



PICEANCE VLY NAD 83

PA 21-06S-095W

PA 22-21 Pad

PA 324-16 - Slot 2B10

Wellbore #1

Plan: Design #2 07Nov12 kjs

Standard Planning Report - Geographic

13 March, 2013



WPX Energy
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well PA 324-16 - Slot 2B10
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 6056.00usft (Nabors 26')
Project:	PA 21-06S-095W	MD Reference:	KELLY BUSHING @ 6056.00usft (Nabors 26')
Site:	PA 22-21 Pad	North Reference:	True
Well:	PA 324-16	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2 07Nov12 kjs		

Project	PA 21-06S-095W, Garfield County, CO, 21-06S-095W		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		Using geodetic scale factor

Site	PA 22-21 Pad				
Site Position:		Northing:	1,620,701.00 usft	Latitude:	39.51079
From:	Map	Easting:	2,292,437.50 usft	Longitude:	-108.00815
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	-1.58 °

Well	PA 324-16 - Slot 2B10					
Well Position	+N/-S	0.00 usft	Northing:	1,620,591.20 usft	Latitude:	39.51049
	+E/-W	0.00 usft	Easting:	2,292,441.70 usft	Longitude:	-108.00813
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	6,030.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/6/2012	10.23	65.72	52,157

Design	Design #2 07Nov12 kjs			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	16.07

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00	
550.00	10.00	352.00	547.97	34.48	-4.85	2.50	2.50	0.00	352.00	
1,560.50	34.01	17.02	1,479.50	397.50	66.81	2.50	2.38	2.48	33.66	
5,340.01	34.01	17.02	4,612.49	2,418.99	685.42	0.00	0.00	0.00	0.00	
7,607.34	0.00	53.06	6,749.00	3,043.79	876.62	1.50	-1.50	1.59	180.00	Top Gas (25' Radius)
9,707.34	0.00	53.06	8,849.00	3,043.80	876.63	0.00	0.00	0.00	0.00	



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Project:	PA 21-06S-095W	MD Reference:	KELLY BUSHING @ 6056.00usft (Nabors 26')
Site:	PA 22-21 Pad	North Reference:	True
Well:	PA 324-16	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2 07Nov12 kjs		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.00	0.00	0.00	0.00	0.00	0.00	1,620,591.20	2,292,441.70	39.51049	-108.00813	
150.00	0.00	0.00	150.00	0.00	0.00	1,620,591.20	2,292,441.70	39.51049	-108.00813	
Start Build 2.50										
500.00	8.75	352.00	498.64	26.41	-3.71	1,620,617.70	2,292,438.72	39.51056	-108.00814	
550.00	10.00	352.00	547.97	34.48	-4.85	1,620,625.79	2,292,437.81	39.51058	-108.00814	
Begin 2.5°/100 Build & Turn										
1,000.00	20.33	10.13	981.93	150.51	3.49	1,620,741.54	2,292,449.35	39.51090	-108.00811	
1,500.00	32.52	16.53	1,428.92	365.73	57.23	1,620,955.19	2,292,509.00	39.51149	-108.00792	
1,560.50	34.01	17.02	1,479.50	397.50	66.81	1,620,986.68	2,292,519.45	39.51158	-108.00789	
Hold 34.01 Inc, 17.02° azi										
1,661.00	34.01	17.02	1,562.82	451.25	83.26	1,621,039.96	2,292,537.38	39.51173	-108.00783	
9 5/8"										
2,000.00	34.01	17.02	1,843.83	632.57	138.74	1,621,219.67	2,292,597.85	39.51222	-108.00764	
2,500.00	34.01	17.02	2,258.30	899.99	220.58	1,621,484.72	2,292,687.03	39.51296	-108.00735	
3,000.00	34.01	17.02	2,672.77	1,167.42	302.42	1,621,749.78	2,292,776.22	39.51369	-108.00706	
3,266.89	34.01	17.02	2,894.00	1,310.17	346.10	1,621,891.26	2,292,823.82	39.51408	-108.00690	
Top of "G" Sand										
3,387.52	34.01	17.02	2,994.00	1,374.69	365.85	1,621,955.21	2,292,845.34	39.51426	-108.00683	
Base of "G" Sand										
3,500.00	34.01	17.02	3,087.24	1,434.85	384.25	1,622,014.84	2,292,865.40	39.51443	-108.00677	
4,000.00	34.01	17.02	3,501.70	1,702.28	466.09	1,622,279.89	2,292,954.59	39.51516	-108.00648	
4,500.00	34.01	17.02	3,916.17	1,969.70	547.93	1,622,544.95	2,293,043.77	39.51589	-108.00618	
5,000.00	34.01	17.02	4,330.64	2,237.13	629.77	1,622,810.01	2,293,132.96	39.51663	-108.00589	
5,340.01	34.01	17.02	4,612.49	2,418.99	685.42	1,622,990.25	2,293,193.61	39.51713	-108.00570	
Begin 1.5°/100 Drop										
5,500.00	31.61	17.02	4,746.95	2,501.88	710.79	1,623,072.41	2,293,221.25	39.51736	-108.00561	
6,000.00	24.11	17.02	5,188.68	2,725.15	779.11	1,623,293.70	2,293,295.71	39.51797	-108.00537	
6,000.35	24.10	17.02	5,189.00	2,725.29	779.15	1,623,293.83	2,293,295.76	39.51797	-108.00537	
Mesaverde										
6,500.00	16.61	17.02	5,657.11	2,891.38	829.98	1,623,458.45	2,293,351.15	39.51842	-108.00519	
7,000.00	9.11	17.02	6,144.22	2,997.72	862.52	1,623,563.85	2,293,386.61	39.51872	-108.00507	
7,500.00	1.61	17.02	6,641.67	3,042.35	876.18	1,623,608.08	2,293,401.50	39.51884	-108.00502	
7,607.34	0.00	53.06	6,749.00	3,043.79	876.62	1,623,609.51	2,293,401.98	39.51884	-108.00502	
Top Gas - Approx. Top Gas										
8,000.00	0.00	53.06	7,141.66	3,043.79	876.62	1,623,609.51	2,293,401.98	39.51884	-108.00502	
8,500.00	0.00	53.06	7,641.66	3,043.80	876.63	1,623,609.52	2,293,401.98	39.51884	-108.00502	
8,737.34	0.00	53.06	7,879.00	3,043.80	876.63	1,623,609.52	2,293,401.98	39.51884	-108.00502	
Cameo Coals										
9,000.00	0.00	53.06	8,141.66	3,043.80	876.63	1,623,609.52	2,293,401.98	39.51884	-108.00502	
9,500.00	0.00	53.06	8,641.66	3,043.80	876.63	1,623,609.52	2,293,401.98	39.51884	-108.00502	
9,607.34	0.00	53.06	8,749.00	3,043.80	876.63	1,623,609.52	2,293,401.98	39.51884	-108.00502	
Rollins SS										
9,707.34	0.00	53.06	8,849.00	3,043.80	876.63	1,623,609.52	2,293,401.98	39.51884	-108.00502	
TD at 9707.34 - TD										



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Project:	PA 21-06S-095W	MD Reference:	KELLY BUSHING @ 6056.00usft (Nabors 26')
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Well:	PA 324-16	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2 07Nov12 kjs		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
Top Gas (25' Radius) P/ - plan hits target center - Circle (radius 25.00)	0.00	0.00	6,749.00	3,043.79	876.62	1,623,609.51	2,293,401.98	39.51884	-108.00502

Casing Points					
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter	
(usft)	(usft)		(in)	(in)	
1,661.00	1,562.82	9 5/8"	9.625	13.500	

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
3,266.89	2,894.00	Top of "G" Sand				
3,387.52	2,994.00	Base of "G" Sand				
6,000.35	5,189.00	Mesaverde				
7,607.34	6,749.00	Approx. Top Gas				
8,737.34	7,879.00	Cameo Coals				
9,607.34	8,749.00	Rollins SS				
9,707.34	8,849.00	TD				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(usft)	(usft)	+N/-S	+E/-W		
		(usft)	(usft)		
150.00	150.00	0.00	0.00	Start Build 2.50	
550.00	547.97	34.48	-4.85	Begin 2.5°/100 Build & Turn	
1,560.50	1,479.50	397.50	66.81	Hold 34.01 Inc, 17.02° azi	
5,340.01	4,612.49	2,418.99	685.42	Begin 1.5°/100 Drop	
7,607.34	6,749.00	3,043.79	876.62	Top Gas	
9,707.34	8,849.00	3,043.80	876.63	TD at 9707.34	