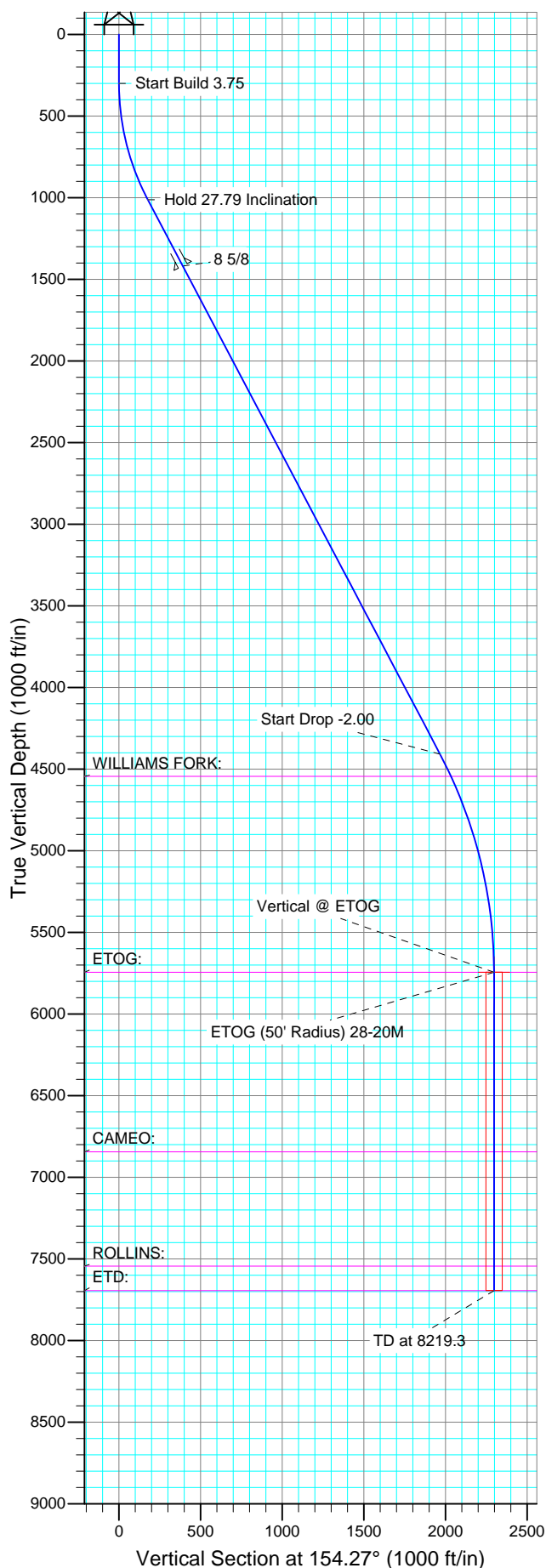




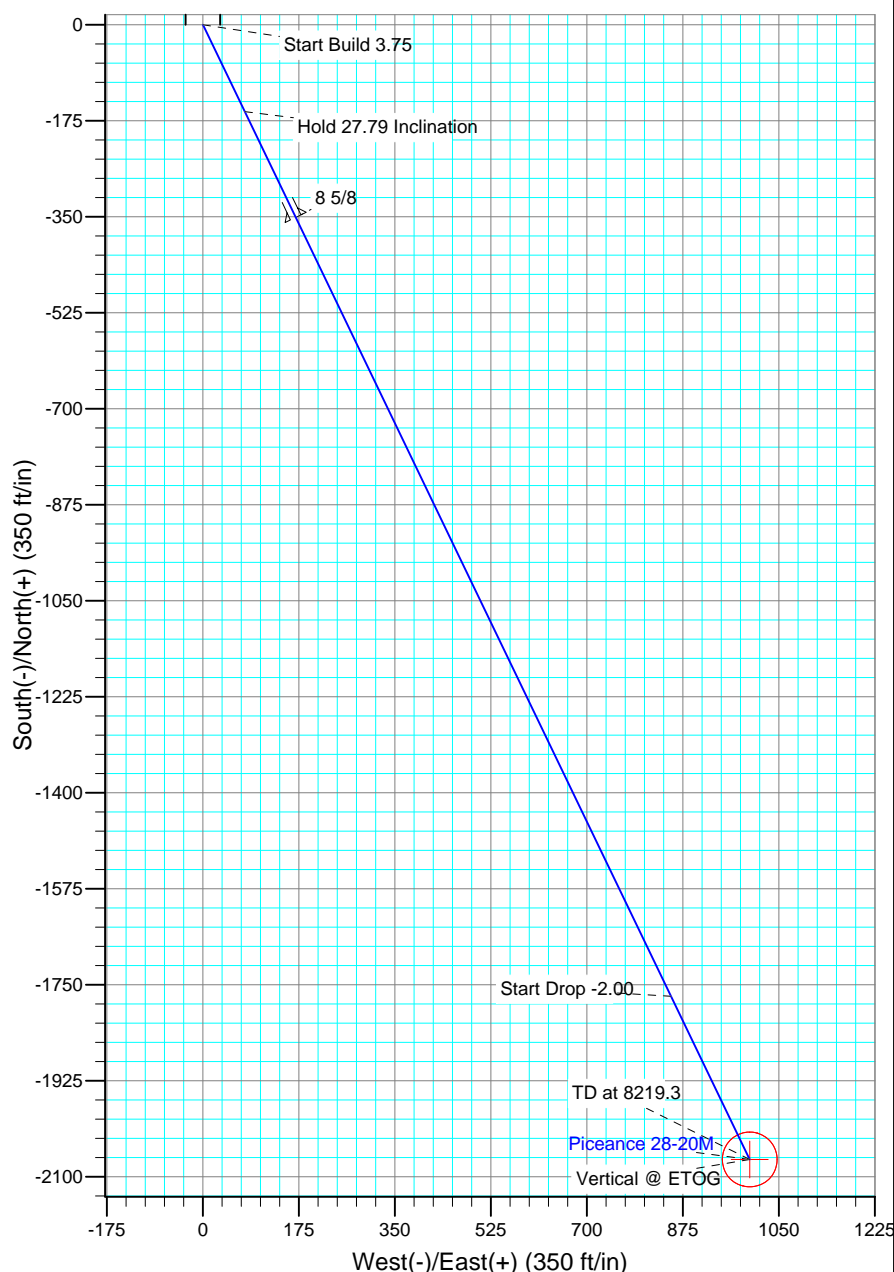
Well Name: Piceance 28-20M
Surface Location: Piceance 28-11 Pad
North American Datum 1983
US State Plane 1983 , Colorado Central Zone
Ground Elevation: 7580.0
WELL @ 7604.0ft (Original Well Elev)

Project: Mesa County, CO
Site: Piceance 28-11 Pad
Well: Piceance 28-20M
Wellbore: Wellbore #1
Design: Plan #1 10May14 kjs

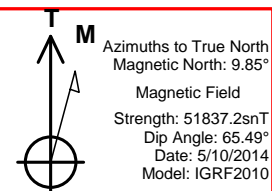
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1523165.08	2354912.38	39° 14' 51.396 N	107° 46' 41.232 W	



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	1041.1	27.79	154.27	1012.4	-158.8	76.5	3.75	154.27	176.2	
4	4879.8	27.79	154.27	4408.3	-1771.1	853.5	0.00	0.00	1966.0	
5	6269.3	0.00	0.00	5744.0	-2068.7	996.9	2.00	180.00	2296.4	ETOG (50' Radius) 28-20M
6	8219.3	0.00	0.00	7694.0	-2068.7	996.9	0.00	0.00	2296.4	



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
4544.0	5031.1	WILLIAMS FORK:
5744.0	6269.3	ETOG:
6844.0	7369.3	CAMEO:
7544.0	8069.3	ROLLINS:
7694.0	8219.3	ETD:



Piceance Energy, LLC

Mesa County, CO

Piceance 28-11 Pad

Piceance 28-20M

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 28-20M
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 28-20M	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 28-20M					
Well Position	+N/-S	0.0 ft	Northing:	1,523,165.09 ft	Latitude:	39° 14' 51.396 N
	+E/-W	0.0 ft	Easting:	2,354,912.38 ft	Longitude:	107° 46' 41.232 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)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	154.27

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(ft)	(ft)	Rate	Rate	Rate	(°)	
(ft)			(ft)			(°/100ft)	(°/100ft)	(°/100ft)		
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	
1,041.1	27.79	154.27	1,012.4	-158.8	76.5	3.75	3.75	0.00	154.27	
4,879.8	27.79	154.27	4,408.3	-1,771.1	853.5	0.00	0.00	0.00	0.00	
6,269.3	0.00	0.00	5,744.0	-2,068.7	996.9	2.00	-2.00	0.00	180.00	ETOG (50' Radius) 28
8,219.3	0.00	0.00	7,694.0	-2,068.7	996.9	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 28-20M
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 28-20M	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	1,523,165.09	2,354,912.38	39° 14' 51.396 N	107° 46' 41.232 W
200.0	0.00	0.00	200.0	0.0	0.0	1,523,165.09	2,354,912.38	39° 14' 51.396 N	107° 46' 41.232 W
300.0	0.00	0.00	300.0	0.0	0.0	1,523,165.09	2,354,912.38	39° 14' 51.396 N	107° 46' 41.232 W
Start Build 3.75									
400.0	3.75	154.27	399.9	-2.9	1.4	1,523,162.11	2,354,913.73	39° 14' 51.367 N	107° 46' 41.214 W
600.0	11.25	154.27	598.1	-26.4	12.7	1,523,138.33	2,354,924.46	39° 14' 51.135 N	107° 46' 41.070 W
800.0	18.75	154.27	791.1	-73.0	35.2	1,523,091.18	2,354,945.74	39° 14' 50.674 N	107° 46' 40.785 W
1,000.0	26.25	154.27	975.8	-141.9	68.4	1,523,021.47	2,354,977.20	39° 14' 49.993 N	107° 46' 40.362 W
1,041.1	27.79	154.27	1,012.4	-158.8	76.5	1,523,004.46	2,354,984.88	39° 14' 49.827 N	107° 46' 40.259 W
Hold 27.79 Inclination									
1,200.0	27.79	154.27	1,153.0	-225.5	108.7	1,522,936.93	2,355,015.36	39° 14' 49.167 N	107° 46' 39.851 W
1,400.0	27.79	154.27	1,329.9	-309.5	149.2	1,522,851.94	2,355,053.73	39° 14' 48.337 N	107° 46' 39.336 W
1,500.0	27.79	154.27	1,418.4	-351.5	169.4	1,522,809.44	2,355,072.91	39° 14' 47.922 N	107° 46' 39.079 W
8 5/8									
1,600.0	27.79	154.27	1,506.8	-393.5	189.6	1,522,766.95	2,355,092.09	39° 14' 47.506 N	107° 46' 38.821 W
1,800.0	27.79	154.27	1,683.7	-477.5	230.1	1,522,681.96	2,355,130.45	39° 14' 46.676 N	107° 46' 38.307 W
2,000.0	27.79	154.27	1,860.7	-561.5	270.6	1,522,596.97	2,355,168.81	39° 14' 45.846 N	107° 46' 37.792 W
2,200.0	27.79	154.27	2,037.6	-645.5	311.1	1,522,511.97	2,355,207.17	39° 14' 45.016 N	107° 46' 37.278 W
2,400.0	27.79	154.27	2,214.5	-729.5	351.6	1,522,426.98	2,355,245.54	39° 14' 44.185 N	107° 46' 36.763 W
2,600.0	27.79	154.27	2,391.5	-813.5	392.0	1,522,341.99	2,355,283.90	39° 14' 43.355 N	107° 46' 36.249 W
2,800.0	27.79	154.27	2,568.4	-897.5	432.5	1,522,257.00	2,355,322.26	39° 14' 42.525 N	107° 46' 35.734 W
3,000.0	27.79	154.27	2,745.3	-981.5	473.0	1,522,172.01	2,355,360.62	39° 14' 41.694 N	107° 46' 35.219 W
3,200.0	27.79	154.27	2,922.3	-1,065.5	513.5	1,522,087.02	2,355,398.98	39° 14' 40.864 N	107° 46' 34.705 W
3,400.0	27.79	154.27	3,099.2	-1,149.5	554.0	1,522,002.03	2,355,437.35	39° 14' 40.034 N	107° 46' 34.190 W
3,600.0	27.79	154.27	3,276.1	-1,233.5	594.4	1,521,917.04	2,355,475.71	39° 14' 39.203 N	107° 46' 33.676 W
3,800.0	27.79	154.27	3,453.1	-1,317.5	634.9	1,521,832.05	2,355,514.07	39° 14' 38.373 N	107° 46' 33.161 W
4,000.0	27.79	154.27	3,630.0	-1,401.5	675.4	1,521,747.06	2,355,552.43	39° 14' 37.543 N	107° 46' 32.647 W
4,200.0	27.79	154.27	3,806.9	-1,485.5	715.9	1,521,662.07	2,355,590.80	39° 14' 36.712 N	107° 46' 32.132 W
4,400.0	27.79	154.27	3,983.9	-1,569.5	756.4	1,521,577.07	2,355,629.16	39° 14' 35.882 N	107° 46' 31.618 W
4,600.0	27.79	154.27	4,160.8	-1,653.5	796.9	1,521,492.08	2,355,667.52	39° 14' 35.052 N	107° 46' 31.103 W
4,800.0	27.79	154.27	4,337.7	-1,737.5	837.3	1,521,407.09	2,355,705.88	39° 14' 34.222 N	107° 46' 30.589 W
4,879.8	27.79	154.27	4,408.3	-1,771.1	853.5	1,521,373.18	2,355,721.19	39° 14' 33.890 N	107° 46' 30.383 W
Start Drop -2.00									
5,000.0	25.39	154.27	4,515.8	-1,819.5	876.8	1,521,324.15	2,355,743.32	39° 14' 33.411 N	107° 46' 30.086 W
5,031.1	24.76	154.27	4,544.0	-1,831.4	882.6	1,521,312.12	2,355,748.75	39° 14' 33.294 N	107° 46' 30.014 W
WILLIAMS FORK:									
5,200.0	21.39	154.27	4,699.3	-1,891.0	911.3	1,521,251.81	2,355,775.97	39° 14' 32.704 N	107° 46' 29.648 W
5,400.0	17.39	154.27	4,888.0	-1,950.8	940.1	1,521,191.31	2,355,803.28	39° 14' 32.113 N	107° 46' 29.282 W
5,600.0	13.39	154.27	5,080.7	-1,998.6	963.1	1,521,142.95	2,355,825.11	39° 14' 31.641 N	107° 46' 28.989 W
5,800.0	9.39	154.27	5,276.8	-2,034.2	980.3	1,521,106.97	2,355,841.35	39° 14' 31.290 N	107° 46' 28.772 W
6,000.0	5.39	154.27	5,475.1	-2,057.3	991.4	1,521,083.54	2,355,851.92	39° 14' 31.061 N	107° 46' 28.630 W
6,200.0	1.39	154.27	5,674.7	-2,068.0	996.6	1,521,072.78	2,355,856.78	39° 14' 30.955 N	107° 46' 28.565 W
6,269.3	0.00	0.00	5,744.0	-2,068.7	996.9	1,521,072.01	2,355,857.13	39° 14' 30.948 N	107° 46' 28.560 W
Vertical @ ETOG - ETOG: - ETOG (50' Radius) 28-20M									
6,400.0	0.00	0.00	5,874.7	-2,068.7	996.9	1,521,072.01	2,355,857.13	39° 14' 30.948 N	107° 46' 28.560 W
6,600.0	0.00	0.00	6,074.7	-2,068.7	996.9	1,521,072.01	2,355,857.13	39° 14' 30.948 N	107° 46' 28.560 W
6,800.0	0.00	0.00	6,274.7	-2,068.7	996.9	1,521,072.01	2,355,857.13	39° 14' 30.948 N	107° 46' 28.560 W
7,000.0	0.00	0.00	6,474.7	-2,068.7	996.9	1,521,072.01	2,355,857.13	39° 14' 30.948 N	107° 46' 28.560 W
7,200.0	0.00	0.00	6,674.7	-2,068.7	996.9	1,521,072.01	2,355,857.13	39° 14' 30.948 N	107° 46' 28.560 W
7,369.3	0.00	0.00	6,844.0	-2,068.7	996.9	1,521,072.01	2,355,857.13	39° 14' 30.948 N	107° 46' 28.560 W
CAMEO:									
7,400.0	0.00	0.00	6,874.7	-2,068.7	996.9	1,521,072.01	2,355,857.13	39° 14' 30.948 N	107° 46' 28.560 W
7,600.0	0.00	0.00	7,074.7	-2,068.7	996.9	1,521,072.01	2,355,857.13	39° 14' 30.948 N	107° 46' 28.560 W

New Tech

Planning Report - Geographic

Database:	EDM 2003.16 Single User Db	Local Co-ordinate Reference:	Well Piceance 28-20M
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 28-20M	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	7,274.7	-2,068.7	996.9	1,521,072.01	2,355,857.13	39° 14' 30.948 N	107° 46' 28.560 W
8,000.0	0.00	0.00	7,474.7	-2,068.7	996.9	1,521,072.01	2,355,857.13	39° 14' 30.948 N	107° 46' 28.560 W
8,069.3	0.00	0.00	7,544.0	-2,068.7	996.9	1,521,072.01	2,355,857.13	39° 14' 30.948 N	107° 46' 28.560 W
ROLLINS:									
8,200.0	0.00	0.00	7,674.7	-2,068.7	996.9	1,521,072.01	2,355,857.13	39° 14' 30.948 N	107° 46' 28.560 W
8,219.3	0.00	0.00	7,694.0	-2,068.7	996.9	1,521,072.01	2,355,857.13	39° 14' 30.948 N	107° 46' 28.560 W
TD at 8219.3 - ETD:									

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	5,744.0	-2,068.7	996.9	1,521,072.01	2,355,857.13	39° 14' 30.948 N	107° 46' 28.560 W

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
1,500.0	1,418.4	8 5/8	8-5/8	8-5/8	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,269.3	5,744.0	ETOG:			
8,069.3	7,544.0	ROLLINS:			
5,031.1	4,544.0	WILLIAMS FORK:			
7,369.3	6,844.0	CAMEO:			
8,219.3	7,694.0	ETD:			

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 3.75
1,041.1	1,012.4	-158.8	76.5	Hold 27.79 Inclination
4,879.8	4,408.3	-1,771.1	853.5	Start Drop -2.00
6,269.3	5,744.0	-2,068.7	996.9	Vertical @ ETOG
8,219.3	7,694.0	-2,068.7	996.9	TD at 8219.3