4,781.4	-353.9	4,729.7	0.75	0.24	0.71
16,670.0	90.30	178.70	11,892.8	-4,831.4	-352.7	4,778.0	0.00	0.00	0.00

16670.0' MD Projected to Bit - PBHL Red Hills West 22 W0DM Fed Com 4H

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
570.0	570.0	-3.6	-0.9	570' MD Phoenix Tech Gyro
16,670.0	11,892.8	-4,831.4	-352.7	16670.0' MD Projected to Bit



April 26, 2018

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
Red Hills West 22 W0DM Federal Com #004H
LWR Bone Spring
Lea County, New Mexico
API# 30-025-42913

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>
Greg Morris	Original Hole	761ft. to 16,670ft.	03-20-18 to 04-06-18	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.


Eric 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\Red Hills West 22 W0DM Fed Com #4HM181031

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



April 26, 2018

Survey Certification Report

STATE OF TEXAS

COUNTY OF Montgomery

I, Eric Estes, certify that I am employed by STRYKER ENERGY DIRECTIONAL SERVICES, L.L.C., and that I did on the day(s) of March 20, 2018, through April 6, 2018 conduct or supervise the taking of a SEDS Original Hole MWD Survey from a depth of 761 feet to a depth of 16,670 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 Red Hills West 22 W0DM Federal Com #004H well, API # **30-025-42913** in Lea 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.

Eric 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**



Microsoft
MWD Surveys



Company: Mewbourne Oil Company
Project: Lea County N.M.
Site: Section 22-26S-32E Red Hills West 22 W0DM Fed
Well: Red Hills West 22 W0DM Fed Com #4H
Wellbore: Original Hole
Design: Original Hole

Local Co-ordinate Reference: Well Red Hills West 22 W0DM Fed Com #4H
TVD Reference: 3144 + 27 @ 3171.0usft (Patterson 242)
MD Reference: 3144 + 27 @ 3171.0usft (Patterson 242)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Stryker_EDM

Project Lea County N.M.

Map System: US State Plane 1927 (Exact solution)
Geo Datum: NAD 1927 (NADCON CONUS)
Map Zone: New Mexico East 3001

System Datum: Mean Sea Level

Site Section 22-26S-32E Red Hills West 22 W0DM Fed Com

Site Position:		Northing:	377,072.20 usft	Latitude:	32° 2' 5.794 N
From:	Map	Easting:	706,027.70 usft	Longitude:	103° 40' 6.495 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.35 °

Well Red Hills West 22 W0DM Fed Com #4H

Well Position	+N/-S	0.0 usft	Northing:	377,072.20 usft	Latitude:	32° 2' 5.794 N
	+E/-W	0.0 usft	Easting:	706,027.70 usft	Longitude:	103° 40' 6.495 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	27.0 usft	Ground Level:	3,144.0 usft

Wellbore Original Hole

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	2/8/2018	6.92	59.86	47,751.17395884

Design Original Hole

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	193.66



Microsoft
MWD Surveys



Company: Mewbourne Oil Company
Project: Lea County N.M.
Site: Section 22-26S-32E Red Hills West 22 WODM Fed
Well: Red Hills West 22 WODM Fed Com #4H
Wellbore: Original Hole
Design: Original Hole

Local Co-ordinate Reference: Well Red Hills West 22 WODM Fed Com #4H
TVD Reference: 3144 + 27 @ 3171.0usft (Patterson 242)
MD Reference: 3144 + 27 @ 3171.0usft (Patterson 242)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Stryker_EDM

Survey Program		Date 4/6/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	570.0	Phoenix Gyro Survey #1 (Original Hole)	SRG-GYRO-MS	surface readout gyro multishot
757.0	16,670.0	Survey #2 (Original Hole)	MWD	MWD v3:standard declination

MD (usft)	Inc (")	Azi (azimuth) (")	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (")	
570.0	0.30	124.71	570.0	-3.6	-0.9	3.8	193.66	Tie-In
757.0	0.30	181.60	757.0	-4.4	-0.5	4.4	186.43	
947.0	0.70	237.80	947.0	-5.5	-1.5	5.7	195.11	
1,137.0	1.00	248.70	1,137.0	-6.8	-4.0	7.9	210.77	
1,328.0	1.30	238.40	1,327.9	-8.5	-7.4	11.3	221.14	
1,518.0	1.50	225.30	1,517.9	-11.4	-11.0	15.8	224.11	
1,710.0	2.10	227.30	1,709.8	-15.5	-15.4	21.9	224.76	
1,896.0	2.30	235.30	1,895.6	-20.0	-21.0	28.9	226.41	
2,082.0	2.70	235.10	2,081.4	-24.6	-27.6	37.0	228.33	
2,269.0	3.30	234.70	2,268.2	-30.2	-35.6	46.7	229.70	
2,455.0	3.60	238.90	2,453.9	-36.3	-45.0	57.8	231.09	
2,641.0	3.30	276.70	2,639.5	-38.7	-55.3	67.5	235.01	
2,828.0	3.60	307.00	2,826.2	-34.6	-65.4	73.9	242.13	
3,014.0	3.70	308.20	3,011.8	-27.3	-74.7	79.6	249.91	
3,201.0	4.00	355.30	3,198.5	-17.1	-80.0	81.8	257.94	
3,388.0	3.60	67.50	3,385.1	-8.4	-75.1	75.6	263.66	
3,574.0	4.10	79.10	3,570.7	-4.9	-63.2	63.4	265.60	
3,760.0	1.20	11.50	3,756.5	-1.7	-56.3	56.3	268.28	
3,947.0	1.00	45.10	3,943.5	1.4	-54.7	54.7	271.44	
4,133.0	1.50	67.80	4,129.5	3.4	-51.3	51.4	273.84	
4,319.0	0.70	327.50	4,315.4	5.3	-49.7	50.0	276.12	



Microsoft
MWD Surveys



Company: Mewbourne Oil Company
Project: Lea County N.M.
Site: Section 22-26S-32E Red Hills West 22 W0DM Fe
Well: Red Hills West 22 W0DM Fed Com #4H
Wellbore: Original Hole
Design: Original Hole

Local Co-ordinate Reference: Well Red Hills West 22 W0DM Fed Com #4H
TVD Reference: 3144 + 27 @ 3171.0usft (Patterson 242)
MD Reference: 3144 + 27 @ 3171.0usft (Patterson 242)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Stryker_EDM

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)
4,337.0	1.10	327.90	4,333.4	5.6	-49.8	50.1	276.37
4,414.0	2.40	300.50	4,410.4	7.0	-51.6	52.1	277.73
4,507.0	3.70	293.00	4,503.3	9.2	-56.1	56.8	279.29
4,693.0	3.90	294.90	4,688.9	14.2	-67.3	68.8	281.89
4,880.0	3.50	296.90	4,875.5	19.4	-78.2	80.6	283.96
5,067.0	3.00	287.60	5,062.2	23.5	-87.9	91.0	284.96
5,254.0	4.90	291.10	5,248.7	27.9	-100.0	103.9	285.56
5,440.0	4.40	291.50	5,434.1	33.3	-114.1	118.9	286.28
5,627.0	4.70	288.10	5,620.5	38.3	-128.1	133.7	286.67
5,814.0	4.40	293.20	5,806.9	43.5	-141.9	148.5	287.06
5,999.0	3.90	288.80	5,991.4	48.4	-154.4	161.8	287.39
6,186.0	3.90	291.50	6,178.0	52.7	-166.3	174.5	287.59
6,371.0	3.70	282.00	6,362.6	56.3	-178.0	186.7	287.55
6,558.0	3.80	284.80	6,549.2	59.1	-189.9	198.9	287.29
6,744.0	3.80	279.30	6,734.8	61.7	-202.0	211.2	286.99
6,931.0	5.00	289.90	6,921.2	65.5	-215.8	225.5	286.88
7,119.0	5.00	292.60	7,106.5	71.4	-231.0	241.8	287.18
7,306.0	4.60	286.50	7,294.9	76.7	-245.7	257.4	287.33
7,493.0	3.90	281.00	7,481.4	80.0	-259.2	271.2	287.16
7,679.0	4.00	304.00	7,666.9	84.9	-270.8	283.7	287.40
7,866.0	3.70	305.30	7,853.5	92.0	-281.1	295.8	288.12
8,053.0	3.80	301.20	8,040.1	98.7	-291.3	307.6	288.71
8,240.0	3.20	302.70	8,226.8	104.7	-301.0	318.7	289.18
8,427.0	3.00	298.50	8,413.5	109.9	-309.7	328.6	289.53
8,613.0	2.90	309.90	8,599.2	115.2	-317.6	337.8	289.94
8,799.0	2.80	294.30	8,785.0	120.1	-325.3	346.8	290.26
8,986.0	3.60	288.90	8,971.7	123.9	-335.0	357.2	290.29



Microsoft
MWD Surveys



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Red Hills West 22 WODM Fed Com #4H
Project:	Lea County N.M.	TVD Reference:	3144 + 27 @ 3171.0usft (Patterson 242)
Site:	Section 22-28S-32E Red Hills West 22 WODM Fed	MD Reference:	3144 + 27 @ 3171.0usft (Patterson 242)
Well:	Red Hills West 22 WODM Fed Com #4H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Stryker_EDM

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)
9,172.0	5.00	291.90	9,157.2	128.8	-348.1	371.2	290.30
9,358.0	4.60	289.90	9,342.5	134.4	-362.6	386.7	290.33
9,544.0	3.60	307.30	9,528.1	140.4	-374.3	399.8	290.57
9,731.0	2.80	313.60	9,714.8	147.1	-382.3	409.6	291.05
9,917.0	3.10	300.20	9,900.5	152.8	-389.9	418.8	291.40
10,103.0	2.70	298.40	10,086.3	157.4	-398.1	428.1	291.57
10,289.0	3.60	267.20	10,272.0	159.2	-407.8	437.8	291.33
10,476.0	4.50	266.40	10,458.5	158.5	-421.0	449.8	290.63
10,663.0	1.90	262.00	10,645.2	157.6	-431.4	459.2	290.07
10,850.0	0.70	35.80	10,832.2	158.1	-433.8	461.7	290.02
11,037.0	0.50	290.30	11,019.2	159.3	-433.9	462.2	290.16
11,224.0	1.80	243.50	11,206.2	158.3	-437.3	465.0	289.90
11,317.4	2.26	247.06	11,299.5	156.9	-440.3	467.4	289.61
B.B. Red Hills West 22 WODM Fed Com 4H							
11,366.0	2.50	248.40	11,348.1	156.1	-442.1	468.9	289.45
11,395.0	3.00	249.80	11,377.0	155.6	-443.4	470.0	289.34
11,426.0	3.60	211.70	11,408.0	154.5	-444.7	470.8	289.16
11,456.0	6.80	180.60	11,437.9	151.9	-445.2	470.4	288.84
11,487.0	12.00	167.60	11,468.4	146.9	-444.5	468.2	288.29
11,519.0	17.40	163.20	11,499.4	139.1	-442.5	463.8	287.45
11,551.0	20.50	162.90	11,528.6	129.2	-439.4	458.0	286.38
11,582.0	22.70	164.20	11,558.5	118.2	-436.2	451.9	285.17
11,613.0	25.80	164.20	11,586.7	106.0	-432.7	445.5	283.76
11,644.0	29.10	163.50	11,614.2	92.3	-428.7	438.6	282.14
11,675.0	32.80	164.60	11,640.8	76.9	-424.4	431.3	280.27
11,706.0	35.60	165.90	11,666.5	60.1	-419.9	424.2	278.14
11,738.0	39.10	167.00	11,691.9	41.2	-415.4	417.4	275.67



Microsoft
MWD Surveys



Company: Mewbourne Oil Company
Project: Lea County N.M.
Site: Section 22-26S-32E Red Hills West 22 WODM Fe
Well: Red Hills West 22 WODM Fed Com #4H
Wellbore: Original Hole
Design: Original Hole

Local Co-ordinate Reference: Well Red Hills West 22 WODM Fed Com #4H
TVD Reference: 3144 + 27 @ 3171.0usft (Patterson 242)
MD Reference: 3144 + 27 @ 3171.0usft (Patterson 242)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Stryker_EDM

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)
11,769.0	43.10	167.70	11,715.2	21.3	-410.9	411.5	272.97
11,800.0	47.60	169.20	11,737.0	-0.3	-406.5	406.5	269.96
11,831.0	51.60	170.40	11,757.1	-23.5	-402.4	403.1	266.66
11,862.0	54.30	171.50	11,775.8	-47.9	-398.5	401.4	263.14
11,893.0	57.50	173.20	11,793.2	-73.4	-395.1	401.8	259.48
11,924.0	60.60	174.80	11,809.1	-99.8	-392.3	404.8	255.73
11,955.0	64.50	176.40	11,823.4	-127.2	-390.2	410.4	251.94
11,972.0	66.80	177.30	11,830.4	-142.7	-389.4	414.7	249.87
11,992.4	68.67	177.78	11,836.1	-161.5	-388.5	420.8	247.43
LP Red Hills West 22 WODM Fed Com 4H							
12,047.0	73.70	179.00	11,855.7	-213.2	-387.1	441.9	241.16
12,078.0	77.00	178.10	11,863.6	-243.2	-386.3	456.5	237.81
12,109.0	80.70	177.90	11,869.6	-273.6	-385.3	472.5	234.62
12,203.0	91.50	178.90	11,876.0	-367.2	-382.7	530.3	228.18
12,296.0	91.10	180.30	11,873.8	-460.1	-382.0	598.1	219.70
12,390.0	90.30	180.70	11,872.7	-554.1	-382.8	673.5	214.64
12,483.0	90.30	181.60	11,872.2	-647.1	-384.7	752.8	210.73
12,577.0	87.30	183.00	11,874.2	-741.0	-388.5	836.7	207.67
12,670.0	86.80	178.00	11,876.0	-833.9	-389.3	920.2	205.03
12,764.0	88.40	178.70	11,882.9	-927.7	-386.6	1,005.0	202.62
12,857.0	91.10	178.60	11,883.3	-1,020.7	-384.4	1,090.7	200.64
12,950.0	90.40	178.60	11,882.1	-1,113.7	-382.1	1,177.4	198.94
13,043.0	89.70	178.30	11,882.0	-1,206.6	-379.6	1,264.9	197.46
13,137.0	91.40	178.60	11,881.1	-1,300.6	-377.1	1,354.1	196.17
13,230.0	91.10	179.20	11,879.1	-1,393.5	-375.3	1,443.2	195.07
13,323.0	90.40	178.80	11,877.9	-1,486.5	-373.7	1,532.8	194.11
13,417.0	89.70	179.40	11,877.8	-1,580.5	-372.2	1,623.7	193.25



Microsoft
MWD Surveys



Company: Mewbourne Oil Company
Project: Lea County N.M.
Site: Section 22-26S-32E Red Hills West 22 W0DM Fe
Well: Red Hills West 22 W0DM Fed Com #4H
Wellbore: Original Hole
Design: Original Hole

Local Co-ordinate Reference: Well Red Hills West 22 W0DM Fed Com #4H
TVD Reference: 3144 + 27 @ 3171.0usft (Patterson 242)
MD Reference: 3144 + 27 @ 3171.0usft (Patterson 242)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Stryker_EDM

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	Closure Distance (usft)	Closure Azimuth (°)
13,510.0	88.80	180.20	11,879.0	-1,873.5	-371.9	1,714.3	192.53
13,603.0	90.40	182.80	11,879.6	-1,766.4	-374.3	1,805.7	191.96
13,695.0	89.70	182.50	11,879.6	-1,858.3	-378.5	1,896.5	191.51
13,788.0	88.40	180.10	11,881.1	-1,951.3	-380.6	1,988.1	191.04
13,881.0	88.50	180.80	11,883.6	-2,044.3	-381.4	2,079.5	190.57
13,973.0	88.00	180.40	11,886.4	-2,138.2	-382.3	2,170.2	190.15
14,066.0	91.50	179.80	11,886.8	-2,229.2	-382.5	2,261.8	189.74
14,159.0	89.10	176.10	11,886.3	-2,322.1	-379.2	2,352.9	189.27
14,251.0	89.80	180.60	11,887.2	-2,414.0	-376.5	2,443.2	188.87
14,344.0	92.00	181.10	11,885.8	-2,507.0	-377.9	2,535.3	188.57
14,437.0	91.00	180.80	11,883.3	-2,600.0	-379.5	2,627.5	188.30
14,530.0	91.40	181.20	11,881.4	-2,692.9	-381.1	2,719.8	188.05
14,623.0	91.10	181.80	11,879.4	-2,785.9	-383.3	2,812.1	187.83
14,716.0	88.50	178.90	11,879.7	-2,878.9	-383.8	2,904.3	187.59
14,809.0	87.10	178.60	11,883.3	-2,971.8	-381.7	2,996.2	187.32
14,901.0	89.30	178.90	11,886.1	-3,063.7	-379.7	3,087.1	187.07
14,994.0	89.60	180.00	11,887.0	-3,156.7	-378.8	3,179.3	186.84
15,087.0	89.80	180.70	11,887.5	-3,249.7	-379.4	3,271.8	186.66
15,180.0	89.60	180.80	11,888.0	-3,342.7	-380.6	3,364.3	186.50
15,273.0	90.00	181.80	11,888.3	-3,435.7	-382.7	3,456.9	186.36
15,366.0	89.90	179.10	11,888.4	-3,528.6	-383.5	3,549.4	186.20
15,459.0	89.90	179.80	11,888.6	-3,621.6	-382.6	3,641.8	186.03
15,553.0	88.90	180.20	11,889.6	-3,715.6	-382.6	3,735.3	185.88
15,646.0	89.40	181.90	11,890.9	-3,808.6	-384.3	3,827.9	185.76
15,739.0	91.30	182.20	11,890.4	-3,901.5	-387.6	3,920.7	185.67
15,833.0	91.70	178.70	11,887.9	-3,995.5	-388.3	4,014.3	185.55
15,926.0	91.60	179.60	11,885.2	-4,088.4	-386.9	4,106.7	185.41



Microsoft
MWD Surveys



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Red Hills West 22 W0DM Fed Com #4H
Project:	Lea County N.M.	TVD Reference:	3144 + 27 @ 3171.0usft (Patterson 242)
Site:	Section 22-26S-32E Red Hills West 22 W0DM Fe	MD Reference:	3144 + 27 @ 3171.0usft (Patterson 242)
Well:	Red Hills West 22 W0DM Fed Com #4H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	Stryker_EDM

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)
16,019.0	88.80	176.50	11,884.9	-4,181.4	-383.8	4,188.9	185.24
16,113.0	87.50	176.90	11,887.9	-4,275.2	-378.4	4,291.9	185.06
16,206.0	88.40	177.20	11,891.3	-4,368.0	-373.6	4,383.9	184.89
16,300.0	89.30	175.90	11,893.2	-4,461.8	-367.9	4,476.9	184.71
16,393.0	89.80	176.70	11,893.9	-4,554.6	-361.9	4,568.9	184.54
16,485.0	90.40	178.10	11,893.7	-4,646.5	-357.8	4,660.2	184.40
16,578.0	90.20	178.40	11,893.2	-4,739.4	-354.9	4,752.7	184.28
16,620.0	90.30	178.70	11,893.1	-4,781.4	-353.9	4,794.5	184.23
16,670.0	90.30	178.70	11,892.8	-4,831.4	-352.7	4,844.3	184.18
16670.0' MD Projected to Bit - PBHL Red Hills West 22 W0DM Fed Com 4H							

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
16,670.0	11,892.8	-4,831.4	-352.7	16670.0' MD Projected to Bit



COMPANY: Mewbourne Oil Company
WELL: Red Hills West 22 WODM Fed Com #4H
COUNTY: Lea County N.M.
DATUM: NAD 1927 (NADCON CONUS)
RIG: Patterson 242



OFFICE: 936.582.7294

GRID CORRECTION: To convert a Magnetic Direction to a Grid Direction, Add 6.56°

GEODETIC ZONE: New Mexico East 3001										
3144 + 27 @ 3171.0uoft (Patterson 242)										
GROUND ELEVATION: 3144.0										
	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot			
	0.0	0.0	377072.20	706027.70	32° 2' 5.794 N	103° 40' 6.485 W				
PLAN SECTIONS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Diag	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	4250.0	0.00	0.00	4250.0	0.0	0.0	0.00	0.00	0.0	
3	4510.5	3.91	291.61	4510.3	3.3	-8.3	1.50	291.61	-2.8	
4	11055.1	3.91	291.61	11039.7	187.5	-423.0	0.00	0.00	-132.9	
5	11315.6	0.00	0.00	11300.0	170.8	-431.2	1.50	180.00	-135.5	B.B. Red Hills West 22 WODM Fed Com 4H
6	11414.2	0.00	0.00	11398.6	170.8	-431.2	0.00	0.00	-135.5	
7	12182.6	89.81	179.55	11878.0	-305.1	-427.5	12.00	179.55	338.8	
8	16897.3	89.81	179.55	11891.0	-4839.6	-391.6	0.00	0.00	4855.4	PBHL Red Hills West 22 WODM Fed Com 4H

SHL: 185' FNL; 760' FWL
Section 22-26S-32E
PBHL: 330' FSL; 990' FWL
Section 22-26S-32E

