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Directional Survey**



Mewbourne Oil Company

Eddy County, New Mexico (Nad 83)

Sec 17, T23S, R30E

FNR 17/20 B2IP FED COM #1H

30-015-44576

Wellbore #1

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AUG 23 2018

Design: Wellbore #1

DISTRICT II-ARTESIA O.C.D.

QES Survey Report

06 February, 2018





Survey Report



Company: Mewbourne Oil Company
Project: Eddy County, New Mexico (Nad 83)
Site: Sec 17, T23S, R30E
Well: FNR 17/20 B2IP FED COM #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well FNR 17/20 B2IP FED COM #1H
TVD Reference: WELL @ 3247.0usft (Patterson #230)
MD Reference: WELL @ 3247.0usft (Patterson #230)
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 17, T23S, R30E

Site Position:	Northing:	474,760.00 usft	Latitude:	32° 18' 15.995 N
From: Map	Easting:	675,368.70 usft	Longitude:	103° 53' 58.273 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.23 °

Well FNR 17/20 B2IP FED COM #1H

Well Position	+N/-S	0.0 usft	Northing:	474,689.00 usft	Latitude:	32° 18' 15.289 N
	+E/-W	0.0 usft	Easting:	675,439.90 usft	Longitude:	103° 53' 57.447 W
Position Uncertainty	0.0 usft		Wellhead Elevation:	usft	Ground Level:	3,222.0 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	1/18/2018	7.05	60.08	47,891.82847139

Design Wellbore #1

Audit Notes:

Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
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Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	171.88

Survey Program Date 2/6/2018

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
81.0	16,590.0	QES MWD Surveys (Wellbore #1)	MWD default	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
First MWD Survey @ 81.0' MD / 81.0' TVD									
81.0	1.10	165.80	81.0	-0.8	0.2	0.8	1.36	1.36	0.00
165.0	1.90	274.80	165.0	-1.4	-1.0	1.3	2.96	0.95	129.76
206.0	2.00	278.80	206.0	-1.3	-2.4	0.9	0.41	0.24	9.76
266.0	2.10	284.80	265.9	-0.8	-4.5	0.2	0.39	0.17	10.00
LL Crossed @ 304.5' MD / 304.4' TVD									
304.5	2.10	295.73	304.4	-0.3	-5.8	-0.5	1.04	0.01	28.38
349.0	2.20	307.80	348.9	0.6	-7.2	-1.6	1.04	0.22	27.13
415.0	2.40	309.80	414.8	2.2	-9.3	-3.5	0.33	0.30	3.03

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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)
483.0	2.20	313.70	482.8	4.0	-11.3	-5.6	0.37	-0.29	5.74
574.0	2.20	320.10	573.7	6.6	-13.7	-8.4	0.27	0.00	7.03
667.0	1.30	286.30	666.6	8.2	-15.9	-10.4	1.43	-0.97	-36.34
757.0	1.40	230.60	756.6	7.8	-17.7	-10.2	1.40	0.11	-61.89
849.0	1.40	222.50	848.6	6.3	-19.3	-9.0	0.21	0.00	-8.80
943.0	1.80	216.20	942.6	4.2	-21.0	-7.2	0.46	0.43	-6.70
1,038.0	2.00	206.70	1,037.5	1.6	-22.6	-4.7	0.39	0.21	-10.00
1,132.0	2.20	203.90	1,131.4	-1.6	-24.1	-1.9	0.24	0.21	-2.98
1,226.0	2.30	198.80	1,225.4	-5.0	-25.4	1.4	0.24	0.11	-5.43
1,321.0	2.40	200.40	1,320.3	-8.7	-26.7	4.8	0.13	0.11	1.68
1,415.0	2.50	201.10	1,414.2	-12.4	-28.1	8.3	0.11	0.11	0.74
1,510.0	1.60	188.60	1,509.1	-15.7	-29.1	11.4	1.05	-0.95	-13.16
1,605.0	0.70	159.60	1,604.1	-17.5	-29.1	13.2	1.10	-0.95	-30.53
1,699.0	0.80	164.70	1,698.1	-18.7	-28.7	14.4	0.13	0.11	5.43
1,793.0	1.00	178.90	1,792.1	-20.1	-28.5	15.9	0.32	0.21	15.11
1,888.0	0.90	174.20	1,887.1	-21.7	-28.4	17.5	0.13	-0.11	-4.95
1,983.0	0.90	174.90	1,982.1	-23.2	-28.3	19.0	0.01	0.00	0.74
2,077.0	0.90	171.70	2,076.1	-24.7	-28.1	20.4	0.05	0.00	-3.40
2,172.0	1.10	179.30	2,171.1	-26.3	-28.0	22.1	0.25	0.21	8.00
2,266.0	1.10	186.00	2,265.0	-28.1	-28.1	23.9	0.14	0.00	7.13
2,360.0	1.20	193.20	2,359.0	-30.0	-28.4	25.7	0.19	0.11	7.66
2,455.0	1.40	198.40	2,454.0	-32.0	-29.0	27.6	0.24	0.21	5.47
2,550.0	1.40	203.70	2,549.0	-34.2	-29.8	29.6	0.14	0.00	5.58
2,645.0	1.50	200.00	2,643.9	-36.4	-30.7	31.7	0.14	0.11	-3.89
2,739.0	0.40	326.90	2,737.9	-37.3	-31.3	32.5	1.88	-1.17	135.00
2,834.0	1.00	40.10	2,832.9	-36.4	-30.9	31.7	1.01	0.63	77.05
2,928.0	1.10	95.20	2,926.9	-35.9	-29.5	31.3	1.04	0.11	58.62
3,023.0	1.50	105.40	3,021.9	-36.3	-27.4	32.0	0.48	0.42	10.74
3,117.0	1.80	121.40	3,115.8	-37.4	-25.0	33.5	0.58	0.32	17.02
3,212.0	2.70	132.00	3,210.8	-39.6	-22.0	36.1	1.04	0.95	11.16
3,306.0	2.40	151.70	3,304.7	-42.9	-19.4	39.7	0.98	-0.32	20.96
3,401.0	0.90	194.40	3,399.6	-45.3	-18.7	42.2	1.94	-1.58	44.95
3,487.0	1.10	253.60	3,485.6	-46.2	-19.6	43.0	1.17	0.23	68.84
3,590.0	0.80	264.00	3,588.6	-46.6	-21.3	43.1	0.33	-0.29	10.10
3,685.0	2.60	73.10	3,683.6	-46.0	-19.9	42.7	3.57	1.89	178.00
3,779.0	5.40	67.10	3,777.3	-43.7	-13.8	41.3	3.01	2.98	-6.38
LL Crossed @ 3872.9' MD / 3870.8' TVD									
3,872.9	5.50	66.41	3,870.8	-40.1	-5.6	39.0	0.13	0.11	-0.74
3,874.0	5.50	66.40	3,871.9	-40.1	-5.5	38.9	0.13	0.11	-0.72
3,969.0	5.40	80.10	3,966.5	-37.5	3.1	37.6	1.37	-0.11	14.42
4,063.0	4.40	98.10	4,060.2	-37.3	11.0	38.4	1.94	-1.06	19.15
4,158.0	4.00	94.40	4,154.9	-38.0	17.9	40.2	0.51	-0.42	-3.89
4,253.0	3.90	97.20	4,249.7	-38.7	24.4	41.8	0.23	-0.11	2.95



Survey Report



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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)
4,347.0	3.60	97.20	4,343.5	-39.5	30.5	43.4	0.32	-0.32	0.00
4,442.0	4.00	75.60	4,438.3	-39.0	36.7	43.8	1.55	0.42	-22.74
4,536.0	3.60	72.20	4,532.1	-37.3	42.7	42.9	0.49	-0.43	-3.62
4,631.0	5.50	52.20	4,626.8	-33.6	49.1	40.2	2.58	2.00	-21.05
4,725.0	5.70	51.50	4,720.3	-27.9	56.3	35.6	0.22	0.21	-0.74
4,820.0	5.50	50.60	4,814.9	-22.1	63.5	30.8	0.23	-0.21	-0.95
4,914.0	6.20	60.10	4,908.4	-16.7	71.4	26.6	1.27	0.74	10.11
5,009.0	6.30	72.60	5,002.8	-12.6	80.8	23.9	1.43	0.11	13.16
5,103.0	6.80	93.80	5,096.2	-11.4	91.3	24.2	2.61	0.53	22.55
5,198.0	5.00	114.20	5,190.7	-13.5	100.7	27.6	2.88	-1.89	21.47
5,292.0	4.70	114.80	5,284.4	-16.8	107.9	31.9	0.32	-0.32	0.64
5,387.0	4.50	113.70	5,379.1	-19.9	114.9	35.9	0.23	-0.21	-1.16
5,481.0	4.30	114.40	5,472.8	-22.8	121.5	39.8	0.22	-0.21	0.74
5,576.0	4.10	92.30	5,567.5	-24.5	128.1	42.3	1.71	-0.21	-23.26
5,670.0	3.90	90.30	5,661.3	-24.6	134.7	43.4	0.26	-0.21	-2.13
5,765.0	3.60	92.30	5,756.1	-24.7	140.9	44.4	0.34	-0.32	2.11
5,860.0	3.20	97.40	5,850.9	-25.2	146.5	45.6	0.53	-0.42	5.37
5,954.0	4.40	77.00	5,944.7	-24.7	152.6	46.0	1.90	1.28	-21.70
6,049.0	3.80	77.30	6,039.5	-23.2	159.2	45.5	0.63	-0.63	0.32
6,143.0	2.90	72.70	6,133.3	-21.8	164.5	44.8	1.00	-0.96	-4.89
6,238.0	2.50	76.80	6,228.2	-20.6	168.8	44.3	0.47	-0.42	4.32
6,332.0	4.10	63.60	6,322.1	-18.7	173.8	43.0	1.87	1.70	-14.04
6,427.0	4.80	71.30	6,416.8	-15.9	180.6	41.3	0.97	0.74	8.11
6,521.0	5.20	83.80	6,510.4	-14.2	188.6	40.7	1.23	0.43	13.30
6,616.0	4.40	95.10	6,605.1	-14.0	196.5	41.6	1.30	-0.84	11.89
6,710.0	3.90	94.50	6,698.9	-14.6	203.3	43.2	0.53	-0.53	-0.64
6,805.0	3.80	96.00	6,793.6	-15.2	209.6	44.6	0.15	-0.11	1.58
6,900.0	3.70	95.60	6,888.4	-15.8	215.8	46.1	0.11	-0.11	-0.42
6,994.0	3.30	93.70	6,982.3	-16.3	221.5	47.4	0.44	-0.43	-2.02
7,089.0	2.80	90.50	7,077.1	-16.5	226.6	48.3	0.56	-0.53	-3.37
7,184.0	2.30	95.10	7,172.0	-16.7	230.8	49.1	0.57	-0.53	4.84
7,278.0	3.80	78.50	7,265.9	-16.2	235.7	49.4	1.84	1.60	-17.66
7,373.0	3.60	75.60	7,360.7	-14.8	241.7	48.8	0.29	-0.21	-3.05
7,468.0	3.30	74.90	7,455.5	-13.4	247.3	48.2	0.32	-0.32	-0.74
7,563.0	4.50	68.00	7,550.3	-11.3	253.3	47.0	1.35	1.26	-7.26
7,658.0	3.20	62.60	7,645.1	-8.7	259.2	45.2	1.42	-1.37	-5.68
7,753.0	4.00	65.00	7,739.9	-6.0	264.5	43.4	0.86	0.84	2.53
7,847.0	5.00	83.60	7,833.6	-4.2	271.6	42.5	1.87	1.06	19.79
7,942.0	4.70	86.10	7,928.3	-3.5	279.6	42.9	0.39	-0.32	2.63
8,037.0	4.10	90.50	8,023.0	-3.2	286.8	43.7	0.72	-0.63	4.63
8,132.0	2.80	77.80	8,117.8	-2.8	292.5	44.1	1.58	-1.37	-13.37
8,227.0	3.10	72.00	8,212.7	-1.5	297.2	43.5	0.45	0.32	-6.11
8,322.0	3.40	87.00	8,307.5	-0.6	302.5	43.3	0.95	0.32	15.79
8,416.0	3.30	102.10	8,401.4	-1.0	307.9	44.5	0.94	-0.11	16.06



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8,511.0	3.40	108.30	8,496.2	-2.4	313.2	46.7	0.40	0.11	6.53
8,606.0	3.00	104.00	8,591.1	-3.9	318.3	48.8	0.49	-0.42	-4.53
8,700.0	1.90	113.70	8,685.0	-5.1	322.1	50.6	1.25	-1.17	10.32
8,739.0	1.80	99.50	8,724.0	-5.5	323.3	51.1	1.20	-0.26	-36.41
8,763.0	1.60	98.10	8,748.0	-5.6	324.0	51.3	0.85	-0.83	-5.83
8,795.0	3.20	125.70	8,779.9	-6.2	325.2	52.1	6.03	5.00	86.25
8,827.0	6.80	136.70	8,811.8	-8.1	327.2	54.2	11.59	11.25	34.38
8,858.0	9.10	146.60	8,842.5	-11.5	329.8	58.0	8.61	7.42	31.94
8,890.0	11.60	150.40	8,874.0	-16.4	332.8	63.2	8.09	7.81	11.88
8,921.0	14.80	146.40	8,904.2	-22.4	336.6	69.7	10.73	10.32	-12.90
8,953.0	17.20	148.00	8,934.9	-29.8	341.3	77.7	7.62	7.50	5.00
8,985.0	20.10	144.30	8,965.2	-38.3	347.0	86.9	9.78	9.06	-11.56
9,016.0	23.50	141.80	8,994.0	-47.5	354.0	97.0	11.37	10.97	-8.06
HL Crossed @ 9038.3' MD / 9014.3' TVD									
9,038.3	25.73	140.79	9,014.3	-54.7	359.8	105.0	10.17	9.99	-4.53
9,048.0	26.70	140.40	9,023.0	-58.0	362.5	108.7	10.17	10.01	-4.02
9,079.0	29.00	142.40	9,050.4	-69.4	371.5	121.1	8.01	7.42	6.45
9,111.0	31.90	143.40	9,078.0	-82.3	381.3	135.3	9.20	9.06	3.13
9,142.0	35.20	142.40	9,103.8	-96.0	391.6	150.3	10.79	10.65	-3.23
9,174.0	39.00	141.00	9,129.3	-111.1	403.6	167.0	12.16	11.88	-4.38
9,205.0	41.80	139.70	9,152.9	-126.6	416.4	184.1	9.43	9.03	-4.19
9,237.0	44.30	140.80	9,176.3	-143.4	430.4	202.7	8.16	7.81	3.44
9,269.0	48.50	141.70	9,198.4	-161.4	444.9	222.7	13.28	13.13	2.81
9,300.0	51.70	142.50	9,218.3	-180.2	459.5	243.3	10.51	10.32	2.58
9,332.0	54.60	143.90	9,237.5	-200.7	474.8	265.8	9.71	9.06	4.38
9,364.0	58.00	143.40	9,255.2	-222.1	490.6	289.2	10.70	10.63	-1.56
9,395.0	61.30	143.40	9,270.9	-243.6	506.6	312.7	10.65	10.65	0.00
9,427.0	64.90	143.10	9,285.3	-266.5	523.6	337.8	11.28	11.25	-0.94
9,458.0	69.40	142.50	9,297.4	-289.2	540.9	362.7	14.63	14.52	-1.94
9,490.0	72.00	143.40	9,308.0	-313.3	559.1	389.2	8.55	8.13	2.81
9,521.0	76.10	144.10	9,316.5	-337.4	576.7	415.4	13.40	13.23	2.26
9,553.0	79.20	144.30	9,323.3	-362.7	595.0	443.1	9.71	9.69	0.63
9,585.0	82.70	144.50	9,328.3	-388.4	613.4	471.1	10.95	10.94	0.63
9,608.0	84.20	145.20	9,331.0	-407.1	626.5	491.5	7.19	6.52	3.04
9,725.0	87.50	147.80	9,339.4	-504.4	690.9	596.9	3.59	2.82	2.22
9,819.0	90.70	149.90	9,340.9	-584.8	739.5	683.4	4.07	3.40	2.23
9,914.0	92.20	150.30	9,338.5	-667.1	786.9	771.6	1.63	1.58	0.42
10,008.0	93.10	152.60	9,334.2	-749.6	831.8	859.6	2.63	0.96	2.45
10,102.0	90.10	155.00	9,331.5	-833.9	873.2	948.9	4.09	-3.19	2.55
10,196.0	87.40	157.70	9,333.6	-920.0	910.9	1,039.4	4.06	-2.87	2.87
10,290.0	89.40	163.60	9,336.2	-1,008.6	942.0	1,131.5	6.62	2.13	6.28
10,384.0	91.80	166.40	9,335.2	-1,099.3	966.4	1,224.8	3.92	2.55	2.98
10,479.0	91.40	170.10	9,332.6	-1,192.3	985.7	1,319.6	3.92	-0.42	3.89

Company: Mewbourne Oil Company
Project: Eddy County, New Mexico (Nad 83)
Site: Sec 17, T23S, R30E
Well: FNR 17/20 B2IP FED COM #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well FNR 17/20 B2IP FED COM #1H
TVD Reference: WELL @ 3247.0usft (Patterson #230)
MD Reference: WELL @ 3247.0usft (Patterson #230)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)	Buid Rate (°/100usft)	Turn Rate (°/100usft)
10,573.0	91.60	174.50	9,330.1	-1,285.4	998.3	1,413.5	4.68	0.21	4.68
10,667.0	92.90	176.10	9,326.4	-1,379.0	1,006.0	1,507.3	2.19	1.38	1.70
10,761.0	90.80	179.60	9,323.4	-1,472.9	1,009.5	1,600.7	4.34	-2.23	3.72
10,856.0	90.80	179.50	9,322.1	-1,567.9	1,010.3	1,694.8	0.11	0.00	-0.11
10,951.0	90.10	179.80	9,321.3	-1,662.9	1,010.8	1,789.0	0.80	-0.74	0.32
11,045.0	89.40	179.60	9,321.7	-1,756.9	1,011.3	1,882.1	0.77	-0.74	-0.21
11,139.0	89.00	179.50	9,323.0	-1,850.8	1,012.1	1,975.2	0.44	-0.43	-0.11
11,234.0	88.80	179.80	9,324.9	-1,945.8	1,012.6	2,069.3	0.38	-0.21	0.32
11,329.0	90.40	179.60	9,325.5	-2,040.8	1,013.1	2,163.5	1.70	1.68	-0.21
11,424.0	89.30	178.70	9,325.8	-2,135.8	1,014.6	2,257.7	1.50	-1.16	-0.95
11,519.0	90.70	179.80	9,325.8	-2,230.8	1,015.8	2,351.9	1.87	1.47	1.16
11,613.0	91.50	180.20	9,324.0	-2,324.8	1,015.8	2,444.9	0.95	0.85	0.43
11,708.0	91.10	180.90	9,321.8	-2,419.7	1,014.9	2,538.8	0.85	-0.42	0.74
11,802.0	91.10	181.40	9,320.0	-2,513.7	1,013.0	2,631.6	0.53	0.00	0.53
11,897.0	91.00	180.70	9,318.3	-2,608.7	1,011.3	2,725.4	0.74	-0.11	-0.74
11,992.0	89.40	179.50	9,317.9	-2,703.7	1,011.1	2,819.4	2.11	-1.68	-1.26
12,086.0	87.70	178.40	9,320.3	-2,797.6	1,012.8	2,912.6	2.15	-1.81	-1.17
12,181.0	90.70	178.60	9,321.6	-2,892.6	1,015.3	3,007.0	3.16	3.16	0.21
12,275.0	90.80	178.60	9,320.4	-2,986.5	1,017.6	3,100.3	0.11	0.11	0.00
12,369.0	88.90	177.90	9,320.7	-3,080.5	1,020.5	3,193.7	2.15	-2.02	-0.74
12,463.0	88.10	177.50	9,323.1	-3,174.4	1,024.2	3,287.2	0.95	-0.85	-0.43
12,558.0	90.10	179.60	9,324.6	-3,269.3	1,026.6	3,381.5	3.05	2.11	2.21
12,653.0	91.40	180.00	9,323.4	-3,364.3	1,027.0	3,475.6	1.43	1.37	0.42
12,748.0	92.10	180.00	9,320.5	-3,459.3	1,027.0	3,569.6	0.74	0.74	0.00
12,842.0	91.30	179.80	9,317.7	-3,553.2	1,027.1	3,662.7	0.88	-0.85	-0.21
12,937.0	88.90	179.60	9,317.5	-3,648.2	1,027.6	3,756.8	2.54	-2.53	-0.21
13,031.0	90.20	181.20	9,318.3	-3,742.2	1,027.0	3,849.7	2.19	1.38	1.70
13,126.0	91.50	181.70	9,316.8	-3,837.2	1,024.6	3,943.4	1.47	1.37	0.53
13,220.0	89.40	182.30	9,316.1	-3,931.1	1,021.3	4,035.9	2.32	-2.23	0.64
13,315.0	88.60	182.40	9,317.8	-4,026.0	1,017.4	4,129.3	0.85	-0.84	0.11
13,410.0	87.40	183.00	9,321.1	-4,120.8	1,012.9	4,222.6	1.41	-1.26	0.63
13,504.0	89.90	182.40	9,323.3	-4,214.7	1,008.5	4,314.9	2.74	2.66	-0.64
13,599.0	90.90	178.90	9,322.6	-4,309.7	1,007.4	4,408.8	3.83	1.05	-3.68
13,694.0	90.70	178.40	9,321.3	-4,404.6	1,009.7	4,503.1	0.57	-0.21	-0.53
13,788.0	88.50	177.50	9,322.0	-4,498.6	1,013.0	4,596.5	2.53	-2.34	-0.96
13,883.0	88.90	176.30	9,324.1	-4,593.4	1,018.2	4,691.2	1.33	0.42	-1.26
13,977.0	90.50	176.80	9,324.6	-4,687.2	1,023.8	4,784.8	1.78	1.70	0.53
14,072.0	90.00	176.30	9,324.2	-4,782.0	1,029.5	4,879.5	0.74	-0.53	-0.53
14,166.0	92.50	178.70	9,322.1	-4,875.9	1,033.6	4,973.0	3.69	2.66	2.55
14,261.0	91.10	178.70	9,319.2	-4,970.8	1,035.8	5,067.3	1.47	-1.47	0.00
14,355.0	91.20	178.00	9,317.3	-5,064.8	1,038.5	5,160.7	0.75	0.11	-0.74
14,450.0	91.20	178.00	9,315.3	-5,159.7	1,041.8	5,255.1	0.00	0.00	0.00
14,545.0	90.70	182.80	9,313.7	-5,254.7	1,041.1	5,349.0	5.08	-0.53	5.05
14,639.0	88.70	183.70	9,314.2	-5,348.5	1,035.8	5,441.2	2.33	-2.13	0.96



Survey Report



Company: Mewbourne Oil Company
Project: Eddy County, New Mexico (Nad 83)
Site: Sec 17, T23S, R30E
Well: FNR 17/20 B2IP FED COM #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well FNR 17/20 B2IP FED COM #1H
TVD Reference: WELL @ 3247.0usft (Patterson #230)
MD Reference: WELL @ 3247.0usft (Patterson #230)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
14,734.0	87.90	183.10	9,317.0	-5,443.3	1,030.2	5,534.2	1.05	-0.84	-0.63
14,828.0	88.50	182.40	9,320.0	-5,537.1	1,025.7	5,626.5	0.98	0.64	-0.74
14,923.0	91.40	179.80	9,320.1	-5,632.1	1,023.9	5,720.3	4.10	3.05	-2.74
15,017.0	90.80	178.90	9,318.2	-5,726.1	1,024.9	5,813.4	1.15	-0.64	-0.96
15,111.0	93.10	181.00	9,315.1	-5,820.0	1,025.0	5,906.4	3.31	2.45	2.23
15,206.0	87.70	178.20	9,314.4	-5,915.0	1,025.7	6,000.5	6.40	-5.68	-2.95
15,301.0	87.50	178.40	9,318.4	-6,009.8	1,028.5	6,094.9	0.30	-0.21	0.21
15,395.0	87.20	179.10	9,322.7	-6,103.7	1,030.5	6,188.1	0.81	-0.32	0.74
15,489.0	89.00	178.00	9,325.8	-6,197.6	1,032.9	6,281.4	2.24	1.91	-1.17
15,584.0	89.40	178.20	9,327.2	-6,292.6	1,036.1	6,375.8	0.47	0.42	0.21
15,678.0	91.60	181.40	9,326.3	-6,386.5	1,036.4	6,468.9	4.13	2.34	3.40
15,773.0	91.00	181.00	9,324.2	-6,481.5	1,034.4	6,562.6	0.76	-0.63	-0.42
15,867.0	91.10	180.90	9,322.5	-6,575.5	1,032.8	6,655.4	0.15	0.11	-0.11
15,961.0	90.50	181.00	9,321.1	-6,669.4	1,031.3	6,748.2	0.65	-0.64	0.11
16,056.0	89.90	180.90	9,320.8	-6,764.4	1,029.7	6,842.1	0.64	-0.63	-0.11
16,150.0	89.30	180.30	9,321.5	-6,858.4	1,028.7	6,935.0	0.90	-0.64	-0.64
16,245.0	90.40	180.70	9,321.7	-6,953.4	1,027.9	7,028.9	1.23	1.16	0.42
16,339.0	90.40	181.00	9,321.1	-7,047.4	1,026.5	7,121.7	0.32	0.00	0.32
16,434.0	89.00	180.50	9,321.6	-7,142.4	1,025.3	7,215.6	1.56	-1.47	-0.53
16,540.0	88.50	179.60	9,323.9	-7,248.4	1,025.2	7,320.5	0.97	-0.47	-0.85
TD @ 16590.0' MD / 9325.2' TVD									
16,590.0	88.50	179.60	9,325.2	-7,298.4	1,025.5	7,370.0	0.00	0.00	0.00

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
81.0	81.0	-0.8	0.2	First MWD Survey @ 81.0' MD / 81.0' TVD
304.5	304.4	-0.3	-5.8	LL Crossed @ 304.5' MD / 304.4' TVD
3,872.9	3,870.8	-40.1	-5.6	LL Crossed @ 3872.9' MD / 3870.8' TVD
9,038.3	9,014.3	-54.7	359.8	HL Crossed @ 9038.3' MD / 9014.3' TVD
16,590.0	9,325.2	-7,298.4	1,025.5	TD @ 16590.0' MD / 9325.2' TVD

Checked By: _____ Approved By: _____ Date: _____

Company Name: Mewbourne Oil Company
FNR 17/20 B2IP FED COM #1H
Eddy County, New Mexico (Nad 83)
Rig: Patterson #230
Created By: Shane Robbins
Date: 2/4/2018

FNR 17/20 B2IP FED COM #1H
Eddy County, New Mexico (Nad 83)
Q180096 & WT-180085
Design #1



PROJECT DETAILS: Eddy County, New Mexico (Nad 83)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

WELL DETAILS: FNR 17/20 B2IP FED COM #1H

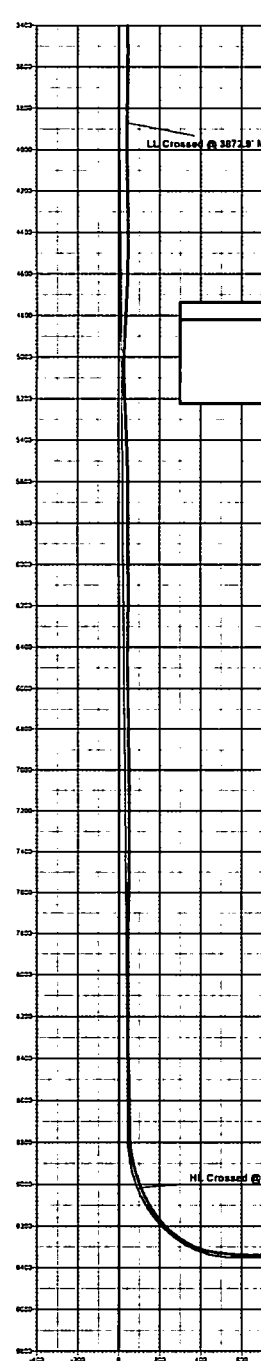
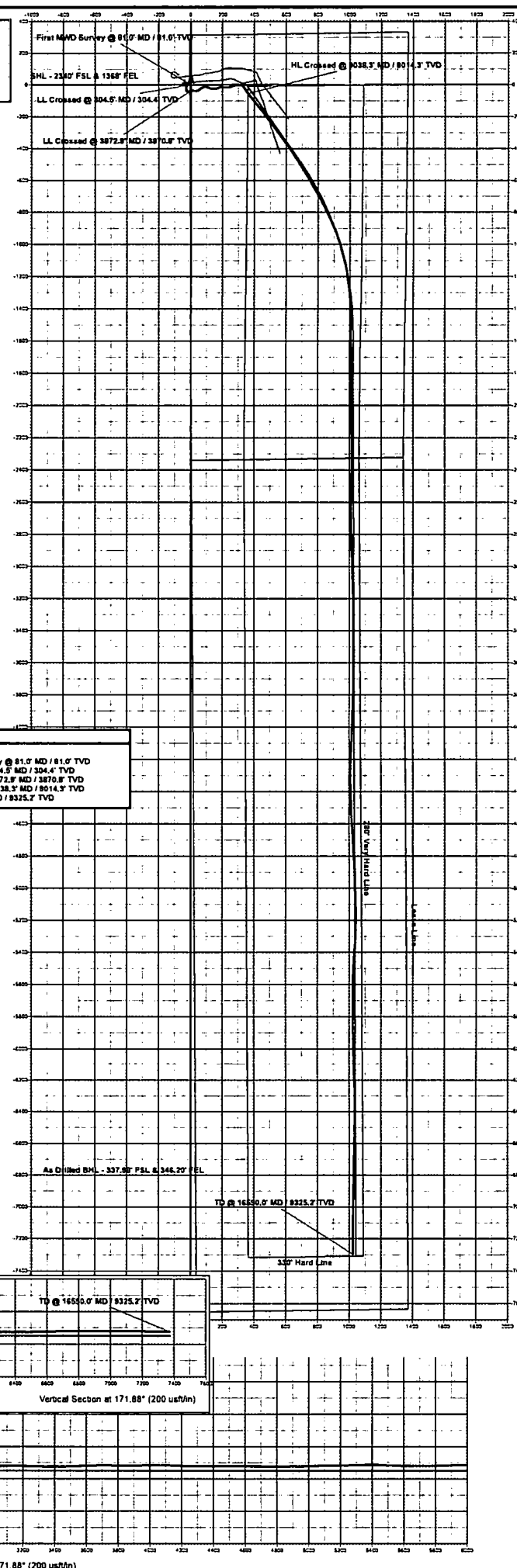
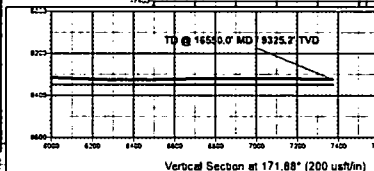
+N/S	+E/W	Northing	Easting	3272.0	Latitude	Longitude
0.0	0.0	474629.00	675439.80	32° 18' 15.229 N	102° 52' 57.447 W	

ANNOYATIONS

MD	Inc	Azi	TVD	+N/S	+E/W	Vsect	Departure	Annotation
81.0	1.10	165.80	81.0	-0.8	0.2	0.8	0.8	First MWD Survey @ 81.0' MD / 81.0' TVD
304.5	2.10	295.73	304.4	-0.3	-5.8	-0.5	8.0	LL Crossed @ 304.5' MD / 304.4' TVD
3372.9	5.50	68.41	3370.8	-0.1	-6.5	33.0	112.9	LL Crossed @ 3372.9' MD / 3370.8' TVD
9038.3	25.73	140.79	9014.3	-64.7	359.8	105.0	520.9	HL Crossed @ 9038.3' MD / 9014.3' TVD
16590.0	88.50	179.60	9325.2	-7298.4	1025.5	7370.0	7942.7	TD @ 16590.0' MD / 9325.2' TVD



Azimuths to Grid North
Magnetic North: 6.82°
Magnetic Field
Strength: 47891.8snT
Dip Angle: 60.08°
Date: 1/18/2018
Model: IGRF2015



Vertical Section at 171.88° (200 usf/in)