



<b>Company:</b> CARRIZO OIL & GAS, INC.	<b>Date:</b> 07/11/2012	<b>Time:</b> 14:30:15	<b>Page:</b> 1
<b>Field:</b> Niobrara CONZ'83	<b>Co-ordinate(NE) Reference:</b> Well: 2-4-34-7-60, Grid North		
<b>Site:</b> Pergamos 4-44-7-60	<b>Vertical (TVD) Reference:</b> 4910'GL+17"KB 4927.0		
<b>Well:</b> 2-4-34-7-60	<b>Section (VS) Reference:</b> Well (0.00N,0.00E,180.02Azi)		
<b>Wellpath:</b> Original Hole	<b>Survey Calculation Method:</b> Minimum Curvature	<b>Db:</b> Adapti	

**Field:** Niobrara CONZ'83

**Map System:** US State Plane Coordinate System 1983  
**Geo Datum:** GRS 1980  
**Sys Datum:** Mean Sea Level

**Map Zone:** Colorado, Northern Zone  
**Coordinate System:** Well Centre  
**Geomagnetic Model:** IGRF2010

**Site:** Pergamos 4-44-7-60  
S:4,T:7N,R:60W  
Weld County, CO

<b>Site Position:</b>	<b>Northing:</b> 1463521.27 ft	<b>Latitude:</b> 40 35 50.095 N
<b>From:</b> Map	<b>Easting:</b> 3390683.38 ft	<b>Longitude:</b> 104 5 35.201 W
<b>Position Uncertainty:</b> 0.00 ft		<b>North Reference:</b> Grid
<b>Ground Level:</b> 4910.00 ft		<b>Grid Convergence:</b> 0.91 deg

<b>Well:</b> 2-4-34-7-60	<b>Slot Name:</b> #2-34
Centerd on # 2-44 revised SL 6-29	
<b>Well Position:</b> +N/-S -0.12 ft	<b>Latitude:</b> 40 35 50.091 N
+E/-W 16.48 ft	<b>Longitude:</b> 104 5 34.987 W
<b>Position Uncertainty:</b> 0.00 ft	

<b>Wellpath:</b> Original Hole	<b>Drilled From:</b> Surface
<b>Current Datum:</b> 4910'GL+17"KB	<b>Tie-on Depth:</b> 0.00 ft
<b>Magnetic Data:</b> 07/02/2012	<b>Above System Datum:</b> Mean Sea Level
<b>Field Strength:</b> 53234 nT	<b>Declination:</b> 8.38 deg
<b>Vertical Section:</b> Depth From (TVD)	<b>Mag Dip Angle:</b> 67.28 deg
ft	<b>+E/-W</b>
	<b>Direction</b>
	deg
0.00	180.02

**Survey Program for Definitive Wellpath**

<b>Date:</b> 07/11/2012	<b>Validated:</b> No	<b>Version:</b> 0
<b>Actual From</b>	<b>To</b>	<b>Toolcode</b>
ft	ft	<b>Tool Name</b>
141.00	10605.00	Survey #1
10682.00	10682.00	Survey #2
		MWD
		Project
		Std MWD
		Projection

**Survey**

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	TIE LINE
141.00	0.70	2.40	141.00	0.86	0.04	-0.86	0.50	0.50	0.00	MWD
233.00	0.70	2.70	232.99	1.98	0.09	-1.98	0.00	0.00	0.33	MWD
328.00	0.90	297.00	327.98	2.90	-0.55	-2.90	0.93	0.21	-69.16	MWD
419.00	2.10	250.80	418.95	2.68	-2.76	-2.68	1.77	1.32	-50.77	MWD
511.00	3.50	248.60	510.84	1.10	-6.97	-1.10	1.53	1.52	-2.39	MWD
603.00	5.10	251.30	602.58	-1.24	-13.46	1.24	1.75	1.74	2.93	MWD
695.00	6.00	249.50	694.15	-4.23	-21.84	4.24	1.00	0.98	-1.96	MWD
787.00	6.00	248.50	785.64	-7.68	-30.81	7.69	0.11	0.00	-1.09	MWD
879.00	5.80	246.00	877.15	-11.33	-39.53	11.34	0.35	-0.22	-2.72	MWD
970.00	5.80	245.30	967.69	-15.12	-47.91	15.14	0.08	0.00	-0.77	MWD
1062.00	6.00	250.90	1059.20	-18.64	-56.68	18.66	0.66	0.22	6.09	MWD
1154.00	5.70	252.30	1150.72	-21.60	-65.57	21.62	0.36	-0.33	1.52	MWD
1246.00	5.70	250.20	1242.27	-24.54	-74.23	24.56	0.23	0.00	-2.28	MWD
1338.00	5.70	250.90	1333.81	-27.58	-82.84	27.61	0.08	0.00	0.76	MWD
1421.00	6.00	251.50	1416.38	-30.31	-90.85	30.34	0.37	0.36	0.72	MWD
1512.00	6.20	251.80	1506.87	-33.35	-100.03	33.38	0.22	0.22	0.33	MWD
1604.00	5.90	251.50	1598.35	-36.40	-109.23	36.44	0.33	-0.33	-0.33	MWD
1690.00	5.60	249.30	1683.92	-39.29	-117.35	39.33	0.43	-0.35	-2.56	MWD
1775.00	5.80	257.80	1768.50	-41.66	-125.43	41.70	1.02	0.24	10.00	MWD
1859.00	6.00	257.40	1852.06	-43.52	-133.86	43.56	0.24	0.24	-0.48	MWD
1944.00	5.50	259.20	1936.63	-45.25	-142.20	45.30	0.63	-0.59	2.12	MWD

**Company:** CARRIZO OIL & GAS, INC.  
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**Wellpath:** Original Hole

**Date:** 07/11/2012 **Time:** 14:30:15 **Page:** 2  
**Co-ordinate(NE) Reference:** Well: 2-4-34-7-60, Grid North  
**Vertical (TVD) Reference:** 4910'GL+17"KB 4927.0  
**Section (VS) Reference:** Well (0.00N,0.00E,180.02Azi)  
**Survey Calculation Method:** Minimum Curvature **Db:** Adapti

**Survey**

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
2029.00	6.50	255.80	2021.16	-47.19	-150.86	47.24	1.25	1.18	-4.00	MWD
2114.00	6.10	256.70	2105.65	-49.41	-159.92	49.47	0.48	-0.47	1.06	MWD
2199.00	5.50	254.80	2190.21	-51.52	-168.25	51.58	0.74	-0.71	-2.24	MWD
2284.00	6.50	254.80	2274.75	-53.85	-176.82	53.91	1.18	1.18	0.00	MWD
2369.00	5.90	249.30	2359.25	-56.65	-185.55	56.72	0.99	-0.71	-6.47	MWD
2455.00	7.00	251.60	2444.70	-59.87	-194.66	59.94	1.31	1.28	2.67	MWD
2540.00	6.90	250.40	2529.08	-63.22	-204.38	63.29	0.21	-0.12	-1.41	MWD
2625.00	6.60	249.20	2613.49	-66.66	-213.76	66.74	0.39	-0.35	-1.41	MWD
2710.00	6.40	248.60	2697.94	-70.13	-222.74	70.21	0.25	-0.24	-0.71	MWD
2795.00	6.30	248.50	2782.42	-73.57	-231.49	73.65	0.12	-0.12	-0.12	MWD
2880.00	6.30	245.10	2866.91	-77.24	-240.06	77.32	0.44	0.00	-4.00	MWD
2965.00	6.30	253.40	2951.40	-80.53	-248.76	80.62	1.07	0.00	9.76	MWD
3051.00	5.50	253.00	3036.94	-83.09	-257.22	83.18	0.93	-0.93	-0.47	MWD
3136.00	6.40	261.10	3121.48	-85.01	-265.80	85.10	1.45	1.06	9.53	MWD
3221.00	5.00	263.90	3206.06	-86.14	-274.16	86.23	1.68	-1.65	3.29	MWD
3306.00	5.70	256.40	3290.69	-87.52	-281.95	87.62	1.16	0.82	-8.82	MWD
3391.00	7.50	253.20	3375.13	-90.12	-291.36	90.22	2.16	2.12	-3.76	MWD
3476.00	8.10	251.50	3459.34	-93.62	-302.35	93.73	0.76	0.71	-2.00	MWD
3561.00	8.50	252.30	3543.45	-97.43	-314.01	97.54	0.49	0.47	0.94	MWD
3646.00	9.10	252.30	3627.45	-101.39	-326.40	101.50	0.71	0.71	0.00	MWD
3731.00	9.50	251.80	3711.33	-105.62	-339.47	105.74	0.48	0.47	-0.59	MWD
3817.00	9.90	250.90	3796.10	-110.26	-353.20	110.38	0.50	0.47	-1.05	MWD
3900.00	9.10	252.00	3877.96	-114.62	-366.18	114.75	0.99	-0.96	1.33	MWD
3985.00	8.40	251.80	3961.97	-118.64	-378.47	118.77	0.82	-0.82	-0.24	MWD
4070.00	7.60	252.90	4046.14	-122.23	-389.74	122.37	0.96	-0.94	1.29	MWD
4155.00	7.30	249.50	4130.43	-125.77	-400.17	125.91	0.63	-0.35	-4.00	MWD
4240.00	6.30	250.20	4214.83	-129.24	-409.62	129.39	1.18	-1.18	0.82	MWD
4326.00	5.50	248.30	4300.37	-132.37	-417.89	132.51	0.96	-0.93	-2.21	MWD
4410.00	5.10	252.00	4384.01	-135.01	-425.18	135.16	0.63	-0.48	4.40	MWD
4495.00	4.10	255.70	4468.74	-136.93	-431.72	137.08	1.23	-1.18	4.35	MWD
4579.00	3.40	263.80	4552.56	-137.94	-437.10	138.09	1.04	-0.83	9.64	MWD
4664.00	3.30	266.70	4637.41	-138.35	-442.05	138.50	0.23	-0.12	3.41	MWD
4749.00	3.90	267.10	4722.25	-138.64	-447.38	138.79	0.71	0.71	0.47	MWD
4834.00	4.10	264.60	4807.04	-139.07	-453.29	139.23	0.31	0.24	-2.94	MWD
4919.00	3.30	271.00	4891.86	-139.31	-458.76	139.47	1.06	-0.94	7.53	MWD
5005.00	4.00	263.10	4977.69	-139.63	-464.22	139.79	1.00	0.81	-9.19	MWD
5090.00	4.70	251.60	5062.44	-141.09	-470.46	141.25	1.31	0.82	-13.53	MWD
5175.00	4.10	255.80	5147.19	-142.93	-476.71	143.10	0.80	-0.71	4.94	MWD
5260.00	4.10	258.30	5231.97	-144.29	-482.64	144.46	0.21	0.00	2.94	MWD
5345.00	5.30	251.30	5316.69	-146.17	-489.33	146.34	1.56	1.41	-8.24	MWD
5431.00	4.70	251.30	5402.36	-148.57	-496.43	148.74	0.70	-0.70	0.00	MWD
5516.00	4.90	238.30	5487.06	-151.59	-502.82	151.77	1.30	0.24	-15.29	MWD
5601.00	5.60	235.10	5571.71	-155.87	-509.31	156.05	0.89	0.82	-3.76	MWD
5669.00	5.50	231.10	5639.39	-159.82	-514.57	160.00	0.59	-0.15	-5.88	MWD
5711.00	5.40	231.80	5681.20	-162.31	-517.68	162.49	0.29	-0.24	1.67	MWD
5754.00	5.50	229.70	5724.00	-164.89	-520.85	165.07	0.52	0.23	-4.88	MWD
5796.00	8.40	217.50	5765.69	-168.63	-524.25	168.81	7.71	6.90	-29.05	MWD
5839.00	11.40	214.40	5808.05	-174.63	-528.56	174.81	7.08	6.98	-7.21	MWD
5882.00	15.20	210.80	5849.89	-182.98	-533.85	183.16	9.04	8.84	-8.37	MWD
5924.00	18.50	207.50	5890.08	-193.62	-539.75	193.81	8.18	7.86	-7.86	MWD
5967.00	21.80	201.20	5930.45	-207.12	-545.79	207.31	9.18	7.67	-14.65	MWD
6010.00	25.30	198.00	5969.86	-223.31	-551.52	223.50	8.66	8.14	-7.44	MWD
6052.00	29.20	194.10	6007.20	-241.79	-556.79	241.98	10.21	9.29	-9.29	MWD

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**Survey Calculation Method:** Minimum Curvature **Db:** Adapti

**Survey**

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
6095.00	33.40	191.50	6043.93	-263.57	-561.71	263.77	10.26	9.77	-6.05	MWD
6137.00	37.70	189.90	6078.10	-287.56	-566.22	287.76	10.47	10.24	-3.81	MWD
6180.00	42.10	189.10	6111.08	-314.76	-570.77	314.96	10.30	10.23	-1.86	MWD
6222.00	47.00	190.60	6141.00	-343.78	-575.82	343.98	11.93	11.67	3.57	MWD
6264.00	51.10	188.50	6168.52	-375.05	-581.06	375.25	10.47	9.76	-5.00	MWD
6366.00	60.90	190.80	6225.50	-458.29	-595.32	458.50	9.79	9.61	2.25	MWD
6408.00	65.70	189.40	6244.36	-495.22	-601.89	495.43	11.81	11.43	-3.33	MWD
6451.00	70.40	188.20	6260.43	-534.62	-607.98	534.83	11.23	10.93	-2.79	MWD
6493.00	74.70	187.50	6273.02	-574.30	-613.45	574.52	10.36	10.24	-1.67	MWD
6536.00	79.10	186.20	6282.77	-615.88	-618.44	616.09	10.65	10.23	-3.02	MWD
6579.00	82.70	184.50	6289.57	-658.14	-622.39	658.36	9.24	8.37	-3.95	MWD
6605.00	84.20	183.30	6292.53	-683.91	-624.15	684.13	7.37	5.77	-4.62	MWD
6637.00	86.33	182.31	6295.17	-715.76	-625.71	715.98	7.35	6.67	-3.10	600' entry
6647.00	87.00	182.00	6295.76	-725.74	-626.08	725.96	7.35	6.67	-3.09	MWD
6690.00	87.10	181.30	6297.97	-768.66	-627.32	768.88	1.64	0.23	-1.63	MWD
6732.00	88.60	180.30	6299.54	-810.63	-627.90	810.85	4.29	3.57	-2.38	MWD
6775.00	89.60	179.40	6300.22	-853.62	-627.79	853.84	3.13	2.33	-2.09	MWD
6818.00	89.30	178.90	6300.63	-896.61	-627.15	896.83	1.36	-0.70	-1.16	MWD
6860.00	89.20	178.90	6301.18	-938.60	-626.35	938.82	0.24	-0.24	0.00	MWD
6903.00	90.60	179.00	6301.26	-981.59	-625.56	981.81	3.26	3.26	0.23	MWD
6945.00	91.00	179.20	6300.67	-1023.58	-624.90	1023.80	1.06	0.95	0.48	MWD
6988.00	90.00	178.30	6300.30	-1066.57	-623.96	1066.79	3.13	-2.33	-2.09	MWD
7031.00	90.50	179.00	6300.11	-1109.56	-622.95	1109.78	2.00	1.16	1.63	MWD
7073.00	90.20	179.40	6299.85	-1151.55	-622.36	1151.77	1.19	-0.71	0.95	MWD
7116.00	90.10	180.10	6299.74	-1194.55	-622.18	1194.77	1.64	-0.23	1.63	MWD
7158.00	90.30	181.00	6299.59	-1236.55	-622.58	1236.77	2.20	0.48	2.14	MWD
7200.00	90.20	181.70	6299.41	-1278.54	-623.57	1278.76	1.68	-0.24	1.67	MWD
7243.00	90.50	181.80	6299.15	-1321.52	-624.88	1321.74	0.74	0.70	0.23	MWD
7285.00	90.10	182.20	6298.93	-1363.49	-626.35	1363.71	1.35	-0.95	0.95	MWD
7327.00	89.30	181.10	6299.15	-1405.47	-627.56	1405.69	3.24	-1.90	-2.62	MWD
7369.00	88.90	181.00	6299.81	-1447.46	-628.33	1447.68	0.98	-0.95	-0.24	MWD
7412.00	88.50	180.40	6300.78	-1490.44	-628.85	1490.66	1.68	-0.93	-1.40	MWD
7454.00	89.70	179.90	6301.44	-1532.44	-628.96	1532.66	3.10	2.86	-1.19	MWD
7497.00	89.40	179.40	6301.78	-1575.44	-628.70	1575.66	1.36	-0.70	-1.16	MWD
7540.00	89.70	179.70	6302.12	-1618.43	-628.36	1618.65	0.99	0.70	0.70	MWD
7582.00	90.60	179.60	6302.01	-1660.43	-628.10	1660.65	2.16	2.14	-0.24	MWD
7625.00	92.30	178.90	6300.92	-1703.41	-627.54	1703.63	4.28	3.95	-1.63	MWD
7667.00	91.50	178.20	6299.53	-1745.38	-626.48	1745.59	2.53	-1.90	-1.67	MWD
7708.00	90.30	178.00	6298.88	-1786.35	-625.12	1786.57	2.97	-2.93	-0.49	MWD
7751.00	90.30	178.30	6298.66	-1829.32	-623.73	1829.54	0.70	0.00	0.70	MWD
7794.00	90.00	178.90	6298.54	-1872.31	-622.68	1872.53	1.56	-0.70	1.40	MWD
7836.00	90.20	179.00	6298.47	-1914.30	-621.91	1914.52	0.53	0.48	0.24	MWD
7879.00	90.10	178.70	6298.36	-1957.30	-621.05	1957.51	0.74	-0.23	-0.70	MWD
7922.00	90.10	178.70	6298.28	-2000.28	-620.07	2000.50	0.00	0.00	0.00	MWD
7964.00	90.50	178.90	6298.06	-2042.27	-619.19	2042.49	1.06	0.95	0.48	MWD
8007.00	90.40	178.20	6297.73	-2085.26	-618.11	2085.47	1.64	-0.23	-1.63	MWD
8049.00	89.80	177.60	6297.65	-2127.23	-616.57	2127.45	2.02	-1.43	-1.43	MWD
8092.00	89.50	176.70	6297.91	-2170.18	-614.43	2170.39	2.21	-0.70	-2.09	MWD
8135.00	90.70	177.30	6297.84	-2213.12	-612.18	2213.33	3.12	2.79	1.40	MWD
8177.00	90.70	176.40	6297.33	-2255.05	-609.87	2255.26	2.14	0.00	-2.14	MWD
8220.00	90.70	175.50	6296.80	-2297.94	-606.83	2298.15	2.09	0.00	-2.09	MWD
8263.00	90.20	175.30	6296.46	-2340.80	-603.38	2341.01	1.25	-1.16	-0.47	MWD
8305.00	90.10	176.70	6296.35	-2382.69	-600.46	2382.90	3.34	-0.24	3.33	MWD
8348.00	90.50	176.20	6296.13	-2425.61	-597.79	2425.82	1.49	0.93	-1.16	MWD

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**Section (VS) Reference:** Well (0.00N,0.00E,180.02Azi)  
**Survey Calculation Method:** Minimum Curvature **Db:** Adapti

**Survey**

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
8391.00	90.70	178.70	6295.68	-2468.56	-595.88	2468.77	5.83	0.47	5.81	MWD
8433.00	90.20	180.80	6295.35	-2510.56	-595.70	2510.77	5.14	-1.19	5.00	MWD
8476.00	90.40	181.00	6295.12	-2553.55	-596.37	2553.76	0.66	0.47	0.47	MWD
8518.00	90.70	180.80	6294.72	-2595.55	-597.03	2595.75	0.86	0.71	-0.48	MWD
8561.00	90.40	180.10	6294.31	-2638.54	-597.37	2638.75	1.77	-0.70	-1.63	MWD
8604.00	90.30	179.90	6294.04	-2681.54	-597.37	2681.75	0.52	-0.23	-0.47	MWD
8646.00	90.60	179.20	6293.71	-2723.54	-597.04	2723.75	1.81	0.71	-1.67	MWD
8688.00	90.60	179.00	6293.27	-2765.53	-596.38	2765.74	0.48	0.00	-0.48	MWD
8730.00	90.50	178.30	6292.87	-2807.52	-595.39	2807.72	1.68	-0.24	-1.67	MWD
8773.00	90.30	178.20	6292.57	-2850.50	-594.08	2850.70	0.52	-0.47	-0.23	MWD
8815.00	89.80	177.50	6292.53	-2892.47	-592.50	2892.67	2.05	-1.19	-1.67	MWD
8858.00	89.40	176.70	6292.83	-2935.41	-590.33	2935.61	2.08	-0.93	-1.86	MWD
8901.00	89.20	178.20	6293.36	-2978.36	-588.41	2978.57	3.52	-0.47	3.49	MWD
8943.00	89.10	178.30	6293.98	-3020.34	-587.13	3020.54	0.34	-0.24	0.24	MWD
8986.00	90.10	180.40	6294.28	-3063.33	-586.64	3063.54	5.41	2.33	4.88	MWD
9029.00	90.90	180.10	6293.91	-3106.33	-586.83	3106.53	1.99	1.86	-0.70	MWD
9071.00	90.70	178.70	6293.32	-3148.32	-586.39	3148.53	3.37	-0.48	-3.33	MWD
9114.00	89.90	177.60	6293.10	-3191.30	-585.00	3191.50	3.16	-1.86	-2.56	MWD
9157.00	90.80	179.40	6292.83	-3234.28	-583.88	3234.48	4.68	2.09	4.19	MWD
9199.00	91.30	180.10	6292.06	-3276.27	-583.69	3276.47	2.05	1.19	1.67	MWD
9242.00	91.10	179.40	6291.16	-3319.26	-583.51	3319.46	1.69	-0.47	-1.63	MWD
9284.00	90.60	178.90	6290.54	-3361.25	-582.88	3361.45	1.68	-1.19	-1.19	MWD
9327.00	89.70	178.00	6290.43	-3404.23	-581.72	3404.44	2.96	-2.09	-2.09	MWD
9370.00	89.30	177.60	6290.80	-3447.20	-580.07	3447.40	1.32	-0.93	-0.93	MWD
9412.00	91.20	179.20	6290.62	-3489.18	-578.90	3489.38	5.91	4.52	3.81	MWD
9455.00	91.10	178.70	6289.76	-3532.17	-578.11	3532.37	1.19	-0.23	-1.16	MWD
9497.00	90.10	179.40	6289.32	-3574.16	-577.41	3574.36	2.91	-2.38	1.67	MWD
9540.00	89.50	178.90	6289.47	-3617.15	-576.78	3617.35	1.82	-1.40	-1.16	MWD
9583.00	89.90	179.60	6289.69	-3660.15	-576.21	3660.35	1.87	0.93	1.63	MWD
9625.00	89.40	179.20	6289.95	-3702.14	-575.77	3702.34	1.52	-1.19	-0.95	MWD
9668.00	90.20	179.60	6290.10	-3745.14	-575.32	3745.34	2.08	1.86	0.93	MWD
9710.00	91.00	180.40	6289.66	-3787.14	-575.32	3787.34	2.69	1.90	1.90	MWD
9753.00	90.80	179.90	6288.98	-3830.13	-575.43	3830.33	1.25	-0.47	-1.16	MWD
9796.00	90.40	179.90	6288.53	-3873.13	-575.36	3873.33	0.93	-0.93	0.00	MWD
9838.00	90.40	179.20	6288.24	-3915.13	-575.03	3915.33	1.67	0.00	-1.67	MWD
9881.00	90.50	179.00	6287.90	-3958.12	-574.35	3958.32	0.52	0.23	-0.47	MWD
9923.00	90.20	178.90	6287.65	-4000.11	-573.58	4000.31	0.75	-0.71	-0.24	MWD
9966.00	90.20	179.00	6287.50	-4043.10	-572.80	4043.30	0.23	0.00	0.23	MWD
10009.00	90.70	179.40	6287.16	-4086.10	-572.20	4086.30	1.49	1.16	0.93	MWD
10051.00	90.20	178.70	6286.83	-4128.09	-571.50	4128.29	2.05	-1.19	-1.67	MWD
10094.00	89.70	178.30	6286.87	-4171.08	-570.37	4171.27	1.49	-1.16	-0.93	MWD
10137.00	90.80	178.70	6286.68	-4214.06	-569.25	4214.26	2.72	2.56	0.93	MWD
10179.00	91.10	178.70	6285.98	-4256.04	-568.30	4256.24	0.71	0.71	0.00	MWD
10222.00	91.00	179.70	6285.19	-4299.03	-567.70	4299.23	2.34	-0.23	2.33	MWD
10264.00	90.80	179.40	6284.53	-4341.03	-567.37	4341.22	0.86	-0.48	-0.71	MWD
10307.00	91.10	181.70	6283.82	-4384.01	-567.78	4384.21	5.39	0.70	5.35	MWD
10349.00	90.70	181.50	6283.16	-4425.99	-568.95	4426.19	1.06	-0.95	-0.48	MWD
10392.00	90.80	181.10	6282.60	-4468.98	-569.93	4469.18	0.96	0.23	-0.93	MWD
10435.00	90.10	180.30	6282.26	-4511.97	-570.45	4512.17	2.47	-1.63	-1.86	MWD
10477.00	90.00	179.60	6282.22	-4553.97	-570.42	4554.17	1.68	-0.24	-1.67	MWD
10520.00	90.50	179.70	6282.04	-4596.97	-570.15	4597.17	1.19	1.16	0.23	MWD
10605.00	89.90	178.30	6281.74	-4681.95	-568.67	4682.15	1.79	-0.71	-1.65	MWD
10682.00	89.90	178.30	6281.87	-4758.92	-566.39	4759.12	0.00	0.00	0.00	PROJECTED to TD

**Company:** CARRIZO OIL & GAS, INC.  
**Field:** Niobrara CONZ'83  
**Site:** Pergamos 4-44-7-60  
**Well:** 2-4-34-7-60  
**Wellpath:** Original Hole

**Date:** 07/11/2012      **Time:** 14:30:15      **Page:** 5  
**Co-ordinate(NE) Reference:** Well: 2-4-34-7-60, Grid North  
**Vertical (TVD) Reference:** 4910'GL+17'KB 4927.0  
**Section (VS) Reference:** Well (0.00N,0.00E,180.02Azi)  
**Survey Calculation Method:** Minimum Curvature      **Db:** Adapti

**Annotation**

MD ft	TVD ft	
6637.00	6295.17	600' entry