



Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC.		Date: 10/08/2014	Time: 10:33:55	Page: 1
Field: Niobrara CONZ'83		Co-ordinate(NE) Reference: Well: 2-3-9-59, Grid North		
Site: Timbro Ranch 1-3-9-59 Pad		Vertical (TVD) Reference: 5065'GL+17'KB 5082.0		
Well: 2-3-9-59		Section (VS) Reference: Well (0.00N,0.00E,179.16Azi)		
Wellpath: Original Hole		Plan: Plan #1		

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: Timbro Ranch 1-3-9-59 Pad				
Weld County, CO				
Site Position:	Northing: 1532959.63 ft	Latitude: 40 47 10.426 N		
From: Map	Easting: 3425521.39 ft	Longitude: 103 57 48.044 W		
Position Uncertainty: 0.00 ft		North Reference: Grid		
Ground Level: 5065.00 ft		Grid Convergence: 0.99 deg		

Well: 2-3-9-59		Slot Name: 2-3		
Well Position:	+N/-S -3.08 ft	Northing: 1532956.55 ft	Latitude: 40 47 10.398 N	
	+E/-W -14.68 ft	Easting : 3425506.71 ft	Longitude: 103 57 48.235 W	
Position Uncertainty: 0.00 ft				

Wellpath: Original Hole		Drilled From: Surface		
Current Datum: 5065'GL+17'KB	Height 5082.00 ft	Tie-on Depth: 0.00 ft		
Magnetic Data: 10/31/2014		Above System Datum: Mean Sea Level		
Field Strength: 53096 nT		Declination: 8.00 deg		
Vertical Section: Depth From (TVD)	+N/-S ft	Mag Dip Angle: 67.37 deg		
		+E/-W ft	Direction deg	
0.00	0.00	0.00	179.16	

Plan: Plan #1		Date Composed: 10/08/2014	
Principal: No		Version: 1	
		Tied-to: 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	
532.24	3.32	338.32	532.05	8.95	-3.56	1.00	1.00	0.00	0.00	
5654.94	3.32	338.32	5646.14	284.83	-113.24	0.00	0.00	0.00	0.00	
6585.98	90.00	179.16	6250.00	-287.41	-117.36	10.00	9.31	-17.09	-159.12	
10620.67	90.00	179.16	6250.00	-4321.67	-58.47	0.00	0.00	0.00	0.00	PBHL 2-3

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
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	1.00	338.32	299.99	0.81	-0.32	-0.82	1.00	1.00	0.00	
400.00	2.00	338.32	399.96	3.24	-1.29	-3.26	1.00	1.00	0.00	
500.00	3.00	338.32	499.86	7.30	-2.90	-7.34	1.00	1.00	0.00	
532.24	3.32	338.32	532.05	8.95	-3.56	-9.00	1.00	1.00	0.00	
600.00	3.32	338.32	599.70	12.60	-5.01	-12.67	0.00	0.00	0.00	
700.00	3.32	338.32	699.53	17.98	-7.15	-18.09	0.00	0.00	0.00	
800.00	3.32	338.32	799.36	23.37	-9.29	-23.50	0.00	0.00	0.00	
900.00	3.32	338.32	899.20	28.75	-11.43	-28.92	0.00	0.00	0.00	
1000.00	3.32	338.32	999.03	34.14	-13.57	-34.33	0.00	0.00	0.00	
1100.00	3.32	338.32	1098.86	39.53	-15.71	-39.75	0.00	0.00	0.00	
1200.00	3.32	338.32	1198.69	44.91	-17.85	-45.17	0.00	0.00	0.00	
1300.00	3.32	338.32	1298.52	50.30	-20.00	-50.58	0.00	0.00	0.00	

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Field: Niobrara CONZ'83
Site: Timbro Ranch 1-3-9-59 Pad
Well: 2-3-9-59
Wellpath: Original Hole

Date: 10/08/2014
Co-ordinate(NE) Reference: Well: 2-3-9-59, Grid North
Vertical (TVD) Reference: 5065'GL+17'KB 5082.0
Section (VS) Reference: Well (0.00N,0.00E,179.16Azi)
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
1400.00	3.32	338.32	1398.36	55.68	-22.14	-56.00	0.00	0.00	0.00	9 5/8"
1401.65	3.32	338.32	1400.00	55.77	-22.17	-56.09	0.00	0.00	0.00	
1500.00	3.32	338.32	1498.19	61.07	-24.28	-61.42	0.00	0.00	0.00	
1600.00	3.32	338.32	1598.02	66.45	-26.42	-66.83	0.00	0.00	0.00	
1700.00	3.32	338.32	1697.85	71.84	-28.56	-72.25	0.00	0.00	0.00	
1800.00	3.32	338.32	1797.68	77.22	-30.70	-77.66	0.00	0.00	0.00	
1900.00	3.32	338.32	1897.51	82.61	-32.84	-83.08	0.00	0.00	0.00	
2000.00	3.32	338.32	1997.35	87.99	-34.98	-88.50	0.00	0.00	0.00	
2100.00	3.32	338.32	2097.18	93.38	-37.12	-93.91	0.00	0.00	0.00	
2200.00	3.32	338.32	2197.01	98.76	-39.27	-99.33	0.00	0.00	0.00	
2300.00	3.32	338.32	2296.84	104.15	-41.41	-104.75	0.00	0.00	0.00	
2400.00	3.32	338.32	2396.67	109.54	-43.55	-110.16	0.00	0.00	0.00	
2500.00	3.32	338.32	2496.51	114.92	-45.69	-115.58	0.00	0.00	0.00	
2600.00	3.32	338.32	2596.34	120.31	-47.83	-120.99	0.00	0.00	0.00	
2700.00	3.32	338.32	2696.17	125.69	-49.97	-126.41	0.00	0.00	0.00	
2800.00	3.32	338.32	2796.00	131.08	-52.11	-131.83	0.00	0.00	0.00	
2900.00	3.32	338.32	2895.83	136.46	-54.25	-137.24	0.00	0.00	0.00	
3000.00	3.32	338.32	2995.67	141.85	-56.39	-142.66	0.00	0.00	0.00	
3100.00	3.32	338.32	3095.50	147.23	-58.54	-148.08	0.00	0.00	0.00	
3200.00	3.32	338.32	3195.33	152.62	-60.68	-153.49	0.00	0.00	0.00	
3300.00	3.32	338.32	3295.16	158.00	-62.82	-158.91	0.00	0.00	0.00	
3400.00	3.32	338.32	3394.99	163.39	-64.96	-164.32	0.00	0.00	0.00	
3500.00	3.32	338.32	3494.83	168.78	-67.10	-169.74	0.00	0.00	0.00	
3600.00	3.32	338.32	3594.66	174.16	-69.24	-175.16	0.00	0.00	0.00	
3700.00	3.32	338.32	3694.49	179.55	-71.38	-180.57	0.00	0.00	0.00	
3800.00	3.32	338.32	3794.32	184.93	-73.52	-185.99	0.00	0.00	0.00	
3900.00	3.32	338.32	3894.15	190.32	-75.66	-191.41	0.00	0.00	0.00	
4000.00	3.32	338.32	3993.99	195.70	-77.80	-196.82	0.00	0.00	0.00	
4100.00	3.32	338.32	4093.82	201.09	-79.95	-202.24	0.00	0.00	0.00	
4200.00	3.32	338.32	4193.65	206.47	-82.09	-207.65	0.00	0.00	0.00	
4300.00	3.32	338.32	4293.48	211.86	-84.23	-213.07	0.00	0.00	0.00	
4400.00	3.32	338.32	4393.31	217.24	-86.37	-218.49	0.00	0.00	0.00	
4500.00	3.32	338.32	4493.14	222.63	-88.51	-223.90	0.00	0.00	0.00	
4600.00	3.32	338.32	4592.98	228.02	-90.65	-229.32	0.00	0.00	0.00	
4700.00	3.32	338.32	4692.81	233.40	-92.79	-234.74	0.00	0.00	0.00	
4800.00	3.32	338.32	4792.64	238.79	-94.93	-240.15	0.00	0.00	0.00	
4900.00	3.32	338.32	4892.47	244.17	-97.07	-245.57	0.00	0.00	0.00	
5000.00	3.32	338.32	4992.30	249.56	-99.22	-250.98	0.00	0.00	0.00	
5100.00	3.32	338.32	5092.14	254.94	-101.36	-256.40	0.00	0.00	0.00	
5200.00	3.32	338.32	5191.97	260.33	-103.50	-261.82	0.00	0.00	0.00	
5300.00	3.32	338.32	5291.80	265.71	-105.64	-267.23	0.00	0.00	0.00	
5400.00	3.32	338.32	5391.63	271.10	-107.78	-272.65	0.00	0.00	0.00	
5500.00	3.32	338.32	5491.46	276.48	-109.92	-278.07	0.00	0.00	0.00	
5600.00	3.32	338.32	5591.30	281.87	-112.06	-283.48	0.00	0.00	0.00	
5654.94	3.32	338.32	5646.14	284.83	-113.24	-286.46	0.00	0.00	0.00	
5700.00	1.83	219.33	5691.18	285.48	-114.18	-287.13	10.00	-3.30	-264.04	
5800.00	11.46	185.01	5790.41	274.32	-116.06	-275.99	10.00	9.63	-34.32	
5900.00	21.43	182.18	5886.20	246.09	-117.63	-247.79	10.00	9.97	-2.83	
6000.00	31.42	181.10	5975.63	201.66	-118.83	-203.38	10.00	9.99	-1.08	
6100.00	41.42	180.51	6056.00	142.37	-119.63	-144.11	10.00	9.99	-0.60	
6200.00	51.41	180.11	6124.86	70.03	-119.99	-71.78	10.00	10.00	-0.40	7"
6300.00	61.41	179.81	6180.11	-13.16	-119.92	11.40	10.00	10.00	-0.30	
6385.94	70.00	179.59	6215.44	-91.42	-119.51	89.66	10.00	10.00	-0.25	
6400.00	71.41	179.56	6220.09	-104.69	-119.41	102.93	10.00	10.00	-0.23	

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Section (VS) Reference: Well (0.00N,0.00E,179.16Azi)
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
6500.00	81.40	179.34	6243.56	-201.76	-118.48	200.00	10.00	10.00	-0.22	
6585.98	90.00	179.16	6250.00	-287.41	-117.36	285.66	10.00	10.00	-0.21	
6600.00	90.00	179.16	6250.00	-301.43	-117.16	299.68	0.00	0.00	0.00	
6700.00	90.00	179.16	6250.00	-401.42	-115.70	399.68	0.00	0.00	0.00	
6800.00	90.00	179.16	6250.00	-501.40	-114.24	499.68	0.00	0.00	0.00	
6900.00	90.00	179.16	6250.00	-601.39	-112.78	599.68	0.00	0.00	0.00	
7000.00	90.00	179.16	6250.00	-701.38	-111.32	699.68	0.00	0.00	0.00	
7100.00	90.00	179.16	6250.00	-801.37	-109.86	799.68	0.00	0.00	0.00	
7200.00	90.00	179.16	6250.00	-901.36	-108.40	899.68	0.00	0.00	0.00	
7300.00	90.00	179.16	6250.00	-1001.35	-106.94	999.68	0.00	0.00	0.00	
7400.00	90.00	179.16	6250.00	-1101.34	-105.48	1099.68	0.00	0.00	0.00	
7500.00	90.00	179.16	6250.00	-1201.33	-104.02	1199.68	0.00	0.00	0.00	
7600.00	90.00	179.16	6250.00	-1301.32	-102.56	1299.68	0.00	0.00	0.00	
7700.00	90.00	179.16	6250.00	-1401.31	-101.10	1399.68	0.00	0.00	0.00	
7800.00	90.00	179.16	6250.00	-1501.30	-99.64	1499.68	0.00	0.00	0.00	
7900.00	90.00	179.16	6250.00	-1601.29	-98.18	1599.68	0.00	0.00	0.00	
8000.00	90.00	179.16	6250.00	-1701.28	-96.72	1699.68	0.00	0.00	0.00	
8100.00	90.00	179.16	6250.00	-1801.27	-95.26	1799.68	0.00	0.00	0.00	
8200.00	90.00	179.16	6250.00	-1901.26	-93.80	1899.68	0.00	0.00	0.00	
8300.00	90.00	179.16	6250.00	-2001.24	-92.34	1999.68	0.00	0.00	0.00	
8400.00	90.00	179.16	6250.00	-2101.23	-90.88	2099.68	0.00	0.00	0.00	
8500.00	90.00	179.16	6250.00	-2201.22	-89.42	2199.68	0.00	0.00	0.00	
8600.00	90.00	179.16	6250.00	-2301.21	-87.96	2299.68	0.00	0.00	0.00	
8700.00	90.00	179.16	6250.00	-2401.20	-86.50	2399.68	0.00	0.00	0.00	
8800.00	90.00	179.16	6250.00	-2501.19	-85.04	2499.68	0.00	0.00	0.00	
8900.00	90.00	179.16	6250.00	-2601.18	-83.58	2599.68	0.00	0.00	0.00	
9000.00	90.00	179.16	6250.00	-2701.17	-82.13	2699.68	0.00	0.00	0.00	
9100.00	90.00	179.16	6250.00	-2801.16	-80.67	2799.68	0.00	0.00	0.00	
9200.00	90.00	179.16	6250.00	-2901.15	-79.21	2899.68	0.00	0.00	0.00	
9300.00	90.00	179.16	6250.00	-3001.14	-77.75	2999.68	0.00	0.00	0.00	
9400.00	90.00	179.16	6250.00	-3101.13	-76.29	3099.68	0.00	0.00	0.00	
9500.00	90.00	179.16	6250.00	-3201.12	-74.83	3199.68	0.00	0.00	0.00	
9600.00	90.00	179.16	6250.00	-3301.11	-73.37	3299.68	0.00	0.00	0.00	
9700.00	90.00	179.16	6250.00	-3401.10	-71.91	3399.68	0.00	0.00	0.00	
9800.00	90.00	179.16	6250.00	-3501.09	-70.45	3499.68	0.00	0.00	0.00	
9900.00	90.00	179.16	6250.00	-3601.07	-68.99	3599.68	0.00	0.00	0.00	
10000.00	90.00	179.16	6250.00	-3701.06	-67.53	3699.68	0.00	0.00	0.00	
10100.00	90.00	179.16	6250.00	-3801.05	-66.07	3799.68	0.00	0.00	0.00	
10200.00	90.00	179.16	6250.00	-3901.04	-64.61	3899.68	0.00	0.00	0.00	
10300.00	90.00	179.16	6250.00	-4001.03	-63.15	3999.68	0.00	0.00	0.00	
10400.00	90.00	179.16	6250.00	-4101.02	-61.69	4099.68	0.00	0.00	0.00	
10500.00	90.00	179.16	6250.00	-4201.01	-60.23	4199.68	0.00	0.00	0.00	
10600.00	90.00	179.16	6250.00	-4301.00	-58.77	4299.68	0.00	0.00	0.00	
10620.67	90.00	179.16	6250.00	-4321.67	-58.47	4320.35	0.00	0.00	0.00	PBHL 2-3

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 2-3			0.00	0.00	0.00	1532956.55	3425506.71	40	47	10.398	N	103	57	48.235	W
PBHL 2-3			6250.00	-4321.67	-58.47	1528634.88	3425448.24	40	46	27.712	N	103	57	49.968	W

Precision Directional Services, Inc.

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Field: Niobrara CONZ'83
Site: Timbro Ranch 1-3-9-59 Pad
Well: 2-3-9-59
Wellpath: Original Hole

Date: 10/08/2014
Co-ordinate(NE) Reference: Well: 2-3-9-59, Grid North
Vertical (TVD) Reference: 5065'GL+17'KB 5082.0
Section (VS) Reference: Well (0.00N,0.00E,179.16Azi)
Plan: Plan #1

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Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
1401.65	1400.00	9.625	12.250	9 5/8"
6385.94	6215.44	7.000	8.500	7"