



Plan: plan 3 s shape 5-4-11 casing set at 850' (Parry GU E#2/Wellbore #1)



## SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
150.0	0.00	0.00	150.0	0.0	0.0	0.00	0.00	0.0	
891.2	33.35	92.43	850.0	-8.9	209.5	4.50	92.43	209.7	
971.2	33.35	92.43	916.8	-10.8	253.4	0.00	0.00	253.7	
1195.8	44.59	92.44	1091.2	-16.7	394.4	5.00	0.02	394.8	
2392.5	44.59	92.44	1943.5	-52.5	1233.6	0.00	0.00	1234.8	
3184.2	5.00	92.43	2648.0	-66.3	1558.8	5.00	180.00	1560.2	FC parry 2
3381.9	5.00	92.43	2845.0	-67.0	1576.0	0.00	0.00	1577.4	PC parry 2
3557.6	5.00	92.43	3020.0	-67.7	1591.3	0.00	0.00	1592.8	BHL parry 2

## WELL DETAILS: Parry GU E#2

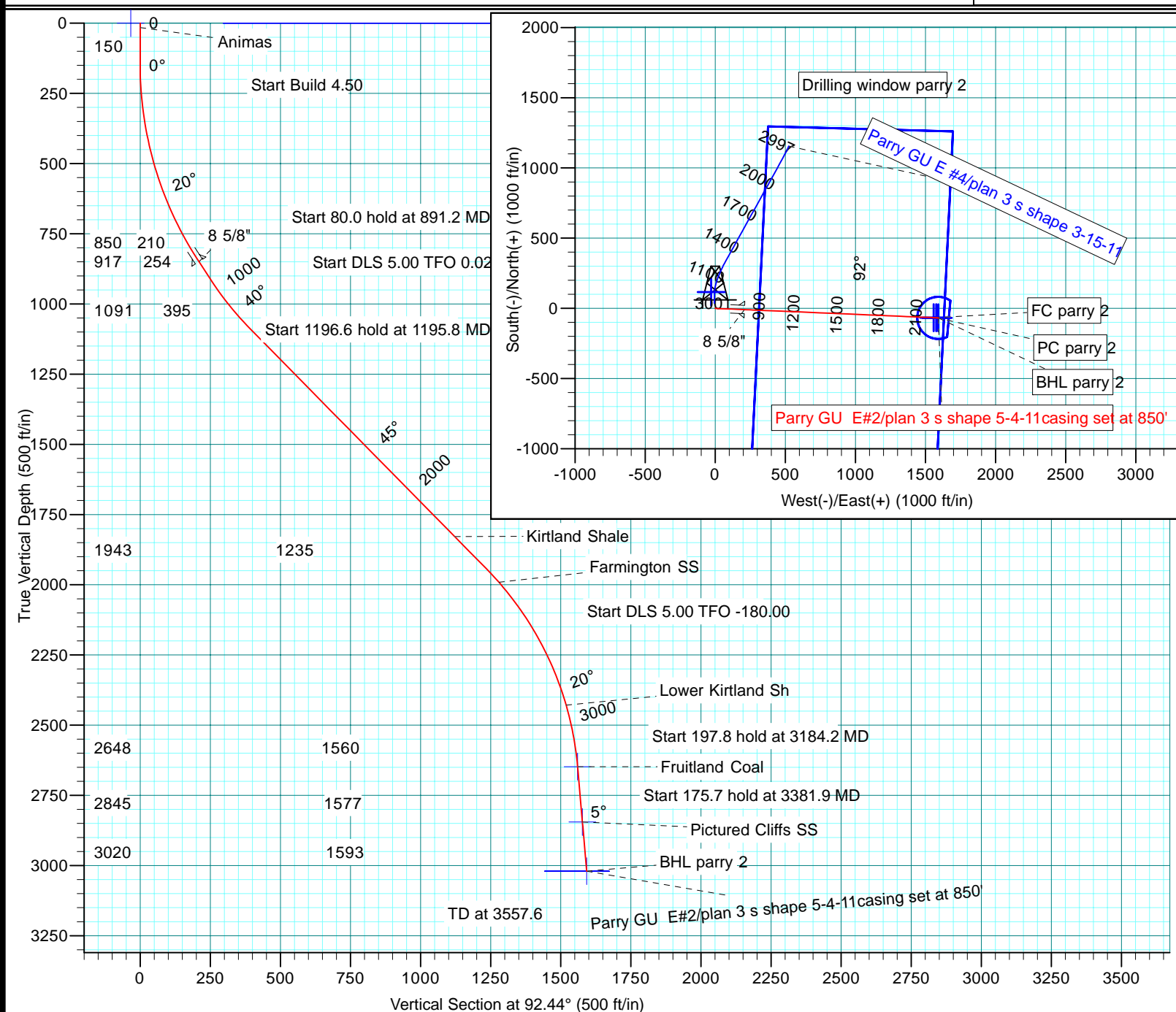
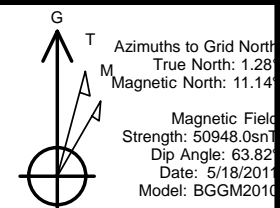
Northings	Ground Level: Easting	6636.0 Latitude	Longitude
1156347.56	2388761.26	37° 4' 37.992 N	107° 35' 43.008 W

PROJECT DETAILS: Western - San Juan North (NAD 83)

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Southern Zone  
System Datum: Mean Sea Level

### WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	
Drilling window parry 2	0.0	116.8	-28.6	1156464.39	2388732.65	Polygon
FC parry 2	2648.0	-66.3	1558.8	1156281.26	2390320.11	
PC parry 2	2845.0	-67.0	1576.0	1156280.56	2390337.31	Point
BHL parry 2	3020.0	-67.7	1591.3	1156279.86	2390352.61	Radius: 150.0



# **North America - Onshore US - BP**

**Western - San Juan North (NAD 83)**

**Sec 27-T33N-R7W**

**Parry GU E#2**

**Wellbore #1**

**Plan: plan 3 s shape 5-4-11 casing set at 850'**

## **Standard Planning Report**

**18 May, 2011**

# BPPASSPORT

## Planning Report

<b>Database:</b>	EDM .16 Hou Prod - WH21P	<b>Local Co-ordinate Reference:</b>	Well Parry GU E#2
<b>Company:</b>	North America - Onshore US - BP	<b>TVD Reference:</b>	RKB MSL @ 6652.0ft (RIG)
<b>Project:</b>	Western - San Juan North (NAD 83)	<b>MD Reference:</b>	RKB MSL @ 6652.0ft (RIG)
<b>Site:</b>	Sec 27-T33N-R7W	<b>North Reference:</b>	Grid
<b>Well:</b>	Parry GU E#2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	plan 3 s shape 5-4-11casing set at 850'		

<b>Project</b>	Western - San Juan North (NAD 83), LAPLATA COUNTY COLORADO, USA		
<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 Southern Zone		Using geodetic scale factor

Site		Sec 27-T33N-R7W			
Site Position:		Northing:	1,157,282.61 ft	Latitude:	37° 4' 46.812 N
From:	Lat/Long	Easting:	2,386,859.21 ft	Longitude:	107° 36' 6.732 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	-1.29 °

Well	Parry GU E#2					
Well Position	+N/-S	0.0 ft	Northing:	1,156,347.56 ft	Latitude:	37° 4' 37.992 N
	+E/-W	0.0 ft	Easting:	2,388,761.26 ft	Longitude:	107° 35' 43.008 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	6,652.0 ft	Ground Level:	6,636.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2010	5/18/2011	9.86	63.82	50,948

<b>Design</b>	plan 3 s shape 5-4-11casing set at 850'			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	92.44

<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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
150.0	0.00	0.00	150.0	0.0	0.0	0.00	0.00	0.00	0.00	
891.2	33.35	92.43	850.0	-8.9	209.5	4.50	4.50	0.00	92.43	
971.2	33.35	92.43	916.8	-10.8	253.4	0.00	0.00	0.00	0.00	
1,195.8	44.59	92.44	1,091.2	-16.7	394.4	5.00	5.00	0.00	0.02	
2,392.5	44.59	92.44	1,943.5	-52.5	1,233.6	0.00	0.00	0.00	0.00	
3,184.2	5.00	92.43	2,648.0	-66.3	1,558.8	5.00	-5.00	0.00	-180.00	FC parry 2
3,381.9	5.00	92.43	2,845.0	-67.0	1,576.0	0.00	0.00	0.00	0.00	PC parry 2
3,557.6	5.00	92.43	3,020.0	-67.7	1,591.3	0.00	0.00	0.00	0.00	BHL parry 2

# BPPASSPORT

## Planning Report

<b>Database:</b>	EDM .16 Hou Prod - WH21P	<b>Local Co-ordinate Reference:</b>	Well Parry GU E#2
<b>Company:</b>	North America - Onshore US - BP	<b>TVD Reference:</b>	RKB MSL @ 6652.0ft (RIG)
<b>Project:</b>	Western - San Juan North (NAD 83)	<b>MD Reference:</b>	RKB MSL @ 6652.0ft (RIG)
<b>Site:</b>	Sec 27-T33N-R7W	<b>North Reference:</b>	Grid
<b>Well:</b>	Parry GU E#2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	plan 3 s shape 5-4-11 casing set at 850'		

### 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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Drilling window parry 2</b>									
16.0	0.00	0.00	16.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Animas</b>									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
150.0	0.00	0.00	150.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Start Build 4.50</b>									
200.0	2.25	92.43	200.0	0.0	1.0	1.0	4.50	4.50	0.00
300.0	6.75	92.43	299.7	-0.4	8.8	8.8	4.50	4.50	0.00
400.0	11.25	92.43	398.4	-1.0	24.4	24.5	4.50	4.50	0.00
500.0	15.75	92.43	495.6	-2.0	47.8	47.8	4.50	4.50	0.00
600.0	20.25	92.43	590.7	-3.3	78.6	78.7	4.50	4.50	0.00
700.0	24.75	92.43	683.1	-5.0	116.9	117.0	4.50	4.50	0.00
800.0	29.25	92.43	772.1	-6.9	162.2	162.3	4.50	4.50	0.00
891.2	33.35	92.43	850.0	-8.9	209.5	209.7	4.50	4.50	0.00
<b>Start 80.0 hold at 891.2 MD - 8 5/8"</b>									
900.0	33.35	92.43	857.4	-9.1	214.4	214.6	0.00	0.00	0.00
971.2	33.35	92.43	916.8	-10.8	253.4	253.7	0.00	0.00	0.00
<b>Start DLS 5.00 TFO 0.03</b>									
1,000.0	34.79	92.43	940.7	-11.4	269.6	269.8	5.00	5.00	0.00
1,100.0	39.79	92.43	1,020.2	-14.0	330.1	330.4	5.00	5.00	0.00
1,195.8	44.59	92.44	1,091.2	-16.7	394.4	394.8	5.00	5.00	0.00
<b>Start 1196.6 hold at 1195.8 MD</b>									
1,200.0	44.59	92.44	1,094.2	-16.9	397.3	397.7	0.00	0.00	0.00
1,300.0	44.59	92.44	1,165.4	-19.9	467.4	467.9	0.00	0.00	0.00
1,400.0	44.59	92.44	1,236.6	-22.8	537.6	538.1	0.00	0.00	0.00
1,500.0	44.59	92.44	1,307.9	-25.8	607.7	608.3	0.00	0.00	0.00
1,600.0	44.59	92.44	1,379.1	-28.8	677.9	678.5	0.00	0.00	0.00
1,700.0	44.59	92.44	1,450.3	-31.8	748.0	748.7	0.00	0.00	0.00
1,800.0	44.59	92.44	1,521.5	-34.8	818.1	818.9	0.00	0.00	0.00
1,900.0	44.59	92.44	1,592.7	-37.8	888.3	889.1	0.00	0.00	0.00
2,000.0	44.59	92.44	1,664.0	-40.7	958.4	959.3	0.00	0.00	0.00
2,100.0	44.59	92.44	1,735.2	-43.7	1,028.5	1,029.5	0.00	0.00	0.00
2,200.0	44.59	92.44	1,806.4	-46.7	1,098.7	1,099.7	0.00	0.00	0.00
2,231.7	44.59	92.44	1,829.0	-47.7	1,120.9	1,121.9	0.00	0.00	0.00
<b>Kirtland Shale</b>									
2,300.0	44.59	92.44	1,877.6	-49.7	1,168.8	1,169.9	0.00	0.00	0.00
2,392.5	44.59	92.44	1,943.5	-52.5	1,233.6	1,234.8	0.00	0.00	0.00
<b>Start DLS 5.00 TFO -180.00</b>									
2,400.0	44.21	92.44	1,948.8	-52.7	1,238.9	1,240.0	5.00	-5.00	0.00
2,457.4	41.34	92.44	1,991.0	-54.3	1,277.9	1,279.0	5.00	-5.00	0.00
<b>Farmington SS</b>									
2,500.0	39.21	92.44	2,023.5	-55.5	1,305.4	1,306.6	5.00	-5.00	0.00
2,600.0	34.21	92.44	2,103.6	-58.1	1,365.1	1,366.3	5.00	-5.00	0.00
2,700.0	29.21	92.44	2,188.7	-60.3	1,417.6	1,418.9	5.00	-5.00	0.00
2,800.0	24.21	92.44	2,278.0	-62.2	1,462.5	1,463.8	5.00	-5.00	0.00
2,900.0	19.21	92.44	2,370.8	-63.8	1,499.4	1,500.8	5.00	-5.00	0.00
2,961.1	16.16	92.44	2,429.0	-64.6	1,517.9	1,519.3	5.00	-5.00	0.00
<b>Lower Kirtland Sh</b>									
3,000.0	14.21	92.43	2,466.6	-65.0	1,528.1	1,529.5	5.00	-5.00	0.00
3,100.0	9.21	92.43	2,564.5	-65.9	1,548.4	1,549.8	5.00	-5.00	0.00
3,184.2	5.00	92.43	2,648.0	-66.3	1,558.8	1,560.2	5.00	-5.00	0.00

# BPPASSPORT

## Planning Report

<b>Database:</b>	EDM .16 Hou Prod - WH21P	<b>Local Co-ordinate Reference:</b>	Well Parry GU E#2
<b>Company:</b>	North America - Onshore US - BP	<b>TVD Reference:</b>	RKB MSL @ 6652.0ft (RIG)
<b>Project:</b>	Western - San Juan North (NAD 83)	<b>MD Reference:</b>	RKB MSL @ 6652.0ft (RIG)
<b>Site:</b>	Sec 27-T33N-R7W	<b>North Reference:</b>	Grid
<b>Well:</b>	Parry GU E#2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	plan 3 s shape 5-4-11 casing set at 850'		

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)
<b>Start 197.8 hold at 3184.2 MD - Fruitland Coal - FC parry 2</b>									
3,200.0	5.00	92.43	2,663.7	-66.4	1,560.2	1,561.6	0.00	0.00	0.00
3,300.0	5.00	92.43	2,763.4	-66.7	1,568.9	1,570.3	0.00	0.00	0.00
3,381.9	5.00	92.43	2,845.0	-67.0	1,576.0	1,577.4	0.00	0.00	0.00
<b>Start 175.7 hold at 3381.9 MD - Pictured Cliffs SS - PC parry 2</b>									
3,400.0	5.00	92.43	2,863.0	-67.1	1,577.6	1,579.0	0.00	0.00	0.00
3,500.0	5.00	92.43	2,962.6	-67.5	1,586.3	1,587.7	0.00	0.00	0.00
3,557.6	5.00	92.43	3,020.0	-67.7	1,591.3	1,592.8	0.00	0.00	0.00
<b>BHL parry 2</b>									

Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
BHL parry 2 - plan hits target center - Circle (radius 150.0)	0.00	360.00	3,020.0	-67.7	1,591.3	1,156,279.86	2,390,352.61	37° 4' 37.675 N	107° 35' 23.358 W
FC parry 2 - plan hits target center - Point	0.00	0.00	2,648.0	-66.3	1,558.8	1,156,281.26	2,390,320.11	37° 4' 37.682 N	107° 35' 23.759 W
Drilling window parry 2 - plan misses target center by 120.3ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E) - Polygon	0.00	0.00	0.0	116.8	-28.6	1,156,464.39	2,388,732.65	37° 4' 39.140 N	107° 35' 43.393 W
Point 1			0.0	1,260.9	1,697.0	1,157,608.52	2,390,458.31		
Point 2			0.0	1,296.0	377.5	1,157,643.63	2,389,138.77		
Point 3			0.0	-2,580.6	186.3	1,153,766.90	2,388,947.56		
Point 4			0.0	-2,573.0	1,510.7	1,153,774.50	2,390,272.00		
PC parry 2 - plan hits target center - Point	0.00	360.00	2,845.0	-67.0	1,576.0	1,156,280.56	2,390,337.31	37° 4' 37.679 N	107° 35' 23.547 W

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name		Casing Diameter (")	Hole Diameter (")
891.2	850.0	8 5/8"		8-5/8	12-1/4

# BPPASSPORT

## Planning Report

**Database:** EDM .16 Hou Prod - WH21P  
**Company:** North America - Onshore US - BP  
**Project:** Western - San Juan North (NAD 83)  
**Site:** Sec 27-T33N-R7W  
**Well:** Parry GU E#2  
**Wellbore:** Wellbore #1  
**Design:** plan 3 s shape 5-4-11 casing set at 850'

**Local Co-ordinate Reference:** Well Parry GU E#2  
**TVD Reference:** RKB MSL @ 6652.0ft (RIG)  
**MD Reference:** RKB MSL @ 6652.0ft (RIG)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
16.0	16.0	Animas		0.00	0.16
2,231.7	1,829.0	Kirtland Shale		0.00	0.16
2,457.4	1,991.0	Farmington SS		0.00	0.16
2,961.1	2,429.0	Lower Kirtland Sh		0.00	0.16
3,184.2	2,648.0	Fruitland Coal		0.00	0.16
3,381.9	2,845.0	Pictured Cliffs SS		0.00	0.16

### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
150.0	150.0	0.0	0.0	Start Build 4.50
891.2	850.0	-8.9	209.5	Start 80.0 hold at 891.2 MD
971.2	916.8	-10.8	253.4	Start DLS 5.00 TFO 0.03
1,195.8	1,091.2	-16.7	394.4	Start 1196.6 hold at 1195.8 MD
2,392.5	1,943.5	-52.5	1,233.6	Start DLS 5.00 TFO -180.00
3,184.2	2,648.0	-66.3	1,558.8	Start 197.8 hold at 3184.2 MD
3,381.9	2,845.0	-67.0	1,576.0	Start 175.7 hold at 3381.9 MD
3,557.6	3,020.0	-67.7	1,591.3	TD at 3557.6