



Precision Directional Services, Inc.

Survey Report

Company: CARRIZO OIL & GAS, INC. Field: Niobrara CONZ'83 Site: Slick Rock 17-11-7-60 Pad Well: 2-17-11-7-60 Wellpath: Sidetrack	Date: 10/10/2012 Co-ordinate(NE) Reference: Vertical (TVD) Reference: Section (VS) Reference: Survey Calculation Method:	Time: 10:05:40 Well: 2-17-11-7-60, Grid North 4935'GL+17'KB 4952.0 Well (0.00N,0.00E,89.15Azi) Minimum Curvature	Page: 1 Db: Adapti
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Field: Niobrara CONZ'83			
Map System: US State Plane Coordinate System 1983		Map Zone: Colorado, Northern Zone	
Geo Datum: GRS 1980		Coordinate System: Well Centre	
Sys Datum: Mean Sea Level		Geomagnetic Model: IGRF2010	

Site: Slick Rock 17-11-7-60 Pad Sec 17 T7N R60W Weld County, CO			
Site Position:	Northing: 1457755.49 ft	Latitude: 40 34 54.361 N	
From: Map	Easting: 3382730.70 ft	Longitude: 104 7 19.445 W	
Position Uncertainty: 0.00 ft		North Reference: Grid	
Ground Level: 4935.00 ft		Grid Convergence: 0.89 deg	

Well: 2-17-11-7-60 offset from site	Slot Name: 2-17
Well Position: +N/-S -1051.83 ft	Northing: 1456703.66 ft
+E/-W -1037.72 ft	Latitude: 40 34 44.127 N
Position Uncertainty: 0.00 ft	Easting : 3381692.98 ft
	Longitude: 104 7 33.104 W

Wellpath: Sidetrack	Drilled From: Original Hole
Current Datum: 4935'GL+17'KB	Tie-on Depth: 7506.00 ft
Magnetic Data: 09/18/2012	Above System Datum: Mean Sea Level
Field Strength: 53200 nT	Declination: 8.36 deg
Vertical Section: Depth From (TVD)	Mag Dip Angle: 67.26 deg
ft	+N/-S
	+E/-W
	Direction
	deg
0.00	0.00
0.00	0.00
0.00	89.15

Survey Program for Definitive Wellpath				
Date: 09/27/2012		Validated: No		Version: 0
Actual From	To	Survey	Toolcode	Tool Name
ft	ft			
140.00	7506.00	Survey #1 (140.00-8568.00) (0)	MWD	Std MWD
7548.00	10642.00	Survey #1 (7548.00-10642.00)	MWD	Std MWD
10700.00	10700.00	Survey #2 (10700.00-10700.00)	Project	Projection

Survey										
MD	Incl	Azim	TVD	+N/-S	+E/-W	VS	DLS	Build	Turn	Tool/Comment
ft	deg	deg	ft	ft	ft	ft	deg/100ft	deg/100ft	deg/100ft	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	TIE LINE
140.00	0.60	319.00	140.00	0.55	-0.48	-0.47	0.43	0.43	0.00	MWD
232.00	2.70	316.70	231.95	2.49	-2.28	-2.25	2.28	2.28	-2.50	MWD
324.00	4.20	314.00	323.78	6.41	-6.19	-6.10	1.64	1.63	-2.93	MWD
418.00	5.20	313.70	417.47	11.75	-11.75	-11.57	1.06	1.06	-0.32	MWD
510.00	6.60	310.00	508.98	18.02	-18.81	-18.54	1.58	1.52	-4.02	MWD
602.00	7.30	311.10	600.30	25.27	-27.27	-26.89	0.77	0.76	1.20	MWD
694.00	6.60	313.20	691.63	32.73	-35.53	-35.04	0.81	-0.76	2.28	MWD
786.00	6.00	317.40	783.07	39.89	-42.64	-42.04	0.82	-0.65	4.57	MWD
878.00	6.90	318.80	874.49	47.58	-49.53	-48.82	0.99	0.98	1.52	MWD
970.00	7.70	320.20	965.74	56.48	-57.12	-56.27	0.89	0.87	1.52	MWD
1062.00	7.60	320.40	1056.92	65.90	-64.94	-63.95	0.11	-0.11	0.22	MWD
1154.00	7.50	319.00	1148.12	75.12	-72.76	-71.63	0.23	-0.11	-1.52	MWD
1246.00	7.50	317.90	1239.34	84.11	-80.72	-79.46	0.16	0.00	-1.20	MWD
1338.00	7.50	317.60	1330.55	92.99	-88.80	-87.41	0.04	0.00	-0.33	MWD
1422.00	7.70	319.00	1413.81	101.29	-96.18	-94.67	0.32	0.24	1.67	MWD
1514.00	7.60	327.20	1505.00	111.06	-103.52	-101.86	1.19	-0.11	8.91	MWD
1606.00	6.80	333.90	1596.27	121.06	-109.22	-107.41	1.26	-0.87	7.28	MWD
1698.00	6.00	331.40	1687.70	130.17	-113.91	-111.97	0.92	-0.87	-2.72	MWD
1783.00	6.10	339.40	1772.23	138.30	-117.63	-115.56	1.00	0.12	9.41	MWD
1868.00	5.50	343.20	1856.79	146.43	-120.40	-118.21	0.84	-0.71	4.47	MWD

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Company: CARRIZO OIL & GAS, INC.	Date: 10/10/2012	Time: 10:05:40	Page: 2
Field: Niobrara CONZ'83	Co-ordinate(NE) Reference: Well: 2-17-11-7-60, Grid North		
Site: Slick Rock 17-11-7-60 Pad	Vertical (TVD) Reference: 4935'GL+17'KB 4952.0		
Well: 2-17-11-7-60	Section (VS) Reference: Well (0.00N,0.00E,89.15Azi)		
Wellpath: Sidetrack	Survey Calculation Method: Minimum Curvature	Db: 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
1953.00	5.50	359.70	1941.40	154.40	-121.59	-119.29	1.85	0.00	19.41	MWD
2038.00	4.90	356.40	2026.05	162.10	-121.84	-119.43	0.79	-0.71	-3.88	MWD
2123.00	5.50	354.30	2110.70	169.78	-122.48	-119.94	0.74	0.71	-2.47	MWD
2208.00	5.70	358.00	2195.30	178.05	-123.03	-120.37	0.49	0.24	4.35	MWD
2294.00	6.70	349.90	2280.80	187.26	-124.06	-121.26	1.54	1.16	-9.42	MWD
2379.00	6.40	348.70	2365.24	196.78	-125.85	-122.92	0.39	-0.35	-1.41	MWD
2464.00	5.70	343.90	2449.77	205.48	-127.95	-124.89	1.02	-0.82	-5.65	MWD
2548.00	6.70	345.70	2533.28	214.24	-130.32	-127.13	1.21	1.19	2.14	MWD
2633.00	6.90	343.90	2617.68	223.95	-132.96	-129.62	0.34	0.24	-2.12	MWD
2718.00	6.80	342.50	2702.07	233.66	-135.89	-132.41	0.23	-0.12	-1.65	MWD
2804.00	6.70	340.20	2787.48	243.23	-139.12	-135.50	0.34	-0.12	-2.67	MWD
2888.00	6.80	349.60	2870.90	252.73	-141.68	-137.91	1.32	0.12	11.19	MWD
2972.00	6.80	349.90	2954.30	262.52	-143.45	-139.54	0.04	0.00	0.36	MWD
3056.00	6.00	354.30	3037.78	271.79	-144.76	-140.71	1.12	-0.95	5.24	MWD
3141.00	4.80	355.00	3122.40	279.75	-145.51	-141.34	1.41	-1.41	0.82	MWD
3226.00	4.40	353.90	3207.13	286.53	-146.16	-141.90	0.48	-0.47	-1.29	MWD
3309.00	4.40	352.00	3289.88	292.85	-146.95	-142.58	0.18	0.00	-2.29	MWD
3397.00	5.00	354.30	3377.59	300.01	-147.80	-143.33	0.71	0.68	2.61	MWD
3481.00	6.70	355.70	3461.15	308.54	-148.53	-143.93	2.03	2.02	1.67	MWD
3566.00	7.60	355.20	3545.48	319.09	-149.37	-144.62	1.06	1.06	-0.59	MWD
3651.00	7.00	359.70	3629.80	329.87	-149.87	-144.96	0.97	-0.71	5.29	MWD
3736.00	7.40	2.60	3714.13	340.51	-149.65	-144.58	0.64	0.47	3.41	MWD
3821.00	6.90	359.90	3798.47	351.09	-149.41	-144.18	0.71	-0.59	-3.18	MWD
3907.00	6.30	352.50	3883.90	360.93	-150.03	-144.66	1.21	-0.70	-8.60	MWD
3992.00	6.10	356.10	3968.40	370.06	-150.95	-145.44	0.51	-0.24	4.24	MWD
4077.00	5.50	3.60	4052.97	378.63	-151.00	-145.36	1.14	-0.71	8.82	MWD
4162.00	5.30	345.70	4137.59	386.50	-151.71	-145.96	1.99	-0.24	-21.06	MWD
4248.00	5.50	339.50	4223.21	394.21	-154.14	-148.27	0.72	0.23	-7.21	MWD
4333.00	5.80	337.40	4307.80	401.99	-157.21	-151.23	0.43	0.35	-2.47	MWD
4418.00	6.20	337.20	4392.33	410.19	-160.64	-154.54	0.47	0.47	-0.24	MWD
4503.00	6.20	341.50	4476.84	418.77	-163.88	-157.65	0.55	0.00	5.06	MWD
4588.00	6.30	341.50	4561.33	427.55	-166.81	-160.45	0.12	0.12	0.00	MWD
4674.00	6.80	348.00	4646.77	437.01	-169.37	-162.87	1.04	0.58	7.56	MWD
4759.00	6.60	348.50	4731.19	446.71	-171.39	-164.74	0.25	-0.24	0.59	MWD
4844.00	6.80	348.00	4815.61	456.42	-173.41	-166.62	0.25	0.24	-0.59	MWD
4929.00	7.00	347.60	4900.00	466.40	-175.57	-168.63	0.24	0.24	-0.47	MWD
5015.00	7.30	359.20	4985.33	476.99	-176.77	-169.67	1.71	0.35	13.49	MWD
5100.00	6.20	355.70	5069.74	486.96	-177.19	-169.95	1.38	-1.29	-4.12	MWD
5185.00	5.40	350.60	5154.31	495.49	-178.19	-170.82	1.12	-0.94	-6.00	MWD
5270.00	4.90	351.70	5238.96	503.02	-179.36	-171.88	0.60	-0.59	1.29	MWD
5355.00	4.00	351.30	5323.70	509.55	-180.34	-172.76	1.06	-1.06	-0.47	MWD
5440.00	4.40	351.70	5408.48	515.70	-181.26	-173.59	0.47	0.47	0.47	MWD
5525.00	4.40	358.90	5493.23	522.19	-181.79	-174.02	0.65	0.00	8.47	MWD
5610.00	5.60	357.50	5577.90	529.59	-182.03	-174.16	1.42	1.41	-1.65	MWD
5695.00	6.20	358.00	5662.45	538.32	-182.37	-174.37	0.71	0.71	0.59	MWD
5756.00	7.30	357.10	5723.03	545.49	-182.69	-174.57	1.81	1.80	-1.48	MWD
5799.00	5.60	0.30	5765.75	550.31	-182.81	-174.63	4.04	-3.95	7.44	MWD
5842.00	7.80	41.80	5808.48	554.59	-180.86	-172.61	12.01	5.12	96.51	MWD
5884.00	11.70	65.10	5849.88	558.51	-175.09	-166.78	13.03	9.29	55.48	MWD
5927.00	16.00	73.20	5891.63	562.06	-165.46	-157.10	10.95	10.00	18.84	MWD
5969.00	19.40	78.50	5931.63	565.13	-153.07	-144.67	8.95	8.10	12.62	MWD
6012.00	24.10	79.60	5971.56	568.14	-137.43	-128.99	10.97	10.93	2.56	MWD
6055.00	28.70	80.40	6010.07	571.45	-118.61	-110.12	10.73	10.70	1.86	MWD
6097.00	32.60	81.50	6046.19	574.80	-97.47	-88.93	9.38	9.29	2.62	MWD

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Well: 2-17-11-7-60	Section (VS) Reference: Well (0.00N,0.00E,89.15Azi)		
Wellpath: Sidetrack	Survey Calculation Method: Minimum Curvature	Db: 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
6140.00	36.10	82.00	6081.69	578.28	-73.46	-64.87	8.17	8.14	1.16	MWD
6182.00	39.60	81.80	6114.85	581.91	-47.95	-39.31	8.34	8.33	-0.48	MWD
6225.00	43.20	83.60	6147.10	585.51	-19.75	-11.06	8.82	8.37	4.19	MWD
6268.00	46.30	84.60	6177.63	588.61	10.36	19.09	7.39	7.21	2.33	MWD
6310.00	49.60	83.80	6205.76	591.77	41.38	50.16	7.98	7.86	-1.90	MWD
6353.00	54.00	82.20	6232.35	595.90	74.91	83.74	10.64	10.23	-3.72	MWD
6396.00	56.20	80.40	6256.95	601.24	109.77	118.67	6.16	5.12	-4.19	MWD
6462.00	58.60	74.60	6292.53	613.30	164.00	173.08	8.25	3.64	-8.79	MWD
6505.00	63.40	78.10	6313.37	622.15	200.54	209.74	13.24	11.16	8.14	MWD
6547.00	69.60	79.60	6330.11	629.58	238.31	247.62	15.12	14.76	3.57	MWD
6590.00	73.90	81.30	6343.58	636.34	278.57	287.98	10.68	10.00	3.95	MWD
6626.00	75.83	82.47	6352.98	641.25	312.97	322.45	6.21	5.35	3.26	600' entry
6633.00	76.20	82.70	6354.67	642.12	319.71	329.20	6.21	5.36	3.23	MWD
6675.00	80.40	84.80	6363.18	646.59	360.58	370.13	11.13	10.00	5.00	MWD
6718.00	86.30	86.90	6368.16	649.68	403.16	412.75	14.55	13.72	4.88	MWD
6760.00	92.70	88.30	6368.53	651.44	445.09	454.71	15.60	15.24	3.33	MWD
6826.00	94.10	88.20	6364.61	653.45	510.95	520.58	2.13	2.12	-0.15	MWD
6869.00	90.20	91.50	6363.00	653.56	553.90	563.54	11.88	-9.07	7.67	MWD
6911.00	87.70	93.40	6363.77	651.76	595.85	605.45	7.48	-5.95	4.52	MWD
6954.00	87.20	93.40	6365.68	649.22	638.73	648.29	1.16	-1.16	0.00	MWD
6996.00	87.20	93.40	6367.74	646.73	680.61	690.13	0.00	0.00	0.00	MWD
7039.00	88.90	92.40	6369.20	644.55	723.53	733.01	4.59	3.95	-2.33	MWD
7081.00	88.50	92.40	6370.15	642.80	765.48	774.93	0.95	-0.95	0.00	MWD
7124.00	88.10	92.60	6371.43	640.92	808.42	817.84	1.04	-0.93	0.47	MWD
7167.00	87.40	92.60	6373.12	638.97	851.34	860.73	1.63	-1.63	0.00	MWD
7209.00	86.90	92.40	6375.20	637.14	893.25	902.60	1.28	-1.19	-0.48	MWD
7251.00	88.70	92.60	6376.82	635.31	935.18	944.50	4.31	4.29	0.48	MWD
7293.00	88.90	92.60	6377.70	633.41	977.12	986.41	0.48	0.48	0.00	MWD
7336.00	89.30	91.70	6378.37	631.79	1020.09	1029.35	2.29	0.93	-2.09	MWD
7378.00	90.00	91.20	6378.63	630.73	1062.07	1071.31	2.05	1.67	-1.19	MWD
7421.00	88.90	88.90	6379.04	630.69	1105.07	1114.30	5.93	-2.56	-5.35	MWD
7463.00	88.80	89.40	6379.88	631.32	1147.05	1156.29	1.21	-0.24	1.19	MWD
7506.00	89.90	89.90	6380.37	631.58	1190.05	1199.29	2.81	2.56	1.16	MWD
7548.00	89.30	90.60	6380.66	631.40	1232.05	1241.28	2.20	-1.43	1.67	MWD
7591.00	92.20	93.60	6380.10	629.82	1275.01	1284.21	9.70	6.74	6.98	MWD
7633.00	93.40	96.20	6378.05	626.24	1316.80	1325.94	6.81	2.86	6.19	MWD
7676.00	93.80	96.40	6375.35	621.53	1359.45	1368.52	1.04	0.93	0.47	MWD
7718.00	92.90	95.90	6372.90	617.04	1401.14	1410.14	2.45	-2.14	-1.19	MWD
7761.00	90.70	94.80	6371.54	613.03	1443.93	1452.86	5.72	-5.12	-2.56	MWD
7803.00	89.10	94.00	6371.62	609.81	1485.80	1494.69	4.26	-3.81	-1.90	MWD
7846.00	89.20	90.60	6372.26	608.08	1528.76	1537.61	7.91	0.23	-7.91	MWD
7887.00	89.10	89.60	6372.86	608.01	1569.75	1578.60	2.45	-0.24	-2.44	MWD
7930.00	89.00	91.90	6373.58	607.45	1612.74	1621.57	5.35	-0.23	5.35	MWD
7972.00	88.00	91.50	6374.68	606.20	1654.71	1663.52	2.56	-2.38	-0.95	MWD
8015.00	86.50	91.20	6376.74	605.19	1697.64	1706.44	3.56	-3.49	-0.70	MWD
8057.00	85.60	91.00	6379.63	604.39	1739.54	1748.31	2.19	-2.14	-0.48	MWD
8100.00	86.30	91.30	6382.67	603.53	1782.42	1791.18	1.77	1.63	0.70	MWD
8143.00	86.90	91.00	6385.22	602.67	1825.34	1834.07	1.56	1.40	-0.70	MWD
8185.00	87.60	90.40	6387.24	602.15	1867.28	1876.01	2.19	1.67	-1.43	MWD
8228.00	89.10	89.40	6388.47	602.23	1910.26	1918.99	4.19	3.49	-2.33	MWD
8270.00	89.80	88.90	6388.88	602.85	1952.26	1960.98	2.05	1.67	-1.19	MWD
8312.00	89.50	89.00	6389.13	603.62	1994.25	2002.98	0.75	-0.71	0.24	MWD
8354.00	89.50	89.00	6389.50	604.35	2036.24	2044.98	0.00	0.00	0.00	MWD

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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
8397.00	89.90	88.70	6389.72	605.22	2079.23	2087.98	1.16	0.93	-0.70	MWD
8440.00	91.90	88.30	6389.05	606.34	2122.21	2130.97	4.74	4.65	-0.93	MWD
8482.00	92.00	88.30	6387.62	607.59	2164.17	2172.94	0.24	0.24	0.00	MWD
8525.00	92.00	88.20	6386.12	608.90	2207.12	2215.91	0.23	0.00	-0.23	MWD
8567.00	92.10	88.00	6384.62	610.29	2249.07	2257.88	0.53	0.24	-0.48	MWD
8610.00	92.80	87.80	6382.78	611.87	2292.00	2300.83	1.69	1.63	-0.47	MWD
8653.00	93.00	87.30	6380.60	613.70	2334.91	2343.75	1.25	0.47	-1.16	MWD
8695.00	92.80	87.80	6378.48	615.49	2376.81	2385.68	1.28	-0.48	1.19	MWD
8738.00	91.40	88.50	6376.90	616.88	2419.76	2428.65	3.64	-3.26	1.63	MWD
8780.00	90.40	89.20	6376.24	617.72	2461.75	2470.64	2.91	-2.38	1.67	MWD
8823.00	90.50	89.20	6375.91	618.32	2504.74	2513.64	0.23	0.23	0.00	MWD
8865.00	90.90	88.90	6375.39	619.02	2546.73	2555.64	1.19	0.95	-0.71	MWD
8908.00	91.20	88.90	6374.60	619.85	2589.72	2598.63	0.70	0.70	0.00	MWD
8949.00	92.60	89.00	6373.25	620.60	2630.69	2639.60	3.42	3.41	0.24	MWD
8992.00	92.90	88.50	6371.18	621.53	2673.63	2682.55	1.35	0.70	-1.16	MWD
9034.00	93.40	88.50	6368.87	622.63	2715.55	2724.49	1.19	1.19	0.00	MWD
9077.00	91.60	88.50	6367.00	623.76	2758.49	2767.44	4.19	-4.19	0.00	MWD
9119.00	90.00	89.00	6366.41	624.67	2800.48	2809.44	3.99	-3.81	1.19	MWD
9162.00	90.00	89.00	6366.41	625.42	2843.47	2852.44	0.00	0.00	0.00	MWD
9204.00	89.80	88.30	6366.49	626.41	2885.46	2894.43	1.73	-0.48	-1.67	MWD
9245.00	89.10	88.00	6366.88	627.74	2926.43	2935.42	1.86	-1.71	-0.73	MWD
9288.00	89.50	87.50	6367.40	629.42	2969.40	2978.41	1.49	0.93	-1.16	MWD
9331.00	89.50	87.30	6367.78	631.37	3012.35	3021.39	0.47	0.00	-0.47	MWD
9373.00	89.70	86.80	6368.07	633.54	3054.30	3063.36	1.28	0.48	-1.19	MWD
9416.00	88.40	86.40	6368.79	636.09	3097.21	3106.31	3.16	-3.02	-0.93	MWD
9458.00	88.20	85.90	6370.03	638.90	3139.10	3148.23	1.28	-0.48	-1.19	MWD
9501.00	89.70	86.10	6370.82	641.90	3181.99	3191.16	3.52	3.49	0.47	MWD
9544.00	90.70	86.10	6370.67	644.83	3224.89	3234.10	2.33	2.33	0.00	MWD
9586.00	91.10	86.20	6370.01	647.65	3266.79	3276.03	0.98	0.95	0.24	MWD
9629.00	91.80	87.50	6368.92	650.01	3309.71	3318.98	3.43	1.63	3.02	MWD
9671.00	91.30	88.30	6367.79	651.55	3351.66	3360.96	2.25	-1.19	1.90	MWD
9714.00	90.40	89.60	6367.15	652.34	3394.65	3403.95	3.68	-2.09	3.02	MWD
9757.00	89.80	90.10	6367.07	652.45	3437.65	3446.95	1.82	-1.40	1.16	MWD
9799.00	89.30	90.30	6367.40	652.30	3479.65	3488.94	1.28	-1.19	0.48	MWD
9842.00	88.70	89.90	6368.15	652.23	3522.64	3531.93	1.68	-1.40	-0.93	MWD
9884.00	88.20	89.90	6369.29	652.30	3564.62	3573.91	1.19	-1.19	0.00	MWD
9927.00	87.80	89.90	6370.79	652.38	3607.60	3616.88	0.93	-0.93	0.00	MWD
9970.00	87.30	89.70	6372.63	652.53	3650.56	3659.84	1.25	-1.16	-0.47	MWD
10012.00	88.50	89.40	6374.17	652.85	3692.53	3701.81	2.94	2.86	-0.71	MWD
10055.00	89.00	89.40	6375.11	653.31	3735.51	3744.79	1.16	1.16	0.00	MWD
10097.00	89.10	89.20	6375.80	653.82	3777.51	3786.79	0.53	0.24	-0.48	MWD
10140.00	89.50	88.20	6376.33	654.79	3820.49	3829.78	2.50	0.93	-2.33	MWD
10182.00	91.50	88.20	6375.96	656.11	3862.47	3871.77	4.76	4.76	0.00	MWD
10225.00	91.60	87.50	6374.80	657.73	3905.42	3914.75	1.64	0.23	-1.63	MWD
10268.00	91.90	87.50	6373.48	659.60	3948.36	3957.71	0.70	0.70	0.00	MWD
10310.00	92.00	86.80	6372.05	661.69	3990.28	3999.66	1.68	0.24	-1.67	MWD
10353.00	92.20	86.40	6370.48	664.24	4033.18	4042.59	1.04	0.47	-0.93	MWD
10395.00	92.40	86.20	6368.79	666.94	4075.06	4084.50	0.67	0.48	-0.48	MWD
10438.00	92.70	86.40	6366.88	669.72	4117.92	4127.41	0.84	0.70	0.47	MWD
10481.00	92.90	86.40	6364.78	672.41	4160.79	4170.31	0.47	0.47	0.00	MWD
10523.00	92.80	86.40	6362.69	675.05	4202.65	4212.21	0.24	-0.24	0.00	MWD
10608.00	93.00	86.10	6358.39	680.60	4287.36	4296.99	0.42	0.24	-0.35	MWD
10642.00	93.50	86.40	6356.46	682.82	4321.24	4330.89	1.71	1.47	0.88	MWD

Precision Directional Services, Inc.

Survey Report

Company: CARRIZO OIL & GAS, INC.
Field: Niobrara CONZ'83
Site: Slick Rock 17-11-7-60 Pad
Well: 2-17-11-7-60
Wellpath: Sidetrack

Date: 10/10/2012
Co-ordinate(NE) Reference: Well: 2-17-11-7-60, Grid North
Vertical (TVD) Reference: 4935'GL+17'KB 4952.0
Section (VS) Reference: Well (0.00N,0.00E,89.15Azi)
Survey Calculation Method: Minimum Curvature
Page: 5
Db: 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
10700.00	93.50	86.40	6352.92	686.45	4379.01	4388.71	0.00	0.00	0.00	Project

Annotation

MD ft	TVD ft	
6626.00	6352.98	600' entry