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Mewbourne Oil Company

Eddy County, New Mexico (Nad 83)

Sec 2, T24S, R28E

Skynyrd 2 W0DM Fee #2H

Wellbore #1

30.015.44803

Design: Wellbore #1

QES Survey Report

19 August, 2018





Survey Report



Company: Mewbourne Oil Company
Project: Eddy County, New Mexico (Nad 83)
Site: Sec 2, T24S, R28E
Well: Skynyrd 2 W0DM Fee #2H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Skynyrd 2 W0DM Fee #2H
TVD Reference: WELL @ 3043.0usft (Patterson #243)
MD Reference: WELL @ 3043.0usft (Patterson #243)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Project	Eddy County, New Mexico (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	Sec 2, T24S, R28E				
Site Position:		Northing:	456,163.00 usft	Latitude:	32° 15' 13.596 N
From:	Map	Easting:	625,124.70 usft	Longitude:	104° 3' 44.254 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.14 °

Well	Skynyrd 2 W0DM Fee #2H					
Well Position	+N/-S	0.0 usft	Northing:	456,162.90 usft	Latitude:	32° 15' 13.596 N
	+E/-W	0.0 usft	Easting:	625,094.60 usft	Longitude:	104° 3' 44.605 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,016.0 usft	

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	7/30/2018	7.06	60.00	47,791.58263186

Design	Wellbore #1				
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	180.80	

Survey Program	Date 8/19/2018				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	100.0	Phoenix Technology Services (Wellbore #1	GYRO-NS	OWSG Gyrocompass Gyro	
204.0	14,305.0	QES MWD Surveys (Wellbore #1)	OWSG (Rev2) MWD	OWSG MWD - Standard	

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
Gyro Tie-in @ 100.0' MD / 100.0' TVD										
	100.0	0.93	351.30	100.0	0.8	-0.1	-0.8	0.93	0.93	0.00
	204.0	1.90	349.70	204.0	3.3	-0.6	-3.3	0.93	0.93	-1.54
	388.0	2.20	357.30	387.8	9.9	-1.3	-9.8	0.22	0.16	4.13
	572.0	1.00	111.70	571.8	12.8	0.1	-12.8	1.50	-0.65	62.17
	759.0	0.70	133.00	758.8	11.4	2.4	-11.4	0.23	-0.16	11.39
	950.0	0.10	333.70	949.8	10.8	3.2	-10.8	0.42	-0.31	-83.40
	1,140.0	0.30	339.00	1,139.8	11.4	2.9	-11.4	0.11	0.11	2.79
	1,330.0	0.30	346.50	1,329.8	12.3	2.6	-12.4	0.02	0.00	3.95

Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Skynyrd 2 W0DM Fee #2H
Project:	Eddy County, New Mexico (Nad 83)	TVD Reference:	WELL @ 3043.0usft (Patterson #243)
Site:	Sec 2, T24S, R28E	MD Reference:	WELL @ 3043.0usft (Patterson #243)
Well:	Skynyrd 2 W0DM Fee #2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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)
1,521.0	0.50	309.30	1,520.8	13.3	1.9	-13.4	0.17	0.10	-19.48
1,712.0	1.00	322.80	1,711.7	15.2	0.2	-15.2	0.28	0.26	7.07
1,840.0	0.60	324.20	1,839.7	16.6	-0.8	-16.6	0.31	-0.31	1.09
2,027.0	0.90	120.50	2,026.7	16.7	-0.1	-16.7	0.79	0.16	83.58
2,214.0	2.40	129.40	2,213.6	13.4	4.1	-13.5	0.81	0.80	4.76
2,402.0	3.50	134.00	2,401.4	7.0	11.3	-7.1	0.60	0.59	2.45
2,475.0	3.00	128.00	2,474.3	4.2	14.4	-4.4	0.83	-0.68	-8.22
2,552.0	3.30	129.60	2,551.2	1.6	17.7	-1.8	0.41	0.39	2.08
2,740.0	3.30	0.90	2,739.0	3.6	22.0	-3.9	3.16	0.00	-68.46
2,926.0	3.80	358.50	2,924.7	15.1	21.9	-15.4	0.28	0.27	-1.29
3,112.0	3.80	353.90	3,110.3	27.4	21.1	-27.6	0.16	0.00	-2.47
3,300.0	4.20	349.50	3,297.8	40.3	19.2	-40.6	0.27	0.21	-2.34
3,486.0	2.20	356.90	3,483.5	50.6	17.7	-50.8	1.10	-1.08	3.98
3,674.0	2.10	353.60	3,671.4	57.6	17.2	-57.8	0.08	-0.05	-1.76
3,860.0	2.40	0.10	3,857.2	64.9	16.8	-65.1	0.21	0.16	3.49
4,047.0	1.70	343.70	4,044.1	71.5	16.0	-71.7	0.48	-0.37	-8.77
4,235.0	1.60	350.80	4,232.0	76.7	14.8	-76.9	0.12	-0.05	3.78
4,422.0	1.50	14.30	4,419.0	81.7	15.0	-81.9	0.34	-0.05	12.57
4,608.0	1.60	354.60	4,604.9	86.6	15.3	-86.8	0.29	0.05	-10.59
4,795.0	1.70	346.40	4,791.8	91.9	14.4	-92.1	0.14	0.05	-4.39
4,982.0	1.70	335.60	4,978.7	97.1	12.7	-97.3	0.17	0.00	-5.78
5,171.0	1.50	326.80	5,167.7	101.8	10.1	-101.9	0.17	-0.11	-4.66
5,359.0	1.40	333.90	5,355.6	105.9	7.8	-106.0	0.11	-0.05	3.78
5,547.0	0.90	300.50	5,543.6	108.7	5.5	-108.8	0.43	-0.27	-17.77
5,735.0	0.40	178.80	5,731.6	108.8	4.2	-108.8	0.62	-0.27	-64.73
5,922.0	0.50	222.10	5,918.5	107.5	3.7	-107.6	0.18	0.05	23.16
6,112.0	1.10	184.30	6,108.5	105.1	3.0	-105.1	0.40	0.32	-19.89
6,299.0	1.10	195.70	6,295.5	101.6	2.4	-101.6	0.12	0.00	6.10
6,487.0	1.60	225.60	6,483.4	98.0	0.0	-98.0	0.45	0.27	15.90
6,675.0	0.50	3.00	6,671.4	97.0	-1.8	-97.0	1.06	-0.59	73.09
6,863.0	1.10	257.90	6,859.4	97.4	-3.5	-97.4	0.70	0.32	-55.90
7,051.0	1.40	286.10	7,047.4	97.7	-7.5	-97.6	0.36	0.16	15.00
7,240.0	1.90	323.00	7,236.3	100.8	-11.6	-100.7	0.61	0.26	19.52
7,428.0	2.50	2.00	7,424.2	107.4	-13.3	-107.2	0.84	0.32	20.74
7,615.0	1.40	49.10	7,611.1	113.0	-11.5	-112.8	0.99	-0.59	25.19
7,803.0	1.40	358.80	7,799.0	116.8	-9.8	-116.6	0.63	0.00	-26.76
7,991.0	1.50	352.70	7,987.0	121.5	-10.1	-121.4	0.10	0.05	-3.24
8,179.0	3.00	21.90	8,174.8	128.5	-8.6	-128.4	0.98	0.80	15.53
8,367.0	2.90	33.50	8,362.6	137.1	-4.2	-137.0	0.32	-0.05	6.17
8,555.0	1.60	8.00	8,550.4	143.6	-1.2	-143.6	0.86	-0.69	-13.56
8,744.0	0.70	157.00	8,739.4	145.2	-0.3	-145.2	1.18	-0.48	78.84
8,932.0	1.40	183.90	8,927.4	141.8	-0.1	-141.8	0.45	0.37	14.31
9,098.0	1.30	176.40	9,093.3	137.9	-0.1	-137.9	0.12	-0.06	-4.52



Survey Report



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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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)
9,154.0	1.90	170.60	9,149.3	136.4	0.1	-136.4	1.11	1.07	-10.36
9,185.0	5.40	170.90	9,180.2	134.4	0.4	-134.4	11.29	11.29	0.97
9,216.0	9.10	183.40	9,211.0	130.5	0.5	-130.5	12.91	11.94	40.32
9,248.0	13.20	182.40	9,242.4	124.4	0.2	-124.4	12.83	12.81	-3.13
9,279.0	17.20	178.10	9,272.3	116.2	0.2	-116.2	13.40	12.90	-13.87
9,311.0	22.30	173.70	9,302.4	105.5	1.0	-105.5	16.59	15.94	-13.75
9,342.0	27.60	172.90	9,330.5	92.5	2.6	-92.5	17.13	17.10	-2.58
9,373.0	32.80	174.40	9,357.3	77.0	4.3	-77.1	16.95	16.77	4.84
9,405.0	37.80	176.70	9,383.4	58.6	5.7	-58.6	16.17	15.63	7.19
9,436.0	42.90	178.50	9,407.0	38.5	6.5	-38.6	16.87	16.45	5.81
9,468.0	46.40	180.40	9,429.8	16.0	6.7	-16.1	11.71	10.94	5.94
9,499.0	48.70	179.70	9,450.7	-6.8	6.7	6.7	7.60	7.42	-2.26
9,530.0	51.70	178.70	9,470.5	-30.6	7.0	30.5	9.99	9.68	-3.23
9,562.0	54.30	177.60	9,489.8	-56.2	7.9	56.1	8.58	8.13	-3.44
9,593.0	56.80	176.90	9,507.3	-81.7	9.1	81.6	8.28	8.06	-2.26
9,624.0	58.60	177.30	9,523.9	-107.9	10.4	107.7	5.91	5.81	1.29
9,656.0	61.20	177.80	9,539.9	-135.5	11.6	135.4	8.24	8.13	1.56
HL Crossed @ 9678.1' MD / 9550.2' TVD									
9,678.1	63.48	178.30	9,550.2	-155.1	12.3	154.9	10.52	10.32	2.28
9,687.0	64.40	178.50	9,554.1	-163.1	12.5	162.9	10.52	10.33	2.21
9,718.0	66.90	179.50	9,566.9	-191.3	13.0	191.1	8.58	8.06	3.23
9,749.0	68.30	180.90	9,578.7	-220.0	12.9	219.8	6.15	4.52	4.52
9,780.0	70.40	181.60	9,589.6	-249.0	12.3	248.8	7.10	6.77	2.26
9,811.0	73.30	181.60	9,599.3	-278.4	11.4	278.2	9.35	9.35	0.00
9,830.0	74.70	181.60	9,604.5	-296.7	10.9	296.5	7.37	7.37	0.00
9,894.0	75.20	181.30	9,621.1	-358.5	9.4	358.3	0.90	0.78	-0.47
9,925.0	74.70	181.50	9,629.2	-388.4	8.6	388.2	1.73	-1.61	0.65
9,957.0	75.50	181.30	9,637.4	-419.3	7.9	419.2	2.57	2.50	-0.63
9,988.0	78.00	181.30	9,644.5	-449.5	7.2	449.3	8.06	8.06	0.00
10,019.0	82.40	180.90	9,649.8	-480.0	6.6	479.9	14.25	14.19	-1.29
10,050.0	87.80	180.10	9,652.4	-510.9	6.3	510.7	17.61	17.42	-2.58
10,113.0	91.00	179.50	9,653.1	-573.9	6.6	573.7	5.17	5.08	-0.95
10,207.0	92.50	181.60	9,650.2	-667.8	5.6	667.7	2.74	1.60	2.23
10,300.0	92.30	181.30	9,646.3	-760.7	3.3	760.6	0.39	-0.22	-0.32
10,395.0	90.00	181.60	9,644.4	-855.6	0.9	855.6	2.44	-2.42	0.32
10,488.0	89.50	182.00	9,644.8	-948.6	-2.0	948.5	0.69	-0.54	0.43
10,582.0	88.90	182.40	9,646.1	-1,042.5	-5.6	1,042.5	0.77	-0.64	0.43
10,676.0	88.30	182.40	9,648.4	-1,136.4	-9.6	1,136.4	0.64	-0.64	0.00
10,770.0	92.80	183.90	9,647.5	-1,230.2	-14.7	1,230.3	5.05	4.79	1.60
10,864.0	89.80	181.50	9,645.4	-1,324.1	-19.2	1,324.2	4.09	-3.19	-2.55
10,958.0	89.80	181.50	9,645.7	-1,418.1	-21.6	1,418.2	0.00	0.00	0.00
11,051.0	88.80	180.80	9,646.9	-1,511.0	-23.5	1,511.2	1.31	-1.08	-0.75
11,145.0	89.50	181.80	9,648.3	-1,605.0	-25.6	1,605.2	1.30	0.74	1.06
11,239.0	90.50	183.10	9,648.3	-1,698.9	-29.6	1,699.2	1.74	1.06	1.38



Survey Report



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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)
11,332.0	89.70	181.50	9,648.1	-1,791.8	-33.4	1,792.1	1.92	-0.86	-1.72
11,426.0	91.40	183.80	9,647.2	-1,885.7	-37.7	1,886.1	3.04	1.81	2.45
11,520.0	91.50	182.90	9,644.8	-1,979.5	-43.2	1,979.9	0.96	0.11	-0.96
11,614.0	90.60	179.50	9,643.1	-2,073.5	-45.2	2,073.9	3.74	-0.96	-3.62
11,708.0	89.30	178.80	9,643.2	-2,167.5	-43.8	2,167.9	1.57	-1.38	-0.74
11,802.0	89.10	179.20	9,644.5	-2,261.4	-42.1	2,261.8	0.48	-0.21	0.43
11,896.0	88.30	180.10	9,646.6	-2,355.4	-41.6	2,355.8	1.28	-0.85	0.96
11,990.0	90.00	179.90	9,648.0	-2,449.4	-41.6	2,449.7	1.82	1.81	-0.21
12,083.0	92.90	183.20	9,645.7	-2,542.3	-44.1	2,542.7	4.72	3.12	3.55
12,177.0	90.70	181.10	9,642.7	-2,636.2	-47.6	2,636.6	3.23	-2.34	-2.23
12,272.0	89.90	181.10	9,642.2	-2,731.2	-49.4	2,731.6	0.84	-0.84	0.00
12,366.0	89.60	181.60	9,642.6	-2,825.1	-51.6	2,825.6	0.62	-0.32	0.53
12,460.0	91.40	182.70	9,641.8	-2,919.1	-55.2	2,919.5	2.24	1.91	1.17
12,554.0	90.00	182.50	9,640.7	-3,013.0	-59.4	3,013.5	1.50	-1.49	-0.21
12,648.0	89.40	182.00	9,641.1	-3,106.9	-63.1	3,107.5	0.83	-0.64	-0.53
12,742.0	89.90	182.50	9,641.7	-3,200.8	-66.8	3,201.4	0.75	0.53	0.53
12,836.0	89.80	182.70	9,642.0	-3,294.7	-71.1	3,295.4	0.24	-0.11	0.21
12,931.0	88.00	179.40	9,643.8	-3,389.7	-72.8	3,390.3	3.96	-1.89	-3.47
13,025.0	86.10	179.50	9,648.6	-3,483.5	-71.9	3,484.2	2.02	-2.02	0.11
13,119.0	90.40	179.50	9,651.5	-3,577.5	-71.1	3,578.1	4.57	4.57	0.00
13,214.0	89.20	178.00	9,651.8	-3,672.4	-69.0	3,673.0	2.02	-1.26	-1.58
13,307.0	92.20	178.10	9,650.7	-3,765.4	-65.9	3,765.9	3.23	3.23	0.11
13,401.0	88.90	179.00	9,649.8	-3,859.3	-63.5	3,859.8	3.64	-3.51	0.96
13,496.0	89.10	177.30	9,651.5	-3,954.2	-60.4	3,954.7	1.80	0.21	-1.79
13,590.0	87.50	174.10	9,654.2	-4,047.9	-53.4	4,048.3	3.80	-1.70	-3.40
13,685.0	92.50	171.60	9,654.2	-4,142.1	-41.5	4,142.3	5.88	5.26	-2.63
13,778.0	95.30	173.70	9,647.9	-4,234.1	-29.7	4,234.2	3.76	3.01	2.26
13,873.0	95.10	177.80	9,639.3	-4,328.5	-22.7	4,328.4	4.30	-0.21	4.32
13,966.0	92.40	179.00	9,633.2	-4,421.2	-20.1	4,421.1	3.18	-2.90	1.29
14,060.0	88.70	180.10	9,632.3	-4,515.2	-19.3	4,515.0	4.11	-3.94	1.17
14,155.0	87.40	179.90	9,635.5	-4,610.2	-19.3	4,610.0	1.38	-1.37	-0.21
14,250.0	85.60	179.90	9,641.3	-4,705.0	-19.2	4,704.8	1.89	-1.89	0.00
TD @ 14305.0' MD / 9645.6' TVD									
14,305.0	85.60	179.90	9,645.6	-4,759.8	-19.1	4,759.6	0.00	0.00	0.00

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
100.0	100.0	0.8	-0.1	Gyro Tie-in @ 100.0' MD / 100.0' TVD
9,678.1	9,550.2	-155.1	12.3	HL Crossed @ 9678.1' MD / 9550.2' TVD
14,305.0	9,645.6	-4,759.8	-19.1	TD @ 14305.0' MD / 9645.6' TVD



Survey Report



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Skynyrd 2 W0DM Fee #2H
Project:	Eddy County, New Mexico (Nad 83)	TVD Reference:	WELL @ 3043.0usft (Patterson #243)
Site:	Sec 2, T24S, R28E	MD Reference:	WELL @ 3043.0usft (Patterson #243)
Well:	Skynyrd 2 W0DM Fee #2H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Checked By: _____ Approved By: _____ Date: _____