



Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SL 2-35	0.00	0.00	0.00	1505907.30	3400764.11	40°42'47.271N	104°03'15.578W	Point
300' Entry 2-35	6073.63	-1.93	652.11	1505905.37	3401416.22	40°42'47.146N	104°03'07.111W	Point
BHL 2-35	6092.21	-4420.46	833.04	1501486.84	3401597.15	40°42'03.463N	104°03'05.699W	Point
PBHL 2-35	6120.00	-4421.31	822.26	1501485.99	3401586.37	40°42'03.456N	104°03'05.839W	Point

Precision Directional Services, Inc.

Survey Report

Company: CARRIZO OIL & GAS, INC. Field: Niobrara CONZ'83 Site: Shull 1-35-9-60 Pad Well: 2-35-9-60 Wellpath: Original Hole	Date: 09/16/2014 Co-ordinate(NE) Reference: Well: 2-35-9-60, Grid North Vertical (TVD) Reference: 4923'GL+17"KB 4940.0 Section (VS) Reference: Well (0.00N,0.00E,178.28Azi) Survey Calculation Method: Minimum Curvature	Time: 15:13:34 Page: 1 Db: Adapti
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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
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Site: Shull 1-35-9-60 Pad Weld County, CO			
Site Position: From: Map Position Uncertainty: 0.00 ft Ground Level: 4923.00 ft	Northing: 1505922.29 ft Easting: 3400763.64 ft	Latitude: 40 42 47.419 N Longitude: 104 3 15.581 W North Reference: Grid Grid Convergence: 0.93 deg	

Well: 2-35-9-60 285' FNL 1319' FEL Well Position: +N/-S -14.99 ft +E/-W 0.47 ft Position Uncertainty: 0.00 ft	Slot Name: 2-35 Latitude: 40 42 47.271 N Longitude: 104 3 15.578 W
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Wellpath: Original Hole Current Datum: 4923'GL+17"KB Magnetic Data: 09/07/2014 Field Strength: 53065 nT Vertical Section: Depth From (TVD) ft	Height 4940.00 ft	Drilled From: Surface Tie-on Depth: 0.00 ft Above System Datum: Mean Sea Level Declination: 8.07 deg Mag Dip Angle: 67.30 deg +E/-W ft Direction bearing
0.00	0.00	0.00 178.28

Survey Program for Definitive Wellpath Date: 09/16/2014 Validated: No Version: 2				
Actual From	To	Survey	Toolcode	Tool Name
136.00	10585.00	Survey #1 (136.00-10585.00)	MWD	Std MWD
10653.00	10653.00	Survey #2 (10653.00-10653.00)	Project	Projection

Survey										
MD ft	Incl deg	Azim bearing	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
136.00	0.40	71.60	136.00	0.15	0.45	-0.14	0.29	0.29	0.00	MWD
229.00	0.40	118.90	229.00	0.10	1.04	-0.06	0.35	0.00	50.86	MWD
320.00	0.60	120.20	319.99	-0.30	1.73	0.35	0.22	0.22	1.43	MWD
411.00	1.20	1.90	410.99	0.41	2.18	-0.35	1.73	0.66	-130.00	MWD
502.00	2.60	343.20	501.94	3.34	1.61	-3.29	1.66	1.54	-20.55	MWD
593.00	2.80	354.30	592.83	7.53	0.79	-7.50	0.61	0.22	12.20	MWD
684.00	2.90	28.00	683.73	11.78	1.65	-11.72	1.82	0.11	37.03	MWD
776.00	3.60	45.60	775.58	15.85	4.81	-15.70	1.32	0.76	19.13	MWD
867.00	3.80	50.90	866.39	19.75	9.19	-19.47	0.44	0.22	5.82	MWD
958.00	4.70	60.60	957.14	23.48	14.78	-23.03	1.26	0.99	10.66	MWD
1049.00	4.80	62.90	1047.83	27.05	21.42	-26.39	0.24	0.11	2.53	MWD
1139.00	6.00	60.70	1137.43	31.07	28.87	-30.19	1.35	1.33	-2.44	MWD
1230.00	6.30	62.30	1227.91	35.71	37.44	-34.57	0.38	0.33	1.76	MWD
1321.00	6.10	64.80	1318.37	40.09	46.24	-38.69	0.37	-0.22	2.75	MWD
1412.00	6.00	65.50	1408.87	44.13	54.94	-42.46	0.14	-0.11	0.77	MWD
1491.00	5.50	66.50	1487.47	47.35	62.17	-45.46	0.65	-0.63	1.27	MWD
1576.00	6.90	61.60	1571.97	51.40	70.39	-49.26	1.76	1.65	-5.76	MWD
1659.00	7.70	63.20	1654.30	56.28	79.74	-53.86	0.99	0.96	1.93	MWD
1744.00	8.40	63.60	1738.46	61.61	90.39	-58.87	0.83	0.82	0.47	MWD
1829.00	7.90	72.20	1822.60	66.15	101.51	-63.08	1.55	-0.59	10.12	MWD
1914.00	7.50	72.30	1906.84	69.63	112.36	-66.22	0.47	-0.47	0.12	MWD

Precision Directional Services, Inc.

Survey Report

Company: CARRIZO OIL & GAS, INC. Field: Niobrara CONZ'83 Site: Shull 1-35-9-60 Pad Well: 2-35-9-60 Wellpath: Original Hole	Date: 09/16/2014 Time: 15:13:34 Page: 2 Co-ordinate(NE) Reference: Well: 2-35-9-60, Grid North Vertical (TVD) Reference: 4923'GL+17"KB 4940.0 Section (VS) Reference: Well (0.00N,0.00E,178.28Azi) Survey Calculation Method: Minimum Curvature Db: Adapti
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Survey

MD ft	Incl deg	Azim bearing	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
1999.00	6.90	73.20	1991.17	72.79	122.53	-69.08	0.72	-0.71	1.06	MWD
2084.00	6.90	72.90	2075.55	75.76	132.30	-71.76	0.04	0.00	-0.35	MWD
2169.00	6.80	70.40	2159.94	78.95	141.92	-74.66	0.37	-0.12	-2.94	MWD
2254.00	6.50	65.80	2244.37	82.61	151.05	-78.04	0.72	-0.35	-5.41	MWD
2339.00	6.90	65.80	2328.79	86.68	160.09	-81.84	0.47	0.47	0.00	MWD
2424.00	6.80	64.30	2413.18	90.95	169.28	-85.83	0.24	-0.12	-1.76	MWD
2509.00	6.90	65.70	2497.58	95.24	178.47	-89.84	0.23	0.12	1.65	MWD
2594.00	6.40	63.70	2582.01	99.44	187.37	-93.77	0.65	-0.59	-2.35	MWD
2679.00	7.00	62.70	2666.43	103.91	196.22	-97.98	0.72	0.71	-1.18	MWD
2764.00	7.70	61.30	2750.73	109.02	205.82	-102.80	0.85	0.82	-1.65	MWD
2849.00	8.10	66.90	2834.92	114.11	216.32	-107.56	1.02	0.47	6.59	MWD
2934.00	8.60	67.60	2919.02	118.88	227.71	-111.99	0.60	0.59	0.82	MWD
3019.00	8.30	71.50	3003.10	123.25	239.40	-116.01	0.76	-0.35	4.59	MWD
3104.00	8.00	71.10	3087.24	127.11	250.82	-119.52	0.36	-0.35	-0.47	MWD
3188.00	6.90	70.60	3170.53	130.68	261.11	-122.78	1.31	-1.31	-0.60	MWD
3273.00	5.10	65.50	3255.06	133.94	269.36	-125.80	2.21	-2.12	-6.00	MWD
3359.00	4.60	56.70	3340.75	137.42	275.72	-129.08	1.04	-0.58	-10.23	MWD
3443.00	5.50	56.70	3424.43	141.48	281.90	-132.96	1.07	1.07	0.00	MWD
3527.00	6.70	56.20	3507.95	146.42	289.34	-137.67	1.43	1.43	-0.60	MWD
3613.00	8.00	55.80	3593.24	152.57	298.46	-143.54	1.51	1.51	-0.47	MWD
3698.00	8.70	56.90	3677.34	159.41	308.73	-150.07	0.84	0.82	1.29	MWD
3783.00	9.70	55.80	3761.24	166.94	320.04	-157.26	1.19	1.18	-1.29	MWD
3868.00	9.60	60.90	3845.04	174.41	332.16	-164.37	1.01	-0.12	6.00	MWD
3953.00	9.10	62.30	3928.91	180.99	344.30	-170.57	0.65	-0.59	1.65	MWD
4038.00	9.50	63.70	4012.80	187.22	356.54	-176.43	0.54	0.47	1.65	MWD
4123.00	7.90	68.80	4096.82	192.44	368.28	-181.30	2.09	-1.88	6.00	MWD
4208.00	7.30	70.40	4181.07	196.36	378.81	-184.90	0.75	-0.71	1.88	MWD
4292.00	6.90	72.70	4264.43	199.65	388.66	-187.90	0.58	-0.48	2.74	MWD
4377.00	6.90	75.00	4348.81	202.49	398.46	-190.44	0.33	0.00	2.71	MWD
4462.00	7.20	75.70	4433.17	205.13	408.56	-192.78	0.37	0.35	0.82	MWD
4547.00	7.50	77.40	4517.47	207.66	419.13	-194.98	0.44	0.35	2.00	MWD
4632.00	7.00	81.30	4601.79	209.65	429.67	-196.66	0.83	-0.59	4.59	MWD
4717.00	7.00	79.40	4686.16	211.39	439.88	-198.09	0.27	0.00	-2.24	MWD
4802.00	6.90	80.30	4770.53	213.20	450.00	-199.60	0.17	-0.12	1.06	MWD
4888.00	6.40	77.30	4855.95	215.12	459.77	-201.23	0.71	-0.58	-3.49	MWD
4973.00	5.10	77.40	4940.52	216.99	468.08	-202.84	1.53	-1.53	0.12	MWD
5058.00	4.40	77.80	5025.23	218.50	474.95	-204.15	0.82	-0.82	0.47	MWD
5143.00	3.70	80.40	5110.02	219.65	480.84	-205.12	0.85	-0.82	3.06	MWD
5227.00	4.50	68.70	5193.80	221.30	486.59	-206.59	1.37	0.95	-13.93	MWD
5313.00	5.70	62.30	5279.46	224.51	493.51	-209.60	1.54	1.40	-7.44	MWD
5398.00	6.00	62.30	5364.02	228.54	501.18	-213.39	0.35	0.35	0.00	MWD
5483.00	4.90	60.70	5448.64	232.38	508.28	-217.02	1.31	-1.29	-1.88	MWD
5558.00	3.60	58.30	5523.43	235.18	513.08	-219.68	1.75	-1.73	-3.20	MWD
5601.00	6.90	75.50	5566.24	236.54	516.73	-220.92	8.42	7.67	40.00	MWD
5643.00	11.60	90.80	5607.69	237.11	523.40	-221.30	12.54	11.19	36.43	MWD
5686.00	14.30	106.80	5649.61	235.52	532.81	-219.42	10.38	6.28	37.21	MWD
5728.00	15.80	121.90	5690.18	230.99	542.63	-214.60	9.96	3.57	35.95	MWD
5771.00	16.50	135.60	5731.50	223.53	551.88	-206.87	8.99	1.63	31.86	MWD
5814.00	17.50	139.80	5772.62	214.23	560.32	-197.32	3.68	2.33	9.77	MWD
5856.00	20.30	142.70	5812.35	203.61	568.82	-186.45	7.03	6.67	6.90	MWD
5899.00	22.40	147.80	5852.40	190.74	577.70	-173.32	6.51	4.88	11.86	MWD
5941.00	27.30	155.30	5890.51	175.21	586.00	-157.54	13.85	11.67	17.86	MWD
5984.00	33.40	158.80	5927.61	155.19	594.41	-137.28	14.76	14.19	8.14	MWD

Precision Directional Services, Inc.

Survey Report

Company: CARRIZO OIL & GAS, INC.	Date: 09/16/2014	Time: 15:13:34	Page: 3
Field: Niobrara CONZ'83	Co-ordinate(NE) Reference: Well: 2-35-9-60, Grid North		
Site: Shull 1-35-9-60 Pad	Vertical (TVD) Reference: 4923'GL+17"KB 4940.0		
Well: 2-35-9-60	Section (VS) Reference: Well (0.00N,0.00E,178.28Azi)		
Wellpath: Original Hole	Survey Calculation Method: Minimum Curvature	Db: Adapti	

Survey

MD ft	Incl deg	Azim bearing	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
6026.00	40.90	158.00	5961.06	131.63	603.75	-113.45	17.89	17.86	-1.90	MWD
6068.00	48.00	158.70	5991.02	104.31	614.59	-85.82	16.94	16.90	1.67	MWD
6111.00	51.90	158.70	6018.69	73.65	626.54	-54.81	9.07	9.07	0.00	MWD
6153.00	53.90	161.10	6044.02	42.19	638.04	-23.02	6.59	4.76	5.71	MWD
6196.00	59.40	163.00	6067.65	8.03	649.09	11.45	13.31	12.79	4.42	MWD
6208.00	60.88	163.26	6073.63	-1.93	652.11	21.50	12.46	12.32	2.17	300' Entry
6239.00	64.70	163.90	6087.80	-28.37	659.90	48.16	12.46	12.33	2.06	MWD
6281.00	66.70	163.60	6105.08	-65.11	670.61	85.21	4.81	4.76	-0.71	MWD
6324.00	70.60	164.60	6120.73	-103.62	681.58	124.04	9.32	9.07	2.33	MWD
6352.00	74.10	165.50	6129.22	-129.40	688.46	150.01	12.87	12.50	3.21	MWD
6414.00	79.10	165.90	6143.59	-187.82	703.35	208.85	8.09	8.06	0.65	MWD
6459.00	84.20	169.40	6150.12	-231.30	712.86	252.59	13.70	11.33	7.78	MWD
6505.00	89.60	174.50	6152.61	-276.75	719.28	298.21	16.13	11.74	11.09	MWD
6590.00	92.20	178.70	6151.27	-361.56	724.32	383.14	5.81	3.06	4.94	MWD
6674.00	91.20	181.70	6148.78	-445.51	724.03	467.04	3.76	-1.19	3.57	MWD
6759.00	90.30	182.00	6147.67	-530.46	721.28	551.87	1.12	-1.06	0.35	MWD
6844.00	92.20	181.00	6145.82	-615.41	719.06	636.71	2.53	2.24	-1.18	MWD
6929.00	91.70	180.30	6142.92	-700.35	718.09	721.59	1.01	-0.59	-0.82	MWD
7014.00	91.30	180.10	6140.70	-785.32	717.80	806.51	0.53	-0.47	-0.24	MWD
7099.00	92.90	179.70	6137.58	-870.26	717.94	891.42	1.94	1.88	-0.47	MWD
7184.00	92.60	178.90	6133.51	-955.15	718.98	976.30	1.00	-0.35	-0.94	MWD
7269.00	92.20	178.50	6129.95	-1040.06	720.91	1061.23	0.67	-0.47	-0.47	MWD
7354.00	92.20	178.00	6126.68	-1124.96	723.50	1146.16	0.59	0.00	-0.59	MWD
7439.00	89.30	176.10	6125.57	-1209.82	727.88	1231.12	4.08	-3.41	-2.24	MWD
7524.00	88.10	177.50	6127.50	-1294.66	732.62	1316.07	2.17	-1.41	1.65	MWD
7609.00	91.30	178.20	6127.94	-1379.59	735.81	1401.06	3.85	3.76	0.82	MWD
7694.00	90.80	177.60	6126.39	-1464.52	738.92	1486.04	0.92	-0.59	-0.71	MWD
7780.00	93.40	178.00	6123.23	-1550.39	742.22	1571.97	3.06	3.02	0.47	MWD
7865.00	92.90	178.00	6118.56	-1635.21	745.18	1656.84	0.59	-0.59	0.00	MWD
7949.00	91.40	178.30	6115.41	-1719.11	747.89	1740.78	1.82	-1.79	0.36	MWD
8034.00	91.50	178.70	6113.26	-1804.05	750.12	1825.75	0.48	0.12	0.47	MWD
8119.00	89.90	178.20	6112.22	-1889.01	752.42	1910.74	1.97	-1.88	-0.59	MWD
8204.00	92.20	178.30	6110.67	-1973.95	755.01	1995.72	2.71	2.71	0.12	MWD
8289.00	88.50	177.60	6110.15	-2058.88	758.05	2080.70	4.43	-4.35	-0.82	MWD
8374.00	90.70	178.20	6110.74	-2143.81	761.17	2165.69	2.68	2.59	0.71	MWD
8460.00	90.50	179.40	6109.84	-2229.79	762.97	2251.68	1.41	-0.23	1.40	MWD
8545.00	88.90	178.20	6110.28	-2314.76	764.75	2336.67	2.35	-1.88	-1.41	MWD
8630.00	88.50	176.40	6112.21	-2399.64	768.75	2421.64	2.17	-0.47	-2.12	MWD
8715.00	92.10	177.50	6111.77	-2484.51	773.27	2506.60	4.43	4.24	1.29	MWD
8800.00	91.90	177.50	6108.80	-2569.37	776.98	2591.54	0.24	-0.24	0.00	MWD
8885.00	90.70	176.80	6106.87	-2654.24	781.20	2676.50	1.63	-1.41	-0.82	MWD
8970.00	92.90	178.20	6104.20	-2739.11	784.91	2761.44	3.07	2.59	1.65	MWD
9056.00	92.70	178.30	6100.00	-2824.97	787.53	2847.34	0.26	-0.23	0.12	MWD
9141.00	91.30	176.60	6097.04	-2909.83	791.31	2932.27	2.59	-1.65	-2.00	MWD
9226.00	91.70	178.50	6094.81	-2994.72	794.94	3017.23	2.28	0.47	2.24	MWD
9311.00	91.80	178.50	6092.21	-3079.65	797.17	3102.19	0.12	0.12	0.00	MWD
9396.00	91.70	177.30	6089.62	-3164.55	800.28	3187.15	1.42	-0.12	-1.41	MWD
9481.00	91.80	176.10	6087.02	-3249.37	805.17	3272.07	1.42	0.12	-1.41	MWD
9566.00	90.30	175.90	6085.47	-3334.15	811.10	3356.99	1.78	-1.76	-0.24	MWD
9651.00	91.00	179.40	6084.50	-3419.06	814.58	3441.97	4.20	0.82	4.12	MWD
9736.00	87.80	180.50	6085.39	-3504.04	814.66	3526.91	3.98	-3.76	1.29	MWD
9820.00	87.20	179.70	6089.06	-3587.96	814.51	3610.79	1.19	-0.71	-0.95	MWD
9905.00	90.00	179.90	6091.13	-3672.92	814.81	3695.73	3.30	3.29	0.24	MWD
9990.00	89.20	179.40	6091.73	-3757.92	815.33	3780.70	1.11	-0.94	-0.59	MWD

Precision Directional Services, Inc.

Survey Report

Company: CARRIZO OIL & GAS, INC. Field: Niobrara CONZ'83 Site: Shull 1-35-9-60 Pad Well: 2-35-9-60 Wellpath: Original Hole	Date: 09/16/2014 Time: 15:13:34 Page: 4 Co-ordinate(NE) Reference: Well: 2-35-9-60, Grid North Vertical (TVD) Reference: 4923'GL+17'KB 4940.0 Section (VS) Reference: Well (0.00N,0.00E,178.28Azi) Survey Calculation Method: Minimum Curvature Db: Adapti
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Survey

MD ft	Incl deg	Azim bearing	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
10075.00	89.10	179.70	6092.99	-3842.91	816.00	3865.67	0.37	-0.12	0.35	MWD
10160.00	88.30	178.00	6094.91	-3927.86	817.70	3950.64	2.21	-0.94	-2.00	MWD
10245.00	88.10	177.60	6097.58	-4012.76	820.96	4035.59	0.53	-0.24	-0.47	MWD
10330.00	89.80	178.50	6099.14	-4097.69	823.85	4120.57	2.26	2.00	1.06	MWD
10416.00	91.50	179.40	6098.17	-4183.67	825.43	4206.56	2.24	1.98	1.05	MWD
10501.00	91.20	178.00	6096.16	-4268.62	827.36	4291.53	1.68	-0.35	-1.65	MWD
10585.00	91.60	177.80	6094.11	-4352.54	830.43	4375.50	0.53	0.48	-0.24	MWD
10653.00	91.60	177.80	6092.21	-4420.46	833.04	4443.47	0.00	0.00	0.00	PROJECTED to TD

Annotation

MD ft	TVD ft	
6208.00	6073.63	300' Entry