



Azimuths to Grid North
True North: -1.04°
Magnetic North: 7.00°

Magnetic Field
Strength: 53138nT
Dip Angle: 67.36°
Date: 04/03/2014
Model: IGRF2010

LEGEND
— 12-20-9-58, Original Hole, Plan #5
— Original Hole

ANNOTATIONS

No.	TVD	MD	Annotation
1	5670.19	5755.00	300' Entry

CASING DETAILS

No.	TVD	MD	Name	Size
1	1430.20	1438.00	9 5/8"	9.625
2	5860.50	6153.00	7"	7.000

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SL #12-20	0.00	0.00	0.00	1514543.34	3444582.17	40°44'05.147N103°53'44.626W		Point
300' Entry 12-20	5670.19	619.74	-247.64	1515163.08	3444334.53	40°44'11.314N103°53'47.697W		Point
BHL #12-20	5831.15	816.48	4078.02	1515359.82	3448660.19	40°44'12.481N103°52'51.468W		Point
PBHL #12-20	5850.00	793.60	4079.07	1515336.94	3448661.24	40°44'12.255N103°52'51.459W		Point

Precision Directional Services, Inc.

Survey 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: 04/10/2014 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) Survey Calculation Method: Minimum Curvature	Time: 13:54:28 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: 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 Northing: 1514543.34 ft Easting : 3444582.17 ft
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Wellpath: Original Hole Current Datum: 4919'GL+17"KB Magnetic Data: 04/03/2014 Field Strength: 53138 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: 8.04 deg Mag Dip Angle: 67.36 deg +E/-W ft Direction bearing
0.00	0.00	0.00 88.54

Survey Program for Definitive Wellpath					
Date: 04/10/2014 Actual From ft To ft	Validated: No Survey	Version: 1 Toolcode			Tool Name
141.00	10080.00	Survey #1 (141.00-10080.00)	MWD		Std MWD
10150.00	10150.00	Survey #2 (10150.00-10150.00)	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
141.00	1.10	5.80	140.99	1.35	0.14	0.17	0.78	0.78	0.00	MWD
234.00	3.60	346.40	233.91	5.07	-0.46	-0.33	2.78	2.69	-20.86	MWD
326.00	4.20	331.00	325.70	10.83	-2.77	-2.50	1.31	0.65	-16.74	MWD
417.00	5.00	324.30	416.40	16.96	-6.70	-6.27	1.06	0.88	-7.36	MWD
509.00	6.10	325.70	507.97	24.26	-11.80	-11.17	1.20	1.20	1.52	MWD
600.00	5.50	324.80	598.50	31.81	-17.03	-16.22	0.67	-0.66	-0.99	MWD
692.00	6.70	325.20	689.98	39.82	-22.64	-21.62	1.31	1.30	0.43	MWD
783.00	6.50	323.60	780.38	48.33	-28.73	-27.48	0.30	-0.22	-1.76	MWD
875.00	7.20	322.00	871.72	57.06	-35.37	-33.90	0.79	0.76	-1.74	MWD
966.00	6.70	323.60	962.05	65.83	-42.03	-40.34	0.59	-0.55	1.76	MWD
1058.00	7.60	320.80	1053.34	74.86	-49.06	-47.13	1.05	0.98	-3.04	MWD
1149.00	7.10	320.80	1143.59	83.89	-56.41	-54.26	0.55	-0.55	0.00	MWD
1241.00	6.60	318.80	1234.93	92.27	-63.49	-61.12	0.60	-0.54	-2.17	MWD
1332.00	7.80	322.40	1325.21	101.10	-70.70	-68.10	1.41	1.32	3.96	MWD
1424.00	8.00	326.60	1416.34	111.39	-78.04	-75.17	0.66	0.22	4.57	MWD
1439.00	8.10	326.40	1431.19	113.14	-79.20	-76.29	0.69	0.67	-1.33	MWD
1498.00	7.70	326.90	1489.63	119.91	-83.65	-80.57	0.69	-0.68	0.85	MWD
1583.00	8.80	320.10	1573.75	129.67	-90.94	-87.60	1.73	1.29	-8.00	MWD
1668.00	8.50	320.10	1657.79	139.48	-99.14	-95.55	0.35	-0.35	0.00	MWD
1753.00	8.30	319.50	1741.87	148.97	-107.15	-103.32	0.26	-0.24	-0.71	MWD
1838.00	7.80	315.70	1826.04	157.76	-115.16	-111.11	0.86	-0.59	-4.47	MWD

Precision Directional Services, Inc.

Survey 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: 04/10/2014 Time: 13:54:28 Page: 2 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) 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
1923.00	7.40	315.30	1910.29	165.78	-123.04	-118.78	0.47	-0.47	-0.47	MWD
2008.00	6.20	322.20	1994.69	173.30	-129.71	-125.25	1.71	-1.41	8.12	MWD
2093.00	6.50	321.60	2079.17	180.69	-135.51	-130.86	0.36	0.35	-0.71	MWD
2178.00	7.00	323.20	2163.58	188.61	-141.60	-136.75	0.63	0.59	1.88	MWD
2264.00	6.90	321.80	2248.95	196.87	-147.93	-142.87	0.23	-0.12	-1.63	MWD
2348.00	7.30	323.80	2332.31	205.14	-154.20	-148.93	0.56	0.48	2.38	MWD
2433.00	7.30	322.90	2416.62	213.80	-160.65	-155.15	0.13	0.00	-1.06	MWD
2518.00	7.10	323.80	2500.95	222.35	-167.01	-161.29	0.27	-0.24	1.06	MWD
2604.00	7.20	325.50	2586.28	231.08	-173.20	-167.26	0.27	0.12	1.98	MWD
2688.00	7.70	320.10	2669.57	239.73	-179.79	-173.63	1.02	0.60	-6.43	MWD
2774.00	8.40	317.80	2754.72	248.81	-187.71	-181.31	0.90	0.81	-2.67	MWD
2859.00	7.80	318.10	2838.87	257.70	-195.73	-189.10	0.71	-0.71	0.35	MWD
2944.00	7.60	314.10	2923.11	265.91	-203.62	-196.78	0.67	-0.24	-4.71	MWD
3028.00	6.90	320.10	3006.44	273.64	-210.85	-203.81	1.23	-0.83	7.14	MWD
3113.00	6.00	324.50	3090.90	281.18	-216.70	-209.47	1.21	-1.06	5.18	MWD
3198.00	5.50	321.10	3175.47	287.96	-221.84	-214.43	0.71	-0.59	-4.00	MWD
3283.00	6.10	322.00	3260.03	294.69	-227.18	-219.59	0.71	0.71	1.06	MWD
3368.00	6.70	324.10	3344.50	302.27	-232.86	-225.09	0.76	0.71	2.47	MWD
3453.00	7.20	325.00	3428.88	310.65	-238.83	-230.84	0.60	0.59	1.06	MWD
3538.00	8.30	324.60	3513.10	320.01	-245.44	-237.20	1.30	1.29	-0.47	MWD
3622.00	9.50	324.30	3596.09	330.58	-252.99	-244.49	1.43	1.43	-0.36	MWD
3707.00	9.10	319.20	3679.97	341.37	-261.48	-252.70	1.08	-0.47	-6.00	MWD
3792.00	8.30	321.30	3763.99	351.25	-269.71	-260.67	1.01	-0.94	2.47	MWD
3877.00	6.70	317.60	3848.27	359.70	-276.89	-267.63	1.97	-1.88	-4.35	MWD
3962.00	5.70	322.00	3932.77	366.68	-282.83	-273.40	1.30	-1.18	5.18	MWD
4047.00	4.80	312.20	4017.41	372.40	-288.06	-278.48	1.49	-1.06	-11.53	MWD
4132.00	5.50	325.90	4102.07	378.16	-292.98	-283.25	1.66	0.82	16.12	MWD
4217.00	7.00	328.50	4186.56	385.95	-297.97	-288.04	1.80	1.76	3.06	MWD
4302.00	7.30	330.40	4270.90	395.06	-303.35	-293.18	0.45	0.35	2.24	MWD
4386.00	6.60	330.80	4354.29	403.92	-308.34	-297.95	0.84	-0.83	0.48	MWD
4471.00	6.40	325.90	4438.74	412.10	-313.38	-302.78	0.69	-0.24	-5.76	MWD
4556.00	6.60	322.50	4523.19	419.90	-319.01	-308.20	0.51	0.24	-4.00	MWD
4641.00	6.80	324.80	4607.61	427.89	-324.88	-313.87	0.39	0.24	2.71	MWD
4726.00	5.90	331.30	4692.09	435.83	-329.88	-318.67	1.35	-1.06	7.65	MWD
4811.00	6.00	334.00	4776.63	443.66	-333.93	-322.51	0.35	0.12	3.18	MWD
4896.00	5.80	324.30	4861.19	451.14	-338.38	-326.77	1.19	-0.24	-11.41	MWD
4981.00	6.20	322.00	4945.72	458.24	-343.71	-331.92	0.55	0.47	-2.71	MWD
5066.00	6.20	318.70	5030.22	465.31	-349.57	-337.60	0.42	0.00	-3.88	MWD
5151.00	5.20	317.30	5114.80	471.59	-355.21	-343.08	1.19	-1.18	-1.65	MWD
5193.00	4.80	317.10	5156.64	474.28	-357.70	-345.50	0.95	-0.95	-0.48	MWD
5229.00	4.50	317.30	5192.52	476.42	-359.68	-347.42	0.83	-0.83	0.56	MWD
5272.00	5.40	334.50	5235.37	479.48	-361.69	-349.36	4.01	2.09	40.00	MWD
5314.00	7.70	357.20	5277.09	484.08	-362.68	-350.23	8.15	5.48	54.05	MWD
5357.00	11.30	10.90	5319.50	491.10	-362.03	-349.40	9.83	8.37	31.86	MWD
5399.00	14.60	14.00	5360.43	500.28	-359.97	-347.10	8.03	7.86	7.38	MWD
5442.00	20.80	15.80	5401.37	512.89	-356.57	-343.39	14.47	14.42	4.19	MWD
5484.00	24.00	24.10	5440.21	527.87	-351.05	-337.49	10.70	7.62	19.76	MWD
5527.00	26.80	32.10	5479.06	544.07	-342.33	-328.35	10.29	6.51	18.60	MWD
5569.00	28.10	38.80	5516.34	559.81	-331.09	-316.72	7.97	3.10	15.95	MWD
5612.00	30.10	46.60	5553.93	575.12	-316.91	-302.15	9.96	4.65	18.14	MWD
5654.00	32.40	53.20	5589.84	589.10	-300.24	-285.13	9.81	5.48	15.71	MWD
5697.00	36.40	58.50	5625.32	602.68	-280.12	-264.68	11.61	9.30	12.33	MWD
5739.00	40.60	63.80	5658.19	615.23	-257.22	-241.46	12.71	10.00	12.62	MWD

Precision Directional Services, Inc.

Survey Report

Company: CARRIZO OIL & GAS, INC.	Date: 04/10/2014	Time: 13:54:28	Page: 3
Field: Niobrara CONZ'83	Co-ordinate(NE) Reference: Well: 12-20-9-58, Grid North		
Site: Bringleson Ranch 8-20-9-58	Vertical (TVD) Reference: 4919'GL+17"KB 4936.0		
Well: 12-20-9-58	Section (VS) Reference: Well (0.00N,0.00E,88.54Azi)		
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
5755.00	42.29	65.72	5670.19	619.74	-247.64	-231.77	13.21	10.54	12.02	300' Entry
5782.00	45.20	68.70	5689.69	626.96	-230.43	-214.38	13.21	10.79	11.02	MWD
5824.00	50.50	71.70	5717.87	637.47	-201.14	-184.83	13.68	12.62	7.14	MWD
5867.00	55.40	74.00	5743.77	647.56	-168.35	-151.80	12.17	11.40	5.35	MWD
5909.00	58.80	75.70	5766.58	656.77	-134.32	-117.54	8.78	8.10	4.05	MWD
5952.00	61.60	78.40	5787.95	665.11	-97.96	-80.98	8.49	6.51	6.28	MWD
5994.00	63.80	79.60	5807.22	672.23	-61.32	-44.18	5.82	5.24	2.86	MWD
6036.00	66.50	81.50	5824.87	678.48	-23.73	-6.44	7.63	6.43	4.52	MWD
6079.00	70.90	84.00	5840.49	683.52	16.00	33.41	11.58	10.23	5.81	MWD
6121.00	74.70	85.80	5852.90	687.08	55.95	73.44	9.93	9.05	4.29	MWD
6186.00	81.10	87.70	5866.52	690.67	119.37	136.93	10.25	9.85	2.92	MWD
6232.00	84.60	89.40	5872.25	691.82	164.99	182.56	8.45	7.61	3.70	MWD
6278.00	88.50	89.60	5875.02	692.22	210.89	228.46	8.49	8.48	0.43	MWD
6323.00	90.80	89.40	5875.29	692.62	255.89	273.45	5.13	5.11	-0.44	MWD
6369.00	91.10	88.00	5874.53	693.66	301.87	319.44	3.11	0.65	-3.04	MWD
6415.00	91.20	88.00	5873.60	695.26	347.83	365.43	0.22	0.22	0.00	MWD
6461.00	91.10	87.90	5872.68	696.91	393.79	411.42	0.31	-0.22	-0.22	MWD
6506.00	90.70	86.50	5871.97	699.11	438.73	456.40	3.24	-0.89	-3.11	MWD
6549.00	90.70	85.90	5871.45	701.96	481.63	499.36	1.40	0.00	-1.40	MWD
6591.00	91.00	86.30	5870.83	704.81	523.53	541.32	1.19	0.71	0.95	MWD
6634.00	91.10	86.30	5870.04	707.59	566.44	584.28	0.23	0.23	0.00	MWD
6676.00	89.70	86.10	5869.74	710.37	608.34	626.24	3.37	-3.33	-0.48	MWD
6718.00	88.50	85.40	5870.40	713.48	650.22	668.19	3.31	-2.86	-1.67	MWD
6761.00	88.30	85.60	5871.61	716.85	693.07	711.11	0.66	-0.47	0.47	MWD
6804.00	89.30	87.30	5872.51	719.52	735.98	754.07	4.59	2.33	3.95	MWD
6846.00	89.60	87.30	5872.91	721.50	777.93	796.06	0.71	0.71	0.00	MWD
6889.00	91.20	88.90	5872.61	722.92	820.90	839.05	5.26	3.72	3.72	MWD
6931.00	91.20	88.60	5871.73	723.84	862.88	881.04	0.71	0.00	-0.71	MWD
6974.00	91.40	88.40	5870.75	724.96	905.85	924.03	0.66	0.47	-0.47	MWD
7016.00	90.80	87.70	5869.95	726.39	947.82	966.02	2.19	-1.43	-1.67	MWD
7059.00	91.30	87.50	5869.16	728.19	990.78	1009.01	1.25	1.16	-0.47	MWD
7101.00	92.80	88.90	5867.66	729.51	1032.73	1050.98	4.88	3.57	3.33	MWD
7144.00	93.20	89.10	5865.41	730.26	1075.66	1093.92	1.04	0.93	0.47	MWD
7186.00	93.50	88.70	5862.95	731.06	1117.58	1135.85	1.19	0.71	-0.95	MWD
7229.00	92.20	88.70	5860.81	732.04	1160.52	1178.79	3.02	-3.02	0.00	MWD
7271.00	92.20	88.40	5859.20	733.10	1202.47	1220.76	0.71	0.00	-0.71	MWD
7314.00	92.40	88.40	5857.48	734.30	1245.42	1263.73	0.47	0.47	0.00	MWD
7356.00	92.60	88.20	5855.64	735.54	1287.36	1305.69	0.67	0.48	-0.48	MWD
7399.00	91.20	89.40	5854.22	736.44	1330.33	1348.66	4.29	-3.26	2.79	MWD
7441.00	91.30	89.60	5853.30	736.81	1372.32	1390.64	0.53	0.24	0.48	MWD
7484.00	90.70	87.20	5852.55	738.01	1415.29	1433.63	5.75	-1.40	-5.58	MWD
7526.00	90.20	86.60	5852.22	740.28	1457.23	1475.61	1.86	-1.19	-1.43	MWD
7569.00	88.50	88.20	5852.71	742.23	1500.18	1518.60	5.43	-3.95	3.72	MWD
7611.00	87.90	88.40	5854.03	743.48	1542.14	1560.58	1.51	-1.43	0.48	MWD
7654.00	88.70	88.90	5855.30	744.49	1585.11	1603.56	2.19	1.86	1.16	MWD
7696.00	90.00	90.50	5855.78	744.71	1627.10	1645.55	4.91	3.10	3.81	MWD
7739.00	91.10	90.50	5855.37	744.34	1670.10	1688.52	2.56	2.56	0.00	MWD
7781.00	89.90	86.50	5855.00	745.44	1712.07	1730.51	9.94	-2.86	-9.52	MWD
7824.00	89.20	84.90	5855.34	748.66	1754.95	1773.45	4.06	-1.63	-3.72	MWD
7867.00	90.90	86.10	5855.30	752.03	1797.81	1816.39	4.84	3.95	2.79	MWD
7909.00	91.60	88.00	5854.39	754.19	1839.74	1858.36	4.82	1.67	4.52	MWD
7952.00	92.00	88.00	5853.03	755.69	1882.70	1901.34	0.93	0.93	0.00	MWD
7994.00	92.30	89.40	5851.46	756.65	1924.65	1943.31	3.41	0.71	3.33	MWD
8037.00	92.20	89.30	5849.77	757.13	1967.62	1986.27	0.33	-0.23	-0.23	MWD

Precision Directional Services, Inc.

Survey 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: 04/10/2014 Time: 13:54:28 Page: 4 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) 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
8079.00	91.10	89.60	5848.56	757.54	2009.60	2028.25	2.71	-2.62	0.71	MWD
8121.00	90.90	89.40	5847.83	757.90	2051.59	2070.24	0.67	-0.48	-0.48	MWD
8164.00	90.90	89.40	5847.15	758.35	2094.58	2113.23	0.00	0.00	0.00	MWD
8206.00	91.40	91.20	5846.31	758.13	2136.57	2155.20	4.45	1.19	4.29	MWD
8249.00	91.10	91.40	5845.37	757.16	2179.55	2198.13	0.84	-0.70	0.47	MWD
8291.00	91.50	91.40	5844.42	756.13	2221.53	2240.07	0.95	0.95	0.00	MWD
8333.00	92.10	90.00	5843.10	755.62	2263.50	2282.02	3.63	1.43	-3.33	MWD
8376.00	91.60	89.60	5841.71	755.77	2306.48	2324.99	1.49	-1.16	-0.93	MWD
8418.00	93.40	88.90	5839.88	756.32	2348.43	2366.94	4.60	4.29	-1.67	MWD
8460.00	94.00	88.70	5837.17	757.20	2390.34	2408.85	1.51	1.43	-0.48	MWD
8503.00	93.80	88.60	5834.24	758.21	2433.23	2451.75	0.52	-0.47	-0.23	MWD
8546.00	92.40	88.00	5831.92	759.48	2476.14	2494.69	3.54	-3.26	-1.40	MWD
8588.00	93.50	88.00	5829.76	760.94	2518.06	2536.63	2.62	2.62	0.00	MWD
8631.00	93.60	87.90	5827.10	762.48	2560.95	2579.55	0.33	0.23	-0.23	MWD
8673.00	93.70	87.90	5824.42	764.02	2602.84	2621.46	0.24	0.24	0.00	MWD
8715.00	93.90	87.50	5821.64	765.70	2644.71	2663.36	1.06	0.48	-0.95	MWD
8758.00	94.30	87.30	5818.56	767.64	2687.56	2706.24	1.04	0.93	-0.47	MWD
8800.00	93.10	85.60	5815.85	770.24	2729.39	2748.13	4.95	-2.86	-4.05	MWD
8842.00	91.30	86.30	5814.24	773.20	2771.25	2790.05	4.60	-4.29	1.67	MWD
8885.00	90.70	88.40	5813.49	775.19	2814.19	2833.03	5.08	-1.40	4.88	MWD
8927.00	90.70	88.90	5812.98	776.18	2856.18	2875.03	1.19	0.00	1.19	MWD
8970.00	90.50	89.10	5812.53	776.93	2899.17	2918.02	0.66	-0.47	0.47	MWD
9012.00	90.60	88.70	5812.12	777.74	2941.16	2960.02	0.98	0.24	-0.95	MWD
9055.00	89.20	89.10	5812.20	778.56	2984.15	3003.02	3.39	-3.26	0.93	MWD
9097.00	88.90	87.90	5812.90	779.66	3026.13	3045.01	2.94	-0.71	-2.86	MWD
9140.00	87.50	84.70	5814.25	782.43	3069.01	3087.95	8.12	-3.26	-7.44	MWD
9182.00	89.20	89.40	5815.46	784.59	3110.93	3129.91	11.90	4.05	11.19	MWD
9225.00	90.00	89.80	5815.76	784.89	3153.92	3172.90	2.08	1.86	0.93	MWD
9267.00	87.70	87.70	5816.60	785.81	3195.90	3214.88	7.41	-5.48	-5.00	MWD
9309.00	87.10	87.70	5818.50	787.49	3237.82	3256.84	1.43	-1.43	0.00	MWD
9352.00	87.00	87.90	5820.72	789.14	3280.73	3299.78	0.52	-0.23	0.47	MWD
9394.00	86.70	87.70	5823.03	790.75	3322.64	3341.71	0.86	-0.71	-0.48	MWD
9437.00	86.20	87.30	5825.69	792.62	3365.52	3384.62	1.49	-1.16	-0.93	MWD
9479.00	88.20	88.60	5827.74	794.12	3407.44	3426.56	5.68	4.76	3.10	MWD
9522.00	89.30	88.40	5828.68	795.25	3450.41	3469.55	2.60	2.56	-0.47	MWD
9564.00	89.00	88.00	5829.30	796.57	3492.38	3511.55	1.19	-0.71	-0.95	MWD
9606.00	89.10	87.90	5830.00	798.07	3534.35	3553.54	0.34	0.24	-0.24	MWD
9649.00	89.80	88.40	5830.41	799.46	3577.33	3596.54	2.00	1.63	1.16	MWD
9691.00	90.00	87.90	5830.48	800.81	3619.31	3638.53	1.28	0.48	-1.19	MWD
9734.00	90.00	87.90	5830.48	802.39	3662.28	3681.53	0.00	0.00	0.00	MWD
9776.00	89.80	87.70	5830.56	804.00	3704.25	3723.53	0.67	-0.48	-0.48	MWD
9819.00	89.70	87.30	5830.74	805.88	3747.20	3766.52	0.96	-0.23	-0.93	MWD
9861.00	89.80	87.30	5830.93	807.85	3789.16	3808.51	0.24	0.24	0.00	MWD
9904.00	89.80	88.00	5831.08	809.62	3832.12	3851.50	1.63	0.00	1.63	MWD
9946.00	90.00	88.40	5831.15	810.94	3874.10	3893.50	1.06	0.48	0.95	MWD
9989.00	90.00	88.40	5831.15	812.14	3917.08	3936.50	0.00	0.00	0.00	MWD
10031.00	90.00	88.60	5831.15	813.24	3959.07	3978.50	0.48	0.00	0.48	MWD
10074.00	90.00	88.40	5831.15	814.36	4002.05	4021.50	0.47	0.00	-0.47	MWD
10080.00	90.00	88.40	5831.15	814.53	4008.05	4027.50	0.00	0.00	0.00	MWD
10150.00	90.00	88.40	5831.15	816.48	4078.02	4097.50	0.00	0.00	0.00	Project

Precision Directional Services, Inc.

Survey 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: 04/10/2014 **Time:** 13:54:28 **Page:** 5
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)
Survey Calculation Method: Minimum Curvature **Db:** Adapti

Annotation

MD ft	TVD ft	
5755.00	5670.19	300' Entry