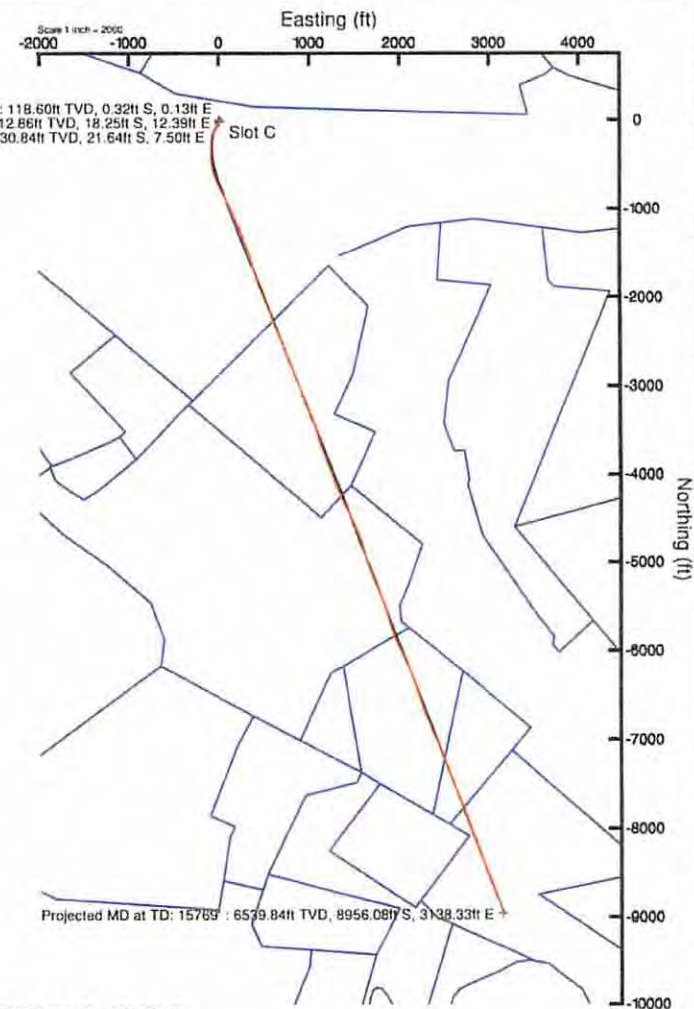
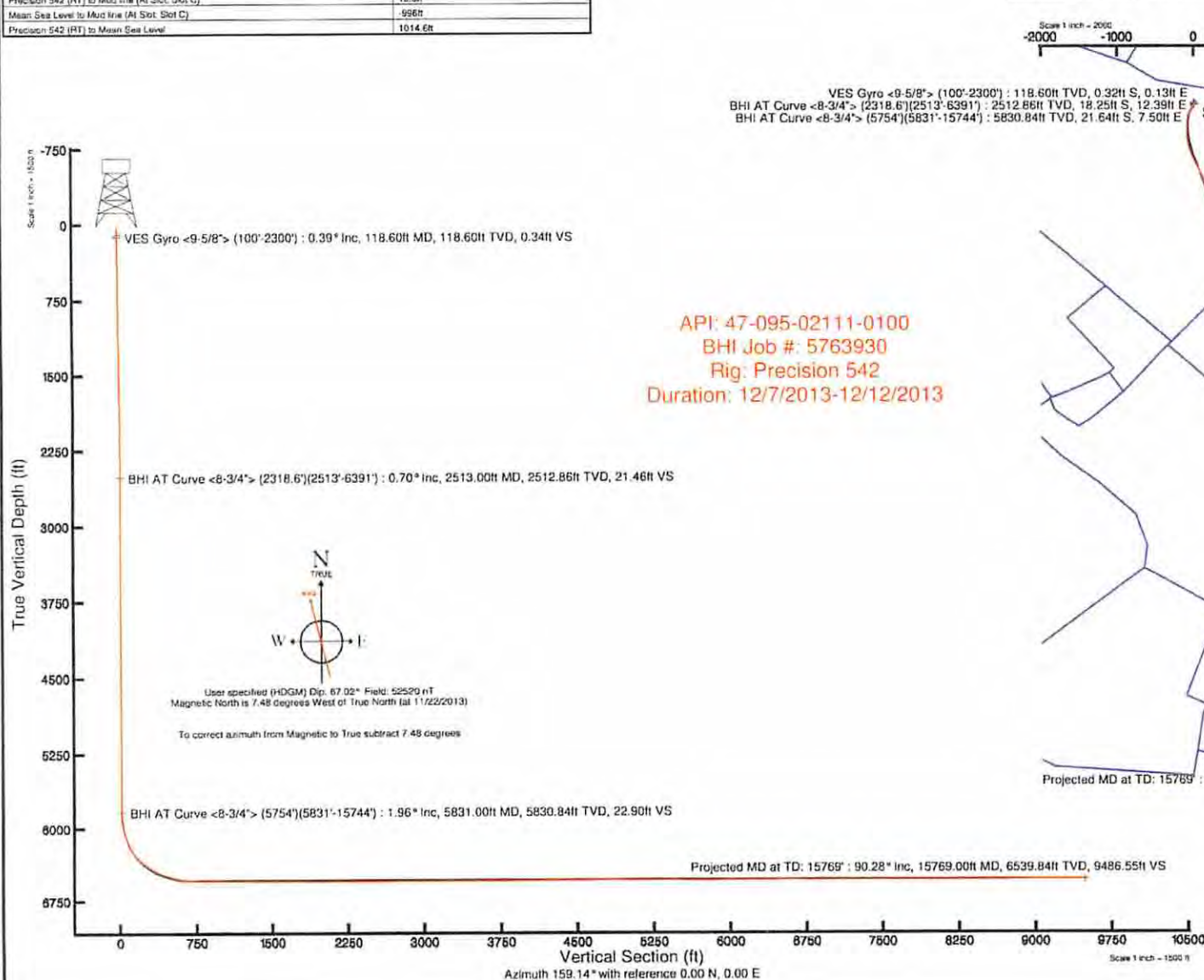


Location: Tyler County, WV  
 Field: Tyler  
 Facility: SHR 1 Pad

Slot: Slot C  
 Well: SHR1CHS ST01  
 Wellbore: SHR1CHS ST01 PWB

| Location Information                            |              |                   |                    |                    |                |
|---|--------------|-------------------|--------------------|--------------------|----------------|
| Facility Name                                   |              | Grid East (US ft) | Grid North (US ft) | Latitude           | Longitude      |
| SHR 1 Pad                                       |              | 1619639.130       | 336008.760         | 39°24'52.983"N     | 80°50'46.696"W |
| Slot  | Local N (ft) | Local E (ft)      | Grid East (US ft)  | Grid North (US ft) | Latitude       |
| Slot C  | 25.06        | 30.42             | 1619669.940        | 336034.350         | 39°24'53.240"N |
| Precision 542 (RT) to Mud line (At Slot Slot C) |              |                   |                    |                    | 18.6ft         |
| Mean Sea Level to Mud line (At Slot Slot C)     |              |                   |                    |                    | .996ft         |
| Precision 542 (RT) to Mean Sea Level            |              |                   |                    |                    | 1014.6ft       |

|   |   |
|---|---|
| Plot reference well path is SHR1CHS ST01 PWB Rev A.0      | Grid System: NAD83 / Lev 548 West Virginia SP, North Zone (4701), US feet |
| True vertical depths are referenced to Precision 542 (RT) | North Reference: True north   |
| Measured depths are referenced to Precision 542 (RT)      | Scale: True distance  |
| Precision 542 (RT) to Mean Sea Level: 1014.6 feet         | Depths are in feet  |
| Mean Sea Level to Mud line (At Slot Slot C): 596 feet     | Created by: asawyer on 12/10/2013   |
| Coordinates are in feet referenced to Slot                |   |



05-02111



# Actual Wellpath Report

SHR1CHS ST01 AWP Proj: 15769'  
Page 1 of 9



### REFERENCE WELLPATH IDENTIFICATION

|          |                  |                |                           |
|----------|------------------|----------------|---------------------------|
| Operator | NOBLE ENERGY     | Slot           | Slot C                    |
| Area     | Tyler County, WV | Well           | SHR1CHS ST01              |
| Field    | Tyler            | Wellbore       | SHR1CHS ST01 AWB          |
| Facility | SHR 1 Pad        | Sidetrack from | SHR1CHS AWB at 5754.00 MD |

95-0211

### REPORT SETUP INFORMATION

|                     |   |                      |  |
|---------------------|---|----------------------|--|
| Projection System   | NAD27 / Lambert West Virginia SP, Northern Zone (4701), US feet | Software System      | WellArchitect® 4.0.1                           |
| North Reference     | True  | User                 | Edsaryar                                       |
| Scale               | 0.999948  | Report Generated     | 12/19/2013 at 2:17:08 PM                       |
| Convergence at slot | n/a   | Database/Source file | Well Architect Eastern US/SHR1CHS_ST01_AWB.xml |

### WELLPATH LOCATION

|                       | Local coordinates |          | Grid coordinates |                 | Geographic coordinates |                |
|-----------------------|-------------------|----------|------------------|-----------------|------------------------|----------------|
|                       | North[ft]         | East[ft] | Easting[US ft]   | Northing[US ft] | Latitude               | Longitude      |
| Slot Location         | 26.05             | 30.42    | 1619669.94       | 336034.35       | 39°24'53.240"N         | 80°50'46.309"W |
| Facility Reference Pt |                   |          | 1619639.13       | 336008.76       | 39°24'52.983"N         | 80°50'46.696"W |
| Field Reference Pt    |                   |          | 0.00             | 0.00            | 38°17'12.460"N         | 86°28'23.077"W |

### WELLPATH DATUM

|                          |                    |   |                   |
|--------------------------|--------------------|---|-------------------|
| Calculation method       | Minimum curvature  | Precision 542 (RT) to Facility Vertical Datum   | 18.60ft           |
| Horizontal Reference Pt  | Slot               | Precision 542 (RT) to Mean Sea Level            | 1014.60ft         |
| Vertical Reference Pt    | Precision 542 (RT) | Precision 542 (RT) to Mud Line at Slot (Slot C) | 18.60ft           |
| MD Reference Pt          | Precision 542 (RT) | Section Origin                                  | N 0.00, E 0.00 ft |
| Field Vertical Reference | Mean Sea Level     | Section Azimuth                                 | 159.14°           |





# Actual Wellpath Report

SHR1CHS ST01 AWP Proj: 15769'  
Page 2 of 9



| REFERENCE WELLPATH IDENTIFICATION |                  |                |                           |
|-----------------------------------|------------------|----------------|---------------------------|
| Operator                          | NOBLE ENERGY     | Slot           | Slot C                    |
| Area                              | Tyler County, WV | Well           | SHR1CHS ST01              |
| Field                             | Tyler            | Wellbore       | SHR1CHS ST01 AWB          |
| Facility                          | SHR 1 Pad        | Sidetrack from | SHR1CHS AWB at 5754.00 MD |

**WELLPATH DATA (189 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] |
|---------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 0.00†   | 0.000           | 157.830     | 0.00     | 0.00           | 0.00       | 0.00      | 1619669.94        | 336034.35          | 39°24'53.240"N | 80°50'46.309"W | 0.00              | 0.000           | 0.00          | 0.00                 | 0.00                |
| 18.60   | 0.000           | 157.830     | 18.60    | 0.00           | 0.00       | 0.00      | 1619669.94        | 336034.35          | 39°24'53.240"N | 80°50'46.309"W | 0.00              | 0.000           | 0.00          | 0.00                 | 0.00                |
| 118.60  | 0.390           | 157.830     | 118.60   | 0.34           | -0.32      | 0.13      | 1619670.06        | 336034.03          | 39°24'53.237"N | 80°50'46.307"W | 0.34              | 157.830         | 0.39          | 0.39                 | 0.00                |
| 218.60  | 0.620           | 160.630     | 218.60   | 1.22           | -1.14      | 0.44      | 1619670.36        | 336033.20          | 39°24'53.229"N | 80°50'46.303"W | 1.22              | 159.070         | 0.23          | 0.23                 | 2.80                |
| 318.60  | 0.320           | 179.410     | 318.59   | 2.02           | -1.93      | 0.62      | 1619670.53        | 336032.41          | 39°24'53.221"N | 80°50'46.301"W | 2.03              | 162.231         | 0.33          | -0.30                | 18.78               |
| 418.60  | 0.700           | 174.150     | 418.59   | 2.88           | -2.82      | 0.68      | 1619670.58        | 336031.52          | 39°24'53.212"N | 80°50'46.300"W | 2.90              | 166.358         | 0.38          | 0.38                 | -5.26               |
| 518.60  | 0.340           | 196.020     | 518.58   | 3.70           | -3.71      | 0.66      | 1619670.55        | 336030.63          | 39°24'53.204"N | 80°50'46.300"W | 3.77              | 169.851         | 0.40          | -0.36                | 21.87               |
| 618.60  | 0.350           | 131.700     | 618.58   | 4.21           | -4.20      | 0.81      | 1619670.69        | 336030.14          | 39°24'53.199"N | 80°50'46.298"W | 4.28              | 169.076         | 0.37          | 0.01                 | -64.32              |
| 718.60  | 0.260           | 129.070     | 718.58   | 4.68           | -4.54      | 1.21      | 1619671.09        | 336029.79          | 39°24'53.195"N | 80°50'46.293"W | 4.70              | 165.038         | 0.09          | -0.09                | -2.63               |
| 818.60  | 0.390           | 122.910     | 818.58   | 5.15           | -4.87      | 1.68      | 1619671.54        | 336029.45          | 39°24'53.192"N | 80°50'46.287"W | 5.15              | 161.015         | 0.13          | 0.13                 | -6.16               |
| 918.60  | 0.410           | 130.870     | 918.58   | 5.74           | -5.29      | 2.23      | 1619672.09        | 336029.03          | 39°24'53.188"N | 80°50'46.280"W | 5.74              | 157.124         | 0.06          | 0.02                 | 7.96                |
| 1018.60 | 0.550           | 143.870     | 1018.57  | 6.52           | -5.91      | 2.79      | 1619672.64        | 336028.40          | 39°24'53.182"N | 80°50'46.273"W | 6.54              | 154.772         | 0.18          | 0.14                 | 13.00               |
| 1118.60 | 0.300           | 122.380     | 1118.57  | 7.19           | -6.44      | 3.29      | 1619673.13        | 336027.86          | 39°24'53.177"N | 80°50'46.267"W | 7.23              | 152.942         | 0.29          | -0.25                | -21.49              |
| 1218.60 | 0.430           | 131.560     | 1218.57  | 7.73           | -6.83      | 3.79      | 1619673.63        | 336027.46          | 39°24'53.173"N | 80°50'46.261"W | 7.81              | 150.962         | 0.14          | 0.13                 | 9.18                |
| 1318.60 | 0.280           | 157.040     | 1318.57  | 8.31           | -7.30      | 4.17      | 1619674.00        | 336026.98          | 39°24'53.168"N | 80°50'46.256"W | 8.41              | 150.289         | 0.21          | -0.15                | 25.48               |
| 1418.60 | 0.220           | 145.710     | 1418.57  | 8.74           | -7.69      | 4.37      | 1619674.20        | 336026.60          | 39°24'53.164"N | 80°50'46.253"W | 8.84              | 150.375         | 0.08          | -0.06                | -11.33              |
| 1518.60 | 0.320           | 140.010     | 1518.56  | 9.19           | -8.06      | 4.66      | 1619674.48        | 336026.22          | 39°24'53.161"N | 80°50'46.249"W | 9.31              | 149.970         | 0.10          | 0.10                 | -5.70               |
| 1618.60 | 0.650           | 142.640     | 1618.56  | 10.00          | -8.73      | 5.18      | 1619674.99        | 336025.55          | 39°24'53.154"N | 80°50'46.243"W | 10.15             | 149.289         | 0.33          | 0.33                 | 2.63                |
| 1718.60 | 0.920           | 151.940     | 1718.55  | 11.34          | -9.88      | 5.90      | 1619675.70        | 336024.38          | 39°24'53.143"N | 80°50'46.234"W | 11.51             | 149.147         | 0.30          | 0.27                 | 9.30                |
| 1818.60 | 1.190           | 154.680     | 1818.53  | 13.17          | -11.53     | 6.73      | 1619676.49        | 336022.72          | 39°24'53.126"N | 80°50'46.223"W | 13.35             | 149.744         | 0.27          | 0.27                 | 2.74                |
| 1918.60 | 0.910           | 143.270     | 1918.52  | 14.97          | -13.11     | 7.65      | 1619677.39        | 336021.13          | 39°24'53.111"N | 80°50'46.211"W | 15.17             | 149.744         | 0.35          | -0.28                | -11.41              |
| 2018.60 | 0.880           | 137.600     | 2018.51  | 16.45          | -14.31     | 8.64      | 1619678.36        | 336019.91          | 39°24'53.099"N | 80°50'46.199"W | 16.72             | 148.883         | 0.09          | -0.03                | -5.67               |
| 2118.60 | 0.860           | 125.420     | 2118.49  | 17.79          | -15.31     | 9.77      | 1619679.48        | 336018.89          | 39°24'53.089"N | 80°50'46.184"W | 18.16             | 147.466         | 0.19          | -0.02                | -12.18              |
| 2218.60 | 0.970           | 123.960     | 2218.48  | 19.10          | -16.22     | 11.08     | 1619680.78        | 336017.97          | 39°24'53.080"N | 80°50'46.168"W | 19.64             | 145.660         | 0.11          | 0.11                 | -1.46               |
| 2318.60 | 0.640           | 116.720     | 2318.47  | 20.21          | -16.94     | 12.28     | 1619681.97        | 336017.22          | 39°24'53.073"N | 80°50'46.152"W | 20.93             | 144.063         | 0.34          | -0.33                | -7.24               |
| 2513.00 | 0.700           | 226.810     | 2512.86  | 21.46          | -18.25     | 12.39     | 1619682.05        | 336015.92          | 39°24'53.060"N | 80°50'46.151"W | 22.05             | 145.828         | 0.57          | 0.03                 | 56.63               |
| 2603.00 | 0.100           | 201.460     | 2602.86  | 21.73          | -18.69     | 11.96     | 1619681.61        | 336015.48          | 39°24'53.055"N | 80°50'46.156"W | 22.19             | 147.398         | 0.68          | -0.67                | -28.17              |
| 2692.00 | 0.070           | 217.160     | 2691.86  | 21.81          | -18.81     | 11.90     | 1619681.55        | 336015.36          | 39°24'53.054"N | 80°50'46.157"W | 22.26             | 147.691         | 0.04          | -0.03                | 17.64               |
| 2782.00 | 0.110           | 269.420     | 2781.86  | 21.81          | -18.85     | 11.78     | 1619681.43        | 336015.32          | 39°24'53.054"N | 80°50'46.159"W | 22.23             | 148.013         | 0.10          | 0.04                 | 58.07               |
| 2871.00 | 0.070           | 82.530      | 2870.86  | 21.80          | -18.85     | 11.74     | 1619681.40        | 336015.33          | 39°24'53.054"N | 80°50'46.159"W | 22.21             | 148.073         | 0.20          | -0.04                | 194.51              |

95-02111



## REFERENCE WELLPATH IDENTIFICATION

|                |                           |
|----------------|---------------------------|
| Operator       | NOBLE ENERGY              |
| Area           | Tyler County, WV          |
| Field          | Tyler                     |
| Facility       | SHR I Pad                 |
| Well           | SHRICHS ST01              |
| Wellbore       | SHRICHS ST01 AWB          |
| Sidetrack from | SHRICHS AWB at 5754.00 MD |

## WELLPATH DATA (189 stations)

| MD [ft] | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [ft] | Grid North [ft] | Latitude       | Longitude      | Closure Dist [ft] | Closure Dir [°] | DLS [1/100ft] | Build Rate [1/100ft] | Turn Rate [1/100ft] |
|---------|-----------------|-------------|----------|----------------|------------|-----------|----------------|-----------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 2961.00 | 0.100           | 188.280     | 2960.86  | 21.88          | -18.92     | 11.79     | 1619681.44     | 336015.26       | 39°24'53.053"N | 80°50'46.159"W | 22.29             | 148.075         | 0.15          | 0.03                 | 117.50              |
| 3050.00 | 0.070           | 76.060      | 3049.86  | 21.95          | -18.98     | 11.83     | 1619681.48     | 336015.19       | 39°24'53.053"N | 80°50'46.158"W | 22.37             | 148.071         | 0.16          | -0.03                | -126.09             |
| 3139.00 | 0.040           | 258.260     | 3138.86  | 21.95          | -18.98     | 11.85     | 1619681.51     | 336015.20       | 39°24'53.053"N | 80°50'46.158"W | 22.37             | 148.013         | 0.12          | -0.03                | -199.78             |
| 3229.00 | 0.090           | 297.400     | 3228.86  | 21.89          | -18.95     | 11.76     | 1619681.41     | 336015.23       | 39°24'53.053"N | 80°50'46.159"W | 22.30             | 148.181         | 0.07          | 0.06                 | 43.49               |
| 3319.00 | 0.070           | 347.620     | 3318.86  | 21.79          | -18.86     | 11.68     | 1619681.34     | 336015.31       | 39°24'53.054"N | 80°50'46.160"W | 22.19             | 148.228         | 0.08          | -0.02                | 55.80               |
| 3408.00 | 0.090           | 268.500     | 3407.86  | 21.71          | -18.81     | 11.60     | 1619681.26     | 336015.37       | 39°24'53.054"N | 80°50'46.161"W | 22.10             | 148.337         | 0.12          | 0.02                 | -88.90              |
| 3498.00 | 0.110           | 295.850     | 3497.86  | 21.62          | -18.78     | 11.45     | 1619681.11     | 336015.40       | 39°24'53.055"N | 80°50'46.163"W | 21.99             | 148.617         | 0.06          | 0.02                 | 30.39               |
| 3587.00 | 0.090           | 190.040     | 3586.86  | 21.62          | -18.81     | 11.36     | 1619681.02     | 336015.37       | 39°24'53.054"N | 80°50'46.164"W | 21.97             | 148.859         | 0.18          | -0.02                | -118.89             |
| 3678.00 | 0.030           | 59.790      | 3677.86  | 21.68          | -18.87     | 11.37     | 1619681.03     | 336015.32       | 39°24'53.054"N | 80°50'46.164"W | 22.03             | 148.919         | 0.12          | -0.07                | -143.13             |
| 3768.00 | 0.090           | 269.500     | 3767.86  | 21.65          | -18.86     | 11.32     | 1619680.98     | 336015.33       | 39°24'53.054"N | 80°50'46.165"W | 21.99             | 149.016         | 0.13          | 0.07                 | -166.99             |
| 3856.00 | 0.070           | 179.510     | 3855.86  | 21.68          | -18.91     | 11.25     | 1619680.91     | 336015.27       | 39°24'53.053"N | 80°50'46.165"W | 22.00             | 149.242         | 0.13          | -0.02                | -102.26             |
| 3945.00 | 0.070           | 86.720      | 3944.86  | 21.74          | -18.96     | 11.31     | 1619680.96     | 336015.22       | 39°24'53.053"N | 80°50'46.165"W | 22.08             | 149.188         | 0.11          | 0.00                 | -104.26             |
| 4035.00 | 0.190           | 247.890     | 4034.86  | 21.76          | -19.01     | 11.22     | 1619680.88     | 336015.17       | 39°24'53.052"N | 80°50'46.166"W | 22.08             | 149.444         | 0.29          | 0.13                 | 179.08              |
| 4124.00 | 0.100           | 178.460     | 4123.86  | 21.84          | -19.15     | 11.09     | 1619680.74     | 336015.04       | 39°24'53.051"N | 80°50'46.168"W | 22.13             | 149.920         | 0.20          | -0.10                | -78.01              |
| 4214.00 | 0.070           | 181.020     | 4213.86  | 21.97          | -19.28     | 11.09     | 1619680.74     | 336014.91       | 39°24'53.050"N | 80°50'46.167"W | 22.24             | 150.090         | 0.03          | -0.03                | 2.84                |
| 4304.00 | 0.030           | 237.840     | 4303.86  | 22.02          | -19.35     | 11.07     | 1619680.72     | 336014.84       | 39°24'53.049"N | 80°50'46.168"W | 22.29             | 150.223         | 0.07          | -0.04                | 63.13               |
| 4393.00 | 0.070           | 156.350     | 4392.86  | 22.08          | -19.41     | 11.07     | 1619680.72     | 336014.78       | 39°24'53.048"N | 80°50'46.168"W | 22.35             | 150.298         | 0.08          | 0.04                 | -91.56              |
| 4483.00 | 0.180           | 17.060      | 4482.86  | 22.02          | -19.33     | 11.14     | 1619680.78     | 336014.86       | 39°24'53.049"N | 80°50'46.167"W | 22.30             | 150.048         | 0.26          | 0.12                 | -154.77             |
| 4573.00 | 0.120           | 294.960     | 4572.86  | 21.85          | -19.15     | 11.09     | 1619680.74     | 336015.04       | 39°24'53.051"N | 80°50'46.167"W | 22.13             | 149.920         | 0.22          | -0.07                | -91.22              |
| 4680.00 | 0.100           | 293.560     | 4679.86  | 21.70          | -19.07     | 10.90     | 1619680.56     | 336015.12       | 39°24'53.052"N | 80°50'46.170"W | 21.96             | 150.232         | 0.02          | -0.02                | -1.31               |
| 4769.00 | 0.210           | 265.450     | 4768.86  | 21.60          | -19.05     | 10.67     | 1619680.32     | 336015.15       | 39°24'53.052"N | 80°50'46.173"W | 21.83             | 150.741         | 0.15          | 0.01                 | -31.58              |
| 4859.00 | 0.220           | 189.000     | 4858.86  | 21.70          | -19.23     | 10.48     | 1619680.13     | 336014.96       | 39°24'53.050"N | 80°50'46.175"W | 21.90             | 151.413         | 0.30          | 0.01                 | -84.94              |
| 4948.00 | 0.140           | 233.050     | 4947.86  | 21.88          | -19.47     | 10.37     | 1619680.01     | 336014.73       | 39°24'53.048"N | 80°50'46.177"W | 22.05             | 151.963         | 0.17          | -0.09                | 49.49               |
| 5038.00 | 0.190           | 248.390     | 5037.86  | 21.91          | -19.59     | 10.14     | 1619679.78     | 336014.61       | 39°24'53.047"N | 80°50'46.180"W | 22.06             | 152.631         | 0.07          | 0.06                 | 17.04               |
| 5127.00 | 0.170           | 296.300     | 5126.86  | 21.82          | -19.58     | 9.88      | 1619679.53     | 336014.62       | 39°24'53.047"N | 80°50'46.183"W | 21.94             | 153.219         | 0.17          | -0.02                | 53.83               |
| 5217.00 | 0.110           | 223.350     | 5216.86  | 21.76          | -19.59     | 9.70      | 1619679.35     | 336014.62       | 39°24'53.047"N | 80°50'46.185"W | 21.86             | 153.642         | 0.19          | -0.07                | -81.06              |
| 5306.00 | 0.340           | 254.690     | 5305.86  | 21.77          | -19.72     | 9.39      | 1619679.03     | 336014.49       | 39°24'53.045"N | 80°50'46.189"W | 21.84             | 154.532         | 0.28          | 0.26                 | 35.21               |
| 5396.00 | 0.180           | 253.610     | 5395.86  | 21.73          | -19.83     | 9.00      | 1619678.64     | 336014.39       | 39°24'53.044"N | 80°50'46.194"W | 21.77             | 155.591         | 0.18          | -0.18                | -1.20               |
| 5486.00 | 0.280           | 227.400     | 5485.85  | 21.80          | -20.02     | 8.70      | 1619678.34     | 336014.21       | 39°24'53.042"N | 80°50'46.198"W | 21.83             | 156.507         | 0.16          | 0.11                 | -29.12              |
| 5575.00 | 0.110           | 188.810     | 5574.85  | 21.96          | -20.25     | 8.53      | 1619678.16     | 336013.98       | 39°24'53.040"N | 80°50'46.200"W | 21.97             | 157.162         | 0.23          | -0.19                | -43.36              |

11120-0211





# Actual Wellpath Report

SHRICH S T01 AWP Proj: 15769'



## REFERENCE WELLPATH IDENTIFICATION

|                |                            |
|----------------|----------------------------|
| Operator       | NOBLE ENERGY               |
| Area           | Tyler County, WV           |
| Field          | Tyler                      |
| Facility       | SHR I Pad                  |
| Slot           | SHRICH S T01               |
| Wellbore       | SHRICH S T01 AWP           |
| Sidetrack from | SHRICH S AWP at 5754.00 MD |

## WELLPATH DATA (189 stations)

| MD [m]  | Inclination [°] | Azimuth [°] | TVD [m] | Vert Sect [m] | North [m] | East [m] | Grid East [m] | Grid North [m] | Latitude       | Longitude      | Closure Dist [m] | Closure Dir [°] | DLS ["/1000] | Build Rate ["/1000] | Turn Rate ["/1000] |
|---------|-----------------|-------------|---------|---------------|-----------|----------|---------------|----------------|----------------|----------------|------------------|-----------------|--------------|---------------------|--------------------|
| 5665.00 | 0.220           | 235.020     | 5664.85 | 22.08         | -20.43    | 8.37     | 1619678.01    | 336013.79      | 39°24'53.038"N | 80°50'46.202"W | 22.08            | 157.718         | 0.18         | 0.12                | 51.34              |
| 5754.00 | 0.040           | 285.600     | 5753.85 | 22.10         | -20.52    | 8.20     | 1619677.83    | 336013.71      | 39°24'53.037"N | 80°50'46.204"W | 22.10            | 158.214         | 0.22         | -0.20               | 56.83              |
| 5831.00 | 1.960           | 210.970     | 5830.84 | 22.90         | -21.64    | 7.50     | 1619677.11    | 336012.60      | 39°24'53.026"N | 80°50'46.213"W | 22.91            | 160.890         | 2.53         | 2.49                | -96.92             |
| 5876.00 | 6.580           | 216.350     | 5875.70 | 24.77         | -24.38    | 5.57     | 1619675.15    | 336009.89      | 39°24'52.999"N | 80°50'46.238"W | 25.01            | 167.123         | 10.29        | 10.27               | 11.96              |
| 5921.00 | 10.370          | 217.800     | 5920.20 | 28.27         | -29.66    | 1.56     | 1619671.06    | 336004.67      | 39°24'52.947"N | 80°50'46.289"W | 29.70            | 176.985         | 8.43         | 8.42                | 3.22               |
| 5966.00 | 13.660          | 216.590     | 5964.21 | 33.24         | -37.13    | -4.09    | 1619665.30    | 335997.29      | 39°24'52.873"N | 80°50'46.361"W | 37.35            | 186.284         | 7.33         | 7.31                | -2.69              |
| 6011.00 | 16.590          | 213.270     | 6007.65 | 39.87         | -46.77    | -10.78   | 1619658.46    | 335987.75      | 39°24'52.778"N | 80°50'46.446"W | 48.00            | 192.982         | 6.79         | 6.51                | -7.38              |
| 6055.00 | 20.290          | 208.630     | 6049.38 | 48.50         | -58.72    | -17.89   | 1619651.18    | 335975.90      | 39°24'52.660"N | 80°50'46.537"W | 61.39            | 196.940         | 9.04         | 8.41                | -10.55             |
| 6100.00 | 24.820          | 205.190     | 6090.93 | 60.13         | -74.13    | -25.65   | 1619643.18    | 335960.62      | 39°24'52.508"N | 80°50'46.636"W | 78.44            | 199.087         | 10.48        | 10.07               | -7.64              |
| 6145.00 | 28.940          | 204.260     | 6131.06 | 74.38         | -92.61    | -34.15   | 1619634.41    | 335942.27      | 39°24'52.325"N | 80°50'46.744"W | 98.70            | 200.240         | 9.20         | 9.16                | -2.07              |
| 6190.00 | 32.260          | 206.780     | 6169.79 | 90.16         | -113.26   | -44.03   | 1619624.22    | 335921.77      | 39°24'52.121"N | 80°50'46.870"W | 121.52           | 201.245         | 7.91         | 7.38                | 5.60               |
| 6234.00 | 34.850          | 204.920     | 6206.46 | 106.84        | -135.15   | -54.62   | 1619613.30    | 335900.04      | 39°24'51.904"N | 80°50'47.005"W | 145.77           | 202.007         | 6.33         | 5.89                | -4.23              |
| 6279.00 | 38.530          | 198.570     | 6242.55 | 126.65        | -160.11   | -64.51   | 1619603.04    | 335875.23      | 39°24'51.658"N | 80°50'47.131"W | 172.62           | 201.945         | 11.74        | 8.18                | -14.11             |
| 6324.00 | 42.110          | 192.570     | 6276.87 | 150.08        | -188.15   | -72.26   | 1619594.87    | 335847.32      | 39°24'51.381"N | 80°50'47.230"W | 201.55           | 201.011         | 11.73        | 7.96                | -13.33             |
| 6368.00 | 45.570          | 187.860     | 6308.61 | 176.19        | -218.12   | -77.63   | 1619589.06    | 335817.42      | 39°24'51.084"N | 80°50'47.298"W | 231.53           | 199.590         | 10.80        | 7.86                | -10.70             |
| 6413.00 | 49.070          | 185.040     | 6339.11 | 205.58        | -250.99   | -81.32   | 1619584.87    | 335784.62      | 39°24'50.760"N | 80°50'47.345"W | 263.83           | 197.952         | 9.04         | 7.78                | -6.27              |
| 6458.00 | 52.670          | 184.340     | 6367.50 | 237.07        | -285.77   | -84.17   | 1619581.51    | 335749.89      | 39°24'50.416"N | 80°50'47.381"W | 297.91           | 196.411         | 8.09         | 8.00                | -1.56              |
| 6503.00 | 56.770          | 183.490     | 6393.49 | 270.42        | -322.41   | -86.67   | 1619578.46    | 335713.29      | 39°24'50.054"N | 80°50'47.413"W | 333.86           | 195.046         | 9.24         | 9.11                | -1.89              |
| 6548.00 | 60.190          | 182.120     | 6417.01 | 305.55        | -360.72   | -88.54   | 1619576.01    | 335675.01      | 39°24'49.675"N | 80°50'47.437"W | 371.43           | 193.790         | 8.03         | 7.60                | -3.04              |
| 6592.00 | 63.330          | 179.400     | 6437.83 | 341.58        | -399.47   | -89.04   | 1619574.93    | 335636.28      | 39°24'49.292"N | 80°50'47.443"W | 409.27           | 192.565         | 8.98         | 7.14                | -6.18              |
| 6637.00 | 64.740          | 176.050     | 6457.54 | 379.92        | -439.89   | -87.42   | 1619575.94    | 335595.84      | 39°24'48.893"N | 80°50'47.423"W | 448.49           | 191.241         | 7.39         | 3.13                | -7.44              |
| 6682.00 | 65.730          | 171.850     | 6476.40 | 419.42        | -480.51   | -83.11   | 1619579.64    | 335555.17      | 39°24'48.491"N | 80°50'47.368"W | 487.64           | 189.813         | 8.76         | 2.20                | -9.33              |
| 6727.00 | 69.270          | 169.340     | 6493.62 | 460.16        | -521.51   | -76.31   | 1619594.04    | 335472.23      | 39°24'47.674"N | 80°50'47.168"W | 567.25           | 186.831         | 10.88        | 9.44                | -5.71              |
| 6772.00 | 73.520          | 166.770     | 6507.97 | 502.28        | -563.22   | -67.47   | 1619594.04    | 335472.23      | 39°24'47.674"N | 80°50'47.168"W | 567.25           | 186.831         | 10.88        | 9.44                | -5.71              |
| 6816.00 | 77.120          | 164.740     | 6519.12 | 544.55        | -604.46   | -57.00   | 1619603.90    | 335430.84      | 39°24'47.266"N | 80°50'47.035"W | 607.15           | 185.387         | 9.32         | 8.18                | -4.61              |
| 6861.00 | 79.850          | 162.060     | 6528.11 | 588.51        | -646.71   | -44.40   | 1619615.86    | 335388.41      | 39°24'46.848"N | 80°50'46.874"W | 648.23           | 183.927         | 8.42         | 6.07                | -5.96              |
| 6906.00 | 81.810          | 159.400     | 6535.28 | 632.91        | -688.64   | -29.73   | 1619629.89    | 335346.27      | 39°24'46.434"N | 80°50'46.688"W | 689.28           | 182.472         | 7.28         | 4.36                | -5.91              |
| 6951.00 | 83.680          | 156.300     | 6540.96 | 677.54        | -729.98   | -12.90   | 1619646.10    | 335304.69      | 39°24'46.025"N | 80°50'46.473"W | 730.09           | 181.013         | 8.00         | 4.16                | -6.89              |
| 6996.00 | 86.520          | 152.840     | 6544.81 | 722.22        | -770.46   | 6.35     | 1619664.74    | 335263.93      | 39°24'45.625"N | 80°50'46.228"W | 770.48           | 179.528         | 9.92         | 6.31                | -7.69              |
| 7041.00 | 89.750          | 151.330     | 6546.27 | 766.84        | -810.19   | 27.40    | 1619685.19    | 335223.88      | 39°24'45.233"N | 80°50'45.960"W | 810.66           | 178.063         | 7.92         | 7.18                | -3.36              |

11/20.56





# Actual Wellpath Report

SHR1CHS ST01 AWP Proj: 15769'  
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### REFERENCE WELLPATH IDENTIFICATION

|          |                  |                |                           |
|----------|------------------|----------------|---------------------------|
| Operator | NOBLE ENERGY     | Slot           | Slot C                    |
| Area     | Tyler County, WV | Well           | SHR1CHS ST01              |
| Field    | Tyler            | Wellbore       | SHR1CHS ST01 AWB          |
| Facility | SHR I Pad        | Sidetrack from | SHR1CHS AWB at 5754.00 MD |

### WELLPATH DATA (189 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] |
|---------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 7085.00 | 89.630          | 151.680     | 6546.51  | 810.45         | -848.86    | 48.39     | 1619705.60        | 335184.90          | 39°24'44.850"N | 80°50'45.692"W | 850.24            | 176.737         | 0.84          | -0.27                | 0.80                |
| 7175.00 | 89.480          | 152.870     | 6547.21  | 899.80         | -928.53    | 90.26     | 1619746.27        | 335104.63          | 39°24'44.063"N | 80°50'45.159"W | 932.90            | 174.448         | 1.33          | -0.17                | 1.32                |
| 7264.00 | 89.630          | 156.200     | 6547.90  | 988.50         | -1008.87   | 128.52    | 1619783.32        | 335023.73          | 39°24'43.269"N | 80°50'44.671"W | 1017.02           | 172.740         | 3.75          | 0.17                 | 3.74                |
| 7353.00 | 89.570          | 158.120     | 6548.52  | 1077.44        | -1090.88   | 163.06    | 1619816.63        | 334941.21          | 39°24'42.458"N | 80°50'44.231"W | 1103.00           | 171.499         | 2.16          | -0.07                | 2.16                |
| 7443.00 | 89.600          | 157.770     | 6549.17  | 1167.42        | -1174.29   | 196.86    | 1619849.17        | 334857.30          | 39°24'41.634"N | 80°50'43.801"W | 1190.68           | 170.484         | 0.39          | 0.03                 | -0.39               |
| 7532.00 | 89.450          | 158.660     | 6549.91  | 1256.40        | -1256.93   | 229.88    | 1619880.95        | 334774.18          | 39°24'40.817"N | 80°50'43.380"W | 1277.78           | 169.636         | 1.01          | -0.17                | 1.00                |
| 7622.00 | 89.690          | 159.080     | 6550.59  | 1346.40        | -1340.88   | 262.33    | 1619912.13        | 334689.76          | 39°24'39.988"N | 80°50'42.967"W | 1366.30           | 168.931         | 0.54          | 0.27                 | 0.47                |
| 7711.00 | 89.630          | 159.870     | 6551.11  | 1435.40        | -1424.23   | 293.53    | 1619942.08        | 334605.96          | 39°24'39.164"N | 80°50'42.569"W | 1454.16           | 168.354         | 0.89          | -0.07                | 0.89                |
| 7801.00 | 89.600          | 160.860     | 6551.72  | 1525.37        | -1508.99   | 323.77    | 1619971.05        | 334520.76          | 39°24'38.326"N | 80°50'42.184"W | 1543.34           | 167.890         | 1.10          | -0.03                | 1.10                |
| 7890.00 | 89.910          | 163.320     | 6552.10  | 1614.25        | -1593.67   | 351.14    | 1619997.14        | 334435.68          | 39°24'37.489"N | 80°50'41.835"W | 1631.90           | 167.574         | 2.79          | 0.35                 | 2.76                |
| 7980.00 | 89.480          | 164.840     | 6552.58  | 1703.91        | -1680.22   | 375.83    | 1620020.53        | 334348.78          | 39°24'36.634"N | 80°50'41.521"W | 1721.73           | 167.392         | 1.76          | -0.48                | 1.69                |
| 8070.00 | 89.910          | 162.100     | 6553.06  | 1793.64        | -1766.49   | 401.43    | 1620044.83        | 334262.14          | 39°24'35.781"N | 80°50'41.194"W | 1811.52           | 167.197         | 3.08          | 0.48                 | -3.04               |
| 8159.00 | 89.230          | 160.850     | 6553.73  | 1882.56        | -1850.87   | 429.70    | 1620071.84        | 334177.35          | 39°24'34.947"N | 80°50'40.834"W | 1900.10           | 166.930         | 1.60          | -0.76                | -1.40               |
| 8249.00 | 90.280          | 158.870     | 6554.11  | 1972.55        | -1935.36   | 460.69    | 1620101.56        | 334092.41          | 39°24'34.112"N | 80°50'40.440"W | 1989.44           | 166.611         | 2.49          | 1.17                 | -2.20               |
| 8338.00 | 90.250          | 157.310     | 6553.70  | 2061.53        | -2017.93   | 493.90    | 1620133.52        | 334009.36          | 39°24'33.296"N | 80°50'40.016"W | 2077.49           | 166.247         | 1.75          | -0.03                | -1.75               |
| 8428.00 | 89.850          | 158.490     | 6553.62  | 2151.51        | -2101.32   | 527.76    | 1620166.13        | 333925.48          | 39°24'32.472"N | 80°50'39.585"W | 2166.58           | 165.901         | 1.38          | -0.44                | 1.31                |
| 8517.00 | 89.350          | 160.050     | 6554.24  | 2240.50        | -2184.55   | 559.26    | 1620196.37        | 333841.79          | 39°24'31.649"N | 80°50'39.184"W | 2255.00           | 165.640         | 1.84          | -0.56                | 1.75                |
| 8607.00 | 90.150          | 159.680     | 6554.63  | 2330.49        | -2269.05   | 590.24    | 1620226.08        | 333756.84          | 39°24'30.814"N | 80°50'38.789"W | 2344.56           | 165.419         | 0.98          | 0.89                 | -0.41               |
| 8697.00 | 89.970          | 158.000     | 6554.54  | 2420.49        | -2352.98   | 622.73    | 1620257.31        | 333672.44          | 39°24'29.984"N | 80°50'38.375"W | 2433.98           | 165.176         | 1.88          | -0.20                | -1.87               |
| 8786.00 | 90.460          | 156.190     | 6554.21  | 2509.43        | -2434.95   | 657.36    | 1620290.71        | 333589.95          | 39°24'29.174"N | 80°50'37.934"W | 2522.13           | 164.892         | 2.11          | 0.55                 | -2.03               |
| 8876.00 | 90.340          | 157.220     | 6553.58  | 2599.34        | -2517.61   | 692.95    | 1620325.06        | 333506.77          | 39°24'28.357"N | 80°50'37.481"W | 2611.24           | 164.611         | 1.15          | -0.13                | 1.14                |
| 8966.00 | 90.370          | 158.800     | 6553.02  | 2689.32        | -2601.06   | 726.65    | 1620357.50        | 333422.83          | 39°24'27.532"N | 80°50'37.051"W | 2700.66           | 164.391         | 1.76          | 0.03                 | 1.76                |
| 9055.00 | 90.430          | 159.690     | 6552.40  | 2778.32        | -2684.28   | 758.19    | 1620387.78        | 333339.15          | 39°24'26.710"N | 80°50'36.650"W | 2789.31           | 164.227         | 1.00          | 0.07                 | 1.00                |
| 9145.00 | 90.340          | 160.450     | 6551.79  | 2868.30        | -2768.89   | 788.87    | 1620417.19        | 333254.10          | 39°24'25.874"N | 80°50'36.259"W | 2879.07           | 164.098         | 0.85          | -0.10                | 0.84                |
| 9235.00 | 90.370          | 159.010     | 6551.24  | 2958.30        | -2853.31   | 820.05    | 1620447.10        | 333169.23          | 39°24'25.039"N | 80°50'35.862"W | 2968.82           | 163.965         | 1.60          | 0.03                 | -1.60               |
| 9324.00 | 89.910          | 159.350     | 6551.02  | 3047.29        | -2936.50   | 851.68    | 1620477.48        | 333085.58          | 39°24'24.217"N | 80°50'35.459"W | 3057.52           | 163.826         | 0.64          | -0.52                | 0.38                |
| 9414.00 | 89.880          | 158.740     | 6551.18  | 3137.29        | -3020.55   | 883.87    | 1620508.40        | 333001.06          | 39°24'23.386"N | 80°50'35.049"W | 3147.21           | 163.690         | 0.68          | -0.03                | -0.68               |
| 9503.00 | 89.970          | 157.550     | 6551.30  | 3226.28        | -3103.15   | 917.00    | 1620540.29        | 332917.98          | 39°24'22.570"N | 80°50'34.627"W | 3235.80           | 163.537         | 1.34          | 0.10                 | -1.34               |
| 9593.00 | 89.910          | 158.000     | 6551.39  | 3316.25        | -3186.46   | 951.04    | 1620573.08        | 332834.17          | 39°24'21.747"N | 80°50'34.193"W | 3325.36           | 163.382         | 0.50          | -0.07                | 0.50                |
| 9683.00 | 89.880          | 159.860     | 6551.56  | 3406.25        | -3270.44   | 983.39    | 1620604.17        | 332749.72          | 39°24'20.917"N | 80°50'33.781"W | 3415.09           | 163.264         | 2.07          | -0.03                | 2.07                |

95-02111





# Actual Wellpath Report

SHR1CHS ST01 AWP Proj: 15769'  
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### REFERENCE WELLPATH IDENTIFICATION

|          |                  |                |                           |
|----------|------------------|----------------|---------------------------|
| Operator | NOBLE ENERGY     | Slot           | Slot C                    |
| Area     | Tyler County, WV | Well           | SHR1CHS ST01              |
| Field    | Tyler            | Wellbore       | SHR1CHS ST01 AWB          |
| Facility | SHR 1 Pad        | Sidetrack from | SHR1CHS AWB at 5754.00 MD |

### WELLPATH DATA (189 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] |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 9772.00  | 89.910          | 160.350     | 6551.72  | 3495.24        | -3354.13   | 1013.68   | 1620633.19        | 332665.59          | 39°24'20.089"N | 80°50'33.395"W | 3503.96           | 163.184         | 0.55          | 0.03                 | 0.55                |
| 9862.00  | 89.910          | 161.890     | 6551.86  | 3585.18        | -3439.29   | 1042.80   | 1620661.04        | 332580.01          | 39°24'19.248"N | 80°50'33.024"W | 3593.90           | 163.133         | 1.71          | 0.00                 | 1.71                |
| 9952.00  | 89.970          | 162.810     | 6551.96  | 3675.04        | -3525.05   | 1070.09   | 1620687.03        | 332493.86          | 39°24'18.400"N | 80°50'32.676"W | 3683.89           | 163.113         | 1.02          | 0.07                 | 1.02                |
| 10041.00 | 89.910          | 163.320     | 6552.05  | 3763.83        | -3610.19   | 1096.01   | 1620711.68        | 332408.34          | 39°24'17.559"N | 80°50'32.346"W | 3772.89           | 163.112         | 0.58          | -0.07                | 0.57                |
| 10131.00 | 90.920          | 163.260     | 6551.40  | 3853.59        | -3696.38   | 1121.89   | 1620736.26        | 332321.77          | 39°24'16.707"N | 80°50'32.017"W | 3862.89           | 163.116         | 1.12          | 1.12                 | -0.07               |
| 10220.00 | 90.430          | 159.370     | 6550.35  | 3942.50        | -3780.67   | 1150.40   | 1620763.50        | 332237.07          | 39°24'15.874"N | 80°50'31.654"W | 3951.82           | 163.076         | 4.41          | -0.55                | -4.37               |
| 10310.00 | 90.550          | 158.050     | 6549.58  | 4032.49        | -3864.52   | 1183.07   | 1620794.91        | 332152.74          | 39°24'15.045"N | 80°50'31.237"W | 4041.56           | 162.979         | 1.47          | 0.13                 | -1.47               |
| 10400.00 | 90.550          | 161.360     | 6548.72  | 4122.47        | -3948.92   | 1214.28   | 1620824.85        | 332067.89          | 39°24'14.211"N | 80°50'30.840"W | 4131.40           | 162.907         | 3.68          | 0.00                 | 3.68                |
| 10489.00 | 90.620          | 161.410     | 6547.81  | 4211.40        | -4033.26   | 1242.69   | 1620851.99        | 331983.14          | 39°24'13.377"N | 80°50'30.478"W | 4220.36           | 162.875         | 0.10          | 0.08                 | 0.06                |
| 10578.00 | 90.490          | 159.160     | 6546.95  | 4300.37        | -4117.03   | 1272.71   | 1620880.75        | 331898.93          | 39°24'12.549"N | 80°50'30.096"W | 4309.27           | 162.822         | 2.53          | -0.15                | -2.53               |
| 10667.00 | 90.220          | 155.560     | 6546.39  | 4389.31        | -4199.16   | 1306.96   | 1620913.77        | 331816.31          | 39°24'11.737"N | 80°50'29.659"W | 4397.85           | 162.712         | 4.06          | -0.30                | -4.04               |
| 10757.00 | 90.150          | 153.900     | 6546.10  | 4479.04        | -4280.55   | 1345.38   | 1620950.96        | 331734.36          | 39°24'10.933"N | 80°50'29.170"W | 4486.99           | 162.552         | 1.85          | -0.08                | -1.84               |
| 10846.00 | 90.180          | 154.520     | 6545.85  | 4567.71        | -4360.68   | 1384.10   | 1620988.47        | 331653.66          | 39°24'10.141"N | 80°50'28.677"W | 4575.07           | 162.390         | 0.70          | 0.03                 | 0.70                |
| 10936.00 | 90.120          | 154.790     | 6545.61  | 4657.44        | -4442.02   | 1422.63   | 1621025.78        | 331571.76          | 39°24'09.337"N | 80°50'28.186"W | 4664.27           | 162.241         | 0.31          | -0.07                | 0.30                |
| 11025.00 | 90.030          | 155.640     | 6545.50  | 4746.23        | -4522.82   | 1459.94   | 1621061.87        | 331490.41          | 39°24'08.538"N | 80°50'27.711"W | 4752.61           | 162.110         | 0.96          | -0.10                | 0.96                |
| 11114.00 | 90.060          | 156.130     | 6545.43  | 4835.08        | -4604.05   | 1496.30   | 1621097.01        | 331408.65          | 39°24'07.736"N | 80°50'27.248"W | 4841.09           | 161.996         | 0.55          | 0.03                 | 0.55                |
| 11204.00 | 89.880          | 157.830     | 6545.47  | 4925.01        | -4686.88   | 1531.50   | 1621130.95        | 331325.30          | 39°24'06.917"N | 80°50'26.799"W | 4930.75           | 161.905         | 1.90          | -0.20                | 1.89                |
| 11293.00 | 89.630          | 160.930     | 6545.85  | 5014.00        | -4770.17   | 1562.83   | 1621161.04        | 331241.56          | 39°24'06.094"N | 80°50'26.400"W | 5019.66           | 161.860         | 3.49          | -0.28                | 3.48                |
| 11383.00 | 89.390          | 163.840     | 6546.62  | 5103.84        | -4855.94   | 1590.07   | 1621186.98        | 331155.40          | 39°24'05.246"N | 80°50'26.053"W | 5109.64           | 161.869         | 3.24          | -0.27                | 3.23                |
| 11473.00 | 89.970          | 163.650     | 6547.13  | 5193.55        | -4942.34   | 1615.26   | 1621210.88        | 331068.64          | 39°24'04.392"N | 80°50'25.732"W | 5199.59           | 161.902         | 0.68          | 0.64                 | -0.21               |
| 11562.00 | 89.880          | 162.100     | 6547.24  | 5282.36        | -5027.39   | 1641.46   | 1621235.80        | 330983.21          | 39°24'03.551"N | 80°50'25.399"W | 5288.57           | 161.918         | 1.74          | -0.10                | -1.74               |
| 11652.00 | 89.820          | 158.690     | 6547.48  | 5372.33        | -5112.16   | 1671.66   | 1621264.72        | 330898.00          | 39°24'02.714"N | 80°50'25.014"W | 5378.53           | 161.892         | 3.79          | -0.07                | -3.79               |
| 11741.00 | 89.820          | 157.600     | 6547.76  | 5461.31        | -5194.76   | 1704.79   | 1621296.61        | 330814.91          | 39°24'01.897"N | 80°50'24.592"W | 5467.34           | 161.831         | 1.22          | 0.00                 | -1.22               |
| 11830.00 | 89.820          | 156.620     | 6548.04  | 5550.25        | -5276.75   | 1739.40   | 1621329.99        | 330732.42          | 39°24'01.087"N | 80°50'24.151"W | 5556.04           | 161.756         | 1.10          | 0.00                 | -1.10               |
| 11920.00 | 90.030          | 157.590     | 6548.15  | 5640.19        | -5359.66   | 1774.42   | 1621363.76        | 330649.00          | 39°24'00.267"N | 80°50'23.705"W | 5645.75           | 161.682         | 1.10          | 0.23                 | 1.08                |
| 12009.00 | 90.000          | 159.570     | 6548.13  | 5729.19        | -5442.51   | 1806.92   | 1621395.01        | 330565.68          | 39°23'59.448"N | 80°50'23.291"W | 5734.62           | 161.634         | 2.22          | -0.03                | 2.22                |
| 12099.00 | 90.000          | 161.310     | 6548.13  | 5819.16        | -5527.31   | 1837.05   | 1621423.87        | 330480.44          | 39°23'58.610"N | 80°50'22.908"W | 5824.59           | 161.615         | 1.93          | 0.00                 | 1.93                |
| 12189.00 | 90.030          | 163.500     | 6548.11  | 5909.01        | -5613.09   | 1864.25   | 1621449.78        | 330394.26          | 39°23'57.762"N | 80°50'22.561"W | 5914.58           | 161.627         | 2.43          | 0.03                 | 2.43                |
| 12278.00 | 90.340          | 163.840     | 6547.82  | 5997.73        | -5698.50   | 1889.28   | 1621473.52        | 330308.49          | 39°23'56.918"N | 80°50'22.243"W | 6003.52           | 161.658         | 0.52          | 0.35                 | 0.38                |
| 12368.00 | 90.340          | 161.350     | 6547.29  | 6087.56        | -5784.37   | 1916.20   | 1621499.15        | 330222.23          | 39°23'56.070"N | 80°50'21.900"W | 6093.50           | 161.671         | 2.77          | 0.00                 | -2.77               |

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# Actual Wellpath Report

SHRICHS ST01 AWP Proj: 15769'  
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## REFERENCE WELLPATH IDENTIFICATION

|          |                  |                |                           |
|----------|------------------|----------------|---------------------------|
| Operator | NOBLE ENERGY     | Slot           | Slot C                    |
| Area     | Tyler County, WV | Well           | SHRICHS ST01              |
| Field    | Tyler            | Wellbore       | SHRICHS ST01 AWB          |
| Facility | SHR I Pad        | Sidetrack from | SHRICHS AWB at 5754.00 MD |

## WELLPATH DATA (189 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] |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 12458.00 | 90.340          | 158.530     | 6546.75  | 6177.54        | -5868.90   | 1947.06   | 1621528.74        | 330137.25          | 39°23'55.234"N | 80°50'21.507"W | 6183.45           | 161.646         | 3.13          | 0.00                 | -3.13               |
| 12547.00 | 90.340          | 155.590     | 6546.22  | 6266.47        | -5950.85   | 1981.75   | 1621562.19        | 330054.79          | 39°23'54.424"N | 80°50'21.065"W | 6272.16           | 161.581         | 3.30          | 0.00                 | -3.30               |
| 12637.00 | 90.250          | 155.020     | 6545.76  | 6356.26        | -6032.62   | 2019.35   | 1621598.56        | 329972.48          | 39°23'53.616"N | 80°50'20.586"W | 6361.63           | 161.493         | 0.64          | -0.10                | -0.63               |
| 12726.00 | 90.030          | 155.590     | 6545.54  | 6445.06        | -6113.48   | 2056.53   | 1621634.53        | 329891.07          | 39°23'52.817"N | 80°50'20.112"W | 6450.11           | 161.407         | 0.69          | -0.25                | 0.64                |
| 12816.00 | 90.030          | 156.320     | 6545.50  | 6534.92        | -6195.67   | 2093.20   | 1621669.96        | 329808.35          | 39°23'52.004"N | 80°50'19.645"W | 6539.71           | 161.333         | 0.81          | 0.00                 | 0.81                |
| 12905.00 | 89.970          | 158.610     | 6545.50  | 6623.88        | -6277.87   | 2127.31   | 1621702.83        | 329725.65          | 39°23'51.192"N | 80°50'19.211"W | 6628.51           | 161.281         | 2.57          | -0.07                | 2.57                |
| 12995.00 | 89.600          | 161.920     | 6545.83  | 6713.85        | -6362.57   | 2157.69   | 1621731.94        | 329640.51          | 39°23'50.355"N | 80°50'18.824"W | 6718.48           | 161.267         | 3.70          | -0.41                | 3.68                |
| 13084.00 | 89.660          | 162.680     | 6546.41  | 6802.71        | -6447.36   | 2184.75   | 1621757.72        | 329555.33          | 39°23'49.517"N | 80°50'18.480"W | 6807.46           | 161.281         | 0.86          | 0.07                 | 0.85                |
| 13173.00 | 89.690          | 161.460     | 6546.91  | 6891.59        | -6532.03   | 2212.15   | 1621783.85        | 329470.26          | 39°23'48.680"N | 80°50'18.131"W | 6896.45           | 161.291         | 1.37          | 0.03                 | -1.37               |
| 13263.00 | 90.090          | 160.830     | 6547.09  | 6981.54        | -6617.20   | 2241.24   | 1621811.65        | 329384.67          | 39°23'47.838"N | 80°50'17.760"W | 6986.45           | 161.289         | 0.83          | 0.44                 | -0.70               |
| 13352.00 | 89.970          | 159.930     | 6547.04  | 7070.51        | -6701.03   | 2271.12   | 1621840.28        | 329300.41          | 39°23'47.009"N | 80°50'17.380"W | 7075.44           | 161.277         | 1.02          | -0.13                | -1.01               |
| 13442.00 | 90.280          | 158.360     | 6546.84  | 7160.51        | -6785.13   | 2303.16   | 1621871.05        | 329215.84          | 39°23'46.178"N | 80°50'16.972"W | 7165.37           | 161.251         | 1.78          | 0.34                 | -1.74               |
| 13531.00 | 90.030          | 157.630     | 6546.60  | 7249.49        | -6867.65   | 2336.51   | 1621903.16        | 329132.84          | 39°23'45.363"N | 80°50'16.547"W | 7254.23           | 161.211         | 0.87          | -0.28                | -0.82               |
| 13621.00 | 90.180          | 156.130     | 6546.44  | 7339.42        | -6950.42   | 2371.84   | 1621937.25        | 329049.55          | 39°23'44.545"N | 80°50'16.097"W | 7343.97           | 161.158         | 1.67          | 0.17                 | -1.67               |
| 13710.00 | 89.940          | 155.390     | 6546.34  | 7428.26        | -7031.57   | 2408.38   | 1621972.56        | 328967.87          | 39°23'43.742"N | 80°50'15.632"W | 7432.58           | 161.093         | 0.87          | -0.27                | -0.83               |
| 13800.00 | 90.000          | 157.050     | 6546.39  | 7518.14        | -7113.93   | 2444.67   | 1622007.61        | 328884.98          | 39°23'42.928"N | 80°50'15.169"W | 7522.26           | 161.035         | 1.85          | 0.07                 | 1.84                |
| 13889.00 | 90.060          | 159.140     | 6546.34  | 7607.12        | -7196.50   | 2477.87   | 1622039.57        | 328801.93          | 39°23'42.112"N | 80°50'14.747"W | 7611.14           | 161.001         | 2.35          | 0.07                 | 2.35                |
| 13979.00 | 90.000          | 160.960     | 6546.30  | 7697.11        | -7281.09   | 2508.58   | 1622069.01        | 328716.89          | 39°23'41.276"N | 80°50'14.356"W | 7701.12           | 160.989         | 2.02          | -0.07                | 2.02                |
| 14069.00 | 89.940          | 160.740     | 6546.34  | 7787.07        | -7366.11   | 2538.10   | 1622097.25        | 328631.44          | 39°23'40.436"N | 80°50'13.980"W | 7791.12           | 160.988         | 0.25          | -0.07                | -0.24               |
| 14158.00 | 90.030          | 158.820     | 6546.37  | 7876.06        | -7449.62   | 2568.86   | 1622126.75        | 328547.48          | 39°23'39.610"N | 80°50'13.588"W | 7880.10           | 160.974         | 2.16          | 0.10                 | -2.16               |
| 14248.00 | 90.000          | 158.110     | 6546.34  | 7966.05        | -7533.34   | 2601.90   | 1622158.53        | 328463.28          | 39°23'38.783"N | 80°50'13.167"W | 7970.01           | 160.946         | 0.79          | -0.03                | -0.79               |
| 14338.00 | 89.970          | 157.500     | 6546.37  | 8056.03        | -7616.67   | 2635.90   | 1622191.27        | 328379.46          | 39°23'37.959"N | 80°50'12.734"W | 8059.88           | 160.911         | 0.68          | -0.03                | -0.68               |
| 14427.00 | 90.150          | 158.210     | 6546.27  | 8145.01        | -7699.10   | 2669.45   | 1622223.58        | 328296.53          | 39°23'37.145"N | 80°50'12.307"W | 8148.75           | 160.877         | 0.82          | 0.20                 | 0.80                |
| 14517.00 | 89.940          | 159.020     | 6546.20  | 8235.00        | -7782.91   | 2702.26   | 1622255.14        | 328212.25          | 39°23'36.316"N | 80°50'11.889"W | 8238.68           | 160.853         | 0.93          | -0.23                | 0.90                |
| 14606.00 | 90.000          | 159.360     | 6546.25  | 8324.00        | -7866.10   | 2733.88   | 1622285.50        | 328128.60          | 39°23'35.494"N | 80°50'11.487"W | 8327.64           | 160.835         | 0.39          | 0.07                 | 0.38                |
| 14696.00 | 89.940          | 159.630     | 6546.30  | 8414.00        | -7950.40   | 2765.41   | 1622315.76        | 328043.84          | 39°23'34.661"N | 80°50'11.085"W | 8417.62           | 160.821         | 0.31          | -0.07                | 0.30                |
| 14786.00 | 89.970          | 160.950     | 6546.37  | 8503.98        | -8035.12   | 2795.76   | 1622344.84        | 327958.68          | 39°23'33.823"N | 80°50'10.699"W | 8507.61           | 160.815         | 1.47          | 0.03                 | 1.47                |
| 14876.00 | 90.220          | 162.130     | 6546.22  | 8593.90        | -8120.49   | 2824.26   | 1622372.05        | 327872.90          | 39°23'32.980"N | 80°50'10.336"W | 8597.60           | 160.823         | 1.34          | 0.28                 | 1.31                |
| 14965.00 | 90.220          | 159.530     | 6545.88  | 8682.85        | -8204.55   | 2853.48   | 1622400.01        | 327788.42          | 39°23'32.149"N | 80°50'09.964"W | 8686.60           | 160.823         | 2.92          | 0.00                 | -2.92               |
| 15055.00 | 90.490          | 156.240     | 6545.32  | 8772.81        | -8287.91   | 2887.36   | 1622432.63        | 327704.56          | 39°23'31.325"N | 80°50'09.532"W | 8776.47           | 160.793         | 3.67          | 0.30                 | -3.66               |

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# Actual Wellpath Report

SHR1CHS ST01 AWP Proj: 15769'  
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## REFERENCE WELLPATH IDENTIFICATION

|          |                  |                |                           |
|----------|------------------|----------------|---------------------------|
| Operator | NOBLE ENERGY     | Slot           | Slot C                    |
| Area     | Tyler County, WV | Well           | SHR1CHS ST01              |
| Field    | Tyler            | Wellbore       | SHR1CHS ST01 AWB          |
| Facility | SHR 1 Pad        | Sidetrack from | SHR1CHS AWB at 5754.00 MD |

## WELLPATH DATA (189 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] |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 15144.00 | 90.770          | 157.510     | 6544.34  | 8861.74        | -8369.76   | 2922.31   | 1622466.35        | 327622.20          | 39°23'30.516"N | 80°50'09.087"W | 8865.25           | 160.753         | 1.46          | 0.31                 | 1.43                |
| 15234.00 | 90.800          | 158.210     | 6543.11  | 8951.71        | -8453.11   | 2956.22   | 1622499.01        | 327538.35          | 39°23'29.692"N | 80°50'08.656"W | 8955.13           | 160.724         | 0.78          | 0.03                 | 0.78                |
| 15323.00 | 90.280          | 159.080     | 6542.27  | 9040.70        | -8536.00   | 2988.63   | 1622530.17        | 327455.00          | 39°23'28.873"N | 80°50'08.243"W | 9044.07           | 160.704         | 1.14          | -0.58                | 0.98                |
| 15413.00 | 90.280          | 159.900     | 6541.83  | 9130.69        | -8620.29   | 3020.16   | 1622560.44        | 327370.25          | 39°23'28.040"N | 80°50'07.841"W | 9134.04           | 160.692         | 0.91          | 0.00                 | 0.91                |
| 15502.00 | 90.340          | 159.870     | 6541.35  | 9219.69        | -8703.86   | 3050.77   | 1622589.79        | 327286.23          | 39°23'27.214"N | 80°50'07.452"W | 9223.03           | 160.684         | 0.08          | 0.07                 | -0.03               |
| 15592.00 | 90.280          | 160.840     | 6540.86  | 9309.66        | -8788.62   | 3081.03   | 1622618.77        | 327201.03          | 39°23'26.376"N | 80°50'07.066"W | 9313.03           | 160.681         | 1.08          | -0.07                | 1.08                |
| 15681.00 | 90.400          | 160.750     | 6540.33  | 9398.62        | -8872.66   | 3110.30   | 1622646.78        | 327116.56          | 39°23'25.545"N | 80°50'06.694"W | 9402.03           | 160.682         | 0.17          | 0.13                 | -0.10               |
| 15744.00 | 90.280          | 161.800     | 6539.96  | 9461.58        | -8932.33   | 3130.53   | 1622666.11        | 327056.61          | 39°23'24.955"N | 80°50'06.436"W | 9465.02           | 160.686         | 1.68          | -0.19                | 1.67                |
| 15769.00 | 90.280          | 161.800     | 6539.84  | 9486.55        | -8956.08   | 3138.33   | 1622673.56        | 327032.74          | 39°23'24.721"N | 80°50'06.337"W | 9490.02           | 160.689         | 0.00          | 0.00                 | 0.00                |

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## TARGETS

| Name               | MD [ft] | TVD [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude       | Longitude      | Shape |
|--------------------|---------|----------|------------|-----------|-------------------|--------------------|----------------|----------------|-------|
| SHR1 CHS BHL Rev-2 |         | 6540.00  | -8954.85   | 3144.77   | 1622680.01        | 327033.87          | 39°23'24.733"N | 80°50'06.255"W | point |
| SHR1 CHS LP Rev-2  |         | 6540.00  | -726.93    | 9.58      | 1619668.63        | 335307.40          | 39°24'46.056"N | 80°50'46.187"W | point |
| SHR1CHS LP Plat2   |         | 6621.30  | -566.42    | -51.51    | 1619609.95        | 335468.80          | 39°24'47.642"N | 80°50'46.965"W | point |

## WELLPATH COMPOSITION - Ref Wellbore: SHR1CHS ST01 AWB Ref Wellpath: SHR1CHS ST01 AWP Proj: 15769'

| Start MD [ft] | End MD [ft] | Positional Uncertainty Model           | Log Name/Comment                             | Wellbore         |
|---------------|-------------|--|--|------------------|
| 18.60         | 2318.60     | Generic gyro - northseeking (Standard) | VES Gyro <9-5/8"> (100'-2300')               | SHR1CHS AWB      |
| 2318.60       | 5754.00     | NaviTrak (MagCorr)                     | BHI AT Curve <8-3/4"> (2318.6')(2513'-6391') | SHR1CHS AWB      |
| 5754.00       | 15744.00    | NaviTrak (MagCorr)                     | BHI AT Curve <8-3/4"> (5754')(5831'-15744')  | SHR1CHS ST01 AWB |
| 15744.00      | 15769.00    | Blind Drilling (std)                   | Projection to bit                            | SHR1CHS ST01 AWB |





Actual Wellpath Report  
SHR1CHS ST01 AWP Proj: 15769'  
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REFERENCE WELLPATH IDENTIFICATION

|          |                  |                |                           |
|----------|------------------|----------------|---------------------------|
| Operator | NOBLE ENERGY     | Slot           | Slot C                    |
| Area     | Tyler County, WV | Well           | SHR1CHS ST01              |
| Field    | Tyler            | Wellbore       | SHR1CHS ST01 AWB          |
| Facility | SHR 1 Pad        | Sidetrack from | SHR1CHS AWB at 5754.00 MD |

COMMENTS

Wellpath general comments

API: 47-095-02111-0100  
BHI Job #: 5763930  
Rig: Precision 542  
Duration: 12/7/2013-12/12/2013  
VES Gyro <9-5/8"> (100'-2300')  
BHI AT Curve [OH] <8-3/4"> (2318.6')(2513'-5754')  
BHI AT Curve [ST] <8-3/4"> (5754')(5831'-15744')  
Projected MD at TD: 15769'  
API: 47-095-02111-0000  
BHI Job #: 5763930  
Rig: Precision 542  
Duration: 11/22/2013-11/28/2013  
VES Gyro <9-5/8"> (100'-2300')  
BHI AT Curve <8-3/4"> (2318.6')(2513'-6391')  
Projected MD at TD: 6427'

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