

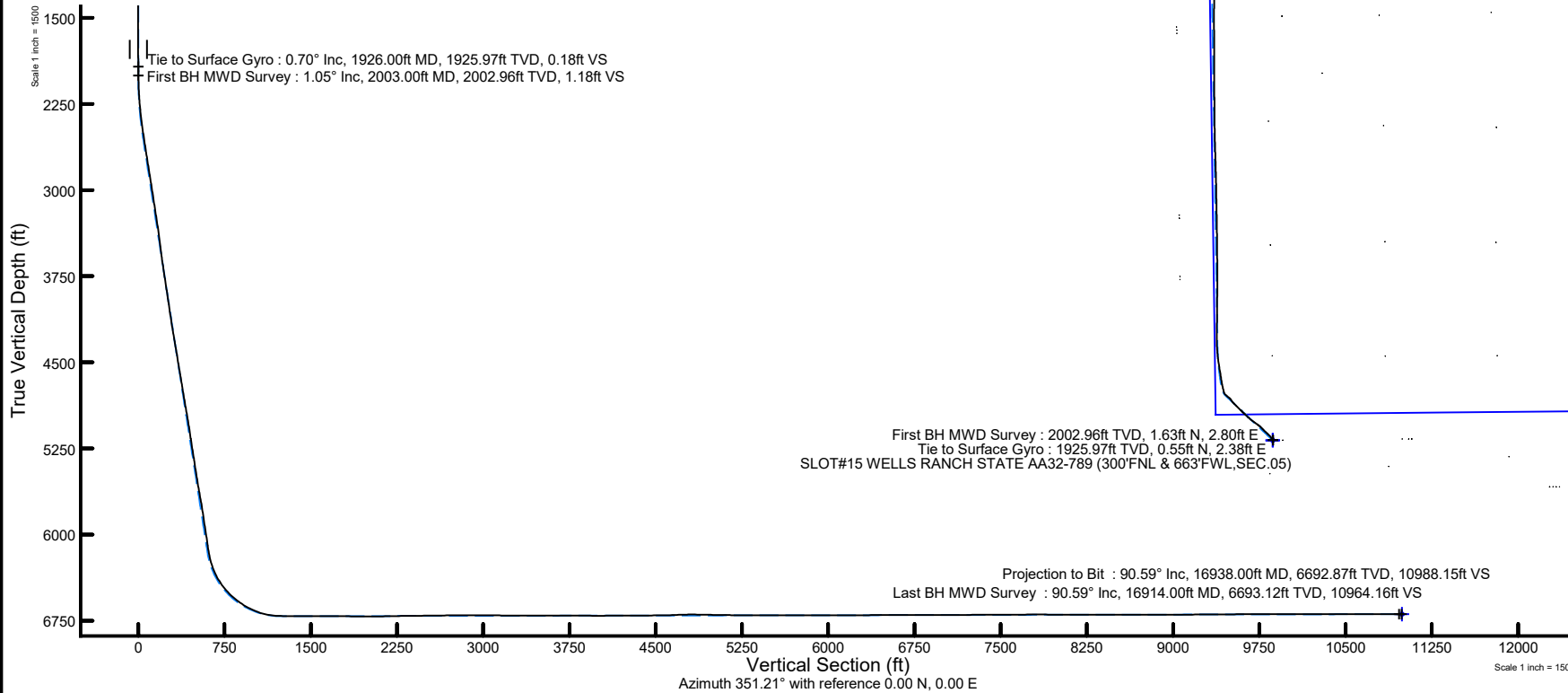
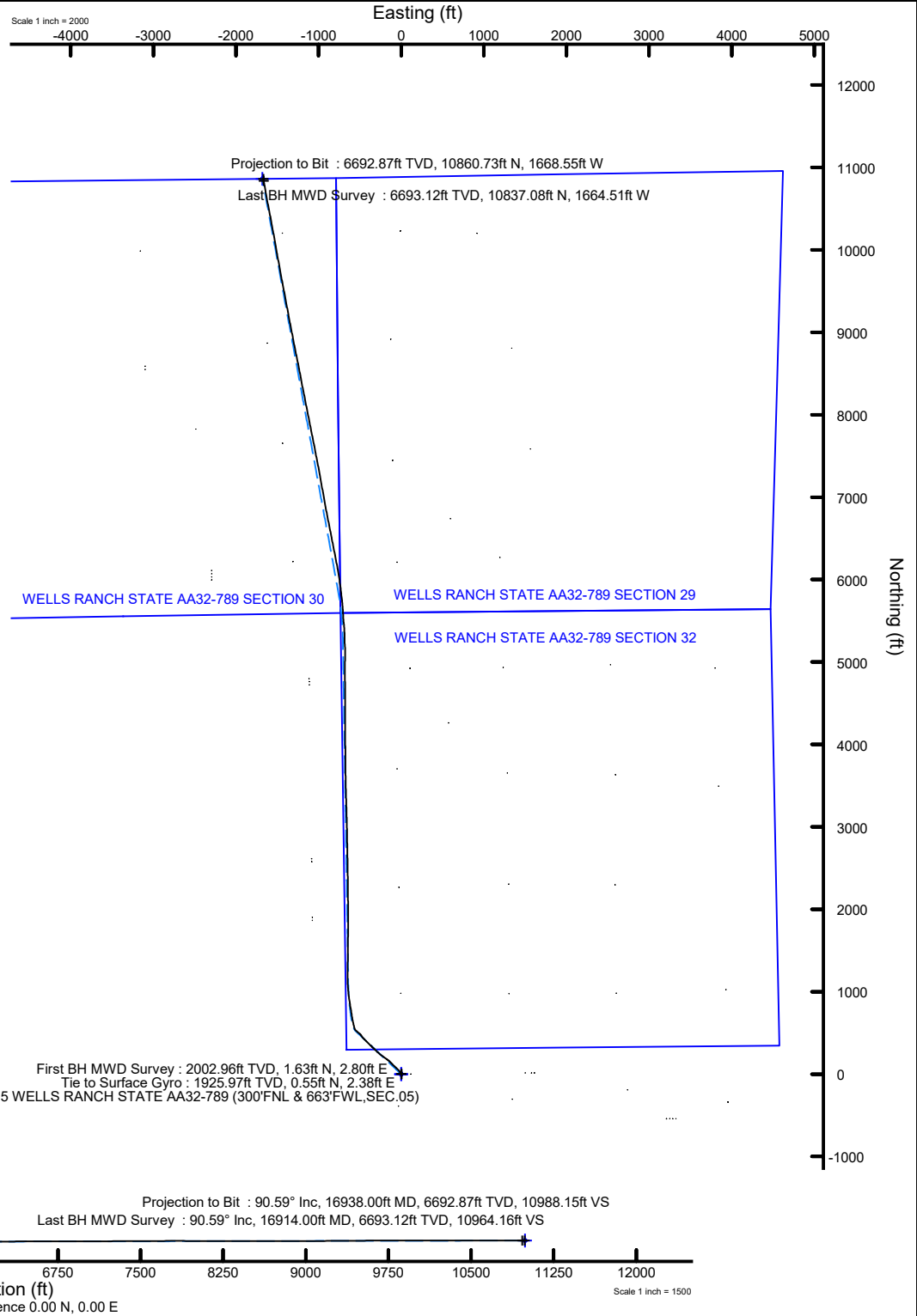
NOBLE ENERGY, INC

Location: COLORADO Slot: SLOT#15 WELLS RANCH STATE AA32-789 (300'FNL & 663'FWL, SEC.05)
 Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: WELLS RANCH STATE AA32-789
 Facility: SEC.05-T05N-R63W Wellbore: WELLS RANCH STATE AA32-789 AWB

Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude		
SEC.05-T05N-R63W	3287261.420	1402254.910	40°26'1.7738"N	104°28'4.6884"W		
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOT#15 WELLS RANCH STATE AA32-789 (300'FNL & 663'FWL, SEC.05)	388.05	34.18	3287315.598	1402942.945	40°26'5.6040"N	104°28'4.1880"W
RIG (307) (RKB) to Ground level (At Slot: SLOT#15 WELLS RANCH STATE AA32-789 (300'FNL & 663'FWL, SEC.05))						4702R
Mean Sea Level to Ground level (At Slot: SLOT#15 WELLS RANCH STATE AA32-789 (300'FNL & 663'FWL, SEC.05))						0R
RIG (307) (RKB) to Mean Sea Level						4702R

Plot reference wellpath is WELLS RANCH STATE AA32-789 AWP	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (601), US feet
True vertical depths are referenced to RIG (307) (RKB)	North Reference: Grid north
Reference wellpath measured depths are referenced to RIG (307) (RKB)	Scale: True distance
RIG (307) (RKB) to Mean Sea Level: 4702 feet	Coordinates are in feet referenced to Slot
Mean Sea Level to Ground level (At Slot: SLOT#15 WELLS RANCH STATE AA32-789 (300'FNL & 663'FWL, SEC.05)): 0 feet	Depths are in feet
Offset wellpath MDs are referenced to each path's default MD datum	Created by: manajohj on 2020-01-07, Database: WA_NOBLE



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	WELLS RANCH STATE AA32-789
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.05-T05N-R63W	Wellbore	WELLS RANCH STATE AA32-789 AWB
Slot	SLOT#15 WELLS RANCH STATE AA32-789 (300'FNL & 663'FWL,SEC.05)		

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	0.999962	Report Generated	1/7/2020 at 2:11:17 PM
Convergence at slot	0.67° 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	388.05	34.18	3287315.60	1402942.95	40°26'5.6040"N	104°28'4.1880"W
Facility Reference Pt			3287281.42	1402554.91	40°26'1.7736"N	104°28'4.6884"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	4702.00ft
Horizontal Reference Pt	Slot	RIG (30') (RKB) to Mean Sea Level	4702.00ft
Vertical Reference Pt	RIG (30') (RKB)	RIG (30') (RKB) to Ground Level at Slot (SLOT#15 WELLS RANCH STATE AA32-789 (300'FNL & 663'FWL,SEC.05))	4702.00ft
MD Reference Pt	RIG (30') (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	351.21°

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	WELLS RANCH STATE AA32-789
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.05-T05N-R63W	Wellbore	WELLS RANCH STATE AA32-789 AWB
Slot	SLOT#15 WELLS RANCH STATE AA32-789 (300'FNL & 663'FWL,SEC.05)		

WELLPATH DATA (179 stations)														
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	TVDSS (ft)	Vert Sect (ft)	North (ft)	East (ft)	Latitude	Longitude	DLS (°/100ft)	Tooface (°)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
0.00	0.000	86.550	0.00	-4702.00	0.00	0.00	0.00	40°26'5.6040"N	104°28'4.1880"W	0.00	0.00	0.00	0.00	
81.00	0.070	86.550	81.00	-4621.00	0.00	0.00	0.05	40°26'5.6040"N	104°28'4.1874"W	0.09	-52.23	0.09	0.00	
175.00	0.180	52.220	175.00	-4527.00	0.06	0.10	0.22	40°26'5.6049"N	104°28'4.1851"W	0.14	95.99	0.12	-36.52	
266.00	0.180	64.190	266.00	-4436.00	0.17	0.25	0.47	40°26'5.6064"N	104°28'4.1819"W	0.04	-173.88	0.00	13.15	
361.00	0.310	253.860	361.00	-4341.00	0.18	0.24	0.35	40°26'5.6063"N	104°28'4.1834"W	0.51	-72.25	0.14	-179.29	
456.00	0.530	215.460	456.00	-4246.00	-0.16	-0.19	-0.15	40°26'5.6021"N	104°28'4.1900"W	0.36	-142.24	0.23	-40.42	
550.00	0.340	145.870	549.99	-4152.01	-0.73	-0.77	-0.24	40°26'5.5969"N	104°28'4.1913"W	0.55	4.64	-0.20	-74.03	
647.00	0.590	147.840	646.99	-4055.01	-1.45	-1.44	0.18	40°26'5.5898"N	104°28'4.1859"W	0.26	-178.92	0.26	2.03	
740.00	0.020	115.050	739.99	-3962.01	-1.89	-1.85	0.45	40°26'5.5857"N	104°28'4.1824"W	0.62	-21.14	-0.61	-35.26	
834.00	0.550	94.660	833.99	-3868.01	-2.01	-1.89	0.92	40°26'5.5852"N	104°28'4.1764"W	0.57	-133.91	0.56	-21.69	
929.00	0.420	31.390	928.99	-3773.01	-1.85	-1.63	1.55	40°26'5.5877"N	104°28'4.1682"W	0.55	159.88	-0.14	-66.60	
1026.00	0.220	150.230	1025.98	-3676.02	-1.75	-1.49	1.83	40°26'5.5891"N	104°28'4.1646"W	0.58	-175.31	-0.21	122.52	
1119.00	0.370	337.710	1118.98	-3583.02	-1.63	-1.37	1.80	40°26'5.5903"N	104°28'4.1649"W	0.63	124.77	0.16	-185.51	
1213.00	0.410	54.640	1212.98	-3489.02	-1.18	-0.89	1.96	40°26'5.5950"N	104°28'4.1627"W	0.52	-167.72	0.04	81.84	
1308.00	0.300	50.020	1307.98	-3394.02	-0.90	-0.53	2.43	40°26'5.5984"N	104°28'4.1566"W	0.12	91.03	-0.12	-4.86	
1403.00	0.300	52.080	1402.98	-3299.02	-0.65	-0.22	2.82	40°26'5.6015"N	104°28'4.1516"W	0.01	115.13	0.00	2.17	
1497.00	0.450	130.080	1496.98	-3205.02	-0.81	-0.31	3.29	40°26'5.6006"N	104°28'4.1454"W	0.52	161.26	0.16	82.98	
1592.00	0.150	216.800	1591.98	-3110.02	-1.18	-0.65	3.51	40°26'5.5972"N	104°28'4.1428"W	0.49	75.08	-0.32	91.28	
1687.00	0.720	280.270	1686.97	-3015.03	-1.07	-0.64	2.84	40°26'5.5973"N	104°28'4.1513"W	0.70	168.35	0.60	66.81	
1782.00	0.150	12.850	1781.97	-2920.03	-0.76	-0.41	2.28	40°26'5.5997"N	104°28'4.1585"W	0.78	-17.67	-0.60	97.45	
1876.00	0.430	1.260	1875.97	-2826.03	-0.30	0.06	2.32	40°26'5.6043"N	104°28'4.1580"W	0.30	22.27	0.30	-12.33	
1926.00	0.700	10.070	1925.97	-2776.03	0.18	0.55	2.38	40°26'5.6091"N	104°28'4.1572"W	0.57	48.16	0.54	17.62	Tie to Surface Gyro
2003.00	1.050	28.450	2002.96	-2699.04	1.18	1.63	2.80	40°26'5.6198"N	104°28'4.1516"W	0.58	-81.32	0.45	23.87	First BH MWD Survey
2098.00	2.220	335.000	2097.92	-2604.08	3.64	4.06	2.43	40°26'5.6439"N	104°28'4.1559"W	1.90	-24.76	1.23	-56.26	
2193.00	4.260	322.840	2192.77	-2509.23	8.52	8.54	-0.48	40°26'5.6885"N	104°28'4.1929"W	2.25	-10.53	2.15	-12.80	
2287.00	6.140	319.590	2286.38	-2415.62	15.87	15.16	-5.84	40°26'5.7544"N	104°28'4.2613"W	2.02	11.48	2.00	-3.46	
2382.00	7.780	322.040	2380.67	-2321.33	25.81	24.09	-13.09	40°26'5.8436"N	104°28'4.3537"W	1.75	2.69	1.73	2.58	
2477.00	9.590	322.550	2474.58	-2227.42	38.37	35.45	-21.86	40°26'5.9568"N	104°28'4.4654"W	1.91	-51.33	1.91	0.54	
2666.00	11.260	312.830	2660.47	-2041.53	66.66	60.49	-44.97	40°26'6.2069"N	104°28'4.7604"W	1.28	31.30	0.88	-5.14	
2761.00	11.420	313.320	2753.61	-1948.39	81.35	73.25	-58.62	40°26'6.3345"N	104°28'4.9349"W	0.20	-105.42	0.17	0.52	
2855.00	11.340	311.770	2845.76	-1856.24	95.83	85.79	-72.28	40°26'6.4600"N	104°28'5.1097"W	0.34	97.49	-0.09	-1.65	
2950.00	11.260	316.120	2938.93	-1763.07	110.63	98.70	-85.67	40°26'6.5891"N	104°28'5.2810"W	0.90	-94.89	-0.08	4.58	
3045.00	11.220	310.170	3032.11	-1669.89	125.19	111.35	-99.17	40°26'6.7156"N	104°28'5.4536"W	1.22	115.34	-0.04	-6.26	
3139.00	10.670	317.410	3124.40	-1577.60	139.32	123.65	-112.04	40°26'6.8387"N	104°28'5.6182"W	1.57	123.07	-0.59	7.70	
3234.00	10.480	319.050	3217.79	-1484.21	153.95	136.65	-123.66	40°26'6.9685"N	104°28'5.7665"W	0.37	-100.20	-0.20	1.73	
3328.00	10.340	312.900	3310.24	-1391.76	167.80	148.85	-135.44	40°26'7.0904"N	104°28'5.9170"W	1.19	-120.46	-0.15	-6.54	
3423.00	10.140	310.910	3403.73	-1298.27	180.87	160.13	-148.01	40°26'7.2033"N	104°28'6.0778"W	0.43	-143.43	-0.21	-2.09	
3518.00	9.390	307.420	3497.35	-1204.65	192.84	170.32	-160.48	40°26'7.3054"N	104°28'6.2376"W	1.01	-3.63	-0.79	-3.67	
3612.00	11.160	306.840	3589.84	-1112.16	204.88	180.43	-173.85	40°26'7.4068"N	104°28'6.4090"W	1.89	-19.73	1.88	-0.62	
3707.00	12.030	305.350	3682.90	-1019.10	218.35	191.67	-189.29	40°26'7.5197"N	104°28'6.6069"W	0.97	73.30	0.92	-1.57	
3802.00	12.100	306.430	3775.80	-926.20	232.31	203.32	-205.37	40°26'7.6366"N	104°28'6.8131"W	0.25	157.12	0.07	1.14	
3896.00	11.900	306.840	3867.75	-834.25	246.23	214.98	-221.05	40°26'7.7536"N	104°28'7.0142"W	0.23	-90.10	-0.21	0.44	
3991.00	11.900	306.630	3960.71	-741.29	260.21	226.69	-236.75	40°26'7.8712"N	104°28'7.2154"W	0.05	150.46	0.00	-0.22	
4086.00	11.760	307.020	4053.69	-648.31	274.13	238.37	-252.34	40°26'7.9883"N	104°28'7.4153"W	0.17	98.73	-0.15	0.41	
4180.00	11.720	308.410	4145.72	-556.28	288.00	250.07	-267.47	40°26'8.1056"N	104°28'7.6091"W	0.30	82.62	-0.04	1.48	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	WELLS RANCH STATE AA32-789
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.05-T05N-R63W	Wellbore	WELLS RANCH STATE AA32-789 AWB
Slot	SLOT#15 WELLS RANCH STATE AA32-789 (300'FNL & 663'FWL,SEC.05)		

WELLPATH DATA (179 stations)														
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Tooface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
4275.00	11.950	314.530	4238.71	-463.29	302.97	262.96	-282.05	40°26'8.2347"N	104°28'7.7956"W	1.34	-102.34	0.24	6.44	
4369.00	11.930	314.080	4330.68	-371.32	318.52	276.54	-295.96	40°26'8.3705"N	104°28'7.9736"W	0.10	-87.33	-0.02	-0.48	
4464.00	11.940	313.190	4423.62	-278.38	334.09	290.10	-310.18	40°26'8.5063"N	104°28'8.1554"W	0.19	131.38	0.01	-0.94	
4559.00	11.850	313.690	4516.58	-185.42	349.57	303.56	-324.40	40°26'8.6408"N	104°28'8.3372"W	0.14	0.00	-0.09	0.53	
4653.00	11.910	313.690	4608.57	-93.43	364.92	316.93	-338.39	40°26'8.7744"N	104°28'8.5162"W	0.06	-135.18	0.06	0.00	
4748.00	11.840	313.350	4701.54	-0.46	380.39	330.39	-352.57	40°26'8.9091"N	104°28'8.6974"W	0.10	85.48	-0.07	-0.36	
4843.00	11.850	313.930	4794.51	92.51	395.84	343.85	-366.68	40°26'9.0437"N	104°28'8.8779"W	0.13	-24.51	0.01	0.61	
4938.00	11.950	313.710	4887.47	185.47	411.41	357.41	-380.81	40°26'9.1793"N	104°28'9.0586"W	0.12	15.67	0.11	-0.23	
5032.00	12.580	314.520	4979.32	277.32	427.34	371.31	-395.15	40°26'9.3183"N	104°28'9.2419"W	0.69	-177.53	0.67	0.86	
5127.00	10.510	314.030	5072.40	370.40	442.54	384.59	-408.75	40°26'9.4511"N	104°28'9.4159"W	2.18	90.05	-2.18	-0.52	
5221.00	10.520	316.610	5164.82	462.82	456.43	396.79	-420.81	40°26'9.5730"N	104°28'9.5700"W	0.50	27.14	0.01	2.74	
5316.00	10.960	317.790	5258.16	556.16	471.11	409.78	-432.84	40°26'9.7027"N	104°28'9.7235"W	0.52	-97.37	0.46	1.24	
5411.00	10.880	312.970	5351.44	649.44	485.69	422.58	-445.47	40°26'9.8306"N	104°28'9.8849"W	0.96	85.95	-0.08	-5.07	
5506.00	10.970	317.340	5444.72	742.72	500.24	435.34	-458.15	40°26'9.9582"N	104°28'10.0470"W	0.88	158.10	0.09	4.60	
5600.00	10.240	319.000	5537.11	835.11	514.73	448.22	-469.69	40°26'10.0868"N	104°28'10.1943"W	0.84	80.53	-0.78	1.77	
5695.00	11.000	332.990	5630.50	928.50	530.49	462.67	-479.35	40°26'10.2307"N	104°28'10.3171"W	2.82	-81.84	0.80	14.73	
5790.00	11.780	318.560	5723.65	1021.65	547.27	478.02	-489.89	40°26'10.3835"N	104°28'10.4510"W	3.10	-99.06	0.82	-15.19	
5884.00	11.650	305.980	5815.70	1113.70	562.03	490.79	-503.92	40°26'10.5113"N	104°28'10.6306"W	2.72	113.47	-0.14	-13.38	
6074.00	11.060	314.530	6002.00	1300.00	590.16	514.84	-532.44	40°26'10.7523"N	104°28'10.9957"W	0.94	-95.29	-0.31	4.50	
6168.00	11.020	306.960	6094.26	1392.26	603.83	526.57	-546.05	40°26'10.8697"N	104°28'11.1699"W	1.54	80.05	-0.04	-8.05	
6263.00	12.430	326.400	6187.31	1485.31	619.62	540.55	-558.97	40°26'11.0093"N	104°28'11.3349"W	4.39	48.98	1.48	20.46	
6358.00	19.340	346.740	6278.70	1576.70	644.63	564.42	-568.25	40°26'11.2463"N	104°28'11.4513"W	9.24	-1.83	7.27	21.41	
6452.00	27.870	346.160	6364.75	1662.75	682.10	600.97	-577.09	40°26'11.6085"N	104°28'11.5602"W	9.08	13.52	9.07	-0.62	
6547.00	36.450	349.600	6445.11	1743.11	732.53	650.39	-587.52	40°26'12.0979"N	104°28'11.6876"W	9.23	10.43	9.03	3.62	
6642.00	44.670	351.740	6517.23	1815.23	794.24	711.30	-597.43	40°26'12.7009"N	104°28'11.8066"W	8.77	-7.08	8.65	2.25	
6736.00	53.520	350.380	6578.72	1876.72	865.21	781.40	-608.51	40°26'13.3948"N	104°28'11.9394"W	9.48	2.49	9.41	-1.45	
6831.00	60.560	350.730	6630.37	1928.37	944.87	859.98	-621.58	40°26'14.1728"N	104°28'12.0965"W	7.42	12.89	7.41	0.37	
6926.00	69.230	352.840	6670.64	1968.64	1030.80	945.04	-633.80	40°26'15.0147"N	104°28'12.2418"W	9.34	12.75	9.13	2.22	
7021.00	78.600	354.990	6696.94	1994.94	1121.87	1035.71	-643.42	40°26'15.9116"N	104°28'12.3527"W	10.10	20.80	9.86	2.26	
7115.00	87.810	358.470	6708.05	2006.05	1214.66	1128.78	-648.71	40°26'16.8319"N	104°28'12.4071"W	10.46	51.05	9.80	3.70	
7210.00	89.630	0.720	6710.17	2008.17	1308.61	1223.74	-649.38	40°26'17.7703"N	104°28'12.4015"W	3.05	51.68	1.92	2.37	
7305.00	90.120	1.340	6710.38	2008.38	1402.22	1318.73	-647.68	40°26'18.7086"N	104°28'12.3652"W	0.83	-123.59	0.52	0.65	
7399.00	89.290	0.090	6710.86	2008.86	1494.92	1412.72	-646.50	40°26'19.6372"N	104°28'12.3359"W	1.60	51.26	-0.88	-1.33	
7494.00	89.940	0.900	6711.50	2009.50	1588.67	1507.71	-645.68	40°26'20.5757"N	104°28'12.3110"W	1.09	-30.26	0.68	0.85	
7589.00	90.180	0.760	6711.40	2009.40	1682.34	1602.70	-644.31	40°26'21.5142"N	104°28'12.2789"W	0.29	-132.27	0.25	-0.15	
7683.00	89.780	0.320	6711.43	2009.43	1775.09	1696.70	-643.42	40°26'22.4428"N	104°28'12.2534"W	0.63	-120.97	-0.43	-0.47	
7778.00	89.600	0.020	6711.95	2009.95	1868.93	1791.69	-643.14	40°26'23.3814"N	104°28'12.2354"W	0.37	-120.97	-0.19	-0.32	
7873.00	89.570	359.970	6712.64	2010.64	1962.81	1886.69	-643.15	40°26'24.3201"N	104°28'12.2213"W	0.06	33.05	-0.03	-0.05	
7967.00	90.400	0.510	6712.66	2010.66	2055.65	1980.69	-642.75	40°26'25.2488"N	104°28'12.2021"W	1.05	-67.12	0.88	0.57	
8062.00	91.020	359.040	6711.48	2009.48	2149.58	2075.68	-643.13	40°26'26.1875"N	104°28'12.1926"W	1.68	93.94	0.65	-1.55	
8156.00	90.980	359.620	6709.84	2007.84	2242.62	2169.66	-644.23	40°26'27.1162"N	104°28'12.1927"W	0.62	-135.00	-0.04	0.62	
8251.00	90.680	359.320	6708.47	2006.47	2336.63	2264.64	-645.10	40°26'28.0548"N	104°28'12.1898"W	0.45	-70.56	-0.32	-0.32	
8346.00	90.740	359.150	6707.29	2005.29	2430.69	2359.63	-646.37	40°26'28.9935"N	104°28'12.1919"W	0.19	-174.96	0.06	-0.18	
8440.00	90.400	359.120	6706.36	2004.36	2523.79	2453.61	-647.79	40°26'29.9223"N	104°28'12.1962"W	0.36	22.06	-0.36	-0.03	
8535.00	91.140	359.420	6705.08	2003.08	2617.84	2548.59	-649.00	40°26'30.8610"N	104°28'12.1976"W	0.84	-118.99	0.78	0.32	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	WELLS RANCH STATE AA32-789
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.05-T05N-R63W	Wellbore	WELLS RANCH STATE AA32-789 AWB
Slot	SLOT#15 WELLS RANCH STATE AA32-789 (300'FNL & 663'FWL,SEC.05)		

WELLPATH DATA (179 stations)														
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Tooface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
8630.00	90.680	358.590	6703.57	2001.57	2711.95	2643.57	-650.65	40°26'31.7996"N	104°28'12.2046"W	1.00	114.65	-0.48	-0.87	
8724.00	90.400	359.200	6702.68	2000.68	2805.10	2737.54	-652.46	40°26'32.7284"N	104°28'12.2140"W	0.71	-139.14	-0.30	0.65	
8819.00	90.030	358.880	6702.33	2000.33	2899.21	2832.53	-654.06	40°26'33.6671"N	104°28'12.2203"W	0.51	178.71	-0.39	-0.34	
8914.00	89.140	358.900	6703.02	2001.02	2993.36	2927.51	-655.90	40°26'34.6058"N	104°28'12.2298"W	0.94	-13.82	-0.94	0.02	
9008.00	89.750	358.750	6703.93	2001.93	3086.52	3021.48	-657.82	40°26'35.5346"N	104°28'12.2406"W	0.67	-93.30	0.65	-0.16	
9103.00	89.720	358.230	6704.37	2002.37	3180.75	3116.45	-660.33	40°26'36.4732"N	104°28'12.2587"W	0.55	48.62	-0.03	-0.55	
9198.00	90.090	358.650	6704.52	2002.52	3275.00	3211.41	-662.91	40°26'37.4118"N	104°28'12.2779"W	0.59	-123.69	0.39	0.44	
9292.00	89.570	357.870	6704.80	2002.80	3368.29	3305.37	-665.77	40°26'38.3405"N	104°28'12.3007"W	1.00	84.20	-0.55	-0.83	
9387.00	89.630	358.460	6705.47	2003.47	3462.58	3400.32	-668.81	40°26'39.2790"N	104°28'12.3258"W	0.62	-12.80	0.06	0.62	
9482.00	89.850	358.410	6705.90	2003.90	3556.83	3495.28	-671.40	40°26'40.2177"N	104°28'12.3451"W	0.24	75.84	0.23	-0.05	
9576.00	90.120	359.480	6705.92	2003.92	3649.97	3589.26	-673.13	40°26'41.1465"N	104°28'12.3533"W	1.17	-111.62	0.29	1.14	
9671.00	89.910	358.950	6705.90	2003.90	3744.05	3684.25	-674.44	40°26'42.0852"N	104°28'12.3559"W	0.60	93.34	-0.22	-0.56	
9765.00	89.850	359.980	6706.09	2004.09	3837.07	3778.25	-675.31	40°26'43.0141"N	104°28'12.3531"W	1.10	151.26	-0.06	1.10	
9860.00	89.540	0.150	6706.60	2004.60	3930.94	3873.25	-675.21	40°26'43.9527"N	104°28'12.3375"W	0.37	-70.99	-0.33	0.18	
9955.00	90.150	358.380	6706.86	2004.86	4025.00	3968.24	-676.42	40°26'44.8914"N	104°28'12.3390"W	1.97	75.25	0.64	-1.86	
10049.00	90.550	359.900	6706.28	2004.28	4118.09	4062.22	-677.84	40°26'45.8203"N	104°28'12.3431"W	1.67	-146.31	0.43	1.62	
10144.00	90.400	359.800	6705.49	2003.49	4212.01	4157.22	-678.08	40°26'46.7589"N	104°28'12.3320"W	0.19	-113.20	-0.16	-0.11	
10239.00	90.250	359.450	6704.95	2002.95	4305.99	4252.21	-678.71	40°26'47.6976"N	104°28'12.3258"W	0.40	174.29	-0.16	-0.37	
10333.00	90.150	359.460	6704.63	2002.63	4399.01	4346.21	-679.60	40°26'48.6265"N	104°28'12.3232"W	0.11	47.07	-0.11	0.01	
10428.00	90.550	359.890	6704.05	2002.05	4492.98	4441.20	-680.14	40°26'49.5652"N	104°28'12.3159"W	0.62	75.20	0.42	0.45	
10522.00	90.830	0.950	6702.91	2000.91	4585.76	4535.19	-679.45	40°26'50.4938"N	104°28'12.2929"W	1.17	-5.99	0.30	1.13	
10617.00	92.830	0.740	6699.88	1997.88	4679.36	4630.13	-678.05	40°26'51.4317"N	104°28'12.2605"W	2.12	-123.06	2.11	-0.22	
10712.00	90.920	357.810	6696.77	1994.77	4773.36	4725.06	-679.25	40°26'52.3698"N	104°28'12.2618"W	3.68	148.84	-2.01	-3.08	
10807.00	88.770	359.110	6697.03	1995.03	4867.59	4820.01	-681.81	40°26'53.3084"N	104°28'12.2806"W	2.64	0.00	-2.26	1.37	
10899.00	89.110	359.110	6698.73	1996.73	4958.70	4911.99	-683.23	40°26'54.2173"N	104°28'12.2853"W	0.37	89.71	0.37	0.00	
10994.00	89.140	4.360	6700.18	1998.18	5052.06	5006.90	-680.36	40°26'55.1548"N	104°28'12.2338"W	5.53	-89.72	0.03	5.53	
11089.00	89.170	358.930	6701.58	1999.58	5145.44	5101.81	-677.63	40°26'56.0923"N	104°28'12.1843"W	5.72	-80.97	0.03	-5.72	
11183.00	89.600	356.230	6702.59	2000.59	5238.85	5195.72	-681.60	40°26'57.0206"N	104°28'12.2215"W	2.91	91.04	0.46	-2.87	
11278.00	89.540	359.590	6703.31	2001.31	5333.18	5290.64	-685.07	40°26'57.9589"N	104°28'12.2521"W	3.54	-79.37	-0.06	3.54	
11373.00	90.030	356.980	6703.66	2001.66	5427.45	5385.58	-687.91	40°26'58.8974"N	104°28'12.2746"W	2.80	-90.48	0.52	-2.75	
11467.00	90.000	353.410	6703.64	2001.64	5521.21	5479.24	-695.78	40°26'59.8237"N	104°28'12.3623"W	3.80	87.92	-0.03	-3.80	
11562.00	90.150	357.540	6703.51	2001.51	5615.93	5573.92	-703.27	40°27'0.7601"N	104°28'12.4450"W	4.35	-95.13	0.16	4.35	
11656.00	90.000	355.870	6703.39	2001.39	5709.49	5667.76	-708.68	40°27'1.6880"N	104°28'12.5008"W	1.78	-90.61	-0.16	-1.78	
11751.00	89.970	353.050	6703.42	2001.42	5804.33	5762.31	-717.85	40°27'2.6232"N	104°28'12.6052"W	2.97	46.98	-0.03	-2.97	
11845.00	90.250	353.350	6703.24	2001.24	5898.27	5855.65	-728.98	40°27'3.5468"N	104°28'12.7351"W	0.44	-95.44	0.30	0.32	
11940.00	90.150	352.300	6702.90	2000.90	5993.23	5949.90	-740.84	40°27'4.4795"N	104°28'12.8745"W	1.11	-77.77	-0.11	-1.11	
12035.00	90.460	350.870	6702.40	2000.40	6088.23	6043.88	-754.74	40°27'5.4096"N	104°28'13.0402"W	1.54	-110.50	0.33	-1.51	
12130.00	90.000	349.640	6702.02	2000.02	6183.21	6137.50	-770.82	40°27'6.3365"N	104°28'13.2341"W	1.38	-69.44	-0.48	-1.29	
12224.00	90.030	349.560	6701.99	1999.99	6277.17	6229.96	-787.79	40°27'7.2520"N	104°28'13.4397"W	0.09	-76.65	0.03	-0.09	
12319.00	90.310	348.380	6701.71	1999.71	6372.10	6323.20	-805.97	40°27'8.1754"N	104°28'13.6607"W	1.28	101.07	0.29	-1.24	
12413.00	90.220	348.840	6701.28	1999.28	6466.00	6415.35	-824.53	40°27'9.0881"N	104°28'13.8870"W	0.50	157.25	-0.10	0.49	
12508.00	89.910	348.970	6701.17	1999.17	6560.92	6508.57	-842.81	40°27'10.0113"N	104°28'14.1095"W	0.35	-63.44	-0.33	0.14	
12603.00	89.940	348.910	6701.29	1999.29	6655.85	6601.81	-861.04	40°27'10.9346"N	104°28'14.3312"W	0.07	-90.00	0.03	-0.06	
12697.00	89.940	348.740	6701.39	1999.39	6749.77	6694.03	-879.26	40°27'11.8479"N	104°28'14.5530"W	0.18	9.46	0.00	-0.18	
12792.00	90.000	348.750	6701.44	1999.44	6844.68	6787.20	-897.80	40°27'12.7707"N	104°28'14.7788"W	0.06	70.42	0.06	0.01	

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	WELLS RANCH STATE AA32-789
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.05-T05N-R63W	Wellbore	WELLS RANCH STATE AA32-789 AWB
Slot	SLOT#15 WELLS RANCH STATE AA32-789 (300'FNL & 663'FWL,SEC.05)		

WELLPATH DATA (179 stations) † = interpolated, ‡ = extrapolated station														
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Tooface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
12886.00	90.370	349.790	6701.14	1999.14	6938.62	6879.55	-915.30	40°27'13.6852"N	104°28'14.9913"W	1.17	68.20	0.39	1.11	
12981.00	90.590	350.340	6700.34	1998.34	7033.60	6973.13	-931.69	40°27'14.6117"N	104°28'15.1893"W	0.62	-113.32	0.23	0.58	
13076.00	90.120	349.250	6699.75	1997.75	7128.57	7066.62	-948.52	40°27'15.5374"N	104°28'15.3930"W	1.25	65.94	-0.49	-1.15	
13170.00	90.370	349.810	6699.35	1997.35	7222.53	7159.05	-965.60	40°27'16.4527"N	104°28'15.6000"W	0.65	119.36	0.27	0.60	
13265.00	90.280	349.970	6698.81	1996.81	7317.50	7252.58	-982.28	40°27'17.3787"N	104°28'15.8017"W	0.19	-80.54	-0.09	0.17	
13360.00	90.340	349.610	6698.30	1996.30	7412.47	7346.07	-999.11	40°27'18.3044"N	104°28'16.0055"W	0.38	-95.48	0.06	-0.38	
13454.00	90.220	348.920	6697.84	1995.84	7506.39	7438.34	-1017.07	40°27'19.2181"N	104°28'16.2239"W	1.34	87.18	-0.13	-1.33	
13549.00	90.280	349.580	6697.42	1995.42	7601.32	7531.58	-1035.25	40°27'20.1415"N	104°28'16.4450"W	1.29	-82.05	0.06	1.28	
13644.00	90.400	348.720	6696.86	1994.86	7696.26	7624.88	-1053.13	40°27'21.0655"N	104°28'16.6624"W	0.91	178.32	0.13	-0.91	
13833.00	89.720	348.740	6696.66	1994.66	7885.08	7810.23	-1090.07	40°27'22.9012"N	104°28'17.1123"W	0.36	43.45	-0.36	0.01	
13928.00	89.910	348.920	6696.97	1994.97	7979.99	7903.43	-1108.47	40°27'23.8242"N	104°28'17.3364"W	0.28	-67.75	0.20	0.19	
14022.00	90.090	348.480	6696.97	1994.97	8073.90	7995.61	-1126.89	40°27'24.7371"N	104°28'17.5608"W	0.51	108.44	0.19	-0.47	
14117.00	89.910	349.020	6696.97	1994.97	8168.82	8088.78	-1145.42	40°27'25.6598"N	104°28'17.7866"W	0.60	62.45	-0.19	0.57	
14212.00	90.030	349.250	6697.02	1995.02	8263.75	8182.08	-1163.33	40°27'26.5837"N	104°28'18.0042"W	0.27	-96.58	0.13	0.24	
14306.00	89.880	347.950	6697.09	1995.09	8357.65	8274.22	-1181.91	40°27'27.4963"N	104°28'18.2307"W	1.39	83.16	-0.16	-1.38	
14401.00	90.060	349.650	6697.14	1995.14	8452.56	8367.38	-1200.52	40°27'28.4189"N	104°28'18.4575"W	1.59	172.30	0.19	1.58	
14496.00	89.690	349.500	6697.35	1995.35	8547.52	8460.78	-1217.88	40°27'29.3438"N	104°28'18.6680"W	0.39	-85.03	-0.39	0.05	
14590.00	89.750	348.810	6697.81	1995.81	8641.45	8553.10	-1235.56	40°27'30.2580"N	104°28'18.8829"W	0.74	-15.64	0.06	-0.73	
14685.00	90.250	348.670	6697.81	1995.81	8736.37	8646.27	-1254.11	40°27'31.1807"N	104°28'19.1089"W	0.55	-149.86	0.53	-0.15	
14780.00	89.940	348.490	6697.65	1995.65	8831.27	8739.39	-1272.92	40°27'32.1030"N	104°28'19.3383"W	0.38	57.72	-0.33	-0.19	
14874.00	90.180	348.870	6697.55	1995.55	8925.17	8831.56	-1291.37	40°27'33.0158"N	104°28'19.5631"W	0.48	108.92	0.26	0.40	
14969.00	90.060	349.220	6697.35	1995.35	9020.11	8924.83	-1309.43	40°27'33.9395"N	104°28'19.7827"W	0.39	-67.07	-0.13	0.37	
15063.00	90.280	348.700	6697.08	1995.08	9114.03	9017.09	-1327.43	40°27'34.8531"N	104°28'20.0017"W	0.60	71.94	0.23	-0.55	
15158.00	90.430	349.160	6696.49	1994.49	9208.95	9110.32	-1345.67	40°27'35.7764"N	104°28'20.2237"W	0.51	104.32	0.16	0.48	
15253.00	90.310	349.630	6695.87	1993.87	9303.91	9203.69	-1363.15	40°27'36.7011"N	104°28'20.4358"W	0.51	-97.59	-0.13	0.49	
15348.00	90.250	349.180	6695.41	1993.41	9398.86	9297.07	-1380.62	40°27'37.6257"N	104°28'20.6478"W	0.48	45.00	-0.06	-0.47	
15442.00	90.590	349.520	6694.72	1992.72	9492.80	9389.45	-1397.99	40°27'38.5405"N	104°28'20.8587"W	0.51	142.43	0.36	0.36	
15537.00	90.460	349.620	6693.85	1991.85	9587.76	9482.88	-1415.19	40°27'39.4656"N	104°28'21.0671"W	0.17	-133.89	-0.14	0.11	
15632.00	89.450	348.570	6693.92	1991.92	9682.69	9576.16	-1433.16	40°27'40.3894"N	104°28'21.2856"W	1.53	52.76	-1.06	-1.11	
15726.00	90.370	349.780	6694.07	1992.07	9776.63	9668.48	-1450.81	40°27'41.3036"N	104°28'21.5002"W	1.62	174.17	0.98	1.29	
15821.00	89.880	349.830	6693.86	1991.86	9871.60	9761.98	-1467.63	40°27'42.2294"N	104°28'21.7037"W	0.52	-79.16	-0.52	0.05	
15916.00	89.970	349.360	6693.99	1991.99	9966.56	9855.42	-1484.79	40°27'43.1546"N	104°28'21.9116"W	0.50	84.64	0.09	-0.49	
16011.00	90.000	349.680	6694.01	1992.01	10061.52	9948.84	-1502.07	40°27'44.0796"N	104°28'22.1212"W	0.34	81.03	0.03	0.34	
16106.00	90.090	350.250	6693.94	1991.94	10156.50	10042.38	-1518.62	40°27'45.0058"N	104°28'22.3213"W	0.61	-62.70	0.09	0.60	
16201.00	90.250	349.940	6693.66	1991.66	10251.48	10135.97	-1534.96	40°27'45.9324"N	104°28'22.5187"W	0.37	-108.89	0.17	-0.33	
16295.00	90.120	349.560	6693.35	1991.35	10345.45	10228.46	-1551.69	40°27'46.8483"N	104°28'22.7212"W	0.43	-104.62	-0.14	-0.40	
16390.00	90.060	349.330	6693.20	1991.20	10440.41	10321.86	-1569.09	40°27'47.7730"N	104°28'22.9323"W	0.25	75.96	-0.06	-0.24	
16485.00	90.150	349.690	6693.03	1991.03	10535.36	10415.27	-1586.38	40°27'48.6980"N	104°28'23.1421"W	0.39	-112.00	0.09	0.38	
16580.00	89.750	348.700	6693.11	1991.11	10630.30	10508.58	-1604.19	40°27'49.6221"N	104°28'23.3585"W	1.12	76.29	-0.42	-1.04	
16674.00	89.850	349.110	6693.44	1991.44	10724.23	10600.83	-1622.28	40°27'50.5356"N	104°28'23.5787"W	0.45	82.70	0.11	0.44	
16769.00	90.000	350.280	6693.57	1991.57	10819.19	10694.29	-1639.28	40°27'51.4610"N	104°28'23.7845"W	1.24	-76.40	0.16	1.23	
16864.00	90.150	349.660	6693.44	1991.44	10914.17	10787.84	-1655.82	40°27'52.3873"N	104°28'23.9846"W	0.67	56.31	0.16	-0.65	
16914.00	90.590	350.320	6693.12	1991.12	10964.16	10837.08	-1664.51	40°27'52.8748"N	104°28'24.0896"W	1.59	0.00	0.88	1.32	Last BH MWD Survey
16938.00	†	90.590	350.320	6692.87	1990.87	10988.15	-1668.55	40°27'53.1090"N	104°28'24.1383"W	0.00		0.00	0.00	Projection to Bit

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	WELLS RANCH STATE AA32-789
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.05-T05N-R63W	Wellbore	WELLS RANCH STATE AA32-789 AWB
Slot	SLOT#15 WELLS RANCH STATE AA32-789 (300'FNL & 663'FWL,SEC.05)		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
WELLS RANCH STATE AA32-789 SECTION 29	0.00	0.00	0.00	3287315.60	1402942.95	40°26'5.6040"N	104°28'4.1880"W	polygon
2D Polygon: dimensions not calculated								
WELLS RANCH STATE AA32-789 SECTION 30	0.00	0.00	0.00	3287315.60	1402942.95	40°26'5.6040"N	104°28'4.1880"W	polygon
2D Polygon: dimensions not calculated								
WELLS RANCH STATE AA32-789 SECTION 32	0.00	0.00	0.00	3287315.60	1402942.95	40°26'5.6040"N	104°28'4.1880"W	polygon
2D Polygon: dimensions not calculated								
WELLS RANCH STATE AA32-789 BHL REV-1 (0'FNL & 890'FEL,SEC.29)	6693.10	10861.72	-1679.59	3285636.07	1413804.23	40°27'53.1200"N	104°28'24.2810"W	point
WELLS RANCH STATE AA32-789 TPZ REV-1 (400'FSL & 35'FWL,SEC.32)	6711.00	695.03	-633.64	3286681.98	1403637.95	40°26'12.5443"N	104°28'12.2773"W	point
WELLS RANCH STATE AA32-789 TPZ REV-2 (400'FSL & 35'FWL,SEC.32)	6711.00	1155.89	-641.77	3286673.85	1404098.79	40°26'17.0990"N	104°28'12.3132"W	point

WELLPATH COMPOSITION - Ref Wellbore: WELLS RANCH STATE AA32-789 AWB Ref Wellpath: WELLS RANCH STATE AA32-789 AWP					
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
0.00	1926.00	Gyrodata 2015 - GC+DROP+OH	3rd Party Gyrodata Surface Surveys <81'-1926'>	WELLS RANCH STATE AA32-789 AWB	11/8/2019
1926.00	16938.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	BH/ATC 8.5" Hole OWSG+IFR+MSA <2003'-16914'>	WELLS RANCH STATE AA32-789 AWB	11/8/2019

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Well	WELLS RANCH STATE AA32-789
Field	WELD COUNTY (NOBLE NAD 83 GRID)	API/Legal	
Facility	SEC.05-T05N-R63W	Wellbore	WELLS RANCH STATE AA32-789 AWB
Slot	SLOT#15 WELLS RANCH STATE AA32-789 (300'FNL & 663'FWL,SEC.05)		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1926.00	0.700	10.070	1925.97	Tie to Surface Gyro
2003.00	1.050	28.450	2002.96	First BH MWD Survey
16914.00	90.590	350.320	6693.12	Last BH MWD Survey
16938.00	90.590	350.320	6692.87	Projection to Bit