

# NOBLE ENERGY, INC

Location: COLORADO Slot: SLOT#09 HARPER A21-626 (876°FSL & 900°FWL,SEC.21)  
Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: HARPER A21-626  
Facility: SEC.21-T06N-R64W Wellbore: HARPER A21-626 PWB

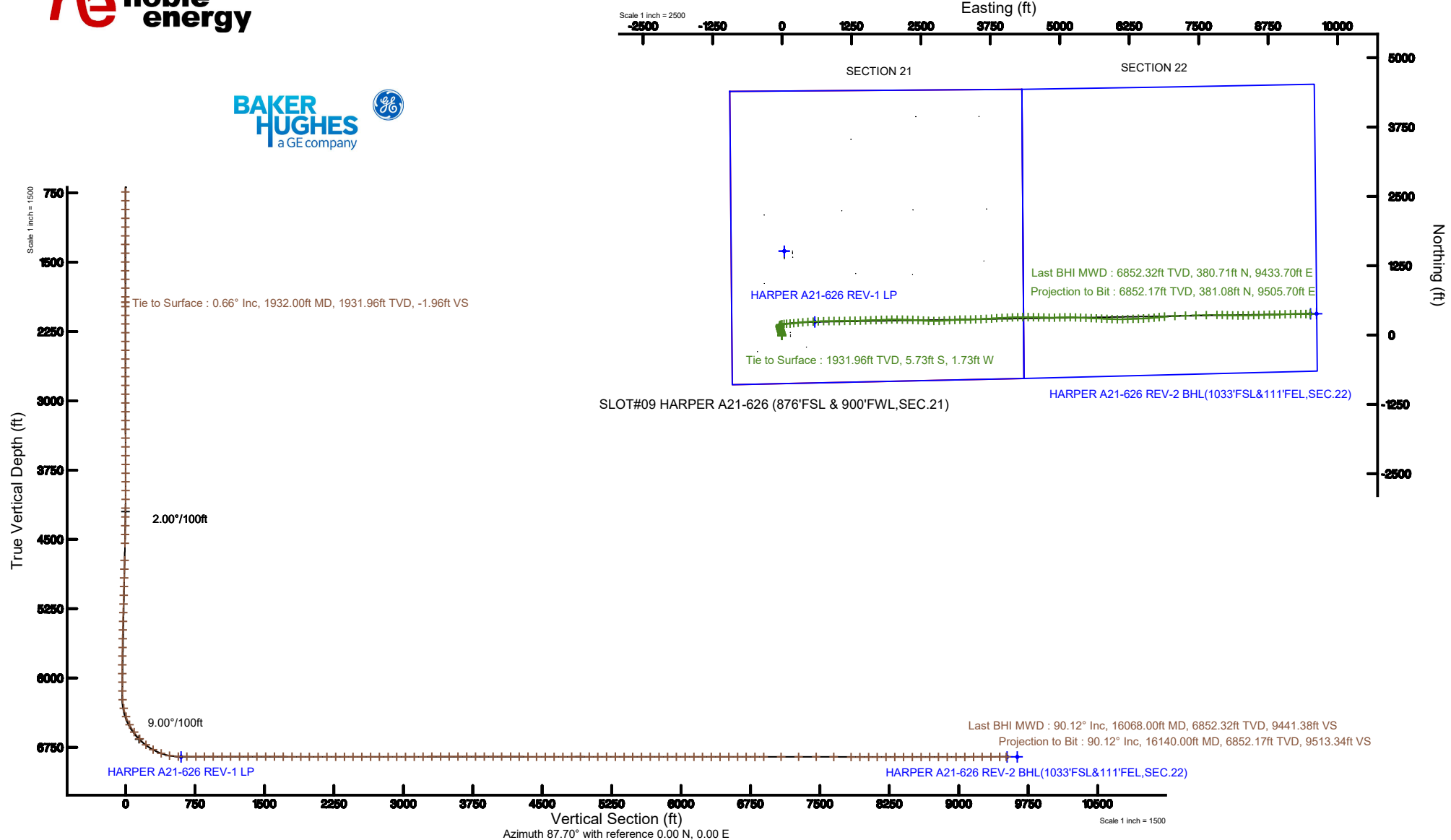
Plot reference wellpath is HARPER A21-626 (REV-B.0) PWP	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
True vertical depths are referenced to RIG (30°KB) (RKB)	North Reference: Grid north
Measured depths are referenced to RIG (30°KB) (RKB)	Scale: True distance
RIG (30°KB) (RKB) to Mean Sea Level: 4757 feet	Depths are in feet
Mean Sea Level to Ground level (At Slot: SLOT#09 HARPER A21-626 (876°FSL & 900°FWL,SEC.21)): 0 feet	Created by: doddanna on 2019-02-27
Coordinates are in feet referenced to Slot	Database: WellArchitectDB

## Location Information

Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.21-T06N-R64W			3261306.758	1414202.887	40°27'59.724"N	104°33'38.988"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOT#09 HARPER A21-626 (876°FSL & 900°FWL,SEC.21)	23.91	-150.52	3261156.248	1414226.796	40°27'59.976"N	104°33'40.932"W
RIG (30°KB) (RKB) to Ground level (At Slot: SLOT#09 HARPER A21-626 (876°FSL & 900°FWL,SEC.21))					4757ft	
Mean Sea Level to Ground level (At Slot: SLOT#09 HARPER A21-626 (876°FSL & 900°FWL,SEC.21))					0ft	
RIG (30°KB) (RKB) to Mean Sea Level					4757ft	

## Survey Program

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
30.00	16260.25	OWSG MWD rev2	OWSG MWD rev2 + IFR1 + Multi-Station Correction		HARPER A21-626 PWB



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#09 HARPER A21-626 (876'FSL & 900'FWL,SEC.21)
Area	COLORADO	Well	HARPER A21-626
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	HARPER A21-626 AWB
Facility	SEC.21-T06N-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	0.999964	Report Generated	2/27/2019 at 2:08:14 PM
Convergence at slot	0.61° East	Database/Source file	WellArchitectDB/HARPER_A21-626_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	23.91	-150.52	3261156.25	1414226.80	40°27'59.976"N	104°33'40.932"W
Facility Reference Pt			3261306.76	1414202.89	40°27'59.724"N	104°33'38.988"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	4757.00ft
Horizontal Reference Pt	Slot	RIG (30'KB) (RKB) to Mean Sea Level	4757.00ft
Vertical Reference Pt	RIG (30'KB) (RKB)	RIG (30'KB) (RKB) to Ground Level at Slot (SLOT#09 HARPER A21-626 (876'FSL & 900'FWL,SEC.21))	4757.00ft
MD Reference Pt	RIG (30'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	87.70°

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	HARPER A21-626 AWB
Facility	SEC.21-T06N-R64W		

WELLPATH DATA (167 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	210.890	0.00	0.00	0.00	0.00	40°27'59.976"N	104°33'40.932"W	0.00	
82.00	0.580	210.890	82.00	-0.23	-0.36	-0.21	40°27'59.973"N	104°33'40.935"W	0.71	
177.00	0.320	171.360	177.00	-0.46	-1.03	-0.42	40°27'59.966"N	104°33'40.938"W	0.41	
269.00	0.380	124.970	268.99	-0.19	-1.46	-0.13	40°27'59.962"N	104°33'40.934"W	0.31	
364.00	0.420	288.710	363.99	-0.26	-1.53	-0.20	40°27'59.961"N	104°33'40.935"W	0.83	
458.00	0.070	351.060	457.99	-0.59	-1.36	-0.54	40°27'59.963"N	104°33'40.939"W	0.42	
553.00	0.460	217.970	552.99	-0.85	-1.60	-0.78	40°27'59.960"N	104°33'40.942"W	0.54	
647.00	0.520	284.280	646.99	-1.50	-1.80	-1.43	40°27'59.958"N	104°33'40.951"W	0.57	
741.00	0.050	199.700	740.99	-1.92	-1.73	-1.85	40°27'59.959"N	104°33'40.956"W	0.55	
836.00	0.210	184.680	835.99	-1.96	-1.94	-1.88	40°27'59.957"N	104°33'40.957"W	0.17	
930.00	0.140	216.330	929.99	-2.05	-2.21	-1.97	40°27'59.954"N	104°33'40.958"W	0.12	
1025.00	0.190	300.400	1024.99	-2.26	-2.22	-2.17	40°27'59.954"N	104°33'40.960"W	0.24	
1121.00	0.290	261.240	1120.99	-2.63	-2.18	-2.55	40°27'59.955"N	104°33'40.965"W	0.19	
1214.00	0.540	218.730	1213.98	-3.15	-2.56	-3.05	40°27'59.951"N	104°33'40.972"W	0.41	
1308.00	0.320	194.910	1307.98	-3.52	-3.15	-3.40	40°27'59.945"N	104°33'40.976"W	0.30	
1403.00	0.140	150.030	1402.98	-3.55	-3.51	-3.41	40°27'59.942"N	104°33'40.977"W	0.25	
1497.00	0.340	260.160	1496.98	-3.77	-3.66	-3.63	40°27'59.940"N	104°33'40.979"W	0.44	
1592.00	0.230	70.070	1591.98	-3.87	-3.64	-3.72	40°27'59.940"N	104°33'40.981"W	0.60	
1685.00	0.290	110.250	1684.98	-3.47	-3.66	-3.33	40°27'59.940"N	104°33'40.976"W	0.20	
1781.00	0.690	152.850	1780.97	-3.01	-4.26	-2.84	40°27'59.934"N	104°33'40.969"W	0.54	
1876.00	0.730	138.090	1875.97	-2.38	-5.22	-2.17	40°27'59.925"N	104°33'40.961"W	0.20	
1932.00	0.660	140.400	1931.96	-1.96	-5.73	-1.73	40°27'59.920"N	104°33'40.955"W	0.13	Tie to Surface
1980.00	0.320	109.700	1979.96	-1.66	-5.99	-1.43	40°27'59.917"N	104°33'40.951"W	0.87	
2075.00	0.100	211.430	2074.96	-1.46	-6.15	-1.22	40°27'59.915"N	104°33'40.949"W	0.37	
2169.00	0.030	210.040	2168.96	-1.52	-6.24	-1.27	40°27'59.914"N	104°33'40.949"W	0.07	
2264.00	0.160	293.680	2263.96	-1.66	-6.21	-1.41	40°27'59.915"N	104°33'40.951"W	0.17	
2359.00	0.280	85.470	2358.96	-1.54	-6.14	-1.30	40°27'59.915"N	104°33'40.950"W	0.45	
2454.00	0.260	211.210	2453.96	-1.43	-6.30	-1.18	40°27'59.914"N	104°33'40.948"W	0.51	
2549.00	0.070	183.560	2548.96	-1.56	-6.55	-1.29	40°27'59.911"N	104°33'40.950"W	0.21	
2644.00	0.090	95.630	2643.96	-1.49	-6.61	-1.22	40°27'59.911"N	104°33'40.949"W	0.12	

### REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#09 HARPER A21-626 (876'FSL & 900'FWL, SEC.21)
Area	COLORADO	Well	HARPER A21-626
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	HARPER A21-626 AWB
Facility	SEC.21-T06N-R64W		

### WELLPATH DATA (167 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
2739.00	0.100	184.230	2738.96	-1.42	-6.70	-1.15	40°27'59.910"N	104°33'40.948"W	0.14	
2833.00	0.130	188.400	2832.96	-1.45	-6.89	-1.18	40°27'59.908"N	104°33'40.948"W	0.03	
2928.00	0.060	97.130	2927.96	-1.42	-7.00	-1.14	40°27'59.907"N	104°33'40.948"W	0.15	
3023.00	0.090	73.450	3022.96	-1.30	-6.99	-1.02	40°27'59.907"N	104°33'40.946"W	0.04	
3118.00	0.190	144.450	3117.96	-1.14	-7.09	-0.86	40°27'59.906"N	104°33'40.944"W	0.19	
3213.00	0.160	206.410	3212.96	-1.12	-7.34	-0.83	40°27'59.904"N	104°33'40.944"W	0.19	
3308.00	0.170	40.010	3307.96	-1.09	-7.35	-0.79	40°27'59.903"N	104°33'40.943"W	0.34	
3403.00	0.340	36.900	3402.96	-0.82	-7.02	-0.53	40°27'59.907"N	104°33'40.940"W	0.18	
3498.00	0.190	216.940	3497.96	-0.74	-6.92	-0.46	40°27'59.908"N	104°33'40.939"W	0.56	
3593.00	0.310	92.830	3592.96	-0.58	-7.06	-0.30	40°27'59.906"N	104°33'40.937"W	0.47	
3688.00	0.100	239.120	3687.96	-0.40	-7.11	-0.11	40°27'59.906"N	104°33'40.934"W	0.42	
3783.00	0.090	126.030	3782.96	-0.41	-7.20	-0.12	40°27'59.905"N	104°33'40.935"W	0.17	
3877.00	0.030	32.720	3876.96	-0.34	-7.22	-0.05	40°27'59.905"N	104°33'40.934"W	0.10	
3972.00	0.260	23.680	3971.96	-0.23	-7.00	0.05	40°27'59.907"N	104°33'40.932"W	0.24	
4067.00	0.200	325.590	4066.95	-0.23	-6.67	0.04	40°27'59.910"N	104°33'40.932"W	0.24	
4162.00	2.900	339.790	4161.91	-1.05	-4.28	-0.88	40°27'59.934"N	104°33'40.944"W	2.85	
4257.00	4.840	349.170	4256.69	-2.39	1.92	-2.46	40°27'59.995"N	104°33'40.964"W	2.14	
4352.00	5.500	350.010	4351.30	-3.59	10.34	-4.01	40°28'00.079"N	104°33'40.982"W	0.70	
4447.00	5.660	348.380	4445.85	-4.96	19.41	-5.74	40°28'00.168"N	104°33'41.004"W	0.24	
4542.00	5.450	347.150	4540.41	-6.54	28.40	-7.69	40°28'00.257"N	104°33'41.028"W	0.25	
4730.00	5.480	341.550	4727.55	-10.67	45.62	-12.51	40°28'00.428"N	104°33'41.088"W	0.28	
4825.00	5.670	340.700	4822.11	-13.31	54.35	-15.50	40°28'00.515"N	104°33'41.125"W	0.22	
4919.00	5.520	343.200	4915.66	-15.79	63.06	-18.34	40°28'00.601"N	104°33'41.161"W	0.30	
5014.00	5.420	343.540	5010.23	-18.04	71.74	-20.93	40°28'00.687"N	104°33'41.193"W	0.11	
5108.00	5.540	342.890	5103.80	-20.28	80.33	-23.53	40°28'00.772"N	104°33'41.225"W	0.14	
5203.00	5.210	339.980	5198.38	-22.77	88.76	-26.35	40°28'00.856"N	104°33'41.261"W	0.45	
5297.00	5.470	343.850	5291.97	-25.14	97.08	-29.06	40°28'00.938"N	104°33'41.295"W	0.47	
5392.00	5.590	344.400	5386.53	-27.29	105.88	-31.56	40°28'01.026"N	104°33'41.326"W	0.14	
5486.00	5.410	344.860	5480.10	-29.32	114.57	-33.95	40°28'01.112"N	104°33'41.356"W	0.20	
5581.00	5.140	346.130	5574.69	-31.17	123.03	-36.14	40°28'01.195"N	104°33'41.383"W	0.31	

### REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#09 HARPER A21-626 (876'FSL & 900'FWL, SEC.21)
Area	COLORADO	Well	HARPER A21-626
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	HARPER A21-626 AWB
Facility	SEC.21-T06N-R64W		

### WELLPATH DATA (167 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5675.00	5.270	344.750	5668.31	-32.98	131.28	-38.29	40°28'01.277"N	104°33'41.409"W	0.19	
5770.00	5.190	346.800	5762.91	-34.77	139.67	-40.42	40°28'01.360"N	104°33'41.436"W	0.21	
5864.00	4.960	352.320	5856.54	-35.96	147.84	-41.93	40°28'01.441"N	104°33'41.454"W	0.57	
5959.00	5.090	0.720	5951.18	-36.12	156.12	-42.43	40°28'01.523"N	104°33'41.460"W	0.79	
6053.00	4.890	4.740	6044.82	-35.41	164.28	-42.04	40°28'01.604"N	104°33'41.453"W	0.43	
6148.00	5.000	1.400	6139.47	-34.65	172.46	-41.61	40°28'01.684"N	104°33'41.447"W	0.32	
6243.00	5.560	30.930	6234.08	-31.86	180.55	-39.14	40°28'01.764"N	104°33'41.414"W	2.89	
6337.00	12.610	66.020	6326.90	-19.80	188.64	-27.40	40°28'01.843"N	104°33'41.261"W	9.21	
6432.00	19.960	78.610	6418.06	5.89	196.07	-1.99	40°28'01.914"N	104°33'40.931"W	8.54	
6526.00	27.220	85.780	6504.16	43.28	200.82	35.24	40°28'01.957"N	104°33'40.449"W	8.29	
6620.00	35.390	87.580	6584.41	92.06	203.56	83.96	40°28'01.979"N	104°33'39.818"W	8.75	
6715.00	42.290	88.010	6658.36	151.61	205.83	143.45	40°28'01.995"N	104°33'39.048"W	7.27	
6809.00	51.870	83.100	6722.32	220.27	211.39	211.95	40°28'02.043"N	104°33'38.161"W	10.88	
6903.00	60.940	83.420	6774.28	298.25	220.56	289.62	40°28'02.125"N	104°33'37.155"W	9.65	
6998.00	69.720	84.950	6813.89	384.33	229.25	375.43	40°28'02.202"N	104°33'36.044"W	9.36	
7092.00	79.440	85.770	6838.86	474.76	236.56	465.64	40°28'02.265"N	104°33'34.875"W	10.37	
7187.00	88.310	87.470	6848.98	569.11	242.11	559.83	40°28'02.310"N	104°33'33.656"W	9.50	
7281.00	90.090	87.200	6850.30	663.09	246.48	653.72	40°28'02.343"N	104°33'32.441"W	1.92	
7376.00	89.970	88.380	6850.25	758.09	250.15	748.65	40°28'02.369"N	104°33'31.212"W	1.25	
7470.00	90.740	89.610	6849.66	852.06	251.79	842.63	40°28'02.376"N	104°33'29.996"W	1.54	
7564.00	90.000	90.020	6849.06	946.00	252.10	936.62	40°28'02.369"N	104°33'28.780"W	0.90	
7659.00	89.720	89.360	6849.29	1040.94	252.61	1031.62	40°28'02.364"N	104°33'27.551"W	0.75	
7753.00	89.820	88.980	6849.67	1134.90	253.97	1125.61	40°28'02.368"N	104°33'26.335"W	0.42	
7848.00	89.940	88.590	6849.87	1229.89	255.99	1220.59	40°28'02.377"N	104°33'25.106"W	0.43	
7942.00	89.910	88.760	6849.99	1323.87	258.16	1314.56	40°28'02.389"N	104°33'23.889"W	0.18	
8037.00	89.880	88.510	6850.16	1418.86	260.42	1409.54	40°28'02.401"N	104°33'22.660"W	0.27	
8132.00	89.970	88.440	6850.29	1513.85	262.95	1504.50	40°28'02.416"N	104°33'21.431"W	0.12	
8226.00	89.880	88.090	6850.41	1607.85	265.80	1598.46	40°28'02.435"N	104°33'20.215"W	0.38	
8320.00	89.690	87.870	6850.76	1701.85	269.11	1692.40	40°28'02.458"N	104°33'19.000"W	0.31	
8415.00	89.780	87.640	6851.20	1796.84	272.83	1787.33	40°28'02.484"N	104°33'17.771"W	0.26	

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	HARPER A21-626 AWB
Facility	SEC.21-T06N-R64W		

### WELLPATH DATA (167 stations)

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8510.00	89.820	87.900	6851.53	1891.84	276.53	1882.25	40°28'02.511"N	104°33'16.542"W	0.28	
8604.00	89.780	89.530	6851.86	1985.82	278.64	1976.23	40°28'02.522"N	104°33'15.326"W	1.73	
8699.00	89.970	90.780	6852.07	2080.74	278.38	2071.22	40°28'02.509"N	104°33'14.097"W	1.33	
8794.00	89.910	91.250	6852.17	2175.58	276.70	2166.21	40°28'02.483"N	104°33'12.869"W	0.50	
8888.00	89.880	91.400	6852.34	2269.39	274.52	2260.18	40°28'02.451"N	104°33'11.653"W	0.16	
8983.00	90.280	91.110	6852.21	2364.20	272.44	2355.16	40°28'02.421"N	104°33'10.425"W	0.52	
9077.00	89.970	93.830	6852.00	2457.87	268.39	2449.06	40°28'02.371"N	104°33'09.210"W	2.91	
9172.00	90.150	94.210	6851.90	2552.29	261.73	2543.83	40°28'02.295"N	104°33'07.985"W	0.44	
9267.00	89.880	92.930	6851.88	2646.79	255.82	2638.64	40°28'02.226"N	104°33'06.759"W	1.38	
9361.00	90.090	89.930	6851.90	2740.58	253.47	2732.60	40°28'02.193"N	104°33'05.544"W	3.20	
9456.00	89.720	87.470	6852.06	2835.56	255.63	2827.57	40°28'02.204"N	104°33'04.315"W	2.62	
9550.00	90.340	86.400	6852.01	2929.55	260.65	2921.44	40°28'02.244"N	104°33'03.100"W	1.32	
9645.00	90.060	86.320	6851.68	3024.52	266.69	3016.24	40°28'02.294"N	104°33'01.873"W	0.31	
9739.00	90.150	86.770	6851.51	3118.50	272.35	3110.07	40°28'02.340"N	104°33'00.658"W	0.49	
9834.00	90.090	87.550	6851.31	3213.50	277.06	3204.95	40°28'02.376"N	104°32'59.430"W	0.82	
9928.00	91.140	89.450	6850.30	3307.48	279.52	3298.91	40°28'02.391"N	104°32'58.214"W	2.31	
10023.00	90.000	89.320	6849.36	3402.43	280.54	3393.90	40°28'02.391"N	104°32'56.985"W	1.21	
10117.00	90.310	88.660	6849.10	3496.40	282.19	3487.88	40°28'02.397"N	104°32'55.769"W	0.78	
10212.00	89.850	86.830	6848.97	3591.40	285.93	3582.81	40°28'02.424"N	104°32'54.540"W	1.99	
10306.00	89.880	86.820	6849.19	3685.39	291.14	3676.66	40°28'02.465"N	104°32'53.325"W	0.03	
10401.00	89.750	86.080	6849.50	3780.36	297.02	3771.48	40°28'02.514"N	104°32'52.098"W	0.79	
10495.00	89.720	86.690	6849.93	3874.34	302.95	3865.29	40°28'02.562"N	104°32'50.883"W	0.65	
10590.00	90.090	86.730	6850.09	3969.32	308.40	3960.13	40°28'02.606"N	104°32'49.655"W	0.39	
10684.00	89.880	87.050	6850.11	4063.31	313.50	4053.99	40°28'02.646"N	104°32'48.440"W	0.41	
10779.00	89.780	87.450	6850.40	4158.31	318.06	4148.88	40°28'02.681"N	104°32'47.212"W	0.43	
10873.00	89.780	88.660	6850.76	4252.31	321.25	4242.83	40°28'02.703"N	104°32'45.996"W	1.29	
10967.00	89.780	89.650	6851.12	4346.27	322.63	4336.81	40°28'02.707"N	104°32'44.780"W	1.05	
11061.00	89.880	90.160	6851.40	4440.20	322.79	4430.81	40°28'02.698"N	104°32'43.564"W	0.55	
11156.00	89.820	91.280	6851.64	4535.07	321.60	4525.80	40°28'02.676"N	104°32'42.335"W	1.18	
11250.00	90.150	92.180	6851.67	4628.84	318.76	4619.76	40°28'02.638"N	104°32'41.120"W	1.02	

### REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#09 HARPER A21-626 (876'FSL & 900'FWL, SEC.21)
Area	COLORADO	Well	HARPER A21-626
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	HARPER A21-626 AWB
Facility	SEC.21-T06N-R64W		

### WELLPATH DATA (167 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11345.00	90.060	91.340	6851.50	4723.60	315.84	4714.71	40°28'02.599"N	104°32'39.892"W	0.89	
11440.00	90.400	90.950	6851.11	4818.42	313.94	4809.69	40°28'02.570"N	104°32'38.663"W	0.54	
11534.00	89.850	89.180	6850.91	4912.34	313.83	4903.69	40°28'02.559"N	104°32'37.447"W	1.97	
11629.00	89.820	88.930	6851.18	5007.31	315.40	4998.68	40°28'02.565"N	104°32'36.218"W	0.27	
11723.00	89.970	87.500	6851.35	5101.31	318.33	5092.63	40°28'02.584"N	104°32'35.002"W	1.53	
11818.00	90.180	89.600	6851.23	5196.29	320.73	5187.59	40°28'02.597"N	104°32'33.773"W	2.22	
11912.00	89.910	94.770	6851.16	5289.97	317.15	5281.49	40°28'02.552"N	104°32'32.559"W	5.51	
12007.00	89.880	92.110	6851.33	5384.48	311.45	5376.31	40°28'02.485"N	104°32'31.333"W	2.80	
12101.00	89.910	92.100	6851.50	5478.21	308.00	5470.25	40°28'02.441"N	104°32'30.118"W	0.03	
12196.00	89.690	92.300	6851.83	5572.91	304.35	5565.18	40°28'02.395"N	104°32'28.891"W	0.31	
12290.00	89.600	93.240	6852.42	5666.54	299.81	5659.07	40°28'02.340"N	104°32'27.677"W	1.00	
12385.00	90.090	92.470	6852.67	5761.16	295.08	5753.95	40°28'02.283"N	104°32'26.450"W	0.96	
12479.00	89.750	92.640	6852.81	5854.82	290.89	5847.85	40°28'02.232"N	104°32'25.235"W	0.40	
12574.00	90.150	92.090	6852.89	5949.50	286.97	5942.77	40°28'02.183"N	104°32'24.008"W	0.72	
12668.00	89.850	90.720	6852.89	6043.30	284.66	6036.74	40°28'02.150"N	104°32'22.792"W	1.49	
12763.00	90.030	89.060	6852.99	6138.23	284.84	6131.74	40°28'02.142"N	104°32'21.563"W	1.76	
12857.00	89.970	87.890	6852.99	6232.22	287.35	6225.70	40°28'02.156"N	104°32'20.347"W	1.25	
12952.00	89.850	87.870	6853.14	6327.22	290.86	6320.64	40°28'02.181"N	104°32'19.119"W	0.13	
13046.00	89.940	88.380	6853.31	6421.22	293.94	6414.59	40°28'02.201"N	104°32'17.903"W	0.55	
13140.00	90.310	87.240	6853.10	6515.21	297.53	6508.52	40°28'02.227"N	104°32'16.687"W	1.28	
13235.00	89.970	84.960	6852.87	6610.17	303.99	6603.29	40°28'02.280"N	104°32'15.460"W	2.43	
13329.00	90.060	84.150	6852.85	6704.03	312.91	6696.86	40°28'02.358"N	104°32'14.248"W	0.87	
13424.00	89.540	84.150	6853.18	6798.85	322.59	6791.37	40°28'02.444"N	104°32'13.024"W	0.55	
13518.00	90.710	85.450	6852.97	6892.72	331.11	6884.98	40°28'02.518"N	104°32'11.812"W	1.86	
13707.00	89.850	87.880	6852.05	7081.67	342.10	7073.64	40°28'02.606"N	104°32'09.370"W	1.36	
13896.00	89.880	87.940	6852.50	7270.67	349.00	7262.51	40°28'02.654"N	104°32'06.925"W	0.04	
14085.00	89.910	88.360	6852.84	7459.66	355.10	7451.41	40°28'02.694"N	104°32'04.480"W	0.22	
14274.00	89.820	88.740	6853.29	7648.64	359.88	7640.35	40°28'02.721"N	104°32'02.035"W	0.21	
14463.00	89.820	89.470	6853.88	7837.58	362.83	7829.33	40°28'02.730"N	104°31'59.590"W	0.39	
14558.00	89.880	92.480	6854.13	7932.42	361.22	7924.30	40°28'02.704"N	104°31'58.361"W	3.17	

### REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#09 HARPER A21-626 (876'FSL & 900'FWL, SEC.21)
Area	COLORADO	Well	HARPER A21-626
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	HARPER A21-626 AWB
Facility	SEC.21-T06N-R64W		

### WELLPATH DATA (167 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
14652.00	89.880	93.060	6854.33	8026.05	356.67	8018.19	40°28'02.649"N	104°31'57.147"W	0.62	
14746.00	89.850	91.180	6854.55	8119.76	353.20	8112.12	40°28'02.604"N	104°31'55.933"W	2.00	
14841.00	89.690	90.410	6854.93	8214.62	351.88	8207.11	40°28'02.581"N	104°31'54.704"W	0.83	
14935.00	90.060	88.650	6855.13	8308.57	352.65	8301.10	40°28'02.578"N	104°31'53.488"W	1.91	
15029.00	90.280	88.770	6854.86	8402.56	354.77	8395.08	40°28'02.589"N	104°31'52.272"W	0.27	
15124.00	90.310	88.300	6854.37	8497.54	357.19	8490.05	40°28'02.603"N	104°31'51.043"W	0.50	
15219.00	90.180	87.920	6853.96	8592.54	360.33	8585.00	40°28'02.624"N	104°31'49.814"W	0.42	
15313.00	90.000	87.970	6853.81	8686.54	363.70	8678.93	40°28'02.647"N	104°31'48.598"W	0.20	
15408.00	90.000	88.620	6853.81	8781.53	366.52	8773.89	40°28'02.664"N	104°31'47.369"W	0.68	
15502.00	89.940	89.020	6853.86	8875.52	368.46	8867.87	40°28'02.673"N	104°31'46.153"W	0.43	
15597.00	90.120	87.990	6853.81	8970.50	370.94	8962.84	40°28'02.688"N	104°31'44.924"W	1.10	
15691.00	90.120	88.080	6853.61	9064.50	374.16	9056.78	40°28'02.709"N	104°31'43.708"W	0.10	
15786.00	90.180	88.260	6853.37	9159.50	377.20	9151.73	40°28'02.729"N	104°31'42.479"W	0.20	
15880.00	90.180	89.380	6853.07	9253.48	379.13	9245.71	40°28'02.738"N	104°31'41.263"W	1.19	
15974.00	90.310	89.500	6852.67	9347.43	380.05	9339.71	40°28'02.737"N	104°31'40.047"W	0.19	
16068.00	90.120	89.700	6852.32	9441.38	380.71	9433.70	40°28'02.733"N	104°31'38.831"W	0.29	Last BHI MWD
16140.00	90.120	89.700	6852.17	9513.34	381.08	9505.70	40°28'02.729"N	104°31'37.899"W	0.00	Projection to Bit



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#09 HARPER A21-626 (876'FSL & 900'FWL, SEC.21)
Area	COLORADO	Well	HARPER A21-626
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	HARPER A21-626 AWB
Facility	SEC.21-T06N-R64W		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
HARPER A21-681 SECTION 21	-17.00	1512.42	39.64	3261195.89	1415739.16	40°28'14.916"N	104°33'40.212"W	polygon
HARPER A21-681 SECTION 22	-17.00	1512.42	39.64	3261195.89	1415739.16	40°28'14.916"N	104°33'40.212"W	polygon
HARPER A21-626 REV-1 BHL (1035'FSL&1'FEL, SEC.22)	6853.00	384.29	9623.71	3270779.59	1414611.07	40°28'02.748"N	104°31'36.372"W	point
HARPER A21-626 REV-1 LP	6853.00	235.38	590.91	3261747.14	1414462.17	40°28'02.240"N	104°33'33.255"W	point
HARPER A21-626 REV-2 BHL (1033'FSL&111'FEL, SEC.22)	6853.00	382.47	9513.46	3270669.35	1414609.25	40°28'02.742"N	104°31'37.799"W	point

WELLPATH COMPOSITION - Ref Wellbore: HARPER A21-626 AWB					Ref Wellpath: HARPER A21-626 AWP	
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment		Wellbore	
0.00	1932.00	BHI Generic gyro - northseeking (Standard)	3rd Party GyroData Surface Survey <82'-1932'>		HARPER A21-626 AWB	
1932.00	16068.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	BH/ATC 8.5" Hole OWSG MWD rev2+IFR1+MSA <1980'-16068'>		HARPER A21-626 AWB	
16068.00	16140.00	Blind Drilling (std)	Projection to bit		HARPER A21-626 AWB	