



Actual Wellpath Report

No. 190H AWP - Final

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REFERENCE WELLPATH IDENTIFICATION

| | | | |
|---------------|-----------------|----------|--------------|
| Operator | BOPCO, LP | Slot | No.190H SHL |
| Area | Eddy County, NM | Well | No.190H |
| Well Id | JRU NAD27 | Wellbore | No. 190H AWB |
| Well Facility | JRU No.190H | | |

30-015-42145

REPORT SETUP INFORMATION

| | | | |
|---------------------|--|----------------------|---|
| Projection System | NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet | Software System | WellArchitect@ 4.0.0 |
| North Reference | Grid | User | Burnranj |
| Scale | 0.999937 | Report Generated | 5/1/2014 at 10:59:44 AM |
| Convergence at slot | 0.27° East | Database/Source file | WA_MIDLAND/C:\Users\burnranj\AppData\Roaming\Well Explorer\temp\BOPCO, LP No.190H SHL_Final Surveys.x |

WELLPATH LOCATION

| | Local coordinates | | Grid coordinates | | Geographic coordinates | |
|----------------------------|-------------------|----------|------------------|-----------------|------------------------|-----------------|
| | North[ft] | East[ft] | Easting[US ft] | Northing[US ft] | Latitude | Longitude |
| Start Location | 0.00 | 0.00 | 656564.90 | 492869.00 | 32°21'14.376"N | 103°49'34.759"W |
| Well Facility Reference Pt | | | 656564.90 | 492869.00 | 32°21'14.376"N | 103°49'34.759"W |
| Well Id Reference Pt | | | 652495.44 | 494904.92 | 32°21'34.711"N | 103°50'22.090"W |

WELLPATH DATUM

| | | | |
|------------------------------|-------------------------|---|-------------------|
| Vertical Datum Method | Minimum curvature | Rig on No.190H SHL (KB) to Facility Vertical Datum | 22.00ft |
| Horizontal Reference Pt | Slot | Rig on No.190H SHL (KB) to Mean Sea Level | 3347.00ft |
| Vertical Reference Pt | Rig on No.190H SHL (KB) | Rig on No.190H SHL (KB) to Mud Line at Slot (No.190H SHL) | 22.00ft |
| Section Origin Reference Pt | Rig on No.190H SHL (KB) | Section Origin | N 0.00, E 0.00 ft |
| Section Azimuth Reference Pt | Mean Sea Level | Section Azimuth | 269.62° |



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|-----------------------------------|-----------------|----------|--------------|
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| Location | Eddy County, NM | Well | No.190H |
| Field | JRU NAD27 | Wellbore | No. 190H AWB |
| Locality | JRU No.190H | | |

| WELLPATH DATA (173 stations) † = interpolated/extrapolated station | | | | | | | | | | |
|--|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|---------------|----------|
| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | DLS [%/100ft] | Comments |
| 0.00† | 0.000 | 254.650 | 0.00 | 0.00 | 0.00 | 0.00 | 656564.90 | 492869.00 | 0.00 | |
| 22.00 | 0.000 | 254.650 | 22.00 | 0.00 | 0.00 | 0.00 | 656564.90 | 492869.00 | 0.00 | |
| 75.00 | 1.200 | 254.650 | 75.00 | 0.54 | -0.15 | -0.54 | 656564.36 | 492868.85 | 2.26 | |
| 138.00 | 1.300 | 264.590 | 137.98 | 1.89 | -0.39 | -1.88 | 656563.02 | 492868.61 | 0.38 | |
| 228.00 | 0.410 | 332.250 | 227.97 | 3.05 | -0.20 | -3.05 | 656561.85 | 492868.80 | 1.34 | |
| 320.00 | 0.350 | 1.680 | 319.97 | 3.19 | 0.37 | -3.19 | 656561.71 | 492869.37 | 0.22 | |
| 410.00 | 0.440 | 11.820 | 409.97 | 3.11 | 0.99 | -3.12 | 656561.78 | 492869.98 | 0.13 | |
| 501.00 | 0.420 | 4.150 | 500.97 | 3.01 | 1.66 | -3.02 | 656561.88 | 492870.66 | 0.07 | |
| 562.00 | 0.360 | 7.840 | 561.96 | 2.96 | 2.07 | -2.98 | 656561.92 | 492871.07 | 0.11 | |
| 764.00 | 0.100 | 37.800 | 763.96 | 2.76 | 2.84 | -2.78 | 656562.12 | 492871.84 | 0.14 | |
| 890.00 | 0.200 | 0.200 | 889.96 | 2.69 | 3.15 | -2.71 | 656562.19 | 492872.15 | 0.11 | |
| 985.00 | 0.200 | 9.200 | 984.96 | 2.66 | 3.48 | -2.69 | 656562.21 | 492872.48 | 0.03 | |
| 1175.00 | 0.070 | 229.000 | 1174.96 | 2.70 | 3.73 | -2.72 | 656562.18 | 492872.73 | 0.14 | |
| 1365.00 | 0.200 | 229.000 | 1364.96 | 3.04 | 3.43 | -3.06 | 656561.84 | 492872.43 | 0.07 | |
| 1555.00 | 0.300 | 123.100 | 1554.96 | 2.87 | 2.95 | -2.89 | 656562.01 | 492871.94 | 0.21 | |
| 1745.00 | 0.900 | 235.000 | 1744.95 | 3.69 | 1.82 | -3.70 | 656561.20 | 492870.82 | 0.55 | |
| 1935.00 | 0.800 | 210.200 | 1934.93 | 5.59 | -0.18 | -5.59 | 656559.31 | 492868.82 | 0.20 | |
| 2125.00 | 0.600 | 194.200 | 2124.92 | 6.51 | -2.30 | -6.50 | 656558.40 | 492866.70 | 0.15 | |
| 2315.00 | 0.700 | 182.100 | 2314.90 | 6.82 | -4.42 | -6.79 | 656558.11 | 492864.58 | 0.09 | |
| 2505.00 | 0.400 | 194.500 | 2504.90 | 7.04 | -6.22 | -7.00 | 656557.91 | 492862.78 | 0.17 | |
| 2695.00 | 0.600 | 114.300 | 2694.89 | 6.30 | -7.27 | -6.25 | 656558.65 | 492861.73 | 0.35 | |
| 2885.00 | 1.200 | 303.100 | 2884.88 | 7.06 | -6.60 | -7.01 | 656557.89 | 492862.40 | 0.94 | |
| 3075.00 | 0.300 | 266.600 | 3074.86 | 9.21 | -5.54 | -9.18 | 656555.72 | 492863.46 | 0.51 | |
| 3265.00 | 0.700 | 153.100 | 3264.86 | 9.19 | -6.60 | -9.15 | 656555.75 | 492862.40 | 0.46 | |
| 3455.00 | 1.200 | 161.700 | 3454.83 | 8.06 | -9.53 | -8.00 | 656556.90 | 492859.47 | 0.27 | |
| 3645.00 | 1.800 | 149.800 | 3644.77 | 5.97 | -14.00 | -5.87 | 656559.03 | 492855.01 | 0.35 | |
| 3808.00 | 0.900 | 128.500 | 3807.72 | 3.70 | -17.01 | -3.58 | 656561.32 | 492852.00 | 0.62 | |
| 3893.00 | 0.700 | 130.100 | 3892.71 | 2.78 | -17.76 | -2.66 | 656562.24 | 492851.25 | 0.24 | |
| 3988.00 | 0.400 | 85.800 | 3987.71 | 2.01 | -18.10 | -1.89 | 656563.01 | 492850.90 | 0.53 | |
| 4083.00 | 0.400 | 51.000 | 4082.70 | 1.42 | -17.87 | -1.30 | 656563.60 | 492851.13 | 0.25 | |
| 4178.00 | 0.900 | 359.600 | 4177.70 | 1.16 | -16.92 | -1.05 | 656563.85 | 492852.08 | 0.76 | |
| 4273.00 | 0.900 | 339.900 | 4272.69 | 1.41 | -15.47 | -1.31 | 656563.59 | 492853.53 | 0.32 | |
| 4463.00 | 0.400 | 335.100 | 4462.67 | 2.19 | -13.47 | -2.10 | 656562.80 | 492855.53 | 0.26 | |
| 4654.00 | 0.700 | 355.300 | 4653.67 | 2.56 | -11.70 | -2.48 | 656562.42 | 492857.30 | 0.18 | |
| 4844.00 | 0.800 | 350.200 | 4843.65 | 2.86 | -9.24 | -2.80 | 656562.10 | 492859.76 | 0.06 | |
| 5034.00 | 0.900 | 347.300 | 5033.63 | 3.40 | -6.47 | -3.35 | 656561.55 | 492862.53 | 0.06 | |
| 5224.00 | 0.900 | 348.500 | 5223.61 | 4.00 | -3.56 | -3.98 | 656560.92 | 492865.44 | 0.01 | |
| 5414.00 | 0.800 | 336.800 | 5413.58 | 4.80 | -0.87 | -4.80 | 656560.10 | 492868.13 | 0.11 | |
| 5604.00 | 0.900 | 349.900 | 5603.56 | 5.57 | 1.81 | -5.58 | 656559.32 | 492870.81 | 0.11 | |
| 5795.00 | 0.900 | 350.300 | 5794.54 | 6.07 | -4.77 | -6.10 | 656558.80 | 492873.77 | 0.00 | |
| 5985.00 | 0.800 | 346.900 | 5984.52 | 6.60 | 7.53 | -6.65 | 656558.25 | 492876.53 | 0.06 | |
| 6175.00 | 0.700 | 348.900 | 6174.50 | 7.11 | 9.96 | -7.18 | 656557.73 | 492878.96 | 0.05 | |
| 6365.00 | 0.700 | 312.200 | 6364.49 | 8.18 | 11.88 | -8.26 | 656556.64 | 492880.88 | 0.23 | |
| 6555.00 | 0.700 | 289.800 | 6554.48 | 10.12 | 13.05 | -10.21 | 656554.69 | 492882.05 | 0.14 | |
| 6746.00 | 0.500 | 287.000 | 6745.47 | 12.01 | 13.69 | -12.11 | 656552.80 | 492882.69 | 0.11 | |



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|----------|-----------------|----------|--------------|
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| Area | Eddy County, NM | Well | No.190H |
| Field | JRU NAD27 | Wellbore | No. 190H AWB |
| Well ID | JRU No.190H | | |

WELLPATH DATA (173 stations)

| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | DLS [°/100ft] | Comments |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|---------------|----------|
| 6936.00 | 0.400 | 278.600 | 6935.46 | 13.46 | 14.03 | -13.55 | 656551.35 | 492883.03 | 0.06 | |
| 7126.00 | 0.400 | 266.800 | 7125.45 | 14.78 | 14.10 | -14.87 | 656550.03 | 492883.10 | 0.04 | |
| 7316.00 | 0.700 | 246.600 | 7315.45 | 16.51 | 13.60 | -16.60 | 656548.30 | 492882.60 | 0.19 | |
| 7507.00 | 0.600 | 238.800 | 7506.43 | 18.44 | 12.62 | -18.53 | 656546.38 | 492881.62 | 0.07 | |
| 7697.00 | 0.900 | 245.900 | 7696.42 | 20.66 | 11.49 | -20.74 | 656544.16 | 492880.49 | 0.16 | |
| 7887.00 | 1.400 | 226.300 | 7886.38 | 23.72 | 9.28 | -23.78 | 656541.12 | 492878.28 | 0.33 | |
| 8077.00 | 1.100 | 170.700 | 8076.34 | 25.12 | 5.88 | -25.16 | 656539.74 | 492874.88 | 0.63 | |
| 8268.00 | 0.600 | 141.000 | 8267.32 | 24.21 | 3.29 | -24.24 | 656540.67 | 492872.29 | 0.34 | |
| 8458.00 | 0.400 | 145.400 | 8457.31 | 23.22 | 1.97 | -23.23 | 656541.67 | 492870.97 | 0.11 | |
| 8651.00 | 0.700 | 202.200 | 8650.30 | 23.29 | 0.33 | -23.30 | 656541.61 | 492869.33 | 0.30 | |
| 8841.00 | 0.800 | 213.200 | 8840.29 | 24.47 | -1.86 | -24.46 | 656540.44 | 492867.14 | 0.09 | |
| 9031.00 | 0.700 | 212.900 | 9030.27 | 25.84 | -3.94 | -25.82 | 656539.08 | 492865.06 | 0.05 | |
| 9221.00 | 0.700 | 249.100 | 9220.26 | 27.57 | -5.33 | -27.53 | 656537.37 | 492863.67 | 0.23 | |
| 9411.00 | 1.200 | 341.200 | 9410.24 | 29.28 | -3.86 | -29.26 | 656535.64 | 492865.14 | 0.74 | |
| 9601.00 | 0.500 | 348.100 | 9600.22 | 30.08 | -1.17 | -30.07 | 656534.83 | 492867.83 | 0.37 | |
| 9791.00 | 0.900 | 62.500 | 9790.21 | 28.91 | 0.33 | -28.92 | 656535.98 | 492869.33 | 0.48 | |
| 9981.00 | 0.500 | 93.400 | 9980.19 | 26.76 | 0.97 | -26.77 | 656538.14 | 492869.97 | 0.28 | |
| 10139.00 | 0.600 | 74.400 | 10138.19 | 25.27 | 1.15 | -25.28 | 656539.62 | 492870.15 | 0.13 | |
| 10171.00 | 0.800 | 114.600 | 10170.18 | 24.91 | 1.11 | -24.92 | 656539.98 | 492870.11 | 1.61 | |
| 10202.00 | 0.400 | 127.700 | 10201.18 | 24.63 | 0.95 | -24.63 | 656540.27 | 492869.95 | 1.36 | |
| 10234.00 | 0.800 | 255.800 | 10233.18 | 24.76 | 0.83 | -24.76 | 656540.14 | 492869.83 | 3.42 | |
| 10266.00 | 2.600 | 270.700 | 10265.17 | 25.70 | 0.78 | -25.70 | 656539.20 | 492869.78 | 5.75 | |
| 10298.00 | 4.300 | 276.600 | 10297.11 | 27.62 | 0.93 | -27.62 | 656537.28 | 492869.93 | 5.42 | |
| 10329.00 | 6.000 | 278.600 | 10327.98 | 30.37 | 1.30 | -30.38 | 656534.52 | 492870.30 | 5.51 | |
| 10361.00 | 8.200 | 278.900 | 10359.73 | 34.27 | 1.91 | -34.29 | 656530.61 | 492870.91 | 6.88 | |
| 10393.00 | 10.400 | 277.700 | 10391.31 | 39.39 | 2.65 | -39.41 | 656525.50 | 492871.65 | 6.90 | |
| 10425.00 | 12.800 | 276.300 | 10422.65 | 45.77 | 3.42 | -45.79 | 656519.11 | 492872.42 | 7.55 | |
| 10456.00 | 14.900 | 278.100 | 10452.75 | 53.12 | 4.36 | -53.15 | 656511.75 | 492873.36 | 6.91 | |
| 10488.00 | 17.200 | 280.500 | 10483.50 | 61.84 | 5.80 | -61.88 | 656503.03 | 492874.80 | 7.48 | |
| 10520.00 | 18.500 | 278.800 | 10513.96 | 71.50 | 7.44 | -71.55 | 656493.36 | 492876.44 | 4.38 | |
| 10551.00 | 21.900 | 278.800 | 10543.05 | 82.06 | 9.08 | -82.12 | 656482.78 | 492878.08 | 10.97 | |
| 10583.00 | 24.300 | 276.000 | 10572.48 | 94.50 | 10.68 | -94.57 | 656470.33 | 492879.68 | 8.25 | |
| 10614.00 | 26.500 | 275.500 | 10600.49 | 107.72 | 12.01 | -107.80 | 656457.10 | 492881.01 | 7.13 | |
| 10646.00 | 29.000 | 275.600 | 10628.80 | 122.54 | 13.45 | -122.63 | 656442.28 | 492882.45 | 7.81 | |
| 10678.00 | 32.300 | 274.500 | 10656.33 | 138.78 | 14.88 | -138.88 | 656426.03 | 492883.88 | 10.46 | |
| 10710.00 | 35.100 | 273.800 | 10682.95 | 156.48 | 16.16 | -156.59 | 656408.32 | 492885.16 | 8.83 | |
| 10741.00 | 38.100 | 271.200 | 10707.83 | 174.93 | 16.95 | -175.05 | 656389.87 | 492885.95 | 10.89 | |
| 10773.00 | 41.100 | 269.500 | 10732.49 | 195.32 | 17.07 | -195.44 | 656369.47 | 492886.07 | 9.97 | |
| 10805.00 | 44.400 | 269.200 | 10755.98 | 217.04 | 16.82 | -217.16 | 656347.76 | 492885.82 | 10.33 | |
| 10836.00 | 47.900 | 268.500 | 10777.46 | 239.39 | 16.37 | -239.50 | 656325.41 | 492885.37 | 11.41 | |
| 10868.00 | 51.300 | 269.100 | 10798.19 | 263.75 | 15.86 | -263.86 | 656301.05 | 492884.86 | 10.72 | |
| 10900.00 | 55.100 | 269.500 | 10817.36 | 289.37 | 15.55 | -289.48 | 656275.44 | 492884.55 | 11.92 | |
| 10931.00 | 58.200 | 269.900 | 10834.40 | 315.26 | 15.41 | -315.37 | 656249.55 | 492884.41 | 10.06 | |
| 10963.00 | 63.400 | 272.100 | 10850.01 | 343.18 | 15.92 | -343.29 | 656221.63 | 492884.91 | 17.32 | |
| 10995.00 | 68.000 | 271.700 | 10863.17 | 372.31 | 16.88 | -372.43 | 656192.49 | 492885.88 | 14.42 | |



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| | | | |
|----------|-----------------|----------|--------------|
| Operator | BOPCO, LP | Slot | No.190H SHL |
| Area | Eddy County, NM | Well | No.190H |
| Field | JRU NAD27 | Wellbore | No. 190H AWB |
| Well ID | JRU No.190H | | |

WELLPATH DATA (173 stations)

| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | DLS [°/100ft] | Comments |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|---------------|----------|
| 11027.00 | 72.600 | 271.200 | 10873.96 | 402.41 | 17.64 | -402.54 | 656162.39 | 492886.64 | 14.45 | |
| 11058.00 | 73.800 | 271.200 | 10882.92 | 432.08 | 18.26 | -432.21 | 656132.72 | 492887.26 | 3.87 | |
| 11073.00 | 74.000 | 271.500 | 10887.08 | 446.48 | 18.60 | -446.62 | 656118.31 | 492887.60 | 2.34 | |
| 11175.00 | 77.500 | 272.100 | 10912.18 | 545.26 | 21.71 | -545.41 | 656019.52 | 492890.71 | 3.48 | |
| 11192.00 | 79.000 | 270.500 | 10915.64 | 561.89 | 22.09 | -562.05 | 656002.88 | 492891.09 | 12.76 | |
| 11224.00 | 82.200 | 269.900 | 10920.87 | 593.46 | 22.20 | -593.62 | 655971.32 | 492891.20 | 10.17 | |
| 11256.00 | 85.100 | 268.900 | 10924.41 | 625.26 | 21.86 | -625.42 | 655939.52 | 492890.86 | 9.58 | |
| 11288.00 | 88.400 | 268.400 | 10926.22 | 657.20 | 21.11 | -657.35 | 655907.59 | 492890.11 | 10.43 | |
| 11319.00 | 90.000 | 267.900 | 10926.65 | 688.18 | 20.11 | -688.33 | 655876.61 | 492889.11 | 5.41 | |
| 11351.00 | 90.200 | 268.200 | 10926.60 | 720.17 | 19.02 | -720.31 | 655844.63 | 492888.02 | 11.13 | |
| 11447.00 | 90.500 | 268.400 | 10926.01 | 816.14 | 16.17 | -816.27 | 655748.69 | 492885.17 | 0.38 | |
| 11542.00 | 90.500 | 268.200 | 10925.18 | 911.11 | 13.35 | -911.22 | 655653.74 | 492882.35 | 0.21 | |
| 11638.00 | 90.700 | 268.000 | 10924.18 | 1007.08 | 10.17 | -1007.16 | 655557.80 | 492879.17 | 0.29 | |
| 11733.00 | 91.400 | 268.200 | 10922.44 | 1102.03 | 7.02 | -1102.10 | 655462.88 | 492876.02 | 0.77 | |
| 11829.00 | 91.000 | 269.600 | 10920.43 | 1197.99 | 5.18 | -1198.05 | 655366.92 | 492874.18 | 1.52 | |
| 11924.00 | 91.500 | 269.700 | 10918.35 | 1292.97 | 4.60 | -1293.03 | 655271.95 | 492873.60 | 0.54 | |
| 12020.00 | 90.100 | 270.000 | 10917.01 | 1388.96 | 4.35 | -1389.02 | 655175.97 | 492873.35 | 1.49 | |
| 12115.00 | 90.500 | 270.100 | 10916.51 | 1483.95 | 4.43 | -1484.02 | 655080.98 | 492873.43 | 0.43 | |
| 12211.00 | 90.800 | 270.000 | 10915.43 | 1579.95 | 4.52 | -1580.01 | 654984.99 | 492873.52 | 0.33 | |
| 12307.00 | 91.000 | 269.500 | 10913.92 | 1675.93 | 4.10 | -1676.00 | 654889.01 | 492873.10 | 0.56 | |
| 12402.00 | 91.100 | 268.700 | 10912.18 | 1770.91 | 2.60 | -1770.97 | 654794.05 | 492871.60 | 0.85 | |
| 12498.00 | 91.100 | 268.400 | 10910.33 | 1866.88 | 0.18 | -1866.92 | 654698.10 | 492869.18 | 0.31 | |
| 12593.00 | 91.100 | 267.400 | 10908.51 | 1961.82 | -3.30 | -1961.84 | 654603.19 | 492865.70 | 1.05 | |
| 12689.00 | 91.000 | 269.000 | 10906.75 | 2057.77 | -6.32 | -2057.77 | 654507.26 | 492862.68 | 1.67 | |
| 12784.00 | 91.400 | 268.700 | 10904.76 | 2152.74 | -8.23 | -2152.73 | 654412.31 | 492860.78 | 0.53 | |
| 12880.00 | 90.100 | 268.600 | 10903.50 | 2248.71 | -10.49 | -2248.69 | 654316.35 | 492858.51 | 1.36 | |
| 12975.00 | 90.300 | 268.600 | 10903.17 | 2343.70 | -12.81 | -2343.66 | 654221.39 | 492856.19 | 0.21 | |
| 13071.00 | 90.800 | 268.800 | 10902.25 | 2439.68 | -14.99 | -2439.63 | 654125.42 | 492854.02 | 0.56 | |
| 13166.00 | 91.100 | 268.700 | 10900.68 | 2534.66 | -17.06 | -2534.60 | 654030.47 | 492851.94 | 0.33 | |
| 13262.00 | 91.400 | 268.400 | 10898.58 | 2630.62 | -19.49 | -2630.54 | 653934.53 | 492849.51 | 0.44 | |
| 13357.00 | 90.700 | 268.100 | 10896.84 | 2725.57 | -22.39 | -2725.48 | 653839.59 | 492846.61 | 0.80 | |
| 13453.00 | 89.500 | 269.400 | 10896.67 | 2821.56 | -24.48 | -2821.46 | 653743.63 | 492844.52 | 1.84 | |
| 13548.00 | 88.800 | 269.100 | 10898.08 | 2916.54 | -25.72 | -2916.44 | 653648.65 | 492843.28 | 0.80 | |
| 13644.00 | 90.200 | 269.500 | 10898.92 | 3012.54 | -26.90 | -3012.42 | 653552.67 | 492842.10 | 1.52 | |
| 13739.00 | 90.300 | 269.200 | 10898.51 | 3107.53 | -27.98 | -3107.42 | 653457.68 | 492841.03 | 0.33 | |
| 13835.00 | 90.700 | 269.600 | 10897.67 | 3203.53 | -28.98 | -3203.41 | 653361.70 | 492840.02 | 0.59 | |
| 13930.00 | 90.700 | 269.700 | 10896.51 | 3298.52 | -29.56 | -3298.40 | 653266.71 | 492839.44 | 0.11 | |
| 14026.00 | 90.700 | 269.300 | 10895.34 | 3394.51 | -30.40 | -3394.39 | 653170.73 | 492838.60 | 0.42 | |
| 14121.00 | 91.000 | 269.500 | 10893.93 | 3489.50 | -31.39 | -3489.37 | 653075.75 | 492837.61 | 0.38 | |
| 14217.00 | 91.800 | 269.600 | 10891.58 | 3585.47 | -32.15 | -3585.34 | 652979.79 | 492836.86 | 0.84 | |
| 14313.00 | 90.300 | 270.700 | 10889.82 | 3681.45 | -31.90 | -3681.32 | 652883.82 | 492837.11 | 1.94 | |
| 14408.00 | 90.300 | 270.600 | 10889.32 | 3776.43 | -30.82 | -3776.31 | 652788.83 | 492838.18 | 0.11 | |
| 14504.00 | 90.700 | 270.500 | 10888.49 | 3872.42 | -29.90 | -3872.30 | 652692.85 | 492839.11 | 0.43 | |
| 14599.00 | 90.300 | 270.000 | 10887.66 | 3967.41 | -29.48 | -3967.30 | 652597.86 | 492839.52 | 0.67 | |
| 14695.00 | 90.500 | 269.900 | 10886.99 | 4063.40 | -29.57 | -4063.30 | 652501.87 | 492839.44 | 0.23 | |



Actual Wellpath Report

No. 190H AWP - Final

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REFERENCE WELLPATH IDENTIFICATION

| | | | |
|----------|-----------------|----------|--------------|
| Operator | BOPCO, LP | Slot | No.190H SHL |
| Area | Eddy County, NM | Well | No.190H |
| Field | JRU NAD27 | Wellbore | No. 190H AWB |
| Well ID | JRU No.190H | | |

WELLPATH DATA (173 stations)

| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | DLS [°/100ft] | Comments |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|---------------|----------|
| 14790.00 | 90.700 | 269.300 | 10885.99 | 4158.40 | -30.23 | -4158.29 | 652406.88 | 492838.77 | 0.67 | |
| 14886.00 | 91.300 | 269.200 | 10884.32 | 4254.38 | -31.49 | -4254.26 | 652310.91 | 492837.52 | 0.63 | |
| 14981.00 | 90.300 | 269.000 | 10882.99 | 4349.37 | -32.98 | -4349.24 | 652215.94 | 492836.02 | 1.07 | |
| 15077.00 | 90.600 | 269.400 | 10882.24 | 4445.36 | -34.32 | -4445.23 | 652119.96 | 492834.68 | 0.52 | |
| 15172.00 | 91.000 | 269.000 | 10880.91 | 4540.35 | -35.64 | -4540.21 | 652024.98 | 492833.36 | 0.60 | |
| 15268.00 | 89.400 | 269.600 | 10880.57 | 4636.34 | -36.82 | -4636.20 | 651929.00 | 492832.19 | 1.78 | |
| 15363.00 | 89.300 | 269.100 | 10881.65 | 4731.33 | -37.89 | -4731.19 | 651834.02 | 492831.11 | 0.54 | |
| 15459.00 | 89.800 | 268.800 | 10882.41 | 4827.32 | -39.65 | -4827.17 | 651738.05 | 492829.35 | 0.61 | |
| 15555.00 | 90.000 | 269.000 | 10882.57 | 4923.32 | -41.50 | -4923.15 | 651642.07 | 492827.51 | 0.29 | |
| 15650.00 | 90.100 | 268.900 | 10882.49 | 5018.31 | -43.24 | -5018.13 | 651547.09 | 492825.77 | 0.15 | |
| 15745.00 | 89.500 | 268.500 | 10882.82 | 5113.30 | -45.39 | -5113.11 | 651452.12 | 492823.61 | 0.76 | |
| 15841.00 | 89.900 | 268.900 | 10883.33 | 5209.28 | -47.57 | -5209.08 | 651356.16 | 492821.43 | 0.59 | |
| 15937.00 | 91.100 | 269.700 | 10882.49 | 5305.27 | -48.74 | -5305.07 | 651260.18 | 492820.26 | 1.50 | |
| 16032.00 | 90.300 | 270.400 | 10881.33 | 5400.26 | -48.66 | -5400.06 | 651165.19 | 492820.34 | 1.12 | |
| 16128.00 | 90.500 | 270.000 | 10880.66 | 5496.26 | -48.33 | -5496.06 | 651069.20 | 492820.68 | 0.47 | |
| 16223.00 | 91.300 | 270.300 | 10879.16 | 5591.24 | -48.08 | -5591.04 | 650974.22 | 492820.93 | 0.90 | |
| 16318.00 | 89.700 | 269.900 | 10878.34 | 5686.23 | -47.91 | -5686.04 | 650879.23 | 492821.09 | 1.74 | |
| 16414.00 | 89.800 | 269.000 | 10878.75 | 5782.23 | -48.83 | -5782.03 | 650783.24 | 492820.17 | 0.94 | |
| 16509.00 | 89.700 | 268.300 | 10879.17 | 5877.21 | -51.07 | -5877.00 | 650688.28 | 492817.93 | 0.74 | |
| 16605.00 | 89.900 | 267.500 | 10879.50 | 5973.17 | -54.59 | -5972.94 | 650592.35 | 492814.42 | 0.86 | |
| 16701.00 | 89.600 | 267.700 | 10879.92 | 6069.11 | -58.61 | -6068.85 | 650496.44 | 492810.40 | 0.38 | |
| 16796.00 | 88.300 | 269.600 | 10881.66 | 6164.07 | -60.85 | -6163.80 | 650401.50 | 492808.16 | 2.42 | |
| 16892.00 | 88.200 | 269.500 | 10884.60 | 6260.02 | -61.60 | -6259.75 | 650305.55 | 492807.40 | 0.15 | |
| 16987.00 | 88.700 | 270.300 | 10887.17 | 6354.99 | -61.77 | -6354.72 | 650210.59 | 492807.24 | 0.99 | |
| 17083.00 | 88.900 | 270.000 | 10889.18 | 6450.96 | -61.51 | -6450.70 | 650114.62 | 492807.49 | 0.38 | |
| 17178.00 | 89.500 | 269.700 | 10890.50 | 6545.95 | -61.76 | -6545.69 | 650019.64 | 492807.24 | 0.71 | |
| 17274.00 | 90.000 | 269.200 | 10890.92 | 6641.95 | -62.68 | -6641.68 | 649923.65 | 492806.32 | 0.74 | |
| 17369.00 | 91.000 | 269.400 | 10890.09 | 6736.94 | -63.84 | -6736.67 | 649828.67 | 492805.16 | 1.07 | |
| 17465.00 | 89.900 | 270.200 | 10889.34 | 6832.94 | -64.18 | -6832.66 | 649732.68 | 492804.82 | 1.42 | |
| 17560.00 | 90.400 | 270.600 | 10889.09 | 6927.93 | -63.52 | -6927.66 | 649637.69 | 492805.49 | 0.67 | |
| 17656.00 | 91.300 | 270.800 | 10887.67 | 7023.90 | -62.34 | -7023.64 | 649541.71 | 492806.66 | 0.96 | |
| 17752.00 | 90.000 | 270.600 | 10886.58 | 7119.87 | -61.17 | -7119.63 | 649445.74 | 492807.83 | 1.37 | |
| 17847.00 | 90.100 | 270.600 | 10886.49 | 7214.86 | -60.18 | -7214.62 | 649350.75 | 492808.83 | 0.11 | |
| 17942.00 | 90.400 | 270.700 | 10886.08 | 7309.84 | -59.10 | -7309.61 | 649255.76 | 492809.91 | 0.33 | |
| 18038.00 | 91.500 | 270.800 | 10884.49 | 7405.81 | -57.84 | -7405.59 | 649159.79 | 492811.16 | 1.15 | |
| 18133.00 | 90.200 | 270.600 | 10883.08 | 7500.78 | -56.68 | -7500.57 | 649064.82 | 492812.32 | 1.38 | |
| 18224.00 | 90.800 | 270.600 | 10882.28 | 7591.76 | -55.73 | -7591.56 | 648973.83 | 492813.27 | 0.66 | |
| 18300.00 | 90.800 | 270.600 | 10881.22 | 7667.75 | -54.93 | -7667.55 | 648897.85 | 492814.07 | 0.00 | |



Actual Wellpath Report

No. 190H AWP - Final

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REFERENCE WELLPATH IDENTIFICATION

| | | | |
|-------------|-----------------|----------|--------------|
| Operator | BOPCO, LP | Slot | No.190H SHL |
| Area | Eddy County, NM | Well | No.190H |
| Field | JRU NAD27 | Wellbore | No. 190H AWB |
| Wellbore ID | JRU No.190H | | |

TARGETS

| Name | MD [ft] | TVD [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude | Longitude | Shape |
|--------------|---------|----------|------------|-----------|-------------------|--------------------|----------------|-----------------|-------|
| U #190H PBHL | | 10881.00 | -50.40 | -7664.40 | 648901.00 | 492818.60 | 32°21'14.227"N | 103°51'04.105"W | point |

WELLPATH COMPOSITION - Ref Wellbore: No. 190H AWB - Ref Wellpath: No. 190H AWP - Final

| Start MD [ft] | End MD [ft] | Positional Uncertainty Model | Log Name/Comment | Wellbore |
|---------------|-------------|--|--------------------------|--------------|
| 22.00 | 562.00 | Generic gyro - northseeking (Standard) | MS Gyros <75-562> | No. 190H AWB |
| 562.00 | 18224.00 | NaviTrak (Standard) | BHI NaviTrak <764-18224> | No. 190H AWB |
| 18224.00 | 18300.00 | Blind Drilling (std) | Projection to bit | No. 190H AWB |