



# Actual Wellpath Report

OXF-97H-HS AWP Proj: 20473'  
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### REFERENCE WELLPATH IDENTIFICATION

|          |                   |          |                |
|----------|-------------------|----------|----------------|
| Operator | NOBLE ENERGY      | Slot     | Slot H         |
| Area     | Doddridge Co., WV | Well     | OXF-97H-HS     |
| Field    | Doddridge         | Wellbore | OXF-97H-HS AWB |
| Facility | OXF-97 Pad        |          |                |

### REPORT SETUP INFORMATION

|                     |   |                      |   |
|---------------------|---|----------------------|---|
| Projection System   | NAD27 / Lambert West Virginia SP, Northern Zone (4701), US feet | Software System      | WellArchitect@ 4.0.1                      |
| North Reference     | Grid  | User                 | Edsaryar                                  |
| Scale               | 0.999964  | Report Generated     | 19/May/2015 at 13:47                      |
| Convergence at slot | 0.83° West  | Database/Source file | WellArchitectEasternDB/OXF-97H-HS_AWB.xml |

### WELLPATH LOCATION

|                       | Local coordinates |           | Grid coordinates |                  | Geographic coordinates |                |
|-----------------------|-------------------|-----------|------------------|------------------|------------------------|----------------|
|                       | North [ft]        | East [ft] | Easting [US ft]  | Northing [US ft] | Latitude               | Longitude      |
| Slot Location         | -60.02            | 19.93     | 1630682.70       | 269604.26        | 39°13'58.313"N         | 80°48'13.716"W |
| Facility Reference Pt |                   |           | 1630662.77       | 269664.28        | 39°13'58.904"N         | 80°48'13.980"W |
| Field Reference Pt    |                   |           | 609601.22        | 0.00             | 38°23'48.753"N         | 84°21'09.765"W |

### WELLPATH DATUM

|                          |                     |  |                   |
|--------------------------|---------------------|--|-------------------|
| Calculation method       | Minimum curvature   | Precision 543 (RKB) to Facility Vertical Datum   | 1351.41ft         |
| Horizontal Reference Pt  | Offshore            | Precision 543 (RKB) to Mean Sea Level            | 1351.41ft         |
| Vertical Reference       | Precision 543 (RKB) | Precision 543 (RKB) to Mud Line at Slot (Slot H) | 18.00ft           |
| MD Reference Pt          | Precision 543 (RKB) | Section Origin                                   | N 0.00, E 0.00 ft |
| Field Vertical Reference | Mean Sea Level      | Section Azimuth                                  | 335.49°           |

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|----------|-------------------|----------|----------------|
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| Field    | Doddridge         | Wellbore | OXF-97H-HS AWB |
| Facility | OXF-97 Pad        |          |                |

## WELLPATH DATA (224 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] | Latitude       | Longitude      | Closure Dist [ft] | Closure Dir [°] | DLS [°/100ft] | Build Rate [°/100ft] | Turn Rate [°/100ft] |
|---------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 18.00   | 0.000           | 20.000      | 18.00    | 0.00           | 0.00       | 0.00      | 1630682.70        | 269604.26          | 39°13'58.313"N | 80°48'13.716"W | 0.00              | 0.000           | 0.00          | 0.00                 | 0.00                |
| 108.00  | 0.190           | 20.000      | 108.00   | 0.11           | 0.14       | 0.05      | 1630682.75        | 269604.40          | 39°13'58.315"N | 80°48'13.715"W | 0.15              | 20.000          | 0.21          | 0.00                 | 0.00                |
| 208.00  | 0.180           | 30.650      | 208.00   | 0.31           | 0.43       | 0.19      | 1630682.89        | 269604.69          | 39°13'58.318"N | 80°48'13.714"W | 0.47              | 23.539          | 0.04          | -0.01                | 10.65               |
| 408.00  | 0.070           | 159.730     | 408.00   | 0.22           | 0.54       | 0.65      | 1630683.35        | 269604.80          | 39°13'58.319"N | 80°48'13.708"W | 0.85              | 50.711          | 0.20          | -0.14                | 73.89               |
| 608.00  | 0.010           | 274.310     | 608.00   | 0.20           | 0.46       | 0.53      | 1630683.23        | 269604.72          | 39°13'58.318"N | 80°48'13.709"W | 0.70              | 48.895          | 0.07          | -0.07                | 11.61               |
| 708.00  | 0.500           | 352.040     | 708.00   | 0.62           | 0.89       | 0.46      | 1630683.16        | 269605.15          | 39°13'58.322"N | 80°48'13.710"W | 1.01              | 27.201          | 0.50          | 0.49                 | 77.73               |
| 908.00  | 0.170           | 36.240      | 907.99   | 1.90           | 2.26       | 0.36      | 1630683.06        | 269606.52          | 39°13'58.336"N | 80°48'13.712"W | 2.28              | 9.086           | 0.37          | -0.30                | 45.07               |
| 1108.00 | 0.380           | 57.360      | 1107.99  | 2.18           | 2.83       | 0.95      | 1630683.65        | 269607.09          | 39°13'58.341"N | 80°48'13.705"W | 2.98              | 18.487          | 0.20          | 0.18                 | 18.78               |
| 1208.00 | 0.590           | 46.450      | 1207.99  | 2.40           | 3.36       | 1.60      | 1630684.30        | 269607.62          | 39°13'58.347"N | 80°48'13.696"W | 3.72              | 25.425          | 0.23          | 0.21                 | -10.91              |
| 1408.00 | 0.760           | 38.410      | 1407.97  | 3.01           | 4.79       | 3.25      | 1630685.95        | 269609.05          | 39°13'58.361"N | 80°48'13.676"W | 5.79              | 34.180          | 0.28          | 0.17                 | -19.12              |
| 1508.00 | 0.610           | 50.700      | 1507.97  | 3.45           | 5.65       | 4.08      | 1630686.78        | 269609.91          | 39°13'58.370"N | 80°48'13.665"W | 6.96              | 35.828          | 0.21          | -0.15                | 12.29               |
| 1608.00 | 0.970           | 47.680      | 1607.96  | 3.84           | 6.55       | 5.11      | 1630687.81        | 269610.81          | 39°13'58.379"N | 80°48'13.652"W | 8.31              | 37.969          | 0.36          | 0.36                 | -3.02               |
| 1708.00 | 0.990           | 39.550      | 1707.95  | 4.40           | 7.65       | 6.18      | 1630688.88        | 269611.91          | 39°13'58.390"N | 80°48'13.639"W | 9.84              | 38.911          | 0.22          | -0.18                | -8.13               |
| 1908.00 | 0.540           | 43.990      | 1907.93  | 4.46           | 8.62       | 8.15      | 1630690.84        | 269612.88          | 39°13'58.400"N | 80°48'13.614"W | 11.86             | 43.389          | 0.46          | -0.15                | -41.63              |
| 2008.00 | 0.540           | 42.000      | 2007.93  | 4.82           | 9.31       | 8.79      | 1630691.49        | 269613.57          | 39°13'58.407"N | 80°48'13.606"W | 12.80             | 43.361          | 0.02          | 0.00                 | -1.93               |
| 2108.00 | 0.490           | 38.900      | 2107.92  | 5.20           | 9.99       | 9.37      | 1630692.07        | 269614.25          | 39°13'58.413"N | 80°48'13.599"W | 13.70             | 43.166          | 0.06          | -0.05                | -3.52               |
| 2208.00 | 0.340           | 50.900      | 2207.92  | 5.47           | 10.51      | 9.87      | 1630692.57        | 269614.77          | 39°13'58.419"N | 80°48'13.593"W | 14.42             | 43.187          | 0.17          | -0.15                | 12.37               |
| 2408.00 | 0.090           | 91.200      | 2407.92  | 5.70           | 11.19      | 10.79     | 1630693.49        | 269615.45          | 39°13'58.426"N | 80°48'13.581"W | 15.54             | 43.959          | 0.26          | -0.26                | 2.80                |
| 2508.00 | 0.180           | 101.150     | 2507.92  | 5.70           | 11.30      | 11.05     | 1630693.75        | 269615.56          | 39°13'58.427"N | 80°48'13.578"W | 15.81             | 44.345          | 0.05          | 0.03                 | 16.03               |
| 2608.00 | 0.340           | 88.950      | 2607.92  | 5.39           | 11.10      | 11.35     | 1630694.05        | 269615.35          | 39°13'58.425"N | 80°48'13.574"W | 15.87             | 45.655          | 0.34          | 0.16                 | 75.78               |
| 2708.00 | 0.210           | 62.200      | 2707.92  | 4.92           | 10.66      | 11.53     | 1630694.23        | 269614.92          | 39°13'58.420"N | 80°48'13.572"W | 15.70             | 47.246          | 0.17          | -0.13                | 23.27               |

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|----------|-------------------|----------|----------------|
| Area     | Doddridge Co., WV | Well     | OXF-97H-HS     |
| Field    | Doddridge         | Wellbore | OXF-97H-HS AWB |
| Facility | OXF-97 Pad        |          |                |

## WELLPATH DATA (224 stations)

| MD (ft) | Inclination (°) | Azimuth (°) | TVD (ft) | Vert Sect (ft) | North (ft) | East (ft) | Grid East (US ft) | Grid North (US ft) | Latitude       | Longitude      | Closure Dist (ft) | Closure Dir (°) | DLS (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 2908.00 | 0.260           | 249.420     | 2907.92  | 4.86           | 10.39      | 11.06     | 1630693.76        | 269614.65          | 39°13'58.418"N | 80°48'13.577"W | 15.18             | 46.798          | 0.12          | 0.10                 | -18.87              |
| 3008.00 | 0.240           | 109.170     | 3007.91  | 4.74           | 10.24      | 11.05     | 1630693.75        | 269614.50          | 39°13'58.416"N | 80°48'13.578"W | 15.07             | 47.171          | 0.47          | -0.02                | -140.25             |
| 3108.00 | 0.490           | 151.060     | 3107.91  | 4.16           | 9.80       | 11.45     | 1630694.15        | 269614.06          | 39°13'58.412"N | 80°48'13.572"W | 15.07             | 49.453          | 0.35          | 0.25                 | 41.89               |
| 3208.00 | 0.490           | 170.600     | 3207.91  | 3.32           | 9.00       | 11.73     | 1630694.43        | 269613.26          | 39°13'58.404"N | 80°48'13.569"W | 14.79             | 52.495          | 0.17          | 0.00                 | 19.54               |
| 3308.00 | 0.340           | 163.280     | 3307.90  | 1.74           | 7.68       | 12.64     | 1630695.34        | 269611.94          | 39°13'58.391"N | 80°48'13.557"W | 14.79             | 58.728          | 0.34          | -0.22                | 34.07               |
| 3508.00 | 0.510           | 163.070     | 3507.90  | 1.01           | 6.97       | 12.86     | 1630695.56        | 269611.23          | 39°13'58.384"N | 80°48'13.554"W | 14.62             | 61.543          | 0.17          | 0.17                 | -0.21               |
| 3608.00 | 0.410           | 214.330     | 3607.90  | 0.38           | 6.25       | 12.79     | 1630695.48        | 269610.51          | 39°13'58.377"N | 80°48'13.555"W | 14.23             | 63.958          | 0.41          | -0.10                | 51.26               |
| 3708.00 | 0.400           | 171.790     | 3707.89  | -0.14          | 5.61       | 12.63     | 1630695.33        | 269609.87          | 39°13'58.371"N | 80°48'13.557"W | 13.82             | 66.070          | 0.29          | -0.01                | -42.54              |
| 3808.00 | 0.380           | 237.620     | 3807.89  | -0.64          | 4.74       | 11.92     | 1630694.62        | 269609.00          | 39°13'58.362"N | 80°48'13.565"W | 12.83             | 68.327          | 0.04          | 0.04                 | 3.28                |
| 4008.00 | 0.360           | 235.990     | 4007.89  | -0.73          | 4.38       | 11.38     | 1630694.08        | 269608.64          | 39°13'58.358"N | 80°48'13.572"W | 12.20             | 68.932          | 0.02          | -0.02                | -1.63               |
| 4108.00 | 0.260           | 226.280     | 4107.89  | -0.86          | 4.05       | 10.96     | 1630693.66        | 269608.31          | 39°13'58.355"N | 80°48'13.578"W | 11.68             | 69.706          | 0.11          | -0.10                | -9.71               |
| 4208.00 | 0.450           | 279.020     | 4207.89  | -0.72          | 3.96       | 10.40     | 1630693.10        | 269608.22          | 39°13'58.354"N | 80°48'13.585"W | 11.13             | 69.181          | 0.36          | 0.19                 | 52.74               |
| 4308.00 | 0.590           | 256.740     | 4307.88  | -0.13          | 3.73       | 8.50      | 1630691.20        | 269607.99          | 39°13'58.352"N | 80°48'13.609"W | 9.28              | 66.281          | 0.04          | 0.00                 | -4.01               |
| 4508.00 | 0.880           | 280.530     | 4507.87  | 0.41           | 3.76       | 7.24      | 1630689.94        | 269608.02          | 39°13'58.352"N | 80°48'13.625"W | 8.16              | 62.587          | 0.42          | 0.29                 | 23.79               |
| 4608.00 | 1.140           | 265.020     | 4607.85  | 1.15           | 3.82       | 5.61      | 1630688.31        | 269608.08          | 39°13'58.352"N | 80°48'13.645"W | 6.79              | 55.746          | 0.29          | 0.13                 | -15.51              |
| 4708.00 | 1.140           | 270.440     | 4707.84  | 1.86           | 3.75       | 3.74      | 1630686.44        | 269608.01          | 39°13'58.351"N | 80°48'13.669"W | 5.30              | 44.892          | 0.16          | 0.13                 | 5.42                |
| 4908.00 | 1.520           | 291.010     | 4907.79  | 4.56           | 4.95       | -0.14     | 1630682.56        | 269609.21          | 39°13'58.362"N | 80°48'13.719"W | 4.95              | 358.323         | 0.20          | 0.19                 | -2.22               |
| 5008.00 | 1.620           | 289.280     | 5007.77  | 6.30           | 5.84       | -2.37     | 1630680.33        | 269610.10          | 39°13'58.371"N | 80°48'13.747"W | 6.30              | 337.857         | 0.11          | 0.11                 | 1.27                |
| 5108.00 | 1.620           | 289.640     | 5107.73  | 8.19           | 6.78       | -4.86     | 1630677.84        | 269611.04          | 39°13'58.380"N | 80°48'13.779"W | 8.35              | 324.379         | 0.20          | 0.19                 | -2.64               |
| 5208.00 | 1.300           | 290.750     | 5207.70  | 9.98           | 7.66       | -7.25     | 1630675.45        | 269611.92          | 39°13'58.388"N | 80°48'13.810"W | 10.55             | 316.568         | 0.32          | -0.32                | 1.11                |
| 5408.00 | 1.570           | 290.430     | 5407.63  | 13.61          | 9.32       | -11.93    | 1630670.77        | 269613.78          | 39°13'58.406"N | 80°48'13.869"W | 15.26             | 308.585         | 0.13          | 0.12                 | -2.31               |
| 5508.00 | 1.790           | 290.500     | 5507.59  | 15.69          | 10.55      | -14.68    | 1630668.03        | 269614.81          | 39°13'58.416"N | 80°48'13.904"W | 18.07             | 305.714         | 0.22          | 0.22                 | 0.32                |
| 5608.00 | 2.080           | 291.000     | 5607.53  | 18.15          | 11.83      | -17.80    | 1630666.90        | 269616.09          | 39°13'58.428"N | 80°48'13.944"W | 21.37             | 303.603         | 0.30          | 0.29                 | 2.75                |
| 5708.00 | 2.390           | 291.620     | 5707.46  | 21.05          | 13.39      | -21.37    | 1630661.33        | 269617.65          | 39°13'58.443"N | 80°48'13.990"W | 25.22             | 302.059         | 0.31          | 0.31                 | 0.12                |
| 5808.00 | 3.420           | 305.260     | 5807.34  | 34.94          | 15.45      | -33.77    | 1630657.23        | 269621.09          | 39°13'58.466"N | 80°48'14.036"W | 29.91             | 301.821         | 0.41          | 0.70                 | 12.19               |

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|----------|-------------------|----------|----------------|
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|---------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 5908.00 | 3.350           | 308.790     | 5907.19  | 29.90          | 19.22      | -29.93    | 1630652.77        | 269623.47          | 39°13'58.499"N | 80°48'14.100"W | 35.57             | 302.702         | 0.31          | 0.26                 | 2.87                |
| 5958.00 | 3.300           | 315.150     | 5957.10  | 32.55          | 21.15      | -32.08    | 1630650.62        | 269625.41          | 39°13'58.518"N | 80°48'14.128"W | 38.43             | 303.396         | 0.74          | -0.10                | 12.72               |
| 6025.00 | 2.670           | 297.670     | 6024.01  | 35.59          | 23.24      | -34.82    | 1630647.88        | 269627.50          | 39°13'58.538"N | 80°48'14.163"W | 41.87             | 303.720         | 1.64          | -0.94                | -26.09              |
| 6115.00 | 3.580           | 308.850     | 6113.88  | 39.76          | 25.98      | -38.87    | 1630643.83        | 269630.24          | 39°13'58.565"N | 80°48'14.215"W | 46.75             | 303.757         | 1.21          | 1.01                 | 12.42               |
| 6294.00 | 15.380          | 328.770     | 6290.45  | 66.45          | 48.00      | -54.91    | 1630627.79        | 269652.26          | 39°13'58.780"N | 80°48'14.423"W | 72.93             | 311.161         | 8.17          | 8.07                 | 6.80                |
| 6383.00 | 21.960          | 335.910     | 6374.73  | 94.85          | 73.32      | -67.83    | 1630614.87        | 269677.57          | 39°13'59.028"N | 80°48'14.592"W | 99.88             | 317.224         | 7.81          | 7.39                 | 8.02                |
| 6473.00 | 27.080          | 341.220     | 6456.60  | 132.09         | 108.10     | -81.31    | 1630601.39        | 269712.36          | 39°13'59.370"N | 80°48'14.769"W | 135.27            | 323.051         | 6.19          | 5.69                 | 5.90                |
| 6562.00 | 29.830          | 343.160     | 6534.84  | 174.19         | 148.48     | -94.25    | 1630588.46        | 269752.73          | 39°13'59.767"N | 80°48'14.941"W | 175.86            | 327.594         | 3.26          | 3.09                 | 2.18                |
| 6652.00 | 35.230          | 348.110     | 6616.41  | 223.09         | 195.08     | -106.16   | 1630576.74        | 269792.31          | 39°14'00.232"N | 80°48'15.113"W | 222.02            | 331.519         | 2.31          | 2.28                 | 1.30                |
| 6741.00 | 46.190          | 345.330     | 6677.60  | 279.26         | 252.35     | -119.69   | 1630563.02        | 269856.60          | 39°14'00.790"N | 80°48'15.283"W | 279.29            | 334.625         | 11.91         | 11.73                | -3.12               |
| 6831.00 | 56.000          | 343.230     | 6734.05  | 348.40         | 319.65     | -138.72   | 1630543.98        | 269923.90          | 39°14'01.453"N | 80°48'15.538"W | 348.46            | 336.540         | 11.05         | 10.90                | -2.33               |
| 6920.00 | 65.350          | 345.320     | 6777.60  | 424.98         | 394.27     | -159.67   | 1630523.04        | 269998.52          | 39°14'02.187"N | 80°48'15.818"W | 425.37            | 337.954         | 10.70         | 10.51                | 2.35                |
| 7010.00 | 68.410          | 343.620     | 6812.93  | 506.73         | 474.00     | -181.84   | 1630500.87        | 270078.24          | 39°14'02.972"N | 80°48'16.114"W | 507.68            | 339.012         | 3.82          | 3.40                 | -1.89               |
| 7099.00 | 75.410          | 342.160     | 6840.55  | 590.58         | 554.76     | -206.85   | 1630487.81        | 270158.18          | 39°14'03.768"N | 80°48'16.410"W | 592.57            | 339.572         | 5.87          | 5.87                 | 1.74                |
| 7189.00 | 85.810          | 340.660     | 6855.22  | 678.80         | 638.76     | -235.25   | 1630447.46        | 270243.00          | 39°14'04.592"N | 80°48'16.823"W | 680.71            | 339.782         | 11.65         | 11.56                | -1.49               |
| 7278.00 | 89.880          | 332.090     | 6858.14  | 767.63         | 720.16     | -270.86   | 1630411.85        | 270324.39          | 39°14'05.392"N | 80°48'17.291"W | 769.41            | 339.388         | 10.93         | 5.19                 | -9.63               |
| 7368.00 | 89.880          | 334.690     | 6857.90  | 857.56         | 800.62     | -311.17   | 1630371.54        | 270404.85          | 39°14'06.181"N | 80°48'17.818"W | 858.96            | 338.761         | 2.95          | -0.61                | 2.89                |
| 7458.00 | 89.880          | 334.370     | 6858.60  | 947.55         | 881.87     | -349.87   | 1630332.84        | 270486.09          | 39°14'06.978"N | 80°48'18.325"W | 948.74            | 338.360         | 0.80          | -0.72                | -0.36               |
| 7548.00 | 89.880          | 335.130     | 6859.24  | 1036.54        | 962.04     | -388.15   | 1630297.57        | 270566.44          | 39°14'07.772"N | 80°48'18.832"W | 1036.54           | 337.906         | 2.00          | 0.45                 | 1.04                |
| 7637.00 | 89.880          | 335.420     | 6861.57  | 1126.51        | 1044.71    | -424.09   | 1630258.63        | 270648.93          | 39°14'08.577"N | 80°48'19.298"W | 1127.51           | 337.906         | 2.25          | -2.12                | -0.76               |
| 7726.00 | 89.880          | 336.600     | 6864.20  | 1215.45        | 1125.01    | -462.37   | 1630220.35        | 270729.23          | 39°14'09.365"N | 80°48'19.799"W | 1216.32           | 337.658         | 2.43          | 1.31                 | -2.04               |
| 7816.00 | 89.880          | 335.678     | 6865.12  | 1305.43        | 1206.32    | -500.92   | 1630181.80        | 270810.54          | 39°14'10.163"N | 80°48'20.304"W | 1306.19           | 337.450         | 2.58          | 1.17                 | 2.30                |
| 7905.00 | 89.880          | 334.500     | 6865.19  | 1394.43        | 1287.05    | -538.40   | 1630144.32        | 270891.26          | 39°14'10.956"N | 80°48'20.795"W | 1395.12           | 337.299         | 1.29          | 0.03                 | -1.29               |
| 8085.00 | 89.880          | 332.130     | 6865.34  | 1484.32        | 1367.44    | -576.44   | 1630108.25        | 270971.51          | 39°14'11.748"N | 80°48'21.312"W | 1484.32           | 337.140         | 0.71          | 0.21                 | 1.12                |
| 8174.00 | 89.880          | 329.820     | 6865.21  | 1573.90        | 1445.07    | -624.44   | 1630088.29        | 271049.27          | 39°14'12.505"N | 80°48'21.918"W | 1574.21           | 336.630         | 2.62          | 0.56                 | -2.56               |
| 8264.00 | 89.880          | 329.820     | 6865.21  | 1662.37        | 1521.55    | -669.96   | 1630072.77        | 271125.75          | 39°14'13.254"N | 80°48'22.510"W | 1662.51           | 336.236         | 0.95          | -0.45                | 0.83                |
| 8353.00 | 90.350          | 330.740     | 6864.87  | 1752.24        | 1601.81    | -710.54   | 1629972.18        | 271206.01          | 39°14'14.042"N | 80°48'23.041"W | 1752.33           | 336.078         | 7.96          | 0.74                 | 7.92                |
| 8442.00 | 90.340          | 330.670     | 6864.18  | 1841.22        | 1683.55    | -745.74   | 1629936.99        | 271287.75          | 39°14'14.844"N | 80°48'23.503"W | 1841.32           | 336.109         | 0.25          | -0.24                | -0.08               |
| 8531.00 | 90.340          | 330.670     | 6863.91  | 1930.12        | 1765.05    | -779.14   | 1629901.50        | 271370.23          | 39°14'15.655"N | 80°48'24.015"W | 1930.12           | 336.144         | 2.89          | 0.27                 | 0.27                |



# Actual Wellpath Report

OXF-97H-HS AWP Proj: 20473'  
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## REFERENCE WELLPATH IDENTIFICATION

| Operator | NOBLE ENERGY      | Slot     | Slot H         |
|----------|-------------------|----------|----------------|
| Area     | Doddridge Co., WV | Well     | OXF-97H-HS     |
| Field    | Doddridge         | Wellbore | OXF-97H-HS AWB |
| Facility | OXF-97 Pad        |          |                |

## WELLPATH DATA (224 stations)

| MD [ft]  | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude       | Longitude      | Closure Dist [ft] | Closure Dir [°] | DLS [°/100ft] | Build Rate [°/100ft] | Turn Rate [°/100ft] |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 8532.00  | 90.460          | 340.830     | 6862.93  | 2019.84        | 1850.62    | -809.87   | 1629872.86        | 271454.81          | 39°14'16.486"N | 80°48'24.349"W | 2020.07           | 336.365         | 1.77          | 0.07                 | 1.77                |
| 8622.00  | 90.800          | 341.210     | 6861.94  | 2109.41        | 1935.72    | -839.14   | 1629843.59        | 271539.91          | 39°14'17.323"N | 80°48'24.737"W | 2109.78           | 336.563         | 0.57          | 0.38                 | 0.42                |
| 8711.00  | 91.020          | 336.680     | 6860.53  | 2198.21        | 2018.75    | -871.10   | 1629811.63        | 271622.93          | 39°14'18.139"N | 80°48'25.158"W | 2198.67           | 336.660         | 5.10          | 0.25                 | -5.09               |
| 8800.00  | 91.050          | 335.520     | 6858.92  | 2287.19        | 2100.10    | -907.15   | 1629775.58        | 271704.28          | 39°14'18.938"N | 80°48'25.631"W | 2287.65           | 336.638         | 1.30          | 0.03                 | -1.30               |
| 8890.00  | 91.160          | 335.940     | 6857.30  | 2377.18        | 2188.13    | -944.14   | 1629738.44        | 271789.41          | 39°14'19.743"N | 80°48'26.104"W | 2377.63           | 336.616         | 0.44          | 0.14                 | 0.37                |
| 8979.00  | 91.290          | 336.130     | 6855.31  | 2466.15        | 2263.44    | -980.28   | 1629702.46        | 271867.62          | 39°14'20.542"N | 80°48'26.591"W | 2466.60           | 336.583         | 0.27          | 0.17                 | 0.21                |
| 9069.00  | 90.280          | 337.060     | 6854.08  | 2556.12        | 2346.03    | -1016.03  | 1629666.71        | 271950.20          | 39°14'21.353"N | 80°48'27.060"W | 2556.59           | 336.583         | 1.53          | -1.12                | 1.03                |
| 9158.00  | 90.800          | 338.200     | 6853.24  | 2645.06        | 2428.32    | -1049.90  | 1629632.84        | 272032.49          | 39°14'22.161"N | 80°48'27.506"W | 2645.57           | 336.619         | 1.41          | 0.58                 | 1.28                |
| 9247.00  | 90.740          | 338.560     | 6852.05  | 2733.94        | 2511.06    | -1082.68  | 1629600.06        | 272115.22          | 39°14'22.974"N | 80°48'27.938"W | 2734.52           | 336.676         | 0.41          | -0.07                | 0.40                |
| 9337.00  | 90.740          | 339.120     | 6850.86  | 2823.17        | 2594.98    | -1115.12  | 1629567.55        | 272199.14          | 39°14'23.786"N | 80°48'28.370"W | 2823.61           | 336.741         | 0.71          | 0.03                 | 0.03                |
| 9426.00  | 90.740          | 334.090     | 6849.69  | 2912.72        | 2676.63    | -1150.49  | 1629532.25        | 272280.79          | 39°14'24.601"N | 80°48'28.830"W | 2913.41           | 336.741         | 5.65          | -0.03                | -5.65               |
| 9516.00  | 90.800          | 334.560     | 6848.48  | 3002.69        | 2757.74    | -1189.48  | 1629493.26        | 272361.89          | 39°14'25.397"N | 80°48'29.341"W | 3003.33           | 336.668         | 0.53          | 0.07                 | 0.52                |
| 9606.00  | 90.710          | 332.170     | 6847.29  | 3092.62        | 2838.17    | -1229.82  | 1629452.92        | 272442.32          | 39°14'26.186"N | 80°48'29.869"W | 3093.17           | 336.572         | 2.66          | -0.10                | -2.66               |
| 9695.00  | 90.800          | 331.080     | 6846.12  | 3181.41        | 2916.47    | -1272.12  | 1629410.63        | 272520.62          | 39°14'26.953"N | 80°48'30.421"W | 3181.84           | 336.434         | 1.23          | 0.10                 | -1.22               |
| 9785.00  | 90.710          | 330.150     | 6844.97  | 3271.90        | 2994.98    | -1310.72  | 1629368.48        | 272599.17          | 39°14'27.720"N | 80°48'30.988"W | 3272.37           | 336.305         | 1.77          | 0.13                 | 1.77                |
| 9874.00  | 90.800          | 330.150     | 6843.76  | 3359.58        | 3071.56    | -1361.46  | 1629321.29        | 272675.70          | 39°14'28.473"N | 80°48'31.585"W | 3359.77           | 336.095         | 0.75          | 0.10                 | 0.74                |
| 9964.00  | 90.710          | 333.490     | 6842.57  | 3449.37        | 3150.87    | -1403.95  | 1629278.80        | 272755.01          | 39°14'29.251"N | 80°48'32.139"W | 3449.50           | 335.983         | 3.71          | -0.10                | 3.71                |
| 10053.00 | 90.650          | 332.390     | 6841.52  | 3538.28        | 3230.12    | -1444.44  | 1629238.32        | 272834.26          | 39°14'30.028"N | 80°48'32.669"W | 3538.37           | 335.907         | 1.24          | -0.07                | -1.24               |
| 10143.00 | 90.580          | 331.170     | 6840.55  | 3628.08        | 3309.42    | -1486.99  | 1629195.76        | 272913.55          | 39°14'30.806"N | 80°48'33.224"W | 3628.14           | 335.805         | 1.36          | -0.08                | -1.36               |
| 10232.00 | 91.000          | 330.200     | 6839.56  | 3718.96        | 3389.91    | -1531.14  | 1629154.47        | 272993.00          | 39°14'31.584"N | 80°48'33.791"W | 3718.96           | 335.631         | 1.41          | 0.13                 | 1.41                |
| 10322.00 | 90.520          | 335.030     | 6838.54  | 3806.95        | 3469.83    | -1566.31  | 1629116.45        | 273073.96          | 39°14'32.380"N | 80°48'34.262"W | 3806.97           | 335.705         | 0.88          | -0.24                | 0.84                |
| 10412.00 | 90.650          | 336.810     | 6837.62  | 3896.94        | 3551.99    | -1603.02  | 1629079.74        | 273156.12          | 39°14'33.186"N | 80°48'34.744"W | 3896.97           | 335.710         | 1.98          | 0.14                 | 1.98                |
| 10501.00 | 90.710          | 335.950     | 6836.56  | 3985.92        | 3633.53    | -1638.68  | 1629044.08        | 273237.65          | 39°14'33.987"N | 80°48'35.212"W | 3985.95           | 335.725         | 0.97          | 0.07                 | -0.97               |
| 10590.00 | 90.580          | 333.120     | 6835.56  | 4074.89        | 3713.87    | -1676.94  | 1629005.82        | 273317.99          | 39°14'34.776"N | 80°48'35.713"W | 4074.92           | 335.699         | 3.18          | -0.15                | -3.18               |
| 10680.00 | 90.620          | 334.300     | 6834.67  | 4164.87        | 3795.16    | -1713.31  | 1629000.24        | 273399.28          | 39°14'35.573"N | 80°48'36.218"W | 4164.95           | 335.671         | 1.31          | 0.14                 | 1.31                |
| 10859.00 | 90.710          | 340.620     | 6832.54  | 4343.58        | 3961.49    | -1781.51  | 1628901.25        | 273565.60          | 39°14'37.208"N | 80°48'37.088"W | 4343.64           | 335.786         | 2.53          | 0.05                 | 2.53                |
| 10948.00 | 90.220          | 334.610     | 6831.81  | 4432.48        | 4043.75    | -1815.39  | 1628867.38        | 273647.85          | 39°14'38.016"N | 80°48'37.534"W | 4432.55           | 335.823         | 6.77          | -0.55                | -6.75               |
| 11038.00 | 90.220          | 338.640     | 6831.47  | 4522.44        | 4126.34    | -1851.09  | 1628831.68        | 273730.44          | 39°14'38.827"N | 80°48'38.003"W | 4522.52           | 335.839         | 4.48          | 0.00                 | 4.48                |
| 11127.00 | 90.220          | 341.380     | 6831.13  | 4611.15        | 4209.97    | -1881.51  | 1628801.26        | 273814.07          | 39°14'39.649"N | 80°48'38.405"W | 4611.28           | 335.919         | 3.08          | 0.00                 | 3.08                |
| 11217.00 | 90.500          | 340.180     | 6830.69  | 4700.63        | 4299.41    | -1929.70  | 1628771.70        | 273899.31          | 39°14'40.481"N | 80°48'38.810"W | 4700.69           | 336.000         | 0.00          | 0.00                 | 0.00                |

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# Actual Wellpath Report

OXF-97H-HS AWP Proj: 20473'  
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## REFERENCE WELLPATH IDENTIFICATION

| Operator | NOBLE ENERGY      | Slot     | Slot H         |
|----------|-------------------|----------|----------------|
| Area     | Doddridge Co., WV | Well     | OXF-97H-HS     |
| Field    | Doddridge         | Wellbore | OXF-97H-HS AWB |
| Facility | OXF-97 Pad        |          |                |

## WELLPATH DATA (224 stations)

| MD       | Inclination | Azimuth | TVD     | Vert Sect | North   | East     | Grid East  | Grid North | Latitude       | Longitude      | Closure Dist | Closure Dir | DLS       | Build Rate | Turn Rate |
|----------|-------------|---------|---------|-----------|---------|----------|------------|------------|----------------|----------------|--------------|-------------|-----------|------------|-----------|
| [ft]     | [°]         | [°]     | [ft]    | [ft]      | [ft]    | [ft]     | [US ft]    | [US ft]    | [NAD 83]       | [NAD 83]       | [ft]         | [°]         | [%/100ft] | [%/100ft]  | [°/100ft] |
| 11307.00 | 89.880      | 337.020 | 6830.81 | 4790.38   | 4379.69 | -1941.28 | 1628741.49 | 273983.79  | 39°14'41.318"N | 80°48'39.196"W | 4790.64      | 336.095     | 5.54      | -0.30      | -5.53     |
| 11396.00 | 89.940      | 333.190 | 6830.95 | 4879.36   | 4460.41 | -1978.74 | 1628704.04 | 274064.50  | 39°14'42.110"N | 80°48'39.687"W | 4879.61      | 336.077     | 4.30      | 0.07       | -4.30     |
| 11486.00 | 89.880      | 329.650 | 6831.09 | 4969.12   | 4539.43 | -2021.79 | 1628660.99 | 274143.52  | 39°14'42.885"N | 80°48'40.249"W | 4969.31      | 335.993     | 3.93      | -0.07      | -3.93     |
| 11576.00 | 89.850      | 333.560 | 6831.31 | 5058.89   | 4618.58 | -2064.58 | 1628618.20 | 274222.67  | 39°14'43.661"N | 80°48'40.807"W | 5059.03      | 335.915     | 4.34      | -0.03      | 4.34      |
| 11665.00 | 89.820      | 332.510 | 6831.75 | 5236.70   | 4776.92 | -2145.90 | 1628536.88 | 274380.99  | 39°14'45.214"N | 80°48'41.870"W | 5236.78      | 335.809     | 0.11      | -0.07      | -0.09     |
| 11844.00 | 89.780      | 332.930 | 6832.06 | 5326.59   | 4856.90 | -2187.16 | 1628495.63 | 274460.98  | 39°14'45.998"N | 80°48'42.409"W | 5326.65      | 335.757     | 0.47      | -0.04      | 0.47      |
| 11933.00 | 89.570      | 335.450 | 6832.57 | 5415.56   | 4937.02 | -2225.90 | 1628456.88 | 274541.09  | 39°14'46.785"N | 80°48'42.917"W | 5415.61      | 335.731     | 2.84      | -0.24      | 2.83      |
| 12023.00 | 89.940      | 339.530 | 6832.95 | 5505.48   | 5020.14 | -2260.35 | 1628422.44 | 274624.21  | 39°14'47.601"N | 80°48'43.370"W | 5505.54      | 335.760     | 4.55      | 0.41       | 4.53      |
| 12112.00 | 89.910      | 342.630 | 6833.41 | 5683.89   | 5188.32 | -2321.55 | 1628361.24 | 274792.39  | 39°14'49.254"N | 80°48'44.179"W | 5684.04      | 335.894     | 4.12      | 0.14       | 4.12      |
| 12291.00 | 89.940      | 343.330 | 6833.53 | 5772.13   | 5273.42 | -2347.60 | 1628335.19 | 274877.48  | 39°14'50.092"N | 80°48'44.526"W | 5772.37      | 336.003     | 0.79      | 0.03       | 0.79      |
| 12381.00 | 89.970      | 334.780 | 6833.60 | 5861.88   | 5357.40 | -2379.74 | 1628303.05 | 274961.46  | 39°14'50.917"N | 80°48'44.950"W | 5862.16      | 336.049     | 9.50      | 0.03       | -9.50     |
| 12471.00 | 89.780      | 331.240 | 6833.80 | 5951.78   | 5437.58 | -2420.58 | 1628262.21 | 275041.64  | 39°14'51.703"N | 80°48'45.484"W | 5952.02      | 336.003     | 3.94      | -0.21      | -3.93     |
| 12560.00 | 89.970      | 336.270 | 6834.08 | 6129.64   | 5597.14 | -2499.36 | 1628183.44 | 275201.19  | 39°14'53.269"N | 80°48'46.515"W | 6129.82      | 335.937     | 2.90      | 0.03       | 2.90      |
| 12649.00 | 90.340      | 333.020 | 6833.84 | 6219.61   | 5678.46 | -2537.89 | 1628144.90 | 275282.50  | 39°14'54.067"N | 80°48'47.019"W | 6219.79      | 335.919     | 3.63      | 0.41       | -3.61     |
| 12829.00 | 90.000      | 331.510 | 6833.57 | 6309.47   | 5758.11 | -2579.78 | 1628103.02 | 275362.16  | 39°14'54.848"N | 80°48'47.567"W | 6309.60      | 335.866     | 1.72      | -0.38      | -1.68     |
| 12918.00 | 90.740      | 333.620 | 6833.00 | 6398.34   | 5837.10 | -2620.78 | 1628062.02 | 275441.14  | 39°14'55.623"N | 80°48'48.102"W | 6398.45      | 335.821     | 2.51      | 0.83       | 2.37      |
| 13007.00 | 90.120      | 334.580 | 6832.09 | 6577.28   | 5998.01 | -2699.18 | 1627983.62 | 275602.04  | 39°14'57.202"N | 80°48'49.129"W | 6577.36      | 335.772     | 0.71      | -0.03      | 0.71      |
| 13187.00 | 89.910      | 333.270 | 6832.07 | 6667.24   | 6078.85 | -2738.74 | 1627944.07 | 275682.88  | 39°14'57.995"N | 80°48'49.647"W | 6667.31      | 335.747     | 1.47      | -0.23      | -1.46     |
| 13276.00 | 90.000      | 332.170 | 6832.14 | 6756.14   | 6157.95 | -2779.53 | 1627903.28 | 275761.97  | 39°14'58.771"N | 80°48'50.180"W | 6756.19      | 335.707     | 1.24      | 0.10       | -1.24     |
| 13366.00 | 89.660      | 337.000 | 6832.40 | 6846.10   | 6239.21 | -2818.14 | 1627864.67 | 275843.24  | 39°14'59.568"N | 80°48'50.686"W | 6846.14      | 335.692     | 5.38      | -0.38      | 5.37      |
| 13455.00 | 88.950      | 333.940 | 6834.78 | 7025.04   | 6402.97 | -2890.30 | 1627792.51 | 276006.99  | 39°15'01.176"N | 80°48'51.633"W | 7025.09      | 335.706     | 3.40      | -0.25      | -3.39     |
| 13635.00 | 88.520      | 333.960 | 6836.77 | 7114.99   | 6483.81 | -2929.82 | 1627752.99 | 276087.83  | 39°15'01.969"N | 80°48'52.150"W | 7115.03      | 335.683     | 0.48      | -0.48      | 0.02      |
| 13725.00 | 88.310      | 334.900 | 6839.26 | 7204.94   | 6564.96 | -2968.65 | 1627714.17 | 276168.98  | 39°15'02.766"N | 80°48'52.659"W | 7204.97      | 335.668     | 1.07      | -0.23      | 1.04      |
| 13814.00 | 88.370      | 337.830 | 6841.84 | 7293.88   | 6646.46 | -3004.31 | 1627678.50 | 276250.46  | 39°15'03.566"N | 80°48'53.128"W | 7293.92      | 335.676     | 3.29      | 0.07       | 3.29      |
| 13903.00 | 88.370      | 337.830 | 6844.47 | 7382.80   | 6730.47 | -3040.47 | 1627642.83 | 276331.94  | 39°15'04.364"N | 80°48'53.592"W | 7382.95      | 335.676     | 3.29      | 0.07       | 3.29      |

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# Actual Wellpath Report

OXF-97H-HS AWP Proj: 20473'  
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## REFERENCE WELLPATH IDENTIFICATION

| Operator | NOBLE ENERGY      | Slot     | Slot H         |
|----------|-------------------|----------|----------------|
| Area     | Doddridge Co., WV | Well     | OXF-97H-HS     |
| Field    | Doddridge         | Wellbore | OXF-97H-HS AWB |
| Facility | OXF-97 Pad        |          |                |

## WELLPATH DATA (224 stations)

| MD [ft]  | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude       | Longitude      | Closure Dist [ft] | Closure Dir [°] | DLS [°/100ft] | Build Rate [°/100ft] | Turn Rate [°/100ft] |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 13993.00 | 87.820          | 340.530     | 6847.50  | 7472.28        | 6814.27    | -3066.27  | 1627616.55        | 276418.28          | 39°15'05.216"N | 80°48'53.946"W | 7472.37           | 335.773         | 0.58          | -0.52                | 0.26                |
| 14083.00 | 87.780          | 337.710     | 6850.95  | 7562.02        | 6898.29    | -3098.32  | 1627584.50        | 276502.29          | 39°15'06.041"N | 80°48'54.369"W | 7562.14           | 335.813         | 3.13          | -0.04                | -3.13               |
| 14172.00 | 87.780          | 338.460     | 6854.40  | 7650.87        | 6980.80    | -3131.51  | 1627551.31        | 276584.80          | 39°15'06.852"N | 80°48'54.806"W | 7651.01           | 335.840         | 0.84          | 0.00                 | 0.84                |
| 14262.00 | 88.280          | 337.280     | 6857.50  | 7740.73        | 7064.12    | -3165.39  | 1627517.43        | 276668.11          | 39°15'07.670"N | 80°48'55.253"W | 7740.90           | 335.863         | 1.42          | 0.56                 | -1.31               |
| 14352.00 | 89.200          | 337.960     | 6860.57  | 7919.57        | 7229.73    | -3233.23  | 1627449.59        | 276833.72          | 39°15'09.297"N | 80°48'56.146"W | 7919.77           | 335.905         | 0.18          | -0.10                | 0.14                |
| 14530.00 | 88.740          | 335.760     | 6862.17  | 8008.52        | 7311.56    | -3268.20  | 1627414.63        | 276915.54          | 39°15'10.101"N | 80°48'56.605"W | 8008.74           | 335.916         | 2.52          | -0.52                | -2.47               |
| 14619.00 | 89.110          | 334.620     | 6863.84  | 8097.50        | 7392.33    | -3305.53  | 1627377.29        | 276996.31          | 39°15'10.894"N | 80°48'57.095"W | 8097.72           | 335.908         | 1.35          | 0.42                 | -1.28               |
| 14709.00 | 88.890          | 333.470     | 6865.41  | 8187.46        | 7473.23    | -3344.92  | 1627337.91        | 277077.21          | 39°15'11.688"N | 80°48'57.611"W | 8187.66           | 335.887         | 1.30          | -0.24                | -1.28               |
| 14798.00 | 88.950          | 332.220     | 6869.11  | 8366.31        | 7633.71    | -3424.06  | 1627258.77        | 277237.68          | 39°15'13.262"N | 80°48'58.647"W | 8366.47           | 335.842         | 4.01          | 0.27                 | 4.00                |
| 14978.00 | 88.830          | 337.970     | 6870.86  | 8456.25        | 7716.60    | -3459.08  | 1627223.75        | 277320.57          | 39°15'14.076"N | 80°48'59.107"W | 8456.43           | 335.855         | 1.95          | -0.13                | 1.94                |
| 15067.00 | 88.770          | 336.610     | 6872.72  | 8545.19        | 7798.68    | -3493.43  | 1627189.40        | 277402.64          | 39°15'14.882"N | 80°48'59.559"W | 8545.38           | 335.870         | 1.53          | -0.07                | -1.53               |
| 15156.00 | 90.710          | 336.250     | 6873.12  | 8634.17        | 7880.25    | -3529.02  | 1627153.81        | 277484.21          | 39°15'15.683"N | 80°49'00.027"W | 8634.37           | 335.876         | 2.22          | 2.18                 | -0.40               |
| 15245.00 | 88.680          | 329.510     | 6875.77  | 8813.79        | 8039.79    | -3612.07  | 1627070.77        | 277643.74          | 39°15'17.248"N | 80°49'01.112"W | 8813.92           | 335.807         | 2.90          | 0.07                 | -2.90               |
| 15334.00 | 88.710          | 334.950     | 6877.80  | 8902.59        | 8118.49    | -3653.51  | 1627029.33        | 277722.44          | 39°15'18.020"N | 80°49'01.653"W | 8902.70           | 335.771         | 6.11          | 0.03                 | 6.11                |
| 15423.00 | 88.890          | 338.090     | 6879.66  | 8991.54        | 8200.09    | -3688.96  | 1626993.88        | 277804.04          | 39°15'18.821"N | 80°49'02.119"W | 8991.66           | 335.779         | 3.53          | 0.20                 | 3.53                |
| 15512.00 | 89.200          | 336.500     | 6881.16  | 9081.48        | 8283.10    | -3723.69  | 1626959.15        | 277887.05          | 39°15'19.636"N | 80°49'02.576"W | 9081.61           | 335.794         | 1.80          | 0.34                 | -1.77               |
| 15601.00 | 89.200          | 335.390     | 6883.80  | 9260.42        | 8444.68    | -3800.63  | 1626882.21        | 278048.62          | 39°15'21.222"N | 80°49'03.584"W | 9260.53           | 335.769         | 2.51          | 0.10                 | 2.51                |
| 15690.00 | 88.860          | 340.180     | 6885.31  | 9349.31        | 8527.03    | -3834.27  | 1626848.58        | 278130.97          | 39°15'22.031"N | 80°49'04.027"W | 9349.44           | 335.788         | 5.39          | -0.38                | 5.38                |
| 15779.00 | 88.890          | 341.520     | 6887.08  | 9438.90        | 8612.04    | -3863.79  | 1626819.06        | 278215.97          | 39°15'22.867"N | 80°49'04.418"W | 9439.07           | 335.837         | 1.49          | 0.03                 | 1.49                |
| 15868.00 | 88.920          | 338.570     | 6888.78  | 9527.59        | 8695.67    | -3894.15  | 1626788.70        | 278299.60          | 39°15'23.689"N | 80°49'04.820"W | 9527.80           | 335.876         | 3.31          | 0.03                 | -3.31               |
| 15957.00 | 88.680          | 335.570     | 6892.25  | 9706.35        | 8861.61    | -3961.10  | 1626721.75        | 278465.53          | 39°15'25.319"N | 80°49'05.702"W | 9706.62           | 335.916         | 3.85          | -0.34                | -3.83               |
| 16046.00 | 88.620          | 337.720     | 6894.37  | 9796.30        | 8944.21    | -3996.77  | 1626686.09        | 278548.13          | 39°15'26.130"N | 80°49'06.170"W | 9796.58           | 335.922         | 2.39          | -0.07                | 2.39                |
| 16135.00 | 88.650          | 337.350     | 6896.49  | 9885.22        | 9026.43    | -4030.76  | 1626652.09        | 278630.35          | 39°15'26.938"N | 80°49'06.618"W | 9885.52           | 335.937         | 0.42          | 0.03                 | -0.42               |
| 16224.00 | 88.740          | 333.380     | 6898.54  | 9975.18        | 9108.20    | -4068.26  | 1626614.59        | 278712.12          | 39°15'27.741"N | 80°49'07.110"W | 9975.47           | 335.932         | 4.41          | 0.10                 | -4.41               |

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# Actual Wellpath Report

OXF-97H-HS AWP Proj: 20473'  
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## REFERENCE WELLPATH IDENTIFICATION

| Operator | NOBLE ENERGY      | Slot     | Slot H         |
|----------|-------------------|----------|----------------|
| Area     | Doddridge Co., WV | Well     | OXF-97H-HS     |
| Field    | Doddridge         | Wellbore | OXF-97H-HS AWB |
| Facility | OXF-97 Pad        |          |                |

## WELLPATH DATA (224 stations)

| MD [ft]  | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude       | Longitude      | Closure Dist [ft] | Closure Dir [°] | DLS [°/100ft] | Build Rate [°/100ft] | Turn Rate [°/100ft] |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 16678.00 | 88.770          | 328.290     | 6902.50  | 10153.61       | 9265.25    | -4153.92  | 1626528.93        | 278869.16          | 39°15'29.280"N | 80°49'08.228"W | 10153.82          | 335.852         | 4.08          | 0.07                 | -4.08               |
| 16768.00 | 88.680          | 328.110     | 6904.50  | 10242.87       | 9341.72    | -4201.34  | 1626481.52        | 278945.63          | 39°15'30.029"N | 80°49'08.845"W | 10243.00          | 335.785         | 0.22          | -0.10                | -0.20               |
| 16857.00 | 88.770          | 329.880     | 6906.48  | 10331.27       | 9417.99    | -4247.17  | 1626435.69        | 279021.89          | 39°15'30.776"N | 80°49'09.442"W | 10331.36          | 335.726         | 1.99          | 0.10                 | 1.99                |
| 16947.00 | 88.580          | 331.670     | 6908.56  | 10420.94       | 9496.51    | -4291.10  | 1626391.76        | 279100.41          | 39°15'31.546"N | 80°49'10.015"W | 10421.00          | 335.684         | 2.00          | -0.21                | 1.99                |
| 17036.00 | 88.710          | 333.530     | 6910.67  | 10509.83       | 9575.96    | -4331.13  | 1626351.74        | 279179.55          | 39°15'32.321"N | 80°49'10.339"W | 10509.88          | 335.628         | 3.58          | 0.18                 | 3.57                |
| 17126.00 | 88.610          | 335.330     | 6912.77  | 10599.81       | 9657.56    | -4369.02  | 1626313.84        | 279261.46          | 39°15'33.126"N | 80°49'11.036"W | 10599.85          | 335.658         | 0.54          | -0.11                | 0.53                |
| 17216.00 | 88.770          | 337.560     | 6914.83  | 10689.76       | 9740.03    | -4404.98  | 1626277.89        | 279343.93          | 39°15'33.936"N | 80°49'11.508"W | 10689.81          | 335.665         | 2.48          | 0.18                 | 2.48                |
| 17305.00 | 88.430          | 338.400     | 6917.00  | 10778.65       | 9822.52    | -4438.34  | 1626244.53        | 279426.41          | 39°15'34.746"N | 80°49'11.947"W | 10778.71          | 335.684         | 1.02          | -0.38                | 0.94                |
| 17394.00 | 88.180          | 337.800     | 6919.64  | 10867.52       | 9905.06    | -4471.52  | 1626211.35        | 279508.94          | 39°15'35.557"N | 80°49'12.385"W | 10867.60          | 335.704         | 0.73          | -0.28                | -0.67               |
| 17484.00 | 88.480          | 335.180     | 6922.32  | 10957.46       | 9987.54    | -4507.40  | 1626175.47        | 279593.13          | 39°15'36.369"N | 80°49'12.856"W | 10957.54          | 335.714         | 2.00          | 0.14                 | 2.00                |
| 17573.00 | 89.230          | 332.440     | 6924.16  | 11046.39       | 10067.38   | -4546.67  | 1626136.20        | 279671.26          | 39°15'37.151"N | 80°49'13.370"W | 11046.46          | 335.695         | 3.22          | 0.93                 | -3.08               |
| 17663.00 | 88.740          | 332.690     | 6925.76  | 11136.26       | 10147.25   | -4588.13  | 1626094.75        | 279751.12          | 39°15'37.934"N | 80°49'13.912"W | 11136.32          | 335.670         | 0.61          | -0.54                | 0.28                |
| 17752.00 | 88.830          | 335.140     | 6927.65  | 11225.20       | 10227.16   | -4627.25  | 1626055.62        | 279831.03          | 39°15'38.718"N | 80°49'14.424"W | 11225.25          | 335.656         | 2.75          | 0.10                 | 2.75                |
| 17842.00 | 87.570          | 334.860     | 6930.47  | 11315.15       | 10308.68   | -4665.27  | 1626017.61        | 279912.55          | 39°15'39.518"N | 80°49'14.923"W | 11315.19          | 335.651         | 1.43          | -1.40                | -0.31               |
| 17932.00 | 88.920          | 334.510     | 6933.23  | 11405.10       | 10390.13   | -4703.45  | 1625979.43        | 279994.10          | 39°15'40.319"N | 80°49'15.444"W | 11405.14          | 335.644         | 1.81          | 0.14                 | 1.80                |
| 18021.00 | 89.010          | 331.220     | 6934.84  | 11493.99       | 10469.45   | -4743.75  | 1625939.13        | 280073.32          | 39°15'41.096"N | 80°49'15.951"W | 11494.02          | 335.625         | 4.15          | 0.10                 | -4.15               |
| 18111.00 | 87.660          | 334.720     | 6937.45  | 11583.85       | 10549.57   | -4784.63  | 1625898.26        | 280153.43          | 39°15'41.881"N | 80°49'16.485"W | 11583.87          | 335.604         | 4.17          | -1.50                | 3.89                |
| 18201.00 | 88.740          | 341.040     | 6940.28  | 11673.68       | 10632.86   | -4818.48  | 1625864.40        | 280236.72          | 39°15'42.700"N | 80°49'16.931"W | 11673.71          | 335.621         | 7.12          | 1.20                 | 7.02                |
| 18290.00 | 88.710          | 336.920     | 6942.26  | 11762.47       | 10715.90   | -4850.39  | 1625832.50        | 280319.76          | 39°15'43.516"N | 80°49'17.352"W | 11762.52          | 335.647         | 4.63          | -0.03                | -4.63               |
| 18380.00 | 88.710          | 339.490     | 6944.23  | 11852.30       | 10799.34   | -4884.34  | 1625797.48        | 280402.21          | 39°15'44.367"N | 80°49'17.795"W | 11852.41          | 335.663         | 3.52          | 0.01                 | 3.51                |
| 18470.00 | 89.110          | 341.120     | 6946.00  | 11942.04       | 10884.00   | -4914.54  | 1625768.34        | 280487.84          | 39°15'45.168"N | 80°49'18.199"W | 11942.12          | 335.699         | 2.18          | 0.44                 | 2.13                |
| 18560.00 | 88.620          | 340.510     | 6947.79  | 12031.63       | 10968.98   | -4944.11  | 1625738.77        | 280572.83          | 39°15'46.003"N | 80°49'18.591"W | 12031.74          | 335.737         | 0.87          | -0.54                | -0.68               |
| 18649.00 | 88.150          | 343.410     | 6950.29  | 12120.02       | 11053.56   | -4971.66  | 1625711.23        | 280657.40          | 39°15'46.835"N | 80°49'18.957"W | 12120.18          | 335.783         | 3.30          | -0.53                | 3.26                |
| 18739.00 | 88.460          | 340.230     | 6952.96  | 12209.42       | 11139.02   | -4999.73  | 1625683.16        | 280742.86          | 39°15'47.675"N | 80°49'19.330"W | 12209.63          | 335.827         | 3.55          | 0.34                 | -3.53               |
| 18829.00 | 88.510          | 335.190     | 6955.28  | 12299.24       | 11224.99   | -5028.45  | 1625655.41        | 280828.22          | 39°15'48.516"N | 80°49'19.715"W | 12299.81          | 335.873         | 3.94          | 0.13                 | 3.94                |
| 18919.00 | 88.400          | 333.160     | 6957.65  | 12389.23       | 11303.54   | -5072.31  | 1625628.10        | 280907.37          | 39°15'49.291"N | 80°49'20.284"W | 12389.45          | 335.832         | 2.82          | -0.20                | -2.81               |
| 9008.00  | 88.120          | 332.410     | 6960.36  | 12478.09       | 11382.65   | -5113.00  | 1625569.92        | 280986.48          | 39°15'50.067"N | 80°49'20.816"W | 12478.28          | 335.811         | 0.90          | -0.31                | -0.84               |
| 19098.00 | 88.120          | 332.820     | 6963.31  | 12567.92       | 11462.52   | -5154.37  | 1625528.52        | 281066.35          | 39°15'50.850"N | 80°49'21.356"W | 12568.09          | 335.788         | 0.46          | 0.00                 | 0.46                |
| 19188.00 | 88.090          | 334.120     | 6966.29  | 12657.82       | 11543.00   | -5194.55  | 1625488.35        | 281146.82          | 39°15'51.640"N | 80°49'21.882"W | 12657.97          | 335.771         | 1.44          | -0.03                | 1.44                |
| 19278.00 | 87.840          | 334.180     | 6969.44  | 12746.54       | 11623.15   | -5233.12  | 1625450.78        | 281226.97          | 39°15'52.436"N | 80°49'22.388"W | 12746.80          | 335.760         | 0.51          | 0.00                 | 0.40                |

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# Actual Wellpath Report

OXF-97H-HS AWP Proj: 20473'  
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| REFERENCE WELLPATH IDENTIFICATION |                   |          |                |
|-----------------------------------|-------------------|----------|----------------|
| Operator                          | NOBLE ENERGY      | Slot     | Slot H         |
| Area                              | Doddridge Co., WV | Well     | OXF-97H-HS     |
| Field                             | Doddridge         | Wellbore | OXF-97H-HS AWB |
| Facility                          | OXF-97 Pad        |          |                |

## WELLPATH DATA (224 stations)

| MD [ft]  | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude       | Longitude      | Closure Dist [ft] | Closure Dir [°] | DLS [°/100ft] | Build Rate [°/100ft] | Turn Rate [°/100ft] |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 19367.00 | 88.000          | 334.870     | 6972.74  | 12836.67       | 11704.44   | -5271.59  | 1625411.31        | 281308.26          | 39°15'53.224"N | 80°49'22.892"W | 12836.81          | 335.754         | 0.48          | 0.20                 | 0.43                |
| 19457.00 | 87.720          | 336.810     | 6976.10  | 12926.60       | 11786.50   | -5308.40  | 1625374.50        | 281390.31          | 39°15'54.029"N | 80°49'23.375"W | 12926.74          | 335.754         | 2.18          | -0.31                | 2.16                |
| 19546.00 | 87.820          | 336.090     | 6979.57  | 13015.52       | 11868.02   | -5343.93  | 1625338.97        | 281471.83          | 39°15'54.830"N | 80°49'23.842"W | 13015.67          | 335.759         | 0.82          | 0.11                 | -0.81               |
| 19636.00 | 88.060          | 333.610     | 6982.80  | 13105.45       | 11949.43   | -5382.15  | 1625300.75        | 281553.24          | 39°15'55.629"N | 80°49'24.343"W | 13105.59          | 335.753         | 2.77          | 0.27                 | -2.76               |
| 19726.00 | 87.940          | 334.100     | 6985.97  | 13195.36       | 12034.19   | -5421.18  | 1625265.19        | 281634.90          | 39°15'56.427"N | 80°49'24.844"W | 13195.49          | 335.748         | 0.63          | 0.77                 | 0.64                |
| 19815.00 | 88.460          | 334.170     | 6988.79  | 13284.29       | 12110.26   | -5460.51  | 1625222.40        | 281714.06          | 39°15'57.207"N | 80°49'25.370"W | 13284.41          | 335.729         | 0.62          | 0.62                 | 0.01                |
| 19905.00 | 88.000          | 332.140     | 6991.57  | 13374.17       | 12190.51   | -5501.13  | 1625181.78        | 281794.31          | 39°15'57.994"N | 80°49'25.901"W | 13374.27          | 335.712         | 2.31          | -0.51                | -2.26               |
| 19995.00 | 88.210          | 331.050     | 6994.54  | 13463.91       | 12269.63   | -5543.92  | 1625138.99        | 281873.43          | 39°15'58.770"N | 80°49'26.460"W | 13463.99          | 335.685         | 1.23          | 0.23                 | -1.21               |
| 20085.00 | 88.460          | 330.670     | 6997.16  | 13553.58       | 12348.21   | -5587.73  | 1625095.19        | 281952.00          | 39°15'59.540"N | 80°49'27.031"W | 13553.63          | 335.653         | 0.51          | 0.28                 | -0.42               |
| 20174.00 | 88.140          | 330.100     | 6999.33  | 13642.41       | 12427.03   | -5629.62  | 1625053.47        | 282030.00          | 39°15'59.313"N | 80°49'27.571"W | 13642.41          | 335.631         | 1.78          | 1.11                 | 1.08                |
| 20264.00 | 89.380          | 334.910     | 7000.81  | 13732.38       | 12508.20   | -5667.81  | 1625015.11        | 282111.99          | 39°16'01.109"N | 80°49'28.080"W | 13732.41          | 335.623         | 1.22          | 0.71                 | 0.99                |
| 20354.00 | 92.090          | 338.080     | 6999.66  | 13822.34       | 12590.71   | -5703.69  | 1624979.23        | 282194.50          | 39°16'01.920"N | 80°49'28.551"W | 13822.38          | 335.629         | 4.63          | 3.01                 | 3.52                |
| 20443.00 | 89.450          | 338.890     | 6998.46  | 13911.20       | 12673.49   | -5736.32  | 1624946.59        | 282277.28          | 39°16'02.733"N | 80°49'28.982"W | 13911.25          | 335.647         | 3.10          | -2.97                | 0.91                |
| 20473.00 | 89.450          | 338.890     | 6998.75  | 13941.14       | 12701.48   | -5747.13  | 1624935.79        | 282305.26          | 39°16'03.008"N | 80°49'29.124"W | 13941.20          | 335.654         | 0.00          | 0.00                 | 0.00                |

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Environmental Protection

01/27/2017



# Actual Wellpath Report

OXF-97H-HS AWP Proj: 20473'  
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## REFERENCE WELLPATH IDENTIFICATION

|          |                   |          |                |
|----------|-------------------|----------|----------------|
| Operator | NOBLE ENERGY      | Slot     | Slot H         |
| Area     | Doddridge Co., WV | Well     | OXF-97H-HS     |
| Field    | Doddridge         | Wellbore | OXF-97H-HS AWB |
| Facility | OXF-97 Pad        |          |                |

## TARGETS

| Name                 | MD [ft] | TVD [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude       | Longitude      | Shape   |
|----------------------|---------|----------|------------|-----------|-------------------|--------------------|----------------|----------------|---------|
| OXF-97H-HS LP Rev-2  |         | 6863.00  | 687.88     | -269.76   | 1630412.95        | 270292.11          | 39°14'05.073"N | 80°48'17.271"W | point   |
| OXF-97H-HS BHL Rev-2 |         | 6950.00  | 12693.86   | -5743.73  | 1624939.19        | 282297.64          | 39°16'02.933"N | 80°49'29.080"W | point   |
| OXF-97 LL            |         | 7198.41  | 60.02      | -19.93    | 1630662.77        | 269664.28          | 39°13'58.904"N | 80°48'13.980"W | polygon |

## WELLPATH COMPOSITION - Ref Wellbore: OXF-97H-HS AWB Ref Wellpath: OXF-97H-HS AWP Proj: 20473'

| Start MD [ft] | End MD [ft] | Positional Uncertainty Model           | Log Name/Comment                               | Wellbore       |
|---------------|-------------|--|--|----------------|
| 18.00         | 5958.00     | Generic gyro - northseeking (Standard) | 01_MS Gyro <8-3/4"> (100'-5950')               | OXF-97H-HS AWB |
| 5958.00       | 20443.00    | NaviTrak (AT Curve Short Spaced)       | 02_BHL AT Curve <8-1/2"> (5958')(6025'-20443') | OXF-97H-HS AWB |
| 20443.00      | 20473.00    | Blind Drilling (std)                   | Projection to bit                              | OXF-97H-HS AWB |



# Actual Wellpath Report

OXF-97H-HS AWP Proj: 20473'

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## REFERENCE WELLPATH IDENTIFICATION

| Operator | NOBLE ENERGY      | Slot     | Slot H         |
|----------|-------------------|----------|----------------|
| Area     | Doddridge Co., WV | Well     | OXF-97H-HS     |
| Field    | Doddridge         | Wellbore | OXF-97H-HS AWB |
| Facility | OXF-97 Pad        |          |                |

## COMMENTS

Wellpath general comments  
 API: 47-017-06586-0000  
 BHI Job #: 7238898  
 Rig: Precision 543  
 Duration: 5/10/2015-5/17/2015  
 MS Gyro <8-3/4"> (100'-5950')  
 BHI AT Curve <8-1/2"> (5958')(6025'-20443')  
 Projected MD at TD: 20473'

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Location: Doddridge Co., WV  
 Field: Doddridge  
 Facility: OXF-97 Pad

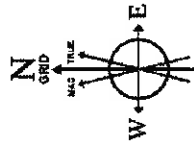
Slot: Slot H  
 Well: OXF-97H-HS  
 Wellbore: OXF-97H-HS PWB

|   |
|---|
| Plot reference well(s) is OXF-97H-HS PWB Row-A0                             |
| True vertical depth was referenced to Precision 543 (R03)                   |
| Measured depths are referenced to Precision 543 (R03)                       |
| Precision 543 (R03) to Mean Sea Level: 750.41 ft                            |
| Mean Sea Level to Mud line (At Slot Slot H): 1335.41 ft                     |
| Coordinates are as listed referenced to BHP                                 |
| Grid System: NAD27 / Lambert West Virginia SP, Northern Zone (701), US feet |
| North Reference: Grid North   |
| Scale: True values  |
| Display as ft feet  |
| Created by: subhayan on 04/07/2015  |

| Location Information                             |                   |                    |                |
|--|-------------------|--------------------|----------------|
| Facility Name                                    | Grid East (US ft) | Grid North (US ft) | Longitude      |
| OXF-97 Pad                                       | 1630662.770       | 266664.260         | 80°48'13.988"W |
| Local N (ft)                                     | Grid East (US ft) | Grid North (US ft) | Longitude      |
| 50.02  | 1630662.700       | 266664.260         | 80°48'13.716"W |
| Slot H   | 1630662.700       | 266664.260         | 80°48'13.716"W |
| Precision 543 (R03) to Mud line (At Slot Slot H) |                   |                    | 18 ft          |
| Mean Sea Level to Mud line (At Slot Slot H)      |                   |                    | -1335.41 ft    |
| Precision 543 (R03) to Mean Sea Level            |                   |                    | 1351.41 ft     |

MS Gyro <8-3/4"> (100'-5950') : 0.19° Inc, 108.00ft MD, 108.00ft TVD, 0.11ft VS

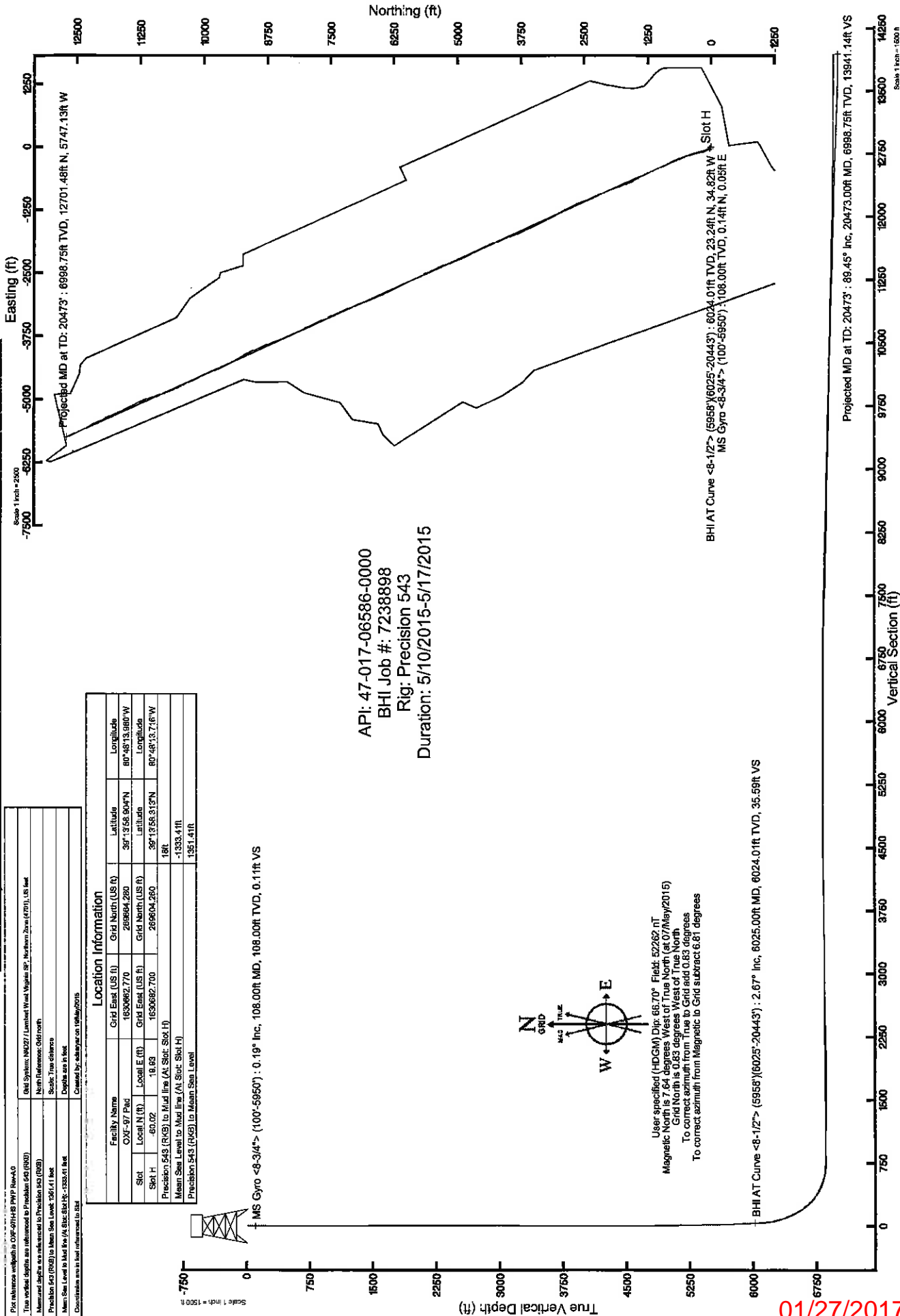
API: 47-017-06586-0000  
 BHI Job #: 7238898  
 Rig: Precision 543  
 Duration: 5/10/2015-5/17/2015



User specified (HDGM) Dip: 66.70° Field: 52262 nT  
 Magnetic North is 7.64 degrees West of True North (at 07/May/2015)  
 Grid North is 0.83 degrees West of True North  
 To correct azimuth from True to Grid add 0.83 degrees  
 To correct azimuth from Magnetic to Grid subtract 6.81 degrees

BHI AT Curve <8-1/2"> (5958')(6025'-20443') : 2.67° Inc, 6025.00ft MD, 6024.01ft TVD, 35.59ft VS

BHI AT Curve <8-1/2"> (5958')(6025'-20443') : 6024.01ft TVD, 23.24ft N, 34.82ft W Slot H  
 MS Gyro <8-3/4"> (100'-5950') : 108.00ft TVD, 0.14ft N, 0.08ft E



Projected MD at TD: 20473' : 89.48° Inc, 20473.00ft MD, 6998.75ft TVD, 13941.14ft VS

Vertical Section (ft)  
 Azimuth 335.49° with reference 0.00 N, 0.00 E