

# **PICEANCE VLY NAD 83**

**RU 23-06S-094W**

**RWF 43-23 Pad**

**RWF 441-23 - Slot A08**

**Wellbore #1**

**Plan: Plan #4 26Mar14 kjs**

## **Standard Planning Report - Geographic**

**11 April, 2014**

**WPX**  
Planning Report - Geographic

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well RWF 441-23 - Slot A08
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5625.00usft (Nabors 577 (26' RKB) mab)
<b>Project:</b>	RU 23-06S-094W	<b>MD Reference:</b>	KELLY BUSHING @ 5625.00usft (Nabors 577 (26' RKB) mab)
<b>Site:</b>	RWF 43-23 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RWF 441-23	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #4 26Mar14 kjs		

<b>Project</b>	RU 23-06S-094W, Garfield County, CO, 23-06S-094W		
<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		Using geodetic scale factor

<b>Site</b>	RWF 43-23 Pad			
<b>Site Position:</b>		<b>Northing:</b>	1,619,204.50 usft	<b>Latitude:</b> 39.51002
<b>From:</b> Map		<b>Easting:</b>	2,337,897.00 usft	<b>Longitude:</b> -107.84695
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> -1.48 °

<b>Well</b>	RWF 441-23 - Slot A08			
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	1,619,204.50 usft
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	2,337,896.50 usft
<b>Position Uncertainty</b>	0.00 usft		<b>Wellhead Elevation:</b>	
			<b>Ground Level:</b>	5,599.00 usft

<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	4/28/2010	10.43	65.81	52,395

<b>Design</b>	Plan #4 26Mar14 kjs			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	345.25

<b>Plan Sections</b>										
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	
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,079.31	23.98	345.25	1,051.54	191.34	-50.36	2.50	2.50	0.00	345.25	
4,684.59	23.98	345.25	4,345.57	1,608.49	-423.35	0.00	0.00	0.00	0.00	
5,883.73	0.00	0.00	5,510.00	1,847.67	-486.30	2.00	-2.00	0.00	180.00	
5,983.73	0.00	0.00	5,610.00	1,847.67	-486.30	0.00	0.00	0.00	0.00	Top Gas (50' Radius)
8,733.73	0.00	0.00	8,360.00	1,847.67	-486.30	0.00	0.00	0.00	0.00	

**WPX**  
Planning Report - Geographic

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well RWF 441-23 - Slot A08
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5625.00usft (Nabors 577 (26' RKB) mab)
<b>Project:</b>	RU 23-06S-094W	<b>MD Reference:</b>	KELLY BUSHING @ 5625.00usft (Nabors 577 (26' RKB) mab)
<b>Site:</b>	RWF 43-23 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RWF 441-23	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #4 26Mar14 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	1,619,204.50	2,337,896.50	39.51002	-107.84695
120.00	0.00	0.00	120.00	0.00	0.00	1,619,204.50	2,337,896.50	39.51002	-107.84695
Start Build 2.50									
200.00	2.00	345.25	199.98	1.35	-0.36	1,619,205.85	2,337,896.18	39.51002	-107.84695
400.00	7.00	345.25	399.30	16.52	-4.35	1,619,221.12	2,337,892.58	39.51006	-107.84696
600.00	12.00	345.25	596.50	48.43	-12.75	1,619,253.24	2,337,885.01	39.51015	-107.84699
800.00	17.00	345.25	790.07	96.84	-25.49	1,619,301.96	2,337,873.52	39.51028	-107.84704
1,000.00	22.00	345.25	978.54	161.39	-42.48	1,619,366.92	2,337,858.21	39.51046	-107.84710
1,079.31	23.98	345.25	1,051.54	191.34	-50.36	1,619,397.07	2,337,851.10	39.51054	-107.84713
Hold 23.98° Inc, 345.25° Az									
1,132.35	23.98	345.25	1,100.00	212.19	-55.85	1,619,418.05	2,337,846.16	39.51060	-107.84715
9 5/8"									
1,200.00	23.98	345.25	1,161.81	238.78	-62.85	1,619,444.81	2,337,839.85	39.51067	-107.84717
1,400.00	23.98	345.25	1,344.55	317.40	-83.54	1,619,523.93	2,337,821.19	39.51089	-107.84724
1,600.00	23.98	345.25	1,527.28	396.01	-104.23	1,619,603.05	2,337,802.54	39.51110	-107.84732
1,800.00	23.98	345.25	1,710.01	474.63	-124.92	1,619,682.17	2,337,783.89	39.51132	-107.84739
1,999.18	23.98	345.25	1,892.00	552.92	-145.53	1,619,760.97	2,337,765.31	39.51153	-107.84746
Top of "G" Sand									
2,000.00	23.98	345.25	1,892.75	553.24	-145.61	1,619,761.29	2,337,765.24	39.51153	-107.84746
2,108.63	23.98	345.25	1,992.00	595.94	-156.85	1,619,804.27	2,337,755.10	39.51165	-107.84750
Base of "G" Sand									
2,200.00	23.98	345.25	2,075.48	631.86	-166.30	1,619,840.41	2,337,746.58	39.51175	-107.84754
2,400.00	23.98	345.25	2,258.21	710.47	-186.99	1,619,919.53	2,337,727.93	39.51197	-107.84761
2,600.00	23.98	345.25	2,440.95	789.09	-207.68	1,619,998.65	2,337,709.28	39.51218	-107.84768
2,800.00	23.98	345.25	2,623.68	867.70	-228.38	1,620,077.77	2,337,690.62	39.51240	-107.84776
3,000.00	23.98	345.25	2,806.41	946.32	-249.07	1,620,156.89	2,337,671.97	39.51261	-107.84783
3,200.00	23.98	345.25	2,989.15	1,024.93	-269.76	1,620,236.01	2,337,653.32	39.51283	-107.84790
3,400.00	23.98	345.25	3,171.88	1,103.55	-290.45	1,620,315.14	2,337,634.67	39.51305	-107.84798
3,600.00	23.98	345.25	3,354.61	1,182.16	-311.14	1,620,394.26	2,337,616.01	39.51326	-107.84805
3,800.00	23.98	345.25	3,537.35	1,260.78	-331.83	1,620,473.38	2,337,597.36	39.51348	-107.84812
4,000.00	23.98	345.25	3,720.08	1,339.39	-352.52	1,620,552.50	2,337,578.71	39.51369	-107.84820
4,200.00	23.98	345.25	3,902.82	1,418.01	-373.21	1,620,631.62	2,337,560.06	39.51391	-107.84827
4,400.00	23.98	345.25	4,085.55	1,496.62	-393.90	1,620,710.74	2,337,541.40	39.51412	-107.84834
4,600.00	23.98	345.25	4,268.28	1,575.24	-414.60	1,620,789.86	2,337,522.75	39.51434	-107.84842
4,684.59	23.98	345.25	4,345.57	1,608.49	-423.35	1,620,823.32	2,337,514.86	39.51443	-107.84845
Start Drop -2.00									
4,792.54	21.82	345.25	4,445.00	1,649.11	-434.04	1,620,864.21	2,337,505.22	39.51454	-107.84849
Mesaverde									
4,800.00	21.67	345.25	4,451.93	1,651.79	-434.74	1,620,866.90	2,337,504.59	39.51455	-107.84849
5,000.00	17.67	345.25	4,640.22	1,716.89	-451.88	1,620,932.42	2,337,489.14	39.51473	-107.84855
5,200.00	13.67	345.25	4,832.74	1,769.14	-465.63	1,620,985.00	2,337,476.74	39.51487	-107.84860
5,400.00	9.67	345.25	5,028.56	1,808.27	-475.93	1,621,024.38	2,337,467.46	39.51498	-107.84863
5,600.00	5.67	345.25	5,226.73	1,834.09	-482.72	1,621,050.37	2,337,461.33	39.51505	-107.84866
5,800.00	1.67	345.25	5,426.28	1,846.48	-485.99	1,621,062.85	2,337,458.39	39.51508	-107.84867
5,883.73	0.00	0.00	5,510.00	1,847.67	-486.30	1,621,064.04	2,337,458.11	39.51509	-107.84867
Vertical									
5,983.73	0.00	0.00	5,610.00	1,847.67	-486.30	1,621,064.04	2,337,458.11	39.51509	-107.84867
Top Gas - Approx. Top Gas									
6,000.00	0.00	0.00	5,626.27	1,847.67	-486.30	1,621,064.04	2,337,458.11	39.51509	-107.84867
6,200.00	0.00	0.00	5,826.27	1,847.67	-486.30	1,621,064.04	2,337,458.11	39.51509	-107.84867
6,400.00	0.00	0.00	6,026.27	1,847.67	-486.30	1,621,064.04	2,337,458.11	39.51509	-107.84867

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<b>Project:</b>	RU 23-06S-094W	<b>MD Reference:</b>	KELLY BUSHING @ 5625.00usft (Nabors 577 (26' RKB) mab)
<b>Site:</b>	RWF 43-23 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RWF 441-23	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #4 26Mar14 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
6,600.00	0.00	0.00	6,226.27	1,847.67	-486.30	1,621,064.04	2,337,458.11	39.51509	-107.84867
6,800.00	0.00	0.00	6,426.27	1,847.67	-486.30	1,621,064.04	2,337,458.11	39.51509	-107.84867
7,000.00	0.00	0.00	6,626.27	1,847.67	-486.30	1,621,064.04	2,337,458.11	39.51509	-107.84867
7,200.00	0.00	0.00	6,826.27	1,847.67	-486.30	1,621,064.04	2,337,458.11	39.51509	-107.84867
7,400.00	0.00	0.00	7,026.27	1,847.67	-486.30	1,621,064.04	2,337,458.11	39.51509	-107.84867
7,600.00	0.00	0.00	7,226.27	1,847.67	-486.30	1,621,064.04	2,337,458.11	39.51509	-107.84867
7,699.73	0.00	0.00	7,326.00	1,847.67	-486.30	1,621,064.04	2,337,458.11	39.51509	-107.84867
Cameo Coals									
7,800.00	0.00	0.00	7,426.27	1,847.67	-486.30	1,621,064.04	2,337,458.11	39.51509	-107.84867
8,000.00	0.00	0.00	7,626.27	1,847.67	-486.30	1,621,064.04	2,337,458.11	39.51509	-107.84867
8,200.00	0.00	0.00	7,826.27	1,847.67	-486.30	1,621,064.04	2,337,458.11	39.51509	-107.84867
8,400.00	0.00	0.00	8,026.27	1,847.67	-486.30	1,621,064.04	2,337,458.11	39.51509	-107.84867
8,493.73	0.00	0.00	8,120.00	1,847.67	-486.30	1,621,064.04	2,337,458.11	39.51509	-107.84867
Coal D									
8,583.73	0.00	0.00	8,210.00	1,847.67	-486.30	1,621,064.04	2,337,458.11	39.51509	-107.84867
Rollins SS									
8,600.00	0.00	0.00	8,226.27	1,847.67	-486.30	1,621,064.04	2,337,458.11	39.51509	-107.84867
8,733.73	0.00	0.00	8,360.00	1,847.67	-486.30	1,621,064.04	2,337,458.11	39.51509	-107.84867
TD at 8733.73									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Top Gas (50' Radius) RV	0.00	0.00	5,610.00	1,847.67	-486.30	1,621,064.04	2,337,458.11	39.51509	-107.84867
- plan hits target center									
- Circle (radius 50.00)									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,132.35	1,100.00	9 5/8"	9.625	13.500	

**WPX**  
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<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well RWF 441-23 - Slot A08
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<b>Project:</b>	RU 23-06S-094W	<b>MD Reference:</b>	KELLY BUSHING @ 5625.00usft (Nabors 577 (26' RKB) mab)
<b>Site:</b>	RWF 43-23 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RWF 441-23	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #4 26Mar14 kjs		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,999.18	1,892.00	Top of "G" Sand				
2,108.63	1,992.00	Base of "G" Sand				
4,792.54	4,445.00	Mesaverde				
5,983.73	5,610.00	Approx. Top Gas				
7,699.73	7,326.00	Cameo Coals				
8,493.73	8,120.00	Coal D				
8,583.73	8,210.00	Rollins SS				
8,733.73	8,360.00	TD				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
120.00	120.00	0.00	0.00	Start Build 2.50	
1,079.31	1,051.54	191.34	-50.36	Hold 23.98° Inc, 345.25° Az	
4,684.59	4,345.57	1,608.49	-423.35	Start Drop -2.00	
5,883.73	5,510.00	1,847.67	-486.30	Vertical	
5,983.73	5,610.00	1,847.67	-486.30	Top Gas	
8,733.73	8,360.00	1,847.67	-486.30	TD at 8733.73	