



**CHISHOLM
ENERGY**

**NM OIL CONSERVATION
ARTESIA DISTRICT**

OCT 17 2018

RECEIVED

Chisholm Energy

Lea Co, NM

Spitfire 16 State Com WCB

WCB #1H

30-015-45318

WCB #1H

Plan: Design #1

Standard Planning Report

10 October, 2018

gyro/data



Chisholm Energy
Lee Co, NM
Split 18 State Com WCB
WCB #1H
WCB #1H
Plan: Design #1 (WCB #1H/WCB #1H)
(OE-0384.2-WCB-22) @ 1376.29usm



Vertical Elevation at 180.00 (1250 usm)

-500 0 500 1000 1500

0 500 1000 1500

1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 6500 7000 7500 8000 8500 9000 9500 10000 10500

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WELLBORE TARGET DETAILS						
Name	TVD	WGS	WGS	WGS	WGS	WGS
WCB #1H - BHL	9023.13	-4950.97	288.77	10413.01	104350.78	Point
WCB #1H - LP	9023.53	-207.72	285.04	90876.25	904352.00	Point

SECTION DETAILS									
Sec	WGS	WGS	Ad	TYD	WGS-6	WGS-6	WGS	Thres	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00
3	1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	0.00
4	1200.00	3.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.00
5	1300.00	6.00	0.00	1300.00	0.00	0.00	0.00	0.00	0.00
6	1400.00	9.00	0.00	1400.00	0.00	0.00	0.00	0.00	0.00
7	1500.00	12.00	0.00	1500.00	0.00	0.00	0.00	0.00	0.00
8	1600.00	15.00	0.00	1600.00	0.00	0.00	0.00	0.00	0.00
9	1700.00	18.00	0.00	1700.00	0.00	0.00	0.00	0.00	0.00
10	1800.00	21.00	0.00	1800.00	0.00	0.00	0.00	0.00	0.00
11	1900.00	24.00	0.00	1900.00	0.00	0.00	0.00	0.00	0.00
12	2000.00	27.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00
13	2100.00	30.00	0.00	2100.00	0.00	0.00	0.00	0.00	0.00
14	2200.00	33.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00
15	2300.00	36.00	0.00	2300.00	0.00	0.00	0.00	0.00	0.00
16	2400.00	39.00	0.00	2400.00	0.00	0.00	0.00	0.00	0.00
17	2500.00	42.00	0.00	2500.00	0.00	0.00	0.00	0.00	0.00
18	2600.00	45.00	0.00	2600.00	0.00	0.00	0.00	0.00	0.00
19	2700.00	48.00	0.00	2700.00	0.00	0.00	0.00	0.00	0.00
20	2800.00	51.00	0.00	2800.00	0.00	0.00	0.00	0.00	0.00
21	2900.00	54.00	0.00	2900.00	0.00	0.00	0.00	0.00	0.00
22	3000.00	57.00	0.00	3000.00	0.00	0.00	0.00	0.00	0.00
23	3100.00	60.00	0.00	3100.00	0.00	0.00	0.00	0.00	0.00
24	3200.00	63.00	0.00	3200.00	0.00	0.00	0.00	0.00	0.00
25	3300.00	66.00	0.00	3300.00	0.00	0.00	0.00	0.00	0.00
26	3400.00	69.00	0.00	3400.00	0.00	0.00	0.00	0.00	0.00
27	3500.00	72.00	0.00	3500.00	0.00	0.00	0.00	0.00	0.00
28	3600.00	75.00	0.00	3600.00	0.00	0.00	0.00	0.00	0.00
29	3700.00	78.00	0.00	3700.00	0.00	0.00	0.00	0.00	0.00
30	3800.00	81.00	0.00	3800.00	0.00	0.00	0.00	0.00	0.00
31	3900.00	84.00	0.00	3900.00	0.00	0.00	0.00	0.00	0.00
32	4000.00	87.00	0.00	4000.00	0.00	0.00	0.00	0.00	0.00
33	4100.00	90.00	0.00	4100.00	0.00	0.00	0.00	0.00	0.00
34	4200.00	93.00	0.00	4200.00	0.00	0.00	0.00	0.00	0.00
35	4300.00	96.00	0.00	4300.00	0.00	0.00	0.00	0.00	0.00
36	4400.00	99.00	0.00	4400.00	0.00	0.00	0.00	0.00	0.00
37	4500.00	102.00	0.00	4500.00	0.00	0.00	0.00	0.00	0.00
38	4600.00	105.00	0.00	4600.00	0.00	0.00	0.00	0.00	0.00
39	4700.00	108.00	0.00	4700.00	0.00	0.00	0.00	0.00	0.00
40	4800.00	111.00	0.00	4800.00	0.00	0.00	0.00	0.00	0.00
41	4900.00	114.00	0.00	4900.00	0.00	0.00	0.00	0.00	0.00
42	5000.00	117.00	0.00	5000.00	0.00	0.00	0.00	0.00	0.00
43	5100.00	120.00	0.00	5100.00	0.00	0.00	0.00	0.00	0.00
44	5200.00	123.00	0.00	5200.00	0.00	0.00	0.00	0.00	0.00
45	5300.00	126.00	0.00	5300.00	0.00	0.00	0.00	0.00	0.00
46	5400.00	129.00	0.00	5400.00	0.00	0.00	0.00	0.00	0.00
47	5500.00	132.00	0.00	5500.00	0.00	0.00	0.00	0.00	0.00
48	5600.00	135.00	0.00	5600.00	0.00	0.00	0.00	0.00	0.00
49	5700.00	138.00	0.00	5700.00	0.00	0.00	0.00	0.00	0.00
50	5800.00	141.00	0.00	5800.00	0.00	0.00	0.00	0.00	0.00
51	5900.00	144.00	0.00	5900.00	0.00	0.00	0.00	0.00	0.00
52	6000.00	147.00	0.00	6000.00	0.00	0.00	0.00	0.00	0.00
53	6100.00	150.00	0.00	6100.00	0.00	0.00	0.00	0.00	0.00
54	6200.00	153.00	0.00	6200.00	0.00	0.00	0.00	0.00	0.00
55	6300.00	156.00	0.00	6300.00	0.00	0.00	0.00	0.00	0.00
56	6400.00	159.00	0.00	6400.00	0.00	0.00	0.00	0.00	0.00
57	6500.00	162.00	0.00	6500.00	0.00	0.00	0.00	0.00	0.00
58	6600.00	165.00	0.00	6600.00	0.00	0.00	0.00	0.00	0.00
59	6700.00	168.00	0.00	6700.00	0.00	0.00	0.00	0.00	0.00
60	6800.00	171.00	0.00	6800.00	0.00	0.00	0.00	0.00	0.00
61	6900.00	174.00	0.00	6900.00	0.00	0.00	0.00	0.00	0.00
62	7000.00	177.00	0.00	7000.00	0.00	0.00	0.00	0.00	0.00
63	7100.00	180.00	0.00	7100.00	0.00	0.00	0.00	0.00	0.00
64	7200.00	183.00	0.00	7200.00	0.00	0.00	0.00	0.00	0.00
65	7300.00	186.00	0.00	7300.00	0.00	0.00	0.00	0.00	0.00
66	7400.00	189.00	0.00	7400.00	0.00	0.00	0.00	0.00	0.00
67	7500.00	192.00	0.00	7500.00	0.00	0.00	0.00	0.00	0.00
68	7600.00	195.00	0.00	7600.00	0.00	0.00	0.00	0.00	0.00
69	7700.00	198.00	0.00	7700.00	0.00	0.00	0.00	0.00	0.00
70	7800.00	201.00	0.00	7800.00	0.00	0.00	0.00	0.00	0.00
71	7900.00	204.00	0.00	7900.00	0.00	0.00	0.00	0.00	0.00
72	8000.00	207.00	0.00	8000.00	0.00	0.00	0.00	0.00	0.00
73	8100.00	210.00	0.00	8100.00	0.00	0.00	0.00	0.00	0.00
74	8200.00	213.00	0.00	8200.00	0.00	0.00	0.00	0.00	0.00
75	8300.00	216.00	0.00	8300.00	0.00	0.00	0.00	0.00	0.00
76	8400.00	219.00	0.00	8400.00	0.00	0.00	0.00	0.00	0.00
77	8500.00	222.00	0.00	8500.00	0.00	0.00	0.00	0.00	0.00
78	8600.00	225.00	0.00	8600.00	0.00	0.00	0.00	0.00	0.00
79	8700.00	228.00	0.00	8700.00	0.00	0.00	0.00	0.00	0.00
80	8800.00	231.00	0.00	8800.00	0.00	0.00	0.00	0.00	0.00
81	8900.00	234.00	0.00	8900.00	0.00	0.00	0.00	0.00	0.00
82	9000.00	237.00	0.00	9000.00	0.00	0.00	0.00	0.00	0.00
83	9100.00	240.00	0.00	9100.00	0.00	0.00	0.00	0.00	0.00
84	9200.00	243.00	0.00	9200.00	0.00	0.00	0.00	0.00	0.00
85	9300.00	246.00	0.00	9300.00	0.00	0.00	0.00	0.00	0.00
86	9400.00	249.00	0.00	9400.00	0.00	0.00	0.00	0.00	0.00
87	9500.00	252.00	0.00	9500.00	0.00	0.00	0.00	0.00	0.00
88	9600.00	255.00	0.00	9600.00	0.00	0.00	0.00	0.00	0.00
89	9700.00	258.00	0.00	9700.00	0.00	0.00	0.00	0.00	0.00
90	9800.00	261.00	0.00	9800.00	0.00	0.00	0.00	0.00	0.00
91	9900.00	264.00	0.00	9900.00	0.00	0.00	0.00	0.00	0.00
92	10000.00	267.00	0.00	10000.00	0.00	0.00	0.00	0.00	0.00
93	10100.00	270.00	0.00	10100.00	0.00	0.00	0.00	0.00	0.00
94	10200.00	273.00	0.00	10200.00	0.00	0.00	0.00	0.00	0.00
95	10300.00	276.00	0.00	10300.00	0.00	0.00	0.00	0.00	0.00
96	10400.00	279.00	0.00	10400.00	0.00	0.00	0.00	0.00	0.00
97	10500.00	282.00	0.00	10500.00	0.00	0.00	0.00	0.00	0.00
98	10600.00	285.00	0.00	10600.00	0.00	0.00	0.00	0.00	0.00
99	10700.00	288.00	0.00	10700.00	0.00	0.00	0.00	0.00	0.00
100	10800.00	291.00	0.00	10800.00	0.00	0.00	0.00	0.00	0.00
101	10900.00	294.00	0.00	10900.00	0.00	0.00	0.00	0.00	0.00
102	11000.00	297.00	0.00	11000.00	0.00	0.00	0.00	0.00	0.00
103	11100.00	300.00	0.00	11100.00	0.00	0.00	0.00	0.00	0.00
104	11200.00	303.00	0.00	11200.00	0.00	0.00	0.00	0.00	0.00
105	11300.00	306.00	0.00	11300.00	0.00	0.00	0.00	0.00	0.00
106	11400.00	309.00	0.00	11400.00	0.00	0.00	0.00	0.00	0.00
107	11500.00	312.00	0.00	11500.00	0.00	0.00	0.00	0.00	0.00
108	11600.00	315.00	0.00	11600.00	0.00	0.00	0.00	0.00	0.00
109	11700.00	318.00	0.00	11700.00	0.00	0.00	0.00	0.00	0.00
110	11800.00	321.00	0.00	11800.00	0.00	0.00	0.00	0.00	0.00
111	11900.00	324.00	0.00	11900.00	0.00	0.00	0.00	0.00	0.00
112	12000.00	327.00	0.00	12000.00	0.00	0.00	0.00	0.00	0.00
113	12100.00	330.00	0.00	12100.00	0.00	0.00	0.00	0.00	0.00
114	12200.00	333.00	0.00	12200.00	0.00	0.00	0.00	0.00	0.00
115	12300.00	336.00	0.00	12300.00	0.00	0.00	0.00	0.00	0.00
116	12400.00	339.00	0.00	12400.00	0.00	0.00	0.00	0.00	0.00
117	12500.00	342.00	0.00	12500.00	0.00	0.00	0.00	0.00	0.00
118	12600.00	345.00	0.00	12600.00	0.00	0.00	0.00	0.00	0.00
119	12700.00	348.00	0.00	12700.00	0.00	0.00	0.00	0.00	0.00
120	12800.00	351.00	0.00	12800.00	0.00	0.00	0.00	0.00	0.00
121	12900.00	354.00	0.00	12900.00	0.00	0.00	0.00	0.00	0.00
122	13000.00	357.00	0.00	13000.00	0.00	0.00	0.00	0.00	0.00
123	13100.00	360.00	0.00	13100.00	0.00				

Database: Gyrodata NWDB
Company: Chisholm Energy
Project: Lea Co, NM
Site: Spitfire 16 State Com WCB
Well: WCB #1H
Wellbore: WCB #1H
Design: Design #1

Local Co-ordinate Reference: Well WCB #1H
TVD Reference: (GE=3354.2'+KB=22') @ 3376.20usft
MD Reference: (GE=3354.2'+KB=22') @ 3376.20usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	Lea Co, 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	Spitfire 16 State Com WCB			
Site Position:		Northing:	509,002.98 usft	Latitude: 32.399310
From:	Map	Easting:	554,267.01 usft	Longitude: -104.291441
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence: 0.02 °

Well	WCB #1H			
Well Position	+N/-S	0.00 usft	Northing:	509,002.98 usft
	+E/-W	0.00 usft	Easting:	554,267.01 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:		Ground Level: 3,354.20 usft

Wellbore	WCB #1H				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	10/10/2018	7.33	60.10	47,955.70000000

Design	Design #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	180.00

Plan Survey Tool Program	Date 10/10/2018			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	14,287.00 Design #1 (WCB #1H)	MWD+HRGM+AX	
			OWSG MWD + HRGM + Axial	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,150.00	3.00	90.00	1,149.93	0.00	3.93	2.00	2.00	0.00	90.00	
6,440.00	3.00	90.00	6,432.68	0.00	280.78	0.00	0.00	0.00	0.00	
6,590.00	0.00	0.00	6,582.61	0.00	284.71	2.00	-2.00	0.00	180.00	
9,163.39	0.00	0.00	9,156.00	0.00	284.71	0.00	0.00	0.00	0.00	
9,916.70	90.40	179.95	9,633.45	-480.78	285.11	12.00	12.00	23.89	179.95	
14,287.00	90.40	179.95	9,603.13	-4,850.97	288.77	0.00	0.00	0.00	0.00	WCB #1H - BHL

Database: Gyrodata NWDB
Company: Chisholm Energy
Project: Lea Co, NM
Site: Spitfire 16 State Corn WCB
Well: WCB #1H
Wellbore: WCB #1H
Design: Design #1

Local Co-ordinate Reference: Well WCB #1H
TVD Reference: (GE=3354.2'+KB=22') @ 3376.20usft
MD Reference: (GE=3354.2'+KB=22') @ 3376.20usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	2.00	90.00	1,099.98	0.00	1.75	0.00	2.00	2.00	0.00
1,150.00	3.00	90.00	1,149.93	0.00	3.93	0.00	2.00	2.00	0.00
1,200.00	3.00	90.00	1,199.86	0.00	6.54	0.00	0.00	0.00	0.00
1,300.00	3.00	90.00	1,299.73	0.00	11.78	0.00	0.00	0.00	0.00
1,400.00	3.00	90.00	1,399.59	0.00	17.01	0.00	0.00	0.00	0.00
1,500.00	3.00	90.00	1,499.45	0.00	22.24	0.00	0.00	0.00	0.00
1,600.00	3.00	90.00	1,599.31	0.00	27.48	0.00	0.00	0.00	0.00
1,700.00	3.00	90.00	1,699.18	0.00	32.71	0.00	0.00	0.00	0.00
1,800.00	3.00	90.00	1,799.04	0.00	37.94	0.00	0.00	0.00	0.00
1,900.00	3.00	90.00	1,898.90	0.00	43.18	0.00	0.00	0.00	0.00
2,000.00	3.00	90.00	1,998.77	0.00	48.41	0.00	0.00	0.00	0.00
2,100.00	3.00	90.00	2,098.63	0.00	53.65	0.00	0.00	0.00	0.00
2,200.00	3.00	90.00	2,198.49	0.00	58.88	0.00	0.00	0.00	0.00
2,300.00	3.00	90.00	2,298.36	0.00	64.11	0.00	0.00	0.00	0.00
2,400.00	3.00	90.00	2,398.22	0.00	69.35	0.00	0.00	0.00	0.00
2,500.00	3.00	90.00	2,498.08	0.00	74.58	0.00	0.00	0.00	0.00
2,600.00	3.00	90.00	2,597.94	0.00	79.81	0.00	0.00	0.00	0.00
2,700.00	3.00	90.00	2,697.81	0.00	85.05	0.00	0.00	0.00	0.00
2,800.00	3.00	90.00	2,797.67	0.00	90.28	0.00	0.00	0.00	0.00
2,900.00	3.00	90.00	2,897.53	0.00	95.51	0.00	0.00	0.00	0.00
3,000.00	3.00	90.00	2,997.40	0.00	100.75	0.00	0.00	0.00	0.00
3,100.00	3.00	90.00	3,097.26	0.00	105.98	0.00	0.00	0.00	0.00
3,200.00	3.00	90.00	3,197.12	0.00	111.21	0.00	0.00	0.00	0.00
3,300.00	3.00	90.00	3,296.99	0.00	116.45	0.00	0.00	0.00	0.00
3,400.00	3.00	90.00	3,396.85	0.00	121.68	0.00	0.00	0.00	0.00
3,500.00	3.00	90.00	3,496.71	0.00	126.92	0.00	0.00	0.00	0.00
3,600.00	3.00	90.00	3,596.57	0.00	132.15	0.00	0.00	0.00	0.00
3,700.00	3.00	90.00	3,696.44	0.00	137.38	0.00	0.00	0.00	0.00
3,800.00	3.00	90.00	3,796.30	0.00	142.62	0.00	0.00	0.00	0.00
3,900.00	3.00	90.00	3,896.16	0.00	147.85	0.00	0.00	0.00	0.00
4,000.00	3.00	90.00	3,996.03	0.00	153.08	0.00	0.00	0.00	0.00
4,100.00	3.00	90.00	4,095.89	0.00	158.32	0.00	0.00	0.00	0.00
4,200.00	3.00	90.00	4,195.75	0.00	163.55	0.00	0.00	0.00	0.00
4,300.00	3.00	90.00	4,295.61	0.00	168.78	0.00	0.00	0.00	0.00
4,400.00	3.00	90.00	4,395.48	0.00	174.02	0.00	0.00	0.00	0.00
4,500.00	3.00	90.00	4,495.34	0.00	179.25	0.00	0.00	0.00	0.00
4,600.00	3.00	90.00	4,595.20	0.00	184.49	0.00	0.00	0.00	0.00
4,700.00	3.00	90.00	4,695.07	0.00	189.72	0.00	0.00	0.00	0.00
4,800.00	3.00	90.00	4,794.93	0.00	194.95	0.00	0.00	0.00	0.00
4,900.00	3.00	90.00	4,894.79	0.00	200.19	0.00	0.00	0.00	0.00
5,000.00	3.00	90.00	4,994.66	0.00	205.42	0.00	0.00	0.00	0.00
5,100.00	3.00	90.00	5,094.52	0.00	210.65	0.00	0.00	0.00	0.00
5,200.00	3.00	90.00	5,194.38	0.00	215.89	0.00	0.00	0.00	0.00



Database: Gyrodata NWDB
Company: Chisholm Energy
Project: Lea Co, NM
Site: Spitfire 16 State Corn WCB
Well: WCB #1H
Wellbore: WCB #1H
Design: Design #1

Local Co-ordinate Reference: Well WCB #1H
TVD Reference: (GE=3354.2'+KB=22') @ 3376.20usft
MD Reference: (GE=3354.2'+KB=22') @ 3376.20usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,300.00	3.00	90.00	5,294.24	0.00	221.12	0.00	0.00	0.00	0.00
5,400.00	3.00	90.00	5,394.11	0.00	226.35	0.00	0.00	0.00	0.00
5,500.00	3.00	90.00	5,493.97	0.00	231.59	0.00	0.00	0.00	0.00
5,600.00	3.00	90.00	5,593.83	0.00	236.82	0.00	0.00	0.00	0.00
5,700.00	3.00	90.00	5,693.70	0.00	242.05	0.00	0.00	0.00	0.00
5,800.00	3.00	90.00	5,793.56	0.00	247.29	0.00	0.00	0.00	0.00
5,900.00	3.00	90.00	5,893.42	0.00	252.52	0.00	0.00	0.00	0.00
6,000.00	3.00	90.00	5,993.28	0.00	257.76	0.00	0.00	0.00	0.00
6,100.00	3.00	90.00	6,093.15	0.00	262.99	0.00	0.00	0.00	0.00
6,200.00	3.00	90.00	6,193.01	0.00	268.22	0.00	0.00	0.00	0.00
6,300.00	3.00	90.00	6,292.87	0.00	273.46	0.00	0.00	0.00	0.00
6,400.00	3.00	90.00	6,392.74	0.00	278.69	0.00	0.00	0.00	0.00
6,440.00	3.00	90.00	6,432.68	0.00	280.78	0.00	0.00	0.00	0.00
6,500.00	1.80	90.00	6,492.63	0.00	283.30	0.00	2.00	-2.00	0.00
6,590.00	0.00	0.00	6,582.61	0.00	284.71	0.00	2.00	-2.00	0.00
6,600.00	0.00	0.00	6,592.61	0.00	284.71	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,692.61	0.00	284.71	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,792.61	0.00	284.71	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,892.61	0.00	284.71	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	6,992.61	0.00	284.71	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,092.61	0.00	284.71	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,192.61	0.00	284.71	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,292.61	0.00	284.71	0.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,392.61	0.00	284.71	0.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,492.61	0.00	284.71	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,592.61	0.00	284.71	0.00	0.00	0.00	0.00
7,700.00	0.00	0.00	7,692.61	0.00	284.71	0.00	0.00	0.00	0.00
7,800.00	0.00	0.00	7,792.61	0.00	284.71	0.00	0.00	0.00	0.00
7,900.00	0.00	0.00	7,892.61	0.00	284.71	0.00	0.00	0.00	0.00
8,000.00	0.00	0.00	7,992.61	0.00	284.71	0.00	0.00	0.00	0.00
8,100.00	0.00	0.00	8,092.61	0.00	284.71	0.00	0.00	0.00	0.00
8,200.00	0.00	0.00	8,192.61	0.00	284.71	0.00	0.00	0.00	0.00
8,300.00	0.00	0.00	8,292.61	0.00	284.71	0.00	0.00	0.00	0.00
8,400.00	0.00	0.00	8,392.61	0.00	284.71	0.00	0.00	0.00	0.00
8,500.00	0.00	0.00	8,492.61	0.00	284.71	0.00	0.00	0.00	0.00
8,600.00	0.00	0.00	8,592.61	0.00	284.71	0.00	0.00	0.00	0.00
8,700.00	0.00	0.00	8,692.61	0.00	284.71	0.00	0.00	0.00	0.00
8,800.00	0.00	0.00	8,792.61	0.00	284.71	0.00	0.00	0.00	0.00
8,900.00	0.00	0.00	8,892.61	0.00	284.71	0.00	0.00	0.00	0.00
9,000.00	0.00	0.00	8,992.61	0.00	284.71	0.00	0.00	0.00	0.00
9,100.00	0.00	0.00	9,092.61	0.00	284.71	0.00	0.00	0.00	0.00
9,163.39	0.00	0.00	9,156.00	0.00	284.71	0.00	0.00	0.00	0.00
9,175.00	1.39	179.95	9,167.61	-0.14	284.71	0.14	12.00	12.00	0.00
9,200.00	4.39	179.95	9,192.58	-1.40	284.71	1.40	12.00	12.00	0.00
9,225.00	7.39	179.95	9,217.44	-3.97	284.71	3.97	12.00	12.00	0.00
9,250.00	10.39	179.95	9,242.14	-7.83	284.72	7.83	12.00	12.00	0.00
9,275.00	13.39	179.95	9,266.60	-12.99	284.72	12.99	12.00	12.00	0.00
9,300.00	16.39	179.95	9,290.76	-19.41	284.73	19.41	12.00	12.00	0.00
9,325.00	19.39	179.95	9,314.55	-27.09	284.73	27.09	12.00	12.00	0.00
9,350.00	22.39	179.95	9,337.90	-36.01	284.74	36.01	12.00	12.00	0.00
9,375.00	25.39	179.95	9,360.75	-46.13	284.75	46.13	12.00	12.00	0.00
9,400.00	28.39	179.95	9,383.05	-57.44	284.76	57.44	12.00	12.00	0.00
9,425.00	31.39	179.95	9,404.72	-69.90	284.77	69.90	12.00	12.00	0.00
9,450.00	34.39	179.95	9,425.71	-83.47	284.78	83.47	12.00	12.00	0.00

Database: Gyrodata NWDB
Company: Chisholm Energy
Project: Lea Co, NM
Site: Spitfire 16 State Com WCB
Well: WCB #1H
Wellbore: WCB #1H
Design: Design #1

Local Co-ordinate Reference: Well WCB #1H
TVD Reference: (GE=3354.2'+KB=22') @ 3376.20usft
MD Reference: (GE=3354.2'+KB=22') @ 3376.20usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,475.00	37.39	179.95	9,445.96	-98.13	284.79	98.13	12.00	12.00	0.00
9,500.00	40.39	179.95	9,465.41	-113.82	284.80	113.82	12.00	12.00	0.00
9,525.00	43.39	179.95	9,484.02	-130.51	284.82	130.51	12.00	12.00	0.00
9,550.00	46.39	179.95	9,501.73	-148.16	284.83	148.16	12.00	12.00	0.00
9,575.00	49.39	179.95	9,518.49	-166.70	284.85	166.70	12.00	12.00	0.00
9,600.00	52.39	179.95	9,534.26	-186.10	284.87	186.10	12.00	12.00	0.00
9,625.00	55.39	179.95	9,548.99	-206.30	284.88	206.30	12.00	12.00	0.00
9,650.00	58.39	179.95	9,562.64	-227.23	284.90	227.23	12.00	12.00	0.00
9,669.70	60.76	179.95	9,572.62	-244.22	284.91	244.22	12.00	12.00	0.00
WCB #1H - LP									
9,675.00	61.39	179.95	9,575.18	-248.86	284.92	248.86	12.00	12.00	0.00
9,700.00	64.39	179.95	9,586.57	-271.11	284.94	271.11	12.00	12.00	0.00
9,725.00	67.39	179.95	9,596.78	-293.93	284.96	293.93	12.00	12.00	0.00
9,750.00	70.39	179.95	9,605.78	-317.25	284.97	317.25	12.00	12.00	0.00
9,775.00	73.39	179.95	9,613.55	-341.01	284.99	341.01	12.00	12.00	0.00
9,800.00	76.39	179.95	9,620.06	-365.14	285.02	365.14	12.00	12.00	0.00
9,825.00	79.39	179.95	9,625.31	-389.58	285.04	389.58	12.00	12.00	0.00
9,850.00	82.39	179.95	9,629.26	-414.26	285.06	414.26	12.00	12.00	0.00
9,875.00	85.39	179.95	9,631.92	-439.12	285.08	439.12	12.00	12.00	0.00
9,900.00	88.39	179.95	9,633.28	-464.08	285.10	464.08	12.00	12.00	0.00
9,916.70	90.40	179.95	9,633.45	-480.78	285.11	480.78	12.00	12.00	0.00
10,000.00	90.40	179.95	9,632.87	-564.08	285.18	564.08	0.00	0.00	0.00
10,100.00	90.40	179.95	9,632.18	-664.07	285.27	664.07	0.00	0.00	0.00
10,200.00	90.40	179.95	9,631.49	-764.07	285.35	764.07	0.00	0.00	0.00
10,300.00	90.40	179.95	9,630.79	-864.07	285.43	864.07	0.00	0.00	0.00
10,400.00	90.40	179.95	9,630.10	-964.07	285.52	964.07	0.00	0.00	0.00
10,500.00	90.40	179.95	9,629.41	-1,064.06	285.60	1,064.06	0.00	0.00	0.00
10,600.00	90.40	179.95	9,628.71	-1,164.06	285.68	1,164.06	0.00	0.00	0.00
10,700.00	90.40	179.95	9,628.02	-1,264.06	285.77	1,264.06	0.00	0.00	0.00
10,800.00	90.40	179.95	9,627.32	-1,364.06	285.85	1,364.06	0.00	0.00	0.00
10,900.00	90.40	179.95	9,626.63	-1,464.05	285.93	1,464.05	0.00	0.00	0.00
11,000.00	90.40	179.95	9,625.94	-1,564.05	286.02	1,564.05	0.00	0.00	0.00
11,100.00	90.40	179.95	9,625.24	-1,664.05	286.10	1,664.05	0.00	0.00	0.00
11,200.00	90.40	179.95	9,624.55	-1,764.05	286.19	1,764.05	0.00	0.00	0.00
11,300.00	90.40	179.95	9,623.85	-1,864.04	286.27	1,864.04	0.00	0.00	0.00
11,400.00	90.40	179.95	9,623.16	-1,964.04	286.35	1,964.04	0.00	0.00	0.00
11,500.00	90.40	179.95	9,622.47	-2,064.04	286.44	2,064.04	0.00	0.00	0.00
11,600.00	90.40	179.95	9,621.77	-2,164.04	286.52	2,164.04	0.00	0.00	0.00
11,700.00	90.40	179.95	9,621.08	-2,264.03	286.60	2,264.03	0.00	0.00	0.00
11,800.00	90.40	179.95	9,620.39	-2,364.03	286.69	2,364.03	0.00	0.00	0.00
11,900.00	90.40	179.95	9,619.69	-2,464.03	286.77	2,464.03	0.00	0.00	0.00
12,000.00	90.40	179.95	9,619.00	-2,564.03	286.86	2,564.03	0.00	0.00	0.00
12,100.00	90.40	179.95	9,618.30	-2,664.03	286.94	2,664.03	0.00	0.00	0.00
12,200.00	90.40	179.95	9,617.61	-2,764.02	287.02	2,764.02	0.00	0.00	0.00
12,300.00	90.40	179.95	9,616.92	-2,864.02	287.11	2,864.02	0.00	0.00	0.00
12,400.00	90.40	179.95	9,616.22	-2,964.02	287.19	2,964.02	0.00	0.00	0.00
12,500.00	90.40	179.95	9,615.53	-3,064.02	287.27	3,064.02	0.00	0.00	0.00
12,600.00	90.40	179.95	9,614.84	-3,164.01	287.36	3,164.01	0.00	0.00	0.00
12,700.00	90.40	179.95	9,614.14	-3,264.01	287.44	3,264.01	0.00	0.00	0.00
12,800.00	90.40	179.95	9,613.45	-3,364.01	287.53	3,364.01	0.00	0.00	0.00
12,900.00	90.40	179.95	9,612.75	-3,464.01	287.61	3,464.01	0.00	0.00	0.00
13,000.00	90.40	179.95	9,612.06	-3,564.00	287.69	3,564.00	0.00	0.00	0.00
13,100.00	90.40	179.95	9,611.37	-3,664.00	287.78	3,664.00	0.00	0.00	0.00

Database: Gyrodata NWDB
Company: Chisholm Energy
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North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,200.00	90.40	179.95	9,610.67	-3,764.00	287.86	3,764.00	0.00	0.00	0.00
13,300.00	90.40	179.95	9,609.98	-3,864.00	287.94	3,864.00	0.00	0.00	0.00
13,400.00	90.40	179.95	9,609.28	-3,963.99	288.03	3,963.99	0.00	0.00	0.00
13,500.00	90.40	179.95	9,608.59	-4,063.99	288.11	4,063.99	0.00	0.00	0.00
13,600.00	90.40	179.95	9,607.90	-4,163.99	288.19	4,163.99	0.00	0.00	0.00
13,700.00	90.40	179.95	9,607.20	-4,263.99	288.28	4,263.99	0.00	0.00	0.00
13,800.00	90.40	179.95	9,606.51	-4,363.98	288.36	4,363.98	0.00	0.00	0.00
13,900.00	90.40	179.95	9,605.82	-4,463.98	288.45	4,463.98	0.00	0.00	0.00
14,000.00	90.40	179.95	9,605.12	-4,563.98	288.53	4,563.98	0.00	0.00	0.00
14,100.00	90.40	179.95	9,604.43	-4,663.98	288.61	4,663.98	0.00	0.00	0.00
14,200.00	90.40	179.95	9,603.73	-4,763.97	288.70	4,763.97	0.00	0.00	0.00
14,287.00	90.40	179.95	9,603.13	-4,850.97	288.77	4,850.97	0.00	0.00	0.00
WCB #1H - BHL									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
WCB #1H - BHL - plan hits target center - Point	0.00	0.00	9,603.13	-4,850.97	288.77	504,152.01	554,555.78	32.385976	-104.290512
WCB #1H - LP - plan misses target center by 72.75usft at 9669.70usft MD (9572.62 TVD, -244.22 N, 284.91 E) - Point	0.00	0.00	9,635.55	-207.73	285.04	508,795.25	554,552.05	32.398739	-104.290518