



# CARRIZO

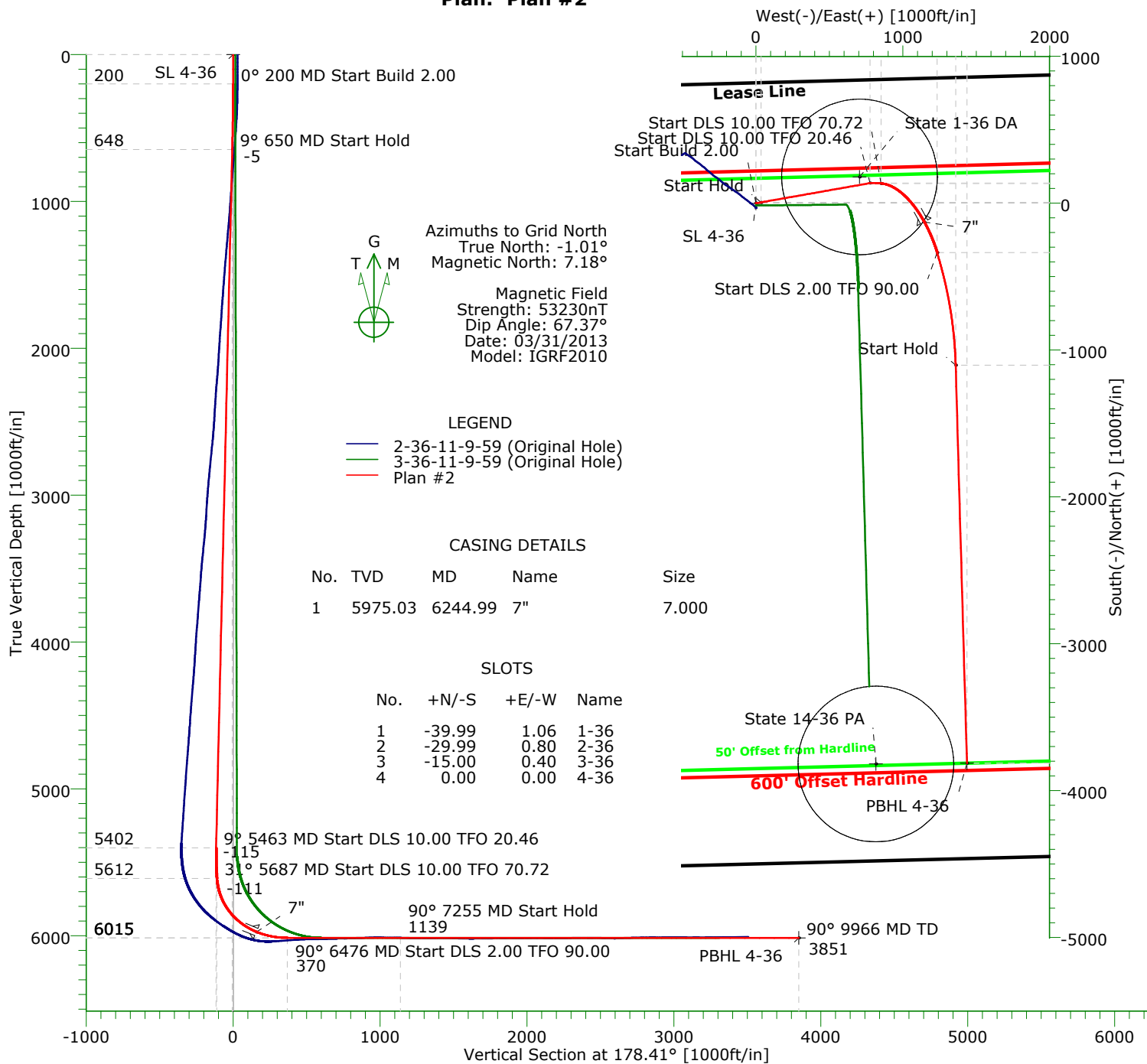
## CARRIZO OIL & GAS, INC.

Field: Niobrara CONZ'83  
Site: Castor 36-11-9-59 Pad  
Well: 4-36-11-9-59  
Wellpath: Original Hole  
Plan: Plan #2



# Precision

Directional Services



Azimuths to Grid North  
True North: -1.01°  
Magnetic North: 7.18°

Magnetic Field  
Strength: 53230nT  
Dip Angle: 67.37°  
Date: 03/31/2013  
Model: IGRF2010

### LEGEND

- 2-36-11-9-59 (Original Hole)
- 3-36-11-9-59 (Original Hole)
- Plan #2

### CASING DETAILS

No.	TVD	MD	Name	Size
1	5975.03	6244.99	7"	7.000

### SLOTS

No.	+N/-S	+E/-W	Name
1	-39.99	1.06	1-36
2	-29.99	0.80	2-36
3	-15.00	0.40	3-36
4	0.00	0.00	4-36

### TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
State 1-36 DA	-100.00	178.85	705.27	1506310.77	3435693.75	40°42'45.385N103°55'41.964W		Circle (Radius: 530)
State 14-36 PA	-100.00	-3818.20	816.14	1502313.72	3435804.62	40°42'05.876N103°55'41.445W		Circle (Radius: 530)
SL 4-36	0.00	0.00	0.00	1506131.92	3434988.48	40°42'43.741N103°55'51.162W		Point
PBHL 4-36	6015.00	-3812.44	1436.22	1502319.48	3436424.70	40°42'05.824N103°55'33.394W		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	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	650.00	9.00	80.00	648.15	6.12	34.73	2.00	80.00	-5.16	
4	5463.21	9.00	80.00	5402.10	136.87	776.25	0.00	0.00	-115.28	
5	5687.37	31.00	95.00	5611.55	134.86	851.99	10.00	20.46	-111.17	
6	6475.53	90.00	162.80	6015.00	-335.89	1232.67	10.00	70.72	369.97	
7	7254.61	90.00	178.38	6015.00	-1102.12	1359.64	2.00	90.00	1139.43	
8	9966.00	90.00	178.38	6015.00	-3812.44	1436.22	0.00	0.00	3850.82	PBHL 4-36

# Precision Directional Services, Inc.

## Planning Report

<b>Company:</b> CARRIZO OIL & GAS, INC.		<b>Date:</b> 03/01/2013	<b>Time:</b> 11:01:25	<b>Page:</b> 1
<b>Field:</b> Niobrara CONZ'83		<b>Co-ordinate(NE) Reference:</b> Well: 4-36-11-9-59, Grid North		
<b>Site:</b> Castor 36-11-9-59 Pad		<b>Vertical (TVD) Reference:</b> 4889'GL+17'KB 4906.0		
<b>Well:</b> 4-36-11-9-59		<b>Section (VS) Reference:</b> Well (0.00N,0.00E,178.41Azi)		
<b>Wellpath:</b> Original Hole		<b>Plan:</b> Plan #2		

<b>Field:</b> Niobrara CONZ'83	
<b>Map System:</b> US State Plane Coordinate System 1983	<b>Map Zone:</b> Colorado, Northern Zone
<b>Geo Datum:</b> GRS 1980	<b>Coordinate System:</b> Well Centre
<b>Sys Datum:</b> Mean Sea Level	<b>Geomagnetic Model:</b> IGRF2010

<b>Site:</b> Castor 36-11-9-59 Pad S:36,T:9N,R:59W Weld County, CO	
<b>Site Position:</b>	<b>Northing:</b> 1506091.93 ft
<b>From:</b> Map	<b>Easting:</b> 3434989.54 ft
<b>Position Uncertainty:</b> 0.00 ft	<b>Latitude:</b> 40 42 43.346 N
<b>Ground Level:</b> 4889.00 ft	<b>Longitude:</b> 103 55 51.158 W
	<b>North Reference:</b> Grid
	<b>Grid Convergence:</b> 1.01 deg

<b>Well:</b> 4-36-11-9-59 850FNL 1327FWL		<b>Slot Name:</b> 4-36
<b>Well Position:</b> +N/-S 39.99 ft	<b>Northing:</b> 1506131.92 ft	<b>Latitude:</b> 40 42 43.741 N
+E/-W -1.06 ft	<b>Easting:</b> 3434988.48 ft	<b>Longitude:</b> 103 55 51.162 W
<b>Position Uncertainty:</b> 0.00 ft		

<b>Wellpath:</b> Original Hole		<b>Drilled From:</b> Surface
<b>Current Datum:</b> 4889'GL+17'KB	<b>Height</b> 4906.00 ft	<b>Tie-on Depth:</b> 0.00 ft
<b>Magnetic Data:</b> 03/31/2013		<b>Above System Datum:</b> Mean Sea Level
<b>Field Strength:</b> 53230 nT		<b>Declination:</b> 8.19 deg
<b>Vertical Section:</b> Depth From (TVD)	+N/-S	<b>Mag Dip Angle:</b> 67.37 deg
ft	ft	<b>+E/-W</b>
		ft
0.00	0.00	0.00
		178.41

<b>Plan:</b> Plan #2	<b>Date Composed:</b> 02/27/2013
<b>Principal:</b> No	<b>Version:</b> 1
	<b>Tied-to:</b> From Surface

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	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
650.00	9.00	80.00	648.15	6.12	34.73	2.00	2.00	0.00	80.00	
5463.21	9.00	80.00	5402.10	136.87	776.25	0.00	0.00	0.00	0.00	
5687.37	31.00	95.00	5611.55	134.86	851.99	10.00	9.81	6.69	20.46	
6475.53	90.00	162.80	6015.00	-335.89	1232.67	10.00	7.49	8.60	70.72	
7254.61	90.00	178.38	6015.00	-1102.12	1359.64	2.00	0.00	2.00	90.00	
9966.00	90.00	178.38	6015.00	-3812.44	1436.22	0.00	0.00	0.00	0.00	PBHL 4-36

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	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	2.00	80.00	299.98	0.30	1.72	-0.26	2.00	2.00	0.00	
400.00	4.00	80.00	399.84	1.21	6.87	-1.02	2.00	2.00	0.00	
500.00	6.00	80.00	499.45	2.73	15.46	-2.30	2.00	2.00	0.00	
600.00	8.00	80.00	598.70	4.84	27.46	-4.08	2.00	2.00	0.00	
650.00	9.00	80.00	648.15	6.12	34.73	-5.16	2.00	2.00	0.00	
700.00	9.00	80.00	697.54	7.48	42.44	-6.30	0.00	0.00	0.00	
800.00	9.00	80.00	796.30	10.20	57.84	-8.59	0.00	0.00	0.00	
900.00	9.00	80.00	895.07	12.92	73.25	-10.88	0.00	0.00	0.00	
1000.00	9.00	80.00	993.84	15.63	88.65	-13.17	0.00	0.00	0.00	
1100.00	9.00	80.00	1092.61	18.35	104.06	-15.45	0.00	0.00	0.00	
1200.00	9.00	80.00	1191.38	21.07	119.47	-17.74	0.00	0.00	0.00	

# Precision Directional Services, Inc.

## Planning Report

**Company:** CARRIZO OIL & GAS, INC.  
**Field:** Niobrara CONZ'83  
**Site:** Castor 36-11-9-59 Pad  
**Well:** 4-36-11-9-59  
**Wellpath:** Original Hole

**Date:** 03/01/2013  
**Co-ordinate(NE) Reference:** Well: 4-36-11-9-59, Grid North  
**Vertical (TVD) Reference:** 4889'GL+17'KB 4906.0  
**Section (VS) Reference:** Well (0.00N,0.00E,178.41Azi)  
**Plan:** Plan #2

**Page:** 2

### 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
1300.00	9.00	80.00	1290.15	23.78	134.87	-20.03	0.00	0.00	0.00	
1400.00	9.00	80.00	1388.92	26.50	150.28	-22.32	0.00	0.00	0.00	
1500.00	9.00	80.00	1487.69	29.21	165.68	-24.61	0.00	0.00	0.00	
1600.00	9.00	80.00	1586.46	31.93	181.09	-26.89	0.00	0.00	0.00	
1700.00	9.00	80.00	1685.22	34.65	196.50	-29.18	0.00	0.00	0.00	
1800.00	9.00	80.00	1783.99	37.36	211.90	-31.47	0.00	0.00	0.00	
1900.00	9.00	80.00	1882.76	40.08	227.31	-33.76	0.00	0.00	0.00	
2000.00	9.00	80.00	1981.53	42.80	242.71	-36.05	0.00	0.00	0.00	
2100.00	9.00	80.00	2080.30	45.51	258.12	-38.33	0.00	0.00	0.00	
2200.00	9.00	80.00	2179.07	48.23	273.52	-40.62	0.00	0.00	0.00	
2300.00	9.00	80.00	2277.84	50.95	288.93	-42.91	0.00	0.00	0.00	
2400.00	9.00	80.00	2376.61	53.66	304.34	-45.20	0.00	0.00	0.00	
2500.00	9.00	80.00	2475.38	56.38	319.74	-47.49	0.00	0.00	0.00	
2600.00	9.00	80.00	2574.14	59.10	335.15	-49.77	0.00	0.00	0.00	
2700.00	9.00	80.00	2672.91	61.81	350.55	-52.06	0.00	0.00	0.00	
2800.00	9.00	80.00	2771.68	64.53	365.96	-54.35	0.00	0.00	0.00	
2900.00	9.00	80.00	2870.45	67.24	381.36	-56.64	0.00	0.00	0.00	
3000.00	9.00	80.00	2969.22	69.96	396.77	-58.93	0.00	0.00	0.00	
3100.00	9.00	80.00	3067.99	72.68	412.18	-61.21	0.00	0.00	0.00	
3200.00	9.00	80.00	3166.76	75.39	427.58	-63.50	0.00	0.00	0.00	
3300.00	9.00	80.00	3265.53	78.11	442.99	-65.79	0.00	0.00	0.00	
3400.00	9.00	80.00	3364.29	80.83	458.39	-68.08	0.00	0.00	0.00	
3500.00	9.00	80.00	3463.06	83.54	473.80	-70.36	0.00	0.00	0.00	
3600.00	9.00	80.00	3561.83	86.26	489.21	-72.65	0.00	0.00	0.00	
3700.00	9.00	80.00	3660.60	88.98	504.61	-74.94	0.00	0.00	0.00	
3800.00	9.00	80.00	3759.37	91.69	520.02	-77.23	0.00	0.00	0.00	
3900.00	9.00	80.00	3858.14	94.41	535.42	-79.52	0.00	0.00	0.00	
4000.00	9.00	80.00	3956.91	97.13	550.83	-81.80	0.00	0.00	0.00	
4100.00	9.00	80.00	4055.68	99.84	566.23	-84.09	0.00	0.00	0.00	
4200.00	9.00	80.00	4154.45	102.56	581.64	-86.38	0.00	0.00	0.00	
4300.00	9.00	80.00	4253.21	105.28	597.05	-88.67	0.00	0.00	0.00	
4400.00	9.00	80.00	4351.98	107.99	612.45	-90.96	0.00	0.00	0.00	
4500.00	9.00	80.00	4450.75	110.71	627.86	-93.24	0.00	0.00	0.00	
4600.00	9.00	80.00	4549.52	113.42	643.26	-95.53	0.00	0.00	0.00	
4700.00	9.00	80.00	4648.29	116.14	658.67	-97.82	0.00	0.00	0.00	
4800.00	9.00	80.00	4747.06	118.86	674.07	-100.11	0.00	0.00	0.00	
4900.00	9.00	80.00	4845.83	121.57	689.48	-102.40	0.00	0.00	0.00	
5000.00	9.00	80.00	4944.60	124.29	704.89	-104.68	0.00	0.00	0.00	
5100.00	9.00	80.00	5043.36	127.01	720.29	-106.97	0.00	0.00	0.00	
5200.00	9.00	80.00	5142.13	129.72	735.70	-109.26	0.00	0.00	0.00	
5300.00	9.00	80.00	5240.90	132.44	751.10	-111.55	0.00	0.00	0.00	
5400.00	9.00	80.00	5339.67	135.16	766.51	-113.84	0.00	0.00	0.00	
5463.21	9.00	80.00	5402.10	136.87	776.25	-115.28	0.00	0.00	0.00	
5500.00	12.51	85.94	5438.24	137.66	783.06	-115.87	10.00	9.55	16.15	
5600.00	22.33	92.57	5533.55	137.57	812.92	-114.96	10.00	9.82	6.62	
5687.37	31.00	95.00	5611.55	134.86	851.99	-111.17	10.00	9.92	2.78	
5700.00	31.44	97.29	5622.35	134.16	858.50	-110.29	10.00	3.46	18.09	
5800.00	36.15	113.20	5705.60	119.19	911.61	-93.85	10.00	4.71	15.92	
5900.00	42.50	125.43	5783.03	87.91	966.39	-61.06	10.00	6.35	12.22	
6000.00	49.86	134.83	5852.30	41.26	1021.16	-12.91	10.00	7.36	9.40	
6100.00	57.83	142.32	5911.30	-19.33	1074.28	49.14	10.00	7.97	7.49	
6200.00	66.17	148.57	5958.24	-92.04	1124.13	123.20	10.00	8.34	6.26	
6244.99	70.00	151.12	5975.03	-128.13	1145.08	159.85	10.00	8.51	5.65	7"

# Precision Directional Services, Inc.

## Planning Report

**Company:** CARRIZO OIL & GAS, INC.  
**Field:** Niobrara CONZ'83  
**Site:** Castor 36-11-9-59 Pad  
**Well:** 4-36-11-9-59  
**Wellpath:** Original Hole

**Date:** 03/01/2013  
**Co-ordinate(NE) Reference:** Well: 4-36-11-9-59, Grid North  
**Vertical (TVD) Reference:** 4889'GL+17'KB 4906.0  
**Section (VS) Reference:** Well (0.00N,0.00E,178.41Azi)  
**Plan:** Plan #2

**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
6300.00	74.73	154.06	5991.70	-174.66	1169.18	207.03	10.00	8.60	5.35	
6400.00	83.41	159.11	6010.66	-264.67	1208.09	298.09	10.00	8.68	5.05	
6475.53	90.00	162.80	6015.00	-335.89	1232.67	369.97	10.00	8.73	4.88	
6500.00	90.00	163.29	6015.00	-359.30	1239.80	393.56	2.00	0.00	2.00	
6600.00	90.00	165.29	6015.00	-455.56	1266.88	490.54	2.00	0.00	2.00	
6700.00	90.00	167.29	6015.00	-552.71	1290.58	588.30	2.00	0.00	2.00	
6800.00	90.00	169.29	6015.00	-650.62	1310.87	686.74	2.00	0.00	2.00	
6900.00	90.00	171.29	6015.00	-749.18	1327.74	785.74	2.00	0.00	2.00	
7000.00	90.00	173.29	6015.00	-848.27	1341.16	885.16	2.00	0.00	2.00	
7100.00	90.00	175.29	6015.00	-947.77	1351.11	984.90	2.00	0.00	2.00	
7200.00	90.00	177.29	6015.00	-1047.56	1357.58	1084.82	2.00	0.00	2.00	
7254.61	90.00	178.38	6015.00	-1102.12	1359.64	1139.43	2.00	0.00	2.00	
7300.00	90.00	178.38	6015.00	-1147.50	1360.92	1184.82	0.00	0.00	0.00	
7400.00	90.00	178.38	6015.00	-1247.46	1363.75	1284.82	0.00	0.00	0.00	
7500.00	90.00	178.38	6015.00	-1347.42	1366.57	1384.82	0.00	0.00	0.00	
7600.00	90.00	178.38	6015.00	-1447.38	1369.40	1484.82	0.00	0.00	0.00	
7700.00	90.00	178.38	6015.00	-1547.34	1372.22	1584.82	0.00	0.00	0.00	
7800.00	90.00	178.38	6015.00	-1647.30	1375.04	1684.82	0.00	0.00	0.00	
7900.00	90.00	178.38	6015.00	-1747.26	1377.87	1784.82	0.00	0.00	0.00	
8000.00	90.00	178.38	6015.00	-1847.22	1380.69	1884.82	0.00	0.00	0.00	
8100.00	90.00	178.38	6015.00	-1947.18	1383.52	1984.82	0.00	0.00	0.00	
8200.00	90.00	178.38	6015.00	-2047.14	1386.34	2084.82	0.00	0.00	0.00	
8300.00	90.00	178.38	6015.00	-2147.10	1389.17	2184.82	0.00	0.00	0.00	
8400.00	90.00	178.38	6015.00	-2247.06	1391.99	2284.82	0.00	0.00	0.00	
8500.00	90.00	178.38	6015.00	-2347.02	1394.81	2384.82	0.00	0.00	0.00	
8600.00	90.00	178.38	6015.00	-2446.98	1397.64	2484.82	0.00	0.00	0.00	
8700.00	90.00	178.38	6015.00	-2546.94	1400.46	2584.82	0.00	0.00	0.00	
8800.00	90.00	178.38	6015.00	-2646.90	1403.29	2684.82	0.00	0.00	0.00	
8900.00	90.00	178.38	6015.00	-2746.86	1406.11	2784.82	0.00	0.00	0.00	
9000.00	90.00	178.38	6015.00	-2846.82	1408.94	2884.82	0.00	0.00	0.00	
9100.00	90.00	178.38	6015.00	-2946.78	1411.76	2984.82	0.00	0.00	0.00	
9200.00	90.00	178.38	6015.00	-3046.74	1414.59	3084.82	0.00	0.00	0.00	
9300.00	90.00	178.38	6015.00	-3146.70	1417.41	3184.82	0.00	0.00	0.00	
9400.00	90.00	178.38	6015.00	-3246.66	1420.23	3284.82	0.00	0.00	0.00	
9500.00	90.00	178.38	6015.00	-3346.62	1423.06	3384.82	0.00	0.00	0.00	
9600.00	90.00	178.38	6015.00	-3446.58	1425.88	3484.82	0.00	0.00	0.00	
9700.00	90.00	178.38	6015.00	-3546.54	1428.71	3584.82	0.00	0.00	0.00	
9800.00	90.00	178.38	6015.00	-3646.50	1431.53	3684.82	0.00	0.00	0.00	
9900.00	90.00	178.38	6015.00	-3746.46	1434.36	3784.82	0.00	0.00	0.00	
9966.00	90.00	178.38	6015.00	-3812.44	1436.22	3850.82	0.00	0.00	0.00	PBHL 4-36

### Targets

Name	Description Dip.	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<--- Latitude ---> Deg Min Sec			<--- Longitude ---> Deg Min Sec		
State 1-36 DA -Circle (Radius: 530)			-100.00	178.85	705.27	1506310.77	3435693.75	40	42	45.385 N	103	55	41.964 W
State 14-36 PA -Circle (Radius: 530)			-100.00	-3818.20	816.14	1502313.72	3435804.62	40	42	5.876 N	103	55	41.445 W
SL 4-36			0.00	0.00	0.00	1506131.92	3434988.48	40	42	43.741 N	103	55	51.162 W
PBHL 4-36			6015.00	-3812.44	1436.22	1502319.48	3436424.70	40	42	5.824 N	103	55	33.394 W

# Precision Directional Services, Inc.

## Planning Report

**Company:** CARRIZO OIL & GAS, INC.

**Field:** Niobrara CONZ'83

**Site:** Castor 36-11-9-59 Pad

**Well:** 4-36-11-9-59

**Wellpath:** Original Hole

**Date:** 03/01/2013

**Time:** 11:01:25

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**Co-ordinate(NE) Reference:** Well: 4-36-11-9-59, Grid North

**Vertical (TVD) Reference:** 4889'GL+17'KB 4906.0

**Section (VS) Reference:** Well (0.00N,0.00E,178.41Azi)

**Plan:** Plan #2

### Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
6244.99	5975.03	7.000	8.500	7"