

# **PICEANCE VLY NAD 83**

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

**RWF 43-23 Pad**

**RWF 41-23 - Slot B09**

**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 41-23 - Slot B09
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5625.00usft (Nabors 576 (26' RKB) mab)
<b>Project:</b>	RU 23-06S-094W	<b>MD Reference:</b>	KELLY BUSHING @ 5625.00usft (Nabors 576 (26' RKB) mab)
<b>Site:</b>	RWF 43-23 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RWF 41-23	<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 41-23 - Slot B09			
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	1,619,214.51 usft
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	2,337,904.01 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	4/27/2010	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	346.52

<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	
1,145.88	28.21	346.52	1,104.93	240.69	-57.69	2.75	2.75	0.00	346.52	
4,627.24	28.21	346.52	4,172.73	1,841.11	-441.28	0.00	0.00	0.00	0.00	
6,037.83	0.00	0.00	5,527.00	2,172.05	-520.60	2.00	-2.00	0.00	180.00	
6,137.83	0.00	0.00	5,627.00	2,172.05	-520.60	0.00	0.00	0.00	0.00	Top Gas (50' Radius)
8,887.83	0.00	0.00	8,377.00	2,172.05	-520.60	0.00	0.00	0.00	0.00	

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Planning Report - Geographic

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<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5625.00usft (Nabors 576 (26' RKB) mab)
<b>Project:</b>	RU 23-06S-094W	<b>MD Reference:</b>	KELLY BUSHING @ 5625.00usft (Nabors 576 (26' RKB) mab)
<b>Site:</b>	RWF 43-23 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RWF 41-23	<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	1,619,214.51	2,337,904.01	39.51004	-107.84692
120.00	0.00	0.00	120.00	0.00	0.00	1,619,214.51	2,337,904.01	39.51004	-107.84692
Start Build 2.75									
200.00	2.20	346.52	199.98	1.49	-0.36	1,619,216.01	2,337,903.69	39.51005	-107.84692
400.00	7.70	346.52	399.16	18.27	-4.38	1,619,232.88	2,337,900.10	39.51009	-107.84694
600.00	13.20	346.52	595.77	53.53	-12.83	1,619,268.35	2,337,892.56	39.51019	-107.84697
800.00	18.70	346.52	787.99	106.96	-25.64	1,619,322.09	2,337,881.14	39.51034	-107.84701
1,000.00	24.20	346.52	974.07	178.05	-42.68	1,619,393.60	2,337,865.95	39.51053	-107.84707
1,145.88	28.21	346.52	1,104.93	240.69	-57.69	1,619,456.60	2,337,852.56	39.51070	-107.84713
Hold 28.21° Inc, 346.52° Az									
1,195.88	28.21	346.52	1,148.99	263.67	-63.20	1,619,479.71	2,337,847.64	39.51077	-107.84715
9 5/8"									
1,200.00	28.21	346.52	1,152.62	265.57	-63.65	1,619,481.62	2,337,847.24	39.51077	-107.84715
1,400.00	28.21	346.52	1,328.86	357.51	-85.69	1,619,574.10	2,337,827.58	39.51103	-107.84723
1,600.00	28.21	346.52	1,505.10	449.45	-107.73	1,619,666.57	2,337,807.93	39.51128	-107.84730
1,800.00	28.21	346.52	1,681.34	541.39	-129.76	1,619,759.05	2,337,788.28	39.51153	-107.84738
2,000.00	28.21	346.52	1,857.58	633.33	-151.80	1,619,851.53	2,337,768.62	39.51178	-107.84746
2,034.52	28.21	346.52	1,888.00	649.20	-155.60	1,619,867.49	2,337,765.23	39.51183	-107.84747
Top of "G" Sand									
2,148.00	28.21	346.52	1,988.00	701.37	-168.11	1,619,919.96	2,337,754.08	39.51197	-107.84752
Base of "G" Sand									
2,200.00	28.21	346.52	2,033.82	725.28	-173.84	1,619,944.00	2,337,748.97	39.51203	-107.84754
2,400.00	28.21	346.52	2,210.07	817.22	-195.87	1,620,036.48	2,337,729.32	39.51229	-107.84762
2,600.00	28.21	346.52	2,386.31	909.16	-217.91	1,620,128.96	2,337,709.66	39.51254	-107.84769
2,800.00	28.21	346.52	2,562.55	1,001.10	-239.95	1,620,221.44	2,337,690.01	39.51279	-107.84777
3,000.00	28.21	346.52	2,738.79	1,093.05	-261.98	1,620,313.91	2,337,670.35	39.51304	-107.84785
3,200.00	28.21	346.52	2,915.03	1,184.99	-284.02	1,620,406.39	2,337,650.70	39.51330	-107.84793
3,400.00	28.21	346.52	3,091.27	1,276.93	-306.06	1,620,498.87	2,337,631.05	39.51355	-107.84801
3,600.00	28.21	346.52	3,267.51	1,368.87	-328.09	1,620,591.34	2,337,611.39	39.51380	-107.84809
3,800.00	28.21	346.52	3,443.76	1,460.81	-350.13	1,620,683.82	2,337,591.74	39.51405	-107.84816
4,000.00	28.21	346.52	3,620.00	1,552.76	-372.17	1,620,776.30	2,337,572.08	39.51431	-107.84824
4,200.00	28.21	346.52	3,796.24	1,644.70	-394.21	1,620,868.78	2,337,552.43	39.51456	-107.84832
4,400.00	28.21	346.52	3,972.48	1,736.64	-416.24	1,620,961.25	2,337,532.78	39.51481	-107.84840
4,600.00	28.21	346.52	4,148.72	1,828.58	-438.28	1,621,053.73	2,337,513.12	39.51506	-107.84848
4,627.24	28.21	346.52	4,172.72	1,841.10	-441.28	1,621,066.33	2,337,510.45	39.51510	-107.84849
Start Drop -2.00									
4,800.00	24.76	346.52	4,327.33	1,916.01	-459.24	1,621,141.67	2,337,494.43	39.51530	-107.84855
4,939.09	21.97	346.52	4,455.00	1,969.65	-472.09	1,621,195.62	2,337,482.97	39.51545	-107.84860
Mesaverde									
5,000.00	20.76	346.52	4,511.73	1,991.23	-477.26	1,621,217.33	2,337,478.35	39.51551	-107.84861
5,200.00	16.76	346.52	4,701.07	2,053.76	-492.25	1,621,280.21	2,337,464.99	39.51568	-107.84867
5,400.00	12.76	346.52	4,894.43	2,103.29	-504.12	1,621,330.03	2,337,454.40	39.51582	-107.84871
5,600.00	8.76	346.52	5,090.88	2,139.58	-512.82	1,621,366.54	2,337,446.64	39.51592	-107.84874
5,800.00	4.76	346.52	5,289.45	2,162.46	-518.30	1,621,389.55	2,337,441.75	39.51598	-107.84876
6,000.00	0.76	346.52	5,489.17	2,171.81	-520.54	1,621,398.95	2,337,439.75	39.51601	-107.84877
6,037.83	0.00	0.00	5,527.00	2,172.05	-520.60	1,621,399.20	2,337,439.70	39.51601	-107.84877
Vertical									
6,137.83	0.00	0.00	5,627.00	2,172.05	-520.60	1,621,399.20	2,337,439.70	39.51601	-107.84877
Top Gas - Approx. Top Gas									
6,200.00	0.00	0.00	5,689.17	2,172.05	-520.60	1,621,399.20	2,337,439.70	39.51601	-107.84877
6,400.00	0.00	0.00	5,889.17	2,172.05	-520.60	1,621,399.20	2,337,439.70	39.51601	-107.84877

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<b>Project:</b>	RU 23-06S-094W	<b>MD Reference:</b>	KELLY BUSHING @ 5625.00usft (Nabors 576 (26' RKB) mab)
<b>Site:</b>	RWF 43-23 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RWF 41-23	<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	6,089.17	2,172.05	-520.60	1,621,399.20	2,337,439.70	39.51601	-107.84877
6,800.00	0.00	0.00	6,289.17	2,172.05	-520.60	1,621,399.20	2,337,439.70	39.51601	-107.84877
7,000.00	0.00	0.00	6,489.17	2,172.05	-520.60	1,621,399.20	2,337,439.70	39.51601	-107.84877
7,200.00	0.00	0.00	6,689.17	2,172.05	-520.60	1,621,399.20	2,337,439.70	39.51601	-107.84877
7,400.00	0.00	0.00	6,889.17	2,172.05	-520.60	1,621,399.20	2,337,439.70	39.51601	-107.84877
7,600.00	0.00	0.00	7,089.17	2,172.05	-520.60	1,621,399.20	2,337,439.70	39.51601	-107.84877
7,800.00	0.00	0.00	7,289.17	2,172.05	-520.60	1,621,399.20	2,337,439.70	39.51601	-107.84877
7,850.83	0.00	0.00	7,340.00	2,172.05	-520.60	1,621,399.20	2,337,439.70	39.51601	-107.84877
Cameo Coals									
8,000.00	0.00	0.00	7,489.17	2,172.05	-520.60	1,621,399.20	2,337,439.70	39.51601	-107.84877
8,200.00	0.00	0.00	7,689.17	2,172.05	-520.60	1,621,399.20	2,337,439.70	39.51601	-107.84877
8,400.00	0.00	0.00	7,889.17	2,172.05	-520.60	1,621,399.20	2,337,439.70	39.51601	-107.84877
8,600.00	0.00	0.00	8,089.17	2,172.05	-520.60	1,621,399.20	2,337,439.70	39.51601	-107.84877
8,650.83	0.00	0.00	8,140.00	2,172.05	-520.60	1,621,399.20	2,337,439.70	39.51601	-107.84877
Coal D									
8,737.83	0.00	0.00	8,227.00	2,172.05	-520.60	1,621,399.20	2,337,439.70	39.51601	-107.84877
Rollins SS									
8,800.00	0.00	0.00	8,289.17	2,172.05	-520.60	1,621,399.20	2,337,439.70	39.51601	-107.84877
8,887.83	0.00	0.00	8,377.00	2,172.05	-520.60	1,621,399.20	2,337,439.70	39.51601	-107.84877
TD at 8887.83									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Top Gas (50' Radius) RV - plan hits target center - Circle (radius 50.00)	0.00	0.00	5,627.00	2,172.05	-520.60	1,621,399.20	2,337,439.70	39.51601	-107.84877

Casing Points						
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)		
1,195.88	1,148.99	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 41-23 - Slot B09
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	KELLY BUSHING @ 5625.00usft (Nabors 576 (26' RKB) mab)
<b>Project:</b>	RU 23-06S-094W	<b>MD Reference:</b>	KELLY BUSHING @ 5625.00usft (Nabors 576 (26' RKB) mab)
<b>Site:</b>	RWF 43-23 Pad	<b>North Reference:</b>	True
<b>Well:</b>	RWF 41-23	<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 (°)
	2,034.52	1,888.00	Top of "G" Sand			
	2,148.00	1,988.00	Base of "G" Sand			
	4,939.09	4,455.00	Mesaverde			
	6,137.83	5,627.00	Approx. Top Gas			
	7,850.83	7,340.00	Cameo Coals			
	8,650.83	8,140.00	Coal D			
	8,737.83	8,227.00	Rollins SS			
	8,887.83	8,377.00	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 2.75
	1,145.88	1,104.93	240.69	-57.69	Hold 28.21° Inc, 346.52° Az
	4,627.24	4,172.72	1,841.10	-441.28	Start Drop -2.00
	6,037.83	5,527.00	2,172.05	-520.60	Vertical
	6,137.83	5,627.00	2,172.05	-520.60	Top Gas
	8,887.83	8,377.00	2,172.05	-520.60	TD at 8887.83