



Precision Directional Services, Inc.

Planning Report

Company: CARRIZO OIL & GAS, INC. Field: Niobrara CONZ'83 Site: Bringleson Ranch 8-20-9-58 Well: 12-20-9-58 Wellpath: Original Hole	Date: 01/23/2014 Co-ordinate(NE) Reference: Well: 12-20-9-58, Grid North Vertical (TVD) Reference: 4919'GL+17'KB 4936.0 Section (VS) Reference: Well (0.00N,0.00E,88.54Azi) Plan: Plan #4	Time: 14:02:47 Page: 1
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Field: Niobrara CONZ'83	
Map System: US State Plane Coordinate System 1983 Geo Datum: GRS 1980 Sys Datum: Mean Sea Level	Map Zone: Colorado, Northern Zone Coordinate System: Well Centre Geomagnetic Model: IGRF2010

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

Well: 12-20-9-58 updated SLx2 2011 FSL, 535'FWL Well Position: +N/-S 36.46 ft +E/-W -47.65 ft Position Uncertainty: 0.00 ft	Slot Name: 12-20 Latitude: 40 44 5.147 N Longitude: 103 53 44.626 W
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Wellpath: Original Hole Current Datum: 4919'GL+17'KB Magnetic Data: 01/31/2014 Field Strength: 53156 nT Vertical Section: Depth From (TVD) ft	Height 4936.00 ft	Drilled From: Surface Tie-on Depth: 0.00 ft Above System Datum: Mean Sea Level Declination: 8.06 deg Mag Dip Angle: 67.37 deg +E/-W ft Direction deg
0.00	0.00	0.00 88.54

Plan: Plan #4 updated SL Principal: No	Date Composed: 01/23/2014 Version: 1 Tied-to: From Surface
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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	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
150.00	0.00	5.00	150.00	0.00	0.00	0.00	0.00	0.00	5.00	
300.00	3.00	5.00	299.93	3.91	0.34	2.00	2.00	0.00	5.00	
585.90	7.00	312.00	584.81	23.04	-11.96	2.00	1.40	-18.54	282.34	
5327.88	7.00	312.00	5291.44	409.73	-441.43	0.00	0.00	0.00	0.00	
5547.27	22.10	32.00	5504.56	454.22	-429.34	10.00	6.88	36.47	97.39	
6301.46	90.00	80.00	5915.00	672.48	95.23	10.00	9.00	6.36	50.16	
6586.94	90.00	88.56	5915.00	700.89	379.03	3.00	0.00	3.00	90.00	
10338.14	90.00	88.56	5915.00	794.87	4129.05	0.00	0.00	0.00	0.00	PBHL #12-20

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	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	5.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
150.00	0.00	5.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	1.00	5.00	200.00	0.43	0.04	0.05	2.00	2.00	0.00	
300.00	3.00	5.00	299.93	3.91	0.34	0.44	2.00	2.00	0.00	
400.00	3.94	335.29	399.75	9.64	-0.87	-0.62	2.00	0.94	-29.71	
500.00	5.49	319.56	499.42	16.41	-5.41	-4.99	2.00	1.54	-15.74	
585.90	7.00	312.00	584.81	23.04	-11.96	-11.37	2.00	1.76	-8.80	
600.00	7.00	312.00	598.80	24.19	-13.24	-12.62	0.00	0.00	0.00	
700.00	7.00	312.00	698.06	32.34	-22.30	-21.46	0.00	0.00	0.00	
800.00	7.00	312.00	797.31	40.50	-31.35	-30.31	0.00	0.00	0.00	
900.00	7.00	312.00	896.57	48.65	-40.41	-39.16	0.00	0.00	0.00	
1000.00	7.00	312.00	995.82	56.81	-49.47	-48.00	0.00	0.00	0.00	

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Planning Report

Company: CARRIZO OIL & GAS, INC.
Field: Niobrara CONZ'83
Site: Bringleson Ranch 8-20-9-58
Well: 12-20-9-58
Wellpath: Original Hole

Date: 01/23/2014
Co-ordinate(NE) Reference: Well: 12-20-9-58, Grid North
Vertical (TVD) Reference: 4919'GL+17'KB 4936.0
Section (VS) Reference: Well (0.00N,0.00E,88.54Azi)
Plan: Plan #4

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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
1100.00	7.00	312.00	1095.07	64.96	-58.52	-56.85	0.00	0.00	0.00	
1200.00	7.00	312.00	1194.33	73.11	-67.58	-65.69	0.00	0.00	0.00	
1300.00	7.00	312.00	1293.58	81.27	-76.64	-74.54	0.00	0.00	0.00	
1400.00	7.00	312.00	1392.84	89.42	-85.69	-83.39	0.00	0.00	0.00	
1447.52	7.00	312.00	1440.00	93.30	-90.00	-87.59	0.00	0.00	0.00	9 5/8"
1500.00	7.00	312.00	1492.09	97.58	-94.75	-92.23	0.00	0.00	0.00	
1600.00	7.00	312.00	1591.35	105.73	-103.81	-101.08	0.00	0.00	0.00	
1700.00	7.00	312.00	1690.60	113.89	-112.86	-109.92	0.00	0.00	0.00	
1800.00	7.00	312.00	1789.86	122.04	-121.92	-118.77	0.00	0.00	0.00	
1900.00	7.00	312.00	1889.11	130.20	-130.98	-127.62	0.00	0.00	0.00	
2000.00	7.00	312.00	1988.37	138.35	-140.03	-136.46	0.00	0.00	0.00	
2100.00	7.00	312.00	2087.62	146.51	-149.09	-145.31	0.00	0.00	0.00	
2200.00	7.00	312.00	2186.88	154.66	-158.15	-154.15	0.00	0.00	0.00	
2300.00	7.00	312.00	2286.13	162.82	-167.20	-163.00	0.00	0.00	0.00	
2400.00	7.00	312.00	2385.38	170.97	-176.26	-171.85	0.00	0.00	0.00	
2500.00	7.00	312.00	2484.64	179.13	-185.32	-180.69	0.00	0.00	0.00	
2600.00	7.00	312.00	2583.89	187.28	-194.37	-189.54	0.00	0.00	0.00	
2700.00	7.00	312.00	2683.15	195.43	-203.43	-198.38	0.00	0.00	0.00	
2800.00	7.00	312.00	2782.40	203.59	-212.49	-207.23	0.00	0.00	0.00	
2900.00	7.00	312.00	2881.66	211.74	-221.54	-216.08	0.00	0.00	0.00	
3000.00	7.00	312.00	2980.91	219.90	-230.60	-224.92	0.00	0.00	0.00	
3100.00	7.00	312.00	3080.17	228.05	-239.66	-233.77	0.00	0.00	0.00	
3200.00	7.00	312.00	3179.42	236.21	-248.71	-242.61	0.00	0.00	0.00	
3300.00	7.00	312.00	3278.68	244.36	-257.77	-251.46	0.00	0.00	0.00	
3400.00	7.00	312.00	3377.93	252.52	-266.83	-260.31	0.00	0.00	0.00	
3500.00	7.00	312.00	3477.19	260.67	-275.88	-269.15	0.00	0.00	0.00	
3600.00	7.00	312.00	3576.44	268.83	-284.94	-278.00	0.00	0.00	0.00	
3700.00	7.00	312.00	3675.69	276.98	-294.00	-286.84	0.00	0.00	0.00	
3800.00	7.00	312.00	3774.95	285.14	-303.05	-295.69	0.00	0.00	0.00	
3900.00	7.00	312.00	3874.20	293.29	-312.11	-304.54	0.00	0.00	0.00	
4000.00	7.00	312.00	3973.46	301.44	-321.17	-313.38	0.00	0.00	0.00	
4100.00	7.00	312.00	4072.71	309.60	-330.22	-322.23	0.00	0.00	0.00	
4200.00	7.00	312.00	4171.97	317.75	-339.28	-331.07	0.00	0.00	0.00	
4300.00	7.00	312.00	4271.22	325.91	-348.34	-339.92	0.00	0.00	0.00	
4400.00	7.00	312.00	4370.48	334.06	-357.39	-348.76	0.00	0.00	0.00	
4500.00	7.00	312.00	4469.73	342.22	-366.45	-357.61	0.00	0.00	0.00	
4600.00	7.00	312.00	4568.99	350.37	-375.51	-366.46	0.00	0.00	0.00	
4700.00	7.00	312.00	4668.24	358.53	-384.56	-375.30	0.00	0.00	0.00	
4800.00	7.00	312.00	4767.50	366.68	-393.62	-384.15	0.00	0.00	0.00	
4900.00	7.00	312.00	4866.75	374.84	-402.68	-392.99	0.00	0.00	0.00	
5000.00	7.00	312.00	4966.00	382.99	-411.73	-401.84	0.00	0.00	0.00	
5100.00	7.00	312.00	5065.26	391.15	-420.79	-410.69	0.00	0.00	0.00	
5200.00	7.00	312.00	5164.51	399.30	-429.85	-419.53	0.00	0.00	0.00	
5300.00	7.00	312.00	5263.77	407.46	-438.90	-428.38	0.00	0.00	0.00	
5327.88	7.00	312.00	5291.44	409.73	-441.43	-430.84	0.00	0.00	0.00	
5350.00	7.06	330.14	5313.40	411.81	-443.11	-432.47	10.00	0.28	81.99	
5400.00	9.37	1.89	5362.91	418.55	-444.50	-433.70	10.00	4.61	63.51	
5450.00	13.24	18.30	5411.94	428.06	-442.57	-431.52	10.00	7.75	32.81	
5500.00	17.69	27.00	5460.12	440.27	-437.32	-425.96	10.00	8.88	17.41	
5547.27	22.10	32.00	5504.56	454.22	-429.34	-417.63	10.00	9.34	10.58	
5550.00	22.28	32.55	5507.09	455.09	-428.79	-417.06	10.00	6.44	20.26	
5600.00	25.78	41.34	5552.77	471.25	-416.50	-404.36	10.00	7.01	17.57	
5650.00	29.69	48.05	5597.02	487.71	-400.10	-387.55	10.00	7.82	13.42	

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Plan: Plan #4

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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
5700.00	33.87	53.28	5639.52	504.32	-379.71	-366.74	10.00	8.35	10.47	
5750.00	38.22	57.47	5679.95	520.98	-355.49	-342.10	10.00	8.71	8.38	
5800.00	42.70	60.91	5717.99	537.55	-327.61	-313.81	10.00	8.95	6.88	
5850.00	47.26	63.81	5753.35	553.91	-296.30	-282.09	10.00	9.12	5.80	
5900.00	51.88	66.31	5785.77	569.93	-261.79	-247.19	10.00	9.25	4.99	
5950.00	56.56	68.50	5815.00	585.49	-224.35	-209.36	10.00	9.34	4.40	
6000.00	61.26	70.48	5840.81	600.47	-184.25	-168.89	10.00	9.41	3.94	
6050.00	66.00	72.28	5863.01	614.75	-141.81	-126.10	10.00	9.47	3.60	
6092.13	70.00	73.69	5878.80	626.17	-104.47	-88.48	10.00	9.50	3.36	7"
6100.00	70.75	73.95	5881.44	628.24	-97.35	-81.31	10.00	9.52	3.26	
6150.00	75.51	75.53	5895.95	640.82	-51.20	-34.86	10.00	9.53	3.16	
6200.00	80.29	77.04	5906.42	652.40	-3.72	12.91	10.00	9.55	3.02	
6250.00	85.07	78.51	5912.79	662.90	44.74	61.61	10.00	9.57	2.94	
6301.46	90.00	80.00	5915.00	672.48	95.23	112.33	10.00	9.57	2.90	
6400.00	90.00	82.96	5915.00	687.08	192.67	210.11	3.00	0.00	3.00	
6500.00	90.00	85.96	5915.00	696.74	292.19	309.85	3.00	0.00	3.00	
6586.94	90.00	88.56	5915.00	700.89	379.03	396.76	3.00	0.00	3.00	
6600.00	90.00	88.56	5915.00	701.22	392.08	409.82	0.00	0.00	0.00	
6700.00	90.00	88.56	5915.00	703.73	492.05	509.82	0.00	0.00	0.00	
6800.00	90.00	88.56	5915.00	706.23	592.02	609.82	0.00	0.00	0.00	
6900.00	90.00	88.56	5915.00	708.74	691.99	709.82	0.00	0.00	0.00	
7000.00	90.00	88.56	5915.00	711.24	791.96	809.82	0.00	0.00	0.00	
7100.00	90.00	88.56	5915.00	713.75	891.92	909.82	0.00	0.00	0.00	
7200.00	90.00	88.56	5915.00	716.25	991.89	1009.82	0.00	0.00	0.00	
7300.00	90.00	88.56	5915.00	718.76	1091.86	1109.82	0.00	0.00	0.00	
7400.00	90.00	88.56	5915.00	721.26	1191.83	1209.82	0.00	0.00	0.00	
7500.00	90.00	88.56	5915.00	723.77	1291.80	1309.82	0.00	0.00	0.00	
7600.00	90.00	88.56	5915.00	726.27	1391.77	1409.82	0.00	0.00	0.00	
7700.00	90.00	88.56	5915.00	728.78	1491.74	1509.82	0.00	0.00	0.00	
7800.00	90.00	88.56	5915.00	731.28	1591.70	1609.82	0.00	0.00	0.00	
7900.00	90.00	88.56	5915.00	733.79	1691.67	1709.82	0.00	0.00	0.00	
8000.00	90.00	88.56	5915.00	736.29	1791.64	1809.82	0.00	0.00	0.00	
8100.00	90.00	88.56	5915.00	738.80	1891.61	1909.82	0.00	0.00	0.00	
8200.00	90.00	88.56	5915.00	741.30	1991.58	2009.82	0.00	0.00	0.00	
8300.00	90.00	88.56	5915.00	743.81	2091.55	2109.82	0.00	0.00	0.00	
8400.00	90.00	88.56	5915.00	746.32	2191.52	2209.82	0.00	0.00	0.00	
8500.00	90.00	88.56	5915.00	748.82	2291.48	2309.82	0.00	0.00	0.00	
8600.00	90.00	88.56	5915.00	751.33	2391.45	2409.82	0.00	0.00	0.00	
8700.00	90.00	88.56	5915.00	753.83	2491.42	2509.82	0.00	0.00	0.00	
8800.00	90.00	88.56	5915.00	756.34	2591.39	2609.82	0.00	0.00	0.00	
8900.00	90.00	88.56	5915.00	758.84	2691.36	2709.82	0.00	0.00	0.00	
9000.00	90.00	88.56	5915.00	761.35	2791.33	2809.82	0.00	0.00	0.00	
9100.00	90.00	88.56	5915.00	763.85	2891.30	2909.82	0.00	0.00	0.00	
9200.00	90.00	88.56	5915.00	766.36	2991.27	3009.82	0.00	0.00	0.00	
9300.00	90.00	88.56	5915.00	768.86	3091.23	3109.82	0.00	0.00	0.00	
9400.00	90.00	88.56	5915.00	771.37	3191.20	3209.82	0.00	0.00	0.00	
9500.00	90.00	88.56	5915.00	773.87	3291.17	3309.82	0.00	0.00	0.00	
9600.00	90.00	88.56	5915.00	776.38	3391.14	3409.82	0.00	0.00	0.00	
9700.00	90.00	88.56	5915.00	778.88	3491.11	3509.82	0.00	0.00	0.00	
9800.00	90.00	88.56	5915.00	781.39	3591.08	3609.82	0.00	0.00	0.00	
9900.00	90.00	88.56	5915.00	783.89	3691.05	3709.82	0.00	0.00	0.00	
10000.00	90.00	88.56	5915.00	786.40	3791.01	3809.82	0.00	0.00	0.00	
10100.00	90.00	88.56	5915.00	788.90	3890.98	3909.82	0.00	0.00	0.00	
10200.00	90.00	88.56	5915.00	791.41	3990.95	4009.82	0.00	0.00	0.00	

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Planning Report

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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
10300.00	90.00	88.56	5915.00	793.91	4090.92	4109.82	0.00	0.00	0.00	
10338.14	90.00	88.56	5915.00	794.87	4129.05	4147.96	0.00	0.00	0.00	PBHL #12-20

Targets

Name	Description	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<---- Latitude ---->			<--- Longitude --->		
	Dip.							Deg	Min	Sec	Deg	Min	Sec
SL #12-20			0.00	0.00	0.00	1514543.34	34444582.17	40	44	5.147 N	103	53	44.626 W
PBHL #12-20			5915.00	794.87	4129.05	1515338.21	3448711.22	40	44	12.258 N	103	52	50.810 W

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
1447.52	1440.00	9.625	12.250	9 5/8"
6092.13	5878.80	7.000	8.500	7"