

Project: COLORADO NORTHERN ZONE - 83
 Site: WELD_STREAR 18-10 PAD
 Well: STREAR 22-10
 Wellbore: OH
 Section: SECTION 10 T2N R67W
 SHL:
 Design: STREAR 22-10(wp01)
 Latitude: 40° 9' 19.346 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	4346.25	PARKMAN
4392.00	4458.20	SUSSEX
7235.00	7327.54	NIOBRARA
7492.00	7584.54	CODELL
7575.00	7667.54	GREENHORN
7932.00	8024.54	J-SAND
8082.00	8174.54	Formation 8



Azimuths to Grid North
 True North: -0.40°
 Magnetic North: 8.54°
 Magnetic Field
 Strength: 53015.4snT
 Dip Angle: 66.84°
 Date: 03/16/2011
 Model: IGRF2010

WELL DETAILS: STREAR 22-10

+N/-S	+E/-W	Northing	Easting	Ground Level: 4942.00	Latitude	Longitude	Slot
0.00	0.00	1300052.21	3173352.03		40° 9' 19.346 N	104° 52' 47.305 W	

CASING DETAILS

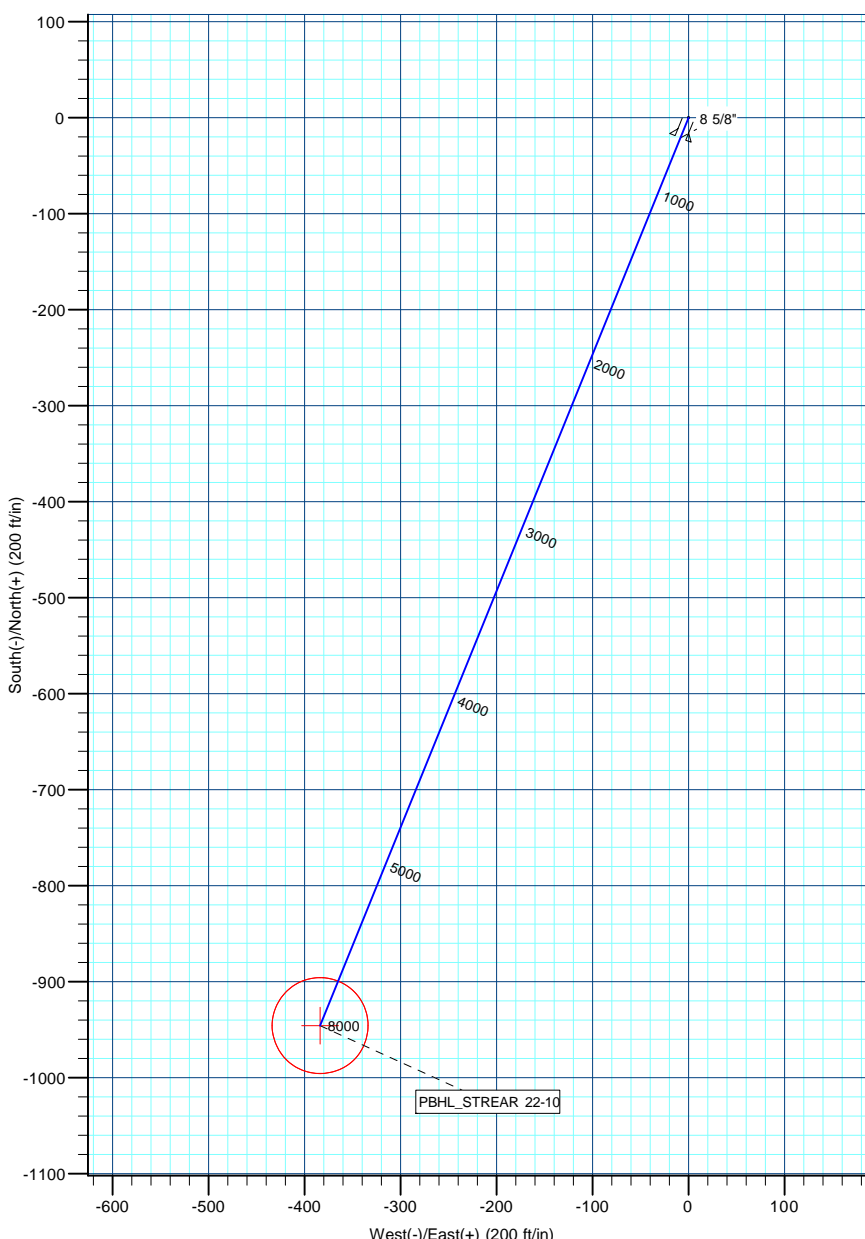
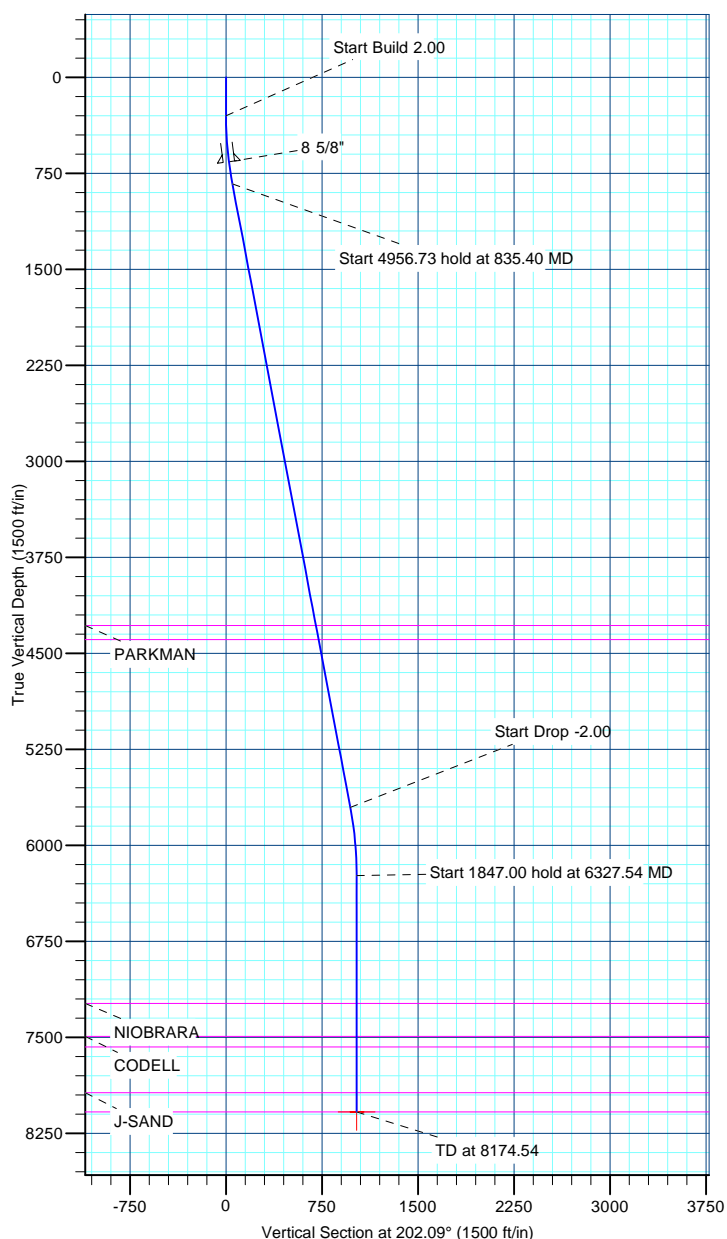
TVD	MD	Name	Size
660.00	660.95	8 5/8"	8.625

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL_STREAR 22-10	8082.00	-945.81	-383.89	1299106.40	3172968.14	40° 9' 10.026 N	104° 52' 52.334 W	Circle (Radius: 50.00)

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect
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
835.40	10.71	202.09	832.29	-46.22	-18.76	2.00	202.09	49.89
5792.13	10.71	202.09	5702.71	-899.59	-365.13	0.00	0.00	970.87
6327.54	0.00	0.00	6235.00	-945.81	-383.89	2.00	180.00	1020.75
8174.54	0.00	0.00	8082.00	-945.81	-383.89	0.00	0.00	1020.75



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_STREAR 18-10 PAD

STREAR 22-10

OH

Plan: STREAR 22-10(wp01)

Standard Planning Report

16 March, 2011

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well STREAR 22-10
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4942' & KB 15' @ 4957.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4942' & KB 15' @ 4957.00ft (ASSUMED)
Site:	WELD_STREAR 18-10 PAD	North Reference:	Grid
Well:	STREAR 22-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	STREAR 22-10(wp01)		

Project	COLORADO NORTHERN ZONE - 83, KERR MCGEE OIL & GAS ONSHORE LP		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

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

Well	STREAR 22-10			
Well Position	+N/-S	-9.86 ft	Northing:	1,300,052.21 usft
	+E/-W	0.07 ft	Easting:	3,173,352.03 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	Ground Level: 4,942.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	03/16/2011	8.94	66.84	53,015

Design	STREAR 22-10(wp01)			
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	202.09

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	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
835.40	10.71	202.09	832.29	-46.22	-18.76	2.00	2.00	0.00	202.09	
5,792.13	10.71	202.09	5,702.71	-899.59	-365.13	0.00	0.00	0.00	0.00	
6,327.54	0.00	0.00	6,235.00	-945.81	-383.89	2.00	-2.00	0.00	180.00	
8,174.54	0.00	0.00	8,082.00	-945.81	-383.89	0.00	0.00	0.00	0.00	PBHL_STREAR 22-10

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well STREAR 22-10
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4942' & KB 15' @ 4957.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4942' & KB 15' @ 4957.00ft (ASSUMED)
Site:	WELD_STREAR 18-10 PAD	North Reference:	Grid
Well:	STREAR 22-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	STREAR 22-10(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
Start Build 2.00									
400.00	2.00	202.09	399.98	-1.62	-0.66	1.75	2.00	2.00	0.00
500.00	4.00	202.09	499.84	-6.47	-2.62	6.98	2.00	2.00	0.00
600.00	6.00	202.09	599.45	-14.54	-5.90	15.69	2.00	2.00	0.00
660.95	7.22	202.09	660.00	-21.04	-8.54	22.71	2.00	2.00	0.00
8 5/8"									
700.00	8.00	202.09	698.70	-25.83	-10.49	27.88	2.00	2.00	0.00
800.00	10.00	202.09	797.47	-40.33	-16.37	43.52	2.00	2.00	0.00
835.40	10.71	202.09	832.29	-46.22	-18.76	49.89	2.00	2.00	0.00
Start 4956.73 hold at 835.40 MD									
900.00	10.71	202.09	895.76	-57.34	-23.28	61.89	0.00	0.00	0.00
1,000.00	10.71	202.09	994.02	-74.56	-30.26	80.47	0.00	0.00	0.00
1,100.00	10.71	202.09	1,092.28	-91.78	-37.25	99.05	0.00	0.00	0.00
1,200.00	10.71	202.09	1,190.54	-108.99	-44.24	117.63	0.00	0.00	0.00
1,300.00	10.71	202.09	1,288.80	-126.21	-51.23	136.21	0.00	0.00	0.00
1,400.00	10.71	202.09	1,387.06	-143.43	-58.21	154.79	0.00	0.00	0.00
1,500.00	10.71	202.09	1,485.32	-160.64	-65.20	173.37	0.00	0.00	0.00
1,600.00	10.71	202.09	1,583.57	-177.86	-72.19	191.95	0.00	0.00	0.00
1,700.00	10.71	202.09	1,681.83	-195.07	-79.18	210.53	0.00	0.00	0.00
1,800.00	10.71	202.09	1,780.09	-212.29	-86.17	229.11	0.00	0.00	0.00
1,900.00	10.71	202.09	1,878.35	-229.51	-93.15	247.69	0.00	0.00	0.00
2,000.00	10.71	202.09	1,976.61	-246.72	-100.14	266.27	0.00	0.00	0.00
2,100.00	10.71	202.09	2,074.87	-263.94	-107.13	284.85	0.00	0.00	0.00
2,200.00	10.71	202.09	2,173.13	-281.16	-114.12	303.43	0.00	0.00	0.00
2,300.00	10.71	202.09	2,271.39	-298.37	-121.11	322.01	0.00	0.00	0.00
2,400.00	10.71	202.09	2,369.64	-315.59	-128.09	340.59	0.00	0.00	0.00
2,500.00	10.71	202.09	2,467.90	-332.81	-135.08	359.17	0.00	0.00	0.00
2,600.00	10.71	202.09	2,566.16	-350.02	-142.07	377.76	0.00	0.00	0.00
2,700.00	10.71	202.09	2,664.42	-367.24	-149.06	396.34	0.00	0.00	0.00
2,800.00	10.71	202.09	2,762.68	-384.45	-156.05	414.92	0.00	0.00	0.00
2,900.00	10.71	202.09	2,860.94	-401.67	-163.03	433.50	0.00	0.00	0.00
3,000.00	10.71	202.09	2,959.20	-418.89	-170.02	452.08	0.00	0.00	0.00
3,100.00	10.71	202.09	3,057.45	-436.10	-177.01	470.66	0.00	0.00	0.00
3,200.00	10.71	202.09	3,155.71	-453.32	-184.00	489.24	0.00	0.00	0.00
3,300.00	10.71	202.09	3,253.97	-470.54	-190.98	507.82	0.00	0.00	0.00
3,400.00	10.71	202.09	3,352.23	-487.75	-197.97	526.40	0.00	0.00	0.00
3,500.00	10.71	202.09	3,450.49	-504.97	-204.96	544.98	0.00	0.00	0.00
3,600.00	10.71	202.09	3,548.75	-522.19	-211.95	563.56	0.00	0.00	0.00
3,700.00	10.71	202.09	3,647.01	-539.40	-218.94	582.14	0.00	0.00	0.00
3,800.00	10.71	202.09	3,745.27	-556.62	-225.92	600.72	0.00	0.00	0.00
3,900.00	10.71	202.09	3,843.52	-573.83	-232.91	619.30	0.00	0.00	0.00
4,000.00	10.71	202.09	3,941.78	-591.05	-239.90	637.88	0.00	0.00	0.00
4,100.00	10.71	202.09	4,040.04	-608.27	-246.89	656.46	0.00	0.00	0.00
4,200.00	10.71	202.09	4,138.30	-625.48	-253.88	675.04	0.00	0.00	0.00
4,300.00	10.71	202.09	4,236.56	-642.70	-260.86	693.62	0.00	0.00	0.00
4,346.25	10.71	202.09	4,282.00	-650.66	-264.09	702.22	0.00	0.00	0.00
PARKMAN									
4,400.00	10.71	202.09	4,334.82	-659.92	-267.85	712.20	0.00	0.00	0.00
4,458.20	10.71	202.09	4,392.00	-669.93	-271.92	723.02	0.00	0.00	0.00
SUSSEX									

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4942' & KB 15' @ 4957.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4942' & KB 15' @ 4957.00ft (ASSUMED)
Site:	WELD_STREAR 18-10 PAD	North Reference:	Grid
Well:	STREAR 22-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	STREAR 22-10(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)
4,500.00	10.71	202.09	4,433.08	-677.13	-274.84	730.78	0.00	0.00	0.00
4,600.00	10.71	202.09	4,531.33	-694.35	-281.83	749.36	0.00	0.00	0.00
4,700.00	10.71	202.09	4,629.59	-711.56	-288.81	767.94	0.00	0.00	0.00
4,800.00	10.71	202.09	4,727.85	-728.78	-295.80	786.52	0.00	0.00	0.00
4,900.00	10.71	202.09	4,826.11	-746.00	-302.79	805.10	0.00	0.00	0.00
5,000.00	10.71	202.09	4,924.37	-763.21	-309.78	823.69	0.00	0.00	0.00
5,100.00	10.71	202.09	5,022.63	-780.43	-316.77	842.27	0.00	0.00	0.00
5,200.00	10.71	202.09	5,120.89	-797.65	-323.75	860.85	0.00	0.00	0.00
5,300.00	10.71	202.09	5,219.15	-814.86	-330.74	879.43	0.00	0.00	0.00
5,400.00	10.71	202.09	5,317.40	-832.08	-337.73	898.01	0.00	0.00	0.00
5,500.00	10.71	202.09	5,415.66	-849.30	-344.72	916.59	0.00	0.00	0.00
5,600.00	10.71	202.09	5,513.92	-866.51	-351.71	935.17	0.00	0.00	0.00
5,700.00	10.71	202.09	5,612.18	-883.73	-358.69	953.75	0.00	0.00	0.00
5,792.13	10.71	202.09	5,702.71	-899.59	-365.13	970.87	0.00	0.00	0.00
Start Drop -2.00									
5,800.00	10.55	202.09	5,710.44	-900.93	-365.68	972.32	2.00	-2.00	0.00
5,900.00	8.55	202.09	5,809.05	-916.31	-371.92	988.91	2.00	-2.00	0.00
6,000.00	6.55	202.09	5,908.18	-928.48	-376.86	1,002.05	2.00	-2.00	0.00
6,100.00	4.55	202.09	6,007.70	-937.44	-380.50	1,011.72	2.00	-2.00	0.00
6,200.00	2.55	202.09	6,107.51	-943.18	-382.83	1,017.91	2.00	-2.00	0.00
6,300.00	0.55	202.09	6,207.47	-945.69	-383.84	1,020.62	2.00	-2.00	0.00
6,327.54	0.00	0.00	6,235.00	-945.81	-383.89	1,020.75	2.00	-2.00	573.48
Start 1847.00 hold at 6327.54 MD									
6,400.00	0.00	0.00	6,307.46	-945.81	-383.89	1,020.75	0.00	0.00	0.00
6,500.00	0.00	0.00	6,407.46	-945.81	-383.89	1,020.75	0.00	0.00	0.00
6,600.00	0.00	0.00	6,507.46	-945.81	-383.89	1,020.75	0.00	0.00	0.00
6,700.00	0.00	0.00	6,607.46	-945.81	-383.89	1,020.75	0.00	0.00	0.00
6,800.00	0.00	0.00	6,707.46	-945.81	-383.89	1,020.75	0.00	0.00	0.00
6,900.00	0.00	0.00	6,807.46	-945.81	-383.89	1,020.75	0.00	0.00	0.00
7,000.00	0.00	0.00	6,907.46	-945.81	-383.89	1,020.75	0.00	0.00	0.00
7,100.00	0.00	0.00	7,007.46	-945.81	-383.89	1,020.75	0.00	0.00	0.00
7,200.00	0.00	0.00	7,107.46	-945.81	-383.89	1,020.75	0.00	0.00	0.00
7,300.00	0.00	0.00	7,207.46	-945.81	-383.89	1,020.75	0.00	0.00	0.00
7,327.54	0.00	0.00	7,235.00	-945.81	-383.89	1,020.75	0.00	0.00	0.00
NIOBRARA									
7,400.00	0.00	0.00	7,307.46	-945.81	-383.89	1,020.75	0.00	0.00	0.00
7,500.00	0.00	0.00	7,407.46	-945.81	-383.89	1,020.75	0.00	0.00	0.00
7,584.54	0.00	0.00	7,492.00	-945.81	-383.89	1,020.75	0.00	0.00	0.00
CODELL									
7,600.00	0.00	0.00	7,507.46	-945.81	-383.89	1,020.75	0.00	0.00	0.00
7,667.54	0.00	0.00	7,575.00	-945.81	-383.89	1,020.75	0.00	0.00	0.00
GREENHORN									
7,700.00	0.00	0.00	7,607.46	-945.81	-383.89	1,020.75	0.00	0.00	0.00
7,800.00	0.00	0.00	7,707.46	-945.81	-383.89	1,020.75	0.00	0.00	0.00
7,900.00	0.00	0.00	7,807.46	-945.81	-383.89	1,020.75	0.00	0.00	0.00
8,000.00	0.00	0.00	7,907.46	-945.81	-383.89	1,020.75	0.00	0.00	0.00
8,024.54	0.00	0.00	7,932.00	-945.81	-383.89	1,020.75	0.00	0.00	0.00
J-SAND									
8,100.00	0.00	0.00	8,007.46	-945.81	-383.89	1,020.75	0.00	0.00	0.00
8,174.54	0.00	0.00	8,082.00	-945.81	-383.89	1,020.75	0.00	0.00	0.00
Formation 8 - PBHL_STREAR 22-10									

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4942' & KB 15' @ 4957.00ft (ASSUMED)
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Well:	STREAR 22-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	STREAR 22-10(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 22-10	0.00	0.00	8,082.00	-945.81	-383.89	1,299,106.40	3,172,968.14	40° 9' 10.026 N	104° 52' 52.334 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 (°)	
4,346.25	4,282.00	PARKMAN				
4,458.20	4,392.00	SUSSEX				
7,327.54	7,235.00	NIOBRARA				
7,584.54	7,492.00	CODELL				
7,667.54	7,575.00	GREENHORN				
8,024.54	7,932.00	J-SAND				
8,174.54	8,082.00	Formation 8				

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	
835.40	832.29	-46.22	-18.76	Start 4956.73 hold at 835.40 MD	
5,792.13	5,702.71	-899.59	-365.13	Start Drop -2.00	
6,327.54	6,235.00	-945.81	-383.89	Start 1847.00 hold at 6327.54 MD	
8,174.54	8,082.00	-945.81	-383.89	TD at 8174.54	