



NM OIL CONSERVATION
ARTESIA DISTRICT

FEB 04 2019

RECEIVED

Mewbourne Oil Company

Eddy County, New Mexico (Nad 83)

Sec 2, T24S, R28E

Skynyrd 2 W0CN Fee #1H

Wellbore #1

30-015-44801

Survey: QES MWD Surveys

QES Survey Certification Report

10 September, 2018



Quintana Energy Services

11390 FM 830

Willis, TX 77318

Phone: (936) 856-4332

Fax: (936) 856-8678

**Survey Certification Sheet**

Company	Job Number	Date
Mewbourne Oil Company	WT-180922	9/12/2018

Lease	Well Name	County & State
SEC 2, T-24S, R28E	Skynyrd 2 W0CN Fee #1H	Eddy County, NM

API No.	Survey Depth Range	Survey Type
30-015-44801	65 feet to 14445 feet MD	MWD

Sidetrack Information	Directional Supervisor/Surveyor
Click here to enter text.	Craig Dent

Certification Statement

The data and calculations for this survey have been checked by me and conform to the standards and procedures set forth by Quintana Energy Services (QES). This report represents a true and correct directional survey of this well based on the original data obtained at the well site. Wellbore coordinates are calculated using minimum curvature.

Christopher Hughes

Digitally signed by Christopher Hughes
DN: cn=Christopher Hughes, o=QES Directional Drilling,
ou=MWD Compliance, email=Chrish@qesinc.com, c=US
Date: 2018.10.16 07:05:44 -05'00'

Christopher Hughes
MWD Compliance Manager
Quintana Energy Services



QES Survey Certification Report



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Skynyrd 2 W0CN Fee #1H
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 W0CN Fee #1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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

Well	Skynyrd 2 W0CN Fee #1H					
Well Position	+N/-S	0.0 usft	Northing:	456,163.00 usft	Latitude:	32° 15' 13.596 N
	+E/-W	0.0 usft	Easting:	625,124.70 usft	Longitude:	104° 3' 44.254 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,016.0usft	

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	8/17/2018	7.06	60.00	47,786.54231497

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	169.40	

Survey Program	Date	9/10/2018			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
65.0	65.0	Phoenix Tech Gyro (Wellbore #1)	GYRO-NS	OWSG Gyrocompass Gyro	
204.0	14,445.0	QES MWD Surveys (Wellbore #1)	OWSG (Rev2) MWD	OWSG MWD - Standard	

Survey									
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)		
65.0	0.46	312.79	65.0	0.2	-0.2	0.3	312.79		
Gyro Tie-In @ 65.0' MD / 65.0' TVD									
204.0	0.70	325.30	204.0	1.3	-1.1	1.7	319.16		
358.0	1.90	41.90	358.0	3.9	0.1	3.9	1.24		
540.0	2.30	52.40	539.8	8.4	5.0	9.8	30.72		
727.0	2.40	48.80	726.7	13.3	10.9	17.2	39.43		
854.0	2.50	51.70	853.6	16.7	15.1	22.5	42.03		
1,045.0	2.50	48.60	1,044.4	22.1	21.5	30.8	44.22		
1,235.0	2.10	35.70	1,234.2	27.6	26.6	38.4	43.92		
1,425.0	1.90	40.30	1,424.1	32.9	30.7	45.0	43.03		
1,616.0	2.40	38.40	1,615.0	38.4	35.2	52.1	42.51		

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Site:	Sec 2, T24S, R28E	MD Reference:	WELL @ 3043.0usft (Patterson #243)
Well:	Skynyrd 2 W0CN Fee #1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)
1,807.0	2.50	70.90	1,805.8	42.9	41.6	59.8	44.14
1,995.0	4.20	93.00	1,993.5	43.9	52.4	68.4	50.04
2,182.0	4.30	105.00	2,180.0	41.7	66.0	78.1	57.70
2,369.0	5.70	114.80	2,366.3	36.0	81.2	88.8	66.08
2,475.0	6.20	117.60	2,471.7	31.2	91.1	96.2	71.11
2,545.0	6.00	120.50	2,541.3	27.5	97.6	101.4	74.23
2,734.0	2.80	82.70	2,729.8	23.1	110.7	113.0	78.20
2,921.0	6.30	79.90	2,916.1	25.5	125.3	127.9	78.50
3,107.0	5.50	56.50	3,101.2	32.2	142.8	146.4	77.29
3,294.0	6.20	63.90	3,287.2	41.6	159.3	164.7	75.37
3,481.0	5.30	63.30	3,473.3	49.9	176.1	183.0	74.17
3,667.0	5.70	63.20	3,658.4	57.9	192.0	200.6	73.21
3,855.0	6.40	73.20	3,845.4	65.2	210.4	220.3	72.78
4,042.0	5.30	67.00	4,031.4	71.6	228.3	239.3	72.59
4,229.0	4.80	66.30	4,217.7	78.1	243.4	255.6	72.21
4,417.0	4.70	66.30	4,405.0	84.4	257.7	271.1	71.87
4,604.0	4.80	68.30	4,591.4	90.3	272.0	286.6	71.63
4,791.0	3.90	67.20	4,777.8	95.7	285.1	300.7	71.45
4,980.0	4.60	67.60	4,966.3	101.1	298.0	314.7	71.27
5,168.0	4.20	71.30	5,153.8	106.1	311.5	329.1	71.19
5,356.0	5.80	77.20	5,341.0	110.5	327.3	345.4	71.35
5,544.0	4.90	79.20	5,528.2	114.1	344.5	362.9	71.68
5,732.0	4.70	66.50	5,715.6	118.6	359.4	378.5	71.73
5,920.0	4.60	78.30	5,902.9	123.2	373.9	393.6	71.76
6,108.0	4.70	72.10	6,090.3	127.1	388.6	408.8	71.88
6,296.0	4.70	67.20	6,277.7	132.5	403.0	424.2	71.80
6,484.0	5.70	58.70	6,464.9	140.3	418.1	441.0	71.45
6,671.0	3.60	57.90	6,651.3	148.3	431.0	455.8	71.02
6,860.0	5.40	67.60	6,839.7	154.8	444.2	470.4	70.79
7,048.0	2.80	91.50	7,027.2	158.1	457.0	483.6	70.92
7,236.0	1.40	109.70	7,215.1	157.2	463.8	489.7	71.28
7,424.0	1.50	99.60	7,403.0	156.0	468.3	493.6	71.58
7,611.0	2.00	51.60	7,590.0	157.6	473.3	498.9	71.58
7,799.0	3.30	64.00	7,777.8	162.0	480.8	507.3	71.38
7,987.0	2.90	93.90	7,965.5	164.1	490.4	517.1	71.50
8,176.0	3.70	107.30	8,154.2	161.9	501.0	526.5	72.09
8,363.0	3.30	116.80	8,340.8	157.7	511.5	535.3	72.87
8,552.0	0.60	65.10	8,529.7	155.7	517.3	540.2	73.25
8,739.0	1.70	61.60	8,716.7	157.4	520.6	543.9	73.18
8,929.0	0.80	69.30	8,906.6	159.2	524.3	548.0	73.11
9,116.0	0.00	282.40	9,093.6	159.7	525.5	549.3	73.10
9,147.0	0.10	277.80	9,124.6	159.7	525.5	549.2	73.10
9,179.0	0.10	290.80	9,156.6	159.7	525.5	549.2	73.10
9,210.0	1.40	161.10	9,187.6	159.3	525.6	549.2	73.13
9,241.0	5.20	154.60	9,218.6	157.7	526.3	549.4	73.32



QES Survey Certification Report



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Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Skynyrd 2 W0CN Fee #1H
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

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)
9,273.0	9.60	152.10	9,250.3	154.0	528.2	550.2	73.74
9,304.0	14.60	149.60	9,280.6	148.4	531.3	551.7	74.40
9,335.0	19.60	149.80	9,310.2	140.5	535.9	554.1	75.31
9,367.0	24.20	151.10	9,339.9	130.1	541.8	557.2	76.50
9,398.0	29.50	154.90	9,367.5	117.6	548.1	560.6	77.89
9,430.0	33.80	159.00	9,394.8	102.2	554.7	564.0	79.56
9,461.0	36.60	161.40	9,420.1	85.4	560.7	567.2	81.34
9,493.0	40.50	162.10	9,445.1	66.4	566.9	570.8	83.32
9,524.0	44.20	161.90	9,468.0	46.6	573.4	575.3	85.36
9,556.0	46.70	162.10	9,490.5	24.9	580.4	581.0	87.54
9,587.0	49.40	162.10	9,511.2	3.0	587.5	587.5	89.71
9,618.0	53.00	162.50	9,530.6	-20.1	594.9	595.2	91.93
9,650.0	56.20	163.40	9,549.2	-45.0	602.5	604.2	94.27
9,681.0	58.70	163.20	9,565.8	-70.0	610.0	614.0	96.55
9,712.0	62.00	162.80	9,581.2	-95.8	617.9	625.3	98.81
9,744.0	65.10	162.10	9,595.4	-123.1	626.5	638.5	101.12
9,775.0	67.60	161.80	9,607.9	-150.1	635.3	652.8	103.29
9,806.0	70.90	161.60	9,618.8	-177.6	644.4	668.5	105.41
9,837.0	73.90	161.80	9,628.2	-205.7	653.7	685.3	107.46
9,850.0	74.70	161.80	9,631.7	-217.5	657.6	692.7	108.30
9,928.0	81.30	161.80	9,647.9	-290.0	681.4	740.6	113.05
10,022.0	88.20	164.20	9,656.5	-379.4	708.8	804.0	118.16
10,116.0	88.90	164.20	9,658.9	-469.9	734.4	871.8	122.61
10,210.0	86.50	164.90	9,662.7	-560.4	759.4	943.8	126.43
10,304.0	87.00	164.90	9,668.0	-651.0	783.8	1,018.9	129.71
10,397.0	90.20	166.90	9,670.3	-741.2	806.5	1,095.3	132.58
10,491.0	90.90	166.90	9,669.4	-832.7	827.8	1,174.1	135.17
10,584.0	90.10	167.20	9,668.6	-923.3	848.6	1,254.1	137.41
10,679.0	90.40	167.20	9,668.2	-1,016.0	869.7	1,337.4	139.44
10,772.0	92.80	167.90	9,665.6	-1,106.7	889.7	1,420.0	141.20
10,866.0	87.70	167.90	9,665.2	-1,198.6	909.4	1,504.6	142.81
10,960.0	90.40	168.40	9,666.7	-1,290.6	928.7	1,590.0	144.26
11,054.0	91.20	170.00	9,665.4	-1,382.9	946.3	1,675.7	145.62
11,148.0	89.60	177.20	9,664.7	-1,476.3	956.8	1,759.2	147.05
11,242.0	90.30	179.50	9,664.8	-1,570.2	959.5	1,840.2	148.57
11,336.0	87.40	178.80	9,666.7	-1,664.2	960.9	1,921.7	150.00
11,430.0	89.10	181.30	9,669.6	-1,758.1	960.8	2,003.5	151.34
11,523.0	90.80	182.00	9,669.7	-1,851.1	958.1	2,084.3	152.63
11,617.0	91.50	182.30	9,667.8	-1,945.0	954.6	2,166.6	153.86
11,711.0	91.40	182.70	9,665.4	-2,038.9	950.5	2,249.5	155.01
11,805.0	91.40	183.00	9,663.1	-2,132.7	945.8	2,333.1	156.08
11,899.0	91.10	183.80	9,661.0	-2,226.5	940.3	2,416.9	157.11
11,993.0	90.70	183.40	9,659.6	-2,320.3	934.4	2,501.4	158.07
12,087.0	92.00	184.10	9,657.4	-2,414.1	928.2	2,586.4	158.97

Company: Mewbourne Oil Company
Project: Eddy County, New Mexico (Nad 83)
Site: Sec 2, T24S, R28E
Well: Skynyrd 2 W0CN Fee #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Skynyrd 2 W0CN Fee #1H
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

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)
12,180.0	90.00	183.20	9,655.7	-2,506.9	922.3	2,671.2	159.80
12,275.0	89.10	183.00	9,656.5	-2,601.8	917.1	2,758.7	160.58
12,369.0	89.90	183.40	9,657.3	-2,695.6	911.9	2,845.7	161.31
12,463.0	89.90	183.40	9,657.5	-2,789.4	906.3	2,933.0	162.00
12,557.0	90.90	182.90	9,656.8	-2,883.3	901.2	3,020.8	162.64
12,651.0	90.60	180.90	9,655.6	-2,977.2	898.0	3,109.7	163.21
12,745.0	91.50	181.60	9,653.9	-3,071.2	896.0	3,199.2	163.74
12,839.0	87.90	180.40	9,654.3	-3,165.2	894.4	3,289.1	164.22
12,933.0	88.90	180.90	9,657.0	-3,259.1	893.3	3,379.3	164.67
13,028.0	89.00	181.30	9,658.7	-3,354.1	891.5	3,470.5	165.12
13,122.0	91.00	180.10	9,658.7	-3,448.1	890.3	3,561.2	165.52
13,216.0	91.40	180.90	9,656.7	-3,542.0	889.5	3,652.0	165.90
13,311.0	90.00	180.10	9,655.6	-3,637.0	888.7	3,744.0	166.27
13,404.0	91.00	180.80	9,654.8	-3,730.0	887.9	3,834.3	166.61
13,498.0	88.60	180.20	9,655.1	-3,824.0	887.1	3,925.6	166.94
13,592.0	89.70	180.20	9,656.5	-3,918.0	886.8	4,017.1	167.25
13,687.0	89.90	180.60	9,656.8	-4,013.0	886.1	4,109.7	167.55
13,782.0	89.90	180.90	9,657.0	-4,108.0	884.9	4,202.2	167.84
13,875.0	88.40	180.80	9,658.4	-4,201.0	883.5	4,292.9	168.12
13,970.0	88.50	181.10	9,660.9	-4,295.9	881.9	4,385.5	168.40
14,063.0	90.30	179.50	9,661.9	-4,388.9	881.4	4,476.5	168.64
14,157.0	90.20	179.40	9,661.5	-4,482.9	882.3	4,568.9	168.87
14,252.0	90.80	179.40	9,660.7	-4,577.9	883.3	4,662.3	169.08
14,347.0	90.70	179.50	9,659.4	-4,672.9	884.3	4,755.8	169.28
14,390.0	90.40	179.50	9,659.0	-4,715.9	884.6	4,798.1	169.38
14,445.0	90.40	179.50	9,658.6	-4,770.9	885.1	4,852.3	169.49

TD @ 14445.0' MD / 9658.6' TVD

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
65.0	65.0	0.2	-0.2	Gyro Tie-in @ 65.0' MD / 65.0' TVD
14,445.0	9,658.6	-4,770.9	885.1	TD @ 14445.0' MD / 9658.6' TVD

Checked By: _____	Approved By: _____	Date: _____
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Company Name: Mewbourne Oil Company
 Skynrd 2 W0CN Fee #1H
 Eddy County, New Mexico (Nad 83)
 Rig: Patterson #243
 Created By: Shane Robbins
 Date: 09/08/2018

Skynrd 2 W0CN Fee #1H
 Eddy County, New Mexico (Nad 83)
 Q181103 & WT-180922
 Design #1



Azimuths to Grid North

Correction: 6.91°
 Magnetic Field

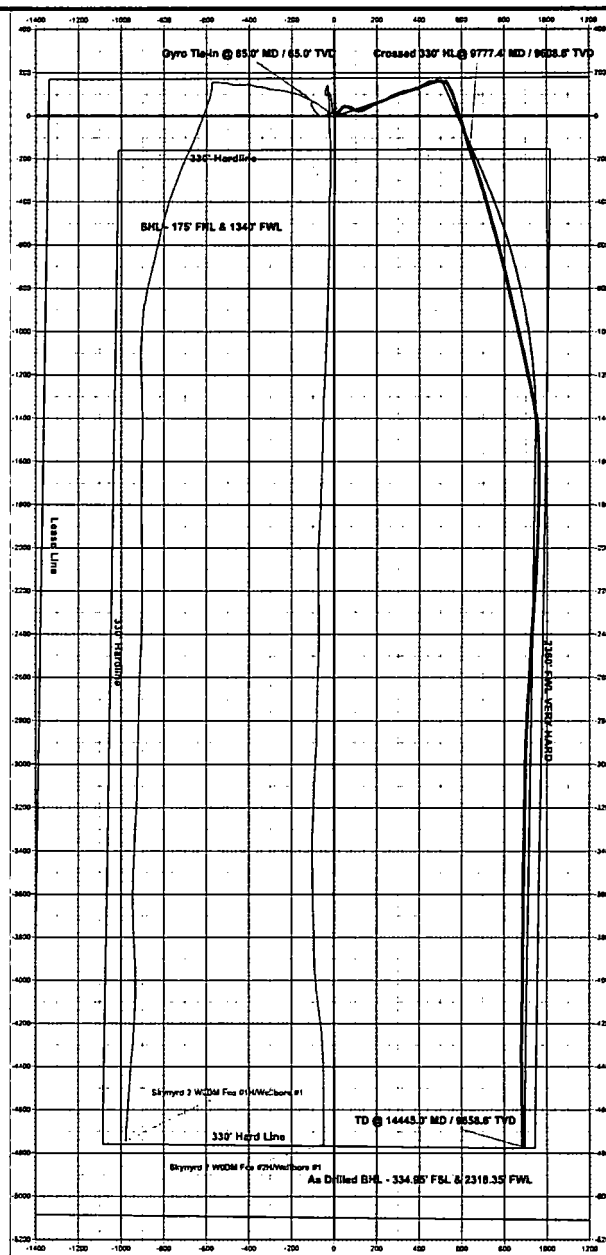
Strength: 47786.5nT
 Dip Angle: 60.00°
 Date: 8/17/2018
 Model: IGRF2015

WELL DETAILS: Skynrd 2 W0CN Fee #1H

	3018.9
Nad-83	9.9
North	436163.99
East	823124.78
Latitude	37° 15' 13.996 N
Longitude	104° 2' 44.254 W

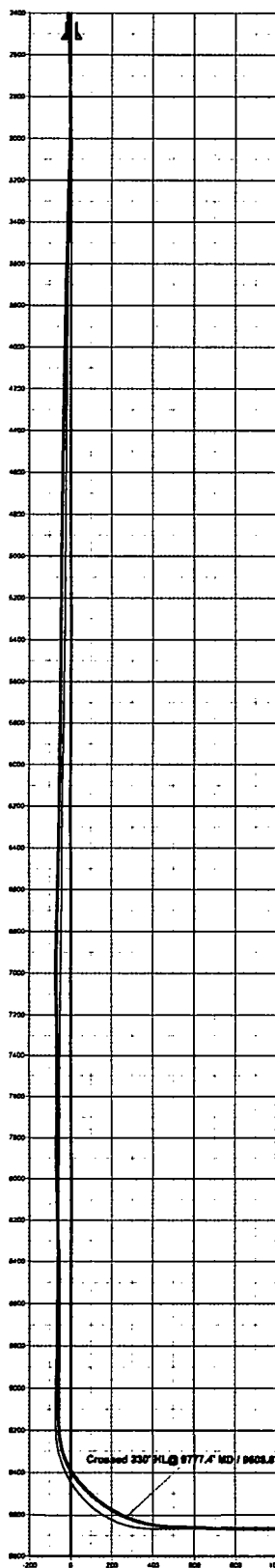
PROJECT DETAILS: Eddy County, New Mexico (Nad 83)

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



ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vbect	Departure	Annotation
85.0	0.46	312.79	65.0	0.2	-0.2	-0.2	0.3	Gyro Tie-in @ 85.0' MD / 65.0' TVD
9777.4	67.86	181.78	9608.8	-152.2	936.0	288.6	917.9	Crossed 330' HL @ 9777.4' MD / 9608.8' TVD
14445.0	90.40	179.50	9658.8	-4770.9	895.1	4852.3	8578.2	TD @ 14445.0' MD / 9658.8' TVD



Crossed 330' HL @ 9777.4' MD / 9608.8' TVD

TD @ 14445.0' MD / 9658.8' TVD