

NOBLE ENERGY, INC

Location: COLORADO Slot: SLOT#03 DOROTHY STATE LG16-748(350'FSL&1535'FEL,SEC.04)
Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: DOROTHY STATE LG16-748
Facility: SEC.04-T08N-R59W Wellbore: DOROTHY STATE LG16-748 PWB

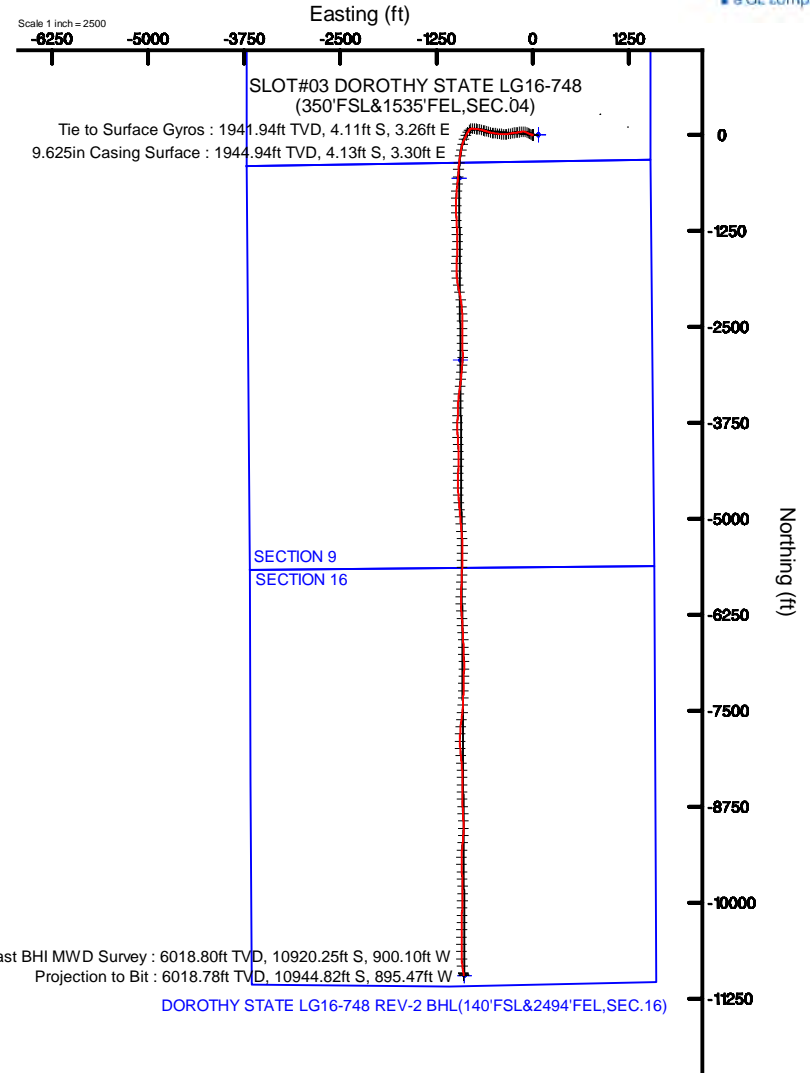
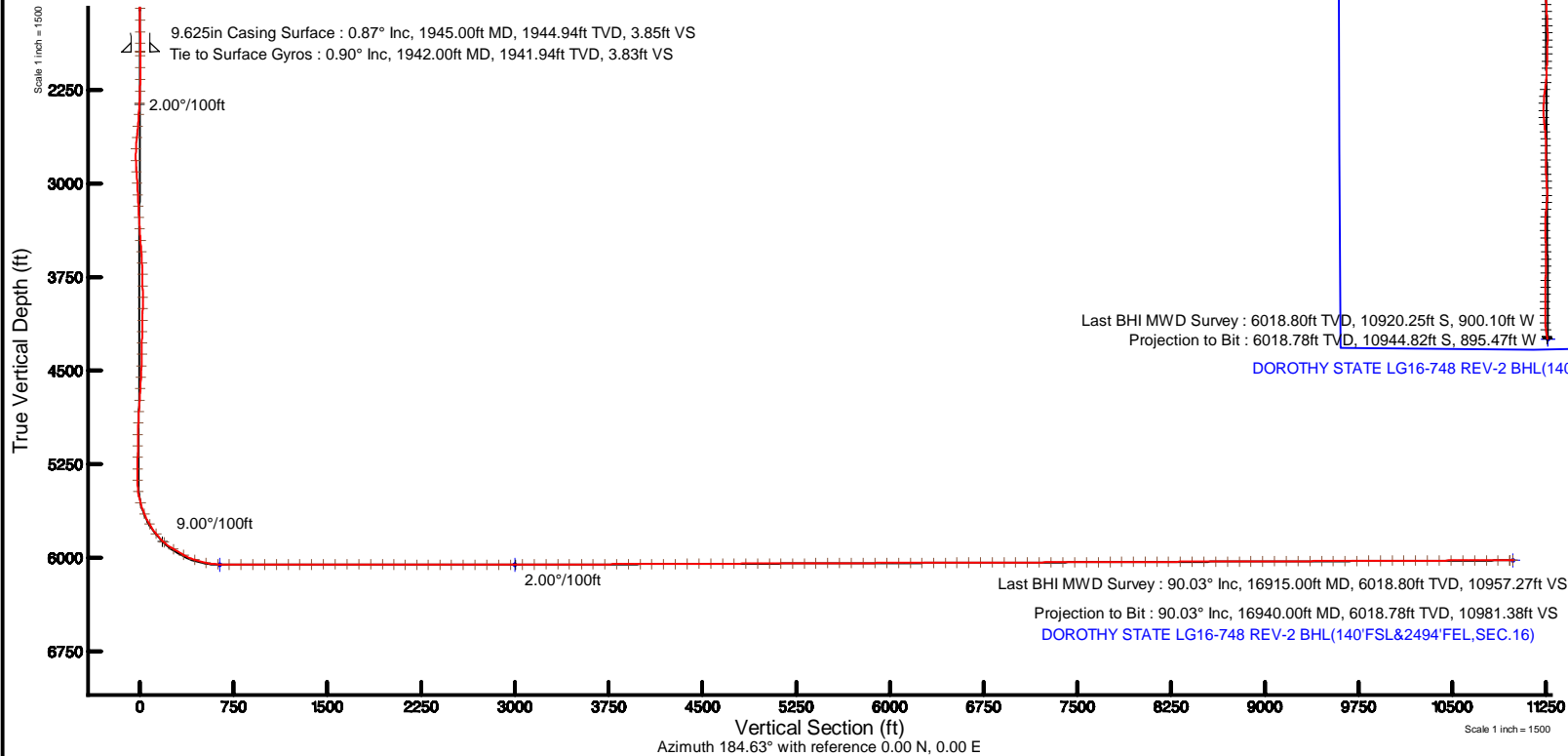
Plot reference wellpath is DOROTHY STATE LG16-748 (REV-B.0) PWP	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
True vertical depths are referenced to RIG (30KB) (RKB)	" = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to RIG (30KB) (RKB)	North Reference: Grid north
RIG (30KB) (RKB) to Mean Sea Level: 4878 feet	Scale: True distance
Mean Sea Level to Ground level (At Slot: SLOT#03 DOROTHY STATE LG16-748(350'FSL&1535'FEL,SEC.04)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: guenaler on 2019-01-14
	Database: WA_DEN_Denver_Defn

Location Information

Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.04-T08N-R59W			3422339.139	1496037.241	40°41'06.216"N	103°58'37.560"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOT#03 DOROTHY STATE LG16-748(350'FSL&1535'FEL,SEC.04)	-1.29	-74.87	3422264.268	1496035.955	40°41'06.216"N	103°58'38.532"W
RIG (30KB) (RKB) to Ground level (At Slot: SLOT#03 DOROTHY STATE LG16-748(350'FSL&1535'FEL,SEC.04))					4878ft	
Mean Sea Level to Ground level (At Slot: SLOT#03 DOROTHY STATE LG16-748(350'FSL&1535'FEL,SEC.04))					0ft	
RIG (30KB) (RKB) to Mean Sea Level					4878ft	

Survey Program

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
30.00	17011.81	OWSG MWD rev2	OWSG MWD rev2 + IFR1 + Multi-Station Correction		DOROTHY STATE LG16-748 PWB



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#03 DOROTHY STATE LG16-748(350'FSL&1535'FEL,SEC.04)
Area	COLORADO	Well	DOROTHY STATE LG16-748
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	DOROTHY STATE LG16-748 AWB
Facility	SEC.04-T08N-R59W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Guenaler
Scale	0.999986	Report Generated	1/14/2019 at 2:34:30 PM
Convergence at slot	0.99° East	Database/Source file	WA_DEN_Denver_Defn/DOROTHY_STATE_LG16-748_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-1.29	-74.87	3422264.27	1496035.96	40°41'06.216"N	103°58'38.532"W
Facility Reference Pt			3422339.14	1496037.24	40°41'06.216"N	103°58'37.560"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	4878.00ft
Horizontal Reference Pt	Slot	RIG (30'KB) (RKB) to Mean Sea Level	4878.00ft
Vertical Reference Pt	RIG (30'KB) (RKB)	RIG (30'KB) (RKB) to Ground Level at Slot (SLOT#03 DOROTHY STATE LG16-748(350'FSL&1535'FEL,SEC.04))	4878.00ft
MD Reference Pt	RIG (30'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	184.63°



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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	DOROTHY STATE LG16-748 AWB
Facility	SEC.04-T08N-R59W		

WELLPATH DATA (182 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	245.720	0.00	0.00	0.00	0.00	40°41'06.216"N	103°58'38.532"W	0.00	
83.00	0.120	245.720	83.00	0.04	-0.04	-0.08	40°41'06.216"N	103°58'38.533"W	0.14	
181.00	0.350	325.090	181.00	-0.14	0.17	-0.34	40°41'06.218"N	103°58'38.536"W	0.36	
273.00	0.410	12.010	273.00	-0.68	0.72	-0.44	40°41'06.223"N	103°58'38.538"W	0.33	
368.00	0.250	275.770	368.00	-1.02	1.07	-0.57	40°41'06.227"N	103°58'38.539"W	0.53	
462.00	0.480	270.790	461.99	-1.00	1.10	-1.17	40°41'06.227"N	103°58'38.547"W	0.25	
557.00	0.170	168.150	556.99	-0.84	0.97	-1.54	40°41'06.226"N	103°58'38.552"W	0.57	
651.00	0.400	186.980	650.99	-0.38	0.50	-1.55	40°41'06.221"N	103°58'38.552"W	0.26	
746.00	0.440	213.710	745.99	0.27	-0.13	-1.79	40°41'06.215"N	103°58'38.555"W	0.21	
840.00	0.230	233.930	839.99	0.71	-0.54	-2.15	40°41'06.211"N	103°58'38.560"W	0.25	
935.00	0.160	34.280	934.99	0.72	-0.54	-2.22	40°41'06.211"N	103°58'38.561"W	0.40	
1029.00	0.220	81.230	1028.99	0.56	-0.41	-1.97	40°41'06.212"N	103°58'38.558"W	0.17	
1124.00	0.220	126.380	1123.99	0.62	-0.49	-1.65	40°41'06.211"N	103°58'38.553"W	0.18	
1218.00	0.280	93.740	1217.99	0.71	-0.61	-1.27	40°41'06.210"N	103°58'38.549"W	0.16	
1312.00	0.230	106.960	1311.98	0.75	-0.68	-0.86	40°41'06.209"N	103°58'38.543"W	0.08	
1407.00	0.150	175.850	1406.98	0.91	-0.86	-0.67	40°41'06.208"N	103°58'38.541"W	0.24	
1501.00	0.280	192.540	1500.98	1.26	-1.20	-0.71	40°41'06.204"N	103°58'38.541"W	0.15	
1596.00	0.230	205.690	1595.98	1.67	-1.60	-0.84	40°41'06.200"N	103°58'38.543"W	0.08	
1690.00	0.270	128.980	1689.98	1.97	-1.91	-0.75	40°41'06.197"N	103°58'38.542"W	0.33	
1784.00	1.350	116.630	1783.97	2.51	-2.55	0.41	40°41'06.191"N	103°58'38.527"W	1.16	
1879.00	1.190	119.320	1878.95	3.34	-3.53	2.27	40°41'06.181"N	103°58'38.503"W	0.18	
1942.00	0.900	121.040	1941.94	3.83	-4.11	3.26	40°41'06.175"N	103°58'38.491"W	0.46	Tie to Surface Gyros
1979.00	0.610	140.110	1978.93	4.10	-4.41	3.64	40°41'06.172"N	103°58'38.486"W	1.03	
2074.00	2.220	267.570	2073.91	4.69	-4.88	2.12	40°41'06.167"N	103°58'38.506"W	2.77	
2168.00	4.280	291.890	2167.76	3.87	-3.64	-2.95	40°41'06.180"N	103°58'38.571"W	2.59	
2263.00	6.700	294.640	2262.32	0.92	-0.01	-11.28	40°41'06.218"N	103°58'38.678"W	2.56	
2357.00	9.040	291.800	2355.43	-3.14	5.02	-23.12	40°41'06.269"N	103°58'38.831"W	2.52	
2452.00	11.210	294.070	2448.94	-8.41	11.56	-38.48	40°41'06.337"N	103°58'39.029"W	2.32	
2546.00	12.930	297.010	2540.86	-15.46	20.06	-56.20	40°41'06.424"N	103°58'39.257"W	1.94	
2641.00	15.160	295.720	2633.02	-23.98	30.28	-76.86	40°41'06.528"N	103°58'39.523"W	2.37	



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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#03 DOROTHY STATE LG16-748(350'FSL&1535'FEL,SEC.04)
Area	COLORADO	Well	DOROTHY STATE LG16-748
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	DOROTHY STATE LG16-748 AWB
Facility	SEC.04-T08N-R59W		

WELLPATH DATA (182 stations)											
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments	
2735.00	16.070	286.030	2723.56	-30.98	39.21	-100.44	40°41'06.620"N	103°58'39.827"W	2.93		
2830.00	15.850	268.520	2814.95	-32.20	42.50	-126.06	40°41'06.657"N	103°58'40.159"W	5.06		
2925.00	13.420	256.070	2906.89	-27.31	39.51	-149.74	40°41'06.632"N	103°58'40.467"W	4.17		
3019.00	14.150	260.340	2998.18	-21.00	34.96	-171.66	40°41'06.591"N	103°58'40.752"W	1.33		
3114.00	14.270	263.140	3090.27	-15.81	31.61	-194.73	40°41'06.561"N	103°58'41.052"W	0.73		
3208.00	14.650	266.050	3181.30	-11.73	29.41	-218.09	40°41'06.544"N	103°58'41.356"W	0.87		
3302.00	14.790	261.310	3272.22	-7.19	26.78	-241.81	40°41'06.522"N	103°58'41.664"W	1.29		
3396.00	14.730	258.780	3363.12	-1.17	22.64	-265.39	40°41'06.485"N	103°58'41.971"W	0.69		
3491.00	14.730	259.240	3454.99	5.34	18.04	-289.10	40°41'06.443"N	103°58'42.280"W	0.12		
3586.00	14.640	258.640	3546.89	11.85	13.42	-312.74	40°41'06.402"N	103°58'42.588"W	0.19		
3680.00	14.780	264.070	3637.81	17.31	9.84	-336.31	40°41'06.370"N	103°58'42.895"W	1.47		
3775.00	14.740	268.450	3729.68	20.83	8.26	-360.45	40°41'06.359"N	103°58'43.208"W	1.18		
3869.00	14.830	272.870	3820.57	22.49	8.54	-384.42	40°41'06.366"N	103°58'43.519"W	1.20		
3964.00	14.560	273.360	3912.46	23.13	9.85	-408.48	40°41'06.383"N	103°58'43.831"W	0.31		
4058.00	14.760	277.990	4003.41	22.68	12.20	-432.14	40°41'06.410"N	103°58'44.138"W	1.26		
4153.00	14.630	280.260	4095.30	20.80	16.02	-455.92	40°41'06.452"N	103°58'44.446"W	0.62		
4248.00	14.750	279.250	4187.20	18.64	20.10	-479.67	40°41'06.496"N	103°58'44.753"W	0.30		
4342.00	14.760	277.460	4278.10	17.09	23.58	-503.35	40°41'06.534"N	103°58'45.059"W	0.49		
4437.00	14.640	276.160	4369.99	16.17	26.44	-527.29	40°41'06.567"N	103°58'45.369"W	0.37		
4531.00	14.640	284.210	4460.94	13.87	30.63	-550.61	40°41'06.612"N	103°58'45.671"W	2.16		
4626.00	14.620	287.390	4552.87	9.22	37.16	-573.69	40°41'06.680"N	103°58'45.969"W	0.85		
4721.00	14.610	288.010	4644.79	3.80	44.45	-596.53	40°41'06.756"N	103°58'46.264"W	0.17		
4815.00	14.650	288.900	4735.74	-1.88	51.97	-619.05	40°41'06.834"N	103°58'46.555"W	0.24		
4910.00	14.530	287.830	4827.68	-7.56	59.51	-641.76	40°41'06.913"N	103°58'46.848"W	0.31		
5005.00	14.550	284.320	4919.64	-12.29	66.11	-664.67	40°41'06.982"N	103°58'47.144"W	0.93		
5099.00	14.480	279.380	5010.64	-15.26	70.94	-687.70	40°41'07.033"N	103°58'47.441"W	1.32		
5194.00	14.530	275.770	5102.62	-16.48	74.08	-711.28	40°41'07.068"N	103°58'47.747"W	0.95		
5289.00	14.630	278.220	5194.56	-17.47	76.99	-735.01	40°41'07.101"N	103°58'48.054"W	0.66		
5383.00	14.540	275.820	5285.53	-18.46	79.88	-758.50	40°41'07.134"N	103°58'48.358"W	0.65		
5478.00	14.640	274.910	5377.47	-18.77	82.12	-782.32	40°41'07.160"N	103°58'48.667"W	0.26		



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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	DOROTHY STATE LG16-748 AWB
Facility	SEC.04-T08N-R59W		

WELLPATH DATA (182 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5572.00	14.650	247.790	5468.52	-13.45	78.64	-805.19	40°41'07.129"N	103°58'48.965"W	7.23	
5667.00	18.950	213.970	5559.66	5.47	61.26	-824.99	40°41'06.961"N	103°58'49.225"W	11.04	
5761.00	25.180	211.380	5646.73	36.66	31.50	-843.95	40°41'06.670"N	103°58'49.478"W	6.71	
5856.00	32.730	208.710	5729.80	78.21	-8.34	-866.84	40°41'06.281"N	103°58'49.784"W	8.06	
5951.00	39.180	203.300	5806.68	130.16	-58.49	-891.08	40°41'05.789"N	103°58'50.110"W	7.56	
6045.00	49.330	195.800	5873.96	193.47	-120.27	-912.60	40°41'05.182"N	103°58'50.403"W	12.13	
6140.00	58.340	191.360	5929.98	269.15	-194.75	-930.42	40°41'04.450"N	103°58'50.651"W	10.20	
6234.00	62.310	188.910	5976.52	350.42	-275.13	-944.75	40°41'03.658"N	103°58'50.855"W	4.79	
6329.00	70.240	186.290	6014.72	437.20	-361.27	-956.18	40°41'02.809"N	103°58'51.022"W	8.72	
6423.00	78.750	184.250	6039.82	527.68	-451.38	-964.46	40°41'01.920"N	103°58'51.150"W	9.29	
6518.00	87.290	182.910	6051.36	621.87	-545.40	-970.34	40°41'00.992"N	103°58'51.247"W	9.10	
6612.00	90.150	186.740	6053.46	715.82	-639.02	-978.24	40°41'00.068"N	103°58'51.370"W	5.08	
6707.00	89.850	185.900	6053.46	810.78	-733.44	-988.70	40°40'59.137"N	103°58'51.527"W	0.94	
6801.00	90.120	179.970	6053.48	904.69	-827.27	-993.51	40°40'58.211"N	103°58'51.610"W	6.32	
6896.00	90.060	181.610	6053.33	999.48	-922.26	-994.82	40°40'57.273"N	103°58'51.648"W	1.73	
6990.00	89.940	178.390	6053.33	1093.16	-1016.25	-994.82	40°40'56.344"N	103°58'51.669"W	3.43	
7085.00	89.970	177.030	6053.41	1187.47	-1111.17	-991.02	40°40'55.406"N	103°58'51.641"W	1.43	
7179.00	90.000	175.780	6053.43	1280.50	-1204.98	-985.13	40°40'54.478"N	103°58'51.585"W	1.33	
7274.00	90.680	179.100	6052.87	1374.74	-1299.87	-980.89	40°40'53.540"N	103°58'51.551"W	3.57	
7368.00	89.970	179.590	6052.34	1468.34	-1393.86	-979.81	40°40'52.611"N	103°58'51.558"W	0.92	
7463.00	90.520	181.200	6051.93	1563.07	-1488.86	-980.47	40°40'51.673"N	103°58'51.588"W	1.79	
7558.00	89.820	184.020	6051.65	1658.00	-1583.75	-984.79	40°40'50.736"N	103°58'51.665"W	3.06	
7652.00	89.820	181.530	6051.94	1751.95	-1677.63	-989.34	40°40'49.809"N	103°58'51.745"W	2.65	
7746.00	89.880	179.180	6052.19	1845.68	-1771.62	-989.92	40°40'48.881"N	103°58'51.773"W	2.50	
7841.00	89.570	174.930	6052.65	1939.83	-1866.47	-985.04	40°40'47.943"N	103°58'51.731"W	4.49	
7936.00	89.540	169.240	6053.38	2032.52	-1960.53	-971.97	40°40'47.011"N	103°58'51.582"W	5.99	
8030.00	89.720	167.420	6053.99	2122.74	-2052.58	-952.96	40°40'46.099"N	103°58'51.356"W	1.95	
8125.00	89.820	171.620	6054.37	2214.44	-2145.97	-935.68	40°40'45.173"N	103°58'51.153"W	4.42	
8220.00	89.780	173.970	6054.70	2307.41	-2240.21	-923.77	40°40'44.240"N	103°58'51.019"W	2.47	
8314.00	89.940	177.540	6054.93	2400.27	-2333.94	-916.81	40°40'43.313"N	103°58'50.950"W	3.80	



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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	DOROTHY STATE LG16-748 AWB
Facility	SEC.04-T08N-R59W		

WELLPATH DATA (182 stations)										
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8408.00	90.060	179.450	6054.93	2493.73	-2427.90	-914.34	40°40'42.384"N	103°58'50.939"W	2.04	
8503.00	89.820	181.380	6055.03	2588.47	-2522.90	-915.03	40°40'41.446"N	103°58'50.969"W	2.05	
8598.00	90.090	179.270	6055.11	2683.20	-2617.89	-915.57	40°40'40.507"N	103°58'50.997"W	2.24	
8692.00	90.150	178.740	6054.91	2776.74	-2711.88	-913.93	40°40'39.578"N	103°58'50.996"W	0.57	
8787.00	90.250	177.600	6054.58	2871.14	-2806.82	-910.90	40°40'38.640"N	103°58'50.978"W	1.20	
8881.00	90.400	181.360	6054.05	2964.74	-2900.80	-910.05	40°40'37.711"N	103°58'50.988"W	4.00	
8976.00	90.180	186.040	6053.57	3059.70	-2995.58	-916.18	40°40'36.776"N	103°58'51.089"W	4.93	
9071.00	90.180	185.450	6053.27	3154.68	-3090.10	-925.69	40°40'35.844"N	103°58'51.233"W	0.62	
9165.00	90.400	184.540	6052.79	3248.68	-3183.74	-933.87	40°40'34.920"N	103°58'51.360"W	1.00	
9260.00	90.370	188.840	6052.15	3343.59	-3278.07	-944.94	40°40'33.990"N	103°58'51.525"W	4.53	
9354.00	90.180	188.250	6051.70	3437.37	-3371.02	-958.90	40°40'33.074"N	103°58'51.726"W	0.66	
9449.00	90.280	182.960	6051.32	3532.32	-3465.53	-968.18	40°40'32.142"N	103°58'51.868"W	5.57	
9543.00	89.940	182.920	6051.14	3626.28	-3559.41	-973.00	40°40'31.215"N	103°58'51.951"W	0.36	
9638.00	90.250	180.710	6050.98	3721.16	-3654.36	-976.01	40°40'30.277"N	103°58'52.011"W	2.35	
9732.00	90.340	181.190	6050.50	3814.97	-3748.34	-977.57	40°40'29.349"N	103°58'52.053"W	0.52	
9827.00	90.250	179.790	6050.01	3909.71	-3843.34	-978.38	40°40'28.411"N	103°58'52.084"W	1.48	
9921.00	90.180	175.880	6049.66	4003.04	-3937.25	-974.83	40°40'27.482"N	103°58'52.059"W	4.16	
10015.00	90.280	177.600	6049.28	4096.14	-4031.09	-969.48	40°40'26.554"N	103°58'52.011"W	1.83	
10110.00	90.120	178.150	6048.95	4190.48	-4126.03	-965.96	40°40'25.616"N	103°58'51.986"W	0.60	
10205.00	90.220	180.290	6048.66	4285.06	-4221.01	-964.67	40°40'24.677"N	103°58'51.990"W	2.26	
10299.00	90.310	181.700	6048.23	4378.86	-4314.99	-966.30	40°40'23.749"N	103°58'52.032"W	1.50	
10394.00	90.310	181.850	6047.72	4473.74	-4409.95	-969.24	40°40'22.811"N	103°58'52.092"W	0.16	
10488.00	90.460	181.290	6047.08	4567.61	-4503.91	-971.82	40°40'21.883"N	103°58'52.146"W	0.62	
10583.00	90.400	178.150	6046.37	4662.25	-4598.89	-971.35	40°40'20.945"N	103°58'52.161"W	3.31	
10677.00	90.180	175.730	6045.90	4755.39	-4692.75	-966.34	40°40'20.017"N	103°58'52.117"W	2.59	
10772.00	90.180	174.970	6045.60	4849.15	-4787.44	-958.63	40°40'19.080"N	103°58'52.038"W	0.80	
10866.00	90.280	175.050	6045.22	4941.83	-4881.08	-950.46	40°40'18.153"N	103°58'51.953"W	0.14	
10961.00	90.250	175.660	6044.78	5035.59	-4975.77	-942.76	40°40'17.217"N	103°58'51.874"W	0.64	
11055.00	90.180	174.950	6044.43	5128.34	-5069.45	-935.07	40°40'16.290"N	103°58'51.795"W	0.76	
11150.00	90.250	174.270	6044.07	5221.90	-5164.03	-926.15	40°40'15.354"N	103°58'51.700"W	0.72	



Actual Wellpath Report

DOROTHY STATE LG16-748 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#03 DOROTHY STATE LG16-748(350'FSL&1535'FEL,SEC.04)
Area	COLORADO	Well	DOROTHY STATE LG16-748
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	DOROTHY STATE LG16-748 AWB
Facility	SEC.04-T08N-R59W		

WELLPATH DATA (182 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11245.00	90.220	176.250	6043.68	5315.62	-5258.70	-918.30	40°40'14.417"N	103°58'51.619"W	2.08	
11339.00	90.340	178.890	6043.22	5408.90	-5352.61	-914.31	40°40'13.489"N	103°58'51.588"W	2.81	
11434.00	90.180	181.120	6042.79	5503.59	-5447.60	-914.32	40°40'12.550"N	103°58'51.610"W	2.35	
11528.00	90.310	181.080	6042.39	5597.41	-5541.58	-916.13	40°40'11.622"N	103°58'51.654"W	0.14	
11623.00	90.250	181.270	6041.92	5692.24	-5636.56	-918.07	40°40'10.684"N	103°58'51.700"W	0.21	
11717.00	90.400	181.070	6041.39	5786.06	-5730.54	-919.99	40°40'09.756"N	103°58'51.746"W	0.27	
11812.00	90.370	183.470	6040.75	5880.97	-5825.45	-923.75	40°40'08.819"N	103°58'51.816"W	2.53	
11906.00	90.250	183.740	6040.24	5974.96	-5919.27	-929.67	40°40'07.893"N	103°58'51.914"W	0.31	
12000.00	90.150	180.710	6039.92	6068.86	-6013.18	-933.31	40°40'06.966"N	103°58'51.982"W	3.23	
12095.00	90.120	178.050	6039.69	6163.46	-6108.17	-932.29	40°40'06.027"N	103°58'51.990"W	2.80	
12189.00	90.220	175.840	6039.41	6256.61	-6202.03	-927.28	40°40'05.099"N	103°58'51.945"W	2.35	
12284.00	90.250	175.870	6039.02	6350.50	-6296.78	-920.41	40°40'04.162"N	103°58'51.877"W	0.04	
12379.00	90.220	176.850	6038.63	6444.51	-6391.59	-914.38	40°40'03.224"N	103°58'51.820"W	1.03	
12473.00	90.220	175.680	6038.27	6537.51	-6485.38	-908.26	40°40'02.296"N	103°58'51.762"W	1.24	
12567.00	90.250	178.130	6037.89	6630.65	-6579.24	-903.18	40°40'01.368"N	103°58'51.717"W	2.61	
12662.00	90.250	179.060	6037.47	6725.12	-6674.21	-900.85	40°40'00.429"N	103°58'51.708"W	0.98	
12756.00	90.000	176.770	6037.27	6818.47	-6768.14	-897.43	40°39'59.501"N	103°58'51.684"W	2.45	
12851.00	90.310	178.470	6037.01	6912.75	-6863.05	-893.49	40°39'58.562"N	103°58'51.654"W	1.82	
12945.00	90.180	181.090	6036.61	7006.41	-6957.04	-893.13	40°39'57.634"N	103°58'51.670"W	2.79	
13040.00	90.280	181.730	6036.23	7101.26	-7052.01	-895.46	40°39'56.696"N	103°58'51.722"W	0.68	
13134.00	90.220	181.300	6035.82	7195.12	-7145.98	-897.95	40°39'55.768"N	103°58'51.775"W	0.46	
13228.00	90.310	181.540	6035.38	7288.97	-7239.95	-900.28	40°39'54.840"N	103°58'51.826"W	0.27	
13323.00	90.340	182.330	6034.84	7383.86	-7334.89	-903.49	40°39'53.902"N	103°58'51.889"W	0.83	
13417.00	90.220	182.250	6034.38	7477.78	-7428.82	-907.24	40°39'52.975"N	103°58'51.958"W	0.15	
13512.00	90.220	186.010	6034.02	7572.76	-7523.55	-914.08	40°39'52.040"N	103°58'52.068"W	3.96	
13607.00	90.280	188.630	6033.60	7667.65	-7617.77	-926.19	40°39'51.111"N	103°58'52.246"W	2.76	
13701.00	90.310	184.850	6033.12	7761.57	-7711.10	-937.22	40°39'50.191"N	103°58'52.410"W	4.02	
13795.00	90.280	182.650	6032.64	7855.55	-7804.89	-943.36	40°39'49.266"N	103°58'52.510"W	2.34	
13890.00	90.340	179.800	6032.12	7950.37	-7899.86	-945.39	40°39'48.328"N	103°58'52.558"W	3.00	
13984.00	90.120	176.360	6031.74	8043.74	-7993.79	-942.25	40°39'47.399"N	103°58'52.538"W	3.67	



Actual Wellpath Report
DOROTHY STATE LG16-748 AWP
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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#03 DOROTHY STATE LG16-748(350'FSL&1535'FEL,SEC.04)
Area	COLORADO	Well	DOROTHY STATE LG16-748
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	DOROTHY STATE LG16-748 AWB
Facility	SEC.04-T08N-R59W		

WELLPATH DATA (182 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
14079.00	90.280	173.050	6031.41	8137.31	-8088.37	-933.48	40°39'46.463"N	103°58'52.445"W	3.49	
14173.00	90.180	175.510	6031.04	8229.77	-8181.90	-924.11	40°39'45.538"N	103°58'52.344"W	2.62	
14268.00	90.280	177.450	6030.65	8323.81	-8276.71	-918.28	40°39'44.600"N	103°58'52.290"W	2.04	
14362.00	90.220	179.930	6030.24	8417.30	-8370.68	-916.13	40°39'43.671"N	103°58'52.283"W	2.64	
14457.00	90.250	180.470	6029.85	8512.01	-8465.68	-916.46	40°39'42.733"N	103°58'52.308"W	0.57	
14551.00	90.250	179.620	6029.44	8605.71	-8559.68	-916.54	40°39'41.804"N	103°58'52.330"W	0.90	
14646.00	90.180	178.560	6029.09	8700.27	-8654.66	-915.03	40°39'40.865"N	103°58'52.332"W	1.12	
14741.00	90.310	176.540	6028.68	8794.54	-8749.57	-910.97	40°39'39.927"N	103°58'52.300"W	2.13	
14835.00	90.180	176.850	6028.28	8887.64	-8843.41	-905.55	40°39'38.999"N	103°58'52.251"W	0.36	
14930.00	90.180	178.420	6027.98	8981.93	-8938.33	-901.63	40°39'38.060"N	103°58'52.221"W	1.65	
15024.00	90.310	179.580	6027.58	9075.47	-9032.31	-899.99	40°39'37.132"N	103°58'52.220"W	1.24	
15119.00	90.370	183.340	6027.02	9170.31	-9127.26	-902.41	40°39'36.194"N	103°58'52.273"W	3.96	
15214.00	90.400	185.680	6026.38	9265.30	-9221.96	-909.88	40°39'35.260"N	103°58'52.391"W	2.46	
15308.00	90.310	185.510	6025.79	9359.28	-9315.51	-919.04	40°39'34.337"N	103°58'52.531"W	0.20	
15403.00	90.220	181.550	6025.35	9454.25	-9410.31	-924.89	40°39'33.401"N	103°58'52.627"W	4.17	
15497.00	90.340	177.270	6024.90	9547.83	-9504.28	-923.92	40°39'32.473"N	103°58'52.636"W	4.55	
15592.00	90.310	178.160	6024.36	9642.14	-9599.20	-920.13	40°39'31.534"N	103°58'52.608"W	0.94	
15686.00	90.280	177.390	6023.87	9735.47	-9693.13	-916.48	40°39'30.606"N	103°58'52.581"W	0.82	
15781.00	90.280	178.450	6023.41	9829.82	-9788.07	-913.04	40°39'29.667"N	103°58'52.558"W	1.12	
15875.00	90.180	180.670	6023.03	9923.44	-9882.06	-912.31	40°39'28.738"N	103°58'52.569"W	2.36	
15970.00	90.180	182.330	6022.73	10018.30	-9977.02	-914.80	40°39'27.801"N	103°58'52.623"W	1.75	
16064.00	90.370	181.340	6022.28	10112.18	-10070.97	-917.81	40°39'26.873"N	103°58'52.682"W	1.07	
16159.00	90.220	179.750	6021.79	10206.94	-10165.96	-918.71	40°39'25.935"N	103°58'52.715"W	1.68	
16253.00	90.180	180.830	6021.46	10300.67	-10259.96	-919.19	40°39'25.006"N	103°58'52.742"W	1.15	
16347.00	90.340	182.870	6021.04	10394.55	-10353.90	-922.22	40°39'24.078"N	103°58'52.803"W	2.18	
16442.00	90.340	180.830	6020.47	10489.43	-10448.85	-925.29	40°39'23.141"N	103°58'52.863"W	2.15	
16536.00	90.310	179.130	6019.94	10583.12	-10542.84	-925.26	40°39'22.212"N	103°58'52.884"W	1.81	
16631.00	90.310	180.580	6019.43	10677.79	-10637.84	-925.02	40°39'21.274"N	103°58'52.902"W	1.53	
16726.00	90.090	177.140	6019.09	10772.29	-10732.80	-923.13	40°39'20.335"N	103°58'52.898"W	3.63	
16820.00	90.120	172.770	6018.92	10864.93	-10826.42	-914.86	40°39'19.409"N	103°58'52.812"W	4.65	



Actual Wellpath Report

DOROTHY STATE LG16-748 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#03 DOROTHY STATE LG16-748(350'FSL&1535'FEL,SEC.04)
Area	COLORADO	Well	DOROTHY STATE LG16-748
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	DOROTHY STATE LG16-748 AWB
Facility	SEC.04-T08N-R59W		

WELLPATH DATA (182 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
16915.00	90.030	169.340	6018.80	10957.27	-10920.25	-900.10	40°39'18.479"N	103°58'52.641"W	3.61	Last BHI MWD Survey
16940.00	90.030	169.340	6018.78	10981.38	-10944.82	-895.47	40°39'18.236"N	103°58'52.587"W	0.00	Projection to Bit

HOLE & CASING SECTIONS - Ref Wellbore: DOROTHY STATE LG16-748 AWB Ref Wellpath: DOROTHY STATE LG16-748 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]
13.5in Open Hole	30.00	1945.00	1915.00	30.00	1944.94	0.00	-0.01	-4.13	3.30
9.625in Casing Surface	30.00	1945.00	1915.00	30.00	1944.94	0.00	-0.01	-4.13	3.30
8.5in Open Hole	1945.00	16915.00	14970.00	1944.94	6018.80	-4.13	3.30	-10920.25	-900.10



Actual Wellpath Report

DOROTHY STATE LG16-748 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#03 DOROTHY STATE LG16-748(350'FSL&1535'FEL,SEC.04)
Area	COLORADO	Well	DOROTHY STATE LG16-748
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	DOROTHY STATE LG16-748 AWB
Facility	SEC.04-T08N-R59W		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
DOROTHY STATE LG16-729 SECTION 16	4.00	1.29	74.87	3422339.14	1496037.24	40°41'06.216"N	103°58'37.560"W	polygon
DOROTHY STATE LG16-729 SECTION 4	4.00	1.29	74.87	3422339.14	1496037.24	40°41'06.216"N	103°58'37.560"W	polygon
DOROTHY STATE LG16-729 SECTION 9	4.00	1.29	74.87	3422339.14	1496037.24	40°41'06.216"N	103°58'37.560"W	polygon
DOROTHY STATE LG16-748 REV-1 BHL (140'FSL&2494'FEL,SEC.16)	5986.87	-10950.30	-885.91	3421378.37	1485085.84	40°39'18.180"N	103°58'52.464"W	point
DOROTHY STATE LG16-748 Landing Point	6005.00	-563.83	-956.19	3421308.09	1495472.13	40°41'00.808"N	103°58'51.067"W	point
DOROTHY STATE LG16-748 REV-2 BHL (140'FSL&2494'FEL,SEC.16)	6020.00	-10950.30	-885.91	3421378.37	1485085.84	40°39'18.180"N	103°58'52.464"W	point
DOROTHY STATE LG16-748 REV-2 Landing Point	6055.00	-563.83	-956.19	3421308.09	1495472.13	40°41'00.808"N	103°58'51.067"W	point
DOROTHY STATE LG16-748 TARGET 1	6055.00	-2933.74	-940.15	3421324.13	1493102.26	40°40'37.391"N	103°58'51.386"W	point

WELLPATH COMPOSITION - Ref Wellbore: DOROTHY STATE LG16-748 AWB					Ref Wellpath: DOROTHY STATE LG16-748 AWP		
Start MD [ft]	End MD [ft]	Positional Uncertainty Model		Log Name/Comment		Wellbore	
0.00	1942.00	Gyrodata standard - Drop gyro or Multi-shot		3rd Party Surface Gyros <83'-1942'>		DOROTHY STATE LG16-748 AWB	
1942.00	16915.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction		BH/ATC 8.5" Hole OWSG MWD rev2+IFR1+MSA <1979'-16915'>		DOROTHY STATE LG16-748 AWB	
16915.00	16940.00	Blind Drilling (std)		Projection to bit		DOROTHY STATE LG16-748 AWB	



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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#03 DOROTHY STATE LG16-748(350'FSL&1535'FEL,SEC.04)
Area	COLORADO	Well	DOROTHY STATE LG16-748
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	DOROTHY STATE LG16-748 AWB
Facility	SEC.04-T08N-R59W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1942.00	0.900	121.040	1941.94	Tie to Surface Gyros
16915.00	90.030	169.340	6018.80	Last BHI MWD Survey
16940.00	90.030	169.340	6018.78	Projection to Bit