



NOBLE ENERGY, INC

Location: COLORADO Slot: SLOT#01 LAPP A22-689 (730'FSL & 400'FWL, SEC.13)
Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: LAPP A22-689
Facility: SEC.13-T06N-R64W Wellbore: LAPP A22-689 PWB

Plot reference wellpath is LAPP A22-689 (REV-B.0, B-MARIL NIO) PWP	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
True vertical depths are referenced to H&P 524 (30KB) (RKB)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to H&P 524 (30KB) (RKB)	North Reference: Grid north
H&P 524 (30KB) (RKB) to Mean Sea Level: 4697 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#01 LAPP A22-689 (730'FSL & 400'FWL, SEC.13)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: adamkat on 2016-09-06
	Database: WA_DEN_Denver_Defn

LAPP A22-689 BHL ON PLAT REV-1 (70'FNL & 535'FWL, SEC.22)
PROJECTION TO BIT : 90.04° Inc, 17612.00ft MD, 6705.44ft TVD, 10431.46ft VS
LAST BHI MWD SURVEY : 90.04° Inc, 17496.00ft MD, 6705.52ft TVD, 10315.74ft VS

Scale 1 inch = 1500

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#01 LAPP A22-689 (730'FSL & 400'FWL, SEC.13)
Area	COLORADO	Well	LAPP A22-689
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LAPP A22-689 AWB
Facility	SEC.13-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	Adamkat
Scale	0.999965	Report Generated	9/6/2016 at 1:09:02 PM
Convergence at slot	0.65° East	Database/Source file	WA_DEN_Denver_Defn/LAPP_A22-689_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	3276394.49	1419595.38	40°28'51.384"N	104°30'23.004"W
Facility Reference Pt			3276394.49	1419595.38	40°28'51.384"N	104°30'23.004"W
Field Reference Pt			3000000.00	4454105.15	48°46'34.315"N	105°30'00.000"W

WELLPATH DATUM			
Calculation method	Minimum curvature	H&P 524 (30'KB) (RKB) to Facility Vertical Datum	4697.00ft
Horizontal Reference Pt	Slot	H&P 524 (30'KB) (RKB) to Mean Sea Level	4697.00ft
Vertical Reference Pt	H&P 524 (30'KB) (RKB)	H&P 524 (30'KB) (RKB) to Mud Line at Slot (SLOT#01 LAPP A22-689 (730'FSL & 400'FWL, SEC.13))	4697.00ft
MD Reference Pt	H&P 524 (30'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	264.52°

REFERENCE WELLPATH IDENTIFICATION

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LAPP A22-689 AWB
Facility	SEC.13-T06N-R64W		

WELLPATH DATA (167 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
1893.00	0.760	211.240	1892.97	-1.08	-1.50	1.23	0.56	TIE INTO GYRODATA SURFACE SURVEYS
1979.00	0.070	81.470	1978.97	-0.79	-1.98	0.99	0.94	FIRST BHI MWD SURVEY
2073.00	0.030	303.070	2072.97	-0.83	-1.96	1.02	0.10	
2168.00	1.240	101.920	2167.96	-1.79	-2.15	2.01	1.33	
2262.00	2.710	106.270	2261.91	-4.83	-2.99	5.14	1.57	
2356.00	4.070	100.420	2355.74	-10.10	-4.21	10.55	1.49	
2451.00	5.970	98.160	2450.37	-18.15	-5.52	18.76	2.01	
2545.00	8.880	101.950	2543.57	-29.82	-7.72	30.70	3.14	
2640.00	11.470	102.800	2637.07	-45.79	-11.33	47.09	2.73	
2734.00	13.620	108.260	2728.82	-64.80	-16.87	66.71	2.61	
2829.00	16.030	121.650	2820.68	-85.50	-27.26	88.51	4.39	
2924.00	15.360	131.070	2912.15	-104.62	-42.42	109.16	2.77	
3018.00	15.440	135.020	3002.78	-121.14	-59.45	127.40	1.12	
3113.00	15.590	139.130	3094.32	-136.58	-78.04	144.69	1.17	
3207.00	15.340	140.130	3184.92	-150.92	-97.14	160.92	0.39	
3302.00	15.440	140.880	3276.51	-165.02	-116.59	176.96	0.23	
3397.00	15.540	138.810	3368.06	-179.46	-135.98	193.32	0.59	
3491.00	15.340	138.330	3458.67	-194.15	-154.75	209.88	0.25	
3586.00	15.590	136.850	3550.23	-209.37	-173.45	226.96	0.49	
3680.00	15.810	132.100	3640.73	-225.73	-191.25	245.10	1.39	
3775.00	15.910	125.110	3732.12	-244.35	-207.41	265.36	2.01	
3869.00	15.930	121.470	3822.52	-264.44	-221.56	286.90	1.06	
3964.00	15.900	119.480	3913.88	-285.53	-234.77	309.35	0.58	
4059.00	15.850	120.610	4005.25	-306.68	-247.78	331.84	0.33	
4153.00	15.790	124.590	4095.70	-326.84	-261.58	353.42	1.16	
4248.00	15.470	125.380	4187.18	-346.31	-276.25	374.39	0.40	
4342.00	15.760	127.920	4277.71	-365.07	-291.35	394.68	0.79	
4437.00	15.560	135.620	4369.20	-382.45	-308.39	413.77	2.20	
4532.00	15.600	138.410	4460.71	-397.98	-327.05	431.17	0.79	
4626.00	15.300	134.890	4551.31	-413.34	-345.26	448.34	1.05	
4721.00	15.350	131.800	4642.94	-429.87	-362.48	466.60	0.86	
4815.00	15.320	132.720	4733.59	-446.58	-379.20	484.99	0.26	
4910.00	15.250	127.010	4825.24	-464.16	-395.24	504.19	1.59	
5004.00	15.640	121.960	4915.84	-483.34	-409.39	524.81	1.49	
5099.00	15.410	119.800	5007.38	-503.81	-422.44	546.63	0.65	
5193.00	14.510	120.550	5098.19	-523.53	-434.63	567.61	0.98	
5288.00	15.220	122.760	5190.01	-542.95	-447.43	588.35	0.96	
5383.00	15.360	126.860	5281.65	-562.05	-461.72	608.90	1.15	
5477.00	15.560	128.550	5372.25	-580.32	-477.05	628.72	0.52	
5572.00	15.560	130.220	5463.77	-598.38	-493.22	648.42	0.47	
5667.00	15.600	132.000	5555.28	-615.91	-509.99	667.64	0.50	
5762.00	15.640	134.080	5646.77	-632.85	-527.45	686.33	0.59	
5857.00	12.350	134.600	5738.94	-647.68	-543.49	702.77	3.47	
5951.00	8.360	165.630	5831.46	-655.20	-557.19	711.63	7.15	
6046.00	7.200	207.870	5925.66	-652.99	-569.15	710.56	6.00	

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#01 LAPP A22-689 (730'FSL & 400'FWL, SEC.13)
Area	COLORADO	Well	LAPP A22-689
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LAPP A22-689 AWB
Facility	SEC.13-T06N-R64W		

WELLPATH DATA (167 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
6141.00	9.680	234.400	6019.66	-642.81	-579.07	701.28	4.79	
6236.00	14.720	251.370	6112.51	-624.13	-587.58	683.33	6.46	
6330.00	20.850	254.620	6201.98	-595.99	-595.84	655.86	6.60	
6425.00	26.250	261.930	6289.05	-558.31	-603.28	618.72	6.45	
6520.00	31.430	267.550	6372.26	-512.55	-607.29	573.14	6.15	
6614.00	39.400	267.350	6448.80	-458.19	-609.72	518.76	8.48	
6684.00†	45.530	268.092	6500.42	-411.03	-611.58	471.56	8.79	CROSS 460' SETBACK
6709.00	47.720	268.320	6517.58	-392.90	-612.15	453.40	8.79	
6803.00	52.150	268.850	6578.07	-321.16	-613.92	381.50	4.73	
6898.00	60.390	267.330	6630.78	-242.37	-616.60	302.61	8.77	
6993.00	69.930	266.570	6670.64	-156.34	-621.20	216.62	10.07	
7087.00	79.100	266.610	6695.71	-65.91	-626.58	126.29	9.76	
7182.00	89.160	267.130	6705.42	28.40	-631.73	32.05	10.60	
7277.00	89.900	266.220	6706.20	123.32	-637.24	-62.78	1.23	
7372.00	90.120	267.290	6706.18	218.25	-642.62	-157.63	1.15	
7466.00	89.720	268.140	6706.31	312.10	-646.37	-251.55	1.00	
7561.00	89.960	268.460	6706.58	406.90	-649.19	-346.51	0.42	
7655.00	90.020	270.650	6706.59	500.53	-649.92	-440.50	2.33	
7750.00	89.990	271.460	6706.58	594.91	-648.17	-535.49	0.85	
7844.00	89.930	272.740	6706.65	688.09	-644.72	-629.42	1.36	
7939.00	89.960	270.570	6706.74	782.35	-641.98	-724.38	2.28	
8034.00	90.050	271.210	6706.73	876.76	-640.50	-819.36	0.68	
8128.00	89.740	271.260	6706.91	970.12	-638.48	-913.34	0.33	
8223.00	90.080	269.760	6707.05	1064.59	-637.63	-1008.34	1.62	
8318.00	90.020	270.180	6706.97	1159.17	-637.68	-1103.33	0.45	
8412.00	89.990	269.380	6706.96	1252.77	-638.04	-1197.33	0.85	
8507.00	90.080	269.840	6706.91	1347.39	-638.69	-1292.33	0.49	
8602.00	90.210	268.900	6706.67	1442.05	-639.73	-1387.32	1.00	
8696.00	89.800	268.030	6706.66	1535.83	-642.25	-1481.29	1.02	
8791.00	89.870	266.720	6706.93	1630.71	-646.60	-1576.19	1.38	
8885.00	89.900	267.300	6707.12	1724.62	-651.51	-1670.06	0.62	
8980.00	90.020	267.440	6707.19	1819.50	-655.87	-1764.96	0.19	
9075.00	89.840	265.620	6707.30	1914.44	-661.62	-1859.78	1.93	
9169.00	89.840	263.970	6707.56	2008.44	-670.14	-1953.39	1.76	
9264.00	89.990	264.850	6707.70	2103.43	-679.40	-2047.94	0.94	
9358.00	89.710	265.490	6707.95	2197.43	-687.31	-2141.60	0.74	
9453.00	89.900	266.990	6708.27	2292.38	-693.54	-2236.39	1.59	
9548.00	89.930	268.530	6708.42	2387.23	-697.25	-2331.32	1.62	
9642.00	90.390	269.710	6708.15	2480.92	-698.70	-2425.30	1.35	
9736.00	90.260	268.560	6707.62	2574.62	-700.12	-2519.29	1.23	
9831.00	90.140	268.790	6707.29	2669.37	-702.31	-2614.26	0.27	
9926.00	90.020	269.400	6707.16	2764.06	-703.81	-2709.25	0.65	
10021.00	90.200	271.520	6706.97	2858.55	-703.05	-2804.24	2.24	
10115.00	89.990	270.840	6706.82	2951.91	-701.12	-2898.22	0.76	
10210.00	90.020	270.920	6706.81	3046.33	-699.66	-2993.21	0.09	

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#01 LAPP A22-689 (730'FSL & 400'FWL, SEC.13)
Area	COLORADO	Well	LAPP A22-689
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LAPP A22-689 AWB
Facility	SEC.13-T06N-R64W		

WELLPATH DATA (167 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
10304.00	90.020	268.670	6706.78	3139.92	-699.99	-3087.20	2.39	
10399.00	90.080	268.660	6706.69	3234.68	-702.21	-3182.18	0.06	
10494.00	89.890	265.520	6706.72	3329.57	-707.03	-3277.04	3.31	
10588.00	90.140	266.040	6706.69	3423.55	-713.95	-3370.79	0.61	
10683.00	90.020	267.210	6706.56	3518.48	-719.54	-3465.62	1.24	
10778.00	89.860	264.970	6706.66	3613.44	-726.02	-3560.40	2.36	
10873.00	89.990	266.420	6706.78	3708.42	-733.15	-3655.13	1.53	
10967.00	90.110	266.300	6706.70	3802.37	-739.11	-3748.94	0.18	
11062.00	90.050	266.690	6706.57	3897.31	-744.92	-3843.76	0.42	
11156.00	89.960	264.700	6706.56	3991.29	-751.98	-3937.49	2.12	
11251.00	90.140	265.150	6706.48	4086.28	-760.38	-4032.11	0.51	
11346.00	89.990	268.190	6706.37	4181.21	-765.90	-4126.94	3.20	
11440.00	90.050	268.100	6706.34	4275.02	-768.94	-4220.89	0.12	
11535.00	90.020	268.500	6706.28	4369.81	-771.76	-4315.85	0.42	
11629.00	90.110	269.210	6706.17	4463.54	-773.64	-4409.83	0.76	
11724.00	89.800	268.630	6706.25	4558.26	-775.43	-4504.81	0.69	
11819.00	90.020	267.630	6706.40	4653.07	-778.53	-4599.76	1.08	
11913.00	89.950	268.220	6706.42	4746.91	-781.93	-4693.70	0.63	
12008.00	90.140	267.200	6706.35	4841.76	-785.73	-4788.62	1.09	
12103.00	90.110	267.640	6706.14	4936.64	-790.01	-4883.53	0.46	
12197.00	90.110	266.140	6705.96	5030.55	-795.10	-4977.39	1.60	
12292.00	89.980	266.740	6705.88	5125.50	-801.00	-5072.20	0.65	
12386.00	89.950	267.320	6705.94	5219.41	-805.87	-5166.08	0.62	
12481.00	89.890	267.900	6706.08	5314.27	-809.84	-5260.99	0.61	
12576.00	90.010	268.460	6706.16	5409.08	-812.85	-5355.94	0.60	
12671.00	89.950	268.450	6706.19	5503.85	-815.41	-5450.91	0.06	
12765.00	90.170	269.300	6706.09	5597.58	-817.26	-5544.89	0.93	
12860.00	90.040	270.130	6705.92	5692.19	-817.73	-5639.89	0.88	
12954.00	89.980	271.100	6705.90	5785.66	-816.72	-5733.88	1.03	
13049.00	89.980	271.770	6705.94	5879.97	-814.34	-5828.85	0.71	
13144.00	89.980	271.420	6705.97	5974.24	-811.70	-5923.81	0.37	
13238.00	89.980	269.910	6706.00	6067.70	-810.61	-6017.80	1.61	
13333.00	90.040	269.330	6705.98	6162.33	-811.24	-6112.80	0.61	
13523.00	89.950	266.420	6706.00	6351.98	-818.28	-6302.65	1.53	
13617.00	90.080	265.350	6705.98	6445.95	-825.03	-6396.41	1.15	
13712.00	89.920	266.210	6705.98	6540.93	-832.02	-6491.15	0.92	
13806.00	90.080	264.230	6705.98	6634.92	-839.85	-6584.82	2.11	
13901.00	90.040	263.570	6705.88	6729.91	-849.95	-6679.28	0.70	
13996.00	90.040	264.010	6705.81	6824.90	-860.22	-6773.72	0.46	
14091.00	90.010	266.770	6705.77	6919.88	-867.86	-6868.40	2.91	
14186.00	89.800	267.950	6705.93	7014.76	-872.23	-6963.30	1.26	
14280.00	89.740	268.040	6706.30	7108.59	-875.52	-7057.24	0.12	
14375.00	89.860	267.600	6706.64	7203.43	-879.14	-7152.17	0.48	
14470.00	89.710	266.410	6706.99	7298.34	-884.10	-7247.04	1.26	
14565.00	89.980	265.420	6707.25	7393.31	-890.87	-7341.80	1.08	

REFERENCE WELLPATH IDENTIFICATION

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Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LAPP A22-689 AWB
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WELLPATH DATA (167 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Comments
14659.00	90.040	269.690	6707.23	7487.16	-894.88	-7435.69	4.54	
14754.00	89.860	270.620	6707.32	7581.70	-894.62	-7530.69	1.00	
14849.00	89.920	268.170	6707.50	7676.35	-895.62	-7625.68	2.58	
14943.00	89.950	265.500	6707.60	7770.26	-900.81	-7719.53	2.84	
15038.00	90.040	264.100	6707.61	7865.26	-909.42	-7814.13	1.48	
15133.00	90.140	264.550	6707.46	7960.26	-918.82	-7908.67	0.49	
15227.00	90.200	264.320	6707.19	8054.26	-927.93	-8002.22	0.25	
15322.00	89.950	265.510	6707.06	8149.25	-936.35	-8096.85	1.28	
15417.00	90.100	266.920	6707.02	8244.21	-942.62	-8191.64	1.49	
15511.00	90.040	267.190	6706.90	8338.12	-947.45	-8285.51	0.29	
15606.00	89.890	267.310	6706.96	8433.01	-952.01	-8380.40	0.20	
15701.00	89.770	268.880	6707.24	8527.82	-955.17	-8475.35	1.66	
15796.00	90.140	269.830	6707.32	8622.48	-956.24	-8570.34	1.07	
15890.00	90.010	270.340	6707.20	8716.04	-956.10	-8664.34	0.56	
15985.00	90.100	270.240	6707.10	8810.56	-955.62	-8759.34	0.14	
16080.00	90.170	269.570	6706.88	8905.14	-955.77	-8854.34	0.71	
16174.00	89.980	270.110	6706.76	8998.73	-956.04	-8948.34	0.61	
16269.00	90.200	270.230	6706.61	9093.27	-955.75	-9043.34	0.26	
16364.00	90.170	270.310	6706.30	9187.80	-955.31	-9138.33	0.09	
16458.00	89.980	270.890	6706.18	9281.27	-954.32	-9232.33	0.65	
16553.00	89.980	269.460	6706.21	9375.80	-954.03	-9327.33	1.51	
16647.00	90.200	268.580	6706.06	9469.51	-955.64	-9421.31	0.96	
16742.00	90.130	270.130	6705.79	9564.17	-956.71	-9516.30	1.63	
16836.00	89.920	270.680	6705.75	9657.68	-956.05	-9610.30	0.63	
16931.00	90.010	269.370	6705.81	9752.24	-956.00	-9705.30	1.38	
17025.00	90.010	268.740	6705.79	9845.94	-957.55	-9799.28	0.67	
17119.00	90.170	267.970	6705.64	9939.73	-960.25	-9893.24	0.84	
17213.00	90.010	268.300	6705.50	10033.54	-963.31	-9987.19	0.39	
17307.00	90.100	268.870	6705.41	10127.31	-965.63	-10081.17	0.61	
17402.00	89.860	269.260	6705.44	10222.01	-967.18	-10176.15	0.48	
17496.00	90.040	268.500	6705.52	10315.74	-969.02	-10270.13	0.83	LAST BHI MWD SURVEY
17612.00	90.040	268.500	6705.44	10431.46	-972.06	-10386.09	0.00	PROJECTION TO BIT

HOLE & CASING SECTIONS - Ref Wellbore: LAPP A22-689 AWB Ref Wellpath: LAPP A22-689 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	0.00	1900.00	1900.00	0.00	1899.97	0.00	0.00	-1.57	1.19
9.625in Casing Surface	0.00	1900.00	1900.00	0.00	1899.97	0.00	0.00	-1.57	1.19
8.5in Open Hole	1900.00	17612.00	15712.00	1899.97	6705.44	-1.57	1.19	-972.06	-10386.09

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#01 LAPP A22-689 (730'FSL & 400'FWL, SEC.13)
Area	COLORADO	Well	LAPP A22-689
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LAPP A22-689 AWP
Facility	SEC.13-T06N-R64W		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.13-T06N-R64W	0.00	0.00	0.00	3276394.49	1419595.38	40°28'51.384"N	104°30'23.004"W	polygon
SEC.13-T06N-R64W NE CORNER	0.00	4667.25	4837.64	3281231.95	1424262.45	40°29'36.960"N	104°29'19.716"W	point
SEC.13-T06N-R64W NW CORNER	0.00	4585.63	-451.93	3275942.58	1424180.84	40°29'36.744"N	104°30'28.188"W	point
SEC.13-T06N-R64W SE CORNER	0.00	-636.81	4903.69	3281298.00	1418958.59	40°28'44.544"N	104°29'19.644"W	point
SEC.13-T06N-R64W SW CORNER	0.00	-740.36	-392.33	3276002.17	1418855.05	40°28'44.112"N	104°30'28.188"W	point
SEC.14-T06N-R64W	0.00	0.00	0.00	3276394.49	1419595.38	40°28'51.384"N	104°30'23.004"W	polygon
SEC.14-T06N-R64W NW CORNER	0.00	4487.09	-5727.41	3270667.30	1424082.30	40°29'36.348"N	104°31'36.480"W	point
SEC.14-T06N-R64W SW CORNER	0.00	-846.08	-5657.75	3270736.95	1418749.33	40°28'43.644"N	104°31'36.336"W	point
SEC.15-T06N-R64W	0.00	0.00	0.00	3276394.49	1419595.38	40°28'51.384"N	104°30'23.004"W	polygon
SEC.15-T06N-R64W NW CORNER	0.00	4415.15	-11005.98	3265388.92	1424010.36	40°29'36.204"N	104°32'44.808"W	point
SEC.15-T06N-R64W SW CORNER	0.00	-936.07	-10920.57	3265474.33	1418659.34	40°28'43.320"N	104°32'44.448"W	point
SEC.22-T06N-R64W	0.00	0.00	0.00	3276394.49	1419595.38	40°28'51.384"N	104°30'23.004"W	polygon
SEC.22-T06N-R64W SE CORNER	0.00	-6019.09	-5603.75	3270790.95	1413576.51	40°27'52.524"N	104°31'36.372"W	point
SEC.22-T06N-R64W SW CORNER	0.00	-6152.96	-10881.12	3265513.78	1413442.65	40°27'51.768"N	104°32'44.664"W	point
LAPP A22-689 CROSS 460' SETBACK REV-2 (130'FSL & 871'FWL, SEC.13) 6719'MD	6533.70	-599.98	471.78	3276866.25	1418995.42	40°28'45.403"N	104°30'16.986"W	point
LAPP A22-689 TOP OF NIO (113'FSL & 1039'FWL, SEC.13) 6781.35'MD	6545.00	-616.23	639.98	3277034.45	1418979.17	40°28'45.224"N	104°30'14.812"W	point
LAPP A22-689 TOP OF NIO REV-2 (130'FSL & 860'FWL, SEC.13) 6735.36'MD	6545.00	-600.42	459.95	3276854.43	1418994.98	40°28'45.400"N	104°30'17.139"W	point
LAPP A22-689 CROSS 460' SETBACK (107'FSL & 871'FWL, SEC.13) 6985'MD	6657.95	-622.02	471.81	3276866.28	1418973.38	40°28'45.186"N	104°30'16.989"W	point
LAPP A22-689 BHL ON PLAT REV-1 (70'FNL & 535'FWL, SEC.22)	6707.00	-995.89	-10385.76	3266009.12	1418599.53	40°28'42.672"N	104°32'37.536"W	point

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#01 LAPP A22-689 (730'FSL & 400'FWL, SEC.13)
Area	COLORADO	Well	LAPP A22-689
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LAPP A22-689 AWB
Facility	SEC.13-T06N-R64W		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
LAPP A22-689 LANDING POINT (100'FSL & 640'FWL, SEC.13) 7223.80'MD	6707.00	-630.00	240.00	3276634.48	1418965.40	40°28'45.132"N	104°30'19.990"W	point
LAPP A22-689 LANDING POINT REV-2 (115'FSL & 340'FWL, SEC.13) 7177.81'MD	6707.00	-615.00	60.00	3276454.49	1418980.40	40°28'45.301"N	104°30'22.317"W	point
LAPP A22-689 UNIT LINE	6707.00	0.00	0.00	3276394.49	1419595.38	40°28'51.384"N	104°30'23.004"W	polygon
LAPP A22-689 UNIT LINE #239	6707.00	400.81	-10943.30	3265451.59	1419996.17	40°28'56.532"N	104°32'44.556"W	point
LAPP A22-689 UNIT LINE #248	6707.00	615.09	916.73	3277311.19	1420210.45	40°28'57.360"N	104°30'11.052"W	point
LAPP A22-689 UNIT LINE #265	6707.00	-2236.64	-10909.36	3265485.54	1417358.83	40°28'30.468"N	104°32'44.484"W	point
LAPP A22-689 UNIT LINE #274	6707.00	-2015.08	949.08	3277343.54	1417580.38	40°28'31.368"N	104°30'11.016"W	point
LAPP A22-689 UNIT LINE HARDLINE (460' SETBACKS)	6707.00	0.00	0.00	3276394.49	1419595.38	40°28'51.384"N	104°30'23.004"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: LAPP A22-689 AWB Ref Wellpath: LAPP A22-689 AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	1893.00	Approximation of GYD GC+DROP+OH	GYRODATA SURFACE SURVEYS 12 1/4" <0 - 1893>	LAPP A22-689
1893.00	17496.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	BHI MWD AUTOTRAK CURVE (IFR, SHORT) MSA CORRECTED SURVEYS 8 1/2" MONOBORE <1893 - 17496>	LAPP A22-689
17496.00	17612.00	Blind Drilling (std)	Projection to bit	LAPP A22-689

REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#01 LAPP A22-689 (730'FSL & 400'FWL, SEC.13)
Area	COLORADO	Well	LAPP A22-689
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	LAPP A22-689 AWB
Facility	SEC.13-T06N-R64W		

WELLPATH COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1893.00	0.760	211.240	1892.97	TIE INTO GYRODATA SURFACE SURVEYS
1979.00	0.070	81.470	1978.97	FIRST BHI MWD SURVEY
6684.00	45.530	268.092	6500.42	CROSS 460' SETBACK
17496.00	90.040	268.500	6705.52	LAST BHI MWD SURVEY
17612.00	90.040	268.500	6705.44	PROJECTION TO BIT