

PICEANCE VLY NAD 83

GV 10-07S-096W

MV 5-10 Pad

GM 312-10 - Slot B03

Wellbore #1

Plan: Design #1 08Aug14 mab

Standard Planning Report - Geographic

13 October, 2014

WPX
Planning Report - Geographic

Database:	COMPASS-PICEANCE	Local Co-ordinate Reference:	Well GM 312-10 - Slot B03
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 312-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 08Aug14 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 312-10 - Slot B03					
Well Position	+N/-S	0.00 usft	Northing:	1,600,354.20000 usft	Latitude:	39.45298
	+E/-W	0.00 usft	Easting:	2,266,878.60000 usft	Longitude:	-108.09664
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	8/8/2014	9.99	65.60	51,895

Design	Design #1 08Aug14 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	286.62

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	
130.00	0.00	0.00	130.00	0.00	0.00	0.00	0.00	0.00	0.00	
800.91	23.48	286.62	782.28	38.77	-129.91	3.50	3.50	0.00	286.62	
3,932.46	23.48	286.62	3,654.50	395.61	-1,325.58	0.00	0.00	0.00	0.00	
5,106.55	0.00	0.00	4,796.00	463.45	-1,552.92	2.00	-2.00	0.00	180.00	
5,206.55	0.00	0.00	4,896.00	463.45	-1,552.92	0.00	0.00	0.00	0.00	Top Gas (50' Radius)
7,056.55	0.00	0.00	6,746.00	463.45	-1,552.92	0.00	0.00	0.00	0.00	

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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 312-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 08Aug14 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	1,600,354.20000	2,266,878.60000	39.45298	-108.09664	
130.00	0.00	0.00	130.00	0.00	0.00	1,600,354.20000	2,266,878.60000	39.45298	-108.09664	
Start Build 3.50										
200.00	2.45	286.62	199.98	0.43	-1.43	1,600,354.66871	2,266,877.17898	39.45298	-108.09665	
400.00	9.45	286.62	398.78	6.35	-21.29	1,600,361.15858	2,266,857.50339	39.45300	-108.09672	
600.00	16.45	286.62	593.57	19.16	-64.21	1,600,375.18884	2,266,814.96733	39.45303	-108.09687	
800.00	23.45	286.62	781.45	38.67	-129.56	1,600,396.55032	2,266,750.20489	39.45308	-108.09710	
800.91	23.48	286.62	782.28	38.77	-129.91	1,600,396.66353	2,266,749.86167	39.45308	-108.09710	
Hold 23.48° Inc, 286.62° Az										
1,000.00	23.48	286.62	964.89	61.46	-205.92	1,600,421.51195	2,266,674.52773	39.45315	-108.09737	
9 5/8"										
1,200.00	23.48	286.62	1,148.33	84.24	-282.29	1,600,446.47366	2,266,598.85035	39.45321	-108.09764	
1,400.00	23.48	286.62	1,331.76	107.03	-358.65	1,600,471.43537	2,266,523.17298	39.45327	-108.09791	
1,600.00	23.48	286.62	1,515.20	129.82	-435.01	1,600,496.39707	2,266,447.49560	39.45333	-108.09818	
1,800.00	23.48	286.62	1,698.64	152.61	-511.38	1,600,521.35878	2,266,371.81823	39.45340	-108.09845	
2,000.00	23.48	286.62	1,882.08	175.40	-587.74	1,600,546.32049	2,266,296.14086	39.45346	-108.09873	
2,200.00	23.48	286.62	2,065.51	198.19	-664.10	1,600,571.28219	2,266,220.46348	39.45352	-108.09900	
2,304.11	23.48	286.62	2,161.00	210.06	-703.85	1,600,584.27589	2,266,181.06999	39.45355	-108.09914	
Top of "G" Sand										
2,400.00	23.48	286.62	2,248.95	220.98	-740.47	1,600,596.24390	2,266,144.78611	39.45358	-108.09927	
2,413.14	23.48	286.62	2,261.00	222.48	-745.48	1,600,597.88364	2,266,139.81483	39.45359	-108.09928	
Base of "G" Sand										
2,600.00	23.48	286.62	2,432.39	243.77	-816.83	1,600,621.20559	2,266,069.10873	39.45365	-108.09954	
2,800.00	23.48	286.62	2,615.82	266.56	-893.19	1,600,646.16730	2,265,993.43136	39.45371	-108.09981	
3,000.00	23.48	286.62	2,799.26	289.35	-969.55	1,600,671.12901	2,265,917.75399	39.45377	-108.10008	
3,200.00	23.48	286.62	2,982.70	312.14	-1,045.92	1,600,696.09071	2,265,842.07661	39.45383	-108.10035	
3,400.00	23.48	286.62	3,166.14	334.93	-1,122.28	1,600,721.05242	2,265,766.39923	39.45390	-108.10062	
3,600.00	23.48	286.62	3,349.57	357.72	-1,198.64	1,600,746.01413	2,265,690.72186	39.45396	-108.10089	
3,800.00	23.48	286.62	3,533.01	380.51	-1,275.01	1,600,770.97583	2,265,615.04449	39.45402	-108.10116	
3,932.46	23.48	286.62	3,654.50	395.61	-1,325.58	1,600,787.50823	2,265,564.92259	39.45406	-108.10134	
Start Drop -2.00°/100										
4,000.00	22.13	286.62	3,716.76	403.09	-1,350.67	1,600,795.70805	2,265,540.06285	39.45408	-108.10143	
4,040.09	21.33	286.62	3,754.00	407.34	-1,364.89	1,600,800.35704	2,265,525.96835	39.45410	-108.10148	
Mesaverde										
4,200.00	18.13	286.62	3,904.50	422.77	-1,416.61	1,600,817.26438	2,265,474.70971	39.45414	-108.10166	
4,400.00	14.13	286.62	4,096.59	438.66	-1,469.85	1,600,834.66604	2,265,421.95241	39.45418	-108.10185	
4,600.00	10.13	286.62	4,292.09	450.68	-1,510.12	1,600,847.82826	2,265,382.04801	39.45421	-108.10199	
4,800.00	6.13	286.62	4,490.03	458.77	-1,537.22	1,600,856.68690	2,265,355.19090	39.45424	-108.10209	
5,000.00	2.13	286.62	4,689.47	462.88	-1,551.02	1,600,861.19883	2,265,341.51193	39.45425	-108.10214	
5,106.55	0.00	0.00	4,796.00	463.45	-1,552.92	1,600,861.81941	2,265,339.63048	39.45425	-108.10214	
Vertical										
5,200.00	0.00	0.00	4,889.45	463.45	-1,552.92	1,600,861.81941	2,265,339.63048	39.45425	-108.10214	
5,206.55	0.00	0.00	4,896.00	463.45	-1,552.92	1,600,861.81941	2,265,339.63048	39.45425	-108.10214	
Top Gas - Approx. Top Gas										
5,400.00	0.00	0.00	5,089.45	463.45	-1,552.92	1,600,861.81941	2,265,339.63048	39.45425	-108.10214	
5,600.00	0.00	0.00	5,289.45	463.45	-1,552.92	1,600,861.81941	2,265,339.63048	39.45425	-108.10214	
5,800.00	0.00	0.00	5,489.45	463.45	-1,552.92	1,600,861.81941	2,265,339.63048	39.45425	-108.10214	
6,000.00	0.00	0.00	5,689.45	463.45	-1,552.92	1,600,861.81941	2,265,339.63048	39.45425	-108.10214	
6,200.00	0.00	0.00	5,889.45	463.45	-1,552.92	1,600,861.81941	2,265,339.63048	39.45425	-108.10214	
6,400.00	0.00	0.00	6,089.45	463.45	-1,552.92	1,600,861.81941	2,265,339.63048	39.45425	-108.10214	

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Site:	MV 5-10 Pad	North Reference:	True
Well:	GM 312-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 08Aug14 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	
6,476.55	0.00	0.00	6,166.00	463.45	-1,552.92	1,600,861.81941	2,265,339.63048	39.45425	-108.10214	
Cameo Coals										
6,600.00	0.00	0.00	6,289.45	463.45	-1,552.92	1,600,861.81941	2,265,339.63048	39.45425	-108.10214	
6,800.00	0.00	0.00	6,489.45	463.45	-1,552.92	1,600,861.81941	2,265,339.63048	39.45425	-108.10214	
6,956.55	0.00	0.00	6,646.00	463.45	-1,552.92	1,600,861.81941	2,265,339.63048	39.45425	-108.10214	
Rollins SS										
7,000.00	0.00	0.00	6,689.45	463.45	-1,552.92	1,600,861.81941	2,265,339.63048	39.45425	-108.10214	
7,056.55	0.00	0.00	6,746.00	463.45	-1,552.92	1,600,861.81941	2,265,339.63048	39.45425	-108.10214	
TD at 7056.55 - 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) GI - plan hits target center - Circle (radius 50.00)	0.00	0.00	4,896.00	463.45	-1,552.92	1,600,861.81941	2,265,339.63048	39.45425	-108.10214	

Casing Points						
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)		
1,000.00	964.89	9 5/8"	9.625	13.500		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (bearing)	
2,304.11	2,161.00	Top of "G" Sand				
2,413.14	2,261.00	Base of "G" Sand				
4,040.09	3,754.00	Mesaverde				
5,206.55	4,896.00	Approx. Top Gas				
6,476.55	6,166.00	Cameo Coals				
6,956.55	6,646.00	Rollins SS				
7,056.55	6,746.00	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 312-10	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 08Aug14 mab		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
130.00	130.00	0.00	0.00	Start Build 3.50
800.91	782.28	38.77	-129.91	Hold 23.48° Inc, 286.62° Az
3,932.46	3,654.50	395.61	-1,325.58	Start Drop -2.00°/100
5,106.55	4,796.00	463.45	-1,552.92	Vertical
5,206.55	4,896.00	463.45	-1,552.92	Top Gas
7,056.55	6,746.00	463.45	-1,552.92	TD at 7056.55