



**CHISHOLM
ENERGY**

30-025-43830

Chisholm Energy Operating, LLC

Lea County, NM

Sec 2, T-19-S, R-33-E

Buffalo West 2 State Com 2BS 3H

Wellbore #1

Design: Wellbore #1

**HOBBS OCD
APR 16 2018
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QES Survey Report

11 November, 2017



Company:	Chisholm Energy Operating, LLC	Local Co-ordinate Reference:	Well Buffalo West 2 State Com 2BS 3H
Project:	Lea County, NM	TVD Reference:	RKB @ 3792.0usft (Latshaw #17)
Site:	Sec 2, T-19-S, R-33-E	MD Reference:	RKB @ 3792.0usft (Latshaw #17)
Well:	Buffalo West 2 State Com 2BS 3H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Project	Lea County, NM		
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, T-19-S, R-33-E				
Site Position:		Northing:	617,848.60 usft	Latitude:	32° 41' 47.519 N
From:	Map	Easting:	757,878.60 usft	Longitude:	103° 37' 45.915 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.38 °

Well	Buffalo West 2 State Com 2BS 3H					
Well Position	+N/-S	0.0 usft	Northing:	617,821.10 usft	Latitude:	32° 41' 47.419 N
	+E/-W	0.0 usft	Easting:	755,249.90 usft	Longitude:	103° 38' 16.678 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,766.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/18/2017	6.98	60.48	48,174.01302866

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	179.56	

Survey Program	Date 11/11/2017				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
225.0	14,575.0	QES MWD Surveys (Wellbore #1)	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
First MWD Survey @ 225.0' MD / 225.0' TVD									
225.0	0.60	353.30	225.0	1.2	-0.1	-1.2	0.27	0.27	0.00
314.0	0.10	330.60	314.0	1.7	-0.2	-1.7	0.57	-0.56	-25.51
398.0	0.20	52.50	398.0	1.9	-0.1	-1.9	0.25	0.12	97.50
488.0	0.40	34.60	488.0	2.2	0.2	-2.2	0.24	0.22	-19.89
576.0	0.40	41.60	576.0	2.7	0.5	-2.7	0.06	0.00	7.95
636.0	0.50	32.50	636.0	3.1	0.8	-3.1	0.20	0.17	-15.17
731.0	0.30	326.70	731.0	3.6	0.9	-3.6	0.49	-0.21	-69.26
822.0	0.60	20.70	822.0	4.3	0.9	-4.3	0.54	0.33	59.34
913.0	0.90	29.30	913.0	5.3	1.5	-5.3	0.35	0.33	9.45

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Site: Sec 2, T-19-S, R-33-E
Well: Buffalo West 2 State Com 2BS 3H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Buffalo West 2 State Com 2BS 3H
TVD Reference: RKB @ 3792.0usft (Latshaw #17)
MD Reference: RKB @ 3792.0usft (Latshaw #17)
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)
1,003.0	1.50	20.70	1,003.0	7.1	2.2	-7.0	0.69	0.67	-9.56
1,093.0	2.20	6.80	1,092.9	9.9	2.8	-9.9	0.92	0.78	-15.44
1,186.0	2.40	5.40	1,185.8	13.6	3.2	-13.6	0.22	0.22	-1.51
1,278.0	2.30	11.90	1,277.8	17.3	3.8	-17.3	0.31	-0.11	7.07
1,372.0	2.50	7.30	1,371.7	21.2	4.4	-21.2	0.30	0.21	-4.89
1,465.0	2.40	1.20	1,464.6	25.1	4.7	-25.1	0.30	-0.11	-6.56
1,484.0	2.60	1.50	1,483.6	26.0	4.8	-25.9	1.05	1.05	1.58
1,556.0	2.60	5.70	1,555.5	29.2	5.0	-29.2	0.26	0.00	5.83
1,650.0	2.50	9.30	1,649.4	33.4	5.5	-33.3	0.20	-0.11	3.83
1,744.0	2.40	11.20	1,743.3	37.3	6.2	-37.3	0.14	-0.11	2.02
1,837.0	2.50	12.90	1,836.2	41.2	7.1	-41.2	0.13	0.11	1.83
1,931.0	2.40	11.70	1,930.1	45.1	7.9	-45.1	0.12	-0.11	-1.28
2,026.0	2.50	11.90	2,025.1	49.1	8.7	-49.1	0.11	0.11	0.21
2,119.0	2.50	15.10	2,118.0	53.1	9.7	-53.0	0.15	0.00	3.44
2,212.0	1.20	4.80	2,210.9	56.0	10.3	-55.9	1.44	-1.40	-11.08
2,304.0	1.50	12.90	2,302.9	58.1	10.6	-58.0	0.39	0.33	8.80
2,397.0	1.70	17.70	2,395.9	60.6	11.3	-60.5	0.26	0.22	5.16
2,490.0	0.50	27.00	2,488.8	62.3	11.9	-62.2	1.30	-1.29	10.00
2,585.0	0.70	40.50	2,583.8	63.1	12.5	-63.0	0.26	0.21	14.21
2,679.0	0.70	33.90	2,677.8	64.0	13.2	-63.9	0.09	0.00	-7.02
2,773.0	1.00	39.10	2,771.8	65.1	14.0	-65.0	0.33	0.32	5.53
2,866.0	1.10	44.60	2,864.8	66.4	15.2	-66.3	0.15	0.11	5.91
2,959.0	0.70	43.20	2,957.8	67.5	16.2	-67.3	0.43	-0.43	-1.51
3,053.0	0.60	39.80	3,051.8	68.3	16.9	-68.1	0.11	-0.11	-3.62
3,147.0	0.70	40.90	3,145.8	69.1	17.6	-68.9	0.11	0.11	1.17
3,240.0	0.60	44.80	3,238.8	69.8	18.3	-69.7	0.12	-0.11	4.19
3,334.0	0.40	54.30	3,332.8	70.4	18.9	-70.2	0.23	-0.21	10.11
3,428.0	0.50	50.60	3,426.8	70.8	19.5	-70.7	0.11	0.11	-3.94
3,523.0	0.60	19.40	3,521.8	71.6	20.0	-71.4	0.33	0.11	-32.84
3,617.0	1.20	345.90	3,615.8	73.0	19.9	-72.8	0.82	0.64	-35.64
3,710.0	1.10	352.20	3,708.7	74.8	19.6	-74.7	0.17	-0.11	6.77
3,804.0	1.10	352.00	3,802.7	76.6	19.3	-76.4	0.00	0.00	-0.21
3,898.0	1.10	338.10	3,896.7	78.3	18.8	-78.2	0.28	0.00	-14.79
3,991.0	1.40	318.30	3,989.7	80.0	17.8	-79.9	0.56	0.32	-21.29
4,084.0	1.30	318.30	4,082.7	81.6	16.3	-81.5	0.11	-0.11	0.00
4,178.0	1.40	322.30	4,176.6	83.3	14.9	-83.2	0.15	0.11	4.26
4,273.0	1.30	316.70	4,271.6	85.0	13.4	-84.9	0.17	-0.11	-5.89
4,364.0	1.30	322.00	4,362.6	86.6	12.1	-86.5	0.13	0.00	5.82
4,458.0	1.40	318.60	4,456.5	88.3	10.7	-88.2	0.14	0.11	-3.62
4,552.0	1.40	318.30	4,550.5	90.0	9.2	-90.0	0.01	0.00	-0.32
4,646.0	1.30	288.20	4,644.5	91.2	7.4	-91.2	0.75	-0.11	-32.02
4,740.0	1.10	242.30	4,738.5	91.1	5.6	-91.1	1.01	-0.21	-48.83
4,834.0	1.20	238.10	4,832.5	90.2	3.9	-90.2	0.14	0.11	-4.47

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4,927.0	1.30	237.40	4,925.4	89.1	2.2	-89.1	0.11	0.11	-0.75
5,022.0	1.40	247.40	5,020.4	88.1	0.2	-88.1	0.27	0.11	10.53
5,115.0	1.50	253.60	5,113.4	87.3	-2.0	-87.3	0.20	0.11	6.67
5,209.0	1.60	259.20	5,207.3	86.7	-4.4	-86.7	0.19	0.11	5.96
5,256.0	1.60	255.90	5,254.3	86.4	-5.7	-86.5	0.20	0.00	-7.02
5,335.0	1.60	268.50	5,333.3	86.1	-7.9	-86.2	0.44	0.00	15.95
5,429.0	1.70	261.70	5,427.3	85.9	-10.6	-86.0	0.23	0.11	-7.23
5,522.0	1.60	268.20	5,520.2	85.7	-13.3	-85.8	0.23	-0.11	6.99
5,616.0	1.10	203.70	5,614.2	84.8	-14.9	-84.9	1.60	-0.53	-68.62
5,709.0	1.50	194.00	5,707.2	82.8	-15.6	-82.9	0.49	0.43	-10.43
5,803.0	1.20	198.40	5,801.1	80.7	-16.2	-80.8	0.34	-0.32	4.68
5,896.0	1.30	205.10	5,894.1	78.8	-16.9	-78.9	0.19	0.11	7.20
5,988.0	1.30	209.50	5,986.1	76.9	-17.9	-77.1	0.11	0.00	4.78
6,082.0	1.30	204.90	6,080.1	75.0	-18.9	-75.2	0.11	0.00	-4.89
6,175.0	1.50	204.70	6,173.0	73.0	-19.8	-73.1	0.22	0.22	-0.22
6,268.0	1.30	203.00	6,266.0	70.9	-20.8	-71.1	0.22	-0.22	-1.83
6,361.0	1.30	208.90	6,359.0	69.0	-21.7	-69.2	0.14	0.00	6.34
6,455.0	1.40	200.90	6,453.0	67.0	-22.6	-67.2	0.23	0.11	-8.51
6,549.0	2.00	175.40	6,546.9	64.3	-22.9	-64.5	1.01	0.64	-27.13
6,642.0	1.70	190.80	6,639.9	61.3	-23.0	-61.5	0.62	-0.32	16.56
6,735.0	1.60	166.90	6,732.8	58.7	-23.0	-58.9	0.74	-0.11	-25.70
6,828.0	1.70	160.10	6,825.8	56.1	-22.2	-56.3	0.24	0.11	-7.31
6,921.0	1.80	157.40	6,918.8	53.5	-21.2	-53.7	0.14	0.11	-2.90
7,015.0	1.60	163.40	7,012.7	50.9	-20.2	-51.0	0.28	-0.21	6.38
7,107.0	1.50	161.30	7,104.7	48.5	-19.5	-48.6	0.12	-0.11	-2.28
7,201.0	1.30	169.60	7,198.7	46.3	-18.9	-46.4	0.30	-0.21	8.83
7,294.0	1.30	172.40	7,291.6	44.2	-18.6	-44.3	0.07	0.00	3.01
7,387.0	1.30	165.70	7,384.6	42.1	-18.2	-42.3	0.16	0.00	-7.20
7,481.0	1.20	167.60	7,478.6	40.1	-17.7	-40.3	0.12	-0.11	2.02
7,575.0	1.20	174.80	7,572.6	38.2	-17.4	-38.3	0.16	0.00	7.66
7,668.0	1.70	169.90	7,665.5	35.9	-17.1	-36.0	0.55	0.54	-5.27
7,762.0	1.90	160.80	7,759.5	33.0	-16.3	-33.1	0.37	0.21	-9.68
7,856.0	1.60	152.00	7,853.5	30.4	-15.2	-30.5	0.43	-0.32	-9.36
7,950.0	1.90	131.10	7,947.4	28.2	-13.4	-28.3	0.74	0.32	-22.23
8,044.0	2.50	120.70	8,041.3	26.1	-10.4	-26.2	0.76	0.64	-11.06
8,138.0	2.40	158.70	8,135.3	23.3	-8.0	-23.3	1.70	-0.11	40.43
8,232.0	0.90	208.60	8,229.2	20.8	-7.6	-20.8	2.07	-1.60	53.09
8,326.0	1.00	233.90	8,323.2	19.6	-8.6	-19.7	0.45	0.11	26.91
8,419.0	1.10	264.80	8,416.2	19.1	-10.2	-19.2	0.61	0.11	33.23
8,513.0	1.10	265.50	8,510.2	18.9	-12.0	-19.0	0.01	0.00	0.74
8,606.0	1.30	264.80	8,603.2	18.8	-13.9	-18.9	0.22	0.22	-0.75
8,700.0	1.60	273.60	8,697.1	18.8	-16.3	-18.9	0.40	0.32	9.36
8,793.0	1.60	197.90	8,790.1	17.6	-18.0	-17.7	2.11	0.00	-81.40



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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)
8,982.0	1.60	200.10	8,979.0	12.6	-19.7	-12.8	0.03	0.00	1.16
9,075.0	1.50	215.40	9,072.0	10.4	-20.8	-10.6	0.46	-0.11	16.45
9,112.0	1.80	214.90	9,109.0	9.5	-21.5	-9.7	0.81	0.81	-1.35
9,200.0	6.00	106.50	9,196.8	7.1	-17.8	-7.2	7.71	4.77	-123.18
9,231.0	12.00	98.50	9,227.4	6.1	-13.1	-6.2	19.73	19.35	-25.81
9,262.0	18.80	97.70	9,257.3	5.0	-4.9	-5.0	21.95	21.94	-2.58
9,293.0	23.20	102.50	9,286.2	3.0	6.0	-3.0	15.23	14.19	15.48
9,325.0	24.40	112.40	9,315.5	-0.9	18.2	1.0	13.02	3.75	30.94
9,356.0	25.00	117.50	9,343.7	-6.3	30.0	6.6	7.14	1.94	16.45
9,387.0	26.20	126.60	9,371.6	-13.4	41.3	13.8	13.25	3.87	29.35
9,418.0	28.20	137.00	9,399.2	-22.9	51.8	23.3	16.61	6.45	33.55
9,448.0	30.20	147.90	9,425.4	-34.5	60.6	34.9	18.91	6.67	36.33
9,479.0	31.40	155.10	9,452.1	-48.4	68.2	48.9	12.50	3.87	23.23
9,510.0	31.50	156.50	9,478.5	-63.2	74.8	63.7	2.38	0.32	4.52
9,542.0	32.60	158.40	9,505.6	-78.8	81.3	79.5	4.66	3.44	5.94
9,573.0	35.70	163.60	9,531.3	-95.3	87.0	96.0	13.73	10.00	16.77
9,604.0	38.30	167.40	9,556.1	-113.4	91.6	114.1	11.17	8.39	12.26
9,635.0	38.30	168.10	9,580.4	-132.1	95.7	132.9	1.40	0.00	2.26
9,666.0	39.00	169.10	9,604.6	-151.1	99.5	151.9	3.03	2.26	3.23
9,698.0	41.10	171.00	9,629.1	-171.4	103.1	172.2	7.59	6.56	5.94
9,729.0	44.50	172.30	9,651.8	-192.2	106.1	193.0	11.33	10.97	4.19
330°HL Crossed @ 9745.6' MD / 9663.5' TVD									
9,745.6	46.53	173.13	9,663.5	-204.0	107.6	204.8	12.75	12.24	4.98
9,760.0	48.30	173.80	9,673.2	-214.5	108.8	215.3	12.75	12.27	4.68
9,792.0	52.70	175.60	9,693.6	-239.1	111.1	239.9	14.42	13.75	5.63
9,823.0	55.70	176.90	9,711.7	-264.2	112.7	265.0	10.26	9.68	4.19
9,854.0	56.00	177.70	9,729.1	-289.8	113.9	290.7	2.34	0.97	2.58
9,885.0	56.70	178.20	9,746.3	-315.6	114.8	316.5	2.63	2.26	1.61
9,916.0	60.10	178.00	9,762.5	-342.0	115.7	342.8	10.98	10.97	-0.65
9,947.0	64.00	177.30	9,777.0	-369.3	116.9	370.2	12.74	12.58	-2.26
9,978.0	66.70	176.70	9,790.0	-397.5	118.3	398.4	8.89	8.71	-1.94
10,009.0	66.90	176.80	9,802.2	-425.9	119.9	426.8	0.71	0.65	0.32
10,040.0	68.00	176.70	9,814.1	-454.5	121.6	455.4	3.56	3.55	-0.32
10,071.0	71.50	177.50	9,824.8	-483.5	123.0	484.5	11.55	11.29	2.58
10,102.0	75.10	178.30	9,833.7	-513.2	124.1	514.1	11.87	11.61	2.58
10,133.0	77.60	178.60	9,841.0	-543.3	124.9	544.3	8.12	8.06	0.97
10,164.0	78.20	178.90	9,847.5	-573.6	125.6	574.6	2.15	1.94	0.97
10,195.0	79.90	179.10	9,853.4	-604.0	126.1	605.0	5.52	5.48	0.65
10,226.0	83.60	179.40	9,857.9	-634.7	126.5	635.7	11.97	11.94	0.97
10,257.0	88.10	179.20	9,860.1	-665.6	126.9	666.6	14.53	14.52	-0.65
10,288.0	90.60	178.90	9,860.5	-696.6	127.4	697.6	8.12	8.06	-0.97
10,347.0	92.10	179.10	9,859.1	-755.6	128.4	756.6	2.56	2.54	0.34
10,441.0	90.50	178.80	9,856.9	-849.5	130.2	850.5	1.73	-1.70	-0.32
10,535.0	88.50	178.30	9,857.7	-943.5	132.5	944.5	2.19	-2.13	-0.53



Company:	Chisholm Energy Operating, LLC	Local Co-ordinate Reference:	Well Buffalo West 2 State Com 2BS 3H
Project:	Lea County, NM	TVD Reference:	RKB @ 3792.0usft (Latshaw #17)
Site:	Sec 2, T-19-S, R-33-E	MD Reference:	RKB @ 3792.0usft (Latshaw #17)
Well:	Buffalo West 2 State Com 2BS 3H	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)
10,628.0	89.40	178.80	9,859.5	-1,036.5	134.9	1,037.5	1.11	0.97	0.54
10,721.0	87.50	178.70	9,862.0	-1,129.4	136.9	1,130.4	2.05	-2.04	-0.11
10,814.0	87.40	178.60	9,866.1	-1,222.3	139.1	1,223.3	0.15	-0.11	-0.11
10,907.0	87.70	179.10	9,870.1	-1,315.2	141.0	1,316.2	0.63	0.32	0.54
11,000.0	88.40	179.60	9,873.2	-1,408.1	142.0	1,409.2	0.92	0.75	0.54
11,094.0	88.60	180.10	9,875.7	-1,502.1	142.3	1,503.1	0.57	0.21	0.53
11,186.0	88.80	180.50	9,877.8	-1,594.1	141.8	1,595.1	0.49	0.22	0.43
11,280.0	89.50	180.90	9,879.2	-1,688.0	140.7	1,689.1	0.86	0.74	0.43
11,373.0	89.00	179.70	9,880.4	-1,781.0	140.2	1,782.1	1.40	-0.54	-1.29
11,467.0	89.40	179.40	9,881.7	-1,875.0	140.9	1,876.0	0.53	0.43	-0.32
11,561.0	88.00	177.70	9,883.9	-1,969.0	143.3	1,970.0	2.34	-1.49	-1.81
11,654.0	87.70	177.30	9,887.3	-2,061.8	147.3	2,062.9	0.54	-0.32	-0.43
11,747.0	87.90	177.50	9,890.9	-2,154.6	151.6	2,155.7	0.30	0.22	0.22
11,840.0	88.20	177.50	9,894.1	-2,247.5	155.6	2,248.6	0.32	0.32	0.00
11,933.0	88.70	177.90	9,896.6	-2,340.4	159.3	2,341.5	0.69	0.54	0.43
12,026.0	89.50	178.30	9,898.1	-2,433.3	162.4	2,434.5	0.96	0.86	0.43
12,120.0	89.80	178.10	9,898.6	-2,527.3	165.4	2,528.5	0.38	0.32	-0.21
12,213.0	90.60	178.10	9,898.3	-2,620.2	168.5	2,621.4	0.86	0.86	0.00
12,306.0	91.00	178.30	9,897.0	-2,713.2	171.4	2,714.4	0.48	0.43	0.22
12,400.0	88.80	178.40	9,897.2	-2,807.1	174.1	2,808.4	2.34	-2.34	0.11
12,494.0	88.80	178.50	9,899.1	-2,901.1	176.6	2,902.3	0.11	0.00	0.11
12,587.0	89.60	178.80	9,900.4	-2,994.0	178.8	2,995.3	0.92	0.86	0.32
12,680.0	90.40	179.10	9,900.4	-3,087.0	180.5	3,088.3	0.92	0.86	0.32
12,775.0	91.30	179.30	9,899.0	-3,182.0	181.8	3,183.3	0.97	0.95	0.21
12,869.0	89.10	178.90	9,898.7	-3,276.0	183.3	3,277.3	2.38	-2.34	-0.43
12,963.0	88.40	178.70	9,900.7	-3,369.9	185.3	3,371.3	0.77	-0.74	-0.21
13,056.0	89.30	179.10	9,902.6	-3,462.9	187.1	3,464.2	1.06	0.97	0.43
13,150.0	86.90	178.50	9,905.7	-3,556.8	189.0	3,558.2	2.63	-2.55	-0.64
13,244.0	86.70	178.40	9,911.0	-3,650.6	191.6	3,652.0	0.24	-0.21	-0.11
13,338.0	87.10	178.50	9,916.1	-3,744.5	194.1	3,745.8	0.44	0.43	0.11
13,431.0	87.60	178.60	9,920.4	-3,837.3	196.5	3,838.7	0.55	0.54	0.11
13,525.0	88.00	178.60	9,924.0	-3,931.2	198.8	3,932.6	0.43	0.43	0.00
13,619.0	88.10	178.80	9,927.2	-4,025.2	200.9	4,026.6	0.24	0.11	0.21
13,712.0	88.20	178.60	9,930.2	-4,118.1	203.0	4,119.5	0.24	0.11	-0.22
13,806.0	90.50	179.10	9,931.2	-4,212.1	204.9	4,213.5	2.50	2.45	0.53
13,901.0	91.20	178.90	9,929.8	-4,307.0	206.6	4,308.5	0.77	0.74	-0.21
13,994.0	91.70	178.50	9,927.5	-4,400.0	208.7	4,401.4	0.69	0.54	-0.43
14,088.0	93.40	178.30	9,923.3	-4,493.8	211.3	4,495.3	1.82	1.81	-0.21
14,118.0	91.60	179.30	9,922.0	-4,523.8	211.9	4,525.3	6.86	-6.00	3.33
14,212.0	91.30	179.80	9,919.6	-4,617.8	212.6	4,619.3	0.62	-0.32	0.53
14,305.0	89.30	179.50	9,919.1	-4,710.8	213.2	4,712.3	2.17	-2.15	-0.32
14,399.0	90.40	179.00	9,919.4	-4,804.8	214.4	4,806.3	1.29	1.17	-0.53
14,493.0	91.80	178.60	9,917.6	-4,898.7	216.4	4,900.2	1.55	1.49	-0.43



Company: Chisholm Energy Operating, LLC
Project: Lea County, NM
Site: Sec 2, T-19-S, R-33-E
Well: Buffalo West 2 State Com 2BS 3H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Buffalo West 2 State Com 2BS 3H
TVD Reference: RKB @ 3792.0usft (Latshaw #17)
MD Reference: RKB @ 3792.0usft (Latshaw #17)
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)	
14,525.0	92.10	178.30	9,916.5	-4,930.7	217.3	4,932.2	1.33	0.94	-0.94	
330'HL Crossed @ 14544.0' MD / 9915.8' TVD										
14,544.0	92.10	178.30	9,915.8	-4,949.7	217.8	4,951.2	0.00	0.00	0.00	
TD @ 14575.0' MD / 9914.6' TVD										
14,575.0	92.10	178.30	9,914.6	-4,980.6	218.8	4,982.2	0.00	0.00	0.00	

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
225.0	225.0	1.2	-0.1	First MWD Survey @ 225.0' MD / 225.0' TVD	
9,745.6	9,663.5	-204.0	107.6	330'HL Crossed @ 9745.6' MD / 9663.5' TVD	
14,544.0	9,915.8	-4,949.7	217.8	330'HL Crossed @ 14544.0' MD / 9915.8' TVD	
14,575.0	9,914.6	-4,980.6	218.8	TD @ 14575.0' MD / 9914.6' TVD	