



# NOBLE ENERGY

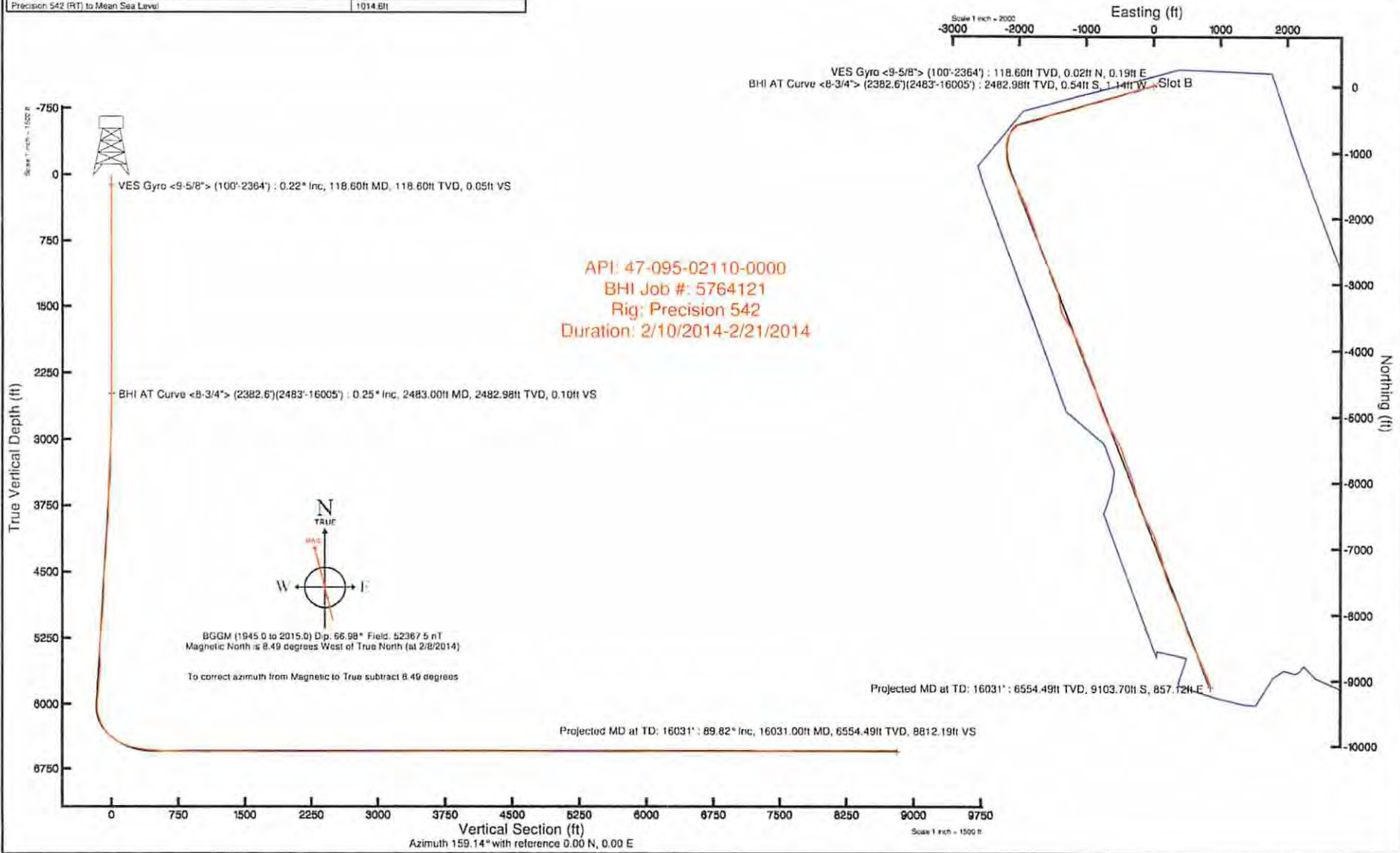


Location: Tyler County, WV  
 Field: Tyler  
 Facility: SHR 1 Pad

Slot: Slot B  
 Well: SHR1BHS  
 Wellbore: SHR1BHS PWB

| Location Information                             |              |                   |                    |                    |                |                |
|--|--------------|-------------------|--------------------|--------------------|----------------|----------------|
| Facility Name                                    |              | Grid East (US ft) | Grid North (US ft) | Latitude           | Longitude      |                |
| SHR 1 Pad  |              | 1019629.130       | 336098.760         | 39°24'52.963"N     | 80°50'46.096"W |                |
| Slot   | Local N (ft) | Local E (ft)      | Grid East (US ft)  | Grid North (US ft) | Latitude       | Longitude      |
| Slot B   | 13.21        | 14.87             | 1019624.060        | 335995.760         | 39°24'52.852"N | 80°50'46.886"W |
| Precision 542 (RT) to Mud line (At Slot, Slot B) |              |                   |                    |                    | 18.6ft         |                |
| Mean Sea Level to Mud line (At Slot, Slot B)     |              |                   |                    |                    | -996ft         |                |
| Precision 542 (RT) to Mean Sea Level             |              |                   |                    |                    | 1014.6ft       |                |

|   |  |
|---|--|
| Plot reference wellpath to SHR1BHS PWB Rev A.0            | Grid System: NAD27 / Lambert West Virginia SP, Northern 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 B): 996 feet    | Created by: skhansen on 2/25/2014  |
| Coordinates are in feet referenced to Slot                |  |





# Actual Wellpath Report

SHR1BHS AWP Proj: 16031'  
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| REFERENCE WELLPATH IDENTIFICATION |                  |          |             |
|-----------------------------------|------------------|----------|-------------|
| Operator                          | NOBLE ENERGY     | Slot     | Slot B      |
| Area                              | Tyler County, WV | Well     | SHR1BHS     |
| Field                             | Tyler            | Wellbore | SHR1BHS AWB |
| Facility                          | SHR 1 Pad        |          |             |

| 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     | 2/25/2014 at 11:27:33 AM                  |
| Convergence at slot      | n/a   | Database/Source file | Well Architect Eastern US/SHR1BHS_AWB.xml |

| WELLPATH LOCATION     |                   |          |                  |                 |                        |                |
|-----------------------|-------------------|----------|------------------|-----------------|------------------------|----------------|
|                       | Local coordinates |          | Grid coordinates |                 | Geographic coordinates |                |
|                       | North[ft]         | East[ft] | Easting[US ft]   | Northing[US ft] | Latitude               | Longitude      |
| Slot Location         | -13.21            | -14.87   | 1619624.06       | 335995.78       | 39°24'52.852"N         | 80°50'46.886"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 B) | 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°           |

95-02110



# Actual Wellpath Report

SHR1BHS AWP Proj: 16031'  
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## REFERENCE WELLPATH IDENTIFICATION

|          |                  |          |             |
|----------|------------------|----------|-------------|
| Operator | NOBLE ENERGY     | Slot     | Slot B      |
| Area     | Tyler County, WV | Well     | SHR1BHS     |
| Field    | Tyler            | Wellbore | SHR1BHS AWB |
| Facility | SHR 1 Pad        |          |             |

## WELLPATH DATA (194 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           | 85.430      | 0.00     | 0.00           | 0.00       | 0.00      | 1619624.06        | 335995.78          | 39°24'52.852"N | 80°50'46.886"W | 0.00              | 0.000           | 0.00          | 0.00                 | 0.00                |
| 18.60   | 0.000           | 85.430      | 18.60    | 0.00           | 0.00       | 0.00      | 1619624.06        | 335995.78          | 39°24'52.852"N | 80°50'46.886"W | 0.00              | 0.000           | 0.00          | 0.00                 | 0.00                |
| 118.60  | 0.220           | 85.430      | 118.60   | 0.05           | 0.02       | 0.19      | 1619624.25        | 335995.79          | 39°24'52.852"N | 80°50'46.884"W | 0.19              | 85.430          | 0.22          | 0.22                 | 0.00                |
| 218.60  | 0.460           | 91.000      | 218.60   | 0.26           | 0.02       | 0.78      | 1619624.84        | 335995.79          | 39°24'52.852"N | 80°50'46.876"W | 0.78              | 88.277          | 0.24          | 0.24                 | 5.57                |
| 318.60  | 0.310           | 79.110      | 318.60   | 0.45           | 0.07       | 1.45      | 1619625.51        | 335995.83          | 39°24'52.853"N | 80°50'46.867"W | 1.45              | 87.329          | 0.17          | -0.15                | -11.89              |
| 418.60  | 0.310           | 98.640      | 418.59   | 0.63           | 0.08       | 1.98      | 1619626.05        | 335995.83          | 39°24'52.853"N | 80°50'46.861"W | 1.99              | 87.744          | 0.11          | 0.00                 | 19.53               |
| 518.60  | 0.120           | 129.110     | 518.59   | 0.86           | -0.03      | 2.33      | 1619626.39        | 335995.72          | 39°24'52.852"N | 80°50'46.856"W | 2.33              | 90.701          | 0.22          | -0.19                | 30.47               |
| 618.60  | 0.120           | 113.700     | 618.59   | 1.02           | -0.14      | 2.51      | 1619626.57        | 335995.61          | 39°24'52.851"N | 80°50'46.854"W | 2.51              | 93.117          | 0.03          | 0.00                 | -15.41              |
| 718.60  | 0.140           | 121.690     | 718.59   | 1.19           | -0.24      | 2.71      | 1619626.77        | 335995.50          | 39°24'52.850"N | 80°50'46.851"W | 2.72              | 95.123          | 0.03          | 0.02                 | 7.99                |
| 818.60  | 0.100           | 173.160     | 818.59   | 1.37           | -0.39      | 2.82      | 1619626.88        | 335995.34          | 39°24'52.848"N | 80°50'46.850"W | 2.85              | 97.938          | 0.11          | -0.04                | 51.47               |
| 918.60  | 0.110           | 131.850     | 918.59   | 1.54           | -0.54      | 2.91      | 1619626.96        | 335995.19          | 39°24'52.847"N | 80°50'46.849"W | 2.96              | 100.611         | 0.07          | 0.01                 | -41.31              |
| 1018.60 | 0.030           | 141.110     | 1018.59  | 1.65           | -0.63      | 2.99      | 1619627.04        | 335995.11          | 39°24'52.846"N | 80°50'46.848"W | 3.06              | 101.862         | 0.08          | -0.08                | 9.26                |
| 1118.60 | 0.100           | 87.670      | 1118.59  | 1.71           | -0.65      | 3.10      | 1619627.15        | 335995.09          | 39°24'52.846"N | 80°50'46.847"W | 3.16              | 101.775         | 0.09          | 0.07                 | -53.44              |
| 1218.60 | 0.050           | 105.100     | 1218.59  | 1.76           | -0.65      | 3.23      | 1619627.28        | 335995.08          | 39°24'52.846"N | 80°50'46.845"W | 3.29              | 101.449         | 0.05          | -0.05                | 17.43               |
| 1318.60 | 0.120           | 337.550     | 1318.59  | 1.68           | -0.57      | 3.23      | 1619627.28        | 335995.16          | 39°24'52.847"N | 80°50'46.845"W | 3.28              | 99.978          | 0.16          | 0.07                 | -127.55             |
| 1418.60 | 0.240           | 337.900     | 1418.59  | 1.37           | -0.28      | 3.11      | 1619627.17        | 335995.46          | 39°24'52.849"N | 80°50'46.846"W | 3.12              | 95.094          | 0.12          | 0.12                 | 0.35                |
| 1518.60 | 0.270           | 325.530     | 1518.59  | 0.93           | 0.11       | 2.90      | 1619626.96        | 335995.85          | 39°24'52.853"N | 80°50'46.849"W | 2.90              | 87.807          | 0.06          | 0.03                 | -12.37              |
| 1618.60 | 0.170           | 255.420     | 1618.59  | 0.68           | 0.27       | 2.62      | 1619626.68        | 335996.01          | 39°24'52.855"N | 80°50'46.853"W | 2.64              | 84.164          | 0.27          | -0.10                | -70.11              |
| 1718.60 | 0.290           | 240.060     | 1718.59  | 0.71           | 0.10       | 2.26      | 1619626.32        | 335995.85          | 39°24'52.853"N | 80°50'46.857"W | 2.26              | 87.357          | 0.13          | 0.12                 | -15.36              |
| 1818.60 | 0.570           | 242.180     | 1818.59  | 0.81           | -0.25      | 1.60      | 1619625.66        | 335995.50          | 39°24'52.850"N | 80°50'46.866"W | 1.62              | 99.031          | 0.28          | 0.28                 | 2.12                |
| 1918.60 | 0.360           | 248.050     | 1918.58  | 0.87           | -0.60      | 0.87      | 1619624.92        | 335995.16          | 39°24'52.846"N | 80°50'46.875"W | 1.06              | 124.823         | 0.22          | -0.21                | 5.87                |
| 2018.60 | 0.310           | 260.050     | 2018.58  | 0.83           | -0.77      | 0.31      | 1619624.36        | 335995.01          | 39°24'52.845"N | 80°50'46.882"W | 0.83              | 158.010         | 0.09          | -0.05                | 12.00               |
| 2118.60 | 0.140           | 294.560     | 2118.58  | 0.69           | -0.76      | -0.07     | 1619623.98        | 335995.02          | 39°24'52.845"N | 80°50'46.887"W | 0.77              | 185.047         | 0.21          | -0.17                | 34.51               |
| 2218.60 | 0.200           | 292.420     | 2218.58  | 0.48           | -0.65      | -0.34     | 1619623.71        | 335995.14          | 39°24'52.846"N | 80°50'46.890"W | 0.73              | 207.733         | 0.06          | 0.06                 | -2.14               |
| 2318.60 | 0.110           | 287.470     | 2318.58  | 0.30           | -0.55      | -0.59     | 1619623.46        | 335995.24          | 39°24'52.847"N | 80°50'46.894"W | 0.81              | 227.086         | 0.09          | -0.09                | -4.95               |
| 2382.60 | 0.190           | 275.440     | 2382.58  | 0.22           | -0.52      | -0.76     | 1619623.30        | 335995.27          | 39°24'52.847"N | 80°50'46.896"W | 0.92              | 235.380         | 0.13          | 0.12                 | -18.80              |
| 2483.00 | 0.250           | 262.030     | 2482.98  | 0.10           | -0.54      | -1.14     | 1619622.91        | 335995.26          | 39°24'52.847"N | 80°50'46.901"W | 1.26              | 244.761         | 0.08          | 0.06                 | -13.36              |
| 2572.00 | 3.740           | 254.830     | 2571.91  | -0.24          | -1.32      | -4.13     | 1619619.91        | 335994.52          | 39°24'52.839"N | 80°50'46.939"W | 4.34              | 252.243         | 3.92          | 3.92                 | -8.09               |
| 2661.00 | 5.150           | 253.110     | 2660.64  | -0.80          | -3.24      | -10.76    | 1619613.25        | 335992.70          | 39°24'52.820"N | 80°50'47.023"W | 11.24             | 253.219         | 1.59          | 1.58                 | -1.93               |
| 2751.00 | 8.990           | 259.550     | 2749.94  | -2.35          | -5.69      | -21.54    | 1619602.44        | 335990.41          | 39°24'52.796"N | 80°50'47.160"W | 22.28             | 255.194         | 4.35          | 4.27                 | 7.16                |

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# Actual Wellpath Report

SHR1BHS AWP Proj: 16031'  
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| REFERENCE WELLPATH IDENTIFICATION |                  |          |             |
|-----------------------------------|------------------|----------|-------------|
| Operator                          | NOBLE ENERGY     | Slot     | Slot B      |
| Area                              | Tyler County, WV | Well     | SHR1BHS     |
| Field                             | Tyler            | Wellbore | SHR1BHS AWP |
| Facility                          | SHR 1 Pad        |          |             |

### WELLPATH DATA (194 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] |
|---------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 2841.00 | 11.720          | 254.610     | 2838.47  | -4.49          | -9.40      | -37.27    | 1619586.65        | 335986.94          | 39°24'52.759"N | 80°50'47.361"W | 38.44             | 255.852         | 3.19          | 3.03                 | -5.49               |
| 2930.00 | 13.010          | 248.660     | 2925.41  | -5.27          | -15.44     | -55.32    | 1619568.52        | 335981.17          | 39°24'52.700"N | 80°50'47.591"W | 57.44             | 254.405         | 2.04          | 1.45                 | -6.69               |
| 3020.00 | 14.490          | 250.970     | 3012.83  | -5.55          | -22.80     | -75.40    | 1619548.33        | 335974.11          | 39°24'52.627"N | 80°50'47.847"W | 78.77             | 253.176         | 1.75          | 1.64                 | 2.57                |
| 3109.00 | 17.350          | 257.020     | 3098.41  | -7.72          | -29.41     | -98.87    | 1619524.77        | 335967.85          | 39°24'52.562"N | 80°50'48.146"W | 103.15            | 253.433         | 3.71          | 3.21                 | 6.80                |
| 3199.00 | 18.820          | 260.170     | 3183.96  | -12.34         | -34.91     | -126.25   | 1619497.31        | 335962.77          | 39°24'52.507"N | 80°50'48.495"W | 130.99            | 254.545         | 1.96          | 1.63                 | 3.50                |
| 3288.00 | 20.450          | 258.060     | 3267.79  | -17.50         | -40.57     | -155.61   | 1619467.87        | 335957.55          | 39°24'52.451"N | 80°50'48.869"W | 160.81            | 255.386         | 2.00          | 1.83                 | -2.37               |
| 3378.00 | 21.970          | 256.560     | 3351.69  | -22.11         | -47.74     | -187.37   | 1619436.01        | 335950.86          | 39°24'52.380"N | 80°50'49.273"W | 193.35            | 255.706         | 1.79          | 1.69                 | -1.67               |
| 3467.00 | 26.560          | 255.730     | 3432.80  | -26.54         | -56.52     | -222.86   | 1619400.39        | 335942.61          | 39°24'52.294"N | 80°50'49.726"W | 229.92            | 255.770         | 5.17          | 5.16                 | -0.93               |
| 3557.00 | 30.220          | 253.090     | 3511.97  | -30.41         | -68.07     | -264.05   | 1619359.04        | 335931.68          | 39°24'52.179"N | 80°50'50.250"W | 272.68            | 255.544         | 4.30          | 4.07                 | -2.93               |
| 3647.00 | 31.630          | 250.540     | 3589.18  | -32.55         | -82.52     | -307.97   | 1619314.90        | 335917.89          | 39°24'52.037"N | 80°50'50.810"W | 318.84            | 255.000         | 2.14          | 1.57                 | -2.83               |
| 3736.00 | 33.790          | 248.040     | 3664.06  | -32.65         | -99.55     | -352.94   | 1619269.69        | 335901.53          | 39°24'51.868"N | 80°50'51.383"W | 366.71            | 254.248         | 2.86          | 2.43                 | -2.81               |
| 3826.00 | 36.810          | 248.270     | 3737.50  | -31.76         | -118.90    | -401.21   | 1619221.14        | 335882.91          | 39°24'51.677"N | 80°50'51.998"W | 418.45            | 253.492         | 3.36          | 3.36                 | 0.26                |
| 3916.00 | 35.830          | 250.320     | 3810.02  | -31.89         | -137.76    | -451.06   | 1619171.01        | 335864.81          | 39°24'51.491"N | 80°50'52.633"W | 471.63            | 253.017         | 1.73          | -1.09                | 2.28                |
| 4005.00 | 35.500          | 252.310     | 3882.33  | -33.86         | -154.38    | -500.21   | 1619121.62        | 335848.92          | 39°24'51.326"N | 80°50'53.259"W | 523.49            | 252.848         | 1.36          | -0.37                | 2.24                |
| 4095.00 | 37.730          | 254.450     | 3954.57  | -37.85         | -169.71    | -551.64   | 1619069.97        | 335834.37          | 39°24'51.175"N | 80°50'53.915"W | 577.16            | 252.900         | 2.85          | 2.48                 | 2.38                |
| 4185.00 | 38.150          | 255.660     | 4025.55  | -43.55         | -183.97    | -605.10   | 1619016.30        | 335820.91          | 39°24'51.034"N | 80°50'54.596"W | 632.45            | 253.089         | 0.95          | 0.47                 | 1.34                |
| 4274.00 | 36.870          | 254.330     | 4096.15  | -49.09         | -197.99    | -657.45   | 1618963.76        | 335807.67          | 39°24'50.895"N | 80°50'55.263"W | 686.61            | 253.240         | 1.70          | -1.44                | -1.49               |
| 4364.00 | 37.520          | 252.370     | 4167.84  | -53.08         | -213.59    | -709.57   | 1618911.41        | 335792.86          | 39°24'50.741"N | 80°50'55.927"W | 741.02            | 253.248         | 1.50          | 0.72                 | -2.18               |
| 4453.00 | 36.960          | 251.880     | 4238.70  | -55.88         | -230.12    | -760.82   | 1618859.91        | 335777.10          | 39°24'50.578"N | 80°50'56.580"W | 794.86            | 253.172         | 0.71          | -0.63                | -0.55               |
| 4543.00 | 37.090          | 253.770     | 4310.55  | -59.37         | -246.12    | -812.60   | 1618807.91        | 335761.88          | 39°24'50.420"N | 80°50'57.239"W | 849.05            | 253.150         | 1.27          | 0.14                 | 2.10                |
| 4633.00 | 37.480          | 258.590     | 4382.17  | -66.06         | -259.12    | -865.51   | 1618754.81        | 335749.67          | 39°24'50.291"N | 80°50'57.913"W | 903.46            | 253.333         | 3.27          | 0.43                 | 5.36                |
| 4723.00 | 35.880          | 256.980     | 4454.35  | -74.15         | -270.48    | -918.05   | 1618702.11        | 335739.10          | 39°24'50.179"N | 80°50'58.583"W | 957.06            | 253.584         | 2.07          | -1.78                | -1.79               |
| 4812.00 | 33.410          | 253.100     | 4527.57  | -79.40         | -283.48    | -966.92   | 1618653.06        | 335726.83          | 39°24'50.050"N | 80°50'59.206"W | 1007.62           | 253.660         | 3.72          | -2.78                | -4.36               |
| 4902.00 | 35.050          | 249.720     | 4601.99  | -81.37         | -299.65    | -1014.87  | 1618604.87        | 335711.39          | 39°24'49.890"N | 80°50'59.817"W | 1058.19           | 253.550         | 2.79          | 1.82                 | -3.76               |
| 4991.00 | 38.310          | 249.880     | 4673.36  | -81.99         | -318.00    | -1064.76  | 1618554.71        | 335693.79          | 39°24'49.709"N | 80°51'00.452"W | 1111.23           | 253.371         | 3.66          | 3.66                 | 0.18                |
| 5081.00 | 37.640          | 250.960     | 4744.30  | -83.22         | -336.56    | -1116.93  | 1618502.27        | 335676.01          | 39°24'49.526"N | 80°51'01.117"W | 1166.54           | 253.231         | 1.05          | -0.74                | 1.20                |
| 5170.00 | 37.690          | 251.420     | 4814.75  | -85.17         | -354.10    | -1168.41  | 1618450.54        | 335659.25          | 39°24'49.352"N | 80°51'01.773"W | 1220.89           | 253.140         | 0.32          | 0.06                 | 0.52                |
| 5260.00 | 34.290          | 254.370     | 4887.57  | -88.58         | -369.70    | -1218.92  | 1618399.80        | 335644.41          | 39°24'49.198"N | 80°51'02.416"W | 1273.76           | 253.127         | 4.24          | -3.78                | 3.28                |
| 5349.00 | 38.160          | 256.110     | 4959.35  | -94.20         | -383.06    | -1269.78  | 1618348.75        | 335631.81          | 39°24'49.066"N | 80°51'03.064"W | 1326.30           | 253.213         | 4.50          | 4.35                 | 1.96                |
| 5439.00 | 38.390          | 257.870     | 5030.01  | -101.82        | -395.61    | -1324.09  | 1618294.26        | 335620.08          | 39°24'48.942"N | 80°51'03.756"W | 1381.93           | 253.365         | 1.24          | 0.26                 | 1.96                |

0120110



# Actual Wellpath Report

SHR1BHS AWP Proj: 16031'

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## REFERENCE WELLPATH IDENTIFICATION

|          |                  |          |             |
|----------|------------------|----------|-------------|
| Operator | NOBLE ENERGY     | Slot     | Slot B      |
| Area     | Tyler County, WV | Well     | SHR1BHS     |
| Field    | Tyler            | Wellbore | SHR1BHS AWB |
| Facility | SHR 1 Pad        |          |             |

## WELLPATH DATA (194 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] |
|---------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 5529.00 | 38.130          | 256.310     | 5100.68  | -109.52        | -408.05    | -1378.41  | 1618239.76        | 335608.45          | 39°24'48.819"N | 80°51'04.448"W | 1437.54           | 253.510         | 1.11          | -0.29                | -1.73               |
| 5618.00 | 35.950          | 255.390     | 5171.72  | -115.80        | -421.15    | -1430.39  | 1618187.59        | 335596.14          | 39°24'48.689"N | 80°51'05.111"W | 1491.11           | 253.594         | 2.53          | -2.45                | -1.03               |
| 5708.00 | 34.720          | 256.580     | 5245.14  | -121.99        | -433.76    | -1480.89  | 1618136.91        | 335584.28          | 39°24'48.565"N | 80°51'05.754"W | 1543.11           | 253.674         | 1.57          | -1.37                | 1.32                |
| 5798.00 | 34.790          | 256.760     | 5319.08  | -128.72        | -445.59    | -1530.82  | 1618086.82        | 335573.20          | 39°24'48.448"N | 80°51'06.390"W | 1594.35           | 253.771         | 0.14          | 0.08                 | 0.20                |
| 5887.00 | 34.730          | 247.340     | 5392.25  | -131.29        | -461.18    | -1578.96  | 1618038.45        | 335558.33          | 39°24'48.294"N | 80°51'07.003"W | 1644.94           | 253.718         | 6.03          | -0.07                | -10.58              |
| 5976.00 | 34.860          | 241.560     | 5465.36  | -127.14        | -483.07    | -1624.74  | 1617992.36        | 335537.14          | 39°24'48.077"N | 80°51'07.587"W | 1695.03           | 253.442         | 3.71          | 0.15                 | -6.49               |
| 6066.00 | 34.910          | 247.210     | 5539.21  | -122.88        | -505.30    | -1671.11  | 1617945.66        | 335515.60          | 39°24'47.858"N | 80°51'08.177"W | 1745.83           | 253.176         | 3.59          | 0.06                 | 6.28                |
| 6155.00 | 34.800          | 258.670     | 5612.32  | -126.23        | -520.17    | -1719.54  | 1617897.01        | 335501.46          | 39°24'47.711"N | 80°51'08.795"W | 1796.50           | 253.169         | 7.35          | -0.12                | 12.88               |
| 6245.00 | 34.140          | 257.620     | 5686.52  | -134.20        | -530.63    | -1769.39  | 1617847.01        | 335491.75          | 39°24'47.607"N | 80°51'09.430"W | 1847.24           | 253.306         | 0.99          | -0.73                | -1.17               |
| 6334.00 | 34.190          | 253.060     | 5760.17  | -139.60        | -543.27    | -1817.71  | 1617798.51        | 335479.83          | 39°24'47.482"N | 80°51'10.045"W | 1897.16           | 253.360         | 2.88          | 0.06                 | -5.12               |
| 6424.00 | 33.800          | 253.520     | 5834.79  | -143.24        | -557.74    | -1865.91  | 1617750.11        | 335466.09          | 39°24'47.339"N | 80°51'10.659"W | 1947.48           | 253.358         | 0.52          | -0.43                | 0.51                |
| 6514.00 | 33.880          | 256.930     | 5909.55  | -148.55        | -570.52    | -1914.35  | 1617701.48        | 335454.04          | 39°24'47.213"N | 80°51'11.277"W | 1997.56           | 253.405         | 2.11          | 0.09                 | 3.79                |
| 6569.00 | 35.980          | 258.500     | 5954.64  | -153.26        | -577.21    | -1945.12  | 1617670.61        | 335447.82          | 39°24'47.147"N | 80°51'11.669"W | 2028.96           | 253.472         | 4.15          | 3.82                 | 2.85                |
| 6614.00 | 35.870          | 256.660     | 5991.08  | -157.13        | -582.89    | -1970.90  | 1617644.75        | 335442.53          | 39°24'47.091"N | 80°51'11.997"W | 2055.29           | 253.525         | 2.41          | -0.24                | -4.09               |
| 6659.00 | 35.870          | 249.320     | 6027.56  | -158.90        | -590.59    | -1996.08  | 1617619.46        | 335435.20          | 39°24'47.014"N | 80°51'12.318"W | 2081.62           | 253.518         | 9.55          | 0.00                 | -16.31              |
| 6703.00 | 35.920          | 239.790     | 6063.24  | -156.84        | -601.64    | -2019.31  | 1617596.07        | 335424.50          | 39°24'46.905"N | 80°51'12.614"W | 2107.03           | 253.409         | 12.69         | 0.11                 | -21.66              |
| 6748.00 | 36.090          | 231.830     | 6099.66  | -150.75        | -616.48    | -2041.15  | 1617574.01        | 335409.99          | 39°24'46.758"N | 80°51'12.892"W | 2132.22           | 253.194         | 10.40         | 0.38                 | -17.69              |
| 6793.00 | 37.500          | 228.490     | 6135.70  | -141.97        | -633.75    | -2061.83  | 1617553.08        | 335393.03          | 39°24'46.588"N | 80°51'13.155"W | 2157.03           | 252.914         | 5.44          | 3.13                 | -7.42               |
| 6838.00 | 39.600          | 227.530     | 6170.89  | -131.86        | -652.52    | -2082.67  | 1617531.96        | 335374.58          | 39°24'46.402"N | 80°51'13.421"W | 2182.50           | 252.604         | 4.85          | 4.67                 | -2.13               |
| 6883.00 | 41.240          | 223.770     | 6205.15  | -120.22        | -672.92    | -2103.51  | 1617510.81        | 335354.50          | 39°24'46.201"N | 80°51'13.687"W | 2208.52           | 252.260         | 6.53          | 3.64                 | -8.36               |
| 6927.00 | 42.120          | 218.880     | 6238.02  | -106.57        | -694.88    | -2122.81  | 1617491.19        | 335332.82          | 39°24'45.983"N | 80°51'13.932"W | 2233.65           | 251.875         | 7.65          | 2.00                 | -11.11              |
| 6972.00 | 43.180          | 211.760     | 6271.14  | -89.61         | -719.74    | -2140.40  | 1617473.23        | 335308.24          | 39°24'45.738"N | 80°51'14.156"W | 2258.17           | 251.414         | 10.97         | 2.36                 | -15.82              |
| 7017.00 | 44.930          | 204.910     | 6303.50  | -69.16         | -747.26    | -2155.21  | 1617458.02        | 335280.94          | 39°24'45.466"N | 80°51'14.345"W | 2281.08           | 250.877         | 11.27         | 3.89                 | -15.22              |
| 7062.00 | 47.110          | 198.790     | 6334.76  | -45.37         | -777.29    | -2167.22  | 1617445.56        | 335251.09          | 39°24'45.169"N | 80°51'14.498"W | 2302.39           | 250.269         | 10.92         | 4.84                 | -13.60              |
| 7106.00 | 50.480          | 193.940     | 6363.75  | -19.01         | -809.04    | -2176.50  | 1617435.80        | 335219.49          | 39°24'44.855"N | 80°51'14.616"W | 2322.01           | 249.609         | 11.29         | 7.66                 | -11.02              |
| 7151.00 | 54.260          | 189.630     | 6391.23  | 11.00          | -843.92    | -2183.74  | 1617428.03        | 335184.73          | 39°24'44.510"N | 80°51'14.709"W | 2341.14           | 248.871         | 11.31         | 8.40                 | -9.58               |
| 7196.00 | 57.670          | 186.440     | 6416.42  | 43.65          | -880.83    | -2188.93  | 1617422.29        | 335147.89          | 39°24'44.146"N | 80°51'14.775"W | 2359.51           | 248.080         | 9.59          | 7.58                 | -7.09               |
| 7241.00 | 61.940          | 182.710     | 6439.05  | 78.77          | -919.59    | -2192.01  | 1617418.64        | 335109.19          | 39°24'43.763"N | 80°51'14.814"W | 2377.09           | 247.241         | 11.89         | 9.49                 | -8.29               |
| 7285.00 | 66.080          | 180.230     | 6458.33  | 115.35         | -959.11    | -2193.01  | 1617417.05        | 335069.69          | 39°24'43.372"N | 80°51'14.826"W | 2393.57           | 246.378         | 10.69         | 9.41                 | -5.64               |
| 7330.00 | 69.900          | 178.530     | 6475.19  | 154.48         | -1000.82   | -2192.55  | 1617416.88        | 335027.98          | 39°24'42.960"N | 80°51'14.821"W | 2410.17           | 245.465         | 9.18          | 8.49                 | -3.78               |

95-02110



# Actual Wellpath Report

SHR1BHS AWP Proj: 16031'  
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| REFERENCE WELLPATH IDENTIFICATION |                  |          |             |
|-----------------------------------|------------------|----------|-------------|
| Operator                          | NOBLE ENERGY     | Slot     | Slot B      |
| Area                              | Tyler County, WV | Well     | SHR1BHS     |
| Field                             | Tyler            | Wellbore | SHR1BHS AWB |
| Facility                          | SHR 1 Pad        |          |             |

## WELLPATH DATA (194 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] |
|---------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 7375.00 | 73.140          | 176.640     | 6489.45  | 194.97         | -1043.45   | -2190.74  | 1617418.05        | 334985.33          | 39°24'42.538"N | 80°51'14.797"W | 2426.55           | 244.531         | 8.23          | 7.20                 | -4.20               |
| 7420.00 | 76.390          | 174.150     | 6501.28  | 236.64         | -1086.72   | -2187.25  | 1617420.89        | 334942.02          | 39°24'42.111"N | 80°51'14.753"W | 2442.34           | 243.580         | 8.98          | 7.22                 | -5.53               |
| 7464.00 | 79.040          | 171.880     | 6510.64  | 278.37         | -1129.39   | -2182.02  | 1617425.48        | 334899.28          | 39°24'41.689"N | 80°51'14.686"W | 2456.97           | 242.634         | 7.85          | 6.02                 | -5.16               |
| 7509.00 | 80.950          | 169.720     | 6518.46  | 321.77         | -1173.13   | -2174.93  | 1617431.91        | 334855.44          | 39°24'41.257"N | 80°51'14.596"W | 2471.14           | 241.658         | 6.35          | 4.24                 | -4.80               |
| 7554.00 | 80.950          | 167.680     | 6525.54  | 365.59         | -1216.70   | -2166.22  | 1617439.97        | 334811.74          | 39°24'40.826"N | 80°51'14.485"W | 2484.53           | 240.678         | 4.48          | 0.00                 | -4.53               |
| 7599.00 | 82.030          | 162.530     | 6532.20  | 409.84         | -1259.70   | -2154.78  | 1617450.76        | 334768.58          | 39°24'40.401"N | 80°51'14.339"W | 2495.98           | 239.689         | 11.57         | 2.40                 | -11.44              |
| 7643.00 | 86.120          | 158.700     | 6536.75  | 453.57         | -1300.96   | -2140.26  | 1617464.66        | 334727.11          | 39°24'39.993"N | 80°51'14.154"W | 2504.64           | 238.707         | 12.70         | 9.30                 | -8.70               |
| 7688.00 | 85.960          | 156.330     | 6539.85  | 498.44         | -1342.44   | -2123.09  | 1617481.21        | 334685.38          | 39°24'39.583"N | 80°51'13.935"W | 2511.90           | 237.695         | 5.27          | -0.36                | -5.27               |
| 7733.00 | 85.900          | 155.400     | 6543.05  | 543.26         | -1383.40   | -2104.74  | 1617498.94        | 334644.15          | 39°24'39.178"N | 80°51'13.701"W | 2518.67           | 236.684         | 2.07          | -0.13                | -2.07               |
| 7778.00 | 87.450          | 155.350     | 6545.66  | 588.08         | -1424.24   | -2086.02  | 1617517.05        | 334603.04          | 39°24'38.775"N | 80°51'13.463"W | 2525.85           | 235.677         | 3.45          | 3.44                 | -0.11               |
| 7822.00 | 88.210          | 153.720     | 6547.32  | 631.91         | -1463.93   | -2067.12  | 1617535.35        | 334563.07          | 39°24'38.383"N | 80°51'13.222"W | 2533.00           | 234.694         | 4.09          | 1.73                 | -3.70               |
| 7912.00 | 87.970          | 154.420     | 6550.32  | 721.50         | -1544.83   | -2027.78  | 1617573.46        | 334481.60          | 39°24'37.583"N | 80°51'12.721"W | 2549.20           | 232.699         | 0.82          | -0.27                | 0.78                |
| 8001.00 | 89.320          | 155.040     | 6552.43  | 810.21         | -1625.29   | -1989.80  | 1617610.23        | 334400.58          | 39°24'36.788"N | 80°51'12.237"W | 2569.22           | 230.758         | 1.67          | 1.52                 | 0.70                |
| 8091.00 | 89.910          | 154.590     | 6553.03  | 899.95         | -1706.73   | -1951.51  | 1617647.30        | 334318.58          | 39°24'35.983"N | 80°51'11.749"W | 2592.55           | 228.828         | 0.82          | 0.66                 | -0.50               |
| 8180.00 | 89.880          | 157.610     | 6553.20  | 988.82         | -1788.09   | -1915.45  | 1617682.13        | 334236.69          | 39°24'35.179"N | 80°51'11.289"W | 2620.35           | 226.970         | 3.39          | -0.03                | 3.39                |
| 8270.00 | 90.000          | 159.390     | 6553.29  | 1078.81        | -1871.82   | -1882.47  | 1617713.86        | 334152.48          | 39°24'34.351"N | 80°51'10.869"W | 2654.69           | 225.162         | 1.98          | 0.13                 | 1.98                |
| 8360.00 | 90.150          | 161.720     | 6553.17  | 1168.78        | -1956.68   | -1852.51  | 1617742.54        | 334067.18          | 39°24'33.513"N | 80°51'10.487"W | 2694.51           | 223.433         | 2.59          | 0.17                 | 2.59                |
| 8449.00 | 89.910          | 158.980     | 6553.13  | 1257.75        | -2040.49   | -1822.58  | 1617771.20        | 333982.94          | 39°24'32.684"N | 80°51'10.106"W | 2735.95           | 221.771         | 3.09          | -0.27                | -3.08               |
| 8539.00 | 90.150          | 160.530     | 6553.08  | 1347.74        | -2124.93   | -1791.44  | 1617801.07        | 333898.05          | 39°24'31.850"N | 80°51'09.709"W | 2779.31           | 220.133         | 1.74          | 0.27                 | 1.72                |
| 8629.00 | 89.970          | 161.880     | 6552.98  | 1437.68        | -2210.13   | -1762.45  | 1617828.79        | 333812.43          | 39°24'31.008"N | 80°51'09.340"W | 2826.81           | 218.570         | 1.51          | -0.20                | 1.50                |
| 8718.00 | 89.970          | 164.070     | 6553.03  | 1526.47        | -2295.22   | -1736.39  | 1617853.57        | 333726.96          | 39°24'30.167"N | 80°51'09.008"W | 2878.04           | 217.108         | 2.46          | 0.00                 | 2.46                |
| 8808.00 | 89.720          | 164.330     | 6553.27  | 1616.12        | -2381.82   | -1711.88  | 1617876.77        | 333640.01          | 39°24'29.311"N | 80°51'08.695"W | 2933.19           | 215.706         | 0.40          | -0.28                | 0.29                |
| 8897.00 | 89.780          | 163.280     | 6553.66  | 1704.83        | -2467.29   | -1687.06  | 1617900.31        | 333554.19          | 39°24'28.466"N | 80°51'08.379"W | 2988.93           | 214.363         | 1.18          | 0.07                 | -1.18               |
| 8987.00 | 89.820          | 158.240     | 6553.98  | 1794.76        | -2552.23   | -1657.41  | 1617928.68        | 333468.81          | 39°24'27.627"N | 80°51'08.001"W | 3043.17           | 213.000         | 5.60          | 0.04                 | -5.60               |
| 9077.00 | 89.660          | 155.250     | 6554.39  | 1884.67        | -2634.91   | -1621.88  | 1617962.96        | 333385.61          | 39°24'26.810"N | 80°51'07.549"W | 3094.07           | 211.614         | 3.33          | -0.18                | -3.32               |
| 9166.00 | 89.600          | 154.970     | 6554.96  | 1973.45        | -2715.64   | -1584.43  | 1617999.20        | 333304.33          | 39°24'26.012"N | 80°51'07.071"W | 3144.06           | 210.261         | 0.32          | -0.07                | -0.31               |
| 9256.00 | 90.000          | 157.770     | 6555.27  | 2063.33        | -2798.09   | -1548.36  | 1618034.03        | 333221.36          | 39°24'25.197"N | 80°51'06.612"W | 3197.92           | 208.958         | 3.14          | 0.44                 | 3.11                |
| 9346.00 | 90.000          | 155.720     | 6555.27  | 2153.25        | -2880.77   | -1512.82  | 1618068.32        | 333138.16          | 39°24'24.380"N | 80°51'06.159"W | 3253.84           | 207.706         | 2.28          | 0.00                 | -2.28               |
| 9435.00 | 89.880          | 158.050     | 6555.37  | 2242.18        | -2962.62   | -1477.89  | 1618102.02        | 333055.80          | 39°24'23.571"N | 80°51'05.714"W | 3310.78           | 206.512         | 2.62          | -0.13                | 2.62                |
| 9525.00 | 89.940          | 163.390     | 6555.51  | 2332.11        | -3047.54   | -1448.18  | 1618130.45        | 332970.45          | 39°24'22.731"N | 80°51'05.335"W | 3374.13           | 205.417         | 5.93          | 0.07                 | 5.93                |

95-02-110



# Actual Wellpath Report

SHR1BHS AWP Proj: 16031'  
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| REFERENCE WELLPATH IDENTIFICATION |                  |          |             |
|-----------------------------------|------------------|----------|-------------|
| Operator                          | NOBLE ENERGY     | Slot     | Slot B      |
| Area                              | Tyler County, WV | Well     | SHR1BHS     |
| Field                             | Tyler            | Wellbore | SHR1BHS AWB |
| Facility                          | SHR 1 Pad        |          |             |

### WELLPATH DATA (194 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] |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 9615.00  | 90.120          | 167.530     | 6555.46  | 2421.54        | -3134.64   | -1425.59  | 1618151.73        | 332883.03          | 39°24'21.871"N | 80°51'05.047"W | 3443.58           | 204.455         | 4.60          | 0.20                 | 4.60                |
| 9704.00  | 90.250          | 172.040     | 6555.17  | 2508.99        | -3222.21   | -1409.81  | 1618166.20        | 332795.24          | 39°24'21.005"N | 80°51'04.846"W | 3517.13           | 203.631         | 5.07          | 0.15                 | 5.07                |
| 9794.00  | 89.910          | 172.830     | 6555.05  | 2596.57        | -3311.42   | -1397.96  | 1618176.71        | 332705.86          | 39°24'20.123"N | 80°51'04.695"W | 3594.41           | 202.888         | 0.96          | -0.38                | 0.88                |
| 9883.00  | 89.880          | 162.890     | 6555.21  | 2684.44        | -3398.32   | -1379.27  | 1618194.10        | 332618.69          | 39°24'19.264"N | 80°51'04.457"W | 3667.56           | 202.091         | 11.17         | -0.03                | -11.17              |
| 9973.00  | 89.880          | 154.590     | 6555.40  | 2774.35        | -3482.12   | -1346.66  | 1618225.44        | 332534.42          | 39°24'18.436"N | 80°51'04.042"W | 3733.46           | 201.143         | 9.22          | 0.00                 | -9.22               |
| 10062.00 | 90.120          | 147.350     | 6555.40  | 2862.39        | -3559.89   | -1303.50  | 1618267.43        | 332456.02          | 39°24'17.668"N | 80°51'03.492"W | 3791.03           | 200.111         | 8.14          | 0.27                 | -8.13               |
| 10152.00 | 89.880          | 146.890     | 6555.40  | 2950.42        | -3635.47   | -1254.65  | 1618315.15        | 332379.71          | 39°24'16.921"N | 80°51'02.869"W | 3845.88           | 199.040         | 0.58          | -0.27                | -0.51               |
| 10242.00 | 89.910          | 153.750     | 6555.57  | 3039.30        | -3713.62   | -1210.11  | 1618358.50        | 332300.91          | 39°24'16.148"N | 80°51'02.302"W | 3905.81           | 198.049         | 7.62          | 0.03                 | 7.62                |
| 10331.00 | 90.460          | 153.690     | 6555.28  | 3127.90        | -3793.42   | -1170.70  | 1618396.71        | 332220.54          | 39°24'15.360"N | 80°51'01.800"W | 3969.96           | 197.151         | 0.62          | 0.62                 | -0.07               |
| 10421.00 | 90.430          | 152.420     | 6554.58  | 3217.39        | -3873.64   | -1129.92  | 1618436.28        | 332139.71          | 39°24'14.567"N | 80°51'01.280"W | 4035.08           | 196.262         | 1.41          | -0.03                | -1.41               |
| 10510.00 | 90.550          | 160.700     | 6553.82  | 3306.22        | -3955.23   | -1094.55  | 1618470.42        | 332057.62          | 39°24'13.760"N | 80°51'00.830"W | 4103.88           | 195.469         | 9.30          | 0.13                 | 9.30                |
| 10599.00 | 90.430          | 161.420     | 6553.06  | 3395.17        | -4039.40   | -1065.67  | 1618498.04        | 331973.02          | 39°24'12.928"N | 80°51'00.462"W | 4177.61           | 194.779         | 0.82          | -0.13                | 0.81                |
| 10689.00 | 90.490          | 159.980     | 6552.33  | 3485.13        | -4124.34   | -1035.92  | 1618526.51        | 331887.65          | 39°24'12.089"N | 80°51'00.083"W | 4252.45           | 194.099         | 1.60          | 0.07                 | -1.60               |
| 10778.00 | 90.430          | 157.500     | 6551.62  | 3574.12        | -4207.27   | -1003.65  | 1618557.53        | 331804.25          | 39°24'11.269"N | 80°50'59.672"W | 4325.33           | 193.417         | 2.79          | -0.07                | -2.79               |
| 10868.00 | 89.940          | 158.760     | 6551.33  | 3664.10        | -4290.80   | -970.13   | 1618589.79        | 331720.24          | 39°24'10.444"N | 80°50'59.244"W | 4399.10           | 192.740         | 1.50          | -0.54                | 1.40                |
| 10957.00 | 89.910          | 161.090     | 6551.45  | 3753.08        | -4374.38   | -939.58   | 1618619.08        | 331636.21          | 39°24'09.618"N | 80°50'58.855"W | 4474.15           | 192.122         | 2.62          | -0.03                | 2.62                |
| 11046.00 | 89.880          | 160.770     | 6551.61  | 3842.04        | -4458.50   | -910.50   | 1618646.90        | 331551.67          | 39°24'08.786"N | 80°50'58.485"W | 4550.52           | 191.542         | 0.36          | -0.03                | -0.36               |
| 11136.00 | 90.000          | 160.940     | 6551.70  | 3932.00        | -4543.52   | -880.99   | 1618675.13        | 331466.22          | 39°24'07.946"N | 80°50'58.109"W | 4628.14           | 190.973         | 0.23          | 0.13                 | 0.19                |
| 11225.00 | 90.030          | 162.090     | 6551.68  | 4020.92        | -4627.93   | -852.77   | 1618702.08        | 331381.40          | 39°24'07.112"N | 80°50'57.749"W | 4705.84           | 190.441         | 1.29          | 0.03                 | 1.29                |
| 11315.00 | 90.000          | 163.010     | 6551.66  | 4110.76        | -4713.78   | -825.78   | 1618727.78        | 331295.16          | 39°24'06.263"N | 80°50'57.405"W | 4785.57           | 189.936         | 1.02          | -0.03                | 1.02                |
| 11404.00 | 89.970          | 162.310     | 6551.68  | 4199.59        | -4798.74   | -799.26   | 1618753.03        | 331209.82          | 39°24'05.424"N | 80°50'57.068"W | 4864.84           | 189.456         | 0.79          | -0.03                | -0.79               |
| 11494.00 | 90.000          | 160.040     | 6551.70  | 4289.53        | -4883.92   | -770.22   | 1618780.78        | 331124.22          | 39°24'04.582"N | 80°50'56.698"W | 4944.28           | 188.962         | 2.52          | 0.03                 | -2.52               |
| 11583.00 | 90.060          | 158.140     | 6551.66  | 4378.53        | -4967.05   | -738.45   | 1618811.30        | 331040.62          | 39°24'03.760"N | 80°50'56.293"W | 5021.65           | 188.456         | 2.14          | 0.07                 | -2.13               |
| 11673.00 | 90.180          | 156.590     | 6551.47  | 4468.48        | -5050.12   | -703.82   | 1618844.68        | 330957.05          | 39°24'02.939"N | 80°50'55.852"W | 5098.93           | 187.934         | 1.73          | 0.13                 | -1.72               |
| 11762.00 | 90.460          | 155.220     | 6550.97  | 4557.34        | -5131.36   | -667.48   | 1618879.79        | 330875.28          | 39°24'02.136"N | 80°50'55.389"W | 5174.59           | 187.411         | 1.57          | 0.31                 | -1.54               |
| 11852.00 | 89.820          | 150.890     | 6550.75  | 4646.81        | -5211.57   | -626.71   | 1618919.36        | 330794.47          | 39°24'01.343"N | 80°50'54.869"W | 5249.12           | 186.857         | 4.86          | -0.71                | -4.81               |
| 11941.00 | 89.540          | 148.570     | 6551.25  | 4734.60        | -5288.43   | -581.85   | 1618963.05        | 330716.95          | 39°24'00.584"N | 80°50'54.298"W | 5320.34           | 186.279         | 2.63          | -0.31                | -2.61               |
| 12031.00 | 89.260          | 151.360     | 6552.19  | 4823.44        | -5366.33   | -536.81   | 1619006.92        | 330638.39          | 39°23'59.814"N | 80°50'53.724"W | 5393.12           | 185.712         | 3.12          | -0.31                | 3.10                |
| 12120.00 | 89.080          | 155.370     | 6553.48  | 4911.96        | -5445.86   | -496.93   | 1619045.61        | 330558.27          | 39°23'59.028"N | 80°50'53.216"W | 5468.49           | 185.214         | 4.51          | -0.20                | 4.51                |
| 12210.00 | 89.780          | 162.920     | 6554.38  | 5001.89        | -5529.90   | -464.91   | 1619076.36        | 330473.77          | 39°23'58.197"N | 80°50'52.808"W | 5549.41           | 184.806         | 8.42          | 0.78                 | 8.39                |

95-02110



# Actual Wellpath Report

SHR1BHS AWP Proj: 16031'

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## REFERENCE WELLPATH IDENTIFICATION

|          |                  |          |             |
|----------|------------------|----------|-------------|
| Operator | NOBLE ENERGY     | Slot     | Slot B      |
| Area     | Tyler County, WV | Well     | SHR1BHS     |
| Field    | Tyler            | Wellbore | SHR1BHS AWB |
| Facility | SHR 1 Pad        |          |             |

## WELLPATH DATA (194 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] |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 12300.00 | 90.650          | 162.660     | 6554.04  | 5091.70        | -5615.87   | -438.28   | 1619101.69        | 330387.41          | 39°23'57.348"N | 80°50'52.469"W | 5632.95           | 184.463         | 1.01          | 0.97                 | -0.29               |
| 12389.00 | 89.940          | 158.550     | 6553.58  | 5180.65        | -5699.80   | -408.73   | 1619129.98        | 330303.06          | 39°23'56.518"N | 80°50'52.093"W | 5714.44           | 184.102         | 4.69          | -0.80                | -4.62               |
| 12479.00 | 89.880          | 160.050     | 6553.72  | 5270.65        | -5783.99   | -376.92   | 1619160.53        | 330218.41          | 39°23'55.686"N | 80°50'51.687"W | 5796.26           | 183.729         | 1.67          | -0.07                | 1.67                |
| 12568.00 | 89.820          | 160.010     | 6553.95  | 5359.64        | -5867.64   | -346.53   | 1619189.66        | 330134.32          | 39°23'54.859"N | 80°50'51.300"W | 5877.86           | 183.380         | 0.08          | -0.07                | -0.04               |
| 12658.00 | 89.780          | 160.960     | 6554.27  | 5449.61        | -5952.46   | -316.46   | 1619218.45        | 330049.05          | 39°23'54.021"N | 80°50'50.917"W | 5960.87           | 183.043         | 1.06          | -0.04                | 1.06                |
| 12747.00 | 89.820          | 164.260     | 6554.58  | 5538.44        | -6037.38   | -289.87   | 1619243.77        | 329963.75          | 39°23'53.182"N | 80°50'50.578"W | 6044.34           | 182.749         | 3.71          | 0.04                 | 3.71                |
| 12837.00 | 90.150          | 166.440     | 6554.60  | 5627.90        | -6124.45   | -267.11   | 1619265.22        | 329876.35          | 39°23'52.321"N | 80°50'50.288"W | 6130.27           | 182.497         | 2.45          | 0.37                 | 2.42                |
| 12926.00 | 90.520          | 167.330     | 6554.08  | 5716.09        | -6211.13   | -246.91   | 1619284.11        | 329789.39          | 39°23'51.464"N | 80°50'50.031"W | 6216.03           | 182.276         | 1.08          | 0.42                 | 1.00                |
| 13016.00 | 90.060          | 163.650     | 6553.63  | 5805.52        | -6298.24   | -224.37   | 1619305.35        | 329701.95          | 39°23'50.603"N | 80°50'49.744"W | 6302.24           | 182.040         | 4.12          | -0.51                | -4.09               |
| 13106.00 | 90.220          | 158.600     | 6553.41  | 5895.44        | -6383.37   | -195.26   | 1619333.18        | 329616.40          | 39°23'49.762"N | 80°50'49.373"W | 6386.36           | 181.752         | 5.61          | 0.18                 | -5.61               |
| 13195.00 | 90.650          | 157.370     | 6552.73  | 5984.41        | -6465.88   | -161.90   | 1619365.29        | 329533.40          | 39°23'48.947"N | 80°50'48.948"W | 6467.91           | 181.434         | 1.46          | 0.48                 | -1.38               |
| 13285.00 | 90.340          | 151.920     | 6551.95  | 6074.10        | -6547.18   | -123.38   | 1619402.59        | 329451.54          | 39°23'48.143"N | 80°50'48.458"W | 6548.34           | 181.080         | 6.07          | -0.34                | -6.06               |
| 13375.00 | 90.250          | 148.510     | 6551.49  | 6162.99        | -6625.28   | -78.68    | 1619446.12        | 329372.79          | 39°23'47.371"N | 80°50'47.888"W | 6625.74           | 180.680         | 3.79          | -0.10                | -3.79               |
| 13464.00 | 89.850          | 151.240     | 6551.41  | 6250.83        | -6702.25   | -34.01    | 1619489.62        | 329295.16          | 39°23'46.610"N | 80°50'47.319"W | 6702.33           | 180.291         | 3.10          | -0.45                | 3.07                |
| 13554.00 | 89.750          | 157.680     | 6551.73  | 6340.48        | -6783.41   | 4.77      | 1619527.18        | 329213.43          | 39°23'45.808"N | 80°50'46.825"W | 6783.41           | 179.960         | 7.16          | -0.11                | 7.16                |
| 13643.00 | 90.000          | 164.470     | 6551.92  | 6429.37        | -6867.55   | 33.62     | 1619554.76        | 329128.87          | 39°23'44.977"N | 80°50'46.458"W | 6867.63           | 179.720         | 7.63          | 0.28                 | 7.63                |
| 13733.00 | 89.940          | 160.970     | 6551.97  | 6519.18        | -6953.47   | 60.35     | 1619580.20        | 329042.56          | 39°23'44.127"N | 80°50'46.117"W | 6953.74           | 179.503         | 3.89          | -0.07                | -3.89               |
| 13822.00 | 89.970          | 160.480     | 6552.04  | 6608.15        | -7037.48   | 89.73     | 1619608.31        | 328958.13          | 39°23'43.297"N | 80°50'45.743"W | 7038.06           | 179.270         | 0.55          | 0.03                 | -0.55               |
| 13912.00 | 89.940          | 162.920     | 6552.11  | 6698.05        | -7122.93   | 117.98    | 1619635.28        | 328872.27          | 39°23'42.453"N | 80°50'45.383"W | 7123.90           | 179.051         | 2.71          | -0.03                | 2.71                |
| 14002.00 | 90.030          | 165.910     | 6552.13  | 6787.66        | -7209.61   | 142.16    | 1619658.16        | 328785.25          | 39°23'41.596"N | 80°50'45.075"W | 7211.01           | 178.870         | 3.32          | 0.10                 | 3.32                |
| 14091.00 | 89.940          | 169.180     | 6552.16  | 6875.69        | -7296.50   | 161.35    | 1619676.05        | 328698.08          | 39°23'40.737"N | 80°50'44.831"W | 7298.28           | 178.733         | 3.68          | -0.10                | 3.67                |
| 14181.00 | 90.180          | 168.490     | 6552.06  | 6964.41        | -7384.80   | 178.78    | 1619692.15        | 328609.54          | 39°23'39.864"N | 80°50'44.609"W | 7386.96           | 178.613         | 0.81          | 0.27                 | -0.77               |
| 14270.00 | 90.280          | 160.650     | 6551.70  | 7052.94        | -7470.52   | 202.44    | 1619714.52        | 328523.47          | 39°23'39.017"N | 80°50'44.307"W | 7473.26           | 178.448         | 8.81          | 0.11                 | -8.81               |
| 14360.00 | 90.370          | 158.880     | 6551.19  | 7142.93        | -7554.96   | 233.57    | 1619744.38        | 328438.58          | 39°23'38.183"N | 80°50'43.911"W | 7558.57           | 178.229         | 1.97          | 0.10                 | -1.97               |
| 14450.00 | 90.340          | 156.940     | 6550.64  | 7232.90        | -7638.35   | 267.41    | 1619776.96        | 328354.70          | 39°23'37.358"N | 80°50'43.480"W | 7643.03           | 177.995         | 2.16          | -0.03                | -2.16               |
| 14539.00 | 90.220          | 153.910     | 6550.20  | 7321.70        | -7719.28   | 304.42    | 1619812.75        | 328273.23          | 39°23'36.559"N | 80°50'43.008"W | 7725.28           | 177.742         | 3.41          | -0.13                | -3.40               |
| 14629.00 | 89.910          | 153.830     | 6550.10  | 7411.32        | -7800.08   | 344.06    | 1619851.17        | 328191.85          | 39°23'35.760"N | 80°50'42.504"W | 7807.66           | 177.474         | 0.36          | -0.34                | -0.09               |
| 14718.00 | 89.780          | 160.750     | 6550.34  | 7500.22        | -7882.13   | 378.40    | 1619884.28        | 328109.30          | 39°23'34.949"N | 80°50'42.066"W | 7891.21           | 177.252         | 7.78          | -0.15                | 7.78                |
| 14808.00 | 89.910          | 159.170     | 6550.58  | 7590.21        | -7966.68   | 409.24    | 1619913.84        | 328024.30          | 39°23'34.113"N | 80°50'41.673"W | 7977.18           | 177.059         | 1.76          | 0.14                 | -1.76               |
| 14897.00 | 89.850          | 159.590     | 6550.77  | 7679.21        | -8049.97   | 440.58    | 1619943.93        | 327940.55          | 39°23'33.290"N | 80°50'41.274"W | 8062.02           | 176.867         | 0.48          | -0.07                | 0.47                |

95-02110





# Actual Wellpath Report

SHR1BHS AWP Proj: 16031'  
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### REFERENCE WELLPATH IDENTIFICATION

|          |                  |          |             |
|----------|------------------|----------|-------------|
| Operator | NOBLE ENERGY     | Slot     | Slot B      |
| Area     | Tyler County, WV | Well     | SHR1BHS     |
| Field    | Tyler            | Wellbore | SHR1BHS AWB |
| Facility | SHR 1 Pad        |          |             |

### WELLPATH DATA (194 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] |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|
| 14987.00 | 89.820          | 160.820     | 6551.03  | 7769.19        | -8134.65   | 471.06    | 1619973.14        | 327855.42          | 39°23'32.453"N | 80°50'40.886"W | 8148.28           | 176.686         | 1.37          | -0.03                | 1.37                |
| 15077.00 | 89.850          | 160.810     | 6551.29  | 7859.15        | -8219.66   | 500.63    | 1620001.43        | 327769.99          | 39°23'31.613"N | 80°50'40.509"W | 8234.89           | 176.515         | 0.04          | 0.03                 | -0.01               |
| 15166.00 | 89.880          | 159.660     | 6551.50  | 7948.13        | -8303.41   | 530.73    | 1620030.27        | 327685.80          | 39°23'30.785"N | 80°50'40.126"W | 8320.35           | 176.343         | 1.29          | 0.03                 | -1.29               |
| 15256.00 | 89.750          | 158.240     | 6551.79  | 8038.13        | -8387.40   | 563.05    | 1620061.33        | 327601.34          | 39°23'29.955"N | 80°50'39.714"W | 8406.28           | 176.159         | 1.58          | -0.14                | -1.58               |
| 15346.00 | 89.720          | 154.270     | 6552.20  | 8128.00        | -8469.77   | 599.29    | 1620096.32        | 327518.45          | 39°23'29.141"N | 80°50'39.253"W | 8490.94           | 175.953         | 4.41          | -0.03                | -4.41               |
| 15435.00 | 89.850          | 154.570     | 6552.54  | 8216.70        | -8550.04   | 637.71    | 1620133.54        | 327437.61          | 39°23'28.348"N | 80°50'38.764"W | 8573.79           | 175.734         | 0.37          | 0.15                 | 0.34                |
| 15525.00 | 89.850          | 156.380     | 6552.77  | 8306.51        | -8631.92   | 675.07    | 1620169.67        | 327355.19          | 39°23'27.538"N | 80°50'38.288"W | 8658.28           | 175.528         | 2.01          | 0.00                 | 2.01                |
| 15615.00 | 89.780          | 157.330     | 6553.06  | 8396.43        | -8714.67   | 710.44    | 1620203.79        | 327271.91          | 39°23'26.720"N | 80°50'37.837"W | 8743.58           | 175.339         | 1.06          | -0.08                | 1.06                |
| 15704.00 | 89.820          | 156.950     | 6553.38  | 8485.38        | -8796.68   | 745.02    | 1620237.13        | 327189.40          | 39°23'25.910"N | 80°50'37.397"W | 8828.17           | 175.159         | 0.43          | 0.04                 | -0.43               |
| 15793.00 | 89.720          | 158.490     | 6553.73  | 8574.35        | -8879.03   | 778.76    | 1620269.64        | 327106.56          | 39°23'25.096"N | 80°50'36.967"W | 8913.12           | 174.988         | 1.73          | -0.11                | 1.73                |
| 15883.00 | 89.820          | 160.250     | 6554.09  | 8664.34        | -8963.26   | 810.47    | 1620300.08        | 327021.87          | 39°23'24.264"N | 80°50'36.563"W | 8999.83           | 174.833         | 1.96          | 0.11                 | 1.96                |
| 15973.00 | 89.880          | 161.770     | 6554.33  | 8754.29        | -9048.36   | 839.75    | 1620328.08        | 326936.35          | 39°23'23.422"N | 80°50'36.190"W | 9087.24           | 174.698         | 1.69          | 0.07                 | 1.69                |
| 16005.00 | 89.820          | 162.890     | 6554.41  | 8786.24        | -9078.85   | 849.47    | 1620337.34        | 326905.72          | 39°23'23.121"N | 80°50'36.067"W | 9118.50           | 174.655         | 3.51          | -0.19                | 3.50                |
| 16031.00 | 89.820          | 162.890     | 6554.49  | 8812.19        | -9103.70   | 857.12    | 1620344.61        | 326880.76          | 39°23'22.875"N | 80°50'35.969"W | 9143.96           | 174.621         | 0.00          | 0.00                 | 0.00                |

01120-56



# Actual Wellpath Report

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### REFERENCE WELLPATH IDENTIFICATION

|          |                  |          |             |
|----------|------------------|----------|-------------|
| Operator | NOBLE ENERGY     | Slot     | Slot B      |
| Area     | Tyler County, WV | Well     | SHRIBHS     |
| Field    | Tyler            | Wellbore | SHRIBHS AWB |
| Facility | SHR 1 Pad        |          |             |

### TARGETS

| Name              | MD [ft] | TVD [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude       | Longitude      | Shape   |
|-------------------|---------|----------|------------|-----------|-------------------|--------------------|----------------|----------------|---------|
| SHRIBHS BHL Rev-1 |         | 6548.00  | -9106.21   | 852.14    | 1620339.60        | 326878.32          | 39°23'22.851"N | 80°50'36.033"W | point   |
| SHRIBHS LP Rev-1  |         | 6548.00  | -1308.14   | -2119.26  | 1617485.55        | 334719.62          | 39°24'39.922"N | 80°51'13.886"W | point   |
| SHR-1 LL          |         | 7000.00  | 26.19      | 30.19     | 1619654.64        | 336021.51          | 39°24'53.111"N | 80°50'46.501"W | polygon |

01750-56

### WELLPATH COMPOSITION - Ref Wellbore: SHR1BHS AWB Ref Wellpath: SHR1BHS AWP Proj: 16031'

| Start MD [ft] | End MD [ft] | Positional Uncertainty Model           | Log Name/Comment                                 | Wellbore    |
|---------------|-------------|--|--|-------------|
| 18.60         | 2382.60     | Generic gyro - northseeking (Standard) | 01_VES Gyro (100'-2364')                         | SHRIBHS AWB |
| 2382.60       | 16005.00    | NaviTrak (MagCorr)                     | 02_BHI AT Curve <8-3/4"> (2382.6')(2483'-16005') | SHRIBHS AWB |
| 16005.00      | 16031.00    | Blind Drilling (std)                   | Projection to bit                                | SHRIBHS AWB |



Actual Wellpath Report  
SHR1BHS AWP Proj: 16031'  
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REFERENCE WELLPATH IDENTIFICATION

|          |                  |          |             |
|----------|------------------|----------|-------------|
| Operator | NOBLE ENERGY     | Slot     | Slot B      |
| Area     | Tyler County, WV | Well     | SHR1BHS     |
| Field    | Tyler            | Wellbore | SHR1BHS AWB |
| Facility | SHR 1 Pad        |          |             |

COMMENTS

Wellpath general comments  
API: 47-095-02110-0000  
BHI Job #: 5764121  
Rig: Precision 542  
Duration: 2/10/2014-2/21/2014  
VES Gyro <9-5/8"> (100'-2364')  
BHI AT Curve <8-3/4"> (2382.6')(2483'-16005')  
Projected MD at TD: 16031'

95-02110