



Well Name: GM 702RD-4-HN1  
Surface Location: GM 32-4 Pad  
North American Datum 1983 , US State Plane 1983 , Colorado Central Zone  
Ground Elevation: 5532.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1606467.23	2262489.96	39.46941	-108.11280	C05

WELL @ 5565.00usft (Nabors Pace X21 (33' RKB))

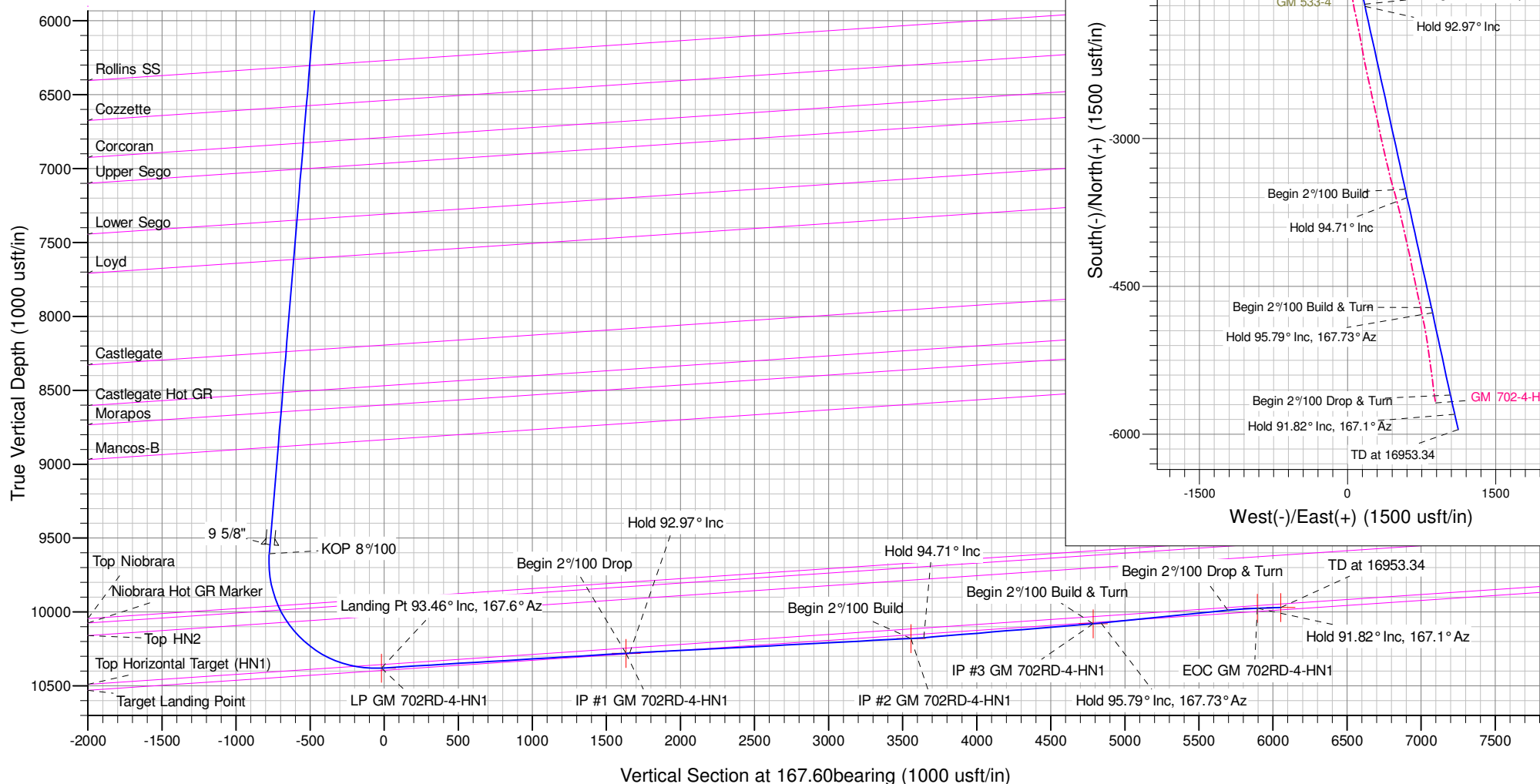
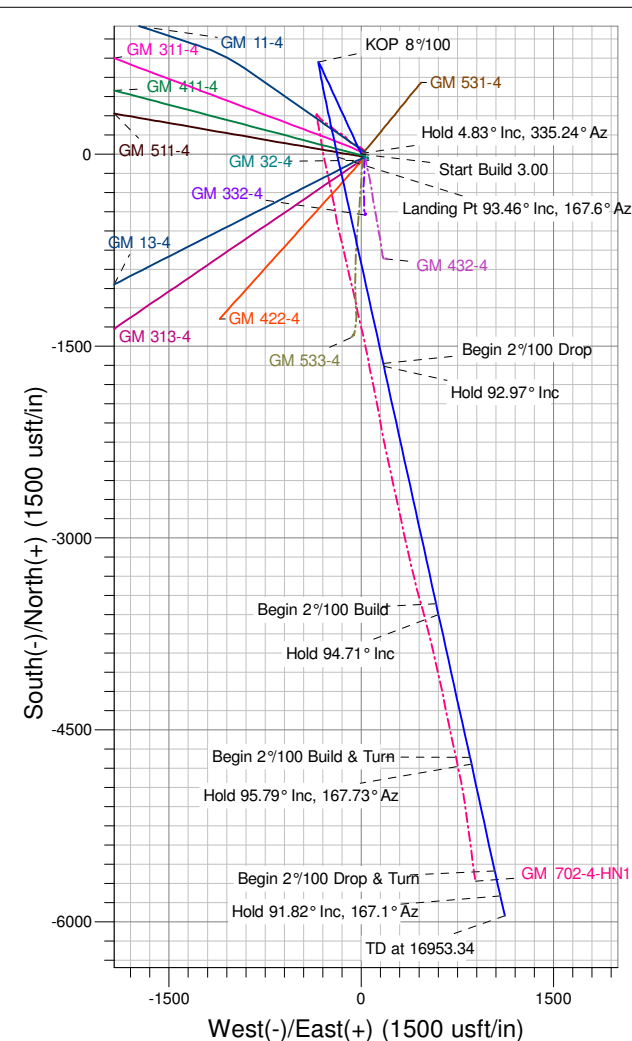
Project: GV 04-07S-096W  
Site: GM 32-4 Pad  
Well: GM 702RD-4-HN1  
Plan #2 16Apr14 kjs

#### ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
140.00	140.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build 3.00
300.92	301.11	4.83	335.24	6.17	-2.84	-6.63	6.79	Hold 4.83° Inc, 335.24° Az
9606.31	9639.71	4.83	335.24	720.68	-332.39	-775.25	793.64	KOP 8°/100
10380.00	10867.02	93.46	167.60	-21.90	-184.39	-18.21	1632.16	Landing Pt 93.46° Inc, 167.6° Az
10280.00	12521.98	93.46	167.60	-1635.30	170.33	1633.73	3284.10	Begin 2°/100 Drop
10278.62	12546.52	92.97	167.60	-1659.24	175.59	1658.23	3308.60	Hold 92.97° Inc
10180.00	14447.85	92.97	167.60	-3513.71	583.31	3557.00	5207.37	Begin 2°/100 Build
10174.17	14534.83	94.71	167.60	-3598.46	601.95	3643.78	5294.15	Hold 94.71° Inc
10080.00	15680.97	94.71	167.60	-4714.09	847.22	4786.05	6436.42	Begin 2°/100 Build & Turn
10075.03	15735.30	95.79	167.73	-4766.94	858.78	4840.15	6490.52	Hold 95.79° Inc, 167.73° Az
9988.35	16594.25	95.79	167.73	-5601.99	1040.35	5694.71	7345.08	Begin 2°/100 Drop & Turn
9975.00	16795.56	91.82	167.10	-5797.99	1084.11	5895.53	7545.91	Hold 91.82° Inc, 167.1° Az
9970.00	16953.34	91.82	167.10	-5951.71	1119.33	6053.23	7703.61	TD at 16953.34



Azimuths to True North  
Magnetic North: 10.05°  
  
Magnetic Field  
Strength: 51949.3snT  
Dip Angle: 65.62°  
Date: 3/6/2014  
Model: IGRF2010





## **PICEANCE VLY NAD 83**

**GV 04-07S-096W**

**GM 32-4 Pad**

**GM 702RD-4-HN1 - Slot C05**

**Wellbore #1**

**Plan: Plan #2 16Apr14 kjs**

## **Standard Planning Report - Geographic**

**06 May, 2014**



<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well GM 702RD-4-HN1 - Slot C05
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	WELL @ 5565.00usft (Nabors Pace X21 (33' RKB))
<b>Project:</b>	GV 04-07S-096W	<b>MD Reference:</b>	WELL @ 5565.00usft (Nabors Pace X21 (33' RKB))
<b>Site:</b>	GM 32-4 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 702RD-4-HN1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 16Apr14 kjs		

<b>Project</b>	GV 04-07S-096W, Garfield County, CO, 04-07S-096W		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Central Zone		Using geodetic scale factor

<b>Site</b>	GM 32-4 Pad			
<b>Site Position:</b>		<b>Northing:</b>	1,606,467.10 usft	<b>Latitude:</b> 39.46941
<b>From:</b>	Map	<b>Easting:</b>	2,262,519.50 usft	<b>Longitude:</b> -108.11270
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> -1.65 °

<b>Well</b>	GM 702RD-4-HN1 - Slot C05			
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	1,606,467.23 usft
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	2,262,489.96 usft
<b>Position Uncertainty</b>	0.00 usft		<b>Wellhead Elevation:</b>	0.00 usft
			<b>Ground Level:</b>	5,532.00 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	3/6/2014	10.05	65.62	51,949

<b>Design</b>	Plan #2 16Apr14 kjs			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (bearing)</b>
	0.00	0.00	0.00	167.60

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (bearing)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
140.00	0.00	0.00	140.00	0.00	0.00	0.00	0.00	0.00	0.00	
301.11	4.83	335.24	300.92	6.17	-2.84	3.00	3.00	0.00	335.24	
9,639.71	4.83	335.24	9,606.31	720.68	-332.39	0.00	0.00	0.00	0.00	
10,867.02	93.46	167.60	10,380.00	-21.90	-184.39	8.00	7.22	-13.66	-167.53	LP GM 702RD-4-HN1
12,521.98	93.46	167.60	10,280.00	-1,635.30	170.33	0.00	0.00	0.00	0.00	IP #1 GM 702RD-4-H
12,546.52	92.97	167.60	10,278.62	-1,659.24	175.59	2.00	-2.00	0.00	-180.00	
14,447.85	92.97	167.60	10,180.00	-3,513.71	583.31	0.00	0.00	0.00	0.00	IP #2 GM 702RD-4-H
14,534.83	94.71	167.60	10,174.17	-3,598.47	601.95	2.00	2.00	0.00	0.00	
15,680.97	94.71	167.60	10,080.00	-4,714.09	847.22	0.00	0.00	0.00	0.00	IP #3 GM 702RD-4-H
15,735.30	95.79	167.73	10,075.03	-4,766.94	858.78	2.00	1.99	0.24	6.99	
16,594.25	95.79	167.73	9,988.35	-5,601.99	1,040.35	0.00	0.00	0.00	0.00	
16,795.56	91.82	167.10	9,975.00	-5,797.99	1,084.11	2.00	-1.97	-0.32	-170.88	EOC GM 702RD-4-HI
16,953.34	91.82	167.10	9,970.00	-5,951.71	1,119.33	0.00	0.00	0.00	0.00	TD / PBHL GM 702RI



<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well GM 702RD-4-HN1 - Slot C05
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	WELL @ 5565.00usft (Nabors Pace X21 (33' RKB))
<b>Project:</b>	GV 04-07S-096W	<b>MD Reference:</b>	WELL @ 5565.00usft (Nabors Pace X21 (33' RKB))
<b>Site:</b>	GM 32-4 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 702RD-4-HN1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 16Apr14 kjs		

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	1,606,467.23	2,262,489.96	39.46941	-108.11280	
140.00	0.00	0.00	140.00	0.00	0.00	1,606,467.23	2,262,489.96	39.46941	-108.11280	
Start Build 3.00										
200.00	1.80	335.24	199.99	0.86	-0.39	1,606,468.10	2,262,489.59	39.46941	-108.11280	
301.11	4.83	335.24	300.92	6.17	-2.84	1,606,473.48	2,262,487.30	39.46943	-108.11281	
Hold 4.83° Inc, 335.24° Az										
400.00	4.83	335.24	399.46	13.73	-6.33	1,606,481.14	2,262,484.03	39.46945	-108.11282	
600.00	4.83	335.24	598.75	29.04	-13.39	1,606,496.64	2,262,477.41	39.46949	-108.11285	
800.00	4.83	335.24	798.03	44.34	-20.45	1,606,512.14	2,262,470.80	39.46953	-108.11287	
1,000.00	4.83	335.24	997.32	59.64	-27.51	1,606,527.64	2,262,464.18	39.46957	-108.11290	
1,200.00	4.83	335.24	1,196.61	74.94	-34.57	1,606,543.13	2,262,457.57	39.46961	-108.11292	
1,400.00	4.83	335.24	1,395.90	90.25	-41.62	1,606,558.63	2,262,450.95	39.46966	-108.11295	
1,600.00	4.83	335.24	1,595.19	105.55	-48.68	1,606,574.13	2,262,444.34	39.46970	-108.11297	
1,728.64	4.83	335.24	1,723.38	115.39	-53.22	1,606,584.10	2,262,440.09	39.46973	-108.11299	
Top of "G" Sand										
1,779.10	4.83	335.24	1,773.66	119.25	-55.00	1,606,588.01	2,262,438.42	39.46974	-108.11300	
Base of "G" Sand										
1,800.00	4.83	335.24	1,794.48	120.85	-55.74	1,606,589.63	2,262,437.73	39.46974	-108.11300	
2,000.00	4.83	335.24	1,993.77	136.15	-62.80	1,606,605.13	2,262,431.11	39.46978	-108.11302	
2,031.40	4.83	335.24	2,025.06	138.56	-63.90	1,606,607.56	2,262,430.07	39.46979	-108.11303	
Top Fort Union										
2,200.00	4.83	335.24	2,193.06	151.45	-69.85	1,606,620.63	2,262,424.50	39.46982	-108.11305	
2,334.16	4.83	335.24	2,326.74	161.72	-74.59	1,606,631.02	2,262,420.06	39.46985	-108.11307	
Base Fort Union										
2,400.00	4.83	335.24	2,392.35	166.76	-76.91	1,606,636.12	2,262,417.88	39.46987	-108.11307	
13 3/8"										
2,600.00	4.83	335.24	2,591.63	182.06	-83.97	1,606,651.62	2,262,411.27	39.46991	-108.11310	
2,800.00	4.83	335.24	2,790.92	197.36	-91.03	1,606,667.12	2,262,404.65	39.46995	-108.11312	
3,000.00	4.83	335.24	2,990.21	212.66	-98.08	1,606,682.62	2,262,398.04	39.46999	-108.11315	
3,200.00	4.83	335.24	3,189.50	227.97	-105.14	1,606,698.12	2,262,391.42	39.47003	-108.11317	
3,242.43	4.83	335.24	3,231.78	231.21	-106.64	1,606,701.41	2,262,390.02	39.47004	-108.11318	
Mesaverde										
3,400.00	4.83	335.24	3,388.79	243.27	-112.20	1,606,713.62	2,262,384.81	39.47008	-108.11320	
3,600.00	4.83	335.24	3,588.08	258.57	-119.26	1,606,729.11	2,262,378.19	39.47012	-108.11322	
3,800.00	4.83	335.24	3,787.37	273.87	-126.32	1,606,744.61	2,262,371.58	39.47016	-108.11325	
4,000.00	4.83	335.24	3,986.66	289.18	-133.37	1,606,760.11	2,262,364.97	39.47020	-108.11327	
4,200.00	4.83	335.24	4,185.94	304.48	-140.43	1,606,775.61	2,262,358.35	39.47024	-108.11330	
4,400.00	4.83	335.24	4,385.23	319.78	-147.49	1,606,791.11	2,262,351.74	39.47029	-108.11332	
4,483.74	4.83	335.24	4,468.67	326.19	-150.44	1,606,797.60	2,262,348.97	39.47030	-108.11333	
Approx. Top Gas										
4,600.00	4.83	335.24	4,584.52	335.08	-154.55	1,606,806.61	2,262,345.12	39.47033	-108.11335	
4,800.00	4.83	335.24	4,783.81	350.39	-161.60	1,606,822.10	2,262,338.51	39.47037	-108.11337	
5,000.00	4.83	335.24	4,983.10	365.69	-168.66	1,606,837.60	2,262,331.89	39.47041	-108.11340	
5,200.00	4.83	335.24	5,182.39	380.99	-175.72	1,606,853.10	2,262,325.28	39.47045	-108.11342	
5,400.00	4.83	335.24	5,381.68	396.29	-182.78	1,606,868.60	2,262,318.66	39.47050	-108.11345	
5,600.00	4.83	335.24	5,580.97	411.60	-189.84	1,606,884.10	2,262,312.05	39.47054	-108.11347	
5,800.00	4.83	335.24	5,780.25	426.90	-196.89	1,606,899.60	2,262,305.43	39.47058	-108.11350	
5,815.87	4.83	335.24	5,796.07	428.11	-197.45	1,606,900.83	2,262,304.91	39.47058	-108.11350	
Cameo Coals										
6,000.00	4.83	335.24	5,979.54	442.20	-203.95	1,606,915.09	2,262,298.82	39.47062	-108.11352	
6,200.00	4.83	335.24	6,178.83	457.50	-211.01	1,606,930.59	2,262,292.21	39.47066	-108.11355	

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well GM 702RD-4-HN1 - Slot C05
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	WELL @ 5565.00usft (Nabors Pace X21 (33' RKB))
<b>Project:</b>	GV 04-07S-096W	<b>MD Reference:</b>	WELL @ 5565.00usft (Nabors Pace X21 (33' RKB))
<b>Site:</b>	GM 32-4 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 702RD-4-HN1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 16Apr14 kjs		

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	
6,325.52	4.83	335.24	6,303.90	467.11	-215.44	1,606,940.32	2,262,288.05	39.47069	-108.11356	
<b>Rollins SS</b>										
6,400.00	4.83	335.24	6,378.12	472.81	-218.07	1,606,946.09	2,262,285.59	39.47071	-108.11357	
6,598.00	4.83	335.24	6,575.42	487.95	-225.05	1,606,961.43	2,262,279.04	39.47075	-108.11360	
<b>Cozzette</b>										
6,600.00	4.83	335.24	6,577.41	488.11	-225.12	1,606,961.59	2,262,278.98	39.47075	-108.11360	
6,800.00	4.83	335.24	6,776.70	503.41	-232.18	1,606,977.09	2,262,272.36	39.47079	-108.11362	
6,850.30	4.83	335.24	6,826.82	507.26	-233.96	1,606,980.98	2,262,270.70	39.47080	-108.11363	
<b>Corcoran</b>										
7,000.00	4.83	335.24	6,975.99	518.71	-239.24	1,606,992.59	2,262,265.75	39.47083	-108.11365	
7,026.91	4.83	335.24	7,002.80	520.77	-240.19	1,606,994.67	2,262,264.86	39.47084	-108.11365	
<b>Upper Sego</b>										
7,200.00	4.83	335.24	7,175.28	534.01	-246.30	1,607,008.08	2,262,259.13	39.47087	-108.11367	
7,375.08	4.83	335.24	7,349.73	547.41	-252.48	1,607,021.65	2,262,253.34	39.47091	-108.11370	
<b>Lower Sego</b>										
7,400.00	4.83	335.24	7,374.57	549.32	-253.36	1,607,023.58	2,262,252.52	39.47092	-108.11370	
7,600.00	4.83	335.24	7,573.85	564.62	-260.41	1,607,039.08	2,262,245.90	39.47096	-108.11372	
7,642.51	4.83	335.24	7,616.22	567.87	-261.91	1,607,042.38	2,262,244.50	39.47097	-108.11373	
<b>Loyd</b>										
7,800.00	4.83	335.24	7,773.14	579.92	-267.47	1,607,054.58	2,262,239.29	39.47100	-108.11375	
8,000.00	4.83	335.24	7,972.43	595.22	-274.53	1,607,070.08	2,262,232.68	39.47104	-108.11377	
8,200.00	4.83	335.24	8,171.72	610.53	-281.59	1,607,085.58	2,262,226.06	39.47108	-108.11380	
8,268.21	4.83	335.24	8,239.69	615.75	-283.99	1,607,090.86	2,262,223.80	39.47110	-108.11381	
<b>Castlegate</b>										
8,400.00	4.83	335.24	8,371.01	625.83	-288.64	1,607,101.07	2,262,219.45	39.47113	-108.11382	
8,545.74	4.83	335.24	8,516.23	636.98	-293.79	1,607,112.37	2,262,214.63	39.47116	-108.11384	
<b>Castlegate Hot GR</b>										
8,600.00	4.83	335.24	8,570.30	641.13	-295.70	1,607,116.57	2,262,212.83	39.47117	-108.11385	
8,676.94	4.83	335.24	8,646.96	647.02	-298.42	1,607,122.53	2,262,210.29	39.47118	-108.11386	
<b>Morapos</b>										
8,800.00	4.83	335.24	8,769.59	656.43	-302.76	1,607,132.07	2,262,206.22	39.47121	-108.11387	
8,914.10	4.83	335.24	8,883.28	665.16	-306.79	1,607,140.91	2,262,202.44	39.47123	-108.11389	
<b>Mancos-B</b>										
9,000.00	4.83	335.24	8,968.88	671.74	-309.82	1,607,147.57	2,262,199.60	39.47125	-108.11390	
9,200.00	4.83	335.24	9,168.16	687.04	-316.88	1,607,163.07	2,262,192.99	39.47129	-108.11392	
9,400.00	4.83	335.24	9,367.45	702.34	-323.93	1,607,178.57	2,262,186.37	39.47134	-108.11395	
9,579.71	4.83	335.24	9,546.52	716.09	-330.28	1,607,192.49	2,262,180.43	39.47137	-108.11397	
<b>9 5/8"</b>										
9,600.00	4.83	335.24	9,566.74	717.64	-330.99	1,607,194.06	2,262,179.76	39.47138	-108.11397	
9,639.71	4.83	335.24	9,606.31	720.68	-332.39	1,607,197.14	2,262,178.45	39.47139	-108.11398	
<b>KOP 8"/100</b>										
9,800.00	8.17	174.94	9,766.17	715.45	-334.22	1,607,191.96	2,262,176.46	39.47137	-108.11399	
10,000.00	24.12	169.99	9,957.67	660.68	-325.81	1,607,136.98	2,262,183.30	39.47122	-108.11396	
10,000.63	24.17	169.99	9,958.24	660.43	-325.77	1,607,136.73	2,262,183.33	39.47122	-108.11396	
<b>Top Niobrara</b>										
10,032.83	26.75	169.73	9,987.31	646.81	-323.33	1,607,123.04	2,262,185.38	39.47118	-108.11395	
<b>Niobrara Hot GR Marker</b>										
10,127.81	34.34	169.19	10,069.05	599.39	-314.48	1,607,075.39	2,262,192.86	39.47105	-108.11392	
<b>Top HN2</b>										
10,200.00	40.11	168.90	10,126.51	556.53	-306.18	1,607,032.31	2,262,199.93	39.47094	-108.11389	
10,400.00	56.11	168.36	10,259.61	411.05	-276.84	1,606,886.06	2,262,225.07	39.47054	-108.11378	

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well GM 702RD-4-HN1 - Slot C05
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	WELL @ 5565.00usft (Nabors Pace X21 (33' RKB))
<b>Project:</b>	GV 04-07S-096W	<b>MD Reference:</b>	WELL @ 5565.00usft (Nabors Pace X21 (33' RKB))
<b>Site:</b>	GM 32-4 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 702RD-4-HN1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 16Apr14 kjs		

Planned Survey											
Measured			Vertical			Map		Map		Latitude	Longitude
Depth (usft)	Inclination (°)	Azimuth (bearing)	Depth (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)				
10,600.00	72.11	168.00	10,346.66	235.52	-240.07	1,606,709.55	2,262,256.77		39.47006	-108.11365	
10,687.05	79.07	167.86	10,368.31	153.12	-222.45	1,606,626.68	2,262,272.01		39.46983	-108.11359	
Top Horizontal Target (HN1)											
10,800.00	88.10	167.70	10,380.92	43.54	-198.72	1,606,516.46	2,262,292.58		39.46953	-108.11351	
10,867.02	93.46	167.60	10,380.00	-21.90	-184.39	1,606,450.65	2,262,305.02		39.46935	-108.11346	
Landing Pt 93.46° Inc, 167.6° Az - LP GM 702RD-4-HN1											
11,000.00	93.46	167.60	10,371.96	-151.54	-155.89	1,606,320.24	2,262,329.79		39.46899	-108.11335	
11,200.00	93.46	167.60	10,359.88	-346.52	-113.02	1,606,124.12	2,262,367.03		39.46846	-108.11320	
11,400.00	93.46	167.60	10,347.79	-541.50	-70.16	1,605,928.00	2,262,404.27		39.46792	-108.11305	
11,600.00	93.46	167.60	10,335.71	-736.47	-27.29	1,605,731.88	2,262,441.51		39.46739	-108.11290	
11,800.00	93.46	167.60	10,323.63	-931.45	15.58	1,605,535.76	2,262,478.75		39.46685	-108.11275	
12,000.00	93.46	167.60	10,311.54	-1,126.43	58.45	1,605,339.63	2,262,515.99		39.46632	-108.11259	
12,200.00	93.46	167.60	10,299.46	-1,321.41	101.31	1,605,143.51	2,262,553.23		39.46578	-108.11244	
12,400.00	93.46	167.60	10,287.37	-1,516.39	144.18	1,604,947.39	2,262,590.47		39.46525	-108.11229	
12,521.98	93.46	167.60	10,280.00	-1,635.30	170.33	1,604,827.78	2,262,613.19		39.46492	-108.11220	
Begin 2°/100 Drop - IP #1 GM 702RD-4-HN1											
12,546.52	92.97	167.60	10,278.62	-1,659.24	175.59	1,604,803.70	2,262,617.76		39.46485	-108.11218	
Hold 92.97° Inc											
12,600.00	92.97	167.60	10,275.85	-1,711.39	187.06	1,604,751.24	2,262,627.72		39.46471	-108.11214	
12,800.00	92.97	167.60	10,265.47	-1,906.47	229.94	1,604,555.02	2,262,664.98		39.46417	-108.11199	
12,836.26	92.97	167.60	10,263.59	-1,941.83	237.72	1,604,519.45	2,262,671.74		39.46408	-108.11196	
Target Landing Point											
13,000.00	92.97	167.60	10,255.10	-2,101.54	272.83	1,604,358.81	2,262,702.24		39.46364	-108.11184	
13,200.00	92.97	167.60	10,244.73	-2,296.61	315.72	1,604,162.59	2,262,739.50		39.46310	-108.11168	
13,400.00	92.97	167.60	10,234.35	-2,491.68	358.61	1,603,966.38	2,262,776.76		39.46257	-108.11153	
13,600.00	92.97	167.60	10,223.98	-2,686.75	401.50	1,603,770.16	2,262,814.02		39.46203	-108.11138	
13,800.00	92.97	167.60	10,213.60	-2,881.82	444.39	1,603,573.94	2,262,851.28		39.46150	-108.11123	
14,000.00	92.97	167.60	10,203.23	-3,076.90	487.27	1,603,377.73	2,262,888.54		39.46096	-108.11108	
14,200.00	92.97	167.60	10,192.86	-3,271.97	530.16	1,603,181.51	2,262,925.80		39.46043	-108.11092	
14,400.00	92.97	167.60	10,182.48	-3,467.04	573.05	1,602,985.30	2,262,963.06		39.45989	-108.11077	
14,447.85	92.97	167.60	10,180.00	-3,513.71	583.31	1,602,938.36	2,262,971.97		39.45976	-108.11074	
Begin 2°/100 Build - IP #2 GM 702RD-4-HN1											
14,534.83	94.71	167.60	10,174.17	-3,598.47	601.95	1,602,853.10	2,262,988.16		39.45953	-108.11067	
Hold 94.71° Inc											
14,600.00	94.71	167.60	10,168.82	-3,661.90	615.89	1,602,789.29	2,263,000.27		39.45936	-108.11062	
14,800.00	94.71	167.60	10,152.38	-3,856.58	658.69	1,602,593.48	2,263,037.46		39.45882	-108.11047	
15,000.00	94.71	167.60	10,135.95	-4,051.25	701.49	1,602,397.66	2,263,074.64		39.45829	-108.11032	
15,200.00	94.71	167.60	10,119.52	-4,245.93	744.30	1,602,201.84	2,263,111.82		39.45775	-108.11017	
15,400.00	94.71	167.60	10,103.09	-4,440.60	787.10	1,602,006.03	2,263,149.01		39.45722	-108.11001	
15,600.00	94.71	167.60	10,086.65	-4,635.27	829.90	1,601,810.21	2,263,186.19		39.45668	-108.10986	
15,680.97	94.71	167.60	10,080.00	-4,714.09	847.22	1,601,730.93	2,263,201.24		39.45647	-108.10980	
Begin 2°/100 Build & Turn - IP #3 GM 702RD-4-HN1											
15,735.30	95.79	167.73	10,075.03	-4,766.94	858.78	1,601,677.77	2,263,211.28		39.45632	-108.10976	
Hold 95.79° Inc, 167.73° Az											
15,800.00	95.79	167.73	10,068.50	-4,829.84	872.46	1,601,614.51	2,263,223.14		39.45615	-108.10971	
16,000.00	95.79	167.73	10,048.32	-5,024.28	914.73	1,601,418.95	2,263,259.80		39.45562	-108.10956	
16,200.00	95.79	167.73	10,028.14	-5,218.71	957.01	1,601,223.38	2,263,296.47		39.45508	-108.10941	
16,400.00	95.79	167.73	10,007.95	-5,413.15	999.28	1,601,027.82	2,263,333.13		39.45455	-108.10926	
16,594.25	95.79	167.73	9,988.35	-5,601.99	1,040.35	1,600,837.88	2,263,368.74		39.45403	-108.10912	
Begin 2°/100 Drop & Turn											
16,600.00	95.68	167.71	9,987.78	-5,607.59	1,041.56	1,600,832.26	2,263,369.80		39.45401	-108.10911	



**WPX**  
Planning Report - Geographic

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well GM 702RD-4-HN1 - Slot C05
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	WELL @ 5565.00usft (Nabors Pace X21 (33' RKB))
<b>Project:</b>	GV 04-07S-096W	<b>MD Reference:</b>	WELL @ 5565.00usft (Nabors Pace X21 (33' RKB))
<b>Site:</b>	GM 32-4 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 702RD-4-HN1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 16Apr14 kjs		

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
16,795.56	91.82	167.10	9,975.00	-5,797.99	1,084.11	1,600,640.72	2,263,406.85	39.45349	-108.10896
<b>Hold 91.82° Inc, 167.1° Az - EOC GM 702RD-4-HN1</b>									
16,800.00	91.82	167.10	9,974.86	-5,802.32	1,085.10	1,600,636.36	2,263,407.72	39.45348	-108.10896
16,953.34	91.82	167.10	9,970.00	-5,951.71	1,119.33	1,600,486.05	2,263,437.63	39.45307	-108.10884
<b>TD at 16953.34 - TD / PBHL GM 702RD-4-HN1</b>									

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
TD / PBHL GM 702RD-4 - plan hits target center - Point	0.00	0.00	9,970.00	-5,951.71	1,119.33	1,600,486.05	2,263,437.63	39.45307	-108.10884
EOC GM 702RD-4-HN1 - plan hits target center - Point	0.00	0.00	9,975.00	-5,797.99	1,084.11	1,600,640.72	2,263,406.85	39.45349	-108.10896
IP #3 GM 702RD-4-HN1 - plan hits target center - Point	0.00	0.00	10,080.00	-4,714.09	847.22	1,601,730.93	2,263,201.24	39.45647	-108.10980
IP #2 GM 702RD-4-HN1 - plan hits target center - Point	0.00	0.00	10,180.00	-3,513.71	583.31	1,602,938.36	2,262,971.97	39.45976	-108.11074
IP #1 GM 702RD-4-HN1 - plan hits target center - Point	0.00	0.00	10,280.00	-1,635.30	170.33	1,604,827.78	2,262,613.19	39.46492	-108.11220
LP GM 702RD-4-HN1 - plan hits target center - Point	0.00	0.00	10,380.00	-21.90	-184.39	1,606,450.65	2,262,305.02	39.46935	-108.11346

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
2,400.00	2,392.35	13 3/8"	13.375	17.500	
9,579.71	9,546.52	9 5/8"	9.625	12.250	



**WPX**  
Planning Report - Geographic

<b>Database:</b>	COMPASS-PICEANCE	<b>Local Co-ordinate Reference:</b>	Well GM 702RD-4-HN1 - Slot C05
<b>Company:</b>	PICEANCE VLY NAD 83	<b>TVD Reference:</b>	WELL @ 5565.00usft (Nabors Pace X21 (33' RKB))
<b>Project:</b>	GV 04-07S-096W	<b>MD Reference:</b>	WELL @ 5565.00usft (Nabors Pace X21 (33' RKB))
<b>Site:</b>	GM 32-4 Pad	<b>North Reference:</b>	True
<b>Well:</b>	GM 702RD-4-HN1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 16Apr14 kjs		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (bearing)	
1,728.64	1,723.38	Top of "G" Sand		-3.86	167.60	
1,779.10	1,773.66	Base of "G" Sand		-3.86	167.60	
2,031.40	2,025.06	Top Fort Union		-3.86	167.60	
2,334.16	2,326.74	Base Fort Union		-3.86	167.60	
3,242.43	3,231.78	Mesaverde		-3.86	167.60	
4,483.74	4,468.67	Approx. Top Gas		-3.86	167.60	
5,815.87	5,796.07	Cameo Coals		-3.86	167.60	
6,325.52	6,303.90	Rollins SS		-3.86	167.60	
6,598.00	6,575.42	Cozzette		-3.86	167.60	
6,850.30	6,826.82	Corcoran		-3.86	167.60	
7,026.91	7,002.80	Upper Sego		-3.86	167.60	
7,375.08	7,349.73	Lower Sego		-3.86	167.60	
7,642.51	7,616.22	Loyd		-3.86	167.60	
8,268.21	8,239.69	Castlegate		-3.86	167.60	
8,545.74	8,516.23	Castlegate Hot GR		-3.86	167.60	
8,676.94	8,646.96	Morapos		-3.86	167.60	
8,914.10	8,883.28	Mancos-B		-3.86	167.60	
10,000.63	9,958.24	Top Niobrara		-3.86	167.60	
10,032.83	9,987.31	Niobrara Hot GR Marker		-3.86	167.60	
10,127.81	10,069.05	Top HN2		-3.86	167.60	
12,836.26	10,263.59	Target Landing Point		-3.86	167.60	
10,687.05	10,368.31	Top Horizontal Target (HN1)		-3.86	167.60	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
140.00	140.00	0.00	0.00	Start Build 3.00	
301.11	300.92	6.17	-2.84	Hold 4.83° Inc, 335.24° Az	
9,639.71	9,606.31	720.68	-332.39	KOP 8°/100	
10,867.02	10,380.00	-21.90	-184.39	Landing Pt 93.46° Inc, 167.6° Az	
12,521.98	10,280.00	-1,635.30	170.33	Begin 2°/100 Drop	
12,546.52	10,278.62	-1,659.24	175.59	Hold 92.97° Inc	
14,447.85	10,180.00	-3,513.71	583.31	Begin 2°/100 Build	
14,534.83	10,174.17	-3,598.47	601.95	Hold 94.71° Inc	
15,680.97	10,080.00	-4,714.09	847.22	Begin 2°/100 Build & Turn	
15,735.30	10,075.03	-4,766.94	858.78	Hold 95.79° Inc, 167.73° Az	
16,594.25	9,988.35	-5,601.99	1,040.35	Begin 2°/100 Drop & Turn	
16,795.56	9,975.00	-5,797.99	1,084.11	Hold 91.82° Inc, 167.1° Az	
16,953.34	9,970.00	-5,951.71	1,119.33	TD at 16953.34	