

PICEANCE HL NAD 83

RG 01-02S-098W

RGU 41-1-298 Pad

Federal RGU 41-1-298 - Slot B5

Federal RGU 41-1-298

Plan: Plan #2 30Mar10 kjs

Standard Planning Report - Geographic

25 August, 2010

Williams
Planning Report - Geographic

Database:	Compass R5000 WIN AUTH	Local Co-ordinate Reference:	Well Federal RGU 41-1-298 (B5) - Slot B5
Company:	PICEANCE HL NAD 83	TVD Reference:	KELLY BUSHING @ 6594.0usft
Project:	RG 01-02S-098W	MD Reference:	KELLY BUSHING @ 6594.0usft
Site:	RGU 41-1-298 Pad	North Reference:	True
Well:	Federal RGU 41-1-298	Survey Calculation Method:	Minimum Curvature
Wellbore:	Federal RGU 41-1-298		
Design:	Plan #2 30Mar10 kjs		

Project	RG 01-02S-098W, Rio Blanco County, CO, RG 01-02S-098W		
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	RGU 41-1-298 Pad		
Site Position:		Northing:	1,768,871.26 usft
From:	Map	Easting:	2,204,775.51 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13.200 in
		Latitude:	39° 54' 37.079 N
		Longitude:	108° 20' 6.318 W
		Grid Convergence:	-1.788 °

Well	Federal RGU 41-1-298 - Slot B5		
Well Position	+N/-S	0.0 usft	Northing: 1,768,871.30 usft
	+E/-W	0.0 usft	Easting: 2,204,775.51 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	Latitude: 39° 54' 37.080 N
			Longitude: 108° 20' 6.318 W
			Ground Level: 6,573.0 usft

Wellbore	Federal RGU 41-1-298				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/22/2011	10.556	66.016	52,424

Design	Plan #2 30Mar10 kjs			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	356.34

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.000	
120.0	0.00	0.00	120.0	0.0	0.0	0.00	0.00	0.00	0.000	
349.9	4.60	356.34	349.6	9.2	-0.6	2.00	2.00	0.00	356.344	
6,976.3	4.60	356.34	6,954.8	539.2	-34.5	0.00	0.00	0.00	0.000	
7,436.1	0.00	0.00	7,414.0	557.6	-35.6	1.00	-1.00	0.00	180.000	Mesaverde (25' Radiu
12,366.1	0.00	0.00	12,344.0	557.6	-35.6	0.00	0.00	0.00	0.000	

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Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.0	0.00	0.00	0.0	0.0	0.0	1,768,871.30	2,204,775.51	39° 54' 37.080 N	108° 20' 6.318 W	
120.0	0.00	0.00	120.0	0.0	0.0	1,768,871.30	2,204,775.51	39° 54' 37.080 N	108° 20' 6.318 W	
349.9	4.60	356.34	349.6	9.2	-0.6	1,768,880.51	2,204,775.21	39° 54' 37.171 N	108° 20' 6.326 W	
6,976.3	4.60	356.34	6,954.8	539.2	-34.5	1,769,411.37	2,204,757.90	39° 54' 42.409 N	108° 20' 6.760 W	
7,436.1	0.00	0.00	7,414.0	557.6	-35.6	1,769,429.80	2,204,757.30	39° 54' 42.591 N	108° 20' 6.775 W	
12,366.1	0.00	0.00	12,344.0	557.6	-35.6	1,769,429.80	2,204,757.30	39° 54' 42.591 N	108° 20' 6.775 W	

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	
Mesaverde (25' Radius) - plan hits target center - Circle (radius 25.0)	0.00	0.00	7,414.0	557.6	-35.6	1,769,429.80	2,204,757.30	39° 54' 42.591 N	108° 20' 6.775 W	
Northeast Hardline Fede - plan hits target center - Polygon	0.00	0.00	7,414.0	557.6	-35.6	1,769,429.80	2,204,757.30	39° 54' 42.591 N	108° 20' 6.775 W	
Point 1			7,414.0	17.1	47.0	1,769,445.43	2,204,804.81		True	
Point 2			7,414.0	217.1	47.0	1,769,645.34	2,204,811.05		True	
Point 3			7,414.0	17.1	247.0	1,769,439.18	2,205,004.72		True	
Mesaverde (50' Radius) - plan hits target center - Circle (radius 50.0)	0.00	0.00	7,414.0	557.6	-35.6	1,769,429.80	2,204,757.30	39° 54' 42.591 N	108° 20' 6.775 W	

Casing Points						
	Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
	3,533.0	3,522.5	9 5/8"	9.625	13.500	

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Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,021.4	1,019.0	Green River Fm				
1,192.0	1,189.0	A Groove				
1,382.6	1,379.0	B Groove				
1,668.5	1,664.0	Dissolution Surface				
2,631.6	2,624.0	Garden Gulch				
2,812.2	2,804.0	Orange Marker				
3,032.9	3,024.0	Wasatch				
5,430.6	5,414.0	G' Sand				
5,771.7	5,754.0	Ft. Union				
7,105.9	7,084.0	Ohio Creek				
7,436.1	7,414.0	Mesaverde				
8,116.1	8,094.0	Top Gas				
10,706.1	10,684.0	Cameo Coals				
11,136.1	11,114.0	Rollins SS				
11,281.1	11,259.0	Cozzette				
11,511.1	11,489.0	Corcoran				
11,871.1	11,849.0	Upper Sego				
12,116.1	12,094.0	Lower Sego				
12,366.1	12,344.0	TD		0.000		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
120.0	120.0	0.0	0.0	Start Build 2.00
349.9	349.6	9.2	-0.6	Hold 4.6 Inc
6,976.3	6,954.8	539.2	-34.5	Start Drop -1.00
7,436.1	7,414.0	557.6	-35.6	Vertical
12,366.1	12,344.0	557.6	-35.6	TD at 12366