

# NOBLE ENERGY, INC

Location: COLORADO Slot: SLOT#08 GUTTERSEN D29-778 (2356'FNL & 973'FWL, SEC.29)  
 Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: GUTTERSEN D29-778  
 Facility: SEC.29-T03N-R64W Wellbore: GUTTERSEN D29-778 PWB

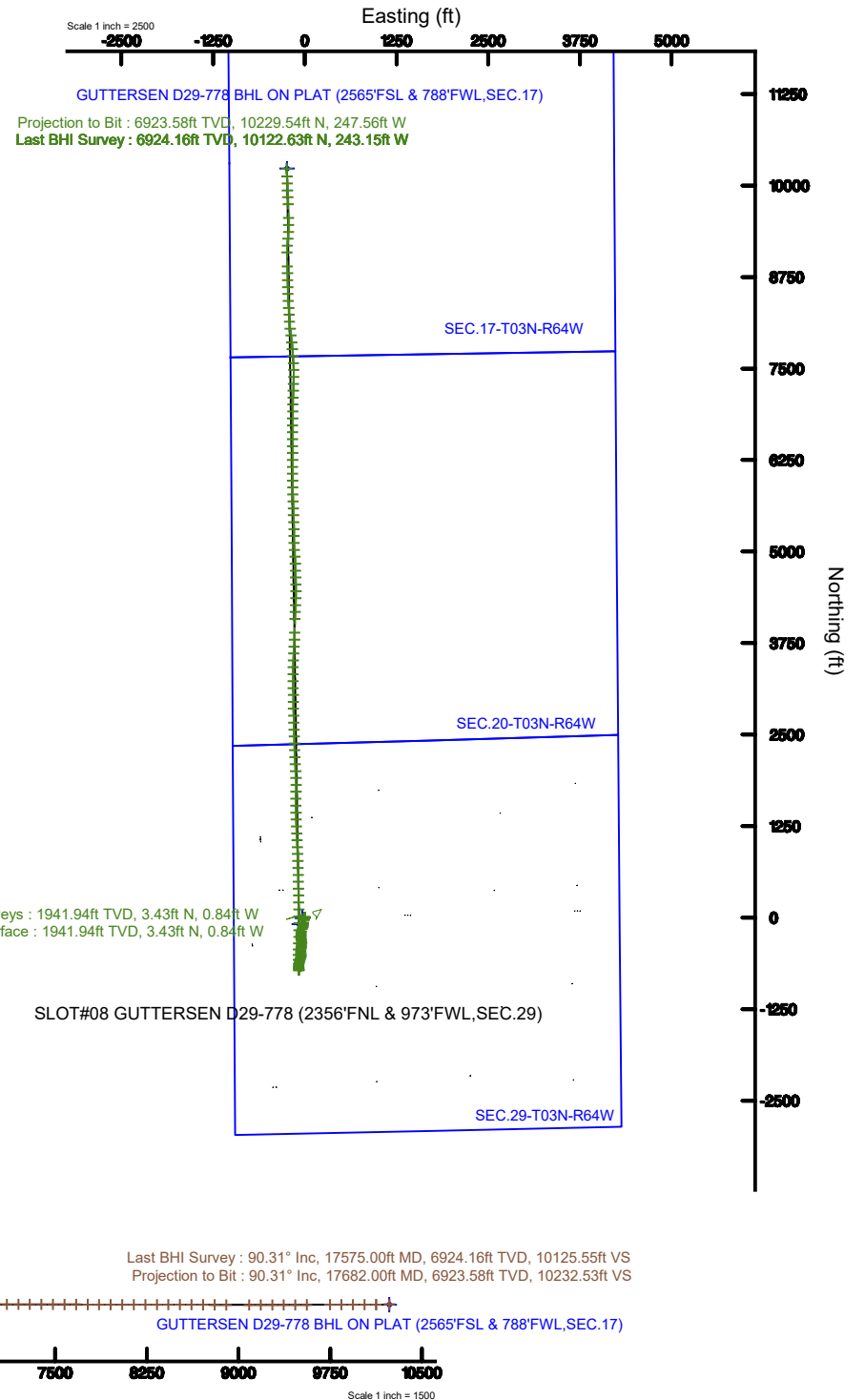
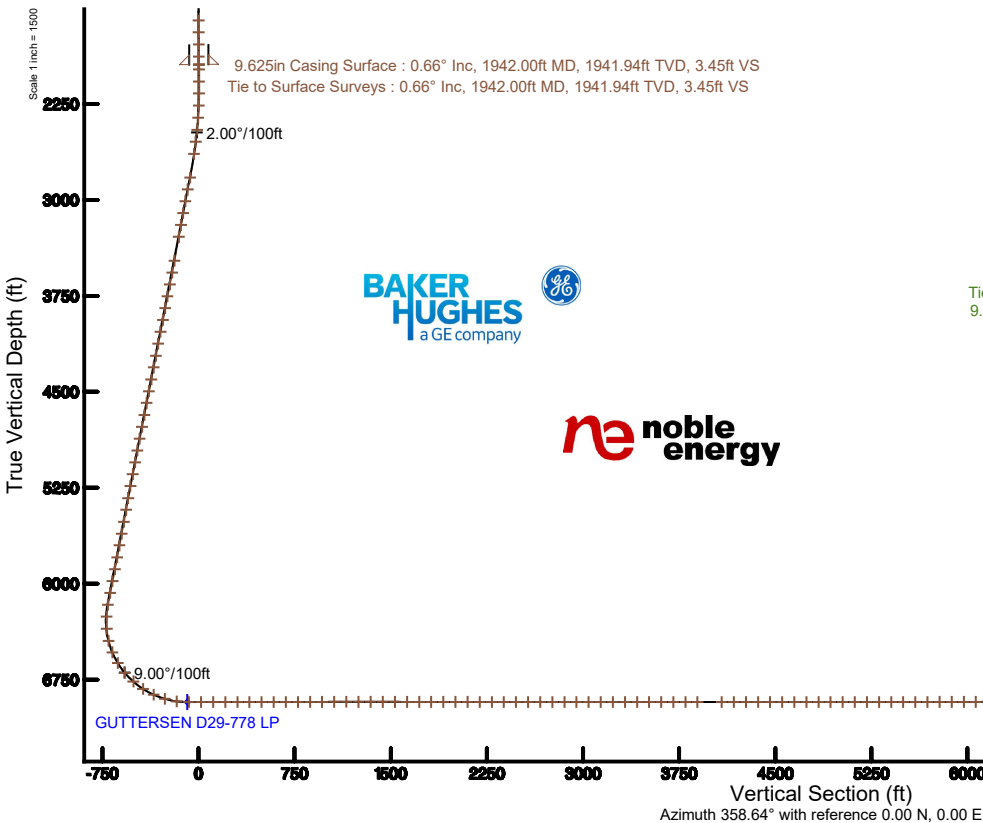
Plot reference wellpath is GUTTERSEN D29-778 PWP (REV-A.0)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
True vertical depths are referenced to RIG (30') (RKB)	North Reference: Grid north
Measured depths are referenced to RIG (30') (RKB)	Scale: True distance
RIG (30') (RKB) to Mean Sea Level: 4814 feet	Depths are in feet
Mean Sea Level to Mud line (At Slot: SLOT#08 GUTTERSEN D29-778 (2356'FNL & 973'FWL, SEC.29)): 0 feet	Created by: doddanna on 2019-02-20
Coordinates are in feet referenced to Slot	Database: WellArchitectDB

## Location Information

Facility Name				Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.29-T03N-R64W				3256078.619	1317026.618	40°12'00.004"N	104°34'59.628"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	
SLOT#08 GUTTERSEN D29-778 (2356'FNL & 973'FWL, SEC.29)	-1079.80	606.23	3256684.817	1315946.866	40°11'49.272"N	104°34'51.960"W	
RIG (30') (RKB) to Mud line (At Slot: SLOT#08 GUTTERSEN D29-778 (2356'FNL & 973'FWL, SEC.29))						4814ft	
Mean Sea Level to Mud line (At Slot: SLOT#08 GUTTERSEN D29-778 (2356'FNL & 973'FWL, SEC.29))						0ft	
RIG (30') (RKB) to Mean Sea Level						4814ft	

## Survey Program

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
30.00	1900.00	OWSG MWD rev2	OWSG MWD rev2 - Standard		GUTTERSEN D29-778 PWB
1900.00	17677.29	OWSG MWD rev2	OWSG MWD rev2 + IFR1 + Multi-Station Correction		GUTTERSEN D29-778 PWB



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#08 GUTTERSEN D29-778 (2356'FNL & 973'FWL, SEC.29)
Area	COLORADO	Well	GUTTERSEN D29-778
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	GUTTERSEN D29-778 AWB
Facility	SEC.29-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	Doddanna
Scale	0.999957	Report Generated	2/20/2019 at 10:20:59 AM
Convergence at slot	0.59° East	Database/Source file	WellArchitectDB/GUTTERSEN_D29-778_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-1079.80	606.23	3256684.82	1315946.87	40°11'49.272"N	104°34'51.960"W
Facility Reference Pt			3256078.62	1317026.62	40°12'00.004"N	104°34'59.628"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') (RKB) to Facility Vertical Datum	4814.00ft
Horizontal Reference Pt	Slot	RIG (30') (RKB) to Mean Sea Level	4814.00ft
Vertical Reference Pt	RIG (30') (RKB)	RIG (30') (RKB) to Mud Line at Slot (SLOT#08 GUTTERSEN D29-778 (2356'FNL & 973'FWL, SEC.29))	4814.00ft
MD Reference Pt	RIG (30') (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	358.64°

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	GUTTERSEN D29-778 AWB
Facility	SEC.29-T03N-R64W		

WELLPATH DATA (184 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	9.460	0.00	0.00	0.00	0.00	40°11'49.272"N	104°34'51.960"W	0.00	
85.00	0.920	9.460	85.00	0.67	0.67	0.11	40°11'49.279"N	104°34'51.958"W	1.08	
180.00	0.590	342.620	179.99	1.89	1.89	0.09	40°11'49.291"N	104°34'51.959"W	0.50	
272.00	0.280	342.140	271.99	2.56	2.56	-0.12	40°11'49.297"N	104°34'51.961"W	0.34	
367.00	0.380	338.950	366.98	3.08	3.07	-0.30	40°11'49.302"N	104°34'51.963"W	0.11	
461.00	0.540	304.350	460.98	3.63	3.61	-0.78	40°11'49.308"N	104°34'51.970"W	0.33	
556.00	0.600	291.240	555.98	4.08	4.05	-1.61	40°11'49.312"N	104°34'51.980"W	0.15	
651.00	0.560	251.520	650.97	4.14	4.08	-2.52	40°11'49.313"N	104°34'51.992"W	0.42	
745.00	0.360	218.370	744.97	3.78	3.70	-3.14	40°11'49.309"N	104°34'52.000"W	0.35	
840.00	0.200	35.590	839.97	3.68	3.60	-3.23	40°11'49.308"N	104°34'52.001"W	0.59	
935.00	0.270	190.330	934.97	3.59	3.52	-3.17	40°11'49.307"N	104°34'52.000"W	0.48	
1029.00	0.610	174.350	1028.97	2.88	2.80	-3.16	40°11'49.300"N	104°34'52.000"W	0.38	
1124.00	0.260	140.750	1123.96	2.20	2.13	-2.97	40°11'49.293"N	104°34'51.998"W	0.44	
1218.00	0.320	149.300	1217.96	1.81	1.74	-2.70	40°11'49.289"N	104°34'51.995"W	0.08	
1313.00	0.220	135.860	1312.96	1.44	1.38	-2.44	40°11'49.286"N	104°34'51.991"W	0.12	
1407.00	0.030	175.240	1406.96	1.28	1.23	-2.31	40°11'49.284"N	104°34'51.990"W	0.21	
1502.00	0.170	136.770	1501.96	1.15	1.10	-2.22	40°11'49.283"N	104°34'51.988"W	0.16	
1597.00	0.480	105.110	1596.96	0.94	0.89	-1.74	40°11'49.281"N	104°34'51.982"W	0.37	
1691.00	0.220	43.530	1690.96	0.95	0.92	-1.23	40°11'49.281"N	104°34'51.976"W	0.45	
1786.00	0.580	24.740	1785.95	1.51	1.49	-0.90	40°11'49.287"N	104°34'51.971"W	0.40	
1880.00	0.870	1.230	1879.95	2.65	2.64	-0.69	40°11'49.298"N	104°34'51.969"W	0.44	
1942.00	0.660	334.160	1941.94	3.45	3.43	-0.84	40°11'49.306"N	104°34'51.970"W	0.66	Tie to Surface Surveys
1980.00	0.190	299.010	1979.94	3.68	3.66	-0.99	40°11'49.308"N	104°34'51.972"W	1.36	
2075.00	0.130	316.840	2074.94	3.84	3.81	-1.20	40°11'49.310"N	104°34'51.975"W	0.08	
2169.00	0.260	196.130	2168.94	3.72	3.68	-1.33	40°11'49.309"N	104°34'51.977"W	0.37	
2264.00	2.290	205.630	2263.91	1.82	1.77	-2.21	40°11'49.290"N	104°34'51.988"W	2.14	
2359.00	4.310	203.720	2358.75	-3.11	-3.21	-4.47	40°11'49.241"N	104°34'52.018"W	2.13	
2453.00	5.700	190.640	2452.39	-10.87	-11.04	-6.75	40°11'49.164"N	104°34'52.048"W	1.90	
2548.00	7.240	183.150	2546.78	-21.46	-21.65	-7.95	40°11'49.059"N	104°34'52.065"W	1.85	
2642.00	8.580	189.510	2639.89	-34.25	-34.48	-9.43	40°11'48.932"N	104°34'52.086"W	1.70	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#08 GUTTERSEN D29-778 (2356'FNL & 973'FWL, SEC.29)
Area	COLORADO	Well	GUTTERSEN D29-778
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	GUTTERSEN D29-778 AWB
Facility	SEC.29-T03N-R64W		

WELLPATH DATA (184 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
2831.00	11.310	195.380	2826.04	-65.85	-66.26	-16.68	40°11'48.619"N	104°34'52.184"W	1.54	
2926.00	11.380	187.900	2919.19	-84.02	-84.53	-20.44	40°11'48.439"N	104°34'52.235"W	1.55	
3020.00	10.780	180.730	3011.44	-101.96	-102.51	-21.83	40°11'48.261"N	104°34'52.255"W	1.60	
3114.00	10.750	193.430	3103.80	-119.22	-119.83	-23.98	40°11'48.090"N	104°34'52.285"W	2.52	
3209.00	11.190	198.670	3197.06	-136.45	-137.18	-28.98	40°11'47.919"N	104°34'52.352"W	1.15	
3303.00	11.070	195.930	3289.30	-153.64	-154.50	-34.38	40°11'47.749"N	104°34'52.424"W	0.58	
3492.00	11.130	199.950	3474.76	-187.96	-189.09	-45.59	40°11'47.408"N	104°34'52.573"W	0.41	
3587.00	11.210	191.570	3567.97	-205.50	-206.76	-50.57	40°11'47.234"N	104°34'52.639"W	1.71	
3681.00	11.140	179.890	3660.20	-223.49	-224.79	-52.38	40°11'47.056"N	104°34'52.665"W	2.41	
3776.00	11.060	176.820	3753.42	-241.77	-243.07	-51.86	40°11'46.875"N	104°34'52.661"W	0.63	
3870.00	11.040	180.600	3845.68	-259.78	-261.07	-51.45	40°11'46.698"N	104°34'52.658"W	0.77	
3965.00	11.080	178.560	3938.92	-277.99	-279.29	-51.32	40°11'46.517"N	104°34'52.659"W	0.41	
4059.00	11.230	169.460	4031.15	-296.06	-297.32	-49.42	40°11'46.339"N	104°34'52.636"W	1.88	
4154.00	11.060	170.040	4124.36	-314.21	-315.39	-46.15	40°11'46.160"N	104°34'52.597"W	0.21	
4249.00	10.970	175.320	4217.61	-332.24	-333.37	-43.83	40°11'45.982"N	104°34'52.569"W	1.07	
4343.00	11.060	186.580	4309.89	-350.10	-351.25	-44.14	40°11'45.806"N	104°34'52.576"W	2.29	
4438.00	11.190	186.620	4403.10	-368.26	-369.46	-46.25	40°11'45.626"N	104°34'52.605"W	0.14	
4532.00	11.160	185.330	4495.32	-386.32	-387.57	-48.14	40°11'45.447"N	104°34'52.632"W	0.27	
4626.00	11.050	181.820	4587.56	-404.35	-405.64	-49.27	40°11'45.269"N	104°34'52.649"W	0.73	
4721.00	11.220	191.360	4680.78	-422.46	-423.80	-51.38	40°11'45.090"N	104°34'52.679"W	1.95	
4816.00	11.190	184.380	4773.98	-440.65	-442.05	-53.91	40°11'44.909"N	104°34'52.714"W	1.43	
4910.00	11.030	178.610	4866.22	-458.72	-460.14	-54.39	40°11'44.731"N	104°34'52.722"W	1.19	
5004.00	11.110	181.020	4958.47	-476.76	-478.18	-54.33	40°11'44.552"N	104°34'52.724"W	0.50	
5099.00	11.160	175.770	5051.68	-495.08	-496.50	-53.81	40°11'44.371"N	104°34'52.720"W	1.07	
5193.00	11.000	174.900	5143.93	-513.12	-514.51	-52.35	40°11'44.193"N	104°34'52.703"W	0.25	
5288.00	10.860	188.740	5237.22	-530.98	-532.38	-52.90	40°11'44.017"N	104°34'52.713"W	2.76	
5383.00	11.050	199.970	5330.50	-548.27	-549.79	-57.37	40°11'43.845"N	104°34'52.773"W	2.25	
5477.00	10.960	196.770	5422.77	-565.15	-566.81	-63.02	40°11'43.678"N	104°34'52.848"W	0.66	
5572.00	11.090	192.930	5516.02	-582.59	-584.36	-67.67	40°11'43.505"N	104°34'52.910"W	0.78	
5666.00	10.960	188.850	5608.29	-600.15	-602.00	-71.07	40°11'43.331"N	104°34'52.956"W	0.84	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#08 GUTTERSEN D29-778 (2356'FNL & 973'FWL, SEC.29)
Area	COLORADO	Well	GUTTERSEN D29-778
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	GUTTERSEN D29-778 AWB
Facility	SEC.29-T03N-R64W		

WELLPATH DATA (184 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5760.00	11.140	199.160	5700.56	-617.45	-619.41	-75.43	40°11'43.159"N	104°34'53.015"W	2.11	
5855.00	11.170	197.210	5793.76	-634.76	-636.87	-81.16	40°11'42.987"N	104°34'53.091"W	0.40	
5949.00	11.100	186.460	5886.00	-652.36	-654.56	-84.87	40°11'42.813"N	104°34'53.141"W	2.21	
6044.00	11.090	176.900	5979.23	-670.55	-672.77	-85.41	40°11'42.633"N	104°34'53.150"W	1.93	
6138.00	10.990	176.020	6071.49	-688.54	-690.74	-84.30	40°11'42.455"N	104°34'53.138"W	0.21	
6233.00	10.700	175.050	6164.80	-706.39	-708.56	-82.91	40°11'42.279"N	104°34'53.123"W	0.36	
6327.00	2.890	145.560	6258.08	-717.10	-719.22	-80.81	40°11'42.173"N	104°34'53.097"W	8.84	
6422.00	4.370	357.580	6353.00	-715.49	-717.58	-79.61	40°11'42.189"N	104°34'53.082"W	7.36	
6517.00	13.130	359.410	6446.81	-701.05	-703.15	-79.87	40°11'42.332"N	104°34'53.083"W	9.22	
6611.00	22.550	357.570	6536.19	-672.29	-674.40	-80.75	40°11'42.616"N	104°34'53.091"W	10.04	
6705.00	31.420	355.010	6619.87	-629.73	-631.89	-83.65	40°11'43.037"N	104°34'53.122"W	9.51	
6800.00	40.640	357.680	6696.62	-573.96	-576.19	-87.07	40°11'43.587"N	104°34'53.159"W	9.84	
6894.00	48.330	0.820	6763.64	-508.17	-510.39	-87.80	40°11'44.238"N	104°34'53.160"W	8.51	
6989.00	56.450	1.840	6821.57	-433.06	-435.22	-86.02	40°11'44.980"N	104°34'53.127"W	8.59	
7084.00	66.140	2.030	6867.14	-349.97	-352.04	-83.20	40°11'45.802"N	104°34'53.079"W	10.20	
7178.00	73.400	1.600	6899.63	-261.96	-263.95	-80.42	40°11'46.672"N	104°34'53.032"W	7.74	
7273.00	83.030	0.160	6919.01	-169.15	-171.07	-79.01	40°11'47.590"N	104°34'53.001"W	10.24	
7367.00	90.060	0.220	6924.67	-75.41	-77.30	-78.70	40°11'48.516"N	104°34'52.984"W	7.48	
7462.00	90.060	358.840	6924.57	19.57	17.69	-79.48	40°11'49.455"N	104°34'52.982"W	1.45	
7556.00	90.090	358.520	6924.45	113.57	111.67	-81.65	40°11'50.384"N	104°34'52.997"W	0.34	
7651.00	89.940	358.950	6924.42	208.57	206.64	-83.75	40°11'51.323"N	104°34'53.012"W	0.48	
7746.00	90.000	359.210	6924.47	303.57	301.63	-85.27	40°11'52.261"N	104°34'53.019"W	0.28	
7840.00	90.090	359.300	6924.40	397.57	395.62	-86.49	40°11'53.190"N	104°34'53.022"W	0.14	
7935.00	90.000	359.260	6924.32	492.56	490.62	-87.69	40°11'54.129"N	104°34'53.024"W	0.10	
8029.00	90.000	358.650	6924.32	586.56	584.60	-89.40	40°11'55.058"N	104°34'53.034"W	0.65	
8124.00	90.090	358.400	6924.25	681.56	679.57	-91.85	40°11'55.997"N	104°34'53.053"W	0.28	
8218.00	90.150	357.690	6924.05	775.55	773.51	-95.05	40°11'56.925"N	104°34'53.082"W	0.76	
8313.00	90.060	357.640	6923.88	870.54	868.43	-98.92	40°11'57.864"N	104°34'53.119"W	0.11	
8407.00	90.090	357.830	6923.75	964.53	962.36	-102.64	40°11'58.792"N	104°34'53.154"W	0.20	
8502.00	90.250	357.780	6923.47	1059.51	1057.29	-106.28	40°11'59.730"N	104°34'53.188"W	0.18	

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	GUTTERSEN D29-778 AWB
Facility	SEC.29-T03N-R64W		

WELLPATH DATA (184 stations)										
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8596.00	90.030	357.460	6923.24	1153.50	1151.21	-110.18	40°12'00.659"N	104°34'53.226"W	0.41	
8691.00	89.880	357.900	6923.32	1248.49	1246.13	-114.03	40°12'01.597"N	104°34'53.263"W	0.49	
8786.00	90.000	358.240	6923.42	1343.48	1341.08	-117.23	40°12'02.536"N	104°34'53.292"W	0.38	
8880.00	90.030	359.100	6923.39	1437.48	1435.05	-119.41	40°12'03.465"N	104°34'53.307"W	0.92	
8975.00	89.780	359.570	6923.55	1532.47	1530.04	-120.51	40°12'04.403"N	104°34'53.309"W	0.56	
9069.00	89.970	0.250	6923.76	1626.45	1624.04	-120.66	40°12'05.332"N	104°34'53.298"W	0.75	
9164.00	90.060	1.200	6923.73	1721.38	1719.03	-119.46	40°12'06.271"N	104°34'53.270"W	1.00	
9258.00	89.910	359.640	6923.75	1815.34	1813.03	-118.77	40°12'07.200"N	104°34'53.248"W	1.67	
9353.00	90.030	358.430	6923.80	1910.33	1908.01	-120.37	40°12'08.138"N	104°34'53.256"W	1.28	
9447.00	89.940	356.860	6923.83	2004.32	2001.93	-124.23	40°12'09.067"N	104°34'53.294"W	1.67	
9542.00	89.940	356.590	6923.93	2099.26	2096.78	-129.66	40°12'10.004"N	104°34'53.351"W	0.28	
9636.00	89.970	357.290	6924.00	2193.22	2190.64	-134.67	40°12'10.932"N	104°34'53.403"W	0.75	
9731.00	89.970	358.240	6924.05	2288.21	2285.57	-138.38	40°12'11.871"N	104°34'53.438"W	1.00	
9825.00	89.970	358.430	6924.10	2382.21	2379.53	-141.11	40°12'12.800"N	104°34'53.461"W	0.20	
9920.00	89.910	358.190	6924.20	2477.20	2474.49	-143.91	40°12'13.738"N	104°34'53.484"W	0.26	
10014.00	89.850	358.060	6924.40	2571.20	2568.44	-146.99	40°12'14.667"N	104°34'53.511"W	0.15	
10109.00	89.970	358.360	6924.55	2666.20	2663.39	-149.95	40°12'15.605"N	104°34'53.537"W	0.34	
10204.00	89.940	358.940	6924.62	2761.20	2758.36	-152.19	40°12'16.544"N	104°34'53.553"W	0.61	
10298.00	89.780	359.110	6924.85	2855.19	2852.35	-153.79	40°12'17.473"N	104°34'53.561"W	0.25	
10392.00	89.940	359.110	6925.08	2949.19	2946.34	-155.25	40°12'18.402"N	104°34'53.567"W	0.17	
10487.00	90.000	359.140	6925.13	3044.19	3041.33	-156.70	40°12'19.341"N	104°34'53.573"W	0.07	
10581.00	89.970	359.060	6925.16	3138.19	3135.31	-158.18	40°12'20.270"N	104°34'53.580"W	0.09	
10676.00	90.030	359.560	6925.16	3233.18	3230.31	-159.32	40°12'21.208"N	104°34'53.582"W	0.53	
10770.00	89.970	0.310	6925.16	3327.15	3324.31	-159.43	40°12'22.137"N	104°34'53.571"W	0.80	
10865.00	90.030	1.250	6925.16	3422.09	3419.30	-158.14	40°12'23.076"N	104°34'53.541"W	0.99	
10959.00	90.030	2.350	6925.11	3515.94	3513.25	-155.18	40°12'24.004"N	104°34'53.491"W	1.17	
11053.00	90.220	3.010	6924.90	3609.71	3607.15	-150.79	40°12'24.931"N	104°34'53.422"W	0.73	
11148.00	90.180	3.230	6924.57	3704.42	3702.00	-145.62	40°12'25.868"N	104°34'53.342"W	0.24	
11243.00	90.120	2.290	6924.32	3799.17	3796.89	-141.04	40°12'26.805"N	104°34'53.271"W	0.99	
11337.00	89.970	1.250	6924.25	3893.03	3890.85	-138.14	40°12'27.733"N	104°34'53.221"W	1.12	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#08 GUTTERSEN D29-778 (2356'FNL & 973'FWL, SEC.29)
Area	COLORADO	Well	GUTTERSEN D29-778
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	GUTTERSEN D29-778 AWB
Facility	SEC.29-T03N-R64W		

WELLPATH DATA (184 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11526.00	90.030	1.110	6924.25	4081.84	4079.81	-134.25	40°12'29.600"N	104°34'53.145"W	0.08	
11621.00	90.030	2.700	6924.20	4176.69	4174.75	-131.09	40°12'30.538"N	104°34'53.092"W	1.67	
11715.00	90.000	2.970	6924.17	4270.43	4268.63	-126.44	40°12'31.465"N	104°34'53.019"W	0.29	
11810.00	89.970	2.390	6924.20	4365.20	4363.53	-122.00	40°12'32.402"N	104°34'52.950"W	0.61	
11904.00	89.880	359.560	6924.32	4459.11	4457.51	-120.40	40°12'33.331"N	104°34'52.916"W	3.01	
11998.00	89.940	358.620	6924.47	4553.11	4551.49	-121.89	40°12'34.260"N	104°34'52.923"W	1.00	
12093.00	89.820	358.760	6924.67	4648.10	4646.47	-124.07	40°12'35.199"N	104°34'52.938"W	0.19	
12187.00	89.970	359.040	6924.84	4742.10	4740.45	-125.87	40°12'36.127"N	104°34'52.949"W	0.34	
12282.00	89.880	357.620	6924.96	4837.10	4835.41	-128.64	40°12'37.066"N	104°34'52.972"W	1.50	
12376.00	89.940	355.160	6925.11	4931.02	4929.21	-134.56	40°12'37.994"N	104°34'53.036"W	2.62	
12471.00	89.970	356.020	6925.19	5025.88	5023.93	-141.86	40°12'38.930"N	104°34'53.117"W	0.91	
12565.00	90.060	359.560	6925.16	5119.86	5117.85	-145.49	40°12'39.859"N	104°34'53.152"W	3.77	
12660.00	90.030	359.800	6925.09	5214.84	5212.85	-146.02	40°12'40.797"N	104°34'53.146"W	0.25	
12754.00	90.090	358.500	6924.99	5308.84	5306.83	-147.41	40°12'41.726"N	104°34'53.151"W	1.38	
12849.00	90.180	358.140	6924.76	5403.84	5401.79	-150.20	40°12'42.665"N	104°34'53.174"W	0.39	
12943.00	90.030	357.700	6924.59	5497.83	5495.73	-153.61	40°12'43.593"N	104°34'53.206"W	0.49	
13038.00	90.220	358.600	6924.38	5592.82	5590.68	-156.67	40°12'44.532"N	104°34'53.233"W	0.97	
13133.00	90.150	358.330	6924.08	5687.82	5685.64	-159.22	40°12'45.471"N	104°34'53.253"W	0.29	
13227.00	90.060	358.160	6923.91	5781.82	5779.60	-162.10	40°12'46.399"N	104°34'53.277"W	0.20	
13322.00	89.940	358.970	6923.91	5876.82	5874.57	-164.48	40°12'47.338"N	104°34'53.295"W	0.86	
13416.00	90.060	359.080	6923.91	5970.82	5968.56	-166.08	40°12'48.267"N	104°34'53.303"W	0.17	
13510.00	90.120	359.360	6923.76	6064.81	6062.55	-167.36	40°12'49.196"N	104°34'53.307"W	0.30	
13605.00	90.180	0.930	6923.51	6159.78	6157.54	-167.12	40°12'50.135"N	104°34'53.292"W	1.65	
13699.00	90.180	0.220	6923.21	6253.72	6251.54	-166.17	40°12'51.063"N	104°34'53.267"W	0.76	
13794.00	90.090	359.890	6922.99	6348.69	6346.54	-166.08	40°12'52.002"N	104°34'53.253"W	0.36	
13888.00	90.030	359.330	6922.89	6442.68	6440.53	-166.72	40°12'52.931"N	104°34'53.249"W	0.60	
13982.00	90.030	359.640	6922.84	6536.67	6534.53	-167.57	40°12'53.860"N	104°34'53.247"W	0.33	
14077.00	90.280	0.330	6922.59	6631.64	6629.53	-167.59	40°12'54.798"N	104°34'53.235"W	0.77	
14171.00	90.030	0.480	6922.33	6725.60	6723.53	-166.93	40°12'55.727"N	104°34'53.214"W	0.31	
14266.00	89.910	0.570	6922.38	6820.54	6818.52	-166.06	40°12'56.666"N	104°34'53.190"W	0.16	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#08 GUTTERSEN D29-778 (2356'FNL & 973'FWL, SEC.29)
Area	COLORADO	Well	GUTTERSEN D29-778
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	GUTTERSEN D29-778 AWB
Facility	SEC.29-T03N-R64W		

WELLPATH DATA (184 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
14361.00	89.940	0.630	6922.51	6915.49	6913.52	-165.06	40°12'57.604"N	104°34'53.164"W	0.07	
14456.00	89.940	1.270	6922.61	7010.41	7008.50	-163.49	40°12'58.543"N	104°34'53.131"W	0.67	
14550.00	89.940	2.020	6922.70	7104.28	7102.46	-160.79	40°12'59.471"N	104°34'53.084"W	0.80	
14645.00	90.180	2.400	6922.60	7199.10	7197.39	-157.12	40°13'00.409"N	104°34'53.024"W	0.47	
14739.00	89.940	1.690	6922.51	7292.93	7291.33	-153.77	40°13'01.337"N	104°34'52.968"W	0.80	
14834.00	89.720	1.270	6922.79	7387.81	7386.30	-151.32	40°13'02.275"N	104°34'52.924"W	0.50	
14928.00	89.880	358.470	6923.12	7481.78	7480.29	-151.53	40°13'03.204"N	104°34'52.914"W	2.98	
15022.00	89.880	356.610	6923.31	7575.76	7574.20	-155.56	40°13'04.132"N	104°34'52.953"W	1.98	
15117.00	89.850	356.070	6923.54	7670.68	7669.01	-161.63	40°13'05.069"N	104°34'53.019"W	0.57	
15212.00	89.780	354.680	6923.84	7765.52	7763.69	-169.29	40°13'06.006"N	104°34'53.105"W	1.47	
15306.00	89.910	354.350	6924.10	7859.28	7857.26	-178.27	40°13'06.931"N	104°34'53.208"W	0.38	
15401.00	89.820	353.590	6924.32	7953.96	7951.74	-188.25	40°13'07.866"N	104°34'53.324"W	0.81	
15496.00	89.970	353.280	6924.50	8048.57	8046.11	-199.11	40°13'08.800"N	104°34'53.452"W	0.36	
15590.00	89.970	355.430	6924.54	8142.30	8139.65	-208.36	40°13'09.725"N	104°34'53.559"W	2.29	
15685.00	89.850	357.010	6924.69	8237.22	8234.44	-214.62	40°13'10.662"N	104°34'53.627"W	1.67	
15780.00	89.780	356.880	6925.00	8332.17	8329.31	-219.69	40°13'11.600"N	104°34'53.679"W	0.16	
15874.00	90.030	356.150	6925.16	8426.11	8423.13	-225.40	40°13'12.528"N	104°34'53.740"W	0.82	
15969.00	89.820	358.490	6925.28	8521.08	8518.02	-229.84	40°13'13.466"N	104°34'53.785"W	2.47	
16063.00	89.910	358.880	6925.50	8615.08	8612.00	-232.00	40°13'14.395"N	104°34'53.800"W	0.43	
16158.00	89.690	358.730	6925.83	8710.07	8706.97	-233.98	40°13'15.333"N	104°34'53.813"W	0.28	
16253.00	89.690	358.790	6926.35	8805.07	8801.95	-236.04	40°13'16.272"N	104°34'53.827"W	0.06	
16347.00	90.000	358.330	6926.60	8899.07	8895.92	-238.40	40°13'17.201"N	104°34'53.845"W	0.59	
16536.00	89.910	359.670	6926.75	9088.06	9084.89	-241.70	40°13'19.068"N	104°34'53.862"W	0.71	
16631.00	90.000	4.670	6926.83	9182.85	9179.79	-238.10	40°13'20.006"N	104°34'53.803"W	5.26	
16725.00	90.150	5.460	6926.70	9276.26	9273.42	-229.80	40°13'20.930"N	104°34'53.684"W	0.86	
16819.00	89.970	3.010	6926.60	9369.81	9367.16	-222.86	40°13'21.856"N	104°34'53.582"W	2.61	
16914.00	90.030	359.940	6926.60	9464.68	9462.11	-220.42	40°13'22.794"N	104°34'53.537"W	3.23	
17008.00	90.340	359.530	6926.30	9558.66	9556.11	-220.85	40°13'23.723"N	104°34'53.530"W	0.55	
17197.00	90.150	356.860	6925.49	9747.64	9745.00	-226.80	40°13'25.590"N	104°34'53.582"W	1.42	
17291.00	90.180	357.150	6925.22	9841.60	9838.87	-231.71	40°13'26.518"N	104°34'53.633"W	0.31	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#08 GUTTERSEN D29-778 (2356'FNL & 973'FWL, SEC.29)
Area	COLORADO	Well	GUTTERSEN D29-778
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	GUTTERSEN D29-778 AWB
Facility	SEC.29-T03N-R64W		

WELLPATH DATA (184 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
17386.00	90.150	357.420	6924.95	9936.57	9933.76	-236.21	40°13'27.456"N	104°34'53.678"W	0.29	
17480.00	90.250	358.260	6924.62	10030.56	10027.70	-239.76	40°13'28.385"N	104°34'53.711"W	0.90	
17575.00	90.310	357.640	6924.16	10125.55	10122.63	-243.15	40°13'29.323"N	104°34'53.742"W	0.66	Last BHI Survey
17682.00	90.310	357.640	6923.58	10232.53	10229.54	-247.56	40°13'30.380"N	104°34'53.785"W	0.00	Projection to Bit

HOLE & CASING SECTIONS - Ref Wellbore: GUTTERSEN D29-778 AWB Ref Wellpath: GUTTERSEN D29-778 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	1942.00	1912.00	30.00	1941.94	0.08	0.01	3.43	-0.84
9.625in Casing Surface	30.00	1942.00	1912.00	30.00	1941.94	0.08	0.01	3.43	-0.84
8.5in Open Hole	1942.00	17682.00	15740.00	1941.94	6923.58	3.43	-0.84	10229.54	-247.56

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#08 GUTTERSEN D29-778 (2356'FNL & 973'FWL, SEC.29)
Area	COLORADO	Well	GUTTERSEN D29-778
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	GUTTERSEN D29-778 AWB
Facility	SEC.29-T03N-R64W		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.17-T03N-R64W	-1.00	-0.38	-36.31	3256648.50	1315946.49	40°11'49.272"N	104°34'52.428"W	polygon
SEC.20-T03N-R64W	-1.00	-0.38	-36.31	3256648.50	1315946.49	40°11'49.272"N	104°34'52.428"W	polygon
SEC.29-T03N-R64W	-1.00	-0.38	-36.31	3256648.50	1315946.49	40°11'49.272"N	104°34'52.428"W	polygon
GUTTERSEN D29-778 BHL ON PLAT (2565'FSL & 788'FWL, SEC.17)	6925.00	10231.22	-242.86	3256441.97	1326177.63	40°13'30.396"N	104°34'53.724"W	point
GUTTERSEN D29-778 LP	6925.00	-88.54	-78.97	3256605.85	1315858.33	40°11'48.405"N	104°34'52.989"W	point

WELLPATH COMPOSITION - Ref Wellbore: GUTTERSEN D29-778 AWB Ref Wellpath: GUTTERSEN D29-778 AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	1942.00	Gyrodatta standard - Continuous gyro	3rd Party Surface Gyros <85'-1942'>	GUTTERSEN D29-778 AWB
1942.00	17575.00	OWSG MWD rev2 + IFR1 + Axial Corr	BH/ATC 8.5" Hole OWSG MWD rev2+IFR1+MSA <1980'-17575'>	GUTTERSEN D29-778 AWB
17575.00	17682.00	Blind Drilling (std)	Projection to bit	GUTTERSEN D29-778 AWB