



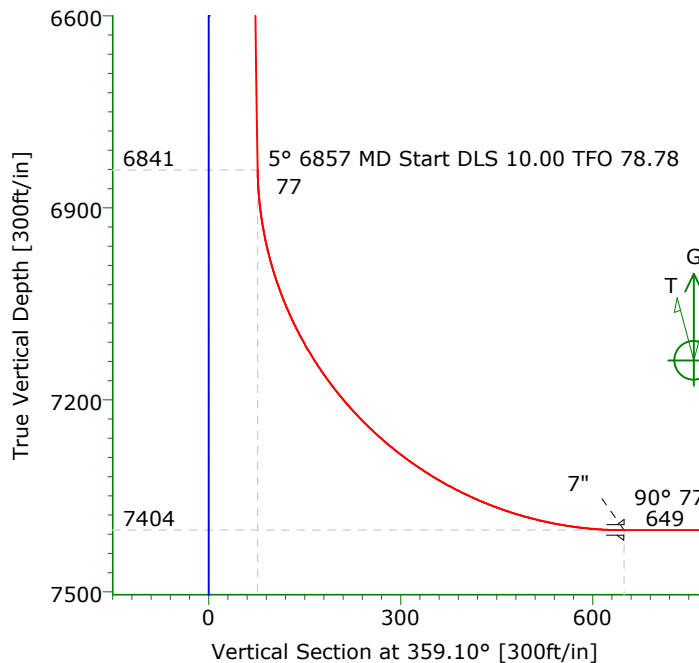
# CARRIZO OIL & GAS, INC.

Field: Niobrara COCZ'83  
Site: WEP 28 PAD  
Well: 1-28-11-3-64  
Wellpath: Original Hole  
Plan: Plan #1



## CASING DETAILS

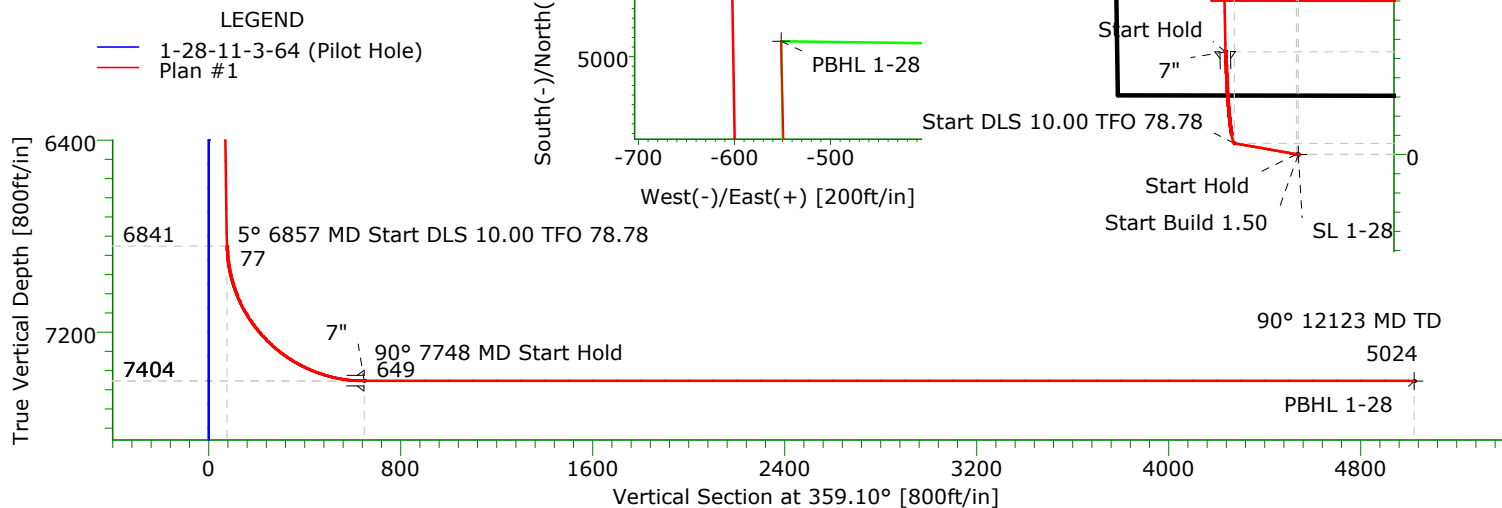
No.	TVD	MD	Name	Size
1	7404.00	7748.49	7"	7.000



Azimuths to Grid North  
True North: -0.59°  
Magnetic North: 7.98°

Magnetic Field  
Strength: 52757nT  
Dip Angle: 66.54°  
Date: 06/01/2012  
Model: IGRF2010

Sidetrack off cement plug after drilling Pilot Hole to 8246' TVD



## TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SL 1-28	0.00	0.00	0.00	1705686.79	3264101.56	39°46'01.771N	104°33'37.879W	Point
PBHL 1-28	7404.00	5015.95	-551.20	1710702.74	3263550.36	39°46'51.395N	104°33'44.274W	Point

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1540.00	0.00	0.00	1540.00	0.00	0.00	0.00	0.00	0.00	
3	1840.00	4.50	280.00	1839.69	2.04	-11.60	1.50	280.00	2.23	
4	6857.26	4.50	280.00	6841.49	70.40	-399.27	0.00	0.00	76.66	
5	7748.49	90.00	358.74	7404.00	642.20	-455.24	10.00	78.78	649.27	
6	12123.29	90.00	358.74	7404.00	5015.95	-551.20	0.00	0.00	5023.99	PBHL 1-28

# Precision Directional Services, Inc.

## Planning Report

<b>Company:</b> CARRIZO OIL & GAS, INC. <b>Field:</b> Niobrara COCZ'83 <b>Site:</b> WEP 28 PAD <b>Well:</b> 1-28-11-3-64 <b>Wellpath:</b> Original Hole	<b>Date:</b> 06/01/2012 <b>Co-ordinate(NE) Reference:</b> <b>Vertical (TVD) Reference:</b> <b>Section (VS) Reference:</b> <b>Plan:</b>	<b>Time:</b> 11:38:40 <b>Well:</b> 1-28-11-3-64, Grid North 5580'GL+17'KB 5597.0 <b>Well (0.00N,0.00E,359.10Azi)</b> <b>Plan #1</b>	<b>Page:</b> 1
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<b>Field:</b> Niobrara COCZ'83  <b>Map System:</b> US State Plane Coordinate System 1983 <b>Geo Datum:</b> GRS 1980 <b>Sys Datum:</b> Mean Sea Level	<b>Map Zone:</b> Colorado, Central Zone <b>Coordinate System:</b> Well Centre <b>Geomagnetic Model:</b> IGRF2010
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<b>Site:</b> WEP 28 PAD S:28, T:3S, R:64W Adams County, CO  <b>Site Position:</b> <b>From:</b> Map <b>Position Uncertainty:</b> 0.00 ft <b>Ground Level:</b> 5580.00 ft	<b>Northing:</b> 1705679.81 ft <b>Easting:</b> 3264108.71 ft	<b>Latitude:</b> 39 46 1.701 N <b>Longitude:</b> 104 33 37.788 W <b>North Reference:</b> Grid <b>Grid Convergence:</b> 0.59 deg
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<b>Well:</b> 1-28-11-3-64  <b>Well Position:</b> +N/-S 6.98 ft +E/-W -7.15 ft <b>Position Uncertainty:</b> 0.00 ft	<b>Slot Name:</b> 1-28  <b>Well Position:</b> +N/-S 6.98 ft +E/-W -7.15 ft <b>Position Uncertainty:</b> 0.00 ft  <b>Well Position:</b> +N/-S 6.98 ft +E/-W -7.15 ft <b>Position Uncertainty:</b> 0.00 ft
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<b>Wellpath:</b> Original Hole  <b>Current Datum:</b> 5580'GL+17'KB <b>Magnetic Data:</b> 06/01/2012 <b>Field Strength:</b> 52757 nT <b>Vertical Section:</b> Depth From (TVD) ft	<b>Height</b> 5597.00 ft	<b>Drilled From:</b> Surface <b>Tie-on Depth:</b> 0.00 ft <b>Above System Datum:</b> Mean Sea Level <b>Declination:</b> 8.57 deg <b>Mag Dip Angle:</b> 66.54 deg <b>+E/-W</b> ft <b>Direction</b> deg
0.00	0.00	0.00 359.10

<b>Plan:</b> Plan #1  <b>Principal:</b> No	<b>Date Composed:</b> 06/01/2012 <b>Version:</b> 1 <b>Tied-to:</b> 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1540.00	0.00	0.00	1540.00	0.00	0.00	0.00	0.00	0.00	0.00	
1840.00	4.50	280.00	1839.69	2.04	-11.60	1.50	1.50	0.00	280.00	
6857.26	4.50	280.00	6841.49	70.40	-399.27	0.00	0.00	0.00	0.00	
7748.49	90.00	358.74	7404.00	642.20	-455.24	10.00	9.59	8.84	78.78	
12123.29	90.00	358.74	7404.00	5015.95	-551.20	0.00	0.00	0.00	0.00	PBHL 1-28

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	0.00	1540.00	0.00	0.00	0.00	0.00	0.00	0.00	
1600.00	0.90	280.00	1600.00	0.08	-0.46	0.09	1.50	1.50	0.00	
1700.00	2.40	280.00	1699.95	0.58	-3.30	0.63	1.50	1.50	0.00	
1800.00	3.90	280.00	1799.80	1.54	-8.71	1.67	1.50	1.50	0.00	
1840.00	4.50	280.00	1839.69	2.04	-11.60	2.23	1.50	1.50	0.00	
1900.00	4.50	280.00	1899.51	2.86	-16.23	3.12	0.00	0.00	0.00	
2000.00	4.50	280.00	1999.20	4.22	-23.96	4.60	0.00	0.00	0.00	
2100.00	4.50	280.00	2098.89	5.59	-31.69	6.08	0.00	0.00	0.00	
2200.00	4.50	280.00	2198.58	6.95	-39.41	7.57	0.00	0.00	0.00	
2300.00	4.50	280.00	2298.27	8.31	-47.14	9.05	0.00	0.00	0.00	
2400.00	4.50	280.00	2397.97	9.67	-54.87	10.53	0.00	0.00	0.00	
2500.00	4.50	280.00	2497.66	11.04	-62.59	12.02	0.00	0.00	0.00	
2600.00	4.50	280.00	2597.35	12.40	-70.32	13.50	0.00	0.00	0.00	
2700.00	4.50	280.00	2697.04	13.76	-78.05	14.99	0.00	0.00	0.00	
2800.00	4.50	280.00	2796.73	15.12	-85.77	16.47	0.00	0.00	0.00	

# Precision Directional Services, Inc.

## Planning Report

**Company:** CARRIZO OIL & GAS, INC.  
**Field:** Niobrara COCZ'83  
**Site:** WEP 28 PAD  
**Well:** 1-28-11-3-64  
**Wellpath:** Original Hole

**Date:** 06/01/2012  
**Co-ordinate(NE) Reference:** Well: 1-28-11-3-64, Grid North  
**Vertical (TVD) Reference:** 5580'GL+17'KB 5597.0  
**Section (VS) Reference:** Well (0.00N,0.00E,359.10Azi)  
**Plan:** Plan #1

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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	4.50	280.00	2896.42	16.49	-93.50	17.95	0.00	0.00	0.00	
3000.00	4.50	280.00	2996.12	17.85	-101.23	19.44	0.00	0.00	0.00	
3100.00	4.50	280.00	3095.81	19.21	-108.95	20.92	0.00	0.00	0.00	
3200.00	4.50	280.00	3195.50	20.57	-116.68	22.40	0.00	0.00	0.00	
3300.00	4.50	280.00	3295.19	21.94	-124.41	23.89	0.00	0.00	0.00	
3400.00	4.50	280.00	3394.88	23.30	-132.13	25.37	0.00	0.00	0.00	
3500.00	4.50	280.00	3494.57	24.66	-139.86	26.85	0.00	0.00	0.00	
3600.00	4.50	280.00	3594.27	26.02	-147.59	28.34	0.00	0.00	0.00	
3700.00	4.50	280.00	3693.96	27.39	-155.31	29.82	0.00	0.00	0.00	
3800.00	4.50	280.00	3793.65	28.75	-163.04	31.31	0.00	0.00	0.00	
3900.00	4.50	280.00	3893.34	30.11	-170.77	32.79	0.00	0.00	0.00	
4000.00	4.50	280.00	3993.03	31.47	-178.49	34.27	0.00	0.00	0.00	
4100.00	4.50	280.00	4092.72	32.84	-186.22	35.76	0.00	0.00	0.00	
4200.00	4.50	280.00	4192.42	34.20	-193.95	37.24	0.00	0.00	0.00	
4300.00	4.50	280.00	4292.11	35.56	-201.67	38.72	0.00	0.00	0.00	
4400.00	4.50	280.00	4391.80	36.92	-209.40	40.21	0.00	0.00	0.00	
4500.00	4.50	280.00	4491.49	38.29	-217.13	41.69	0.00	0.00	0.00	
4600.00	4.50	280.00	4591.18	39.65	-224.85	43.17	0.00	0.00	0.00	
4700.00	4.50	280.00	4690.88	41.01	-232.58	44.66	0.00	0.00	0.00	
4800.00	4.50	280.00	4790.57	42.37	-240.31	46.14	0.00	0.00	0.00	
4900.00	4.50	280.00	4890.26	43.73	-248.03	47.63	0.00	0.00	0.00	
5000.00	4.50	280.00	4989.95	45.10	-255.76	49.11	0.00	0.00	0.00	
5100.00	4.50	280.00	5089.64	46.46	-263.49	50.59	0.00	0.00	0.00	
5200.00	4.50	280.00	5189.33	47.82	-271.21	52.08	0.00	0.00	0.00	
5300.00	4.50	280.00	5289.03	49.18	-278.94	53.56	0.00	0.00	0.00	
5400.00	4.50	280.00	5388.72	50.55	-286.67	55.04	0.00	0.00	0.00	
5500.00	4.50	280.00	5488.41	51.91	-294.39	56.53	0.00	0.00	0.00	
5600.00	4.50	280.00	5588.10	53.27	-302.12	58.01	0.00	0.00	0.00	
5700.00	4.50	280.00	5687.79	54.63	-309.85	59.49	0.00	0.00	0.00	
5800.00	4.50	280.00	5787.48	56.00	-317.57	60.98	0.00	0.00	0.00	
5900.00	4.50	280.00	5887.18	57.36	-325.30	62.46	0.00	0.00	0.00	
6000.00	4.50	280.00	5986.87	58.72	-333.03	63.95	0.00	0.00	0.00	
6100.00	4.50	280.00	6086.56	60.08	-340.75	65.43	0.00	0.00	0.00	
6200.00	4.50	280.00	6186.25	61.45	-348.48	66.91	0.00	0.00	0.00	
6300.00	4.50	280.00	6285.94	62.81	-356.21	68.40	0.00	0.00	0.00	
6400.00	4.50	280.00	6385.63	64.17	-363.93	69.88	0.00	0.00	0.00	
6500.00	4.50	280.00	6485.33	65.53	-371.66	71.36	0.00	0.00	0.00	
6600.00	4.50	280.00	6585.02	66.90	-379.39	72.85	0.00	0.00	0.00	
6700.00	4.50	280.00	6684.71	68.26	-387.11	74.33	0.00	0.00	0.00	
6800.00	4.50	280.00	6784.40	69.62	-394.84	75.81	0.00	0.00	0.00	
6857.26	4.50	280.00	6841.49	70.40	-399.27	76.66	0.00	0.00	0.00	
6900.00	6.78	318.26	6884.03	72.58	-402.60	78.89	10.00	5.33	89.52	
6950.00	11.06	335.48	6933.42	79.15	-406.56	85.52	10.00	8.56	34.46	
7000.00	15.77	342.88	6982.05	90.01	-410.55	96.44	10.00	9.41	14.79	
7050.00	20.61	346.90	7029.54	105.08	-414.54	111.58	10.00	9.69	8.04	
7100.00	25.51	349.43	7075.53	124.25	-418.52	130.81	10.00	9.80	5.07	
7150.00	30.44	351.20	7119.67	147.36	-422.43	153.98	10.00	9.86	3.52	
7200.00	35.39	352.51	7161.63	174.25	-426.26	180.93	10.00	9.90	2.62	
7250.00	40.35	353.53	7201.09	204.71	-429.98	211.44	10.00	9.92	2.05	
7300.00	45.32	354.37	7237.75	238.51	-433.55	245.29	10.00	9.94	1.67	
7350.00	50.29	355.07	7271.32	275.38	-436.95	282.21	10.00	9.95	1.41	
7400.00	55.27	355.68	7301.55	315.06	-440.15	321.93	10.00	9.95	1.22	
7450.00	60.25	356.21	7328.22	357.23	-443.14	364.15	10.00	9.96	1.08	
7500.00	65.23	356.70	7351.11	401.58	-445.88	408.53	10.00	9.96	0.98	

# Precision Directional Services, Inc.

## Planning Report

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**Field:** Niobrara COCZ'83  
**Site:** WEP 28 PAD  
**Well:** 1-28-11-3-64  
**Wellpath:** Original Hole

**Date:** 06/01/2012  
**Co-ordinate(NE) Reference:** Well: 1-28-11-3-64, Grid North  
**Vertical (TVD) Reference:** 5580'GL+17"KB 5597.0  
**Section (VS) Reference:** Well (0.00N,0.00E,359.10Azi)  
**Plan:** Plan #1

**Page:** 3

### 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
7550.00	70.21	357.15	7370.06	447.76	-448.35	454.75	10.00	9.97	0.90	
7600.00	75.20	357.57	7384.92	495.44	-450.55	502.45	10.00	9.97	0.84	
7650.00	80.18	357.98	7395.58	544.23	-452.44	551.27	10.00	9.97	0.81	
7700.00	85.17	358.37	7401.95	593.79	-454.02	600.84	10.00	9.97	0.78	
7748.49	90.00	358.74	7404.00	642.20	-455.24	649.27	10.00	9.97	0.77	7"
7800.00	90.00	358.74	7404.00	693.70	-456.37	700.78	0.00	0.00	0.00	
7900.00	90.00	358.74	7404.00	793.68	-458.56	800.78	0.00	0.00	0.00	
8000.00	90.00	358.74	7404.00	893.65	-460.76	900.78	0.00	0.00	0.00	
8100.00	90.00	358.74	7404.00	993.63	-462.95	1000.78	0.00	0.00	0.00	
8200.00	90.00	358.74	7404.00	1093.60	-465.14	1100.78	0.00	0.00	0.00	
8300.00	90.00	358.74	7404.00	1193.58	-467.34	1200.77	0.00	0.00	0.00	
8400.00	90.00	358.74	7404.00	1293.56	-469.53	1300.77	0.00	0.00	0.00	
8500.00	90.00	358.74	7404.00	1393.53	-471.72	1400.77	0.00	0.00	0.00	
8600.00	90.00	358.74	7404.00	1493.51	-473.92	1500.77	0.00	0.00	0.00	
8700.00	90.00	358.74	7404.00	1593.48	-476.11	1600.77	0.00	0.00	0.00	
8800.00	90.00	358.74	7404.00	1693.46	-478.30	1700.76	0.00	0.00	0.00	
8900.00	90.00	358.74	7404.00	1793.44	-480.50	1800.76	0.00	0.00	0.00	
9000.00	90.00	358.74	7404.00	1893.41	-482.69	1900.76	0.00	0.00	0.00	
9100.00	90.00	358.74	7404.00	1993.39	-484.89	2000.76	0.00	0.00	0.00	
9200.00	90.00	358.74	7404.00	2093.36	-487.08	2100.76	0.00	0.00	0.00	
9300.00	90.00	358.74	7404.00	2193.34	-489.27	2200.75	0.00	0.00	0.00	
9400.00	90.00	358.74	7404.00	2293.32	-491.47	2300.75	0.00	0.00	0.00	
9500.00	90.00	358.74	7404.00	2393.29	-493.66	2400.75	0.00	0.00	0.00	
9600.00	90.00	358.74	7404.00	2493.27	-495.85	2500.75	0.00	0.00	0.00	
9700.00	90.00	358.74	7404.00	2593.24	-498.05	2600.75	0.00	0.00	0.00	
9800.00	90.00	358.74	7404.00	2693.22	-500.24	2700.74	0.00	0.00	0.00	
9900.00	90.00	358.74	7404.00	2793.19	-502.43	2800.74	0.00	0.00	0.00	
10000.00	90.00	358.74	7404.00	2893.17	-504.63	2900.74	0.00	0.00	0.00	
10100.00	90.00	358.74	7404.00	2993.15	-506.82	3000.74	0.00	0.00	0.00	
10200.00	90.00	358.74	7404.00	3093.12	-509.01	3100.74	0.00	0.00	0.00	
10300.00	90.00	358.74	7404.00	3193.10	-511.21	3200.73	0.00	0.00	0.00	
10400.00	90.00	358.74	7404.00	3293.07	-513.40	3300.73	0.00	0.00	0.00	
10500.00	90.00	358.74	7404.00	3393.05	-515.59	3400.73	0.00	0.00	0.00	
10600.00	90.00	358.74	7404.00	3493.03	-517.79	3500.73	0.00	0.00	0.00	
10700.00	90.00	358.74	7404.00	3593.00	-519.98	3600.73	0.00	0.00	0.00	
10800.00	90.00	358.74	7404.00	3692.98	-522.17	3700.72	0.00	0.00	0.00	
10900.00	90.00	358.74	7404.00	3792.95	-524.37	3800.72	0.00	0.00	0.00	
11000.00	90.00	358.74	7404.00	3892.93	-526.56	3900.72	0.00	0.00	0.00	
11100.00	90.00	358.74	7404.00	3992.91	-528.75	4000.72	0.00	0.00	0.00	
11200.00	90.00	358.74	7404.00	4092.88	-530.95	4100.72	0.00	0.00	0.00	
11300.00	90.00	358.74	7404.00	4192.86	-533.14	4200.71	0.00	0.00	0.00	
11400.00	90.00	358.74	7404.00	4292.83	-535.33	4300.71	0.00	0.00	0.00	
11500.00	90.00	358.74	7404.00	4392.81	-537.53	4400.71	0.00	0.00	0.00	
11600.00	90.00	358.74	7404.00	4492.79	-539.72	4500.71	0.00	0.00	0.00	
11700.00	90.00	358.74	7404.00	4592.76	-541.92	4600.71	0.00	0.00	0.00	
11800.00	90.00	358.74	7404.00	4692.74	-544.11	4700.71	0.00	0.00	0.00	
11900.00	90.00	358.74	7404.00	4792.71	-546.30	4800.70	0.00	0.00	0.00	
12000.00	90.00	358.74	7404.00	4892.69	-548.50	4900.70	0.00	0.00	0.00	
12100.00	90.00	358.74	7404.00	4992.67	-550.69	5000.70	0.00	0.00	0.00	
12123.29	90.00	358.74	7404.00	5015.95	-551.20	5023.99	0.00	0.00	0.00	PBHL 1-28

# Precision Directional Services, Inc.

## Planning Report

**Company:** CARRIZO OIL & GAS, INC.  
**Field:** Niobrara COCZ'83  
**Site:** WEP 28 PAD  
**Well:** 1-28-11-3-64  
**Wellpath:** Original Hole

**Date:** 06/01/2012  
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**Vertical (TVD) Reference:** 5580'GL+17"KB 5597.0  
**Section (VS) Reference:** Well (0.00N,0.00E,359.10Azi)  
**Plan:** Plan #1

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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 1-28			0.00	0.00	0.00	1705686.79	3264101.56	39	46	1.771 N	104	33	37.879 W
PBHL 1-28			7404.00	5015.95	-551.20	1710702.74	3263550.36	39	46	51.395 N	104	33	44.274 W

### Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
7748.49	7404.00	7.000	8.750	7"