



COMPANY: Mewbourne Oil Company
 WELL: Red Hills West 21 W080 Fed Com #4H
 COUNTY: Lea County N. M. Nad (83)
 DATUM: North American Datum 1983
 RIG: Patterson 217

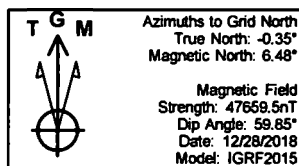
STRYKER
 DIRECTIONAL

OFFICE: 936.582.7296

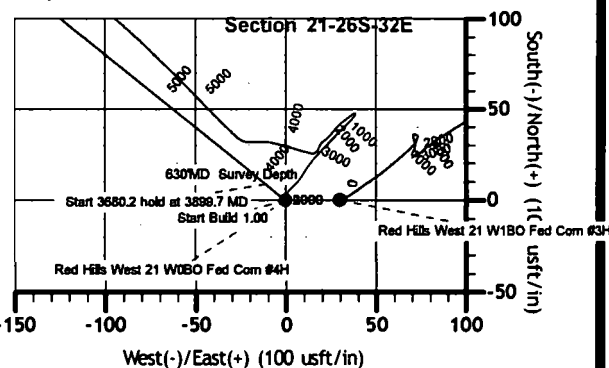
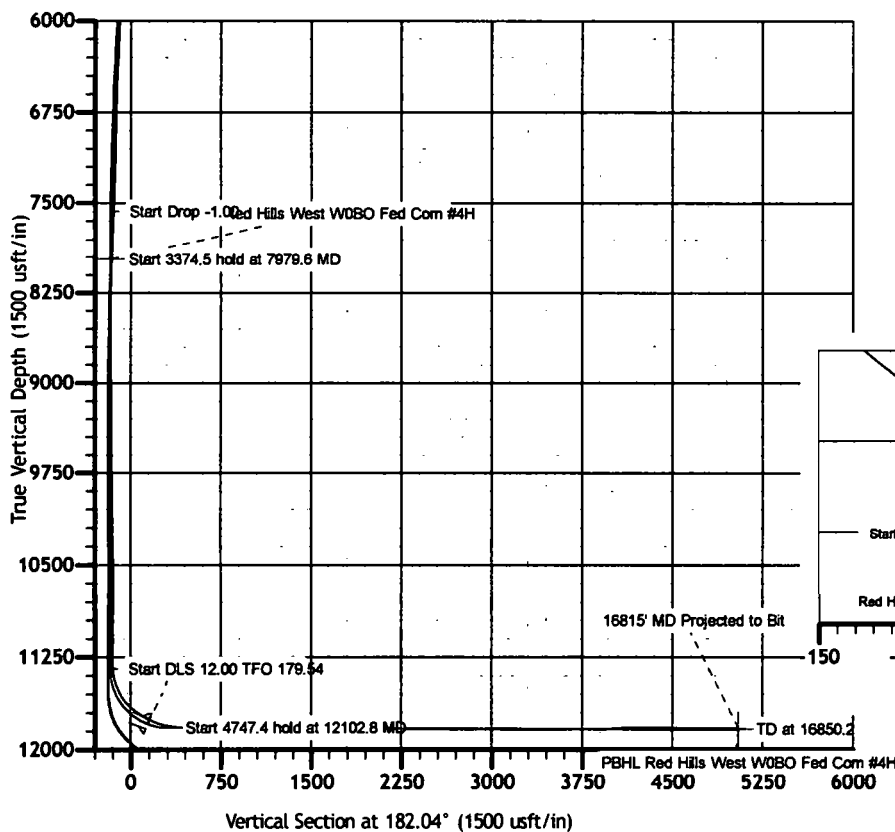
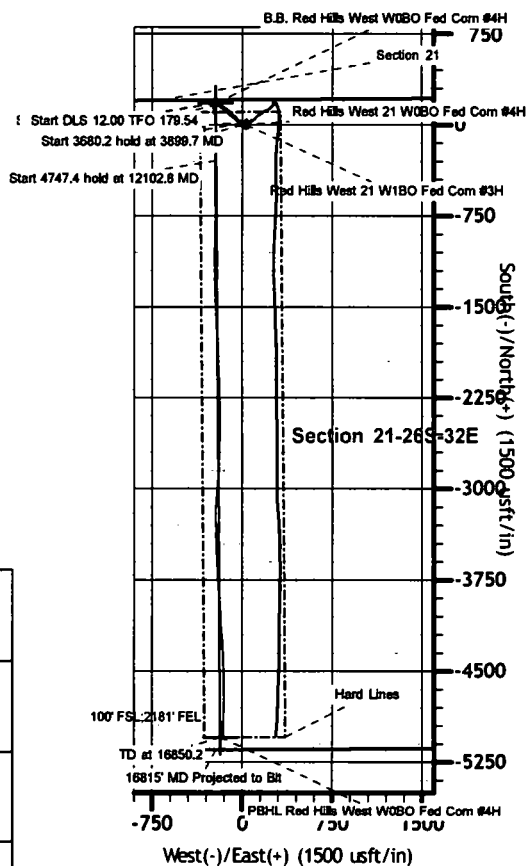
GRID CORRECTION: To convert a Magnetic Direction to a Grid Direction, Add 6.48°

GEODETIC ZONE: New Mexico Eastern Zone										
3157 + 27 @ 3184.0usft (Patterson 217)										
GROUND ELEVATION: 3157.0										
	+N-S	+E-W	Northing	Easting	Latitude	Longitude	Slot			
	0.0	0.0	377088.50	744475.20	32° 2' 6.006 N	103° 40' 40.016 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	3500.0	0.00	0.00	3500.0	0.0	0.0	0.00	0.00	0.0	
3	3899.7	4.00	308.88	3899.4	8.7	-10.9	1.00	308.88	-8.4	
4	7579.9	4.00	308.88	7570.6	169.7	-210.8	0.00	0.00	-162.1	
5	7979.6	0.00	0.00	7970.0	178.4	-221.4	1.00	180.00	-170.4	B.B. Red Hills West W080 Fed Com #4H
6	11354.1	0.00	0.00	11344.5	178.4	-221.4	0.00	0.00	-170.4	
7	12102.8	89.84	179.54	11822.0	-297.7	-217.7	12.00	179.54	305.3	
8	16850.2	89.84	179.54	11835.0	-5044.9	-180.0	0.00	0.00	5048.1	PBHL Red Hills West W080 Fed Com #4H

SHL: 205' FNL; 1980' FEL
 Section 21-26S-32E
 PBHL: 100' FSL; 2200' FEL
 Section 21-26S-32E



HOBBS OCD
 MAY 15 2019
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**MEWBOURNE
OIL COMPANY**

Mewbourne Oil Company

Lea County N. M. Nad (83)

Section 21-26S-32E Red Hills West Fed Com #4H

Red Hills West 21W0BO Fed Com #4H

Original Hole

Design: Original Hole

Standard Survey Report

27 February, 2019

STRYKER
DIRECTIONAL



Stryker Directional Survey Report



Company: Mewbourne Oil Company
Project: Lea County N. M. Nad (83)
Site: Section 21-26S-32E Red Hills West Fed Com #4H
Well: Red Hills West 21 W0BO Fed Com #4H
Wellbore: Original Hole
Design: Original Hole

Local Co-ordinate Reference: Well Red Hills West 21 W0BO Fed Com #4H
TVD Reference: 3157 + 27 @ 3184.0usft (Patterson 217)
MD Reference: 3157 + 27 @ 3184.0usft (Patterson 217)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: STYKER_EDM

Project	Lea County N. M. Nad (83)	System Datum:	Mean Sea Level
Map System:	US State Plane 1983		
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Section 21-26S-32E Red Hills West Fed Com #4H

Site Position: **Map** **Northing:** 377,088.50 usft **Latitude:** 32° 2' 6.006 N
From: **Eastng:** 744,475.20 usft **Longitude:** 103° 40' 40.016 W
Position Uncertainty: 0.0 usft **Slot Radius:** 13-3/16 " **Grid Convergence:** 0.35 °

Well Red Hills West 21 W0BO Fed Com #4H

Well Position **+N/-S** 0.0 usft **Northing:** 377,088.50 usft **Latitude:** 32° 2' 6.006 N
+E/-W 0.0 usft **Eastng:** 744,475.20 usft **Longitude:** 103° 40' 40.016 W
Position Uncertainty 0.0 usft **Wellhead Elevation:** 27.0 usft **Ground Level:** 3,157.0 usft

Wellbore Original Hole

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	12/28/18	6.82	59.85	47,659.46957848

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	35.04

Survey Program Date 02/27/19

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
829.0	16,815.0	MWD Survey (Original Hole)	MWD	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)	Buird 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
829.0	5.30	45.70	827.8	26.8	27.4	37.7	0.64	0.64	0.00
1,019.0	2.00	40.30	1,017.4	35.4	35.8	49.6	1.74	-1.74	-2.84
1,209.0	0.60	260.10	1,207.4	37.8	37.0	52.2	1.31	-0.74	-73.79
1,399.0	0.20	231.30	1,397.4	37.4	35.8	51.2	0.23	-0.21	-15.16
1,588.0	1.10	233.96	1,586.4	36.1	34.1	49.1	0.48	0.48	1.41
1,777.0	0.70	227.30	1,775.3	34.3	31.7	46.3	0.22	-0.21	-3.52
1,966.0	0.60	239.70	1,964.3	33.0	30.0	44.3	0.09	-0.05	6.56
2,156.0	1.50	222.30	2,154.3	30.7	27.5	40.9	0.50	0.47	-9.16
2,346.0	1.30	219.70	2,344.2	27.2	24.4	36.3	0.11	-0.11	-1.37



Stryker Directional Survey Report



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Site: Section 21-26S-32E Red Hills West Fed Com #4H
Well: Red Hills West 21 W0BO Fed Com #4H
Wellbore: Original Hole
Design: Original Hole

Local Co-ordinate Reference: Well Red Hills West 21 W0BO Fed Com #4H
TVD Reference: 3157 + 27 @ 3184.0usft (Patterson 217)
MD Reference: 3157 + 27 @ 3184.0usft (Patterson 217)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: STYKER_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)
2,535.0	0.90	224.30	2,533.2	24.4	22.0	32.7	0.22	-0.21	2.43
2,725.0	0.90	233.40	2,723.2	22.5	19.8	29.8	0.08	0.00	4.79
2,915.0	0.40	235.40	2,913.2	21.2	18.1	27.7	0.26	-0.26	1.05
3,105.0	0.80	192.00	3,103.1	19.5	17.2	25.9	0.30	0.21	-22.84
3,295.0	1.00	207.70	3,293.1	16.8	16.2	23.0	0.17	0.11	8.26
3,485.0	1.10	267.30	3,483.1	15.2	13.6	20.3	0.55	0.05	31.37
3,673.0	2.50	289.20	3,671.0	16.5	7.9	18.0	0.82	0.74	11.65
3,863.0	2.00	286.90	3,860.9	18.8	0.8	15.9	0.27	-0.26	-1.21
4,053.0	2.90	283.20	4,050.7	20.9	-7.0	13.1	0.48	0.47	-1.95
4,243.0	2.30	267.70	4,240.5	21.8	-15.5	9.0	0.48	-0.32	-8.16
4,337.0	2.10	270.10	4,334.4	21.7	-19.1	6.8	0.23	-0.21	2.55
4,477.0	1.60	272.50	4,474.3	21.8	-23.6	4.3	0.36	-0.36	1.71
4,665.0	4.80	314.40	4,662.0	27.5	-31.9	4.2	2.00	1.70	22.29
4,855.0	4.40	315.20	4,851.4	38.2	-42.7	6.8	0.21	-0.21	0.42
5,045.0	5.50	316.60	5,040.7	50.0	-54.1	9.9	0.58	0.58	0.74
5,234.0	5.60	313.70	5,228.8	62.9	-67.0	13.1	0.16	0.05	-1.53
5,424.0	5.30	314.20	5,418.0	75.5	-80.0	15.9	0.16	-0.16	0.26
5,613.0	4.90	310.50	5,606.2	86.8	-92.4	18.0	0.27	-0.21	-1.96
5,803.0	5.20	309.80	5,795.5	97.6	-105.1	19.5	0.16	0.16	-0.37
5,993.0	5.50	310.70	5,984.7	109.0	-118.7	21.1	0.16	0.16	0.47
6,182.0	5.00	304.10	6,172.9	119.5	-132.4	21.9	0.41	-0.26	-3.49
6,372.0	4.40	299.50	6,362.2	127.8	-145.6	21.0	0.37	-0.32	-2.42
6,561.0	4.40	302.40	6,550.7	135.2	-158.0	20.0	0.12	0.00	1.53
6,751.0	4.30	301.80	6,740.1	142.9	-170.2	19.3	0.06	-0.05	-0.32
6,940.0	4.00	303.70	6,928.6	150.3	-181.7	18.7	0.17	-0.16	1.01
7,130.0	4.10	298.90	7,118.2	157.2	-193.2	17.8	0.19	0.05	-2.53
7,319.0	3.60	294.40	7,306.7	162.9	-204.5	16.0	0.31	-0.26	-2.38
7,509.0	3.60	289.80	7,496.4	167.4	-215.5	13.3	0.15	0.00	-2.42
7,698.0	1.90	275.00	7,685.1	169.7	-224.2	10.2	0.97	-0.90	-7.83
7,887.0	1.00	241.80	7,874.1	169.2	-228.8	7.2	0.63	-0.48	-17.57
7,982.7	1.15	241.69	7,969.7	168.4	-230.4	5.6	0.16	0.16	-0.12
B.B. Red Hills West W0BO Fed Com #4H									
8,077.0	1.30	241.60	8,064.0	167.4	-232.2	3.7	0.16	0.16	-0.09
8,265.0	0.40	323.80	8,252.0	166.9	-234.4	2.1	0.70	-0.48	43.72
8,455.0	0.70	290.40	8,442.0	167.9	-235.9	2.0	0.22	0.16	-17.58
8,645.0	0.80	274.40	8,632.0	168.4	-238.3	1.0	0.12	0.05	-8.42
8,834.0	1.10	247.80	8,821.0	167.8	-241.3	-1.2	0.28	0.16	-14.07
9,024.0	1.30	226.90	9,010.9	165.6	-244.6	-4.8	0.25	0.11	-11.00
9,213.0	0.50	33.90	9,199.9	164.8	-245.7	-6.1	0.95	-0.42	88.36
9,403.0	0.90	193.70	9,389.9	164.1	-245.6	-6.7	0.73	0.21	84.11
9,592.0	1.00	204.80	9,578.9	161.1	-246.6	-9.7	0.11	0.05	5.87
9,782.0	0.70	167.20	9,768.9	158.5	-247.0	-12.1	0.32	-0.16	-19.79



Stryker Directional Survey Report



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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: STYKER_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)
9,971.0	0.70	207.30	9,957.8	156.3	-247.3	-14.0	0.25	0.00	21.22
10,161.0	1.30	192.80	10,147.8	153.2	-248.3	-17.2	0.34	0.32	-7.63
10,351.0	1.70	243.30	10,337.8	149.8	-251.3	-21.6	0.70	0.21	26.58
10,540.0	0.40	219.70	10,526.7	148.1	-254.2	-24.8	0.71	-0.69	-12.49
10,729.0	0.40	1.60	10,715.7	148.2	-254.7	-24.9	0.40	0.00	75.08
10,918.0	0.70	68.10	10,904.7	149.3	-253.6	-23.3	0.35	0.16	35.19
11,108.0	0.90	27.70	11,094.7	151.1	-251.8	-20.9	0.31	0.11	-21.26
11,262.0	0.50	22.10	11,248.7	152.8	-251.0	-19.0	0.26	-0.26	-3.64
11,320.0	1.30	140.40	11,306.7	152.5	-250.5	-19.0	2.76	1.38	203.97
11,366.0	5.40	160.30	11,352.6	150.1	-249.4	-20.4	9.13	8.91	43.26
11,398.0	10.10	161.40	11,384.3	146.0	-248.0	-22.9	14.69	14.69	3.44
11,429.0	13.70	164.60	11,414.6	139.9	-246.2	-26.8	11.80	11.61	10.32
11,461.0	16.50	165.20	11,445.5	131.8	-244.0	-32.2	8.76	8.75	1.88
11,493.0	20.20	165.60	11,475.9	122.1	-241.5	-38.7	11.57	11.56	1.25
11,524.0	24.30	165.60	11,504.6	110.7	-238.5	-46.3	13.23	13.23	0.00
11,556.0	28.30	165.50	11,533.3	97.0	-235.0	-55.5	12.50	12.50	-0.31
11,588.0	31.60	168.20	11,561.0	81.4	-231.4	-66.2	11.14	10.31	8.44
11,619.0	35.40	168.60	11,586.8	64.7	-227.9	-78.0	12.28	12.26	1.29
11,650.0	40.40	171.70	11,611.3	45.9	-224.7	-91.5	17.25	16.13	10.00
11,682.0	45.40	174.40	11,634.7	24.3	-222.1	-107.7	16.64	15.63	8.44
11,714.0	48.40	176.50	11,656.6	1.0	-220.3	-125.7	10.53	9.38	6.56
11,745.0	51.20	178.70	11,676.6	-22.7	-219.3	-144.5	10.53	9.03	7.10
11,777.0	52.90	179.30	11,696.3	-47.9	-218.8	-164.9	5.51	5.31	1.88
11,808.0	55.70	179.30	11,714.4	-73.1	-218.5	-185.3	9.03	9.03	0.00
11,840.0	60.00	179.80	11,731.4	-100.1	-218.3	-207.3	13.50	13.44	1.56
11,871.0	62.30	180.50	11,746.3	-127.3	-218.4	-229.6	7.68	7.42	2.26
11,895.0	64.60	181.50	11,757.1	-148.8	-218.8	-247.4	10.28	9.58	4.17
11,951.0	67.70	182.30	11,779.7	-199.9	-220.5	-290.3	5.69	5.54	1.43
11,983.0	72.10	182.70	11,790.7	-230.0	-221.8	-315.6	13.80	13.75	1.25
12,014.0	76.60	183.30	11,799.1	-259.8	-223.4	-340.9	14.64	14.52	1.94
12,046.0	78.40	182.90	11,806.0	-291.0	-225.0	-367.4	5.76	5.63	-1.25
12,077.0	79.80	182.30	11,811.8	-321.4	-226.4	-393.1	4.90	4.52	-1.94
12,108.0	83.00	180.50	11,816.5	-352.0	-227.2	-418.6	11.81	10.32	-5.81
12,140.0	87.30	179.90	11,819.2	-383.9	-227.3	-444.8	13.57	13.44	-1.88
12,203.0	88.30	179.40	11,821.6	-446.8	-226.9	-496.1	1.77	1.59	-0.79
12,297.0	88.20	179.40	11,824.5	-540.8	-225.9	-572.5	0.11	-0.11	0.00
12,392.0	89.10	179.70	11,826.7	-635.7	-225.2	-649.8	1.00	0.95	0.32
12,486.0	87.70	180.00	11,829.3	-729.7	-224.9	-726.6	1.52	-1.49	0.32
12,580.0	87.80	180.60	11,833.0	-823.6	-225.4	-803.7	0.65	0.11	0.64
12,675.0	88.10	180.90	11,836.4	-918.6	-226.7	-882.2	0.45	0.32	0.32
12,769.0	92.60	182.50	11,835.9	-1,012.5	-229.4	-960.7	5.08	4.79	1.70
12,863.0	91.30	180.30	11,832.7	-1,106.4	-231.7	-1,038.9	2.72	-1.38	-2.34
12,957.0	91.30	178.40	11,830.5	-1,200.4	-230.7	-1,115.2	2.02	0.00	-2.02



Stryker Directional Survey Report



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Site:	Section 21-26S-32E Red Hills West Fed Com #4H	MD Reference:	3157 + 27 @ 3184.0usft (Patterson 217)
Well:	Red Hills West 21 W0BO Fed Com #4H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	STYKER_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)
13,052.0	91.10	179.10	11,828.5	-1,295.3	-228.6	-1,191.8	0.77	-0.21	0.74
13,146.0	89.50	178.30	11,828.0	-1,389.3	-226.5	-1,267.5	1.90	-1.70	-0.85
13,240.0	88.40	177.00	11,829.8	-1,483.2	-222.6	-1,342.1	1.81	-1.17	-1.38
13,335.0	89.20	176.40	11,831.7	-1,578.0	-217.1	-1,416.6	1.05	0.84	-0.63
13,429.0	90.30	177.10	11,832.2	-1,671.9	-211.8	-1,490.4	1.39	1.17	0.74
13,522.0	89.70	177.00	11,832.2	-1,764.7	-207.0	-1,563.7	0.65	-0.65	-0.11
13,617.0	89.00	179.30	11,833.2	-1,859.7	-204.0	-1,639.7	2.53	-0.74	2.42
13,711.0	92.10	178.70	11,832.3	-1,953.6	-202.3	-1,715.6	3.36	3.30	-0.64
13,806.0	90.90	178.00	11,829.8	-2,048.6	-199.6	-1,791.8	1.46	-1.26	-0.74
13,901.0	89.50	177.30	11,829.5	-2,143.5	-195.7	-1,867.3	1.65	-1.47	-0.74
13,995.0	91.10	178.30	11,829.0	-2,237.4	-192.1	-1,942.1	2.01	1.70	1.06
14,090.0	90.20	179.40	11,827.9	-2,332.4	-190.2	-2,018.8	1.50	-0.95	1.16
14,185.0	88.80	179.30	11,828.8	-2,427.4	-189.1	-2,095.9	1.48	-1.47	-0.11
14,278.0	89.90	181.00	11,829.8	-2,520.4	-189.3	-2,172.2	2.18	1.18	1.83
14,373.0	89.10	182.10	11,830.7	-2,615.3	-191.9	-2,251.4	1.43	-0.84	1.16
14,468.0	88.40	181.10	11,832.7	-2,710.3	-194.6	-2,330.6	1.28	-0.74	-1.05
14,563.0	90.50	181.00	11,833.6	-2,805.2	-196.3	-2,409.4	2.21	2.21	-0.11
14,657.0	90.10	182.50	11,833.2	-2,899.2	-199.2	-2,488.0	1.65	-0.43	1.60
14,751.0	90.70	184.90	11,832.5	-2,993.0	-205.2	-2,568.2	2.63	0.64	2.55
14,845.0	89.30	185.50	11,832.5	-3,086.6	-213.8	-2,649.8	1.62	-1.49	0.64
14,940.0	88.90	182.10	11,834.0	-3,181.4	-220.1	-2,731.0	3.60	-0.42	-3.58
15,035.0	89.50	179.40	11,835.3	-3,276.3	-221.3	-2,809.4	2.91	0.63	-2.84
15,129.0	89.80	177.50	11,835.9	-3,370.3	-218.8	-2,884.9	2.05	0.32	-2.02
15,224.0	91.60	177.50	11,834.7	-3,465.2	-214.6	-2,960.2	1.89	1.89	0.00
15,318.0	91.20	177.90	11,832.4	-3,559.1	-210.8	-3,034.9	0.60	-0.43	0.43
15,413.0	89.60	178.00	11,831.8	-3,654.0	-207.4	-3,110.7	1.69	-1.68	0.11
15,508.0	90.60	176.20	11,831.6	-3,748.9	-202.6	-3,185.6	2.17	1.05	-1.89
15,602.0	88.40	175.50	11,832.4	-3,842.6	-195.8	-3,258.5	2.46	-2.34	-0.74
15,697.0	92.40	175.80	11,831.8	-3,937.3	-188.6	-3,331.9	4.22	4.21	0.32
15,791.0	92.00	176.50	11,828.2	-4,031.1	-182.3	-3,405.0	0.86	-0.43	0.74
15,886.0	91.60	176.60	11,825.2	-4,125.8	-176.6	-3,479.3	0.43	-0.42	0.11
15,980.0	91.60	177.20	11,822.5	-4,219.7	-171.5	-3,553.2	0.64	0.00	0.64
16,075.0	90.60	177.30	11,820.7	-4,314.5	-167.0	-3,628.2	1.06	-1.05	0.11
16,170.0	88.50	177.10	11,821.5	-4,409.4	-162.3	-3,703.3	2.22	-2.21	-0.21
16,264.0	87.90	178.00	11,824.4	-4,503.3	-158.3	-3,777.8	1.15	-0.64	0.96
16,359.0	88.50	179.30	11,827.4	-4,598.2	-156.1	-3,854.2	1.51	0.63	1.37
16,454.0	90.20	180.20	11,828.5	-4,693.2	-155.7	-3,931.8	2.02	1.79	0.95
16,549.0	90.60	180.70	11,827.8	-4,788.2	-156.4	-4,010.0	0.67	0.42	0.53
16,643.0	90.70	181.70	11,826.8	-4,882.2	-158.4	-4,088.0	1.07	0.11	1.06
16,737.0	89.10	181.40	11,826.9	-4,976.1	-160.9	-4,166.4	1.73	-1.70	-0.32
16,768.0	88.50	181.40	11,827.6	-5,007.1	-161.7	-4,192.2	1.94	-1.94	0.00
16,806.4	88.50	181.40	11,828.6	-5,045.5	-162.6	-4,224.2	0.00	0.00	0.00



Stryker Directional Survey Report



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Red Hills West 21 W0BO Fed Com #4H
Project:	Lea County N. M. Nad (83)	TVD Reference:	3157 + 27 @ 3184.0usft (Patterson 217)
Site:	Section 21-26S-32E Red Hills West Fed Com #4H	MD Reference:	3157 + 27 @ 3184.0usft (Patterson 217)
Well:	Red Hills West 21 W0BO Fed Com #4H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	STYKER_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)
PBHL Red Hills West W0BO Fed Com #4H									
16,815.0	88.50	181.40	11,828.8	-5,054.1	-162.8	-4,231.3	0.00	0.00	0.00
16815' MD Projected to Bit									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
16,815.0	11,828.8	-5,054.1	-162.8	16815' MD Projected to Bit

STRYKER

DIRECTIONAL

March 14, 2019

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

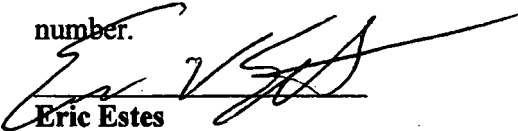
Attn: Jackie Lathan

Re: Mewbourne Oil Company
Red Hills West 21 W0BO Federal Com #4H
Wildcat; Upper Wolfcamp
Lea County, New Mexico
API# 30-025-45442

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>
James Dennehy	Original Hole	829ft. to 16,768ft.	01-12-19 to 01-30-19	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 21 W0BO Fed Com #4H\M191020

STRYKER ENERGY DIRECTIONAL SERVICES, L.L.C.

P.O. Box 1250

Montgomery, TX 77356

Office (936) 582-7296 * Fax (936)-588-4163



March 14, 2019

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 January 12, 2019, through January 30, 2019 conduct or supervise the taking of a SEDS Original Hole MWD Survey from a depth of 829feet to a depth of 16,768feet; 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 21 W0BO Federal Com #004H, well API # 30-025-45442 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.

A handwritten signature in black ink, appearing to read "Eric Estes", is written over a horizontal line.

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



Stryker Directional MWD Surveys



Company: Mewbourne Oil Company
Project: Lea County N. M. Nad (83)
Site: Section 21-26S-32E Red Hills West Fed Com #4H
Well: Red Hills West 21 W0BO Fed Com #4H
Wellbore: Original Hole
Design: Original Hole

Local Co-ordinate Reference: Well Red Hills West 21 W0BO Fed Com #4H
TVD Reference: 3157 + 27 @ 3184.0usft (Patterson 217)
MD Reference: 3157 + 27 @ 3184.0usft (Patterson 217)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: STYKER_EDM

Project Lea County N. M. Nad (83)

Map System: US State Plane 1983
Geo Datum: North American Datum 1983
Map Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

Site Section 21-26S-32E Red Hills West Fed Com #4H

Site Position:	Northing:	377,088.50 usft	Latitude:	32° 2' 6.006 N
From: Map	Easting:	744,475.20 usft	Longitude:	103° 40' 40.016 W
Position Uncertainty: 0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.35 °

Well Red Hills West 21 W0BO Fed Com #4H

Well Position	+N/-S	0.0 usft	Northing:	377,088.50 usft	Latitude:	32° 2' 6.006 N
	+E/-W	0.0 usft	Easting:	744,475.20 usft	Longitude:	103° 40' 40.016 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	27.0 usft	Ground Level:	3,157.0 usft

Wellbore Original Hole

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	12/28/18	6.82	59.85	47,659.46957848

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	35.04	

Survey Program Date 02/27/19

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
829.0	16,815.0	MWD Survey (Original Hole)	MWD	MWD v3:standard declination



Stryker Directional MWD Surveys



Company: Mewbourne Oil Company
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Wellbore: Original Hole
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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: STYKER_EDM

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Tie-In
630.0	5.24	40.99	628.9	2,555.1	23.6	16.6	28.9	35.04	
630' MD Rig									
829.0	5.30	45.70	827.1	2,356.9	36.9	29.1	47.0	38.26	
1,019.0	2.00	40.30	1,016.7	2,167.3	45.6	37.5	59.0	39.48	
1,209.0	0.60	260.10	1,206.7	1,977.3	47.9	38.7	61.6	38.92	
1,399.0	0.20	231.30	1,396.7	1,787.3	47.6	37.5	60.5	38.24	
1,588.0	1.10	233.96	1,585.6	1,598.4	46.3	35.7	58.5	37.68	
1,777.0	0.70	227.30	1,774.6	1,409.4	44.4	33.4	55.6	36.96	
1,966.0	0.60	239.70	1,963.6	1,220.4	43.1	31.7	53.6	36.33	
2,156.0	1.50	222.30	2,153.6	1,030.4	40.8	29.2	50.2	35.58	
2,346.0	1.30	219.70	2,343.5	840.5	37.3	26.1	45.6	35.02	
2,535.0	0.90	224.30	2,532.5	651.5	34.6	23.7	42.0	34.45	
2,725.0	0.90	233.40	2,722.5	461.5	32.6	21.5	39.1	33.37	
2,915.0	0.40	235.40	2,912.4	271.6	31.4	19.8	37.1	32.19	
3,105.0	0.80	192.00	3,102.4	81.6	29.7	18.9	35.2	32.51	
3,295.0	1.00	207.70	3,292.4	-108.4	26.9	17.9	32.3	33.58	
3,485.0	1.10	267.30	3,482.4	-298.4	25.4	15.3	29.6	31.07	
3,673.0	2.50	289.20	3,670.3	-486.3	26.6	9.6	28.3	19.85	
3,863.0	2.00	286.90	3,860.1	-676.1	29.0	2.5	29.1	4.99	
4,053.0	2.90	283.20	4,050.0	-866.0	31.0	-5.3	31.5	350.27	
4,243.0	2.30	267.70	4,239.8	-1,055.8	32.0	-13.8	34.8	336.64	
4,337.0	2.10	270.10	4,333.7	-1,149.7	31.9	-17.4	36.3	331.37	
4,477.0	1.60	272.50	4,473.6	-1,289.6	32.0	-21.9	38.8	325.56	
4,665.0	4.80	314.40	4,661.3	-1,477.3	37.6	-30.2	48.2	321.26	
4,855.0	4.40	315.20	4,850.7	-1,666.7	48.3	-41.0	63.4	319.70	
5,045.0	5.50	316.60	5,040.0	-1,856.0	60.1	-52.4	79.8	318.94	
5,234.0	5.60	313.70	5,228.1	-2,044.1	73.1	-65.3	98.0	318.23	



Stryker Directional MWD Surveys



Company: Mewbourne Oil Company
Project: Lea County N. M. Nad (83)
Site: Section 21-26S-32E Red Hills West Fed Com #4H
Well: Red Hills West 21 W0BO Fed Com #4H
Wellbore: Original Hole
Design: Original Hole

Local Co-ordinate Reference: Well Red Hills West 21 W0BO Fed Com #4H
TVD Reference: 3157 + 27 @ 3184.0usft (Patterson 217)
MD Reference: 3157 + 27 @ 3184.0usft (Patterson 217)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: STYKER_EDM

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)
5,424.0	5.30	314.20	5,417.3	-2,233.3	85.6	-78.3	116.0	317.56
5,613.0	4.90	310.50	5,605.5	-2,421.5	96.9	-90.7	132.7	316.91
5,803.0	5.20	309.80	5,794.8	-2,610.8	107.7	-103.5	149.3	316.16
5,993.0	5.50	310.70	5,983.9	-2,799.9	119.2	-117.0	167.0	315.53
6,182.0	5.00	304.10	6,172.2	-2,988.2	129.7	-130.7	184.1	314.79
6,372.0	4.40	299.50	6,361.5	-3,177.5	137.9	-143.9	199.3	313.79
6,561.0	4.40	302.40	6,550.0	-3,366.0	145.4	-156.3	213.4	312.93
6,751.0	4.30	301.80	6,739.4	-3,555.4	153.0	-168.5	227.6	312.25
6,940.0	4.00	303.70	6,927.9	-3,743.9	160.4	-180.0	241.1	311.71
7,130.0	4.10	298.90	7,117.4	-3,933.4	167.4	-191.5	254.3	311.16
7,319.0	3.60	294.40	7,306.0	-4,122.0	173.1	-202.8	266.6	310.49
7,509.0	3.60	289.80	7,495.6	-4,311.6	177.6	-213.8	278.0	309.71
7,698.0	1.90	275.00	7,684.4	-4,500.4	179.9	-222.5	286.1	308.95
7,887.0	1.00	241.80	7,873.4	-4,689.4	179.4	-227.1	289.4	308.30
7,983.5	1.15	241.69	7,969.9	-4,785.9	178.5	-228.7	290.1	307.97
B.B. Red Hills West W0BO Fed Com #4H								
8,077.0	1.30	241.60	8,063.3	-4,879.3	177.6	-230.5	290.9	307.61
8,265.0	0.40	323.80	8,251.3	-5,067.3	177.1	-232.7	292.4	307.27
8,455.0	0.70	290.40	8,441.3	-5,257.3	178.0	-234.2	294.2	307.24
8,645.0	0.80	274.40	8,631.3	-5,447.3	178.5	-236.6	296.4	307.03
8,834.0	1.10	247.80	8,820.3	-5,636.3	177.9	-239.6	298.5	306.60
9,024.0	1.30	226.90	9,010.2	-5,826.2	175.8	-242.9	299.8	305.89
9,213.0	0.50	33.90	9,199.2	-6,015.2	175.0	-244.0	300.2	305.65
9,403.0	0.90	193.70	9,389.2	-6,205.2	174.2	-243.9	299.7	305.54
9,592.0	1.00	204.80	9,578.2	-6,394.2	171.3	-244.9	298.9	304.97
9,782.0	0.70	167.20	9,768.2	-6,584.2	168.7	-245.4	297.7	304.50
9,971.0	0.70	207.30	9,957.1	-6,773.1	166.5	-245.6	296.7	304.13



Stryker Directional MWD Surveys



Company: Mewbourne Oil Company
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Wellbore: Original Hole
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TVD Reference: 3157 + 27 @ 3184.0usft (Patterson 217)
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Database: STYKER_EDM

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)
10,161.0	1.30	192.80	10,147.1	-8,983.1	163.4	-246.6	295.8	303.52
10,351.0	1.70	243.30	10,337.0	-7,153.0	180.0	-249.6	296.5	302.66
10,540.0	0.40	219.70	10,526.0	-7,342.0	158.2	-252.6	298.0	302.07
10,729.0	0.40	1.60	10,715.0	-7,531.0	158.4	-253.0	298.5	302.05
10,918.0	0.70	68.10	10,904.0	-7,720.0	159.5	-251.9	298.1	302.34
11,108.0	0.90	27.70	11,094.0	-7,910.0	161.2	-250.1	297.6	302.81
11,262.0	0.50	22.10	11,248.0	-8,064.0	162.9	-249.3	297.8	303.17
11,320.0	1.30	140.40	11,306.0	-8,122.0	162.6	-248.8	297.2	303.18
11,366.0	5.40	160.30	11,351.9	-8,167.9	160.2	-247.7	295.0	302.89
11,398.0	10.10	161.40	11,383.6	-8,199.6	156.1	-246.3	291.6	302.37
11,429.0	13.70	164.60	11,413.9	-8,229.9	150.0	-244.5	286.8	301.53
11,461.0	16.50	165.20	11,444.8	-8,260.8	142.0	-242.3	280.8	300.37
11,493.0	20.20	165.60	11,475.2	-8,291.2	132.2	-239.8	273.8	298.87
11,524.0	24.30	165.60	11,503.9	-8,319.9	120.8	-236.8	265.9	297.03
11,556.0	28.30	165.50	11,532.5	-8,348.5	107.1	-233.3	256.7	294.66
11,588.0	31.60	168.20	11,560.3	-8,376.3	91.6	-229.7	247.3	291.73
11,619.0	35.40	168.60	11,586.1	-8,402.1	74.8	-226.2	238.3	288.30
11,650.0	40.40	171.70	11,610.6	-8,426.6	56.1	-223.0	230.0	284.11
11,682.0	45.40	174.40	11,634.0	-8,450.0	34.4	-220.4	223.1	278.88
11,714.0	48.40	176.50	11,655.9	-8,471.9	11.1	-218.6	218.9	272.92
11,745.0	51.20	178.70	11,675.9	-8,491.9	-12.5	-217.6	217.9	266.71
11,777.0	52.90	179.30	11,695.6	-8,511.6	-37.7	-217.1	220.4	260.14
11,808.0	55.70	179.30	11,713.6	-8,529.6	-62.9	-216.8	225.8	253.82
11,840.0	60.00	179.80	11,730.7	-8,546.7	-90.0	-216.6	234.6	247.44
11,871.0	62.30	180.50	11,745.6	-8,561.6	-117.1	-216.7	246.3	241.61
11,895.0	64.60	181.50	11,756.3	-8,572.3	-138.6	-217.1	257.6	237.44
11,951.0	67.70	182.30	11,779.0	-8,595.0	-189.8	-218.8	289.6	229.06



Stryker Directional MWD Surveys



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Site: Section 21-26S-32E Red Hills West Fed Com #4I
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Wellbore: Original Hole
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MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)
11,983.0	72.10	182.70	11,790.0	-8,606.0	-219.8	-220.1	311.1	225.04
12,014.0	76.60	183.30	11,798.3	-8,614.3	-249.6	-221.7	333.8	221.61
12,046.0	76.40	182.90	11,805.3	-8,621.3	-280.8	-223.3	358.8	218.50
12,077.0	79.80	182.30	11,811.1	-8,627.1	-311.2	-224.7	383.9	215.83
12,108.0	83.00	180.50	11,815.8	-8,631.8	-341.8	-225.5	408.5	213.41
12,140.0	87.30	179.90	11,818.5	-8,634.5	-373.7	-225.6	436.5	211.12
12,203.0	88.30	179.40	11,820.9	-8,636.9	-436.7	-225.2	491.3	207.28
12,297.0	88.20	179.40	11,823.8	-8,639.8	-530.6	-224.2	576.0	202.91
12,392.0	89.10	179.70	11,826.0	-8,642.0	-625.6	-223.5	664.3	199.66
12,486.0	87.70	180.00	11,828.6	-8,644.6	-719.6	-223.2	753.4	197.24
12,580.0	87.80	180.60	11,832.3	-8,648.3	-813.5	-223.7	843.7	195.38
12,675.0	88.10	180.90	11,835.7	-8,651.7	-908.4	-225.0	935.8	193.91
12,768.0	92.60	182.50	11,835.1	-8,651.1	-1,002.3	-227.7	1,027.9	192.80
12,863.0	91.30	180.30	11,831.9	-8,647.9	-1,096.2	-230.0	1,120.1	191.85
12,957.0	91.30	178.40	11,829.8	-8,645.8	-1,190.2	-229.0	1,212.0	190.89
13,052.0	91.10	179.10	11,827.8	-8,643.8	-1,285.2	-226.9	1,305.0	190.01
13,146.0	89.50	178.30	11,827.3	-8,643.3	-1,379.1	-224.8	1,397.3	189.26
13,240.0	88.40	177.00	11,829.0	-8,645.0	-1,473.0	-220.9	1,489.5	188.53
13,335.0	89.20	176.40	11,831.0	-8,647.0	-1,567.9	-215.4	1,582.6	187.82
13,429.0	90.30	177.10	11,831.4	-8,647.4	-1,661.7	-210.1	1,674.9	187.21
13,522.0	89.70	177.00	11,831.4	-8,647.4	-1,754.6	-205.3	1,766.6	186.67
13,617.0	89.00	179.30	11,832.5	-8,648.5	-1,849.5	-202.3	1,860.5	186.24
13,711.0	92.10	178.70	11,831.6	-8,647.6	-1,943.5	-200.6	1,953.8	185.89
13,806.0	90.90	178.00	11,829.1	-8,645.1	-2,038.4	-197.9	2,048.0	185.55
13,901.0	89.50	177.30	11,828.8	-8,644.8	-2,133.3	-194.0	2,142.1	185.20
13,995.0	91.10	178.30	11,828.3	-8,644.3	-2,227.3	-190.4	2,235.4	184.89
14,090.0	90.20	179.40	11,827.2	-8,643.2	-2,322.2	-188.5	2,329.9	184.64



Stryker Directional MWD Surveys



Company: Mewbourne Oil Company
Project: Lea County N. M. Nad (83)
Site: Section 21-26S-32E Red Hills West Fed Com #4I
Well: Red Hills West 21 W0BO Fed Com #4H
Wellbore: Original Hole
Design: Original Hole

Local Co-ordinate Reference: Well Red Hills West 21 W0BO Fed Com #4H
TVD Reference: 3157 + 27 @ 3184.0usft (Patterson 217)
MD Reference: 3157 + 27 @ 3184.0usft (Patterson 217)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: STYKER_EDM

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)
14,185.0	88.80	179.30	11,828.1	-8,644.1	-2,417.2	-187.4	2,424.5	184.43
14,278.0	89.90	181.00	11,829.1	-8,645.1	-2,510.2	-187.6	2,517.2	184.28
14,373.0	89.10	182.10	11,829.9	-8,645.9	-2,605.2	-190.2	2,612.1	184.18
14,468.0	88.40	181.10	11,832.0	-8,648.0	-2,700.1	-192.9	2,707.0	184.09
14,563.0	90.50	181.00	11,832.9	-8,648.9	-2,795.1	-194.6	2,801.8	183.98
14,657.0	90.10	182.50	11,832.4	-8,648.4	-2,889.0	-197.5	2,895.8	183.91
14,751.0	90.70	184.90	11,831.8	-8,647.8	-2,982.8	-203.5	2,989.8	183.90
14,845.0	89.30	185.50	11,831.8	-8,647.8	-3,076.4	-212.1	3,083.7	183.94
14,940.0	88.90	182.10	11,833.3	-8,649.3	-3,171.2	-218.4	3,178.7	183.94
15,035.0	89.50	179.40	11,834.6	-8,650.6	-3,266.2	-219.6	3,273.5	183.85
15,129.0	89.80	177.50	11,835.2	-8,651.2	-3,360.1	-217.1	3,367.1	183.70
15,224.0	91.60	177.50	11,834.0	-8,650.0	-3,455.0	-212.9	3,461.6	183.53
15,318.0	91.20	177.90	11,831.7	-8,647.7	-3,548.9	-209.1	3,555.1	183.37
15,413.0	89.60	178.00	11,831.1	-8,647.1	-3,643.9	-205.7	3,649.7	183.23
15,508.0	90.60	176.20	11,830.9	-8,646.9	-3,738.7	-200.9	3,744.1	183.08
15,602.0	88.40	175.50	11,831.7	-8,647.7	-3,832.5	-194.1	3,837.4	182.90
15,697.0	92.40	175.80	11,831.0	-8,647.0	-3,927.2	-188.9	3,931.6	182.73
15,791.0	92.00	176.50	11,827.4	-8,643.4	-4,020.9	-180.6	4,025.0	182.57
15,886.0	91.60	176.60	11,824.5	-8,640.5	-4,115.7	-174.9	4,119.4	182.43
15,980.0	91.60	177.20	11,821.8	-8,637.8	-4,209.6	-169.8	4,212.9	182.31
16,075.0	90.60	177.30	11,820.0	-8,636.0	-4,304.4	-165.3	4,307.6	182.20
16,170.0	88.50	177.10	11,820.8	-8,636.8	-4,399.3	-160.6	4,402.2	182.09
16,264.0	87.90	178.00	11,823.7	-8,639.7	-4,493.1	-156.6	4,495.9	182.00
16,359.0	88.50	179.30	11,826.7	-8,642.7	-4,588.0	-154.4	4,590.6	181.93
16,454.0	90.20	180.20	11,827.8	-8,643.8	-4,683.0	-154.0	4,685.6	181.88
16,549.0	90.60	180.70	11,827.1	-8,643.1	-4,778.0	-154.7	4,780.5	181.85
16,643.0	90.70	181.70	11,826.0	-8,642.0	-4,872.0	-156.7	4,874.5	181.84



Stryker Directional MWD Surveys



Company: Mewbourne Oil Company
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Well: Red Hills West 21 W0BO Fed Com #4H
Wellbore: Original Hole
Design: Original Hole

Local Co-ordinate Reference: Well Red Hills West 21 W0BO Fed Com #4H
TVD Reference: 3157 + 27 @ 3184.0usft (Patterson 217)
MD Reference: 3157 + 27 @ 3184.0usft (Patterson 217)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: STYKER_EDM

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)
16,737.0	89.10	181.40	11,826.2	-8,642.2	-4,966.0	-159.2	4,968.5	181.84
16,768.0	88.50	181.40	11,826.9	-8,642.9	-4,997.0	-160.0	4,999.5	181.83
16,815.0	88.50	181.40	11,828.1	-8,644.1	-5,043.9	-161.1	5,046.5	181.83

16815' MD Projected to Bit - PBHL Red Hills West W0BO Fed Com #4H

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
630.0	628.9	23.6	16.6	630' MD Rig
16,815.0	11,828.1	-5,043.9	-161.1	16815' MD Projected to Bit