

NOBLE ENERGY, INC

Location: COLORADO Slot: SLOT#04 BISON RIDGE Y22-734(2230'FSL&2060'FEL,SEC.10)
Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: BISON RIDGE Y22-734
Facility: SEC.10-T02N-B64W Wellbore: BISON RIDGE Y22-734 PWB

Comments

SURFACE LOCATION: NWSE
40.15182N
104.53546W
API: 05-123-45371

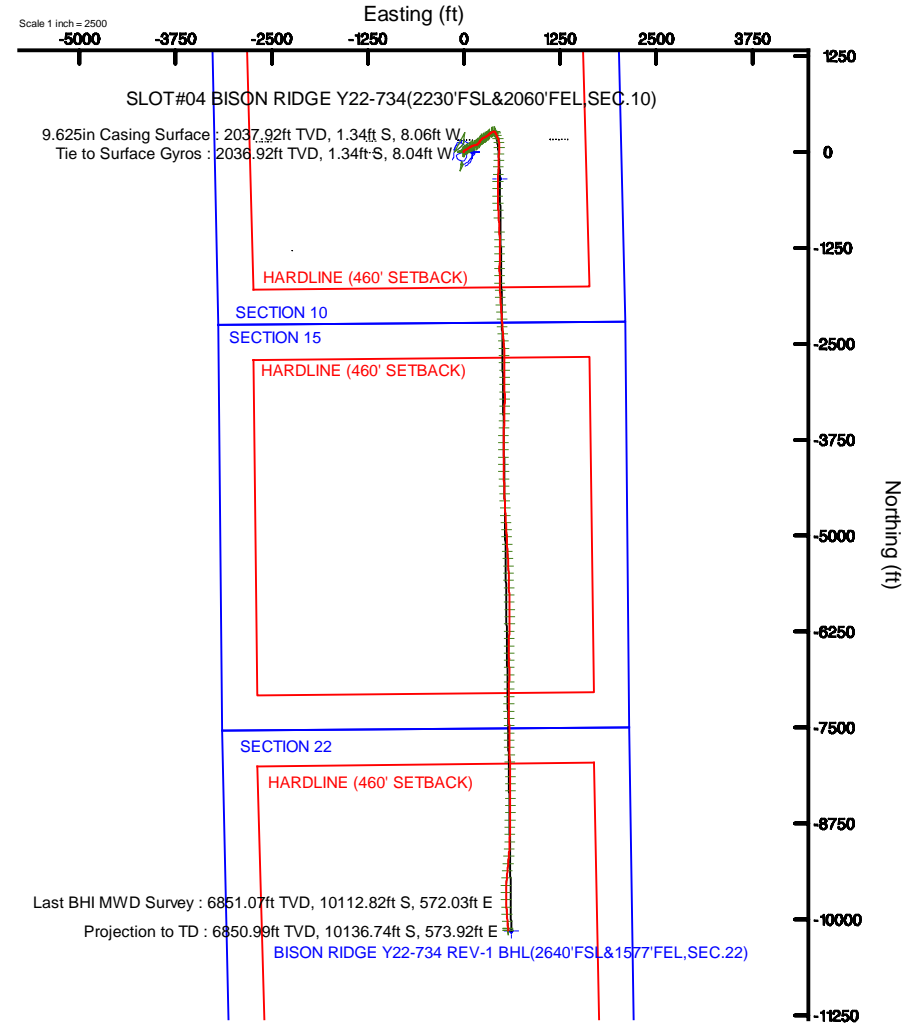
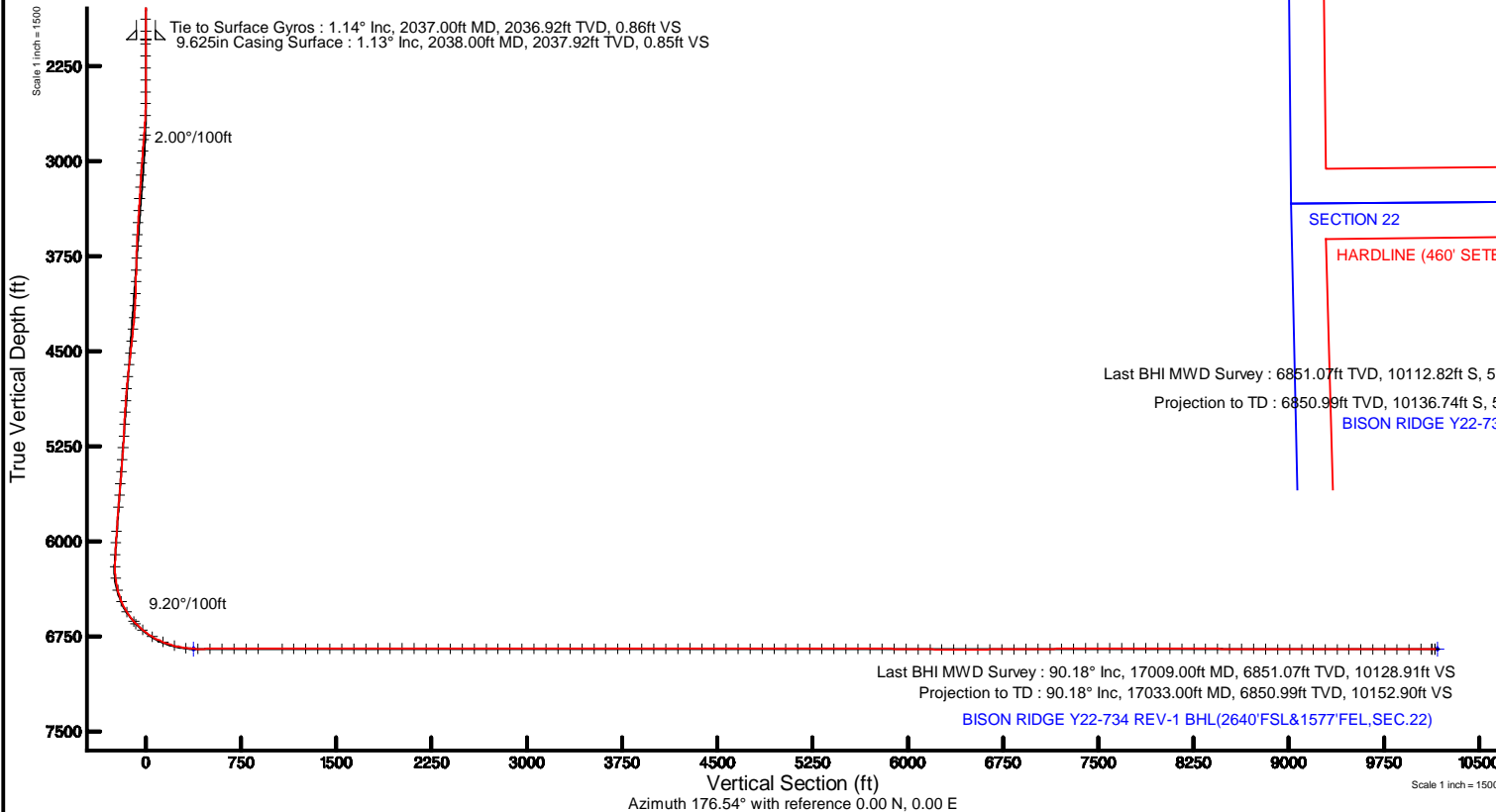
Survey Program

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
30.00	17042.70	OWSG MWD rev2	OWSG MWD rev2 + IFR1 + Multi-Station Correction		BISON RIDGE Y22-734 PWB



Plot reference wellpath is BISON RIDGE Y22-734 (REV-1) (S) PWB	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (2011) US feet
True vertical depths are referenced to RIG (2018) (RMS)	* = Wellpath was imported from a different geographic datum
Measured depths are referenced to RIG (2018) (RMS)	North Reference: Grid north
RIG (2018) (RMS) to Mean Sea Level: 4854 feet	Scale: True distance
Mean Sea Level to Ground level (At Slot: SLOT#04 BISON RIDGE Y22-734(2230'FSL&2060'FEL,SEC.10): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: gmsd on 2018-01-08
	Drawn by: VLA, DNN, Dave, Dahn

Location Information						
Facility Name			Grid East (US F)	Grid North (US F)	Latitude	Longitude
SEC.10-T02N-B64W			3089734.271	128816.915	40°10'06.552"N	104°12'06.218"W
Site	Local N (F)	Local E (F)	Grid East (US F)	Grid North (US F)	Latitude	Longitude
SLOT#04 BISON RIDGE Y22-734(2230'FSL&2060'FEL,SEC.10)	-1.22	-111.81	3089734.271	128816.915	40°10'06.552"N	104°12'06.218"W
RIG (2018) (RMS) to Ground level (At Slot: SLOT#04 BISON RIDGE Y22-734(2230'FSL&2060'FEL,SEC.10)						49041
Mean Sea Level to Ground level (At Slot: SLOT#04 BISON RIDGE Y22-734(2230'FSL&2060'FEL,SEC.10)						491
RIG (2018) (RMS) to Mean Sea Level						49041





Actual Wellpath Report

BISON RIDGE Y22-734 AWP

Page 1 of 10



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#04 BISON RIDGE Y22-734(2230'FSL&2060'FEL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-734
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-734 AWB
Facility	SEC.10-T02N-R64W		

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	0.999958	Report Generated	1/8/2018 at 12:34:36 PM
Convergence at slot	0.63° East	Database/Source file	WA_DEN_Denver_Defn/BISON_RIDGE_Y22-734_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-1.22	-111.81	3269612.47	1299617.70	40°09'06.552"N	104°32'07.656"W
Facility Reference Pt			3269724.27	1299618.92	40°09'06.552"N	104°32'06.216"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	4954.00ft
Horizontal Reference Pt	Slot	RIG (30'KB) (RKB) to Mean Sea Level	4954.00ft
Vertical Reference Pt	RIG (30'KB) (RKB)	RIG (30'KB) (RKB) to Ground Level at Slot (SLOT#04 BISON RIDGE Y22-734 (2230'FSL&2060'FEL,SEC.10))	4954.00ft
MD Reference Pt	RIG (30'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	176.54°



Actual Wellpath Report
BISON RIDGE Y22-734 AWP
Page 2 of 10



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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-734 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH DATA (181 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	348.130	0.00	0.00	0.00	0.00	40°09'06.552"N	104°32'07.656"W	0.00	
79.60	0.290	348.130	79.60	-0.20	0.20	-0.04	40°09'06.554"N	104°32'07.657"W	0.36	
178.50	0.280	352.180	178.50	-0.69	0.68	-0.13	40°09'06.559"N	104°32'07.658"W	0.02	
270.20	0.370	29.740	270.20	-1.16	1.16	-0.01	40°09'06.563"N	104°32'07.656"W	0.25	
364.80	0.360	39.760	364.80	-1.63	1.65	0.33	40°09'06.568"N	104°32'07.651"W	0.07	
459.30	0.370	73.600	459.29	-1.92	1.97	0.81	40°09'06.571"N	104°32'07.645"W	0.23	
554.00	0.150	146.690	553.99	-1.88	1.95	1.18	40°09'06.571"N	104°32'07.641"W	0.38	
648.50	0.500	286.680	648.49	-1.91	1.97	0.85	40°09'06.571"N	104°32'07.645"W	0.66	
743.10	0.360	293.170	743.09	-2.19	2.20	0.18	40°09'06.574"N	104°32'07.653"W	0.16	
837.80	0.270	286.560	837.79	-2.40	2.38	-0.31	40°09'06.576"N	104°32'07.660"W	0.10	
932.50	0.440	300.870	932.49	-2.68	2.63	-0.83	40°09'06.578"N	104°32'07.666"W	0.20	
1027.40	0.480	320.720	1027.38	-3.21	3.13	-1.40	40°09'06.583"N	104°32'07.674"W	0.17	
1121.70	0.410	281.280	1121.68	-3.61	3.50	-1.98	40°09'06.587"N	104°32'07.681"W	0.33	
1216.50	0.160	181.810	1216.48	-3.57	3.43	-2.32	40°09'06.586"N	104°32'07.685"W	0.49	
1311.10	0.200	232.420	1311.08	-3.34	3.20	-2.45	40°09'06.584"N	104°32'07.687"W	0.17	
1405.70	0.210	216.150	1405.68	-3.12	2.96	-2.68	40°09'06.582"N	104°32'07.690"W	0.06	
1500.40	0.290	176.500	1500.38	-2.74	2.58	-2.77	40°09'06.578"N	104°32'07.691"W	0.20	
1594.90	0.460	201.370	1594.88	-2.16	1.99	-2.89	40°09'06.572"N	104°32'07.693"W	0.25	
1689.70	0.700	206.060	1689.67	-1.31	1.11	-3.29	40°09'06.563"N	104°32'07.698"W	0.26	
1784.40	0.880	221.120	1784.36	-0.29	0.05	-4.02	40°09'06.553"N	104°32'07.708"W	0.29	
1879.00	1.000	235.310	1878.95	0.66	-0.97	-5.18	40°09'06.543"N	104°32'07.723"W	0.28	
1973.60	1.130	270.100	1973.53	1.03	-1.44	-6.79	40°09'06.539"N	104°32'07.744"W	0.69	
2037.00	1.140	278.600	2036.92	0.86	-1.34	-8.04	40°09'06.540"N	104°32'07.760"W	0.27	Tie to Surface Gyros
2073.00	1.100	308.690	2072.91	0.55	-1.07	-8.66	40°09'06.542"N	104°32'07.768"W	1.62	
2168.00	1.280	265.160	2167.90	-0.04	-0.59	-10.43	40°09'06.547"N	104°32'07.790"W	0.95	
2262.00	0.030	225.680	2261.89	0.00	-0.70	-11.49	40°09'06.546"N	104°32'07.804"W	1.34	
2357.00	0.030	296.190	2356.89	0.01	-0.71	-11.53	40°09'06.546"N	104°32'07.805"W	0.04	
2452.00	0.460	168.750	2451.89	0.37	-1.07	-11.48	40°09'06.543"N	104°32'07.804"W	0.50	
2546.00	1.790	45.740	2545.87	-0.21	-0.41	-10.36	40°09'06.549"N	104°32'07.789"W	2.21	
2641.00	4.450	44.800	2640.72	-3.64	3.24	-6.70	40°09'06.585"N	104°32'07.742"W	2.80	



Actual Wellpath Report

BISON RIDGE Y22-734 AWP



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Operator	NOBLE ENERGY, INC	Slot	SLOT#04 BISON RIDGE Y22-734(2230'FSL&2060'FEL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-734
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-734 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH DATA (181 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
2735.00	6.430	47.010	2734.30	-9.41	9.41	-0.28	40°09'06.645"N	104°32'07.658"W	2.12	
2829.00	7.970	54.250	2827.55	-16.25	16.81	8.86	40°09'06.717"N	104°32'07.540"W	1.90	
2924.00	8.080	56.050	2921.62	-23.15	24.39	19.75	40°09'06.791"N	104°32'07.398"W	0.29	
3018.00	8.050	56.550	3014.69	-29.79	31.71	30.72	40°09'06.862"N	104°32'07.256"W	0.08	
3113.00	7.970	57.210	3108.77	-36.34	38.94	41.81	40°09'06.932"N	104°32'07.112"W	0.13	
3208.00	7.930	59.130	3202.85	-42.59	45.87	52.97	40°09'07.000"N	104°32'06.967"W	0.28	
3302.00	7.930	59.950	3295.95	-48.47	52.44	64.15	40°09'07.063"N	104°32'06.823"W	0.12	
3397.00	8.130	58.740	3390.02	-54.54	59.21	75.56	40°09'07.129"N	104°32'06.675"W	0.28	
3491.00	7.190	55.570	3483.18	-60.67	65.98	86.09	40°09'07.195"N	104°32'06.538"W	1.10	
3586.00	6.910	60.550	3577.47	-66.23	72.16	95.97	40°09'07.255"N	104°32'06.410"W	0.71	
3680.00	6.640	70.800	3670.81	-70.18	76.72	106.03	40°09'07.299"N	104°32'06.280"W	1.32	
3774.00	7.770	77.500	3764.07	-72.66	79.89	117.37	40°09'07.329"N	104°32'06.133"W	1.50	
3869.00	7.930	72.780	3858.18	-75.22	83.22	129.90	40°09'07.360"N	104°32'05.972"W	0.70	
3964.00	7.900	77.540	3952.28	-77.80	86.56	142.53	40°09'07.392"N	104°32'05.808"W	0.69	
4058.00	8.130	75.210	4045.36	-80.12	89.65	155.27	40°09'07.421"N	104°32'05.644"W	0.42	
4153.00	8.210	62.640	4139.40	-84.19	94.49	167.79	40°09'07.468"N	104°32'05.482"W	1.88	
4248.00	8.030	47.860	4233.46	-91.08	102.06	178.73	40°09'07.541"N	104°32'05.340"W	2.20	
4342.00	8.000	42.290	4326.54	-99.75	111.30	188.00	40°09'07.632"N	104°32'05.219"W	0.83	
4437.00	8.150	37.390	4420.60	-109.46	121.54	196.54	40°09'07.732"N	104°32'05.108"W	0.74	
4531.00	8.010	31.190	4513.67	-119.89	132.44	203.98	40°09'07.839"N	104°32'05.011"W	0.94	
4625.00	7.850	31.230	4606.77	-130.55	143.53	210.70	40°09'07.948"N	104°32'04.923"W	0.17	
4720.00	7.810	36.550	4700.89	-140.83	154.26	217.90	40°09'08.053"N	104°32'04.828"W	0.76	
4814.00	7.820	46.070	4794.02	-149.87	163.83	226.31	40°09'08.147"N	104°32'04.719"W	1.38	
4909.00	8.030	56.100	4888.12	-157.43	172.02	236.48	40°09'08.226"N	104°32'04.587"W	1.47	
5003.00	7.670	62.840	4981.24	-163.28	178.54	247.51	40°09'08.290"N	104°32'04.444"W	1.05	
5098.00	8.480	67.000	5075.30	-168.17	184.17	259.60	40°09'08.344"N	104°32'04.287"W	1.05	
5192.00	8.330	63.900	5168.29	-173.11	189.88	272.09	40°09'08.399"N	104°32'04.126"W	0.51	
5287.00	7.800	58.270	5262.35	-178.81	196.29	283.75	40°09'08.461"N	104°32'03.974"W	1.00	
5381.00	7.680	55.090	5355.49	-185.11	203.24	294.33	40°09'08.529"N	104°32'03.837"W	0.47	
5476.00	7.720	50.520	5449.64	-192.17	210.93	304.46	40°09'08.604"N	104°32'03.706"W	0.65	



Actual Wellpath Report

BISON RIDGE Y22-734 AWP



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#04 BISON RIDGE Y22-734(2230'FSL&2060'FEL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-734
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-734 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH DATA (181 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5571.00	7.560	48.400	5543.79	-199.78	219.14	314.06	40°09'08.684"N	104°32'03.581"W	0.34	
5665.00	7.950	49.670	5636.93	-207.50	227.45	323.64	40°09'08.765"N	104°32'03.456"W	0.45	
5760.00	7.700	50.470	5731.05	-215.19	235.75	333.55	40°09'08.846"N	104°32'03.328"W	0.29	
5949.00	7.570	56.290	5918.38	-228.92	250.72	353.68	40°09'08.991"N	104°32'03.066"W	0.41	
6043.00	7.610	63.130	6011.55	-234.51	256.97	364.38	40°09'09.052"N	104°32'02.928"W	0.96	
6138.00	7.650	65.430	6105.71	-239.29	262.45	375.74	40°09'09.105"N	104°32'02.781"W	0.32	
6232.00	7.030	81.420	6198.95	-242.05	265.91	387.12	40°09'09.138"N	104°32'02.634"W	2.26	
6327.00	9.840	128.790	6293.02	-237.11	261.68	399.21	40°09'09.095"N	104°32'02.478"W	7.61	
6422.00	14.150	157.670	6386.01	-220.64	245.83	409.97	40°09'08.937"N	104°32'02.342"W	7.65	
6516.00	23.840	152.410	6474.79	-192.36	218.30	423.16	40°09'08.664"N	104°32'02.176"W	10.46	
6611.00	33.210	159.280	6558.19	-149.89	176.85	441.30	40°09'08.252"N	104°32'01.948"W	10.44	
6705.00	41.540	173.170	6632.95	-93.99	121.63	454.16	40°09'07.705"N	104°32'01.790"W	12.56	
6800.00	50.570	181.320	6698.87	-25.79	53.47	457.07	40°09'07.031"N	104°32'01.763"W	11.32	
6894.00	59.780	182.780	6752.49	50.93	-23.55	454.26	40°09'06.270"N	104°32'01.810"W	9.88	
6989.00	67.650	181.530	6794.53	135.63	-108.60	451.09	40°09'05.430"N	104°32'01.862"W	8.37	
7083.00	75.120	182.150	6824.52	224.27	-197.57	448.22	40°09'04.551"N	104°32'01.912"W	7.97	
7178.00	82.590	182.620	6842.87	316.93	-290.64	444.34	40°09'03.632"N	104°32'01.975"W	7.88	
7272.00	90.150	181.800	6848.81	410.21	-384.31	440.73	40°09'02.707"N	104°32'02.034"W	8.09	
7367.00	90.220	180.280	6848.51	504.91	-479.29	439.01	40°09'01.769"N	104°32'02.070"W	1.60	
7462.00	90.180	179.680	6848.17	599.74	-574.29	439.04	40°09'00.830"N	104°32'02.083"W	0.63	
7556.00	90.220	177.900	6847.85	693.67	-668.26	441.02	40°08'59.901"N	104°32'02.070"W	1.89	
7651.00	89.880	177.160	6847.76	788.65	-763.17	445.12	40°08'58.963"N	104°32'02.031"W	0.86	
7745.00	89.970	176.060	6847.89	882.65	-857.01	450.68	40°08'58.035"N	104°32'01.973"W	1.17	
7935.00	90.120	177.870	6847.74	1072.64	-1046.73	460.74	40°08'56.159"N	104°32'01.870"W	0.96	
8029.00	90.000	179.860	6847.64	1166.55	-1140.71	462.60	40°08'55.230"N	104°32'01.859"W	2.12	
8124.00	90.400	179.910	6847.31	1261.39	-1235.71	462.79	40°08'54.292"N	104°32'01.870"W	0.42	
8219.00	90.030	179.960	6846.95	1356.22	-1330.71	462.90	40°08'53.353"N	104°32'01.882"W	0.39	
8313.00	90.150	180.810	6846.80	1450.01	-1424.71	462.26	40°08'52.424"N	104°32'01.903"W	0.91	
8408.00	90.180	179.990	6846.53	1544.79	-1519.70	461.60	40°08'51.485"N	104°32'01.925"W	0.86	
8502.00	89.720	178.930	6846.61	1638.67	-1613.70	462.49	40°08'50.557"N	104°32'01.927"W	1.23	



Actual Wellpath Report

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-734 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH DATA (181 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8597.00	90.220	178.500	6846.66	1733.60	-1708.67	464.62	40°08'49.618"N	104°32'01.913"W	0.69	
8692.00	90.030	177.400	6846.45	1828.57	-1803.61	468.02	40°08'48.679"N	104°32'01.882"W	1.18	
8786.00	90.030	176.350	6846.41	1922.57	-1897.47	473.14	40°08'47.751"N	104°32'01.829"W	1.12	
8881.00	90.150	176.050	6846.26	2017.57	-1992.26	479.44	40°08'46.814"N	104°32'01.762"W	0.34	
8976.00	89.880	176.280	6846.23	2112.56	-2087.05	485.79	40°08'45.877"N	104°32'01.693"W	0.37	
9070.00	89.750	176.300	6846.53	2206.56	-2180.85	491.87	40°08'44.949"N	104°32'01.628"W	0.14	
9165.00	89.780	176.190	6846.92	2301.56	-2275.64	498.09	40°08'44.012"N	104°32'01.561"W	0.12	
9260.00	89.910	174.500	6847.18	2396.54	-2370.33	505.80	40°08'43.075"N	104°32'01.475"W	1.78	
9355.00	89.750	174.560	6847.46	2491.48	-2464.89	514.86	40°08'42.140"N	104°32'01.372"W	0.18	
9449.00	89.940	178.890	6847.72	2585.45	-2558.72	520.23	40°08'41.212"N	104°32'01.316"W	4.61	
9544.00	90.000	178.720	6847.77	2680.38	-2653.70	522.21	40°08'40.273"N	104°32'01.304"W	0.19	
9638.00	90.060	178.750	6847.72	2774.31	-2747.67	524.28	40°08'39.345"N	104°32'01.290"W	0.07	
9733.00	90.060	180.500	6847.62	2869.17	-2842.67	524.91	40°08'38.406"N	104°32'01.295"W	1.84	
9827.00	90.000	179.310	6847.57	2963.00	-2936.67	525.06	40°08'37.477"N	104°32'01.307"W	1.27	
9922.00	89.970	179.000	6847.59	3057.91	-3031.66	526.46	40°08'36.538"N	104°32'01.302"W	0.33	
10016.00	90.030	179.050	6847.59	3151.82	-3125.64	528.06	40°08'35.609"N	104°32'01.295"W	0.08	
10111.00	90.090	180.310	6847.49	3246.67	-3220.64	528.59	40°08'34.670"N	104°32'01.301"W	1.33	
10206.00	90.030	180.200	6847.40	3341.47	-3315.64	528.17	40°08'33.732"N	104°32'01.320"W	0.13	
10301.00	90.060	181.420	6847.32	3436.21	-3410.63	526.83	40°08'32.793"N	104°32'01.350"W	1.28	
10395.00	89.970	182.780	6847.30	3529.76	-3504.56	523.38	40°08'31.865"N	104°32'01.408"W	1.45	
10489.00	90.030	183.230	6847.30	3623.16	-3598.43	518.46	40°08'30.938"N	104°32'01.485"W	0.48	
10584.00	89.970	182.490	6847.30	3717.59	-3693.31	513.72	40°08'30.001"N	104°32'01.559"W	0.78	
10678.00	90.150	179.530	6847.20	3811.29	-3787.29	512.06	40°08'29.073"N	104°32'01.593"W	3.15	
10773.00	90.120	180.020	6846.97	3906.14	-3882.29	512.43	40°08'28.134"N	104°32'01.602"W	0.52	
10868.00	90.030	179.220	6846.85	4001.00	-3977.28	513.06	40°08'27.195"N	104°32'01.607"W	0.85	
10962.00	90.060	179.500	6846.78	4094.89	-4071.28	514.11	40°08'26.266"N	104°32'01.607"W	0.30	
11057.00	90.090	178.870	6846.65	4189.78	-4166.27	515.46	40°08'25.328"N	104°32'01.603"W	0.66	
11151.00	90.120	177.370	6846.48	4283.75	-4260.21	518.55	40°08'24.399"N	104°32'01.576"W	1.60	
11246.00	89.850	177.930	6846.50	4378.73	-4355.13	522.44	40°08'23.461"N	104°32'01.539"W	0.65	
11341.00	90.120	178.180	6846.53	4473.69	-4450.08	525.67	40°08'22.522"N	104°32'01.511"W	0.39	



Actual Wellpath Report

BISON RIDGE Y22-734 AWP



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#04 BISON RIDGE Y22-734(2230'FSL&2060'FEL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-734
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-734 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH DATA (181 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11435.00	89.780	177.830	6846.61	4567.66	-4544.02	528.94	40°08'21.593"N	104°32'01.482"W	0.52	
11530.00	89.880	176.930	6846.89	4662.65	-4638.92	533.28	40°08'20.655"N	104°32'01.440"W	0.95	
11625.00	90.150	176.750	6846.87	4757.65	-4733.78	538.52	40°08'19.717"N	104°32'01.386"W	0.34	
11719.00	90.000	176.550	6846.74	4851.65	-4827.61	544.01	40°08'18.789"N	104°32'01.328"W	0.27	
11814.00	90.120	176.240	6846.65	4946.65	-4922.43	549.98	40°08'17.852"N	104°32'01.264"W	0.35	
11908.00	89.910	177.270	6846.62	5040.65	-5016.27	555.31	40°08'16.924"N	104°32'01.209"W	1.12	
12003.00	89.660	177.760	6846.98	5135.63	-5111.18	559.42	40°08'15.986"N	104°32'01.169"W	0.58	
12098.00	89.970	177.010	6847.28	5230.62	-5206.08	563.76	40°08'15.047"N	104°32'01.127"W	0.85	
12192.00	89.820	175.010	6847.46	5324.61	-5299.85	570.30	40°08'14.120"N	104°32'01.056"W	2.13	
12287.00	89.880	177.740	6847.70	5419.60	-5394.65	576.30	40°08'13.183"N	104°32'00.992"W	2.87	
12381.00	90.060	178.870	6847.75	5513.56	-5488.61	579.08	40°08'12.254"N	104°32'00.969"W	1.22	
12476.00	89.940	178.900	6847.75	5608.48	-5583.59	580.93	40°08'11.315"N	104°32'00.959"W	0.13	
12571.00	90.030	177.420	6847.78	5703.44	-5678.54	583.98	40°08'10.377"N	104°32'00.933"W	1.56	
12665.00	89.910	178.610	6847.83	5797.40	-5772.48	587.24	40°08'09.448"N	104°32'00.904"W	1.27	
12759.00	88.950	178.600	6848.76	5891.34	-5866.45	589.53	40°08'08.519"N	104°32'00.888"W	1.02	
12854.00	89.200	178.960	6850.30	5986.25	-5961.41	591.55	40°08'07.581"N	104°32'00.875"W	0.46	
12949.00	89.140	179.910	6851.67	6081.12	-6056.40	592.49	40°08'06.642"N	104°32'00.876"W	1.00	
13043.00	89.080	182.050	6853.13	6174.82	-6150.37	590.88	40°08'05.714"N	104°32'00.910"W	2.28	
13138.00	89.690	181.680	6854.15	6269.40	-6245.31	587.79	40°08'04.776"N	104°32'00.963"W	0.75	
13232.00	89.690	181.440	6854.66	6363.04	-6339.27	585.23	40°08'03.848"N	104°32'01.009"W	0.26	
13327.00	90.340	181.150	6854.64	6457.71	-6434.25	583.08	40°08'02.909"N	104°32'01.050"W	0.75	
13421.00	90.280	177.000	6854.13	6551.60	-6528.22	584.60	40°08'01.981"N	104°32'01.044"W	4.42	
13516.00	90.340	180.710	6853.61	6646.50	-6623.18	586.50	40°08'01.042"N	104°32'01.033"W	3.91	
13610.00	90.280	179.100	6853.11	6740.34	-6717.17	586.65	40°08'00.113"N	104°32'01.044"W	1.71	
13705.00	90.490	180.060	6852.47	6835.20	-6812.17	587.35	40°07'59.174"N	104°32'01.048"W	1.03	
13800.00	90.830	181.340	6851.37	6929.94	-6907.15	586.19	40°07'58.236"N	104°32'01.077"W	1.39	
13894.00	90.890	180.830	6849.96	7023.63	-7001.12	584.41	40°07'57.308"N	104°32'01.113"W	0.55	
13989.00	90.340	180.300	6848.94	7118.39	-7096.11	583.47	40°07'56.369"N	104°32'01.138"W	0.80	
14083.00	90.710	181.420	6848.08	7212.12	-7190.10	582.06	40°07'55.440"N	104°32'01.170"W	1.25	
14178.00	91.110	178.800	6846.57	7306.92	-7285.08	581.88	40°07'54.502"N	104°32'01.185"W	2.79	



Actual Wellpath Report

BISON RIDGE Y22-734 AWP



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#04 BISON RIDGE Y22-734(2230'FSL&2060'FEL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-734
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-734 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH DATA (181 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
14273.00	90.180	178.360	6845.50	7401.85	-7380.04	584.23	40°07'53.563"N	104°32'01.168"W	1.08	
14367.00	90.280	178.490	6845.12	7495.80	-7474.00	586.82	40°07'52.635"N	104°32'01.148"W	0.17	
14462.00	90.430	180.020	6844.54	7590.69	-7568.99	588.05	40°07'51.696"N	104°32'01.146"W	1.62	
14556.00	89.880	180.850	6844.28	7684.47	-7662.99	587.34	40°07'50.767"N	104°32'01.168"W	1.06	
14651.00	89.690	178.430	6844.64	7779.32	-7757.98	587.94	40°07'49.828"N	104°32'01.174"W	2.56	
14745.00	89.630	177.190	6845.20	7873.29	-7851.91	591.53	40°07'48.900"N	104°32'01.141"W	1.32	
14840.00	89.720	177.650	6845.73	7968.28	-7946.81	595.80	40°07'47.962"N	104°32'01.099"W	0.49	
14934.00	89.720	178.450	6846.19	8062.25	-8040.75	599.00	40°07'47.033"N	104°32'01.071"W	0.85	
15029.00	89.600	179.570	6846.76	8157.15	-8135.73	600.64	40°07'46.094"N	104°32'01.063"W	1.19	
15124.00	89.660	179.380	6847.37	8252.03	-8230.73	601.51	40°07'45.155"N	104°32'01.065"W	0.21	
15218.00	89.690	179.540	6847.90	8345.90	-8324.72	602.40	40°07'44.227"N	104°32'01.067"W	0.17	
15313.00	89.540	180.640	6848.54	8440.72	-8419.72	602.25	40°07'43.288"N	104°32'01.082"W	1.17	
15407.00	89.480	180.970	6849.35	8534.45	-8513.71	600.93	40°07'42.359"N	104°32'01.112"W	0.36	
15502.00	89.630	180.240	6850.08	8629.21	-8608.70	599.93	40°07'41.421"N	104°32'01.139"W	0.78	
15596.00	89.570	180.300	6850.74	8723.01	-8702.69	599.48	40°07'40.492"N	104°32'01.158"W	0.09	
15691.00	89.630	181.430	6851.40	8817.74	-8797.68	598.05	40°07'39.553"N	104°32'01.189"W	1.19	
15786.00	89.540	181.440	6852.09	8912.39	-8892.65	595.67	40°07'38.615"N	104°32'01.233"W	0.10	
15880.00	89.570	181.650	6852.82	9006.03	-8986.61	593.14	40°07'37.687"N	104°32'01.279"W	0.23	
15975.00	90.180	183.060	6853.03	9100.53	-9081.53	589.23	40°07'36.750"N	104°32'01.343"W	1.62	
16070.00	90.120	184.990	6852.78	9194.72	-9176.29	582.57	40°07'35.814"N	104°32'01.442"W	2.03	
16164.00	90.150	185.610	6852.56	9287.62	-9269.88	573.88	40°07'34.890"N	104°32'01.567"W	0.66	
16259.00	90.150	185.350	6852.31	9381.47	-9364.45	564.81	40°07'33.956"N	104°32'01.697"W	0.27	
16353.00	90.180	185.570	6852.04	9474.33	-9458.02	555.87	40°07'33.033"N	104°32'01.825"W	0.24	
16448.00	90.030	183.380	6851.87	9568.41	-9552.73	548.45	40°07'32.098"N	104°32'01.934"W	2.31	
16542.00	90.090	179.530	6851.77	9662.05	-9646.68	546.07	40°07'31.170"N	104°32'01.978"W	4.10	
16637.00	90.060	177.370	6851.64	9756.99	-9741.64	548.64	40°07'30.231"N	104°32'01.958"W	2.27	
16732.00	89.970	178.120	6851.62	9851.97	-9836.56	552.38	40°07'29.293"N	104°32'01.923"W	0.80	
16826.00	90.150	176.370	6851.52	9945.96	-9930.45	556.89	40°07'28.364"N	104°32'01.878"W	1.87	
16921.00	90.120	174.570	6851.30	10040.94	-10025.15	564.40	40°07'27.428"N	104°32'01.795"W	1.89	
17009.00	90.180	175.480	6851.07	10128.91	-10112.82	572.03	40°07'26.561"N	104°32'01.709"W	1.04	Last BHI MWD Survey



Actual Wellpath Report

BISON RIDGE Y22-734 AWP



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#04 BISON RIDGE Y22-734(2230'FSL&2060'FEL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-734
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-734 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH DATA (181 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
17033.00	90.180	175.480	6850.99	10152.90	-10136.74	573.92	40°07'26.324"N	104°32'01.688"W	0.00	Projection to TD

HOLE & CASING SECTIONS - Ref Wellbore: BISON RIDGE Y22-734 AWB Ref Wellpath: BISON RIDGE Y22-734 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	2038.00	2008.00	30.00	2037.92	0.03	-0.01	-1.34	-8.06
9.625in Casing Surface	30.00	2038.00	2008.00	30.00	2037.92	0.03	-0.01	-1.34	-8.06
8.5in Open Hole	2038.00	17033.00	14995.00	2037.92	6850.99	-1.34	-8.06	-10136.74	573.92



Actual Wellpath Report

BISON RIDGE Y22-734 AWP



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#04 BISON RIDGE Y22-734(2230'FSL&2060'FEL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-734
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-734 AWB
Facility	SEC.10-T02N-R64W		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
BISON RIDGE Y22-711 SECTION 10	1.00	1.22	111.81	3269724.27	1299618.92	40°09'06.552"N	104°32'06.216"W	polygon
BISON RIDGE Y22-711 SECTION 15	1.00	1.22	111.81	3269724.27	1299618.92	40°09'06.552"N	104°32'06.216"W	polygon
BISON RIDGE Y22-711 SECTION 22	1.00	1.22	111.81	3269724.27	1299618.92	40°09'06.552"N	104°32'06.216"W	polygon
BISON RIDGE Y22-734 LANDING POINT	6850.00	-350.00	465.00	3270077.45	1299267.71	40°09'03.043"N	104°32'01.717"W	point
BISON RIDGE Y22-734 REV-1 BHL(2640'FSL&1577'FEL,SEC.22)	6850.00	-10150.48	613.83	3270226.26	1289467.66	40°07'26.184"N	104°32'01.176"W	point
BISON RIDGE Y22-711 SECTION 10 HARDLINE (460' SETBACK)	7101.00	1.22	111.81	3269724.27	1299618.92	40°09'06.552"N	104°32'06.216"W	polygon
BISON RIDGE Y22-711 SECTION 15 HARDLINE (460' SETBACK)	7101.00	1.22	111.81	3269724.27	1299618.92	40°09'06.552"N	104°32'06.216"W	polygon
BISON RIDGE Y22-711 SECTION 22 HARDLINE (460' SETBACK)	7101.00	1.22	111.81	3269724.27	1299618.92	40°09'06.552"N	104°32'06.216"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: BISON RIDGE Y22-734 AWB Ref Wellpath: BISON RIDGE Y22-734 AWP			
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment
0.00	2037.00	Gyrodata standard - Drop gyro or Multi-shot	3rd Party Gyrodata standard <79.6'-2037'>
2037.00	17009.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	BHI/ATC 8.5" Hole OWSG+IFR+MSA <2073'-17009'>
17009.00	17033.00	Blind Drilling (std)	Projection to bit



Actual Wellpath Report

BISON RIDGE Y22-734 AWP



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#04 BISON RIDGE Y22-734(2230'FSL&2060'FEL,SEC.10)
Area	COLORADO	Well	BISON RIDGE Y22-734
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	BISON RIDGE Y22-734 AWB
Facility	SEC.10-T02N-R64W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
2037.00	1.140	278.600	2036.92	Tie to Surface Gyros
17009.00	90.180	175.480	6851.07	Last BHI MWD Survey
17033.00	90.180	175.480	6850.99	Projection to TD

COMMENTS
Wellpath general comments SURFACE LOCATION: NWSE 40.15182N 104.53546W API: 05-123-45371