

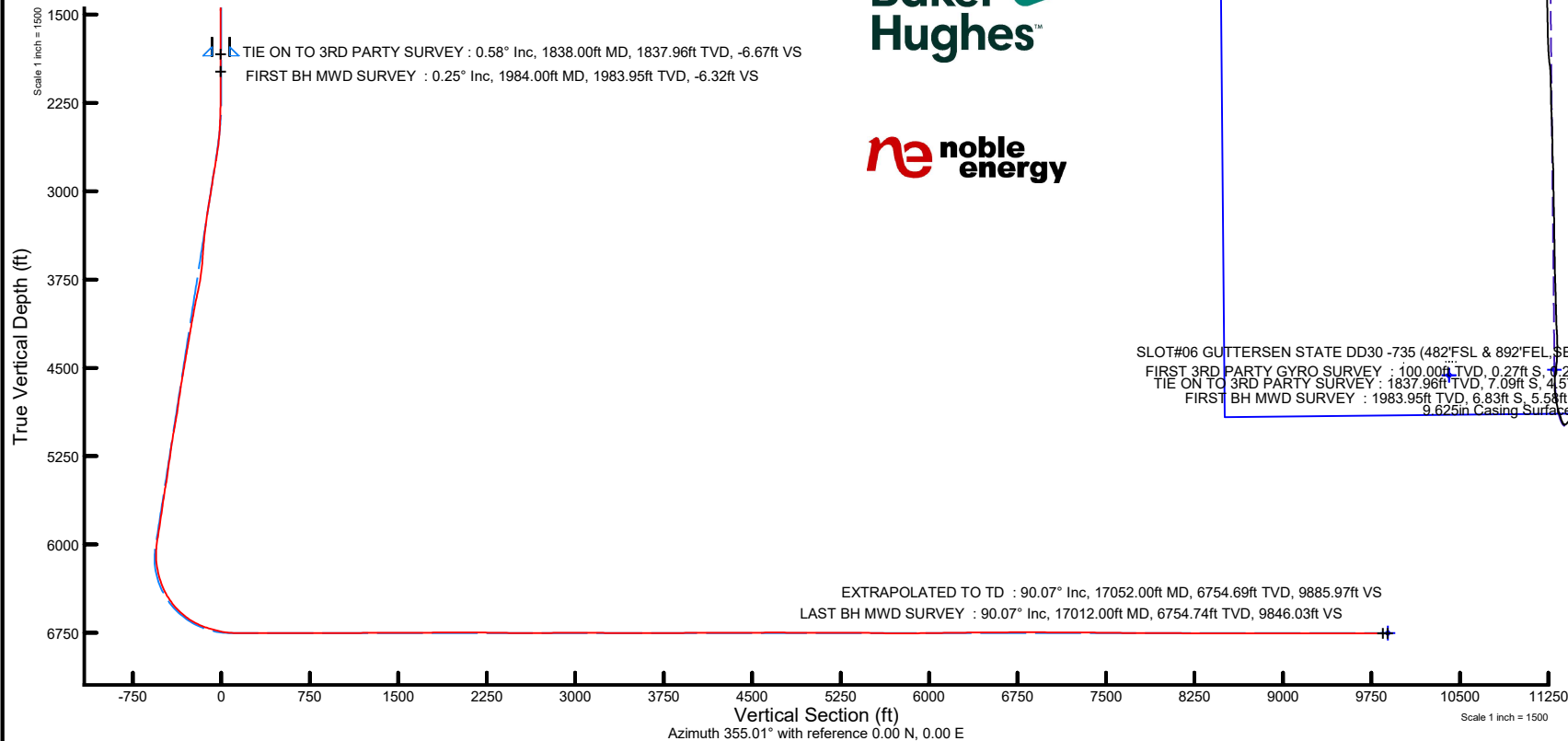
NOBLE ENERGY, INC

Location: COLORADO Slot: SLOT#06 GUTTERSEN STATE DD30 -735 (482°FSL & 892°FEL, SEC.30)
Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: GUTTERSEN STATE DD30 -735
Facility: SEC.30-T03N-R63W Wellbore: GUTTERSEN STATE DD30 -735 AWB

Location Information

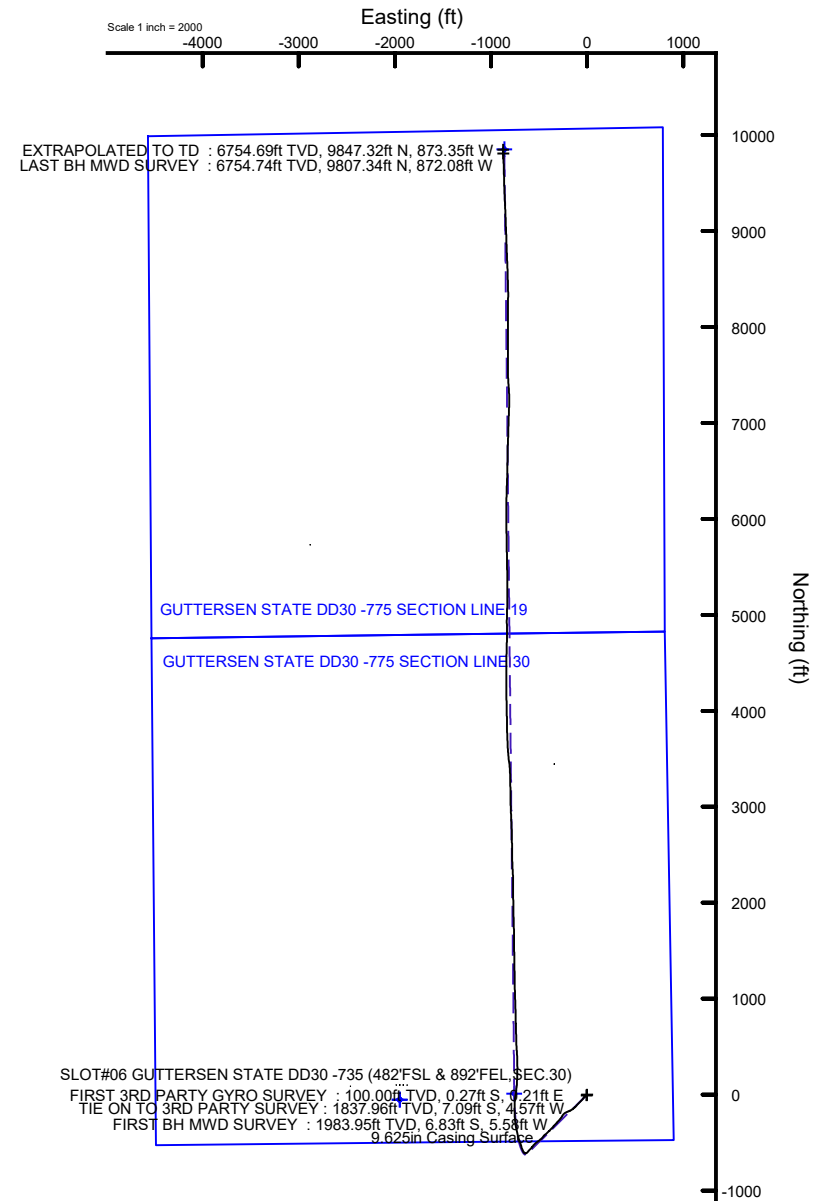
Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC.30-T03N-R63W			3284561.516	1313836.085	40°11'25.4040"N	104°28'53.0400"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOT#06 GUTTERSEN STATE DD30 -735 (482°FSL & 892°FEL, SEC.30)	48.40	1985.99	3286547.420	1313884.479	40°11'25.6560"N	104°28'27.4440"W
RIG (30') (RKB) to Mud line (At Slot: SLOT#06 GUTTERSEN STATE DD30 -735 (482°FSL & 892°FEL, SEC.30))					4853ft	
Mean Sea Level to Mud line (At Slot: SLOT#06 GUTTERSEN STATE DD30 -735 (482°FSL & 892°FEL, SEC.30))					0ft	
RIG (30') (RKB) to Mean Sea Level					4853ft	

Plot reference wellpath is GUTTERSEN STATE DD30 -735 AWP	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
True vertical depths are referenced to RIG (30') (RKB)	North Reference: Grid north
Reference wellpath measured depths are referenced to RIG (30') (RKB)	Scale: True distance
RIG (30') (RKB) to Mean Sea Level: 4853 feet	Coordinates are in feet referenced to Slot
Mean Sea Level to Mud line (At Slot: SLOT#06 GUTTERSEN STATE DD30 -735 (482°FSL & 892°FEL, SEC.30)): 0 feet	Depths are in feet
Offset wellpath MDs are referenced to each path's default MD datum	Created by: manajohj on 2019-12-07; Database: WA_NOBLE



Baker Hughes

noble energy



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	GUTTERSEN STATE DD30 -735
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.30-T03N-R63W	Wellbore	GUTTERSEN STATE DD30 -735 AWB
Slot	SLOT#06 GUTTERSEN STATE DD30 -735 (482'FSL & 892'FEL,SEC.30)		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Manajohj
Scale	0.999957	Report Generated	12/2/2019 at 1:05:01 PM
Convergence at slot	0.66° East	Database	WA_NOBLE

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	48.40	1985.99	3286547.42	1313884.48	40°11'25.6560"N	104°28'27.4440"W
Facility Reference Pt			3284561.52	1313836.09	40°11'25.4040"N	104°28'53.0400"W
Field Reference Pt			3000000.00	4454105.15	48°46'34.3150"N	105°30'0.0000"W

WELLPATH DATUM			
Calculation method	Minimum curvature	RIG (30') (RKB) to Facility Vertical Datum	4853.00ft
Horizontal Reference Pt	Slot	RIG (30') (RKB) to Mean Sea Level	4853.00ft
Vertical Reference Pt	RIG (30') (RKB)	RIG (30') (RKB) to Mud Line at Slot (SLOT#06 GUTTERSEN STATE DD30 -735 (482'FSL & 892'FEL,SEC.30))	4853.00ft
MD Reference Pt	RIG (30') (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	355.01°

REFERENCE WELLPATH IDENTIFICATION				
Operator	NOBLE ENERGY, INC		Well	GUTTERSEN STATE DD30 -735
Field	WELD COUNTY (NOBLE NAD 83 GRID)		API/Legal	
Facility	SEC.30-T03N-R63W		Wellbore	GUTTERSEN STATE DD30 -735 AWB
Slot	SLOT#06 GUTTERSEN STATE DD30 -735 (482'FSL & 892'FEL, SEC.30)			

WELLPATH DATA (176 stations)														
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Toolface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
0.00	0.000	142.170	0.00	-4853.00	0.00	0.00	0.00	40°11'25.6560"N	104°28'27.4440"W	0.00	0.00	0.00	0.00	
100.00	0.390	142.170	100.00	-4753.00	-0.29	-0.27	0.21	40°11'25.6533"N	104°28'27.4414"W	0.39	-108.63	0.39	0.00	FIRST 3RD PARTY GYRO SURVEY
200.00	0.370	120.770	200.00	-4653.00	-0.76	-0.70	0.69	40°11'25.6490"N	104°28'27.4352"W	0.14	147.85	-0.02	-21.40	
300.00	0.210	158.270	300.00	-4553.00	-1.12	-1.04	1.04	40°11'25.6456"N	104°28'27.4308"W	0.24	124.36	-0.16	37.50	
400.00	0.380	255.490	399.99	-4453.01	-1.36	-1.29	0.79	40°11'25.6431"N	104°28'27.4341"W	0.46	148.35	0.17	97.22	
500.00	0.200	318.230	499.99	-4353.01	-1.27	-1.24	0.35	40°11'25.6437"N	104°28'27.4397"W	0.34	148.53	-0.18	62.74	
600.00	0.250	82.070	599.99	-4253.01	-1.12	-1.08	0.45	40°11'25.6452"N	104°28'27.4384"W	0.40	155.45	0.05	123.84	
700.00	0.120	177.560	699.99	-4153.01	-1.21	-1.16	0.67	40°11'25.6445"N	104°28'27.4355"W	0.29	51.11	-0.13	95.49	
800.00	0.380	214.440	799.99	-4053.01	-1.57	-1.54	0.49	40°11'25.6408"N	104°28'27.4380"W	0.29	77.90	0.26	36.88	
900.00	0.450	236.680	899.99	-3953.01	-2.02	-2.03	-0.03	40°11'25.6360"N	104°28'27.4447"W	0.17	-131.61	0.07	22.24	
1000.00	0.400	227.810	999.99	-3853.01	-2.41	-2.48	-0.62	40°11'25.6316"N	104°28'27.4523"W	0.08	-113.18	-0.05	-8.87	
1100.00	0.370	198.260	1099.98	-3753.02	-2.92	-3.02	-0.98	40°11'25.6263"N	104°28'27.4570"W	0.20	169.79	-0.03	-29.55	
1200.00	0.290	201.120	1199.98	-3653.02	-3.44	-3.56	-1.17	40°11'25.6210"N	104°28'27.4596"W	0.08	-16.45	-0.08	2.86	
1300.00	0.560	193.100	1299.98	-3553.02	-4.14	-4.27	-1.37	40°11'25.6139"N	104°28'27.4623"W	0.28	140.02	0.27	-8.02	
1400.00	0.490	200.370	1399.98	-3453.02	-4.99	-5.15	-1.63	40°11'25.6053"N	104°28'27.4658"W	0.10	64.93	-0.07	7.27	
1500.00	0.580	215.370	1499.97	-3353.03	-5.76	-5.96	-2.07	40°11'25.5973"N	104°28'27.4716"W	0.17	163.89	0.09	15.00	
1600.00	0.540	216.600	1599.97	-3253.03	-6.50	-6.75	-2.64	40°11'25.5896"N	104°28'27.4791"W	0.04	122.17	-0.04	1.23	
1700.00	0.460	255.230	1699.96	-3153.04	-6.92	-7.23	-3.31	40°11'25.5849"N	104°28'27.4878"W	0.34	78.58	-0.08	38.63	
1800.00	0.590	283.970	1799.96	-3053.04	-6.82	-7.21	-4.20	40°11'25.5852"N	104°28'27.4992"W	0.29	101.16	0.13	28.74	
1838.00	0.580	291.520	1837.96	-3015.04	-6.67	-7.09	-4.57	40°11'25.5864"N	104°28'27.5039"W	0.20	-164.43	-0.03	19.87	TIE ON TO 3RD PARTY SURVEY
1984.00	0.250	268.580	1983.95	-2869.05	-6.32	-6.83	-5.58	40°11'25.5891"N	104°28'27.5169"W	0.25	105.96	-0.23	-15.71	FIRST BH MWD SURVEY
2079.00	0.330	327.790	2078.95	-2774.05	-6.06	-6.60	-5.93	40°11'25.5914"N	104°28'27.5214"W	0.31	166.55	0.08	62.33	
2173.00	0.880	129.340	2172.95	-2680.05	-6.33	-6.83	-5.52	40°11'25.5891"N	104°28'27.5161"W	1.27	144.42	0.59	171.86	
2268.00	1.570	254.740	2267.94	-2585.06	-7.07	-7.64	-6.21	40°11'25.5812"N	104°28'27.5251"W	2.32	-20.81	0.73	132.00	
2363.00	4.410	241.190	2362.80	-2490.20	-8.78	-9.74	-10.66	40°11'25.5610"N	104°28'27.5829"W	3.06	-17.78	2.99	-14.26	
2457.00	5.960	236.460	2456.41	-2396.59	-12.57	-14.18	-17.90	40°11'25.5179"N	104°28'27.6767"W	1.71	-51.65	1.65	-5.03	
2552.00	7.940	220.820	2550.72	-2302.28	-19.50	-21.87	-26.30	40°11'25.4429"N	104°28'27.7861"W	2.87	-10.77	2.08	-16.46	
2646.00	11.280	217.590	2643.39	-2209.61	-30.80	-34.07	-36.16	40°11'25.3234"N	104°28'27.9149"W	3.60	34.76	3.55	-3.44	
2741.00	13.440	223.820	2736.18	-2116.82	-44.91	-49.40	-49.47	40°11'25.1735"N	104°28'28.0888"W	2.67	-23.73	2.27	6.56	
2835.00	14.470	222.020	2827.41	-2025.59	-60.11	-66.01	-64.89	40°11'25.0111"N	104°28'28.2900"W	1.19	157.50	1.10	-1.91	
2930.00	12.860	225.050	2919.72	-1933.28	-75.00	-82.30	-80.32	40°11'24.8520"N	104°28'28.4912"W	1.85	-5.52	-1.69	3.19	
3025.00	14.040	224.580	3012.11	-1840.89	-89.26	-97.98	-95.89	40°11'24.6988"N	104°28'28.6942"W	1.25	-101.57	1.24	-0.49	
3119.00	13.860	220.060	3103.34	-1749.66	-104.61	-114.72	-111.14	40°11'24.5352"N	104°28'28.8931"W	1.17	107.10	-0.19	-4.81	
3214.00	13.430	227.710	3195.67	-1657.33	-119.33	-130.85	-126.63	40°11'24.3775"N	104°28'29.0951"W	1.95	111.34	-0.45	8.05	
3308.00	13.080	232.090	3287.16	-1565.84	-131.73	-144.73	-143.10	40°11'24.2422"N	104°28'29.3093"W	1.13	56.50	-0.37	4.66	
3403.00	13.870	236.790	3379.55	-1473.45	-142.95	-157.57	-161.11	40°11'24.1174"N	104°28'29.5433"W	1.42	126.01	0.83	4.95	
3498.00	12.630	245.510	3472.03	-1380.97	-151.80	-168.12	-180.09	40°11'24.0154"N	104°28'29.7894"W	2.47	38.16	-1.31	9.18	
3592.00	13.990	249.810	3563.50	-1289.50	-158.21	-176.30	-200.11	40°11'23.9368"N	104°28'30.0485"W	1.79	-71.12	1.45	4.57	
3687.00	14.890	241.320	3655.51	-1197.49	-166.13	-186.12	-221.59	40°11'23.8422"N	104°28'30.3269"W	2.42	-99.73	0.95	-8.94	
3876.00	15.490	212.110	3838.18	-1014.82	-196.05	-219.20	-256.36	40°11'23.5193"N	104°28'30.7798"W	4.02	144.50	0.32	-15.46	
3970.00	14.740	214.240	3928.92	-924.08	-215.33	-239.72	-269.77	40°11'23.3181"N	104°28'30.9555"W	0.99	110.92	-0.80	2.27	
4065.00	14.310	219.380	4020.89	-832.11	-233.08	-258.79	-284.01	40°11'23.1313"N	104°28'31.1420"W	1.43	60.73	-0.45	5.41	
4160.00	14.780	222.520	4112.85	-740.15	-249.66	-276.79	-299.65	40°11'22.9552"N	104°28'31.3461"W	0.97	88.20	0.49	3.31	
4254.00	14.800	224.230	4203.73	-649.27	-265.60	-294.23	-316.13	40°11'22.7847"N	104°28'31.5611"W	0.46	-129.14	0.02	1.82	
4349.00	14.540	222.940	4295.64	-557.36	-281.51	-311.66	-332.72	40°11'22.6144"N	104°28'31.7774"W	0.44	-169.39	-0.27	-1.36	

REFERENCE WELLPATH IDENTIFICATION				
Operator	NOBLE ENERGY, INC		Well	GUTTERSEN STATE DD30 -735
Field	WELD COUNTY (NOBLE NAD 83 GRID)		API/Legal	
Facility	SEC.30-T03N-R63W		Wellbore	GUTTERSEN STATE DD30 -735 AWB
Slot	SLOT#06 GUTTERSEN STATE DD30 -735 (482'FSL & 892'FEL, SEC.30)			

WELLPATH DATA (176 stations)														
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Toolface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
4443.00	13.730	222.300	4386.79	-466.21	-296.99	-328.55	-348.27	40°11'22.4493"N	104°28'31.9802"W	0.88	30.16	-0.86	-0.68	
4537.00	14.210	223.430	4478.01	-374.99	-312.21	-345.18	-363.70	40°11'22.2868"N	104°28'32.1816"W	0.59	-65.77	0.51	1.20	
4632.00	14.690	219.510	4570.01	-282.99	-328.54	-362.94	-379.38	40°11'22.1130"N	104°28'32.3863"W	1.15	125.13	0.51	-4.13	
4726.00	13.280	229.470	4661.23	-191.77	-343.32	-379.15	-395.18	40°11'21.9546"N	104°28'32.5921"W	2.96	-76.24	-1.50	10.60	
4821.00	13.820	222.100	4753.59	-99.41	-357.38	-394.66	-411.08	40°11'21.8032"N	104°28'32.7993"W	1.90	94.49	0.57	-7.76	
4915.00	13.930	235.390	4844.87	-8.13	-370.62	-409.42	-427.92	40°11'21.6592"N	104°28'33.0186"W	3.39	-70.68	0.12	14.14	
5010.00	15.200	224.410	4936.84	83.84	-384.38	-424.82	-446.05	40°11'21.5092"N	104°28'33.2544"W	3.19	-130.77	1.34	-11.56	
5104.00	14.400	220.530	5027.72	174.72	-400.59	-442.51	-462.27	40°11'21.3363"N	104°28'33.4661"W	1.35	86.14	-0.85	-4.13	
5199.00	14.520	225.060	5119.71	266.71	-416.51	-459.90	-478.38	40°11'21.1662"N	104°28'33.6762"W	1.20	102.43	0.13	4.77	
5294.00	14.240	232.190	5211.74	358.74	-430.49	-475.47	-496.04	40°11'21.0143"N	104°28'33.9061"W	1.89	87.80	-0.29	7.51	
5483.00	14.280	234.850	5394.92	541.92	-454.80	-503.14	-533.47	40°11'20.7452"N	104°28'34.3924"W	0.35	-93.80	0.02	1.41	
5577.00	14.670	216.860	5485.98	632.98	-469.50	-519.35	-550.09	40°11'20.5869"N	104°28'34.6090"W	4.78	163.90	0.41	-19.14	
5672.00	11.440	221.620	5578.52	725.52	-484.93	-536.02	-563.57	40°11'20.4237"N	104°28'34.7851"W	3.58	-25.63	-3.40	5.01	
5766.00	12.090	220.140	5670.54	817.54	-498.28	-550.52	-576.11	40°11'20.2819"N	104°28'34.9488"W	0.76	93.31	0.69	-1.57	
5861.00	12.070	223.030	5763.44	910.44	-511.94	-565.38	-589.30	40°11'20.1365"N	104°28'35.1210"W	0.64	-55.71	-0.02	3.04	
5956.00	12.560	219.850	5856.26	1003.26	-525.91	-580.57	-602.70	40°11'19.9880"N	104°28'35.2959"W	0.88	50.00	0.52	-3.35	
6050.00	12.990	222.080	5947.93	1094.93	-540.35	-596.26	-616.33	40°11'19.8345"N	104°28'35.4738"W	0.70	108.74	0.46	2.37	
6145.00	12.290	241.430	6040.67	1187.67	-551.67	-609.03	-632.37	40°11'19.7102"N	104°28'35.6824"W	4.50	123.00	-0.74	20.37	
6239.00	10.700	291.240	6133.00	1280.00	-551.82	-610.66	-649.33	40°11'19.6960"N	104°28'35.9012"W	10.36	101.49	-1.69	52.99	
6334.00	12.340	335.170	6226.25	1373.25	-538.35	-598.22	-661.84	40°11'19.8203"N	104°28'36.0605"W	9.16	1.83	1.73	46.24	
6428.00	20.140	335.890	6316.43	1463.43	-513.57	-574.30	-672.68	40°11'20.0580"N	104°28'36.1967"W	8.30	27.50	8.30	0.77	
6522.00	27.120	343.610	6402.52	1549.52	-477.22	-538.92	-685.36	40°11'20.4090"N	104°28'36.3547"W	8.11	-9.39	7.43	8.21	
6617.00	36.600	341.000	6483.12	1630.12	-428.40	-491.26	-700.72	40°11'20.8817"N	104°28'36.5456"W	10.08	13.74	9.98	-2.75	
6711.00	44.860	343.840	6554.29	1701.29	-368.58	-432.81	-719.11	40°11'21.4613"N	104°28'36.7738"W	9.00	26.57	8.79	3.02	
6806.00	53.280	349.000	6616.50	1763.50	-297.69	-363.11	-735.73	40°11'22.1520"N	104°28'36.9776"W	9.76	22.85	8.86	5.43	
6900.00	62.230	353.210	6666.62	1813.62	-218.47	-284.64	-747.87	40°11'22.9287"N	104°28'37.1223"W	10.24	25.68	9.52	4.48	
6994.00	71.450	357.830	6703.57	1850.57	-132.17	-198.60	-754.49	40°11'23.7797"N	104°28'37.1948"W	10.80	43.54	9.81	4.91	
7089.00	75.910	2.150	6730.27	1877.27	-41.40	-107.47	-754.47	40°11'24.6801"N	104°28'37.1810"W	6.41	40.04	4.69	4.55	
7183.00	83.610	8.580	6746.98	1893.98	49.47	-15.50	-745.76	40°11'25.5879"N	104°28'37.0552"W	10.60	-23.36	8.19	6.84	
7278.00	90.090	5.790	6752.20	1899.20	142.13	78.55	-733.92	40°11'26.5160"N	104°28'36.8886"W	7.42	-90.00	6.82	-2.94	
7373.00	90.090	2.210	6752.05	1899.05	235.95	173.30	-727.29	40°11'27.4515"N	104°28'36.7891"W	3.77	-90.84	0.00	-3.77	
7467.00	90.060	0.160	6751.93	1898.93	329.40	267.28	-725.35	40°11'28.3799"N	104°28'36.7501"W	2.18	-84.18	-0.03	-2.18	
7562.00	90.280	358.000	6751.65	1898.65	424.15	362.26	-726.87	40°11'29.3186"N	104°28'36.7556"W	2.29	-96.92	0.23	-2.27	
7656.00	90.030	355.940	6751.39	1898.39	518.09	456.12	-731.84	40°11'30.2466"N	104°28'36.8057"W	2.21	92.28	-0.27	-2.19	
7750.00	89.940	358.200	6751.42	1898.42	612.02	549.99	-736.64	40°11'31.1748"N	104°28'36.8536"W	2.41	93.43	-0.10	2.40	
7844.00	89.910	358.700	6751.54	1898.54	705.85	643.96	-739.19	40°11'32.1036"N	104°28'36.8724"W	0.53	-87.71	-0.03	0.53	
7939.00	89.940	357.950	6751.66	1898.66	800.69	738.92	-741.96	40°11'33.0422"N	104°28'36.8941"W	0.79	81.67	0.03	-0.79	
8033.00	90.120	359.180	6751.61	1898.61	894.51	832.89	-744.32	40°11'33.9710"N	104°28'36.9104"W	1.32	-106.24	0.19	1.31	
8128.00	89.820	358.150	6751.66	1898.66	989.32	927.86	-746.53	40°11'34.9097"N	104°28'36.9248"W	1.13	-106.39	-0.32	-1.08	
8222.00	89.720	357.810	6752.04	1899.04	1083.19	1021.80	-749.84	40°11'35.8383"N	104°28'36.9536"W	0.38	40.07	-0.11	-0.36	
8317.00	91.170	359.030	6751.30	1898.30	1178.01	1116.76	-752.46	40°11'36.7769"N	104°28'36.9732"W	1.99	168.47	1.53	1.28	
8412.00	90.680	359.130	6749.77	1896.77	1272.76	1211.73	-753.99	40°11'37.7156"N	104°28'36.9787"W	0.53	-160.60	-0.52	0.11	
8506.00	89.970	358.880	6749.24	1896.24	1366.53	1305.71	-755.62	40°11'38.6445"N	104°28'36.9858"W	0.80	100.46	-0.76	-0.27	
8600.00	89.850	359.530	6749.38	1896.38	1460.28	1399.71	-756.92	40°11'39.5734"N	104°28'36.9886"W	0.70	-81.63	-0.13	0.69	
8695.00	90.090	357.900	6749.43	1896.43	1555.07	1494.68	-759.06	40°11'40.5121"N	104°28'37.0020"W	1.73	91.00	0.25	-1.72	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	GUTTERSEN STATE DD30 -735
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.30-T03N-R63W	Wellbore	GUTTERSEN STATE DD30 -735 AWB
Slot	SLOT#06 GUTTERSEN STATE DD30 -735 (482'FSL & 892'FEL,SEC.30)		

WELLPATH DATA (176 stations)														
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Toolface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
8789.00	90.030	1.320	6749.34	1896.34	1648.76	1588.66	-759.69	40°11'41.4408"N	104°28'36.9962"W	3.64	-79.92	-0.06	3.64	
8884.00	90.680	357.660	6748.75	1895.75	1743.45	1683.64	-760.54	40°11'42.3794"N	104°28'36.9930"W	3.91	127.05	0.68	-3.85	
8979.00	89.940	358.640	6748.23	1895.23	1838.30	1778.59	-763.61	40°11'43.3180"N	104°28'37.0184"W	1.29	-56.73	-0.78	1.03	
9073.00	90.150	358.320	6748.16	1895.16	1932.13	1872.55	-766.10	40°11'44.2468"N	104°28'37.0366"W	0.41	79.69	0.22	-0.34	
9168.00	90.370	359.530	6747.73	1894.73	2026.90	1967.53	-767.88	40°11'45.1855"N	104°28'37.0454"W	1.29	-133.38	0.23	1.27	
9262.00	89.510	358.620	6747.83	1894.83	2120.67	2061.52	-769.40	40°11'46.1144"N	104°28'37.0510"W	1.33	77.98	-0.91	-0.97	
9357.00	89.970	0.780	6748.26	1895.26	2215.34	2156.51	-769.90	40°11'47.0531"N	104°28'37.0433"W	2.32	-104.73	0.48	2.27	
9546.00	88.770	356.210	6750.34	1897.34	2403.92	2345.38	-774.86	40°11'48.9199"N	104°28'37.0791"W	2.50	67.86	-0.63	-2.42	
9641.00	90.000	359.230	6751.36	1898.36	2498.80	2440.29	-778.64	40°11'49.8582"N	104°28'37.1137"W	3.43	-83.88	1.29	3.18	
9735.00	90.060	358.670	6751.31	1898.31	2592.58	2534.27	-780.36	40°11'50.7871"N	104°28'37.1219"W	0.60	112.09	0.06	-0.60	
9830.00	89.780	359.360	6751.44	1898.44	2687.34	2629.26	-781.99	40°11'51.7258"N	104°28'37.1289"W	0.78	-53.13	-0.29	0.73	
9924.00	90.680	358.160	6751.06	1898.06	2781.14	2723.23	-784.03	40°11'52.6547"N	104°28'37.1411"W	1.60	-136.82	0.96	-1.28	
10019.00	90.030	357.550	6750.47	1897.47	2876.02	2818.16	-787.58	40°11'53.5931"N	104°28'37.1728"W	0.94	54.46	-0.68	-0.64	
10113.00	90.180	357.760	6750.30	1897.30	2969.92	2912.08	-791.43	40°11'54.5216"N	104°28'37.2084"W	0.27	133.67	0.16	0.22	
10207.00	89.970	357.980	6750.18	1897.18	3063.80	3006.02	-794.92	40°11'55.4502"N	104°28'37.2395"W	0.32	103.09	-0.22	0.23	
10396.00	89.540	359.830	6750.99	1897.99	3252.35	3194.97	-798.53	40°11'57.3177"N	104°28'37.2579"W	1.00	-75.97	-0.23	0.98	
10490.00	89.780	358.870	6751.54	1898.54	3346.08	3288.96	-799.60	40°11'58.2466"N	104°28'37.2577"W	1.05	-71.94	0.26	-1.02	
10585.00	90.520	356.600	6751.30	1898.30	3440.97	3383.88	-803.35	40°11'59.1850"N	104°28'37.2919"W	2.51	-100.31	0.78	-2.39	
10679.00	89.690	352.040	6751.12	1898.12	3534.93	3477.40	-812.66	40°12'0.1101"N	104°28'37.3979"W	4.93	85.76	-0.88	-4.85	
10774.00	89.970	355.810	6751.41	1898.41	3629.90	3571.84	-822.71	40°12'1.0445"N	104°28'37.5134"W	3.98	87.73	0.29	3.97	
10868.00	90.060	358.080	6751.38	1898.38	3723.84	3665.71	-827.72	40°12'1.9725"N	104°28'37.5640"W	2.42	-116.08	0.10	2.41	
10963.00	89.600	357.140	6751.66	1898.66	3818.74	3760.62	-831.68	40°12'2.9109"N	104°28'37.6009"W	1.10	63.36	-0.48	-0.99	
11057.00	91.110	0.150	6751.08	1898.08	3912.53	3854.58	-833.90	40°12'3.8396"N	104°28'37.6156"W	3.58	-110.11	1.61	3.20	
11152.00	90.370	358.130	6749.85	1896.85	4007.27	3949.55	-835.33	40°12'4.7782"N	104°28'37.6199"W	2.26	115.46	-0.78	-2.13	
11246.00	89.970	358.970	6749.57	1896.57	4101.09	4043.52	-837.71	40°12'5.7070"N	104°28'37.6365"W	0.99	84.47	-0.43	0.89	
11341.00	90.060	359.900	6749.55	1896.55	4195.81	4138.52	-838.64	40°12'6.6458"N	104°28'37.6345"W	0.98	63.44	0.09	0.98	
11435.00	90.150	0.080	6749.38	1896.38	4289.45	4232.52	-838.66	40°12'7.5746"N	104°28'37.6207"W	0.21	-80.29	0.10	0.19	
11529.00	90.280	359.320	6749.02	1896.02	4383.14	4326.51	-839.15	40°12'8.5035"N	104°28'37.6131"W	0.82	160.77	0.14	-0.81	
11624.00	89.850	359.470	6748.92	1895.92	4477.86	4421.51	-840.15	40°12'9.4423"N	104°28'37.6119"W	0.48	63.59	-0.45	0.16	
11718.00	90.580	0.940	6748.56	1895.56	4571.47	4515.50	-839.82	40°12'10.3710"N	104°28'37.5936"W	1.75	141.53	0.78	1.56	
11813.00	89.850	1.520	6748.21	1895.21	4665.90	4610.48	-837.78	40°12'11.3093"N	104°28'37.5532"W	0.98	-43.03	-0.77	0.61	
11908.00	90.000	1.380	6748.33	1895.33	4760.30	4705.45	-835.37	40°12'12.2475"N	104°28'37.5081"W	0.22	-122.01	0.16	-0.15	
12002.00	89.050	359.860	6749.11	1896.11	4853.85	4799.44	-834.36	40°12'13.1761"N	104°28'37.4810"W	1.91	-19.22	-1.01	-1.62	
12097.00	90.800	359.250	6749.24	1896.24	4948.54	4894.43	-835.10	40°12'14.1148"N	104°28'37.4764"W	1.95	113.37	1.84	-0.64	
12191.00	89.780	1.610	6748.76	1895.76	5042.11	4988.42	-834.39	40°12'15.0434"N	104°28'37.4533"W	2.74	138.82	-1.09	2.51	
12286.00	89.380	1.960	6749.46	1896.46	5136.45	5083.37	-831.43	40°12'15.9813"N	104°28'37.4011"W	0.56	-59.73	-0.42	0.37	
12380.00	90.950	359.270	6749.18	1896.18	5229.98	5177.35	-830.42	40°12'16.9099"N	104°28'37.3741"W	3.31	157.58	1.67	-2.86	
12475.00	88.890	0.120	6749.32	1896.32	5324.66	5272.35	-830.93	40°12'17.8486"N	104°28'37.3665"W	2.35	20.51	-2.17	0.89	
12569.00	90.120	0.580	6750.13	1897.13	5418.25	5366.34	-830.35	40°12'18.7773"N	104°28'37.3451"W	1.40	-122.61	1.31	0.49	
12663.00	88.400	357.890	6751.34	1898.34	5511.97	5460.31	-831.61	40°12'19.7060"N	104°28'37.3473"W	3.40	59.68	-1.83	-2.86	
12758.00	89.260	359.360	6753.28	1900.28	5606.76	5555.26	-833.89	40°12'20.6445"N	104°28'37.3626"W	1.79	-20.93	0.91	1.55	
12852.00	89.940	359.100	6753.94	1900.94	5700.50	5649.25	-835.15	40°12'21.5734"N	104°28'37.3649"W	0.77	-39.81	0.72	-0.28	
12948.00	90.120	358.950	6753.89	1900.89	5796.26	5745.23	-836.78	40°12'22.5220"N	104°28'37.3717"W	0.24	20.23	0.19	-0.16	
13042.00	90.310	359.020	6753.54	1900.54	5890.04	5839.22	-838.45	40°12'23.4509"N	104°28'37.3792"W	0.22	76.43	0.20	0.07	
13137.00	90.520	359.890	6752.85	1899.85	5984.75	5934.21	-839.35	40°12'24.3897"N	104°28'37.3767"W	0.94	-3.07	0.22	0.92	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	GUTTERSEN STATE DD30 -735
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.30-T03N-R63W	Wellbore	GUTTERSEN STATE DD30 -735 AWB
Slot	SLOT#06 GUTTERSEN STATE DD30 -735 (482'FSL & 892'FEL, SEC.30)		

WELLPATH DATA (176 stations) † = interpolated, ‡ = extrapolated station														
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Toolface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
13231.00	91.080	359.860	6751.54	1898.54	6078.40	6028.20	-839.56	40°12'25.3184"N	104°28'37.3653"W	0.60	0.00	0.60	-0.03	
13326.00	91.080	359.860	6749.75	1896.75	6173.04	6123.18	-839.79	40°12'26.2570"N	104°28'37.3542"W	0.00	119.88	0.00	0.00	
13420.00	90.310	1.200	6748.61	1895.61	6266.59	6217.17	-838.92	40°12'27.1856"N	104°28'37.3290"W	1.64	90.00	-0.82	1.43	
13609.00	90.310	2.410	6747.58	1894.58	6454.26	6406.07	-832.97	40°12'29.0515"N	104°28'37.2242"W	0.64	-119.21	0.00	0.64	
13704.00	89.600	1.140	6747.66	1894.66	6548.59	6501.02	-830.02	40°12'29.9894"N	104°28'37.1722"W	1.53	-9.37	-0.75	-1.34	
13799.00	91.720	0.790	6746.56	1893.56	6643.07	6596.00	-828.42	40°12'30.9277"N	104°28'37.1374"W	2.26	177.71	2.23	-0.37	
13893.00	90.220	0.850	6744.97	1891.97	6736.57	6689.97	-827.08	40°12'31.8562"N	104°28'37.1061"W	1.60	100.71	-1.60	0.06	
13987.00	89.940	2.330	6744.84	1891.84	6829.95	6783.93	-824.47	40°12'32.7843"N	104°28'37.0585"W	1.60	-119.96	-0.30	1.57	
14082.00	89.600	1.740	6745.22	1892.22	6924.23	6878.87	-821.10	40°12'33.7221"N	104°28'37.0010"W	0.72	-177.27	-0.36	-0.62	
14177.00	89.390	1.730	6746.06	1893.06	7018.57	6973.82	-818.22	40°12'34.6600"N	104°28'36.9498"W	0.22	18.43	-0.22	-0.01	
14272.00	89.510	1.770	6746.97	1893.97	7112.91	7068.77	-815.32	40°12'35.5979"N	104°28'36.8983"W	0.13	59.14	0.13	0.04	
14366.00	90.000	2.590	6747.37	1894.37	7206.17	7162.70	-811.74	40°12'36.5257"N	104°28'36.8382"W	1.02	-91.94	0.52	0.87	
14461.00	89.880	359.050	6747.47	1894.47	7300.67	7257.68	-810.39	40°12'37.4640"N	104°28'36.8066"W	3.73	-103.95	-0.13	-3.73	
14555.00	89.170	356.190	6748.25	1895.25	7394.56	7351.58	-814.29	40°12'38.3923"N	104°28'36.8429"W	3.13	-157.38	-0.76	-3.04	
14650.00	89.050	356.140	6749.73	1896.73	7489.53	7446.36	-820.64	40°12'39.3296"N	104°28'36.9107"W	0.14	78.41	-0.13	-0.05	
14744.00	89.790	359.740	6750.68	1897.68	7583.38	7540.28	-824.02	40°12'40.2580"N	104°28'36.9403"W	3.91	-152.53	0.79	3.83	
14839.00	89.540	359.610	6751.24	1898.24	7678.07	7635.28	-824.56	40°12'41.1967"N	104°28'36.9331"W	0.30	37.78	-0.26	-0.14	
14933.00	89.940	359.920	6751.66	1898.66	7771.74	7729.27	-824.94	40°12'42.1256"N	104°28'36.9241"W	0.54	117.22	0.43	0.33	
15028.00	89.760	0.270	6751.91	1898.91	7866.37	7824.27	-824.79	40°12'43.0643"N	104°28'36.9079"W	0.41	99.62	-0.19	0.37	
15122.00	89.660	0.860	6752.39	1899.39	7959.92	7918.27	-823.86	40°12'43.9930"N	104°28'36.8820"W	0.64	-83.83	-0.11	0.63	
15217.00	89.700	0.490	6752.92	1899.92	8054.46	8013.26	-822.74	40°12'44.9315"N	104°28'36.8534"W	0.39	-88.09	0.04	-0.39	
15311.00	89.730	359.590	6753.38	1900.38	8148.09	8107.26	-822.67	40°12'45.8603"N	104°28'36.8386"W	0.96	65.64	0.03	-0.96	
15406.00	89.970	0.120	6753.63	1900.63	8242.75	8202.26	-822.92	40°12'46.7990"N	104°28'36.8276"W	0.61	98.70	0.25	0.56	
15500.00	89.820	1.100	6753.81	1900.81	8336.30	8296.25	-821.91	40°12'47.7277"N	104°28'36.8007"W	1.05	-84.13	-0.16	1.04	
15595.00	90.100	358.380	6753.87	1900.87	8430.97	8391.24	-822.35	40°12'48.6664"N	104°28'36.7921"W	2.88	-112.62	0.29	-2.86	
15689.00	90.000	358.140	6753.79	1900.79	8524.82	8485.20	-825.20	40°12'49.5951"N	104°28'36.8149"W	0.28	86.10	-0.11	-0.26	
15784.00	90.030	358.580	6753.76	1900.76	8619.65	8580.16	-827.92	40°12'50.5338"N	104°28'36.8359"W	0.46	-101.99	0.03	0.46	
15878.00	89.790	357.450	6753.91	1900.91	8713.52	8674.10	-831.17	40°12'51.4624"N	104°28'36.8639"W	1.23	46.17	-0.26	-1.20	
15972.00	90.030	357.700	6754.06	1901.06	8807.43	8768.01	-835.15	40°12'52.3909"N	104°28'36.9012"W	0.37	65.85	0.26	0.27	
16067.00	90.160	357.990	6753.90	1900.90	8902.31	8862.95	-838.72	40°12'53.3293"N	104°28'36.9331"W	0.33	153.44	0.14	0.31	
16161.00	89.700	358.220	6754.02	1901.02	8996.17	8956.89	-841.83	40°12'54.2580"N	104°28'36.9592"W	0.55	-66.43	-0.49	0.24	
16256.00	89.940	357.670	6754.32	1901.32	9091.05	9051.83	-845.24	40°12'55.1965"N	104°28'36.9890"W	0.63	81.47	0.25	-0.58	
16350.00	90.000	358.070	6754.37	1901.37	9184.93	9145.77	-848.73	40°12'56.1251"N	104°28'37.0200"W	0.43	-102.38	0.06	0.43	
16445.00	89.820	357.250	6754.51	1901.51	9279.83	9240.69	-852.61	40°12'57.0635"N	104°28'37.0559"W	0.88	68.36	-0.19	-0.86	
16539.00	90.070	357.880	6754.60	1901.60	9373.73	9334.60	-856.60	40°12'57.9919"N	104°28'37.0934"W	0.72	-145.62	0.27	0.67	
16634.00	89.880	357.750	6754.65	1901.65	9468.62	9429.53	-860.23	40°12'58.9304"N	104°28'37.1260"W	0.24	77.62	-0.20	-0.14	
16729.00	89.970	358.160	6754.77	1901.77	9563.49	9524.47	-863.62	40°12'59.8689"N	104°28'37.1556"W	0.44	86.50	0.09	0.43	
16823.00	90.000	358.650	6754.79	1901.79	9657.33	9618.43	-866.23	40°13'0.7977"N	104°28'37.1753"W	0.52	-90.00	0.03	0.52	
16917.00	90.000	358.040	6754.79	1901.79	9751.17	9712.40	-868.95	40°13'1.7264"N	104°28'37.1963"W	0.65	63.44	0.00	-0.65	
17012.00	90.070	358.180	6754.74	1901.74	9846.03	9807.34	-872.08	40°13'2.6650"N	104°28'37.2226"W	0.16	0.00	0.07	0.15	LAST BH MWD SURVEY
17052.00†	90.070	358.180	6754.69	1901.69	9885.97	9847.32	-873.35	40°13'3.0602"N	104°28'37.2330"W	0.00		0.00	0.00	EXTRAPOLATED TO TD

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	GUTTERSEN STATE DD30 -735
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.30-T03N-R63W	Wellbore	GUTTERSEN STATE DD30 -735 AWP
Slot	SLOT#06 GUTTERSEN STATE DD30 -735 (482'FSL & 892'FEL,SEC.30)		

HOLE & CASING SECTIONS - Ref Wellbore: GUTTERSEN STATE DD30 -735 AWP Ref Wellpath: GUTTERSEN STATE DD30 -735 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	1850.00	1820.00	30.00	1849.96	-0.02	0.02	-7.05	-4.68
9.625in Casing Surface	30.00	1850.00	1820.00	30.00	1849.96	-0.02	0.02	-7.05	-4.68
8.5in Open Hole	1850.00	17052.00	15202.00	1849.96	6754.69	-7.05	-4.68	9847.32	-873.35

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
GUTTERSEN STATE DD30 -775 SECTION LINE 19	29.00	-51.62	-1949.63	3284597.87	1313832.86	40°11'25.3680"N	104°28'52.5720"W	polygon
	2D Polygon: dimensions not calculated							
GUTTERSEN STATE DD30 -775 SECTION LINE 30	29.00	-51.62	-1949.63	3284597.87	1313832.86	40°11'25.3680"N	104°28'52.5720"W	polygon
	2D Polygon: dimensions not calculated							
GUTTERSEN STATE DD30 -735 BHL REV-1 (200'FNL & 1650'FEL,SEC.19)	6752.00	9851.65	-860.77	3285686.69	1323735.69	40°13'3.1015"N	104°28'37.0702"W	point
GUTTERSEN STATE DD30 -735 TPZ REV-1 (500'FSL & 1649'FEL,SEC.30)	6752.00	11.29	-757.62	3285789.83	1313895.76	40°11'25.8540"N	104°28'37.2040"W	point

WELLPATH COMPOSITION - Ref Wellbore: GUTTERSEN STATE DD30 -735 AWP Ref Wellpath: GUTTERSEN STATE DD30 -735 AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	1838.00	Gyrodata 2015 - GC+DROP+COND	13.5 SURFACE HOLE (GYRODATA 2015-GC+DROP+COND) <0'-1838">	GUTTERSEN STATE DD30 -735 AWP
1838.00	17052.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	8.5" ATC MONOBORE (OWSG MWD REV.2+IFR1+MSA) <1984'-17052">	GUTTERSEN STATE DD30 -735 AWP

Survey Date
12/2/2019
12/2/2019

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	GUTTERSEN STATE DD30 -735
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.30-T03N-R63W	Wellbore	GUTTERSEN STATE DD30 -735 AWP
Slot	SLOT#06 GUTTERSEN STATE DD30 -735 (482'FSL & 892'FEL,SEC.30)		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
100.00	0.390	142.170	100.00	FIRST 3RD PARTY GYRO SURVEY
1838.00	0.580	291.520	1837.96	TIE ON TO 3RD PARTY SURVEY
1984.00	0.250	268.580	1983.95	FIRST BH MWD SURVEY
17012.00	90.070	358.180	6754.74	LAST BH MWD SURVEY
17052.00	90.070	358.180	6754.69	EXTRAPOLATED TO TD