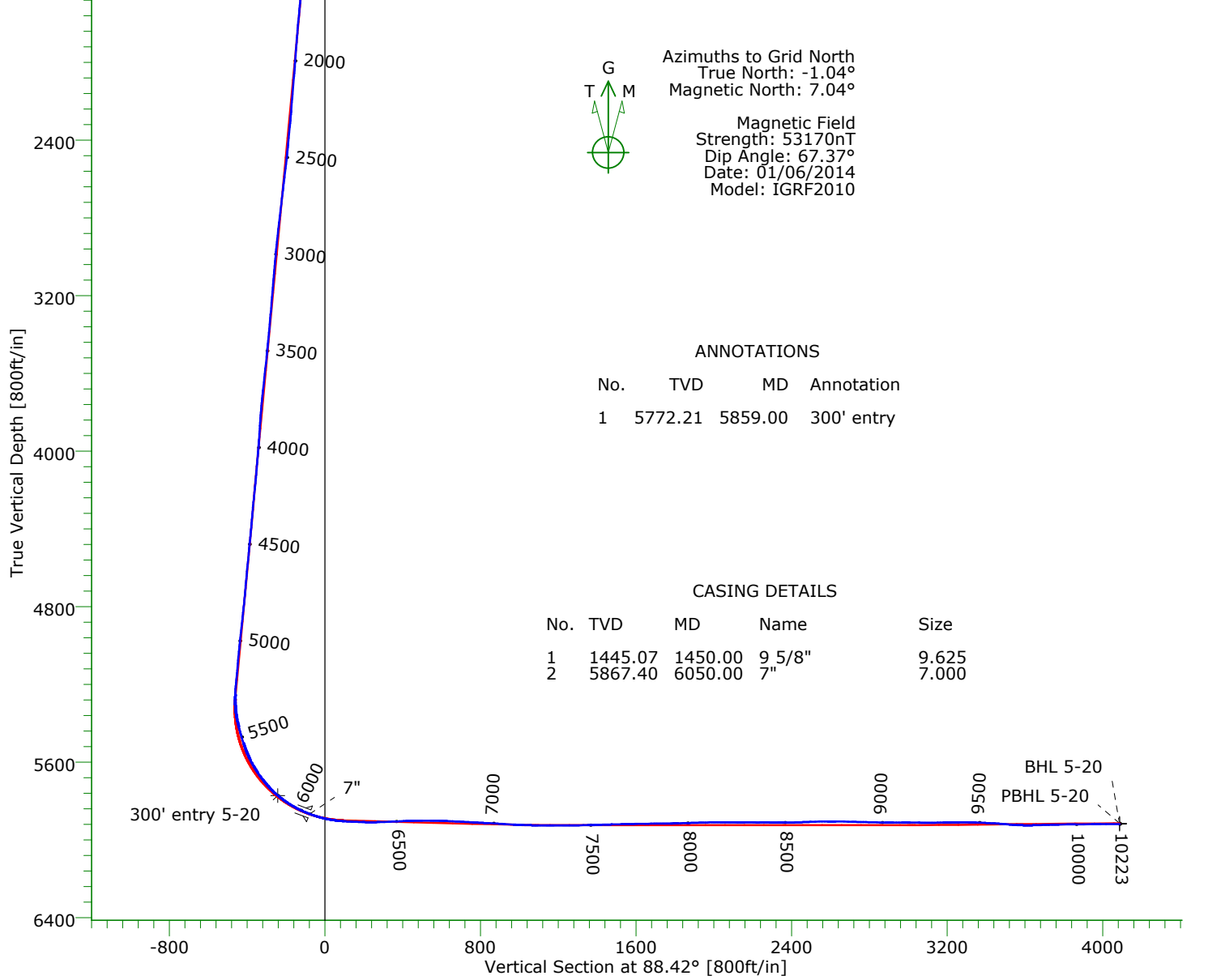
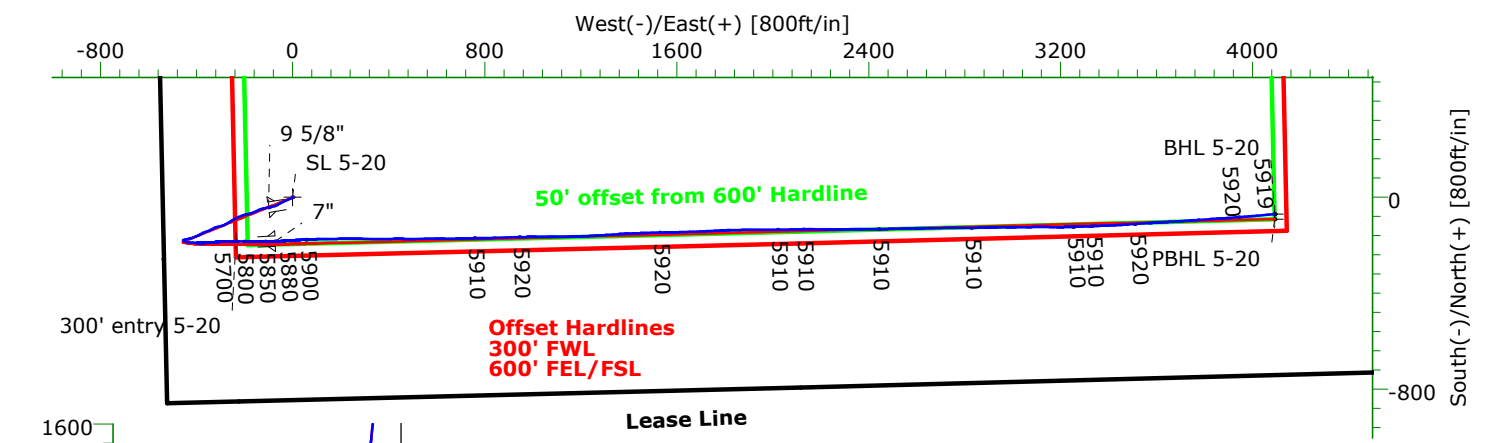




**CARRIZO OIL & GAS, INC.**  
Field: Niobrara CONZ'83  
Site: Bringleson Ranch 5-20-9-58 Pad  
Well: 5-20-9-58  
Wellpath: Original Hole



Azimuths to Grid North  
True North: -1.04°  
Magnetic North: 7.04°  
  
Magnetic Field  
Strength: 53170nT  
Dip Angle: 67.37°  
Date: 01/06/2014  
Model: IGRF2010

ANNOTATIONS

No.	TVD	MD	Annotation
1	5772.21	5859.00	300' entry

CASING DETAILS

No.	TVD	MD	Name	Size
1	1445.07	1450.00	9 5/8"	9.625
2	5867.40	6050.00	7"	7.000

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SL 5-20	0.00	0.00	0.00	1513377.83	3444613.89	40°43'53.626N	103°53'44.488W	Point
300' entry 5-20	5772.21	-183.76	-237.19	1513194.07	3444376.70	40°43'51.853N	103°53'47.612W	Point
PBHL 5-20	5915.00	-90.67	4091.59	1513287.16	3448705.48	40°43'51.996N	103°52'51.371W	Point
BHL 5-20	5918.80	-70.17	4090.91	1513307.66	3448704.80	40°43'52.198N	103°52'51.375W	Point

# Precision Directional Services, Inc.

## Survey Report

<b>Company:</b> CARRIZO OIL & GAS, INC.		<b>Date:</b> 01/17/2014	<b>Time:</b> 08:42:31	<b>Page:</b> 1
<b>Field:</b> Niobrara CONZ'83		<b>Co-ordinate(NE) Reference:</b> Well: 5-20-9-58, Grid North		
<b>Site:</b> Bringleson Ranch 5-20-9-58 Pad		<b>Vertical (TVD) Reference:</b> 4856'GL+17"KB 4873.0		
<b>Well:</b> 5-20-9-58		<b>Section (VS) Reference:</b> Well (0.00N,0.00E,88.42Azi)		
<b>Wellpath:</b> Original Hole		<b>Survey Calculation Method:</b> Minimum Curvature	<b>Db:</b> Adapti	

<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 5-20-9-58 Pad				
<b>Site Position:</b>	<b>Northing:</b> 1513377.83 ft	<b>Latitude:</b> 40 43 53.626 N		
<b>From:</b> Map	<b>Easting:</b> 3444613.89 ft	<b>Longitude:</b> 103 53 44.488 W		
<b>Position Uncertainty:</b> 0.00 ft		<b>North Reference:</b> Grid		
<b>Ground Level:</b> 4856.00 ft		<b>Grid Convergence:</b> 1.04 deg		

<b>Well:</b> 5-20-9-58		<b>Slot Name:</b> 5-20		
<b>Well Position:</b> +N/-S 0.00 ft	<b>Northing:</b> 1513377.83 ft	<b>Latitude:</b> 40 43 53.626 N		
+E/-W 0.00 ft	<b>Easting :</b> 3444613.89 ft	<b>Longitude:</b> 103 53 44.488 W		
<b>Position Uncertainty:</b> 0.00 ft				

<b>Wellpath:</b> Original Hole		<b>Drilled From:</b> Surface		
<b>Current Datum:</b> 4856'GL+17"KB		<b>Tie-on Depth:</b> 0.00 ft		
<b>Magnetic Data:</b> 01/06/2014		<b>Above System Datum:</b> Mean Sea Level		
<b>Field Strength:</b> 53170 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	<b>Direction</b> deg	
0.00	0.00	0.00	88.42	

<b>Survey Program for Definitive Wellpath</b>				
<b>Date:</b> 01/17/2014		<b>Validated:</b> No	<b>Version:</b> 4	
<b>Actual From</b> ft	<b>To</b> ft	<b>Survey</b>	<b>Toolcode</b>	<b>Tool Name</b>
108.00	10154.00	Survey #1 (108.00-10154.00)	MWD	Std MWD
10223.00	10223.00	Survey #2 (10223.00-10223.00)	Project	Projection

<b>Survey</b>										
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
108.00	0.30	214.50	108.00	-0.23	-0.16	-0.17	0.28	0.28	0.00	MWD
139.00	0.30	222.00	139.00	-0.36	-0.26	-0.27	0.13	0.00	24.19	MWD
230.00	2.60	240.50	229.96	-1.55	-2.22	-2.26	2.55	2.53	20.33	MWD
320.00	3.20	243.80	319.85	-3.67	-6.25	-6.35	0.69	0.67	3.67	MWD
412.00	4.30	242.10	411.65	-6.42	-11.60	-11.77	1.20	1.20	-1.85	MWD
503.00	6.40	246.30	502.25	-10.05	-19.26	-19.53	2.35	2.31	4.62	MWD
595.00	6.50	244.70	593.67	-14.34	-28.66	-29.05	0.22	0.11	-1.74	MWD
686.00	6.00	246.10	684.13	-18.47	-37.67	-38.16	0.57	-0.55	1.54	MWD
777.00	5.60	244.70	774.66	-22.29	-46.03	-46.63	0.47	-0.44	-1.54	MWD
868.00	5.10	242.60	865.26	-26.05	-53.63	-54.33	0.59	-0.55	-2.31	MWD
961.00	4.80	241.40	957.92	-29.81	-60.72	-61.52	0.34	-0.32	-1.29	MWD
1052.00	4.60	238.40	1048.61	-33.55	-67.17	-68.07	0.35	-0.22	-3.30	MWD
1143.00	5.10	253.50	1139.29	-36.61	-74.16	-75.14	1.50	0.55	16.59	MWD
1234.00	5.30	257.90	1229.91	-38.64	-82.15	-83.18	0.49	0.22	4.84	MWD
1324.00	5.00	258.10	1319.55	-40.32	-90.05	-91.13	0.33	-0.33	0.22	MWD
1406.00	5.00	260.30	1401.24	-41.66	-97.07	-98.18	0.23	0.00	2.68	MWD
1492.00	5.00	262.10	1486.91	-42.80	-104.47	-105.61	0.18	0.00	2.09	MWD
1577.00	6.30	257.50	1571.50	-44.32	-112.70	-113.87	1.62	1.53	-5.41	MWD
1662.00	6.30	257.40	1655.98	-46.35	-121.80	-123.03	0.01	0.00	-0.12	MWD
1747.00	5.50	252.60	1740.53	-48.59	-130.24	-131.53	1.11	-0.94	-5.65	MWD
1832.00	5.30	247.90	1825.16	-51.28	-137.76	-139.12	0.57	-0.24	-5.53	MWD

# Precision Directional Services, Inc.

## Survey Report

<b>Company:</b> CARRIZO OIL & GAS, INC. <b>Field:</b> Niobrara CONZ'83 <b>Site:</b> Bringleson Ranch 5-20-9-58 Pad <b>Well:</b> 5-20-9-58 <b>Wellpath:</b> Original Hole	<b>Date:</b> 01/17/2014 <b>Time:</b> 08:42:31 <b>Page:</b> 2 <b>Co-ordinate(NE) Reference:</b> Well: 5-20-9-58, Grid North <b>Vertical (TVD) Reference:</b> 4856'GL+17"KB 4873.0 <b>Section (VS) Reference:</b> Well (0.00N,0.00E,88.42Azi) <b>Survey Calculation Method:</b> Minimum Curvature <b>Db:</b> Adapti
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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
1917.00	4.80	243.50	1909.83	-54.34	-144.58	-146.03	0.74	-0.59	-5.18	MWD
2002.00	4.70	241.20	1994.53	-57.61	-150.82	-152.35	0.25	-0.12	-2.71	MWD
2087.00	5.00	252.80	2079.23	-60.38	-157.41	-159.01	1.20	0.35	13.65	MWD
2172.00	5.00	247.00	2163.91	-62.92	-164.36	-166.03	0.59	0.00	-6.82	MWD
2257.00	4.70	249.80	2248.60	-65.57	-171.03	-172.78	0.45	-0.35	3.29	MWD
2343.00	5.70	258.20	2334.25	-67.66	-178.52	-180.32	1.46	1.16	9.77	MWD
2428.00	5.50	256.60	2418.85	-69.47	-186.62	-188.46	0.30	-0.24	-1.88	MWD
2513.00	6.70	254.70	2503.36	-71.72	-195.36	-197.26	1.43	1.41	-2.24	MWD
2598.00	6.90	257.50	2587.76	-74.14	-205.13	-207.10	0.46	0.24	3.29	MWD
2683.00	7.20	246.50	2672.13	-77.37	-215.00	-217.05	1.62	0.35	-12.94	MWD
2769.00	7.40	245.20	2757.43	-81.84	-224.97	-227.14	0.30	0.23	-1.51	MWD
2854.00	7.00	243.60	2841.76	-86.44	-234.58	-236.87	0.53	-0.47	-1.88	MWD
2938.00	6.60	243.30	2925.17	-90.88	-243.47	-245.89	0.48	-0.48	-0.36	MWD
3024.00	6.00	241.00	3010.65	-95.28	-251.82	-254.35	0.76	-0.70	-2.67	MWD
3109.00	5.80	233.10	3095.20	-100.02	-259.14	-261.80	0.98	-0.24	-9.29	MWD
3194.00	5.30	240.10	3179.80	-104.55	-265.98	-268.76	0.99	-0.59	8.24	MWD
3279.00	5.40	242.20	3264.43	-108.37	-272.92	-275.80	0.26	0.12	2.47	MWD
3364.00	5.80	241.20	3349.03	-112.31	-280.22	-283.21	0.48	0.47	-1.18	MWD
3449.00	6.00	244.00	3433.57	-116.32	-287.98	-291.08	0.41	0.24	3.29	MWD
3535.00	6.10	256.30	3519.10	-119.38	-296.46	-299.64	1.51	0.12	14.30	MWD
3620.00	6.20	258.40	3603.61	-121.37	-305.34	-308.57	0.29	0.12	2.47	MWD
3705.00	6.40	256.30	3688.10	-123.41	-314.44	-317.72	0.36	0.24	-2.47	MWD
3790.00	5.10	255.90	3772.67	-125.46	-322.71	-326.04	1.53	-1.53	-0.47	MWD
3874.00	4.50	238.40	3856.38	-128.09	-329.14	-332.54	1.87	-0.71	-20.83	MWD
3959.00	4.70	231.50	3941.10	-132.01	-334.70	-338.21	0.69	0.24	-8.12	MWD
4045.00	5.60	248.60	4026.76	-135.73	-341.37	-344.98	2.06	1.05	19.88	MWD
4130.00	4.90	244.90	4111.40	-138.79	-348.52	-352.21	0.91	-0.82	-4.35	MWD
4215.00	6.20	250.80	4196.00	-141.84	-356.14	-359.91	1.67	1.53	6.94	MWD
4300.00	5.80	249.40	4280.54	-144.86	-364.49	-368.35	0.50	-0.47	-1.65	MWD
4385.00	5.10	247.90	4365.15	-147.79	-372.01	-375.95	0.84	-0.82	-1.76	MWD
4470.00	6.40	245.40	4449.72	-151.18	-379.82	-383.85	1.56	1.53	-2.94	MWD
4555.00	5.60	244.50	4534.26	-154.94	-387.87	-392.00	0.95	-0.94	-1.06	MWD
4641.00	6.20	242.40	4619.80	-158.90	-395.78	-400.01	0.74	0.70	-2.44	MWD
4726.00	5.50	242.60	4704.36	-162.90	-403.46	-407.80	0.82	-0.82	0.24	MWD
4811.00	6.00	248.70	4788.93	-166.39	-411.22	-415.65	0.93	0.59	7.18	MWD
4896.00	6.80	253.70	4873.40	-169.41	-420.18	-424.70	1.15	0.94	5.88	MWD
4982.00	6.20	255.90	4958.85	-171.97	-429.58	-434.15	0.76	-0.70	2.56	MWD
5066.00	5.40	258.20	5042.42	-173.89	-437.84	-442.47	0.99	-0.95	2.74	MWD
5152.00	5.50	253.30	5128.03	-175.90	-445.75	-450.43	0.55	0.12	-5.70	MWD
5194.00	5.30	255.20	5169.84	-176.97	-449.56	-454.26	0.64	-0.48	4.52	MWD
5233.00	4.90	258.10	5208.69	-177.78	-452.93	-457.66	1.22	-1.03	7.44	MWD
5276.00	3.70	251.90	5251.57	-178.59	-456.04	-460.79	2.99	-2.79	-14.42	MWD
5318.00	2.50	157.90	5293.53	-179.86	-456.99	-461.77	10.97	-2.86	-223.81	MWD
5361.00	7.50	119.50	5336.36	-182.11	-454.19	-459.04	13.38	11.63	-89.30	MWD
5404.00	12.10	107.40	5378.72	-184.84	-447.44	-452.37	11.66	10.70	-28.14	MWD
5446.00	15.50	98.40	5419.51	-186.98	-437.69	-442.68	9.55	8.10	-21.43	MWD
5489.00	16.70	93.20	5460.83	-188.16	-425.83	-430.86	4.36	2.79	-12.09	MWD
5532.00	16.60	94.10	5502.02	-188.95	-413.54	-418.59	0.64	-0.23	2.09	MWD
5574.00	20.80	93.20	5541.80	-189.79	-400.10	-405.18	10.02	10.00	-2.14	MWD
5617.00	26.60	89.10	5581.16	-190.07	-382.84	-387.93	14.01	13.49	-9.53	MWD
5660.00	30.00	86.50	5619.01	-189.26	-362.47	-367.56	8.41	7.91	-6.05	MWD
5702.00	33.90	86.00	5654.64	-187.80	-340.30	-345.35	9.31	9.29	-1.19	MWD
5745.00	37.10	85.60	5689.65	-185.97	-315.40	-320.41	7.46	7.44	-0.93	MWD

# Precision Directional Services, Inc.

## Survey Report

<b>Company:</b> CARRIZO OIL & GAS, INC. <b>Field:</b> Niobrara CONZ'83 <b>Site:</b> Bringleson Ranch 5-20-9-58 Pad <b>Well:</b> 5-20-9-58 <b>Wellpath:</b> Original Hole	<b>Date:</b> 01/17/2014 <b>Time:</b> 08:42:31 <b>Page:</b> 3 <b>Co-ordinate(NE) Reference:</b> Well: 5-20-9-58, Grid North <b>Vertical (TVD) Reference:</b> 4856'GL+17"KB 4873.0 <b>Section (VS) Reference:</b> Well (0.00N,0.00E,88.42Azi) <b>Survey Calculation Method:</b> Minimum Curvature <b>Db:</b> Adapti
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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
5787.00	41.90	87.20	5722.05	-184.31	-288.75	-293.72	11.68	11.43	3.81	MWD
5830.00	46.60	90.00	5752.84	-183.61	-258.77	-263.73	11.83	10.93	6.51	MWD
5859.00	49.57	90.77	5772.21	-183.76	-237.19	-242.17	10.43	10.23	2.67	300' entry
5872.00	50.90	91.10	5780.53	-183.92	-227.20	-232.18	10.43	10.25	2.50	MWD
5915.00	55.80	91.10	5806.19	-184.58	-192.72	-197.73	11.40	11.40	0.00	MWD
5957.00	60.20	90.50	5828.44	-185.08	-157.11	-162.15	10.55	10.48	-1.43	MWD
6000.00	65.20	89.30	5848.15	-185.00	-118.91	-123.97	11.89	11.63	-2.79	MWD
6096.00	73.50	86.00	5881.99	-181.25	-29.25	-34.24	9.22	8.65	-3.44	MWD
6142.00	78.20	86.50	5893.23	-178.34	15.24	10.32	10.27	10.22	1.09	MWD
6188.00	83.20	87.50	5900.66	-175.96	60.56	55.69	11.08	10.87	2.17	MWD
6233.00	86.40	88.60	5904.74	-174.44	105.34	100.49	7.52	7.11	2.44	MWD
6279.00	87.50	89.50	5907.19	-173.68	151.27	146.42	3.09	2.39	1.96	MWD
6324.00	88.10	89.30	5908.91	-173.21	196.24	191.38	1.41	1.33	-0.44	MWD
6370.00	90.00	90.40	5909.68	-173.09	242.23	237.36	4.77	4.13	2.39	MWD
6416.00	92.00	90.20	5908.87	-173.33	288.22	283.33	4.37	4.35	-0.43	MWD
6461.00	92.20	90.20	5907.23	-173.49	333.19	328.28	0.44	0.44	0.00	MWD
6507.00	92.40	89.80	5905.38	-173.49	379.15	374.22	0.97	0.43	-0.87	MWD
6549.00	92.70	89.70	5903.51	-173.30	421.11	416.17	0.75	0.71	-0.24	MWD
6591.00	90.40	90.40	5902.38	-173.34	463.09	458.13	5.72	-5.48	1.67	MWD
6634.00	90.20	89.80	5902.15	-173.42	506.09	501.11	1.47	-0.47	-1.40	MWD
6676.00	90.10	89.80	5902.04	-173.27	548.09	543.10	0.24	-0.24	0.00	MWD
6719.00	89.40	89.30	5902.23	-172.93	591.08	586.09	2.00	-1.63	-1.16	MWD
6762.00	87.40	89.50	5903.43	-172.48	634.06	629.07	4.67	-4.65	0.47	MWD
6804.00	87.30	89.30	5905.37	-172.04	676.02	671.01	0.53	-0.24	-0.48	MWD
6847.00	86.60	89.00	5907.66	-171.40	718.95	713.95	1.77	-1.63	-0.70	MWD
6889.00	86.40	88.60	5910.22	-170.53	760.86	755.87	1.06	-0.48	-0.95	MWD
6932.00	87.50	89.50	5912.51	-169.81	803.79	798.81	3.30	2.56	2.09	MWD
6975.00	87.00	88.40	5914.57	-169.03	846.74	841.75	2.81	-1.16	-2.56	MWD
7017.00	87.10	88.40	5916.73	-167.86	888.66	883.70	0.24	0.24	0.00	MWD
7060.00	86.40	88.40	5919.17	-166.66	931.58	926.63	1.63	-1.63	0.00	MWD
7102.00	86.40	88.10	5921.81	-165.38	973.48	968.55	0.71	0.00	-0.71	MWD
7144.00	88.50	90.00	5923.68	-164.68	1015.42	1010.50	6.74	5.00	4.52	MWD
7187.00	87.90	89.50	5925.03	-164.50	1058.40	1053.46	1.82	-1.40	-1.16	MWD
7230.00	89.70	90.20	5925.93	-164.38	1101.39	1096.44	4.49	4.19	1.63	MWD
7272.00	89.60	89.30	5926.19	-164.20	1143.39	1138.43	2.16	-0.24	-2.14	MWD
7314.00	90.60	88.10	5926.11	-163.25	1185.38	1180.43	3.72	2.38	-2.86	MWD
7357.00	90.30	87.40	5925.78	-161.56	1228.34	1223.42	1.77	-0.70	-1.63	MWD
7400.00	89.80	86.50	5925.74	-159.27	1271.28	1266.41	2.39	-1.16	-2.09	MWD
7442.00	90.80	86.00	5925.52	-156.52	1313.19	1308.37	2.66	2.38	-1.19	MWD
7485.00	90.90	86.10	5924.88	-153.56	1356.08	1351.33	0.33	0.23	0.23	MWD
7527.00	92.10	88.10	5923.78	-151.44	1398.01	1393.30	5.55	2.86	4.76	MWD
7570.00	91.70	87.20	5922.35	-149.68	1440.95	1436.28	2.29	-0.93	-2.09	MWD
7612.00	91.50	88.80	5921.18	-148.21	1482.91	1478.26	3.84	-0.48	3.81	MWD
7655.00	91.50	88.40	5920.06	-147.16	1525.88	1521.24	0.93	0.00	-0.93	MWD
7698.00	91.00	89.00	5919.12	-146.19	1568.86	1564.23	1.82	-1.16	1.40	MWD
7740.00	90.90	88.40	5918.42	-145.23	1610.84	1606.22	1.45	-0.24	-1.43	MWD
7783.00	90.90	88.10	5917.75	-143.92	1653.82	1649.22	0.70	0.00	-0.70	MWD
7826.00	90.70	87.90	5917.15	-142.42	1696.79	1692.21	0.66	-0.47	-0.47	MWD
7868.00	90.60	87.40	5916.67	-140.70	1738.75	1734.21	1.21	-0.24	-1.19	MWD
7911.00	90.70	86.70	5916.18	-138.48	1781.69	1777.19	1.64	0.23	-1.63	MWD
7953.00	91.70	88.80	5915.30	-136.84	1823.64	1819.18	5.54	2.38	5.00	MWD
7996.00	91.80	89.10	5913.99	-136.05	1866.62	1862.16	0.74	0.23	0.70	MWD
8038.00	91.90	89.80	5912.63	-135.64	1908.59	1904.13	1.68	0.24	1.67	MWD
8081.00	91.40	89.50	5911.39	-135.38	1951.57	1947.10	1.36	-1.16	-0.70	MWD

# Precision Directional Services, Inc.

## Survey Report

<b>Company:</b> CARRIZO OIL & GAS, INC.	<b>Date:</b> 01/17/2014	<b>Time:</b> 08:42:31	<b>Page:</b> 4
<b>Field:</b> Niobrara CONZ'83	<b>Co-ordinate(NE) Reference:</b> Well: 5-20-9-58, Grid North		
<b>Site:</b> Bringleson Ranch 5-20-9-58 Pad	<b>Vertical (TVD) Reference:</b> 4856'GL+17"KB 4873.0		
<b>Well:</b> 5-20-9-58	<b>Section (VS) Reference:</b> Well (0.00N,0.00E,88.42Azi)		
<b>Wellpath:</b> Original Hole	<b>Survey Calculation Method:</b> Minimum Curvature		<b>Db:</b> 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
8123.00	91.20	89.80	5910.44	-135.13	1993.56	1989.08	0.86	-0.48	0.71	MWD
8166.00	90.70	89.70	5909.73	-134.94	2036.56	2032.06	1.19	-1.16	-0.23	MWD
8209.00	89.90	89.10	5909.50	-134.49	2079.55	2075.05	2.33	-1.86	-1.40	MWD
8251.00	89.00	88.60	5909.91	-133.65	2121.54	2117.05	2.45	-2.14	-1.19	MWD
8294.00	90.00	90.40	5910.28	-133.27	2164.53	2160.04	4.79	2.33	4.19	MWD
8336.00	89.30	90.00	5910.54	-133.42	2206.53	2202.02	1.92	-1.67	-0.95	MWD
8379.00	90.50	90.50	5910.61	-133.60	2249.53	2244.99	3.02	2.79	1.16	MWD
8421.00	89.30	89.70	5910.69	-133.68	2291.53	2286.97	3.43	-2.86	-1.90	MWD
8464.00	88.90	88.40	5911.36	-132.96	2334.52	2329.96	3.16	-0.93	-3.02	MWD
8506.00	90.70	90.00	5911.51	-132.38	2376.51	2371.96	5.73	4.29	3.81	MWD
8549.00	91.40	90.20	5910.72	-132.45	2419.50	2414.93	1.69	1.63	0.47	MWD
8592.00	92.30	89.30	5909.33	-132.27	2462.48	2457.90	2.96	2.09	-2.09	MWD
8634.00	91.70	88.60	5907.87	-131.50	2504.45	2499.87	2.19	-1.43	-1.67	MWD
8677.00	91.50	88.60	5906.67	-130.45	2547.42	2542.85	0.47	-0.47	0.00	MWD
8719.00	91.30	88.40	5905.64	-129.35	2589.39	2584.84	0.67	-0.48	-0.48	MWD
8762.00	88.80	89.30	5905.60	-128.48	2632.38	2627.83	6.18	-5.81	2.09	MWD
8804.00	88.80	89.80	5906.48	-128.15	2674.37	2669.82	1.19	0.00	1.19	MWD
8847.00	88.70	89.70	5907.42	-127.97	2717.36	2712.79	0.33	-0.23	-0.23	MWD
8889.00	88.60	89.30	5908.41	-127.60	2759.34	2754.78	0.98	-0.24	-0.95	MWD
8932.00	88.70	89.50	5909.42	-127.15	2802.33	2797.76	0.52	0.23	0.47	MWD
8974.00	88.70	89.50	5910.38	-126.78	2844.32	2839.74	0.00	0.00	0.00	MWD
9016.00	88.80	89.30	5911.29	-126.34	2886.30	2881.72	0.53	0.24	-0.48	MWD
9059.00	90.60	89.10	5911.52	-125.74	2929.30	2924.72	4.21	4.19	-0.47	MWD
9101.00	90.90	89.10	5910.97	-125.08	2971.29	2966.71	0.71	0.71	0.00	MWD
9144.00	88.90	89.50	5911.04	-124.56	3014.28	3009.70	4.74	-4.65	0.93	MWD
9187.00	88.90	89.50	5911.87	-124.18	3057.27	3052.69	0.00	0.00	0.00	MWD
9229.00	90.00	89.70	5912.27	-123.89	3099.27	3094.68	2.66	2.62	0.48	MWD
9272.00	90.60	90.40	5912.05	-123.93	3142.27	3137.66	2.14	1.40	1.63	MWD
9314.00	90.50	90.20	5911.64	-124.15	3184.27	3179.63	0.53	-0.24	-0.48	MWD
9357.00	92.40	88.80	5910.55	-123.77	3227.25	3222.61	5.49	4.42	-3.26	MWD
9400.00	90.30	87.40	5909.54	-122.35	3270.21	3265.59	5.87	-4.88	-3.26	MWD
9442.00	89.40	87.70	5909.65	-120.55	3312.17	3307.59	2.26	-2.14	0.71	MWD
9484.00	87.20	88.30	5910.90	-119.09	3354.12	3349.56	5.43	-5.24	1.43	MWD
9527.00	87.20	87.70	5913.00	-117.59	3397.05	3392.51	1.39	0.00	-1.40	MWD
9569.00	86.80	87.00	5915.20	-115.65	3438.94	3434.45	1.92	-0.95	-1.67	MWD
9612.00	85.80	86.30	5917.97	-113.14	3481.78	3477.34	2.84	-2.33	-1.63	MWD
9655.00	85.10	86.30	5921.38	-110.38	3524.55	3520.17	1.63	-1.63	0.00	MWD
9698.00	87.10	86.30	5924.31	-107.61	3567.36	3563.04	4.65	4.65	0.00	MWD
9740.00	89.50	86.50	5925.55	-104.97	3609.26	3604.99	5.73	5.71	0.48	MWD
9783.00	91.50	86.80	5925.18	-102.46	3652.18	3647.97	4.70	4.65	0.70	MWD
9826.00	91.90	86.30	5923.90	-99.87	3695.08	3690.93	1.49	0.93	-1.16	MWD
9868.00	92.10	85.80	5922.44	-96.98	3736.96	3732.86	1.28	0.48	-1.19	MWD
9911.00	90.30	86.00	5921.54	-93.91	3779.84	3775.81	4.21	-4.19	0.47	MWD
9953.00	90.30	86.00	5921.32	-90.98	3821.73	3817.77	0.00	0.00	0.00	MWD
9996.00	90.70	86.70	5920.94	-88.24	3864.64	3860.74	1.87	0.93	1.63	MWD
10039.00	90.70	85.80	5920.42	-85.43	3907.55	3903.71	2.09	0.00	-2.09	MWD
10081.00	90.70	85.60	5919.90	-82.28	3949.43	3945.66	0.48	0.00	-0.48	MWD
10124.00	90.40	85.30	5919.49	-78.87	3992.29	3988.60	0.99	-0.70	-0.70	MWD
10154.00	90.40	84.90	5919.28	-76.31	4022.18	4018.55	1.33	0.00	-1.33	MWD
10223.00	90.40	84.90	5918.80	-70.17	4090.91	4087.41	0.00	0.00	0.00	PROJECTED to TD

# Precision Directional Services, Inc.

## Survey Report

**Company:** CARRIZO OIL & GAS, INC.  
**Field:** Niobrara CONZ'83  
**Site:** Bringleson Ranch 5-20-9-58 Pad  
**Well:** 5-20-9-58  
**Wellpath:** Original Hole

**Date:** 01/17/2014 **Time:** 08:42:31 **Page:** 5  
**Co-ordinate(NE) Reference:** Well: 5-20-9-58, Grid North  
**Vertical (TVD) Reference:** 4856'GL+17'KB 4873.0  
**Section (VS) Reference:** Well (0.00N,0.00E,88.42Azi)  
**Survey Calculation Method:** Minimum Curvature **Db:** Adapti

### Annotation

MD ft	TVD ft	
5859.00	5772.21	300' entry