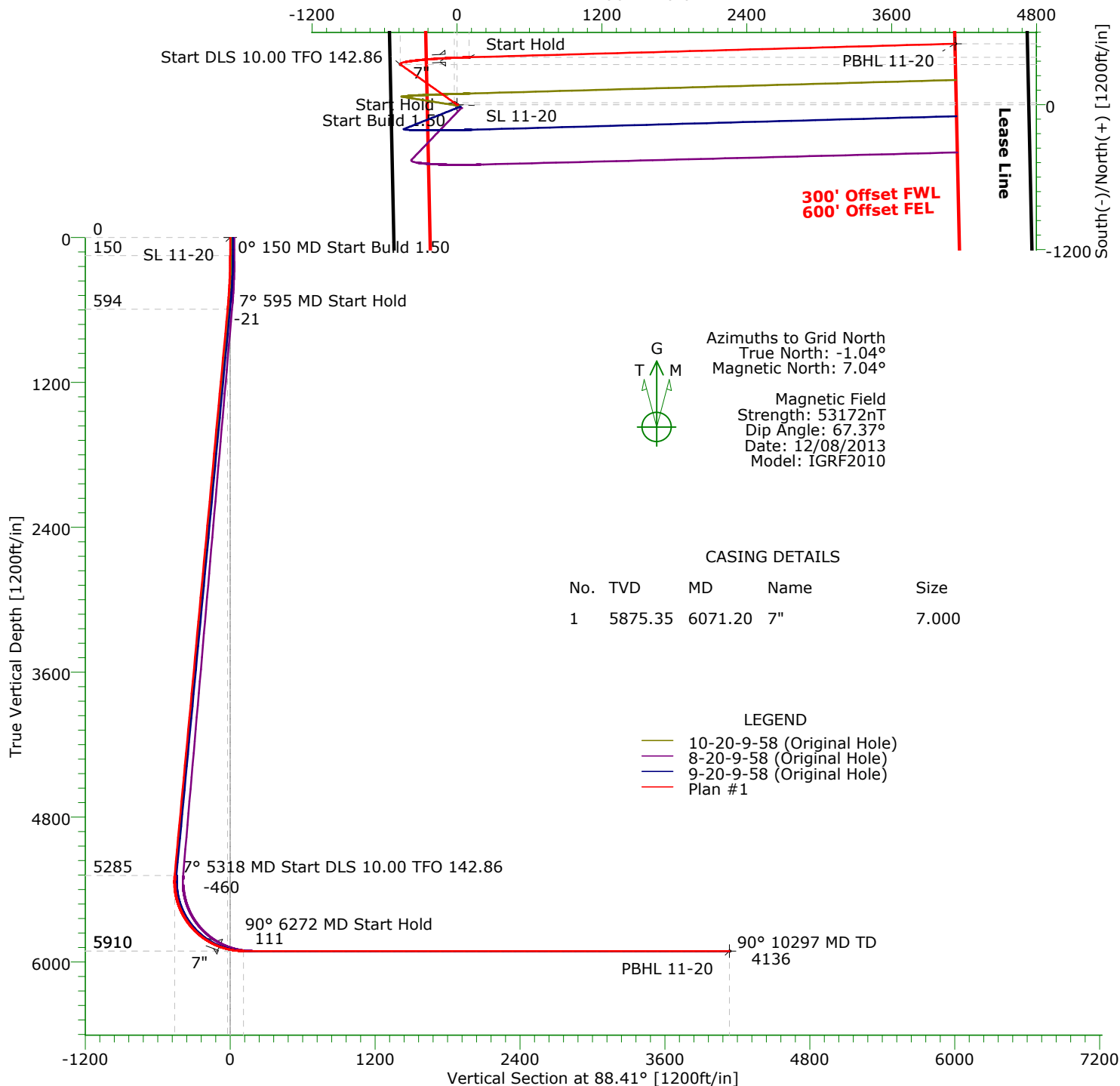




**CARRIZO OIL & GAS, INC.**  
Field: Niobrara CONZ'83  
Site: Bringleson Ranch 8-20-9-58  
Well: 11-20-9-58  
Wellpath: Original Hole  
Plan: Plan #1



TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SL 11-20	0.00	0.00	0.00	1514534.23	3444594.09	40°44'05.055N	103°53'44.473W	Point
PBHL 11-20	5910.00	504.04	4123.58	1515038.27	3448717.67	40°44'09.294N	103°52'50.797W	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	150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	
3	595.22	6.68	305.37	594.21	15.00	-21.13	1.50	0.00	-20.71	
4	5318.40	6.68	305.37	5285.34	332.94	-469.04	0.00	0.00	-459.62	
5	6271.72	90.00	88.41	5910.00	392.68	100.00	10.00	142.86	110.86	
6	10296.84	90.00	88.41	5910.00	504.04	4123.58	0.00	0.00	4135.98	PBHL 11-20

Plan: Plan #1 (11-20-9-58/Original Hole)

Created By: Tony LoRicca

Date: 11/08/2013

**PRECISION DIRECTIONAL SERVICES, INC.**

**713.435.6250**

# Precision Directional Services, Inc.

## Planning Report

<b>Company:</b> CARRIZO OIL & GAS, INC.		<b>Date:</b> 11/08/2013		<b>Time:</b> 15:26:40		<b>Page:</b> 1	
<b>Field:</b> Niobrara CONZ'83		<b>Co-ordinate(NE) Reference:</b> Well: 11-20-9-58, Grid North					
<b>Site:</b> Bringleson Ranch 8-20-9-58		<b>Vertical (TVD) Reference:</b> 4919'GL+25'KB 4944.0					
<b>Well:</b> 11-20-9-58		<b>Section (VS) Reference:</b> Well (0.00N,0.00E,88.41Azi)					
<b>Wellpath:</b> Original Hole		<b>Plan:</b> Plan #1					

<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> Bringleson Ranch 8-20-9-58					
<b>Site Position:</b>		<b>Northing:</b> 1514506.88 ft		<b>Latitude:</b> 40 44 4.778 N	
<b>From:</b> Map		<b>Easting:</b> 3444629.82 ft		<b>Longitude:</b> 103 53 44.016 W	
<b>Position Uncertainty:</b> 0.00 ft				<b>North Reference:</b> Grid	
<b>Ground Level:</b> 4919.00 ft				<b>Grid Convergence:</b> 1.04 deg	

<b>Well:</b> 11-20-9-58		<b>Slot Name:</b> 11-20			
<b>Well Position:</b> +N/-S 27.35 ft		<b>Northing:</b> 1514534.23 ft		<b>Latitude:</b> 40 44 5.055 N	
+E/-W -35.73 ft		<b>Easting :</b> 3444594.09 ft		<b>Longitude:</b> 103 53 44.473 W	
<b>Position Uncertainty:</b> 0.00 ft					

<b>Wellpath:</b> Original Hole		<b>Drilled From:</b> Surface	
<b>Current Datum:</b> 4919'GL+25'KB		<b>Tie-on Depth:</b> 0.00 ft	
<b>Magnetic Data:</b> 12/08/2013		<b>Above System Datum:</b> Mean Sea Level	
<b>Field Strength:</b> 53172 nT		<b>Declination:</b> 8.08 deg	
<b>Vertical Section:</b> Depth From (TVD)		<b>Mag Dip Angle:</b> 67.37 deg	
ft	+N/-S ft	+E/-W ft	Direction deg
0.00	0.00	0.00	88.41

<b>Plan:</b> Plan #1		<b>Date Composed:</b> 11/08/2013	
<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	
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00	
595.22	6.68	305.37	594.21	15.00	-21.13	1.50	1.50	0.00	0.00	
5318.40	6.68	305.37	5285.34	332.94	-469.04	0.00	0.00	0.00	0.00	
6271.72	90.00	88.41	5910.00	392.68	100.00	10.00	8.74	15.00	142.86	
10296.84	90.00	88.41	5910.00	504.04	4123.58	0.00	0.00	0.00	0.00	PBHL 11-20

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	
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.75	305.37	200.00	0.19	-0.27	-0.26	1.50	1.50	0.00	
300.00	2.25	305.37	299.96	1.70	-2.40	-2.35	1.50	1.50	0.00	
400.00	3.75	305.37	399.82	4.73	-6.67	-6.54	1.50	1.50	0.00	
500.00	5.25	305.37	499.51	9.28	-13.07	-12.80	1.50	1.50	0.00	
595.22	6.68	305.37	594.21	15.00	-21.13	-20.71	1.50	1.50	0.00	
600.00	6.68	305.37	598.96	15.32	-21.59	-21.15	0.00	0.00	0.00	
700.00	6.68	305.37	698.28	22.06	-31.07	-30.45	0.00	0.00	0.00	
800.00	6.68	305.37	797.60	28.79	-40.55	-39.74	0.00	0.00	0.00	
900.00	6.68	305.37	896.92	35.52	-50.04	-49.03	0.00	0.00	0.00	
1000.00	6.68	305.37	996.25	42.25	-59.52	-58.33	0.00	0.00	0.00	
1100.00	6.68	305.37	1095.57	48.98	-69.00	-67.62	0.00	0.00	0.00	
1200.00	6.68	305.37	1194.89	55.71	-78.49	-76.91	0.00	0.00	0.00	

# Precision Directional Services, Inc.

## Planning Report

**Company:** CARRIZO OIL & GAS, INC.  
**Field:** Niobrara CONZ'83  
**Site:** Bringleson Ranch 8-20-9-58  
**Well:** 11-20-9-58  
**Wellpath:** Original Hole

**Date:** 11/08/2013  
**Co-ordinate(NE) Reference:** Well: 11-20-9-58, Grid North  
**Vertical (TVD) Reference:** 4919'GL+25'KB 4944.0  
**Section (VS) Reference:** Well (0.00N,0.00E,88.41Azi)  
**Plan:** Plan #1

**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	6.68	305.37	1294.21	62.44	-87.97	-86.20	0.00	0.00	0.00	
1400.00	6.68	305.37	1393.53	69.18	-97.45	-95.50	0.00	0.00	0.00	
1500.00	6.68	305.37	1492.85	75.91	-106.94	-104.79	0.00	0.00	0.00	
1600.00	6.68	305.37	1592.17	82.64	-116.42	-114.08	0.00	0.00	0.00	
1700.00	6.68	305.37	1691.50	89.37	-125.90	-123.37	0.00	0.00	0.00	
1800.00	6.68	305.37	1790.82	96.10	-135.39	-132.67	0.00	0.00	0.00	
1900.00	6.68	305.37	1890.14	102.83	-144.87	-141.96	0.00	0.00	0.00	
2000.00	6.68	305.37	1989.46	109.57	-154.35	-151.25	0.00	0.00	0.00	
2100.00	6.68	305.37	2088.78	116.30	-163.84	-160.55	0.00	0.00	0.00	
2200.00	6.68	305.37	2188.10	123.03	-173.32	-169.84	0.00	0.00	0.00	
2300.00	6.68	305.37	2287.43	129.76	-182.80	-179.13	0.00	0.00	0.00	
2400.00	6.68	305.37	2386.75	136.49	-192.29	-188.42	0.00	0.00	0.00	
2500.00	6.68	305.37	2486.07	143.22	-201.77	-197.72	0.00	0.00	0.00	
2600.00	6.68	305.37	2585.39	149.95	-211.25	-207.01	0.00	0.00	0.00	
2700.00	6.68	305.37	2684.71	156.69	-220.74	-216.30	0.00	0.00	0.00	
2800.00	6.68	305.37	2784.03	163.42	-230.22	-225.60	0.00	0.00	0.00	
2900.00	6.68	305.37	2883.35	170.15	-239.70	-234.89	0.00	0.00	0.00	
3000.00	6.68	305.37	2982.68	176.88	-249.18	-244.18	0.00	0.00	0.00	
3100.00	6.68	305.37	3082.00	183.61	-258.67	-253.47	0.00	0.00	0.00	
3200.00	6.68	305.37	3181.32	190.34	-268.15	-262.77	0.00	0.00	0.00	
3300.00	6.68	305.37	3280.64	197.07	-277.63	-272.06	0.00	0.00	0.00	
3400.00	6.68	305.37	3379.96	203.81	-287.12	-281.35	0.00	0.00	0.00	
3500.00	6.68	305.37	3479.28	210.54	-296.60	-290.64	0.00	0.00	0.00	
3600.00	6.68	305.37	3578.60	217.27	-306.08	-299.94	0.00	0.00	0.00	
3700.00	6.68	305.37	3677.93	224.00	-315.57	-309.23	0.00	0.00	0.00	
3800.00	6.68	305.37	3777.25	230.73	-325.05	-318.52	0.00	0.00	0.00	
3900.00	6.68	305.37	3876.57	237.46	-334.53	-327.82	0.00	0.00	0.00	
4000.00	6.68	305.37	3975.89	244.20	-344.02	-337.11	0.00	0.00	0.00	
4100.00	6.68	305.37	4075.21	250.93	-353.50	-346.40	0.00	0.00	0.00	
4200.00	6.68	305.37	4174.53	257.66	-362.98	-355.69	0.00	0.00	0.00	
4300.00	6.68	305.37	4273.85	264.39	-372.47	-364.99	0.00	0.00	0.00	
4400.00	6.68	305.37	4373.18	271.12	-381.95	-374.28	0.00	0.00	0.00	
4500.00	6.68	305.37	4472.50	277.85	-391.43	-383.57	0.00	0.00	0.00	
4600.00	6.68	305.37	4571.82	284.58	-400.92	-392.87	0.00	0.00	0.00	
4700.00	6.68	305.37	4671.14	291.32	-410.40	-402.16	0.00	0.00	0.00	
4800.00	6.68	305.37	4770.46	298.05	-419.88	-411.45	0.00	0.00	0.00	
4900.00	6.68	305.37	4869.78	304.78	-429.37	-420.74	0.00	0.00	0.00	
5000.00	6.68	305.37	4969.11	311.51	-438.85	-430.04	0.00	0.00	0.00	
5100.00	6.68	305.37	5068.43	318.24	-448.33	-439.33	0.00	0.00	0.00	
5200.00	6.68	305.37	5167.75	324.97	-457.82	-448.62	0.00	0.00	0.00	
5300.00	6.68	305.37	5267.07	331.71	-467.30	-457.91	0.00	0.00	0.00	
5318.40	6.68	305.37	5285.34	332.94	-469.04	-459.62	0.00	0.00	0.00	
5350.00	4.57	330.04	5316.80	335.10	-471.17	-461.69	10.00	-6.66	78.06	
5400.00	4.92	33.54	5366.65	338.62	-470.98	-461.41	10.00	0.69	127.00	
5450.00	8.80	61.36	5416.30	342.24	-466.44	-456.76	10.00	7.76	55.64	
5500.00	13.43	71.28	5465.35	345.94	-457.58	-447.80	10.00	9.28	19.83	
5550.00	18.26	76.10	5513.44	349.69	-444.46	-434.59	10.00	9.66	9.64	
5600.00	23.16	78.94	5560.20	353.46	-427.20	-417.22	10.00	9.80	5.69	
5650.00	28.09	80.84	5605.26	357.22	-405.91	-395.84	10.00	9.87	3.79	
5700.00	33.05	82.20	5648.30	360.95	-380.76	-370.60	10.00	9.90	2.73	
5750.00	38.01	83.25	5688.98	364.61	-351.95	-341.70	10.00	9.93	2.09	
5800.00	42.98	84.08	5726.99	368.18	-319.69	-309.35	10.00	9.94	1.67	
5850.00	47.96	84.78	5762.05	371.63	-284.22	-273.80	10.00	9.95	1.39	
5900.00	52.94	85.37	5793.88	374.93	-245.83	-235.33	10.00	9.96	1.18	

# Precision Directional Services, Inc.

## Planning Report

**Company:** CARRIZO OIL & GAS, INC.  
**Field:** Niobrara CONZ'83  
**Site:** Bringleson Ranch 8-20-9-58  
**Well:** 11-20-9-58  
**Wellpath:** Original Hole

**Date:** 11/08/2013  
**Co-ordinate(NE) Reference:** Well: 11-20-9-58, Grid North  
**Vertical (TVD) Reference:** 4919'GL+25'KB 4944.0  
**Section (VS) Reference:** Well (0.00N,0.00E,88.41Azi)  
**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
5950.00	57.92	85.89	5822.24	378.06	-204.79	-194.22	10.00	9.96	1.04	
6000.00	62.90	86.35	5846.92	381.00	-161.43	-150.79	10.00	9.97	0.93	
6050.00	67.89	86.78	5867.74	383.72	-116.06	-105.37	10.00	9.97	0.85	
6071.20	70.00	86.95	5875.35	384.81	-96.31	-85.59	10.00	9.97	0.81	7"
6100.00	72.87	87.17	5884.52	386.21	-69.05	-58.30	10.00	9.97	0.78	
6150.00	77.86	87.55	5897.15	388.43	-20.74	-9.95	10.00	9.97	0.75	
6200.00	82.85	87.91	5905.53	390.39	28.50	39.32	10.00	9.97	0.72	
6250.00	87.83	88.26	5909.59	392.05	78.29	89.14	10.00	9.98	0.71	
6271.72	90.00	88.41	5910.00	392.68	100.00	110.86	10.00	9.98	0.70	
6300.00	90.00	88.41	5910.00	393.46	128.27	139.14	0.00	0.00	0.00	
6400.00	90.00	88.41	5910.00	396.23	228.23	239.14	0.00	0.00	0.00	
6500.00	90.00	88.41	5910.00	399.00	328.19	339.14	0.00	0.00	0.00	
6600.00	90.00	88.41	5910.00	401.76	428.15	439.14	0.00	0.00	0.00	
6700.00	90.00	88.41	5910.00	404.53	528.12	539.14	0.00	0.00	0.00	
6800.00	90.00	88.41	5910.00	407.30	628.08	639.14	0.00	0.00	0.00	
6900.00	90.00	88.41	5910.00	410.06	728.04	739.14	0.00	0.00	0.00	
7000.00	90.00	88.41	5910.00	412.83	828.00	839.14	0.00	0.00	0.00	
7100.00	90.00	88.41	5910.00	415.60	927.96	939.14	0.00	0.00	0.00	
7200.00	90.00	88.41	5910.00	418.36	1027.92	1039.14	0.00	0.00	0.00	
7300.00	90.00	88.41	5910.00	421.13	1127.89	1139.14	0.00	0.00	0.00	
7400.00	90.00	88.41	5910.00	423.90	1227.85	1239.14	0.00	0.00	0.00	
7500.00	90.00	88.41	5910.00	426.66	1327.81	1339.14	0.00	0.00	0.00	
7600.00	90.00	88.41	5910.00	429.43	1427.77	1439.14	0.00	0.00	0.00	
7700.00	90.00	88.41	5910.00	432.20	1527.73	1539.14	0.00	0.00	0.00	
7800.00	90.00	88.41	5910.00	434.96	1627.69	1639.14	0.00	0.00	0.00	
7900.00	90.00	88.41	5910.00	437.73	1727.66	1739.14	0.00	0.00	0.00	
8000.00	90.00	88.41	5910.00	440.50	1827.62	1839.14	0.00	0.00	0.00	
8100.00	90.00	88.41	5910.00	443.26	1927.58	1939.14	0.00	0.00	0.00	
8200.00	90.00	88.41	5910.00	446.03	2027.54	2039.14	0.00	0.00	0.00	
8300.00	90.00	88.41	5910.00	448.79	2127.50	2139.14	0.00	0.00	0.00	
8400.00	90.00	88.41	5910.00	451.56	2227.47	2239.14	0.00	0.00	0.00	
8500.00	90.00	88.41	5910.00	454.33	2327.43	2339.14	0.00	0.00	0.00	
8600.00	90.00	88.41	5910.00	457.09	2427.39	2439.14	0.00	0.00	0.00	
8700.00	90.00	88.41	5910.00	459.86	2527.35	2539.14	0.00	0.00	0.00	
8800.00	90.00	88.41	5910.00	462.63	2627.31	2639.14	0.00	0.00	0.00	
8900.00	90.00	88.41	5910.00	465.39	2727.27	2739.14	0.00	0.00	0.00	
9000.00	90.00	88.41	5910.00	468.16	2827.24	2839.14	0.00	0.00	0.00	
9100.00	90.00	88.41	5910.00	470.93	2927.20	2939.14	0.00	0.00	0.00	
9200.00	90.00	88.41	5910.00	473.69	3027.16	3039.14	0.00	0.00	0.00	
9300.00	90.00	88.41	5910.00	476.46	3127.12	3139.14	0.00	0.00	0.00	
9400.00	90.00	88.41	5910.00	479.23	3227.08	3239.14	0.00	0.00	0.00	
9500.00	90.00	88.41	5910.00	481.99	3327.04	3339.14	0.00	0.00	0.00	
9600.00	90.00	88.41	5910.00	484.76	3427.01	3439.14	0.00	0.00	0.00	
9700.00	90.00	88.41	5910.00	487.53	3526.97	3539.14	0.00	0.00	0.00	
9800.00	90.00	88.41	5910.00	490.29	3626.93	3639.14	0.00	0.00	0.00	
9900.00	90.00	88.41	5910.00	493.06	3726.89	3739.14	0.00	0.00	0.00	
10000.00	90.00	88.41	5910.00	495.83	3826.85	3839.14	0.00	0.00	0.00	
10100.00	90.00	88.41	5910.00	498.59	3926.81	3939.14	0.00	0.00	0.00	
10200.00	90.00	88.41	5910.00	501.36	4026.78	4039.14	0.00	0.00	0.00	
10296.84	90.00	88.41	5910.00	504.04	4123.58	4135.98	0.00	0.00	0.00	PBHL 11-20

# Precision Directional Services, Inc.

## Planning Report

**Company:** CARRIZO OIL & GAS, INC.  
**Field:** Niobrara CONZ'83  
**Site:** Bringleson Ranch 8-20-9-58  
**Well:** 11-20-9-58  
**Wellpath:** Original Hole

**Date:** 11/08/2013  
**Co-ordinate(NE) Reference:** Well: 11-20-9-58, Grid North  
**Vertical (TVD) Reference:** 4919'GL+25'KB 4944.0  
**Section (VS) Reference:** Well (0.00N,0.00E,88.41Azi)  
**Plan:** Plan #1

**Page:** 4

### 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 11-20			0.00	0.00	0.00	1514534.23	3444594.09	40	44	5.055 N	103	53	44.473 W
PBHL 11-20			5910.00	504.04	4123.58	1515038.27	3448717.67	40	44	9.294 N	103	52	50.797 W

### Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
6071.20	5875.35	7.000	8.500	7"