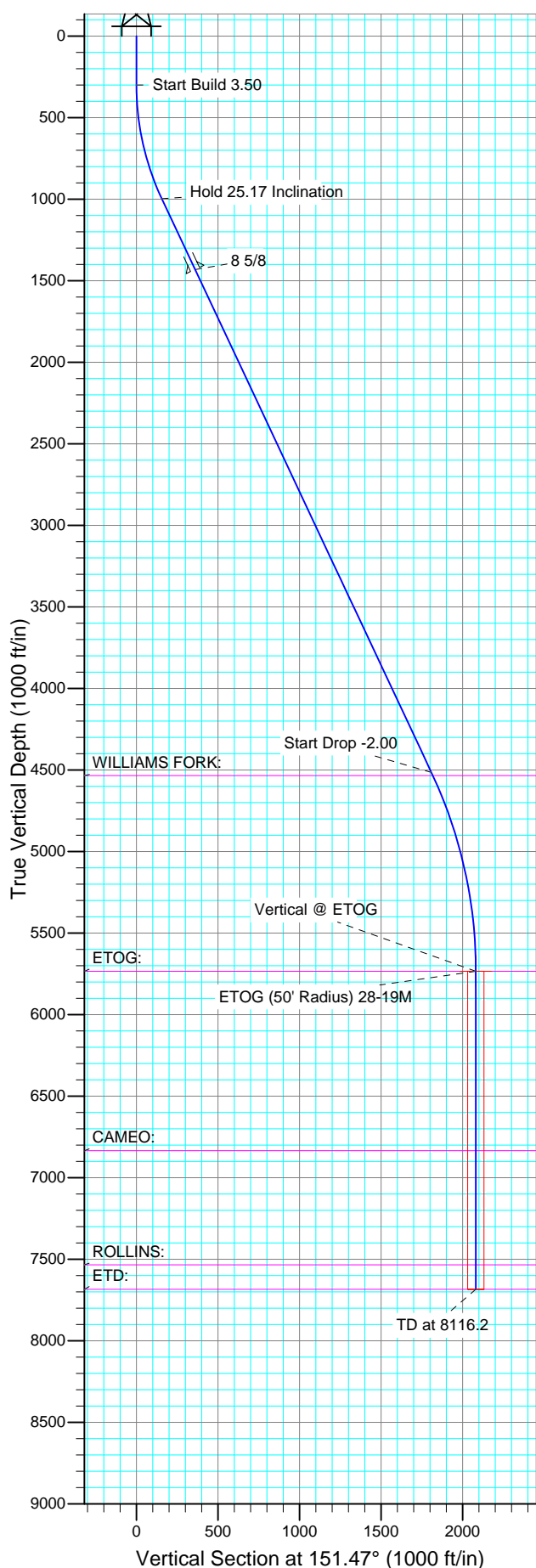




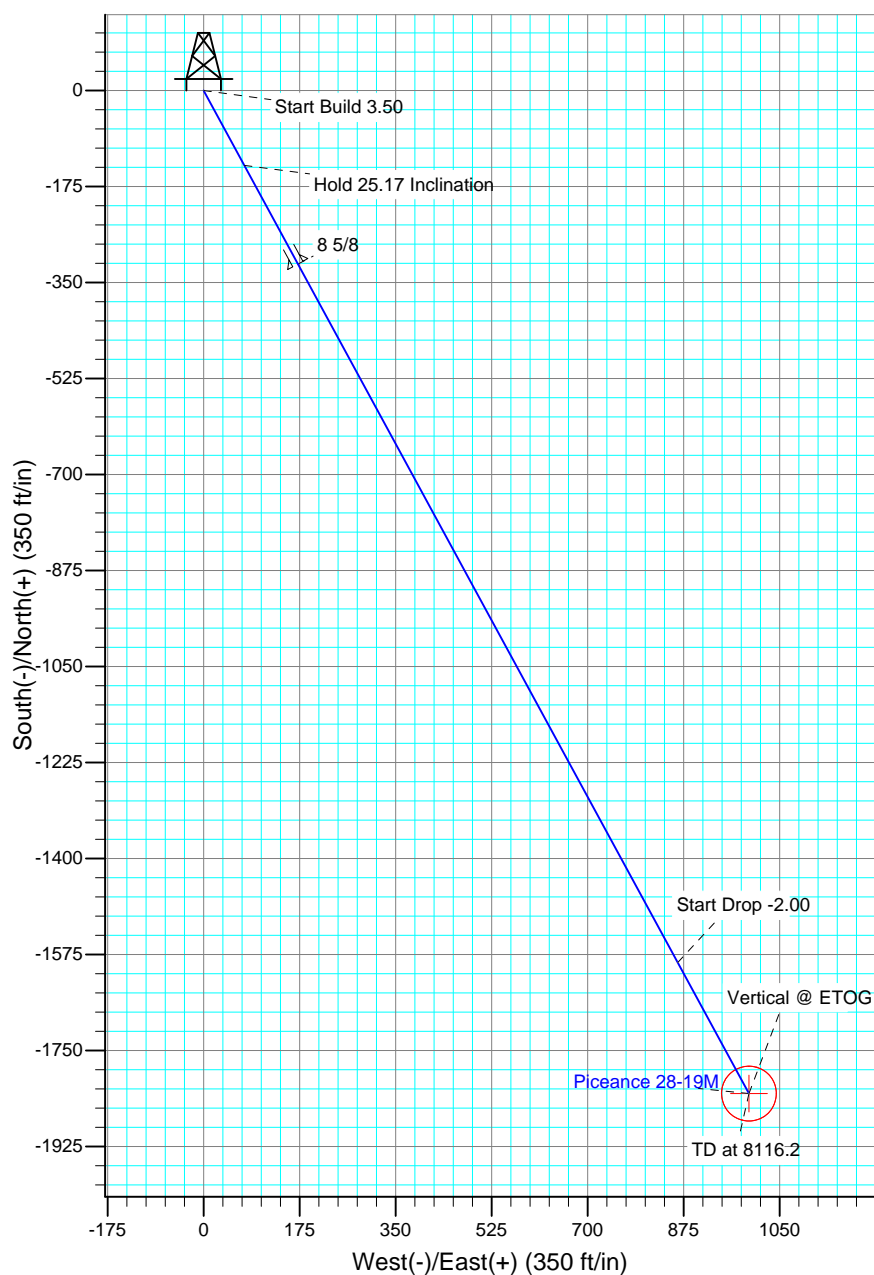
Well Name: Piceance 28-19M  
Surface Location: Piceance 28-11 Pad  
North American Datum 1983  
US State Plane 1983 , Colorado Central Zone  
Ground Elevation: 7580.0  
WELL @ 7604.0ft (Original Well Elev)  
Easting 2354912.56 Latitude 39° 14' 51.468 N Longitude 107° 46' 41.232 W

Project: Mesa County, CO  
Site: Piceance 28-11 Pad  
Well: Piceance 28-19M  
Wellbore: Wellbore #1  
Design: Plan #1 10May14 kjs

+N/-S 0.0 +E/-W 0.0 Northing 1523172.37 Slot  
Easting 2354912.56 Latitude 39° 14' 51.468 N Longitude 107° 46' 41.232 W



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.0	
3	1019.1	25.17	151.47	996.2	-136.5	74.2	3.50	151.47	155.4	
4	4907.8	25.17	151.47	4515.7	-1589.4	864.2	0.00	0.00	1809.2	
5	6166.2	0.00	0.00	5734.0	-1828.3	994.1	2.00	180.00	2081.1	ETOG (50' Radius) 28-19M
6	8116.2	0.00	0.00	7684.0	-1828.3	994.1	0.00	0.00	2081.1	



#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4534.0	4928.0	WILLIAMS FORK:
5734.0	6166.2	ETOG:
6834.0	7266.2	CAMEO:
7534.0	7966.2	ROLLINS:
7684.0	8116.2	ETD:

Azimuths to True North  
Magnetic North: 9.85°  
Magnetic Field  
Strength: 51837.2snT  
Dip Angle: 65.49°  
Date: 5/10/2014  
Model: IGRF2010

# **Piceance Energy, LLC**

**Mesa County, CO**

**Piceance 28-11 Pad**

**Piceance 28-19M**

**Wellbore #1**

**Plan: Plan #1 10May14 kjs**

## **Standard Planning Report - Geographic**

**11 May, 2014**

# New Tech

## Planning Report - Geographic

<b>Database:</b>	EDM 2003.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Piceance 28-19M
<b>Company:</b>	Piceance Energy, LLC	<b>TVD Reference:</b>	WELL @ 7604.0ft (Original Well Elev)
<b>Project:</b>	Mesa County, CO	<b>MD Reference:</b>	WELL @ 7604.0ft (Original Well Elev)
<b>Site:</b>	Piceance 28-11 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Piceance 28-19M	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 10May14 kjs		

<b>Project</b>	Mesa County, CO		
<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 Central Zone		

Site		Piceance 28-11 Pad			
Site Position:		Northing:	1,523,237.48 ft	Latitude:	39° 14' 52.116 N
From:	Lat/Long	Easting:	2,354,931.19 ft	Longitude:	107° 46' 41.016 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	-1.44 °

Well	Piceance 28-19M					
Well Position	+N/-S	0.0 ft	Northing:	1,523,172.37 ft	Latitude:	39° 14' 51.468 N
	+E/-W	0.0 ft	Easting:	2,354,912.56 ft	Longitude:	107° 46' 41.232 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,580.0 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>
	IGRF2010	5/10/2014	9.85	65.50	51,837

<b>Design</b>	Plan #1 10May14 kjs			
<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	151.47

<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	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,019.1	25.17	151.47	996.2	-136.5	74.2	3.50	3.50	0.00	151.47	
4,907.8	25.17	151.47	4,515.7	-1,589.4	864.2	0.00	0.00	0.00	0.00	
6,166.2	0.00	0.00	5,734.0	-1,828.3	994.1	2.00	-2.00	0.00	180.00	ETOG (50' Radius) 25
8,116.2	0.00	0.00	7,684.0	-1,828.3	994.1	0.00	0.00	0.00	0.00	

# New Tech

## Planning Report - Geographic

<b>Database:</b>	EDM 2003.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Piceance 28-19M
<b>Company:</b>	Piceance Energy, LLC	<b>TVD Reference:</b>	WELL @ 7604.0ft (Original Well Elev)
<b>Project:</b>	Mesa County, CO	<b>MD Reference:</b>	WELL @ 7604.0ft (Original Well Elev)
<b>Site:</b>	Piceance 28-11 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Piceance 28-19M	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 10May14 kjs		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	1,523,172.37	2,354,912.56	39° 14' 51.468 N	107° 46' 41.232 W
200.0	0.00	0.00	200.0	0.0	0.0	1,523,172.37	2,354,912.56	39° 14' 51.468 N	107° 46' 41.232 W
300.0	0.00	0.00	300.0	0.0	0.0	1,523,172.37	2,354,912.56	39° 14' 51.468 N	107° 46' 41.232 W
<b>Start Build 3.50</b>									
400.0	3.50	151.47	399.9	-2.7	1.5	1,523,169.65	2,354,913.95	39° 14' 51.441 N	107° 46' 41.213 W
600.0	10.50	151.47	598.3	-24.1	13.1	1,523,147.97	2,354,925.05	39° 14' 51.230 N	107° 46' 41.066 W
800.0	17.50	151.47	792.3	-66.6	36.2	1,523,104.92	2,354,947.07	39° 14' 50.810 N	107° 46' 40.772 W
1,000.0	24.50	151.47	978.9	-129.5	70.4	1,523,041.15	2,354,979.70	39° 14' 50.188 N	107° 46' 40.337 W
1,019.1	25.17	151.47	996.2	-136.5	74.2	1,523,034.02	2,354,983.35	39° 14' 50.118 N	107° 46' 40.288 W
<b>Hold 25.17 Inclination</b>									
1,200.0	25.17	151.47	1,159.9	-204.1	111.0	1,522,965.52	2,355,018.40	39° 14' 49.450 N	107° 46' 39.821 W
1,400.0	25.17	151.47	1,340.9	-278.9	151.6	1,522,889.80	2,355,057.14	39° 14' 48.712 N	107° 46' 39.305 W
1,500.0	25.17	151.47	1,431.4	-316.2	171.9	1,522,851.94	2,355,076.51	39° 14' 48.342 N	107° 46' 39.046 W
<b>8 5/8</b>									
1,600.0	25.17	151.47	1,521.9	-353.6	192.2	1,522,814.09	2,355,095.88	39° 14' 47.973 N	107° 46' 38.788 W
1,800.0	25.17	151.47	1,703.0	-428.3	232.9	1,522,738.37	2,355,134.62	39° 14' 47.235 N	107° 46' 38.272 W
2,000.0	25.17	151.47	1,884.0	-503.0	273.5	1,522,662.65	2,355,173.36	39° 14' 46.496 N	107° 46' 37.755 W
2,200.0	25.17	151.47	2,065.0	-577.7	314.1	1,522,586.93	2,355,212.10	39° 14' 45.757 N	107° 46' 37.239 W
2,400.0	25.17	151.47	2,246.0	-652.5	354.8	1,522,511.21	2,355,250.84	39° 14' 45.019 N	107° 46' 36.722 W
2,600.0	25.17	151.47	2,427.0	-727.2	395.4	1,522,435.49	2,355,289.59	39° 14' 44.280 N	107° 46' 36.206 W
2,800.0	25.17	151.47	2,608.0	-801.9	436.0	1,522,359.77	2,355,328.33	39° 14' 43.542 N	107° 46' 35.690 W
3,000.0	25.17	151.47	2,789.0	-876.6	476.6	1,522,284.05	2,355,367.07	39° 14' 42.803 N	107° 46' 35.173 W
3,200.0	25.17	151.47	2,970.1	-951.4	517.3	1,522,208.33	2,355,405.81	39° 14' 42.064 N	107° 46' 34.657 W
3,400.0	25.17	151.47	3,151.1	-1,026.1	557.9	1,522,132.62	2,355,444.55	39° 14' 41.326 N	107° 46' 34.140 W
3,600.0	25.17	151.47	3,332.1	-1,100.8	598.5	1,522,056.90	2,355,483.29	39° 14' 40.587 N	107° 46' 33.624 W
3,800.0	25.17	151.47	3,513.1	-1,175.5	639.1	1,521,981.18	2,355,522.04	39° 14' 39.849 N	107° 46' 33.107 W
4,000.0	25.17	151.47	3,694.1	-1,250.3	679.8	1,521,905.46	2,355,560.78	39° 14' 39.110 N	107° 46' 32.591 W
4,200.0	25.17	151.47	3,875.1	-1,325.0	720.4	1,521,829.74	2,355,599.52	39° 14' 38.371 N	107° 46' 32.075 W
4,400.0	25.17	151.47	4,056.1	-1,399.7	761.0	1,521,754.02	2,355,638.26	39° 14' 37.633 N	107° 46' 31.558 W
4,600.0	25.17	151.47	4,237.1	-1,474.4	801.7	1,521,678.30	2,355,677.00	39° 14' 36.894 N	107° 46' 31.042 W
4,800.0	25.17	151.47	4,418.2	-1,549.2	842.3	1,521,602.58	2,355,715.74	39° 14' 36.156 N	107° 46' 30.525 W
4,907.8	25.17	151.47	4,515.7	-1,589.4	864.2	1,521,561.79	2,355,736.62	39° 14' 35.758 N	107° 46' 30.247 W
<b>Start Drop -2.00</b>									
4,928.0	24.76	151.47	4,534.0	-1,596.9	868.3	1,521,554.20	2,355,740.50	39° 14' 35.684 N	107° 46' 30.195 W
<b>WILLIAMS FORK:</b>									
5,000.0	23.32	151.47	4,599.8	-1,622.7	882.3	1,521,528.07	2,355,753.87	39° 14' 35.429 N	107° 46' 30.017 W
5,200.0	19.32	151.47	4,786.1	-1,686.6	917.0	1,521,463.34	2,355,786.99	39° 14' 34.797 N	107° 46' 29.576 W
5,400.0	15.32	151.47	4,976.9	-1,738.9	945.4	1,521,410.33	2,355,814.11	39° 14' 34.280 N	107° 46' 29.214 W
5,600.0	11.32	151.47	5,171.5	-1,779.4	967.5	1,521,369.31	2,355,835.10	39° 14' 33.880 N	107° 46' 28.935 W
5,800.0	7.32	151.47	5,368.8	-1,807.8	982.9	1,521,340.47	2,355,849.85	39° 14' 33.599 N	107° 46' 28.738 W
6,000.0	3.32	151.47	5,567.9	-1,824.1	991.8	1,521,323.96	2,355,858.30	39° 14' 33.438 N	107° 46' 28.625 W
6,166.2	0.00	0.00	5,734.0	-1,828.3	994.1	1,521,319.67	2,355,860.50	39° 14' 33.396 N	107° 46' 28.596 W
<b>Vertical @ ETOG - ETOG: - ETOG (50' Radius) 28-19M</b>									
6,200.0	0.00	0.00	5,767.8	-1,828.3	994.1	1,521,319.67	2,355,860.50	39° 14' 33.396 N	107° 46' 28.596 W
6,400.0	0.00	0.00	5,967.8	-1,828.3	994.1	1,521,319.67	2,355,860.50	39° 14' 33.396 N	107° 46' 28.596 W
6,600.0	0.00	0.00	6,167.8	-1,828.3	994.1	1,521,319.67	2,355,860.50	39° 14' 33.396 N	107° 46' 28.596 W
6,800.0	0.00	0.00	6,367.8	-1,828.3	994.1	1,521,319.67	2,355,860.50	39° 14' 33.396 N	107° 46' 28.596 W
7,000.0	0.00	0.00	6,567.8	-1,828.3	994.1	1,521,319.67	2,355,860.50	39° 14' 33.396 N	107° 46' 28.596 W
7,200.0	0.00	0.00	6,767.8	-1,828.3	994.1	1,521,319.67	2,355,860.50	39° 14' 33.396 N	107° 46' 28.596 W
7,266.2	0.00	0.00	6,834.0	-1,828.3	994.1	1,521,319.67	2,355,860.50	39° 14' 33.396 N	107° 46' 28.596 W
<b>CAMEO:</b>									
7,400.0	0.00	0.00	6,967.8	-1,828.3	994.1	1,521,319.67	2,355,860.50	39° 14' 33.396 N	107° 46' 28.596 W
7,600.0	0.00	0.00	7,167.8	-1,828.3	994.1	1,521,319.67	2,355,860.50	39° 14' 33.396 N	107° 46' 28.596 W

# New Tech

## Planning Report - Geographic

<b>Database:</b>	EDM 2003.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Piceance 28-19M
<b>Company:</b>	Piceance Energy, LLC	<b>TVD Reference:</b>	WELL @ 7604.0ft (Original Well Elev)
<b>Project:</b>	Mesa County, CO	<b>MD Reference:</b>	WELL @ 7604.0ft (Original Well Elev)
<b>Site:</b>	Piceance 28-11 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Piceance 28-19M	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 10May14 kjs		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
7,800.0	0.00	0.00	7,367.8	-1,828.3	994.1	1,521,319.67	2,355,860.50	39° 14' 33.396 N	107° 46' 28.596 W
7,966.2	0.00	0.00	7,534.0	-1,828.3	994.1	1,521,319.67	2,355,860.50	39° 14' 33.396 N	107° 46' 28.596 W
<b>ROLLINS:</b>									
8,000.0	0.00	0.00	7,567.8	-1,828.3	994.1	1,521,319.67	2,355,860.50	39° 14' 33.396 N	107° 46' 28.596 W
8,116.2	0.00	0.00	7,684.0	-1,828.3	994.1	1,521,319.67	2,355,860.50	39° 14' 33.396 N	107° 46' 28.596 W
<b>TD at 8116.2 - ETD:</b>									

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
ETOG (50' Radius) 28-1	0.00	0.00	5,734.0	-1,828.3	994.1	1,521,319.67	2,355,860.50	39° 14' 33.396 N	107° 46' 28.596 W
- plan hits target									
- Circle (radius 50.0)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
1,500.0	1,431.4	8 5/8	8-5/8	8-5/8	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
7,966.2	7,534.0	ROLLINS:				
6,166.2	5,734.0	ETOG:				
7,266.2	6,834.0	CAMEO:				
8,116.2	7,684.0	ETD:				
4,928.0	4,534.0	WILLIAMS FORK:				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
300.0	300.0	0.0	0.0	Start Build 3.50	
1,019.1	996.2	-136.5	74.2	Hold 25.17 Inclination	
4,907.8	4,515.7	-1,589.4	864.2	Start Drop -2.00	
6,166.2	5,734.0	-1,828.3	994.1	Vertical @ ETOG	
8,116.2	7,684.0	-1,828.3	994.1	TD at 8116.2	