

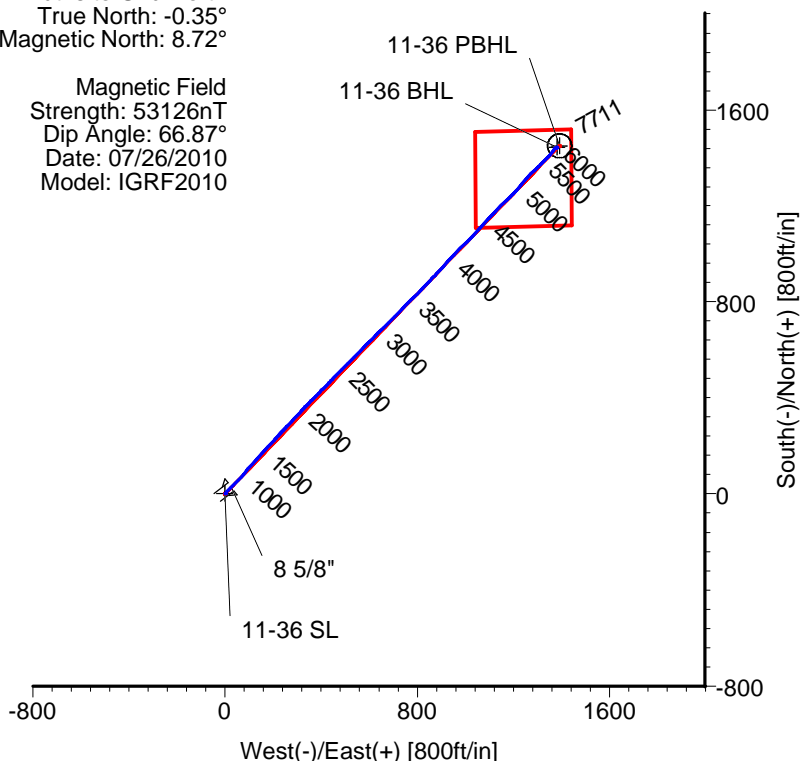
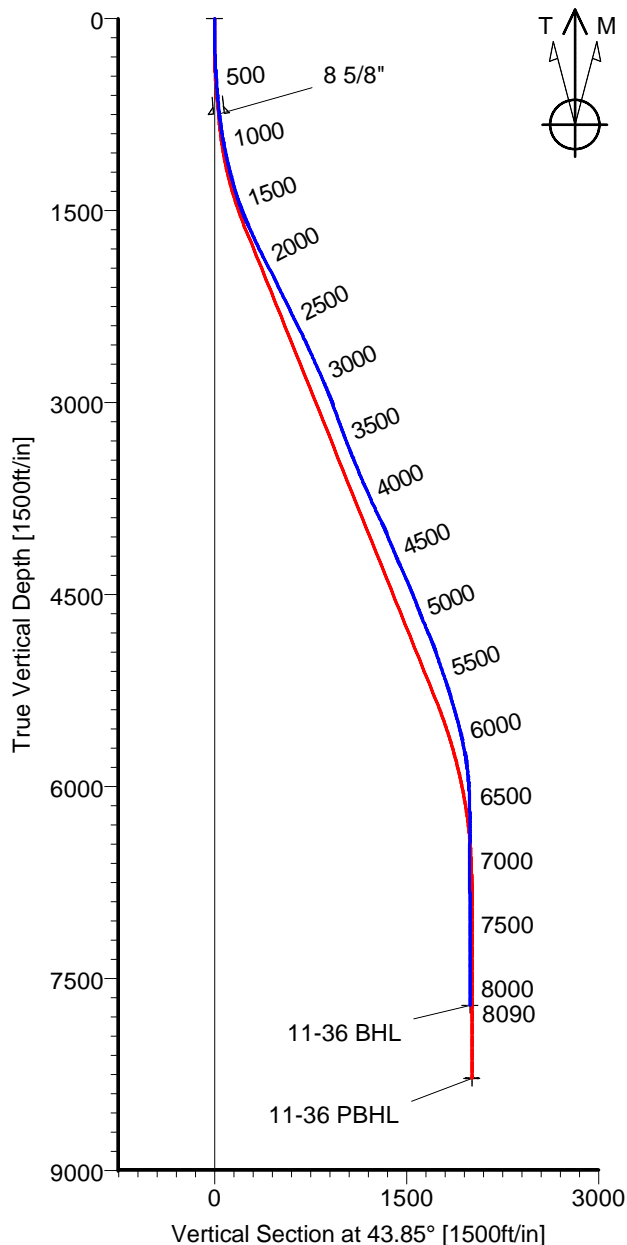
ANADARKO PETROLEUM

Field: Weld County, CO
Site: Vogl 13-36 Pad
Well: 11-36
Wellpath: Original Hole



Azimuths to Grid North
True North: -0.35°
Magnetic North: 8.72°

Magnetic Field
Strength: 53126nT
Dip Angle: 66.87°
Date: 07/26/2010
Model: IGRF2010



CASING DETAILS

| No. | TVD | MD | Name | Size |
|-----|--------|--------|--------|-------|
| 1 | 743.63 | 745.00 | 8 5/8" | 8.625 |

LEGEND

- 11-36,Original Hole,Plan #1
- Original Hole

TARGET DETAILS

| Name | TVD | +N/-S | +E/-W | Latitude | Longitude | Shape |
|------------|---------|---------|---------|---------------|----------------|---------------------|
| 11-36 SL | 0.00 | 0.00 | 0.00 | 40°10'37.704N | 104°57'29.016W | Point |
| 11-36 BHL | 7710.83 | 1443.18 | 1383.17 | 40°10'51.882N | 104°57'11.082W | Point |
| 11-36 PBHL | 8278.00 | 1450.01 | 1392.94 | 40°10'51.949N | 104°57'10.955W | Circle (Radius: 50) |

Wellpath: (11-36/Original Hole)

ALLIS-CHALMERS DIRECTIONAL DRILLING SERVICES
911 Regional Park Drive Houston, Texas 77060
Phone: 713-934-9600 Fax: 713-934-9067



**DIRECTIONAL
DRILLING SERVICES**

Allis-Chalmers Energy, Inc.

Survey Report

| | | | |
|--|---|--|-------------------------------------|
| Company: ANADARKO PETROLEUM Field: Weld County, CO Site: Vogl 13-36 Pad Well: 11-36 Wellpath: Original Hole | Date: 09/07/2010 Co-ordinate(NE) Reference: Vertical (TVD) Reference: Section (VS) Reference: Survey Calculation Method: | Time: 10:39:36 Well: 11-36, Grid North 4817'GL+13'KB 4830.0 Well (0.00N,0.00E,43.85Azi) Minimum Curvature | Page: 1 Db: Sybase |
|--|---|--|-------------------------------------|

| | |
|---|---|
| Field: Weld County, CO Map System: US State Plane Coordinate System 1983 Geo Datum: GRS 1980 Sys Datum: Mean Sea Level | Map Zone: Colorado, Northern Zone Coordinate System: Well Centre Geomagnetic Model: IGRF2010 |
|---|---|

| | |
|--|--|
| Site: Vogl 13-36 Pad Site Position: From: Geographic Position Uncertainty: 0.00 ft Ground Level: 4817.00 ft | Northing: 1307840.32 ft Easting: 3151437.43 ft Latitude: 40 10 37.704 N Longitude: 104 57 29.016 W North Reference: Grid Grid Convergence: 0.35 deg |
|--|--|

| | |
|---|---|
| Well: 11-36 Well Position: +N/-S 0.00 ft +E/-W 0.00 ft Position Uncertainty: 0.00 ft | Slot Name: 11-36 Latitude: 40 10 37.704 N Longitude: 104 57 29.016 W Northing: 1307840.32 ft Easting : 3151437.43 ft |
|---|---|

| | |
|--|--|
| Wellpath: Original Hole Current Datum: 4817'GL+13'KB Magnetic Data: 07/26/2010 Field Strength: 53126 nT Vertical Section: Depth From (TVD) ft | Drilled From: Surface Tie-on Depth: 0.00 ft Above System Datum: Mean Sea Level Declination: 9.07 deg Mag Dip Angle: 66.87 deg +N/-S ft +E/-W ft Direction deg |
| 0.00 | 0.00 |

| | | | | |
|---|----------------------|-----------------------------|-----------------|------------------|
| Survey Program for Definitive Wellpath | | | | |
| Date: 09/07/2010 | Validated: No | Version: 0 | | |
| Actual From | To | Survey | Toolcode | Tool Name |
| 46.00 | 8045.00 | Survey #1 (46.00-8045.00) | MWD | Std MWD |
| 8090.00 | 8090.00 | Survey #2 (8090.00-8090.00) | Project | Projection |

| Survey | | | | | | | | | | |
|----------|-------------|-------------|-----------|-------------|-------------|----------|------------------|--------------------|-------------------|--------------|
| MD ft | Incl deg | Azim deg | TVD ft | +N/-S ft | +E/-W ft | VS ft | DLS deg/100ft | Build deg/100ft | Turn deg/100ft | Tool/Comment |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | TIE LINE |
| 46.00 | 1.10 | 43.90 | 46.00 | 0.32 | 0.31 | 0.44 | 2.39 | 2.39 | 0.00 | MWD |
| 107.00 | 1.10 | 47.40 | 106.99 | 1.14 | 1.14 | 1.61 | 0.11 | 0.00 | 5.74 | MWD |
| 168.00 | 0.90 | 48.50 | 167.98 | 1.85 | 1.93 | 2.67 | 0.33 | -0.33 | 1.80 | MWD |
| 228.00 | 1.20 | 38.60 | 227.97 | 2.65 | 2.68 | 3.77 | 0.58 | 0.50 | -16.50 | MWD |
| 288.00 | 1.60 | 31.60 | 287.95 | 3.86 | 3.51 | 5.21 | 0.72 | 0.67 | -11.67 | MWD |
| 349.00 | 2.50 | 37.90 | 348.91 | 5.63 | 4.77 | 7.37 | 1.52 | 1.48 | 10.33 | MWD |
| 430.00 | 3.90 | 35.40 | 429.78 | 9.27 | 7.45 | 11.85 | 1.74 | 1.73 | -3.09 | MWD |
| 521.00 | 4.40 | 38.30 | 520.54 | 14.53 | 11.41 | 18.39 | 0.60 | 0.55 | 3.19 | MWD |
| 612.00 | 5.10 | 44.20 | 611.23 | 20.17 | 16.39 | 25.91 | 0.94 | 0.77 | 6.48 | MWD |
| 695.00 | 5.30 | 50.60 | 693.89 | 25.25 | 21.93 | 33.40 | 0.74 | 0.24 | 7.71 | MWD |
| 742.00 | 6.20 | 52.70 | 740.65 | 28.17 | 25.62 | 38.06 | 1.97 | 1.91 | 4.47 | MWD |
| 745.00 | 6.26 | 52.46 | 743.63 | 28.37 | 25.88 | 38.39 | 2.23 | 2.05 | -8.08 | 8 5/8" |
| 833.00 | 8.10 | 47.00 | 830.94 | 35.52 | 34.22 | 49.32 | 2.23 | 2.09 | -6.20 | MWD |
| 924.00 | 9.50 | 43.50 | 920.87 | 45.34 | 44.08 | 63.23 | 1.65 | 1.54 | -3.85 | MWD |
| 1014.00 | 11.30 | 40.70 | 1009.39 | 57.41 | 54.94 | 79.47 | 2.08 | 2.00 | -3.11 | MWD |
| 1105.00 | 12.50 | 39.70 | 1098.43 | 71.75 | 67.05 | 98.19 | 1.34 | 1.32 | -1.10 | MWD |
| 1196.00 | 14.10 | 38.60 | 1186.99 | 87.99 | 80.26 | 119.05 | 1.78 | 1.76 | -1.21 | MWD |
| 1287.00 | 15.80 | 43.20 | 1274.91 | 105.69 | 95.65 | 142.48 | 2.28 | 1.87 | 5.05 | MWD |
| 1378.00 | 17.10 | 41.10 | 1362.18 | 124.80 | 112.93 | 168.23 | 1.57 | 1.43 | -2.31 | MWD |
| 1469.00 | 19.00 | 41.10 | 1448.70 | 146.05 | 131.46 | 196.40 | 2.09 | 2.09 | 0.00 | MWD |
| 1560.00 | 22.00 | 42.50 | 1533.92 | 169.78 | 152.72 | 228.24 | 3.34 | 3.30 | 1.54 | MWD |

Allis-Chalmers Energy, Inc.

Survey Report

Company: ANADARKO PETROLEUM
Field: Weld County, CO
Site: Vogl 13-36 Pad
Well: 11-36
Wellpath: Original Hole

| | | | | | |
|-----------------------------------|-----------------------------|--------------|----------|--------------|--------|
| Date: | 09/07/2010 | Time: | 10:39:36 | Page: | 2 |
| Co-ordinate(NE) Reference: | Well: 11-36, Grid North | | | | |
| Vertical (TVD) Reference: | 4817'GL+13'KB 4830.0 | | | | |
| Section (VS) Reference: | Well (0.00N,0.00E,43.85Azi) | | | | |
| Survey Calculation Method: | Minimum Curvature | | | Db: | Sybase |

Survey

| MD ft | Incl deg | Azim deg | TVD ft | +N/-S ft | +E/-W ft | VS ft | DLS deg/100ft | Build deg/100ft | Turn deg/100ft | Tool/Comment |
|----------|-------------|-------------|-----------|-------------|-------------|----------|------------------|--------------------|-------------------|--------------|
| 1651.00 | 25.00 | 44.60 | 1617.37 | 196.05 | 177.75 | 264.52 | 3.42 | 3.30 | 2.31 | MWD |
| 1742.00 | 24.60 | 42.10 | 1699.98 | 223.79 | 203.95 | 302.68 | 1.23 | -0.44 | -2.75 | MWD |
| 1833.00 | 25.90 | 42.50 | 1782.28 | 252.50 | 230.07 | 341.48 | 1.44 | 1.43 | 0.44 | MWD |
| 1924.00 | 27.30 | 43.20 | 1863.65 | 282.37 | 257.79 | 382.22 | 1.58 | 1.54 | 0.77 | MWD |
| 2016.00 | 27.30 | 42.80 | 1945.40 | 313.23 | 286.56 | 424.41 | 0.20 | 0.00 | -0.43 | MWD |
| 2107.00 | 27.10 | 42.80 | 2026.34 | 343.75 | 314.83 | 466.00 | 0.22 | -0.22 | 0.00 | MWD |
| 2198.00 | 25.90 | 45.30 | 2107.78 | 372.94 | 343.04 | 506.59 | 1.80 | -1.32 | 2.75 | MWD |
| 2289.00 | 26.40 | 45.60 | 2189.46 | 401.07 | 371.62 | 546.68 | 0.57 | 0.55 | 0.33 | MWD |
| 2380.00 | 25.90 | 44.20 | 2271.15 | 429.47 | 399.93 | 586.78 | 0.87 | -0.55 | -1.54 | MWD |
| 2471.00 | 26.90 | 43.50 | 2352.66 | 458.66 | 427.96 | 627.24 | 1.15 | 1.10 | -0.77 | MWD |
| 2562.00 | 26.20 | 43.90 | 2434.06 | 488.06 | 456.06 | 667.91 | 0.79 | -0.77 | 0.44 | MWD |
| 2653.00 | 25.70 | 45.60 | 2515.89 | 516.34 | 484.08 | 707.73 | 0.98 | -0.55 | 1.87 | MWD |
| 2744.00 | 24.30 | 44.20 | 2598.36 | 543.57 | 511.24 | 746.17 | 1.67 | -1.54 | -1.54 | MWD |
| 2835.00 | 23.80 | 44.20 | 2681.46 | 570.16 | 537.09 | 783.26 | 0.55 | -0.55 | 0.00 | MWD |
| 2926.00 | 23.90 | 45.60 | 2764.69 | 596.22 | 563.06 | 820.04 | 0.63 | 0.11 | 1.54 | MWD |
| 3017.00 | 23.90 | 44.60 | 2847.89 | 622.25 | 589.18 | 856.90 | 0.45 | 0.00 | -1.10 | MWD |
| 3108.00 | 22.20 | 42.80 | 2931.62 | 647.99 | 613.80 | 892.53 | 2.02 | -1.87 | -1.98 | MWD |
| 3199.00 | 19.70 | 46.30 | 3016.60 | 671.20 | 636.58 | 925.05 | 3.07 | -2.75 | 3.85 | MWD |
| 3289.00 | 20.10 | 47.70 | 3101.23 | 692.09 | 658.98 | 955.63 | 0.69 | 0.44 | 1.56 | MWD |
| 3380.00 | 19.90 | 44.90 | 3186.74 | 713.59 | 681.48 | 986.72 | 1.07 | -0.22 | -3.08 | MWD |
| 3471.00 | 21.50 | 46.30 | 3271.87 | 736.08 | 704.47 | 1018.87 | 1.84 | 1.76 | 1.54 | MWD |
| 3562.00 | 21.10 | 43.50 | 3356.65 | 759.48 | 727.80 | 1051.91 | 1.20 | -0.44 | -3.08 | MWD |
| 3653.00 | 22.90 | 43.20 | 3441.02 | 784.27 | 751.20 | 1085.99 | 1.98 | 1.98 | -0.33 | MWD |
| 3743.00 | 22.50 | 46.30 | 3524.05 | 808.94 | 775.64 | 1120.71 | 1.40 | -0.44 | 3.44 | MWD |
| 3834.00 | 22.90 | 45.60 | 3608.00 | 833.35 | 800.88 | 1155.80 | 0.53 | 0.44 | -0.77 | MWD |
| 3925.00 | 24.30 | 43.20 | 3691.39 | 859.39 | 826.35 | 1192.22 | 1.87 | 1.54 | -2.64 | MWD |
| 4016.00 | 24.50 | 42.50 | 3774.27 | 886.95 | 851.91 | 1229.81 | 0.39 | 0.22 | -0.77 | MWD |
| 4107.00 | 25.30 | 43.20 | 3856.81 | 915.04 | 877.97 | 1268.12 | 0.94 | 0.88 | 0.77 | MWD |
| 4198.00 | 25.50 | 42.10 | 3939.01 | 943.75 | 904.41 | 1307.14 | 0.56 | 0.22 | -1.21 | MWD |
| 4289.00 | 22.20 | 42.10 | 4022.23 | 971.04 | 929.08 | 1343.91 | 3.63 | -3.63 | 0.00 | MWD |
| 4380.00 | 23.10 | 43.20 | 4106.21 | 996.81 | 952.82 | 1378.95 | 1.09 | 0.99 | 1.21 | MWD |
| 4471.00 | 22.40 | 45.30 | 4190.13 | 1022.02 | 977.37 | 1414.13 | 1.18 | -0.77 | 2.31 | MWD |
| 4563.00 | 24.50 | 45.30 | 4274.53 | 1047.77 | 1003.39 | 1450.73 | 2.28 | 2.28 | 0.00 | MWD |
| 4654.00 | 24.50 | 44.20 | 4357.33 | 1074.57 | 1029.96 | 1488.46 | 0.50 | 0.00 | -1.21 | MWD |
| 4745.00 | 23.10 | 43.20 | 4440.59 | 1101.12 | 1055.33 | 1525.18 | 1.60 | -1.54 | -1.10 | MWD |
| 4836.00 | 21.50 | 41.10 | 4524.79 | 1126.70 | 1078.52 | 1559.69 | 1.96 | -1.76 | -2.31 | MWD |
| 4927.00 | 20.60 | 44.60 | 4609.72 | 1150.66 | 1100.72 | 1592.36 | 1.70 | -0.99 | 3.85 | MWD |
| 5018.00 | 22.70 | 44.60 | 4694.29 | 1174.57 | 1124.29 | 1625.93 | 2.31 | 2.31 | 0.00 | MWD |
| 5109.00 | 23.40 | 43.50 | 4778.03 | 1200.18 | 1149.06 | 1661.55 | 0.90 | 0.77 | -1.21 | MWD |
| 5200.00 | 21.80 | 44.90 | 4862.04 | 1225.26 | 1173.43 | 1696.52 | 1.85 | -1.76 | 1.54 | MWD |
| 5291.00 | 19.20 | 44.90 | 4947.27 | 1247.83 | 1195.92 | 1728.38 | 2.86 | -2.86 | 0.00 | MWD |
| 5382.00 | 18.80 | 42.80 | 5033.31 | 1269.19 | 1216.45 | 1758.00 | 0.87 | -0.44 | -2.31 | MWD |
| 5473.00 | 19.50 | 40.70 | 5119.27 | 1291.46 | 1236.32 | 1787.83 | 1.08 | 0.77 | -2.31 | MWD |
| 5564.00 | 18.10 | 41.10 | 5205.42 | 1313.63 | 1255.51 | 1817.12 | 1.54 | -1.54 | 0.44 | MWD |
| 5655.00 | 16.20 | 44.20 | 5292.37 | 1333.38 | 1273.66 | 1843.93 | 2.32 | -2.09 | 3.41 | MWD |
| 5747.00 | 16.70 | 48.10 | 5380.61 | 1351.41 | 1292.44 | 1869.95 | 1.32 | 0.54 | 4.24 | MWD |
| 5838.00 | 15.00 | 46.00 | 5468.14 | 1368.33 | 1310.65 | 1894.76 | 1.97 | -1.87 | -2.31 | MWD |
| 5929.00 | 13.90 | 43.50 | 5556.26 | 1384.44 | 1326.64 | 1917.46 | 1.39 | -1.21 | -2.75 | MWD |
| 6019.00 | 11.60 | 44.20 | 5644.04 | 1398.77 | 1340.40 | 1937.32 | 2.56 | -2.56 | 0.78 | MWD |
| 6111.00 | 11.10 | 39.00 | 5734.24 | 1412.28 | 1352.42 | 1955.39 | 1.24 | -0.54 | -5.65 | MWD |
| 6202.00 | 7.70 | 37.20 | 5824.01 | 1423.95 | 1361.62 | 1970.18 | 3.75 | -3.74 | -1.98 | MWD |
| 6293.00 | 5.80 | 38.60 | 5914.37 | 1432.40 | 1368.17 | 1980.82 | 2.10 | -2.09 | 1.54 | MWD |
| 6384.00 | 3.70 | 43.50 | 6005.05 | 1438.12 | 1373.07 | 1988.33 | 2.35 | -2.31 | 5.38 | MWD |

Allis-Chalmers Energy, Inc.

Survey Report

| | | |
|--|--|---|
| Company: ANADARKO PETROLEUM Field: Weld County, CO Site: Vogl 13-36 Pad Well: 11-36 Wellpath: Original Hole | Date: 09/07/2010 Co-ordinate(NE) Reference: Well: 11-36, Grid North Vertical (TVD) Reference: 4817'GL+13'KB 4830.0 Section (VS) Reference: Well (0.00N,0.00E,43.85Azi) Survey Calculation Method: Minimum Curvature | Page: 3 Db: Sybase |
|--|--|---|

Survey

| MD ft | Incl deg | Azim deg | TVD ft | +N/-S ft | +E/-W ft | VS ft | DLS deg/100ft | Build deg/100ft | Turn deg/100ft | Tool/Comment |
|----------|-------------|-------------|-----------|-------------|-------------|----------|------------------|--------------------|-------------------|--------------|
| 6475.00 | 2.10 | 49.20 | 6095.94 | 1441.34 | 1376.35 | 1992.93 | 1.78 | -1.76 | 6.26 | MWD |
| 6566.00 | 0.90 | 100.50 | 6186.91 | 1442.30 | 1378.31 | 1994.98 | 1.86 | -1.32 | 56.37 | MWD |
| 6748.00 | 0.30 | 180.60 | 6368.90 | 1441.56 | 1379.71 | 1995.42 | 0.49 | -0.33 | 44.01 | MWD |
| 6929.00 | 1.10 | 256.90 | 6549.88 | 1440.70 | 1378.02 | 1993.62 | 0.59 | 0.44 | 42.15 | MWD |
| 7111.00 | 0.90 | 39.70 | 6731.87 | 1441.40 | 1377.23 | 1993.58 | 1.04 | -0.11 | 78.46 | MWD |
| 7292.00 | 0.70 | 66.70 | 6912.86 | 1442.93 | 1379.15 | 1996.02 | 0.23 | -0.11 | 14.92 | MWD |
| 7474.00 | 0.20 | 67.10 | 7094.85 | 1443.49 | 1380.47 | 1997.33 | 0.27 | -0.27 | 0.22 | MWD |
| 7656.00 | 0.70 | 137.40 | 7276.84 | 1442.80 | 1381.51 | 1997.56 | 0.36 | 0.27 | 38.63 | MWD |
| 7838.00 | 0.50 | 91.30 | 7458.84 | 1441.96 | 1383.06 | 1998.02 | 0.28 | -0.11 | -25.33 | MWD |
| 8020.00 | 0.50 | 330.80 | 7640.83 | 1442.64 | 1383.46 | 1998.79 | 0.48 | 0.00 | -66.21 | MWD |
| 8045.00 | 0.50 | 331.80 | 7665.83 | 1442.83 | 1383.36 | 1998.86 | 0.03 | 0.00 | 4.00 | MWD |
| 8090.00 | 0.50 | 331.80 | 7710.83 | 1443.18 | 1383.17 | 1998.98 | 0.00 | 0.00 | 0.00 | 11-36 BHL |

Targets

| Name | Description Dip. | Dir. | TVD ft | +N/-S ft | +E/-W ft | Map Northing ft | Map Easting ft | <--- Latitude ---> Deg Min Sec | | | <--- Longitude ---> Deg Min Sec | | |
|----------------------|---------------------|------|-----------|-------------|-------------|-----------------------|----------------------|-----------------------------------|----|----------|------------------------------------|----|----------|
| 11-36 SL | | | 0.00 | 0.00 | 0.00 | 1307840.32 | 3151437.43 | 40 | 10 | 37.704 N | 104 | 57 | 29.016 W |
| 11-36 BHL | | | 7710.83 | 1443.18 | 1383.17 | 1309283.50 | 3152820.60 | 40 | 10 | 51.882 N | 104 | 57 | 11.082 W |
| 11-36 PBHL | | | 8278.00 | 1450.01 | 1392.94 | 1309290.33 | 3152830.38 | 40 | 10 | 51.949 N | 104 | 57 | 10.955 W |
| -Circle (Radius: 50) | | | | | | | | | | | | | |

Casing Points

| MD ft | TVD ft | Diameter in | Hole Size in | Name |
|----------|-----------|----------------|-----------------|--------|
| 745.00 | 743.63 | 8.625 | 9.875 | 8 5/8" |