

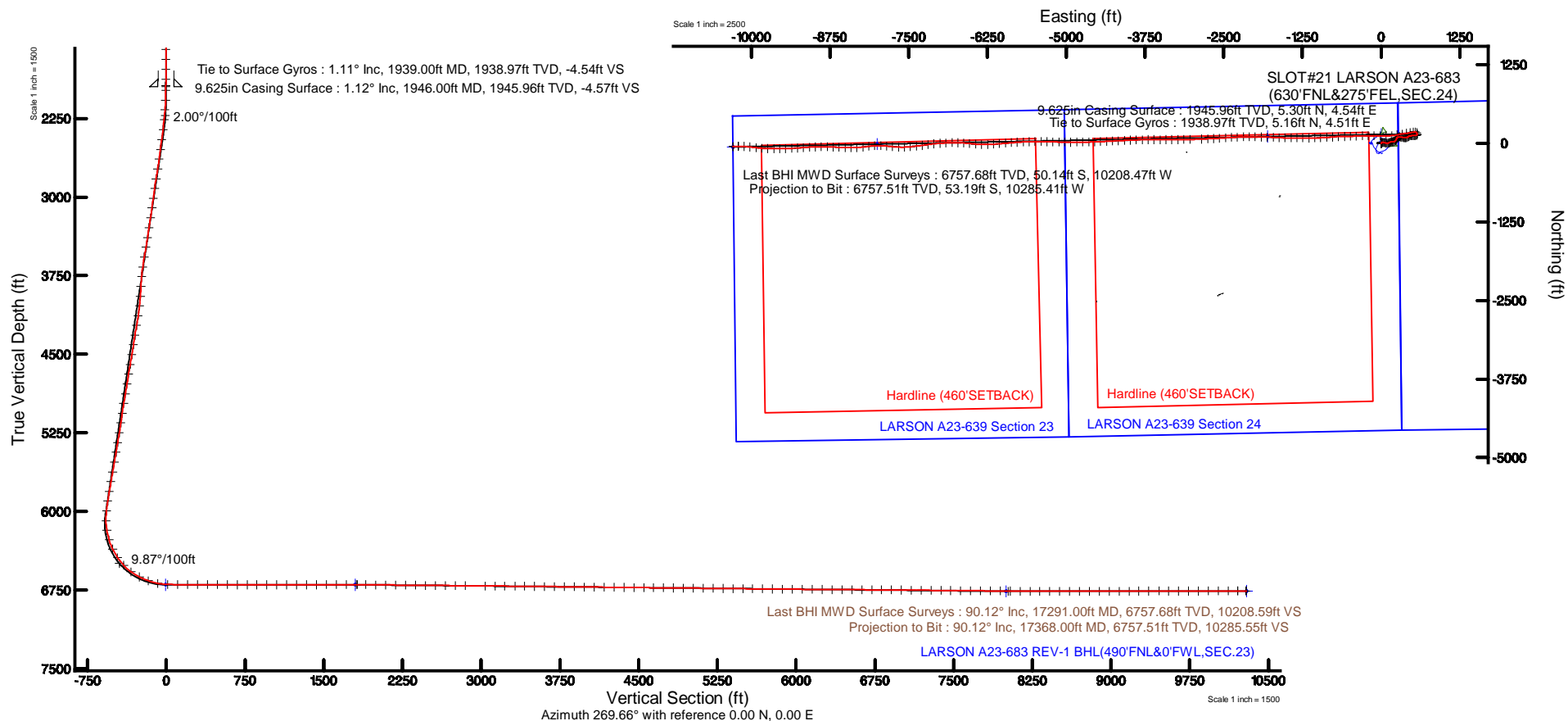
Location:	COLORADO	Slot:	SLOT#21 LARSON A23-683(630'FNL&275'FEL,SEC.24)
Field:	WELD COUNTY (NOBLE NAD 83 GRID)	Well:	LARSON A23-683
Facility:	SEC.24-T06N-R64W	Wellbore:	LARSON A23-683 PWB

Plot reference wellpath is LARSON A23-683 (REV-A.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: 4682 feet	Scale: True distance
Mean Sea Level to Ground level (At Slot: SLOT#21 LARSON A23-683(6307FNL&275FEL,SEC.24): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: guenaler on 2018-08-07
	Database: WA_DEN_Deriver_Defn

Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.24-T06N-R64W			3281075.203	1414828.232	40°28'03.756"N	104°29'23.136"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOT#21 LARSON A23-683(630FNL&275FEL,SEC.24)	3493.54	-42.58	3281032.620	1418321.639	40°28'38.280"N	104°29'23.172"W
RIG (30'KB) (RKB) to Ground level (At Slot: SLOT#21 LARSON A23-683(630FNL&275FEL,SEC.24))					4682ft	
Mean Sea Level to Ground level (At Slot: SLOT#21 LARSON A23-683(630FNL&275FEL,SEC.24)					0ft	
RIG (30'KB) (RKB) to Mean Sea Level					4682ft	

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
30.00	17373.08	OWSG MWD rev2	OWSG MWD rev2 + IFR1 + Multi-Station Correction		LARSON A23-683 PWB

SURFACE LOCATION: NENE
40.47730N
104.48977W
API: 05-123-45095





Actual Wellpath Report

LARSON A23-683 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#21 LARSON A23-683(630'FNL&275'FEL,SEC.24)
Area	COLORADO	Well	LARSON A23-683
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LARSON A23-683 AWB
Facility	SEC.24-T06N-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	0.999965	Report Generated	8/7/2018 at 12:03:22 PM
Convergence at slot	0.66° East	Database/Source file	WA_DEN_Denver_Defn/LARSON_A23-683_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	3493.54	-42.58	3281032.62	1418321.64	40°28'38.280"N	104°29'23.172"W
Facility Reference Pt			3281075.20	1414828.23	40°28'03.756"N	104°29'23.136"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	4682.00ft
Horizontal Reference Pt	Slot	RIG (30'KB) (RKB) to Mean Sea Level	4682.00ft
Vertical Reference Pt	RIG (30'KB) (RKB)	RIG (30'KB) (RKB) to Ground Level at Slot (SLOT#21 LARSON A23-683 (630'FNL&275'FEL,SEC.24))	4682.00ft
MD Reference Pt	RIG (30'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	269.66°



Actual Wellpath Report
LARSON A23-683 AWP
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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#21 LARSON A23-683(630'FNL&275'FEL,SEC.24)
Area	COLORADO	Well	LARSON A23-683
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LARSON A23-683 AWB
Facility	SEC.24-T06N-R64W		

WELLPATH DATA (185 stations)												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude		Longitude		DLS [°/100ft]	Comments
0.00	0.000	239.300	0.00	0.00	0.00	0.00	40°28'38.280"N		104°29'23.172"W		0.00	
83.00	0.060	239.300	83.00	0.04	-0.02	-0.04	40°28'38.280"N		104°29'23.172"W		0.07	
179.00	0.340	358.000	179.00	0.09	0.24	-0.09	40°28'38.282"N		104°29'23.173"W		0.39	
270.00	0.370	359.600	270.00	0.10	0.80	-0.10	40°28'38.288"N		104°29'23.173"W		0.03	
365.00	0.020	141.000	365.00	0.09	1.09	-0.09	40°28'38.291"N		104°29'23.173"W		0.41	
459.00	0.510	104.210	459.00	-0.33	0.98	0.32	40°28'38.290"N		104°29'23.168"W		0.53	
554.00	0.330	84.730	553.99	-1.01	0.90	1.00	40°28'38.289"N		104°29'23.159"W		0.24	
648.00	0.270	30.310	647.99	-1.39	1.12	1.39	40°28'38.291"N		104°29'23.154"W		0.30	
743.00	0.320	9.410	742.99	-1.55	1.57	1.54	40°28'38.295"N		104°29'23.152"W		0.12	
837.00	0.020	154.490	836.99	-1.60	1.82	1.59	40°28'38.298"N		104°29'23.151"W		0.36	
932.00	0.150	106.450	931.99	-1.73	1.77	1.72	40°28'38.297"N		104°29'23.150"W		0.14	
1026.00	0.050	355.130	1025.99	-1.84	1.77	1.83	40°28'38.297"N		104°29'23.148"W		0.19	
1121.00	0.010	224.040	1120.99	-1.83	1.81	1.82	40°28'38.298"N		104°29'23.148"W		0.06	
1216.00	0.050	303.930	1215.99	-1.79	1.82	1.78	40°28'38.298"N		104°29'23.149"W		0.05	
1310.00	0.140	98.010	1309.99	-1.87	1.83	1.86	40°28'38.298"N		104°29'23.148"W		0.20	
1404.00	0.190	89.970	1403.99	-2.14	1.81	2.13	40°28'38.298"N		104°29'23.144"W		0.06	
1499.00	0.190	41.430	1498.99	-2.41	1.93	2.39	40°28'38.299"N		104°29'23.141"W		0.16	
1593.00	0.380	37.820	1592.99	-2.70	2.30	2.69	40°28'38.302"N		104°29'23.137"W		0.20	
1688.00	0.360	65.180	1687.99	-3.17	2.67	3.15	40°28'38.306"N		104°29'23.131"W		0.19	
1782.00	0.490	49.510	1781.98	-3.74	3.06	3.73	40°28'38.310"N		104°29'23.123"W		0.18	
1876.00	0.950	16.160	1875.98	-4.27	4.06	4.25	40°28'38.320"N		104°29'23.116"W		0.64	
1939.00	1.110	11.310	1938.97	-4.54	5.16	4.51	40°28'38.331"N		104°29'23.113"W		0.29	Tie to Surface Gyros
1980.00	1.200	18.640	1979.96	-4.76	5.96	4.73	40°28'38.338"N		104°29'23.110"W		0.42	
2075.00	2.750	62.700	2074.90	-7.12	7.95	7.07	40°28'38.358"N		104°29'23.079"W		2.17	
2169.00	4.170	75.950	2168.73	-12.45	9.81	12.39	40°28'38.376"N		104°29'23.010"W		1.72	
2264.00	6.030	82.390	2263.35	-20.76	11.31	20.69	40°28'38.389"N		104°29'22.903"W		2.05	
2358.00	7.230	97.480	2356.73	-31.51	11.20	31.45	40°28'38.387"N		104°29'22.763"W		2.24	
2453.00	7.760	101.360	2450.92	-43.72	9.15	43.66	40°28'38.366"N		104°29'22.606"W		0.77	
2548.00	7.680	97.450	2545.06	-56.29	7.07	56.25	40°28'38.344"N		104°29'22.443"W		0.56	
2643.00	8.410	110.600	2639.13	-69.07	3.80	69.05	40°28'38.310"N		104°29'22.278"W		2.08	



Actual Wellpath Report

LARSON A23-683 AWP



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#21 LARSON A23-683(630'FNL&275'FEL,SEC.24)
Area	COLORADO	Well	LARSON A23-683
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LARSON A23-683 AWB
Facility	SEC.24-T06N-R64W		

WELLPATH DATA (185 stations)											
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments	
2736.00	8.580	101.490	2731.11	-82.21	0.03	82.21	40°28'38.271"N	104°29'22.108"W	1.46		
2831.00	9.210	88.780	2824.98	-96.75	-1.22	96.76	40°28'38.257"N	104°29'21.920"W	2.17		
2926.00	8.560	70.320	2918.86	-111.02	1.32	111.02	40°28'38.281"N	104°29'21.735"W	3.06		
3020.00	8.690	65.840	3011.80	-124.12	6.58	124.08	40°28'38.331"N	104°29'21.565"W	0.73		
3114.00	8.820	60.610	3104.70	-136.92	13.02	136.84	40°28'38.393"N	104°29'21.399"W	0.86		
3209.00	8.860	73.560	3198.58	-150.31	18.67	150.21	40°28'38.448"N	104°29'21.226"W	2.09		
3304.00	8.470	85.380	3292.51	-164.32	21.30	164.20	40°28'38.472"N	104°29'21.044"W	1.92		
3398.00	9.310	93.220	3385.38	-178.81	21.43	178.69	40°28'38.472"N	104°29'20.857"W	1.57		
3493.00	9.340	82.040	3479.13	-194.13	22.07	194.00	40°28'38.476"N	104°29'20.659"W	1.90		
3588.00	10.290	67.270	3572.75	-209.61	26.42	209.46	40°28'38.517"N	104°29'20.458"W	2.82		
3682.00	10.770	49.530	3665.20	-224.10	35.36	223.89	40°28'38.604"N	104°29'20.270"W	3.47		
3776.00	10.060	32.490	3757.67	-235.26	47.99	234.99	40°28'38.728"N	104°29'20.124"W	3.35		
3871.00	8.860	11.950	3851.40	-241.32	62.15	240.96	40°28'38.867"N	104°29'20.045"W	3.75		
3966.00	8.780	28.630	3945.29	-246.39	75.68	245.95	40°28'39.000"N	104°29'19.978"W	2.68		
4060.00	8.800	47.440	4038.21	-255.19	86.84	254.69	40°28'39.109"N	104°29'19.864"W	3.04		
4154.00	9.420	67.550	4131.05	-267.65	94.64	267.09	40°28'39.185"N	104°29'19.702"W	3.43		
4249.00	9.480	83.390	4224.77	-282.63	98.51	282.05	40°28'39.222"N	104°29'19.508"W	2.73		
4343.00	9.460	96.040	4317.50	-298.00	98.59	297.43	40°28'39.221"N	104°29'19.309"W	2.21		
4437.00	9.550	98.280	4410.21	-313.39	96.66	312.82	40°28'39.200"N	104°29'19.110"W	0.40		
4532.00	9.310	97.840	4503.93	-328.79	94.47	328.24	40°28'39.176"N	104°29'18.911"W	0.26		
4626.00	9.420	103.470	4596.68	-343.78	91.64	343.25	40°28'39.147"N	104°29'18.717"W	0.98		
4721.00	9.530	97.320	4690.38	-359.13	88.83	358.61	40°28'39.117"N	104°29'18.519"W	1.07		
4815.00	9.410	92.100	4783.10	-374.52	87.56	374.01	40°28'39.103"N	104°29'18.320"W	0.92		
4910.00	9.500	93.700	4876.81	-390.10	86.77	389.59	40°28'39.093"N	104°29'18.118"W	0.29		
5004.00	10.200	80.200	4969.44	-406.05	87.68	405.54	40°28'39.101"N	104°29'17.912"W	2.56		
5099.00	10.210	48.740	5063.01	-420.72	94.67	420.17	40°28'39.168"N	104°29'17.721"W	5.80		
5193.00	9.350	52.470	5155.64	-433.09	104.82	432.49	40°28'39.267"N	104°29'17.560"W	1.14		
5288.00	9.900	73.630	5249.34	-447.09	111.82	446.45	40°28'39.335"N	104°29'17.379"W	3.75		
5382.00	9.890	75.840	5341.94	-462.70	116.08	462.03	40°28'39.375"N	104°29'17.177"W	0.40		
5477.00	9.840	83.810	5435.54	-478.70	118.95	478.01	40°28'39.401"N	104°29'16.969"W	1.44		



Actual Wellpath Report

LARSON A23-683 AWP



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#21 LARSON A23-683(630'FNL&275'FEL,SEC.24)
Area	COLORADO	Well	LARSON A23-683
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LARSON A23-683 AWB
Facility	SEC.24-T06N-R64W		

WELLPATH DATA (185 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5571.00	9.880	88.030	5528.15	-494.75	120.09	494.05	40°28'39.411"N	104°29'16.762"W	0.77	
5666.00	9.790	86.140	5621.75	-510.96	120.91	510.26	40°28'39.417"N	104°29'16.552"W	0.35	
5760.00	9.710	92.150	5714.40	-526.85	121.15	526.15	40°28'39.418"N	104°29'16.346"W	1.09	
5854.00	9.910	88.940	5807.02	-542.86	121.01	542.16	40°28'39.415"N	104°29'16.139"W	0.62	
5949.00	8.400	65.900	5900.84	-557.39	123.99	556.67	40°28'39.442"N	104°29'15.951"W	4.14	
6043.00	7.910	62.520	5993.89	-569.43	129.78	568.68	40°28'39.498"N	104°29'15.794"W	0.73	
6138.00	12.420	356.770	6087.65	-574.75	143.04	573.92	40°28'39.629"N	104°29'15.725"W	12.24	
6232.00	17.160	323.130	6178.67	-565.97	164.28	565.01	40°28'39.840"N	104°29'15.837"W	10.23	
6327.00	16.770	277.860	6269.92	-543.97	177.42	542.93	40°28'39.972"N	104°29'16.121"W	13.58	
6421.00	25.370	256.550	6357.68	-510.82	174.58	509.80	40°28'39.948"N	104°29'16.550"W	12.12	
6515.00	34.370	260.010	6439.12	-464.95	165.27	463.99	40°28'39.861"N	104°29'17.144"W	9.74	
6610.00	42.970	264.190	6513.23	-406.17	157.33	405.25	40°28'39.789"N	104°29'17.905"W	9.46	
6704.00	54.200	259.250	6575.34	-336.54	146.94	335.68	40°28'39.694"N	104°29'18.807"W	12.57	
6799.00	64.580	258.880	6623.64	-256.28	131.44	255.52	40°28'39.550"N	104°29'19.846"W	10.93	
6893.00	70.740	265.080	6659.39	-170.20	119.42	169.50	40°28'39.441"N	104°29'20.961"W	8.95	
6987.00	78.470	268.790	6684.33	-79.76	114.64	79.09	40°28'39.404"N	104°29'22.132"W	9.06	
7082.00	88.280	271.990	6695.28	14.47	115.30	-15.15	40°28'39.421"N	104°29'23.351"W	10.85	
7176.00	89.510	270.560	6697.09	108.41	117.39	-109.10	40°28'39.452"N	104°29'24.566"W	2.01	
7270.00	90.250	269.740	6697.29	202.40	117.64	-203.10	40°28'39.465"N	104°29'25.783"W	1.18	
7365.00	90.400	268.730	6696.75	297.40	116.37	-298.09	40°28'39.463"N	104°29'27.012"W	1.07	
7460.00	89.540	267.200	6696.80	392.35	113.00	-393.02	40°28'39.441"N	104°29'28.241"W	1.85	
7554.00	89.690	267.720	6697.43	486.28	108.83	-486.93	40°28'39.410"N	104°29'29.457"W	0.58	
7648.00	89.420	269.610	6698.16	580.26	106.64	-580.90	40°28'39.399"N	104°29'30.673"W	2.03	
7743.00	89.910	267.730	6698.72	675.24	104.44	-675.86	40°28'39.388"N	104°29'31.902"W	2.05	
7838.00	89.940	264.310	6698.84	770.03	97.85	-770.62	40°28'39.333"N	104°29'33.129"W	3.60	
7932.00	90.000	266.790	6698.89	863.78	90.55	-864.33	40°28'39.272"N	104°29'34.343"W	2.64	
8027.00	89.850	267.500	6699.01	958.69	85.82	-959.21	40°28'39.236"N	104°29'35.571"W	0.76	
8121.00	89.940	268.600	6699.19	1052.65	82.62	-1053.16	40°28'39.215"N	104°29'36.787"W	1.17	
8216.00	90.150	269.930	6699.11	1147.65	81.40	-1148.15	40°28'39.213"N	104°29'38.016"W	1.42	
8310.00	90.280	271.760	6698.76	1241.62	82.79	-1242.13	40°28'39.238"N	104°29'39.232"W	1.95	



Actual Wellpath Report

LARSON A23-683 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#21 LARSON A23-683(630'FNL&275'FEL,SEC.24)
Area	COLORADO	Well	LARSON A23-683
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LARSON A23-683 AWB
Facility	SEC.24-T06N-R64W		

WELLPATH DATA (185 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8404.00	90.060	269.560	6698.48	1335.60	83.87	-1336.12	40°28'39.259"N	104°29'40.448"W	2.35	
8499.00	89.910	269.620	6698.51	1430.60	83.19	-1431.12	40°28'39.263"N	104°29'41.678"W	0.17	
8593.00	90.310	271.600	6698.32	1524.58	84.19	-1525.11	40°28'39.283"N	104°29'42.894"W	2.15	
8688.00	90.090	272.780	6697.99	1619.49	87.82	-1620.03	40°28'39.330"N	104°29'44.121"W	1.26	
8782.00	90.120	272.610	6697.82	1713.36	92.24	-1713.93	40°28'39.384"N	104°29'45.336"W	0.18	
8877.00	90.060	271.660	6697.67	1808.27	95.78	-1808.86	40°28'39.429"N	104°29'46.563"W	1.00	
8971.00	89.110	271.150	6698.35	1902.22	98.09	-1902.83	40°28'39.463"N	104°29'47.779"W	1.15	
9066.00	89.320	270.790	6699.65	1997.19	99.70	-1997.81	40°28'39.489"N	104°29'49.008"W	0.44	
9161.00	89.510	270.010	6700.62	2092.17	100.36	-2092.80	40°28'39.506"N	104°29'50.237"W	0.85	
9255.00	89.510	267.770	6701.43	2186.16	98.54	-2186.77	40°28'39.499"N	104°29'51.453"W	2.38	
9350.00	89.380	267.320	6702.35	2281.09	94.47	-2281.68	40°28'39.469"N	104°29'52.682"W	0.49	
9444.00	89.380	267.460	6703.37	2375.01	90.19	-2375.58	40°28'39.437"N	104°29'53.897"W	0.15	
9538.00	89.510	264.820	6704.28	2468.82	83.86	-2469.35	40°28'39.385"N	104°29'55.112"W	2.81	
9633.00	89.420	267.540	6705.16	2563.63	77.53	-2564.13	40°28'39.333"N	104°29'56.339"W	2.86	
9728.00	89.540	267.420	6706.03	2658.55	73.36	-2659.03	40°28'39.303"N	104°29'57.567"W	0.18	
9822.00	89.420	267.380	6706.88	2752.48	69.09	-2752.93	40°28'39.271"N	104°29'58.783"W	0.13	
9917.00	89.380	267.300	6707.87	2847.39	64.68	-2847.82	40°28'39.238"N	104°30'00.012"W	0.09	
10106.00	89.510	268.910	6709.70	3036.31	58.43	-3036.70	40°28'39.197"N	104°30'02.456"W	0.85	
10201.00	89.570	269.450	6710.47	3131.30	57.07	-3131.69	40°28'39.195"N	104°30'03.686"W	0.57	
10295.00	89.570	269.920	6711.17	3225.30	56.56	-3225.69	40°28'39.200"N	104°30'04.902"W	0.50	
10390.00	89.380	270.220	6712.04	3320.29	56.67	-3320.68	40°28'39.212"N	104°30'06.131"W	0.37	
10484.00	89.320	269.430	6713.11	3414.29	56.39	-3414.68	40°28'39.219"N	104°30'07.348"W	0.84	
10579.00	89.380	269.500	6714.19	3509.28	55.50	-3509.67	40°28'39.221"N	104°30'08.577"W	0.10	
10673.00	89.480	270.520	6715.12	3603.27	55.52	-3603.66	40°28'39.232"N	104°30'09.793"W	1.09	
10768.00	89.290	269.840	6716.14	3698.26	55.81	-3698.65	40°28'39.245"N	104°30'11.022"W	0.74	
10862.00	89.380	268.530	6717.23	3792.25	54.48	-3792.64	40°28'39.242"N	104°30'12.238"W	1.40	
10957.00	89.290	267.260	6718.34	3887.20	50.99	-3887.56	40°28'39.218"N	104°30'13.467"W	1.34	
11051.00	89.380	268.130	6719.43	3981.13	47.21	-3981.48	40°28'39.191"N	104°30'14.683"W	0.93	
11146.00	89.380	267.340	6720.45	4076.07	43.45	-4076.40	40°28'39.165"N	104°30'15.912"W	0.83	
11241.00	89.420	267.080	6721.45	4170.98	38.83	-4171.28	40°28'39.130"N	104°30'17.140"W	0.28	



Actual Wellpath Report

LARSON A23-683 AWP



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#21 LARSON A23-683(630'FNL&275'FEL,SEC.24)
Area	COLORADO	Well	LARSON A23-683
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LARSON A23-683 AWB
Facility	SEC.24-T06N-R64W		

WELLPATH DATA (185 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11335.00	89.260	266.210	6722.53	4264.84	33.33	-4265.11	40°28'39.086"N	104°30'18.355"W	0.94	
11430.00	89.380	267.170	6723.66	4359.71	27.84	-4359.95	40°28'39.042"N	104°30'19.583"W	1.02	
11524.00	89.350	267.420	6724.70	4453.62	23.41	-4453.84	40°28'39.009"N	104°30'20.798"W	0.27	
11619.00	89.320	268.320	6725.80	4548.57	19.88	-4548.76	40°28'38.984"N	104°30'22.027"W	0.95	
11713.00	89.290	269.930	6726.94	4642.55	18.44	-4642.74	40°28'38.981"N	104°30'23.243"W	1.71	
11808.00	89.380	268.700	6728.05	4737.54	17.31	-4737.73	40°28'38.980"N	104°30'24.473"W	1.30	
11902.00	89.540	268.900	6728.93	4831.53	15.34	-4831.70	40°28'38.971"N	104°30'25.689"W	0.27	
11997.00	89.570	270.510	6729.67	4926.52	14.85	-4926.69	40°28'38.976"N	104°30'26.918"W	1.69	
12091.00	89.230	271.160	6730.66	5020.50	16.22	-5020.68	40°28'39.000"N	104°30'28.134"W	0.78	
12186.00	89.480	271.250	6731.72	5115.46	18.22	-5115.65	40°28'39.031"N	104°30'29.363"W	0.28	
12280.00	89.380	271.030	6732.66	5209.42	20.09	-5209.63	40°28'39.060"N	104°30'30.578"W	0.26	
12374.00	89.350	272.010	6733.70	5303.36	22.58	-5303.59	40°28'39.095"N	104°30'31.794"W	1.04	
12468.00	89.230	270.990	6734.87	5397.31	25.04	-5397.55	40°28'39.129"N	104°30'33.009"W	1.09	
12563.00	89.380	269.110	6736.02	5492.29	25.12	-5492.54	40°28'39.141"N	104°30'34.238"W	1.99	
12657.00	89.480	267.870	6736.95	5586.27	22.65	-5586.50	40°28'39.126"N	104°30'35.455"W	1.32	
12752.00	89.480	267.720	6737.82	5681.21	18.99	-5681.42	40°28'39.101"N	104°30'36.683"W	0.16	
12847.00	89.380	266.190	6738.76	5776.10	13.95	-5776.28	40°28'39.061"N	104°30'37.911"W	1.61	
12941.00	89.540	265.190	6739.65	5869.87	6.88	-5870.01	40°28'39.002"N	104°30'39.125"W	1.08	
13036.00	89.570	264.760	6740.38	5964.55	-1.44	-5964.64	40°28'38.930"N	104°30'40.351"W	0.45	
13132.00	89.260	265.200	6741.37	6060.22	-9.84	-6060.27	40°28'38.858"N	104°30'41.590"W	0.56	
13226.00	89.350	266.390	6742.51	6154.00	-16.73	-6154.01	40°28'38.800"N	104°30'42.803"W	1.27	
13321.00	89.380	268.260	6743.56	6248.91	-21.16	-6248.89	40°28'38.767"N	104°30'44.032"W	1.97	
13416.00	89.690	271.740	6744.33	6343.89	-21.16	-6343.88	40°28'38.777"N	104°30'45.261"W	3.68	
13510.00	89.570	275.130	6744.94	6437.67	-15.53	-6437.69	40°28'38.843"N	104°30'46.474"W	3.61	
13605.00	89.660	276.640	6745.58	6532.11	-5.79	-6532.19	40°28'38.950"N	104°30'47.695"W	1.59	
13700.00	89.630	273.450	6746.16	6626.67	2.56	-6626.80	40°28'39.043"N	104°30'48.918"W	3.36	
13794.00	89.630	271.340	6746.77	6720.56	6.49	-6720.71	40°28'39.092"N	104°30'50.133"W	2.24	
13888.00	89.570	269.130	6747.43	6814.55	6.87	-6814.71	40°28'39.106"N	104°30'51.349"W	2.35	
13983.00	89.630	267.150	6748.09	6909.51	3.79	-6909.65	40°28'39.086"N	104°30'52.578"W	2.09	
14077.00	89.540	265.670	6748.77	7003.35	-2.10	-7003.46	40°28'39.038"N	104°30'53.793"W	1.58	



Actual Wellpath Report

LARSON A23-683 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#21 LARSON A23-683(630'FNL&275'FEL,SEC.24)
Area	COLORADO	Well	LARSON A23-683
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LARSON A23-683 AWB
Facility	SEC.24-T06N-R64W		

WELLPATH DATA (185 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
14172.00	89.450	263.540	6749.61	7097.97	-11.03	-7098.03	40°28'38.960"N	104°30'55.018"W	2.24	
14267.00	89.380	262.500	6750.58	7192.33	-22.57	-7192.32	40°28'38.856"N	104°30'56.239"W	1.10	
14361.00	89.450	262.220	6751.54	7285.56	-35.07	-7285.48	40°28'38.743"N	104°30'57.447"W	0.31	
14455.00	89.450	262.870	6752.44	7378.83	-47.26	-7378.68	40°28'38.633"N	104°30'58.654"W	0.69	
14550.00	89.200	264.410	6753.56	7473.30	-57.78	-7473.09	40°28'38.539"N	104°30'59.877"W	1.64	
14645.00	89.420	267.370	6754.70	7568.07	-64.59	-7567.82	40°28'38.482"N	104°31'01.104"W	3.12	
14739.00	89.690	273.750	6755.44	7662.01	-63.67	-7661.77	40°28'38.502"N	104°31'02.320"W	6.79	
14834.00	89.540	276.120	6756.07	7756.60	-55.50	-7756.41	40°28'38.593"N	104°31'03.543"W	2.50	
14928.00	89.480	275.810	6756.88	7850.03	-45.73	-7849.89	40°28'38.699"N	104°31'04.751"W	0.34	
15023.00	89.450	270.040	6757.77	7944.83	-40.89	-7944.73	40°28'38.758"N	104°31'05.978"W	6.07	
15118.00	89.410	267.030	6758.71	8039.80	-43.32	-8039.68	40°28'38.744"N	104°31'07.207"W	3.17	
15212.00	89.540	262.940	6759.57	8133.46	-51.53	-8133.30	40°28'38.673"N	104°31'08.419"W	4.35	
15307.00	89.510	264.000	6760.36	8227.90	-62.34	-8227.67	40°28'38.577"N	104°31'09.642"W	1.12	
15401.00	90.310	266.820	6760.51	8321.63	-69.86	-8321.36	40°28'38.513"N	104°31'10.855"W	3.12	
15496.00	90.090	269.610	6760.18	8416.59	-72.82	-8416.31	40°28'38.494"N	104°31'12.084"W	2.95	
15590.00	90.090	272.500	6760.03	8510.55	-71.09	-8510.28	40°28'38.521"N	104°31'13.300"W	3.07	
15685.00	89.940	272.630	6760.00	8605.43	-66.83	-8605.19	40°28'38.574"N	104°31'14.527"W	0.21	
15779.00	90.120	272.330	6759.95	8699.32	-62.77	-8699.10	40°28'38.624"N	104°31'15.742"W	0.37	
15874.00	90.120	271.450	6759.76	8794.24	-59.63	-8794.04	40°28'38.665"N	104°31'16.970"W	0.93	
15968.00	90.000	269.870	6759.66	8888.23	-58.55	-8888.04	40°28'38.686"N	104°31'18.186"W	1.69	
16063.00	90.060	268.170	6759.61	8983.22	-60.18	-8983.02	40°28'38.680"N	104°31'19.415"W	1.79	
16157.00	90.030	266.550	6759.53	9077.14	-64.50	-9076.91	40°28'38.648"N	104°31'20.631"W	1.72	
16252.00	90.280	265.770	6759.28	9171.96	-70.87	-9171.70	40°28'38.595"N	104°31'21.858"W	0.86	
16346.00	90.180	265.870	6758.90	9265.75	-77.72	-9265.45	40°28'38.538"N	104°31'23.072"W	0.15	
16441.00	90.220	266.910	6758.57	9360.59	-83.70	-9360.26	40°28'38.489"N	104°31'24.300"W	1.10	
16536.00	89.970	269.810	6758.41	9455.55	-86.42	-9455.21	40°28'38.473"N	104°31'25.529"W	3.06	
16630.00	89.910	269.410	6758.51	9549.55	-87.06	-9549.21	40°28'38.477"N	104°31'26.745"W	0.43	
16724.00	89.970	270.130	6758.61	9643.55	-87.44	-9643.21	40°28'38.483"N	104°31'27.962"W	0.77	
16819.00	89.910	271.660	6758.71	9738.53	-85.95	-9738.19	40°28'38.508"N	104°31'29.191"W	1.61	
16913.00	90.090	275.070	6758.71	9832.32	-80.44	-9832.02	40°28'38.573"N	104°31'30.404"W	3.63	



Actual Wellpath Report

LARSON A23-683 AWP



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#21 LARSON A23-683(630'FNL&275'FEL,SEC.24)
Area	COLORADO	Well	LARSON A23-683
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LARSON A23-683 AWB
Facility	SEC.24-T06N-R64W		

WELLPATH DATA (185 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
17008.00	90.490	275.850	6758.23	9926.83	-71.40	-9926.58	40°28'38.672"N	104°31'31.626"W	0.92	
17102.00	90.120	276.980	6757.72	10020.18	-60.89	-10019.99	40°28'38.786"N	104°31'32.833"W	1.26	
17197.00	89.910	274.150	6757.70	10114.66	-51.68	-10114.53	40°28'38.887"N	104°31'34.055"W	2.99	
17291.00	90.120	267.730	6757.68	10208.59	-50.14	-10208.47	40°28'38.913"N	104°31'35.271"W	6.83	Last BHI MWD Surface Surveys
17368.00	90.120	267.730	6757.51	10285.55	-53.19	-10285.41	40°28'38.891"N	104°31'36.267"W	0.00	Projection to Bit

HOLE & CASING SECTIONS - Ref Wellbore: LARSON A23-683 AWB Ref Wellpath: LARSON A23-683 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	1946.00	1916.00	30.00	1945.96	0.00	0.00	5.30	4.54
9.625in Casing Surface	30.00	1946.00	1916.00	30.00	1945.96	0.00	0.00	5.30	4.54
8.5in Open Hole	1946.00	17368.00	15422.00	1945.96	6757.51	5.30	4.54	-53.19	-10285.41



Actual Wellpath Report

LARSON A23-683 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#21 LARSON A23-683(630'FNL&275'FEL,SEC.24)
Area	COLORADO	Well	LARSON A23-683
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LARSON A23-683 AWB
Facility	SEC.24-T06N-R64W		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
LARSON A23-639 Section 23	6.00	-3264.03	39.97	3281072.59	1415057.73	40°28'06.024"N	104°29'23.136"W	polygon
LARSON A23-639 Section 24	6.00	-3264.03	39.97	3281072.59	1415057.73	40°28'06.024"N	104°29'23.136"W	polygon
LARSON AA19-618 SECTION 19	6.00	-3493.54	42.58	3281075.20	1414828.23	40°28'03.756"N	104°29'23.136"W	polygon
LARSON AA19-618 SECTION 19 HARDLINE (460'SETBACK)	6.00	-3493.54	42.58	3281075.20	1414828.23	40°28'03.756"N	104°29'23.136"W	polygon
LARSON A23-683 Landing Point	6698.00	140.00	5.00	3281037.62	1418461.63	40°28'39.663"N	104°29'23.087"W	point
LARSON A23-683 Target 1	6698.00	104.87	-1800.00	3279232.69	1418426.50	40°28'39.518"N	104°29'46.447"W	point
LARSON A23-683 REV-1 BHL(490'FNL&0'FWL,SEC.23)	6759.25	-60.44	-10290.69	3270742.31	1418261.20	40°28'38.820"N	104°31'36.336"W	point
LARSON A23-683 Target 2	6761.00	-15.85	-8000.00	3273032.92	1418305.79	40°28'39.011"N	104°31'06.689"W	point
LARSON A23-639 SECTION 23 Hardline (460'SETBACK)	7006.00	-3264.03	39.97	3281072.59	1415057.73	40°28'06.024"N	104°29'23.136"W	polygon
LARSON A23-639 SECTION 24 Hardline (460'SETBACK)	7006.00	-3264.03	39.97	3281072.59	1415057.73	40°28'06.024"N	104°29'23.136"W	polygon



Actual Wellpath Report

LARSON A23-683 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#21 LARSON A23-683(630'FNL&275'FEL,SEC.24)
Area	COLORADO	Well	LARSON A23-683
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LARSON A23-683 AWB
Facility	SEC.24-T06N-R64W		

WELLPATH COMPOSITION - Ref Wellbore: LARSON A23-683 AWB Ref Wellpath: LARSON A23-683 AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	1939.00	Gyrodatta standard - Drop gyro or Multi-shot	3rd Party Surface Gyros <83'-1939'>	LARSON A23-683 AWB
1939.00	17291.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	BHI/ATCurve OWSG MWD rev2+IFR1+MSA 8.5" Hole <1980'-17291'>	LARSON A23-683 AWB
17291.00	17368.00	Blind Drilling (std)	Projection to bit	LARSON A23-683 AWB



Actual Wellpath Report

LARSON A23-683 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#21 LARSON A23-683(630'FNL&275'FEL,SEC.24)
Area	COLORADO	Well	LARSON A23-683
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LARSON A23-683 AWB
Facility	SEC.24-T06N-R64W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1939.00	1.110	11.310	1938.97	Tie to Surface Gyros
17291.00	90.120	267.730	6757.68	Last BHI MWD Surface Surveys
17368.00	90.120	267.730	6757.51	Projection to Bit

COMMENTS	
<div>Wellpath general comments</div> <div>SURFACE LOCATION: NENE</div> <div>40.47730N</div> <div>104.48977W</div> <div>API: 05-123-45095</div>	