



CARRIZO

CARRIZO OIL & GAS, INC.

Field: Niobrara CONZ'83

Site: Castor 4-36-9-59 Pad

Well: 4-36-9-59

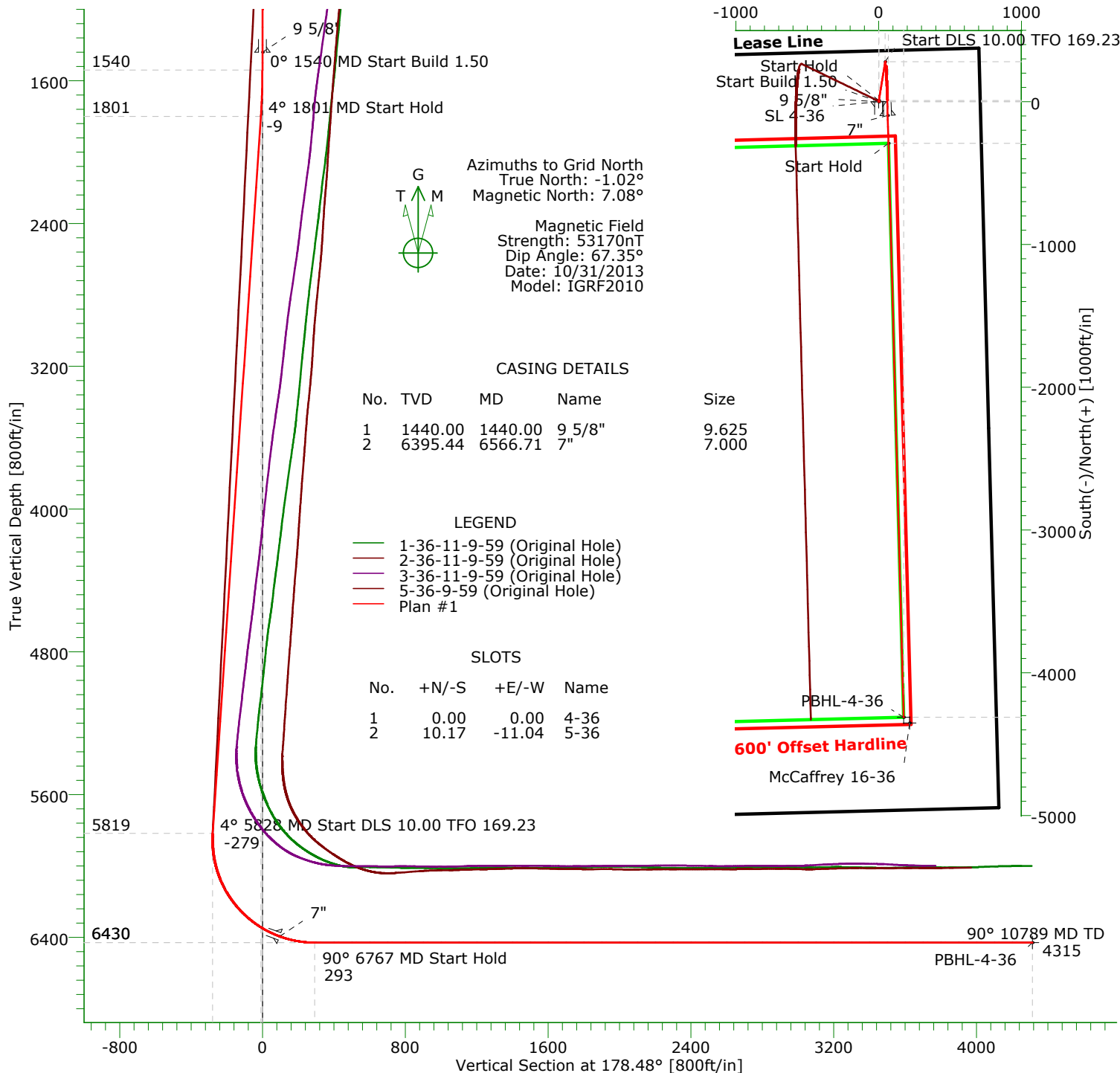
Wellpath: Original Hole

Plan: Plan #1



Precision

Directional Services



TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
McCaffrey 16-36	-100.00	-4350.39	216.20	1502332.03	3438492.29	40°42'05.585N103°55'06.550W		Point
SL 4-36	0.00	0.00	0.00	1506682.42	3438276.09	40°42'48.603N103°55'08.350W		Point
PBHL-4-36	6430.00	-4311.42	175.13	1502371.00	3438451.22	40°42'05.977N103°55'07.074W		Point

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1540.00	0.00	0.00	1540.00	0.00	0.00	0.00	0.00	0.00	
3	1801.08	3.92	9.23	1800.88	8.80	1.43	1.50	0.00	-8.76	
4	5828.25	3.92	9.23	5818.65	280.29	45.53	0.00	0.00	-278.98	
5	6766.73	90.00	178.48	6430.00	-290.97	68.49	10.00	169.23	292.68	
6	10788.59	90.00	178.48	6430.00	-4311.42	175.13	0.00	0.00	4314.55	PBHL-4-36

Plan: Plan #1 (4-36-9-59/Original Hole)

Created By: Shane Nelson

Date: 09/09/2013

PRECISION DIRECTIONAL SERVICES, INC.

713.435.6250

Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC.		Date: 09/09/2013	Time: 14:31:50	Page: 1
Field: Niobrara CONZ'83		Co-ordinate(NE) Reference: Well: 4-36-9-59, Grid North		
Site: Castor 4-36-9-59 Pad		Vertical (TVD) Reference: 4890'PE+17'KB 4907.0		
Well: 4-36-9-59		Section (VS) Reference: Well (0.00N,0.00E,178.48Azi)		
Wellpath: Original Hole		Plan: Plan #1		

Field: Niobrara CONZ'83				
Map System: US State Plane Coordinate System 1983		Map Zone: Colorado, Northern Zone		
Geo Datum: GRS 1980		Coordinate System: Well Centre		
Sys Datum: Mean Sea Level		Geomagnetic Model: IGRF2010		

Site: Castor 4-36-9-59 Pad Weld County, CO renamed 9-9-13				
Site Position:	Northing: 1506682.42 ft	Latitude: 40 42 48.603 N		
From: Map	Easting: 3438276.09 ft	Longitude: 103 55 8.350 W		
Position Uncertainty: 0.00 ft		North Reference: Grid		
Ground Level: 4890.00 ft		Grid Convergence: 1.02 deg		

Well: 4-36-9-59		Slot Name: 4-36		
Well Position: +N/-S 0.00 ft	Northing: 1506682.42 ft	Latitude: 40 42 48.603 N		
+E/-W 0.00 ft	Easting : 3438276.09 ft	Longitude: 103 55 8.350 W		
Position Uncertainty: 0.00 ft				

Wellpath: Original Hole		Drilled From: Surface	
Current Datum: 4890'PE+17'KB	Height 4907.00 ft	Tie-on Depth: 0.00 ft	
Magnetic Data: 10/31/2013		Above System Datum: Mean Sea Level	
Field Strength: 53170 nT		Declination: 8.11 deg	
Vertical Section: Depth From (TVD)	+N/-S	Mag Dip Angle: 67.35 deg	
ft	ft	+E/-W	Direction
		ft	deg
0.00	0.00	0.00	178.48

Plan: Plan #1		Date Composed: 09/09/2013
Principal: No		Version: 1
		Tied-to: From Surface

Plan Section Information										
MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1540.00	0.00	0.00	1540.00	0.00	0.00	0.00	0.00	0.00	0.00	
1801.08	3.92	9.23	1800.88	8.80	1.43	1.50	1.50	0.00	0.00	
5828.25	3.92	9.23	5818.65	280.29	45.53	0.00	0.00	0.00	0.00	
6766.73	90.00	178.48	6430.00	-290.97	68.49	10.00	9.17	18.04	169.23	
10788.59	90.00	178.48	6430.00	-4311.42	175.13	0.00	0.00	0.00	0.00	PBHL-4-36

Survey										
MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
1440.00	0.00	0.00	1440.00	0.00	0.00	0.00	0.00	0.00	0.00	9 5/8"
1540.00	0.00	0.00	1540.00	0.00	0.00	0.00	0.00	0.00	0.00	
1640.00	1.50	9.23	1639.99	1.29	0.21	-1.29	1.50	1.50	0.00	
1740.00	3.00	9.23	1739.91	5.17	0.84	-5.14	1.50	1.50	0.00	
1801.08	3.92	9.23	1800.88	8.80	1.43	-8.76	1.50	1.50	0.00	
1840.00	3.92	9.23	1839.71	11.43	1.86	-11.37	0.00	0.00	0.00	
1940.00	3.92	9.23	1939.47	18.17	2.95	-18.08	0.00	0.00	0.00	
2040.00	3.92	9.23	2039.24	24.91	4.05	-24.79	0.00	0.00	0.00	
2140.00	3.92	9.23	2139.01	31.65	5.14	-31.50	0.00	0.00	0.00	
2240.00	3.92	9.23	2238.77	38.39	6.24	-38.21	0.00	0.00	0.00	
2340.00	3.92	9.23	2338.54	45.13	7.33	-44.92	0.00	0.00	0.00	
2440.00	3.92	9.23	2438.30	51.88	8.43	-51.63	0.00	0.00	0.00	
2540.00	3.92	9.23	2538.07	58.62	9.52	-58.34	0.00	0.00	0.00	
2640.00	3.92	9.23	2637.84	65.36	10.62	-65.05	0.00	0.00	0.00	
2740.00	3.92	9.23	2737.60	72.10	11.71	-71.76	0.00	0.00	0.00	

Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC.
Field: Niobrara CONZ'83
Site: Castor 4-36-9-59 Pad
Well: 4-36-9-59
Wellpath: Original Hole

Date: 09/09/2013
Co-ordinate(NE) Reference: Well: 4-36-9-59, Grid North
Vertical (TVD) Reference: 4890'PE+17'KB 4907.0
Section (VS) Reference: Well (0.00N,0.00E,178.48Azi)
Plan: Plan #1

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Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
2840.00	3.92	9.23	2837.37	78.84	12.81	-78.47	0.00	0.00	0.00	
2940.00	3.92	9.23	2937.14	85.58	13.90	-85.18	0.00	0.00	0.00	
3040.00	3.92	9.23	3036.90	92.32	15.00	-91.89	0.00	0.00	0.00	
3140.00	3.92	9.23	3136.67	99.06	16.09	-98.60	0.00	0.00	0.00	
3240.00	3.92	9.23	3236.44	105.81	17.19	-105.31	0.00	0.00	0.00	
3340.00	3.92	9.23	3336.20	112.55	18.28	-112.02	0.00	0.00	0.00	
3440.00	3.92	9.23	3435.97	119.29	19.38	-118.73	0.00	0.00	0.00	
3540.00	3.92	9.23	3535.74	126.03	20.47	-125.44	0.00	0.00	0.00	
3640.00	3.92	9.23	3635.50	132.77	21.57	-132.15	0.00	0.00	0.00	
3740.00	3.92	9.23	3735.27	139.51	22.66	-138.86	0.00	0.00	0.00	
3840.00	3.92	9.23	3835.04	146.25	23.76	-145.57	0.00	0.00	0.00	
3940.00	3.92	9.23	3934.80	153.00	24.85	-152.28	0.00	0.00	0.00	
4040.00	3.92	9.23	4034.57	159.74	25.95	-158.99	0.00	0.00	0.00	
4140.00	3.92	9.23	4134.34	166.48	27.04	-165.70	0.00	0.00	0.00	
4240.00	3.92	9.23	4234.10	173.22	28.14	-172.41	0.00	0.00	0.00	
4340.00	3.92	9.23	4333.87	179.96	29.23	-179.12	0.00	0.00	0.00	
4440.00	3.92	9.23	4433.63	186.70	30.33	-185.83	0.00	0.00	0.00	
4540.00	3.92	9.23	4533.40	193.44	31.42	-192.54	0.00	0.00	0.00	
4640.00	3.92	9.23	4633.17	200.18	32.52	-199.25	0.00	0.00	0.00	
4740.00	3.92	9.23	4732.93	206.93	33.61	-205.96	0.00	0.00	0.00	
4840.00	3.92	9.23	4832.70	213.67	34.71	-212.67	0.00	0.00	0.00	
4940.00	3.92	9.23	4932.47	220.41	35.80	-219.38	0.00	0.00	0.00	
5040.00	3.92	9.23	5032.23	227.15	36.90	-226.09	0.00	0.00	0.00	
5140.00	3.92	9.23	5132.00	233.89	37.99	-232.80	0.00	0.00	0.00	
5240.00	3.92	9.23	5231.77	240.63	39.09	-239.51	0.00	0.00	0.00	
5340.00	3.92	9.23	5331.53	247.37	40.18	-246.22	0.00	0.00	0.00	
5440.00	3.92	9.23	5431.30	254.12	41.28	-252.93	0.00	0.00	0.00	
5540.00	3.92	9.23	5531.07	260.86	42.37	-259.64	0.00	0.00	0.00	
5640.00	3.92	9.23	5630.83	267.60	43.47	-266.35	0.00	0.00	0.00	
5740.00	3.92	9.23	5730.60	274.34	44.56	-273.06	0.00	0.00	0.00	
5828.25	3.92	9.23	5818.65	280.29	45.53	-278.98	0.00	0.00	0.00	
5840.00	2.77	13.77	5830.37	280.96	45.66	-279.65	10.00	-9.75	38.70	
5940.00	7.36	172.81	5930.16	276.94	47.04	-275.59	10.00	4.59	159.04	
6040.00	17.34	176.14	6027.72	255.66	48.85	-254.27	10.00	9.98	3.33	
6140.00	27.34	177.07	6120.10	217.76	51.04	-216.33	10.00	9.99	0.93	
6240.00	37.33	177.52	6204.48	164.40	53.53	-162.92	10.00	10.00	0.46	
6340.00	47.33	177.81	6278.31	97.20	56.26	-95.67	10.00	10.00	0.28	
6440.00	57.33	178.01	6339.35	18.20	59.13	-16.62	10.00	10.00	0.21	
6540.00	67.33	178.18	6385.73	-70.21	62.07	71.83	10.00	10.00	0.16	
6566.71	70.00	178.21	6395.44	-95.07	62.85	96.70	10.00	10.00	0.15	7"
6640.00	77.33	178.32	6416.04	-165.32	64.98	166.99	10.00	10.00	0.14	
6740.00	87.33	178.45	6429.38	-264.26	67.77	265.97	10.00	10.00	0.13	
6766.73	90.00	178.48	6430.00	-290.97	68.49	292.68	10.00	10.00	0.13	
6840.00	90.00	178.48	6430.00	-364.22	70.43	365.96	0.00	0.00	0.00	
6940.00	90.00	178.48	6430.00	-464.18	73.08	465.96	0.00	0.00	0.00	
7040.00	90.00	178.48	6430.00	-564.15	75.74	565.96	0.00	0.00	0.00	
7140.00	90.00	178.48	6430.00	-664.11	78.39	665.96	0.00	0.00	0.00	
7240.00	90.00	178.48	6430.00	-764.08	81.04	765.96	0.00	0.00	0.00	
7340.00	90.00	178.48	6430.00	-864.04	83.69	865.96	0.00	0.00	0.00	
7440.00	90.00	178.48	6430.00	-964.01	86.34	965.96	0.00	0.00	0.00	
7540.00	90.00	178.48	6430.00	-1063.97	88.99	1065.96	0.00	0.00	0.00	
7640.00	90.00	178.48	6430.00	-1163.94	91.64	1165.96	0.00	0.00	0.00	
7740.00	90.00	178.48	6430.00	-1263.90	94.30	1265.96	0.00	0.00	0.00	
7840.00	90.00	178.48	6430.00	-1363.87	96.95	1365.96	0.00	0.00	0.00	

Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC.
Field: Niobrara CONZ'83
Site: Castor 4-36-9-59 Pad
Well: 4-36-9-59
Wellpath: Original Hole

Date: 09/09/2013
Co-ordinate(NE) Reference: Well: 4-36-9-59, Grid North
Vertical (TVD) Reference: 4890'PE+17'KB 4907.0
Section (VS) Reference: Well (0.00N,0.00E,178.48Azi)
Plan: Plan #1

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Survey

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
7940.00	90.00	178.48	6430.00	-1463.83	99.60	1465.96	0.00	0.00	0.00	
8040.00	90.00	178.48	6430.00	-1563.79	102.25	1565.96	0.00	0.00	0.00	
8140.00	90.00	178.48	6430.00	-1663.76	104.90	1665.96	0.00	0.00	0.00	
8240.00	90.00	178.48	6430.00	-1763.72	107.55	1765.96	0.00	0.00	0.00	
8340.00	90.00	178.48	6430.00	-1863.69	110.21	1865.96	0.00	0.00	0.00	
8440.00	90.00	178.48	6430.00	-1963.65	112.86	1965.96	0.00	0.00	0.00	
8540.00	90.00	178.48	6430.00	-2063.62	115.51	2065.96	0.00	0.00	0.00	
8640.00	90.00	178.48	6430.00	-2163.58	118.16	2165.96	0.00	0.00	0.00	
8740.00	90.00	178.48	6430.00	-2263.55	120.81	2265.96	0.00	0.00	0.00	
8840.00	90.00	178.48	6430.00	-2363.51	123.46	2365.96	0.00	0.00	0.00	
8940.00	90.00	178.48	6430.00	-2463.48	126.11	2465.96	0.00	0.00	0.00	
9040.00	90.00	178.48	6430.00	-2563.44	128.77	2565.96	0.00	0.00	0.00	
9140.00	90.00	178.48	6430.00	-2663.41	131.42	2665.96	0.00	0.00	0.00	
9240.00	90.00	178.48	6430.00	-2763.37	134.07	2765.96	0.00	0.00	0.00	
9340.00	90.00	178.48	6430.00	-2863.34	136.72	2865.96	0.00	0.00	0.00	
9440.00	90.00	178.48	6430.00	-2963.30	139.37	2965.96	0.00	0.00	0.00	
9540.00	90.00	178.48	6430.00	-3063.27	142.02	3065.96	0.00	0.00	0.00	
9640.00	90.00	178.48	6430.00	-3163.23	144.68	3165.96	0.00	0.00	0.00	
9740.00	90.00	178.48	6430.00	-3263.20	147.33	3265.96	0.00	0.00	0.00	
9840.00	90.00	178.48	6430.00	-3363.16	149.98	3365.96	0.00	0.00	0.00	
9940.00	90.00	178.48	6430.00	-3463.13	152.63	3465.96	0.00	0.00	0.00	
10040.00	90.00	178.48	6430.00	-3563.09	155.28	3565.96	0.00	0.00	0.00	
10140.00	90.00	178.48	6430.00	-3663.06	157.93	3665.96	0.00	0.00	0.00	
10240.00	90.00	178.48	6430.00	-3763.02	160.58	3765.96	0.00	0.00	0.00	
10340.00	90.00	178.48	6430.00	-3862.99	163.24	3865.96	0.00	0.00	0.00	
10440.00	90.00	178.48	6430.00	-3962.95	165.89	3965.96	0.00	0.00	0.00	
10540.00	90.00	178.48	6430.00	-4062.92	168.54	4065.96	0.00	0.00	0.00	
10640.00	90.00	178.48	6430.00	-4162.88	171.19	4165.96	0.00	0.00	0.00	
10740.00	90.00	178.48	6430.00	-4262.85	173.84	4265.96	0.00	0.00	0.00	
10788.59	90.00	178.48	6430.00	-4311.42	175.13	4314.55	0.00	0.00	0.00	PBHL-4-36

Targets

Name	Description Dip.	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<--- Latitude --->			<--- Longitude --->		
McCaffrey 16-36			-100.00	-4350.39	216.20	1502332.03	3438492.29	40	42	5.585 N	103	55	6.550 W
SL 4-36			0.00	0.00	0.00	1506682.42	3438276.09	40	42	48.603 N	103	55	8.350 W
PBHL-4-36			6430.00	-4311.42	175.13	1502371.00	3438451.22	40	42	5.977 N	103	55	7.074 W

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
1440.00	1440.00	9.625	12.250	9 5/8"
6566.71	6395.44	7.000	8.500	7"