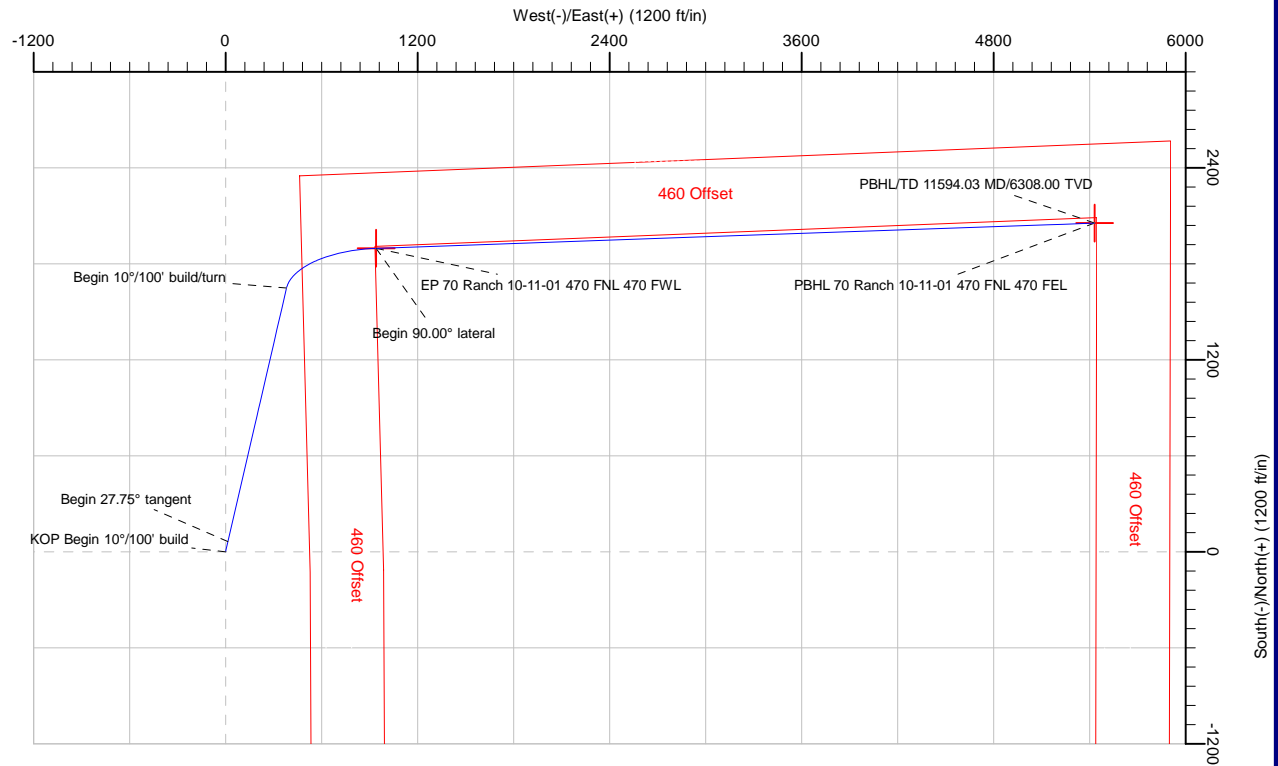
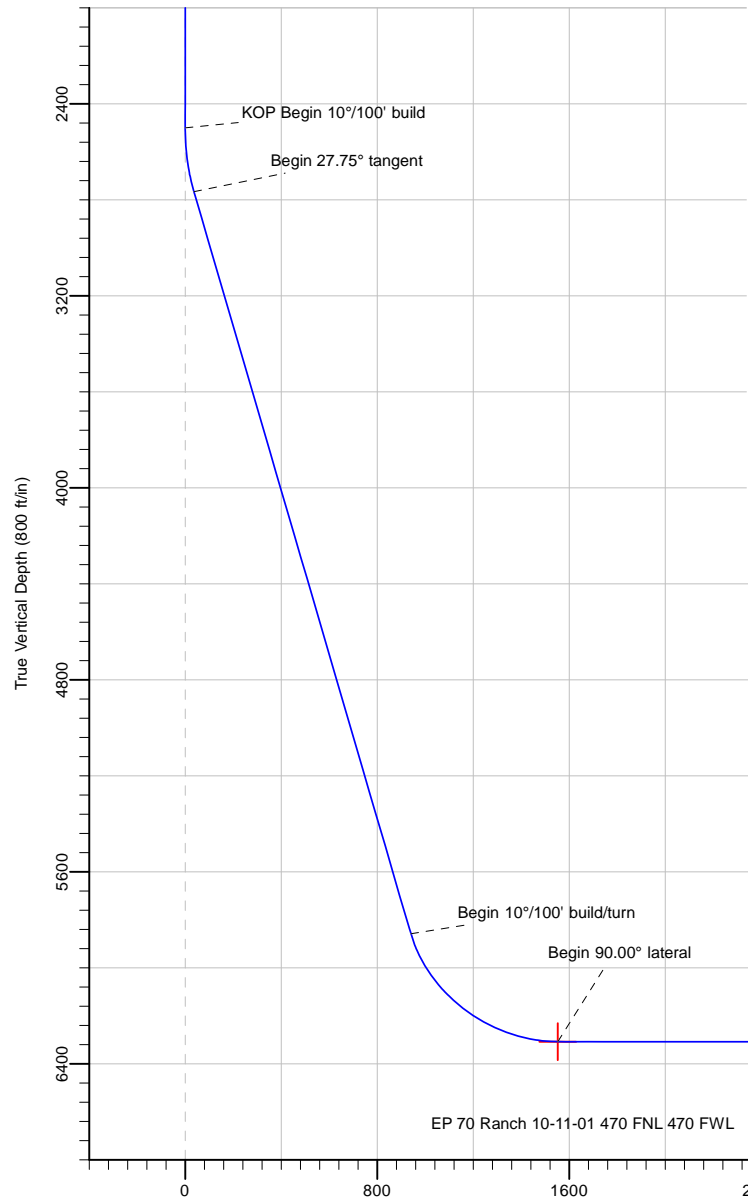




Well: 70 Ranch 10-11-01
Site: Section 10-T04N-R63W
Project: Weld County, Colorado
Wellbore: Original Hole
Design: plan1



Section Details									
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	KOP Begin 10°/100' build
3	2777.52	27.75	13.03	2766.80	64.21	14.86	10.00	36.62	Begin 27.75° tangent
4	6271.57	27.75	13.03	5858.92	1649.34	381.59	0.00	940.54	Begin 10°/100' build/turn
5	7102.17	90.00	87.99	6308.00	1897.36	941.99	10.00	1552.45	Begin 90.00° lateral
6	11594.52	90.00	87.99	6308.00	2055.01	5431.57	0.00	5807.32	PBHL/TD

DESIGN TARGET DETAILS									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude		
EP 70 Ranch 10-11-01 470 FNL 470 FWL	6308.00	1897.36	941.99	14648460.64	1803855.74	40.33279000	-104.41354000		
PBHL 70 Ranch 10-11-01 470 FNL 470 FEL	6308.00	2054.54	5431.75	14648647.38	1808344.35	40.33322000	-104.39743000		



Azimuths to True North
Magnetic North: 8.13°
Magnetic Field
Strength: 52243.4nT
Dip Angle: 66.90°
Date: 4/8/2018
Model: HDGM

70 Ranch 10-11-01 Surf loc: 2345 FNL 514 FEL Section 10-T04N-R63W			
NAD83 Colorado - HARN Universal Transverse Mercator (US Survey Feet) Zone 13N (108 W to 102 W) RKB=4604+24 @ 4628.00ft			
Northing	Easting	Latitude	Longitude
14646557.12	1802926.26	40.32758000	-104.41692000



Date: 11:17, April 09 2018

Vertical Section at 69.28° (800 ft/in)

Note: All lease lines and hard lines are estimates only and are subject to customers approval.

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-11-01
Company:	Confluence Resources	TVD Reference:	RKB=4604+24 @ 4628.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4604+24 @ 4628.00ft
Site:	Section 10-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-11-01	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Project	Weld County, Colorado		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	NAD83 Colorado - HARN		
Map Zone:	Zone 13N (108 W to 102 W)		

Site		Section 10-T04N-R63W			
Site Position:		Northing:	14,648,687.65 usft	Latitude:	40.33348000
From:	Lat/Long	Easting:	1,800,150.33 usft	Longitude:	-104.42683000
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.37 °

Well	70 Ranch 10-11-01, Surf loc: 2345 FNL 514 FEL Section 10-T04N-R63W					
Well Position	+N/-S	-2,148.47 ft	Northing:	14,646,557.12 usft	Latitude:	40.32758000
	+E/-W	2,762.08 ft	Easting:	1,802,926.26 usft	Longitude:	-104.41692000
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,604.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	4/8/2018	8.13	66.90	52,243.40000000

Design	plan1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	69.28

Plan Survey Tool Program	Date	4/9/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	11,594.03	plan1 (Original Hole)	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	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	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,777.52	27.75	13.03	2,766.80	64.21	14.86	10.00	10.00	0.00	13.03	
6,271.57	27.75	13.03	5,858.92	1,649.34	381.59	0.00	0.00	0.00	0.00	
7,102.17	90.00	87.99	6,308.00	1,897.36	941.99	10.00	7.49	9.02	76.63	EP 70 Ranch 10-11-0
11,594.52	90.00	87.99	6,308.00	2,055.01	5,431.57	0.00	0.00	0.00	0.00	PBHL 70 Ranch 10-11-0

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-11-01
Company:	Confluence Resources	TVD Reference:	RKB=4604+24 @ 4628.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4604+24 @ 4628.00ft
Site:	Section 10-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-11-01	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	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	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP Begin 10°/100' build									
2,600.01	10.00	13.03	2,599.50	8.48	1.96	4.84	10.00	10.00	0.00
2,700.01	20.00	13.03	2,695.97	33.67	7.79	19.20	10.00	10.00	0.00
2,777.52	27.75	13.03	2,766.80	64.21	14.86	36.62	10.00	10.00	0.00
Begin 27.75° tangent									
2,800.01	27.75	13.03	2,786.69	74.41	17.22	42.43	0.00	0.00	0.00
2,900.01	27.75	13.03	2,875.19	119.78	27.71	68.30	0.00	0.00	0.00
3,000.01	27.75	13.03	2,963.69	165.14	38.21	94.17	0.00	0.00	0.00
3,100.01	27.75	13.03	3,052.19	210.51	48.70	120.05	0.00	0.00	0.00
3,200.01	27.75	13.03	3,140.68	255.88	59.20	145.92	0.00	0.00	0.00
3,300.01	27.75	13.03	3,229.18	301.24	69.70	171.79	0.00	0.00	0.00
3,400.01	27.75	13.03	3,317.68	346.61	80.19	197.66	0.00	0.00	0.00
3,500.01	27.75	13.03	3,406.17	391.98	90.69	223.53	0.00	0.00	0.00
3,600.01	27.75	13.03	3,494.67	437.34	101.18	249.40	0.00	0.00	0.00
3,700.01	27.75	13.03	3,583.17	482.71	111.68	275.27	0.00	0.00	0.00
3,800.01	27.75	13.03	3,671.67	528.08	122.18	301.14	0.00	0.00	0.00
3,900.01	27.75	13.03	3,760.16	573.44	132.67	327.01	0.00	0.00	0.00
4,000.01	27.75	13.03	3,848.66	618.81	143.17	352.88	0.00	0.00	0.00
4,100.01	27.75	13.03	3,937.16	664.18	153.66	378.75	0.00	0.00	0.00
4,200.01	27.75	13.03	4,025.65	709.54	164.16	404.62	0.00	0.00	0.00
4,300.01	27.75	13.03	4,114.15	754.91	174.66	430.49	0.00	0.00	0.00
4,400.01	27.75	13.03	4,202.65	800.28	185.15	456.36	0.00	0.00	0.00
4,500.01	27.75	13.03	4,291.15	845.64	195.65	482.23	0.00	0.00	0.00
4,600.01	27.75	13.03	4,379.64	891.01	206.14	508.10	0.00	0.00	0.00
4,700.01	27.75	13.03	4,468.14	936.38	216.64	533.97	0.00	0.00	0.00
4,800.01	27.75	13.03	4,556.64	981.74	227.14	559.84	0.00	0.00	0.00
4,900.01	27.75	13.03	4,645.13	1,027.11	237.63	585.72	0.00	0.00	0.00

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-11-01
Company:	Confluence Resources	TVD Reference:	RKB=4604+24 @ 4628.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4604+24 @ 4628.00ft
Site:	Section 10-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-11-01	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,000.01	27.75	13.03	4,733.63	1,072.48	248.13	611.59	0.00	0.00	0.00
5,100.01	27.75	13.03	4,822.13	1,117.84	258.62	637.46	0.00	0.00	0.00
5,200.01	27.75	13.03	4,910.63	1,163.21	269.12	663.33	0.00	0.00	0.00
5,300.01	27.75	13.03	4,999.12	1,208.58	279.62	689.20	0.00	0.00	0.00
5,400.01	27.75	13.03	5,087.62	1,253.94	290.11	715.07	0.00	0.00	0.00
5,500.01	27.75	13.03	5,176.12	1,299.31	300.61	740.94	0.00	0.00	0.00
5,600.01	27.75	13.03	5,264.61	1,344.68	311.10	766.81	0.00	0.00	0.00
5,700.01	27.75	13.03	5,353.11	1,390.04	321.60	792.68	0.00	0.00	0.00
5,800.01	27.75	13.03	5,441.61	1,435.41	332.10	818.55	0.00	0.00	0.00
5,900.01	27.75	13.03	5,530.11	1,480.78	342.59	844.42	0.00	0.00	0.00
6,000.01	27.75	13.03	5,618.60	1,526.14	353.09	870.29	0.00	0.00	0.00
6,100.01	27.75	13.03	5,707.10	1,571.51	363.58	896.16	0.00	0.00	0.00
6,200.01	27.75	13.03	5,795.60	1,616.88	374.08	922.03	0.00	0.00	0.00
6,271.57	27.75	13.03	5,858.92	1,649.34	381.59	940.54	0.00	0.00	0.00
Begin 10°/100' build/turn									
6,300.01	28.53	18.83	5,884.01	1,662.22	385.28	948.55	10.00	2.75	20.39
6,400.01	32.98	36.44	5,970.10	1,706.84	409.21	986.72	10.00	4.44	17.61
6,500.01	39.31	49.62	6,050.93	1,749.36	449.61	1,039.56	10.00	6.33	13.19
6,600.01	46.76	59.44	6,124.06	1,788.50	505.25	1,105.44	10.00	7.45	9.82
6,700.01	54.86	67.03	6,187.26	1,823.06	574.43	1,182.38	10.00	8.10	7.59
6,800.01	63.34	73.21	6,238.60	1,852.00	655.06	1,268.03	10.00	8.49	6.18
6,900.01	72.06	78.52	6,276.53	1,874.43	744.68	1,359.80	10.00	8.71	5.31
7,000.01	80.90	83.32	6,299.90	1,889.68	840.58	1,454.88	10.00	8.85	4.80
7,100.01	89.81	87.89	6,308.00	1,897.28	939.83	1,550.41	10.00	8.91	4.57
7,102.17	90.00	87.99	6,308.00	1,897.36	941.99	1,552.45	10.00	8.92	4.53
Begin 90.00° lateral									
7,200.01	90.00	87.99	6,308.00	1,900.79	1,039.77	1,645.12	0.00	0.00	0.00
7,300.01	90.00	87.99	6,308.00	1,904.30	1,139.71	1,739.83	0.00	0.00	0.00
7,400.01	90.00	87.99	6,308.00	1,907.81	1,239.65	1,834.55	0.00	0.00	0.00
7,500.02	90.00	87.99	6,308.00	1,911.32	1,339.59	1,929.26	0.00	0.00	0.00
7,600.02	90.00	87.99	6,308.00	1,914.83	1,439.53	2,023.98	0.00	0.00	0.00
7,700.02	90.00	87.99	6,308.00	1,918.34	1,539.46	2,118.69	0.00	0.00	0.00
7,800.02	90.00	87.99	6,308.00	1,921.85	1,639.40	2,213.40	0.00	0.00	0.00
7,900.02	90.00	87.99	6,308.00	1,925.36	1,739.34	2,308.12	0.00	0.00	0.00
8,000.02	90.00	87.99	6,308.00	1,928.87	1,839.28	2,402.83	0.00	0.00	0.00
8,100.02	90.00	87.99	6,308.00	1,932.38	1,939.22	2,497.55	0.00	0.00	0.00
8,200.02	90.00	87.99	6,308.00	1,935.89	2,039.16	2,592.26	0.00	0.00	0.00
8,300.02	90.00	87.99	6,308.00	1,939.40	2,139.10	2,686.97	0.00	0.00	0.00
8,400.02	90.00	87.99	6,308.00	1,942.91	2,239.04	2,781.69	0.00	0.00	0.00
8,500.02	90.00	87.99	6,308.00	1,946.42	2,338.97	2,876.40	0.00	0.00	0.00
8,600.02	90.00	87.99	6,308.00	1,949.92	2,438.91	2,971.12	0.00	0.00	0.00
8,700.02	90.00	87.99	6,308.00	1,953.43	2,538.85	3,065.83	0.00	0.00	0.00
8,800.02	90.00	87.99	6,308.00	1,956.94	2,638.79	3,160.55	0.00	0.00	0.00
8,900.02	90.00	87.99	6,308.00	1,960.45	2,738.73	3,255.26	0.00	0.00	0.00
9,000.02	90.00	87.99	6,308.00	1,963.96	2,838.67	3,349.97	0.00	0.00	0.00
9,100.02	90.00	87.99	6,308.00	1,967.47	2,938.61	3,444.69	0.00	0.00	0.00
9,200.02	90.00	87.99	6,308.00	1,970.98	3,038.54	3,539.40	0.00	0.00	0.00
9,300.02	90.00	87.99	6,308.00	1,974.49	3,138.48	3,634.12	0.00	0.00	0.00
9,400.02	90.00	87.99	6,308.00	1,978.00	3,238.42	3,728.83	0.00	0.00	0.00
9,500.02	90.00	87.99	6,308.00	1,981.51	3,338.36	3,823.54	0.00	0.00	0.00
9,600.02	90.00	87.99	6,308.00	1,985.02	3,438.30	3,918.26	0.00	0.00	0.00
9,700.02	90.00	87.99	6,308.00	1,988.53	3,538.24	4,012.97	0.00	0.00	0.00
9,800.02	90.00	87.99	6,308.00	1,992.04	3,638.18	4,107.69	0.00	0.00	0.00
9,900.02	90.00	87.99	6,308.00	1,995.55	3,738.11	4,202.40	0.00	0.00	0.00

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-11-01
Company:	Confluence Resources	TVD Reference:	RKB=4604+24 @ 4628.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4604+24 @ 4628.00ft
Site:	Section 10-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-11-01	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
10,000.02	90.00	87.99	6,308.00	1,999.06	3,838.05	4,297.11	0.00	0.00	0.00	
10,100.02	90.00	87.99	6,308.00	2,002.57	3,937.99	4,391.83	0.00	0.00	0.00	
10,200.02	90.00	87.99	6,308.00	2,006.08	4,037.93	4,486.54	0.00	0.00	0.00	
10,300.02	90.00	87.99	6,308.00	2,009.58	4,137.87	4,581.26	0.00	0.00	0.00	
10,400.02	90.00	87.99	6,308.00	2,013.09	4,237.81	4,675.97	0.00	0.00	0.00	
10,500.02	90.00	87.99	6,308.00	2,016.60	4,337.75	4,770.68	0.00	0.00	0.00	
10,600.02	90.00	87.99	6,308.00	2,020.11	4,437.68	4,865.40	0.00	0.00	0.00	
10,700.02	90.00	87.99	6,308.00	2,023.62	4,537.62	4,960.11	0.00	0.00	0.00	
10,800.02	90.00	87.99	6,308.00	2,027.13	4,637.56	5,054.83	0.00	0.00	0.00	
10,900.02	90.00	87.99	6,308.00	2,030.64	4,737.50	5,149.54	0.00	0.00	0.00	
11,000.02	90.00	87.99	6,308.00	2,034.15	4,837.44	5,244.25	0.00	0.00	0.00	
11,100.02	90.00	87.99	6,308.00	2,037.66	4,937.38	5,338.97	0.00	0.00	0.00	
11,200.02	90.00	87.99	6,308.00	2,041.17	5,037.32	5,433.68	0.00	0.00	0.00	
11,300.02	90.00	87.99	6,308.00	2,044.68	5,137.25	5,528.40	0.00	0.00	0.00	
11,400.02	90.00	87.99	6,308.00	2,048.19	5,237.19	5,623.11	0.00	0.00	0.00	
11,500.02	90.00	87.99	6,308.00	2,051.70	5,337.13	5,717.82	0.00	0.00	0.00	
11,594.03	90.00	87.99	6,308.00	2,055.00	5,431.08	5,806.86	0.00	0.00	0.00	
PBHL/TD 11594.03 MD/6308.00 TVD										
11,594.52	90.00	87.99	6,308.00	2,055.01	5,431.57	5,807.32	0.00	0.00	0.00	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
EP 70 Ranch 10-11-01 4	0.00	0.00	6,308.00	1,897.36	941.99	14,648,460.64	1,803,855.74	40.33279000	-104.41354000	
- plan hits target center										
- Point										
PBHL 70 Ranch 10-11-0	0.00	0.00	6,308.00	2,054.54	5,431.75	14,648,647.38	1,808,344.35	40.33322000	-104.39743000	
- plan misses target center by 0.51ft at 11594.52ft MD (6308.00 TVD, 2055.01 N, 5431.57 E)										
- Point										

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2,500.00	2,500.00	0.00	0.00	KOP Begin 10°/100' build	
2,777.52	2,766.80	64.21	14.86	Begin 27.75° tangent	
6,271.57	5,858.92	1,649.34	381.59	Begin 10°/100' build/turn	
7,102.17	6,308.00	1,897.36	941.99	Begin 90.00° lateral	
11,594.03	6,308.00	2,055.00	5,431.08	PBHL/TD 11594.03 MD/6308.00 TVD	

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-11-01
Company:	Confluence Resources	TVD Reference:	RKB=4604+24 @ 4628.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4604+24 @ 4628.00ft
Site:	Section 10-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-11-01	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Project	Weld County, Colorado		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	NAD83 Colorado - HARN		
Map Zone:	Zone 13N (108 W to 102 W)		

Site		Section 10-T04N-R63W			
Site Position:		Northing:	14,648,687.65 usft	Latitude:	40.33348000
From:	Lat/Long	Easting:	1,800,150.33 usft	Longitude:	-104.42683000
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.37 °

Well	70 Ranch 10-11-01, Surf loc: 2345 FNL 514 FEL Section 10-T04N-R63W					
Well Position	+N/-S	0.00 ft	Northing:	14,646,557.12 usft	Latitude:	40.32758000
	+E/-W	0.00 ft	Easting:	1,802,926.26 usft	Longitude:	-104.41692000
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,604.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	4/8/2018	8.13	66.90	52,243.40000000

Design	plan1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	69.28

Plan Survey Tool Program	Date	4/9/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	11,594.03 plan1 (Original Hole)		

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	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	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,777.52	27.75	13.03	2,766.80	64.21	14.86	10.00	10.00	0.00	13.03	
6,271.57	27.75	13.03	5,858.92	1,649.34	381.59	0.00	0.00	0.00	0.00	
7,102.17	90.00	87.99	6,308.00	1,897.36	941.99	10.00	7.49	9.02	76.63	EP 70 Ranch 10-11-0
11,594.52	90.00	87.99	6,308.00	2,055.01	5,431.57	0.00	0.00	0.00	0.00	PBHL 70 Ranch 10-11-

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-11-01
Company:	Confluence Resources	TVD Reference:	RKB=4604+24 @ 4628.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4604+24 @ 4628.00ft
Site:	Section 10-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-11-01	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	14,646,557.12	1,802,926.26	40.32758000	-104.41692000
100.00	0.00	0.00	100.00	0.00	0.00	14,646,557.12	1,802,926.26	40.32758000	-104.41692000
200.00	0.00	0.00	200.00	0.00	0.00	14,646,557.12	1,802,926.26	40.32758000	-104.41692000
300.00	0.00	0.00	300.00	0.00	0.00	14,646,557.12	1,802,926.26	40.32758000	-104.41692000
400.00	0.00	0.00	400.00	0.00	0.00	14,646,557.12	1,802,926.26	40.32758000	-104.41692000
500.00	0.00	0.00	500.00	0.00	0.00	14,646,557.12	1,802,926.26	40.32758000	-104.41692000
600.00	0.00	0.00	600.00	0.00	0.00	14,646,557.12	1,802,926.26	40.32758000	-104.41692000
700.00	0.00	0.00	700.00	0.00	0.00	14,646,557.12	1,802,926.26	40.32758000	-104.41692000
800.00	0.00	0.00	800.00	0.00	0.00	14,646,557.12	1,802,926.26	40.32758000	-104.41692000
900.00	0.00	0.00	900.00	0.00	0.00	14,646,557.12	1,802,926.26	40.32758000	-104.41692000
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,646,557.12	1,802,926.26	40.32758000	-104.41692000
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,646,557.12	1,802,926.26	40.32758000	-104.41692000
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,646,557.12	1,802,926.26	40.32758000	-104.41692000
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,646,557.12	1,802,926.26	40.32758000	-104.41692000
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,646,557.12	1,802,926.26	40.32758000	-104.41692000
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,646,557.12	1,802,926.26	40.32758000	-104.41692000
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,646,557.12	1,802,926.26	40.32758000	-104.41692000
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,646,557.12	1,802,926.26	40.32758000	-104.41692000
1,800.00	0.00	0.00	1,800.00	0.00	0.00	14,646,557.12	1,802,926.26	40.32758000	-104.41692000
1,900.00	0.00	0.00	1,900.00	0.00	0.00	14,646,557.12	1,802,926.26	40.32758000	-104.41692000
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,646,557.12	1,802,926.26	40.32758000	-104.41692000
2,100.00	0.00	0.00	2,100.00	0.00	0.00	14,646,557.12	1,802,926.26	40.32758000	-104.41692000
2,200.00	0.00	0.00	2,200.00	0.00	0.00	14,646,557.12	1,802,926.26	40.32758000	-104.41692000
2,300.00	0.00	0.00	2,300.00	0.00	0.00	14,646,557.12	1,802,926.26	40.32758000	-104.41692000
2,400.00	0.00	0.00	2,400.00	0.00	0.00	14,646,557.12	1,802,926.26	40.32758000	-104.41692000
2,500.00	0.00	0.00	2,500.00	0.00	0.00	14,646,557.12	1,802,926.26	40.32758000	-104.41692000
KOP Begin 10°/100' build									
2,600.01	10.00	13.03	2,599.50	8.48	1.96	14,646,565.61	1,802,928.17	40.32760328	-104.41691296
2,700.01	20.00	13.03	2,695.97	33.67	7.79	14,646,590.83	1,802,933.83	40.32767244	-104.41689206
2,777.52	27.75	13.03	2,766.80	64.21	14.86	14,646,621.42	1,802,940.70	40.32775631	-104.41686670
Begin 27.75° tangent									
2,800.01	27.75	13.03	2,786.69	74.41	17.22	14,646,631.64	1,802,942.99	40.32778432	-104.41685824
2,900.01	27.75	13.03	2,875.19	119.78	27.71	14,646,677.07	1,802,953.19	40.32790890	-104.41682058
3,000.01	27.75	13.03	2,963.69	165.14	38.21	14,646,722.51	1,802,963.38	40.32803347	-104.41678292
3,100.01	27.75	13.03	3,052.19	210.51	48.70	14,646,767.94	1,802,973.58	40.32815805	-104.41674526
3,200.01	27.75	13.03	3,140.68	255.88	59.20	14,646,813.38	1,802,983.78	40.32828262	-104.41670760
3,300.01	27.75	13.03	3,229.18	301.24	69.70	14,646,858.81	1,802,993.97	40.32840720	-104.41666994
3,400.01	27.75	13.03	3,317.68	346.61	80.19	14,646,904.25	1,803,004.17	40.32853177	-104.41663228
3,500.01	27.75	13.03	3,406.17	391.98	90.69	14,646,949.68	1,803,014.37	40.32865635	-104.41659462
3,600.01	27.75	13.03	3,494.67	437.34	101.18	14,646,995.12	1,803,024.56	40.32878092	-104.41655696
3,700.01	27.75	13.03	3,583.17	482.71	111.68	14,647,040.55	1,803,034.76	40.32890549	-104.41651931
3,800.01	27.75	13.03	3,671.67	528.08	122.18	14,647,085.99	1,803,044.96	40.32903007	-104.41648165
3,900.01	27.75	13.03	3,760.16	573.44	132.67	14,647,131.42	1,803,055.15	40.32915464	-104.41644399
4,000.01	27.75	13.03	3,848.66	618.81	143.17	14,647,176.86	1,803,065.35	40.32927922	-104.41640633
4,100.01	27.75	13.03	3,937.16	664.18	153.66	14,647,222.29	1,803,075.55	40.32940379	-104.41636867
4,200.01	27.75	13.03	4,025.65	709.54	164.16	14,647,267.73	1,803,085.75	40.32952836	-104.41633101
4,300.01	27.75	13.03	4,114.15	754.91	174.66	14,647,313.16	1,803,095.94	40.32965294	-104.41629334
4,400.01	27.75	13.03	4,202.65	800.28	185.15	14,647,358.59	1,803,106.14	40.32977751	-104.41625568
4,500.01	27.75	13.03	4,291.15	845.64	195.65	14,647,404.03	1,803,116.34	40.32990209	-104.41621802
4,600.01	27.75	13.03	4,379.64	891.01	206.14	14,647,449.46	1,803,126.53	40.33002666	-104.41618036
4,700.01	27.75	13.03	4,468.14	936.38	216.64	14,647,494.90	1,803,136.73	40.33015124	-104.41614270
4,800.01	27.75	13.03	4,556.64	981.74	227.14	14,647,540.33	1,803,146.93	40.33027581	-104.41610504
4,900.01	27.75	13.03	4,645.13	1,027.11	237.63	14,647,585.77	1,803,157.12	40.33040038	-104.41606738
5,000.01	27.75	13.03	4,733.63	1,072.48	248.13	14,647,631.20	1,803,167.32	40.33052496	-104.41602972

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-11-01
Company:	Confluence Resources	TVD Reference:	RKB=4604+24 @ 4628.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4604+24 @ 4628.00ft
Site:	Section 10-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-11-01	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,100.01	27.75	13.03	4,822.13	1,117.84	258.62	14,647,676.64	1,803,177.52	40.33064953	-104.41599206
5,200.01	27.75	13.03	4,910.63	1,163.21	269.12	14,647,722.07	1,803,187.71	40.33077411	-104.41595439
5,300.01	27.75	13.03	4,999.12	1,208.58	279.62	14,647,767.51	1,803,197.91	40.33089868	-104.41591673
5,400.01	27.75	13.03	5,087.62	1,253.94	290.11	14,647,812.94	1,803,208.11	40.33102325	-104.41587907
5,500.01	27.75	13.03	5,176.12	1,299.31	300.61	14,647,858.38	1,803,218.31	40.33114783	-104.41584141
5,600.01	27.75	13.03	5,264.61	1,344.68	311.10	14,647,903.81	1,803,228.50	40.33127240	-104.41580375
5,700.01	27.75	13.03	5,353.11	1,390.04	321.60	14,647,949.25	1,803,238.70	40.33139698	-104.41576608
5,800.01	27.75	13.03	5,441.61	1,435.41	332.10	14,647,994.68	1,803,248.90	40.33152155	-104.41572842
5,900.01	27.75	13.03	5,530.11	1,480.78	342.59	14,648,040.11	1,803,259.09	40.33164612	-104.41569076
6,000.01	27.75	13.03	5,618.60	1,526.14	353.09	14,648,085.55	1,803,269.29	40.33177070	-104.41565310
6,100.01	27.75	13.03	5,707.10	1,571.51	363.58	14,648,130.98	1,803,279.49	40.33189527	-104.41561543
6,200.01	27.75	13.03	5,795.60	1,616.88	374.08	14,648,176.42	1,803,289.68	40.33201984	-104.41557777
6,271.57	27.75	13.03	5,858.92	1,649.34	381.59	14,648,208.93	1,803,296.98	40.33210899	-104.41555082
Begin 10°/100' build/turn									
6,300.01	28.53	18.83	5,884.01	1,662.22	385.28	14,648,221.84	1,803,300.58	40.33214437	-104.41553759
6,400.01	32.98	36.44	5,970.10	1,706.84	409.21	14,648,266.61	1,803,324.22	40.33226687	-104.41545171
6,500.01	39.31	49.62	6,050.93	1,749.36	449.61	14,648,309.40	1,803,364.34	40.33238363	-104.41530675
6,600.01	46.76	59.44	6,124.06	1,788.50	505.25	14,648,348.90	1,803,419.72	40.33249110	-104.41510712
6,700.01	54.86	67.03	6,187.26	1,823.06	574.43	14,648,383.92	1,803,488.67	40.33258600	-104.41485887
6,800.01	63.34	73.21	6,238.60	1,852.00	655.06	14,648,413.38	1,803,569.11	40.33266546	-104.41456956
6,900.01	72.06	78.52	6,276.53	1,874.43	744.68	14,648,436.41	1,803,658.58	40.33272705	-104.41424798
7,000.01	80.90	83.32	6,299.90	1,889.68	840.58	14,648,452.29	1,803,754.38	40.33276892	-104.41390389
7,100.01	89.81	87.89	6,308.00	1,897.28	939.83	14,648,460.54	1,803,853.58	40.33278978	-104.41354775
7,102.17	90.00	87.99	6,308.00	1,897.36	941.99	14,648,460.64	1,803,855.73	40.33278999	-104.41354002
Begin 90.00° lateral									
7,200.01	90.00	87.99	6,308.00	1,900.79	1,039.77	14,648,464.71	1,803,953.49	40.33279941	-104.41318915
7,300.01	90.00	87.99	6,308.00	1,904.30	1,139.71	14,648,468.88	1,804,053.40	40.33280904	-104.41283056
7,400.01	90.00	87.99	6,308.00	1,907.81	1,239.65	14,648,473.05	1,804,153.32	40.33281866	-104.41247197
7,500.02	90.00	87.99	6,308.00	1,911.32	1,339.59	14,648,477.22	1,804,253.23	40.33282828	-104.41211337
7,600.02	90.00	87.99	6,308.00	1,914.83	1,439.53	14,648,481.38	1,804,353.14	40.33283790	-104.41175478
7,700.02	90.00	87.99	6,308.00	1,918.34	1,539.46	14,648,485.55	1,804,453.06	40.33284752	-104.41139618
7,800.02	90.00	87.99	6,308.00	1,921.85	1,639.40	14,648,489.72	1,804,552.97	40.33285714	-104.41103759
7,900.02	90.00	87.99	6,308.00	1,925.36	1,739.34	14,648,493.89	1,804,652.88	40.33286676	-104.41067899
8,000.02	90.00	87.99	6,308.00	1,928.87	1,839.28	14,648,498.05	1,804,752.80	40.33287638	-104.41032040
8,100.02	90.00	87.99	6,308.00	1,932.38	1,939.22	14,648,502.22	1,804,852.71	40.33288599	-104.40996180
8,200.02	90.00	87.99	6,308.00	1,935.89	2,039.16	14,648,506.39	1,804,952.62	40.33289561	-104.40960321
8,300.02	90.00	87.99	6,308.00	1,939.40	2,139.10	14,648,510.56	1,805,052.54	40.33290522	-104.40924461
8,400.02	90.00	87.99	6,308.00	1,942.91	2,239.04	14,648,514.72	1,805,152.45	40.33291483	-104.40888601
8,500.02	90.00	87.99	6,308.00	1,946.42	2,338.97	14,648,518.89	1,805,252.36	40.33292444	-104.40852742
8,600.02	90.00	87.99	6,308.00	1,949.92	2,438.91	14,648,523.06	1,805,352.27	40.33293405	-104.40816882
8,700.02	90.00	87.99	6,308.00	1,953.43	2,538.85	14,648,527.23	1,805,452.19	40.33294366	-104.40781023
8,800.02	90.00	87.99	6,308.00	1,956.94	2,638.79	14,648,531.39	1,805,552.10	40.33295327	-104.40745163
8,900.02	90.00	87.99	6,308.00	1,960.45	2,738.73	14,648,535.56	1,805,652.01	40.33296288	-104.40709304
9,000.02	90.00	87.99	6,308.00	1,963.96	2,838.67	14,648,539.73	1,805,751.93	40.33297248	-104.40673444
9,100.02	90.00	87.99	6,308.00	1,967.47	2,938.61	14,648,543.90	1,805,851.84	40.33298209	-104.40637584
9,200.02	90.00	87.99	6,308.00	1,970.98	3,038.54	14,648,548.06	1,805,951.75	40.33299169	-104.40601725
9,300.02	90.00	87.99	6,308.00	1,974.49	3,138.48	14,648,552.23	1,806,051.67	40.33300129	-104.40565865
9,400.02	90.00	87.99	6,308.00	1,978.00	3,238.42	14,648,556.40	1,806,151.58	40.33301089	-104.40530006
9,500.02	90.00	87.99	6,308.00	1,981.51	3,338.36	14,648,560.57	1,806,251.49	40.33302049	-104.40494146
9,600.02	90.00	87.99	6,308.00	1,985.02	3,438.30	14,648,564.73	1,806,351.41	40.33303009	-104.40458286
9,700.02	90.00	87.99	6,308.00	1,988.53	3,538.24	14,648,568.90	1,806,451.32	40.33303969	-104.40422427
9,800.02	90.00	87.99	6,308.00	1,992.04	3,638.18	14,648,573.07	1,806,551.23	40.33304929	-104.40386567
9,900.02	90.00	87.99	6,308.00	1,995.55	3,738.11	14,648,577.24	1,806,651.15	40.33305888	-104.40350707
10,000.02	90.00	87.99	6,308.00	1,999.06	3,838.05	14,648,581.40	1,806,751.06	40.33306848	-104.40314847

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-11-01
Company:	Confluence Resources	TVD Reference:	RKB=4604+24 @ 4628.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4604+24 @ 4628.00ft
Site:	Section 10-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-11-01	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,100.02	90.00	87.99	6,308.00	2,002.57	3,937.99	14,648,585.57	1,806,850.97	40.33307807	-104.40278988
10,200.02	90.00	87.99	6,308.00	2,006.08	4,037.93	14,648,589.74	1,806,950.88	40.33308766	-104.40243128
10,300.02	90.00	87.99	6,308.00	2,009.58	4,137.87	14,648,593.91	1,807,050.80	40.33309725	-104.40207268
10,400.02	90.00	87.99	6,308.00	2,013.09	4,237.81	14,648,598.08	1,807,150.71	40.33310684	-104.40171409
10,500.02	90.00	87.99	6,308.00	2,016.60	4,337.75	14,648,602.24	1,807,250.62	40.33311643	-104.40135549
10,600.02	90.00	87.99	6,308.00	2,020.11	4,437.68	14,648,606.41	1,807,350.54	40.33312602	-104.40099689
10,700.02	90.00	87.99	6,308.00	2,023.62	4,537.62	14,648,610.58	1,807,450.45	40.33313560	-104.40063829
10,800.02	90.00	87.99	6,308.00	2,027.13	4,637.56	14,648,614.75	1,807,550.36	40.33314519	-104.40027970
10,900.02	90.00	87.99	6,308.00	2,030.64	4,737.50	14,648,618.91	1,807,650.28	40.33315477	-104.39992110
11,000.02	90.00	87.99	6,308.00	2,034.15	4,837.44	14,648,623.08	1,807,750.19	40.33316436	-104.39956250
11,100.02	90.00	87.99	6,308.00	2,037.66	4,937.38	14,648,627.25	1,807,850.10	40.33317394	-104.39920390
11,200.02	90.00	87.99	6,308.00	2,041.17	5,037.32	14,648,631.42	1,807,950.02	40.33318352	-104.39884531
11,300.02	90.00	87.99	6,308.00	2,044.68	5,137.25	14,648,635.58	1,808,049.93	40.33319310	-104.39848671
11,400.02	90.00	87.99	6,308.00	2,048.19	5,237.19	14,648,639.75	1,808,149.84	40.33320268	-104.39812811
11,500.02	90.00	87.99	6,308.00	2,051.70	5,337.13	14,648,643.92	1,808,249.76	40.33321226	-104.39776951
11,594.03	90.00	87.99	6,308.00	2,055.00	5,431.08	14,648,647.84	1,808,343.68	40.33322126	-104.39743240
PBHL/TD 11594.03 MD/6308.00 TVD									
11,594.52	90.00	87.99	6,308.00	2,055.01	5,431.57	14,648,647.86	1,808,344.17	40.33322131	-104.39743065

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
EP 70 Ranch 10-11-01 4	0.00	0.00	6,308.00	1,897.36	941.99	14,648,460.64	1,803,855.74	40.33279000	-104.41354000
- plan hits target center									
- Point									
PBHL 70 Ranch 10-11-0	0.00	0.00	6,308.00	2,054.54	5,431.75	14,648,647.38	1,808,344.35	40.33322000	-104.39743000
- plan misses target center by 0.51ft at 11594.52ft MD (6308.00 TVD, 2055.01 N, 5431.57 E)									
- Point									

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2,500.00	2,500.00	0.00	0.00	KOP Begin 10°/100' build	
2,777.52	2,766.80	64.21	14.86	Begin 27.75° tangent	
6,271.57	5,858.92	1,649.34	381.59	Begin 10°/100' build/turn	
7,102.17	6,308.00	1,897.36	941.99	Begin 90.00° lateral	
11,594.03	6,308.00	2,055.00	5,431.08	PBHL/TD 11594.03 MD/6308.00 TVD	