

PICEANCE VLY NAD 83

GV 10-07S-096W

MV 5-10 Pad

GM 411-10 - Slot B11

Wellbore #1

Plan: Design #1 07Aug14 mab

Standard Planning Report - Geographic

13 October, 2014

WPX
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well GM 411-10 - Slot B11
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 6174.00usft (Nabors _ (26' RKB) mab)
Project:	GV 10-07S-096W	MD Reference:	KELLY BUSHING @ 6174.00usft (Nabors _ (26' RKB) mab)
Site:	MV 5-10 Pad	North Reference:	True
Well:	GM 411-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 07Aug14 mab		

Project	GV 10-07S-096W		
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	MV 5-10 Pad			
Site Position:		Northing:	1,600,354.00000 usft	Latitude: 39.45298
From: Map		Easting:	2,266,910.20000 usft	Longitude: -108.09653
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence: -1.64 °

Well	GM 411-10 - Slot B11			
Well Position	+N/-S	0.00 usft	Northing:	1,600,372.80000 usft
	+E/-W	0.00 usft	Easting:	2,266,935.60000 usft
Position Uncertainty	0.00 usft		Wellhead Elevation:	0.00 usft
			Ground Level:	6,148.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/7/2014	9.99	65.60	51,895

Design	Design #1 07Aug14 mab			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (bearing)
	0.00	0.00	0.00	312.04

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	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	
1,604.77	37.12	312.04	1,503.07	310.95	-344.89	2.50	2.50	0.00	312.04	
2,905.06	37.12	312.04	2,539.89	836.41	-927.67	0.00	0.00	0.00	0.00	
5,379.68	0.00	0.00	4,845.00	1,354.66	-1,502.48	1.50	-1.50	0.00	180.00	
5,479.68	0.00	0.00	4,945.00	1,354.66	-1,502.48	0.00	0.00	0.00	0.00	Top Gas (50' Radius)
7,329.68	0.00	0.00	6,795.00	1,354.66	-1,502.48	0.00	0.00	0.00	0.00	

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Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 6174.00usft (Nabors _ (26' RKB) mab)
Project:	GV 10-07S-096W	MD Reference:	KELLY BUSHING @ 6174.00usft (Nabors _ (26' RKB) mab)
Site:	MV 5-10 Pad	North Reference:	True
Well:	GM 411-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 07Aug14 mab		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	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	1,600,372.80000	2,266,935.60000	39.45303	-108.09644	
120.00	0.00	0.00	120.00	0.00	0.00	1,600,372.80000	2,266,935.60000	39.45303	-108.09644	
Start Build 2.50										
200.00	2.00	312.04	199.98	0.93	-1.04	1,600,373.76409	2,266,934.59029	39.45304	-108.09645	
400.00	7.00	312.04	399.30	11.44	-12.69	1,600,384.59659	2,266,923.24518	39.45306	-108.09649	
600.00	12.00	312.04	596.50	33.54	-37.20	1,600,407.38399	2,266,899.37945	39.45313	-108.09658	
800.00	17.00	312.04	790.07	67.06	-74.38	1,600,441.95287	2,266,863.17474	39.45322	-108.09671	
1,000.00	22.00	312.04	978.54	111.75	-123.94	1,600,488.04012	2,266,814.90659	39.45334	-108.09688	
1,200.00	27.00	312.04	1,160.47	167.27	-185.52	1,600,545.29501	2,266,754.94234	39.45349	-108.09710	
1,400.00	32.00	312.04	1,334.49	233.20	-258.64	1,600,613.28178	2,266,683.73836	39.45367	-108.09736	
1,600.00	37.00	312.04	1,499.26	309.03	-342.75	1,600,691.48300	2,266,601.83656	39.45388	-108.09766	
1,604.77	37.12	312.04	1,503.07	310.95	-344.89	1,600,693.46898	2,266,599.75660	39.45389	-108.09767	
Hold 37.12° Inc, 312.04° Az										
1,654.77	37.12	312.04	1,542.93	331.16	-367.29	1,600,714.30452	2,266,577.93510	39.45394	-108.09774	
9 5/8"										
1,800.00	37.12	312.04	1,658.74	389.85	-432.39	1,600,774.82610	2,266,514.54957	39.45410	-108.09798	
2,000.00	37.12	312.04	1,818.21	470.67	-522.03	1,600,858.17193	2,266,427.25973	39.45433	-108.09829	
2,200.00	37.12	312.04	1,977.69	551.49	-611.67	1,600,941.51777	2,266,339.96988	39.45455	-108.09861	
2,400.00	37.12	312.04	2,137.17	632.31	-701.31	1,601,024.86359	2,266,252.68002	39.45477	-108.09893	
2,485.07	37.12	312.04	2,205.00	666.69	-739.44	1,601,060.31520	2,266,215.55080	39.45486	-108.09906	
Top of "G" Sand										
2,600.00	37.12	312.04	2,296.64	713.13	-790.95	1,601,108.20943	2,266,165.39017	39.45499	-108.09924	
2,610.48	37.12	312.04	2,305.00	717.37	-795.64	1,601,112.57747	2,266,160.81543	39.45500	-108.09926	
Base of "G" Sand										
2,800.00	37.12	312.04	2,456.12	793.95	-880.59	1,601,191.55526	2,266,078.10032	39.45521	-108.09956	
2,905.06	37.12	312.04	2,539.89	836.41	-927.67	1,601,235.33572	2,266,032.24813	39.45533	-108.09973	
Start Drop -1.50°/100										
3,000.00	35.70	312.04	2,616.30	874.14	-969.52	1,601,274.24734	2,265,991.49516	39.45543	-108.09988	
3,200.00	32.70	312.04	2,781.71	949.40	-1,053.00	1,601,351.85786	2,265,910.21203	39.45564	-108.10017	
3,400.00	29.70	312.04	2,952.77	1,018.76	-1,129.92	1,601,423.38414	2,265,835.30104	39.45583	-108.10045	
3,600.00	26.70	312.04	3,129.02	1,082.03	-1,200.10	1,601,488.63014	2,265,766.96752	39.45600	-108.10069	
3,800.00	23.70	312.04	3,309.97	1,139.03	-1,263.32	1,601,547.41702	2,265,705.39878	39.45616	-108.10092	
4,000.00	20.70	312.04	3,495.13	1,189.62	-1,319.43	1,601,599.58366	2,265,650.76356	39.45630	-108.10112	
4,200.00	17.70	312.04	3,683.99	1,233.65	-1,368.26	1,601,644.98705	2,265,603.21163	39.45642	-108.10129	
4,315.98	15.96	312.04	3,795.00	1,256.13	-1,393.19	1,601,668.16905	2,265,578.93264	39.45648	-108.10138	
Mesaverde										
4,400.00	14.70	312.04	3,876.03	1,271.00	-1,409.69	1,601,683.50277	2,265,562.87331	39.45652	-108.10144	
4,600.00	11.70	312.04	4,070.73	1,301.56	-1,443.59	1,601,715.02523	2,265,529.85917	39.45661	-108.10156	
4,800.00	8.70	312.04	4,267.54	1,325.27	-1,469.88	1,601,739.46805	2,265,504.25969	39.45667	-108.10165	
5,000.00	5.70	312.04	4,465.95	1,342.04	-1,488.48	1,601,756.76421	2,265,486.14506	39.45672	-108.10172	
5,200.00	2.70	312.04	4,665.39	1,351.84	-1,499.34	1,601,766.86632	2,265,475.56490	39.45674	-108.10175	
5,379.68	0.00	0.00	4,845.00	1,354.66	-1,502.48	1,601,769.78401	2,265,472.50914	39.45675	-108.10176	
Vertical										
5,400.00	0.00	0.00	4,865.32	1,354.66	-1,502.48	1,601,769.78401	2,265,472.50914	39.45675	-108.10176	
5,479.68	0.00	0.00	4,945.00	1,354.66	-1,502.48	1,601,769.78401	2,265,472.50914	39.45675	-108.10176	
Top Gas - Approx. Top Gas										
5,600.00	0.00	0.00	5,065.32	1,354.66	-1,502.48	1,601,769.78401	2,265,472.50914	39.45675	-108.10176	
5,800.00	0.00	0.00	5,265.32	1,354.66	-1,502.48	1,601,769.78401	2,265,472.50914	39.45675	-108.10176	
6,000.00	0.00	0.00	5,465.32	1,354.66	-1,502.48	1,601,769.78401	2,265,472.50914	39.45675	-108.10176	
6,200.00	0.00	0.00	5,665.32	1,354.66	-1,502.48	1,601,769.78401	2,265,472.50914	39.45675	-108.10176	
6,400.00	0.00	0.00	5,865.32	1,354.66	-1,502.48	1,601,769.78401	2,265,472.50914	39.45675	-108.10176	
6,600.00	0.00	0.00	6,065.32	1,354.66	-1,502.48	1,601,769.78401	2,265,472.50914	39.45675	-108.10176	

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Well:	GM 411-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 07Aug14 mab		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,749.68	0.00	0.00	6,215.00	1,354.66	-1,502.48	1,601,769.78401	2,265,472.50914	39.45675	-108.10176
Cameo Coals									
6,800.00	0.00	0.00	6,265.32	1,354.66	-1,502.48	1,601,769.78401	2,265,472.50914	39.45675	-108.10176
7,000.00	0.00	0.00	6,465.32	1,354.66	-1,502.48	1,601,769.78401	2,265,472.50914	39.45675	-108.10176
7,200.00	0.00	0.00	6,665.32	1,354.66	-1,502.48	1,601,769.78401	2,265,472.50914	39.45675	-108.10176
7,229.68	0.00	0.00	6,695.00	1,354.66	-1,502.48	1,601,769.78401	2,265,472.50914	39.45675	-108.10176
Rollins SS									
7,329.68	0.00	0.00	6,795.00	1,354.66	-1,502.48	1,601,769.78401	2,265,472.50914	39.45675	-108.10176
TD at 7329.68 - TD									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (bearing)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Top Gas (50' Radius) G1 - plan hits target center - Circle (radius 50.00)	0.00	0.00	4,945.00	1,354.66	-1,502.48	1,601,769.78401	2,265,472.50914	39.45675	-108.10176

Casing Points						
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)		
1,654.77	1,542.93	9 5/8"	9.625	13.500		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (bearing)	
2,485.07	2,205.00	Top of "G" Sand				
2,610.48	2,305.00	Base of "G" Sand				
4,315.98	3,795.00	Mesaverde				
5,479.68	4,945.00	Approx. Top Gas				
6,749.68	6,215.00	Cameo Coals				
7,229.68	6,695.00	Rollins SS				
7,329.68	6,795.00	TD				

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Project:	GV 10-07S-096W	MD Reference:	KELLY BUSHING @ 6174.00usft (Nabors _ (26' RKB) mab)
Site:	MV 5-10 Pad	North Reference:	True
Well:	GM 411-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 07Aug14 mab		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
120.00	120.00	0.00	0.00	Start Build 2.50
1,604.77	1,503.07	310.95	-344.89	Hold 37.12° Inc, 312.04° Az
2,905.06	2,539.89	836.41	-927.67	Start Drop -1.50°/100
5,379.68	4,845.00	1,354.66	-1,502.48	Vertical
5,479.68	4,945.00	1,354.66	-1,502.48	Top Gas
7,329.68	6,795.00	1,354.66	-1,502.48	TD at 7329.68