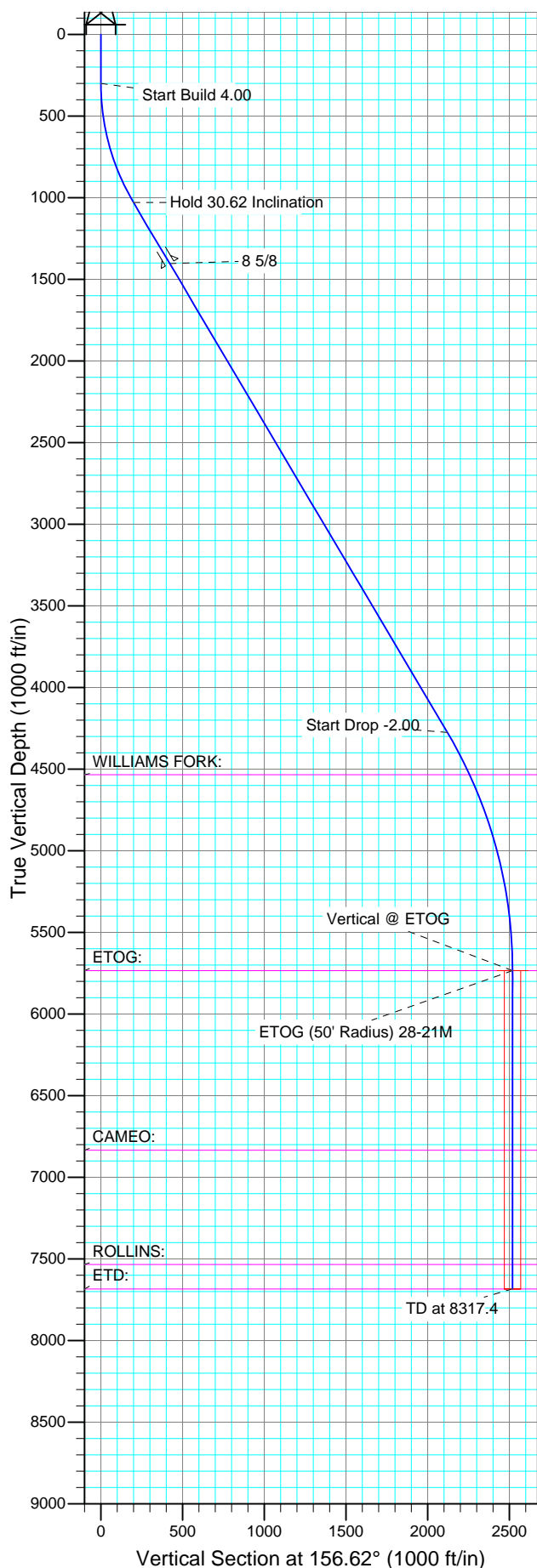




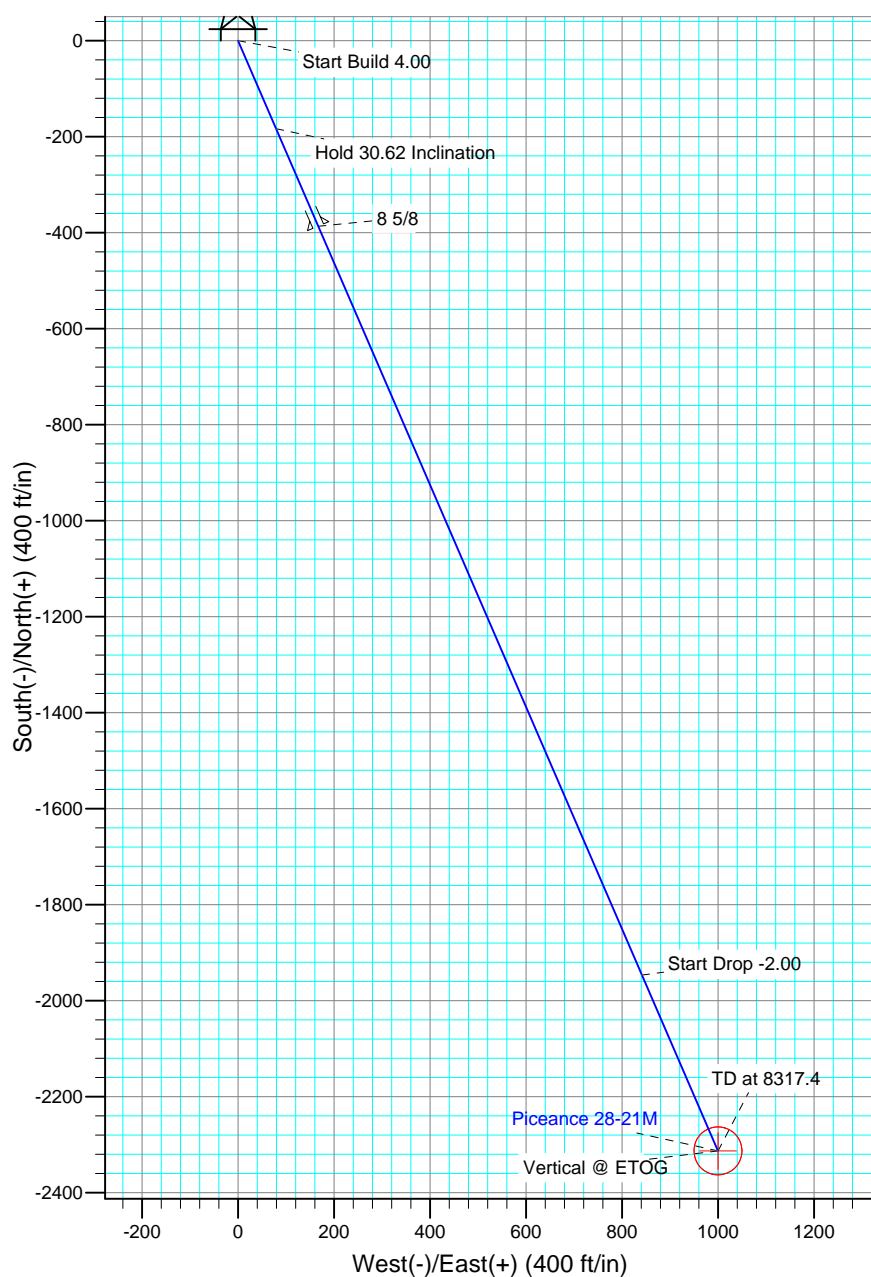
Well Name: Piceance 28-21M
Surface Location: Piceance 28-11 Pad
North American Datum 1983
US State Plane 1983 , Colorado Central Zone
Ground Elevation: 7580.0
WELL @ 7604.0ft (Original Well Elev)
Easting 2354909.37 Latitude 39° 14' 51.324 N Longitude 107° 46' 41.268 W

Project: Mesa County, CO
Site: Piceance 28-11 Pad
Well: Piceance 28-21M
Wellbore: Wellbore #1
Design: Plan #1 10May14 kjs

+N/-S 0.0 +E/-W 0.0 Northing 1523157.88 Easting 2354909.37 Latitude 39° 14' 51.324 N Longitude 107° 46' 41.268 W Slot



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	1065.4	30.62	156.62	1029.5	-183.3	79.2	4.00	156.62	199.7	
4	4836.6	30.62	156.62	4275.0	-1946.2	841.3	0.00	0.00	2120.3	
5	6367.4	0.00	0.00	5734.0	-2312.8	999.8	2.00	180.00	2519.6	ETOG (50' Radius) 28-21M
6	8317.4	0.00	0.00	7684.0	-2312.8	999.8	0.00	0.00	2519.6	



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
4534.0	5129.2	ETD:
5734.0	6367.4	WILLIAMS FORK:
6834.0	7467.4	ETOG:
7534.0	8167.4	CAMEO:
		ROLLINS:

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 28-21M

Wellbore #1

Plan: Plan #1 10May14 kjs

Standard Planning Report - Geographic

11 May, 2014

New Tech

Planning Report - Geographic

Database:	EDM 2003.16 Single User Db	Local Co-ordinate Reference:	Well Piceance 28-21M
Company:	Piceance Energy, LLC	TVD Reference:	WELL @ 7604.0ft (Original Well Elev)
Project:	Mesa County, CO	MD Reference:	WELL @ 7604.0ft (Original Well Elev)
Site:	Piceance 28-11 Pad	North Reference:	True
Well:	Piceance 28-21M	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 10May14 kjs		

Project	Mesa County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	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 28-21M					
Well Position	+N/-S	0.0 ft	Northing:	1,523,157.88 ft	Latitude:	39° 14' 51.324 N
	+E/-W	0.0 ft	Easting:	2,354,909.37 ft	Longitude:	107° 46' 41.268 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,580.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/10/2014	9.85	65.50	51,837

Design	Plan #1 10May14 kjs			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	156.62

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
0.0	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	
1,065.4	30.62	156.62	1,029.5	-183.3	79.2	4.00	4.00	0.00	156.62	
4,836.6	30.62	156.62	4,275.0	-1,946.2	841.3	0.00	0.00	0.00	0.00	
6,367.4	0.00	0.00	5,734.0	-2,312.8	999.8	2.00	-2.00	0.00	180.00	ETOG (50' Radius) 2%
8,317.4	0.00	0.00	7,684.0	-2,312.8	999.8	0.00	0.00	0.00	0.00	

New Tech

Planning Report - Geographic

Database:	EDM 2003.16 Single User Db	Local Co-ordinate Reference:	Well Piceance 28-21M
Company:	Piceance Energy, LLC	TVD Reference:	WELL @ 7604.0ft (Original Well Elev)
Project:	Mesa County, CO	MD Reference:	WELL @ 7604.0ft (Original Well Elev)
Site:	Piceance 28-11 Pad	North Reference:	True
Well:	Piceance 28-21M	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	1,523,157.88	2,354,909.37	39° 14' 51.324 N	107° 46' 41.268 W
200.0	0.00	0.00	200.0	0.0	0.0	1,523,157.88	2,354,909.37	39° 14' 51.324 N	107° 46' 41.268 W
300.0	0.00	0.00	300.0	0.0	0.0	1,523,157.88	2,354,909.37	39° 14' 51.324 N	107° 46' 41.268 W
Start Build 4.00									
400.0	4.00	156.62	399.9	-3.2	1.4	1,523,154.64	2,354,910.67	39° 14' 51.292 N	107° 46' 41.250 W
600.0	12.00	156.62	597.8	-28.7	12.4	1,523,128.84	2,354,921.06	39° 14' 51.040 N	107° 46' 41.110 W
800.0	20.00	156.62	789.9	-79.3	34.3	1,523,077.75	2,354,941.64	39° 14' 50.540 N	107° 46' 40.832 W
1,000.0	28.00	156.62	972.5	-153.9	66.5	1,523,002.36	2,354,972.02	39° 14' 49.803 N	107° 46' 40.422 W
1,065.4	30.62	156.62	1,029.5	-183.3	79.2	1,522,972.67	2,354,983.97	39° 14' 49.512 N	107° 46' 40.261 W
Hold 30.62 Inclination									
1,200.0	30.62	156.62	1,145.3	-246.2	106.4	1,522,909.08	2,355,009.59	39° 14' 48.890 N	107° 46' 39.915 W
1,400.0	30.62	156.62	1,317.5	-339.7	146.8	1,522,814.60	2,355,047.65	39° 14' 47.966 N	107° 46' 39.401 W
1,500.0	30.62	156.62	1,403.5	-386.4	167.1	1,522,767.37	2,355,066.68	39° 14' 47.504 N	107° 46' 39.144 W
8 5/8									
1,600.0	30.62	156.62	1,489.6	-433.2	187.3	1,522,720.13	2,355,085.71	39° 14' 47.042 N	107° 46' 38.888 W
1,800.0	30.62	156.62	1,661.7	-526.7	227.7	1,522,625.65	2,355,123.77	39° 14' 46.118 N	107° 46' 38.374 W
2,000.0	30.62	156.62	1,833.8	-620.2	268.1	1,522,531.17	2,355,161.83	39° 14' 45.194 N	107° 46' 37.860 W
2,200.0	30.62	156.62	2,005.9	-713.7	308.5	1,522,436.70	2,355,199.88	39° 14' 44.270 N	107° 46' 37.346 W
2,400.0	30.62	156.62	2,178.1	-807.2	348.9	1,522,342.22	2,355,237.94	39° 14' 43.346 N	107° 46' 36.833 W
2,600.0	30.62	156.62	2,350.2	-900.7	389.3	1,522,247.74	2,355,276.00	39° 14' 42.422 N	107° 46' 36.319 W
2,800.0	30.62	156.62	2,522.3	-994.1	429.8	1,522,153.27	2,355,314.06	39° 14' 41.498 N	107° 46' 35.805 W
3,000.0	30.62	156.62	2,694.4	-1,087.6	470.2	1,522,058.79	2,355,352.12	39° 14' 40.573 N	107° 46' 35.291 W
3,200.0	30.62	156.62	2,866.5	-1,181.1	510.6	1,521,964.31	2,355,390.18	39° 14' 39.649 N	107° 46' 34.778 W
3,400.0	30.62	156.62	3,038.7	-1,274.6	551.0	1,521,869.84	2,355,428.24	39° 14' 38.725 N	107° 46' 34.264 W
3,600.0	30.62	156.62	3,210.8	-1,368.1	591.4	1,521,775.36	2,355,466.30	39° 14' 37.801 N	107° 46' 33.750 W
3,800.0	30.62	156.62	3,382.9	-1,461.6	631.8	1,521,680.88	2,355,504.35	39° 14' 36.877 N	107° 46' 33.237 W
4,000.0	30.62	156.62	3,555.0	-1,555.1	672.3	1,521,586.41	2,355,542.41	39° 14' 35.953 N	107° 46' 32.723 W
4,200.0	30.62	156.62	3,727.1	-1,648.6	712.7	1,521,491.93	2,355,580.47	39° 14' 35.029 N	107° 46' 32.209 W
4,400.0	30.62	156.62	3,899.3	-1,742.1	753.1	1,521,397.45	2,355,618.53	39° 14' 34.105 N	107° 46' 31.695 W
4,600.0	30.62	156.62	4,071.4	-1,835.6	793.5	1,521,302.98	2,355,656.59	39° 14' 33.181 N	107° 46' 31.182 W
4,800.0	30.62	156.62	4,243.5	-1,929.1	833.9	1,521,208.50	2,355,694.65	39° 14' 32.256 N	107° 46' 30.668 W
4,836.6	30.62	156.62	4,275.0	-1,946.2	841.3	1,521,191.19	2,355,701.62	39° 14' 32.087 N	107° 46' 30.574 W
Start Drop -2.00									
5,000.0	27.35	156.62	4,417.9	-2,018.8	872.7	1,521,117.78	2,355,731.19	39° 14' 31.369 N	107° 46' 30.175 W
5,129.2	24.76	156.62	4,534.0	-2,070.9	895.2	1,521,065.14	2,355,752.40	39° 14' 30.854 N	107° 46' 29.889 W
WILLIAMS FORK:									
5,200.0	23.35	156.62	4,598.6	-2,097.4	906.7	1,521,038.38	2,355,763.18	39° 14' 30.592 N	107° 46' 29.743 W
5,400.0	19.35	156.62	4,784.9	-2,164.2	935.6	1,520,970.86	2,355,790.38	39° 14' 29.932 N	107° 46' 29.376 W
5,600.0	15.35	156.62	4,975.7	-2,219.0	959.2	1,520,915.55	2,355,812.66	39° 14' 29.391 N	107° 46' 29.075 W
5,800.0	11.35	156.62	5,170.3	-2,261.3	977.5	1,520,872.73	2,355,829.91	39° 14' 28.972 N	107° 46' 28.842 W
6,000.0	7.35	156.62	5,367.6	-2,291.2	990.4	1,520,842.60	2,355,842.04	39° 14' 28.677 N	107° 46' 28.679 W
6,200.0	3.35	156.62	5,566.7	-2,308.3	997.8	1,520,825.32	2,355,849.01	39° 14' 28.508 N	107° 46' 28.585 W
6,367.4	0.00	0.00	5,734.0	-2,312.8	999.8	1,520,820.78	2,355,850.83	39° 14' 28.464 N	107° 46' 28.560 W
Vertical @ ETOG - ETOG: - ETOG (50' Radius) 28-21M									
6,400.0	0.00	0.00	5,766.6	-2,312.8	999.8	1,520,820.78	2,355,850.83	39° 14' 28.464 N	107° 46' 28.560 W
6,600.0	0.00	0.00	5,966.6	-2,312.8	999.8	1,520,820.78	2,355,850.83	39° 14' 28.464 N	107° 46' 28.560 W
6,800.0	0.00	0.00	6,166.6	-2,312.8	999.8	1,520,820.78	2,355,850.83	39° 14' 28.464 N	107° 46' 28.560 W
7,000.0	0.00	0.00	6,366.6	-2,312.8	999.8	1,520,820.78	2,355,850.83	39° 14' 28.464 N	107° 46' 28.560 W
7,200.0	0.00	0.00	6,566.6	-2,312.8	999.8	1,520,820.78	2,355,850.83	39° 14' 28.464 N	107° 46' 28.560 W
7,400.0	0.00	0.00	6,766.6	-2,312.8	999.8	1,520,820.78	2,355,850.83	39° 14' 28.464 N	107° 46' 28.560 W
7,467.4	0.00	0.00	6,834.0	-2,312.8	999.8	1,520,820.78	2,355,850.83	39° 14' 28.464 N	107° 46' 28.560 W
CAMEO:									
7,600.0	0.00	0.00	6,966.6	-2,312.8	999.8	1,520,820.78	2,355,850.83	39° 14' 28.464 N	107° 46' 28.560 W

New Tech

Planning Report - Geographic

Database:	EDM 2003.16 Single User Db	Local Co-ordinate Reference:	Well Piceance 28-21M
Company:	Piceance Energy, LLC	TVD Reference:	WELL @ 7604.0ft (Original Well Elev)
Project:	Mesa County, CO	MD Reference:	WELL @ 7604.0ft (Original Well Elev)
Site:	Piceance 28-11 Pad	North Reference:	True
Well:	Piceance 28-21M	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	7,166.6	-2,312.8	999.8	1,520,820.78	2,355,850.83	39° 14' 28.464 N	107° 46' 28.560 W
8,000.0	0.00	0.00	7,366.6	-2,312.8	999.8	1,520,820.78	2,355,850.83	39° 14' 28.464 N	107° 46' 28.560 W
8,167.4	0.00	0.00	7,534.0	-2,312.8	999.8	1,520,820.78	2,355,850.83	39° 14' 28.464 N	107° 46' 28.560 W
ROLLINS:									
8,200.0	0.00	0.00	7,566.6	-2,312.8	999.8	1,520,820.78	2,355,850.83	39° 14' 28.464 N	107° 46' 28.560 W
8,317.4	0.00	0.00	7,684.0	-2,312.8	999.8	1,520,820.78	2,355,850.83	39° 14' 28.464 N	107° 46' 28.560 W
TD at 8317.4									

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
ETOG (50' Radius) 28-2 - plan hits target - Circle (radius 50.0)	0.00	0.00	5,734.0	-2,312.8	999.8	1,520,820.78	2,355,850.83	39° 14' 28.464 N	107° 46' 28.560 W

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
1,500.0	1,403.5	8 5/8	8-5/8	8-5/8	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
8,167.4	7,534.0	ROLLINS:			
	7,684.0	ETD:			
7,467.4	6,834.0	CAMEO:			
6,367.4	5,734.0	ETOG:			
5,129.2	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 4.00
1,065.4	1,029.5	-183.3	79.2	Hold 30.62 Inclination
4,836.6	4,275.0	-1,946.2	841.3	Start Drop -2.00
6,367.4	5,734.0	-2,312.8	999.8	Vertical @ ETOG
8,317.4	7,684.0	-2,312.8	999.8	TD at 8317.4