



Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC. Field: Niobrara COCZ'83 Site: WEP 28 PAD Well: 4-28-11-3-64 Wellpath: Original Hole	Date: 10/10/2012 Co-ordinate(NE) Reference: Vertical (TVD) Reference: Section (VS) Reference: Plan:	Time: 08:32:23 Well: 4-28-11-3-64, Grid North 5580'GL+17'KB 5597.0 Well (0.00N,0.00E,179.45Azi) Plan #2	Page: 1
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Field: Niobrara COCZ'83 Map System: US State Plane Coordinate System 1983 Geo Datum: GRS 1980 Sys Datum: Mean Sea Level	Map Zone: Colorado, Central Zone Coordinate System: Well Centre Geomagnetic Model: IGRF2010
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Site: WEP 28 PAD S:28, T:3S, R:64W Adams County, CO Site Position: From: Map Position Uncertainty: 0.00 ft Ground Level: 5580.00 ft	Northing: 1705679.81 ft Easting: 3264108.71 ft Latitude: 39 46 1.701 N Longitude: 104 33 37.788 W North Reference: Grid Grid Convergence: 0.59 deg
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Well: 4-28-11-3-64 Well Position: +N/-S 5.77 ft +E/-W 30.31 ft Position Uncertainty: 0.00 ft	Slot Name: 4-28 Well Position: +N/-S 5.77 ft +E/-W 30.31 ft Position Uncertainty: 0.00 ft
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Wellpath: Original Hole Current Datum: 5580'GL+17'KB Magnetic Data: 10/31/2012 Field Strength: 52713 nT Vertical Section: Depth From (TVD) ft	Drilled From: Surface Tie-on Depth: 0.00 ft Above System Datum: Mean Sea Level Declination: 8.52 deg Mag Dip Angle: 66.52 deg +E/-W ft Direction deg
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Plan: Plan #2 Principal: No	Date Composed: 10/05/2012 Version: 1 Tied-to: From Surface
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Plan Section Information										
MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	61.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1540.00	0.00	61.00	1540.00	0.00	0.00	0.00	0.00	0.00	61.00	
1890.00	7.00	61.00	1889.13	10.35	18.68	2.00	2.00	0.00	61.00	
6784.84	7.00	61.00	6747.48	299.56	540.41	0.00	0.00	0.00	0.00	
7024.33	28.00	110.00	6975.40	287.22	606.98	10.00	8.77	20.46	60.79	
7829.77	90.00	179.52	7404.00	-276.13	825.23	10.00	7.70	8.63	71.75	
11843.13	90.00	179.52	7404.00	-4289.34	859.13	0.00	0.00	0.00	0.00	PBHL 4-28

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
1540.00	0.00	61.00	1540.00	0.00	0.00	0.00	0.00	0.00	0.00	
1600.00	1.20	61.00	1600.00	0.30	0.55	-0.30	2.00	2.00	0.00	
1700.00	3.20	61.00	1699.92	2.17	3.91	-2.13	2.00	2.00	0.00	
1800.00	5.20	61.00	1799.64	5.72	10.31	-5.62	2.00	2.00	0.00	
1890.00	7.00	61.00	1889.13	10.35	18.68	-10.17	2.00	2.00	0.00	
1900.00	7.00	61.00	1899.06	10.94	19.74	-10.75	0.00	0.00	0.00	
2000.00	7.00	61.00	1998.31	16.85	30.40	-16.56	0.00	0.00	0.00	
2100.00	7.00	61.00	2097.56	22.76	41.06	-22.36	0.00	0.00	0.00	
2200.00	7.00	61.00	2196.82	28.67	51.72	-28.17	0.00	0.00	0.00	
2300.00	7.00	61.00	2296.07	34.58	62.38	-33.98	0.00	0.00	0.00	
2400.00	7.00	61.00	2395.33	40.49	73.04	-39.78	0.00	0.00	0.00	
2500.00	7.00	61.00	2494.58	46.39	83.70	-45.59	0.00	0.00	0.00	
2600.00	7.00	61.00	2593.84	52.30	94.35	-51.39	0.00	0.00	0.00	
2700.00	7.00	61.00	2693.09	58.21	105.01	-57.20	0.00	0.00	0.00	
2800.00	7.00	61.00	2792.35	64.12	115.67	-63.01	0.00	0.00	0.00	

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Planning Report

Company: CARRIZO OIL & GAS, INC.
Field: Niobrara COCZ'83
Site: WEP 28 PAD
Well: 4-28-11-3-64
Wellpath: Original Hole

Date: 10/10/2012
Co-ordinate(NE) Reference: Well: 4-28-11-3-64, Grid North
Vertical (TVD) Reference: 5580'GL+17'KB 5597.0
Section (VS) Reference: Well (0.00N,0.00E,179.45Azi)
Plan: Plan #2

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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
2900.00	7.00	61.00	2891.60	70.03	126.33	-68.81	0.00	0.00	0.00	
3000.00	7.00	61.00	2990.86	75.94	136.99	-74.62	0.00	0.00	0.00	
3100.00	7.00	61.00	3090.11	81.84	147.65	-80.42	0.00	0.00	0.00	
3200.00	7.00	61.00	3189.37	87.75	158.31	-86.23	0.00	0.00	0.00	
3300.00	7.00	61.00	3288.62	93.66	168.97	-92.03	0.00	0.00	0.00	
3400.00	7.00	61.00	3387.87	99.57	179.63	-97.84	0.00	0.00	0.00	
3500.00	7.00	61.00	3487.13	105.48	190.29	-103.65	0.00	0.00	0.00	
3600.00	7.00	61.00	3586.38	111.39	200.94	-109.45	0.00	0.00	0.00	
3700.00	7.00	61.00	3685.64	117.29	211.60	-115.26	0.00	0.00	0.00	
3800.00	7.00	61.00	3784.89	123.20	222.26	-121.06	0.00	0.00	0.00	
3900.00	7.00	61.00	3884.15	129.11	232.92	-126.87	0.00	0.00	0.00	
4000.00	7.00	61.00	3983.40	135.02	243.58	-132.67	0.00	0.00	0.00	
4100.00	7.00	61.00	4082.66	140.93	254.24	-138.48	0.00	0.00	0.00	
4200.00	7.00	61.00	4181.91	146.84	264.90	-144.29	0.00	0.00	0.00	
4300.00	7.00	61.00	4281.17	152.74	275.56	-150.09	0.00	0.00	0.00	
4400.00	7.00	61.00	4380.42	158.65	286.22	-155.90	0.00	0.00	0.00	
4500.00	7.00	61.00	4479.68	164.56	296.87	-161.70	0.00	0.00	0.00	
4600.00	7.00	61.00	4578.93	170.47	307.53	-167.51	0.00	0.00	0.00	
4700.00	7.00	61.00	4678.18	176.38	318.19	-173.31	0.00	0.00	0.00	
4800.00	7.00	61.00	4777.44	182.29	328.85	-179.12	0.00	0.00	0.00	
4900.00	7.00	61.00	4876.69	188.19	339.51	-184.93	0.00	0.00	0.00	
5000.00	7.00	61.00	4975.95	194.10	350.17	-190.73	0.00	0.00	0.00	
5100.00	7.00	61.00	5075.20	200.01	360.83	-196.54	0.00	0.00	0.00	
5200.00	7.00	61.00	5174.46	205.92	371.49	-202.34	0.00	0.00	0.00	
5300.00	7.00	61.00	5273.71	211.83	382.15	-208.15	0.00	0.00	0.00	
5400.00	7.00	61.00	5372.97	217.74	392.80	-213.95	0.00	0.00	0.00	
5500.00	7.00	61.00	5472.22	223.64	403.46	-219.76	0.00	0.00	0.00	
5600.00	7.00	61.00	5571.48	229.55	414.12	-225.57	0.00	0.00	0.00	
5700.00	7.00	61.00	5670.73	235.46	424.78	-231.37	0.00	0.00	0.00	
5800.00	7.00	61.00	5769.99	241.37	435.44	-237.18	0.00	0.00	0.00	
5900.00	7.00	61.00	5869.24	247.28	446.10	-242.98	0.00	0.00	0.00	
6000.00	7.00	61.00	5968.49	253.19	456.76	-248.79	0.00	0.00	0.00	
6100.00	7.00	61.00	6067.75	259.09	467.42	-254.59	0.00	0.00	0.00	
6200.00	7.00	61.00	6167.00	265.00	478.08	-260.40	0.00	0.00	0.00	
6300.00	7.00	61.00	6266.26	270.91	488.74	-266.21	0.00	0.00	0.00	
6400.00	7.00	61.00	6365.51	276.82	499.39	-272.01	0.00	0.00	0.00	
6500.00	7.00	61.00	6464.77	282.73	510.05	-277.82	0.00	0.00	0.00	
6600.00	7.00	61.00	6564.02	288.64	520.71	-283.62	0.00	0.00	0.00	
6700.00	7.00	61.00	6663.28	294.54	531.37	-289.43	0.00	0.00	0.00	
6784.84	7.00	61.00	6747.48	299.56	540.41	-294.35	0.00	0.00	0.00	
6800.00	7.85	70.73	6762.52	300.35	542.20	-295.13	10.00	5.62	64.19	
6850.00	11.65	90.36	6811.80	301.44	550.48	-296.14	10.00	7.61	39.26	
6900.00	16.12	99.88	6860.33	300.22	562.37	-294.81	10.00	8.93	19.03	
6950.00	20.82	105.27	6907.75	296.68	577.80	-291.12	10.00	9.41	10.78	
7000.00	25.64	108.73	6953.68	290.87	596.62	-285.13	10.00	9.63	6.91	
7024.33	28.00	110.00	6975.40	287.22	606.98	-281.38	10.00	9.72	5.24	
7050.00	28.90	115.05	6997.97	282.54	618.26	-276.59	10.00	3.50	19.67	
7100.00	31.14	123.99	7041.28	270.18	639.94	-264.03	10.00	4.49	17.89	
7150.00	33.92	131.73	7083.45	253.66	661.08	-247.30	10.00	5.56	15.48	
7200.00	37.12	138.36	7124.15	233.08	681.53	-226.53	10.00	6.39	13.25	
7250.00	40.63	144.03	7163.09	208.62	701.13	-201.88	10.00	7.03	11.35	
7300.00	44.39	148.93	7199.95	180.45	719.73	-173.53	10.00	7.51	9.79	
7350.00	48.32	153.19	7234.46	148.78	737.19	-141.70	10.00	7.87	8.53	

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Plan: Plan #2

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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
7400.00	52.40	156.96	7266.36	113.87	753.37	-106.63	10.00	8.15	7.53	
7450.00	56.58	160.33	7295.40	75.97	768.16	-68.60	10.00	8.36	6.74	
7500.00	60.84	163.38	7321.37	35.38	781.44	-27.88	10.00	8.53	6.11	
7550.00	65.17	166.19	7344.06	-7.60	793.10	15.21	10.00	8.66	5.62	
7600.00	69.55	168.81	7363.31	-52.64	803.07	60.35	10.00	8.75	5.24	
7605.12	70.00	169.07	7365.08	-57.36	803.99	65.07	10.00	8.80	5.06	7"
7650.00	73.96	171.28	7378.96	-99.40	811.26	107.18	10.00	8.83	4.93	
7700.00	78.40	173.65	7390.90	-147.52	817.62	155.36	10.00	8.88	4.73	
7750.00	82.86	175.94	7399.04	-196.63	822.08	204.52	10.00	8.92	4.58	
7800.00	87.34	178.19	7403.31	-246.37	824.63	254.27	10.00	8.94	4.49	
7829.77	90.00	179.52	7404.00	-276.13	825.23	284.03	10.00	8.95	4.46	
7900.00	90.00	179.52	7404.00	-346.35	825.82	354.26	0.00	0.00	0.00	
8000.00	90.00	179.52	7404.00	-446.35	826.66	454.26	0.00	0.00	0.00	
8100.00	90.00	179.52	7404.00	-546.34	827.51	554.26	0.00	0.00	0.00	
8200.00	90.00	179.52	7404.00	-646.34	828.35	654.26	0.00	0.00	0.00	
8300.00	90.00	179.52	7404.00	-746.34	829.20	754.26	0.00	0.00	0.00	
8400.00	90.00	179.52	7404.00	-846.33	830.04	854.26	0.00	0.00	0.00	
8500.00	90.00	179.52	7404.00	-946.33	830.89	954.26	0.00	0.00	0.00	
8600.00	90.00	179.52	7404.00	-1046.33	831.73	1054.26	0.00	0.00	0.00	
8700.00	90.00	179.52	7404.00	-1146.32	832.58	1154.26	0.00	0.00	0.00	
8800.00	90.00	179.52	7404.00	-1246.32	833.42	1254.26	0.00	0.00	0.00	
8900.00	90.00	179.52	7404.00	-1346.31	834.27	1354.26	0.00	0.00	0.00	
9000.00	90.00	179.52	7404.00	-1446.31	835.11	1454.26	0.00	0.00	0.00	
9100.00	90.00	179.52	7404.00	-1546.31	835.96	1554.26	0.00	0.00	0.00	
9200.00	90.00	179.52	7404.00	-1646.30	836.80	1654.26	0.00	0.00	0.00	
9300.00	90.00	179.52	7404.00	-1746.30	837.65	1754.26	0.00	0.00	0.00	
9400.00	90.00	179.52	7404.00	-1846.30	838.49	1854.26	0.00	0.00	0.00	
9500.00	90.00	179.52	7404.00	-1946.29	839.34	1954.26	0.00	0.00	0.00	
9600.00	90.00	179.52	7404.00	-2046.29	840.18	2054.26	0.00	0.00	0.00	
9700.00	90.00	179.52	7404.00	-2146.29	841.03	2154.26	0.00	0.00	0.00	
9800.00	90.00	179.52	7404.00	-2246.28	841.87	2254.26	0.00	0.00	0.00	
9900.00	90.00	179.52	7404.00	-2346.28	842.72	2354.26	0.00	0.00	0.00	
10000.00	90.00	179.52	7404.00	-2446.28	843.56	2454.26	0.00	0.00	0.00	
10100.00	90.00	179.52	7404.00	-2546.27	844.40	2554.26	0.00	0.00	0.00	
10200.00	90.00	179.52	7404.00	-2646.27	845.25	2654.26	0.00	0.00	0.00	
10300.00	90.00	179.52	7404.00	-2746.26	846.09	2754.26	0.00	0.00	0.00	
10400.00	90.00	179.52	7404.00	-2846.26	846.94	2854.26	0.00	0.00	0.00	
10500.00	90.00	179.52	7404.00	-2946.26	847.78	2954.26	0.00	0.00	0.00	
10600.00	90.00	179.52	7404.00	-3046.25	848.63	3054.26	0.00	0.00	0.00	
10700.00	90.00	179.52	7404.00	-3146.25	849.47	3154.26	0.00	0.00	0.00	
10800.00	90.00	179.52	7404.00	-3246.25	850.32	3254.26	0.00	0.00	0.00	
10900.00	90.00	179.52	7404.00	-3346.24	851.16	3354.26	0.00	0.00	0.00	
11000.00	90.00	179.52	7404.00	-3446.24	852.01	3454.26	0.00	0.00	0.00	
11100.00	90.00	179.52	7404.00	-3546.24	852.85	3554.26	0.00	0.00	0.00	
11200.00	90.00	179.52	7404.00	-3646.23	853.70	3654.26	0.00	0.00	0.00	
11300.00	90.00	179.52	7404.00	-3746.23	854.54	3754.26	0.00	0.00	0.00	
11400.00	90.00	179.52	7404.00	-3846.23	855.39	3854.26	0.00	0.00	0.00	
11500.00	90.00	179.52	7404.00	-3946.22	856.23	3954.26	0.00	0.00	0.00	
11600.00	90.00	179.52	7404.00	-4046.22	857.08	4054.26	0.00	0.00	0.00	
11700.00	90.00	179.52	7404.00	-4146.21	857.92	4154.26	0.00	0.00	0.00	
11800.00	90.00	179.52	7404.00	-4246.21	858.77	4254.26	0.00	0.00	0.00	
11843.13	90.00	179.52	7404.00	-4289.34	859.13	4297.39	0.00	0.00	0.00	PBHL 4-28

Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC. Field: Niobrara COCZ'83 Site: WEP 28 PAD Well: 4-28-11-3-64 Wellpath: Original Hole	Date: 10/10/2012 Co-ordinate(NE) Reference: Vertical (TVD) Reference: Section (VS) Reference: Plan:	Time: 08:32:23 Well: 4-28-11-3-64, Grid North 5580'GL+17"KB 5597.0 Well (0.00N,0.00E,179.45Azi) Plan #2	Page: 4
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Targets

Name	Description Dip.	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<---- Latitude ---->			<--- Longitude --->		
								Deg	Min	Sec	Deg	Min	Sec
SL 4-28			0.00	0.00	0.00	1705685.58	3264139.02	39	46	1.755	N	104	33 37.399 W
PBHL 4-28			7404.00	-4289.34	859.13	1701396.24	3264998.15	39	45	19.279	N	104	33 26.967 W

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
1440.00	1440.00	9.625	12.250	9 5/8"
7605.12	7365.08	7.000	8.750	7"