



### REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#11 VOGLER STATE D21-760(915'FSL&1048'FWL,SEC.21)
Area	COLORADO	Well	VOGLER STATE D21-760
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	VOGLER STATE D21-760 AWP
Facility	SEC.21-T03N-R64W		

### REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Robiale01
Scale	0.999957	Report Generated	3/26/2019 at 2:29:02 PM
Convergence at slot	0.61° East	Database/Source file	WA DENVER/VOGLER_STATE_D21-760_AWP.xml

### WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	342.88	384.65	3261995.64	1319361.35	40°12'22.464"N	104°33'43.056"W
Facility Reference Pt			3261611.01	1319018.48	40°12'19.116"N	104°33'48.060"W
Field Reference Pt			3000000.00	4454105.15	48°46'34.315"N	105°30'00.000"W

### WELLPATH DATUM

Calculation method	Minimum curvature	RIG (30'KB) (RKB) to Facility Vertical Datum	4824.00ft
Horizontal Reference Pt	Slot	RIG (30'KB) (RKB) to Mean Sea Level	4824.00ft
Vertical Reference Pt	RIG (30'KB) (RKB)	RIG (30'KB) (RKB) to Ground Level at Slot (SLOT#11 VOGLER STATE D21-760(915'FSL&1048'FWL,SEC.21))	4824.00ft
MD Reference Pt	RIG (30'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	5.29°

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	VOGLER STATE D21-760 AWB
Facility	SEC.21-T03N-R64W		

### WELLPATH DATA (189 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	308.180	0.00	0.00	0.00	0.00	40°12'22.464"N	104°33'43.056"W	0.00	
86.00	0.400	308.180	86.00	0.16	0.19	-0.24	40°12'22.466"N	104°33'43.059"W	0.47	
179.00	0.470	290.920	179.00	0.44	0.52	-0.85	40°12'22.469"N	104°33'43.067"W	0.16	
271.00	0.580	309.510	270.99	0.81	0.95	-1.56	40°12'22.474"N	104°33'43.076"W	0.22	
366.00	0.750	323.190	365.99	1.54	1.76	-2.30	40°12'22.482"N	104°33'43.085"W	0.24	
450.00	0.470	288.780	449.98	2.03	2.31	-2.96	40°12'22.487"N	104°33'43.094"W	0.53	
555.00	0.470	289.400	554.98	2.23	2.59	-3.77	40°12'22.490"N	104°33'43.104"W	0.00	
656.00	0.410	282.060	655.98	2.37	2.80	-4.52	40°12'22.492"N	104°33'43.114"W	0.08	
744.00	0.210	46.400	743.97	2.53	2.98	-4.71	40°12'22.494"N	104°33'43.116"W	0.63	
839.00	0.460	200.530	838.97	2.30	2.74	-4.72	40°12'22.492"N	104°33'43.116"W	0.69	
934.00	0.400	233.380	933.97	1.71	2.19	-5.11	40°12'22.486"N	104°33'43.122"W	0.26	
1028.00	0.250	147.420	1027.97	1.33	1.82	-5.27	40°12'22.483"N	104°33'43.124"W	0.49	
1123.00	0.050	338.390	1122.97	1.20	1.68	-5.17	40°12'22.481"N	104°33'43.122"W	0.31	
1218.00	0.160	347.110	1217.97	1.36	1.85	-5.22	40°12'22.483"N	104°33'43.123"W	0.12	
1312.00	0.270	335.420	1311.97	1.68	2.18	-5.34	40°12'22.486"N	104°33'43.124"W	0.13	
1407.00	0.410	51.030	1406.97	2.11	2.60	-5.17	40°12'22.490"N	104°33'43.122"W	0.45	
1502.00	0.330	58.830	1501.97	2.51	2.95	-4.67	40°12'22.494"N	104°33'43.116"W	0.10	
1596.00	0.540	13.970	1595.96	3.11	3.52	-4.33	40°12'22.499"N	104°33'43.111"W	0.41	
1691.00	0.570	289.650	1690.96	3.67	4.12	-4.67	40°12'22.505"N	104°33'43.116"W	0.78	
1786.00	0.770	278.570	1785.95	3.82	4.37	-5.74	40°12'22.508"N	104°33'43.129"W	0.25	
1880.00	0.310	276.020	1879.95	3.86	4.49	-6.62	40°12'22.509"N	104°33'43.141"W	0.49	
1946.00	0.170	253.690	1945.95	3.83	4.48	-6.89	40°12'22.509"N	104°33'43.144"W	0.25	Tie to Surface
1994.00	0.060	99.470	1993.95	3.80	4.46	-6.94	40°12'22.509"N	104°33'43.145"W	0.47	
2089.00	0.090	192.000	2088.95	3.72	4.38	-6.90	40°12'22.508"N	104°33'43.144"W	0.12	
2184.00	0.070	37.150	2183.95	3.70	4.35	-6.88	40°12'22.508"N	104°33'43.144"W	0.16	
2279.00	0.090	167.300	2278.95	3.68	4.32	-6.83	40°12'22.507"N	104°33'43.143"W	0.15	
2373.00	0.070	128.960	2372.95	3.57	4.22	-6.77	40°12'22.506"N	104°33'43.143"W	0.06	
2468.00	2.680	135.330	2467.91	2.11	2.60	-5.16	40°12'22.490"N	104°33'43.122"W	2.75	
2563.00	4.540	139.490	2562.72	-1.94	-1.84	-1.16	40°12'22.446"N	104°33'43.071"W	1.98	
2657.00	6.590	147.870	2656.27	-8.82	-9.24	4.13	40°12'22.372"N	104°33'43.004"W	2.34	
2752.00	10.030	151.700	2750.26	-20.04	-21.14	10.95	40°12'22.254"N	104°33'42.918"W	3.67	
2846.00	13.420	150.610	2842.29	-35.83	-37.86	20.19	40°12'22.088"N	104°33'42.801"W	3.61	
2941.00	16.650	150.090	2934.02	-56.03	-59.26	32.39	40°12'21.875"N	104°33'42.647"W	3.40	
3036.00	18.650	149.140	3024.55	-79.42	-84.10	46.97	40°12'21.628"N	104°33'42.462"W	2.13	
3131.00	18.220	146.620	3114.67	-103.28	-109.55	62.93	40°12'21.375"N	104°33'42.260"W	0.95	
3225.00	19.690	145.340	3203.57	-126.89	-134.84	80.02	40°12'21.123"N	104°33'42.043"W	1.63	

WELLPATH DATA (189 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
3320.00	20.030	146.980	3292.93	-151.93	-161.65	97.99	40°12'20.856"N	104°33'41.815"W	0.69	
3415.00	19.340	148.110	3382.37	-177.23	-188.65	115.17	40°12'20.588"N	104°33'41.598"W	0.83	
3509.00	21.320	148.220	3470.51	-203.26	-216.39	132.39	40°12'20.312"N	104°33'41.379"W	2.11	
3604.00	22.890	148.050	3558.53	-231.75	-246.75	151.26	40°12'20.010"N	104°33'41.140"W	1.65	
3699.00	23.810	149.410	3645.75	-262.00	-278.94	170.80	40°12'19.690"N	104°33'40.893"W	1.12	
3793.00	25.740	150.280	3731.09	-294.10	-313.00	190.58	40°12'19.351"N	104°33'40.643"W	2.09	
3888.00	25.710	149.960	3816.68	-327.80	-348.75	211.12	40°12'18.996"N	104°33'40.383"W	0.15	
3983.00	25.870	148.650	3902.21	-361.24	-384.29	232.22	40°12'18.642"N	104°33'40.116"W	0.62	
4077.00	25.660	147.810	3986.87	-393.85	-419.03	253.73	40°12'18.297"N	104°33'39.843"W	0.45	

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### WELLPATH DATA (189 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4172.00	25.460	152.440	4072.58	-427.33	-454.54	274.14	40°12'17.944"N	104°33'39.585"W	2.11	
4266.00	25.780	154.460	4157.34	-461.86	-490.90	292.30	40°12'17.583"N	104°33'39.356"W	0.99	
4361.00	25.670	157.260	4242.93	-497.76	-528.52	309.16	40°12'17.209"N	104°33'39.144"W	1.28	
4456.00	25.630	157.760	4328.57	-534.14	-566.51	324.89	40°12'16.832"N	104°33'38.946"W	0.23	
4550.00	26.110	157.250	4413.15	-570.43	-604.41	340.58	40°12'16.456"N	104°33'38.749"W	0.56	
4645.00	25.850	154.870	4498.55	-606.74	-642.44	357.46	40°12'16.078"N	104°33'38.537"W	1.13	
4740.00	25.790	154.610	4584.06	-642.37	-679.86	375.12	40°12'15.707"N	104°33'38.314"W	0.13	
4834.00	25.820	157.230	4668.69	-678.03	-717.21	391.81	40°12'15.336"N	104°33'38.104"W	1.21	
4929.00	25.980	158.430	4754.15	-714.85	-755.63	407.47	40°12'14.955"N	104°33'37.908"W	0.58	
5023.00	25.460	161.290	4838.84	-751.67	-793.92	421.52	40°12'14.575"N	104°33'37.732"W	1.43	
5118.00	26.140	164.120	4924.37	-789.84	-833.39	433.80	40°12'14.184"N	104°33'37.579"W	1.48	
5212.00	26.230	159.390	5008.74	-827.84	-872.75	446.77	40°12'13.793"N	104°33'37.417"W	2.22	
5307.00	26.140	153.570	5094.00	-864.53	-911.15	463.48	40°12'13.412"N	104°33'37.207"W	2.70	
5401.00	26.210	147.800	5178.38	-898.62	-947.26	483.76	40°12'13.053"N	104°33'36.951"W	2.71	
5496.00	24.680	144.450	5264.16	-930.28	-981.16	506.48	40°12'12.716"N	104°33'36.663"W	2.21	
5590.00	23.190	145.470	5350.08	-959.34	-1012.37	528.38	40°12'12.405"N	104°33'36.385"W	1.65	
5685.00	26.980	140.550	5436.11	-989.03	-1044.44	552.69	40°12'12.086"N	104°33'36.076"W	4.55	
5779.00	26.830	137.580	5519.94	-1018.45	-1076.56	580.55	40°12'11.765"N	104°33'35.721"W	1.44	
5874.00	25.400	138.290	5605.24	-1046.77	-1107.60	608.56	40°12'11.456"N	104°33'35.364"W	1.54	
5969.00	27.090	140.960	5690.45	-1076.14	-1139.62	635.75	40°12'11.136"N	104°33'35.018"W	2.17	
6064.00	25.570	144.680	5775.59	-1107.19	-1173.15	661.23	40°12'10.802"N	104°33'34.695"W	2.36	
6158.00	27.030	148.510	5859.87	-1139.70	-1207.92	684.12	40°12'10.456"N	104°33'34.404"W	2.38	
6253.00	26.990	147.540	5944.51	-1174.03	-1244.52	706.96	40°12'10.092"N	104°33'34.115"W	0.47	
6347.00	27.160	148.320	6028.20	-1208.04	-1280.77	729.68	40°12'09.732"N	104°33'33.827"W	0.42	
6442.00	21.760	134.290	6114.72	-1236.49	-1311.57	753.71	40°12'09.425"N	104°33'33.522"W	8.31	
6537.00	15.810	108.930	6204.77	-1250.66	-1328.11	778.62	40°12'09.259"N	104°33'33.203"W	10.50	
6632.00	14.050	79.330	6296.69	-1250.54	-1330.17	802.23	40°12'09.236"N	104°33'32.899"W	8.14	
6726.00	16.740	60.550	6387.36	-1239.68	-1321.40	825.25	40°12'09.320"N	104°33'32.601"W	5.99	
6821.00	21.860	36.300	6477.14	-1216.67	-1300.37	847.68	40°12'09.526"N	104°33'32.309"W	9.90	
6916.00	29.260	20.740	6562.87	-1179.04	-1264.31	866.42	40°12'09.880"N	104°33'32.063"W	10.46	
7010.00	37.270	14.720	6641.43	-1128.73	-1215.21	881.82	40°12'10.364"N	104°33'31.858"W	9.21	
7105.00	44.750	16.700	6713.07	-1067.48	-1155.27	898.76	40°12'10.954"N	104°33'31.631"W	7.99	
7200.00	52.730	9.720	6775.71	-996.85	-1085.82	914.79	40°12'11.639"N	104°33'31.415"W	10.04	
7295.00	62.580	3.460	6826.51	-916.77	-1006.22	923.74	40°12'12.424"N	104°33'31.289"W	11.76	
7390.00	71.490	1.100	6863.54	-829.52	-918.92	927.16	40°12'13.287"N	104°33'31.233"W	9.65	
7484.00	80.220	1.260	6886.49	-738.69	-827.87	929.04	40°12'14.186"N	104°33'31.196"W	9.29	

WELLPATH DATA (189 stations)										
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7579.00	89.540	2.880	6894.96	-644.32	-733.42	932.46	40°12'15.119"N	104°33'31.139"W	9.96	
7674.00	89.480	1.340	6895.78	-549.48	-638.49	935.96	40°12'16.057"N	104°33'31.081"W	1.62	
7768.00	89.480	359.310	6896.63	-455.84	-544.50	936.49	40°12'16.985"N	104°33'31.061"W	2.16	
7863.00	89.690	359.100	6897.32	-361.38	-449.52	935.17	40°12'17.924"N	104°33'31.065"W	0.31	
7958.00	89.630	359.260	6897.88	-266.92	-354.53	933.82	40°12'18.863"N	104°33'31.070"W	0.18	
8052.00	89.540	0.190	6898.56	-173.36	-260.53	933.36	40°12'19.792"N	104°33'31.063"W	0.99	
8147.00	89.780	1.260	6899.13	-78.67	-165.54	934.57	40°12'20.730"N	104°33'31.034"W	1.15	
8242.00	89.660	0.160	6899.59	16.03	-70.55	935.74	40°12'21.669"N	104°33'31.006"W	1.16	
8337.00	89.720	0.190	6900.10	110.65	24.45	936.03	40°12'22.608"N	104°33'30.989"W	0.07	

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	VOGLER STATE D21-760 AWB
Facility	SEC.21-T03N-R64W		

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8431.00	89.690	359.640	6900.59	204.23	118.44	935.89	40°12'23.536"N	104°33'30.978"W	0.59	
8526.00	89.780	359.570	6901.03	298.76	213.44	935.24	40°12'24.475"N	104°33'30.974"W	0.12	
8621.00	89.750	358.600	6901.42	393.20	308.43	933.72	40°12'25.414"N	104°33'30.980"W	1.02	
8716.00	90.150	358.110	6901.50	487.51	403.39	930.99	40°12'26.353"N	104°33'31.002"W	0.67	
8810.00	90.120	357.960	6901.28	580.76	497.33	927.77	40°12'27.281"N	104°33'31.031"W	0.16	
8905.00	89.970	359.480	6901.20	675.13	592.31	925.65	40°12'28.220"N	104°33'31.045"W	1.61	
9000.00	90.000	1.480	6901.23	769.79	687.30	926.45	40°12'29.158"N	104°33'31.022"W	2.11	
9094.00	89.970	2.090	6901.25	863.61	781.25	929.37	40°12'30.087"N	104°33'30.972"W	0.65	
9189.00	90.150	2.410	6901.15	958.48	876.18	933.10	40°12'31.024"N	104°33'30.910"W	0.39	
9284.00	90.120	0.150	6900.93	1053.24	971.15	935.23	40°12'31.962"N	104°33'30.870"W	2.38	
9378.00	90.090	357.150	6900.76	1146.60	1065.11	933.01	40°12'32.891"N	104°33'30.886"W	3.19	
9473.00	90.120	357.440	6900.58	1240.68	1160.00	928.53	40°12'33.829"N	104°33'30.931"W	0.31	
9568.00	90.000	0.890	6900.48	1335.12	1254.98	927.14	40°12'34.768"N	104°33'30.935"W	3.63	
9663.00	90.120	359.210	6900.38	1429.72	1349.98	927.23	40°12'35.707"N	104°33'30.921"W	1.77	
9757.00	90.060	357.980	6900.24	1523.08	1443.95	924.92	40°12'36.635"N	104°33'30.938"W	1.31	
9852.00	89.970	358.070	6900.21	1617.31	1538.89	921.65	40°12'37.574"N	104°33'30.967"W	0.13	
9947.00	90.000	357.760	6900.24	1711.53	1633.83	918.19	40°12'38.512"N	104°33'30.999"W	0.33	
10041.00	90.030	357.070	6900.21	1804.64	1727.73	913.95	40°12'39.441"N	104°33'31.041"W	0.73	
10136.00	89.880	358.270	6900.29	1898.80	1822.65	910.09	40°12'40.379"N	104°33'31.078"W	1.27	
10231.00	89.970	359.310	6900.41	1993.19	1917.63	908.08	40°12'41.318"N	104°33'31.090"W	1.10	
10326.00	89.940	0.600	6900.49	2087.77	2012.63	908.01	40°12'42.256"N	104°33'31.078"W	1.36	
10420.00	89.940	359.580	6900.58	2181.38	2106.62	908.16	40°12'43.185"N	104°33'31.064"W	1.09	
10515.00	89.880	358.740	6900.73	2275.84	2201.61	906.76	40°12'44.124"N	104°33'31.069"W	0.89	
10610.00	89.880	359.790	6900.93	2370.31	2296.60	905.54	40°12'45.063"N	104°33'31.071"W	1.11	
10705.00	89.970	0.890	6901.06	2464.96	2391.60	906.11	40°12'46.001"N	104°33'31.051"W	1.16	
10800.00	89.910	1.730	6901.16	2559.73	2486.57	908.28	40°12'46.940"N	104°33'31.010"W	0.89	
10894.00	89.910	2.770	6901.30	2653.59	2580.50	911.97	40°12'47.867"N	104°33'30.950"W	1.11	
10989.00	90.060	2.960	6901.33	2748.51	2675.38	916.72	40°12'48.805"N	104°33'30.875"W	0.25	
11084.00	90.060	4.190	6901.23	2843.46	2770.20	922.64	40°12'49.741"N	104°33'30.786"W	1.29	
11179.00	90.000	3.070	6901.18	2938.42	2865.00	928.66	40°12'50.677"N	104°33'30.696"W	1.18	
11274.00	89.970	0.160	6901.20	3033.22	2959.96	931.33	40°12'51.615"N	104°33'30.648"W	3.06	
11369.00	90.060	359.420	6901.18	3127.78	3054.95	930.99	40°12'52.554"N	104°33'30.640"W	0.78	
11464.00	90.060	0.510	6901.08	3222.37	3149.95	930.93	40°12'53.492"N	104°33'30.627"W	1.15	
11558.00	89.940	1.290	6901.08	3316.09	3243.94	932.40	40°12'54.421"N	104°33'30.595"W	0.84	
11653.00	89.970	1.240	6901.15	3410.86	3338.92	934.50	40°12'55.359"N	104°33'30.555"W	0.06	
11748.00	89.970	359.210	6901.20	3505.48	3433.91	934.88	40°12'56.298"N	104°33'30.538"W	2.14	

WELLPATH DATA (189 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11842.00	90.090	357.890	6901.15	3598.83	3527.88	932.50	40°12'57.227"N	104°33'30.555"W	1.41	
11937.00	90.000	357.840	6901.08	3693.03	3622.81	928.96	40°12'58.165"N	104°33'30.588"W	0.11	
12032.00	89.970	357.410	6901.11	3787.18	3717.73	925.02	40°12'59.104"N	104°33'30.626"W	0.45	
12127.00	89.910	358.050	6901.20	3881.36	3812.66	921.26	40°13'00.042"N	104°33'30.661"W	0.68	
12221.00	89.910	357.610	6901.35	3974.56	3906.59	917.70	40°13'00.970"N	104°33'30.694"W	0.47	
12316.00	89.940	356.570	6901.48	4068.59	4001.46	912.88	40°13'01.908"N	104°33'30.744"W	1.10	
12411.00	89.910	358.120	6901.60	4162.67	4096.36	908.48	40°13'02.847"N	104°33'30.787"W	1.63	
12506.00	89.880	359.360	6901.78	4257.05	4191.33	906.39	40°13'03.785"N	104°33'30.801"W	1.31	
12600.00	89.910	0.160	6901.95	4350.61	4285.33	905.99	40°13'04.714"N	104°33'30.793"W	0.85	



### REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#11 VOGLER STATE D21-760(915'FSL&1048'FWL,SEC.21)
Area	COLORADO	Well	VOGLER STATE D21-760
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	VOGLER STATE D21-760 AWB
Facility	SEC.21-T03N-R64W		

### WELLPATH DATA (189 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12695.00	89.970	359.900	6902.05	4445.21	4380.33	906.04	40°13'05.653"N	104°33'30.780"W	0.28	
12790.00	89.940	359.690	6902.12	4539.78	4475.33	905.70	40°13'06.592"N	104°33'30.771"W	0.22	
12885.00	89.020	358.670	6902.98	4634.23	4570.32	904.34	40°13'07.530"N	104°33'30.776"W	1.45	
12979.00	88.860	357.530	6904.72	4727.47	4664.25	901.23	40°13'08.459"N	104°33'30.803"W	1.22	
13074.00	88.860	357.180	6906.61	4821.54	4759.13	896.84	40°13'09.397"N	104°33'30.846"W	0.37	
13169.00	88.980	357.430	6908.40	4915.61	4854.00	892.38	40°13'10.335"N	104°33'30.891"W	0.29	
13263.00	89.230	353.020	6909.87	5008.13	4947.64	884.56	40°13'11.261"N	104°33'30.979"W	4.70	
13358.00	88.890	356.890	6911.43	5101.55	5042.24	876.20	40°13'12.197"N	104°33'31.074"W	4.09	
13453.00	89.140	357.010	6913.06	5195.54	5137.10	871.15	40°13'13.134"N	104°33'31.126"W	0.29	
13548.00	90.180	358.290	6913.63	5289.69	5232.01	867.26	40°13'14.073"N	104°33'31.163"W	1.74	
13642.00	90.030	359.430	6913.46	5383.09	5325.99	865.39	40°13'15.002"N	104°33'31.174"W	1.22	
13737.00	90.030	0.240	6913.41	5477.66	5420.99	865.11	40°13'15.940"N	104°33'31.165"W	0.85	
13832.00	89.970	1.810	6913.41	5572.40	5515.97	866.81	40°13'16.879"N	104°33'31.130"W	1.65	
13926.00	89.970	1.250	6913.46	5666.19	5609.94	869.32	40°13'17.807"N	104°33'31.085"W	0.60	
14021.00	90.120	2.150	6913.38	5761.01	5704.89	872.14	40°13'18.745"N	104°33'31.036"W	0.96	
14116.00	89.940	3.120	6913.33	5855.90	5799.79	876.51	40°13'19.682"N	104°33'30.966"W	1.04	
14211.00	89.970	0.270	6913.41	5950.71	5894.74	879.32	40°13'20.620"N	104°33'30.917"W	3.00	
14305.00	89.970	0.430	6913.46	6044.36	5988.74	879.89	40°13'21.549"N	104°33'30.897"W	0.17	
14400.00	90.000	1.090	6913.48	6139.06	6083.73	881.15	40°13'22.488"N	104°33'30.868"W	0.70	
14495.00	90.060	1.550	6913.43	6233.83	6178.71	883.34	40°13'23.426"N	104°33'30.826"W	0.49	
14589.00	90.000	1.390	6913.38	6327.62	6272.67	885.75	40°13'24.354"N	104°33'30.782"W	0.18	
14684.00	90.030	1.340	6913.36	6422.40	6367.65	888.01	40°13'25.292"N	104°33'30.740"W	0.06	
14779.00	90.180	2.430	6913.18	6517.23	6462.59	891.14	40°13'26.230"N	104°33'30.687"W	1.16	
14874.00	89.910	359.380	6913.11	6611.94	6557.57	892.64	40°13'27.169"N	104°33'30.655"W	3.22	
14969.00	90.000	357.070	6913.18	6706.21	6652.52	889.70	40°13'28.107"N	104°33'30.679"W	2.43	
15063.00	90.030	355.820	6913.16	6799.09	6746.34	883.87	40°13'29.035"N	104°33'30.742"W	1.33	
15158.00	90.550	356.290	6912.68	6892.86	6841.11	877.33	40°13'29.972"N	104°33'30.813"W	0.74	
15253.00	90.620	356.590	6911.71	6986.72	6935.92	871.43	40°13'30.909"N	104°33'30.876"W	0.32	
15348.00	90.680	357.650	6910.63	7080.75	7030.79	866.66	40°13'31.847"N	104°33'30.925"W	1.12	
15537.00	90.650	359.850	6908.44	7268.50	7219.72	862.54	40°13'33.715"N	104°33'30.952"W	1.16	
15632.00	90.710	0.480	6907.31	7363.11	7314.72	862.81	40°13'34.653"N	104°33'30.935"W	0.67	
15726.00	90.650	0.410	6906.19	7456.77	7408.71	863.54	40°13'35.582"N	104°33'30.913"W	0.10	
15821.00	90.680	1.020	6905.09	7551.46	7503.69	864.73	40°13'36.520"N	104°33'30.885"W	0.64	
15916.00	90.620	1.680	6904.01	7646.23	7598.66	866.96	40°13'37.459"N	104°33'30.843"W	0.70	
16011.00	90.710	2.200	6902.91	7741.06	7693.60	870.18	40°13'38.396"N	104°33'30.789"W	0.56	
16106.00	90.620	0.800	6901.81	7835.84	7788.56	872.67	40°13'39.334"N	104°33'30.744"W	1.48	

WELLPATH DATA (189 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
16201.00	90.370	0.510	6900.99	7930.53	7883.55	873.75	40°13'40.273"N	104°33'30.717"W	0.40	
16295.00	89.940	359.850	6900.73	8024.15	7977.55	874.05	40°13'41.202"N	104°33'30.700"W	0.84	
16390.00	90.000	359.840	6900.78	8118.72	8072.55	873.79	40°13'42.141"N	104°33'30.690"W	0.06	
16485.00	90.000	359.020	6900.78	8213.23	8167.54	872.85	40°13'43.079"N	104°33'30.689"W	0.86	
16579.00	90.120	358.930	6900.68	8306.66	8261.53	871.16	40°13'44.008"N	104°33'30.698"W	0.16	
16674.00	90.120	358.800	6900.48	8401.06	8356.51	869.28	40°13'44.947"N	104°33'30.709"W	0.14	
16769.00	90.030	359.810	6900.36	8495.54	8451.50	868.13	40°13'45.886"N	104°33'30.711"W	1.07	
16864.00	89.880	0.890	6900.43	8590.19	8546.49	868.71	40°13'46.824"N	104°33'30.691"W	1.15	
16958.00	89.910	1.980	6900.61	8683.97	8640.46	871.07	40°13'47.753"N	104°33'30.648"W	1.16	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#11 VOGLER STATE D21-760(915'FSL&1048'FWL,SEC.21)
Area	COLORADO	Well	VOGLER STATE D21-760
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	VOGLER STATE D21-760 AWB
Facility	SEC.21-T03N-R64W		

WELLPATH DATA (189 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
17053.00	90.000	2.010	6900.68	8778.81	8735.41	874.37	40°13'48.690"N	104°33'30.592"W	0.10	
17148.00	89.820	2.780	6900.83	8873.69	8830.32	878.34	40°13'49.628"N	104°33'30.528"W	0.83	
17242.00	89.780	3.030	6901.16	8967.61	8924.20	883.11	40°13'50.555"N	104°33'30.453"W	0.27	
17337.00	89.940	2.660	6901.39	9062.52	9019.08	887.82	40°13'51.492"N	104°33'30.380"W	0.42	
17432.00	89.880	2.310	6901.54	9157.41	9113.99	891.94	40°13'52.430"N	104°33'30.314"W	0.37	
17526.00	89.780	2.510	6901.82	9251.29	9207.91	895.89	40°13'53.357"N	104°33'30.250"W	0.24	
17621.00	89.850	2.520	6902.13	9346.18	9302.82	900.06	40°13'54.295"N	104°33'30.183"W	0.07	
17716.00	89.850	2.780	6902.37	9441.08	9397.72	904.45	40°13'55.232"N	104°33'30.113"W	0.27	Last BHI MWD Surveys
17761.00	89.850	2.780	6902.49	9486.03	9442.66	906.64	40°13'55.676"N	104°33'30.079"W	0.00	Projection to Bit

HOLE & CASING SECTIONS - Ref Wellbore: VOGLER STATE D21-760 AWB Ref Wellpath: VOGLER STATE D21-760 AWP									
String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
9.625in Casing Surface	30.00	1949.00	1919.00	30.00	1948.95	0.02	-0.03	4.48	-6.90

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
VOLGER STATE D21-790 Seciton 16	-26.00	-48.48	3657.01	3265652.49	1319312.87	40°12'21.600"N	104°32'55.932"W	polygon
VOLGER STATE D21-790 Seciton 21	-26.00	-48.48	3657.01	3265652.49	1319312.87	40°12'21.600"N	104°32'55.932"W	polygon
VOGLER STATE D21-760 BHL FROM PLAN (200'FNL&1980'FWL,SEC.16)	6904.00	9444.86	874.56	3262870.16	1328805.79	40°13'55.701"N	104°33'30.492"W	point
VOGLER STATE D21-760 Landing Point	6904.00	-714.04	936.92	3262932.52	1318647.34	40°12'15.310"N	104°33'31.079"W	point

WELLPATH COMPOSITION - Ref Wellbore: VOGLER STATE D21-760 AWB Ref Wellpath: VOGLER STATE D21-760 AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	1946.00	Gyrodata standard - Drop gyro or Multi-shot	3rd Party Surface <86'-1946'>	VOGLER STATE D21-760 AWB

WELLPATH COMPOSITION - Ref Wellbore: VOGLER STATE D21-760 AWB      Ref Wellpath: VOGLER STATE D21-760 AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
1946.00	17716.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	BH/ATC 8.5 OWSG MWD rev2+IFR1+MSA <1994'-17716'>	VOGLER STATE D21-760 AWB
17716.00	17761.00	Blind Drilling (std)	Projection to bit	VOGLER STATE D21-760 AWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#11 VOGLER STATE D21-760(915'FSL&1048'FWL,SEC.21)
Area	COLORADO	Well	VOGLER STATE D21-760
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	VOGLER STATE D21-760 AWB
Facility	SEC.21-T03N-R64W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1946.00	0.170	253.690	1945.95	Tie to Surface
17716.00	89.850	2.780	6902.37	Last BHI MWD Surveys
17761.00	89.850	2.780	6902.49	Projection to Bit