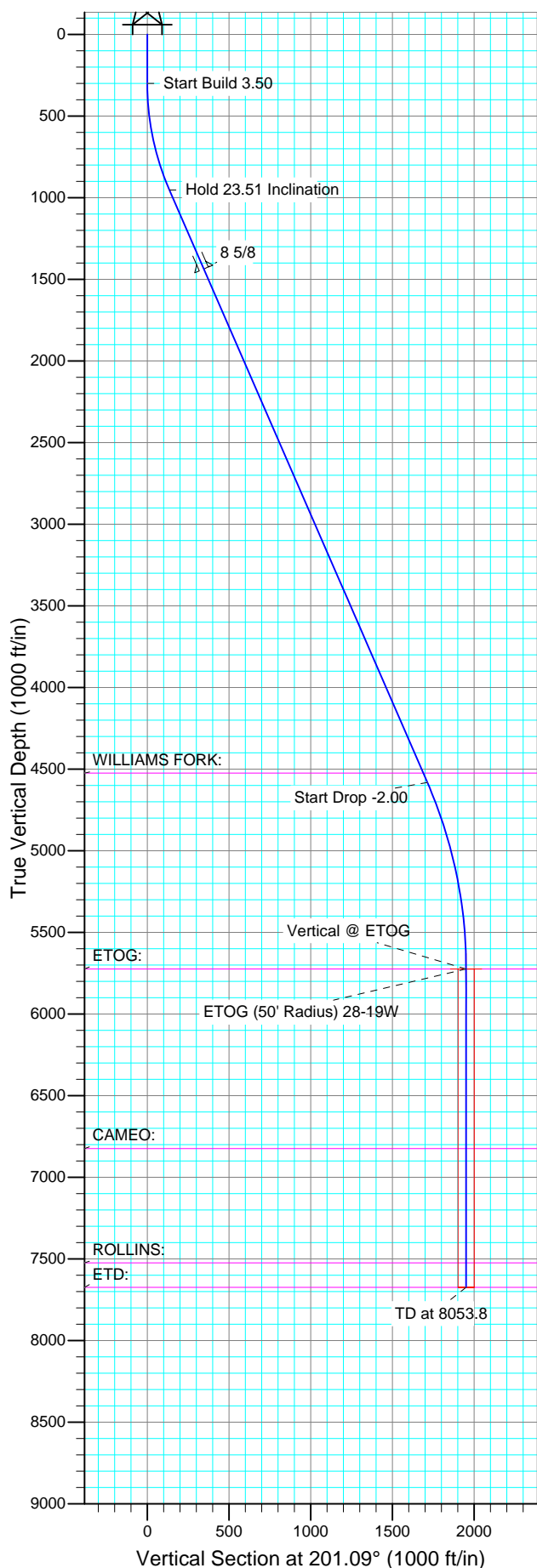




Well Name: Piceance 28-19W
Surface Location: Piceance 28-11 Pad
North American Datum 1983
US State Plane 1983 , Colorado Central Zone
Ground Elevation: 7580.0
WELL @ 7604.0ft (Original Well Elev)
Easting 2354904.16 Latitude 39° 14' 51.504 N Longitude 107° 46' 41.340 W Slot

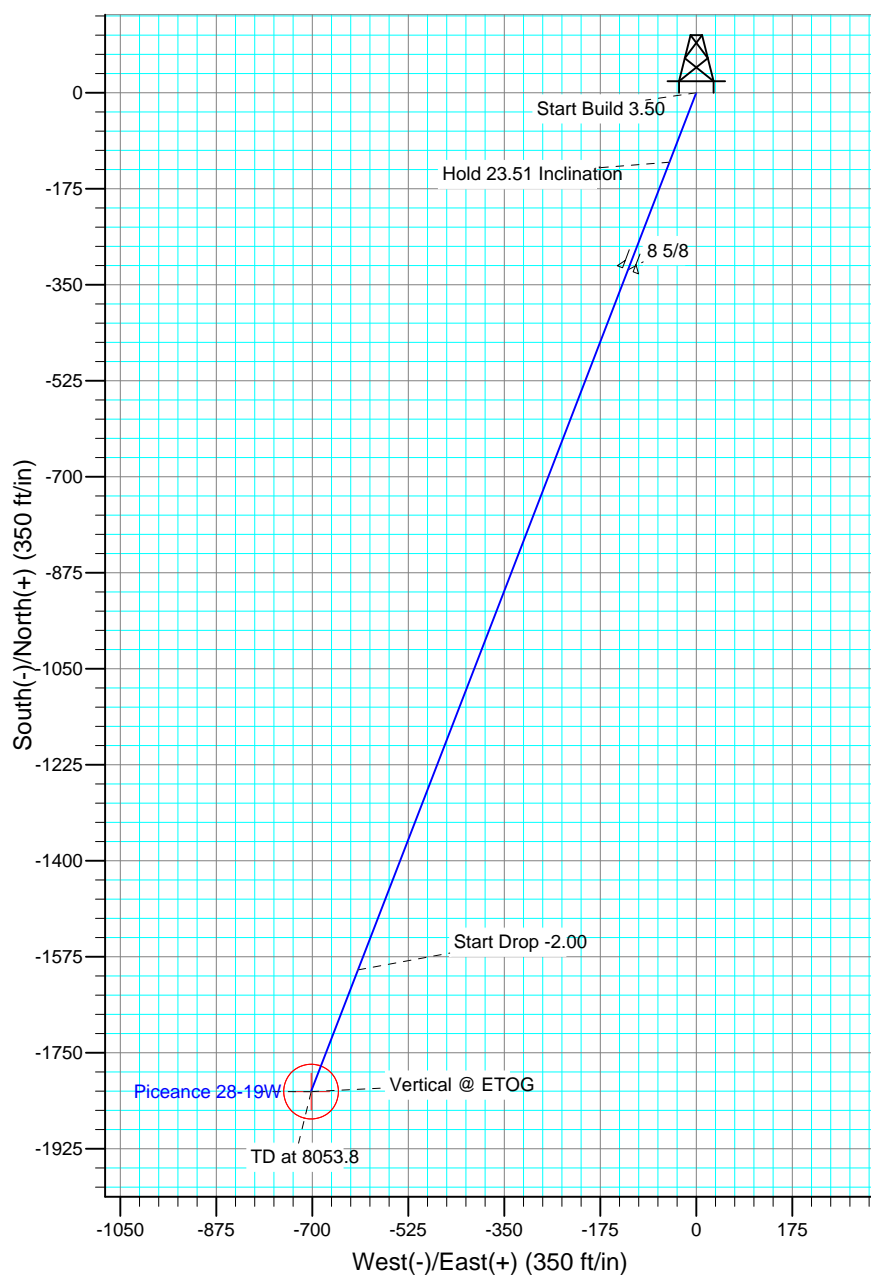
Project: Mesa County, CO
Site: Piceance 28-11 Pad
Well: Piceance 28-19W
Wellbore: Wellbore #1
Design: Plan #1 10May14 kjs

+N/-S +E/-W Northing
0.0 0.0 1523176.22



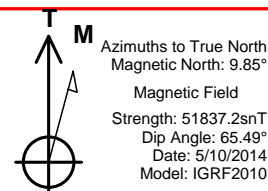
SECTION DETAILS

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	971.6	23.51	201.09	953.0	-126.8	-48.9	3.50	201.09	135.9	
4	4928.4	23.51	201.09	4581.3	-1599.2	-616.8	0.00	0.00	1714.1	
5	6103.8	0.00	0.00	5724.0	-1821.1	-702.4	2.00	180.00	1951.8	ETOG (50' Radius) 28-19W
6	8053.8	0.00	0.00	7674.0	-1821.1	-702.4	0.00	0.00	1951.8	



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4524.0	4865.9	WILLIAMS FORK:
5724.0	6103.8	ETOG:
6824.0	7203.8	CAMEO:
7524.0	7903.8	ROLLINS:
7674.0	8053.8	ETD:



Piceance Energy, LLC

Mesa County, CO

Piceance 28-11 Pad

Piceance 28-19W

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 28-19W
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 28-19W	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 28-19W					
Well Position	+N/-S	0.0 ft	Northing:	1,523,176.22 ft	Latitude:	39° 14' 51.504 N
	+E/-W	0.0 ft	Easting:	2,354,904.16 ft	Longitude:	107° 46' 41.340 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	201.09

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
0.0	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	
971.6	23.51	201.09	953.0	-126.8	-48.9	3.50	3.50	0.00	201.09	
4,928.4	23.51	201.09	4,581.3	-1,599.2	-616.8	0.00	0.00	0.00	0.00	
6,103.8	0.00	0.00	5,724.0	-1,821.1	-702.4	2.00	-2.00	0.00	180.00	ETOG (50' Radius) 2%
8,053.8	0.00	0.00	7,674.0	-1,821.1	-702.4	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 28-19W
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 28-19W	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	1,523,176.22	2,354,904.16	39° 14' 51.504 N	107° 46' 41.340 W
200.0	0.00	0.00	200.0	0.0	0.0	1,523,176.22	2,354,904.16	39° 14' 51.504 N	107° 46' 41.340 W
300.0	0.00	0.00	300.0	0.0	0.0	1,523,176.22	2,354,904.16	39° 14' 51.504 N	107° 46' 41.340 W
Start Build 3.50									
400.0	3.50	201.09	399.9	-2.8	-1.1	1,523,173.40	2,354,902.99	39° 14' 51.476 N	107° 46' 41.354 W
600.0	10.50	201.09	598.3	-25.6	-9.9	1,523,150.90	2,354,893.66	39° 14' 51.251 N	107° 46' 41.465 W
800.0	17.50	201.09	792.3	-70.7	-27.3	1,523,106.24	2,354,875.13	39° 14' 50.805 N	107° 46' 41.687 W
971.6	23.51	201.09	953.0	-126.8	-48.9	1,523,050.73	2,354,852.11	39° 14' 50.251 N	107° 46' 41.961 W
Hold 23.51 Inclination									
1,000.0	23.51	201.09	979.0	-137.3	-53.0	1,523,040.28	2,354,847.77	39° 14' 50.147 N	107° 46' 42.013 W
1,200.0	23.51	201.09	1,162.4	-211.7	-81.7	1,522,966.60	2,354,817.21	39° 14' 49.411 N	107° 46' 42.378 W
1,400.0	23.51	201.09	1,345.8	-286.2	-110.4	1,522,892.91	2,354,786.65	39° 14' 48.675 N	107° 46' 42.743 W
1,500.0	23.51	201.09	1,437.5	-323.4	-124.7	1,522,856.07	2,354,771.36	39° 14' 48.308 N	107° 46' 42.926 W
8 5/8									
1,600.0	23.51	201.09	1,529.2	-360.6	-139.1	1,522,819.22	2,354,756.08	39° 14' 47.940 N	107° 46' 43.108 W
1,800.0	23.51	201.09	1,712.6	-435.0	-167.8	1,522,745.54	2,354,725.52	39° 14' 47.204 N	107° 46' 43.473 W
2,000.0	23.51	201.09	1,896.0	-509.5	-196.5	1,522,671.85	2,354,694.95	39° 14' 46.468 N	107° 46' 43.838 W
2,200.0	23.51	201.09	2,079.4	-583.9	-225.2	1,522,598.17	2,354,664.39	39° 14' 45.733 N	107° 46' 44.203 W
2,400.0	23.51	201.09	2,262.8	-658.3	-253.9	1,522,524.48	2,354,633.83	39° 14' 44.997 N	107° 46' 44.568 W
2,600.0	23.51	201.09	2,446.2	-732.7	-282.6	1,522,450.79	2,354,603.26	39° 14' 44.261 N	107° 46' 44.933 W
2,800.0	23.51	201.09	2,629.6	-807.2	-311.3	1,522,377.11	2,354,572.70	39° 14' 43.526 N	107° 46' 45.297 W
3,000.0	23.51	201.09	2,813.0	-881.6	-340.0	1,522,303.42	2,354,542.13	39° 14' 42.790 N	107° 46' 45.662 W
3,200.0	23.51	201.09	2,996.4	-956.0	-368.7	1,522,229.74	2,354,511.57	39° 14' 42.054 N	107° 46' 46.027 W
3,400.0	23.51	201.09	3,179.8	-1,030.5	-397.4	1,522,156.05	2,354,481.00	39° 14' 41.319 N	107° 46' 46.392 W
3,600.0	23.51	201.09	3,363.2	-1,104.9	-426.1	1,522,082.36	2,354,450.44	39° 14' 40.583 N	107° 46' 46.757 W
3,800.0	23.51	201.09	3,546.6	-1,179.3	-454.9	1,522,008.68	2,354,419.88	39° 14' 39.847 N	107° 46' 47.122 W
4,000.0	23.51	201.09	3,730.0	-1,253.8	-483.6	1,521,934.99	2,354,389.31	39° 14' 39.112 N	107° 46' 47.487 W
4,200.0	23.51	201.09	3,913.4	-1,328.2	-512.3	1,521,861.31	2,354,358.75	39° 14' 38.376 N	107° 46' 47.852 W
4,400.0	23.51	201.09	4,096.8	-1,402.6	-541.0	1,521,787.62	2,354,328.18	39° 14' 37.640 N	107° 46' 48.217 W
4,600.0	23.51	201.09	4,280.2	-1,477.0	-569.7	1,521,713.93	2,354,297.62	39° 14' 36.905 N	107° 46' 48.581 W
4,800.0	23.51	201.09	4,463.6	-1,551.5	-598.4	1,521,640.25	2,354,267.06	39° 14' 36.169 N	107° 46' 48.946 W
4,865.9	23.51	201.09	4,524.0	-1,576.0	-607.8	1,521,615.98	2,354,256.99	39° 14' 35.927 N	107° 46' 49.066 W
WILLIAMS FORK:									
4,928.4	23.51	201.09	4,581.3	-1,599.2	-616.8	1,521,592.94	2,354,247.43	39° 14' 35.697 N	107° 46' 49.181 W
Start Drop -2.00									
5,000.0	22.08	201.09	4,647.3	-1,625.1	-626.8	1,521,567.32	2,354,236.81	39° 14' 35.441 N	107° 46' 49.307 W
5,200.0	18.08	201.09	4,835.2	-1,689.2	-651.5	1,521,503.92	2,354,210.51	39° 14' 34.808 N	107° 46' 49.621 W
5,400.0	14.08	201.09	5,027.3	-1,740.8	-671.4	1,521,452.78	2,354,189.30	39° 14' 34.297 N	107° 46' 49.875 W
5,600.0	10.08	201.09	5,222.8	-1,779.9	-686.5	1,521,414.14	2,354,173.27	39° 14' 33.911 N	107° 46' 50.066 W
5,800.0	6.08	201.09	5,420.8	-1,806.1	-696.6	1,521,388.20	2,354,162.51	39° 14' 33.652 N	107° 46' 50.194 W
6,000.0	2.08	201.09	5,620.3	-1,819.3	-701.7	1,521,375.07	2,354,157.06	39° 14' 33.521 N	107° 46' 50.259 W
6,103.8	0.00	0.00	5,724.0	-1,821.1	-702.4	1,521,373.33	2,354,156.34	39° 14' 33.504 N	107° 46' 50.268 W
Vertical @ ETOG - ETOG: - ETOG (50' Radius) 28-19W									
6,200.0	0.00	0.00	5,820.2	-1,821.1	-702.4	1,521,373.33	2,354,156.34	39° 14' 33.504 N	107° 46' 50.268 W
6,400.0	0.00	0.00	6,020.2	-1,821.1	-702.4	1,521,373.33	2,354,156.34	39° 14' 33.504 N	107° 46' 50.268 W
6,600.0	0.00	0.00	6,220.2	-1,821.1	-702.4	1,521,373.33	2,354,156.34	39° 14' 33.504 N	107° 46' 50.268 W
6,800.0	0.00	0.00	6,420.2	-1,821.1	-702.4	1,521,373.33	2,354,156.34	39° 14' 33.504 N	107° 46' 50.268 W
7,000.0	0.00	0.00	6,620.2	-1,821.1	-702.4	1,521,373.33	2,354,156.34	39° 14' 33.504 N	107° 46' 50.268 W
7,200.0	0.00	0.00	6,820.2	-1,821.1	-702.4	1,521,373.33	2,354,156.34	39° 14' 33.504 N	107° 46' 50.268 W
7,203.8	0.00	0.00	6,824.0	-1,821.1	-702.4	1,521,373.33	2,354,156.34	39° 14' 33.504 N	107° 46' 50.268 W
CAMEO:									
7,400.0	0.00	0.00	7,020.2	-1,821.1	-702.4	1,521,373.33	2,354,156.34	39° 14' 33.504 N	107° 46' 50.268 W
7,600.0	0.00	0.00	7,220.2	-1,821.1	-702.4	1,521,373.33	2,354,156.34	39° 14' 33.504 N	107° 46' 50.268 W

New Tech

Planning Report - Geographic

Database:	EDM 2003.16 Single User Db	Local Co-ordinate Reference:	Well Piceance 28-19W
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 28-19W	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	7,420.2	-1,821.1	-702.4	1,521,373.33	2,354,156.34	39° 14' 33.504 N	107° 46' 50.268 W
7,903.8	0.00	0.00	7,524.0	-1,821.1	-702.4	1,521,373.33	2,354,156.34	39° 14' 33.504 N	107° 46' 50.268 W
ROLLINS:									
8,000.0	0.00	0.00	7,620.2	-1,821.1	-702.4	1,521,373.33	2,354,156.34	39° 14' 33.504 N	107° 46' 50.268 W
8,053.8	0.00	0.00	7,674.0	-1,821.1	-702.4	1,521,373.33	2,354,156.34	39° 14' 33.504 N	107° 46' 50.268 W
TD at 8053.8 - ETD:									

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	5,724.0	-1,821.1	-702.4	1,521,373.33	2,354,156.34	39° 14' 33.504 N	107° 46' 50.268 W
- plan hits target									
- Circle (radius 50.0)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
1,500.0	1,437.5	8 5/8	8-5/8	8-5/8	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
6,103.8	5,724.0	ETOG:				
7,903.8	7,524.0	ROLLINS:				
8,053.8	7,674.0	ETD:				
4,865.9	4,524.0	WILLIAMS FORK:				
7,203.8	6,824.0	CAMEO:				

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	
971.6	953.0	-126.8	-48.9	Hold 23.51 Inclination	
4,928.4	4,581.3	-1,599.2	-616.8	Start Drop -2.00	
6,103.8	5,724.0	-1,821.1	-702.4	Vertical @ ETOG	
8,053.8	7,674.0	-1,821.1	-702.4	TD at 8053.8	