

NOBLE ENERGY, INC

Location: COLORADO Slot: SLOT#01 LARSON AA19-618(1072'FSL&275'FEL,SEC.24)
Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: LARSON AA19-618
Facility: SEC.24-T06N-R64W Wellbore: LARSON AA19-618 PWB

Plot reference wellpath is LARSON AA19-618 (REV-A.0) PWP	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
True vertical depths are referenced to RIG (30'KB) (RKB)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to RIG (30'KB) (RKB)	North Reference: Grid north
RIG (30'KB) (RKB) to Mean Sea Level: 4676 feet	Scale: True distance
Mean Sea Level to Ground level (At Slot: SLOT#01 LARSON AA19-618(1072'FSL&275'FEL,SEC.24)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: guenaler on 2018-06-11
	Database: WA_DEN_Denver_Delhi

Survey Program

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
30.00	17915.59	OWSG MWD rev2	OWSG MWD rev2 + IFR1 + Multi-Station Correction		LARSON AA19-618 PWB

Comments

SURFACE LOCATION: SESE

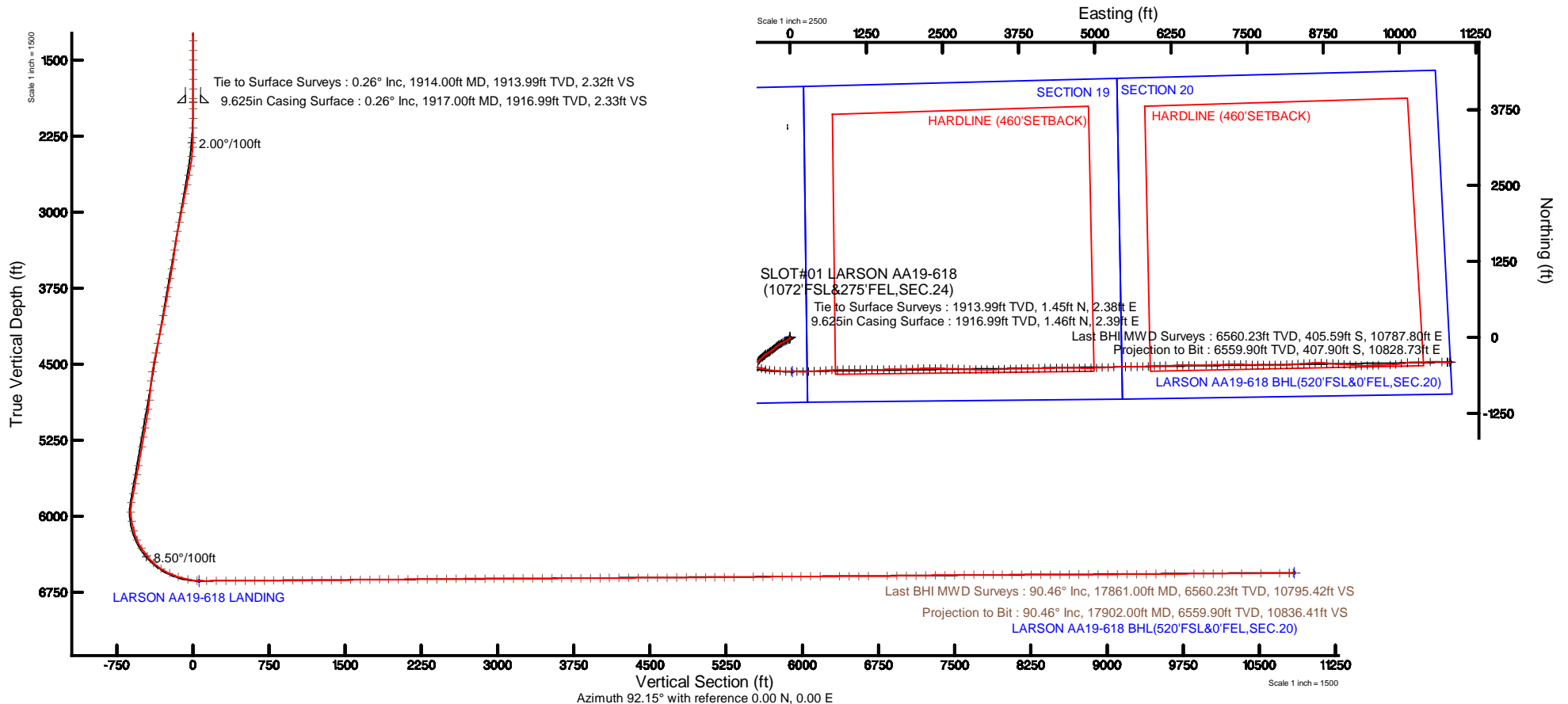
40.46771N

104.48976W

API: 05-123-45546

Location Information

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#01 LARSON AA19-618(1072'FSL&275'FEL,SEC.24)	0.00	0.00	3281075.203	1414828.232	40°28'03.756"N	104°29'23.136"W
RIG (30'KB) (RKB) to Ground level (At Slot: SLOT#01 LARSON AA19-618(1072'FSL&275'FEL,SEC.24))					4676ft	
Mean Sea Level to Ground level (At Slot: SLOT#01 LARSON AA19-618(1072'FSL&275'FEL,SEC.24))					0ft	
RIG (30'KB) (RKB) to Mean Sea Level					4676ft	



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#01 LARSON AA19-618(1072'FSL&275'FEL,SEC.24)
Area	COLORADO	Well	LARSON AA19-618
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LARSON AA19-618 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	0.999964	Report Generated	6/11/2018 at 1:04:37 PM
Convergence at slot	0.66° East	Database/Source file	WA_DEN_Denver_Defn/LARSON_AA19-618_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	3281075.20	1414828.23	40°28'03.756"N	104°29'23.136"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	4676.00ft
Horizontal Reference Pt	Slot	RIG (30'KB) (RKB) to Mean Sea Level	4676.00ft
Vertical Reference Pt	RIG (30'KB) (RKB)	RIG (30'KB) (RKB) to Ground Level at Slot (SLOT#01 LARSON AA19-618 (1072'FSL&275'FEL,SEC.24))	4676.00ft
MD Reference Pt	RIG (30'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	92.15°



Actual Wellpath Report

LARSON AA19-618 AWP



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Area	COLORADO	Well	LARSON AA19-618
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LARSON AA19-618 AWB
Facility	SEC.24-T06N-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	78.330	0.00	0.00	0.00	0.00	40°28'03.756"N	104°29'23.136"W	0.00	
81.00	0.140	78.330	81.00	0.10	0.02	0.10	40°28'03.756"N	104°29'23.135"W	0.17	
176.00	0.070	43.620	176.00	0.25	0.09	0.25	40°28'03.757"N	104°29'23.133"W	0.10	
271.00	0.090	172.190	271.00	0.30	0.05	0.30	40°28'03.756"N	104°29'23.132"W	0.15	
365.00	0.210	37.550	365.00	0.41	0.12	0.42	40°28'03.757"N	104°29'23.131"W	0.30	
460.00	0.370	69.340	460.00	0.79	0.36	0.81	40°28'03.759"N	104°29'23.125"W	0.23	
554.00	0.170	94.440	554.00	1.21	0.46	1.23	40°28'03.760"N	104°29'23.120"W	0.24	
649.00	0.310	73.220	649.00	1.60	0.52	1.62	40°28'03.761"N	104°29'23.115"W	0.17	
743.00	0.260	40.420	743.00	1.97	0.76	2.00	40°28'03.763"N	104°29'23.110"W	0.18	
838.00	0.080	277.280	838.00	2.04	0.93	2.07	40°28'03.765"N	104°29'23.109"W	0.33	
932.00	0.250	128.880	931.99	2.14	0.81	2.17	40°28'03.764"N	104°29'23.108"W	0.34	
1027.00	0.140	69.020	1026.99	2.41	0.72	2.44	40°28'03.763"N	104°29'23.104"W	0.23	
1121.00	0.110	72.530	1120.99	2.60	0.79	2.63	40°28'03.764"N	104°29'23.102"W	0.03	
1216.00	0.290	154.980	1215.99	2.80	0.60	2.82	40°28'03.762"N	104°29'23.099"W	0.31	
1310.00	0.090	133.850	1309.99	2.96	0.33	2.97	40°28'03.759"N	104°29'23.097"W	0.22	
1405.00	0.070	113.570	1404.99	3.07	0.26	3.08	40°28'03.758"N	104°29'23.096"W	0.04	
1499.00	0.180	319.030	1498.99	3.02	0.35	3.04	40°28'03.759"N	104°29'23.097"W	0.26	
1594.00	0.450	247.380	1593.99	2.58	0.32	2.59	40°28'03.759"N	104°29'23.102"W	0.45	
1688.00	0.210	299.780	1687.99	2.09	0.26	2.10	40°28'03.758"N	104°29'23.109"W	0.39	
1783.00	0.410	0.400	1782.99	1.93	0.69	1.96	40°28'03.763"N	104°29'23.111"W	0.38	
1877.00	0.450	44.940	1876.99	2.17	1.28	2.22	40°28'03.768"N	104°29'23.107"W	0.35	
1914.00	0.260	41.420	1913.99	2.32	1.45	2.38	40°28'03.770"N	104°29'23.105"W	0.52	Tie to Surface Surveys
1980.00	0.330	94.720	1979.99	2.61	1.55	2.67	40°28'03.771"N	104°29'23.101"W	0.41	
2074.00	0.540	143.660	2073.98	3.15	1.17	3.20	40°28'03.767"N	104°29'23.094"W	0.43	
2168.00	2.160	196.560	2167.96	2.99	-0.89	2.96	40°28'03.747"N	104°29'23.098"W	2.00	
2263.00	5.150	205.500	2262.75	0.85	-6.45	0.61	40°28'03.692"N	104°29'23.129"W	3.19	
2357.00	6.240	206.280	2356.29	-2.91	-14.84	-3.47	40°28'03.610"N	104°29'23.183"W	1.16	
2452.00	8.400	224.860	2450.52	-9.73	-24.39	-10.65	40°28'03.516"N	104°29'23.277"W	3.35	
2547.00	11.530	240.250	2544.09	-22.50	-34.03	-23.79	40°28'03.422"N	104°29'23.449"W	4.30	
2641.00	13.010	245.980	2635.95	-39.98	-43.00	-41.62	40°28'03.336"N	104°29'23.681"W	2.04	



Actual Wellpath Report

LARSON AA19-618 AWP



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#01 LARSON AA19-618(1072'FSL&275'FEL,SEC.24)
Area	COLORADO	Well	LARSON AA19-618
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LARSON AA19-618 AWB
Facility	SEC.24-T06N-R64W		

WELLPATH DATA (184 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
2736.00	12.560	244.300	2728.59	-58.71	-51.83	-60.69	40°28'03.251"N	104°29'23.929"W	0.61	
2830.00	13.180	243.400	2820.23	-77.14	-61.06	-79.48	40°28'03.162"N	104°29'24.173"W	0.69	
2925.00	13.050	242.410	2912.75	-95.95	-70.88	-98.67	40°28'03.067"N	104°29'24.423"W	0.27	
3019.00	12.850	241.130	3004.36	-114.12	-80.84	-117.23	40°28'02.970"N	104°29'24.665"W	0.37	
3114.00	12.940	240.920	3096.96	-132.27	-91.11	-135.78	40°28'02.871"N	104°29'24.906"W	0.11	
3208.00	11.970	240.200	3188.75	-149.54	-101.07	-153.44	40°28'02.775"N	104°29'25.136"W	1.05	
3303.00	10.420	240.040	3281.94	-165.18	-110.26	-169.43	40°28'02.686"N	104°29'25.344"W	1.63	
3398.00	9.380	238.140	3375.52	-178.88	-118.63	-183.45	40°28'02.604"N	104°29'25.527"W	1.15	
3492.00	10.070	234.620	3468.17	-191.74	-127.43	-196.66	40°28'02.519"N	104°29'25.699"W	0.97	
3587.00	12.470	232.370	3561.34	-206.22	-138.51	-211.55	40°28'02.411"N	104°29'25.893"W	2.57	
3681.00	13.750	230.100	3652.88	-222.31	-151.87	-228.16	40°28'02.281"N	104°29'26.110"W	1.47	
3776.00	13.820	228.290	3745.15	-238.88	-166.66	-245.29	40°28'02.137"N	104°29'26.334"W	0.46	
3870.00	13.780	228.210	3836.44	-255.04	-181.59	-262.02	40°28'01.991"N	104°29'26.553"W	0.05	
3965.00	13.780	228.950	3928.70	-271.43	-196.56	-278.99	40°28'01.845"N	104°29'26.774"W	0.19	
4059.00	15.040	231.460	4019.74	-288.84	-211.51	-296.97	40°28'01.699"N	104°29'27.009"W	1.50	
4154.00	14.420	234.360	4111.62	-307.54	-226.09	-316.23	40°28'01.558"N	104°29'27.260"W	1.01	
4249.00	13.860	237.270	4203.74	-326.22	-239.13	-335.41	40°28'01.431"N	104°29'27.511"W	0.95	
4343.00	13.350	240.950	4295.11	-344.74	-250.49	-354.37	40°28'01.321"N	104°29'27.758"W	1.07	
4438.00	13.120	242.350	4387.58	-363.48	-260.82	-373.51	40°28'01.221"N	104°29'28.007"W	0.42	
4533.00	13.090	240.290	4480.11	-381.97	-271.15	-392.41	40°28'01.121"N	104°29'28.253"W	0.49	
4627.00	10.310	237.680	4572.15	-397.95	-280.93	-408.76	40°28'01.026"N	104°29'28.466"W	3.01	
4722.00	8.890	231.060	4665.82	-410.50	-290.09	-421.66	40°28'00.937"N	104°29'28.634"W	1.89	
4816.00	7.520	220.000	4758.86	-419.75	-299.37	-431.26	40°28'00.847"N	104°29'28.760"W	2.22	
4911.00	8.690	221.160	4852.91	-428.08	-309.53	-439.98	40°28'00.747"N	104°29'28.874"W	1.24	
5005.00	13.000	224.490	4945.21	-439.68	-322.43	-452.07	40°28'00.621"N	104°29'29.032"W	4.63	
5100.00	12.920	227.250	5037.79	-454.40	-337.26	-467.36	40°28'00.476"N	104°29'29.232"W	0.66	
5194.00	13.540	228.570	5129.30	-469.81	-351.67	-483.32	40°28'00.336"N	104°29'29.441"W	0.73	
5289.00	13.440	228.270	5221.68	-485.83	-366.38	-499.90	40°28'00.192"N	104°29'29.657"W	0.13	
5383.00	13.410	228.120	5313.11	-501.54	-380.93	-516.17	40°28'00.050"N	104°29'29.870"W	0.05	
5573.00	13.430	231.410	5497.92	-534.10	-409.40	-549.82	40°27'59.773"N	104°29'30.310"W	0.40	



Actual Wellpath Report

LARSON AA19-618 AWP



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Operator	NOBLE ENERGY, INC	Slot	SLOT#01 LARSON AA19-618(1072'FSL&275'FEL,SEC.24)
Area	COLORADO	Well	LARSON AA19-618
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LARSON AA19-618 AWB
Facility	SEC.24-T06N-R64W		

WELLPATH DATA (184 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5667.00	13.560	233.190	5589.33	-550.94	-422.81	-567.18	40°27'59.642"N	104°29'30.536"W	0.46	
5761.00	13.110	236.250	5680.79	-568.15	-435.34	-584.86	40°27'59.520"N	104°29'30.767"W	0.89	
5856.00	13.130	237.850	5773.31	-585.79	-447.06	-602.96	40°27'59.406"N	104°29'31.003"W	0.38	
5951.00	12.970	237.760	5865.86	-603.50	-458.49	-621.11	40°27'59.296"N	104°29'31.239"W	0.17	
6045.00	8.470	170.280	5958.51	-610.81	-470.99	-628.89	40°27'59.173"N	104°29'31.342"W	13.23	
6140.00	10.270	102.790	6052.50	-601.02	-479.79	-619.43	40°27'59.085"N	104°29'31.220"W	11.04	
6235.00	15.270	85.900	6145.15	-580.24	-480.77	-598.67	40°27'59.073"N	104°29'30.952"W	6.52	
6329.00	23.190	100.730	6233.88	-549.57	-483.34	-568.07	40°27'59.044"N	104°29'30.557"W	9.84	
6424.00	33.930	105.690	6317.21	-505.16	-494.02	-524.03	40°27'58.934"N	104°29'29.988"W	11.57	
6518.00	39.550	104.410	6392.51	-450.37	-508.57	-469.75	40°27'58.784"N	104°29'29.288"W	6.03	
6612.00	47.300	101.690	6460.74	-386.96	-523.04	-406.84	40°27'58.634"N	104°29'28.476"W	8.48	
6707.00	56.860	99.080	6519.06	-312.87	-536.43	-333.20	40°27'58.493"N	104°29'27.526"W	10.29	
6801.00	66.240	94.790	6563.81	-230.62	-546.26	-251.26	40°27'58.387"N	104°29'26.467"W	10.75	
6896.00	71.430	92.890	6598.10	-142.10	-552.16	-162.90	40°27'58.319"N	104°29'25.325"W	5.77	
6991.00	78.320	92.000	6622.87	-50.45	-556.06	-71.33	40°27'58.270"N	104°29'24.141"W	7.31	
7085.00	86.430	91.000	6635.33	42.63	-558.49	21.73	40°27'58.235"N	104°29'22.937"W	8.69	
7180.00	90.340	90.510	6638.01	137.55	-559.74	116.67	40°27'58.212"N	104°29'21.709"W	4.15	
7274.00	90.310	90.720	6637.48	231.51	-560.75	210.66	40°27'58.192"N	104°29'20.493"W	0.23	
7369.00	90.280	88.120	6636.99	326.40	-559.79	305.64	40°27'58.190"N	104°29'19.264"W	2.74	
7463.00	90.430	86.950	6636.40	420.09	-555.74	399.55	40°27'58.220"N	104°29'18.049"W	1.25	
7558.00	90.090	84.880	6635.97	514.52	-548.98	494.31	40°27'58.276"N	104°29'16.822"W	2.21	
7653.00	90.250	86.400	6635.69	608.91	-541.75	589.03	40°27'58.337"N	104°29'15.595"W	1.61	
7748.00	90.430	87.420	6635.13	703.51	-536.63	683.89	40°27'58.377"N	104°29'14.368"W	1.09	
7842.00	90.430	88.320	6634.42	797.24	-533.14	777.82	40°27'58.400"N	104°29'13.152"W	0.96	
7937.00	90.090	88.960	6633.99	892.06	-530.88	872.79	40°27'58.412"N	104°29'11.923"W	0.76	
8031.00	90.340	89.510	6633.64	985.94	-529.63	966.78	40°27'58.414"N	104°29'10.707"W	0.64	
8126.00	90.250	89.800	6633.15	1080.85	-529.06	1061.78	40°27'58.409"N	104°29'09.478"W	0.32	
8220.00	90.280	90.230	6632.71	1174.78	-529.08	1155.78	40°27'58.398"N	104°29'08.261"W	0.46	
8315.00	90.890	90.300	6631.74	1269.73	-529.52	1250.77	40°27'58.383"N	104°29'07.033"W	0.65	
8409.00	90.770	89.200	6630.38	1363.63	-529.11	1344.76	40°27'58.376"N	104°29'05.817"W	1.18	



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Area	COLORADO	Well	LARSON AA19-618
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LARSON AA19-618 AWB
Facility	SEC.24-T06N-R64W		

WELLPATH DATA (184 stations)										
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8504.00	90.620	89.090	6629.23	1458.50	-527.69	1439.74	40°27'58.379"N	104°29'04.588"W	0.20	
8598.00	90.650	89.580	6628.19	1552.38	-526.60	1533.73	40°27'58.380"N	104°29'03.371"W	0.52	
8693.00	90.580	89.960	6627.17	1647.29	-526.22	1628.72	40°27'58.373"N	104°29'02.142"W	0.41	
8787.00	90.680	88.840	6626.14	1741.17	-525.24	1722.71	40°27'58.372"N	104°29'00.926"W	1.20	
8882.00	90.740	87.790	6624.96	1835.95	-522.44	1817.66	40°27'58.389"N	104°28'59.698"W	1.11	
8976.00	90.430	87.790	6624.00	1929.68	-518.82	1911.58	40°27'58.414"N	104°28'58.482"W	0.33	
9071.00	90.340	88.110	6623.36	2024.42	-515.42	2006.52	40°27'58.436"N	104°28'57.253"W	0.35	
9166.00	90.580	88.010	6622.60	2119.17	-512.21	2101.46	40°27'58.458"N	104°28'56.024"W	0.27	
9260.00	90.340	88.670	6621.84	2212.96	-509.48	2195.42	40°27'58.474"N	104°28'54.808"W	0.75	
9355.00	90.430	89.350	6621.20	2307.82	-507.84	2290.40	40°27'58.479"N	104°28'53.579"W	0.72	
9449.00	90.520	90.230	6620.43	2401.73	-507.50	2384.40	40°27'58.472"N	104°28'52.363"W	0.94	
9544.00	90.460	91.120	6619.61	2496.70	-508.62	2479.39	40°27'58.450"N	104°28'51.135"W	0.94	
9638.00	90.770	91.840	6618.60	2590.69	-511.04	2573.35	40°27'58.415"N	104°28'49.919"W	0.83	
9733.00	90.250	92.200	6617.76	2685.68	-514.39	2668.29	40°27'58.372"N	104°28'48.692"W	0.67	
9827.00	90.280	92.290	6617.32	2779.68	-518.07	2762.21	40°27'58.324"N	104°28'47.477"W	0.10	
9922.00	90.180	92.030	6616.94	2874.68	-521.65	2857.15	40°27'58.278"N	104°28'46.249"W	0.29	
10016.00	90.120	91.530	6616.70	2968.68	-524.57	2951.10	40°27'58.239"N	104°28'45.034"W	0.54	
10111.00	90.460	91.440	6616.22	3063.67	-527.04	3046.07	40°27'58.204"N	104°28'43.806"W	0.37	
10205.00	90.430	90.550	6615.49	3157.65	-528.67	3140.05	40°27'58.177"N	104°28'42.590"W	0.95	
10300.00	90.370	90.260	6614.82	3252.60	-529.34	3235.04	40°27'58.159"N	104°28'41.362"W	0.31	
10395.00	90.280	88.850	6614.28	3347.50	-528.60	3330.04	40°27'58.156"N	104°28'40.133"W	1.49	
10489.00	90.180	87.380	6613.91	3441.26	-525.51	3423.98	40°27'58.176"N	104°28'38.917"W	1.57	
10584.00	90.520	86.650	6613.33	3535.88	-520.56	3518.85	40°27'58.214"N	104°28'37.689"W	0.85	
10679.00	90.250	88.520	6612.69	3630.57	-516.56	3613.76	40°27'58.242"N	104°28'36.460"W	1.99	
10773.00	90.340	89.070	6612.20	3724.41	-514.58	3707.74	40°27'58.251"N	104°28'35.244"W	0.59	
10868.00	90.250	89.000	6611.71	3819.27	-512.98	3802.72	40°27'58.256"N	104°28'34.015"W	0.12	
10962.00	90.250	89.190	6611.30	3913.13	-511.50	3896.71	40°27'58.260"N	104°28'32.799"W	0.20	
11057.00	90.550	87.860	6610.64	4007.94	-509.05	3991.67	40°27'58.274"N	104°28'31.570"W	1.44	
11151.00	90.460	87.590	6609.81	4101.66	-505.32	4085.60	40°27'58.300"N	104°28'30.354"W	0.30	
11246.00	90.400	89.130	6609.10	4196.44	-502.60	4180.55	40°27'58.316"N	104°28'29.125"W	1.62	



Actual Wellpath Report

LARSON AA19-618 AWP



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#01 LARSON AA19-618(1072'FSL&275'FEL,SEC.24)
Area	COLORADO	Well	LARSON AA19-618
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LARSON AA19-618 AWB
Facility	SEC.24-T06N-R64W		

WELLPATH DATA (184 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11340.00	90.490	89.650	6608.37	4290.33	-501.60	4274.54	40°27'58.315"N	104°28'27.909"W	0.56	
11435.00	90.400	89.700	6607.63	4385.24	-501.06	4369.54	40°27'58.309"N	104°28'26.680"W	0.11	
11529.00	90.400	90.240	6606.97	4479.17	-501.02	4463.54	40°27'58.299"N	104°28'25.464"W	0.57	
11624.00	90.340	90.230	6606.36	4574.12	-501.41	4558.53	40°27'58.284"N	104°28'24.235"W	0.06	
11718.00	90.310	89.520	6605.83	4668.04	-501.20	4652.53	40°27'58.276"N	104°28'23.019"W	0.76	
11813.00	90.490	90.620	6605.16	4762.97	-501.32	4747.53	40°27'58.264"N	104°28'21.790"W	1.17	
11907.00	90.400	90.380	6604.43	4856.93	-502.14	4841.52	40°27'58.245"N	104°28'20.574"W	0.27	
12002.00	90.460	89.540	6603.72	4951.86	-502.07	4936.52	40°27'58.235"N	104°28'19.345"W	0.89	
12097.00	90.490	88.580	6602.93	5046.72	-500.51	5031.50	40°27'58.239"N	104°28'18.116"W	1.01	
12191.00	90.340	86.570	6602.25	5140.41	-496.53	5125.41	40°27'58.268"N	104°28'16.901"W	2.14	
12286.00	90.490	86.360	6601.57	5234.94	-490.68	5220.23	40°27'58.315"N	104°28'15.673"W	0.27	
12380.00	90.460	87.020	6600.79	5328.51	-485.25	5314.06	40°27'58.357"N	104°28'14.458"W	0.70	
12569.00	90.460	89.870	6599.27	5517.09	-480.12	5502.97	40°27'58.386"N	104°28'12.014"W	1.51	
12663.00	90.460	90.480	6598.51	5611.03	-480.41	5596.97	40°27'58.373"N	104°28'10.798"W	0.65	
12758.00	90.400	89.430	6597.80	5705.96	-480.33	5691.96	40°27'58.363"N	104°28'09.569"W	1.11	
12852.00	90.400	87.880	6597.14	5799.78	-478.13	5785.93	40°27'58.374"N	104°28'08.353"W	1.65	
12947.00	90.370	87.120	6596.51	5894.46	-473.98	5880.84	40°27'58.404"N	104°28'07.124"W	0.80	
13041.00	90.580	88.290	6595.73	5988.18	-470.22	5974.76	40°27'58.430"N	104°28'05.909"W	1.26	
13136.00	90.520	87.910	6594.81	6082.94	-467.07	6069.70	40°27'58.450"N	104°28'04.680"W	0.40	
13230.00	90.400	88.430	6594.06	6176.71	-464.07	6163.65	40°27'58.469"N	104°28'03.464"W	0.57	
13419.00	90.370	88.890	6592.79	6365.35	-459.65	6352.59	40°27'58.491"N	104°28'01.019"W	0.24	
13514.00	90.460	89.350	6592.10	6460.22	-458.19	6447.58	40°27'58.495"N	104°27'59.790"W	0.49	
13608.00	90.460	89.420	6591.35	6554.10	-457.18	6541.57	40°27'58.494"N	104°27'58.574"W	0.07	
13703.00	90.430	89.880	6590.61	6649.01	-456.60	6636.57	40°27'58.488"N	104°27'57.345"W	0.49	
13892.00	90.580	88.810	6588.94	6837.77	-454.44	6825.54	40°27'58.488"N	104°27'54.899"W	0.57	
13986.00	90.580	88.470	6587.99	6931.59	-452.21	6919.51	40°27'58.499"N	104°27'53.683"W	0.36	
14081.00	90.710	88.190	6586.92	7026.38	-449.44	7014.46	40°27'58.516"N	104°27'52.455"W	0.32	
14175.00	90.430	87.610	6585.99	7120.11	-446.00	7108.40	40°27'58.539"N	104°27'51.239"W	0.69	
14270.00	91.750	88.430	6584.18	7214.85	-442.72	7203.32	40°27'58.560"N	104°27'50.010"W	1.64	
14364.00	90.520	88.950	6582.32	7308.66	-440.57	7297.27	40°27'58.571"N	104°27'48.794"W	1.42	



Actual Wellpath Report

LARSON AA19-618 AWP



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#01 LARSON AA19-618(1072'FSL&275'FEL,SEC.24)
Area	COLORADO	Well	LARSON AA19-618
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LARSON AA19-618 AWB
Facility	SEC.24-T06N-R64W		

WELLPATH DATA (184 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
14459.00	90.710	93.350	6581.30	7403.61	-442.47	7392.23	40°27'58.541"N	104°27'47.566"W	4.64	
14553.00	90.090	92.810	6580.64	7497.60	-447.52	7486.09	40°27'58.480"N	104°27'46.353"W	0.87	
14648.00	90.460	90.470	6580.19	7592.59	-450.24	7581.04	40°27'58.442"N	104°27'45.125"W	2.49	
14743.00	90.250	90.910	6579.60	7687.55	-451.39	7676.03	40°27'58.420"N	104°27'43.896"W	0.51	
14837.00	90.150	91.270	6579.27	7781.54	-453.17	7770.01	40°27'58.391"N	104°27'42.680"W	0.40	
14932.00	90.310	90.600	6578.89	7876.51	-454.72	7865.00	40°27'58.365"N	104°27'41.452"W	0.73	
15026.00	90.400	89.310	6578.31	7970.44	-454.65	7959.00	40°27'58.355"N	104°27'40.236"W	1.38	
15121.00	90.340	87.330	6577.69	8065.22	-451.87	8053.95	40°27'58.372"N	104°27'39.007"W	2.09	
15215.00	90.340	86.730	6577.13	8158.85	-447.00	8147.82	40°27'58.409"N	104°27'37.792"W	0.64	
15310.00	90.060	86.740	6576.80	8253.42	-441.58	8242.67	40°27'58.451"N	104°27'36.564"W	0.29	
15404.00	90.220	86.760	6576.57	8347.00	-436.26	8336.51	40°27'58.493"N	104°27'35.349"W	0.17	
15499.00	90.370	85.780	6576.08	8441.50	-430.08	8431.31	40°27'58.543"N	104°27'34.122"W	1.04	
15594.00	90.060	86.080	6575.73	8535.94	-423.33	8526.07	40°27'58.599"N	104°27'32.895"W	0.45	
15688.00	90.150	87.010	6575.55	8629.49	-417.67	8619.90	40°27'58.644"N	104°27'31.680"W	0.99	
15783.00	90.400	92.350	6575.10	8724.37	-417.14	8714.86	40°27'58.638"N	104°27'30.451"W	5.63	
15877.00	90.180	95.050	6574.62	8818.33	-423.20	8808.65	40°27'58.567"N	104°27'29.239"W	2.88	
15972.00	90.520	93.930	6574.04	8913.24	-430.64	8903.36	40°27'58.483"N	104°27'28.015"W	1.23	
16066.00	90.150	93.350	6573.49	9007.21	-436.61	8997.17	40°27'58.413"N	104°27'26.802"W	0.73	
16161.00	90.520	92.880	6572.94	9102.19	-441.77	9092.03	40°27'58.351"N	104°27'25.576"W	0.63	
16256.00	90.340	96.060	6572.22	9197.10	-449.17	9186.72	40°27'58.267"N	104°27'24.352"W	3.35	
16350.00	90.490	96.020	6571.54	9290.88	-459.06	9280.20	40°27'58.158"N	104°27'23.144"W	0.17	
16445.00	90.430	90.240	6570.78	9385.82	-464.25	9375.01	40°27'58.096"N	104°27'21.918"W	6.08	
16539.00	90.490	88.000	6570.03	9479.68	-462.80	9468.99	40°27'58.099"N	104°27'20.702"W	2.38	
16634.00	90.400	87.880	6569.29	9574.42	-459.39	9563.93	40°27'58.122"N	104°27'19.473"W	0.16	
16728.00	90.400	88.120	6568.63	9668.18	-456.11	9657.87	40°27'58.143"N	104°27'18.257"W	0.26	
16917.00	90.370	87.290	6567.36	9856.60	-448.54	9846.71	40°27'58.196"N	104°27'15.813"W	0.44	
17011.00	90.150	82.170	6566.93	9949.78	-439.91	9940.28	40°27'58.271"N	104°27'14.601"W	5.45	
17106.00	90.150	82.170	6566.69	10043.35	-426.97	10034.40	40°27'58.387"N	104°27'13.382"W	0.00	
17200.00	90.400	82.020	6566.23	10135.90	-414.04	10127.50	40°27'58.504"N	104°27'12.175"W	0.31	
17389.00	90.580	90.580	6564.61	10323.74	-401.86	10315.92	40°27'58.603"N	104°27'09.736"W	4.53	



Actual Wellpath Report

LARSON AA19-618 AWP



REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#01 LARSON AA19-618(1072'FSL&275'FEL,SEC.24)
Area	COLORADO	Well	LARSON AA19-618
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LARSON AA19-618 AWB
Facility	SEC.24-T06N-R64W		

WELLPATH DATA (184 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
17578.00	90.490	88.920	6562.85	10512.56	-401.03	10504.91	40°27'58.589"N	104°27'07.291"W	0.88	
17766.00	90.580	91.480	6561.09	10700.43	-401.69	10692.88	40°27'58.560"N	104°27'04.859"W	1.36	
17861.00	90.460	93.230	6560.23	10795.42	-405.59	10787.80	40°27'58.511"N	104°27'03.632"W	1.85	Last BHI MWD Surveys
17902.00	90.460	93.230	6559.90	10836.41	-407.90	10828.73	40°27'58.483"N	104°27'03.102"W	0.00	Projection to Bit

HOLE & CASING SECTIONS - Ref Wellbore: LARSON AA19-618 AWB Ref Wellpath: LARSON AA19-618 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	1917.00	1887.00	30.00	1916.99	0.00	0.01	1.46	2.39
9.625in Casing Surface	30.00	1917.00	1887.00	30.00	1916.99	0.00	0.01	1.46	2.39
8.5in Open Hole	1917.00	17902.00	15985.00	1916.99	6559.90	1.46	2.39	-407.90	10828.73



Actual Wellpath Report

LARSON AA19-618 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#01 LARSON AA19-618(1072'FSL&275'FEL,SEC.24)
Area	COLORADO	Well	LARSON AA19-618
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LARSON AA19-618 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 24	0.00	229.50	-2.61	3281072.59	1415057.73	40°28'06.024"N	104°29'23.136"W	polygon
LARSON AA19-618 SECTION 19	0.00	0.00	0.00	3281075.20	1414828.23	40°28'03.756"N	104°29'23.136"W	polygon
LARSON AA19-618 SECTION 19 HARDLINE (460'SETBACK)	0.00	0.00	0.00	3281075.20	1414828.23	40°28'03.756"N	104°29'23.136"W	polygon
LARSON AA19-618 SECTION 20	0.00	0.00	0.00	3281075.20	1414828.23	40°28'03.756"N	104°29'23.136"W	polygon
LARSON AA19-618 SECTION 20 HARDLINE (460'SETBACK)	0.00	0.00	0.00	3281075.20	1414828.23	40°28'03.756"N	104°29'23.136"W	polygon
LARSON AA19-618 BHL(520'FSL&0'FEL,SEC.20)	6557.98	-406.12	10834.77	3291909.56	1414422.13	40°27'58.500"N	104°27'03.024"W	point
LARSON AA19-618 LANDING	6639.00	-560.00	40.00	3281115.20	1414268.25	40°27'58.218"N	104°29'22.701"W	point

WELLPATH COMPOSITION - Ref Wellbore: LARSON AA19-618 AWB Ref Wellpath: LARSON AA19-618 AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	1914.00	Gyrodata standard - Drop gyro or Multi-shot	3rd Party Gyrodata Surface Surveys <81'-1914'>	LARSON AA19-618 AWB
1914.00	17861.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	BH/ATC OWSG, REV-2+IFR+MSA <1980'-17861'>	LARSON AA19-618 AWB
17861.00	17902.00	Blind Drilling (std)	Projection to bit	LARSON AA19-618 AWB



Actual Wellpath Report

LARSON AA19-618 AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#01 LARSON AA19-618(1072'FSL&275'FEL,SEC.24)
Area	COLORADO	Well	LARSON AA19-618
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LARSON AA19-618 AWB
Facility	SEC.24-T06N-R64W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1914.00	0.260	41.420	1913.99	Tie to Surface Surveys
17861.00	90.460	93.230	6560.23	Last BHI MWD Surveys
17902.00	90.460	93.230	6559.90	Projection to Bit

COMMENTS
<div>Wellpath general comments</div> <div>SURFACE LOCATION: SESE</div> <div>40.46771N</div> <div>104.48976W</div> <div>API: 05-123-45546</div>