



# Crestone Peak Resources

Well Name:

Herren 1D-33H-H367

Project Name:

Sec 33 T3N-R67W

Pad Name:

Herren Pad

## ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	Start Build 2.00
1257.08	17.14	20.84	1244.36	118.93	45.28	6.60	127.26	Hold 17.14 Inc, 20.84 Az
6598.13	17.14	20.84	6348.15	1590.12	605.37	88.22	1701.45	KOP 8/100
7780.82	90.00	275.00	7090.00	1871.62	-86.61	834.95	2498.14	Begin 2/100 Turn
7930.82	90.00	272.00	7090.00	1880.78	-236.31	975.60	2648.14	Hold 272 Az
9430.82	90.00	272.00	7090.00	1933.13	-1735.40	2368.19	4148.14	Begin 2/100 Turn
9541.47	90.00	269.79	7090.00	1934.85	-1846.02	2470.10	4258.78	Hold 269.79 Az
12058.19	90.00	269.79	7090.00	1925.50	-4362.73	4768.74	6775.50	TD at 12058.19

## Geodetic Datum:

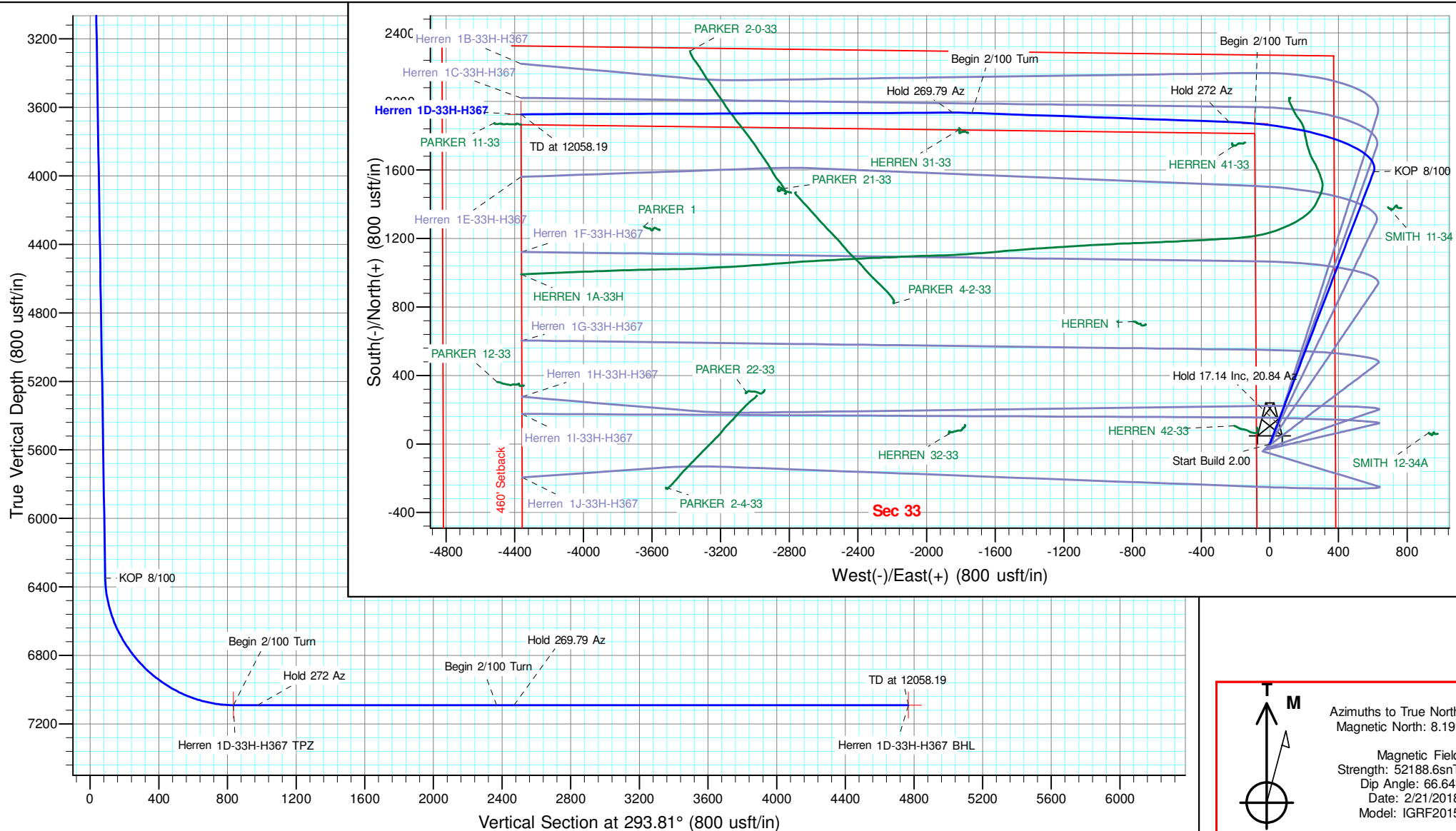
North American Datum 1983  
US State Plane 1983, Colorado Northern Zone

## Elevation:

Ground Elevation: 4848.00  
KB Elevation: WELL @ 4871.00usft (Original Well Elev)

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Herren 1D-33H-H367	7090.00	1925.50	-4362.73	1312085.46	3168862.99	40.188528	-104.902732	Point
BHL								
Herren 1D-33H-H367 TPZ	7090.00	1871.62	-86.61	1312061.14	3171139.38	40.188381	-104.887426	Point





# **Crestone Peak Resources**

**Sec 33 T3N-R67W**

**Herren Pad**

**Herren 1D-33H-H367**

**Wellbore #1**

**Plan: Design #1 23Feb18 kjs**

## **Standard Planning Report**

**07 March, 2018**



# Microsoft Planning Report

<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Herren 1D-33H-H367
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	WELL @ 4871.00usft (Original Well Elev)
<b>Project:</b>	Sec 33 T3N-R67W	<b>MD Reference:</b>	WELL @ 4871.00usft (Original Well Elev)
<b>Site:</b>	Herren Pad	<b>North Reference:</b>	True
<b>Well:</b>	Herren 1D-33H-H367	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 23Feb18 kjs		

<b>Project</b>	Sec 33 T3N-R67W, Weld County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

<b>Site</b>	Herren Pad			
<b>Site Position:</b>		<b>Northing:</b>	1,310,204.30 usft	<b>Latitude:</b> 40.183282
<b>From:</b> Map		<b>Easting:</b>	3,171,253.06 usft	<b>Longitude:</b> -104.887065
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b> 0.40 °

<b>Well</b>	Herren 1D-33H-H367			
<b>Well Position</b>	<b>+N/-S</b>	-14.04 usft	<b>Northing:</b>	1,310,190.16 usft
	<b>+E/-W</b>	-14.24 usft	<b>Easting:</b>	3,171,238.92 usft
<b>Position Uncertainty</b>	0.00 usft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b> 4,848.00 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	2/21/2018	8.19	66.64	52,188.64355907

<b>Design</b>	Design #1 23Feb18 kjs			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	293.81

<b>Plan Survey Tool Program</b>	<b>Date</b>	3/7/2018		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	12,058.19	Design #1 23Feb18 kjs (Wellbore)	MWD
				OWSG MWD - Standard

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	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	
1,257.08	17.14	20.84	1,244.36	118.93	45.28	2.00	2.00	0.00	20.84	
6,598.13	17.14	20.84	6,348.15	1,590.12	605.37	0.00	0.00	0.00	0.00	
7,780.82	90.00	275.00	7,090.00	1,871.62	-86.61	8.00	6.16	-8.95	-105.17	Herren 1D-33H-H367 TPZ
7,930.82	90.00	272.00	7,090.00	1,880.78	-236.31	2.00	0.00	-2.00	-90.00	
9,430.82	90.00	272.00	7,090.00	1,933.13	-1,735.40	0.00	0.00	0.00	0.00	
9,541.47	90.00	269.79	7,090.00	1,934.85	-1,846.02	2.00	0.00	-2.00	-90.00	
12,058.19	90.00	269.79	7,090.00	1,925.50	-4,362.73	0.00	0.00	0.00	0.00	Herren 1D-33H-H367 BHL

<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Herren 1D-33H-H367
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	WELL @ 4871.00usft (Original Well Elev)
<b>Project:</b>	Sec 33 T3N-R67W	<b>MD Reference:</b>	WELL @ 4871.00usft (Original Well Elev)
<b>Site:</b>	Herren Pad	<b>North Reference:</b>	True
<b>Well:</b>	Herren 1D-33H-H367	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 23Feb18 kjs		

Planned 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)
0.00	0.00	0.00	0.00	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
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 2.00</b>									
600.00	4.00	20.84	599.84	6.52	2.48	0.36	2.00	2.00	0.00
800.00	8.00	20.84	798.70	26.06	9.92	1.45	2.00	2.00	0.00
1,000.00	12.00	20.84	995.62	58.51	22.27	3.25	2.00	2.00	0.00
1,200.00	16.00	20.84	1,189.64	103.72	39.48	5.75	2.00	2.00	0.00
1,257.08	17.14	20.84	1,244.36	118.93	45.28	6.60	2.00	2.00	0.00
<b>Hold 17.14 Inc, 20.84 Az</b>									
1,400.00	17.14	20.84	1,380.92	158.30	60.26	8.78	0.00	0.00	0.00
1,600.00	17.14	20.84	1,572.04	213.39	81.24	11.84	0.00	0.00	0.00
1,800.00	17.14	20.84	1,763.15	268.48	102.21	14.90	0.00	0.00	0.00
2,000.00	17.14	20.84	1,954.27	323.57	123.18	17.95	0.00	0.00	0.00
2,200.00	17.14	20.84	2,145.39	378.66	144.16	21.01	0.00	0.00	0.00
2,400.00	17.14	20.84	2,336.50	433.75	165.13	24.07	0.00	0.00	0.00
2,600.00	17.14	20.84	2,527.62	488.84	186.10	27.12	0.00	0.00	0.00
2,800.00	17.14	20.84	2,718.73	543.93	207.08	30.18	0.00	0.00	0.00
3,000.00	17.14	20.84	2,909.85	599.02	228.05	33.24	0.00	0.00	0.00
3,200.00	17.14	20.84	3,100.96	654.11	249.02	36.29	0.00	0.00	0.00
3,400.00	17.14	20.84	3,292.08	709.20	269.99	39.35	0.00	0.00	0.00
3,600.00	17.14	20.84	3,483.20	764.29	290.97	42.40	0.00	0.00	0.00
3,800.00	17.14	20.84	3,674.31	819.37	311.94	45.46	0.00	0.00	0.00
4,000.00	17.14	20.84	3,865.43	874.46	332.91	48.52	0.00	0.00	0.00
4,200.00	17.14	20.84	4,056.54	929.55	353.89	51.57	0.00	0.00	0.00
4,400.00	17.14	20.84	4,247.66	984.64	374.86	54.63	0.00	0.00	0.00
4,600.00	17.14	20.84	4,438.77	1,039.73	395.83	57.69	0.00	0.00	0.00
4,800.00	17.14	20.84	4,629.89	1,094.82	416.81	60.74	0.00	0.00	0.00
5,000.00	17.14	20.84	4,821.01	1,149.91	437.78	63.80	0.00	0.00	0.00
5,200.00	17.14	20.84	5,012.12	1,205.00	458.75	66.86	0.00	0.00	0.00
5,400.00	17.14	20.84	5,203.24	1,260.09	479.73	69.91	0.00	0.00	0.00
5,600.00	17.14	20.84	5,394.35	1,315.18	500.70	72.97	0.00	0.00	0.00
5,800.00	17.14	20.84	5,585.47	1,370.27	521.67	76.03	0.00	0.00	0.00
6,000.00	17.14	20.84	5,776.59	1,425.36	542.64	79.08	0.00	0.00	0.00
6,200.00	17.14	20.84	5,967.70	1,480.45	563.62	82.14	0.00	0.00	0.00
6,400.00	17.14	20.84	6,158.82	1,535.54	584.59	85.20	0.00	0.00	0.00
6,598.13	17.14	20.84	6,348.15	1,590.12	605.37	88.22	0.00	0.00	0.00
<b>KOP 8/100</b>									
6,600.00	17.10	20.35	6,349.93	1,590.63	605.56	88.26	8.00	-2.06	-26.25
6,800.00	20.06	329.34	6,540.68	1,648.09	598.25	118.14	8.00	1.48	-25.50
7,000.00	31.78	303.62	6,720.80	1,707.14	536.50	198.47	8.00	5.86	-12.86
7,200.00	45.97	291.67	6,876.32	1,763.21	425.11	323.03	8.00	7.10	-5.98
7,400.00	60.92	284.50	6,995.20	1,811.95	272.69	482.15	8.00	7.47	-3.58
7,600.00	76.14	279.20	7,068.23	1,849.60	91.05	663.52	8.00	7.61	-2.65
7,780.82	90.00	275.00	7,090.00	1,871.62	-86.61	834.95	8.00	7.66	-2.32
<b>Begin 2/100 Turn</b>									
7,800.00	90.00	274.62	7,090.00	1,873.23	-105.72	853.08	2.00	0.00	-2.00
7,930.82	90.00	272.00	7,090.00	1,880.78	-236.31	975.60	2.00	0.00	-2.00
<b>Hold 272 Az</b>									
8,000.00	90.00	272.00	7,090.00	1,883.19	-305.45	1,039.83	0.00	0.00	0.00
8,200.00	90.00	272.00	7,090.00	1,890.17	-505.33	1,225.51	0.00	0.00	0.00
8,400.00	90.00	272.00	7,090.00	1,897.15	-705.21	1,411.19	0.00	0.00	0.00
8,600.00	90.00	272.00	7,090.00	1,904.13	-905.08	1,596.86	0.00	0.00	0.00

<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Herren 1D-33H-H367
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	WELL @ 4871.00usft (Original Well Elev)
<b>Project:</b>	Sec 33 T3N-R67W	<b>MD Reference:</b>	WELL @ 4871.00usft (Original Well Elev)
<b>Site:</b>	Herren Pad	<b>North Reference:</b>	True
<b>Well:</b>	Herren 1D-33H-H367	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 23Feb18 kjs		

Planned 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)	
8,800.00	90.00	272.00	7,090.00	1,911.11	-1,104.96	1,782.54	0.00	0.00	0.00	
9,000.00	90.00	272.00	7,090.00	1,918.09	-1,304.84	1,968.22	0.00	0.00	0.00	
9,200.00	90.00	272.00	7,090.00	1,925.07	-1,504.72	2,153.90	0.00	0.00	0.00	
9,400.00	90.00	272.00	7,090.00	1,932.05	-1,704.60	2,339.58	0.00	0.00	0.00	
9,430.82	90.00	272.00	7,090.00	1,933.13	-1,735.40	2,368.19	0.00	0.00	0.00	
Begin 2/100 Turn										
9,541.47	90.00	269.79	7,090.00	1,934.85	-1,846.02	2,470.10	2.00	0.00	-2.00	
Hold 269.79 Az										
9,600.00	90.00	269.79	7,090.00	1,934.64	-1,904.56	2,523.56	0.00	0.00	0.00	
9,800.00	90.00	269.79	7,090.00	1,933.89	-2,104.55	2,706.23	0.00	0.00	0.00	
10,000.00	90.00	269.79	7,090.00	1,933.15	-2,304.55	2,888.90	0.00	0.00	0.00	
10,200.00	90.00	269.79	7,090.00	1,932.41	-2,504.55	3,071.57	0.00	0.00	0.00	
10,400.00	90.00	269.79	7,090.00	1,931.66	-2,704.55	3,254.24	0.00	0.00	0.00	
10,600.00	90.00	269.79	7,090.00	1,930.92	-2,904.55	3,436.91	0.00	0.00	0.00	
10,800.00	90.00	269.79	7,090.00	1,930.18	-3,104.55	3,619.58	0.00	0.00	0.00	
11,000.00	90.00	269.79	7,090.00	1,929.43	-3,304.55	3,802.25	0.00	0.00	0.00	
11,200.00	90.00	269.79	7,090.00	1,928.69	-3,504.55	3,984.92	0.00	0.00	0.00	
11,400.00	90.00	269.79	7,090.00	1,927.95	-3,704.54	4,167.59	0.00	0.00	0.00	
11,600.00	90.00	269.79	7,090.00	1,927.20	-3,904.54	4,350.26	0.00	0.00	0.00	
11,800.00	90.00	269.79	7,090.00	1,926.46	-4,104.54	4,532.93	0.00	0.00	0.00	
12,000.00	90.00	269.79	7,090.00	1,925.72	-4,304.54	4,715.60	0.00	0.00	0.00	
12,058.19	90.00	269.79	7,090.00	1,925.50	-4,362.73	4,768.74	0.00	0.00	0.00	
TD at 12058.19										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude Longitude		
Herren 1D-33H-H367 BHL - hit/miss target - Shape - Point	0.00	0.00	7,090.00	1,925.50	-4,362.73	1,312,085.46	3,166,862.99	40.188528 -104.902732		
Herren 1D-33H-H367 TPZ - plan hits target center - Point	0.00	0.00	7,090.00	1,871.62	-86.61	1,312,061.14	3,171,139.38	40.188382 -104.887426		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
400.00	400.00	0.00	0.00	Start Build 2.00	
1,257.08	1,244.36	118.93	45.28	Hold 17.14 Inc, 20.84 Az	
6,598.13	6,348.15	1,590.12	605.37	KOP 8/100	
7,780.82	7,090.00	1,871.62	-86.61	Begin 2/100 Turn	
7,930.82	7,090.00	1,880.78	-236.31	Hold 272 Az	
9,430.82	7,090.00	1,933.13	-1,735.40	Begin 2/100 Turn	
9,541.47	7,090.00	1,934.85	-1,846.02	Hold 269.79 Az	
12,058.19	7,090.00	1,925.50	-4,362.73	TD at 12058.19	