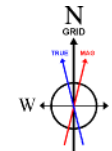


# NOBLE ENERGY, INC

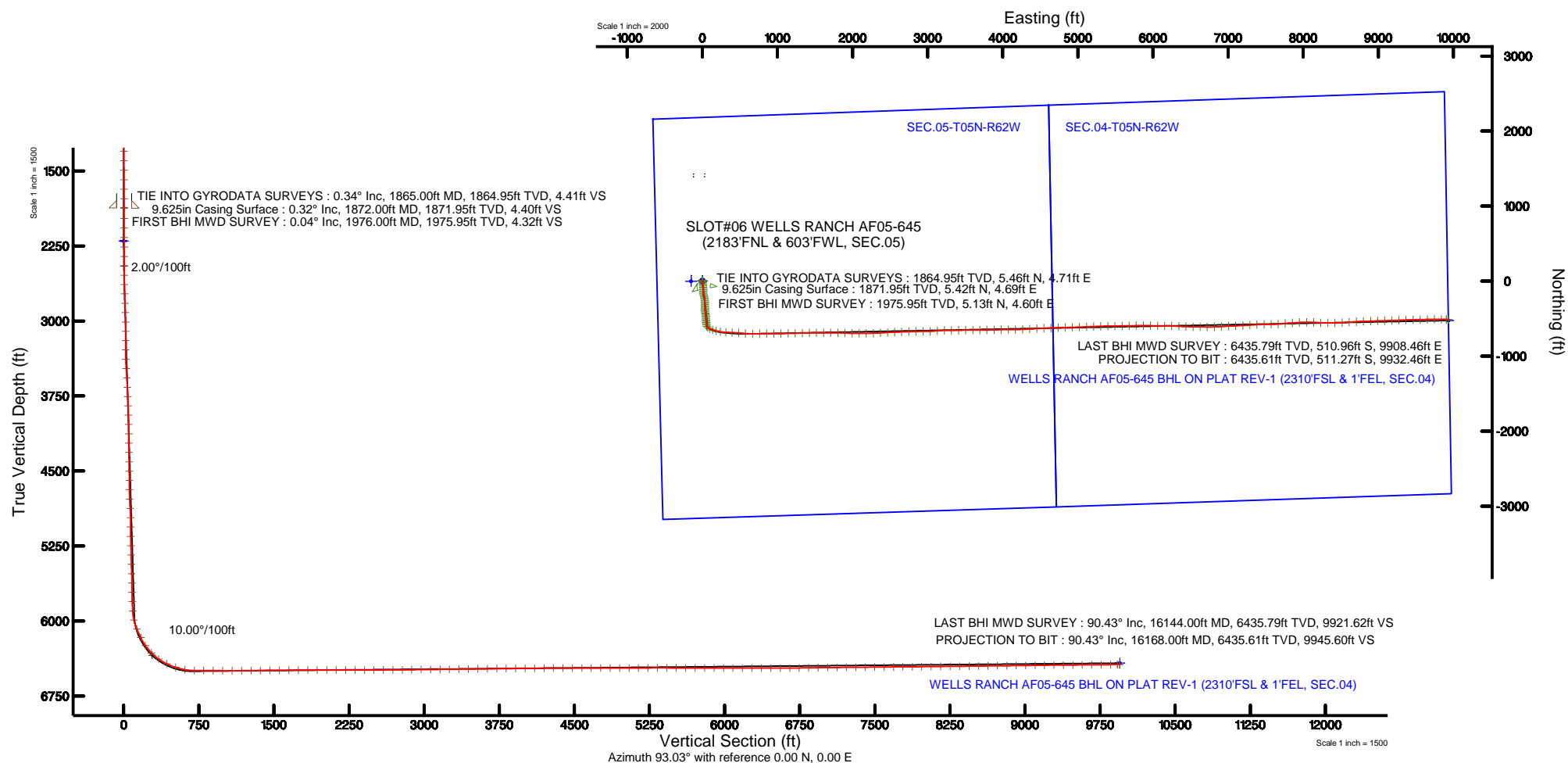
Location: COLORADO Slot: SLOT#06 WELLS RANCH AF05-645 (2183'FNL & 603'FWL, SEC.05)  
Field: WELD COUNTY (NOBLE NAD 83 GRID) Well: WELLS RANCH AF05-645  
Facility: SEC.05-T05N-R62W Wellbore: WELLS RANCH AF05-645 PWB

Plot reference wellpath is WELLS RANCH AF05-645 (REV-B.0) PWB	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
True vertical depths are referenced to H&P 321 (RKB)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to H&P 321 (RKB)	North Reference: Grid north
H&P 321 (RKB) to Mean Sea Level: 4711 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#06 WELLS RANCH AF05-645 (2183'FNL & 603'FWL, SEC.05)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: adamkat on 2016-04-08
	Database: WA_DEN_Server_Defn



BGGM (1945.0 to 2017.0) Dip: 67.05° Field: 52625.9 nT  
Magnetic North is 8.26 degrees East of True North (at 2/9/2016)  
Grid North is 0.74 degrees East of True North  
To correct azimuth from True to Grid subtract 0.74 degrees  
To correct azimuth from Magnetic to Grid add 7.52 degrees

API # 05-123-42140



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#06 WELLS RANCH AF05-645 (2183'FNL & 603'FWL, SEC.05)
Area	COLORADO	Well	WELLS RANCH AF05-645
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH AF05-645 AWB
Facility	SEC.05-T05N-R62W		

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	0.999962	Report Generated	4/8/2016 at 9:26:29 AM
Convergence at slot	0.75° East	Database/Source file	WA_DEN_Denver_Defn/WELLS_RANCH_AF05-645_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	1.94	150.32	3318853.13	1401534.06	40°25'47.856"N	104°21'16.596"W
Facility Reference Pt			3318702.82	1401532.12	40°25'47.856"N	104°21'18.540"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 321 (RKB) to Facility Vertical Datum	4711.00ft
Horizontal Reference Pt	Slot	H&P 321 (RKB) to Mean Sea Level	4711.00ft
Vertical Reference Pt	H&P 321 (RKB)	H&P 321 (RKB) to Mud Line at Slot (SLOT#06 WELLS RANCH AF05-645 (2183'FNL & 603'FWL, SEC.05))	4711.00ft
MD Reference Pt	H&P 321 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	93.03°

## REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#06 WELLS RANCH AF05-645 (2183'FNL & 603'FWL, SEC.05)
Area	COLORADO	Well	WELLS RANCH AF05-645
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH AF05-645 AWB
Facility	SEC.05-T05N-R62W		

## WELLPATH DATA (153 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
1865.00	0.340	203.160	1864.95	4.41	5.46	4.71	40°25'47.909"N	104°21'16.534"W	0.11	TIE INTO GYRODATA SURVEYS
1976.00	0.040	144.560	1975.95	4.32	5.13	4.60	40°25'47.906"N	104°21'16.536"W	0.29	FIRST BHI MWD SURVEY
2071.00	0.060	1.500	2070.95	4.34	5.15	4.62	40°25'47.906"N	104°21'16.535"W	0.10	
2165.00	0.160	82.850	2164.95	4.47	5.21	4.75	40°25'47.907"N	104°21'16.534"W	0.17	
2260.00	2.160	167.500	2259.93	5.08	3.48	5.27	40°25'47.890"N	104°21'16.527"W	2.26	
2355.00	4.250	178.620	2354.78	5.83	-1.78	5.74	40°25'47.838"N	104°21'16.522"W	2.29	
2449.00	6.380	184.470	2448.37	5.96	-10.47	5.42	40°25'47.752"N	104°21'16.528"W	2.34	
2544.00	7.170	184.060	2542.70	5.72	-21.65	4.59	40°25'47.641"N	104°21'16.540"W	0.83	
2639.00	8.890	171.080	2636.78	7.14	-34.82	5.31	40°25'47.511"N	104°21'16.533"W	2.62	
2733.00	9.970	172.560	2729.50	10.12	-50.06	7.49	40°25'47.360"N	104°21'16.508"W	1.18	
2828.00	9.950	172.330	2823.07	13.14	-66.35	9.65	40°25'47.199"N	104°21'16.482"W	0.05	
2923.00	9.930	172.040	2916.65	16.22	-82.60	11.88	40°25'47.038"N	104°21'16.456"W	0.06	
3018.00	9.910	180.200	3010.23	18.19	-98.89	12.98	40°25'46.877"N	104°21'16.445"W	1.48	
3112.00	9.970	179.930	3102.82	19.03	-115.11	12.96	40°25'46.717"N	104°21'16.448"W	0.08	
3207.00	9.960	185.060	3196.39	19.18	-131.52	12.25	40°25'46.555"N	104°21'16.460"W	0.93	
3302.00	9.960	181.690	3289.96	19.08	-147.91	11.28	40°25'46.393"N	104°21'16.475"W	0.61	
3397.00	10.000	174.810	3383.52	20.45	-164.34	11.79	40°25'46.231"N	104°21'16.471"W	1.26	
3491.00	10.210	159.560	3476.08	24.94	-180.28	15.43	40°25'46.073"N	104°21'16.427"W	2.85	
3586.00	10.360	161.670	3569.56	31.40	-196.28	21.06	40°25'45.914"N	104°21'16.356"W	0.43	
3681.00	10.220	167.040	3663.03	36.83	-212.60	25.64	40°25'45.752"N	104°21'16.300"W	1.02	
3775.00	10.110	170.560	3755.56	40.91	-228.87	28.86	40°25'45.591"N	104°21'16.261"W	0.67	
3870.00	10.210	172.150	3849.07	44.30	-245.43	31.38	40°25'45.427"N	104°21'16.231"W	0.31	
3965.00	10.150	175.300	3942.57	47.02	-262.11	33.21	40°25'45.262"N	104°21'16.210"W	0.59	
4059.00	10.070	177.290	4035.11	48.95	-278.58	34.28	40°25'45.099"N	104°21'16.199"W	0.38	
4154.00	9.730	182.400	4128.70	49.87	-294.90	34.34	40°25'44.938"N	104°21'16.201"W	0.99	
4248.00	10.090	182.240	4221.30	50.07	-311.06	33.68	40°25'44.778"N	104°21'16.212"W	0.38	
4343.00	10.080	177.290	4314.83	51.02	-327.68	33.75	40°25'44.614"N	104°21'16.214"W	0.91	
4438.00	9.900	172.960	4408.39	53.28	-344.09	35.15	40°25'44.452"N	104°21'16.199"W	0.81	
4532.00	9.590	180.570	4501.04	55.02	-359.94	36.06	40°25'44.295"N	104°21'16.190"W	1.41	
4627.00	9.960	181.930	4594.66	55.52	-376.06	35.70	40°25'44.136"N	104°21'16.197"W	0.46	
4721.00	10.120	178.180	4687.22	56.38	-392.44	35.69	40°25'43.974"N	104°21'16.200"W	0.72	
4816.00	9.970	168.010	4780.77	59.21	-408.83	37.66	40°25'43.812"N	104°21'16.177"W	1.87	
4910.00	10.150	163.380	4873.33	64.11	-424.73	41.72	40°25'43.654"N	104°21'16.127"W	0.88	
5005.00	8.440	171.860	4967.08	68.27	-439.65	45.11	40°25'43.506"N	104°21'16.086"W	2.30	
5099.00	7.930	187.390	5060.14	69.11	-452.91	45.25	40°25'43.375"N	104°21'16.087"W	2.41	
5194.00	10.340	174.110	5153.93	69.94	-467.90	45.28	40°25'43.227"N	104°21'16.089"W	3.35	
5289.00	10.130	175.890	5247.42	72.30	-484.71	46.75	40°25'43.061"N	104°21'16.072"W	0.40	
5383.00	10.510	176.830	5339.90	74.25	-501.51	47.82	40°25'42.895"N	104°21'16.061"W	0.44	
5478.00	10.060	173.500	5433.38	76.56	-518.41	49.24	40°25'42.727"N	104°21'16.046"W	0.78	
5572.00	9.990	173.190	5525.94	79.31	-534.66	51.14	40°25'42.567"N	104°21'16.024"W	0.09	
5667.00	9.690	178.970	5619.55	81.29	-550.84	52.26	40°25'42.407"N	104°21'16.012"W	1.09	
5762.00	10.440	178.750	5713.08	82.49	-567.44	52.59	40°25'42.243"N	104°21'16.011"W	0.79	
5856.00	10.510	171.060	5805.52	84.91	-584.42	54.11	40°25'42.075"N	104°21'15.994"W	1.49	
5951.00	10.480	165.840	5898.93	89.26	-601.36	57.57	40°25'41.907"N	104°21'15.952"W	1.00	
6045.00	16.280	131.440	5990.48	102.14	-618.41	69.56	40°25'41.737"N	104°21'15.800"W	10.22	

## REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#06 WELLS RANCH AF05-645 (2183'FNL & 603'FWL, SEC.05)
Area	COLORADO	Well	WELLS RANCH AF05-645
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH AF05-645 AWB
Facility	SEC.05-T05N-R62W		

## WELLPATH DATA (153 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
6140.00	24.450	112.260	6079.56	131.22	-634.71	97.82	40°25'41.572"N	104°21'15.437"W	11.00	
6234.00	26.970	109.940	6164.25	169.98	-649.36	135.87	40°25'41.423"N	104°21'14.948"W	2.89	
6329.00	34.910	104.970	6245.68	217.27	-663.75	182.46	40°25'41.274"N	104°21'14.348"W	8.77	
6424.00	44.220	98.630	6318.87	276.99	-675.77	241.63	40°25'41.148"N	104°21'13.585"W	10.67	
6519.00	55.510	92.700	6380.04	349.39	-682.61	313.76	40°25'41.071"N	104°21'12.653"W	12.80	
6614.00	63.930	92.300	6427.89	431.35	-686.18	395.65	40°25'41.026"N	104°21'11.595"W	8.87	
6709.00	71.660	94.580	6463.77	519.22	-691.50	483.37	40°25'40.962"N	104°21'10.462"W	8.43	
6803.00	80.290	94.070	6486.53	610.31	-698.36	574.22	40°25'40.882"N	104°21'09.288"W	9.20	
6898.00	89.480	90.550	6495.00	704.81	-702.15	668.65	40°25'40.833"N	104°21'08.068"W	10.35	
6992.00	89.750	88.990	6495.63	798.65	-701.77	762.64	40°25'40.824"N	104°21'06.853"W	1.68	
7087.00	89.780	89.320	6496.02	893.44	-700.37	857.63	40°25'40.826"N	104°21'05.624"W	0.35	
7182.00	89.820	89.650	6496.35	988.25	-699.52	952.63	40°25'40.822"N	104°21'04.396"W	0.35	
7276.00	89.850	89.410	6496.62	1082.08	-698.75	1046.62	40°25'40.818"N	104°21'03.180"W	0.26	
7371.00	90.580	88.950	6496.26	1176.86	-697.39	1141.61	40°25'40.819"N	104°21'01.952"W	0.91	
7466.00	90.550	88.370	6495.33	1271.58	-695.17	1236.58	40°25'40.829"N	104°21'00.724"W	0.61	
7560.00	90.620	88.710	6494.37	1365.29	-692.77	1330.54	40°25'40.841"N	104°20'59.508"W	0.37	
7655.00	90.650	89.130	6493.31	1460.04	-690.98	1425.52	40°25'40.846"N	104°20'58.280"W	0.44	
7749.00	90.460	89.910	6492.40	1553.86	-690.19	1519.51	40°25'40.842"N	104°20'57.064"W	0.85	
7844.00	90.490	89.660	6491.62	1648.70	-689.84	1614.51	40°25'40.833"N	104°20'55.836"W	0.27	
7939.00	90.280	89.460	6490.98	1743.52	-689.11	1709.50	40°25'40.828"N	104°20'54.608"W	0.31	
8034.00	90.550	90.650	6490.29	1838.39	-689.20	1804.50	40°25'40.815"N	104°20'53.380"W	1.28	
8128.00	90.340	93.540	6489.56	1932.37	-692.63	1898.42	40°25'40.769"N	104°20'52.166"W	3.08	
8223.00	89.970	90.590	6489.30	2027.34	-696.06	1993.35	40°25'40.723"N	104°20'50.939"W	3.13	
8317.00	90.030	89.610	6489.30	2121.22	-696.22	2087.35	40°25'40.710"N	104°20'49.724"W	1.04	
8412.00	89.970	89.990	6489.30	2216.07	-695.89	2182.35	40°25'40.701"N	104°20'48.495"W	0.40	
8507.00	89.970	88.120	6489.35	2310.83	-694.32	2277.33	40°25'40.704"N	104°20'47.267"W	1.97	
8601.00	89.880	87.100	6489.48	2404.41	-690.40	2371.25	40°25'40.731"N	104°20'46.052"W	1.09	
8696.00	90.090	87.170	6489.50	2498.91	-685.65	2466.13	40°25'40.765"N	104°20'44.824"W	0.23	
8790.00	90.460	87.290	6489.05	2592.43	-681.11	2560.02	40°25'40.798"N	104°20'43.610"W	0.41	
8885.00	90.460	88.180	6488.29	2687.02	-677.36	2654.94	40°25'40.823"N	104°20'42.382"W	0.94	
8980.00	90.520	87.700	6487.47	2781.64	-673.94	2749.88	40°25'40.844"N	104°20'41.154"W	0.51	
9074.00	90.490	89.500	6486.65	2875.35	-671.65	2843.84	40°25'40.855"N	104°20'39.938"W	1.92	
9169.00	90.580	89.370	6485.76	2970.16	-670.71	2938.83	40°25'40.852"N	104°20'38.710"W	0.17	
9264.00	90.650	88.180	6484.74	3064.89	-668.68	3033.80	40°25'40.860"N	104°20'37.482"W	1.25	
9359.00	90.740	84.540	6483.59	3159.23	-662.65	3128.59	40°25'40.907"N	104°20'36.255"W	3.83	
9453.00	90.650	88.190	6482.45	3252.57	-656.69	3222.38	40°25'40.954"N	104°20'35.041"W	3.88	
9548.00	90.800	90.130	6481.24	3347.34	-655.30	3317.35	40°25'40.956"N	104°20'33.813"W	2.05	
9643.00	90.890	89.590	6479.84	3442.19	-655.07	3412.34	40°25'40.946"N	104°20'32.585"W	0.58	
9737.00	90.740	89.290	6478.50	3535.99	-654.15	3506.33	40°25'40.943"N	104°20'31.370"W	0.36	
9832.00	90.770	89.490	6477.25	3630.79	-653.14	3601.31	40°25'40.940"N	104°20'30.141"W	0.21	
9927.00	90.800	89.330	6475.95	3725.59	-652.16	3696.30	40°25'40.938"N	104°20'28.913"W	0.17	
10021.00	90.740	89.870	6474.69	3819.42	-651.50	3790.29	40°25'40.932"N	104°20'27.698"W	0.58	
10116.00	90.520	87.860	6473.64	3914.16	-649.62	3885.26	40°25'40.938"N	104°20'26.469"W	2.13	
10210.00	90.370	89.810	6472.91	4007.90	-647.71	3979.23	40°25'40.945"N	104°20'25.254"W	2.08	
10305.00	90.770	89.490	6471.97	4102.73	-647.13	4074.23	40°25'40.939"N	104°20'24.026"W	0.54	

### REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#06 WELLS RANCH AF05-645 (2183'FNL & 603'FWL, SEC.05)
Area	COLORADO	Well	WELLS RANCH AF05-645
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH AF05-645 AWB
Facility	SEC.05-T05N-R62W		

### WELLPATH DATA (153 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
10400.00	90.400	89.640	6471.00	4197.55	-646.41	4169.22	40°25'40.933"N	104°20'22.797"W	0.42	
10494.00	90.090	87.350	6470.60	4291.25	-643.94	4263.18	40°25'40.946"N	104°20'21.582"W	2.46	
10589.00	90.120	86.180	6470.42	4385.68	-638.58	4358.03	40°25'40.986"N	104°20'20.355"W	1.23	
10684.00	90.120	87.160	6470.22	4480.09	-633.06	4452.86	40°25'41.029"N	104°20'19.128"W	1.03	
10779.00	89.970	87.220	6470.15	4574.60	-628.40	4547.75	40°25'41.062"N	104°20'17.900"W	0.17	
10873.00	90.000	87.660	6470.17	4668.15	-624.20	4641.66	40°25'41.092"N	104°20'16.685"W	0.47	
10968.00	90.060	88.260	6470.12	4762.78	-620.82	4736.60	40°25'41.113"N	104°20'15.457"W	0.63	
11063.00	90.030	88.830	6470.05	4857.49	-618.41	4831.56	40°25'41.124"N	104°20'14.229"W	0.60	
11157.00	89.940	88.480	6470.07	4951.21	-616.20	4925.54	40°25'41.134"N	104°20'13.013"W	0.38	
11252.00	90.060	88.020	6470.07	5045.88	-613.30	5020.49	40°25'41.150"N	104°20'11.785"W	0.50	
11347.00	90.280	87.400	6469.79	5140.47	-609.51	5115.42	40°25'41.175"N	104°20'10.557"W	0.69	
11441.00	90.590	87.640	6469.08	5234.04	-605.44	5209.33	40°25'41.203"N	104°20'09.342"W	0.42	
11536.00	90.030	88.560	6468.56	5328.68	-602.29	5304.27	40°25'41.222"N	104°20'08.114"W	1.13	
11631.00	89.780	88.830	6468.72	5423.41	-600.13	5399.25	40°25'41.231"N	104°20'06.886"W	0.39	
11725.00	89.910	89.190	6468.98	5517.18	-598.50	5493.23	40°25'41.235"N	104°20'05.670"W	0.41	
11820.00	89.850	90.000	6469.17	5612.01	-597.83	5588.23	40°25'41.229"N	104°20'04.442"W	0.85	
11915.00	89.820	88.760	6469.45	5706.81	-596.80	5683.22	40°25'41.227"N	104°20'03.213"W	1.31	
12009.00	89.750	87.430	6469.80	5800.46	-593.68	5777.17	40°25'41.246"N	104°20'01.998"W	1.42	
12104.00	89.940	90.670	6470.06	5895.22	-592.10	5872.14	40°25'41.249"N	104°20'00.770"W	3.42	
12199.00	89.850	91.710	6470.23	5990.17	-594.08	5967.12	40°25'41.217"N	104°19'59.542"W	1.10	
12293.00	90.000	89.550	6470.36	6084.08	-595.11	6061.11	40°25'41.195"N	104°19'58.327"W	2.30	
12388.00	89.940	91.010	6470.41	6178.97	-595.57	6156.10	40°25'41.178"N	104°19'57.099"W	1.54	
12482.00	89.940	92.230	6470.50	6272.94	-598.23	6250.06	40°25'41.139"N	104°19'55.885"W	1.30	
12577.00	89.910	93.610	6470.63	6367.94	-603.07	6344.94	40°25'41.079"N	104°19'54.659"W	1.45	
12672.00	89.880	91.240	6470.80	6462.93	-607.09	6439.85	40°25'41.027"N	104°19'53.432"W	2.49	
12766.00	90.460	90.880	6470.52	6556.87	-608.83	6533.83	40°25'40.998"N	104°19'52.217"W	0.73	
12861.00	90.460	90.980	6469.76	6651.80	-610.37	6628.81	40°25'40.970"N	104°19'50.990"W	0.11	
12955.00	90.460	90.400	6469.01	6745.72	-611.50	6722.80	40°25'40.947"N	104°19'49.775"W	0.62	
13050.00	91.140	89.010	6467.68	6840.55	-611.01	6817.79	40°25'40.939"N	104°19'48.546"W	1.63	
13145.00	90.550	85.520	6466.28	6935.04	-606.48	6912.66	40°25'40.972"N	104°19'47.319"W	3.73	
13239.00	90.620	87.590	6465.32	7028.43	-600.83	7006.48	40°25'41.015"N	104°19'46.105"W	2.20	
13334.00	90.620	86.750	6464.29	7122.93	-596.14	7101.35	40°25'41.049"N	104°19'44.877"W	0.88	
13429.00	90.580	88.320	6463.30	7217.49	-592.06	7196.26	40°25'41.077"N	104°19'43.650"W	1.65	
13523.00	90.520	85.750	6462.39	7310.96	-587.20	7290.12	40°25'41.113"N	104°19'42.435"W	2.73	
13617.00	90.520	86.320	6461.54	7404.26	-580.70	7383.89	40°25'41.165"N	104°19'41.222"W	0.61	
13712.00	90.550	89.940	6460.65	7498.89	-577.60	7478.82	40°25'41.183"N	104°19'39.994"W	3.81	
13806.00	90.590	88.800	6459.72	7592.69	-576.56	7572.81	40°25'41.181"N	104°19'38.778"W	1.21	
13901.00	90.580	86.140	6458.75	7687.23	-572.37	7667.70	40°25'41.210"N	104°19'37.551"W	2.80	
13995.00	90.490	84.890	6457.87	7780.42	-565.02	7761.41	40°25'41.271"N	104°19'36.338"W	1.33	
14090.00	90.550	85.980	6457.01	7874.58	-557.46	7856.10	40°25'41.333"N	104°19'35.112"W	1.15	
14184.00	90.520	86.870	6456.13	7967.95	-551.60	7949.91	40°25'41.378"N	104°19'33.898"W	0.95	
14279.00	90.740	89.380	6455.08	8062.59	-548.49	8044.85	40°25'41.397"N	104°19'32.670"W	2.65	
14374.00	90.550	93.440	6454.01	8157.53	-550.83	8139.79	40°25'41.361"N	104°19'31.443"W	4.28	
14468.00	90.520	92.050	6453.14	8251.52	-555.33	8233.68	40°25'41.304"N	104°19'30.230"W	1.48	
14563.00	90.710	90.050	6452.12	8346.45	-557.07	8328.65	40°25'41.275"N	104°19'29.002"W	2.11	

### REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#06 WELLS RANCH AF05-645 (2183'FNL & 603'FWL, SEC.05)
Area	COLORADO	Well	WELLS RANCH AF05-645
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH AF05-645 AWB
Facility	SEC.05-T05N-R62W		

### WELLPATH DATA (153 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
14658.00	90.680	90.940	6450.96	8441.35	-557.89	8423.64	40°25'41.254"N	104°19'27.774"W	0.94	
14753.00	90.710	85.130	6449.81	8535.94	-554.64	8518.54	40°25'41.274"N	104°19'26.547"W	6.12	
14848.00	90.680	85.680	6448.66	8630.10	-547.03	8613.23	40°25'41.337"N	104°19'25.321"W	0.58	
14942.00	90.520	87.150	6447.67	8723.46	-541.15	8707.03	40°25'41.383"N	104°19'24.107"W	1.57	
15037.00	90.580	88.160	6446.76	8818.04	-537.26	8801.95	40°25'41.409"N	104°19'22.879"W	1.06	
15132.00	90.740	87.760	6445.67	8912.66	-533.88	8896.88	40°25'41.429"N	104°19'21.651"W	0.45	
15226.00	90.550	88.380	6444.61	9006.30	-530.71	8990.82	40°25'41.448"N	104°19'20.436"W	0.69	
15321.00	91.360	88.660	6443.03	9101.00	-528.26	9085.78	40°25'41.460"N	104°19'19.208"W	0.90	
15415.00	90.430	87.520	6441.56	9194.63	-525.13	9179.71	40°25'41.479"N	104°19'17.993"W	1.57	
15509.00	90.430	87.940	6440.85	9288.23	-521.41	9273.63	40°25'41.503"N	104°19'16.778"W	0.45	
15604.00	90.460	88.180	6440.12	9382.87	-518.19	9368.58	40°25'41.523"N	104°19'15.550"W	0.25	
15699.00	90.550	88.310	6439.28	9477.53	-515.28	9463.53	40°25'41.539"N	104°19'14.322"W	0.17	
15793.00	90.520	88.470	6438.40	9571.22	-512.64	9557.49	40°25'41.553"N	104°19'13.106"W	0.17	
15888.00	90.430	89.610	6437.61	9665.99	-511.05	9652.47	40°25'41.556"N	104°19'11.878"W	1.20	
15983.00	90.370	89.810	6436.95	9760.83	-510.57	9747.46	40°25'41.548"N	104°19'10.650"W	0.22	
16077.00	90.430	90.090	6436.29	9854.69	-510.48	9841.46	40°25'41.537"N	104°19'09.434"W	0.30	
16144.00	90.430	90.730	6435.79	9921.62	-510.96	9908.46	40°25'41.523"N	104°19'08.568"W	0.96	LAST BHI MWD SURVEY
16168.00	90.430	90.730	6435.61	9945.60	-511.27	9932.46	40°25'41.517"N	104°19'08.258"W	0.00	PROJECTION TO BIT

### HOLE & CASING SECTIONS - Ref Wellbore: WELLS RANCH AF05-645 AWB Ref Wellpath: WELLS RANCH AF05-645 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]
9.625in Casing Surface	30.00	1872.00	1842.00	30.00	1871.95	0.01	0.00	5.42	4.69
8.5in Open Hole	1882.00	16168.00	14286.00	1881.95	6435.61	5.37	4.67	-511.27	9932.46

### TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
EX. WELLS#1	-1.00	1721.87	5312.52	3324165.44	1403255.86	40°26'04.186"N	104°20'07.613"W	circle
SEC.04-T05N-R62W	5.00	-1.94	-150.32	3318702.82	1401532.12	40°25'47.856"N	104°21'18.540"W	polygon
SEC.05-T05N-R62W	5.00	-1.94	-150.32	3318702.82	1401532.12	40°25'47.856"N	104°21'18.540"W	polygon
WELLS RANCH AF05-645 KOP (35' RADII)	2200.00	0.00	0.00	3318853.13	1401534.06	40°25'47.856"N	104°21'16.596"W	circle
WELLS RANCH AF05-645 BHL ON PLAT REV-1 (2310'FSL & 1'FEL, SEC.04)	6421.00	-525.52	9932.79	3328785.52	1401008.56	40°25'41.376"N	104°19'08.256"W	point
WELLS RANCH AF05-645 DRILLING COORDINATOR (35'LEFT/RIGHT & 8'UP/DOWN)	6421.00	-525.52	9932.79	3328785.52	1401008.56	40°25'41.376"N	104°19'08.256"W	polygon

REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY, INC	Slot	SLOT#06 WELLS RANCH AF05-645 (2183'FNL & 603'FWL, SEC.05)
Area	COLORADO	Well	WELLS RANCH AF05-645
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH AF05-645 AWB
Facility	SEC.05-T05N-R62W		

WELLPATH COMPOSITION - Ref Wellbore: WELLS RANCH AF05-645 AWB				Ref Wellpath: WELLS RANCH AF05-645 AWP
Start MD	End MD	Positional Uncertainty Model	Log Name/Comment	Wellb
[ft]	[ft]			
0.00	1865.00	Gyrodata standard - Continuous gyro	GYRODATA SURFACE SURVEYS <83'-1865'>	WELLS RANCH /
1865.00	16144.00	Custom Custom NaviTrak (Short spacing) (AT Curve sf 0.01) (Rockies 0.03Gt model)	BHI MWD NAVI (AT CURVE, SHORT SPACING) 8 1/2" HOLE <1976'- 16144>	WELLS RANCH /
16144.00	16168.00	Blind Drilling (std)	Projection to bit	WELLS RANCH /

## Actual Wellpath Report

WELLS RANCH AF05-645 AWP

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## REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY, INC	Slot	SLOT#06 WELLS RANCH AF05-645 (2183'FNL & 603'FWL, SEC.05)
Area	COLORADO	Well	WELLS RANCH AF05-645
Field	WELD COUNTY (NOBLE NAD 83 GRID)	Wellbore	WELLS RANCH AF05-645 AWB
Facility	SEC.05-T05N-R62W		

## WELLPATH COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1865.00	0.340	203.160	1864.95	TIE INTO GYRODATA SURVEYS
1976.00	0.040	144.560	1975.95	FIRST BHI MWD SURVEY
16144.00	90.430	90.730	6435.79	LAST BHI MWD SURVEY
16168.00	90.430	90.730	6435.61	PROJECTION TO BIT