



NM OIL CONSERVATION
ARTESIA DISTRICT
DEC 02 2016

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30-015-43517

Mewbourne Oil Company

Eddy County, New Mexico

Sec 13, T26S, R29E

Fuller 13/24 W1LM Fed Com #3H

Wellbore #1

Design: Wellbore #1

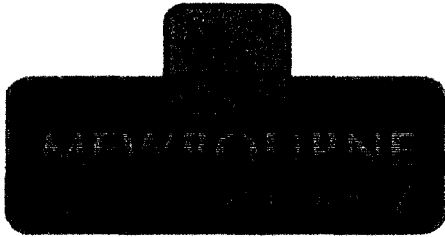
DDC Survey Report

10 February, 2016



Company Name: Newbourn Oil Company
 Fuller 13/24 W1LM Fed Com #3H
 Eddy County, New Mexico
 Rig: Patterson #231
 Created By: Shane Robbins
 Date: 3/10/2016

Fuller 13/24 W1LM Fed Com #3H
 Eddy County, New Mexico
 Q150875 & WT-160007
 Design #2



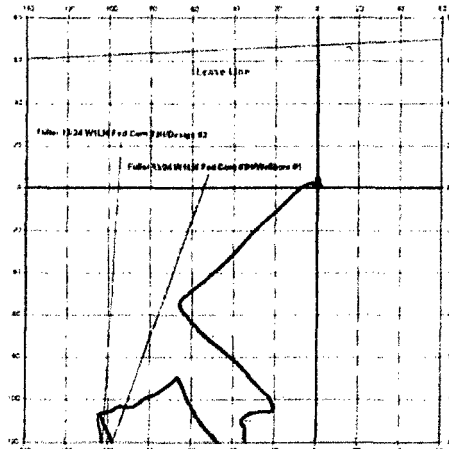
Azimuths to Grid North

Correction: 7.07°

Magnetic Field
 Strength: 47945.4snT
 Dip Angle: 59.85°
 Date: 12/21/2015
 Model: IGRF2015

PROJECT DETAILS: Eddy County, New Mexico

Geodetic System: US State Plane 1927 (Exact solution)
 Datum: NAD 1927 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone: New Mexico East 3001
 System Datum: Mean Sea Level



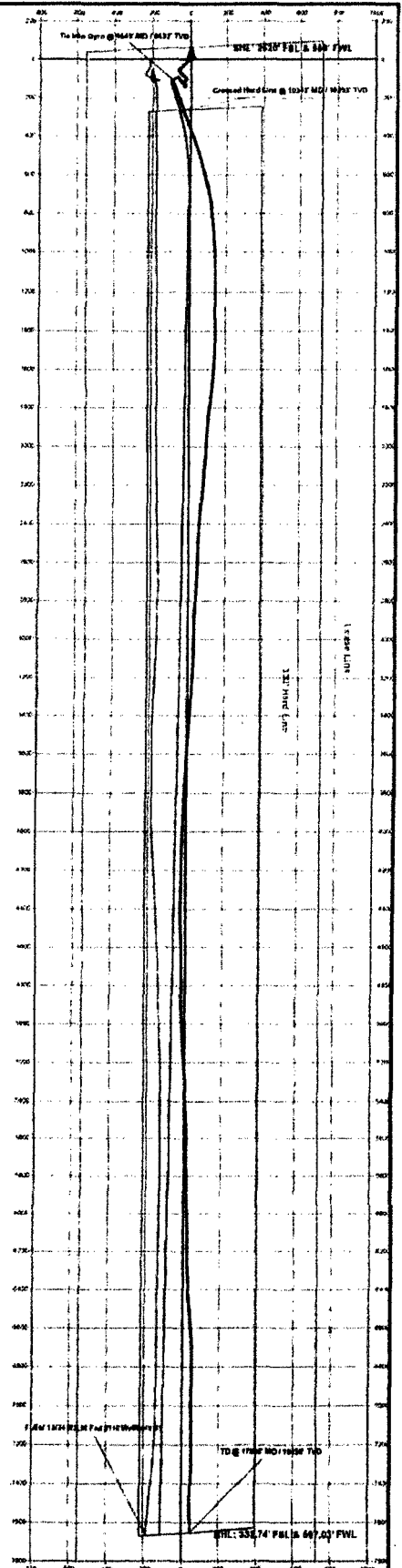
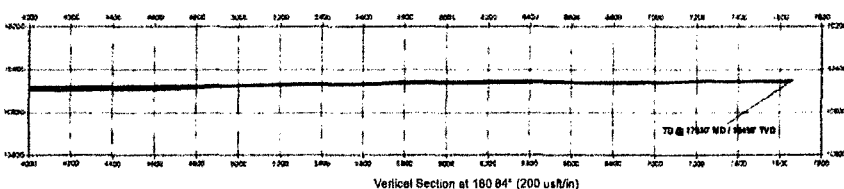
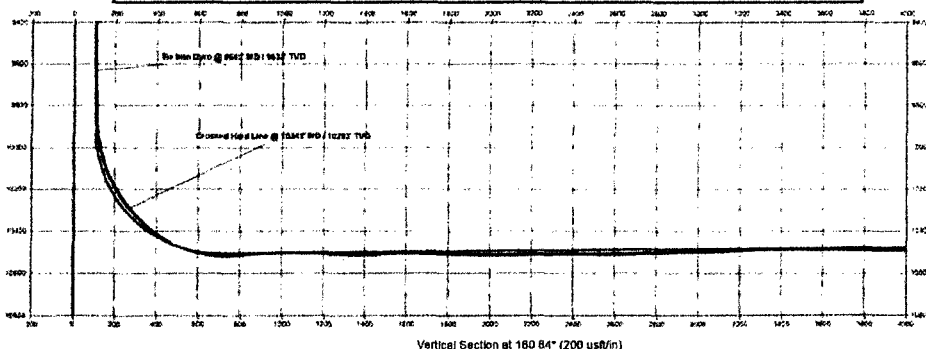
Ground Level: 3957.0
 Northing: 378087.80
 Easting: 629054.90
 Latitude: 32° 2' 23.850 N
 Longitude: 102° 56' 36.871 W

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL Fuller 13/24 W1LM Fed Com #3H	10450.0	-7682.5	-111.9	371425.30	620742.80	32° 1' 54.030 N	102° 56' 37.432 W
- from this target center							

ANNOTATIONS

MD	Inc	Asp	TVD	+N/-S	+E/-W	Offset	Remarks
8648.0	8.96	286.86	8832.4	-106.1	-106.1	186.1	Top wire Dymo @ 8648' MD / 8832' TVD
18342.0	45.94	157.53	18292.7	-364.9	-40.7	264.9	Crossed Hand Line @ 18342' MD / 18292' TVD
17839.0	85.78	176.05	16457.6	-7649.9	40.3	7649.9	TD @ 17839' MD / 16457' TVD





DDC
Survey Report



Company: Mewbourne Oil Company
Project: Eddy County, New Mexico
Site: Sec 13, T26S, R29E
Well: Fuller 13/24 W1LM Fed Com #3H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Fuller 13/24 W1LM Fed Com #3H
TVD Reference: WELL @ 2982.0usft (Patterson #231)
MD Reference: WELL @ 2982.0usft (Patterson #231)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

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

Site Sec 13, T26S, R29E

Site Position:		Northing:	379,076.30 usft	Latitude:	32° 2' 29.752 N
From:	Map	Easting:	620,635.10 usft	Longitude:	103° 56' 38.424 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.21 °

Well Fuller 13/24 W1LM Fed Com #3H

Well Position	+N/-S	0.0 usft	Northing:	379,087.80 usft	Latitude:	32° 2' 29.858 N
	+E/-W	0.0 usft	Easting:	620,854.80 usft	Longitude:	103° 56' 35.871 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	2,957.0 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	12/21/2015	7.27	59.85	47,945

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	180.01

Survey Program Date 2/10/2016

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	9,640.0	GYRO (Wellbore #1)	Good_gyro	Good Gyro
9,836.0	17,830.0	MWD (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
100.0	0.27	312.74	100.0	0.2	-0.2	-0.2	0.27	0.27	0.00
200.0	0.63	330.80	200.0	0.8	-0.6	-0.8	0.38	0.36	18.06
300.0	0.59	314.78	300.0	1.6	-1.2	-1.6	0.17	-0.04	-16.02
400.0	0.51	303.70	400.0	2.3	-2.0	-2.3	0.13	-0.08	-11.08
500.0	1.78	256.26	500.0	2.1	-3.9	-2.1	1.48	1.27	-47.44
600.0	2.24	238.69	599.9	0.7	-7.0	-0.7	0.76	0.46	-17.57
700.0	2.68	226.91	699.8	-1.9	-10.4	1.9	0.67	0.44	-11.78
800.0	2.68	222.02	799.7	-5.2	-13.7	5.2	0.23	0.00	-4.89
900.0	2.68	226.17	899.6	-8.6	-16.9	8.6	0.19	0.00	4.15



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Design: Wellbore #1

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MD Reference: WELL @ 2982.0usft (Patterson #231)
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)
1,000.0	2.71	230.50	999.5	-11.7	-20.5	11.7	0.21	0.03	4.33
1,100.0	2.98	229.50	1,099.4	-14.9	-24.3	14.9	0.27	0.27	-1.00
1,200.0	3.13	224.90	1,199.2	-18.5	-28.2	18.5	0.29	0.15	-4.60
1,300.0	3.49	225.66	1,299.1	-22.6	-32.3	22.6	0.36	0.36	0.76
1,400.0	3.57	219.39	1,398.9	-27.1	-36.4	27.1	0.39	0.08	-6.27
1,500.0	3.54	224.93	1,498.7	-31.7	-40.6	31.7	0.34	-0.03	5.54
1,600.0	3.26	229.13	1,598.5	-35.7	-44.9	35.7	0.37	-0.28	4.20
1,700.0	3.18	226.57	1,698.3	-39.5	-49.1	39.5	0.16	-0.08	-2.56
1,800.0	2.79	230.32	1,798.2	-43.0	-53.0	43.0	0.44	-0.39	3.75
1,900.0	2.15	233.24	1,898.1	-45.6	-56.3	45.6	0.65	-0.64	2.92
2,000.0	1.69	232.51	1,998.1	-47.7	-59.0	47.7	0.46	-0.46	-0.73
2,100.0	1.44	229.96	2,098.0	-49.4	-61.1	49.4	0.26	-0.25	-2.55
2,200.0	1.42	229.72	2,198.0	-51.0	-63.0	51.0	0.02	-0.02	-0.24
2,300.0	1.53	227.96	2,297.9	-52.7	-65.0	52.7	0.12	0.11	-1.76
2,400.0	1.28	200.79	2,397.9	-54.6	-66.4	54.6	0.70	-0.25	-27.17
2,500.0	2.32	143.17	2,497.9	-57.3	-65.5	57.3	1.96	1.04	-57.62
2,600.0	3.11	137.95	2,597.8	-60.9	-62.5	60.9	0.83	0.79	-5.22
2,700.0	3.82	140.76	2,697.6	-65.5	-58.6	65.5	0.73	0.71	2.81
2,800.0	5.32	128.26	2,797.3	-70.9	-52.8	71.0	1.79	1.50	-12.50
2,900.0	5.78	128.84	2,896.8	-77.0	-45.3	77.0	0.46	0.46	0.58
3,000.0	4.39	130.23	2,996.4	-82.6	-38.4	82.6	1.40	-1.39	1.39
3,100.0	2.96	143.33	3,096.2	-87.1	-34.0	87.2	1.65	-1.43	13.10
3,200.0	1.56	137.77	3,196.1	-90.2	-31.5	90.2	1.42	-1.40	-5.56
3,300.0	1.33	136.08	3,296.1	-92.1	-29.8	92.1	0.23	-0.23	-1.69
3,400.0	1.22	138.49	3,396.1	-93.7	-28.3	93.7	0.12	-0.11	2.41
3,500.0	1.25	134.44	3,496.0	-95.3	-26.8	95.3	0.09	0.03	-4.05
3,600.0	1.32	127.17	3,596.0	-96.7	-25.1	96.7	0.18	0.07	-7.27
3,700.0	1.06	141.88	3,696.0	-98.1	-23.6	98.2	0.40	-0.26	14.71
3,800.0	0.85	146.40	3,796.0	-99.5	-22.6	99.5	0.22	-0.21	4.52
3,900.0	0.79	154.39	3,896.0	-100.7	-21.9	100.7	0.13	-0.06	7.99
4,000.0	0.75	160.63	3,996.0	-102.0	-21.4	102.0	0.09	-0.04	6.24
4,100.0	0.73	163.39	4,095.9	-103.2	-21.0	103.2	0.04	-0.02	2.76
4,200.0	0.58	175.62	4,195.9	-104.3	-20.8	104.3	0.20	-0.15	12.23
4,300.0	0.56	203.39	4,295.9	-105.3	-20.9	105.3	0.27	-0.02	27.77
4,400.0	0.36	245.08	4,395.9	-105.8	-21.4	105.9	0.38	-0.20	41.69
4,500.0	0.51	279.73	4,495.9	-105.9	-22.2	105.9	0.30	0.15	34.65
4,600.0	0.90	266.26	4,595.9	-105.9	-23.4	105.9	0.42	0.39	-13.47
4,700.0	0.88	269.21	4,695.9	-105.9	-24.9	105.9	0.05	-0.02	2.95
4,800.0	1.06	263.68	4,795.9	-106.1	-26.6	106.1	0.20	0.18	-5.53
4,900.0	0.88	259.78	4,895.9	-106.3	-28.3	106.3	0.19	-0.18	-3.90
5,000.0	1.03	260.58	4,995.9	-106.6	-29.9	106.6	0.15	0.15	0.80
5,100.0	0.97	260.08	5,095.8	-106.9	-31.6	106.9	0.06	-0.06	-0.50
5,200.0	1.25	234.87	5,195.8	-107.6	-33.4	107.6	0.56	0.28	-25.21



DDC Survey Report



Company: Mewbourne Oil Company
Project: Eddy County, New Mexico
Site: Sec 13, T28S, R29E
Well: Fuller 13/24 W1LM Fed Com #3H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Fuller 13/24 W1LM Fed Com #3H
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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)
5,300.0	1.11	237.14	5,295.8	-108.8	-35.1	108.8	0.15	-0.14	2.27
5,400.0	0.60	207.84	5,395.8	-109.8	-36.1	109.8	0.66	-0.51	-29.30
5,500.0	0.49	164.50	5,495.8	-110.7	-36.3	110.7	0.42	-0.11	-43.34
5,600.0	0.32	154.76	5,595.8	-111.3	-36.0	111.3	0.18	-0.17	-9.74
5,700.0	0.53	138.50	5,695.8	-111.9	-35.6	111.9	0.24	0.21	-16.26
5,800.0	0.71	135.45	5,795.8	-112.7	-34.9	112.7	0.18	0.18	-3.05
5,900.0	0.55	168.95	5,895.8	-113.6	-34.3	113.6	0.39	-0.16	33.50
6,000.0	0.84	199.44	5,995.8	-114.8	-34.5	114.8	0.46	0.29	30.49
6,100.0	1.03	176.28	6,095.8	-116.4	-34.7	116.4	0.42	0.19	-23.16
6,200.0	1.24	162.42	6,195.7	-118.3	-34.3	118.3	0.34	0.21	-13.86
6,300.0	1.37	167.22	6,295.7	-120.5	-33.7	120.5	0.17	0.13	4.80
6,400.0	1.22	192.40	6,395.7	-122.7	-33.7	122.7	0.58	-0.15	25.18
6,500.0	1.36	213.20	6,495.7	-124.7	-34.5	124.7	0.49	0.14	20.80
6,600.0	1.38	221.57	6,595.6	-126.6	-36.0	126.6	0.20	0.02	8.37
6,700.0	1.51	210.83	6,695.6	-128.7	-37.5	128.7	0.30	0.13	-10.74
6,800.0	1.40	205.07	6,795.6	-130.9	-38.7	130.9	0.18	-0.11	-5.76
6,900.0	1.51	186.99	6,895.5	-133.3	-39.3	133.3	0.47	0.11	-18.08
7,000.0	2.54	147.44	6,995.5	-136.5	-38.3	136.5	1.68	1.03	-39.55
7,100.0	2.81	135.00	7,095.4	-140.1	-35.4	140.1	0.64	0.27	-12.44
7,200.0	1.70	60.57	7,195.3	-141.1	-32.4	141.1	2.87	-1.11	-74.43
7,300.0	1.54	25.34	7,295.3	-139.2	-30.5	139.2	0.99	-0.16	-35.23
7,400.0	2.55	340.05	7,395.2	-135.8	-30.7	135.9	1.83	1.01	-45.29
7,500.0	2.37	332.30	7,495.1	-131.9	-32.4	131.9	0.38	-0.18	-7.75
7,600.0	2.76	311.99	7,595.0	-128.5	-35.1	128.5	0.98	0.39	-20.31
7,700.0	4.57	304.73	7,694.8	-124.6	-40.2	124.6	1.86	1.81	-7.26
7,800.0	4.81	305.54	7,794.5	-119.9	-46.9	119.9	0.25	0.24	0.81
7,900.0	4.86	317.35	7,894.1	-114.3	-53.2	114.4	0.99	0.05	11.81
8,000.0	4.64	328.13	7,993.8	-107.8	-58.2	107.8	0.92	-0.22	10.78
8,100.0	4.89	336.67	8,093.4	-100.4	-62.0	100.5	0.75	0.25	8.54
8,200.0	4.12	335.88	8,193.1	-93.3	-65.2	93.3	0.77	-0.77	-0.79
8,300.0	0.46	308.10	8,293.0	-89.7	-66.9	89.7	3.72	-3.66	-27.78
8,400.0	1.93	217.17	8,393.0	-90.8	-68.3	90.8	1.99	1.47	-90.93
8,500.0	3.08	237.55	8,492.9	-93.6	-71.6	93.6	1.44	1.15	20.38
8,600.0	3.56	233.55	8,592.8	-96.9	-76.3	96.9	0.53	0.48	-4.00
8,700.0	2.24	255.06	8,692.6	-99.2	-80.7	99.3	1.69	-1.32	21.51
8,800.0	1.20	225.88	8,792.6	-100.5	-83.4	100.5	1.33	-1.04	-29.18
8,900.0	1.68	234.04	8,892.5	-102.1	-85.3	102.1	0.52	0.48	8.16
9,000.0	1.51	239.59	8,992.5	-103.6	-87.6	103.6	0.23	-0.17	5.55
9,100.0	1.57	275.88	9,092.5	-104.1	-90.1	104.1	0.96	0.06	36.29
9,200.0	1.50	279.20	9,192.4	-103.8	-92.8	103.8	0.11	-0.07	3.32
9,300.0	0.99	270.82	9,292.4	-103.5	-94.9	103.6	0.54	-0.51	-8.38
9,400.0	0.92	214.89	9,392.4	-104.2	-96.2	104.2	0.90	-0.07	-55.93
9,500.0	1.07	245.40	9,492.4	-105.2	-97.6	105.3	0.54	0.15	30.51



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9,800.0	1.19	253.73	9,592.4	-105.9	-99.4	105.9	0.20	0.12	8.33
Tie into Gyro @ 9640' MD / 9632' TVD									
9,640.0	0.96	260.66	9,632.4	-106.1	-100.1	106.1	0.66	-0.58	17.33
9,836.0	1.10	258.60	9,828.3	-106.7	-103.6	106.7	0.07	0.07	-1.05
9,867.0	0.70	258.60	9,859.3	-106.8	-104.1	106.8	1.29	-1.29	0.00
9,899.0	2.80	159.60	9,891.3	-107.6	-104.0	107.6	9.35	6.56	-309.38
9,930.0	9.50	154.20	9,922.1	-110.6	-102.6	110.6	21.67	21.61	-17.42
9,965.0	12.60	153.10	9,956.5	-116.6	-99.6	116.6	8.88	8.86	-3.14
9,997.0	12.80	155.10	9,987.7	-122.9	-96.6	123.0	1.51	0.63	6.25
10,029.0	13.80	154.90	10,018.8	-129.6	-93.4	129.6	3.13	3.13	-0.63
10,060.0	16.60	152.80	10,048.7	-136.9	-89.9	136.9	9.20	9.03	-6.77
10,092.0	19.60	155.40	10,079.1	-145.9	-85.5	145.9	9.71	9.38	8.13
10,124.0	22.80	160.20	10,109.0	-156.6	-81.2	156.6	11.37	10.00	15.00
10,155.0	25.50	161.90	10,137.3	-168.6	-77.1	168.6	8.99	8.71	5.48
10,187.0	28.10	160.40	10,165.8	-182.2	-72.4	182.2	8.39	8.13	-4.69
10,218.0	31.00	158.60	10,192.8	-196.5	-67.1	196.5	9.78	9.35	-5.81
10,249.0	34.10	158.80	10,218.9	-212.1	-61.0	212.1	10.01	10.00	0.65
10,281.0	36.50	159.30	10,245.0	-229.3	-54.4	229.3	7.55	7.50	1.56
10,312.0	38.50	159.50	10,269.6	-247.0	-47.7	247.0	6.46	6.45	0.65
Crossed Hard Line @ 10342' MD / 10293' TVD									
10,342.0	40.94	157.52	10,292.7	-264.8	-40.7	264.8	9.15	8.12	-6.58
10,344.0	41.10	157.40	10,294.2	-266.0	-40.2	266.1	9.15	8.18	-6.24
10,376.0	43.30	157.70	10,317.9	-285.9	-32.0	285.9	6.90	6.88	0.94
10,407.0	46.40	156.10	10,339.9	-306.0	-23.4	306.0	10.64	10.00	-5.16
10,438.0	49.00	159.50	10,360.8	-327.2	-14.8	327.2	11.67	8.39	10.97
10,470.0	50.90	160.50	10,381.3	-350.3	-6.4	350.3	6.40	5.94	3.13
10,502.0	54.00	158.80	10,400.8	-374.0	2.4	374.0	10.56	9.69	-5.31
10,533.0	57.00	159.50	10,418.4	-397.9	11.5	397.9	9.85	9.68	2.26
10,564.0	59.40	159.60	10,434.7	-422.6	20.7	422.6	7.75	7.74	0.32
10,596.0	63.10	161.10	10,450.1	-449.0	30.1	449.0	12.27	11.56	4.69
10,627.0	66.80	161.40	10,463.3	-475.6	39.2	475.6	11.97	11.94	0.97
10,659.0	69.80	162.50	10,475.1	-503.9	48.4	503.9	9.90	9.38	3.44
10,690.0	72.30	164.00	10,485.1	-531.9	56.8	531.9	9.27	8.06	4.84
10,721.0	74.80	163.00	10,493.9	-560.4	65.3	560.4	8.64	8.06	-3.23
10,753.0	76.40	164.40	10,501.9	-590.2	74.0	590.2	6.55	5.00	4.38
10,785.0	79.20	166.50	10,508.6	-620.5	81.8	620.4	10.85	8.75	6.56
10,816.0	82.10	167.20	10,513.7	-650.2	88.8	650.2	9.62	9.35	2.26
10,845.0	84.60	166.90	10,517.0	-678.3	95.2	678.3	8.68	8.62	-1.03
10,889.0	90.40	169.00	10,519.0	-721.3	104.4	721.3	14.02	13.18	4.77
10,920.0	93.70	169.30	10,517.9	-751.7	110.2	751.7	10.69	10.65	0.97
11,014.0	94.70	175.30	10,511.0	-844.6	122.8	844.5	6.45	1.06	6.38
11,046.0	92.50	175.10	10,509.0	-876.4	125.5	876.4	6.90	-6.88	-0.63
11,078.0	92.10	175.10	10,507.7	-908.2	128.2	908.2	1.25	-1.25	0.00
11,109.0	92.00	176.40	10,506.6	-939.1	130.5	939.1	4.20	-0.32	4.19



DDC Survey Report



Company: Mewbourne Oil Company
Project: Eddy County, New Mexico
Site: Sec 13, T26S, R29E
Well: Fuller 13/24 W1LM Fed Com #3H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Fuller 13/24 W1LM Fed Com #3H
TVD Reference: WELL @ 2982.0usft (Patterson #231)
MD Reference: WELL @ 2982.0usft (Patterson #231)
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)
11,141.0	91.30	176.50	10,505.6	-971.1	132.5	971.0	2.21	-2.19	0.31
11,172.0	90.70	177.20	10,505.1	-1,002.0	134.2	1,002.0	2.97	-1.94	2.26
11,203.0	88.90	178.10	10,505.2	-1,033.0	135.4	1,033.0	6.49	-5.81	2.90
11,235.0	89.70	179.20	10,505.6	-1,065.0	136.2	1,064.9	4.25	2.50	3.44
11,266.0	90.00	179.90	10,505.7	-1,096.0	136.4	1,095.9	2.46	0.97	2.26
11,298.0	89.10	179.20	10,505.9	-1,128.0	136.7	1,127.9	3.56	-2.81	-2.19
11,329.0	88.10	180.70	10,506.7	-1,159.0	136.7	1,158.9	5.81	-3.23	4.84
11,361.0	88.60	180.20	10,507.6	-1,190.9	136.5	1,190.9	2.21	1.56	-1.56
11,393.0	88.20	180.40	10,508.5	-1,222.9	136.3	1,222.9	1.40	-1.25	0.63
11,424.0	86.90	179.00	10,509.8	-1,253.9	136.5	1,253.9	6.16	-4.19	-4.52
11,456.0	87.10	179.30	10,511.5	-1,285.9	136.9	1,285.8	1.13	0.63	0.94
11,487.0	87.20	178.80	10,513.0	-1,316.8	137.5	1,316.8	1.64	0.32	-1.61
11,518.0	88.60	178.60	10,514.2	-1,347.8	138.2	1,347.8	4.56	4.52	-0.65
11,550.0	90.40	180.20	10,514.5	-1,379.8	138.5	1,379.7	7.53	5.63	5.00
11,581.0	91.90	180.20	10,513.8	-1,410.8	138.4	1,410.7	4.84	4.84	0.00
11,613.0	92.80	180.20	10,512.5	-1,442.7	138.3	1,442.7	2.81	2.81	0.00
11,676.0	93.00	182.70	10,509.3	-1,505.6	136.7	1,505.6	3.98	0.32	3.97
11,739.0	90.90	183.90	10,507.2	-1,568.5	133.1	1,568.5	3.84	-3.33	1.90
11,770.0	88.70	185.00	10,507.3	-1,599.4	130.7	1,599.4	7.93	-7.10	3.55
11,865.0	89.40	186.90	10,508.9	-1,693.9	120.8	1,693.8	2.13	0.74	2.00
11,959.0	88.40	185.30	10,510.7	-1,787.3	110.8	1,787.3	2.01	-1.06	-1.70
12,054.0	89.20	185.30	10,512.7	-1,881.9	102.0	1,881.9	0.84	0.84	0.00
12,149.0	89.00	184.60	10,514.2	-1,976.5	93.8	1,976.5	0.77	-0.21	-0.74
12,243.0	90.50	184.10	10,514.6	-2,070.2	86.7	2,070.2	1.68	1.60	-0.53
12,338.0	91.40	185.80	10,513.0	-2,164.9	78.5	2,164.9	2.02	0.95	1.79
12,431.0	91.40	185.70	10,510.7	-2,257.4	69.2	2,257.4	0.11	0.00	-0.11
12,526.0	90.30	185.10	10,509.3	-2,351.9	60.3	2,351.9	1.32	-1.16	-0.63
12,620.0	89.10	183.70	10,509.8	-2,445.7	53.1	2,445.6	1.96	-1.28	-1.49
12,714.0	89.10	181.80	10,511.3	-2,539.5	48.5	2,539.5	2.02	0.00	-2.02
12,808.0	91.40	182.30	10,510.9	-2,633.5	45.2	2,633.5	2.50	2.45	0.53
12,902.0	92.30	183.00	10,507.8	-2,727.3	40.8	2,727.3	1.21	0.96	0.74
12,996.0	91.70	182.00	10,504.6	-2,821.2	36.7	2,821.2	1.24	-0.64	-1.06
13,091.0	92.50	182.70	10,501.1	-2,916.0	32.9	2,916.0	1.12	0.84	0.74
13,186.0	88.70	180.70	10,500.1	-3,010.9	30.0	3,010.9	4.52	-4.00	-2.11
13,280.0	92.30	182.00	10,499.3	-3,104.9	27.8	3,104.9	4.07	3.83	1.38
13,374.0	93.20	183.60	10,494.8	-3,198.7	23.2	3,198.7	1.95	0.96	1.70
13,469.0	91.80	182.50	10,490.6	-3,293.4	18.2	3,293.4	1.87	-1.47	-1.16
13,563.0	89.60	183.70	10,489.5	-3,387.3	13.1	3,387.3	2.67	-2.34	1.28
13,657.0	90.30	184.40	10,489.5	-3,481.1	6.5	3,481.1	1.05	0.74	0.74
13,752.0	89.50	184.40	10,489.7	-3,575.8	-0.8	3,575.8	0.84	-0.84	0.00
13,846.0	89.60	183.60	10,490.4	-3,669.5	-7.4	3,669.5	0.86	0.11	-0.85
13,940.0	88.70	181.40	10,491.8	-3,763.4	-11.5	3,763.4	2.53	-0.96	-2.34
14,035.0	90.70	181.30	10,492.3	-3,858.4	-13.7	3,858.4	2.11	2.11	-0.11



DDC Survey Report



Company: Mowbourn Oil Company
Project: Eddy County, New Mexico
Site: Sec 13, T26S, R29E
Well: Fuller 13/24 W1LM Fed Com #3H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Fuller 13/24 W1LM Fed Com #3H
TVD Reference: WELL @ 2982.0usft (Patterson #231)
MD Reference: WELL @ 2982.0usft (Patterson #231)
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)
14,129.0	89.90	183.40	10,491.8	-3,952.3	-17.6	3,952.3	2.39	-0.85	2.23
14,223.0	87.80	181.60	10,493.7	-4,046.2	-21.7	4,046.2	2.94	-2.23	-1.91
14,318.0	90.90	180.70	10,494.8	-4,141.2	-23.6	4,141.2	3.40	3.26	-0.95
14,413.0	90.70	180.90	10,493.5	-4,236.1	-24.9	4,236.2	0.30	-0.21	0.21
14,507.0	91.80	181.80	10,491.4	-4,330.1	-27.1	4,330.1	1.51	1.17	0.96
14,601.0	89.70	180.40	10,490.2	-4,424.1	-28.9	4,424.1	2.68	-2.23	-1.49
14,695.0	90.30	177.60	10,490.2	-4,518.0	-27.3	4,518.0	3.05	0.64	-2.98
14,789.0	90.40	179.20	10,489.6	-4,612.0	-24.7	4,612.0	1.71	0.11	1.70
14,884.0	91.70	178.30	10,487.9	-4,707.0	-22.6	4,707.0	1.66	1.37	-0.95
14,978.0	92.90	179.70	10,484.1	-4,800.9	-20.9	4,800.9	1.96	1.28	1.49
15,073.0	93.80	179.70	10,478.6	-4,895.7	-20.4	4,895.7	0.95	0.95	0.00
15,194.0	91.40	177.10	10,473.1	-5,016.5	-17.1	5,016.5	2.92	-1.98	-2.15
15,289.0	90.20	176.20	10,471.7	-5,111.3	-11.5	5,111.3	1.58	-1.26	-0.95
15,384.0	90.80	176.70	10,470.9	-5,206.1	-5.6	5,206.1	0.82	0.63	0.53
15,479.0	91.40	177.60	10,469.1	-5,301.0	-0.9	5,301.0	1.14	0.63	0.95
15,573.0	89.30	177.60	10,468.5	-5,394.9	3.0	5,394.9	2.23	-2.23	0.00
15,668.0	89.20	177.20	10,469.8	-5,489.8	7.3	5,489.8	0.43	-0.11	-0.42
15,762.0	91.00	179.90	10,469.6	-5,583.8	9.7	5,583.8	3.45	1.91	2.87
15,857.0	93.60	181.30	10,465.8	-5,678.7	8.7	5,678.7	3.11	2.74	1.47
15,951.0	91.30	177.80	10,461.8	-5,772.6	9.5	5,772.6	4.45	-2.45	-3.72
16,046.0	90.60	177.90	10,460.2	-5,867.5	13.0	5,867.5	0.74	-0.74	0.11
16,140.0	90.10	177.80	10,459.6	-5,961.4	16.5	5,961.4	0.54	-0.53	-0.11
16,235.0	90.00	179.00	10,459.5	-6,056.4	19.2	6,056.4	1.27	-0.11	1.26
16,329.0	91.40	179.70	10,458.4	-6,150.4	20.3	6,150.4	1.67	1.49	0.74
16,424.0	90.70	179.30	10,456.6	-6,245.3	21.1	6,245.3	0.85	-0.74	-0.42
16,519.0	91.10	178.10	10,455.2	-6,340.3	23.2	6,340.3	1.33	0.42	-1.26
16,613.0	89.10	175.60	10,455.0	-6,434.2	28.4	6,434.1	3.41	-2.13	-2.66
16,708.0	87.80	175.10	10,457.6	-6,528.8	36.1	6,528.8	1.47	-1.37	-0.53
16,802.0	87.50	175.10	10,461.4	-6,622.4	44.1	6,622.4	0.32	-0.32	0.00
16,896.0	90.00	179.30	10,463.5	-6,716.2	48.7	6,716.2	5.20	2.66	4.47
16,990.0	88.30	180.20	10,464.9	-6,810.2	49.1	6,810.2	2.05	-1.81	0.96
17,085.0	91.40	180.70	10,465.1	-6,905.2	48.4	6,905.2	3.31	3.26	0.53
17,180.0	91.20	179.90	10,463.0	-7,000.2	47.9	7,000.2	0.87	-0.21	-0.84
17,274.0	93.50	179.50	10,459.1	-7,094.1	48.4	7,094.1	2.48	2.45	-0.43
17,369.0	91.40	179.50	10,455.0	-7,189.0	49.2	7,189.0	2.21	-2.21	0.00
17,464.0	88.20	180.60	10,455.4	-7,284.0	49.1	7,284.0	3.56	-3.37	1.16
17,559.0	90.20	182.50	10,456.7	-7,378.9	48.8	7,378.9	2.90	2.11	2.00
17,653.0	90.30	181.80	10,456.3	-7,472.8	43.0	7,472.8	0.75	0.11	-0.74
17,748.0	87.70	177.80	10,457.9	-7,567.8	43.4	7,567.8	5.02	-2.74	-4.21
17,775.0	90.70	178.80	10,458.3	-7,594.8	44.2	7,594.8	11.71	11.11	3.70
TD @ 17830' MD / 10458' TVD									
17,830.0	90.70	178.80	10,457.6	-7,649.8	45.3	7,649.8	0.00	0.00	0.00



DDC
Survey Report



Company: Mawbourne Oil Company
Project: Eddy County, New Mexico
Site: Sec 13, T26S, R29E
Well: Fuller 13/24 W1LM Fed Com #3H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Fuller 13/24 W1LM Fed Com #3H
TVD Reference: WELL @ 2982.0usft (Patterson #231)
MD Reference: WELL @ 2982.0usft (Patterson #231)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,640.0	9,632.4	-106.1	-100.1	Tie into Gyro @ 9640' MD / 9632' TVD
10,342.0	10,292.7	-264.8	-40.7	Crossed Hard Line @ 10342' MD / 10293' TVD
17,830.0	10,457.8	-7,649.8	45.3	TD @ 17830' MD / 10458' TVD

Checked By: _____	Approved By: _____	Date: _____
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January 13, 2016

Mewbourne Oil Company
701 S. Cecil
Hobbs, New Mexico 88240

Attn: Jake Nave

Re: Fuller 13 24 W1LM Federal Com No 003H

Please find enclosed a copy of the survey from 0' to 9640' ran on the above referenced well.

If I can be of any further service please do not hesitate to call me at 800-606-4976.

Sincerely,


Jennifer Byerly
Operations





VES SURVEY

Company: Mewbourne Oil
Lease/Well: Fuller 13 24 W1LM Federal Com No/003H

Rig Name: Patterson 231
State/County: New Mexico/Eddy
VS-Azi: 180.01 Degrees
Latitude: 32.04161, Longitude: -103.94365
Grid North = True North -0.21 degs (NAD 27)
Grid Correction Applied = -0.21 degs

Depth Reference : RKB = 26 feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyro survey.ut
Minimum Curvature Method
Report Date/Time: 1/13/2016 / 13:09

VES Survey International
Midland, Texas
432-563-5444

Surveyor: Adam Askew

Fuller 13 24 W1LM Federal Com No 003H / API 30-015-43517

NM OIL CONSERVATION
ARTESIA DISTRICT

DEC 02 2016

RECEIVED

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	----
100.00	0.27	312.74	100.00	0.16	-0.17	-0.16	0.23	312.74	0.27
200.00	0.63	330.80	200.00	0.80	-0.61	-0.80	1.00	322.45	0.38
300.00	0.59	314.78	299.99	1.64	-1.24	-1.64	2.06	322.73	0.17
400.00	0.51	303.70	399.99	2.25	-1.98	-2.25	2.99	318.60	0.14
500.00	1.78	256.26	499.97	2.12	-3.86	-2.12	4.40	298.80	1.49
600.00	2.24	238.69	599.90	0.74	-7.04	-0.73	7.08	275.96	0.76
700.00	2.68	226.91	699.81	-1.88	-10.42	1.88	10.59	259.78	0.67
800.00	2.68	222.02	799.70	-5.21	-13.69	5.22	14.65	249.16	0.23
900.00	2.68	226.17	899.59	-8.57	-16.95	8.57	18.99	243.17	0.19
1000.00	2.71	230.50	999.48	-11.69	-20.46	11.70	23.56	240.25	0.21
1100.00	2.98	229.50	1099.36	-14.89	-24.26	14.89	28.47	238.46	0.27
1200.00	3.13	224.90	1199.22	-18.51	-28.16	18.51	33.70	236.69	0.29
1300.00	3.49	225.66	1299.05	-22.57	-32.26	22.57	39.37	235.03	0.36
1400.00	3.57	219.39	1398.86	-27.10	-36.41	27.10	45.39	233.35	0.39
1500.00	3.54	224.93	1498.67	-31.69	-40.57	31.69	51.48	232.01	0.34
1600.00	3.26	229.13	1598.49	-35.73	-44.90	35.74	57.38	231.48	0.37

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1700.00	3.18	226.57	1698.34	-39.50	-49.06	39.51	62.99	231.16	0.17
1800.00	2.79	230.32	1798.20	-42.96	-52.95	42.97	68.18	230.95	0.44
1900.00	2.15	233.24	1898.11	-45.64	-56.33	45.65	72.49	230.98	0.55
2000.00	1.69	232.51	1998.05	-47.66	-59.00	47.67	75.84	231.07	0.47
2100.00	1.44	229.96	2098.01	-49.36	-61.13	49.37	78.57	231.08	0.26
2200.00	1.42	229.72	2197.98	-50.97	-63.04	50.98	81.06	231.04	0.01
2300.00	1.53	227.96	2297.95	-52.67	-64.98	52.68	83.64	230.97	0.12
2400.00	1.28	200.79	2397.92	-54.61	-66.37	54.62	85.94	230.55	0.71
2500.00	2.32	143.17	2497.88	-57.27	-65.55	57.28	87.04	228.85	1.96
2600.00	3.11	137.95	2597.76	-60.91	-62.52	60.92	87.28	225.75	0.82
2700.00	3.82	140.76	2697.58	-65.50	-58.59	65.51	87.88	221.82	0.73
2800.00	5.32	128.26	2797.26	-70.95	-52.84	70.96	88.47	216.68	1.80
2900.00	5.78	128.84	2896.79	-76.98	-45.28	76.99	89.31	210.46	0.46
3000.00	4.39	130.23	2996.40	-82.61	-38.43	82.62	91.11	204.95	1.40
3100.00	2.96	143.33	3096.19	-87.16	-33.97	87.16	93.54	201.29	1.64
3200.00	1.56	137.77	3196.11	-90.23	-31.51	90.24	95.88	199.25	1.42
3300.00	1.33	136.08	3296.08	-92.08	-29.79	92.08	96.78	197.93	0.23
3400.00	1.22	138.49	3396.05	-93.71	-28.28	93.72	97.89	196.79	0.13
3500.00	1.25	134.44	3496.03	-95.27	-26.80	95.28	98.97	195.71	0.09
3600.00	1.32	127.17	3596.00	-96.73	-25.10	96.74	99.94	194.55	0.17
3700.00	1.06	141.88	3695.98	-98.16	-23.61	98.16	100.96	193.52	0.40
3800.00	0.85	146.40	3795.97	-99.50	-22.63	99.51	102.05	192.81	0.23
3900.00	0.79	154.39	3895.96	-100.74	-21.92	100.75	103.10	192.28	0.13
4000.00	0.75	160.63	3995.95	-101.98	-21.41	101.98	104.20	191.86	0.09
4100.00	0.73	163.39	4095.94	-103.21	-21.01	103.21	105.32	191.51	0.04
4200.00	0.58	175.62	4195.94	-104.33	-20.79	104.33	106.38	191.27	0.20
4300.00	0.56	203.39	4295.93	-105.29	-20.94	105.29	107.35	191.25	0.28
4400.00	0.36	245.08	4395.93	-105.87	-21.42	105.88	108.02	191.44	0.38
4500.00	0.51	279.73	4495.92	-105.93	-22.15	105.93	108.22	191.81	0.30
4600.00	0.90	266.26	4595.92	-105.91	-23.37	105.91	108.46	192.45	0.43
4700.00	0.88	269.21	4695.90	-105.97	-24.93	105.97	108.86	193.24	0.05
4800.00	1.06	263.68	4795.89	-106.08	-26.62	106.09	109.37	194.09	0.20
4900.00	0.88	259.78	4895.88	-106.32	-28.29	106.32	110.02	194.90	0.19
5000.00	1.03	260.58	4995.86	-106.60	-29.93	106.61	110.73	195.69	0.15
5100.00	0.97	260.08	5095.85	-106.90	-31.66	106.90	111.49	196.50	0.06
5200.00	1.25	234.87	5195.83	-107.67	-33.39	107.68	112.73	197.23	0.56
5300.00	1.11	237.14	5295.81	-108.83	-35.10	108.83	114.35	197.88	0.15
5400.00	0.60	207.84	5395.80	-109.82	-36.16	109.83	115.62	198.23	0.65
5500.00	0.49	164.50	5495.79	-110.70	-36.29	110.70	116.50	198.15	0.42

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/S FT	+E/W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
5600.00	0.32	154.76	5595.79	-111.36	-36.06	111.37	117.06	197.94	0.19
5700.00	0.53	138.60	5695.79	-111.96	-35.63	111.97	117.50	197.65	0.25
5800.00	0.71	135.45	5795.78	-112.75	-34.89	112.76	118.03	197.19	0.18
5900.00	0.55	168.95	5895.77	-113.87	-34.36	113.68	118.75	196.82	0.40
6000.00	0.84	189.44	5995.77	-114.84	-34.51	114.85	119.91	196.73	0.46
6100.00	1.03	176.28	6095.75	-116.43	-34.70	116.43	121.49	196.60	0.42
6200.00	1.24	162.42	6195.74	-118.35	-34.31	118.36	123.23	196.17	0.35
6300.00	1.37	167.22	6295.71	-120.54	-33.72	120.55	125.17	195.63	0.17
6400.00	1.22	192.40	6395.68	-122.74	-33.69	122.75	127.28	195.35	0.58
6500.00	1.36	213.20	6495.66	-124.78	-34.57	124.78	129.47	195.48	0.49
6600.00	1.38	221.57	6595.63	-126.87	-36.02	126.68	131.69	195.87	0.20
6700.00	1.51	210.83	6695.60	-128.70	-37.49	128.71	134.05	196.24	0.30
6800.00	1.40	205.07	6795.57	-130.93	-38.68	130.94	136.53	196.46	0.18
6900.00	1.51	186.99	6895.54	-133.34	-39.36	133.35	139.03	196.44	0.47
7000.00	2.54	147.44	6995.48	-136.52	-38.32	136.52	141.79	195.68	1.88
7100.00	2.81	135.00	7095.37	-140.12	-35.40	140.13	144.52	194.18	0.64
7200.00	1.70	60.57	7195.31	-141.13	-32.37	141.13	144.79	192.92	2.87
7300.00	1.54	25.34	7295.27	-139.19	-30.51	139.19	142.49	192.36	0.99
7400.00	2.55	340.05	7395.21	-135.89	-30.69	135.89	139.31	192.73	1.83
7500.00	2.37	332.30	7495.12	-131.97	-32.41	131.97	135.89	193.80	0.37
7600.00	2.76	311.99	7595.02	-128.53	-35.16	128.53	133.25	195.30	0.98
7700.00	4.57	304.73	7694.81	-124.65	-40.23	124.66	130.98	197.89	1.86
7800.00	4.81	305.54	7794.48	-119.94	-46.91	119.95	128.79	201.36	0.25
7900.00	4.86	317.35	7894.13	-114.39	-53.19	114.40	126.15	204.84	0.99
8000.00	4.64	328.13	7993.78	-107.84	-58.20	107.85	122.54	208.35	0.92
8100.00	4.89	336.67	8093.44	-100.49	-62.02	100.50	118.09	211.68	0.75
8200.00	4.12	335.88	8193.13	-93.29	-65.18	93.30	113.80	214.94	0.78
8300.00	0.46	308.10	8293.03	-89.76	-66.96	89.78	111.99	216.72	3.72
8400.00	1.93	217.17	8393.01	-90.86	-68.30	90.87	113.67	216.93	1.99
8500.00	3.08	237.55	8492.92	-93.64	-71.58	93.66	117.87	217.39	1.43
8600.00	3.56	233.55	8592.75	-96.93	-76.34	96.94	123.38	218.22	0.54
8700.00	2.24	255.06	8692.62	-99.28	-80.73	99.29	127.96	219.12	1.69
8800.00	1.20	225.88	8792.58	-100.51	-83.36	100.53	130.58	219.67	1.32
8900.00	1.68	234.04	8892.55	-102.10	-85.30	102.12	133.04	219.88	0.52
9000.00	1.51	239.59	8992.51	-103.63	-87.62	103.64	135.71	220.22	0.23
9100.00	1.57	275.88	9092.47	-104.16	-90.12	104.17	137.73	220.87	0.96
9200.00	1.50	279.20	9192.44	-103.81	-92.77	103.82	139.22	221.79	0.11
9300.00	0.99	270.82	9292.41	-103.58	-94.93	103.60	140.51	222.50	0.54
9400.00	0.92	214.89	9392.40	-104.23	-96.26	104.25	141.88	222.72	0.90

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
9500.00	1.07	245.40	9492.39	-105.28	-97.57	105.29	143.54	222.82	0.54
9600.00	1.19	253.73	9592.37	-105.96	-99.41	105.97	145.29	223.17	0.21
9640.00	0.96	260.86	9632.36	-106.13	-100.14	106.15	145.92	223.34	0.66



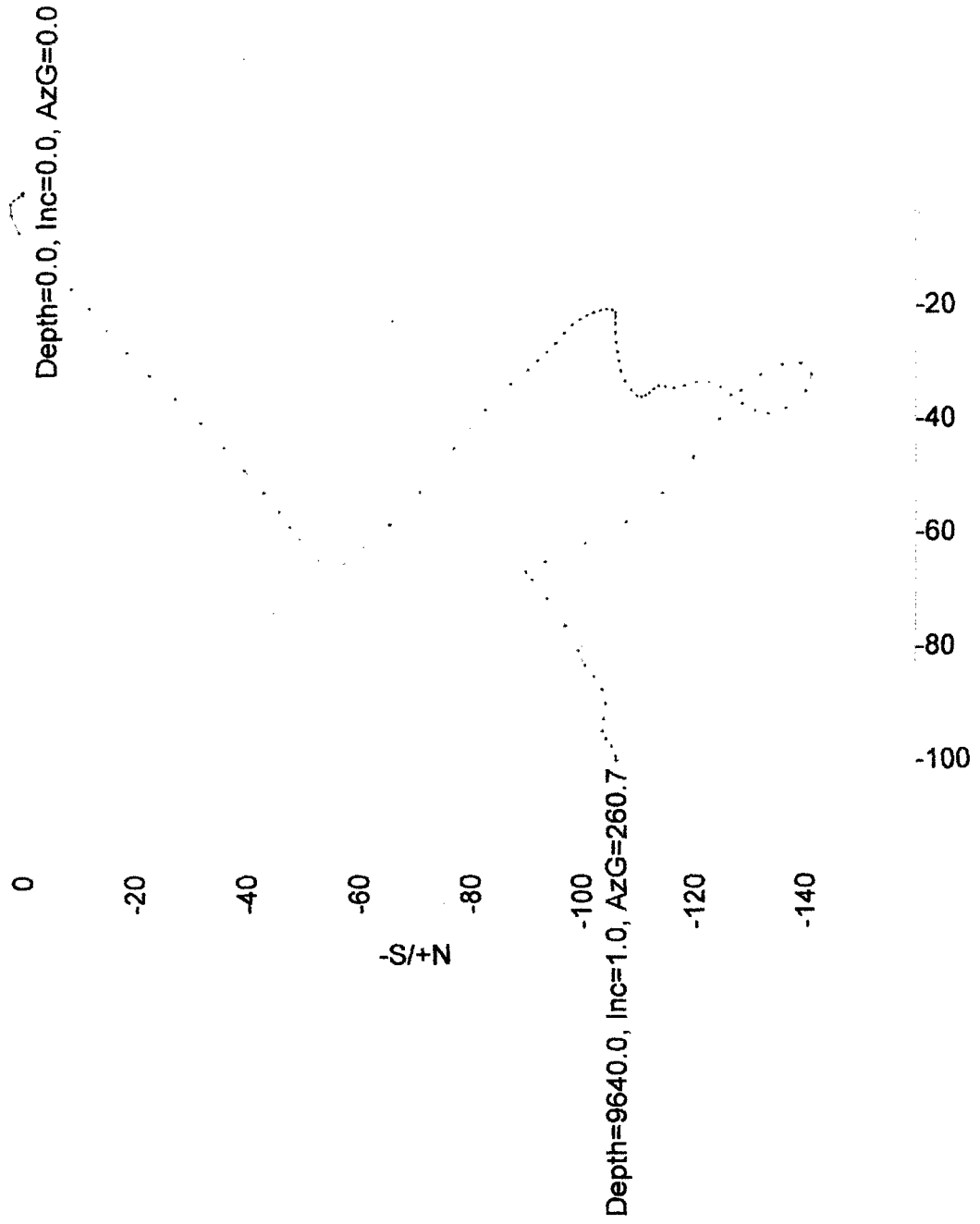
VES Survey International
Midland, Texas
432-563-5444

Surveyor: Adam Askew

Fuller 13 24 W1LM Federal Com No 003H / API 30-015-43517

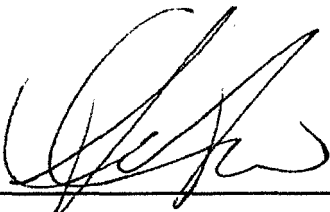
VES

SURVEY



VES SURVEY

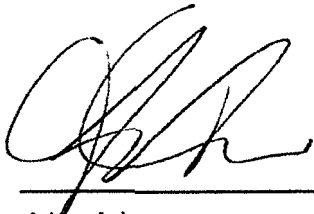
I Adam Askew certify that I am employed by VES Survey International. That I did on the day(s) of 01/07/16 through 01/07/16 conduct or supervise the taking of a Rate Gyro survey from a depth of 0.00 feet to a depth of 9,640.00 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Vaughn Energy Services, that I am authorized and qualified to make this report; that this survey was conducted at the request of Mewbourne Oil for the Fuller 13/24 W1LM Fed Com Well # 3H API # 30-015-43517 in Eddy County / Parish New Mexico; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Vaughn Energy Services



Adam Askew
Service Technician
Vaughn Energy Services

VES SURVEY

I Adam Askew certify that I am employed by VES Survey International. That I did on the day(s) of 01/07/16 through 01/07/16 conduct or supervise the taking of a Rate Gyro survey from a depth of 0.00 feet to a depth of 9,640.00 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Vaughn Energy Services, that I am authorized and qualified to make this report; that this survey was conducted at the request of Mewbourne Oil for the Fuller 13/24 W1LM Fed Com Well # 3H API # 30-015-43517 in Eddy County / Parish New Mexico; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Vaughn Energy Services



Adam Askew
Service Technician
Vaughn Energy Services

OPERATOR
WELL/LEASE
COUNTY

MEWBOURNE OIL COMPANY
FULLER 13/24 W1LM FED COM 3H
EDDY

231-0025

STATE OF NEW MEXICO
DEVIATION REPORT

342

0.52

STATE OF TEXAS

COUNTY OF MIDLAND

BY: *Dora Garcia*

The foregoing instrument was acknowledged before me on
Dora Garcia on behalf of Patterson-UTI Drilling Company LLC.

2/16/16, by

Amber Elizabeth Carr
Notary Public for Midland County, Texas
My Commission Expires:

