

PICEANCE VLY NAD 83

GV 09-07S-096W

MV 16-9 Pad

GM 43-8 - Slot A08

Wellbore #1

Plan: Design #1 30Jun14 mab

Standard Planning Report - Geographic

04 August, 2014

WPX
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well GM 43-8 - Slot A08
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 6108.00usft (Cyclone 17 (21' RKB) mab)
Project:	GV 09-07S-096W	MD Reference:	KELLY BUSHING @ 6108.00usft (Cyclone 17 (21' RKB) mab)
Site:	MV 16-9 Pad	North Reference:	True
Well:	GM 43-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 30Jun14 mab		

Project	GV 09-07S-096W, Garfield County, CO, 09-07S-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 16-9 Pad			
Site Position:		Northing:	1,601,987.30000 usft	Latitude: 39.45695
From: Map		Easting:	2,260,352.30000 usft	Longitude: -108.11991
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence: -1.65 °

Well	GM 43-8 - Slot A08			
Well Position	+N/-S	0.00 usft	Northing:	1,601,944.10000 usft
	+E/-W	0.00 usft	Easting:	2,260,322.40000 usft
Position Uncertainty	0.00 usft		Wellhead Elevation:	0.00 usft
			Ground Level:	6,087.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	6/30/2014	9.98	65.62	51,950

Design	Design #1 30Jun14 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	210.19

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	
1,305.43	41.49	210.19	1,204.51	-355.05	-206.58	3.50	3.50	0.00	210.19	
3,195.23	41.49	210.19	2,620.10	-1,437.19	-836.21	0.00	0.00	0.00	0.00	
5,269.74	0.00	0.00	4,518.00	-2,058.53	-1,197.72	2.00	-2.00	0.00	180.00	
5,369.74	0.00	0.00	4,618.00	-2,058.53	-1,197.72	0.00	0.00	0.00	0.00	Top Gas (50' Radius)
7,219.74	0.00	0.00	6,468.00	-2,058.53	-1,197.72	0.00	0.00	0.00	0.00	

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Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 6108.00usft (Cyclone 17 (21' RKB) mab)
Project:	GV 09-07S-096W	MD Reference:	KELLY BUSHING @ 6108.00usft (Cyclone 17 (21' RKB) mab)
Site:	MV 16-9 Pad	North Reference:	True
Well:	GM 43-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 30Jun14 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	1,601,944.10000	2,260,322.40000	39.45682	-108.12001	
120.00	0.00	0.00	120.00	0.00	0.00	1,601,944.10000	2,260,322.40000	39.45682	-108.12001	
Start Build 3.50										
200.00	2.80	210.19	199.97	-1.69	-0.98	1,601,942.43987	2,260,321.36888	39.45682	-108.12002	
400.00	9.80	210.19	398.64	-20.65	-12.01	1,601,923.80886	2,260,309.79699	39.45677	-108.12006	
600.00	16.80	210.19	593.15	-60.39	-35.14	1,601,884.75036	2,260,285.53741	39.45666	-108.12014	
800.00	23.80	210.19	780.61	-120.33	-70.01	1,601,825.84664	2,260,248.95177	39.45649	-108.12026	
1,000.00	30.80	210.19	958.23	-199.56	-116.11	1,601,747.97582	2,260,200.58550	39.45628	-108.12043	
1,200.00	37.80	210.19	1,123.34	-296.92	-172.76	1,601,652.29876	2,260,141.15962	39.45601	-108.12063	
1,305.43	41.49	210.19	1,204.51	-355.05	-206.58	1,601,595.16811	2,260,105.67526	39.45585	-108.12075	
Hold 41.49° Inc, 210.19° Az										
1,355.43	41.49	210.19	1,241.96	-383.68	-223.24	1,601,567.03144	2,260,088.19933	39.45577	-108.12081	
9 5/8"										
1,400.00	41.49	210.19	1,275.35	-409.20	-238.09	1,601,541.94978	2,260,072.62089	39.45570	-108.12086	
1,600.00	41.49	210.19	1,425.16	-523.73	-304.72	1,601,429.40026	2,260,002.71537	39.45539	-108.12109	
1,800.00	41.49	210.19	1,574.98	-638.25	-371.36	1,601,316.85075	2,259,932.80985	39.45507	-108.12133	
2,000.00	41.49	210.19	1,724.79	-752.77	-437.99	1,601,204.30123	2,259,862.90433	39.45476	-108.12157	
2,177.83	41.49	210.19	1,858.00	-854.60	-497.24	1,601,104.22763	2,259,800.74771	39.45448	-108.12178	
Top of "G" Sand										
2,200.00	41.49	210.19	1,874.61	-867.30	-504.63	1,601,091.75171	2,259,792.99881	39.45444	-108.12180	
2,311.33	41.49	210.19	1,958.00	-931.05	-541.72	1,601,029.10148	2,259,754.08619	39.45427	-108.12193	
Base of "G" Sand										
2,400.00	41.49	210.19	2,024.42	-981.82	-571.26	1,600,979.20220	2,259,723.09329	39.45413	-108.12204	
2,600.00	41.49	210.19	2,174.23	-1,096.35	-637.89	1,600,866.65268	2,259,653.18778	39.45381	-108.12227	
2,800.00	41.49	210.19	2,324.05	-1,210.87	-704.53	1,600,754.10316	2,259,583.28226	39.45350	-108.12251	
3,000.00	41.49	210.19	2,473.86	-1,325.39	-771.16	1,600,641.55364	2,259,513.37674	39.45319	-108.12275	
3,195.23	41.49	210.19	2,620.10	-1,437.19	-836.21	1,600,531.68809	2,259,445.13825	39.45288	-108.12298	
Start Drop -2.00°/100										
3,200.00	41.39	210.19	2,623.68	-1,439.91	-837.79	1,600,529.00666	2,259,443.47279	39.45287	-108.12298	
3,400.00	37.39	210.19	2,778.21	-1,549.60	-901.62	1,600,421.20728	2,259,376.51763	39.45257	-108.12321	
3,600.00	33.39	210.19	2,941.21	-1,649.71	-959.86	1,600,322.82685	2,259,315.41266	39.45230	-108.12341	
3,800.00	29.39	210.19	3,111.89	-1,739.74	-1,012.25	1,600,234.34468	2,259,260.45559	39.45205	-108.12360	
4,000.00	25.39	210.19	3,289.43	-1,819.27	-1,058.52	1,600,156.19184	2,259,211.91416	39.45183	-108.12376	
4,162.36	22.15	210.19	3,438.00	-1,875.83	-1,091.42	1,600,100.60651	2,259,177.38961	39.45167	-108.12388	
Mesaverde										
4,200.00	21.39	210.19	3,472.95	-1,887.89	-1,098.44	1,600,088.74909	2,259,170.02486	39.45164	-108.12390	
4,400.00	17.39	210.19	3,661.56	-1,945.29	-1,131.84	1,600,032.34499	2,259,134.99177	39.45148	-108.12402	
4,600.00	13.39	210.19	3,854.35	-1,991.17	-1,158.53	1,599,987.25435	2,259,106.98556	39.45136	-108.12412	
4,800.00	9.39	210.19	4,050.37	-2,025.32	-1,178.40	1,599,953.69684	2,259,086.14269	39.45126	-108.12419	
5,000.00	5.39	210.19	4,248.66	-2,047.56	-1,191.34	1,599,931.83595	2,259,072.56470	39.45120	-108.12423	
5,200.00	1.39	210.19	4,448.27	-2,057.79	-1,197.30	1,599,921.77818	2,259,066.31773	39.45117	-108.12425	
5,269.74	0.00	0.00	4,518.00	-2,058.53	-1,197.72	1,599,921.05725	2,259,065.86995	39.45117	-108.12426	
Vertical										
5,369.74	0.00	0.00	4,618.00	-2,058.53	-1,197.72	1,599,921.05725	2,259,065.86995	39.45117	-108.12426	
Top Gas - Approx. Top Gas										
5,400.00	0.00	0.00	4,648.26	-2,058.53	-1,197.72	1,599,921.05725	2,259,065.86995	39.45117	-108.12426	
5,600.00	0.00	0.00	4,848.26	-2,058.53	-1,197.72	1,599,921.05725	2,259,065.86995	39.45117	-108.12426	
5,800.00	0.00	0.00	5,048.26	-2,058.53	-1,197.72	1,599,921.05725	2,259,065.86995	39.45117	-108.12426	
6,000.00	0.00	0.00	5,248.26	-2,058.53	-1,197.72	1,599,921.05725	2,259,065.86995	39.45117	-108.12426	
6,200.00	0.00	0.00	5,448.26	-2,058.53	-1,197.72	1,599,921.05725	2,259,065.86995	39.45117	-108.12426	
6,400.00	0.00	0.00	5,648.26	-2,058.53	-1,197.72	1,599,921.05725	2,259,065.86995	39.45117	-108.12426	
6,600.00	0.00	0.00	5,848.26	-2,058.53	-1,197.72	1,599,921.05725	2,259,065.86995	39.45117	-108.12426	

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Well:	GM 43-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 30Jun14 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
6,649.74	0.00	0.00	5,898.00	-2,058.53	-1,197.72	1,599,921.05725	2,259,065.86995	39.45117	-108.12426
Cameo Coals									
6,800.00	0.00	0.00	6,048.26	-2,058.53	-1,197.72	1,599,921.05725	2,259,065.86995	39.45117	-108.12426
7,000.00	0.00	0.00	6,248.26	-2,058.53	-1,197.72	1,599,921.05725	2,259,065.86995	39.45117	-108.12426
7,119.74	0.00	0.00	6,368.00	-2,058.53	-1,197.72	1,599,921.05725	2,259,065.86995	39.45117	-108.12426
Rollins SS									
7,200.00	0.00	0.00	6,448.26	-2,058.53	-1,197.72	1,599,921.05725	2,259,065.86995	39.45117	-108.12426
7,219.74	0.00	0.00	6,468.00	-2,058.53	-1,197.72	1,599,921.05725	2,259,065.86995	39.45117	-108.12426
TD at 7219.74 - 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	4,618.00	-2,058.53	-1,197.72	1,599,921.05725	2,259,065.86995	39.45117	-108.12426

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,355.43	1,241.96	9 5/8"	9.625	13.500	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (bearing)	
2,177.83	1,858.00	Top of "G" Sand				
2,311.33	1,958.00	Base of "G" Sand				
4,162.36	3,438.00	Mesaverde				
5,369.74	4,618.00	Approx. Top Gas				
6,649.74	5,898.00	Cameo Coals				
7,119.74	6,368.00	Rollins SS				
7,219.74	6,468.00	TD				

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Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well GM 43-8 - Slot A08
Company:	PICEANCE VLY NAD 83	TVD Reference:	KELLY BUSHING @ 6108.00usft (Cyclone 17 (21' RKB) mab)
Project:	GV 09-07S-096W	MD Reference:	KELLY BUSHING @ 6108.00usft (Cyclone 17 (21' RKB) mab)
Site:	MV 16-9 Pad	North Reference:	True
Well:	GM 43-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 30Jun14 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 3.50
1,305.43	1,204.51	-355.05	-206.58	Hold 41.49° Inc, 210.19° Az
3,195.23	2,620.10	-1,437.19	-836.21	Start Drop -2.00°/100
5,269.74	4,518.00	-2,058.53	-1,197.72	Vertical
5,369.74	4,618.00	-2,058.53	-1,197.72	Top Gas
7,219.74	6,468.00	-2,058.53	-1,197.72	TD at 7219.74