



Anadarko Petroleum Corporation

Riverbend

Riverbend 14 Pad

Riverbend 08-14 (111415) - Slot 08-14

08-14

Survey: 08-14

Survey Report - Geographic

17 January, 2012

Survey Report - Geographic

| | | | |
|------------------|--------------------------------|-------------------------------------|--|
| Company: | Anadarko Petroleum Corporation | Local Co-ordinate Reference: | Well Riverbend 08-14 (111415) - Slot 08-14 |
| Project: | Riverbend | TVD Reference: | KB @ 4967.00ft (Original Well Elev) |
| Site: | Riverbend 14 Pad | MD Reference: | KB @ 4967.00ft (Original Well Elev) |
| Well: | Riverbend 08-14 (111415) | North Reference: | True |
| Wellbore: | 08-14 | Survey Calculation Method: | Minimum Curvature |
| Design: | 08-14 | Database: | EDM5000 |

| | | | |
|--------------------|-------------------------------|----------------------|----------------|
| Project | Riverbend | | |
| Map System: | Universal Transverse Mercator | System Datum: | Mean Sea Level |
| Geo Datum: | NAD83 Colorado - HARN | | |
| Map Zone: | Zone 13N (108 W to 102 W) | | |

| Site | Riverbend 14 Pad | | | | |
|-----------------------|------------------|--------------|--------------------|-------------------|--------------|
| Site Position: | | Northing: | 14,547,138.00 usft | Latitude: | 40.055934°N |
| From: | Lat/Long | Easting: | 1,683,122.87 usft | Longitude: | 104.847381°W |
| Position Uncertainty: | 0.00 ft | Slot Radius: | 13.20 in | Grid Convergence: | 0.10 ° |

| | | | | | | |
|----------------------|---------------------------------------|---------|---------------------|--------------------|---------------|--------------|
| Well | Riverbend 08-14 (111415) - Slot 08-14 | | | | | |
| Well Position | +N/-S | 0.00 ft | Northing: | 14,547,108.00 usft | Latitude: | 40.055852°N |
| | +E/-W | 0.00 ft | Easting: | 1,683,123.00 usft | Longitude: | 104.847381°W |
| Position Uncertainty | | 0.00 ft | Wellhead Elevation: | ft | Ground Level: | 4,952.00 ft |

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|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | 08-14 | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2010 | 02/22/12 | 8.79 | 66.73 | 52,867 |

| | | | | | |
|--------------------------|------------------------------|-------------------|-------------------|----------------------|--------|
| Design | 08-14 | | | | |
| Audit Notes: | | | | | |
| Version: | 1.0 | Phase: | ACTUAL | Tie On Depth: | 0.00 |
| Vertical Section: | Depth From (TVD) (ft) | +N/-S (ft) | +E/-W (ft) | Direction (°) | |
| | 0.00 | 0.00 | 0.00 | | 221.94 |

| | | | | | |
|-----------------------|----------------|--------------------------|------------------|--------------------|--|
| Survey Program | Date | 01/15/12 | | | |
| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description | |
| 134.00 | 8,268.00 | 08-14 (08-14) | MWD | MWD - Standard | |

| | | | | | | | | | |
|----------------------------|------------------------|--------------------|----------------------------|-------------------|-------------------|----------------------------|---------------------------|-----------------|------------------|
| Survey | | | | | | | | | |
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Map Northing (usft) | Map Easting (usft) | Latitude | Longitude |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 14,547,108.00 | 1,683,123.00 | 40.055852°N | 104.847381°W |
| 134.00 | 0.09 | 261.69 | 134.00 | -0.02 | -0.10 | 14,547,107.99 | 1,683,122.90 | 40.055852°N | 104.847381°W |
| 226.00 | 1.19 | 206.58 | 225.99 | -0.88 | -0.60 | 14,547,107.12 | 1,683,122.40 | 40.055849°N | 104.847383°W |
| 319.00 | 2.50 | 211.37 | 318.94 | -3.48 | -2.09 | 14,547,104.52 | 1,683,120.92 | 40.055842°N | 104.847388°W |
| 395.00 | 3.69 | 199.37 | 394.83 | -7.20 | -3.77 | 14,547,100.80 | 1,683,119.25 | 40.055832°N | 104.847394°W |
| 483.00 | 5.19 | 209.57 | 482.57 | -13.33 | -6.67 | 14,547,094.66 | 1,683,116.35 | 40.055815°N | 104.847405°W |
| 572.00 | 6.77 | 212.69 | 571.08 | -21.25 | -11.49 | 14,547,086.73 | 1,683,111.55 | 40.055793°N | 104.847422°W |
| 662.00 | 8.39 | 219.89 | 660.29 | -30.75 | -18.57 | 14,547,077.22 | 1,683,104.49 | 40.055767°N | 104.847447°W |
| 752.00 | 10.28 | 221.61 | 749.10 | -41.80 | -28.11 | 14,547,066.16 | 1,683,094.96 | 40.055737°N | 104.847481°W |
| 840.00 | 10.68 | 222.40 | 835.63 | -53.69 | -38.82 | 14,547,054.25 | 1,683,084.27 | 40.055704°N | 104.847520°W |
| 930.00 | 10.99 | 220.86 | 924.02 | -66.33 | -50.06 | 14,547,041.58 | 1,683,073.06 | 40.055670°N | 104.847560°W |
| 1,058.00 | 11.51 | 221.56 | 1,049.56 | -85.12 | -66.51 | 14,547,022.77 | 1,683,056.63 | 40.055618°N | 104.847619°W |

Survey Report - Geographic

| | | | |
|------------------|--------------------------------|-------------------------------------|--|
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| Project: | Riverbend | TVD Reference: | KB @ 4967.00ft (Original Well Elev) |
| Site: | Riverbend 14 Pad | MD Reference: | KB @ 4967.00ft (Original Well Elev) |
| Well: | Riverbend 08-14 (111415) | North Reference: | True |
| Wellbore: | 08-14 | Survey Calculation Method: | Minimum Curvature |
| Design: | 08-14 | Database: | EDM5000 |

| Survey | | | | | | | | | |
|---------------------|-----------------|-------------|---------------------|------------|------------|---------------------|--------------------|-------------|--------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Map Northing (usft) | Map Easting (usft) | Latitude | Longitude |
| 1,148.00 | 11.21 | 221.30 | 1,137.80 | -98.41 | -78.24 | 14,547,009.46 | 1,683,044.93 | 40.055581°N | 104.847661°W |
| 1,236.00 | 12.79 | 227.19 | 1,223.88 | -111.46 | -91.04 | 14,546,996.39 | 1,683,032.16 | 40.055546°N | 104.847706°W |
| 1,326.00 | 15.51 | 225.87 | 1,311.14 | -126.61 | -106.98 | 14,546,981.21 | 1,683,016.23 | 40.055504°N | 104.847763°W |
| 1,415.00 | 14.50 | 224.29 | 1,397.10 | -142.87 | -123.31 | 14,546,964.92 | 1,682,999.94 | 40.055459°N | 104.847822°W |
| 1,505.00 | 17.01 | 223.36 | 1,483.72 | -160.51 | -140.21 | 14,546,947.25 | 1,682,983.06 | 40.055411°N | 104.847882°W |
| 1,593.00 | 16.79 | 222.79 | 1,567.92 | -179.19 | -157.69 | 14,546,928.54 | 1,682,965.62 | 40.055360°N | 104.847945°W |
| 1,683.00 | 16.79 | 222.40 | 1,654.08 | -198.33 | -175.28 | 14,546,909.37 | 1,682,948.06 | 40.055307°N | 104.848007°W |
| 1,771.00 | 16.39 | 220.99 | 1,738.42 | -217.09 | -192.00 | 14,546,890.58 | 1,682,931.38 | 40.055256°N | 104.848067°W |
| 1,860.00 | 15.91 | 225.69 | 1,823.91 | -235.09 | -208.96 | 14,546,872.55 | 1,682,914.44 | 40.055206°N | 104.848128°W |
| 1,949.00 | 14.99 | 224.07 | 1,909.69 | -251.88 | -225.70 | 14,546,855.73 | 1,682,897.74 | 40.055160°N | 104.848188°W |
| 2,038.00 | 13.89 | 222.66 | 1,995.88 | -268.01 | -240.94 | 14,546,839.58 | 1,682,882.52 | 40.055116°N | 104.848242°W |
| 2,127.00 | 13.49 | 223.28 | 2,082.35 | -283.42 | -255.30 | 14,546,824.14 | 1,682,868.19 | 40.055073°N | 104.848293°W |
| 2,215.00 | 14.81 | 225.08 | 2,167.68 | -298.84 | -270.30 | 14,546,808.70 | 1,682,853.21 | 40.055031°N | 104.848347°W |
| 2,302.00 | 15.12 | 225.47 | 2,251.73 | -314.64 | -286.26 | 14,546,792.87 | 1,682,837.28 | 40.054988°N | 104.848404°W |
| 2,392.00 | 15.69 | 225.17 | 2,338.49 | -331.46 | -303.26 | 14,546,776.03 | 1,682,820.31 | 40.054941°N | 104.848465°W |
| 2,481.00 | 14.41 | 223.67 | 2,424.44 | -347.95 | -319.44 | 14,546,759.50 | 1,682,804.16 | 40.054896°N | 104.848523°W |
| 2,571.00 | 13.71 | 227.28 | 2,511.74 | -363.29 | -335.01 | 14,546,744.14 | 1,682,788.61 | 40.054854°N | 104.848578°W |
| 2,659.00 | 14.19 | 221.78 | 2,597.15 | -378.41 | -349.86 | 14,546,729.00 | 1,682,773.79 | 40.054813°N | 104.848631°W |
| 2,749.00 | 14.50 | 221.87 | 2,684.35 | -395.02 | -364.73 | 14,546,712.36 | 1,682,758.95 | 40.054767°N | 104.848684°W |
| 2,837.00 | 14.11 | 224.99 | 2,769.62 | -410.81 | -379.67 | 14,546,696.54 | 1,682,744.04 | 40.054724°N | 104.848738°W |
| 2,928.00 | 12.48 | 226.66 | 2,858.18 | -425.41 | -394.66 | 14,546,681.92 | 1,682,729.07 | 40.054683°N | 104.848791°W |
| 3,018.00 | 12.70 | 228.37 | 2,946.01 | -438.65 | -409.13 | 14,546,668.65 | 1,682,714.63 | 40.054647°N | 104.848843°W |
| 3,106.00 | 13.49 | 228.29 | 3,031.72 | -451.91 | -424.02 | 14,546,655.37 | 1,682,699.76 | 40.054611°N | 104.848896°W |
| 3,195.00 | 14.41 | 225.39 | 3,118.10 | -466.59 | -439.66 | 14,546,640.66 | 1,682,684.15 | 40.054570°N | 104.848952°W |
| 3,285.00 | 15.29 | 223.76 | 3,205.09 | -483.03 | -455.84 | 14,546,624.19 | 1,682,668.00 | 40.054525°N | 104.849010°W |
| 3,375.00 | 14.90 | 219.89 | 3,291.99 | -500.48 | -471.46 | 14,546,606.72 | 1,682,652.40 | 40.054477°N | 104.849066°W |
| 3,462.00 | 15.38 | 220.77 | 3,375.97 | -517.80 | -486.17 | 14,546,589.37 | 1,682,637.72 | 40.054430°N | 104.849118°W |
| 3,552.00 | 14.02 | 219.06 | 3,463.02 | -535.30 | -500.84 | 14,546,571.84 | 1,682,623.08 | 40.054382°N | 104.849171°W |
| 3,643.00 | 13.18 | 223.89 | 3,551.47 | -551.34 | -514.97 | 14,546,555.78 | 1,682,608.97 | 40.054338°N | 104.849221°W |
| 3,734.00 | 14.50 | 224.86 | 3,639.83 | -566.89 | -530.20 | 14,546,540.20 | 1,682,593.77 | 40.054295°N | 104.849276°W |
| 3,822.00 | 14.41 | 220.46 | 3,725.05 | -583.03 | -545.08 | 14,546,524.04 | 1,682,578.92 | 40.054251°N | 104.849329°W |
| 3,911.00 | 13.58 | 228.07 | 3,811.41 | -598.44 | -560.04 | 14,546,508.60 | 1,682,563.99 | 40.054208°N | 104.849382°W |
| 3,999.00 | 12.70 | 223.67 | 3,897.11 | -612.34 | -574.41 | 14,546,494.68 | 1,682,549.64 | 40.054170°N | 104.849434°W |
| 4,089.00 | 13.80 | 221.30 | 3,984.71 | -627.56 | -588.32 | 14,546,479.43 | 1,682,535.75 | 40.054128°N | 104.849483°W |
| 4,179.00 | 14.02 | 221.87 | 4,072.07 | -643.75 | -602.68 | 14,546,463.22 | 1,682,521.42 | 40.054084°N | 104.849535°W |
| 4,268.00 | 16.22 | 219.67 | 4,157.99 | -661.34 | -617.82 | 14,546,445.60 | 1,682,506.32 | 40.054036°N | 104.849589°W |
| 4,356.00 | 16.48 | 218.97 | 4,242.43 | -680.51 | -633.51 | 14,546,426.41 | 1,682,490.66 | 40.053983°N | 104.849645°W |
| 4,445.00 | 16.39 | 219.37 | 4,327.79 | -700.03 | -649.42 | 14,546,406.86 | 1,682,474.79 | 40.053929°N | 104.849702°W |
| 4,534.00 | 14.41 | 220.07 | 4,413.59 | -718.21 | -664.51 | 14,546,388.65 | 1,682,459.72 | 40.053879°N | 104.849756°W |
| 4,622.00 | 14.11 | 216.47 | 4,498.88 | -735.22 | -677.94 | 14,546,371.62 | 1,682,446.33 | 40.053833°N | 104.849804°W |
| 4,712.00 | 13.18 | 215.06 | 4,586.34 | -752.44 | -690.35 | 14,546,354.38 | 1,682,433.94 | 40.053785°N | 104.849848°W |
| 4,801.00 | 13.18 | 219.28 | 4,673.00 | -768.60 | -702.60 | 14,546,338.20 | 1,682,421.72 | 40.053741°N | 104.849892°W |
| 4,891.00 | 14.72 | 221.56 | 4,760.34 | -785.10 | -716.69 | 14,546,321.68 | 1,682,407.66 | 40.053696°N | 104.849942°W |
| 4,981.00 | 14.59 | 224.29 | 4,847.42 | -801.77 | -732.19 | 14,546,304.98 | 1,682,392.19 | 40.053650°N | 104.849998°W |
| 5,069.00 | 14.81 | 221.70 | 4,932.54 | -818.10 | -747.41 | 14,546,288.62 | 1,682,377.00 | 40.053605°N | 104.850052°W |
| 5,158.00 | 14.59 | 221.78 | 5,018.62 | -834.95 | -762.45 | 14,546,271.74 | 1,682,361.99 | 40.053559°N | 104.850106°W |
| 5,247.00 | 15.12 | 218.79 | 5,104.65 | -852.36 | -777.19 | 14,546,254.31 | 1,682,347.28 | 40.053511°N | 104.850158°W |
| 5,336.00 | 15.38 | 215.89 | 5,190.52 | -870.97 | -791.38 | 14,546,235.68 | 1,682,333.12 | 40.053460°N | 104.850209°W |
| 5,426.00 | 13.71 | 218.97 | 5,277.63 | -888.93 | -805.08 | 14,546,217.69 | 1,682,319.44 | 40.053411°N | 104.850258°W |
| 5,515.00 | 13.18 | 218.27 | 5,364.19 | -905.10 | -818.00 | 14,546,201.50 | 1,682,306.56 | 40.053366°N | 104.850304°W |
| 5,608.00 | 12.61 | 221.78 | 5,454.85 | -920.99 | -831.33 | 14,546,185.59 | 1,682,293.25 | 40.053322°N | 104.850352°W |
| 5,695.00 | 12.70 | 225.39 | 5,539.73 | -934.79 | -844.47 | 14,546,171.77 | 1,682,280.14 | 40.053285°N | 104.850399°W |
| 5,784.00 | 12.61 | 227.67 | 5,626.57 | -948.20 | -858.61 | 14,546,158.33 | 1,682,266.02 | 40.053248°N | 104.850449°W |
| 5,871.00 | 12.70 | 230.57 | 5,711.46 | -960.67 | -873.02 | 14,546,145.84 | 1,682,251.63 | 40.053214°N | 104.850501°W |
| 5,958.00 | 12.22 | 225.69 | 5,796.41 | -973.18 | -887.00 | 14,546,133.31 | 1,682,237.68 | 40.053179°N | 104.850551°W |

Survey Report - Geographic

| | | | |
|------------------|--------------------------------|-------------------------------------|--|
| Company: | Anadarko Petroleum Corporation | Local Co-ordinate Reference: | Well Riverbend 08-14 (111415) - Slot 08-14 |
| Project: | Riverbend | TVD Reference: | KB @ 4967.00ft (Original Well Elev) |
| Site: | Riverbend 14 Pad | MD Reference: | KB @ 4967.00ft (Original Well Elev) |
| Well: | Riverbend 08-14 (111415) | North Reference: | True |
| Wellbore: | 08-14 | Survey Calculation Method: | Minimum Curvature |
| Design: | 08-14 | Database: | EDM5000 |

| Survey | | | | | | | | | | |
|--------------------------------|--------------------|----------------|---------------------------|---------------|---------------|---------------------------|--------------------------|-------------|--------------|--|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Map Northing (usft) | Map Easting (usft) | Latitude | Longitude | |
| 6,047.00 | 12.30 | 225.08 | 5,883.38 | -986.45 | -900.45 | 14,546,120.01 | 1,682,224.25 | 40.053143°N | 104.850599°W | |
| 6,137.00 | 12.79 | 224.77 | 5,971.23 | -1,000.29 | -914.25 | 14,546,106.14 | 1,682,210.47 | 40.053105°N | 104.850648°W | |
| 6,226.00 | 11.38 | 227.50 | 6,058.26 | -1,013.22 | -927.67 | 14,546,093.19 | 1,682,197.08 | 40.053069°N | 104.850696°W | |
| 6,315.00 | 9.89 | 226.00 | 6,145.73 | -1,024.46 | -939.64 | 14,546,081.93 | 1,682,185.12 | 40.053038°N | 104.850739°W | |
| 6,405.00 | 8.61 | 223.58 | 6,234.56 | -1,034.71 | -949.84 | 14,546,071.66 | 1,682,174.94 | 40.053010°N | 104.850775°W | |
| 6,491.00 | 7.69 | 222.57 | 6,319.69 | -1,043.61 | -958.17 | 14,546,062.75 | 1,682,166.62 | 40.052986°N | 104.850805°W | |
| 6,581.00 | 6.42 | 220.68 | 6,409.00 | -1,051.86 | -965.53 | 14,546,054.49 | 1,682,159.28 | 40.052963°N | 104.850831°W | |
| 6,671.00 | 5.49 | 219.19 | 6,498.52 | -1,059.02 | -971.53 | 14,546,047.32 | 1,682,153.29 | 40.052943°N | 104.850853°W | |
| 6,761.00 | 4.22 | 219.98 | 6,588.19 | -1,064.89 | -976.38 | 14,546,041.44 | 1,682,148.45 | 40.052927°N | 104.850870°W | |
| 6,813.83 | 3.72 | 220.52 | 6,640.90 | -1,067.68 | -978.74 | 14,546,038.64 | 1,682,146.10 | 40.052920°N | 104.850879°W | |
| 08-14 BH - 08-14 Legal Window | | | | | | | | | | |
| 6,850.00 | 3.38 | 220.99 | 6,677.00 | -1,069.38 | -980.20 | 14,546,036.94 | 1,682,144.64 | 40.052915°N | 104.850884°W | |
| 6,940.00 | 2.29 | 215.06 | 6,766.89 | -1,072.86 | -982.97 | 14,546,033.46 | 1,682,141.87 | 40.052905°N | 104.850894°W | |
| 7,030.00 | 2.42 | 192.69 | 6,856.81 | -1,076.18 | -984.42 | 14,546,030.14 | 1,682,140.42 | 40.052896°N | 104.850899°W | |
| 7,118.00 | 2.81 | 177.79 | 6,944.72 | -1,080.15 | -984.75 | 14,546,026.17 | 1,682,140.11 | 40.052885°N | 104.850900°W | |
| 7,207.00 | 3.12 | 168.96 | 7,033.60 | -1,084.71 | -984.20 | 14,546,021.61 | 1,682,140.66 | 40.052873°N | 104.850898°W | |
| 7,295.00 | 2.81 | 161.27 | 7,121.48 | -1,089.10 | -983.05 | 14,546,017.22 | 1,682,141.82 | 40.052861°N | 104.850894°W | |
| 7,383.00 | 2.81 | 161.58 | 7,209.38 | -1,093.19 | -981.68 | 14,546,013.13 | 1,682,143.20 | 40.052850°N | 104.850889°W | |
| 7,473.00 | 2.50 | 154.99 | 7,299.28 | -1,097.06 | -980.15 | 14,546,009.26 | 1,682,144.74 | 40.052839°N | 104.850884°W | |
| 7,560.00 | 2.42 | 142.90 | 7,386.20 | -1,100.25 | -978.24 | 14,546,006.08 | 1,682,146.65 | 40.052830°N | 104.850877°W | |
| 7,650.00 | 2.42 | 134.68 | 7,476.12 | -1,103.10 | -975.74 | 14,546,003.24 | 1,682,149.15 | 40.052822°N | 104.850868°W | |
| 7,740.00 | 2.29 | 130.60 | 7,566.05 | -1,105.60 | -973.03 | 14,546,000.73 | 1,682,151.87 | 40.052816°N | 104.850858°W | |
| 7,829.00 | 2.29 | 128.27 | 7,654.98 | -1,107.86 | -970.28 | 14,545,998.48 | 1,682,154.62 | 40.052809°N | 104.850848°W | |
| 7,918.00 | 2.20 | 127.08 | 7,743.91 | -1,109.99 | -967.52 | 14,545,996.35 | 1,682,157.39 | 40.052803°N | 104.850838°W | |
| 8,007.00 | 1.89 | 119.96 | 7,832.85 | -1,111.76 | -964.89 | 14,545,994.60 | 1,682,160.02 | 40.052799°N | 104.850829°W | |
| 8,096.00 | 1.89 | 115.79 | 7,921.80 | -1,113.13 | -962.29 | 14,545,993.23 | 1,682,162.62 | 40.052795°N | 104.850820°W | |
| 8,224.00 | 1.49 | 111.26 | 8,049.75 | -1,114.65 | -958.84 | 14,545,991.71 | 1,682,166.07 | 40.052791°N | 104.850807°W | |
| 8,268.00 | 1.49 | 111.26 | 8,093.73 | -1,115.06 | -957.78 | 14,545,991.30 | 1,682,167.14 | 40.052790°N | 104.850804°W | |
| Proj to TD at 8268 MD/8094 TVD | | | | | | | | | | |

| Survey Annotations | | | | | |
|---------------------|---------------------|-------------------|------------|--------------------------------|--|
| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates | | Comment | |
| | | +N/-S (ft) | +E/-W (ft) | | |
| 8,268.00 | 8,093.73 | -1,115.06 | -957.78 | Proj to TD at 8268 MD/8094 TVD | |

| | | |
|-------------------|--------------------|-------------|
| Checked By: _____ | Approved By: _____ | Date: _____ |
|-------------------|--------------------|-------------|