

# **PICEANCE VLY NAD 83**

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

**RWF 43-23 Pad**

**RWF 442-23 - Slot A10**

**Wellbore #1**

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

## **Standard Planning Report - Geographic**

**14 April, 2014**

**WPX**  
Planning Report - Geographic

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well RWF 442-23 - Slot A10
<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 442-23	<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>From:</b>	Map	<b>Easting:</b>	2,337,897.00 usft
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.200 in
		<b>Latitude:</b>	39.51002
		<b>Longitude:</b>	-107.84695
		<b>Grid Convergence:</b>	-1.48 °

<b>Well</b>	RWF 442-23 - Slot A10		
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.00 usft		<b>Wellhead Elevation:</b>
			<b>Latitude:</b>
			<b>Longitude:</b>
			<b>Ground Level:</b>

<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	346.40

<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	
175.00	0.00	0.00	175.00	0.00	0.00	0.00	0.00	0.00	0.00	
592.65	8.35	346.40	591.17	29.54	-7.15	2.00	2.00	0.00	346.40	
4,943.74	8.35	346.40	4,896.11	643.90	-155.78	0.00	0.00	0.00	0.00	
5,500.61	0.00	0.00	5,451.00	683.28	-165.31	1.50	-1.50	0.00	180.00	
5,600.61	0.00	0.00	5,551.00	683.28	-165.31	0.00	0.00	0.00	0.00	Top Gas (50' Radius)
8,350.61	0.00	0.00	8,301.00	683.28	-165.31	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 442-23	<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	2,337,911.50	39.51002	-107.84689
175.00	0.00	0.00	175.00	0.00	0.00	1,619,204.50	2,337,911.50	39.51002	-107.84689
<b>Start Build 2.00</b>									
200.00	0.50	346.40	200.00	0.11	-0.03	1,619,204.60	2,337,911.48	39.51002	-107.84689
400.00	4.50	346.40	399.77	8.58	-2.08	1,619,213.13	2,337,909.65	39.51004	-107.84690
592.65	8.35	346.40	591.17	29.54	-7.15	1,619,234.21	2,337,905.12	39.51010	-107.84692
<b>Hold 8.35° Inc, 346.40° Az</b>									
600.00	8.35	346.40	598.44	30.58	-7.40	1,619,235.25	2,337,904.90	39.51010	-107.84692
800.00	8.35	346.40	796.32	58.82	-14.23	1,619,263.66	2,337,898.80	39.51018	-107.84695
1,000.00	8.35	346.40	994.20	87.05	-21.06	1,619,292.06	2,337,892.70	39.51026	-107.84697
1,106.93	8.35	346.40	1,100.00	102.15	-24.71	1,619,307.25	2,337,889.44	39.51030	-107.84698
<b>9 5/8"</b>									
1,200.00	8.35	346.40	1,192.08	115.29	-27.89	1,619,320.47	2,337,886.60	39.51033	-107.84699
1,400.00	8.35	346.40	1,389.96	143.53	-34.73	1,619,348.87	2,337,880.50	39.51041	-107.84702
1,600.00	8.35	346.40	1,587.84	171.77	-41.56	1,619,377.28	2,337,874.40	39.51049	-107.84704
1,800.00	8.35	346.40	1,785.71	200.01	-48.39	1,619,405.68	2,337,868.30	39.51057	-107.84707
1,915.51	8.35	346.40	1,900.00	216.32	-52.34	1,619,422.09	2,337,864.77	39.51061	-107.84708
<b>Top of "G" Sand</b>									
2,000.00	8.35	346.40	1,983.59	228.25	-55.22	1,619,434.09	2,337,862.20	39.51064	-107.84709
2,016.58	8.35	346.40	2,000.00	230.59	-55.79	1,619,436.45	2,337,861.69	39.51065	-107.84709
<b>Base of "G" Sand</b>									
2,200.00	8.35	346.40	2,181.47	256.49	-62.05	1,619,462.50	2,337,856.10	39.51072	-107.84711
2,400.00	8.35	346.40	2,379.35	284.73	-68.89	1,619,490.90	2,337,850.00	39.51080	-107.84714
2,600.00	8.35	346.40	2,577.23	312.97	-75.72	1,619,519.31	2,337,843.90	39.51088	-107.84716
2,800.00	8.35	346.40	2,775.11	341.21	-82.55	1,619,547.71	2,337,837.80	39.51095	-107.84719
3,000.00	8.35	346.40	2,972.98	369.45	-89.38	1,619,576.12	2,337,831.70	39.51103	-107.84721
3,200.00	8.35	346.40	3,170.86	397.69	-96.22	1,619,604.52	2,337,825.60	39.51111	-107.84724
3,400.00	8.35	346.40	3,368.74	425.93	-103.05	1,619,632.93	2,337,819.50	39.51119	-107.84726
3,600.00	8.35	346.40	3,566.62	454.17	-109.88	1,619,661.33	2,337,813.39	39.51126	-107.84728
3,800.00	8.35	346.40	3,764.50	482.41	-116.71	1,619,689.74	2,337,807.29	39.51134	-107.84731
4,000.00	8.35	346.40	3,962.38	510.65	-123.54	1,619,718.14	2,337,801.19	39.51142	-107.84733
4,200.00	8.35	346.40	4,160.26	538.89	-130.38	1,619,746.55	2,337,795.09	39.51150	-107.84736
4,400.00	8.35	346.40	4,358.13	567.13	-137.21	1,619,774.96	2,337,788.99	39.51157	-107.84738
4,457.48	8.35	346.40	4,415.00	575.24	-139.17	1,619,783.12	2,337,787.24	39.51160	-107.84739
<b>Mesaverde</b>									
4,600.00	8.35	346.40	4,556.01	595.37	-144.04	1,619,803.36	2,337,782.89	39.51165	-107.84741
4,800.00	8.35	346.40	4,753.89	623.61	-150.87	1,619,831.77	2,337,776.79	39.51173	-107.84743
4,943.74	8.35	346.40	4,896.11	643.90	-155.78	1,619,852.18	2,337,772.41	39.51178	-107.84745
<b>Start Drop -1.50</b>									
5,000.00	7.51	346.40	4,951.83	651.45	-157.61	1,619,859.77	2,337,770.78	39.51181	-107.84745
5,200.00	4.51	346.40	5,150.71	671.79	-162.53	1,619,880.24	2,337,766.38	39.51186	-107.84747
5,400.00	1.51	346.40	5,350.41	682.00	-165.00	1,619,890.50	2,337,764.18	39.51189	-107.84748
5,500.61	0.00	0.00	5,451.00	683.28	-165.31	1,619,891.80	2,337,763.90	39.51189	-107.84748
<b>Vertical</b>									
5,600.00	0.00	0.00	5,550.39	683.28	-165.31	1,619,891.80	2,337,763.90	39.51189	-107.84748
5,600.61	0.00	0.00	5,551.00	683.28	-165.31	1,619,891.80	2,337,763.90	39.51189	-107.84748
<b>Top Gas - Approx. Top Gas</b>									
5,800.00	0.00	0.00	5,750.39	683.28	-165.31	1,619,891.80	2,337,763.90	39.51189	-107.84748
6,000.00	0.00	0.00	5,950.39	683.28	-165.31	1,619,891.80	2,337,763.90	39.51189	-107.84748
6,200.00	0.00	0.00	6,150.39	683.28	-165.31	1,619,891.80	2,337,763.90	39.51189	-107.84748
6,400.00	0.00	0.00	6,350.39	683.28	-165.31	1,619,891.80	2,337,763.90	39.51189	-107.84748

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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 442-23	<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	6,550.39	683.28	-165.31	1,619,891.80	2,337,763.90	39.51189	-107.84748
6,800.00	0.00	0.00	6,750.39	683.28	-165.31	1,619,891.80	2,337,763.90	39.51189	-107.84748
7,000.00	0.00	0.00	6,950.39	683.28	-165.31	1,619,891.80	2,337,763.90	39.51189	-107.84748
7,200.00	0.00	0.00	7,150.39	683.28	-165.31	1,619,891.80	2,337,763.90	39.51189	-107.84748
7,343.61	0.00	0.00	7,294.00	683.28	-165.31	1,619,891.80	2,337,763.90	39.51189	-107.84748
<b>Cameo Coals</b>									
7,400.00	0.00	0.00	7,350.40	683.28	-165.31	1,619,891.80	2,337,763.90	39.51189	-107.84748
7,600.00	0.00	0.00	7,550.40	683.28	-165.31	1,619,891.80	2,337,763.90	39.51189	-107.84748
7,800.00	0.00	0.00	7,750.40	683.28	-165.31	1,619,891.80	2,337,763.90	39.51189	-107.84748
8,000.00	0.00	0.00	7,950.40	683.28	-165.31	1,619,891.80	2,337,763.90	39.51189	-107.84748
8,120.61	0.00	0.00	8,071.00	683.28	-165.31	1,619,891.80	2,337,763.90	39.51189	-107.84748
<b>Coal D</b>									
8,200.00	0.00	0.00	8,150.40	683.28	-165.31	1,619,891.80	2,337,763.90	39.51189	-107.84748
8,200.61	0.00	0.00	8,151.00	683.28	-165.31	1,619,891.80	2,337,763.90	39.51189	-107.84748
<b>Rollins SS</b>									
8,350.61	0.00	0.00	8,301.00	683.28	-165.31	1,619,891.80	2,337,763.90	39.51189	-107.84748
<b>TD at 8350.61 - TD</b>									

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	5,551.00	683.28	-165.31	1,619,891.80	2,337,763.90	39.51189	-107.84748

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,106.93	1,100.00	9 5/8"	9.625	13.500	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,915.51	1,900.00	Top of "G" Sand				
2,016.58	2,000.00	Base of "G" Sand				
4,457.48	4,415.00	Mesaverde				
5,600.61	5,551.00	Approx. Top Gas				
7,343.61	7,294.00	Cameo Coals				
8,120.61	8,071.00	Coal D				
8,200.61	8,151.00	Rollins SS				
8,350.61	8,301.00	TD				

**WPX**  
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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 442-23	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #4 26Mar14 kjs		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
175.00	175.00	0.00	0.00	Start Build 2.00
592.65	591.17	29.54	-7.15	Hold 8.35° Inc, 346.40° Az
4,943.74	4,896.11	643.90	-155.78	Start Drop -1.50
5,500.61	5,451.00	683.28	-165.31	Vertical
5,600.61	5,551.00	683.28	-165.31	Top Gas
8,350.61	8,301.00	683.28	-165.31	TD at 8350.61