

Project: COLORADO NORTHERN ZONE - 83  
 Site: WELD\_STREAR 16-10 PAD  
 Well: STREAR 36-10  
 Wellbore: OH  
 Section: SECTION 36 T10N R67W  
 SHL:  
 Design: STREAR 36-10(wp01)  
 Latitude: 40° 8' 49.023 N  
 Longitude: 104° 52' 10.628 W  
 GL: 4961.00  
 KB: GL 4961' & KB 15' @ 4976.00ft (ASSUMED)

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4301.00	4583.38	PARKMAN
4458.00	4754.09	SUSSEX
7269.00	7656.15	NIOBRARA
7536.00	7923.15	CODELL
7609.00	7996.15	GREENHORN
7961.00	8348.15	J-SAND



Azimuths to Grid North  
 True North: -0.41°  
 Magnetic North: 8.52°

Magnetic Field  
 Strength: 53012.0snT  
 Dip Angle: 66.84°  
 Date: 03/16/2011  
 Model: IGRF2010

#### WELL DETAILS: STREAR 36-10

+N/-S	+E/-W	Northing	Easting	Ground Level: 4961.00	Latitude	Longitude	Slot
0.00	0.00	1297004.04	3176221.47		40° 8' 49.023 N	104° 52' 10.628 W	

#### CASING DETAILS

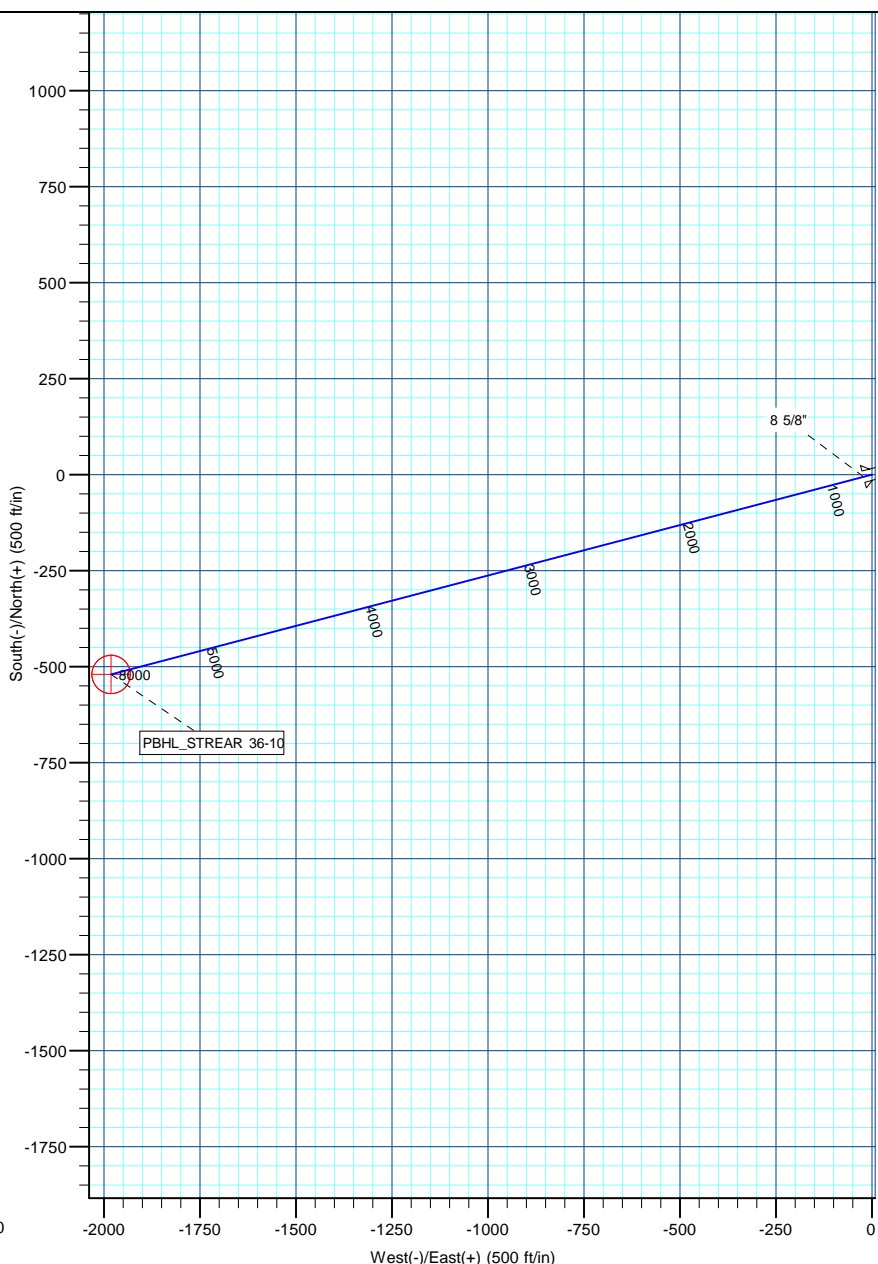
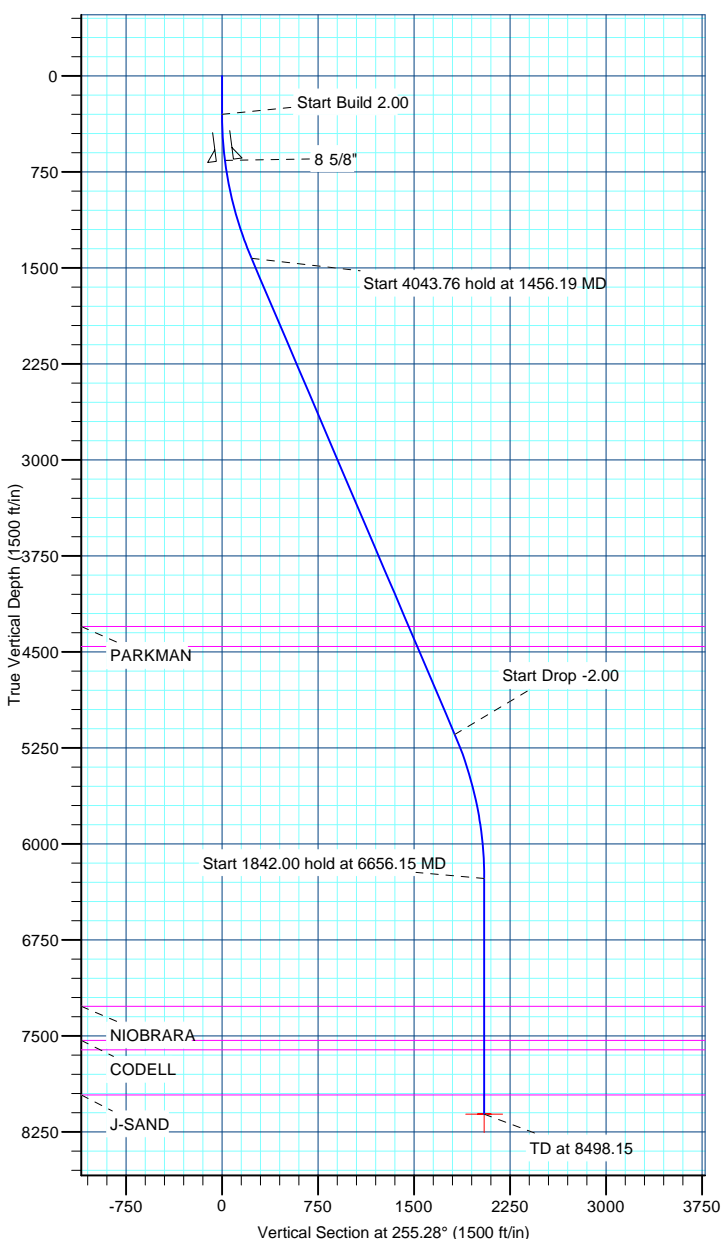
TVD	MD	Name	Size
660.00	660.95	8 5/8"	8.625

#### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL_STREAR 36-10	8111.00	-520.36	-1981.20	1296483.69	3174240.28	40° 8' 44.020 N	104° 52' 36.188 W	Circle (Radius: 50.00)

#### SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.00	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
1456.19	23.12	255.28	1425.06	-58.47	-222.61	2.00	255.28	230.16
5499.96	23.12	255.28	5143.94	-461.89	-1758.59	0.00	0.00	1818.23
6656.15	0.00	0.00	6269.00	-520.36	-1981.20	2.00	180.00	2048.40
8498.15	0.00	0.00	8111.00	-520.36	-1981.20	0.00	0.00	2048.40



# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_STREAR 16-10 PAD**

**STREAR 36-10**

**OH**

**Plan: STREAR 36-10(wp01)**

## **Standard Planning Report**

**16 March, 2011**

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well STREAR 36-10
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4961' & KB 15' @ 4976.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4961' & KB 15' @ 4976.00ft (ASSUMED)
<b>Site:</b>	WELD_STREAR 16-10 PAD	<b>North Reference:</b>	Grid
<b>Well:</b>	STREAR 36-10	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	STREAR 36-10(wp01)		

<b>Project</b>	COLORADO NORTHERN ZONE - 83, KERR MCGEE OIL & GAS ONSHORE LP		
<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		

Site		WELD_STREAR 16-10 PAD, SECTION 36 T10N R67W			
Site Position:		Northing:	1,296,996.08 usft	Latitude:	40° 8' 48.944 N
From:	Lat/Long	Easting:	3,176,227.40 usft	Longitude:	104° 52' 10.553 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.41 °

Well	STREAR 36-10					
Well Position	+N/-S	7.96 ft	Northing:	1,297,004.04 usft	Latitude:	40° 8' 49.023 N
	+E/-W	-5.93 ft	Easting:	3,176,221.47 usft	Longitude:	104° 52' 10.628 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,961.00 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	03/16/2011	8.93	66.84	53,012

<b>Design</b>	STREAR 36-10(wp01)			
<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) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	255.28

<b>Plan Sections</b>										
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	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,456.19	23.12	255.28	1,425.06	-58.47	-222.61	2.00	2.00	0.00	255.28	
5,499.96	23.12	255.28	5,143.94	-461.89	-1,758.59	0.00	0.00	0.00	0.00	
6,656.15	0.00	0.00	6,269.00	-520.36	-1,981.20	2.00	-2.00	0.00	180.00	
8,498.15	0.00	0.00	8,111.00	-520.36	-1,981.20	0.00	0.00	0.00	0.00	PBHL_STREAR 36-10

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<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4961' & KB 15' @ 4976.00ft (ASSUMED)
<b>Site:</b>	WELD_STREAR 16-10 PAD	<b>North Reference:</b>	Grid
<b>Well:</b>	STREAR 36-10	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	STREAR 36-10(wp01)		

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
<b>Start Build 2.00</b>									
400.00	2.00	255.28	399.98	-0.44	-1.69	1.75	2.00	2.00	0.00
500.00	4.00	255.28	499.84	-1.77	-6.75	6.98	2.00	2.00	0.00
600.00	6.00	255.28	599.45	-3.99	-15.18	15.69	2.00	2.00	0.00
660.95	7.22	255.28	660.00	-5.77	-21.96	22.71	2.00	2.00	0.00
<b>8 5/8"</b>									
700.00	8.00	255.28	698.70	-7.08	-26.97	27.88	2.00	2.00	0.00
800.00	10.00	255.28	797.47	-11.06	-42.09	43.52	2.00	2.00	0.00
900.00	12.00	255.28	895.62	-15.90	-60.55	62.60	2.00	2.00	0.00
1,000.00	14.00	255.28	993.06	-21.62	-82.30	85.10	2.00	2.00	0.00
1,100.00	16.00	255.28	1,089.64	-28.19	-107.34	110.98	2.00	2.00	0.00
1,200.00	18.00	255.28	1,185.27	-35.62	-135.61	140.21	2.00	2.00	0.00
1,300.00	20.00	255.28	1,279.82	-43.89	-167.10	172.77	2.00	2.00	0.00
1,400.00	22.00	255.28	1,373.17	-52.99	-201.76	208.60	2.00	2.00	0.00
1,456.19	23.12	255.28	1,425.06	-58.47	-222.61	230.16	2.00	2.00	0.00
<b>Start 4043.76 hold at 1456.19 MD</b>									
1,500.00	23.12	255.28	1,465.35	-62.84	-239.25	247.37	0.00	0.00	0.00
1,600.00	23.12	255.28	1,557.31	-72.82	-277.24	286.64	0.00	0.00	0.00
1,700.00	23.12	255.28	1,649.28	-82.79	-315.22	325.91	0.00	0.00	0.00
1,800.00	23.12	255.28	1,741.25	-92.77	-353.20	365.18	0.00	0.00	0.00
1,900.00	23.12	255.28	1,833.21	-102.74	-391.19	404.45	0.00	0.00	0.00
2,000.00	23.12	255.28	1,925.18	-112.72	-429.17	443.73	0.00	0.00	0.00
2,100.00	23.12	255.28	2,017.14	-122.70	-467.15	483.00	0.00	0.00	0.00
2,200.00	23.12	255.28	2,109.11	-132.67	-505.14	522.27	0.00	0.00	0.00
2,300.00	23.12	255.28	2,201.07	-142.65	-543.12	561.54	0.00	0.00	0.00
2,400.00	23.12	255.28	2,293.04	-152.63	-581.11	600.82	0.00	0.00	0.00
2,500.00	23.12	255.28	2,385.01	-162.60	-619.09	640.09	0.00	0.00	0.00
2,600.00	23.12	255.28	2,476.97	-172.58	-657.07	679.36	0.00	0.00	0.00
2,700.00	23.12	255.28	2,568.94	-182.55	-695.06	718.63	0.00	0.00	0.00
2,800.00	23.12	255.28	2,660.90	-192.53	-733.04	757.90	0.00	0.00	0.00
2,900.00	23.12	255.28	2,752.87	-202.51	-771.03	797.18	0.00	0.00	0.00
3,000.00	23.12	255.28	2,844.83	-212.48	-809.01	836.45	0.00	0.00	0.00
3,100.00	23.12	255.28	2,936.80	-222.46	-846.99	875.72	0.00	0.00	0.00
3,200.00	23.12	255.28	3,028.77	-232.44	-884.98	914.99	0.00	0.00	0.00
3,300.00	23.12	255.28	3,120.73	-242.41	-922.96	954.26	0.00	0.00	0.00
3,400.00	23.12	255.28	3,212.70	-252.39	-960.94	993.54	0.00	0.00	0.00
3,500.00	23.12	255.28	3,304.66	-262.37	-998.93	1,032.81	0.00	0.00	0.00
3,600.00	23.12	255.28	3,396.63	-272.34	-1,036.91	1,072.08	0.00	0.00	0.00
3,700.00	23.12	255.28	3,488.60	-282.32	-1,074.90	1,111.35	0.00	0.00	0.00
3,800.00	23.12	255.28	3,580.56	-292.29	-1,112.88	1,150.62	0.00	0.00	0.00
3,900.00	23.12	255.28	3,672.53	-302.27	-1,150.86	1,189.90	0.00	0.00	0.00
4,000.00	23.12	255.28	3,764.49	-312.25	-1,188.85	1,229.17	0.00	0.00	0.00
4,100.00	23.12	255.28	3,856.46	-322.22	-1,226.83	1,268.44	0.00	0.00	0.00
4,200.00	23.12	255.28	3,948.42	-332.20	-1,264.81	1,307.71	0.00	0.00	0.00
4,300.00	23.12	255.28	4,040.39	-342.18	-1,302.80	1,346.98	0.00	0.00	0.00
4,400.00	23.12	255.28	4,132.36	-352.15	-1,340.78	1,386.26	0.00	0.00	0.00
4,500.00	23.12	255.28	4,224.32	-362.13	-1,378.77	1,425.53	0.00	0.00	0.00
4,583.38	23.12	255.28	4,301.00	-370.45	-1,410.44	1,458.27	0.00	0.00	0.00
<b>PARKMAN</b>									
4,600.00	23.12	255.28	4,316.29	-372.10	-1,416.75	1,464.80	0.00	0.00	0.00

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<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4961' & KB 15' @ 4976.00ft (ASSUMED)
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<b>Well:</b>	STREAR 36-10	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	STREAR 36-10(wp01)		

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)
4,700.00	23.12	255.28	4,408.25	-382.08	-1,454.73	1,504.07	0.00	0.00	0.00
4,754.09	23.12	255.28	4,458.00	-387.48	-1,475.28	1,525.32	0.00	0.00	0.00
<b>SUSSEX</b>									
4,800.00	23.12	255.28	4,500.22	-392.06	-1,492.72	1,543.34	0.00	0.00	0.00
4,900.00	23.12	255.28	4,592.18	-402.03	-1,530.70	1,582.62	0.00	0.00	0.00
5,000.00	23.12	255.28	4,684.15	-412.01	-1,568.68	1,621.89	0.00	0.00	0.00
5,100.00	23.12	255.28	4,776.12	-421.99	-1,606.67	1,661.16	0.00	0.00	0.00
5,200.00	23.12	255.28	4,868.08	-431.96	-1,644.65	1,700.43	0.00	0.00	0.00
5,300.00	23.12	255.28	4,960.05	-441.94	-1,682.64	1,739.71	0.00	0.00	0.00
5,400.00	23.12	255.28	5,052.01	-451.92	-1,720.62	1,778.98	0.00	0.00	0.00
5,499.96	23.12	255.28	5,143.94	-461.89	-1,758.59	1,818.23	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
5,500.00	23.12	255.28	5,143.98	-461.89	-1,758.60	1,818.25	0.00	0.00	0.00
5,600.00	21.12	255.28	5,236.61	-471.46	-1,795.03	1,855.91	2.00	-2.00	0.00
5,700.00	19.12	255.28	5,330.50	-480.20	-1,828.30	1,890.31	2.00	-2.00	0.00
5,800.00	17.12	255.28	5,425.54	-488.10	-1,858.38	1,921.41	2.00	-2.00	0.00
5,900.00	15.12	255.28	5,521.60	-495.15	-1,885.24	1,949.18	2.00	-2.00	0.00
6,000.00	13.12	255.28	5,618.57	-501.35	-1,908.84	1,973.58	2.00	-2.00	0.00
6,100.00	11.12	255.28	5,716.34	-506.69	-1,929.15	1,994.58	2.00	-2.00	0.00
6,200.00	9.12	255.28	5,814.77	-511.15	-1,946.15	2,012.16	2.00	-2.00	0.00
6,300.00	7.12	255.28	5,913.77	-514.74	-1,959.82	2,026.29	2.00	-2.00	0.00
6,400.00	5.12	255.28	6,013.19	-517.45	-1,970.13	2,036.95	2.00	-2.00	0.00
6,500.00	3.12	255.28	6,112.93	-519.27	-1,977.08	2,044.14	2.00	-2.00	0.00
6,600.00	1.12	255.28	6,212.85	-520.22	-1,980.67	2,047.84	2.00	-2.00	0.00
6,656.15	0.00	0.00	6,269.00	-520.36	-1,981.20	2,048.40	2.00	-2.00	0.00
<b>Start 1842.00 hold at 6656.15 MD</b>									
6,700.00	0.00	0.00	6,312.85	-520.36	-1,981.20	2,048.40	0.00	0.00	0.00
6,800.00	0.00	0.00	6,412.85	-520.36	-1,981.20	2,048.40	0.00	0.00	0.00
6,900.00	0.00	0.00	6,512.85	-520.36	-1,981.20	2,048.40	0.00	0.00	0.00
7,000.00	0.00	0.00	6,612.85	-520.36	-1,981.20	2,048.40	0.00	0.00	0.00
7,100.00	0.00	0.00	6,712.85	-520.36	-1,981.20	2,048.40	0.00	0.00	0.00
7,200.00	0.00	0.00	6,812.85	-520.36	-1,981.20	2,048.40	0.00	0.00	0.00
7,300.00	0.00	0.00	6,912.85	-520.36	-1,981.20	2,048.40	0.00	0.00	0.00
7,400.00	0.00	0.00	7,012.85	-520.36	-1,981.20	2,048.40	0.00	0.00	0.00
7,500.00	0.00	0.00	7,112.85	-520.36	-1,981.20	2,048.40	0.00	0.00	0.00
7,600.00	0.00	0.00	7,212.85	-520.36	-1,981.20	2,048.40	0.00	0.00	0.00
7,656.15	0.00	0.00	7,269.00	-520.36	-1,981.20	2,048.40	0.00	0.00	0.00
<b>NIOBRARA</b>									
7,700.00	0.00	0.00	7,312.85	-520.36	-1,981.20	2,048.40	0.00	0.00	0.00
7,800.00	0.00	0.00	7,412.85	-520.36	-1,981.20	2,048.40	0.00	0.00	0.00
7,900.00	0.00	0.00	7,512.85	-520.36	-1,981.20	2,048.40	0.00	0.00	0.00
7,923.15	0.00	0.00	7,536.00	-520.36	-1,981.20	2,048.40	0.00	0.00	0.00
<b>CODELL</b>									
7,996.15	0.00	0.00	7,609.00	-520.36	-1,981.20	2,048.40	0.00	0.00	0.00
<b>GREENHORN</b>									
8,000.00	0.00	0.00	7,612.85	-520.36	-1,981.20	2,048.40	0.00	0.00	0.00
8,100.00	0.00	0.00	7,712.85	-520.36	-1,981.20	2,048.40	0.00	0.00	0.00
8,200.00	0.00	0.00	7,812.85	-520.36	-1,981.20	2,048.40	0.00	0.00	0.00
8,300.00	0.00	0.00	7,912.85	-520.36	-1,981.20	2,048.40	0.00	0.00	0.00
8,348.15	0.00	0.00	7,961.00	-520.36	-1,981.20	2,048.40	0.00	0.00	0.00
<b>J-SAND</b>									
8,400.00	0.00	0.00	8,012.85	-520.36	-1,981.20	2,048.40	0.00	0.00	0.00
8,498.15	0.00	0.00	8,111.00	-520.36	-1,981.20	2,048.40	0.00	0.00	0.00

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<b>Well:</b>	STREAR 36-10	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	STREAR 36-10(wp01)		

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)
PBHL_STREAR 36-10									

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									
PBHL_STREAR 36-10	0.00	0.00	8,111.00	-520.36	-1,981.20	1,296,483.69	3,174,240.28	40° 8' 44.020 N	104° 52' 36.188 W
- plan hits target center									
- Circle (radius 50.00)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
660.95	660.00	8 5/8"	8.625	11.000	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,583.38	4,301.00	PARKMAN				
4,754.09	4,458.00	SUSSEX				
7,656.15	7,269.00	NIOBRARA				
7,923.15	7,536.00	CODELL				
7,996.15	7,609.00	GREENHORN				
8,348.15	7,961.00	J-SAND				

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
300.00	300.00	0.00	0.00	Start Build 2.00
1,456.19	1,425.06	-58.47	-222.61	Start 4043.76 hold at 1456.19 MD
5,499.96	5,143.94	-461.89	-1,758.59	Start Drop -2.00
6,656.15	6,269.00	-520.36	-1,981.20	Start 1842.00 hold at 6656.15 MD
8,498.15	8,111.00	-520.36	-1,981.20	TD at 8498.15