

PICEANCE VLY NAD 83

RU 23-06S-094W

RWF 43-23 Pad

RWF 541-23 - Slot B10

Wellbore #1

Plan: Plan #4 26Mar14 kjs

Standard Planning Report - Geographic

14 April, 2014

WPX
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well RWF 541-23 - Slot B10
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 5625.00usft (Nabors 576 (26' RKB) mab)
Project:	RU 23-06S-094W	MD Reference:	KELLY BUSHING @ 5625.00usft (Nabors 576 (26' RKB) mab)
Site:	RWF 43-23 Pad	North Reference:	True
Well:	RWF 541-23	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #4 26Mar14 kjs		

Project	RU 23-06S-094W, Garfield County, CO, 23-06S-094W		
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	RWF 43-23 Pad			
Site Position:		Northing:	1,619,204.50 usft	Latitude: 39.51002
From: Map		Easting:	2,337,897.00 usft	Longitude: -107.84695
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence: -1.48 °

Well	RWF 541-23 - Slot B10			
Well Position	+N/-S	0.00 usft	Northing:	1,619,214.50 usft
	+E/-W	0.00 usft	Easting:	2,337,911.50 usft
Position Uncertainty	0.00 usft		Wellhead Elevation:	Ground Level: 5,599.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/27/2010	10.43	65.81	52,395

Design	Plan #4 26Mar14 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	350.07

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	
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00	
960.23	33.61	350.07	912.86	235.86	-41.28	4.00	4.00	0.00	350.07	
4,705.76	33.61	350.07	4,032.27	2,278.07	-398.66	0.00	0.00	0.00	0.00	
6,386.21	0.00	0.00	5,618.00	2,749.79	-481.21	2.00	-2.00	0.00	180.00	
6,486.21	0.00	0.00	5,718.00	2,749.79	-481.21	0.00	0.00	0.00	0.00	Top Gas (50' Radius)
9,236.21	0.00	0.00	8,468.00	2,749.79	-481.21	0.00	0.00	0.00	0.00	

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Project:	RU 23-06S-094W	MD Reference:	KELLY BUSHING @ 5625.00usft (Nabors 576 (26' RKB) mab)
Site:	RWF 43-23 Pad	North Reference:	True
Well:	RWF 541-23	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	1,619,214.50	2,337,911.50	39.51004	-107.84690
120.00	0.00	0.00	120.00	0.00	0.00	1,619,214.50	2,337,911.50	39.51004	-107.84690
Start Build 4.00									
200.00	3.20	350.07	199.96	2.20	-0.38	1,619,216.70	2,337,911.17	39.51005	-107.84690
400.00	11.20	350.07	398.22	26.87	-4.70	1,619,241.48	2,337,907.50	39.51012	-107.84691
600.00	19.20	350.07	591.07	78.48	-13.73	1,619,293.30	2,337,899.80	39.51026	-107.84694
800.00	27.20	350.07	774.74	156.03	-27.30	1,619,371.17	2,337,888.24	39.51047	-107.84699
960.23	33.61	350.07	912.87	235.87	-41.28	1,619,451.34	2,337,876.33	39.51069	-107.84704
Hold 33.61° Inc, 350.07° Az									
1,000.00	33.61	350.07	945.99	257.55	-45.07	1,619,473.11	2,337,873.10	39.51075	-107.84706
1,184.92	33.61	350.07	1,100.00	358.38	-62.71	1,619,574.36	2,337,858.07	39.51103	-107.84712
9 5/8"									
1,200.00	33.61	350.07	1,112.56	366.60	-64.15	1,619,582.61	2,337,856.84	39.51105	-107.84712
1,400.00	33.61	350.07	1,279.12	475.64	-83.24	1,619,692.11	2,337,840.58	39.51135	-107.84719
1,600.00	33.61	350.07	1,445.69	584.69	-102.32	1,619,801.61	2,337,824.32	39.51165	-107.84726
1,800.00	33.61	350.07	1,612.26	693.74	-121.40	1,619,911.11	2,337,808.06	39.51195	-107.84733
2,000.00	33.61	350.07	1,778.82	802.79	-140.49	1,620,020.61	2,337,791.81	39.51225	-107.84739
2,133.49	33.61	350.07	1,890.00	875.57	-153.22	1,620,093.70	2,337,780.95	39.51245	-107.84744
Top of "G" Sand									
2,200.00	33.61	350.07	1,945.39	911.83	-159.57	1,620,130.11	2,337,775.55	39.51255	-107.84746
2,253.56	33.61	350.07	1,990.00	941.04	-164.68	1,620,159.44	2,337,771.19	39.51263	-107.84748
Base of "G" Sand									
2,400.00	33.61	350.07	2,111.96	1,020.88	-178.65	1,620,239.61	2,337,759.29	39.51285	-107.84753
2,600.00	33.61	350.07	2,278.52	1,129.93	-197.73	1,620,349.11	2,337,743.03	39.51315	-107.84760
2,800.00	33.61	350.07	2,445.09	1,238.98	-216.82	1,620,458.61	2,337,726.77	39.51345	-107.84766
3,000.00	33.61	350.07	2,611.66	1,348.02	-235.90	1,620,568.11	2,337,710.51	39.51374	-107.84773
3,200.00	33.61	350.07	2,778.22	1,457.07	-254.98	1,620,677.61	2,337,694.25	39.51404	-107.84780
3,400.00	33.61	350.07	2,944.79	1,566.12	-274.07	1,620,787.11	2,337,677.99	39.51434	-107.84787
3,600.00	33.61	350.07	3,111.36	1,675.17	-293.15	1,620,896.61	2,337,661.73	39.51464	-107.84793
3,800.00	33.61	350.07	3,277.92	1,784.21	-312.23	1,621,006.11	2,337,645.47	39.51494	-107.84800
4,000.00	33.61	350.07	3,444.49	1,893.26	-331.31	1,621,115.61	2,337,629.21	39.51524	-107.84807
4,200.00	33.61	350.07	3,611.06	2,002.31	-350.40	1,621,225.11	2,337,612.95	39.51554	-107.84814
4,400.00	33.61	350.07	3,777.62	2,111.36	-369.48	1,621,334.61	2,337,596.69	39.51584	-107.84821
4,600.00	33.61	350.07	3,944.19	2,220.40	-388.56	1,621,444.11	2,337,580.44	39.51614	-107.84827
4,705.76	33.61	350.07	4,032.27	2,278.07	-398.65	1,621,502.01	2,337,571.84	39.51630	-107.84831
Start Drop -2.00									
4,800.00	31.72	350.07	4,111.60	2,328.17	-407.42	1,621,552.32	2,337,564.37	39.51644	-107.84834
5,000.00	27.72	350.07	4,285.25	2,425.83	-424.51	1,621,650.39	2,337,549.81	39.51670	-107.84840
5,200.00	23.72	350.07	4,465.39	2,511.32	-439.47	1,621,736.23	2,337,537.06	39.51694	-107.84845
5,210.49	23.51	350.07	4,475.00	2,515.46	-440.20	1,621,740.39	2,337,536.44	39.51695	-107.84846
Mesaverde									
5,400.00	19.72	350.07	4,651.15	2,584.23	-452.23	1,621,809.44	2,337,526.19	39.51714	-107.84850
5,600.00	15.72	350.07	4,841.62	2,644.19	-462.73	1,621,869.65	2,337,517.25	39.51730	-107.84854
5,800.00	11.72	350.07	5,035.87	2,690.92	-470.90	1,621,916.58	2,337,510.28	39.51743	-107.84856
6,000.00	7.72	350.07	5,232.96	2,724.19	-476.73	1,621,949.99	2,337,505.32	39.51752	-107.84859
6,200.00	3.72	350.07	5,431.92	2,743.84	-480.16	1,621,969.71	2,337,502.39	39.51758	-107.84860
6,386.21	0.00	350.07	5,618.00	2,749.79	-481.21	1,621,975.70	2,337,501.50	39.51759	-107.84860
Vertical									
6,400.00	0.00	0.00	5,631.79	2,749.79	-481.21	1,621,975.70	2,337,501.50	39.51759	-107.84860
6,486.21	0.00	0.00	5,718.00	2,749.79	-481.21	1,621,975.70	2,337,501.50	39.51759	-107.84860
Top Gas - Approx. Top Gas									

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Site:	RWF 43-23 Pad	North Reference:	True
Well:	RWF 541-23	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	5,831.79	2,749.79	-481.21	1,621,975.70	2,337,501.50	39.51759	-107.84860
6,800.00	0.00	0.00	6,031.79	2,749.79	-481.21	1,621,975.70	2,337,501.50	39.51759	-107.84860
7,000.00	0.00	0.00	6,231.79	2,749.79	-481.21	1,621,975.70	2,337,501.50	39.51759	-107.84860
7,200.00	0.00	0.00	6,431.79	2,749.79	-481.21	1,621,975.70	2,337,501.50	39.51759	-107.84860
7,400.00	0.00	0.00	6,631.79	2,749.79	-481.21	1,621,975.70	2,337,501.50	39.51759	-107.84860
7,600.00	0.00	0.00	6,831.79	2,749.79	-481.21	1,621,975.70	2,337,501.50	39.51759	-107.84860
7,800.00	0.00	0.00	7,031.79	2,749.79	-481.21	1,621,975.70	2,337,501.50	39.51759	-107.84860
8,000.00	0.00	0.00	7,231.79	2,749.79	-481.21	1,621,975.70	2,337,501.50	39.51759	-107.84860
8,141.21	0.00	0.00	7,373.00	2,749.79	-481.21	1,621,975.70	2,337,501.50	39.51759	-107.84860
Cameo Coals									
8,200.00	0.00	0.00	7,431.79	2,749.79	-481.21	1,621,975.70	2,337,501.50	39.51759	-107.84860
8,400.00	0.00	0.00	7,631.79	2,749.79	-481.21	1,621,975.70	2,337,501.50	39.51759	-107.84860
8,600.00	0.00	0.00	7,831.79	2,749.79	-481.21	1,621,975.70	2,337,501.50	39.51759	-107.84860
8,800.00	0.00	0.00	8,031.79	2,749.79	-481.21	1,621,975.70	2,337,501.50	39.51759	-107.84860
8,941.21	0.00	0.00	8,173.00	2,749.79	-481.21	1,621,975.70	2,337,501.50	39.51759	-107.84860
Coal D									
9,000.00	0.00	0.00	8,231.79	2,749.79	-481.21	1,621,975.70	2,337,501.50	39.51759	-107.84860
9,086.21	0.00	0.00	8,318.00	2,749.79	-481.21	1,621,975.70	2,337,501.50	39.51759	-107.84860
Rollins SS									
9,200.00	0.00	0.00	8,431.79	2,749.79	-481.21	1,621,975.70	2,337,501.50	39.51759	-107.84860
9,236.21	0.00	0.00	8,468.00	2,749.79	-481.21	1,621,975.70	2,337,501.50	39.51759	-107.84860
TD at 9236.21									

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	5,718.00	2,749.79	-481.21	1,621,975.70	2,337,501.50	39.51759	-107.84860

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,184.92	1,100.00	9 5/8"	9.625	13.500	

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Well:	RWF 541-23	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #4 26Mar14 kjs		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,133.49	1,890.00	Top of "G" Sand				
2,253.56	1,990.00	Base of "G" Sand				
5,210.49	4,475.00	Mesaverde				
6,486.21	5,718.00	Approx. Top Gas				
8,141.21	7,373.00	Cameo Coals				
8,941.21	8,173.00	Coal D				
9,086.21	8,318.00	Rollins SS				
9,236.21	8,468.00	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 4.00	
960.23	912.87	235.87	-41.28	Hold 33.61° Inc, 350.07° Az	
4,705.76	4,032.27	2,278.07	-398.65	Start Drop -2.00	
6,386.21	5,618.00	2,749.79	-481.21	Vertical	
6,486.21	5,718.00	2,749.79	-481.21	Top Gas	
9,236.21	8,468.00	2,749.79	-481.21	TD at 9236.21	