

Project: COLORADO NORTHERN ZONE - 83  
 Site: WELD\_STREAR 18-10 PAD  
 Well: STREAR 18-10  
 Wellbore: OH  
 Section: SECTION 10 T2N R67W  
 SHL:  
 Design: STREAR 18-10(wp01)  
 Latitude: 40° 9' 19.742 N  
 Longitude: 104° 52' 47.305 W  
 GL: 4942.00  
 KB: GL 4942' & KB 15' @ 4957.00ft (ASSUMED)

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4282.00	4383.44	PARKMAN
4392.00	4493.46	SUSSEX
7235.00	7336.46	NIOBRARA
7492.00	7593.46	CODELL
7575.00	7676.46	GREENHORN



Azimuths to Grid North  
 True North: -0.40°  
 Magnetic North: 8.54°  
 Magnetic Field  
 Strength: 53015.5nT  
 Dip Angle: 66.84°  
 Date: 03/16/2011  
 Model: IGRF2010

#### WELL DETAILS: STREAR 18-10

+N/-S	+E/-W	Northing	Ground Level: Easting	4942.00 Latitude	Longitude	Slot
0.00	0.00	1300092.29	3173351.75	40° 9' 19.742 N	104° 52' 47.305 W	

#### CASING DETAILS

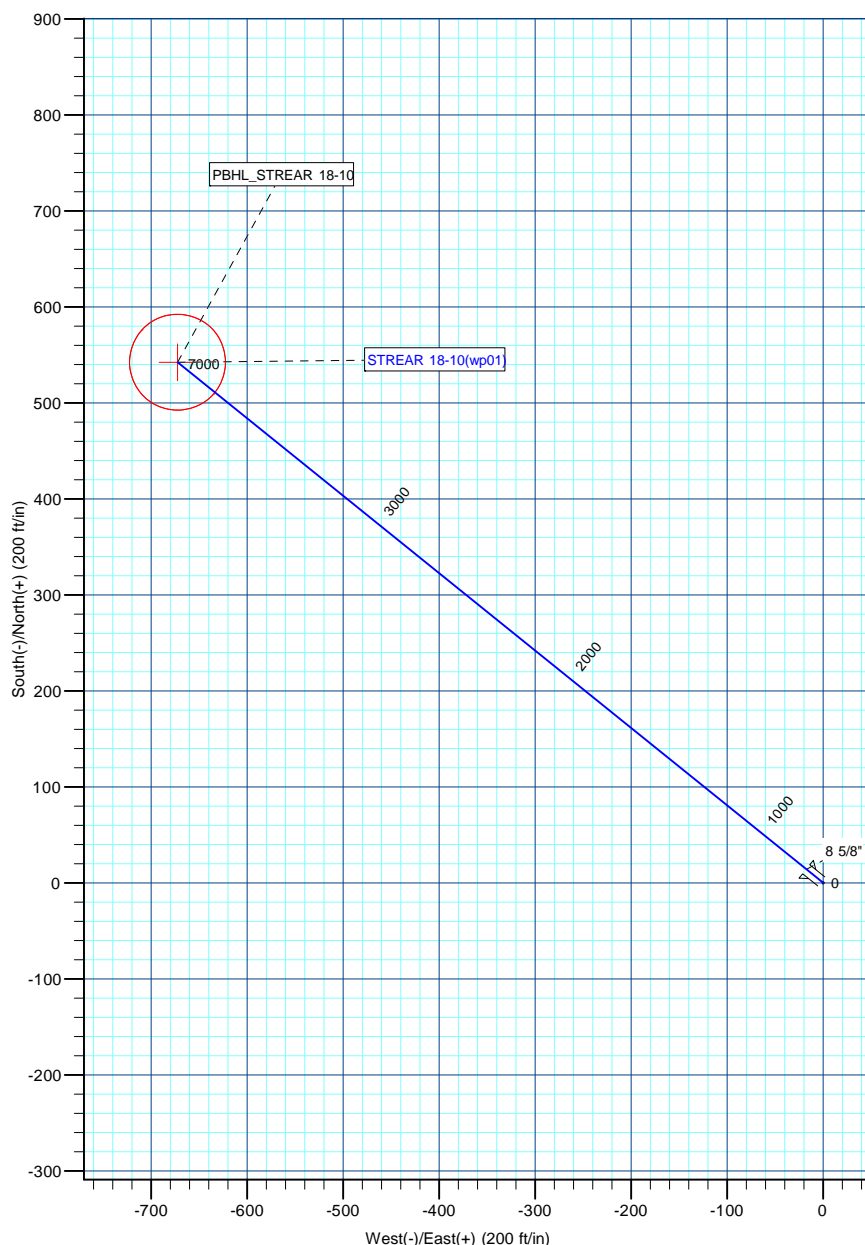
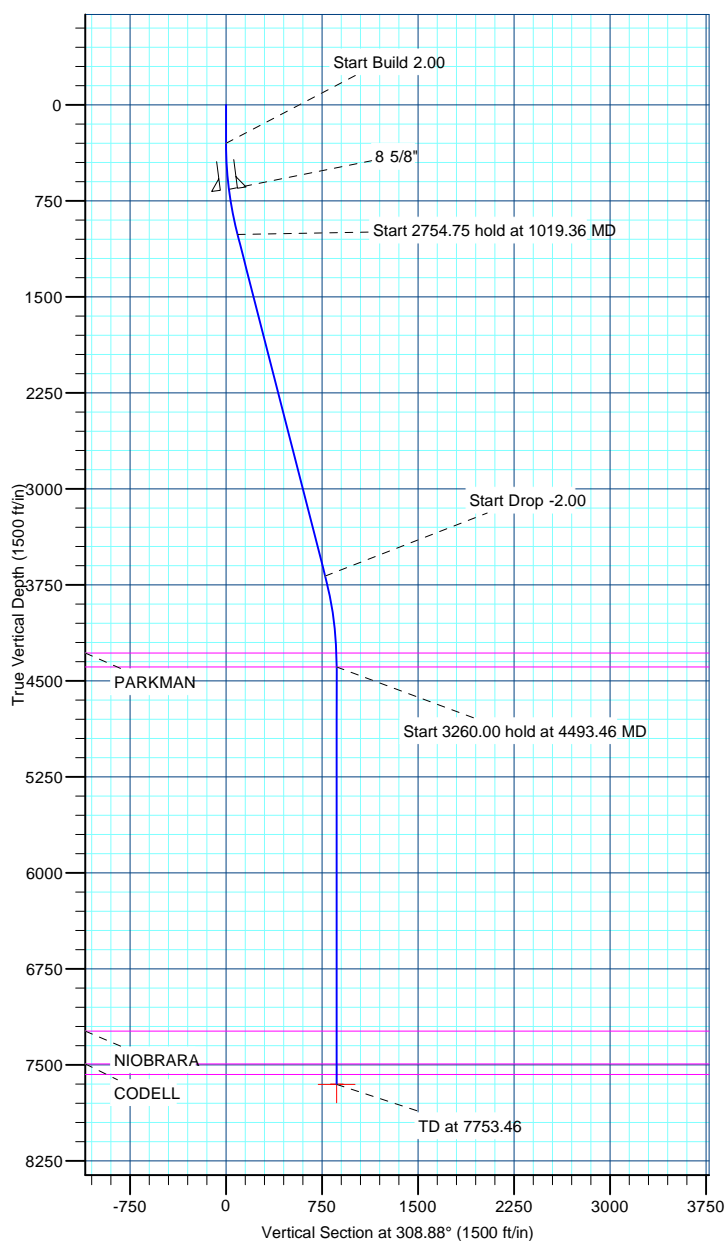
TVD	MD	Name	Size
660.00	660.95	8 5/8"	8.625

#### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL_STREAR 18-10	7652.00	542.48	-672.68	1300634.77	3172679.07	40° 9' 25.150 N	104° 52' 55.920 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
1019.36	14.39	308.88	1011.82	56.40	-69.93	2.00	308.88	89.84
3774.11	14.39	308.88	3680.18	486.08	-602.74	0.00	0.00	774.32
4493.46	0.00	0.00	4392.00	542.48	-672.68	2.00	180.00	864.16
7753.46	0.00	0.00	7652.00	542.48	-672.68	0.00	0.00	864.16



# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_STREAR 18-10 PAD**

**STREAR 18-10**

**OH**

**Plan: STREAR 18-10(wp01)**

## **Standard Planning Report**

**16 March, 2011**

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well STREAR 18-10
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4942' & KB 15' @ 4957.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4942' & KB 15' @ 4957.00ft (ASSUMED)
<b>Site:</b>	WELD_STREAR 18-10 PAD	<b>North Reference:</b>	Grid
<b>Well:</b>	STREAR 18-10	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	STREAR 18-10(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		

<b>Site</b>	WELD_STREAR 18-10 PAD, SECTION 10 T2N R67W			
<b>Site Position:</b>		<b>Northing:</b>	1,300,062.07 usft	<b>Latitude:</b> 40° 9' 19.444 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,173,351.96 usft	<b>Longitude:</b> 104° 52' 47.305 W
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> 0.40 °

<b>Well</b>	STREAR 18-10			
<b>Well Position</b>	<b>+N/-S</b>	30.22 ft	<b>Northing:</b>	1,300,092.29 usft
	<b>+E/-W</b>	-0.21 ft	<b>Easting:</b>	3,173,351.75 usft
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b> 4,942.00 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	8.94	66.84	53,015

<b>Design</b>	STREAR 18-10(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	308.88

<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	
1,019.36	14.39	308.88	1,011.82	56.40	-69.93	2.00	2.00	0.00	308.88	
3,774.11	14.39	308.88	3,680.18	486.08	-602.74	0.00	0.00	0.00	0.00	
4,493.46	0.00	0.00	4,392.00	542.48	-672.68	2.00	-2.00	0.00	180.00	
7,753.46	0.00	0.00	7,652.00	542.48	-672.68	0.00	0.00	0.00	0.00	PBHL_STREAR 18-10

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well STREAR 18-10
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4942' & KB 15' @ 4957.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4942' & KB 15' @ 4957.00ft (ASSUMED)
<b>Site:</b>	WELD_STREAR 18-10 PAD	<b>North Reference:</b>	Grid
<b>Well:</b>	STREAR 18-10	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	STREAR 18-10(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	308.88	399.98	1.10	-1.36	1.75	2.00	2.00	0.00
500.00	4.00	308.88	499.84	4.38	-5.43	6.98	2.00	2.00	0.00
600.00	6.00	308.88	599.45	9.85	-12.22	15.69	2.00	2.00	0.00
660.95	7.22	308.88	660.00	14.26	-17.68	22.71	2.00	2.00	0.00
<b>8 5/8"</b>									
700.00	8.00	308.88	698.70	17.50	-21.70	27.88	2.00	2.00	0.00
800.00	10.00	308.88	797.47	27.32	-33.88	43.52	2.00	2.00	0.00
900.00	12.00	308.88	895.62	39.30	-48.73	62.60	2.00	2.00	0.00
1,000.00	14.00	308.88	993.06	53.42	-66.24	85.10	2.00	2.00	0.00
1,019.36	14.39	308.88	1,011.82	56.40	-69.93	89.84	2.00	2.00	0.00
<b>Start 2754.75 hold at 1019.36 MD</b>									
1,100.00	14.39	308.88	1,089.94	68.98	-85.53	109.88	0.00	0.00	0.00
1,200.00	14.39	308.88	1,186.80	84.58	-104.87	134.73	0.00	0.00	0.00
1,300.00	14.39	308.88	1,283.66	100.17	-124.22	159.57	0.00	0.00	0.00
1,400.00	14.39	308.88	1,380.53	115.77	-143.56	184.42	0.00	0.00	0.00
1,500.00	14.39	308.88	1,477.39	131.37	-162.90	209.27	0.00	0.00	0.00
1,600.00	14.39	308.88	1,574.25	146.97	-182.24	234.12	0.00	0.00	0.00
1,700.00	14.39	308.88	1,671.12	162.57	-201.58	258.96	0.00	0.00	0.00
1,800.00	14.39	308.88	1,767.98	178.16	-220.92	283.81	0.00	0.00	0.00
1,900.00	14.39	308.88	1,864.85	193.76	-240.26	308.66	0.00	0.00	0.00
2,000.00	14.39	308.88	1,961.71	209.36	-259.60	333.51	0.00	0.00	0.00
2,100.00	14.39	308.88	2,058.57	224.96	-278.95	358.35	0.00	0.00	0.00
2,200.00	14.39	308.88	2,155.44	240.55	-298.29	383.20	0.00	0.00	0.00
2,300.00	14.39	308.88	2,252.30	256.15	-317.63	408.05	0.00	0.00	0.00
2,400.00	14.39	308.88	2,349.17	271.75	-336.97	432.89	0.00	0.00	0.00
2,500.00	14.39	308.88	2,446.03	287.35	-356.31	457.74	0.00	0.00	0.00
2,600.00	14.39	308.88	2,542.89	302.95	-375.65	482.59	0.00	0.00	0.00
2,700.00	14.39	308.88	2,639.76	318.54	-394.99	507.44	0.00	0.00	0.00
2,800.00	14.39	308.88	2,736.62	334.14	-414.34	532.28	0.00	0.00	0.00
2,900.00	14.39	308.88	2,833.49	349.74	-433.68	557.13	0.00	0.00	0.00
3,000.00	14.39	308.88	2,930.35	365.34	-453.02	581.98	0.00	0.00	0.00
3,100.00	14.39	308.88	3,027.21	380.94	-472.36	606.82	0.00	0.00	0.00
3,200.00	14.39	308.88	3,124.08	396.53	-491.70	631.67	0.00	0.00	0.00
3,300.00	14.39	308.88	3,220.94	412.13	-511.04	656.52	0.00	0.00	0.00
3,400.00	14.39	308.88	3,317.81	427.73	-530.38	681.37	0.00	0.00	0.00
3,500.00	14.39	308.88	3,414.67	443.33	-549.73	706.21	0.00	0.00	0.00
3,600.00	14.39	308.88	3,511.53	458.93	-569.07	731.06	0.00	0.00	0.00
3,700.00	14.39	308.88	3,608.40	474.52	-588.41	755.91	0.00	0.00	0.00
3,774.11	14.39	308.88	3,680.18	486.08	-602.74	774.32	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
3,800.00	13.87	308.88	3,705.29	490.05	-607.66	780.64	2.00	-2.00	0.00
3,900.00	11.87	308.88	3,802.77	504.03	-625.00	802.91	2.00	-2.00	0.00
4,000.00	9.87	308.88	3,900.97	515.87	-639.68	821.77	2.00	-2.00	0.00
4,100.00	7.87	308.88	3,999.77	525.55	-651.68	837.19	2.00	-2.00	0.00
4,200.00	5.87	308.88	4,099.05	533.05	-660.99	849.15	2.00	-2.00	0.00
4,300.00	3.87	308.88	4,198.68	538.38	-667.59	857.63	2.00	-2.00	0.00
4,383.44	2.20	308.88	4,282.00	541.15	-671.03	862.05	2.00	-2.00	0.00
<b>PARKMAN</b>									
4,400.00	1.87	308.88	4,298.55	541.52	-671.49	862.64	2.00	-2.00	0.00

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well STREAR 18-10
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4942' & KB 15' @ 4957.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4942' & KB 15' @ 4957.00ft (ASSUMED)
<b>Site:</b>	WELD_STREAR 18-10 PAD	<b>North Reference:</b>	Grid
<b>Well:</b>	STREAR 18-10	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	STREAR 18-10(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)
4,493.46	0.00	0.00	4,392.00	542.48	-672.68	864.16	2.00	-2.00	0.00
Start 3260.00 hold at 4493.46 MD - SUSSEX									
4,500.00	0.00	0.00	4,398.54	542.48	-672.68	864.16	0.00	0.00	0.00
4,600.00	0.00	0.00	4,498.54	542.48	-672.68	864.16	0.00	0.00	0.00
4,700.00	0.00	0.00	4,598.54	542.48	-672.68	864.16	0.00	0.00	0.00
4,800.00	0.00	0.00	4,698.54	542.48	-672.68	864.16	0.00	0.00	0.00
4,900.00	0.00	0.00	4,798.54	542.48	-672.68	864.16	0.00	0.00	0.00
5,000.00	0.00	0.00	4,898.54	542.48	-672.68	864.16	0.00	0.00	0.00
5,100.00	0.00	0.00	4,998.54	542.48	-672.68	864.16	0.00	0.00	0.00
5,200.00	0.00	0.00	5,098.54	542.48	-672.68	864.16	0.00	0.00	0.00
5,300.00	0.00	0.00	5,198.54	542.48	-672.68	864.16	0.00	0.00	0.00
5,400.00	0.00	0.00	5,298.54	542.48	-672.68	864.16	0.00	0.00	0.00
5,500.00	0.00	0.00	5,398.54	542.48	-672.68	864.16	0.00	0.00	0.00
5,600.00	0.00	0.00	5,498.54	542.48	-672.68	864.16	0.00	0.00	0.00
5,700.00	0.00	0.00	5,598.54	542.48	-672.68	864.16	0.00	0.00	0.00
5,800.00	0.00	0.00	5,698.54	542.48	-672.68	864.16	0.00	0.00	0.00
5,900.00	0.00	0.00	5,798.54	542.48	-672.68	864.16	0.00	0.00	0.00
6,000.00	0.00	0.00	5,898.54	542.48	-672.68	864.16	0.00	0.00	0.00
6,100.00	0.00	0.00	5,998.54	542.48	-672.68	864.16	0.00	0.00	0.00
6,200.00	0.00	0.00	6,098.54	542.48	-672.68	864.16	0.00	0.00	0.00
6,300.00	0.00	0.00	6,198.54	542.48	-672.68	864.16	0.00	0.00	0.00
6,400.00	0.00	0.00	6,298.54	542.48	-672.68	864.16	0.00	0.00	0.00
6,500.00	0.00	0.00	6,398.54	542.48	-672.68	864.16	0.00	0.00	0.00
6,600.00	0.00	0.00	6,498.54	542.48	-672.68	864.16	0.00	0.00	0.00
6,700.00	0.00	0.00	6,598.54	542.48	-672.68	864.16	0.00	0.00	0.00
6,800.00	0.00	0.00	6,698.54	542.48	-672.68	864.16	0.00	0.00	0.00
6,900.00	0.00	0.00	6,798.54	542.48	-672.68	864.16	0.00	0.00	0.00
7,000.00	0.00	0.00	6,898.54	542.48	-672.68	864.16	0.00	0.00	0.00
7,100.00	0.00	0.00	6,998.54	542.48	-672.68	864.16	0.00	0.00	0.00
7,200.00	0.00	0.00	7,098.54	542.48	-672.68	864.16	0.00	0.00	0.00
7,300.00	0.00	0.00	7,198.54	542.48	-672.68	864.16	0.00	0.00	0.00
7,336.46	0.00	0.00	7,235.00	542.48	-672.68	864.16	0.00	0.00	0.00
NIOBRARA									
7,400.00	0.00	0.00	7,298.54	542.48	-672.68	864.16	0.00	0.00	0.00
7,500.00	0.00	0.00	7,398.54	542.48	-672.68	864.16	0.00	0.00	0.00
7,593.46	0.00	0.00	7,492.00	542.48	-672.68	864.16	0.00	0.00	0.00
CODELL									
7,600.00	0.00	0.00	7,498.54	542.48	-672.68	864.16	0.00	0.00	0.00
7,676.46	0.00	0.00	7,575.00	542.48	-672.68	864.16	0.00	0.00	0.00
GREENHORN									
7,700.00	0.00	0.00	7,598.54	542.48	-672.68	864.16	0.00	0.00	0.00
7,753.46	0.00	0.00	7,652.00	542.48	-672.68	864.16	0.00	0.00	0.00
PBHL_STREAR 18-10									

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well STREAR 18-10
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4942' & KB 15' @ 4957.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4942' & KB 15' @ 4957.00ft (ASSUMED)
<b>Site:</b>	WELD_STREAR 18-10 PAD	<b>North Reference:</b>	Grid
<b>Well:</b>	STREAR 18-10	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	STREAR 18-10(wp01)		

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 18-10	0.00	0.01	7,652.00	542.48	-672.68	1,300,634.77	3,172,679.07	40° 9' 25.150 N	104° 52' 55.920 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 (°)	
4,383.44	4,282.00	PARKMAN				
4,493.46	4,392.00	SUSSEX				
7,336.46	7,235.00	NIOBRARA				
7,593.46	7,492.00	CODELL				
7,676.46	7,575.00	GREENHORN				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
300.00	300.00	0.00	0.00	Start Build 2.00	
1,019.36	1,011.82	56.40	-69.93	Start 2754.75 hold at 1019.36 MD	
3,774.11	3,680.18	486.08	-602.74	Start Drop -2.00	
4,493.46	4,392.00	542.48	-672.68	Start 3260.00 hold at 4493.46 MD	
7,753.46	7,652.00	542.48	-672.68	TD at 7753.46	