



| REFERENCE WELLPATH IDENTIFICATION | | | |
|-----------------------------------|---------------------------------|----------|--|
| Operator | NOBLE ENERGY, INC | Slot | SLOT#01 WELLS RANCH BB11-618(797'FSL&235'FWL,SEC.11) |
| Area | COLORADO | Well | WELLS RANCH BB11-618 |
| Field | WELD COUNTY (NOBLE NAD 83 GRID) | Wellbore | WELLS RANCH BB11-618 AWB |
| Facility | SEC.11-T05N-R63W | | |

| REPORT SETUP INFORMATION | | | |
|--------------------------|---|----------------------|-------------------------------------|
| Projection System | NAD83 / Lambert Colorado SP, Northern Zone (501), US feet | Software System | WellArchitect® 5.0 |
| North Reference | Grid | User | Cantryat |
| Scale | 0.999961 | Report Generated | 10/19/2017 at 4:20:16 PM |
| Convergence at slot | 0.71° East | Database/Source file | Denver/WELLS_RANCH_BB11-618_AWP.xml |

| WELLPATH LOCATION | | | | | | |
|-----------------------|-------------------|----------|------------------|-----------------|------------------------|-----------------|
| | Local coordinates | | Grid coordinates | | Geographic coordinates | |
| | North[ft] | East[ft] | Easting[US ft] | Northing[US ft] | Latitude | Longitude |
| Slot Location | 0.00 | 0.00 | 3302802.43 | 1393626.46 | 40°24'31.716"N | 104°24'45.396"W |
| Facility Reference Pt | | | 3302802.43 | 1393626.46 | 40°24'31.716"N | 104°24'45.396"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 Rig (30'KB) (RKB) to Facility Vertical Datum | 4705.00ft |
| Horizontal Reference Pt | Slot | H&P Rig (30'KB) (RKB) to Mean Sea Level | 4705.00ft |
| Vertical Reference Pt | H&P Rig (30'KB) (RKB) | H&P Rig (30'KB) (RKB) to Ground Level at Slot (SLOT#01 WELLS RANCH BB11-618 (797'FSL&235'FWL,SEC.11)) | 4705.00ft |
| MD Reference Pt | H&P Rig (30'KB) (RKB) | Section Origin | N 0.00, E 0.00 ft |
| Field Vertical Reference | Mean Sea Level | Section Azimuth | 91.35° |

REFERENCE WELLPATH IDENTIFICATION

| | | | |
|----------|---------------------------------|----------|--|
| Operator | NOBLE ENERGY, INC | Slot | SLOT#01 WELLS RANCH BB11-618(797'FSL&235'FWL,SEC.11) |
| Area | COLORADO | Well | WELLS RANCH BB11-618 |
| Field | WELD COUNTY (NOBLE NAD 83 GRID) | Wellbore | WELLS RANCH BB11-618 AWB |
| Facility | SEC.11-T05N-R63W | | |

WELLPATH DATA (149 stations)

| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Latitude | Longitude | DLS [°/100ft] | Comments |
|------------|--------------------|----------------|-------------|-------------------|---------------|--------------|----------------|-----------------|------------------|----------------|
| 0.00 | 0.000 | 148.340 | 0.00 | 0.00 | 0.00 | 0.00 | 40°24'31.716"N | 104°24'45.396"W | 0.00 | |
| 84.00 | 0.280 | 148.340 | 84.00 | 0.11 | -0.17 | 0.11 | 40°24'31.714"N | 104°24'45.395"W | 0.33 | |
| 178.00 | 0.290 | 195.040 | 178.00 | 0.18 | -0.60 | 0.17 | 40°24'31.710"N | 104°24'45.394"W | 0.24 | |
| 269.00 | 0.340 | 257.690 | 269.00 | -0.14 | -0.88 | -0.16 | 40°24'31.707"N | 104°24'45.398"W | 0.36 | |
| 364.00 | 0.110 | 349.530 | 364.00 | -0.43 | -0.85 | -0.45 | 40°24'31.708"N | 104°24'45.402"W | 0.38 | |
| 459.00 | 0.340 | 33.610 | 459.00 | -0.30 | -0.53 | -0.31 | 40°24'31.711"N | 104°24'45.400"W | 0.29 | |
| 553.00 | 0.440 | 125.480 | 552.99 | 0.15 | -0.50 | 0.14 | 40°24'31.711"N | 104°24'45.394"W | 0.60 | |
| 648.00 | 0.090 | 301.090 | 647.99 | 0.39 | -0.68 | 0.37 | 40°24'31.709"N | 104°24'45.391"W | 0.56 | |
| 742.00 | 0.160 | 191.200 | 741.99 | 0.30 | -0.77 | 0.28 | 40°24'31.708"N | 104°24'45.392"W | 0.22 | |
| 837.00 | 0.380 | 36.770 | 836.99 | 0.46 | -0.64 | 0.45 | 40°24'31.710"N | 104°24'45.390"W | 0.56 | |
| 931.00 | 0.170 | 9.290 | 930.99 | 0.66 | -0.26 | 0.66 | 40°24'31.713"N | 104°24'45.388"W | 0.26 | |
| 1026.00 | 0.380 | 283.180 | 1025.99 | 0.37 | -0.05 | 0.37 | 40°24'31.715"N | 104°24'45.391"W | 0.43 | |
| 1121.00 | 0.220 | 0.980 | 1120.99 | 0.06 | 0.21 | 0.07 | 40°24'31.718"N | 104°24'45.395"W | 0.42 | |
| 1215.00 | 0.210 | 94.990 | 1214.99 | 0.23 | 0.37 | 0.24 | 40°24'31.720"N | 104°24'45.393"W | 0.33 | |
| 1310.00 | 0.290 | 34.090 | 1309.99 | 0.54 | 0.56 | 0.55 | 40°24'31.721"N | 104°24'45.389"W | 0.28 | |
| 1405.00 | 0.380 | 66.430 | 1404.99 | 0.95 | 0.88 | 0.97 | 40°24'31.725"N | 104°24'45.383"W | 0.22 | |
| 1500.00 | 0.310 | 348.760 | 1499.99 | 1.18 | 1.26 | 1.21 | 40°24'31.728"N | 104°24'45.380"W | 0.46 | |
| 1594.00 | 0.320 | 287.420 | 1593.99 | 0.87 | 1.59 | 0.91 | 40°24'31.732"N | 104°24'45.384"W | 0.34 | |
| 1689.00 | 0.240 | 211.570 | 1688.98 | 0.52 | 1.50 | 0.56 | 40°24'31.731"N | 104°24'45.389"W | 0.37 | |
| 1784.00 | 0.330 | 178.370 | 1783.98 | 0.43 | 1.06 | 0.46 | 40°24'31.726"N | 104°24'45.390"W | 0.19 | |
| 1878.00 | 0.680 | 146.870 | 1877.98 | 0.76 | 0.32 | 0.77 | 40°24'31.719"N | 104°24'45.386"W | 0.46 | |
| 1957.00 | 0.890 | 144.020 | 1956.97 | 1.40 | -0.57 | 1.39 | 40°24'31.710"N | 104°24'45.378"W | 0.27 | Tie to Surface |
| 1978.00 | 0.720 | 122.820 | 1977.97 | 1.61 | -0.78 | 1.59 | 40°24'31.708"N | 104°24'45.376"W | 1.62 | |
| 2073.00 | 1.090 | 108.940 | 2072.96 | 2.98 | -1.39 | 2.95 | 40°24'31.702"N | 104°24'45.358"W | 0.45 | |
| 2167.00 | 0.260 | 70.240 | 2166.95 | 4.03 | -1.61 | 4.00 | 40°24'31.700"N | 104°24'45.345"W | 0.96 | |
| 2262.00 | 0.220 | 335.400 | 2261.95 | 4.16 | -1.37 | 4.12 | 40°24'31.702"N | 104°24'45.343"W | 0.37 | |
| 2356.00 | 0.350 | 323.720 | 2355.95 | 3.90 | -0.98 | 3.88 | 40°24'31.706"N | 104°24'45.346"W | 0.15 | |
| 2451.00 | 2.240 | 236.670 | 2450.92 | 2.20 | -1.76 | 2.16 | 40°24'31.698"N | 104°24'45.368"W | 2.37 | |
| 2545.00 | 4.010 | 229.460 | 2544.78 | -1.76 | -4.91 | -1.88 | 40°24'31.668"N | 104°24'45.421"W | 1.93 | |
| 2640.00 | 4.700 | 220.110 | 2639.51 | -6.67 | -10.04 | -6.91 | 40°24'31.618"N | 104°24'45.487"W | 1.04 | |

| REFERENCE WELLPATH IDENTIFICATION | | | |
|-----------------------------------|---------------------------------|----------|--|
| Operator | NOBLE ENERGY, INC | Slot | SLOT#01 WELLS RANCH BB11-618(797'FSL&235'FWL,SEC.11) |
| Area | COLORADO | Well | WELLS RANCH BB11-618 |
| Field | WELD COUNTY (NOBLE NAD 83 GRID) | Wellbore | WELLS RANCH BB11-618 AWP |
| Facility | SEC.11-T05N-R63W | | |

| WELLPATH DATA (149 stations) | | | | | | | | | | |
|------------------------------|--------------------|----------------|-------------|-------------------|---------------|--------------|----------------|-----------------|------------------|----------|
| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Latitude | Longitude | DLS [°/100ft] | Comments |
| 2735.00 | 7.350 | 239.260 | 2733.98 | -14.26 | -16.13 | -14.64 | 40°24'31.558"N | 104°24'45.588"W | 3.46 | |
| 2829.00 | 10.040 | 250.480 | 2826.90 | -27.01 | -21.94 | -27.54 | 40°24'31.503"N | 104°24'45.755"W | 3.37 | |
| 2924.00 | 9.610 | 251.540 | 2920.51 | -42.21 | -27.22 | -42.86 | 40°24'31.452"N | 104°24'45.954"W | 0.49 | |
| 3019.00 | 9.600 | 248.160 | 3014.18 | -56.95 | -32.68 | -57.74 | 40°24'31.400"N | 104°24'46.147"W | 0.59 | |
| 3113.00 | 9.630 | 250.650 | 3106.86 | -71.51 | -38.20 | -72.43 | 40°24'31.347"N | 104°24'46.338"W | 0.44 | |
| 3207.00 | 9.960 | 263.170 | 3199.50 | -86.92 | -41.77 | -87.92 | 40°24'31.314"N | 104°24'46.539"W | 2.29 | |
| 3302.00 | 10.010 | 273.860 | 3293.07 | -103.30 | -42.19 | -104.32 | 40°24'31.312"N | 104°24'46.751"W | 1.95 | |
| 3397.00 | 10.180 | 291.640 | 3386.62 | -119.42 | -38.54 | -120.36 | 40°24'31.350"N | 104°24'46.958"W | 3.27 | |
| 3491.00 | 10.600 | 292.320 | 3479.08 | -135.29 | -32.19 | -136.08 | 40°24'31.414"N | 104°24'47.160"W | 0.47 | |
| 3586.00 | 11.170 | 285.910 | 3572.37 | -152.35 | -26.35 | -153.02 | 40°24'31.474"N | 104°24'47.378"W | 1.41 | |
| 3680.00 | 11.100 | 272.080 | 3664.62 | -170.22 | -23.53 | -170.82 | 40°24'31.504"N | 104°24'47.608"W | 2.84 | |
| 3775.00 | 11.170 | 262.700 | 3757.84 | -188.46 | -24.36 | -189.09 | 40°24'31.498"N | 104°24'47.844"W | 1.91 | |
| 3869.00 | 11.030 | 255.240 | 3850.08 | -206.10 | -27.81 | -206.81 | 40°24'31.466"N | 104°24'48.074"W | 1.53 | |
| 3964.00 | 10.970 | 256.660 | 3943.34 | -223.58 | -32.21 | -224.40 | 40°24'31.425"N | 104°24'48.302"W | 0.29 | |
| 4058.00 | 11.040 | 255.210 | 4035.61 | -240.87 | -36.57 | -241.80 | 40°24'31.384"N | 104°24'48.527"W | 0.30 | |
| 4153.00 | 10.900 | 254.140 | 4128.87 | -258.19 | -41.35 | -259.24 | 40°24'31.339"N | 104°24'48.753"W | 0.26 | |
| 4248.00 | 11.010 | 256.090 | 4222.14 | -275.52 | -45.99 | -276.68 | 40°24'31.295"N | 104°24'48.980"W | 0.41 | |
| 4342.00 | 10.450 | 256.960 | 4314.50 | -292.44 | -50.07 | -293.70 | 40°24'31.257"N | 104°24'49.200"W | 0.62 | |
| 4437.00 | 9.990 | 252.940 | 4407.99 | -308.60 | -54.43 | -309.97 | 40°24'31.216"N | 104°24'49.411"W | 0.89 | |
| 4531.00 | 10.000 | 250.110 | 4500.57 | -323.95 | -59.60 | -325.44 | 40°24'31.167"N | 104°24'49.612"W | 0.52 | |
| 4626.00 | 10.040 | 244.040 | 4594.12 | -338.99 | -66.03 | -340.64 | 40°24'31.105"N | 104°24'49.810"W | 1.11 | |
| 4721.00 | 9.810 | 244.460 | 4687.70 | -353.57 | -73.14 | -355.39 | 40°24'31.036"N | 104°24'50.001"W | 0.25 | |
| 4815.00 | 9.910 | 247.780 | 4780.31 | -368.13 | -79.65 | -370.10 | 40°24'30.974"N | 104°24'50.193"W | 0.61 | |
| 4910.00 | 10.050 | 242.680 | 4873.87 | -382.89 | -86.55 | -385.04 | 40°24'30.907"N | 104°24'50.387"W | 0.94 | |
| 5005.00 | 9.820 | 238.310 | 4967.45 | -396.96 | -94.61 | -399.29 | 40°24'30.830"N | 104°24'50.572"W | 0.83 | |
| 5099.00 | 9.850 | 239.940 | 5060.07 | -410.54 | -102.85 | -413.07 | 40°24'30.750"N | 104°24'50.752"W | 0.30 | |
| 5194.00 | 10.390 | 241.100 | 5153.59 | -424.88 | -111.06 | -427.61 | 40°24'30.670"N | 104°24'50.941"W | 0.61 | |
| 5289.00 | 10.380 | 244.190 | 5247.04 | -439.89 | -118.93 | -442.81 | 40°24'30.595"N | 104°24'51.139"W | 0.59 | |
| 5383.00 | 10.430 | 251.610 | 5339.50 | -455.43 | -125.30 | -458.51 | 40°24'30.533"N | 104°24'51.343"W | 1.43 | |
| 5478.00 | 10.440 | 257.200 | 5432.93 | -471.88 | -129.92 | -475.06 | 40°24'30.490"N | 104°24'51.557"W | 1.07 | |

| REFERENCE WELLPATH IDENTIFICATION | | | |
|-----------------------------------|---------------------------------|----------|--|
| Operator | NOBLE ENERGY, INC | Slot | SLOT#01 WELLS RANCH BB11-618(797'FSL&235'FWL,SEC.11) |
| Area | COLORADO | Well | WELLS RANCH BB11-618 |
| Field | WELD COUNTY (NOBLE NAD 83 GRID) | Wellbore | WELLS RANCH BB11-618 AWB |
| Facility | SEC.11-T05N-R63W | | |

| WELLPATH DATA (149 stations) | | | | | | | | | | |
|------------------------------|--------------------|----------------|-------------|-------------------|---------------|--------------|----------------|-----------------|------------------|----------|
| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Latitude | Longitude | DLS [°/100ft] | Comments |
| 5573.00 | 10.580 | 262.870 | 5526.33 | -488.85 | -132.91 | -492.11 | 40°24'30.462"N | 104°24'51.778"W | 1.10 | |
| 5667.00 | 10.540 | 264.320 | 5618.74 | -505.92 | -134.83 | -509.23 | 40°24'30.445"N | 104°24'52.000"W | 0.29 | |
| 5762.00 | 9.030 | 261.670 | 5712.36 | -521.89 | -136.77 | -525.25 | 40°24'30.428"N | 104°24'52.207"W | 1.66 | |
| 5856.00 | 4.560 | 196.290 | 5805.79 | -530.14 | -141.43 | -533.61 | 40°24'30.383"N | 104°24'52.316"W | 8.77 | |
| 5951.00 | 4.720 | 117.750 | 5900.56 | -527.61 | -146.88 | -531.21 | 40°24'30.329"N | 104°24'52.286"W | 6.18 | |
| 6045.00 | 11.950 | 98.800 | 5993.52 | -514.48 | -150.18 | -518.15 | 40°24'30.295"N | 104°24'52.117"W | 8.13 | |
| 6139.00 | 20.520 | 90.030 | 6083.70 | -488.30 | -151.68 | -492.01 | 40°24'30.277"N | 104°24'51.780"W | 9.46 | |
| 6234.00 | 28.950 | 85.700 | 6169.91 | -448.70 | -149.96 | -452.35 | 40°24'30.289"N | 104°24'51.267"W | 9.07 | |
| 6328.00 | 37.830 | 90.300 | 6248.33 | -397.13 | -148.40 | -400.73 | 40°24'30.298"N | 104°24'50.599"W | 9.82 | |
| 6423.00 | 48.330 | 94.560 | 6317.64 | -332.38 | -151.38 | -336.03 | 40°24'30.261"N | 104°24'49.764"W | 11.46 | |
| 6518.00 | 56.680 | 94.570 | 6375.41 | -257.19 | -157.38 | -260.97 | 40°24'30.193"N | 104°24'48.794"W | 8.79 | |
| 6612.00 | 65.990 | 89.260 | 6420.48 | -174.85 | -159.96 | -178.66 | 40°24'30.157"N | 104°24'47.731"W | 11.07 | |
| 6707.00 | 74.870 | 86.280 | 6452.27 | -85.62 | -156.41 | -89.32 | 40°24'30.181"N | 104°24'46.575"W | 9.80 | |
| 6802.00 | 82.900 | 87.860 | 6470.57 | 7.26 | -151.67 | 3.70 | 40°24'30.217"N | 104°24'45.372"W | 8.61 | |
| 6896.00 | 89.200 | 88.150 | 6477.05 | 100.83 | -148.41 | 97.37 | 40°24'30.238"N | 104°24'44.161"W | 6.71 | |
| 6991.00 | 90.340 | 89.540 | 6477.43 | 195.74 | -146.49 | 192.34 | 40°24'30.245"N | 104°24'42.933"W | 1.89 | |
| 7086.00 | 90.550 | 90.250 | 6476.69 | 290.70 | -146.32 | 287.34 | 40°24'30.235"N | 104°24'41.705"W | 0.78 | |
| 7180.00 | 90.400 | 91.910 | 6475.91 | 384.70 | -148.09 | 381.32 | 40°24'30.206"N | 104°24'40.491"W | 1.77 | |
| 7275.00 | 90.370 | 92.720 | 6475.27 | 479.68 | -151.93 | 476.24 | 40°24'30.157"N | 104°24'39.264"W | 0.85 | |
| 7369.00 | 90.490 | 94.600 | 6474.57 | 573.60 | -157.93 | 570.04 | 40°24'30.086"N | 104°24'38.053"W | 2.00 | |
| 7464.00 | 90.220 | 94.050 | 6473.98 | 668.47 | -165.09 | 664.77 | 40°24'30.004"N | 104°24'36.829"W | 0.64 | |
| 7559.00 | 90.180 | 91.860 | 6473.65 | 763.42 | -169.99 | 759.63 | 40°24'29.944"N | 104°24'35.604"W | 2.31 | |
| 7653.00 | 90.060 | 89.640 | 6473.45 | 857.41 | -171.22 | 853.62 | 40°24'29.921"N | 104°24'34.389"W | 2.37 | |
| 7748.00 | 90.060 | 88.960 | 6473.35 | 952.35 | -170.06 | 948.61 | 40°24'29.921"N | 104°24'33.161"W | 0.72 | |
| 7842.00 | 89.910 | 90.880 | 6473.37 | 1046.32 | -169.93 | 1042.61 | 40°24'29.910"N | 104°24'31.946"W | 2.05 | |
| 7936.00 | 89.570 | 91.450 | 6473.80 | 1140.31 | -171.84 | 1136.59 | 40°24'29.880"N | 104°24'30.732"W | 0.71 | |
| 8031.00 | 89.480 | 91.510 | 6474.59 | 1235.31 | -174.29 | 1231.55 | 40°24'29.844"N | 104°24'29.505"W | 0.11 | |
| 8122.00 | 89.350 | 90.750 | 6475.52 | 1326.30 | -176.09 | 1322.53 | 40°24'29.815"N | 104°24'28.329"W | 0.85 | |
| 8217.00 | 89.420 | 89.860 | 6476.54 | 1421.28 | -176.59 | 1417.52 | 40°24'29.799"N | 104°24'27.101"W | 0.94 | |
| 8256.00 | 89.380 | 89.930 | 6476.95 | 1460.27 | -176.52 | 1456.52 | 40°24'29.795"N | 104°24'26.597"W | 0.21 | |

| REFERENCE WELLPATH IDENTIFICATION | | | |
|-----------------------------------|---------------------------------|----------|--|
| Operator | NOBLE ENERGY, INC | Slot | SLOT#01 WELLS RANCH BB11-618(797'FSL&235'FWL,SEC.11) |
| Area | COLORADO | Well | WELLS RANCH BB11-618 |
| Field | WELD COUNTY (NOBLE NAD 83 GRID) | Wellbore | WELLS RANCH BB11-618 AWB |
| Facility | SEC.11-T05N-R63W | | |

| WELLPATH DATA (149 stations) | | | | | | | | | | |
|------------------------------|-----------------|-------------|----------|----------------|------------|-----------|----------------|-----------------|---------------|----------|
| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Latitude | Longitude | DLS [°/100ft] | Comments |
| 8350.00 | 89.290 | 89.330 | 6478.04 | 1554.22 | -175.92 | 1550.51 | 40°24'29.789"N | 104°24'25.382"W | 0.65 | |
| 8445.00 | 89.420 | 88.710 | 6479.11 | 1649.13 | -174.29 | 1645.49 | 40°24'29.794"N | 104°24'24.154"W | 0.67 | |
| 8540.00 | 89.780 | 88.310 | 6479.77 | 1744.01 | -171.82 | 1740.45 | 40°24'29.807"N | 104°24'22.926"W | 0.57 | |
| 8635.00 | 89.660 | 88.720 | 6480.23 | 1838.90 | -169.36 | 1835.42 | 40°24'29.820"N | 104°24'21.698"W | 0.45 | |
| 8729.00 | 89.690 | 88.950 | 6480.77 | 1932.80 | -167.45 | 1929.40 | 40°24'29.827"N | 104°24'20.483"W | 0.25 | |
| 8824.00 | 89.630 | 88.280 | 6481.33 | 2027.69 | -165.15 | 2024.37 | 40°24'29.838"N | 104°24'19.255"W | 0.71 | |
| 8919.00 | 89.750 | 91.320 | 6481.84 | 2122.65 | -164.82 | 2119.36 | 40°24'29.830"N | 104°24'18.027"W | 3.20 | |
| 9013.00 | 89.850 | 92.310 | 6482.17 | 2216.64 | -167.80 | 2213.31 | 40°24'29.789"N | 104°24'16.813"W | 1.06 | |
| 9108.00 | 89.570 | 91.920 | 6482.65 | 2311.63 | -171.30 | 2308.24 | 40°24'29.743"N | 104°24'15.587"W | 0.51 | |
| 9202.00 | 89.690 | 89.680 | 6483.26 | 2405.62 | -172.62 | 2402.22 | 40°24'29.718"N | 104°24'14.372"W | 2.39 | |
| 9297.00 | 89.720 | 88.290 | 6483.75 | 2500.54 | -170.93 | 2497.21 | 40°24'29.723"N | 104°24'13.144"W | 1.46 | |
| 9391.00 | 89.630 | 87.690 | 6484.28 | 2594.37 | -167.64 | 2591.15 | 40°24'29.744"N | 104°24'11.929"W | 0.65 | |
| 9486.00 | 89.880 | 91.500 | 6484.69 | 2689.31 | -166.96 | 2686.13 | 40°24'29.739"N | 104°24'10.702"W | 4.02 | |
| 9581.00 | 89.820 | 93.390 | 6484.94 | 2784.29 | -171.02 | 2781.03 | 40°24'29.688"N | 104°24'09.476"W | 1.99 | |
| 9675.00 | 89.480 | 92.860 | 6485.51 | 2878.24 | -176.14 | 2874.89 | 40°24'29.626"N | 104°24'08.263"W | 0.67 | |
| 9770.00 | 89.420 | 93.580 | 6486.42 | 2973.18 | -181.48 | 2969.74 | 40°24'29.561"N | 104°24'07.038"W | 0.76 | |
| 9864.00 | 89.660 | 91.290 | 6487.18 | 3067.16 | -185.47 | 3063.64 | 40°24'29.510"N | 104°24'05.825"W | 2.45 | |
| 9959.00 | 89.820 | 91.230 | 6487.61 | 3162.16 | -187.56 | 3158.62 | 40°24'29.478"N | 104°24'04.598"W | 0.18 | |
| 10054.00 | 89.690 | 94.600 | 6488.02 | 3257.11 | -192.39 | 3253.48 | 40°24'29.419"N | 104°24'03.372"W | 3.55 | |
| 10149.00 | 89.780 | 94.790 | 6488.46 | 3351.94 | -200.17 | 3348.16 | 40°24'29.330"N | 104°24'02.150"W | 0.22 | |
| 10243.00 | 89.720 | 91.680 | 6488.87 | 3445.88 | -205.47 | 3442.00 | 40°24'29.266"N | 104°24'00.937"W | 3.31 | |
| 10338.00 | 89.850 | 89.850 | 6489.22 | 3540.87 | -206.74 | 3536.99 | 40°24'29.242"N | 104°23'59.710"W | 1.93 | |
| 10432.00 | 89.970 | 89.470 | 6489.37 | 3634.83 | -206.18 | 3630.98 | 40°24'29.236"N | 104°23'58.495"W | 0.42 | |
| 10527.00 | 89.690 | 86.610 | 6489.65 | 3729.66 | -202.93 | 3725.92 | 40°24'29.257"N | 104°23'57.267"W | 3.02 | |
| 10622.00 | 89.780 | 85.980 | 6490.09 | 3824.29 | -196.79 | 3820.72 | 40°24'29.306"N | 104°23'56.041"W | 0.67 | |
| 10716.00 | 89.750 | 85.690 | 6490.48 | 3917.85 | -189.97 | 3914.47 | 40°24'29.362"N | 104°23'54.828"W | 0.31 | |
| 10811.00 | 89.630 | 85.780 | 6490.99 | 4012.40 | -182.90 | 4009.20 | 40°24'29.420"N | 104°23'53.602"W | 0.16 | |
| 10905.00 | 89.660 | 86.700 | 6491.57 | 4106.02 | -176.74 | 4103.00 | 40°24'29.469"N | 104°23'52.389"W | 0.98 | |
| 11000.00 | 89.690 | 87.430 | 6492.11 | 4200.75 | -171.87 | 4197.87 | 40°24'29.506"N | 104°23'51.162"W | 0.77 | |
| 11095.00 | 89.780 | 87.840 | 6492.55 | 4295.55 | -167.95 | 4292.79 | 40°24'29.533"N | 104°23'49.934"W | 0.44 | |

REFERENCE WELLPATH IDENTIFICATION

| | | | |
|----------|---------------------------------|----------|--|
| Operator | NOBLE ENERGY, INC | Slot | SLOT#01 WELLS RANCH BB11-618(797'FSL&235'FWL,SEC.11) |
| Area | COLORADO | Well | WELLS RANCH BB11-618 |
| Field | WELD COUNTY (NOBLE NAD 83 GRID) | Wellbore | WELLS RANCH BB11-618 AWB |
| Facility | SEC.11-T05N-R63W | | |

WELLPATH DATA (149 stations)

| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Latitude | Longitude | DLS [°/100ft] | Comments |
|----------|-----------------|-------------|----------|----------------|------------|-----------|----------------|-----------------|---------------|---------------------|
| 11190.00 | 89.820 | 89.000 | 6492.88 | 4390.43 | -165.33 | 4387.75 | 40°24'29.547"N | 104°23'48.706"W | 1.22 | |
| 11284.00 | 89.630 | 89.860 | 6493.33 | 4484.37 | -164.40 | 4481.75 | 40°24'29.545"N | 104°23'47.491"W | 0.94 | |
| 11379.00 | 89.750 | 91.120 | 6493.85 | 4579.36 | -165.21 | 4576.74 | 40°24'29.525"N | 104°23'46.263"W | 1.33 | |
| 11568.00 | 89.630 | 90.830 | 6494.87 | 4768.35 | -168.43 | 4765.71 | 40°24'29.470"N | 104°23'43.821"W | 0.17 | |
| 11662.00 | 89.690 | 87.840 | 6495.43 | 4862.28 | -167.33 | 4859.69 | 40°24'29.469"N | 104°23'42.606"W | 3.18 | |
| 11757.00 | 89.630 | 92.290 | 6495.99 | 4957.23 | -167.44 | 4954.66 | 40°24'29.456"N | 104°23'41.379"W | 4.68 | |
| 11851.00 | 89.690 | 92.240 | 6496.55 | 5051.22 | -171.16 | 5048.59 | 40°24'29.408"N | 104°23'40.165"W | 0.08 | |
| 11946.00 | 89.720 | 91.920 | 6497.04 | 5146.21 | -174.61 | 5143.53 | 40°24'29.362"N | 104°23'38.939"W | 0.34 | |
| 12040.00 | 89.750 | 90.960 | 6497.48 | 5240.21 | -176.97 | 5237.49 | 40°24'29.327"N | 104°23'37.724"W | 1.02 | |
| 12135.00 | 89.600 | 89.050 | 6498.01 | 5335.17 | -176.98 | 5332.49 | 40°24'29.315"N | 104°23'36.497"W | 2.02 | |
| 12229.00 | 89.510 | 87.870 | 6498.74 | 5429.05 | -174.45 | 5426.45 | 40°24'29.329"N | 104°23'35.282"W | 1.26 | |
| 12324.00 | 89.450 | 88.100 | 6499.61 | 5523.88 | -171.11 | 5521.39 | 40°24'29.350"N | 104°23'34.054"W | 0.25 | |
| 12513.00 | 89.720 | 89.130 | 6500.98 | 5712.66 | -166.54 | 5710.32 | 40°24'29.372"N | 104°23'31.611"W | 0.56 | |
| 12608.00 | 89.660 | 89.620 | 6501.49 | 5807.60 | -165.51 | 5805.32 | 40°24'29.370"N | 104°23'30.383"W | 0.52 | |
| 12702.00 | 89.570 | 89.260 | 6502.12 | 5901.55 | -164.59 | 5899.31 | 40°24'29.368"N | 104°23'29.168"W | 0.39 | |
| 12797.00 | 89.660 | 91.650 | 6502.76 | 5996.53 | -165.34 | 5994.30 | 40°24'29.349"N | 104°23'27.940"W | 2.52 | |
| 12891.00 | 89.540 | 92.020 | 6503.42 | 6090.52 | -168.35 | 6088.25 | 40°24'29.307"N | 104°23'26.726"W | 0.41 | |
| 12986.00 | 89.780 | 92.080 | 6503.98 | 6185.51 | -171.75 | 6183.18 | 40°24'29.262"N | 104°23'25.500"W | 0.26 | |
| 13080.00 | 89.420 | 93.290 | 6504.64 | 6279.48 | -176.15 | 6277.08 | 40°24'29.207"N | 104°23'24.287"W | 1.34 | |
| 13175.00 | 89.540 | 91.540 | 6505.50 | 6374.46 | -180.16 | 6371.98 | 40°24'29.156"N | 104°23'23.061"W | 1.85 | |
| 13270.00 | 89.510 | 87.270 | 6506.29 | 6469.38 | -179.17 | 6466.95 | 40°24'29.154"N | 104°23'21.833"W | 4.49 | |
| 13364.00 | 89.450 | 86.700 | 6507.14 | 6563.10 | -174.23 | 6560.82 | 40°24'29.191"N | 104°23'20.619"W | 0.61 | |
| 13459.00 | 89.510 | 90.040 | 6508.00 | 6657.96 | -171.52 | 6655.76 | 40°24'29.206"N | 104°23'19.391"W | 3.52 | |
| 13553.00 | 89.570 | 91.210 | 6508.76 | 6751.94 | -172.55 | 6749.75 | 40°24'29.184"N | 104°23'18.176"W | 1.25 | |
| 13648.00 | 89.630 | 91.220 | 6509.42 | 6846.94 | -174.56 | 6844.73 | 40°24'29.152"N | 104°23'16.949"W | 0.06 | |
| 13742.00 | 89.420 | 86.570 | 6510.20 | 6940.83 | -172.75 | 6938.68 | 40°24'29.159"N | 104°23'15.734"W | 4.95 | |
| 13837.00 | 89.570 | 85.000 | 6511.04 | 7035.37 | -165.77 | 7033.42 | 40°24'29.216"N | 104°23'14.509"W | 1.66 | |
| 13932.00 | 89.630 | 85.570 | 6511.70 | 7129.84 | -157.96 | 7128.10 | 40°24'29.281"N | 104°23'13.284"W | 0.60 | Last BHI MWD Survey |
| 14000.00 | 89.630 | 85.570 | 6512.14 | 7197.49 | -152.71 | 7195.89 | 40°24'29.325"N | 104°23'12.406"W | 0.00 | PROJECTION TO BIT |

HOLE & CASING SECTIONS - Ref Wellbore: WELLS RANCH BB11-618 AWB Ref Wellpath: WELLS RANCH BB11-618 AWP

| String/Diameter | Start MD [ft] | End MD [ft] | Interval [ft] | Start TVD [ft] | End TVD [ft] | Start N/S [ft] | Start E/W [ft] | End N/S [ft] | End E/W [ft] |
|------------------------|---------------|-------------|---------------|----------------|--------------|----------------|----------------|--------------|--------------|
| 13.5in Conductor | 30.00 | 1962.00 | 1932.00 | 30.00 | 1961.97 | -0.02 | 0.01 | -0.63 | 1.43 |
| 9.625in Casing Surface | 30.00 | 1962.00 | 1932.00 | 30.00 | 1961.97 | -0.02 | 0.01 | -0.63 | 1.43 |
| 8.5in Open Hole | 1962.00 | 14000.00 | 12038.00 | 1961.97 | 6512.14 | -0.63 | 1.43 | -152.71 | 7195.89 |

TARGETS

| Name | TVD [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude | Longitude | Shape |
|---|----------|------------|-----------|-------------------|--------------------|----------------|-----------------|---------|
| WELLS RANCH BB11-618 SECTION 11-T05N-R63W | 0.00 | 0.00 | 0.00 | 3302802.43 | 1393626.45 | 40°24'31.716"N | 104°24'45.396"W | polygon |
| WELLS RANCH BB11-618 SECTION 12-T05N-R63W | 0.00 | 0.00 | 0.00 | 3302802.43 | 1393626.45 | 40°24'31.716"N | 104°24'45.396"W | polygon |
| WELLS RANCH BB11-618 REV-1 BHL (535'FSL&2100'FWL,SEC.12) | 6468.77 | -169.35 | 7198.76 | 3310000.90 | 1393457.11 | 40°24'29.160"N | 104°23'12.372"W | point |
| WELLS RANCH BB11-618 LANDING POINT(640'FSL&30'FWL,SEC.11) | 6475.00 | -160.00 | 60.00 | 3302862.43 | 1393466.46 | 40°24'30.128"N | 104°24'44.646"W | point |
| WELLS RANCH BB11-618 SECTION 11 HARDLINES (460'SETBACK) | 6500.00 | 0.00 | 0.00 | 3302802.43 | 1393626.45 | 40°24'31.716"N | 104°24'45.396"W | polygon |
| WELLS RANCH BB11-618 SECTION 12 HARDLINES (460'SETBACK) | 6500.00 | 0.00 | 0.00 | 3302802.43 | 1393626.45 | 40°24'31.716"N | 104°24'45.396"W | polygon |

WELLPATH COMPOSITION - Ref Wellbore: WELLS RANCH BB11-618 AWB Ref Wellpath: WELLS RANCH BB11-618 AWP

| Start MD [ft] | End MD [ft] | Positional Uncertainty Model | Log Name/Comment | Wellbore |
|---------------|-------------|------------------------------|------------------|----------|
| | | | | |

| WELLPATH COMPOSITION - Ref Wellbore: WELLS RANCH BB11-618 AWB Ref Wellpath: WELLS RANCH BB11-618 AWP | | | | |
|---|----------------|---|---|--------------------------|
| Start MD [ft] | End MD [ft] | Positional Uncertainty Model | Log Name/Comment | Wellbore |
| 0.00 | 1957.00 | Gyrodata standard - Drop gyro or Multi-shot | GyroData 13.5" Surface Surveys <84'-1957'> | WELLS RANCH BB11-618 AWB |
| 1957.00 | 13932.00 | OWSG MWD rev2 + IFR1 + Multi-Station Correction | BHI/ATC OWSG MWD+IFR+MSA 8.5" Hole <1978'-13932'> | WELLS RANCH BB11-618 AWB |
| 13932.00 | 14000.00 | Blind Drilling (std) | Projection to bit | WELLS RANCH BB11-618 AWB |

| REFERENCE WELLPATH IDENTIFICATION | | | |
|-----------------------------------|---------------------------------|----------|--|
| Operator | NOBLE ENERGY, INC | Slot | SLOT#01 WELLS RANCH BB11-618(797'FSL&235'FWL,SEC.11) |
| Area | COLORADO | Well | WELLS RANCH BB11-618 |
| Field | WELD COUNTY (NOBLE NAD 83 GRID) | Wellbore | WELLS RANCH BB11-618 AWB |
| Facility | SEC.11-T05N-R63W | | |

| WELLPATH COMMENTS | | | | |
|-------------------|--------------------|----------------|-------------|---------------------|
| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Comment |
| 1957.00 | 0.890 | 144.020 | 1956.97 | Tie to Surface |
| 13932.00 | 89.630 | 85.570 | 6511.70 | Last BHI MWD Survey |
| 14000.00 | 89.630 | 85.570 | 6512.14 | PROJECTION TO BIT |

| COMMENTS | |
|--|--|
| Wellpath general comments SURFACE LOCATION: SWSW 40.40881N 104.41261W API #: 05-123-44950 | |